



CATALOGO

2022





## PROTAGONISTA IN QUALITÀ E INNOVAZIONE

Flessibilità, competenza e tecnologia fanno di Gimatic un'azienda all'avanguardia. Questa è la strategia vincente adottata da Gimatic, una strategia conosciuta ed apprezzata in tutto il mondo. Ciò che la rende un'azienda competitiva è la continua voglia di crescere, dimostrata dagli investimenti in ricerca e sviluppo di parte del fatturato annuo e dall'espansione della propria attività in tutto il mondo. Gimatic infatti può contare su una rete capillare, organizzata e affidabile di distributori e di consociate, fondamentali per garantire un flusso continuo di nuovi prodotti. Rete commerciale che non solo commercializza i prodotti Gimatic ma che allo stesso tempo raccoglie la richiesta dell'utilizzatore e costruisce la soluzione ad hoc per la specifica applicazione.

## LEADER IN QUALITY AND INNOVATION

Flexibility, skill and technology make Gimatic a cutting-edge company. This is the winning strategy adopted by Gimatic, a strategy that is known and appreciated worldwide. What makes it a competitive business is its continuous desire to grow, as is shown by its constant investment, with part of its annual turnover ploughed back into research and development year-in, year-out, to expand its business all over the world. Gimatic can rely on a well-organised, highly reliable capillary network of distributors and sister companies, which is essential to guaranteeing a continuous flow of new products. It is a sales network that not only markets Gimatic products, but which also collects the user's requests and builds a specific solution for the given need. Gimatic is also synonymous of quality, a characteristic guaranteed by the use of innovative, technologically advanced machinery and close-knit control procedures monitoring both components and finished products.



## End Of Arm Tooling

Che cosa è un EOAT?

E' il telaio (con tutti i componenti necessari) montato su un robot per lo scarico della pressa di stampaggio.

Le sue funzioni sono:

- estrarre il pezzo dallo stampo;
- afferrarlo saldamente;
- separarlo dalle materozze;
- afferrare le materozze dopo il taglio;
- scaricare le materozze nel riciclatore;
- depositare il pezzo smaterozzato su pallet o nastro trasportatore.

## End-Of-Arm Tooling

What is an EOAT?

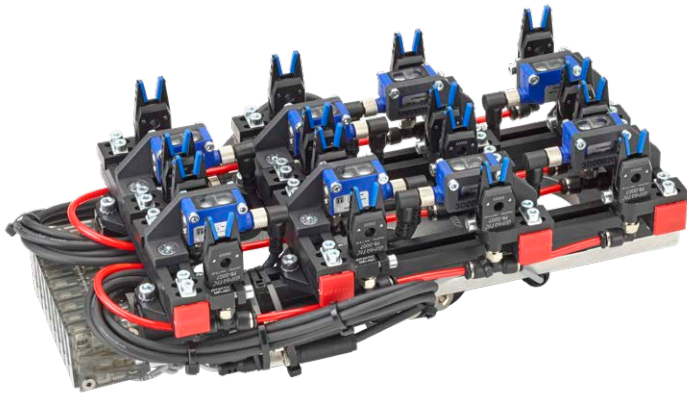
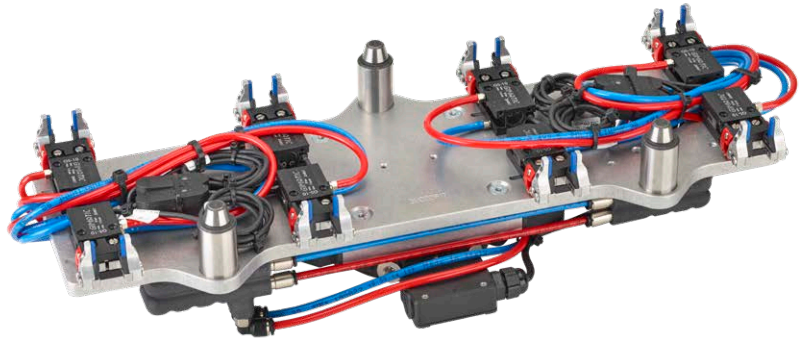
It is the frame (with all the necessary components) mounted on a robot for unloading the hydraulic moulding machine.

Its functions are:

- to extract the piece from the die;
- to grip the piece firmly;
- to cut it from the sprues;
- to grip the sprues after the cut;
- to discharge the sprues into the recycler;
- to place the piece without sprue onto a pallet or conveyor belt.

Manipolazione componenti per sistema iniezione.

*Handling of injection system components.*

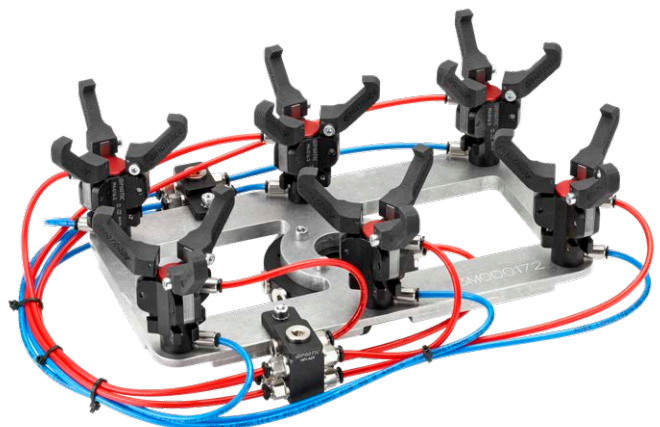


Manipolazione di Cover in silicone morbido

*Handling of soft silicone covers*

Manipolazione lenti per occhiali post stampata con pinze PN-016-3 e dita di presa personalizzate in stampa 3d.

*Handling of post-moulded spectacle lenses with PN-016-3 grippers and customised 3D-printed gripper fingers.*



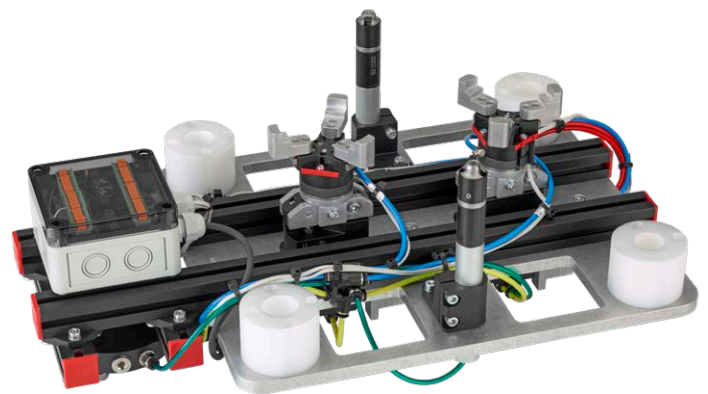


Manipolazione cassettiere in alluminio. Soluzione custom dotata di ventose antialone VG.CF in HNBR, pompa EJ-XPRO con logica di controllo integrata e pompe decentralizzate per alimentazione di ventose VG.IS per la manipolazione dell'interfaldia di protezione.

*Handling of aluminium drawer units. Custom solution with VG.CF mark-free suction cups in HNBR, EJ-XPRO vacuum pump with built-in control logic and decentralized pumps for feeding VG.IS suction cups for handling the protection interlayer.*

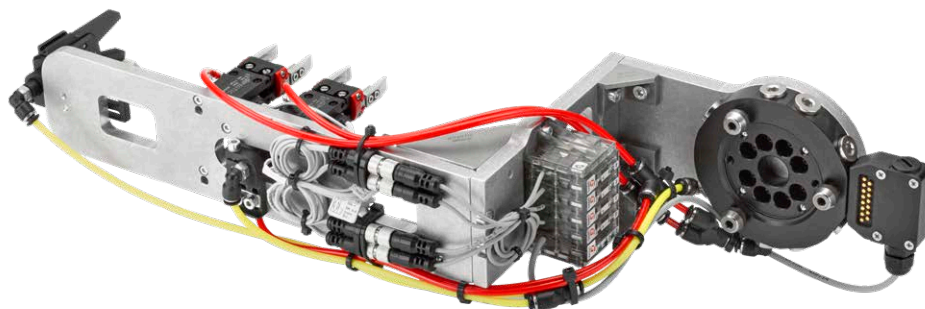
Preso e caricamento nello stampo di un anello in rame con pinza a tre griffe TH, sulla parte opposta della mano gruppo di presa per scarico cuscinetto co-stampato.

*Gripping and loading a copper ring into the mould with a TH three-jaw gripper, on the opposite side of the EOAT for gripping and unloading the co-moulded bearing.*



Manipolazione di materiale costampato.  
Preso e caricamento nello stampo di componenti in plastica, manipolazione del prodotto finito dopo processo di sovrastampaggio e rivestimento in gomma.  
Tastiera per centralina Automotive

*Handling of co-moulded material.  
Gripping and loading plastic components into the mould, handling the finished product after the overmoulding and rubber coating processes.  
Keypad for Automotive control unit*



# I nostri EOAT

## Our EOATS



### CAMBIA UTENSILE

- > Manuali o automatici
- > Con o senza valvole di controllo dell'aria
- > Intrinsecamente sicuri

### QUICK CHANGER

- > Manual or automatic
- > With or without air control valves
- > Inherently safe



### RIBALTATORI

- > La gamma più completa sul mercato con capacità da 60g a 60kg

### TILT UNITS

- > The most complete range on the market with capacities from 60g to 60kg



### PROFILI E STAFFE

- > Elevata precisione di posizionamento tra profilo e staffa
- > Elevata rigidità degli snodi
- > Tutti i gradi di libertà necessari a raggiungere ogni posizione

### PROFILES AND BRACKETS

- > High positioning accuracy between profile and bracket
- > High joint rigidity
- > All the degrees of freedom needed to reach each position

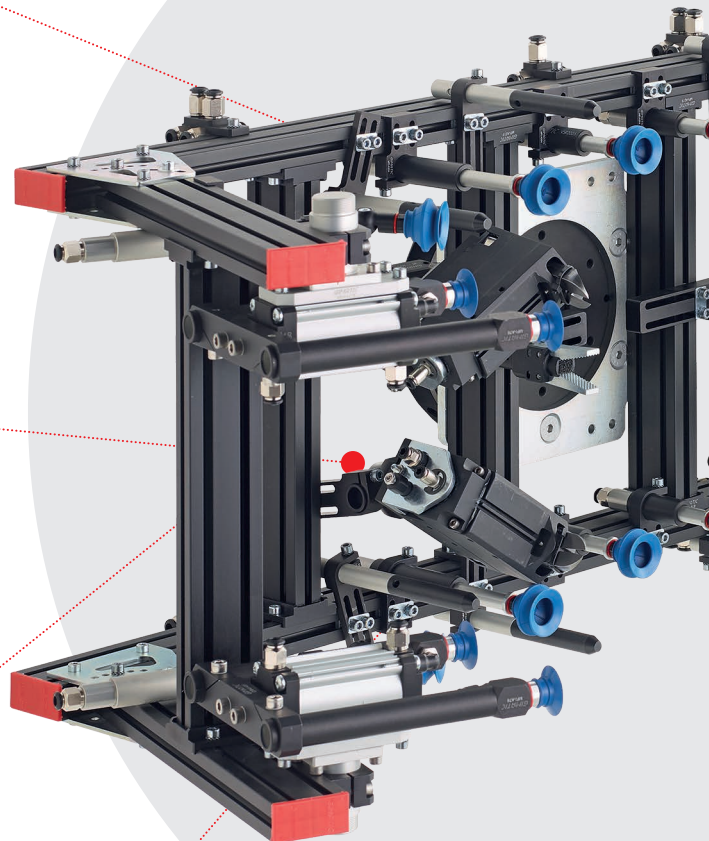


### SENSORI

- > Magnetici, induttivi, ottici, ultrasonici
- > Per un monitoraggio completo e sicuro di tutte le funzioni dell'EOAT
- > Varie sensor box per gestire la logica dei segnali ricevuti dai sensori

### SENSORS

- > Magnetic, inductive, optical, ultrasonic
- > For complete and secure monitoring of all EOAT functions
- > Various sensor boxes to manage the logic of the signals received from the sensors





### **TAGLIERINI**

- > A cesoia o a ghigliottina
- > Sensori integrati
- > Lame intercambiabili
- > Sistema di riscaldamento integrato

### **NIPPERS**

- > Scissor or thrust-cut type
- > Integrated sensors
- > Interchangeable blades
- > Integrated heating system



### **SOSPENSIONI E VUOTO**

- > Sospensioni leggere con molla integrata e protetta
- > Nessuna presenza di lubrificante
- > Ventose anti-alone
- > Pompe per vuoto con controsoffio ed energy saving

### **SUSPENSIONS AND VACUUM**

- > Lightweight suspensions with integrated, protected spring
- > Lubricant-free
- > Mark-free suction cups
- > Vacuum pumps with blow-off and energy saving



### **PINZE**

- > La più ampia gamma nel mercato Plastics: parallele, angolari, a 3 griffe, a espansione e magnetiche
- > Concetti esclusivi e brevettati


### **GRIPPERS**

- > The widest range in the Plastics market: parallel, angular, 3-jaw, expansion and magnetic grippers
- > Exclusive and patented concepts

**+2.500 EOATS**  
installati l'anno  
*installed per year*

**+150** brevetti /patents  
**+2.000.000** elementi prodotti l'anno /items produced per year  
**+5.000** codici a catalogo /product codes on catalogue

**awix**<sup>TM</sup>

 A business of BARNES

**Unità rorotanti**  
**Rotary units**



21

Unità Rotanti  
Rotary Units

**Cambia utensile**  
**Quick changer**



53

Cambia Utensile  
Quick Changer

**Profili e staffe**  
**Profiles and brackets**



117

Profili e Staffe  
Profiles and Brackets

**Pinze**  
**Grippers**



205

Pinze  
Grippers

**Attuatori**  
**Linear actuators**



449

Attuatori Lineari  
Linear Actuators

**Sospensioni**  
**Suspensions**



491

Sospensioni  
Suspensions

**Taglierini**  
**Nippers**



525

Taglierini  
Nippers

**Kit-Robot**  
**Robot-kit**



543

Kit-Robot  
Robot Kit

**Accessori Opzionali**  
**Options**



555

Accessori Opzionali  
Options

**Sensori**  
**Sensors**



579

Sensori  
Sensors



Unità rotanti  
Rotary units

21



22  
**RBT**  
Ribaltatori  
Tilt units



28  
**OFN**  
Ribaltatore pneumatico per piccoli EOAT  
Pneumatic tilt unit for small EOATs



30  
**RT**  
Attuatori rotanti  
Swivelling units



34  
**R**  
Attuatori rotanti  
Swivelling units



42  
**MRE**  
Attuatori rotanti elettrici  
Electric rotary actuators



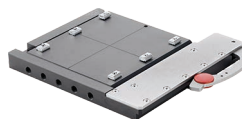
48  
**ITSC**  
Tavole rotanti  
Rotary indexing tables

Cambia utensile  
Quick changer

53



54  
**QC**  
Cambia utensile  
Quick changer



95  
**SQC**  
Cambia utensile quadro  
Square quick changer



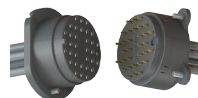
80  
**MCQC**  
Moduli di connessione elettrica per QC.  
Electrical connection modules for QC



106  
**EQC**  
Cambia utensile elettrico  
Electric quick changer



90  
**QC75**  
Cambia utensile per robot collaborativi  
Quick changer for collaborative robots



113  
**ECQC**  
Moduli di connessione elettrica per EQC.  
Electrical connection modules for EQC



94  
**SQM/SQP**  
Cambia utensile con sospensione  
Quick changer with suspension



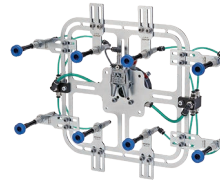
118  
**EM** **NEW**  
Travi  
Beams



198  
**MFT** **NEW**  
Cravatte per telai tubolari  
Clamps for tubular frames



122  
**MFI** **NEW**  
Moduli di fissaggio universali  
Universal mounting clamps



202  
**PLA**  
Piastra per Eoat  
Plate for EOAT



184  
**MFP**  
Moduli di fissaggio in plastica  
Plastic Fastening Modules



203  
**MCD**  
Mini compensatore  
Mini compensator



187  
**MFM**  
Moduli di fissaggio in metallo  
Metal Fastening Modules

**Pinze**  
**Grippers**



206  
**AGG**  
Pinza per agganciamento  
Gripper for engagement



236  
**BB**  
Pinze in zama non autocentranti per materozze  
Non-self-centering sprue grippers in zamak



208  
**AA**  
Pinze autocentranti per materozze  
Self-centering sprue grippers



238  
**DD** **NEW**  
Pinze autocentranti per materozze  
Self-centering sprue grippers



213  
**DC**  
Pinza per materozze  
Sprue gripper



248  
**GW**  
Pinze radiali a 2 griffe  
2-jaw radial-acting grippers



214  
**PB** **NEW**  
Pinze non autocentranti per materozze  
Non-self-centering sprue grippers



254  
**PN**  
Pinze radiali a 2 griffe  
2-jaw radial-acting grippers



**260**  
**TFA**  
Pinze radiali a 2 griffe  
*2-jaw radial-acting grippers*



**264**  
**MPBM**  
Pinze elettriche angolari a 2 griffe  
*2-jaw angular electric grippers*



**268**  
**PS**  
Pinze radiali a 2 griffe  
*2-jaw radial-acting grippers*



**270**  
**PS-P**  
Pinze radiali a 2 griffe  
*2-jaw radial-acting grippers*



**274**  
**GX-S**  
Pinze radiali a 2 griffe  
*2-jaw radial-acting grippers*



**280**  
**PT**  
Pinze ad aghi  
*Needle gripper*



**284**  
**SGP-S**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**292**  
**GS**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**300**  
**SZ**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**304**  
**PQ**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**308**  
**MGX**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**312**  
**MG**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**318**  
**GM**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**324**  
**SX**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**326**  
**PE**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**334**  
**DH**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**344**  
**SP**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**350**  
**JP**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**352**  
**HS**  
Pinze parallele a 2 griffe  
*2-jaw parallel grippers*



**356**  
**X**  
Pinze pneumatiche autocentranti  
*Self-centering pneumatic grippers*



**362**  
**MPPM**  
Pinze elettriche parallele a 2 griffe  
*2-jaw parallel electric grippers*



**366**  
**KIT-GMP-G**  
Soluzione per manipolazione in camera bianca  
*Cleanroom gripping solution*



**370**  
**MPXM**  
Pinze elettriche parallele a 2 griffe  
*2-jaw parallel electric grippers*



**374**  
**MPLM**  
Pinze elettriche parallele a 2 griffe  
*2-jaw parallel electric grippers*



**378**  
**KIT-GMPLM3240**  
Soluzione per manipolazione in camera bianca  
*Cleanroom gripping solution*



**382**  
**MPLF**  
Pinza servo elettrica parallela corsa lunga 2 griffe autocentrante  
*Self-centering 2-jaw servo-electric parallel gripper with long stroke*



**388**  
**TGP**  
Pinza pneumatica autocentrante a 3 griffe  
*3-jaw self-centring pneumatic gripper*



**390**  
**T**  
Pinze autocentranti a 3 griffe  
*3-jaw self-centering grippers*



**392**  
**TH**  
Pinze autocentranti a 3 griffe  
*3-jaw self-centering grippers*



**410**  
**SXT**  
Pinze autocentranti a 3 griffe  
*3-jaw self-centering grippers*



**412**  
**MPTM**  
Pinze elettriche autocentranti a 3 griffe  
*3-jaw self-centering electric grippers*



**416**  
**MFD / MFU**  
Pinze ad espansione  
*Air Hands*



**423**  
**IFU**  
Micro pinze ad espansione per interni  
*ID expansion micro grippers*



**424**  
**OFD**  
Pinza elastica mono-dito  
*One finger elastic module*



**425**  
**OFG**  
Attuatori pneumatici mono-dito angolari per staffaggio  
*One-finger angular pneumatic actuators for clamping*



**426**  
**OF** **NEW**  
Pinze per staffaggio  
*Grippers for clamping*



**438**  
**OFP**  
Pinze per staffaggio angolari, con dito in plastica  
*Angular grippers for clamping with finger in polymer*



**442**  
**OFX**  
Pinze per staffaggio perpendicolari  
*Perpendicular grippers for clamping*



**444**  
**MAG** **NEW**  
Pinza magnetica  
*Magnetic gripper*



**450**  
**OFL**  
Cilindro a corsa breve  
Short stroke cylinder



**472**  
**Z**  
Slitte  
Slides



**452**  
**OFB**  
Cilindro guidato  
Guided cylinder



**482**  
**ZJ**  
Slitta a doppia corsa  
Double stroke slide



**456**  
**OFC**  
Mini cilindri  
Mini cylinders



**484**  
**ZG**  
Slitte per taglierini pneumatici serie GN  
Slides for GN pneumatic nippers



**462**  
**ZL**  
Slitte pneumatiche per EOAT  
Pneumatic slides for the EOATs



**486**  
**VAQ**  
Attuatori a depressione  
Vacuum actuator



**470**  
**ZE-P**  
Slitte  
Slides



**492**  
**VS-INTRO**  
Sospensioni per ventose  
Vacuum cup suspensions



**495**  
**VSC**  
Sospensioni telescopiche anti-rotazione con  
corpo filettato  
Threaded-body non-rotative telescopic  
suspensions



**494**  
**VSL**  
Sospensioni telescopiche anti-rotazione con  
corpo liscio  
Smooth-body non-rotative telescopic suspensions



**496**  
**VSR** **NEW**  
Sospensioni rotanti con corpo liscio  
Smooth-body rotative suspensions

497

**VSRT** NEW

Sospensioni rotanti con corpo filettato  
*Threaded-body rotative suspensions*



498

**VSE**

Sospensioni anti-rotazione con giunto angolare integrato e corpo liscio  
*Smooth-body non-rotative suspensions with integral elbow arms*



499

**VSET**

Sospensioni anti-rotazione con giunto angolare integrato e corpo filettato  
*Threaded-body non-rotative suspensions with integral elbow arms*



500

**VVX**

Sospensioni inox anti-rotazione per carichi elevati  
*Non-rotative heavy duty stainless suspensions*



501

**VSRTG**

Sospensioni inox rotanti con corpo filettato  
*Rotative stainless suspensions with threaded body*



502

**VSNG**

Sospensioni anti-rotazione con corpo liscio  
*Smooth-body non-rotative telescopic suspensions*



503

**VSNTG**

Sospensioni anti-rotazione con corpo filettato  
*Threaded-body non-rotative suspensions*



504

**VSS**

Sospensioni telescopiche auto-ritraenti  
*Telescopic self-retracting suspensions*



505

**VSD**

Sospensioni anti-rotazione con cravatta regolabile e corpo liscio  
*Non-rotative suspensions with smooth-body and adjustable clamp*



506

**VSF-INTRO**

Sospensioni e giunti sferici per ventose con freno  
*Vacuum suspensions and ball joints with brake*



508

**VSNF**

Sospensioni anti-rotazione con corpo liscio e freno  
*Non-rotative suspensions, with smooth body and brake*



509

**VSNTF**

Sospensioni anti-rotazione con corpo filettato e freno  
*Non-rotative suspensions, with threaded body and brake*



510

**VSRF**

Sospensioni rotanti con corpo liscio e freno  
*Rotative suspensions, with smooth body and brake*



512

**VSRTF**

Sospensioni rotanti con corpo filettato e freno  
*Rotative suspensions, with threaded body and brake*



513

**VAB**

Giunto sferico  
*Ball joint*



514

**AF**

Nippli filettati  
*Threaded nipples*



516

**VAM**

Giunti angolari  
*Elbow arms*



517

**VAC**

Giunti angolari  
*Elbow arms*



518

**VSX**

Pressore a molla  
*Spring rod*



520

**VMK**

Sospensioni universali  
*Universal suspensions*





**526**  
**GNB**  
Portalama  
*Blade holder*



**527**  
**CH102**  
Regolatore di temperatura  
*Temperature regulator*



**526**  
**GN-**  
Taglierini a ghigliottina  
*Thrust Cut Nippers*



**530**  
**GNS**  
Attuatori pneumatici per taglierini  
*Air nipper actuators*



**536**  
**GN**  
Attuatori pneumatici per taglierini  
*Air nipper actuators*



**538**  
**G.N**  
Lame per taglierini pneumatici serie GN  
*Blades for GN pneumatic nippers*



**541**  
**JG**  
Griffe per taglierini pneumatici serie GN  
*Fingers for GN pneumatic nippers*



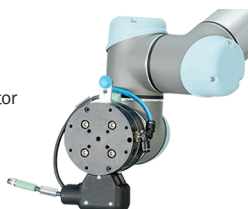
**544**  
**KIT-UR-G**  
Pinza elettrica a 2 griffe con copertura in plastica e capacitor box (kit per robot UR)  
*2-jaw electric gripper with plastic cover and capacitor box (kit for UR robot)*



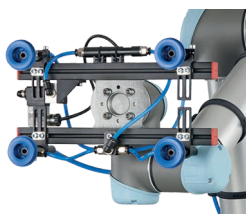
**546**  
**KIT-UR-EQC20**  
Cambia utensile elettrico con connettore elettrico (kit per robot UR)  
*Electric quick changer with electric connector (kit for TM robot)*



**545**  
**KIT-UR-J**  
Pinza elettrica a parallelogramma con capacitor box integrato (kit per robot UR)  
*Parallelogram electric gripper with built-in capacitor box (kit for UR robot)*



**547**  
**KIT-UR-QC**  
Cambia utensile manuale con connettore elettrico (kit per robot UR)  
*Manual quick changer with electric connector (kit for UR robot)*



**542**  
**KIT-UR-V**  
End Of The Arm Tool (EOAT) per operazioni pick-and-place in depressione (kit per robot UR)  
*End Of The Arm Tool (EOAT) for vacuum based pick & place operations (kit for UR robot)*



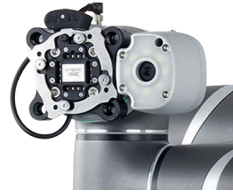
**548**  
**KIT-UR-QC75**  
Cambia utensile manuale con connettore elettrico (kit per robot UR)  
*Manual quick changer with electric connector (kit for UR robot)*



550

**KIT-TM-J** NEW

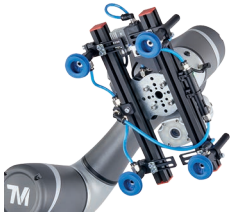
Pinza elettrica a parallelogramma con capacitor box integrato (kit per robot TM)  
*Parallelogram electric gripper with built-in capacitor box (kit for TM robot)*



552

**KIT-TM-QC75** NEW

Cambia utensile manuale con connettore elettrico (kit per robot TM)  
*Manual quick changer with electric connector (kit for TM robot)*



551

**KIT-TM-V** NEW

End Of The Arm Tool (EOAT) per operazioni pick-and-place in depressione (kit per robot TM)  
*End Of The Arm Tool (EOAT) for vacuum based pick & place operations (kit for TM robot)*



553

**KIT-TM-EQC20** NEW

Cambia utensile elettrico con connettore elettrico (kit per robot TM)  
*Electric quick changer with electric connector (kit for TM robot)*

**Accessori Opzionali**  
**Options**

555



556

**RG.**  
Raccordi  
*Fittings*



572

**RQC**  
Tecnologia Opzioni  
*Technology and options*



566

**VITE**  
Dadi  
*Nuts*



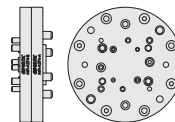
573

**MPS**  
Tecnologia Opzioni  
*Technology and options*



567

**TU**  
Tubi flessibili  
*Hoses*



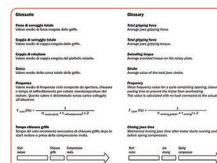
574

**A-MECHA**  
Accessori  
*Accessories*



568

**CAP BOX**  
Accessori  
*Accessories*



575

**GLO**  
Glossario  
*Glossary*



570

**MECHA**  
Tecnologia Opzioni  
*Technology and options*





**580**  
**SENSORS-INTRO**



**584**  
**SS-G**  
Sensori magnetici per cave a C con uscita cavo assiale  
*Magnetic sensors for C slots with axial cable output*



**586**  
**SN-G**  
Sensori magnetici per cave a C con uscita cavo angolare  
*Magnetic sensors for C slots with angular cable output*



**588**  
**SS-V-G**  
Sensori magnetici analogici per cave a C con uscita cavo assiale  
*Analog magnetic sensors for C slots with axial cable output*



**590**  
**SN-V-G**  
Sensori magnetici analogici per cave a C con uscita cavo angolare  
*Analog magnetic sensors for C slots with angular cable output*



**592**  
**SSY-G**  
Sensori magnetici per cave a C a isteresi ridotta  
*Magnetic sensors for C slots with low hysteresis*



**594**  
**SSQ-G**  
Sensori magnetici per cave a C a isteresi ultra bassa  
*Magnetic sensors for C-slots with very low hysteresis*



**596**  
**PRO-SS-G**  
Sensori magnetici programmabili con uscita cavo assiale  
*Programmable magnetic sensors with axial cable output*



**598**  
**PRO-SN-G**  
Sensori magnetici programmabili con uscita cavo angolare  
*Programmable magnetic sensors with angular cable output*



**600**  
**PRO-SN-HS**  
Sensori magnetici programmabili per pinze SGP-S  
*Programmable magnetic sensors for SGP-S grippers*



**602**  
**PRO-SSR**  
Sensori magnetici programmabili  
*Programmable magnetic sensors*



**603**  
**SL-G**  
Sensori magnetici per cave a T ad inserimento assiale  
*Magnetic sensors for T slots with axial insertion*



**604**  
**SA-G**  
Sensori magnetici per cave a T ad inserimento verticale  
*Magnetic sensors for T slots with vertical insertion*



**608**  
**CB-G**  
Sensori magnetici per cave a coda di rondine  
*Magnetic sensors for dovetail slots*



**610**  
**SM-G**  
Sensori magnetici a tiranti  
*Magnetic sensors with tie-rods*



**612**  
**SM-G-IP68**  
Sensori magnetici IP68 a tiranti  
*IP68 magnetic sensors with tie-rods*



**614**  
**SM-G-NC**  
Sensori magnetici normalmente chiusi a tiranti  
*Normally closed magnetic sensors with tie-rods*



**616**  
**NO LED**  
Sensori magnetici senza led  
*Magnetic sensors with no LEDs*



**618**  
**SI**  
Sensori induttivi  
*Inductive sensors*



**620**  
**SO**  
Sensori ottici  
*Optical sensors*



**622**  
**SOQ**  
Sensori ottici cubici  
*Cubical optical sensors*



**657**  
**ST**  
Staffe per cilindri  
*Mounting brackets for cylinders*



**624**  
**MLS**  
Modulo laser  
*Laser module*



**660**  
**CF**  
Connettori elettrici  
*Electrical connectors*



**626**  
**SU**  
Sensori ultrasonici  
*Ultrasonic sensors*



**675**  
**MOLD MONITORING**  
Sistema monitoraggio stampi  
*Mold Monitoring System*



**628**  
**SR-G**  
Sensori tattili  
*Touch sensors*



**678**  
**IOLBOX**  
IO-Link Gateway Unit  
*IO-Link Gateway Unit*



**630**  
**SB**  
Sensor box  
*Sensor box*



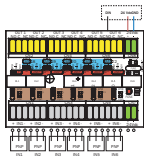
**684**  
**CUSTOM**  
Sensori personalizzati su richiesta cliente  
*Sensors customised to customer's requirements*



**638**  
**SBM**  
Sensor box modulare  
*Modular sensor box*



**684**  
**AUTOMOTIVE**  
Sensori magnetici per applicazioni AUTOMOTIVE  
*Magnetic sensors for AUTOMOTIVE applications*



**642**  
**SB-APPLICATION EXAMPLE**  
Scatole di derivazione per sensori - esempi di utilizzo  
*Sensor boxes - application examples*



**686**  
**3D**  
Servizio stampa 3D  
*3D printing service*



**650**  
**SB2T**  
Tester per sensori  
*Tester for sensors*



**687**  
**3L**  
Servizio laser  
*Laser service*



**654**  
**K**  
Adattatori per cave  
*Slot adapters*



**687**  
**3M**  
Servizio lavorazione metallica  
*Metal processing service*



**656**  
**SW / XF**  
Fascette per micro cilindri  
*Mounting clamps for microcylinders*

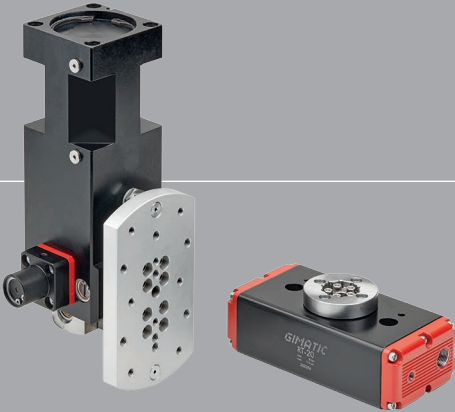
**688**  
Condizioni generali di fornitura  
*General conditions of sale*

**gms™**

 A business of BARNES

# UNITÀ ROTANTI

*Rotary units*

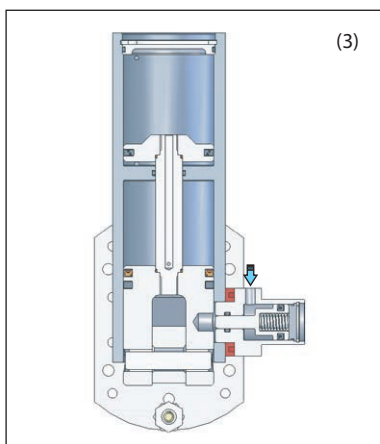
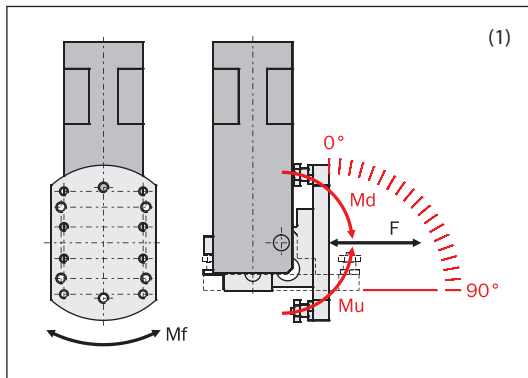
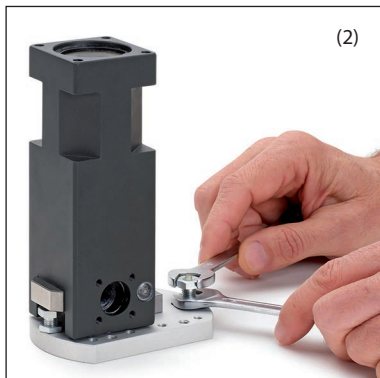


## Ribaltatori pneumatici per EOAT serie RBT

- Rotazione di 90° (1).
- Due fine corsa su gomma regolabili (2).
- Elevata coppia di sollevamento.
- Bloccaggio di sicurezza (3), eccetto RBT30.
- Sensori magnetici opzionali.

## Pneumatic tilt units for EOATs, series RBT

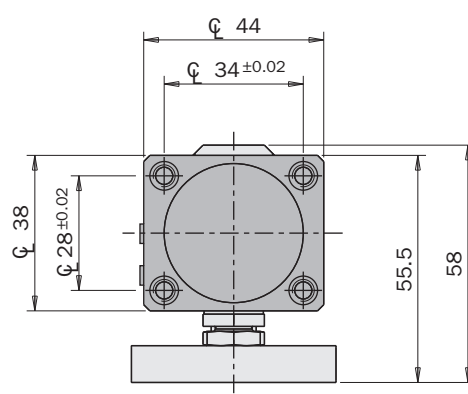
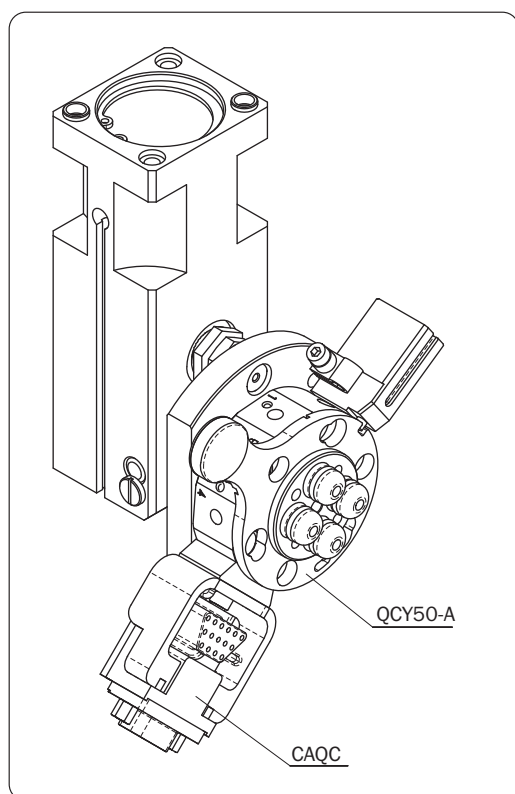
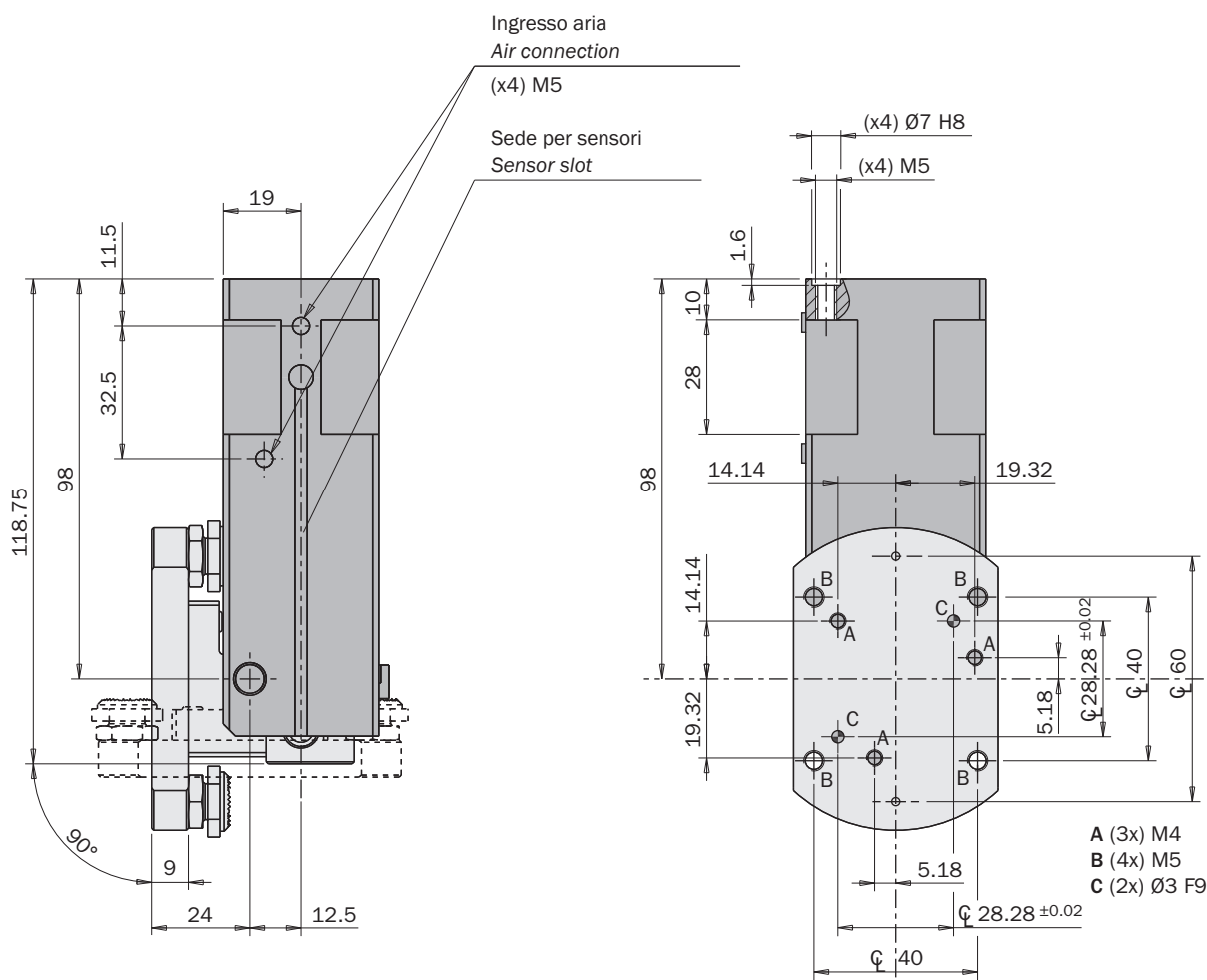
- 90° rotation (1).
- Two rubber adjustable end-strokes (2).
- High lifting torque.
- Safety lock (3), except RBT30.
- Optional magnetic sensors.



	RBT30	RBT40	RBT50	RBT63	RBT80
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]				
Pressione di esercizio Pressure range	2 ÷ 8 bar				
Pressione per sbloccaggio Unlock pressure	-	> 3.5 bar			
Temperatura di esercizio Temperature range	5 ÷ 60 °C.				
Corsa angolare Tilt angle	90°				
Regolazione fine-corsa End stroke adjustment	± 2°				
Consumo d'aria per ciclo Cycle air consumption	56 cm <sup>3</sup>	142 cm <sup>3</sup>	266 cm <sup>3</sup>	462 cm <sup>3</sup>	983 cm <sup>3</sup>
Coppia di sollevamento a 6 bar (90° → 0°) Lift torque at 6 bar (90° → 0°)	(Mu) > 9 Nm	> 24 Nm	> 45 Nm	> 78 Nm	> 174 Nm
Coppia di abbassamento a 6 bar (0° → 90°) Drop torque at 6 bar (0° → 90°)	(Md) > 4 Nm	> 11 Nm	> 22 Nm	> 42 Nm	> 84 Nm
Carico ammissibile Allowed load	(F) 50 N	100 N	200 N	300 N	600 N
Momento ammissibile Allowed moment	(Mf) 3 Nm	7 Nm	12 Nm	30 Nm	75 Nm
Peso Weight	520 g	1050 g	1600 g	2600 g	6500 g

**Dimensioni (mm)**  
**Dimensions (mm)**

**RBT30**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Gripters

Attuatori Lineari  
Linear Actuators

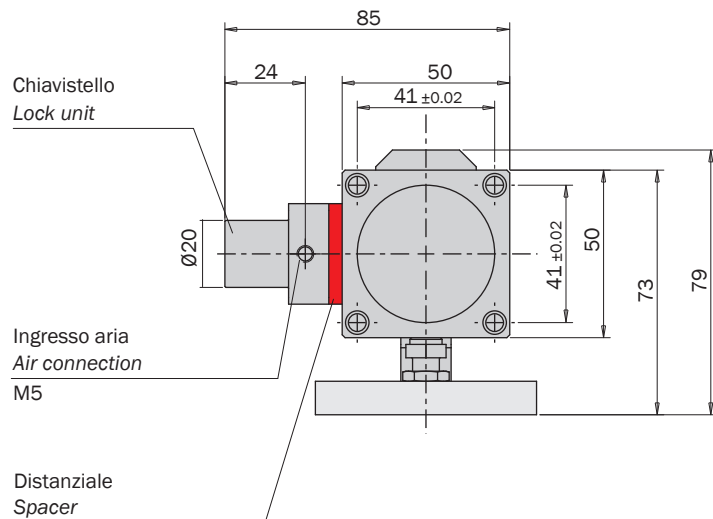
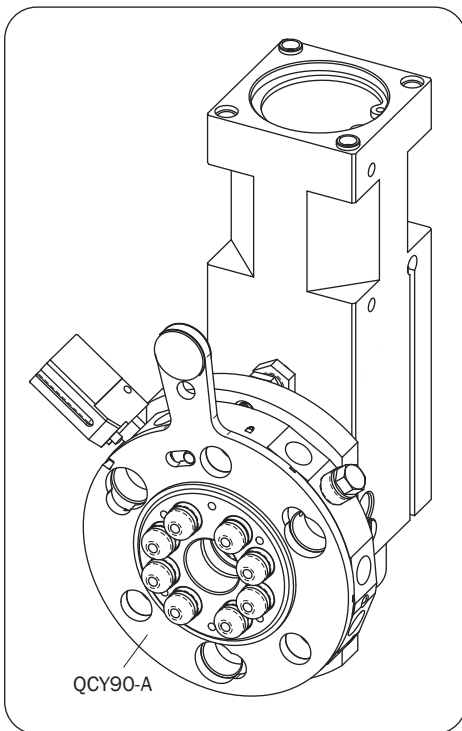
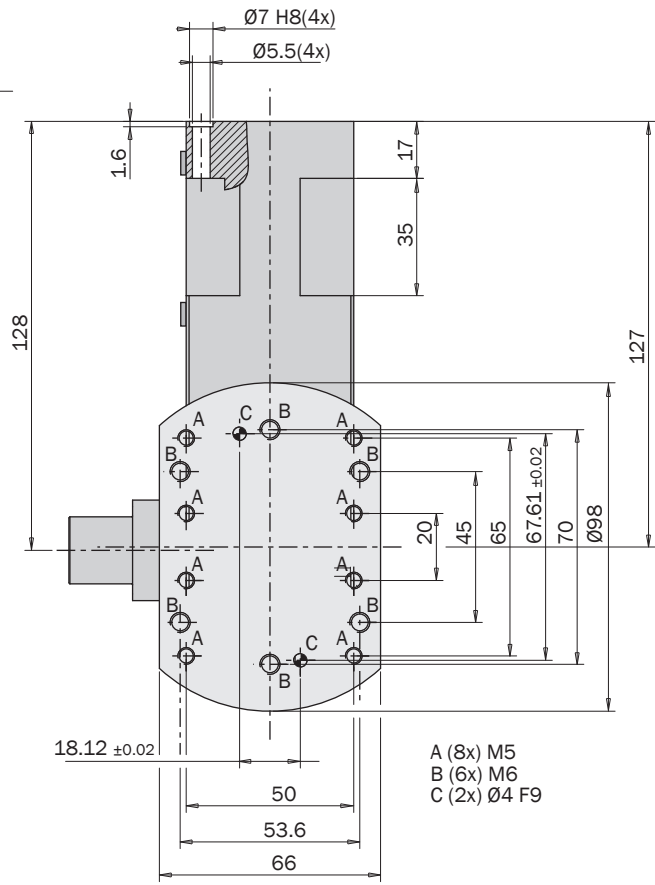
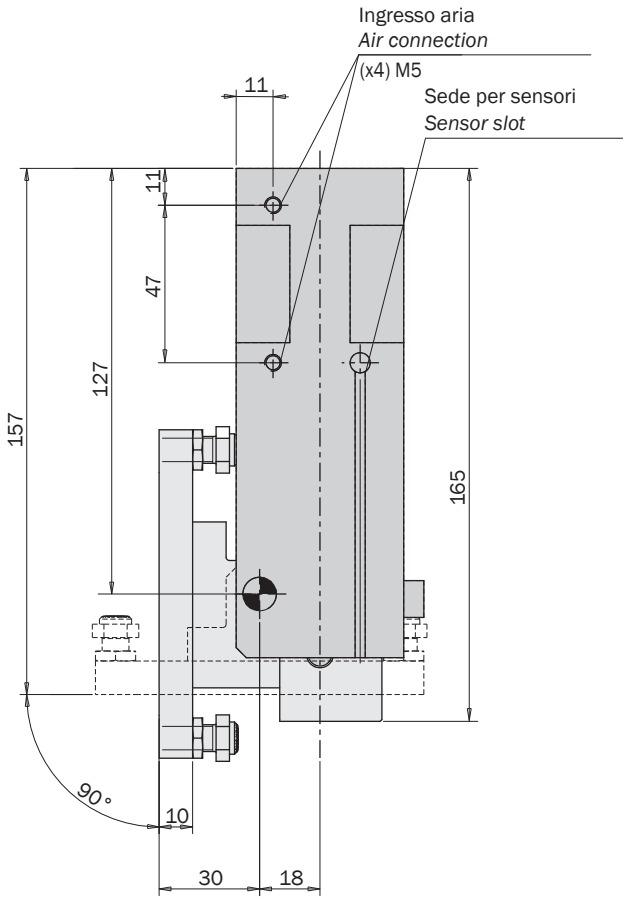
Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

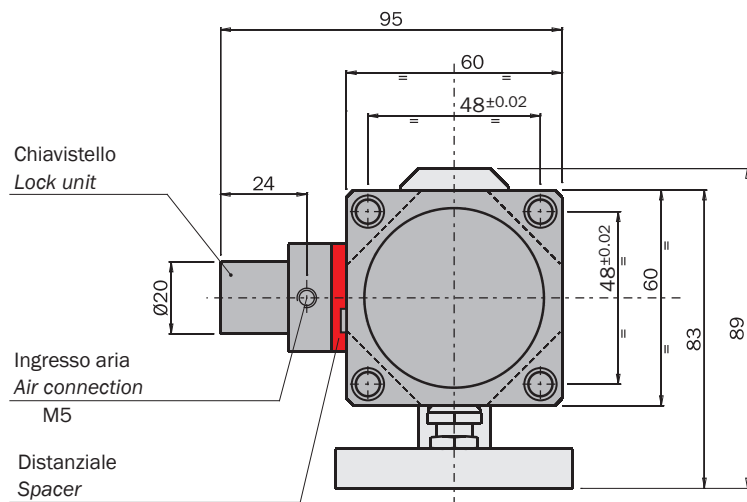
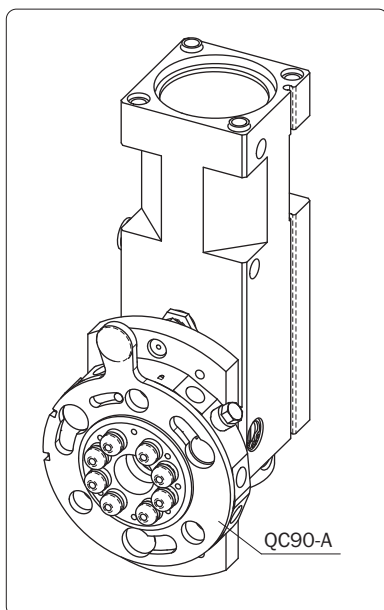
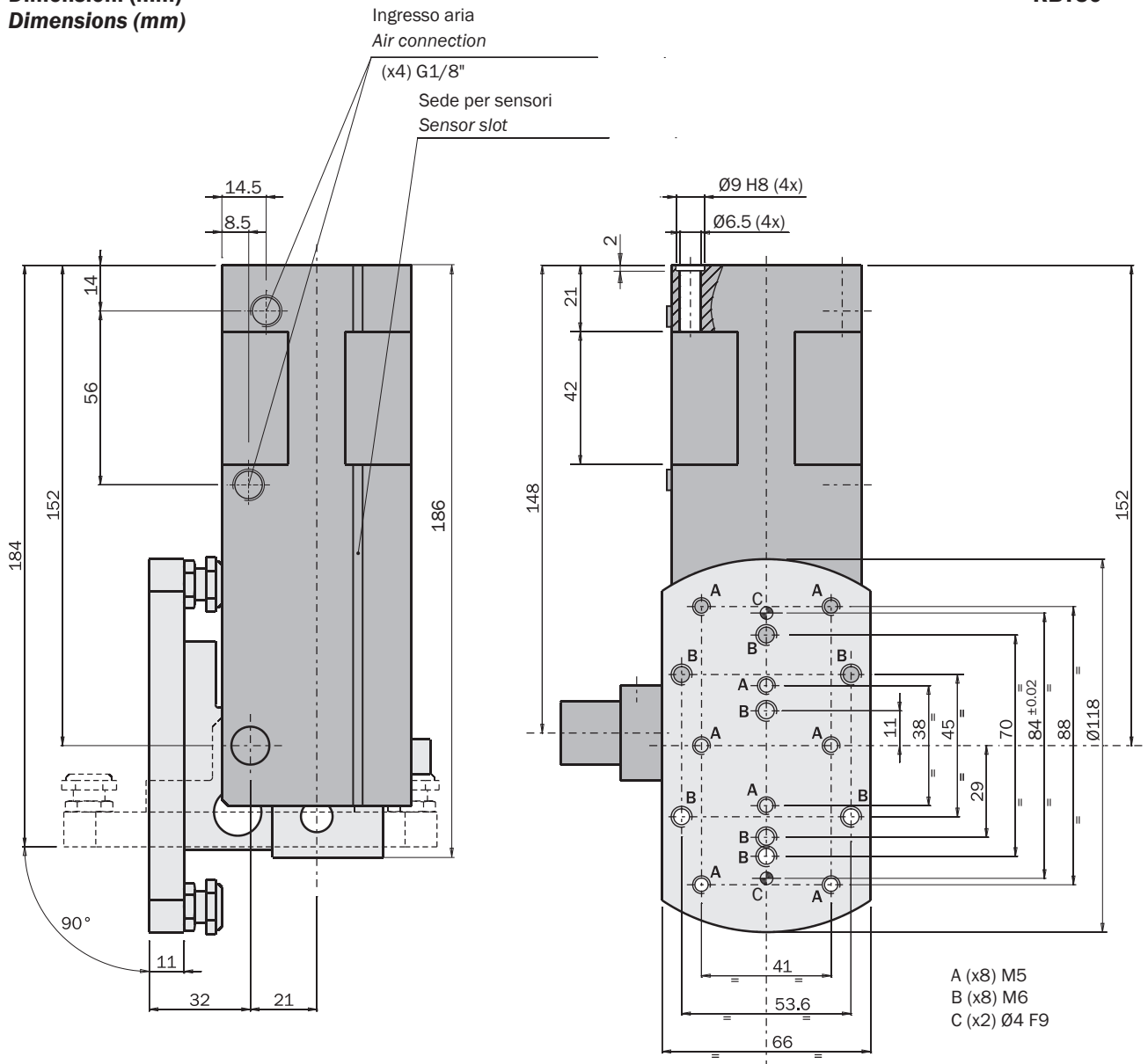
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**RBT50**

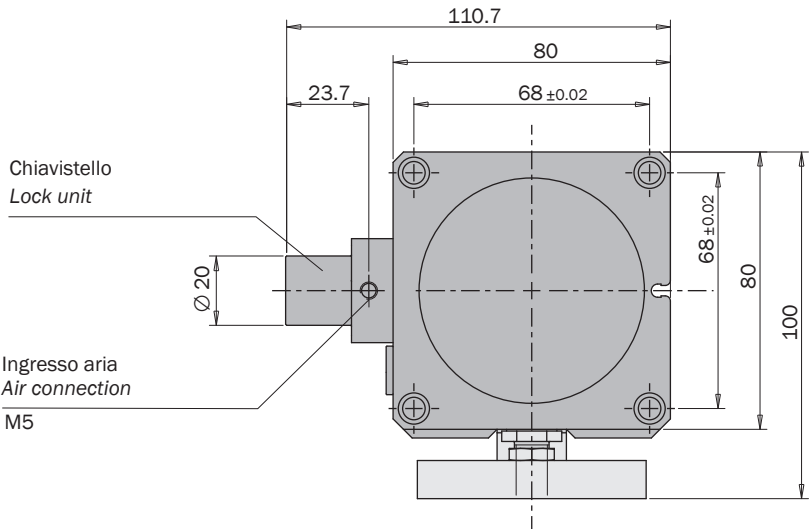
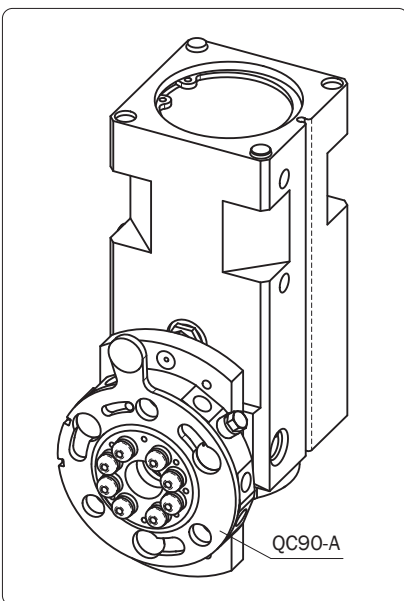
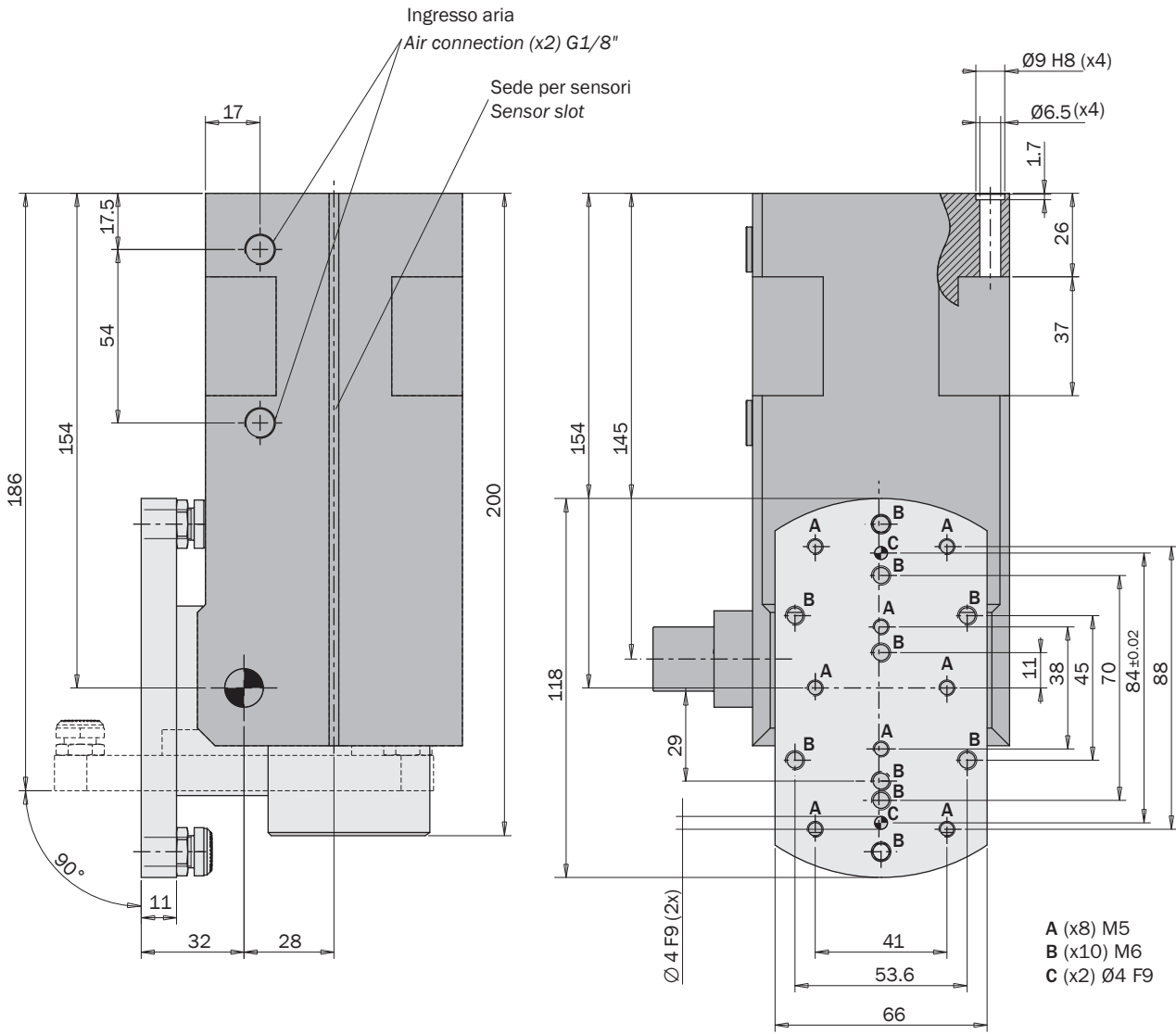


FIRST ANGLE  
PROJECTION



**Dimensioni (mm)**  
**Dimensions (mm)**

**RBT63**



FIRST ANGLE  
PROJECTION

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

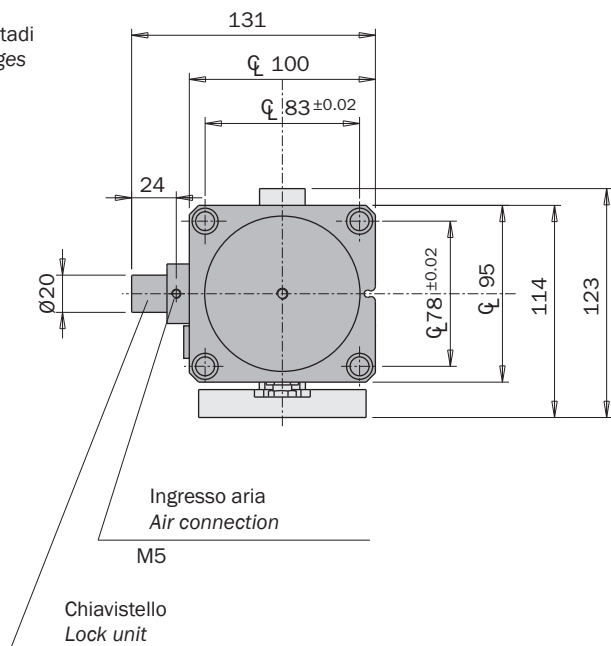
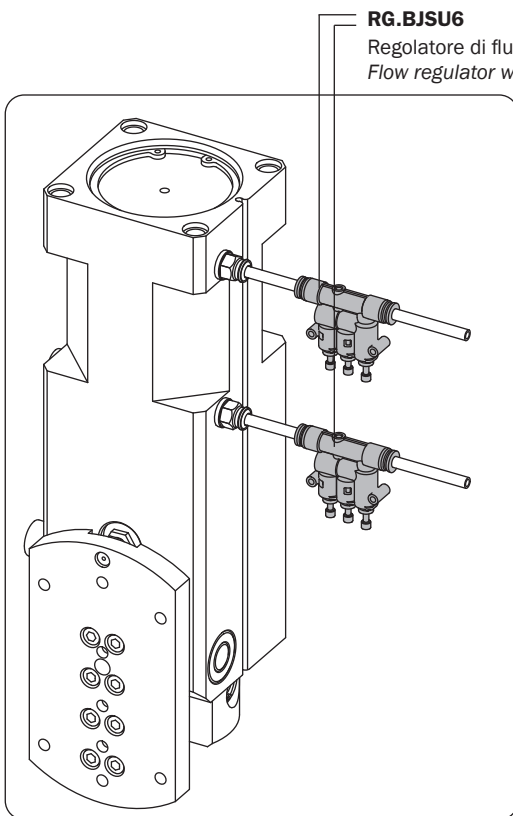
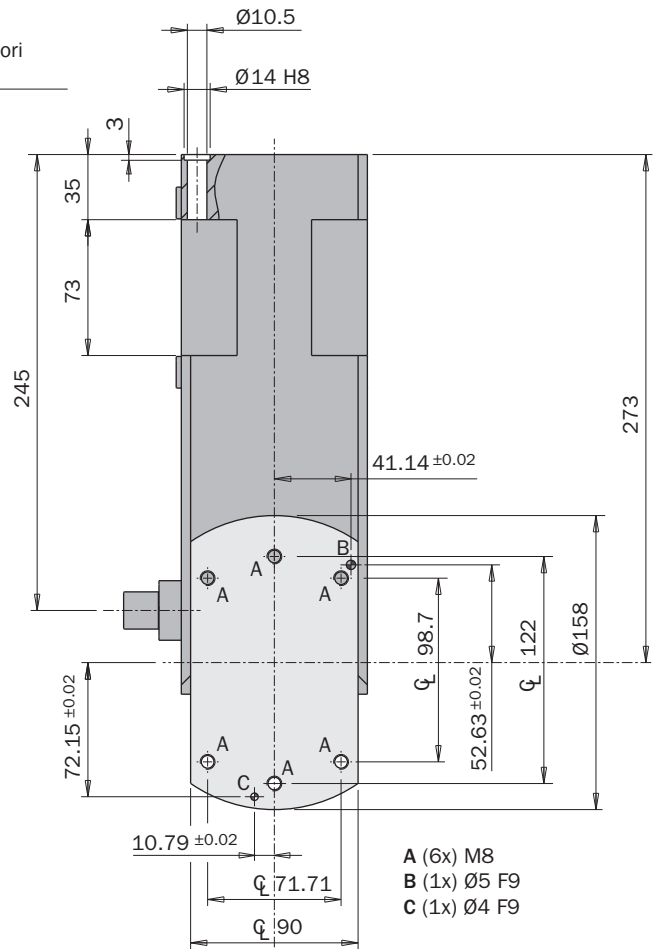
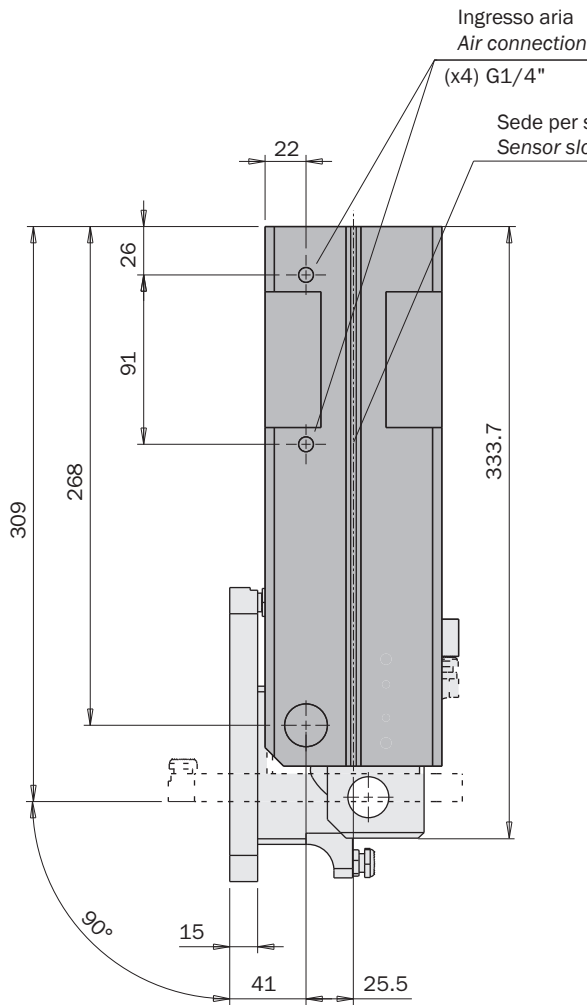
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**RBT80**



FIRST ANGLE  
PROJECTION

**Ribaltatore pneumatico per piccoli EOAT, serie OFN**

- Rotazione di 90°.
- Funzionamento a semplice effetto, o doppio effetto (SD).
- Vari accessori disponibili per il fissaggio.
- Sensori magnetici opzionali da montare con fascetta SWP esterna o direttamente in cava (SD).

**Pneumatic tilt unit for small EOATs, series OFN**

- 90° rotation.
- Single- or double-acting operation (SD).
- Several mounting accessories.
- Optional magnetic sensors to be fitted with an SWP external clamp or directly into the slot (SD).

OFN...	SWP...
OFN20-90	SWP-020
OFN30-90	SWP-030
OFN20-90SD	-
OFN30-90SD	-

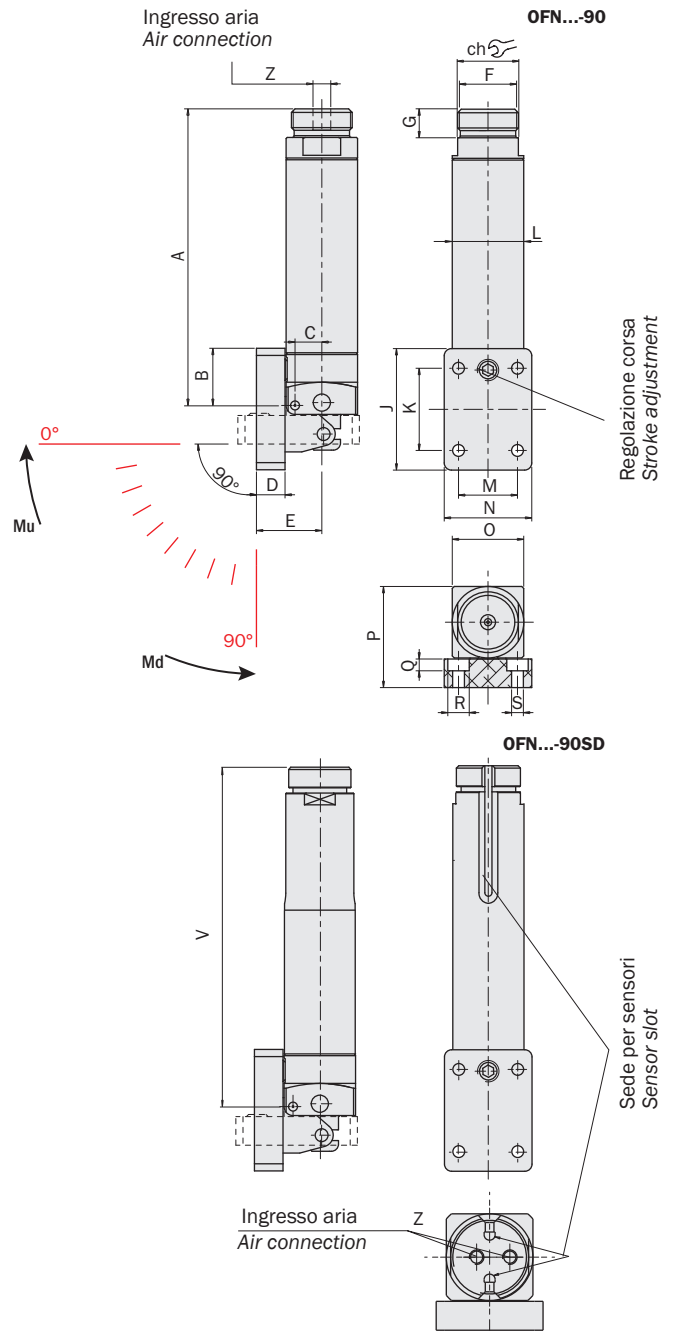


	OFN20-90	OFN20-90SD	OFN30-90	OFN30-90SD
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Pressure range	2.5 ÷ 8 bar	1.5 ÷ 8 bar	2.5 ÷ 8 bar	1.5 ÷ 8 bar
Temperatura di esercizio Temperature range	5 ÷ 60 °C.			
Corsa angolare Tilt angle	90°			
Consumo d'aria per ciclo Cycle air consumption	3.52 cm <sup>3</sup>	5.53 cm <sup>3</sup>	12.9 cm <sup>3</sup>	19.6 cm <sup>3</sup>
Coppia di sollevamento a 6 bar (90° → 0°) Lift torque at 6 bar (90° → 0°) (Mu)	70 Ncm	80 Ncm	300 Ncm	300 Ncm
Coppia di abbassamento a 6 bar (0° → 90°) Drop torque at 6 bar (0° → 90°) (Md)	15 Ncm	40 Ncm	30 Ncm	150 Ncm
Peso Weight	75 g	88 g	210 g	260 g

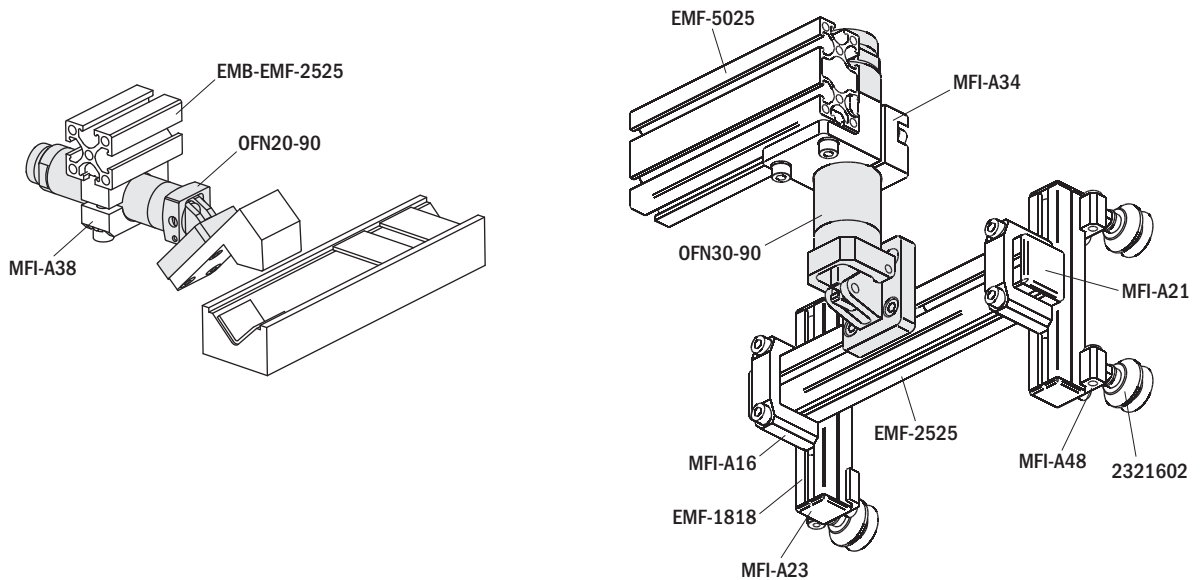
**Dimensioni (mm)**  
**Dimensions (mm)**



	OFN20-90	OFN20-90SD	OFN30-90	OFN30-90SD
A	83	-	119	-
B	16		18.5	
C	7.5		11	
D	8		10	
E	18.3		25.3	
F	M17x1		M27x1	
G	8		11	
J	34		46	
K	23		25	
L	20		30	
M	16.5		25	
N	24.5		37	
O	20		30	
P	28.3		40.3	
Q	3.3		5.3	
R	6		10	
S	3.3		5.3	
	17		27	
V	-	103.5	-	144
Z	M5	M3	M5	M5



**Esempi di utilizzo**  
**Application example**



**Attuatori rotanti pneumatici serie RT**

- Movimento a pignone e cremagliera.
- Corsa regolabile in modo continuo.
- Grossi cuscinetti a sfera di supporto.
- Foro passante nel pignone.
- Fine corsa opzionali con gommino (FGD) o deceleratore idraulico.
- Dispositivo opzionale per l'arresto intermedio (RTD).
- Sensori magnetici opzionali.

**Pneumatic swivelling units series RT**

- Rack and pinion movement.
- Continuously adjustable stroke.
- Large ball bearings on the shaft.
- Through hole in the pinion.
- Optional rubber bumpers (FGD) or hydraulic shock-absorber.
- Optional intermediate stopper (RTD).
- Optional proximity magnetic sensors.



	RT-10	RT-12	RT-20	RT-25	RT-35	RT-45	RT-63
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]						
Pressione di esercizio Pressure range	1.5 ÷ 8 bar						
Temperatura di esercizio Temperature range	5° ÷ 60°C.						
Corsa angolare massima Maximum swivelling angle	190°						
Coppia di rotazione teorica a 6 bar Theoretical torque at 6 bar	28 Ncm	56 Ncm	198 Ncm	397 Ncm	779 Ncm	1669 Ncm	3926 Ncm
Frequenza max funzionamento Maximum working frequency	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz	2 Hz	1 Hz
Tempo di rotazione senza carico Swivelling time without load	0.05 s	0.06 s	0.11 s	0.19 s	0.08 s	0.16 s	0.23 s
Consumo d'aria per ciclo Cycle air consumption	3.3 cm <sup>3</sup>	6.3 cm <sup>3</sup>	23 cm <sup>3</sup>	45 cm <sup>3</sup>	92 cm <sup>3</sup>	230 cm <sup>3</sup>	520 cm <sup>3</sup>
Tolleranza max ripetibilità con deceleratori Max repeatability tolerance with shock-absorber	0.02°	0.02°	0.02°	0.02°	0.02°	0.02°	0.02°
Peso Weight	235 g	560 g	965 g	1680 g	2475 g	5250 g	8185 g

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

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Sospensioni  
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Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

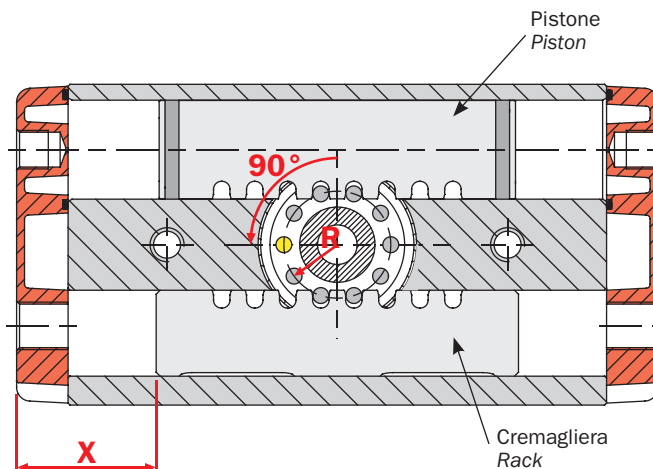
### Accessori per fine corsa

Per la regolazione della corsa si possono utilizzare deceleratori idraulici, ammortizzatori di gomma (FGD) o semplici viti a seconda dell'energia cinetica che l'unità deve sopportare. NON SI DEVE USARE L'ATTUATORE SENZA DISPOSITIVI DI REGOLAZIONE DELLA CORSA.



### End stroke accessories

For the stroke adjustment you can use hydraulic shock-absorbers, rubber bumpers (FGD) or only grub screws according to the kinetic energy the unit has to bear. NEVER USE THE SWIVELLING UNIT WITHOUT STROKE ADJUSTERS.



La tabella mostra i codici dei deceleratori idonei. I fine corsa opzionali con gommino (FGD) sono prodotti Gimatic.

The table shows the codes of the suitable shock-absorbers. The bumpers (FGD) are Gimatic products.

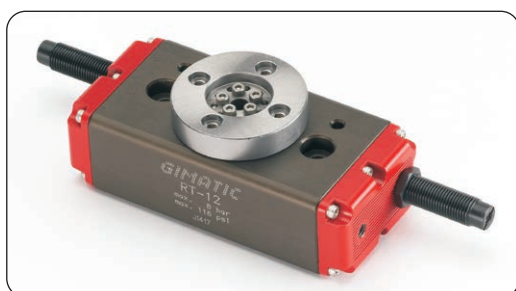
		RT-10	RT-12	RT-20	RT-25	RT-35	RT-45	RT-63
		M8x1	M10x1	M12x1	M12x1	M14x1.5	M20x1.5	M25x1.5
Deceleratori per carichi pesanti Shock-absorbers for heavy loads	ACE ENIDINE	MC10MH -	- TK10M-1-SP18482	MC75M3-NB-111 PM15MF-3-SP33881	MC75M3-NB-111 PM15MF-3-SP33881	MC150MH2 PM25MC-3-SP34780	MC225MH2 PM50MC-2	MC600MH2 PM100MF-3-SP37330
Deceleratori per carichi leggeri Shock-absorbers for light loads	ACE ENIDINE	MC10ML PMX8MC-3	MC25M-NB TK10M-4	MC75M2-NB ECO15MF-2	MC75M3-NB ECO15MF-2	-	-	-
Fine corsa con gommino Rubber bumpers		FGD0830 (L=30 mm)	FGD1030 (L=30 mm)	FGD1235 (L=35 mm)	-	-	-	-
R (mm)		6	8.25	10.5	13.5	13.5	17.5	21
X <sub>90°</sub> (mm)		18.5	24	27.5	35.5	37	53.5	60
ΔX∇1° (mm)		0.1047	0.1417	0.1802	0.2317	0.2296	0.2976	0.3571

Dove:  
R è il raggio del pignone;  
X<sub>90°</sub> è la lunghezza minima del dispositivo di fine corsa necessaria per ridurre la corsa dell'attuatore a 90°;  
ΔX∇1° è la corsa della cremagliera per ogni grado di rotazione del pignone.

Where:  
R is the pinion radius;  
X<sub>90°</sub> is the minimum length of the end-stroke device to reduce the unit stroke to 90°;  
ΔX∇1° is the rack stroke each one degree pinion rotation.

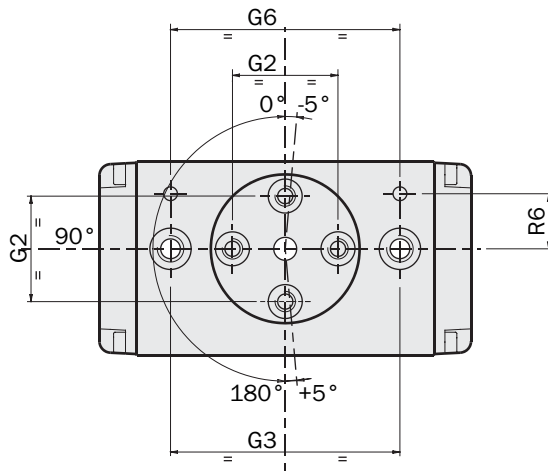
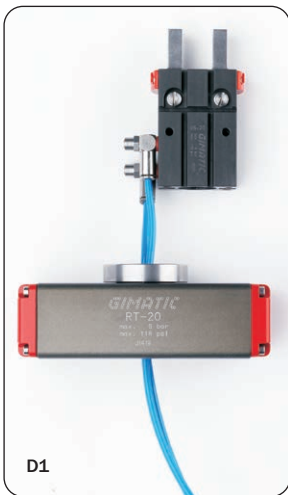
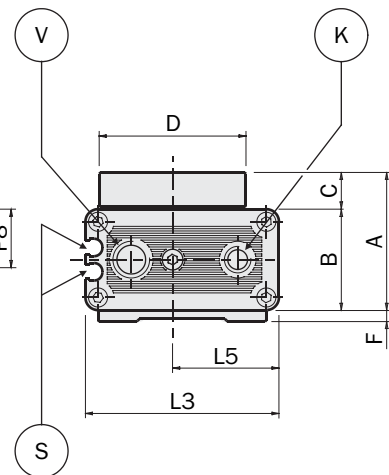
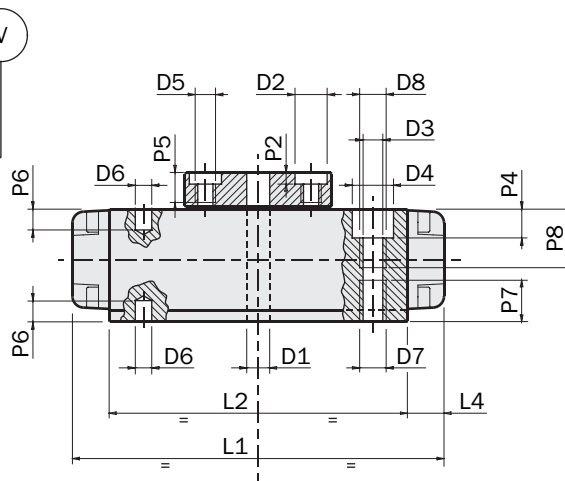
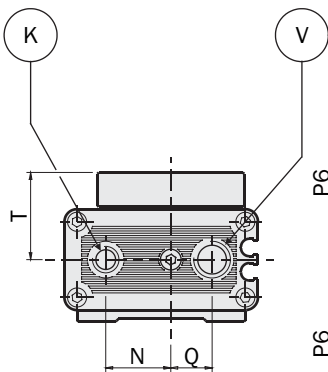
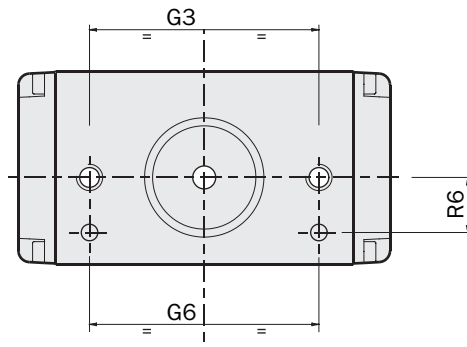
Utilizzando gli accessori della tabella precedente è possibile ridurre la corsa dell'attuatore fino a 90°. Se è richiesta una riduzione maggiore si deve verificare se è necessario un dispositivo di fine corsa più lungo. Esempio:  
Se è richiesto un angolo di rotazione di 70° con RT-63, la quota X dovrà essere: 60+(20x0.3571)=67.1mm.

By the accessories in the previous table, it is possible to reduce the unit stroke to 90°. If a larger stroke reduction is requested, it is necessary to check if a longer end-stroke device must be used. Example:  
If a 70° rotation angle is requested by RT-63, the dimension X will have to be: 60+(20x0.3571)=67.1mm.



**Dimensioni (mm)**  
**Dimensions (mm)**

FIRST ANGLE  
PROJECTION



- |  |   |
|--|---|
| <p><b>D1</b> Foro passante<br/><i>Through hole</i></p> <p><b>K</b> Foro filettato per ingresso aria<br/><i>Threaded hole for air connection</i></p> <p><b>V</b> Foro filettato per regolatori di corsa<br/><i>Threaded hole for stroke adjuster</i></p> <p><b>S</b> Sede per sensori serie SS e SN<br/><i>SS and SN series sensor groove</i></p> <p><b>D2</b> Foro per boccia di centraggio<br/><i>Hole for centering sleeve</i></p> | <p><b>D3</b> Foro passante per fissaggio dell'attuatore<br/><i>Through hole for the unit fastening</i></p> <p><b>D5</b> Foro filettato per fissaggio applicazione<br/><i>Threaded hole for fastening</i></p> <p><b>D6</b> Foro di riferimento dell'attuatore<br/><i>Dowel pin hole</i></p> <p><b>D7</b> Foro filettato per fissaggio dell'attuatore<br/><i>Threaded hole for the unit fastening</i></p> |
|--|---|

**Dimensioni (mm)**  
**Dimensions (mm)**

	RT-10	RT-12	RT-20	RT-25	RT-35	RT-45	RT-63
A	29.75	42	49	59	71	90.5	108.5
B	21.75	32	39	45	57	72	90
C	8	10	10	14	14	18.5	18.5
D	Ø32	Ø45	Ø45	Ø65	Ø65	Ø100	Ø100
D1	Ø5	Ø6	Ø8	Ø10	Ø12	Ø18	Ø20
D2	Ø7 H8	Ø7 H8	Ø7 H8	Ø9 H8	Ø9 H8	Ø15 H8	Ø15 H8
D3	Ø4.3	Ø5.2	Ø5.2	Ø6.8	Ø6.8	Ø10.5	Ø10.5
D4	Ø9	Ø11	Ø11	Ø15	Ø15	Ø19	Ø19
D5	M4	M4	M4	M5	M5	M8	M8
D6	Ø3 H8	Ø4 H8	Ø4 H8	Ø6 H8	Ø6 H8	Ø8 H8	Ø8 H8
D7	M5	M6	M6	M8	M8	M12	M12
D8	M5	M6	M6	M8	M8	M12	M12
F	2.75	-	-	-	-	-	-
G2	23 ±0.02	31.5 ±0.02	31.5 ±0.02	50 ±0.02	50 ±0.02	76 ±0.02	76 ±0.02
G3	50	59	72	86	86	140	140
G6	50 ±0.02	59 ±0.02	72 ±0.02	86 ±0.02	86 ±0.02	140 ±0.02	140 ±0.02
K	M5	M5	M5	1/8	1/8	1/4	1/4
L1	81	108	130	162	170	230	265
L2	65	88	110	136	140	180	215
L3	38	50	65	81	100	120	150
L4	8	10	10	13	15	25	25
L5	19	25	32.5	40.5	53	64	87
N	10	13	16	24	28.5	37	48.5
P2	2.5	2.5	2.5	3	3	3.5	3.5
P4	6	6	6	10	10	13	13
P5	6.5	8	8	12	12	16	16
P6	3	4	4	6	6	8	8
P7	24.5	12	12	14	18	24	24
P8	24.5	12	12	14	18	24	24
Q	9	13	16	20.5	22	26	27
R6	12 ±0.02	13 ±0.02	13 ±0.02	25 ±0.02	25 ±0.02	30 ±0.02	30 ±0.02
V	M8x1	M10x1	M12x1	M12x1	M14x1.5	M20x1.5	M25x1.5
T	19	26	29.5	36.5	42.5	54.5	63.5

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors



## Attuatori rotanti pneumatici a 2 posizioni (serie R)

- Vincitore al concorso IF Design Award 1999 di Hannover.
- Integrabile con gli altri elementi del Gimapick.
- Adatto per rotazioni di 90° o 180°.
- Deceleratori di serie.
- Rotazione su cuscinetti a sfera.
- Distributore rotante dell'aria compressa.
- Alimentazione dell'aria compressa possibile direttamente dalla piastra di fissaggio.
- Sensori magnetici opzionali.

## 2 position pneumatic swivelling units (series R)

- Hannover IF Design Award 1999 winner.
- Modular with Gimapick system.
- Suitable for 90° or 180° rotation angles.
- Shock-absorbers.
- Ball bearings.
- Integrated rotating distributor of compressed air.
- Air feeding possible directly from the fixing plate.
- Optional magnetic sensors.



	R20		R32		R63	
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>					
Pressione di esercizio <i>Pressure range</i>	2 ÷ 8 bar					
Temperatura di esercizio <i>Temperature range</i>	5° ÷ 60°C.					
Corsa angolare <i>Swivelling angle</i>	90°	180°	90°	180°	90°	180*
Consumo d'aria <i>Air consumption</i>	8 cm <sup>3</sup>	14 cm <sup>3</sup>	16 cm <sup>3</sup>	28 cm <sup>3</sup>	115 cm <sup>3</sup>	174 cm <sup>3</sup>
Tempo di rotazione senza carico <i>Swivelling time without load</i>	0.09 s	0.17 s	0.08 s	0.15 s	0.2 s	0.3 s
Frequenza max funzionamento <i>Maximum working frequency</i>	1 Hz		0.5 Hz		0.5 Hz	
Coppia di rotazione teorica a 6 bar <i>Theoretical torque at 6 bar</i>	1131 Nmm		4343 Nmm		22444 Nmm	
Regolazione angolo 180° <i>180° angle adjustment</i>	± 8°		± 8°		± 8°	
Ripetibilità <i>Repetition accuracy</i>	0.02°		0.02°		0.02°	
Peso <i>Weight</i>	400 g		1000 g		3400 g	

### Angolo di rotazione

Gli attuatori R20, R32 e R63 sono forniti nella configurazione adatta per effettuare rotazioni di 180°, cioè con il blocchetto di fine-corsa (F) inserito nella sede (D).

È comunque fornito nella confezione un secondo blocchetto, che montato nella sede (E), consente di ridurre a 90° l'angolo di rotazione.

Per fare questo è necessario rimuovere la protezione (C).

La vite che fissa il blocchetto va incollata con un frena filetti medio.

Infine è possibile una regolazione micrometrica delle posizioni di fine-corsa, agendo sui deceleratori (A), dopo aver allentato i dadi (B).

Ogni deceleratore può spostare la posizione di fine-corsa di circa ±4°.

### Rotation angle

The units R20, R32 and R63 are supplied with one end-stroke block (F) in the seat (D).

In this configuration they get a 180° rotation angle.

However a second block is supplied in the product packaging: mounting it in the seat (E), it reduces the stroke at 90°.

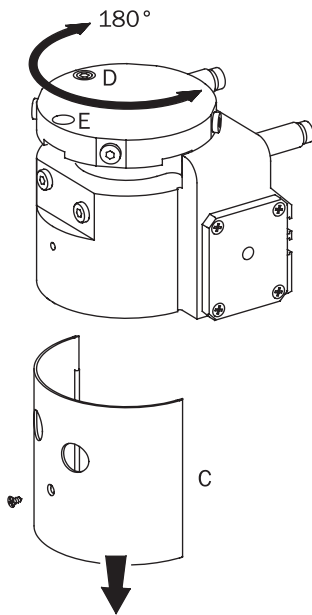
It is necessary to remove the protection (C), before mounting the second block.

Glue the screw of the second block by an anaerobic adhesive (medium resistance).

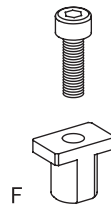
At the end the rotation angle can be furthermore adjusted changing the position of the shock-absorbers (A), after loosening the nuts (B).

Each shock-absorber can change the end-stroke position of about ±4°.

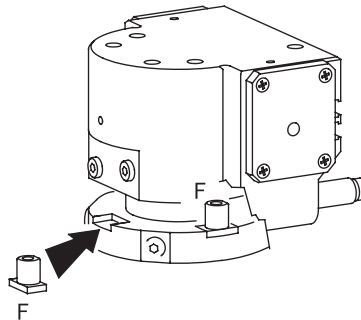
1



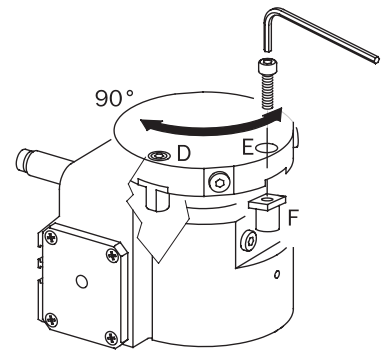
2



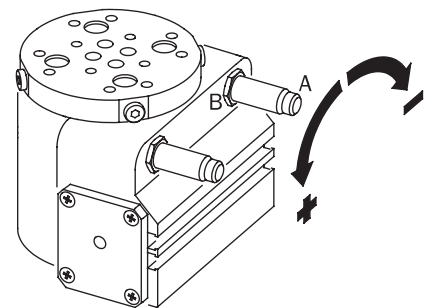
3



4

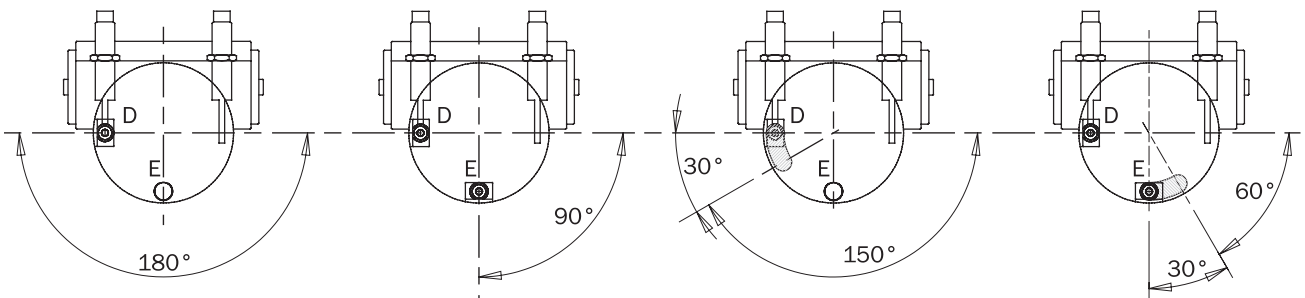


5



Per angoli di rotazione differenti è necessario costruire dei blocchetti fine corsa appositamente sagomati (non forniti).

To get other angles, it is necessary to build end-stroke blocks (not supplied) with a proper shape.



### Attuatori rotanti pneumatici a 3 posizioni (serie R)

- Vincitore al concorso IF Design Award 1999 di Hannover.
- Integrabile con gli altri elementi del Gimapick.
- Adatto per rotazioni di 90° e 180°.
- Fine-corsa decelerato in ogni posizione.
- Rotazione su cuscinetti a sfera.
- Costruzione compatta.
- Alimentazione dell'aria compressa possibile direttamente dalla piastra di fissaggio.
- Sensori magnetici opzionali.

### 3 position pneumatic swivelling units (series R)

- Hannover IF Design Award 1999 winner.
- Modular with Gimapick system.
- Suitable for 90° and 180° rotation angles.
- Damped end-stroke in every position.
- Ball bearings.
- Compact design.
- Air feeding possible directly from the fixing plate.
- Optional magnetic sensors.



	R21		R33		R64	
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>					
Pressione di esercizio <i>Pressure range</i>	3 ÷ 8 bar					
Temperatura di esercizio <i>Temperature range</i>	5° ÷ 60°C.					
Corsa angular <i>Swivelling angle</i>	90°	180°	90°	180°	90°	180*
Consumo d'aria <i>Air consumption</i>	8 cm <sup>3</sup>	14 cm <sup>3</sup>	16 cm <sup>3</sup>	28 cm <sup>3</sup>	115 cm <sup>3</sup>	174 cm <sup>3</sup>
Tempo di rotazione senza carico <i>Swivelling time without load</i>	0.09 s	0.17 s	0.08 s	0.15 s	0.2 s	0.3 s
Frequenza max funzionamento <i>Maximum working frequency</i>	2 Hz		1 Hz		0.5 Hz	
Coppia di rotazione teorica a 6 bar <i>Theoretical torque at 6 bar</i>	1131 Nmm		4343 Nmm		22444 Nmm	
Regolazione angolo 180° <i>180° angle adjustment</i>	± 8°		± 8°		± 8°	
Ripetibilità <i>Repetition accuracy</i>	0.02°		0.02°		0.02°	
Peso <i>Weight</i>	500 g		1200 g		3200 g	

### Angolo di rotazione

R21, R33 e R64 sono attuatori rotanti a tre posizioni, cioè 0°, 90° e 180°.

I movimenti seguenti sono possibili:

- Da 0° a 180°.
- Da 180° a 0°.
- Da 0° a 90°.
- Da 90° a 0°.
- Da 90° a 180°, con l'accortezza di equilibrare la pressione nelle due camere del pistone prima di far rientrare il bloccetto mobile (D). Non è possibile il movimento diretto da 180° a 90°.

Il bloccetto fisso (A) determina la posizione a 0° contro il deceleratore (B) e a 180° contro il deceleratore (C), mentre il bloccetto mobile (D) determina la posizione a 90° contro il deceleratore (C).

Il bloccetto mobile (D) non deve essere estratto nelle posizioni fra 70° e 180°.

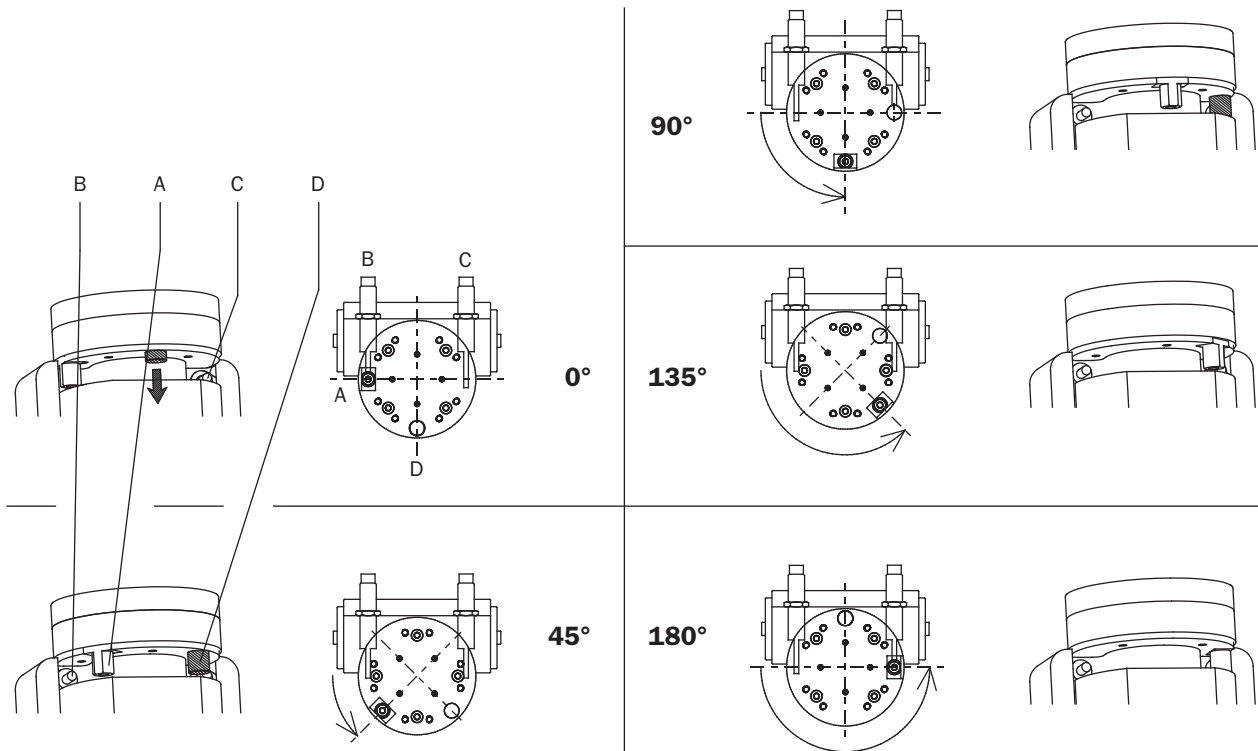
### Rotation angle

R21, R33 and R64 are swivelling units with three positions: 0°, 90° and 180°.

These movements are possible:

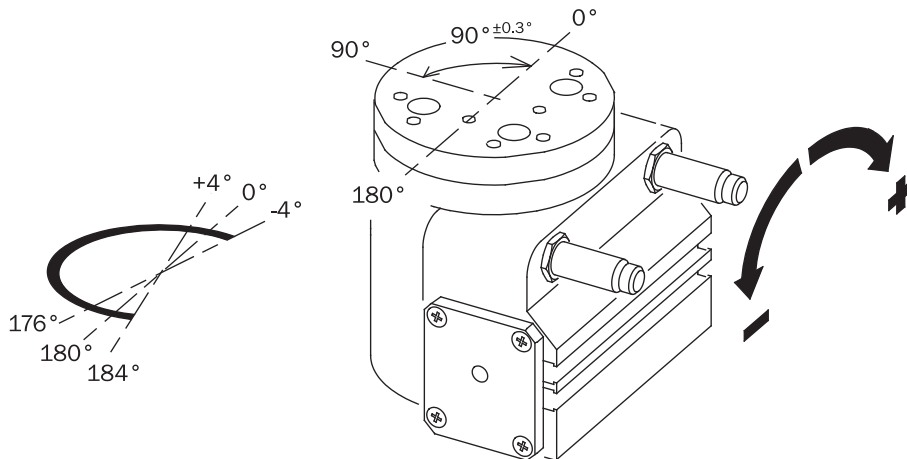
- From 0° to 180°.
- From 180° to 0°.
- From 0° to 90°.
- From 90° to 0°.
- From 90° to 180°, before to retract the moving block (D), the pressure must be balanced on both sides of the piston. The direct rotation from 180° to 90° is not possible.

The fixed block (A) gives the end-stroke at 0° against the shock-absorber (B) and at 180° against the shock-absorber (C), the moving block (D) at 90° against the shock-absorber (C). The moving block (D) can't be put out between 70° to 180°.



Il 180° fra le due posizioni estreme sono regolabili di  $\pm 4^\circ$  per parte, agendo sulla posizione dei deceleratori. Invece i 90° (tolleranza  $\pm 0.3^\circ$ ) non sono registrabili.

You can adjust of about  $\pm 4^\circ$  on both sides the 180° angle, by the shock-absorbers. It is not possible to adjust the 90° (tolerance  $\pm 0.3^\circ$ ) angle.



**Dimensioni (mm)**  
**Dimensions (mm)**



Foro per fissaggio  
Hole for fastening  
(N° 4) AR

Foro per fissaggio  
Hole for fastening  
(N° 4) AS

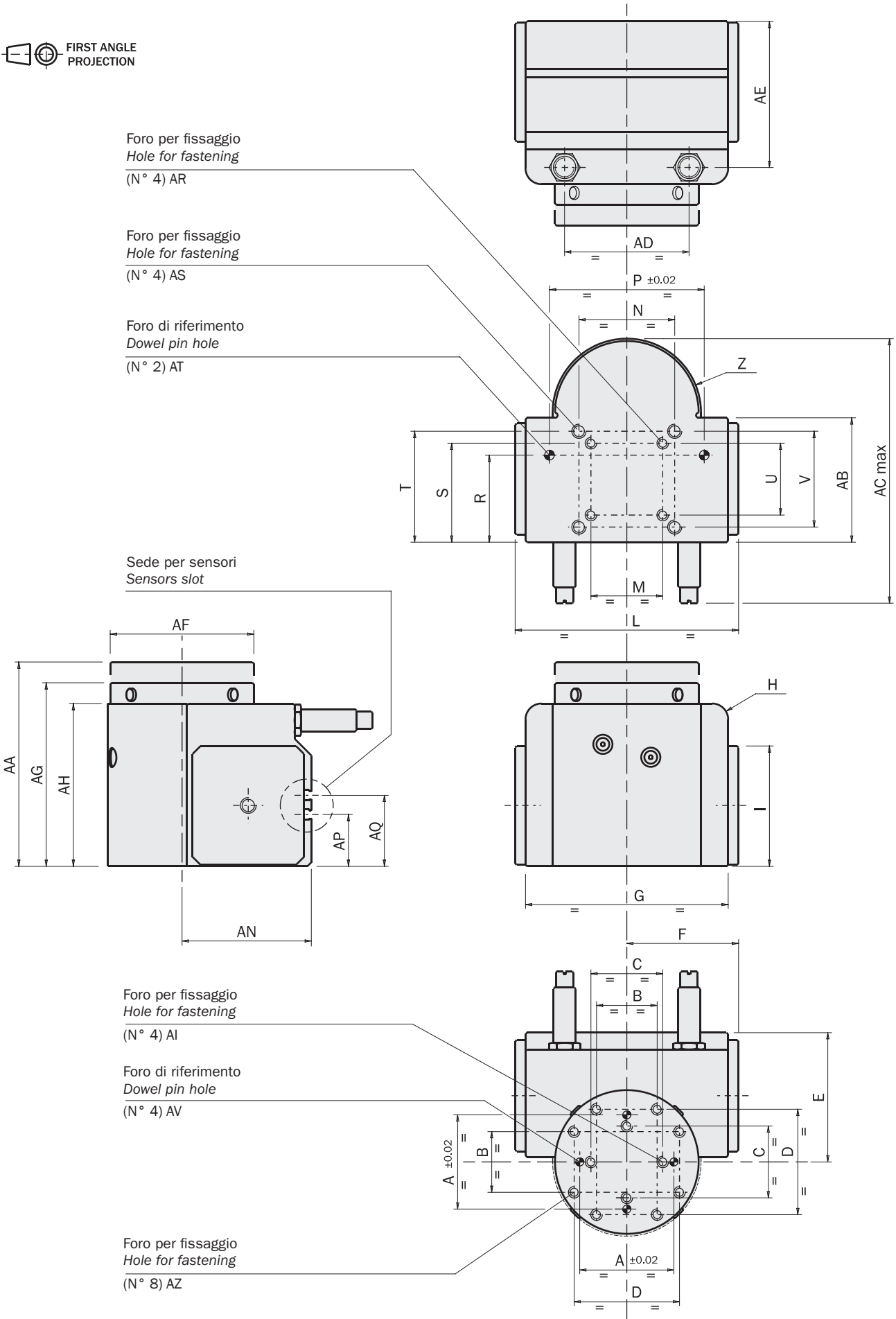
Foro di riferimento  
Dowel pin hole  
(N° 2) AT

Sede per sensori  
Sensors slot

Foro per fissaggio  
Hole for fastening  
(N° 4) AI

Foro di riferimento  
Dowel pin hole  
(N° 4) AV

Foro per fissaggio  
Hole for fastening  
(N° 8) AZ



**Dimensioni (mm)**  
**Dimensions (mm)**

	R20	R21	R32	R33	R63	R64
A	30.4	30.4	30.4	30.4	59	59
B	21	21	27	27	38	38
C	-	-	-	-	45	45
D	37	37	48	48	66	66
E	32	32	47	47	81	81
F	35	35	49	49	70	70
G	64.5	64.5	90	90	127	127
H	R 5	R 5	R 8	R 8	R 10	R 10
I	36	36	44.5	44.5	75.4	75.4
L	70	70	98	98	140	140
M	-	-	-	-	45	45
N	34	34	45	45	60	60
P	30.4	30.4	30.4	30.4	97	97
R	32	32	47	47	54.5	54.5
S	-	-	-	-	62	62
T	40.5	40.5	52.5	52.5	69.5	69.5
U	-	-	-	-	45	45
V	34	34	45	45	60	60
Z	R 26	R 26	R 36	R 36	R 46.5	R 46.5
AA	-	71	-	92	-	134
AB	30.4	30.4	45	45	77.9	77.9
AC	75	75	105	105	170	170
AD	42	42	60	60	78	78
AE	43	43	59	59	91.5	91.5
AF	Ø50	Ø50	Ø70	Ø72	Ø90	Ø90
AG	59	-	78	-	115	-
AH	51	51	67.5	67.5	102	102
AI	-	-	-	-	M6x12 mm	M6x12 mm
AN	32	32	47	47	81	81
AP	14	14	20.5	20.5	40	40
AQ	23	23	29.5	29.5	-	-
AR	-	-	-	-	M6x10 mm	M6x10 mm
AS	M4x8 mm	M4x8 mm	M6x10 mm	M6x10 mm	M8x14 mm	M8x14 mm
AT	Ø3 H8x6 mm	Ø3 H8x6 mm	Ø3 H8x6 mm	Ø3 H8x6 mm	Ø6 H8x8 mm	Ø6 H8x8 mm
AV	Ø3 H8x6 mm	Ø3 H8x6 mm	Ø3 H8x6 mm	Ø3 H8x6 mm	Ø5 H8x8 mm	Ø5 H8x8 mm
AZ	M3x6 mm	M3x6 mm	M4x10 mm	M4x10 mm	M6x12 mm	M6x12 mm

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

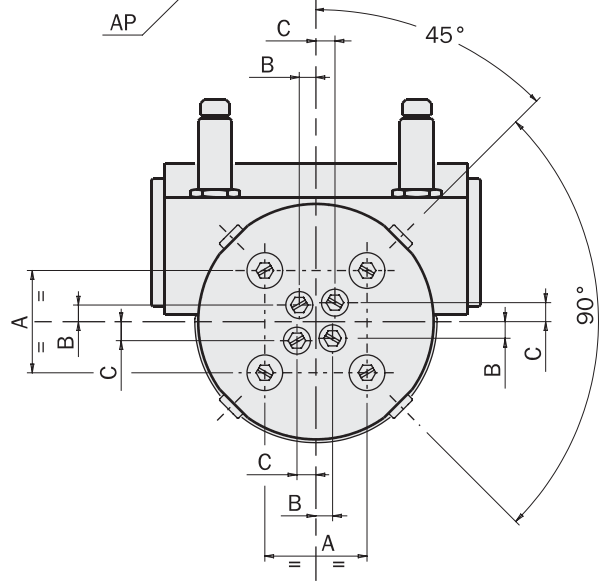
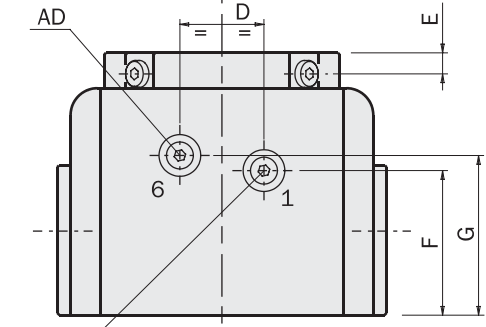
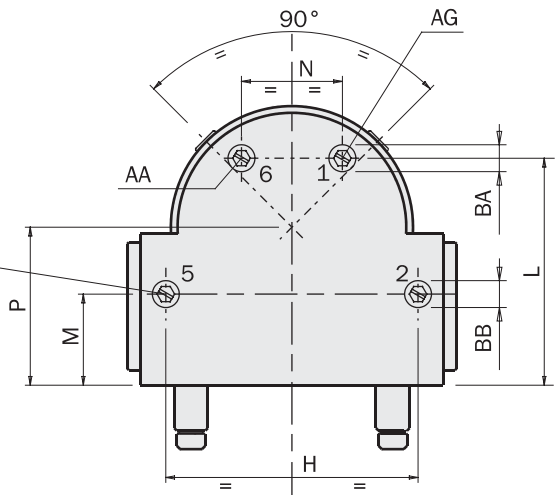
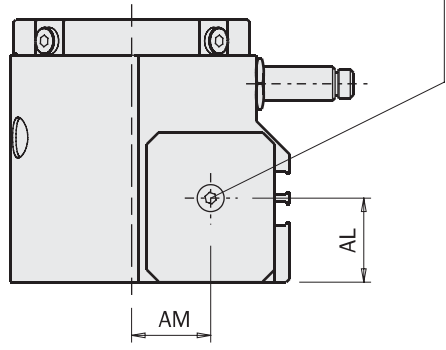
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

N° 2 AB (5 - 2)

N° 2 AU (5 - 2)



Uscita per alimentazione diretta  
Outlet of direct feeding

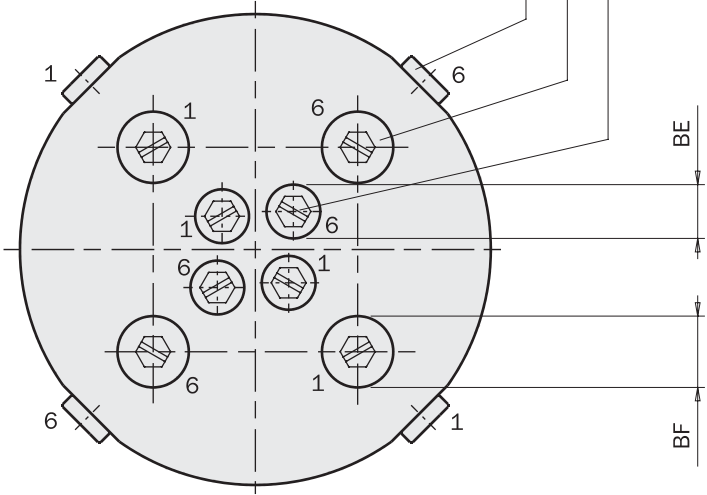
N° 4 AE (1 - 6)

Uscita per alimentazione diretta  
Outlet of direct feeding

N° 4 AF (1 - 6)

Uscita per alimentazione diretta  
Outlet of direct feeding

N° 4 AC (1 - 6)



I fori indicati con lo stesso numero sono fra loro comunicanti  
The air ports identified with the same number are communicating

**Dimensioni (mm)**  
**Dimensions (mm)**

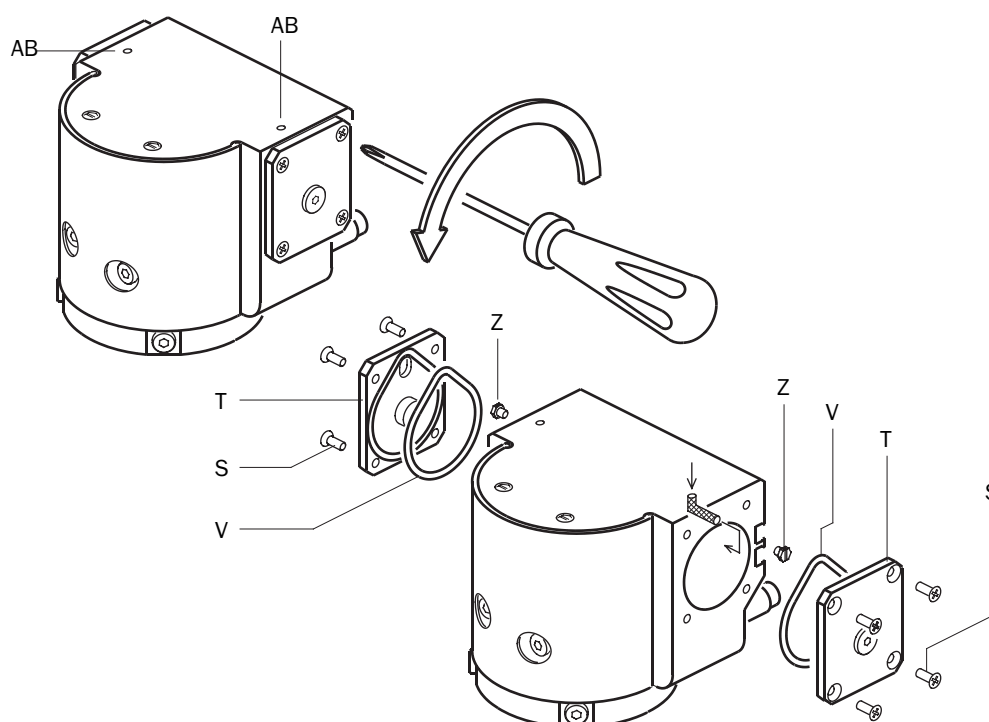
	R20	R21	R32	R33	R63	R64
A	24	-	30.4	-	48	-
B	2.7	-	4.9	-	6.2	-
C	3.4	-	5.7	-	7.25	-
D	13	13	25	25	30	30
E	4.5	-	6.25	-	7.5	-
F	32	32	43	43	68.35	68.35
G	37.7	-	47.5	-	76.45	-
H	52	52	75	75	109	109
L	46	46	67.5	67.5	103.5	103.5
M	17	17	27.1	27.1	39.5	39.5
N	13	13	30	30	30	30
P	32	32	47	47	81	81
AA	M3	-	M3	-	M5	-
AB	M3	M3	Ø2	Ø2	M3	M3
AC	M3	-	M5	-	M5	-
AD	M3	-	M5	-	M5	-
AE	M3	-	M3	-	M3	-
AF	M3	-	M3	-	M3	-
AG	M3	M3	M3	M3	M5	M5
AL	18.5	18.5	25	25	38.15	38.15
AM	15	15	23.5	23.5	41.5	41.5
AP	M3	M3	M5	M5	M5	M5
AU	M5	M5	M5	M5	G 1/8	G 1/8
BA	Ø6	Ø6	Ø6	Ø6	Ø9	Ø9
BB	Ø6	Ø6	-	-	Ø6	Ø6
BE	Ø5.5	-	Ø6	-	Ø6	-
BF	Ø9.4x1.3mm	-	Ø9.4x1.3mm	-	Ø9.4x1.3mm	-

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
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SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors
**Attenzione**

Nel caso degli attuatori R32 e R33, se si desidera utilizzare i fori sul fondo (AB), è necessario rimuovere i tappi (Z), posti dietro i coperchi (T), facendo attenzione alla corretta posizione della guarnizione (V) prima di riposizionare le viti (S).

**Warning**

The direct feeding of the rotary units R32 and R33 from the bottom air ports (AB) is possible only removing the plugs (Z) placed behind the covers (T). Reassembling the covers pay attention to the correct position of the gaskets (V), before placing the screws (S).





**Attuatori rotanti elettrici a 2 posizioni**

- Rotazione di 90° oppure 180° meccanicamente impostabile.
- Semplice azionamento Plug&Play.
- Nessun consumo elettrico quando l'attuatore è in posizione.
- Nessuna programmazione richiesta.
- Tenuta posizione garantita in caso di interruzione d'energia.
- Motore senza spazzole a lunga vita elettrica (Brushless DC).
- Azionamento motore integrato nell'attuatore.
- Alimentazione in bassa tensione 24 Vdc.
- Connessione M8x1, 3 poli standard.
- Controllabile con segnale PLC come una Valvola Pneumatica.
- Rotazione su cuscinetti a sfera.
- Sistema di riduzione in fibra di carbonio.
- Esente da manutenzione per 10 milioni di cicli.
- Miglior compromesso peso-dimensioni-forza.
- Compatibile con pinze elettriche MPPM.
- Sensori induttivi opzionali.

**2 position electrical rotary actuator**

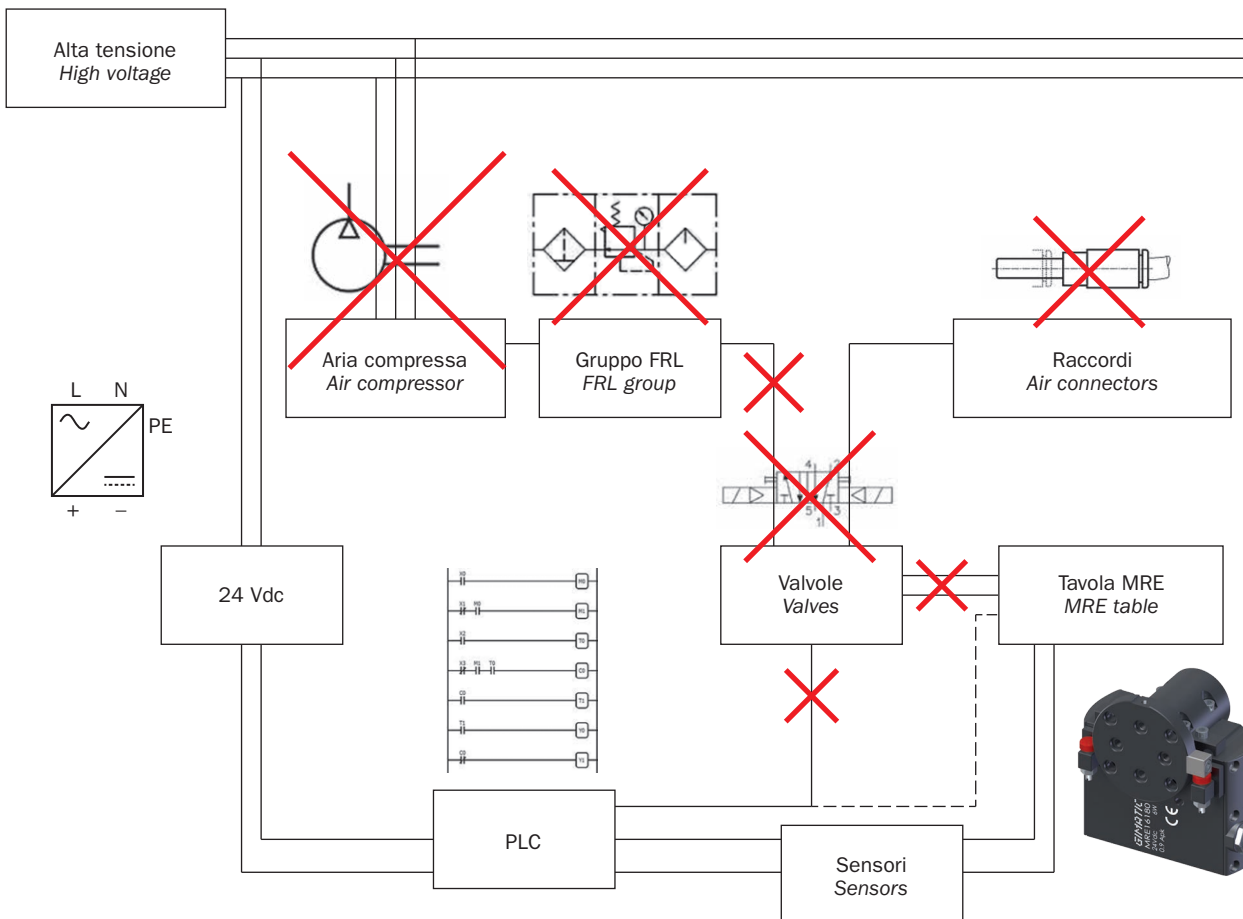
- Suitable for 90° or 180° rotation angle mechanically set.
- Plug & play user friendly gripper.
- No electricity consumption when actuator is in position.
- No programming required.
- Guarantee of position kept in the event of power blackout.
- Long life Brushless motor (Brushless DC).
- Motor drive integrated in the actuator.
- 24 Vdc Low Voltage Power Supply.
- M8x1, 3 poles standard connection.
- Controllable by PLC as a pneumatic valve.
- Ball bearings.
- Fiber-carbon gear reduction.
- 10 million cycle maintenance-free.
- Weight-dimensions-force best trade off.
- Compatible with MPPM electric grippers.
- Optional inductive sensors.



MRE16180

MRE25180

MRE32180





	MRE16180		MRE25180		MRE32180	
Coppia di rotazione <i>Swivelling torque</i>	45 Ncm		80 Ncm		138 Ncm	
Corsa angolare <i>Swivelling angle</i>	90°	180°	90°	180°	90°	180°
Frequenza alla temperatura ambiente di 30°C <i>Frequency at an ambient temperature of 30°C</i>	0.61 Hz	0.60 Hz	1.46 Hz	0.91 Hz	0.83 Hz	0.62 Hz
Tempo rotazione senza carico <i>Swivelling time without load</i>	0.12 s	0.35 s	0.22 s	0.44 s	0.15 s	0.35 s
Tempo di lavoro attuatore <i>Working actuator time</i>	0.35 s	0.57 s	0.33 s	0.55 s	0.36 s	0.57 s
Ciclo di lavoro alla temperatura ambiente di 30°C <i>Duty cycle at an ambient temperature of 30°C</i>	46%	66%	99%	100%	39%	79%
Tensione d'alimentazione <i>Power supply</i>	24 Vdc ±10%		24 Vdc ±10%		24 Vdc ±10%	
Corrente di picco <i>Peak current</i>	0.9 Apk		1.2 Apk		3.8 Apk	
Corrente nominale <i>Nominal current</i>	0.3 Arms		0.4 Arms		0.8 Arms	
Potenza motore brushless <i>Brushless motor power</i>	6 W		11 W		23 W	
Connessione <i>Connection</i>	M8 - 3 poli M8 - 3 poles					
Segnale d'ingresso apertura/chiusura <i>Open/closed input signal</i>	PNP open collector PNP open collector					
Ripetibilità <i>Repetition accuracy</i>	0.04°		0.04°		0.04°	
Temperatura di esercizio <i>Operating temperature</i>	5 ÷ 60°C		5 ÷ 60°C		5 ÷ 60°C	
Grado di protezione <i>Environmental Degree</i>	IP54		IP54		IP54	
Rumorosità <i>Noise level</i>	< 70 dB		< 70 dB		< 70 dB	
Massa (motore incluso) <i>Mass (motor included)</i>	195 g		400 g		738 g	
Carico inerziale massimo <i>Maximum inertial load</i>	6 kgcm <sup>2</sup>		15 kgcm <sup>2</sup>		20 kgcm <sup>2</sup>	
Certificazione Camera Bianca ISO14644-1 <i>ISO14644-1 Clean Room Certification</i>	CLASS 6		-		-	
Normative di riferimento <i>Reference standards</i>	EN 61000-6-2 + EC + IS1; EN 61000-6-3 + A1					
Tecnologia e opzioni <i>Technology and options</i>	Pagina 570 - 571 Page 570 - 571					

**Angolo di rotazione**

Gli attuatori rotanti elettrici MRE possono compiere rotazioni di 90° oppure 180°.

Il blocchetto fisso (A) determina la posizione a 0° contro la battuta meccanica (B) e a 180° contro la seconda battuta meccanica (C), mentre il blocchetto mobile (D) determina la posizione a 90° sempre contro la battuta meccanica (C).

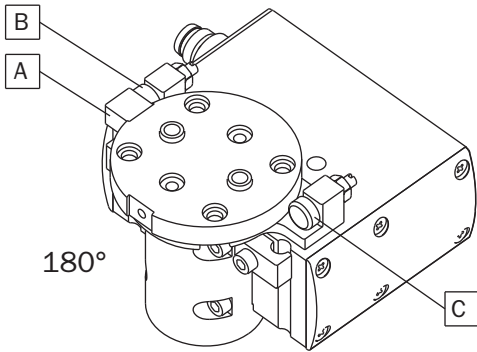
Le posizioni estreme sono regolabili di +/- 4° per parte, agendo sulla posizione delle battute meccaniche.

**Rotation angle**

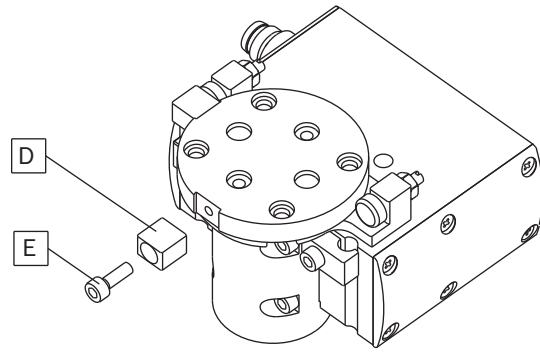
MRE electrical rotary actuators are able to swivel to 90° or 180°.

The fixed block (A) gives the 0° position against the mechanical stopper (B) and the 180° position against the mechanical stopper (C), while the moving block (D) gives 90° position against the mechanical stopper (C).

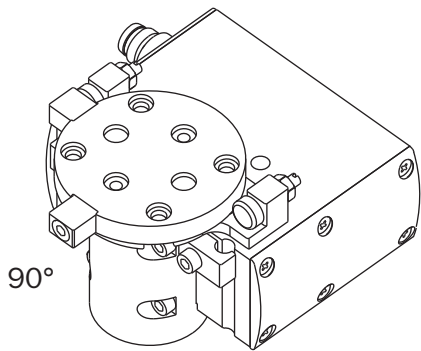
Extreme positions can be adjusted by +/- 4° on each side, by acting on the mechanical stoppers.



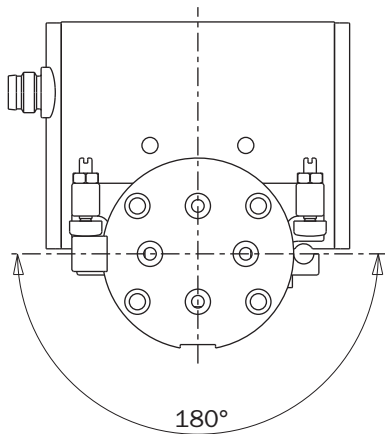
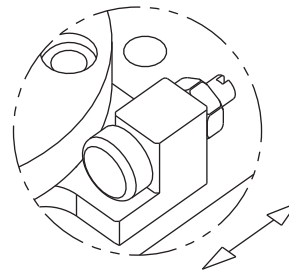
1



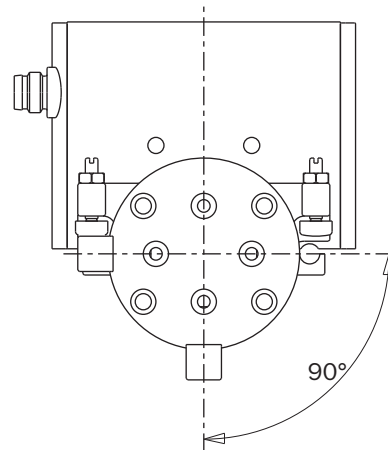
2



3



180°



90°

Il carico deve avere un momento d'inerzia J minore di 6/15/20 kgcm<sup>2</sup>.

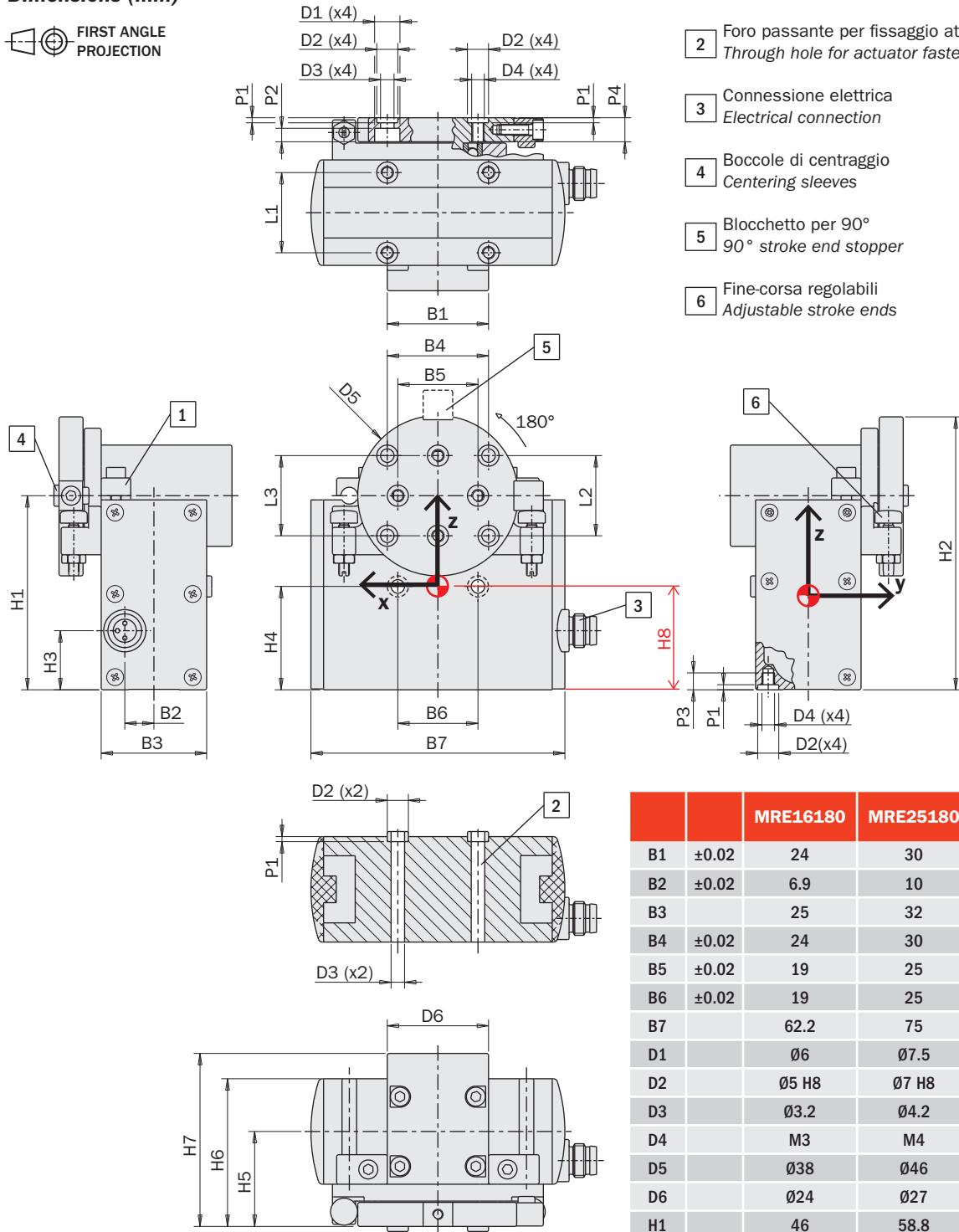
Un'energia cinetica eccessiva può danneggiare la tavola e comprometterne il funzionamento.

The moment of inertia of the load must be lower than 6/15/20 kgcm<sup>2</sup>.

Excessive kinetic energy can damage the table and compromise its operation.

**Dimensioni (mm)**  
**Dimensions (mm)**

FIRST ANGLE PROJECTION



- 1 Bloccasensore induttivo  
Inductive sensor bracket
- 2 Foro passante per fissaggio attuatore  
Through hole for actuator fastening
- 3 Connessione elettrica  
Electrical connection
- 4 Boccole di centraggio  
Centering sleeves
- 5 Blocchetto per 90°  
90° stroke end stopper
- 6 Fine-corsa regolabili  
Adjustable stroke ends

		MRE16180	MRE25180	MRE32180
B1	±0.02	24	30	36
B2	±0.02	6.9	10	11
B3		25	32	35
B4	±0.02	24	30	36
B5	±0.02	19	25	30
B6	±0.02	19	25	30
B7		62.2	75	89
D1		Ø6	Ø7.5	Ø9
D2		Ø5 H8	Ø7 H8	Ø7 H8
D3		Ø3.2	Ø4.2	Ø5.2
D4		M3	M4	M5
D5		Ø38	Ø46	Ø55
D6		Ø24	Ø27	Ø31
H1		46	58.8	67.5
H2		65	81.8	95
H3		14	17	19
H4	±0.02	24.5	32	38
H5		22.5	28.5	33
H6		35	43.5	50.5
H7		41	52	60
H8		31.5	41	48
L1	±0.02	19	24	26
L2	±0.02	19	24	26
L3	±0.02	19	25	30
P1		1.2	1.5	1.5
P2	+0.1	3.2	4.1	5
P3		4	6	8
P4		5.7	7.2	8.7

**Connessione elettrica**

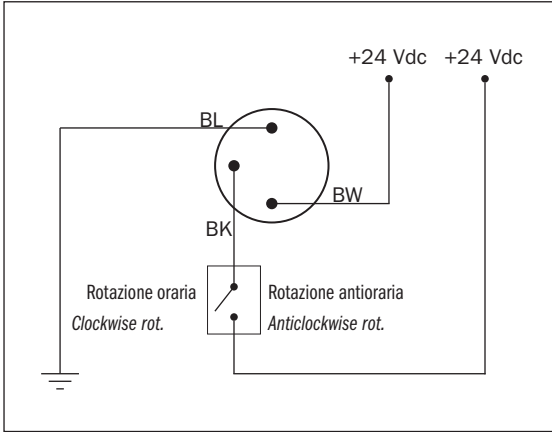
L'attuatore rotante è dotato di connettore M8 a 3 poli per l'alimentazione a 24 Vdc e per il segnale di rotazione.

Non è necessaria un'ulteriore elettronica di comando esterna.

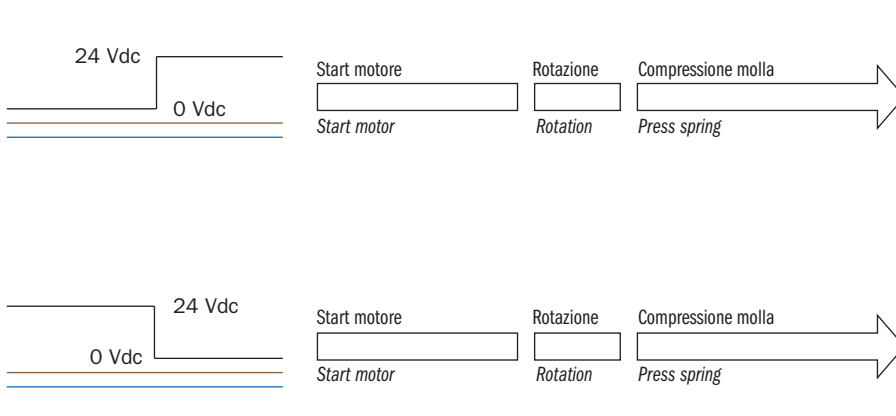
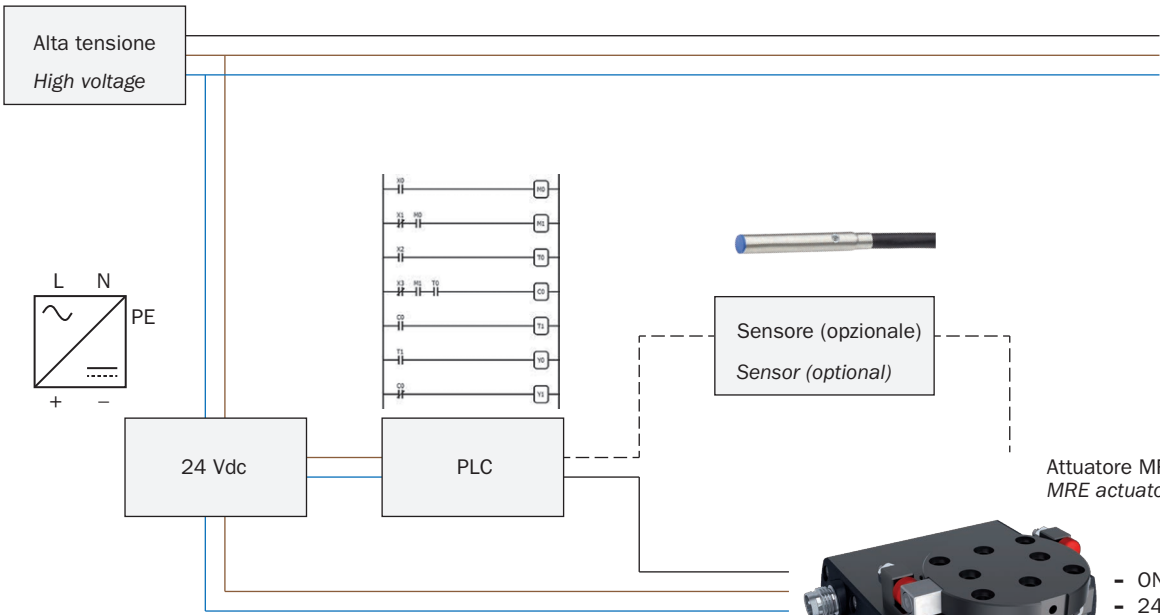
**Electrical connection**

The rotary actuator is equipped with a 3-pole M8 connector for the 24Vdc power supply and the swiveling signal.

No further electronics is necessary to drive the actuator.



Connettore femmina standard M8x1 opzionale.  
Codice Gimatic: CFGM800325P / CFGM890325P.  
Optional M8x1 standard female connector.  
Gimatic code: CFGM800325P / CFGM890325P



### Fissaggio dell'attuatore rotante

L'attuatore rotante può essere montato in posizione fissa oppure su parti in movimento: in questo caso va considerata la forza d'inerzia cui l'attuatore ed il suo carico sono sottoposti.

- Per fissare l'attuatore sul fondo usare quattro viti (SA) passanti attraverso la piastra di fissaggio ed avvitare nell'attuatore.
- Per fissare l'attuatore su un lato usare due viti (SB) attraverso i fori passanti (D3).

In ogni caso utilizzare per il centraggio due boccole (BA), fornite nella confezione. Rispettare le dimensioni (DA e PA) nella tabella per le loro sedi nella piastra di fissaggio.

### Fitting the rotary actuator

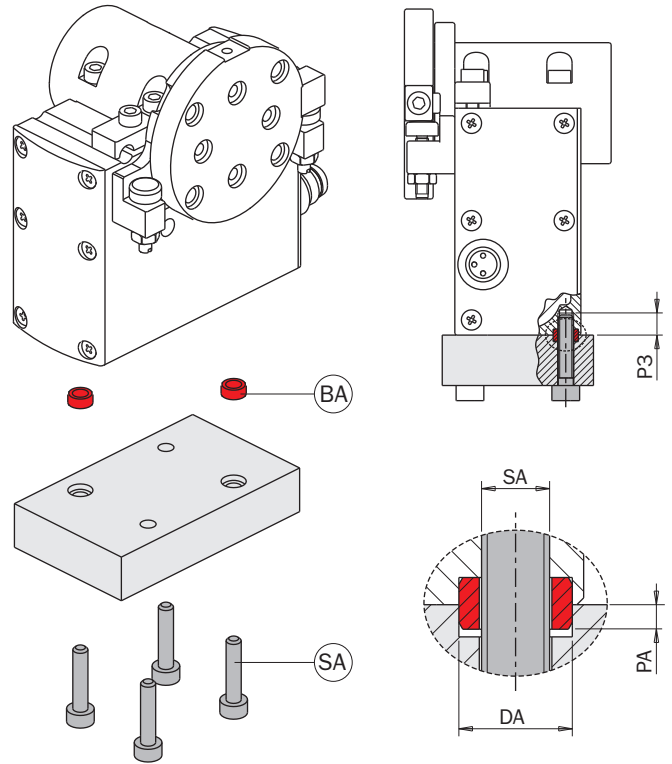
The rotary actuator can be fitted in a fixed position or to moving parts.

When on a moving part, you must pay attention to the inertial force to which the gripper and its load are subjected.

- To fasten the actuator by its base, use four through-screws (SA) through the mounting plate and screw it to the unit.
- To fasten the actuator by its side, use two screws (SB) in the through-holes (D3).

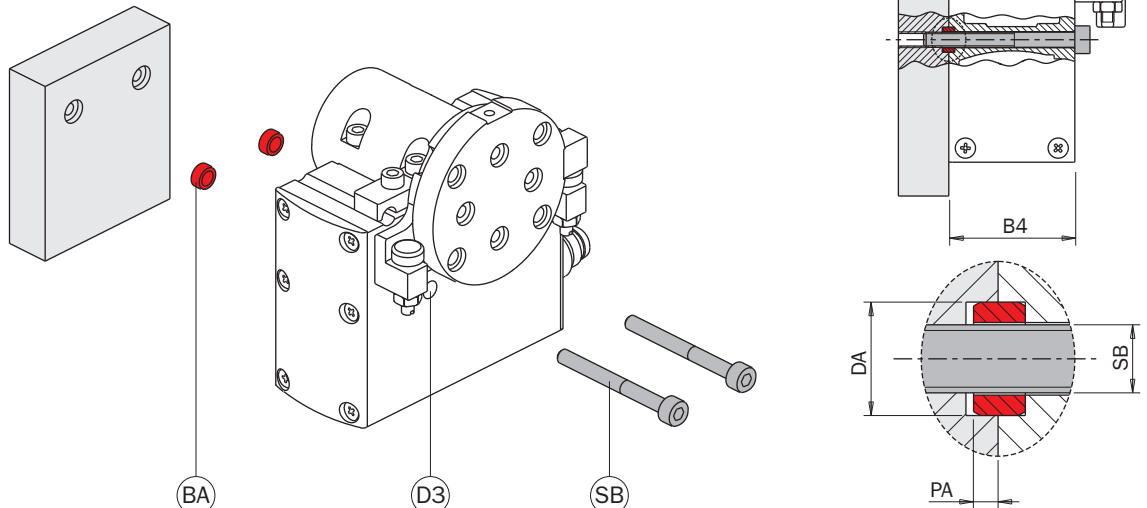
In every case, use the two centering sleeves (BA) supplied in the package. Follow the dimensions (DA and PA) given in the table for their seats in the mounting plate.

	MRE16180	MRE25180	MRE32180
B4	25	32	35
D3	Ø3.2	Ø4.2	Ø5.2
DA	Ø5 h7	Ø7 h7	Ø7 h7
P3	4	6	8
PA	1.2	1.5	1.5
SA	M3	M4	M5
SB	M3	M4	M5



Nella confezione dell'attuatore sono fornite 2 boccole di centraggio (BA) per il disco e 2 boccole (BA) per il corpo.

2 centering rings (BA) for the disc and 2 centering sleeves (BA) for the body are supplied in the package.



## Tavole rotanti pneumatiche (serie ITSC)

- Disponibili in 2 taglie con 4, 6 o 8 divisioni.
- Verso di rotazione orario o antiorario (suffisso A).
- Elevata coppia disponibile.
- Elevata capacità di carico.
- Foro passante per il passaggio di cavi e tubi.
- Peso ed ingombro limitati.

## Pneumatic indexing tables (series ITSC)

- Available in two sizes with 4, 6 or 8 positions.
- Available clockwise or counter clockwise (ending A).
- High torque.
- Suitable for heavy loads.
- Through hole for cables and hoses.
- Reduced weight and overall dimensions.



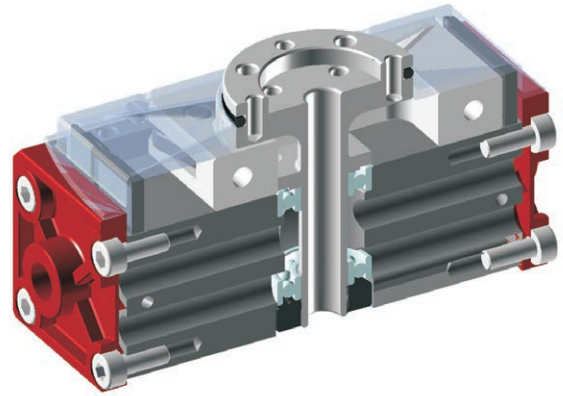
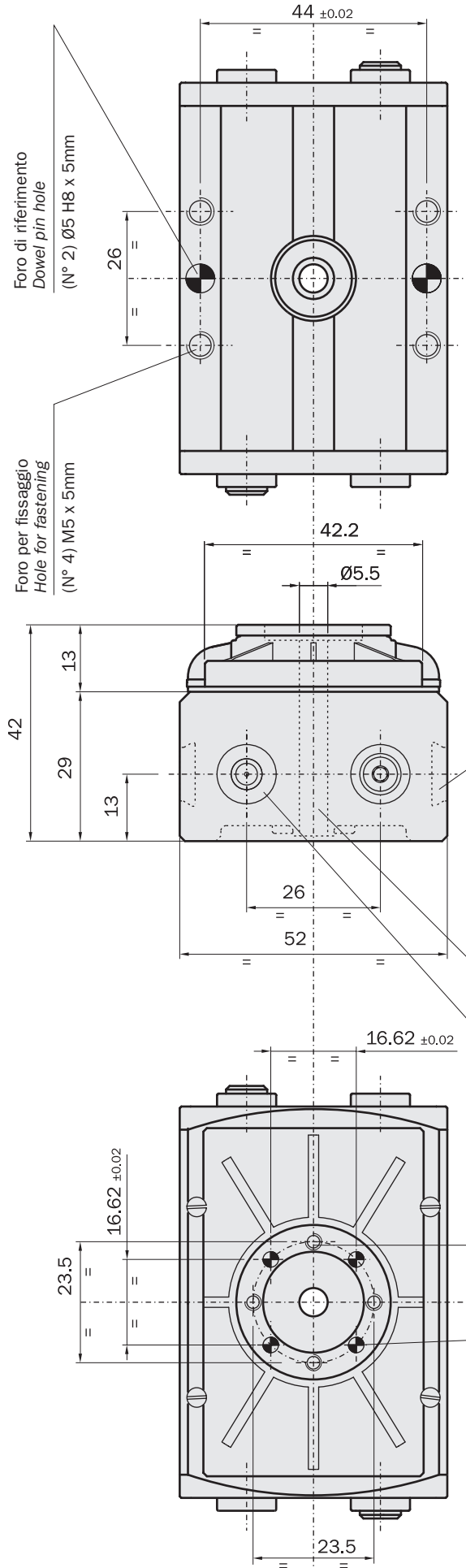
ITSC-16...



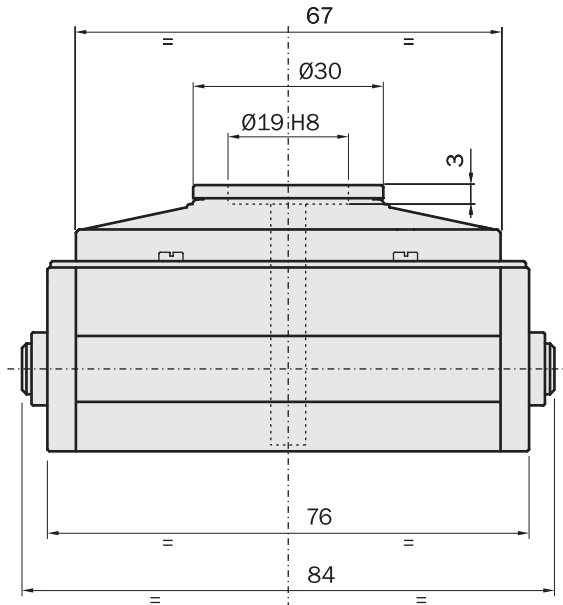
ITSC-45...

	ITSC-164 ITSC-164A	ITSC-166 ITSC-166A	ITSC-168 ITSC-168A	ITSC-454 ITSC-454A	ITSC-456 ITSC-456A	ITSC-458 ITSC-458
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	2.5 ÷ 8 bar					
Temperatura di esercizio Temperature range	5° ÷ 60°C.					
Corsa angolare Swivelling angle	4x90°	6x60°	8x45°	4x90°	6x60°	8x45°
Coppia di rotazione teorica a 6 bar Theoretical torque at 6 bar	1364 Nmm	1672 Nmm	1814 Nmm	22902 Nmm	26442 Nmm	28208 Nmm
Consumo d'aria Air consumption	8 cm <sup>3</sup> x90°	7 cm <sup>3</sup> x60°	7 cm <sup>3</sup> x45°	159 cm <sup>3</sup> x90°	146 cm <sup>3</sup> x60°	136 cm <sup>3</sup> x45°
Tempo di rotazione senza carico Indexing time without load	0.10 s x90°	0.08 s x60°	0.06 s x45°	0.15 s x90°	0.12 s x60°	0.09 s x45°
Precisione angolare Angular precision	± 0.12°	± 0.12°	± 0.12°	± 0.12°	± 0.12°	± 0.12°
Ripetibilità di posizione (360°) Positioning repeatability	± 0.02°	± 0.02°	± 0.02°	± 0.02°	± 0.02°	± 0.02°
Peso Weight	320 g	320 g	320 g	3740 g	3740 g	3960 g

**Dimensioni (mm)**  
**Dimensions (mm)**



Sede per sensori serie CB  
CB series sensor groove



Foro passante  
Through hole

Ingresso aria  
Air connection  
(N° 2) M5

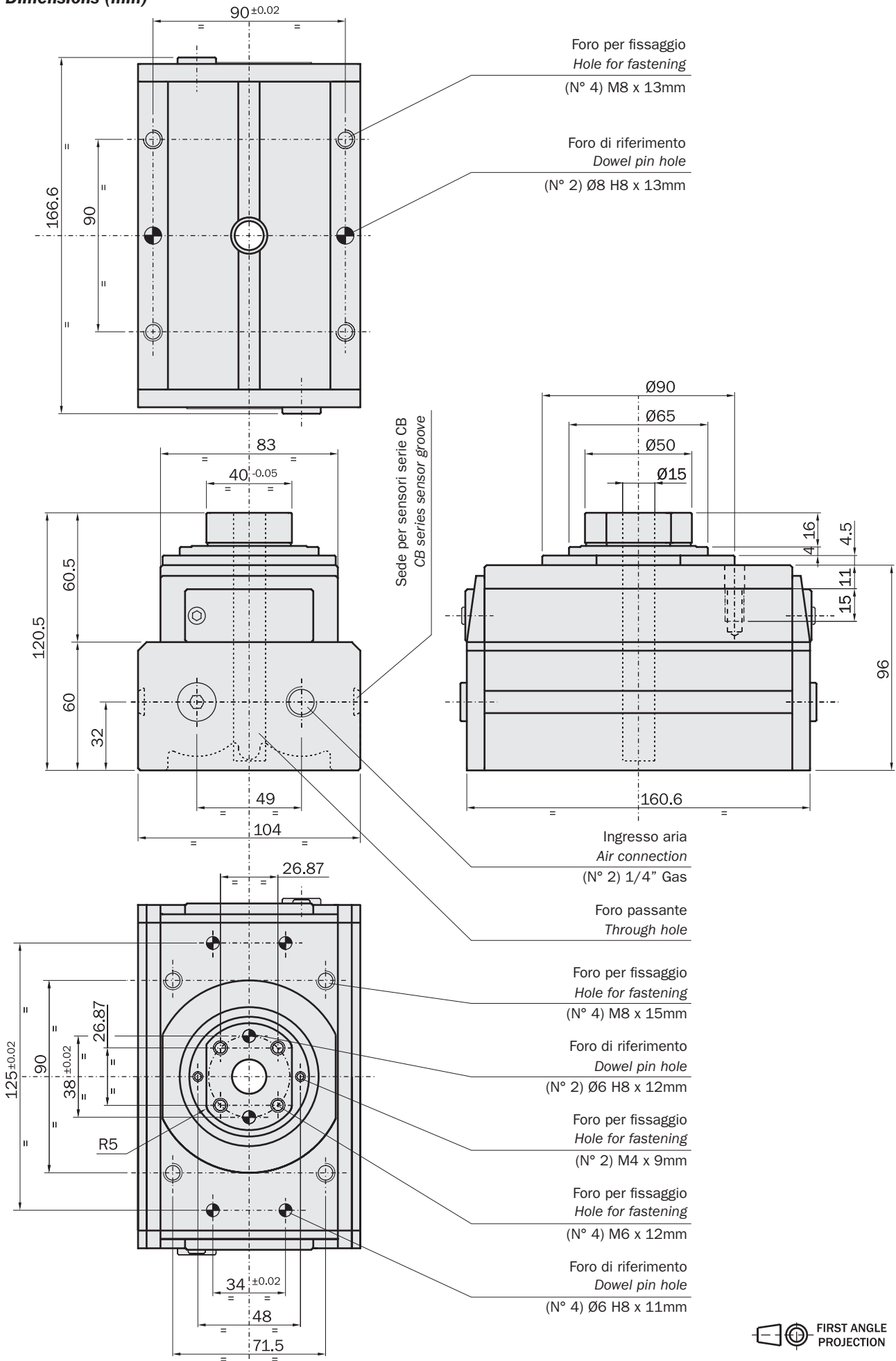
Foro per fissaggio  
Hole for fastening  
(N° 4) M3 x 5mm

Foro di riferimento  
Dowel pin hole  
(N° 4) Ø3 H8 x 5.5mm





**Dimensioni (mm)**  
**Dimensions (mm)**

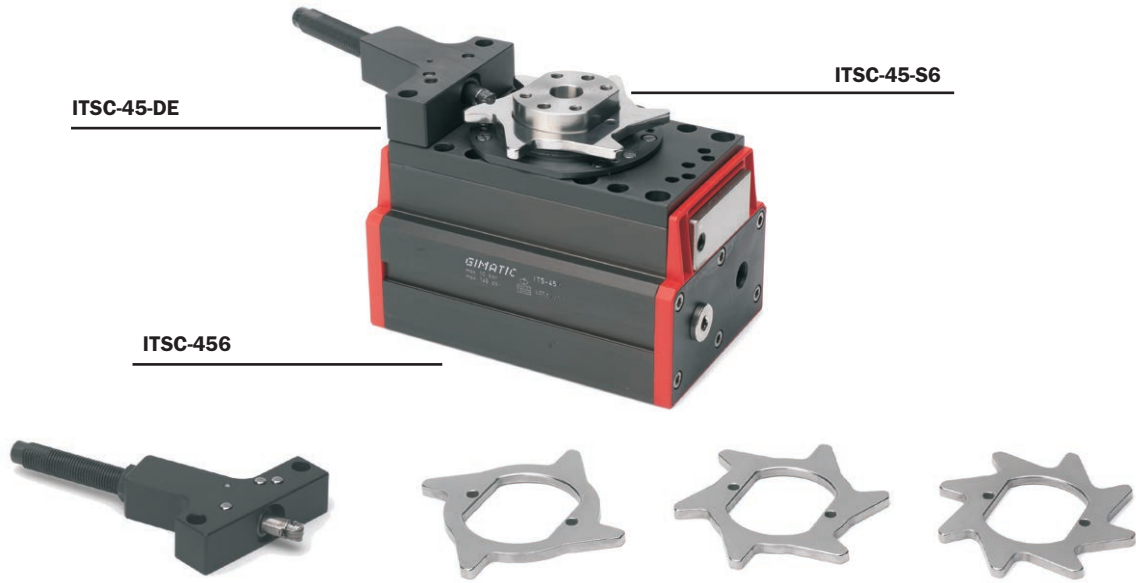


**Deceleratori**

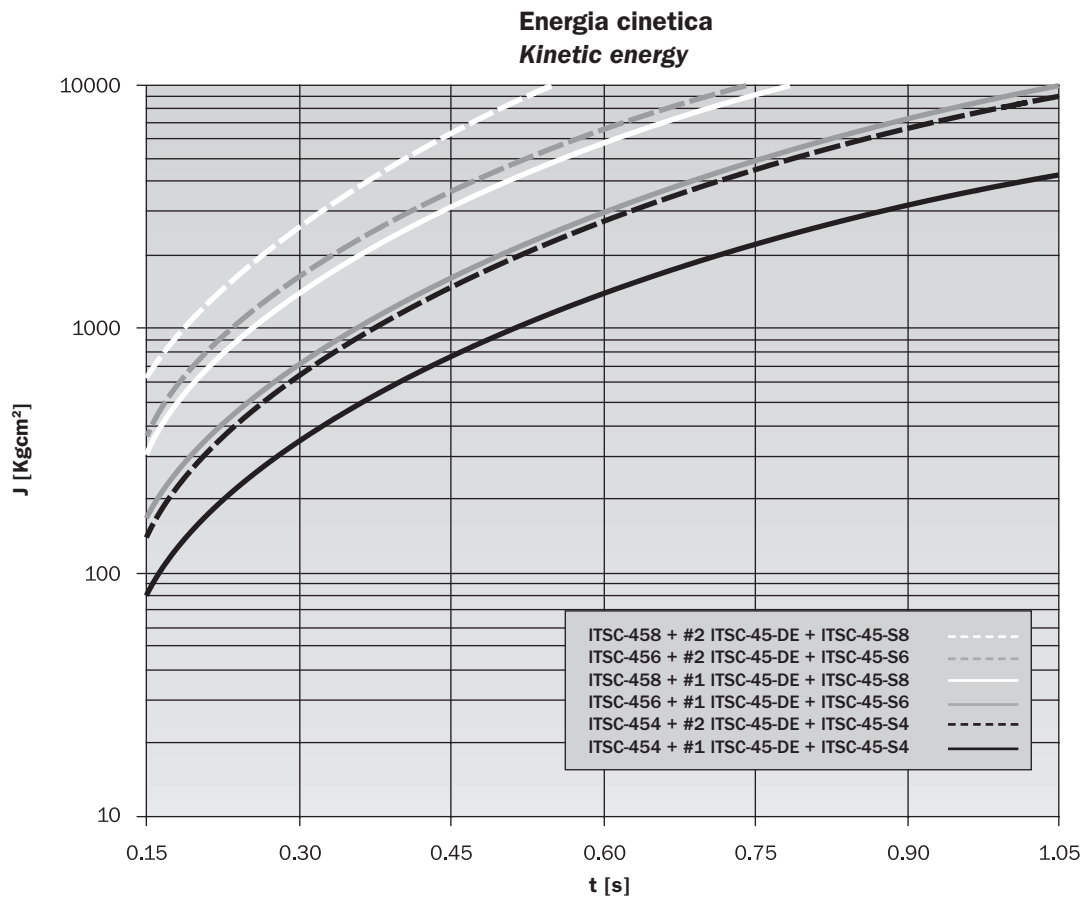
Sono disponibili per la taglia maggiore (ITSC-45...) degli accessori che consentono di dissipare energia cinetica con uno o due deceleratori e quindi consentono un minor tempo di rotazione.

**Shock-absorbers**

Accessories for ITSC-45... are available to dissipate kinetic energy by means of one or two shock-absorbers. They allow shorter indexing times.



	ITSC-45-DE	ITSC-45-S4	ITSC-45-S6	ITSC-45-S8
Descrizione Description	Deceleratore con alloggiamento Shock-absorber with housing	Corona per 4 divisioni 4-cam crown	Corona per 6 divisioni 6-cam crown	Corona per 8 divisioni 8-cam crown
Peso Weight	290 g	90 g	105 g	120 g
Adatto per: To use on:	ITSC-45...	ITSC-454 ITSC-454-A	ITSC-456 ITSC-456-A	ITSC-458 ITSC-458-A

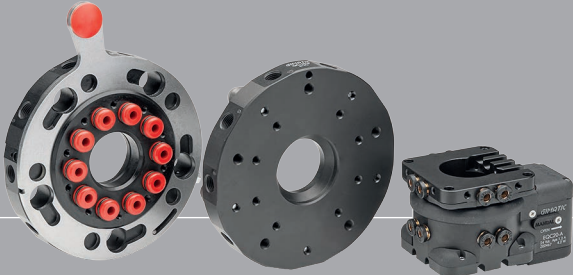


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**CAMBIA UTENSILE**

*Quick changer*



**Cambia utensile**

- Cambio rapido dell'attrezzatura sul robot.
- Adatto anche per canalizzazioni in depressione.
- Evita errori nelle connessioni pneumatiche ed elettriche.
- 4, 8, 10 o 12 connessioni pneumatiche.
- 15 connessioni elettriche.
- Le due parti (lato robot e lato pinza) sono fornite separatamente.
- Il lato robot QCX può anche tagliare l'aria compressa con una valvola di sicurezza.
- Il lato robot QCY taglia l'aria compressa automaticamente durante lo sganciamento.
- Dispositivo di bloccaggio LOQC opzionale.

**Quick changer**

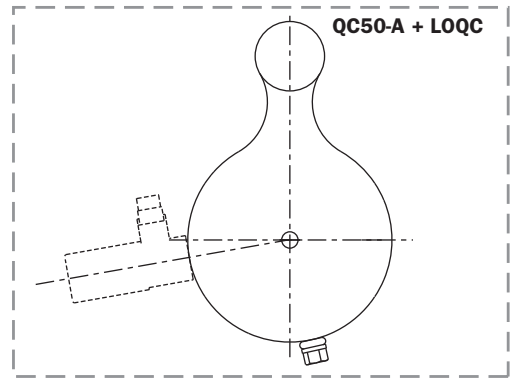
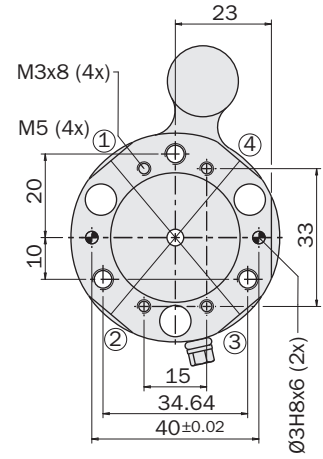
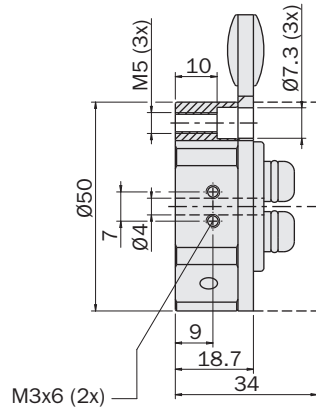
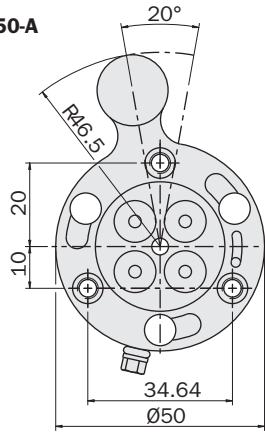
- Easy replacement of the EOAT on the robot.
- Suitable also with vacuum ports.
- Avoids mistakes in pneumatic and electrical connections.
- 4, 8, 10 or 12 pneumatic connections.
- 15 electrical connections.
- The two parts (robot side and gripper side) are supplied separately.
- The robot side QCX unit can also cut off the compressed air with a safety air valve.
- The robot side QCY unit cuts off the compressed air automatically during disengagement.
- Optional LOQC lock unit.



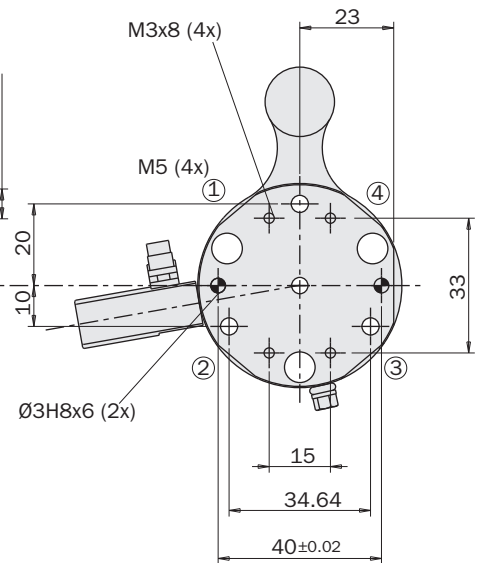
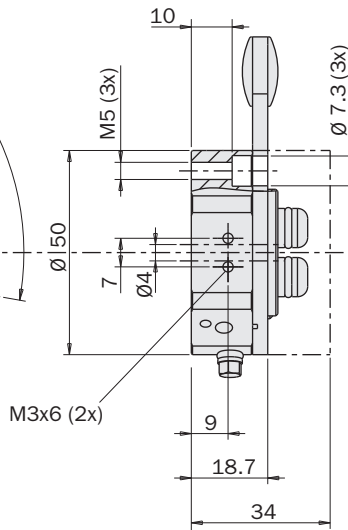
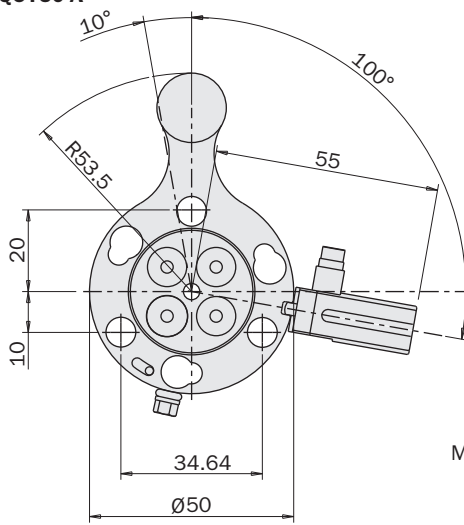
		50	90	150	160	200
Fluido Medium		Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]				
Pressione di esercizio Pressure range		-1 ÷ 6 bar				
Temperatura di esercizio Temperature range		5 ÷ 60 °C				
Cambia utensile lato robot Robot side quick changer	QC...-A	QC50-A (103 g)	QC90-A (318 g)	QC150-A (1123 g)	QC160-A (1200 g)	QC200-A (2640 g)
Cambia utensile lato robot con valvola di sicurezza Robot side quick changer with safety valve	QCX...-A	-	QCX90-A (595 g)	QCX150-A (2200 g)	QCX160-A (2200 g)	QCX200-A (4900 g)
Cambia utensile lato robot con valvola automatica Robot side quick changer with automatic valve	QCY...-A	QCY50-A (133 g)	QCY90-A (350 g)	QCY150-A (1180 g)	-	QCY200-A (2700 g)
Cambia utensile lato pinza universale Universal gripper side quick changer	QC...-B	QC50-B (65 g)	QC90-B (227 g)	QC150-B (827 g)	QC160-B (900 g)	QC200-B (1890 g)
Cambia utensile lato pinza con flangia Quick changer on gripper side, with flange	QCP...-B	QCP50-B (110 g)	QCP90-B (315 g)	QCP150-B (1090 g)	QCP160-B (1150 g)	QCP200-B (2400 g)
Cambia utensile lato pinza, specifico per QCY Gripper side quick changer, specific for QCY	QCY...-B	-	-	QCY150-B (862 g)	-	QCY200-B (1875 g)

**Dimensioni (mm)**  
**Dimensions (mm)**

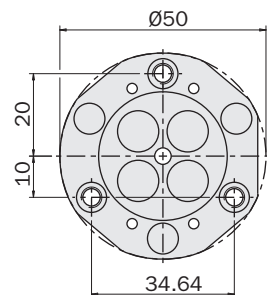
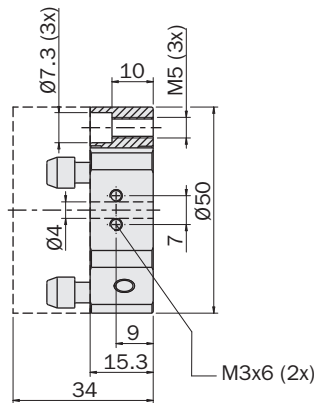
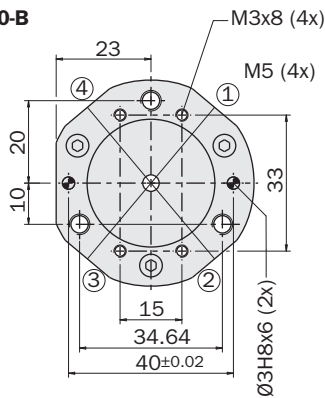
**QC50-A**



**QCY50-A**

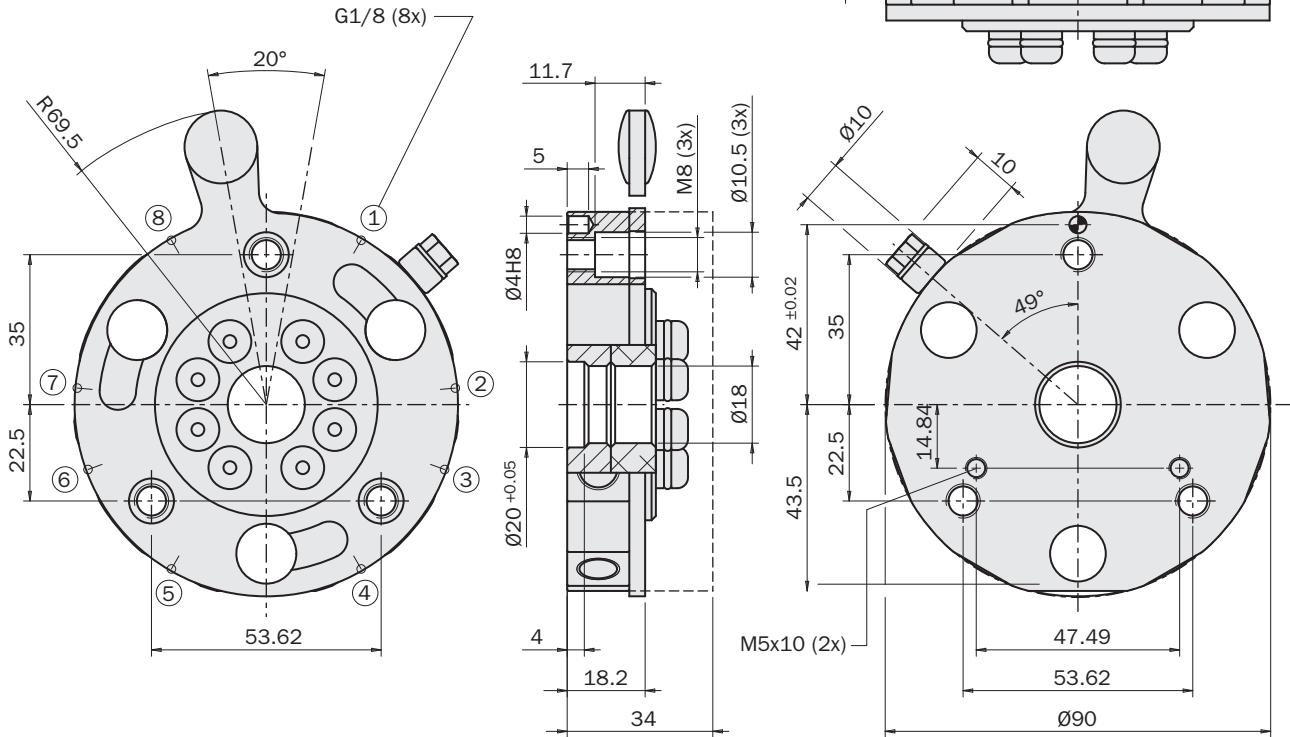


**QC50-B**

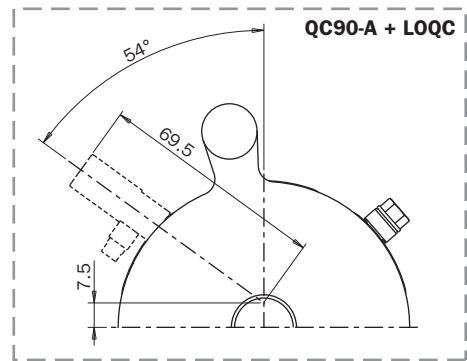


**Dimensioni (mm)**  
**Dimensions (mm)**

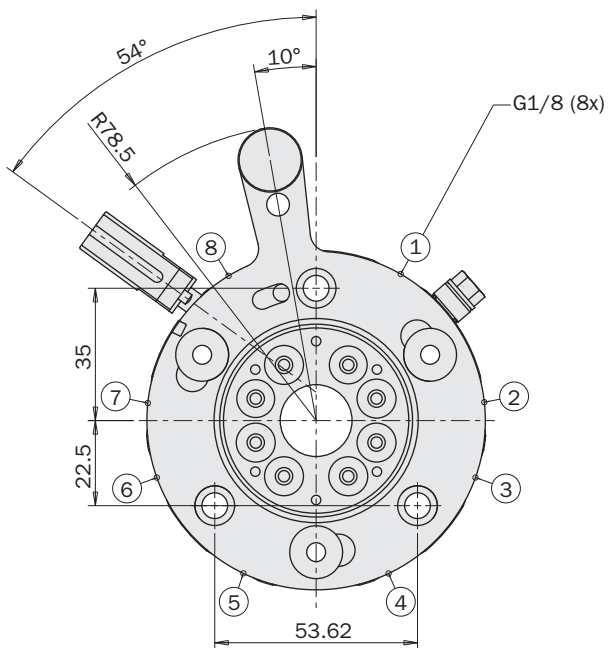
**QC90-A**



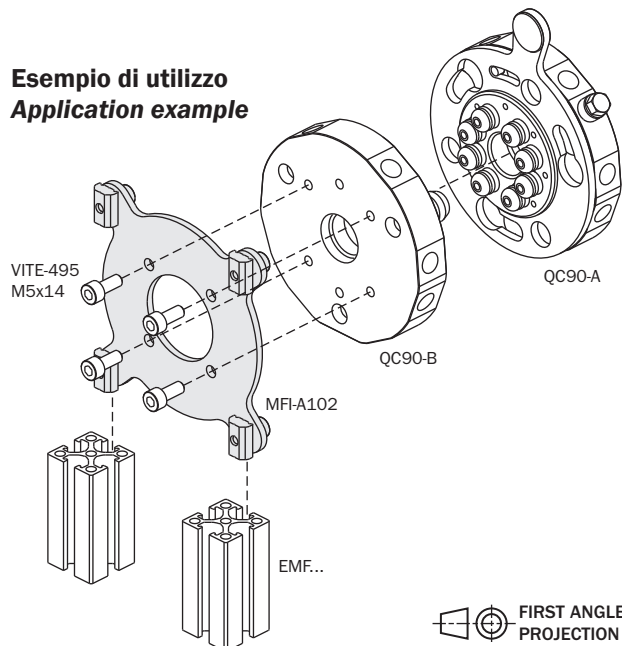
FIRST ANGLE PROJECTION



**QCY90-A**



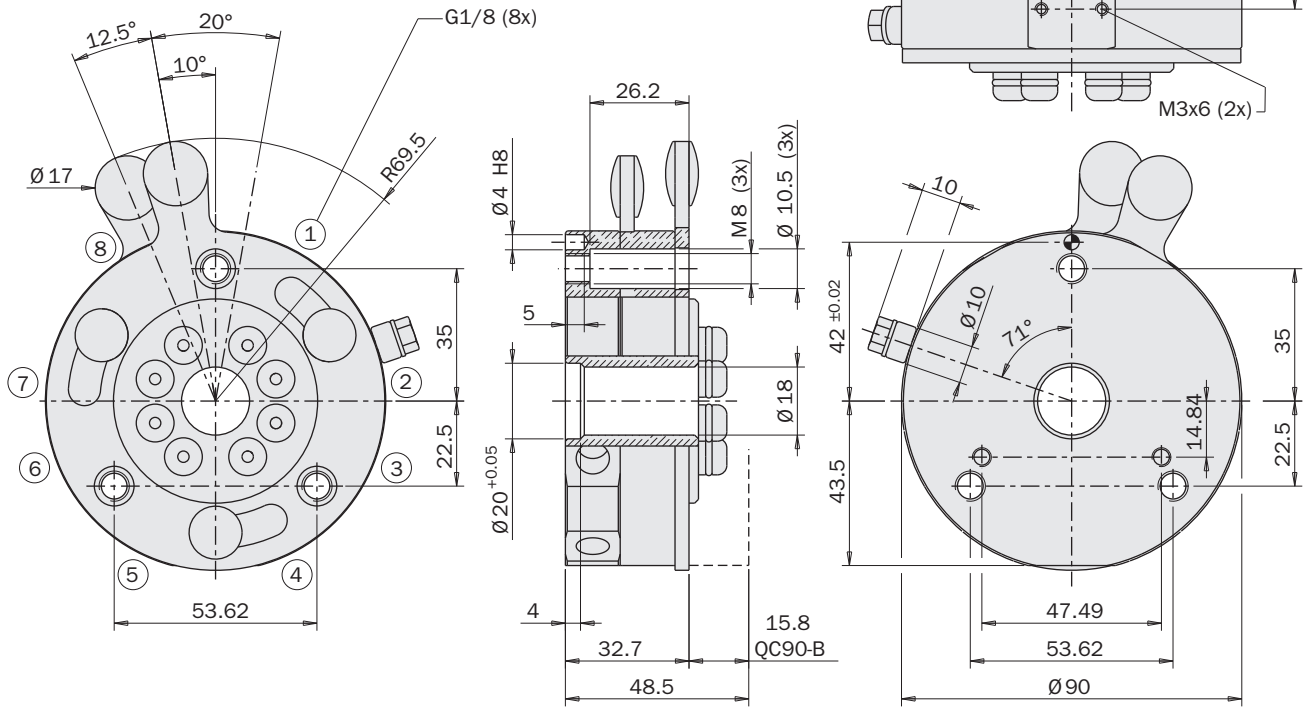
**Esempio di utilizzo**  
**Application example**



FIRST ANGLE PROJECTION

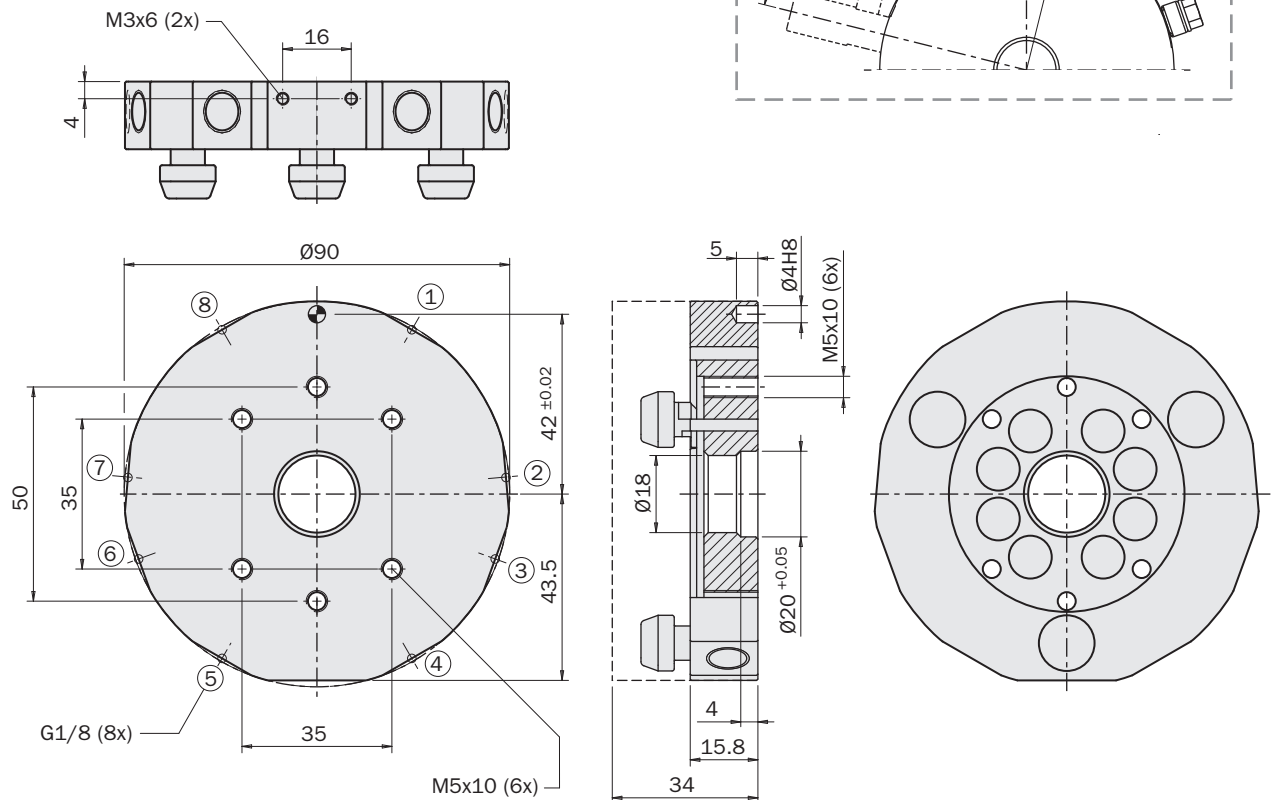
**Dimensioni (mm)**  
**Dimensions (mm)**

**QCX90-A**



FIRST ANGLE PROJECTION

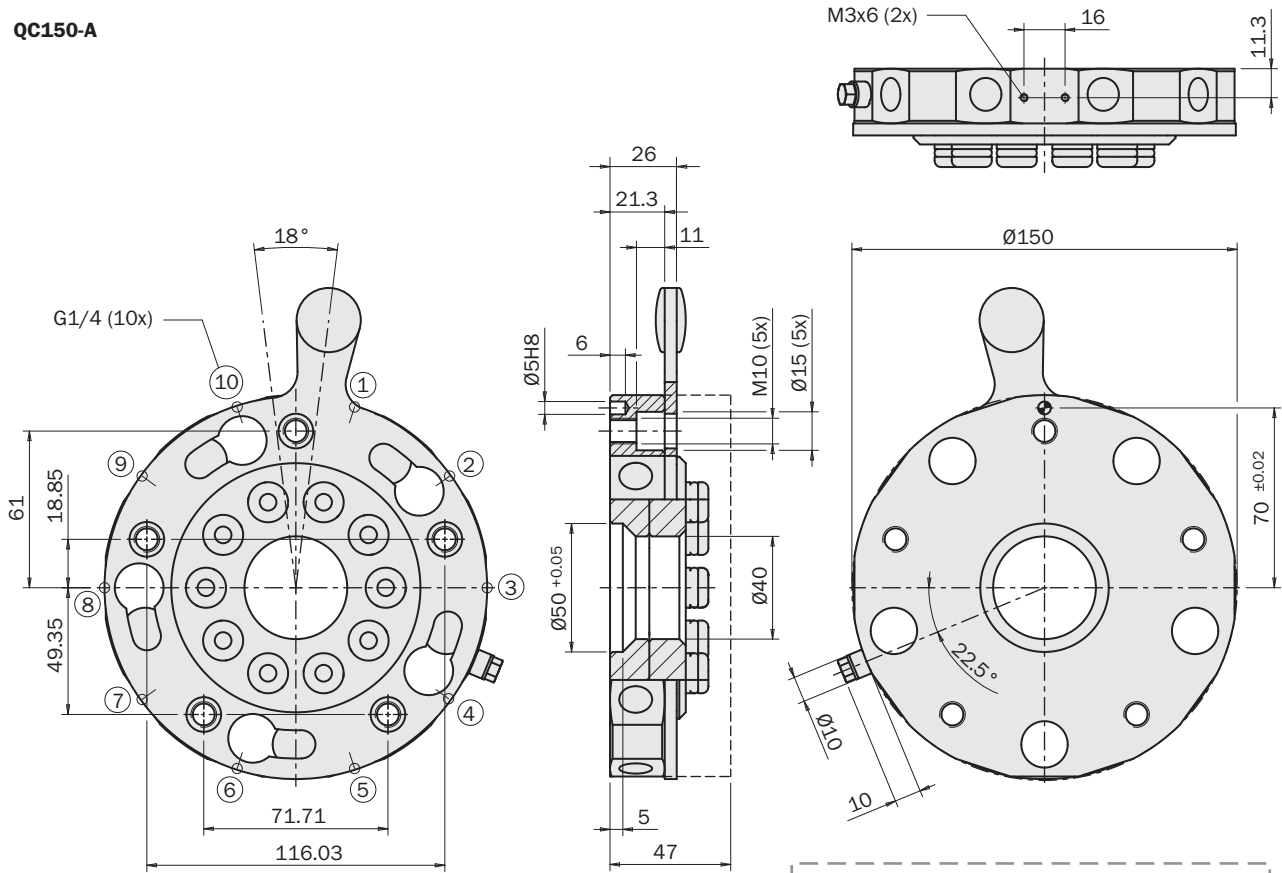
**QC90-B**



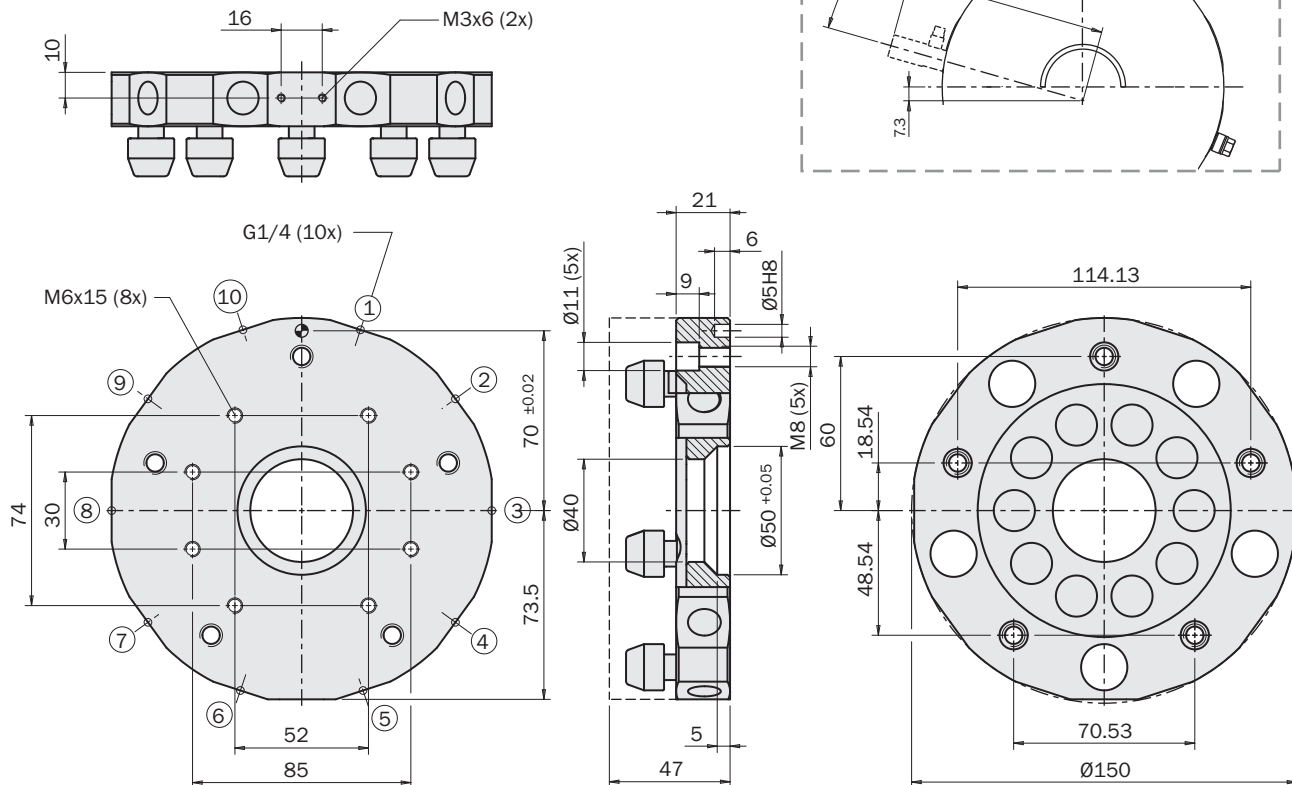


**Dimensioni (mm)**  
**Dimensions (mm)**

**QC150-A**



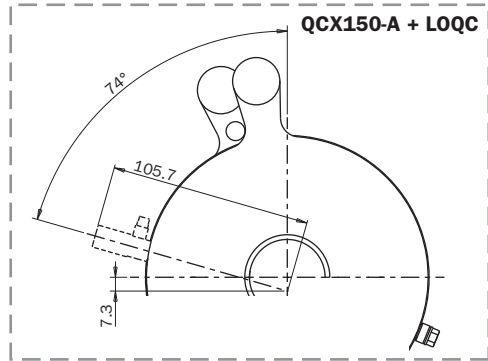
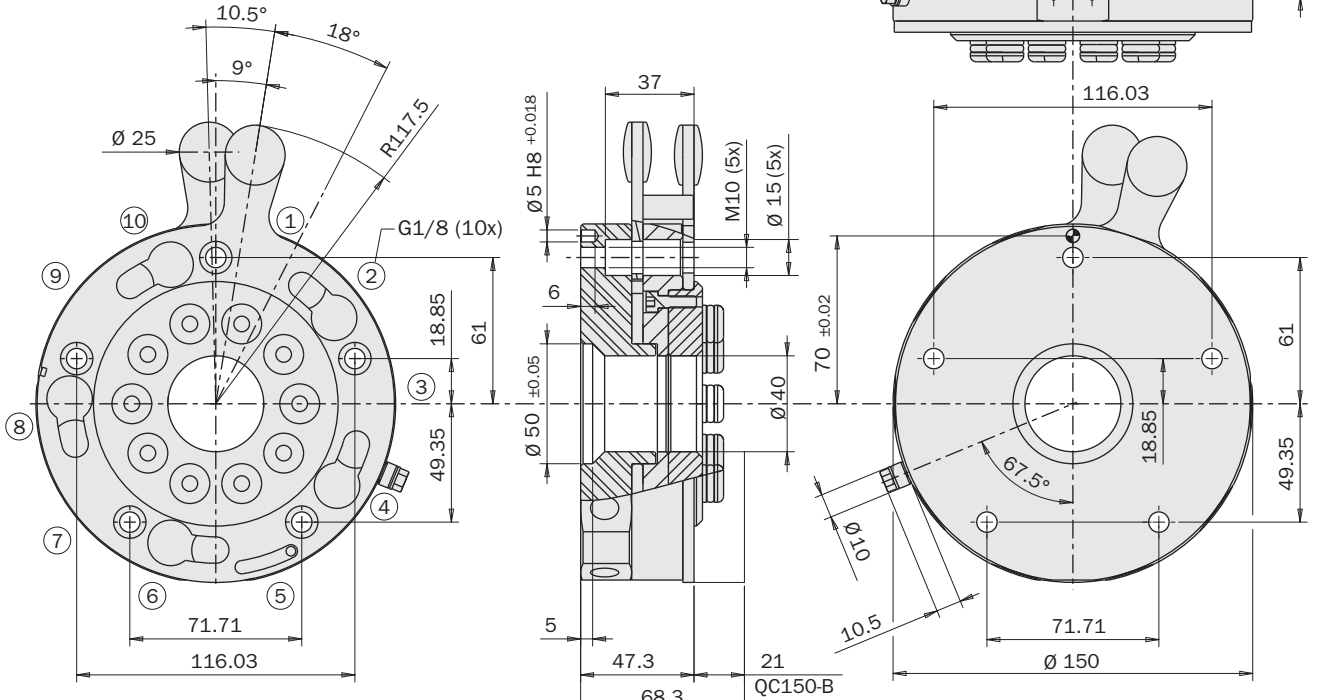
**QC150-B / QCY150-B**



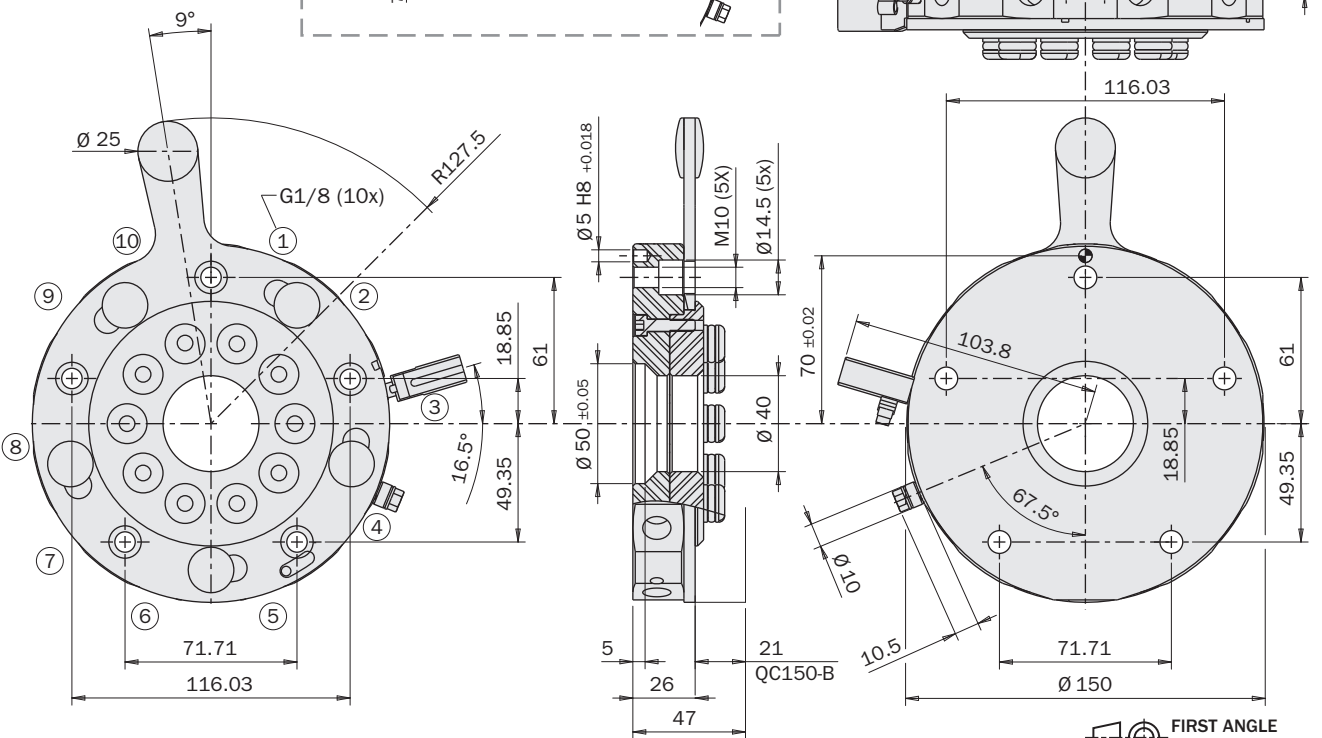
FIRST ANGLE  
PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

**QCX150-A**



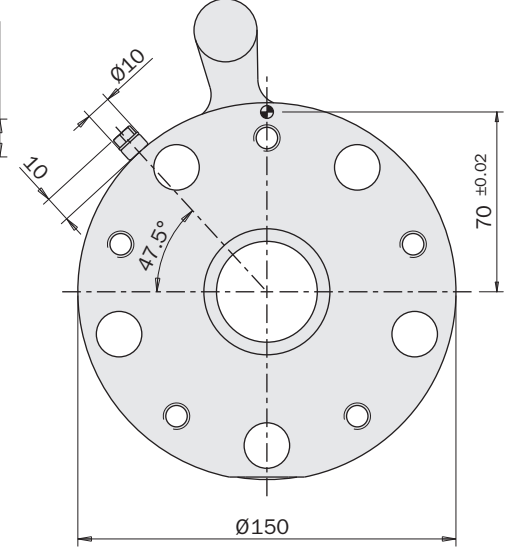
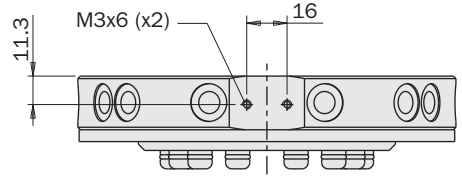
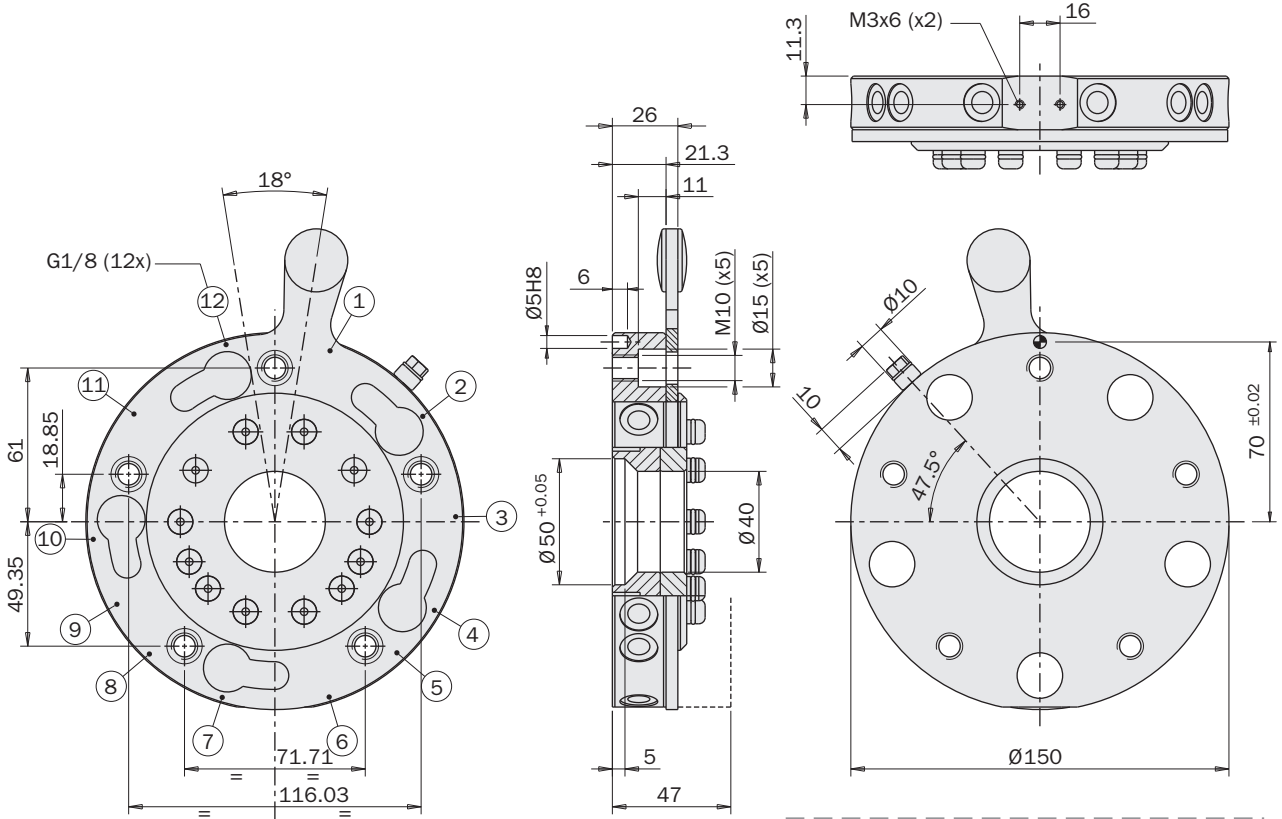
**QCY150-A**



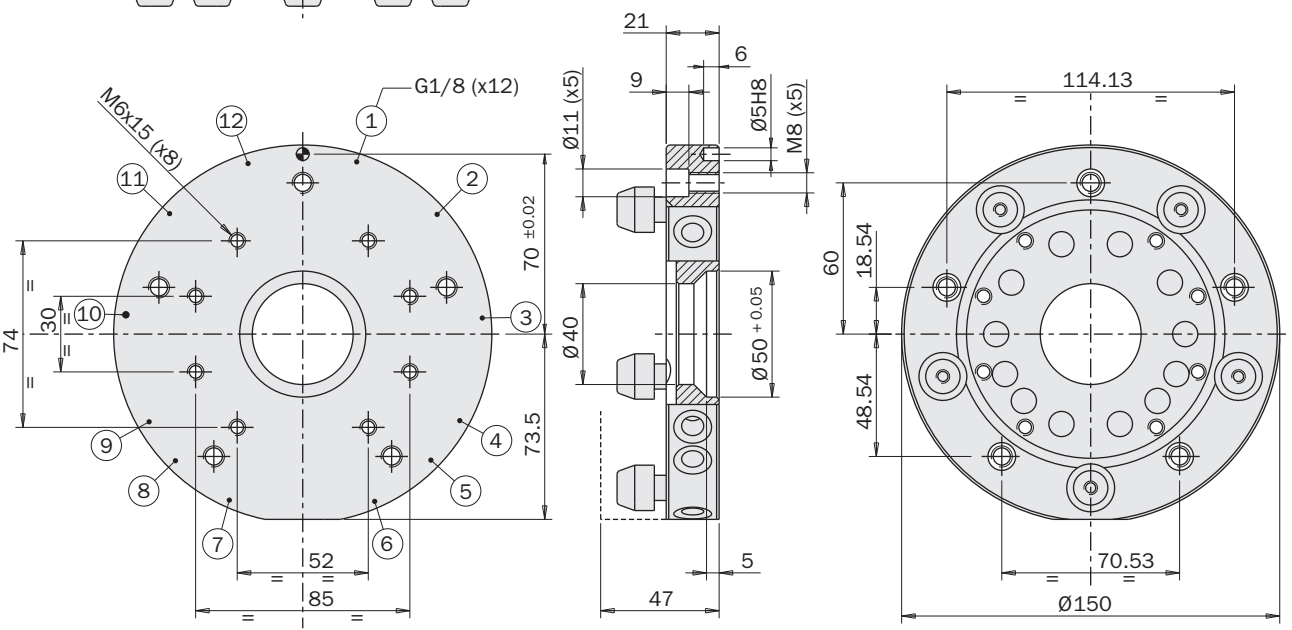
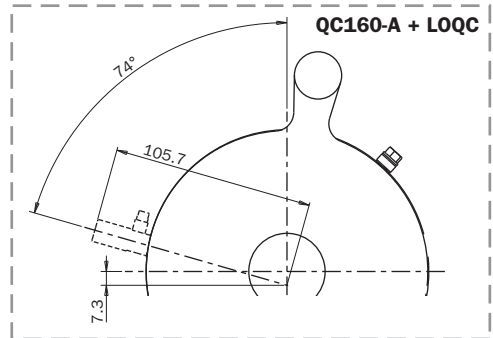
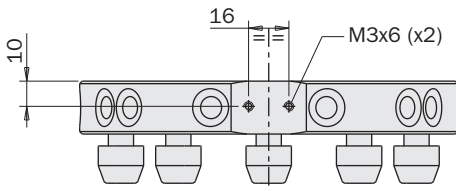
FIRST ANGLE PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

**QC160-A**



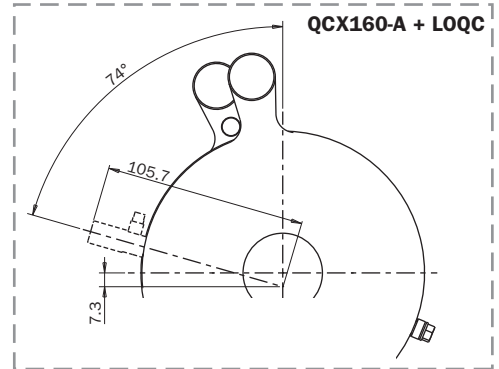
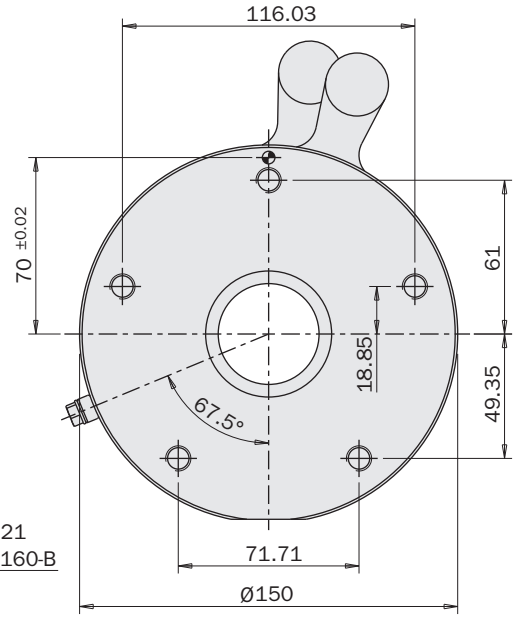
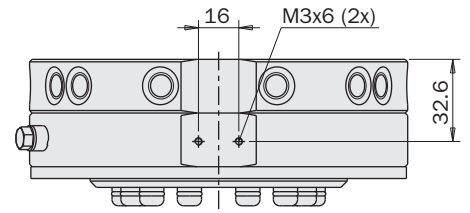
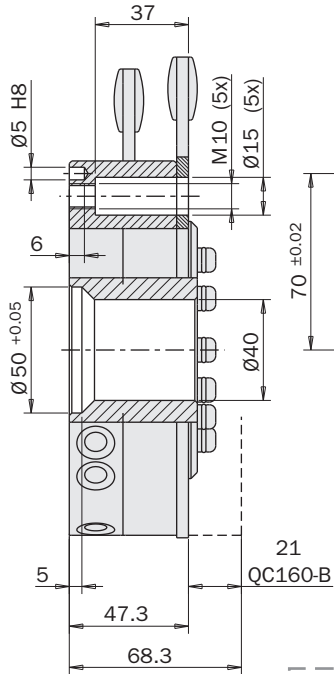
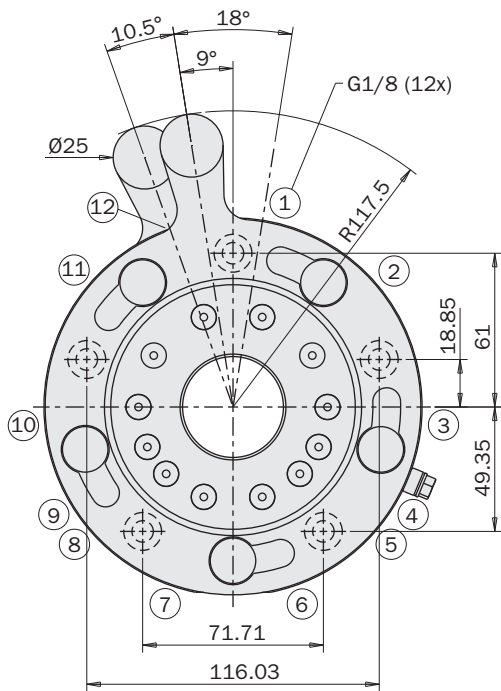
**QC160-B**



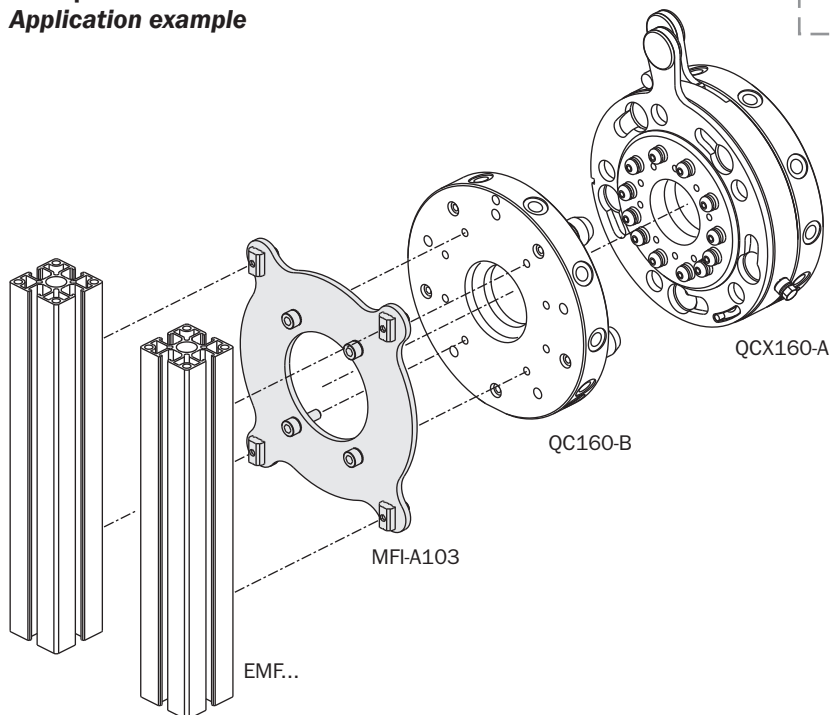
FIRST ANGLE  
PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

**QCX160-A**

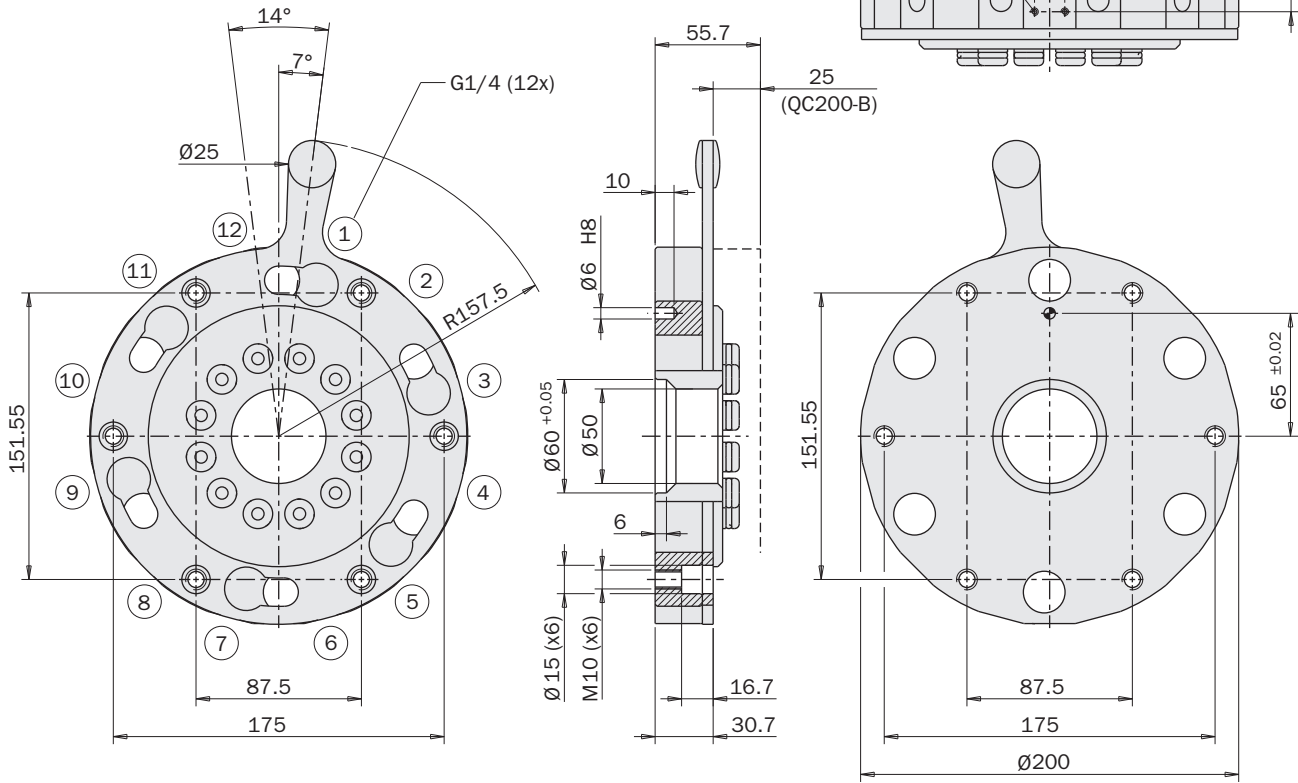


**Esempio di utilizzo**  
**Application example**

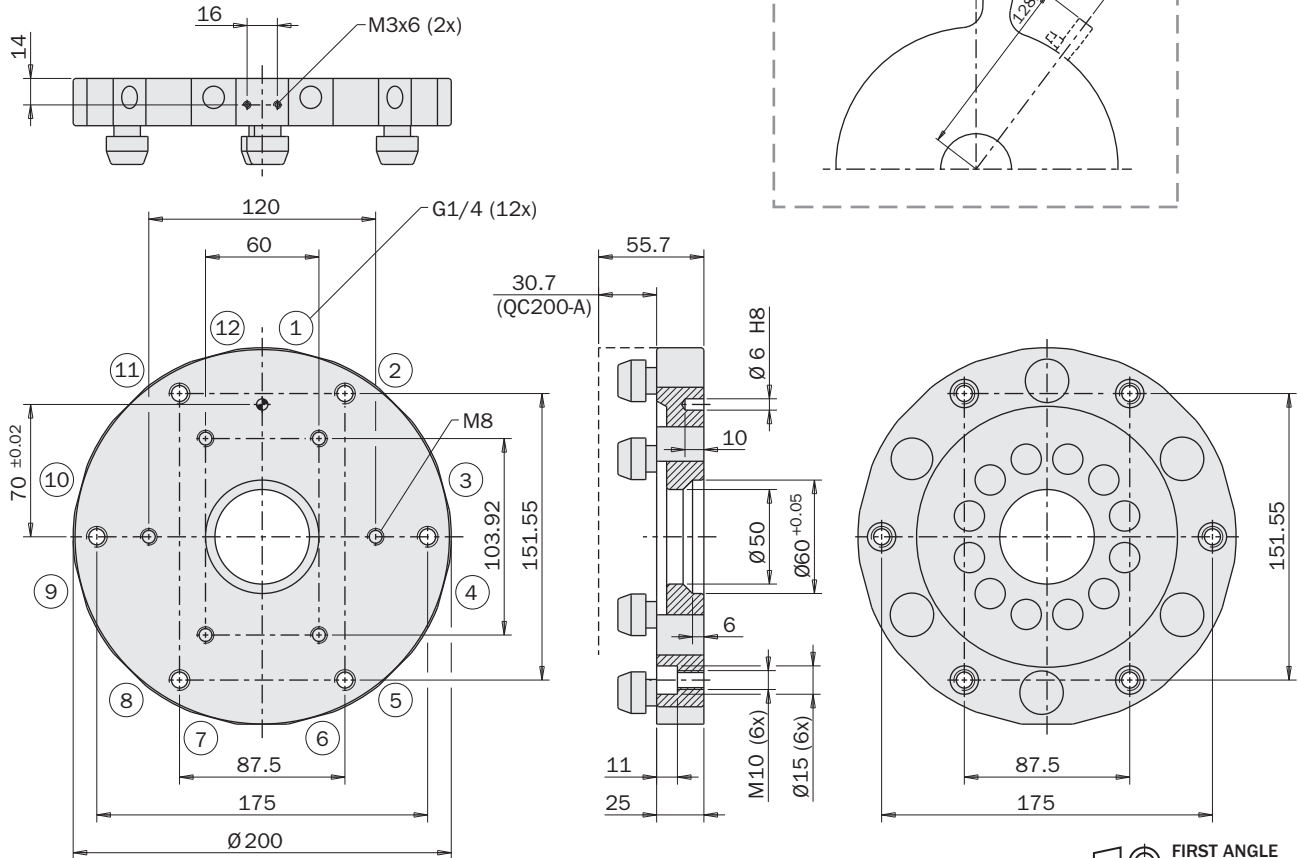


**Dimensioni (mm)**  
**Dimensions (mm)**

**QC200-A**



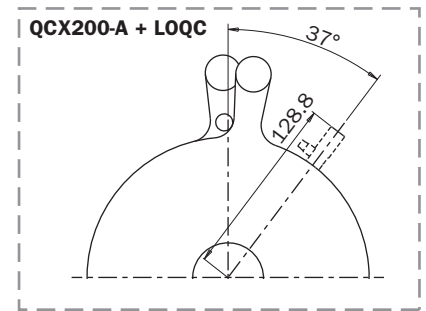
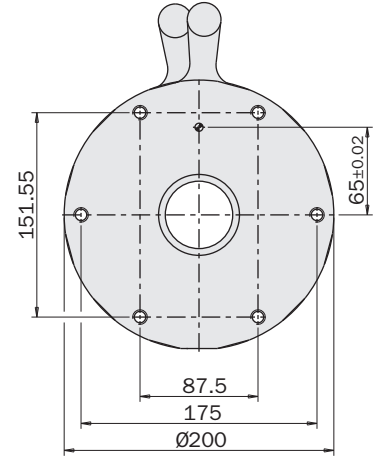
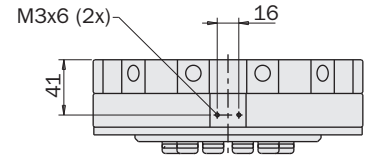
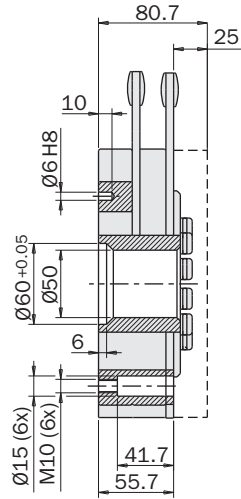
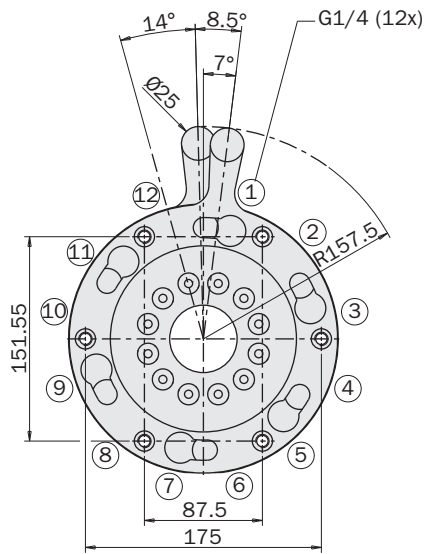
**QC200-B / QCY200-B**



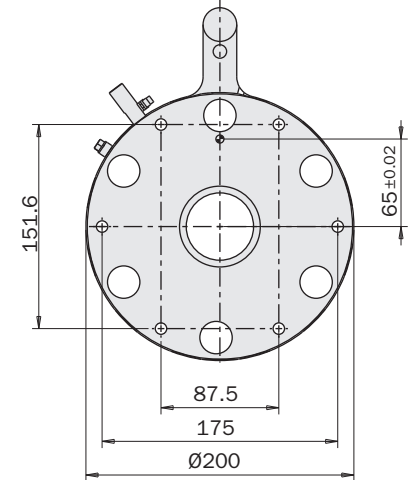
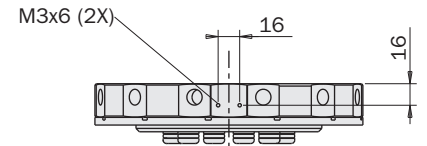
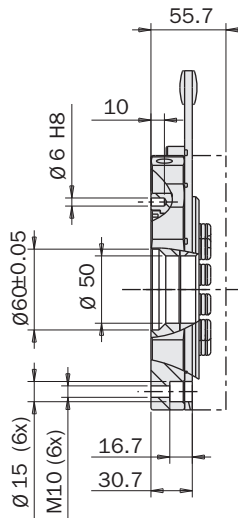
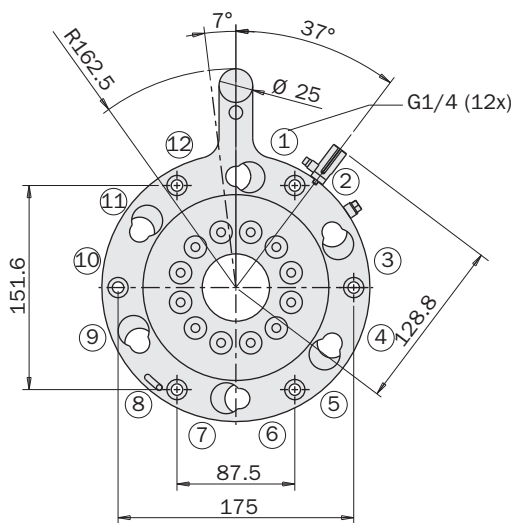
FIRST ANGLE  
PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

**QCX200-A**



**QCY200-A**

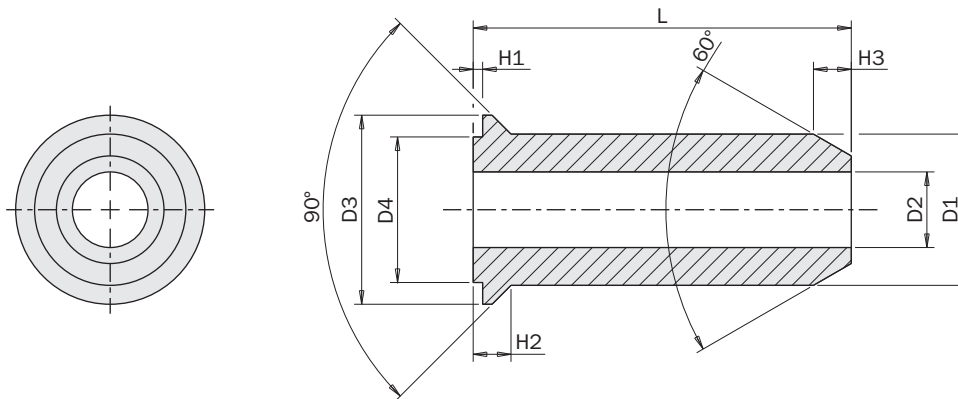


**Spina di centraggio**

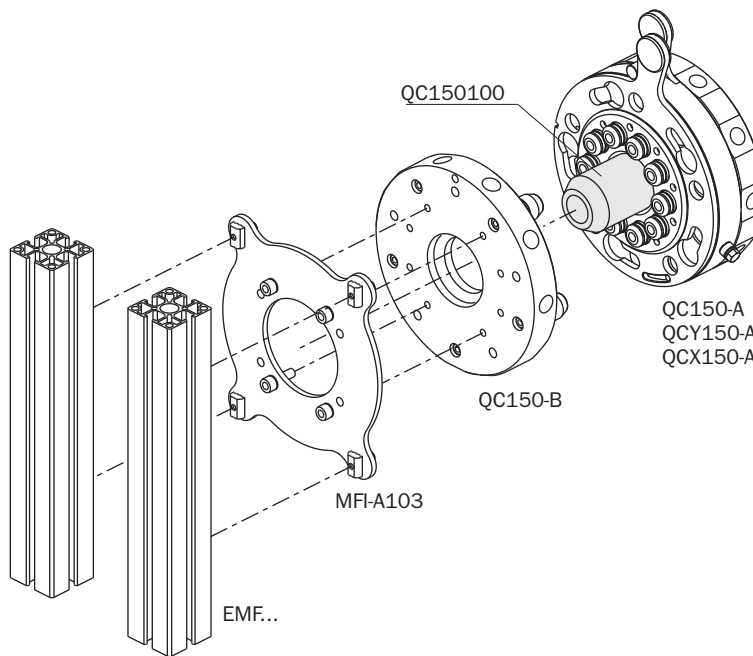
- Da posizionare sul lato robot.
- Aiuta il centraggio manuale di EOAT pesanti.

**Centering pin**

- To be positioned on the robot side.
- It helps the manual centering of heavy EOATs.



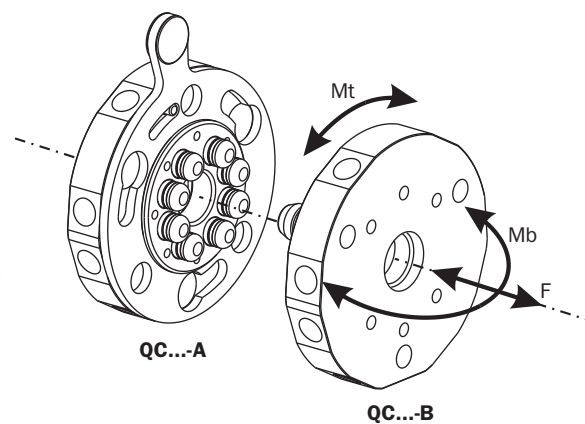
	QC9065	QC150100	QC200120
L	65	100	120
H1	2	2.5	3
H2	5	10	11
H3	5	10	15
D1	Ø18	Ø40	Ø50
D2	Ø8	Ø20	Ø25
D3	Ø20	Ø50	Ø60
D4	Ø14	Ø38.5	Ø43.5



**Carichi di sicurezza**

**Safety loads**

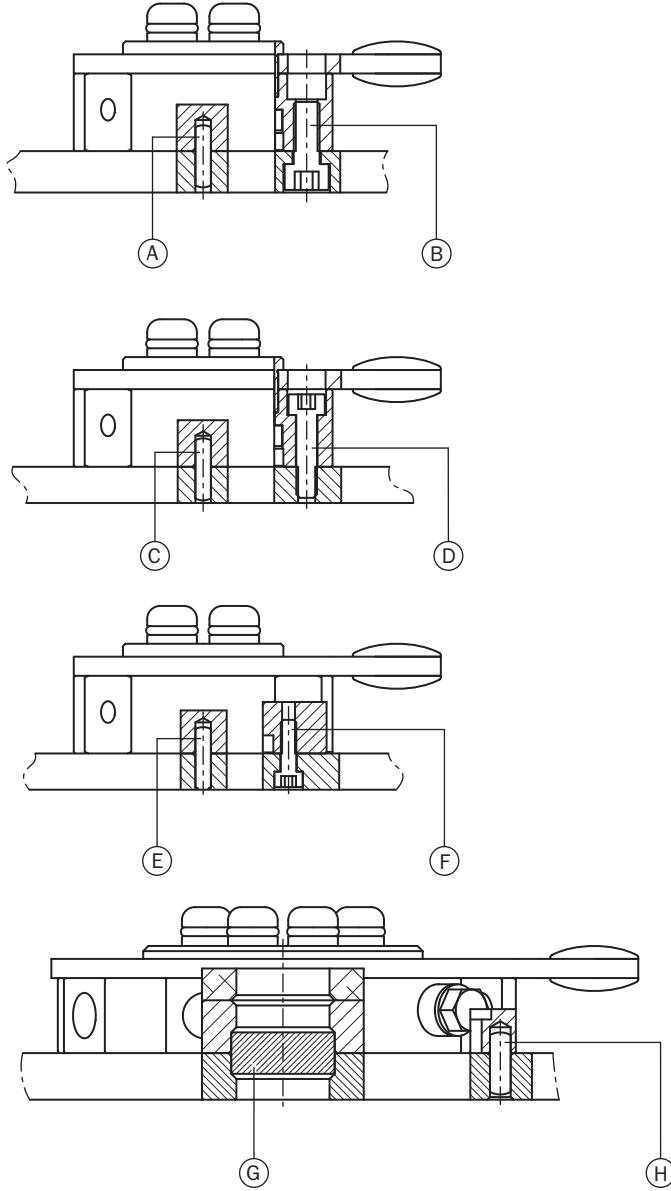
	QC50	QC90	QC150	QC160	QC200
F	350 N	1400 N	3000 N	3000 N	9000 N
Mt	30 Nm	180 Nm	600 Nm	600 Nm	2000 Nm
Mb	15 Nm	100 Nm	350 Nm	350 Nm	1350 Nm
m (*)	5 kg	20 kg	50 kg	50 kg	150 kg



(\*)  
Massimo carico raccomandato  
Maximum recommended load

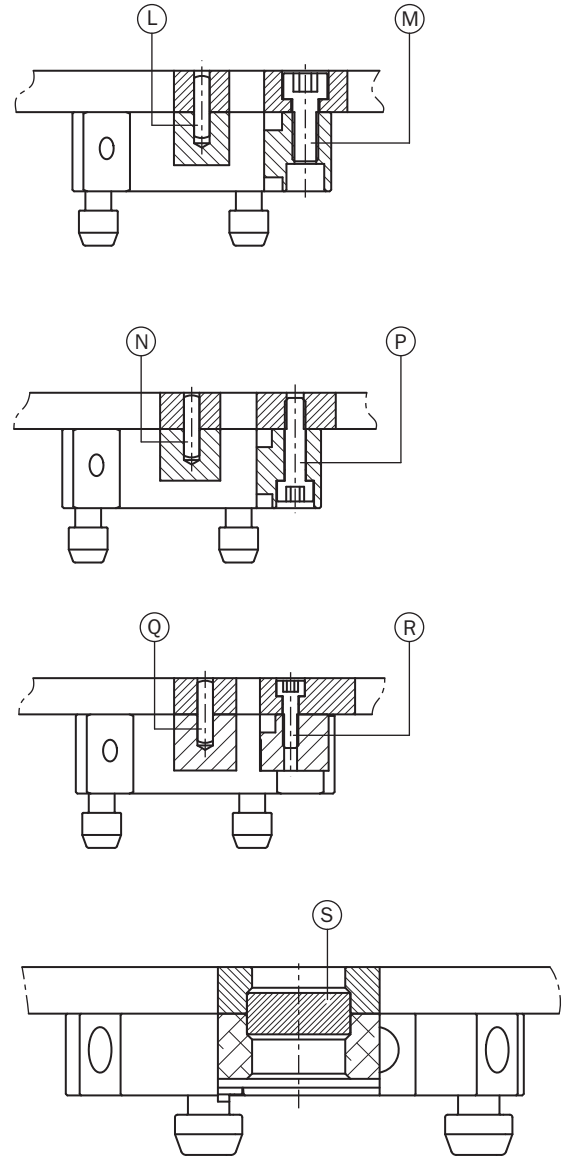
**Fissaggio**

Lato robot  
Robot side



**Fastening**

Lato pinza  
Gripper side



	QC50-A QCY50-A	QC90-A QCX90-A QCY90-A	QC150-A QCX150-A QCY150-A	QC160-A QCX160-A	QC200-A QCX200-A QCY200-A
A	Ø3 (2x)	-	-	-	-
B	M5 (3x)	M8 (3x)	M10 (5x)	M10 (5x)	M10 (6x)
C	Ø3 (2x)	-	-	-	-
D	M4 (3x)	M6 (3x)	M8 (5x)	M8 (5x)	M8 (6x)
E	Ø3 (2x)	-	-	-	-
F	M3 (4x)	M5 (2x)	-	-	-
G	-	Ø20	Ø50	Ø50	Ø60
H	-	Ø4 (1x)	Ø5 (1x)	-	Ø6 (1x)

	QC50-B	QC90-B	QC150-B QCY150-B	QC160-B	QC200-B QCY200-B
L	Ø3 (2x)	-	-	-	Ø6 (1x)
M	M5 (3x)	-	M8 (5x)	M8 (5x)	M10 (6x)
N	Ø3 (2x)	-	-	-	-
P	M4 (3x)	-	M6 (5x)	M6 (5x)	M8 (6x)
Q	Ø3 (2x)	-	-	-	-
R	M3 (4x)	M5 (6x)	M6 (8x)	M6 (8x)	M8 (6x)
S	-	Ø20	Ø50	Ø50	Ø60



**QCX**

**Cambia utensile lato robot con valvola di sicurezza**

QCX è equipaggiato con una valvola dell'aria integrata, che chiude automaticamente il flusso di aria compressa (o il vuoto) prima che il sistema sia completamente sganciato (4).

Non è possibile aprire il flusso d'aria, se la flangia non è agganciata (1).

La maniglia rossa sconnette la flangia, ma inoltre muove la maniglia blu tramite la spina nera, che chiude l'aria (2).

Quando il sistema è agganciato il flusso d'aria può essere controllato (on/off) con la maniglia blu (3).

Questa valvola a rubinetto rotante risolve tutti i problemi delle valvole di non ritorno a sfera: l'elevata forza di spinta necessaria per l'aggancio ed i movimenti incontrollati degli attuatori durante lo sganciamento.

QCX è perfettamente compatibile con QC...-B ed ha gli stessi fissaggi di QC...-A, ma con uno spessore maggiore.

**QCX**

**Robot side quick changer with safety valve**

QCX is equipped with an integrated air valve, which automatically closes the compressed air (or vacuum) flow before the system is completely disengaged (4).

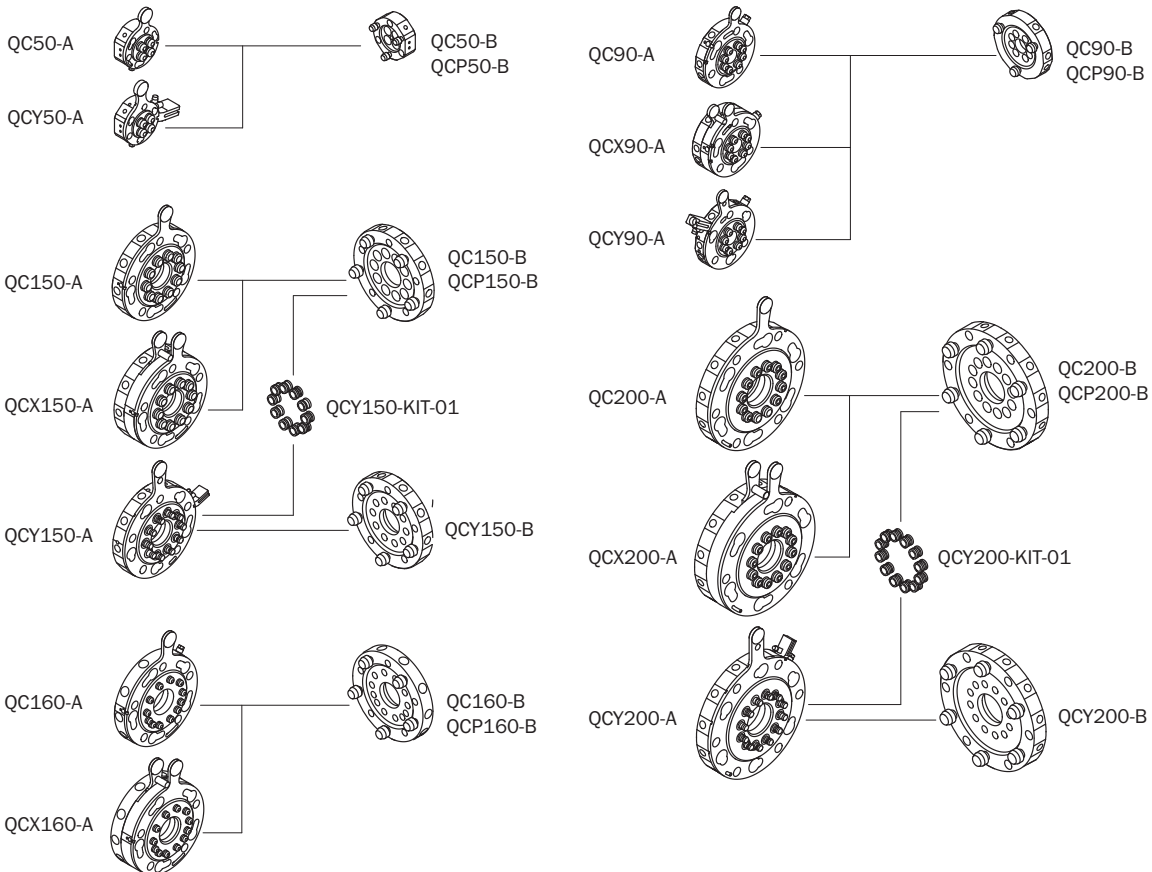
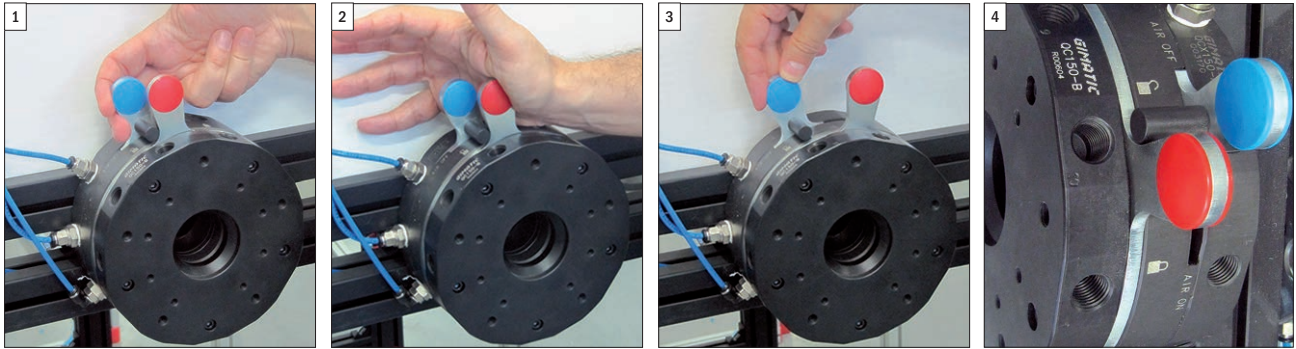
It is not possible to open the air flow, if the flange is not engaged (1).

The red handle disengages the flange, but also move the blue handle by the black pin which closes the air (2).

When engaged the air flow can be controlled (on/off) by the blue handle (3).

This rotating tap valve solves all the problems of ball valve systems: the high pushing force necessary for engaging and the uncontrolled movements of the actuators when disengaging.

QCX perfectly fit with QC...-B and it has the same mounting pattern of a QC...-A, but with a larger thickness.



**QCY**

**Cambia utensile lato robot con valvola automatica**

QCY è equipaggiato con una valvola dell'aria integrata che chiude automaticamente il flusso dell'aria compressa (o il vuoto) prima che il sistema sia completamente sganciato.

Anche l'apertura del flusso di aria compressa (o del vuoto) è automatica e successiva al completo agganciamento.

Quindi a differenza del QCX una sola maniglia è sufficiente.

Questo riduce le dimensioni del QCY che è intercambiabile con il QC...-A e compatibile con il QC...-B.

Anche questa valvola è a rubinetto rotante e quindi non richiede una forza di spinta elevata per l'aggancio e non causa movimenti incontrollati durante lo sganciamento. Un circuito di sfiato mette in comunicazione con l'atmosfera gli utensili pneumatici a bordo del QC...-B prima che lo sganciamento sia completato.

**QCY**

**Robot side quick changer with automatic valve**

The QCY features a built-in air valve, which automatically cuts off the compressed air flow (or vacuum) before the system is completely disengaged.

The opening of the compressed air flow (or vacuum) is also automatic and follows the complete engagement.

Therefore, unlike the QCX, a single handle is sufficient.

This reduces the dimensions of the QCY which is interchangeable with the QC...-A and compatible with the QC...-B.

Also this valve is with rotating tap and therefore does not require a high pushing force for the engagement and does not cause uncontrolled movements during the disengagement. An exhaust circuit connects the pneumatic tools on the QC...-B with the external atmosphere before the disengagement is completed.

**QCY-KIT**

Il KIT di trasformazione permette di rendere compatibili i modelli QC150-B e QC200-B con i nuovi cambia utensile QCY150-A e QCY200-A.

ATTENZIONE: il QC...-B non sarà più compatibile con i modelli QC...-A e QCX...-A dopo aver assemblato il KIT di trasformazione

**QCY-KIT**

The transformation KIT makes the QC150-B and QC200-B models compatible with the new QCY150-A and QCY200-A quick changers.

ATTENTION: the QC...-B will no longer be compatible with the QC...-A and QCX...-A models after assembling the transformation KIT.

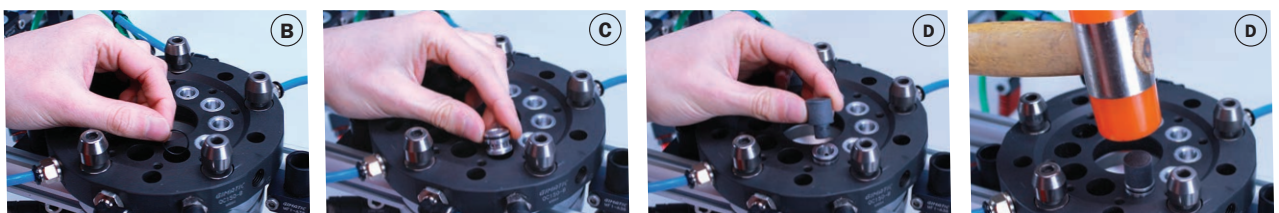
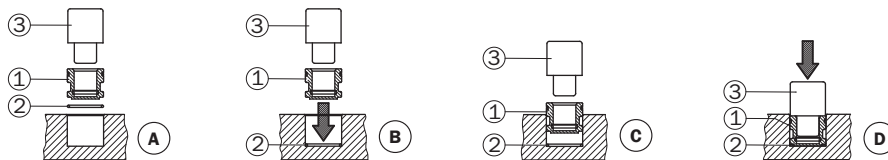
QCY...-A	QC...-B	KIT
QCY150-A	QC150-B, QCP150-B	QCY150-KIT-01
QCY200-A	QC200-B, QCP200-B	QCY200-KIT-01

Procedura di assemblaggio:

- Posizionare l'EOAT su una superficie che ne assicuri la stabilità.
- Pulire i fori del QC...-B dalla presenza di eventuale grasso.
- Introdurre gli o-ring (2) presenti nel KIT in ognuno dei fori del QC...-B, accertandosi che siano inseriti a fondo (come da Fig. B).
- Introdurre la boccia di riduzione (1) con il lato aperto rivolto verso l'alto sul foro del QC...-B (come da Fig. C).
- Posizionare la spina di inserimento (3) presente nel KIT nella boccia di riduzione.
- Mediante una mazzetta in plastica, inserire la boccia nel QC...-B facendo attenzione a mantenerla perpendicolare durante l'operazione (come da Fig. D). Una porzione eccedente di o-ring potrebbe essere tagliata durante l'operazione.
- Controllare che la boccia di riduzione (1) sia inserita fino in battuta: non deve sporgere rispetto al piano del QC...-B.
- Ripetere le operazioni precedenti per assemblare le altre bocce di riduzione nei fori rimanenti del QC...-B.

Assembly procedure:

- Place the EOAT on a surface that ensures its stability.
- Clean the holes of the QC...-B from the presence of any grease.
- Introduce the o-rings (2) present in the KIT into each hole of the QC...-B, making sure that they are inserted fully (as shown in the Pic. B).
- Insert the reduction bushing (1) with the open side facing up on the hole of the QC...-B (as shown in the Pic. C).
- Place the insertion pin (3) in the KIT into the reduction bushing.
- Using a plastic hammer, insert the bushing into the QC...-B taking care to keep it perpendicular during the operation (as shown in the Pic. D). An excess portion of the o-ring could be cut off during the operation.
- Make sure that the reduction bushing (1) is in contact with the bottom of the hole: it must not protrude from the plane of the QC...-B.
- Repeat the previous steps to assemble the other reduction bushings in the remaining holes of the QC...-B.



**QCP**

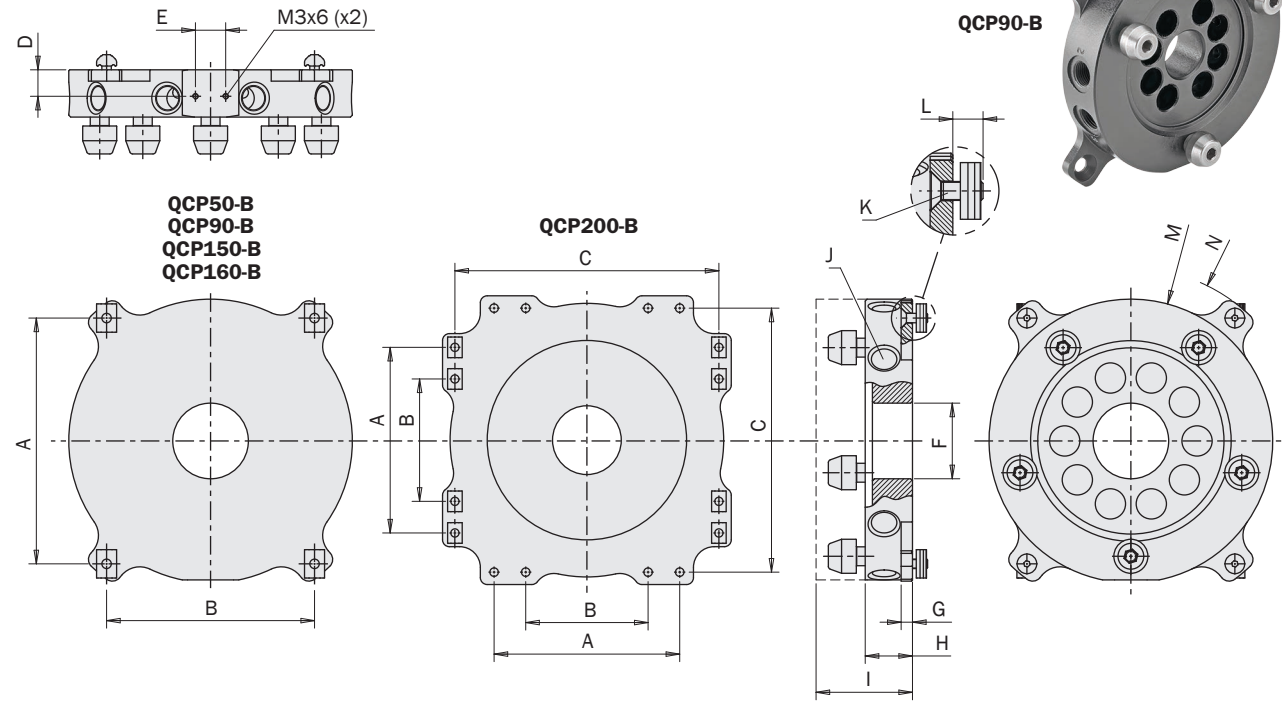
**Cambia utensile lato pinza con flangia integrata**

- L'interfaccia per le travi in alluminio è integrata.
- Peso ridotto.
- Gioco ridotto.
- Stesse dimensioni.

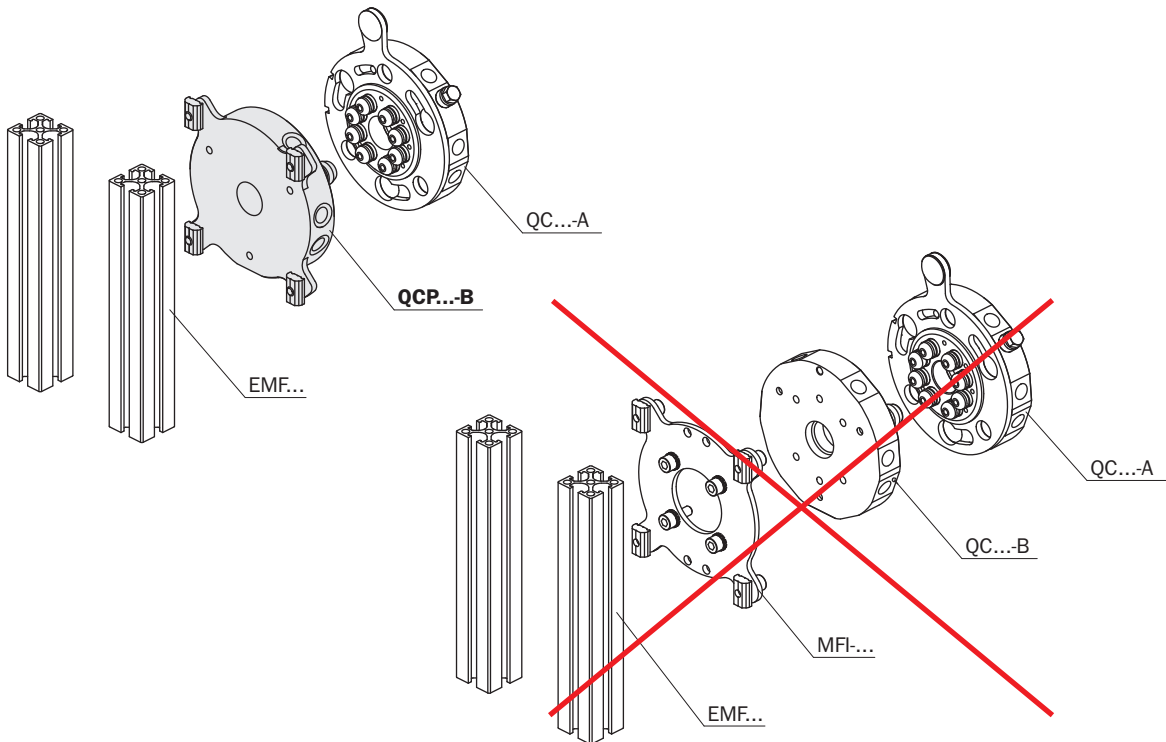
**QCP**

**Gripper side quick changer with integrated flange**

- The interface for the aluminum beams is integrated.
- Reduced weight.
- Reduced backlash.
- Same dimensions.



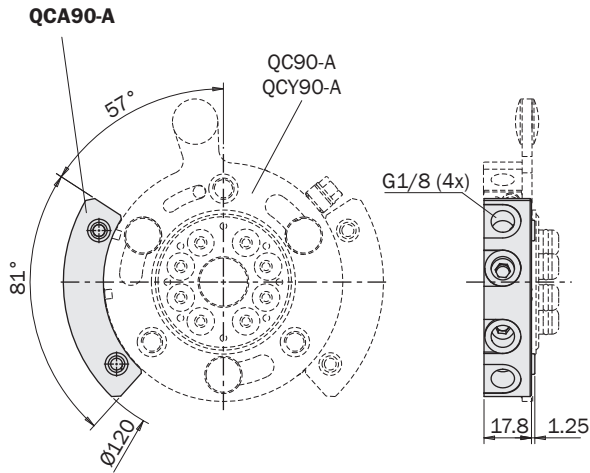
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Peso Weight
<b>QCP50-B</b>	50	32	-	13	7	∅4	4	19.3	38	M5 (x4)	M4 (x4)	7.4	∅50	∅71.5	110 g
<b>QCP90-B</b>	76	76	-	7	16	∅18	4	18.8	37	G1/8 (x8)	M5 (x4)	7.4	∅90	∅99.5	315 g
<b>QCP150-B</b>	130	110	-	14	16	∅40	6	25	51	G1/4 (x10)	M5 (x4)	7.4	∅150	∅183	1092 g
<b>QCP160-B</b>	130	110	-	14	16	∅40	6	25	51	G1/8 (x12)	M5 (x4)	7.4	∅150	∅183	1150 g
<b>QCP200-B</b>	135	89	192	22	16	∅50	8	33	64	G1/4 (x12)	M6 (x16)	7.4	∅200	∅257	2400 g



**QCA**

**Canali dell'aria aggiuntivi**

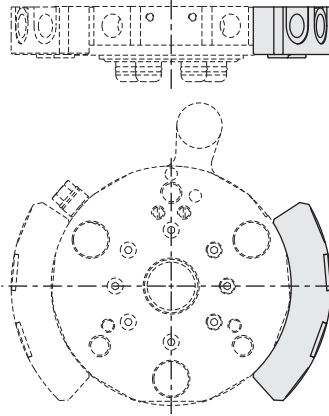
- Accessori per aggiungere 2 o 4 canali dell'aria.
- Le due parti (lato robot e lato pinza) sono fornite separatamente.
- Lo stesso accessorio può essere usato sul lato destro o sul lato sinistro.
- Adatti per il vuoto e per l'aria compressa.
- Due canali con portata elevata per ogni accessorio.



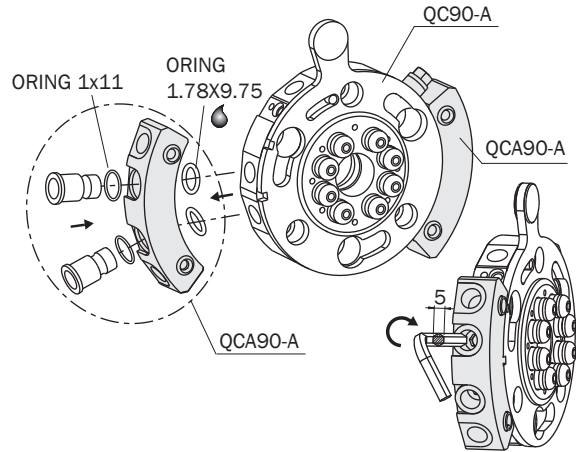
**QCA**

**Additional air ports**

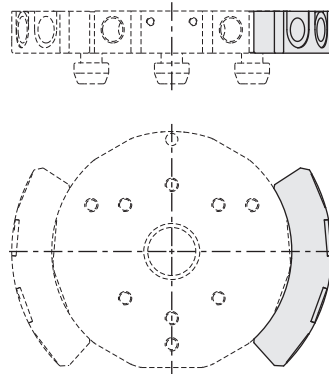
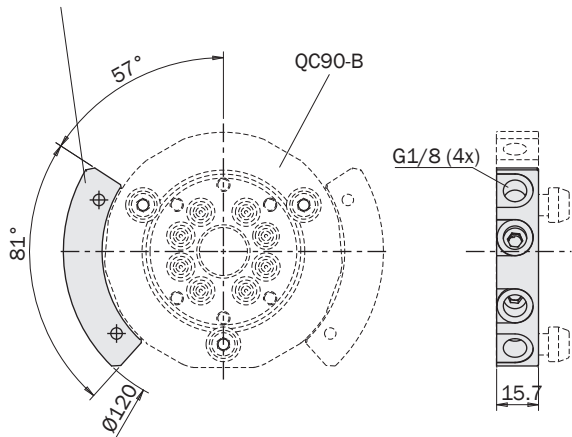
- Accessories for adding 2 or 4 extra air ports.
- The two parts (robot side and gripper side) are supplied separately.
- The accessory can be used on the left or on the right side.
- Suitable for vacuum and compressed air.
- Two high-flow air ports for each accessory.



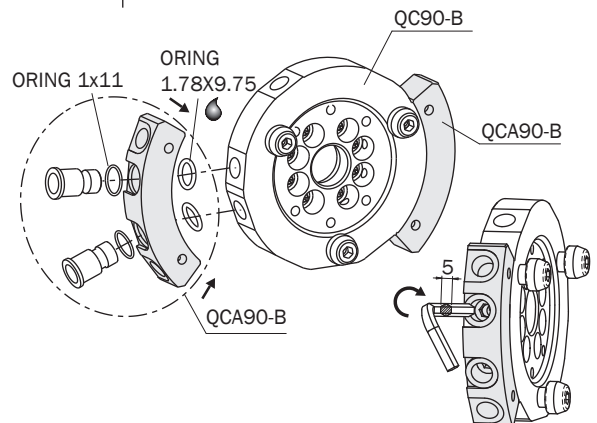
	<b>QCA90-A</b>
Peso	53 g
Weight	53 g



**QCA90-B**



	<b>QCA90-B</b>
Peso	53 g
Weight	53 g



**LOQC**

**Unità di blocco per cambia utensili QC**

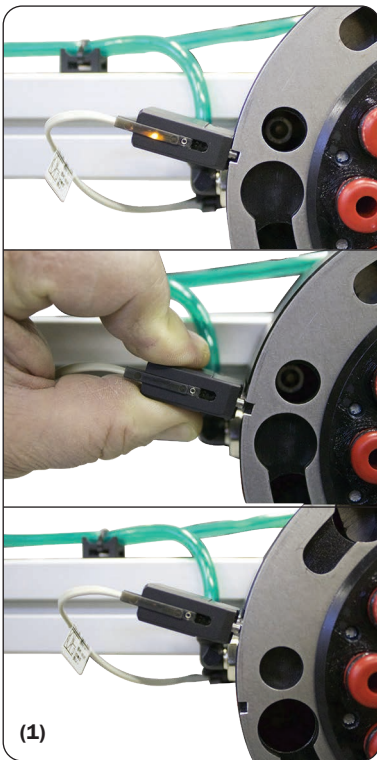
- Accessorio opzionale adatto per QC50-A, QC90-A, QC150-A, QC160-A, QC200-A, QCX90-A, QCX150-A, QCX160-A, QCX200-A.
- Di serie su QCY50-A, QCY90-A, QCY150-A, QCY200-A.
- Evita la caduta accidentale dell'EOAT.
- Sicurezza meccanica: blocca la maniglia del cambia utensile, solo se correttamente agganciata (1).
- Sicurezza elettrica: emette un segnale elettrico, solo quando è bloccata (2). Questo segnale darà il consenso per il movimento del robot. In caso di aggancio non corretto, o di un urto distruttivo sul LOQC, o di un guasto elettrico del sensore, il segnale cessa ed il robot si ferma.
- Sensore magnetico (tipo SS) (3) o induttivo (tipo SI) (4) fornito a parte.

**LOQC**

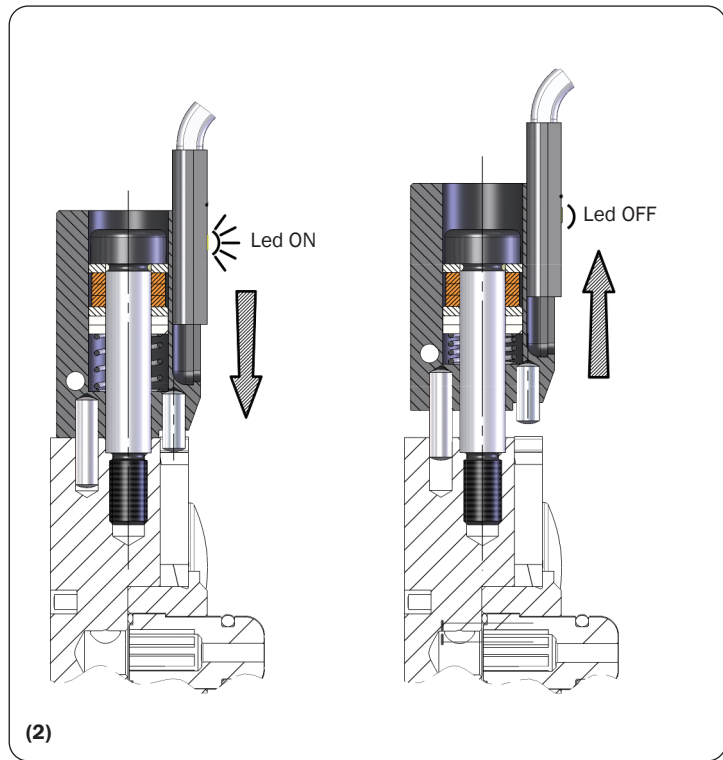
**Lock unit for QC quick changers**

- Option suitable for QC50-A, QC90-A, QC150-A, QC160-A, QC200-A, QCX90-A, QCX150-A, QCX160-A, QCX200-A.
- Standard on QCY50-A, QCY90-A, QCY150-A, QCY200-A.
- It prevents accidental falling of the EOAT.
- Mechanical safety: it locks the handle of the quick changer, only when correctly engaged (1).
- Electrical safety: it emits an electric signal, only when locked (2). This signal will give the consent to the movement of the robot. In the case of incorrect engagement, or destructive impact on the LOQC, or electrical fault of the sensor, the signal drops out and the robot stops.
- Magnetic (SS type) (3) or inductive (SI type) (4) sensor supplied a part.

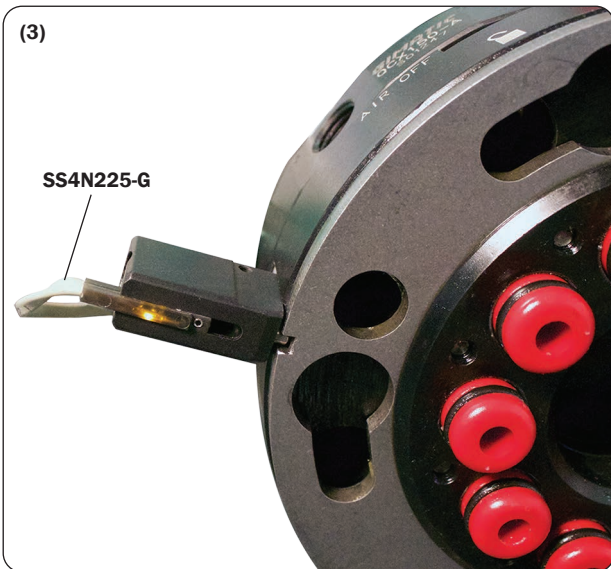
	LOQC
Peso	
Weight	20 g



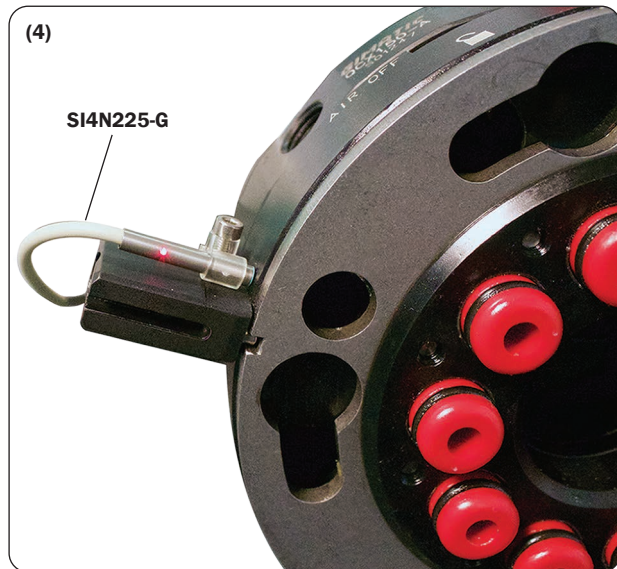
(1)



(2)



(3)



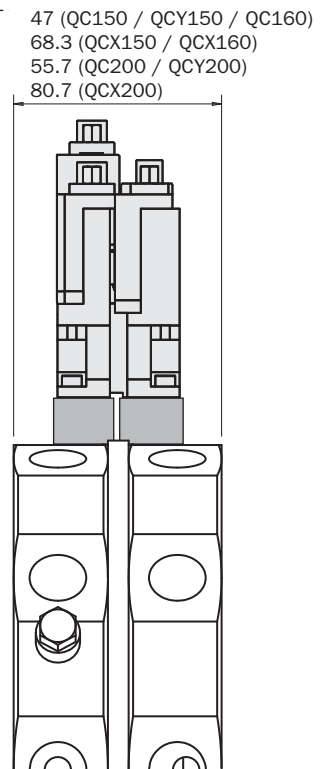
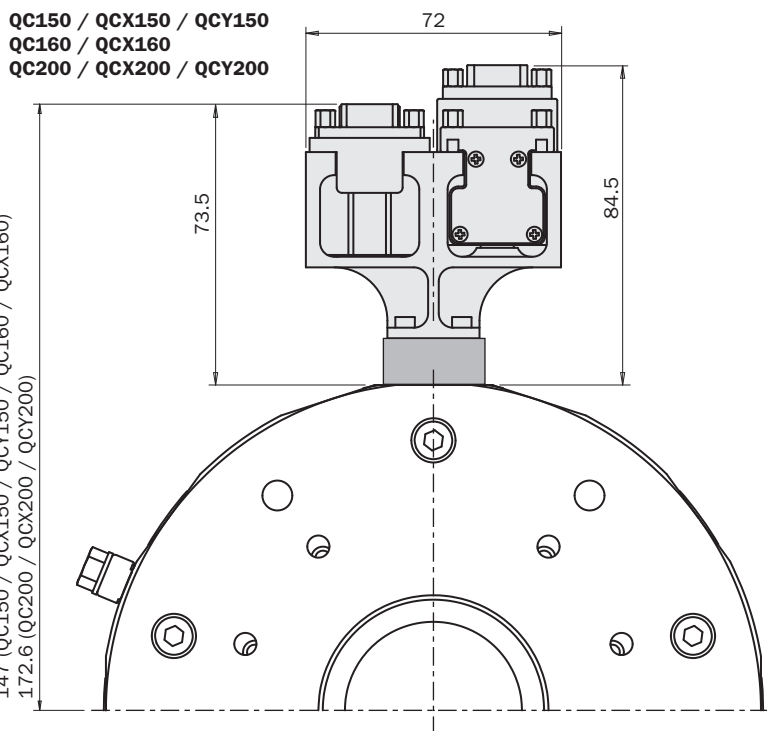
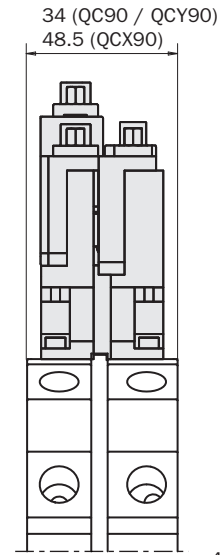
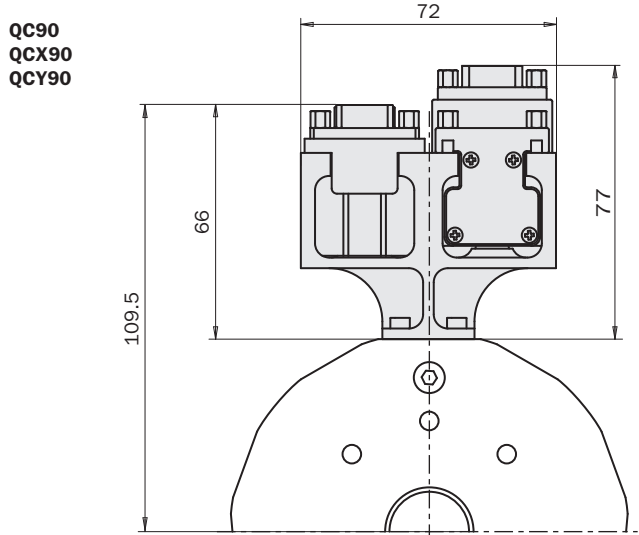
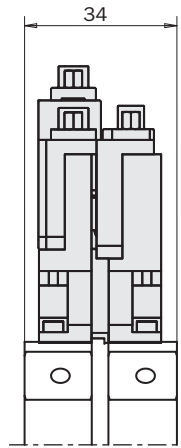
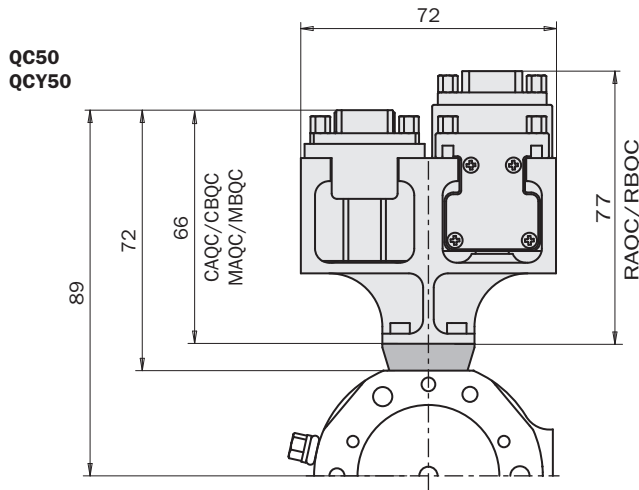
(4)

**Staffa**

CQC-012 (lato robot).  
CQC-013 (lato pinza).

**Mounting bracket**

CQC-012 (robot side).  
CQC-013 (gripper side).

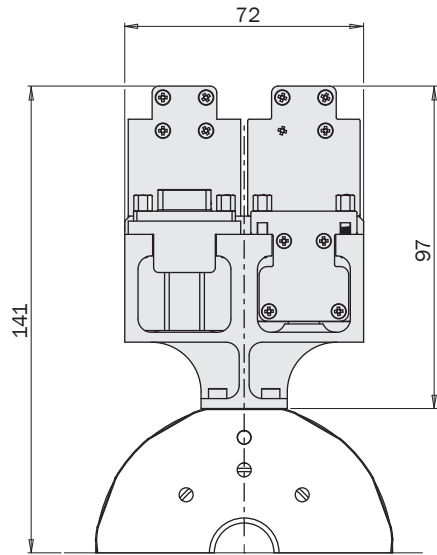
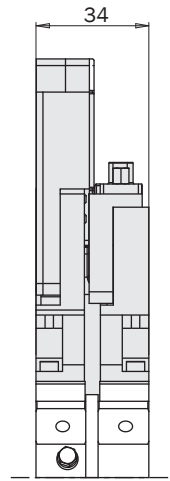
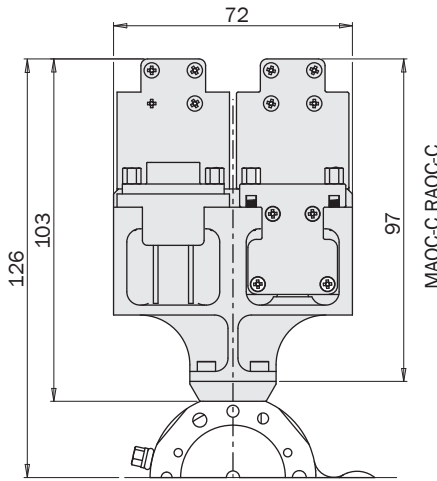


**Staffa**

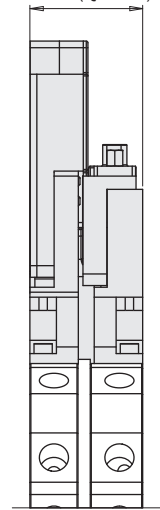
CQC-017 (lato robot).  
CQC-013 (lato pinza).

**Mounting bracket**

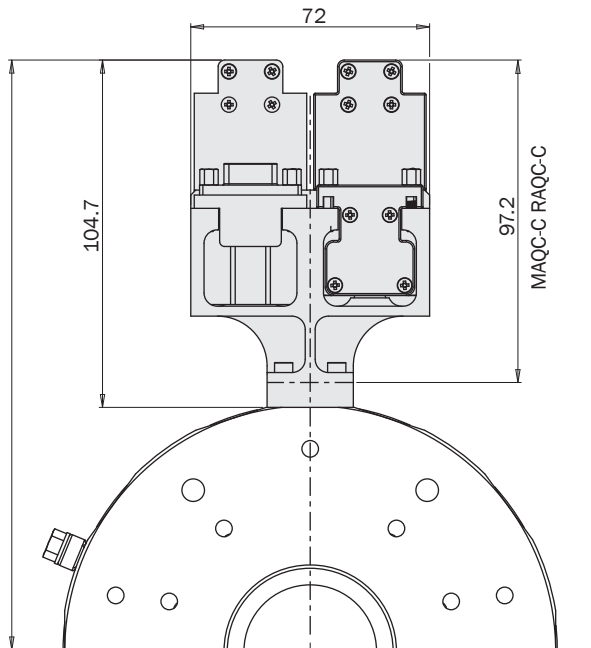
CQC-017 (robot side).  
CQC-013 (gripper side).



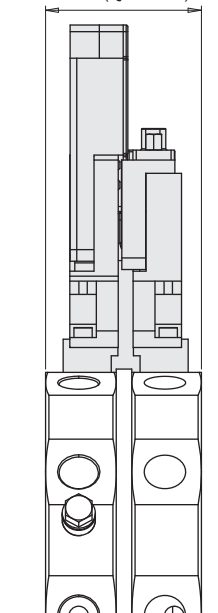
34 (QC90 / QCY90)  
48.5 (QCX90)



178.2 (QC150 / QCX150 / QCY150 / QC160 / QCX160)  
203.5 (QC200 / QCX200 / QCY200)



47 (QC150 - QCY150 / QC160)  
68.3 (QCX150 / QCX160)  
55.7 (QC200 / QCY200)  
80.7 (QCX200)

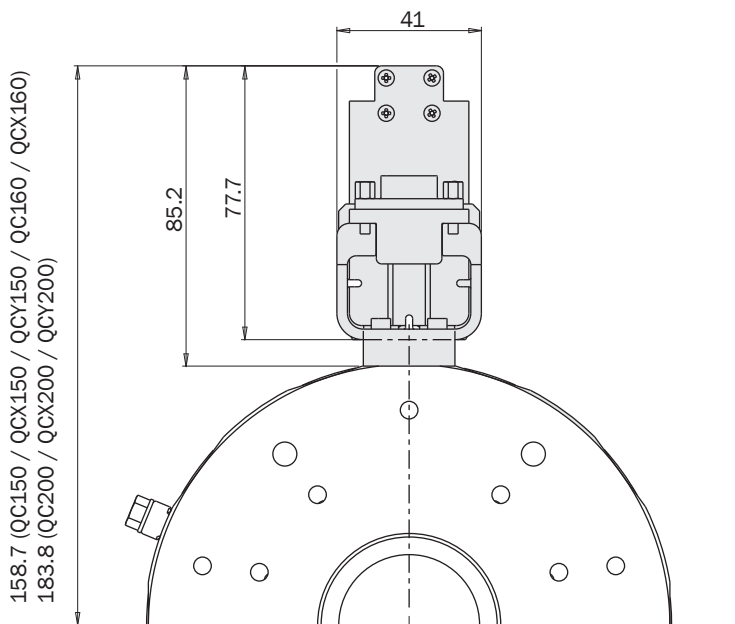
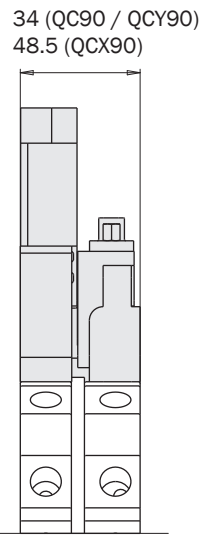
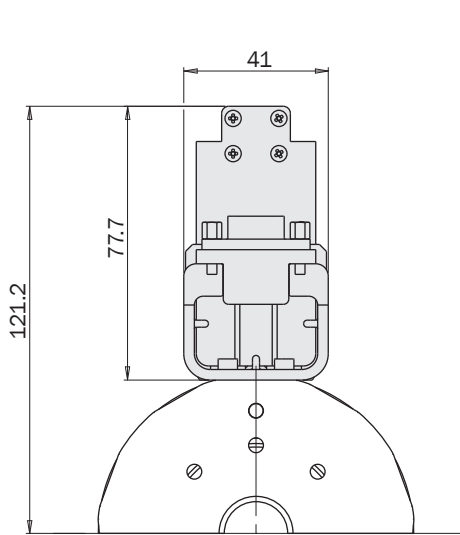
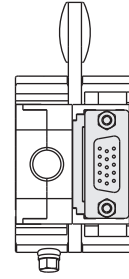
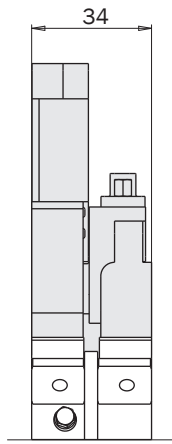
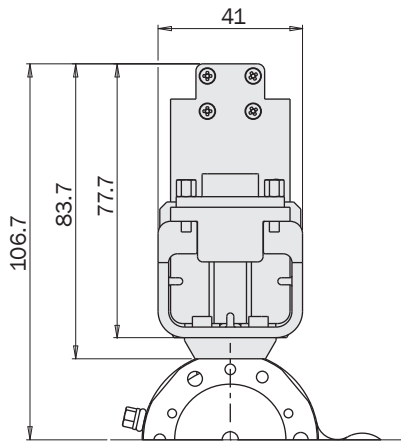


**Staffa**

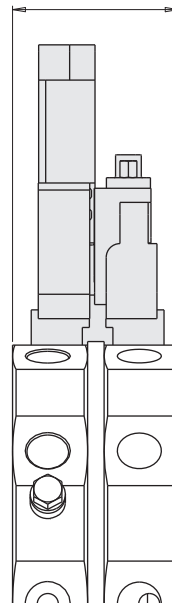
CQC-019 (lato robot).  
CQC-013 (lato pinza).

**Mounting bracket**

CQC-019 (robot side).  
CQC-013 (gripper side).



47 (QC150 / QCY150 / QC160)  
68.3 (QCX150 / QCX160)  
55.7 (QC200 / QCY200)  
80.7 (QCX200)





**AQC**

**Attuatore pneumatico per cambia utensile QC**

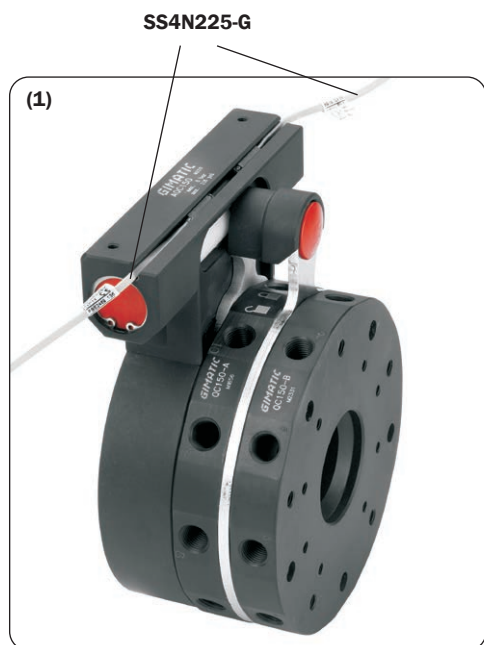
- Sensori opzionali tipo SS-G per la posizione del pistone (1) e sensori opzionali tipo SI4 per la prossimità del lato pinza QC...-B (2).
- Compatibile con QC90-A e QC150-A senza LOQC (3).

**AQC**

**Pneumatic actuator for quick changer QC**

- Optional sensors series SS-G to detect the piston position (1) and optional sensors series SI4 to detect the proximity of the QC...-B gripper side (2).
- Compatible with QC90-A and QC150-A without LOQC (3).

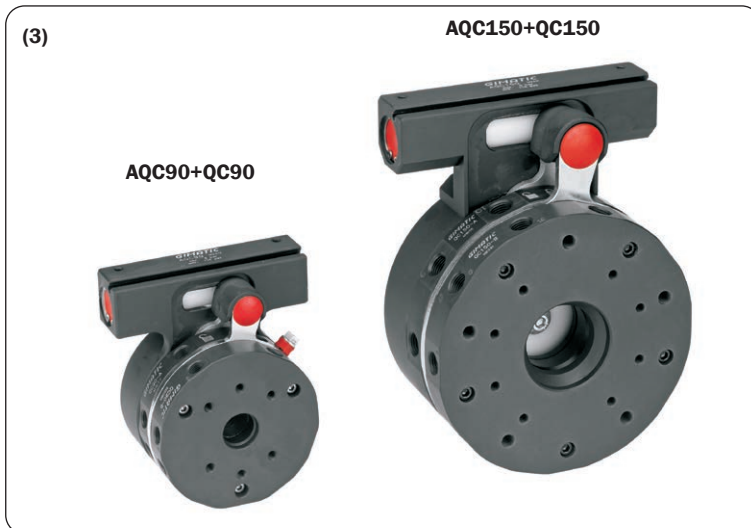
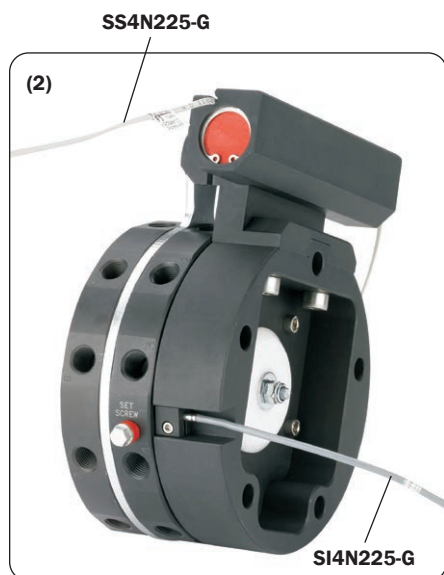
	AQC90	AQC150
Peso Weight	560 g	1480 g



AQC90

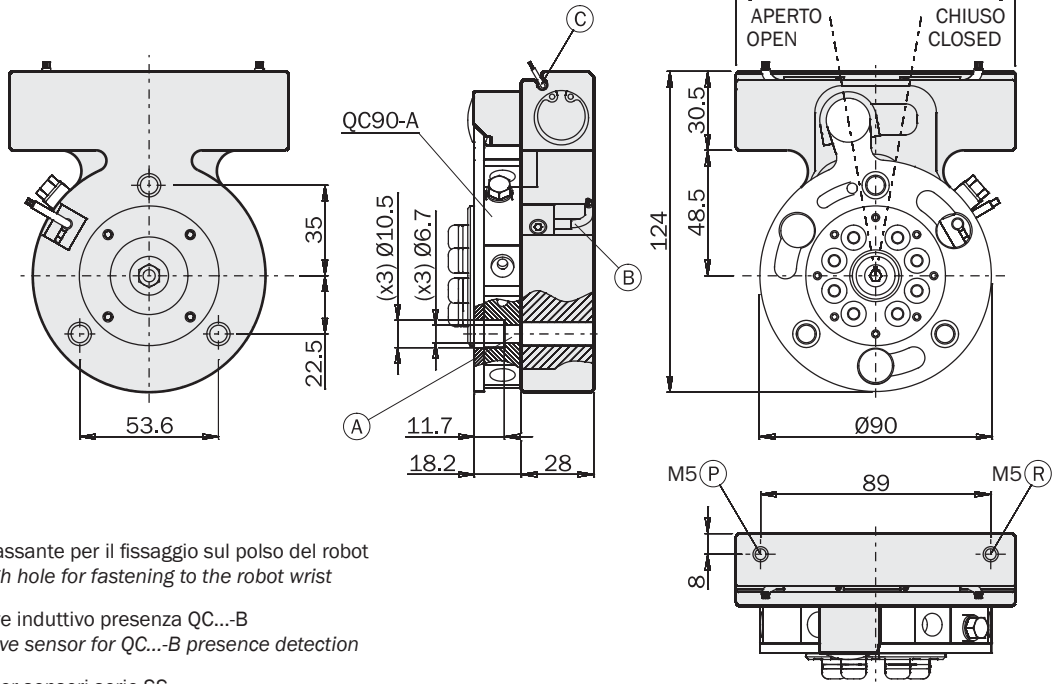


AQC150



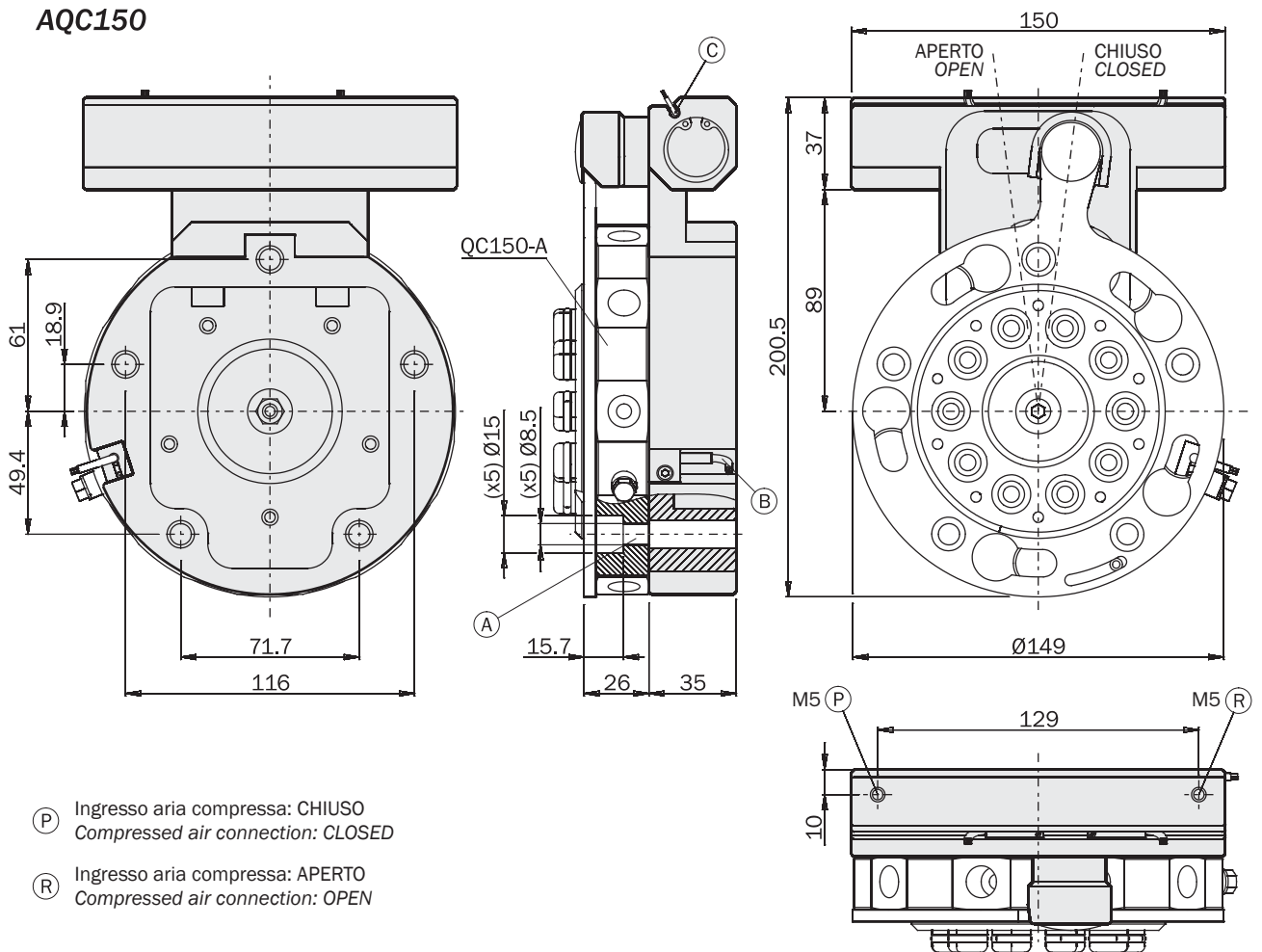
**Dimensioni (mm)**  
**Dimensions (mm)**

**AQC90**



- (A) Foro passante per il fissaggio sul polso del robot  
Through hole for fastening to the robot wrist
- (B) Sensore induttivo presenza QC...-B  
Inductive sensor for QC...-B presence detection
- (C) Sede per sensori serie SS  
Slot for SS series sensors

**AQC150**

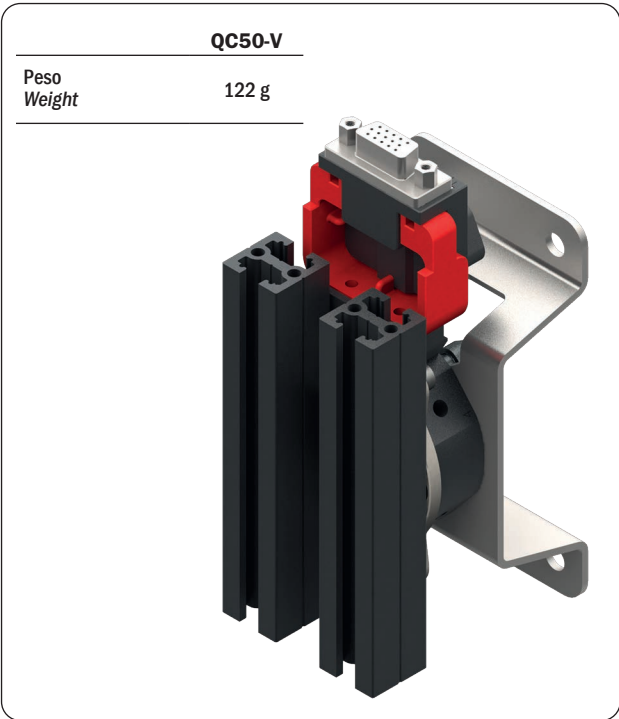
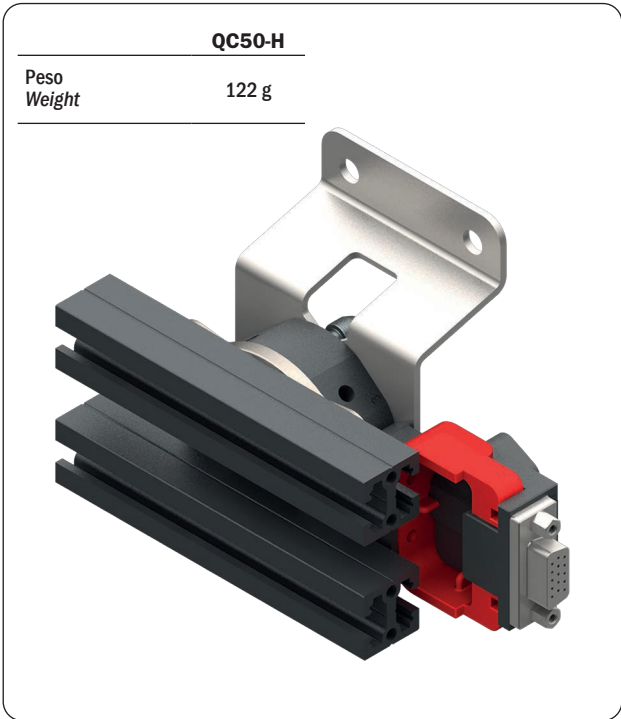


- (P) Ingresso aria compressa: CHIUSO  
Compressed air connection: CLOSED
- (R) Ingresso aria compressa: APERTO  
Compressed air connection: OPEN

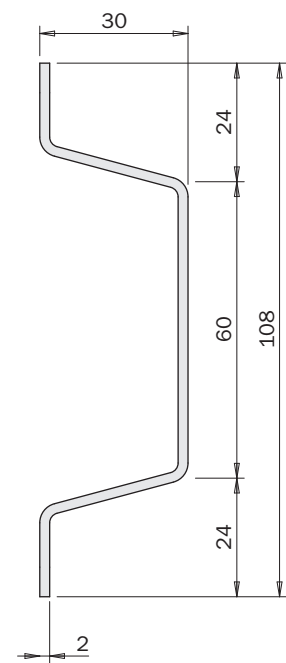
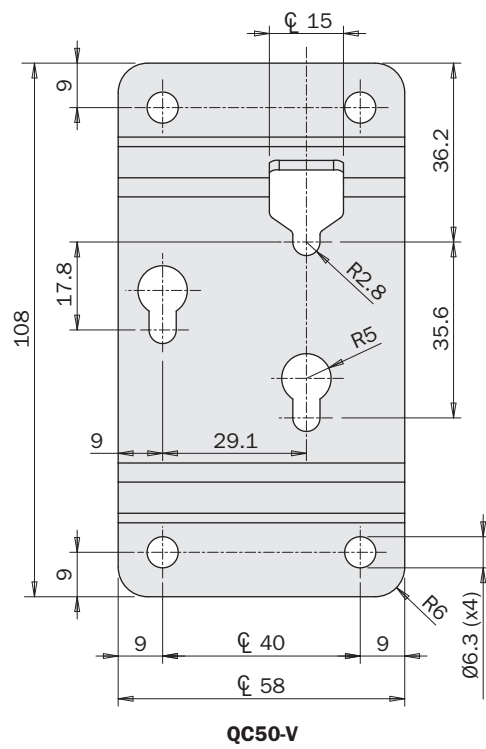
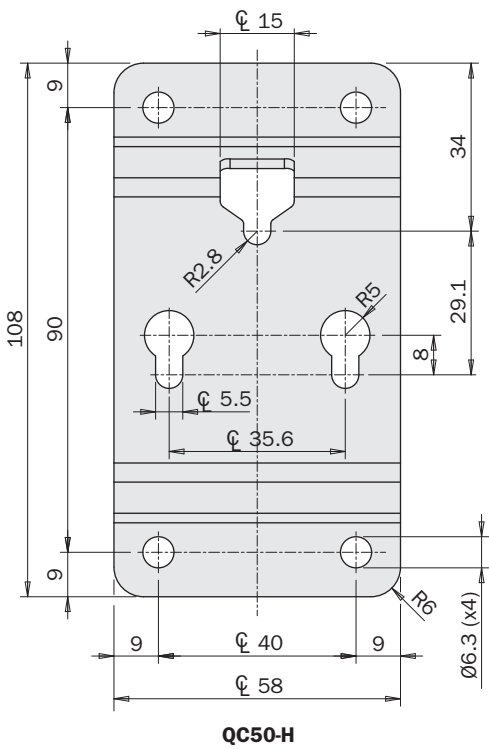


Magazzino per QC50-B

QC50-B Storage

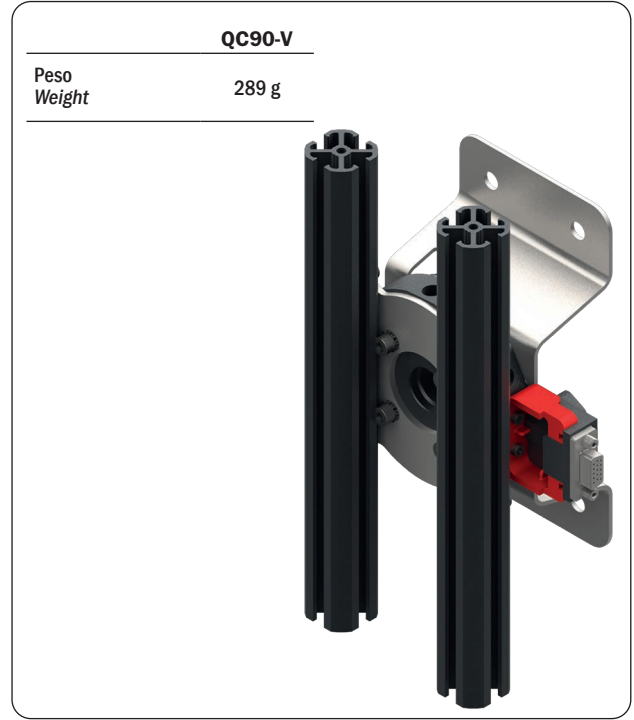
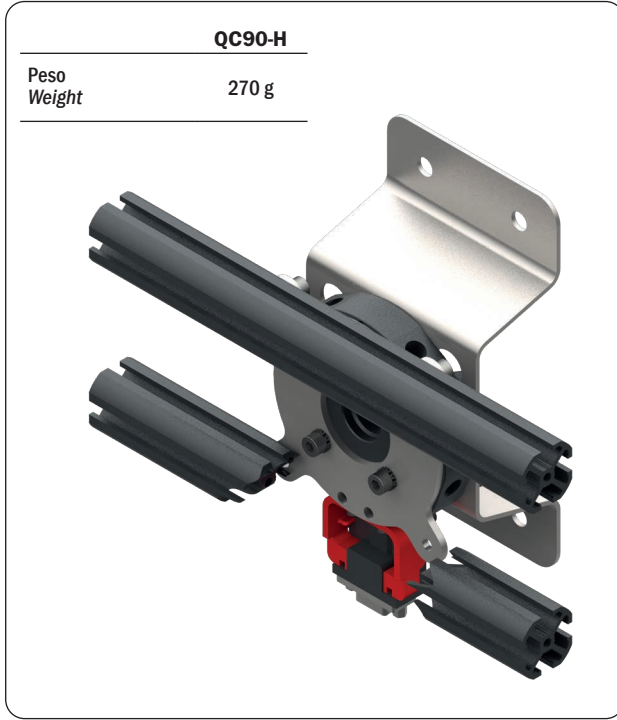


Dimensioni (mm)  
Dimensions (mm)

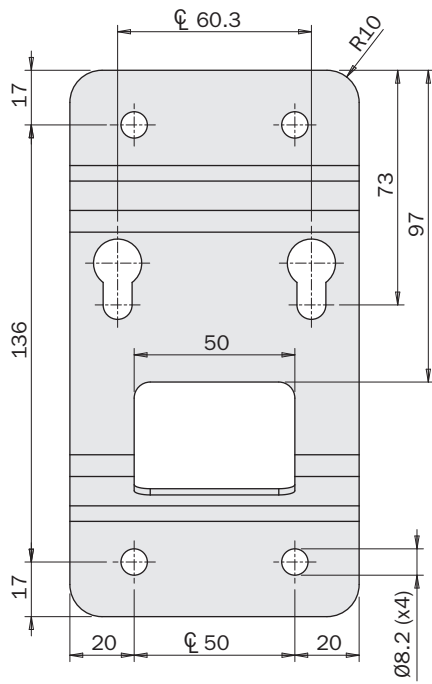


Magazzino per QC90-B

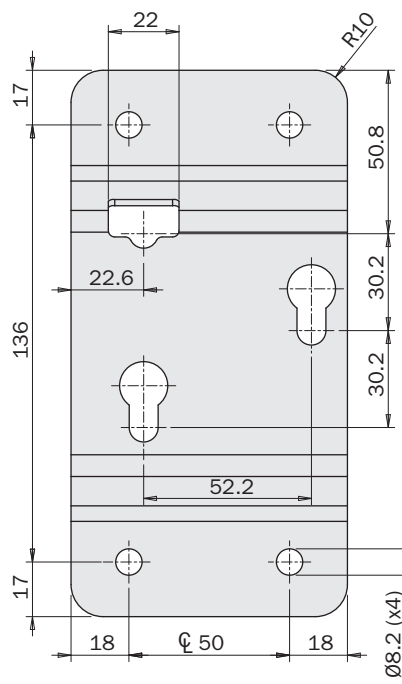
QC90-B Storage



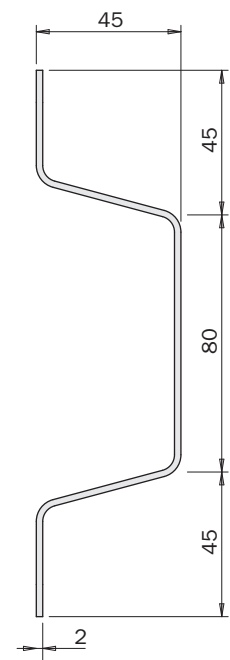
Dimensioni (mm)  
Dimensions (mm)



QC90-H

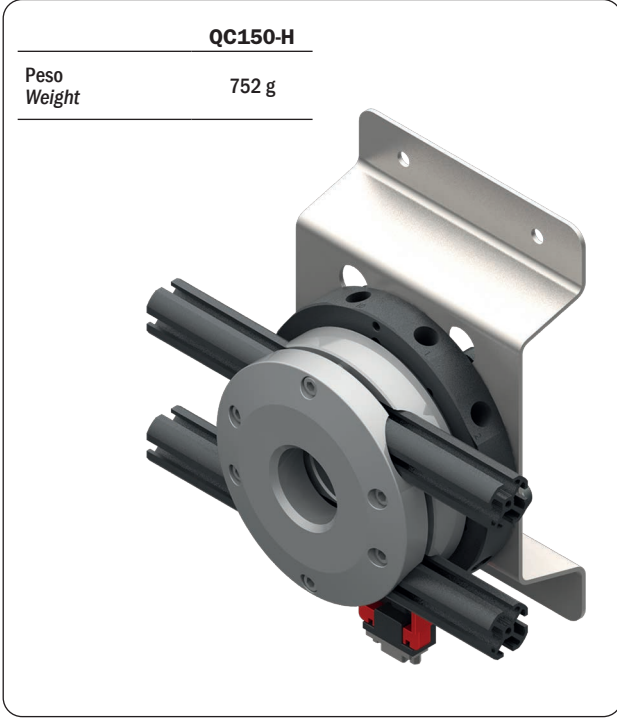


QC90-V

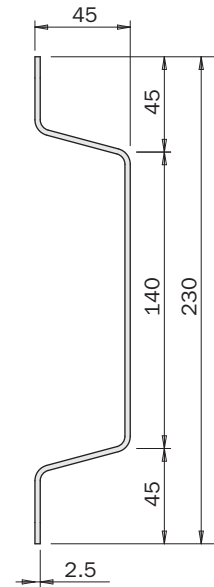
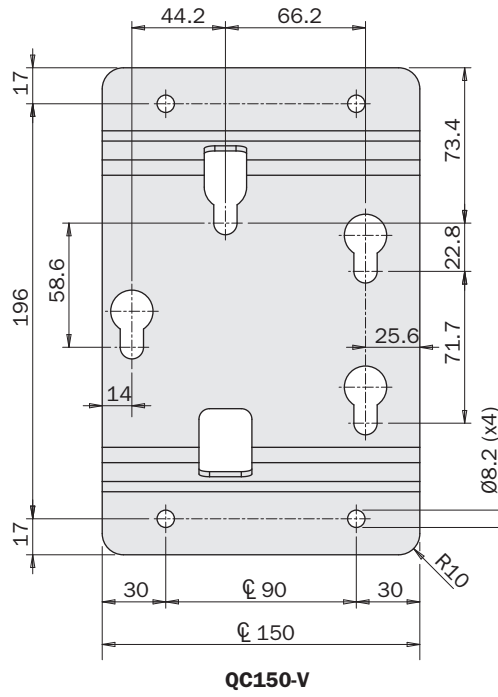
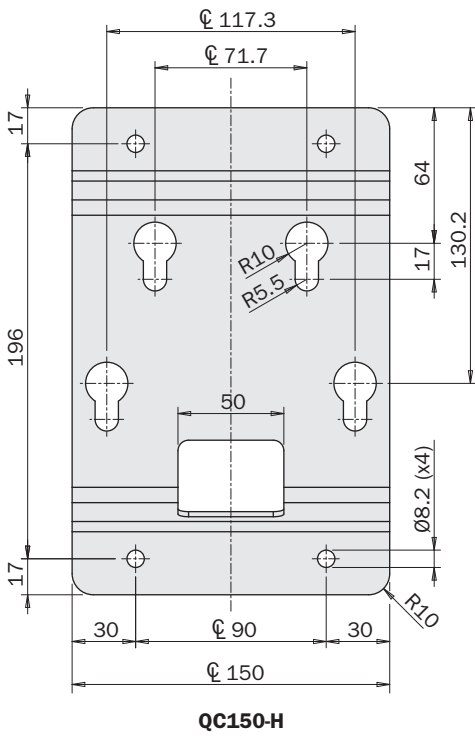


Magazzino per QC150-B/QC160-B

QC150-B/QC160-B Storage

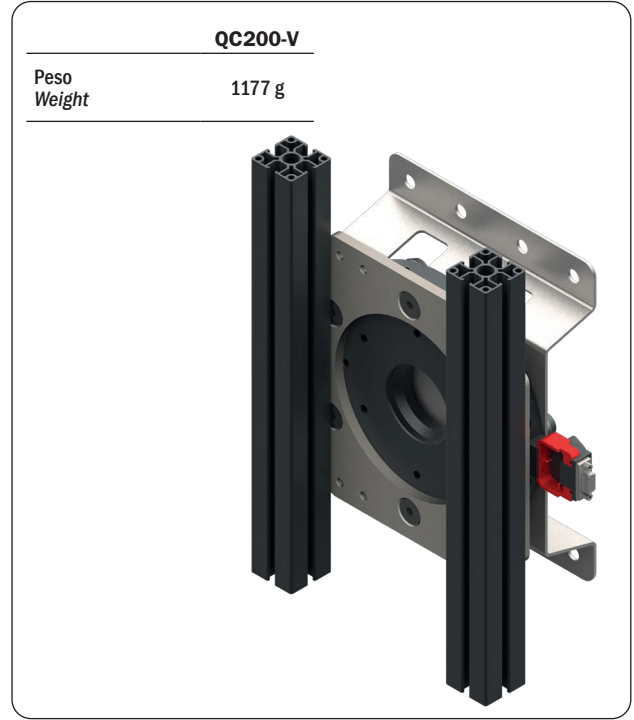
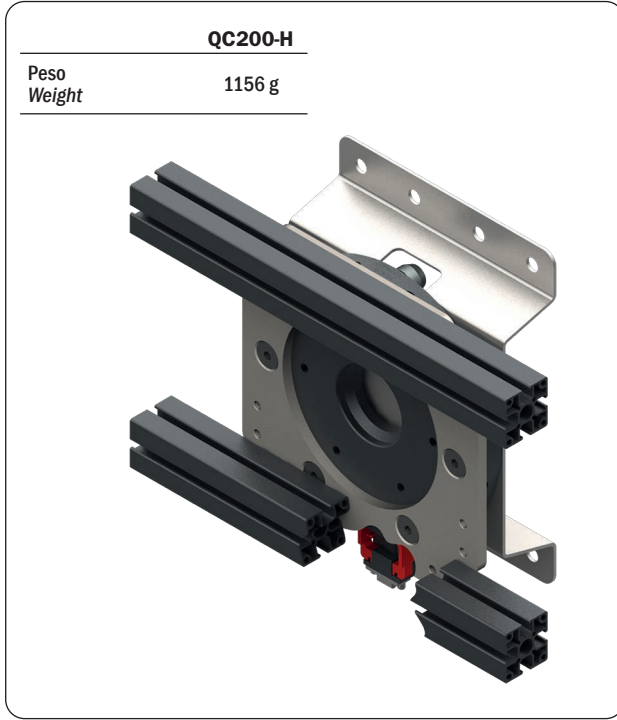


Dimensioni (mm)  
Dimensions (mm)

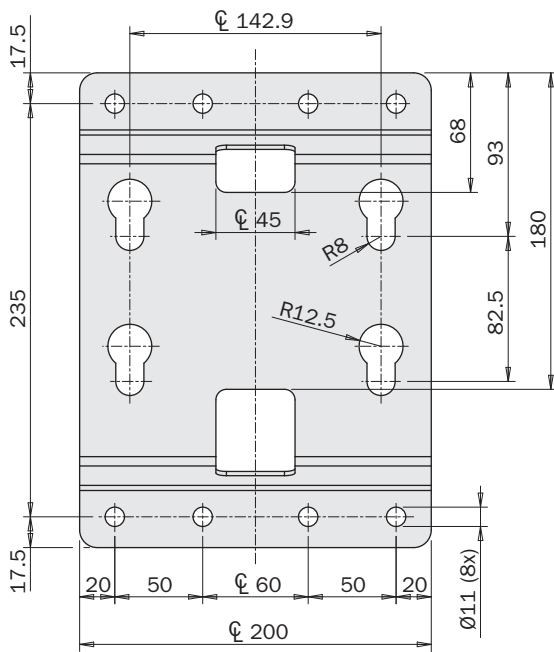


Magazzino per QC200-B

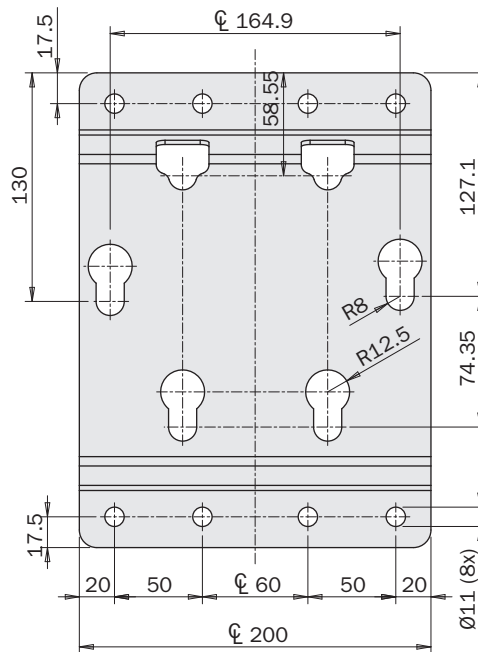
QC200-B Storage



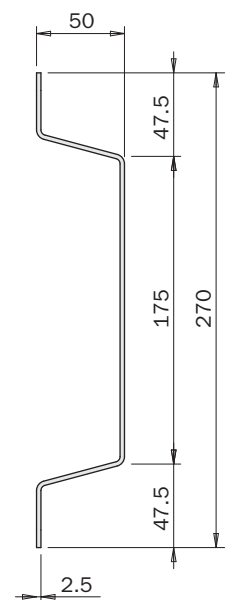
Dimensioni (mm)  
Dimensions (mm)



QC200-H



QC200-V



## Moduli di connessione elettrica

- 15 connessioni elettriche Ø1 mm.
- Le due parti sono fornite separatamente:  
PMAQC/PAQC/MAQC/CAQC - lato robot;  
PMBQC/PBQC/MBQC/CBQC - lato pinza.

## Electrical connection modules

- 15 pins Ø1 mm.
- The two parts are supplied separately:  
PMAQC/PAQC/MAQC/CAQC - robot side;  
PMBQC/PBQC/MBQC/CBQC - gripper side.

**CAQC**

**CBQC**

**MAQC**

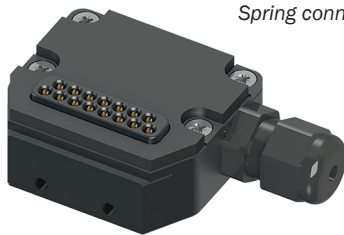
 Connettori a molla  
Spring connectors

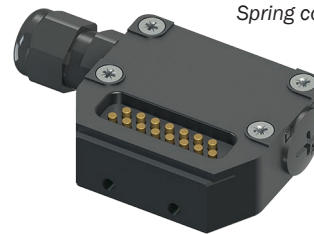
**MBQC**

 Connettori a molla  
Spring connectors

**PAQC**

**PBQC**

**PMAQC**

 Connettori a molla  
Spring connectors

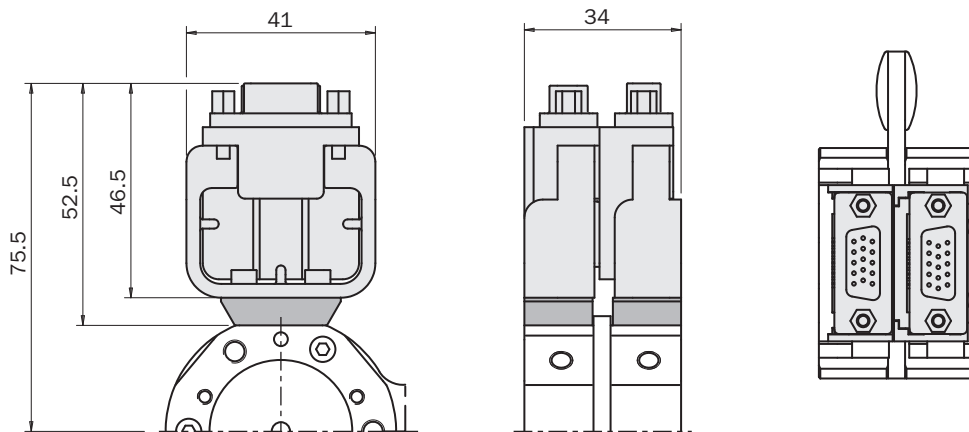
**PMBQC**

 Connettori a molla  
Spring connectors

	CAQC	CBQC	MAQC	MBQC	PAQC	PBQC	PMAQC	PMBQC
Tipo di connessione I/O I/O connection type	15 pin D-SUB - Connettore alta densità - Tipo VGA 15 pins D-SUB - High density connector - VGA type				15 pin 15 pins			
Corrente d'esercizio Working Current	2 A (0.5A assoluto con CEQC-A, CEQC-B) 2A (0.5A absolute value with CEQC-A, CEQC-B)				3A		0.5	
Tensione di scarica Break down voltage	0 ÷ 250 Vac							
Temperatura di esercizio Temperature range	-55°C ÷ +105°C							
Contatti Contact	Dorati Gold plated							
Massima sezione dei conduttori Maximum conductor cross-section					AWG28			
Diametro esterno massimo del cavo Maximum cable outer diameter					7 mm			

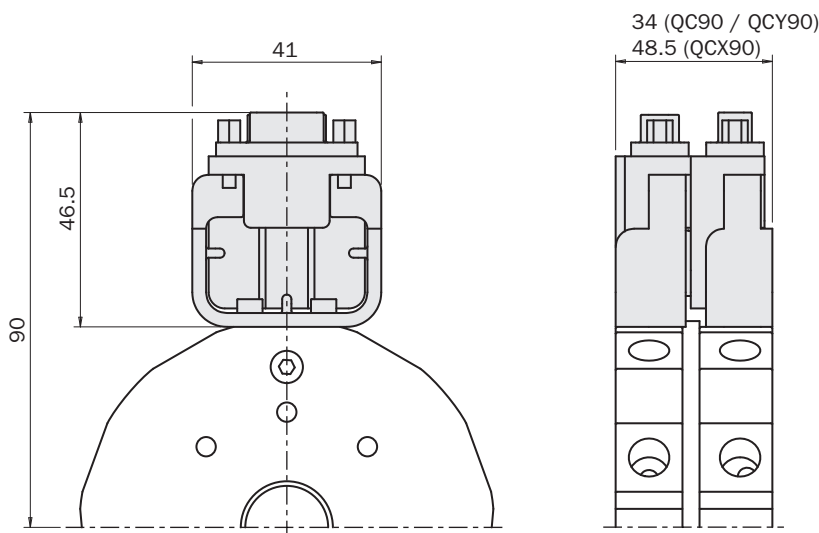
**Dimensioni (mm)**  
**Dimensions (mm)**

FIRST ANGLE  
PROJECTION

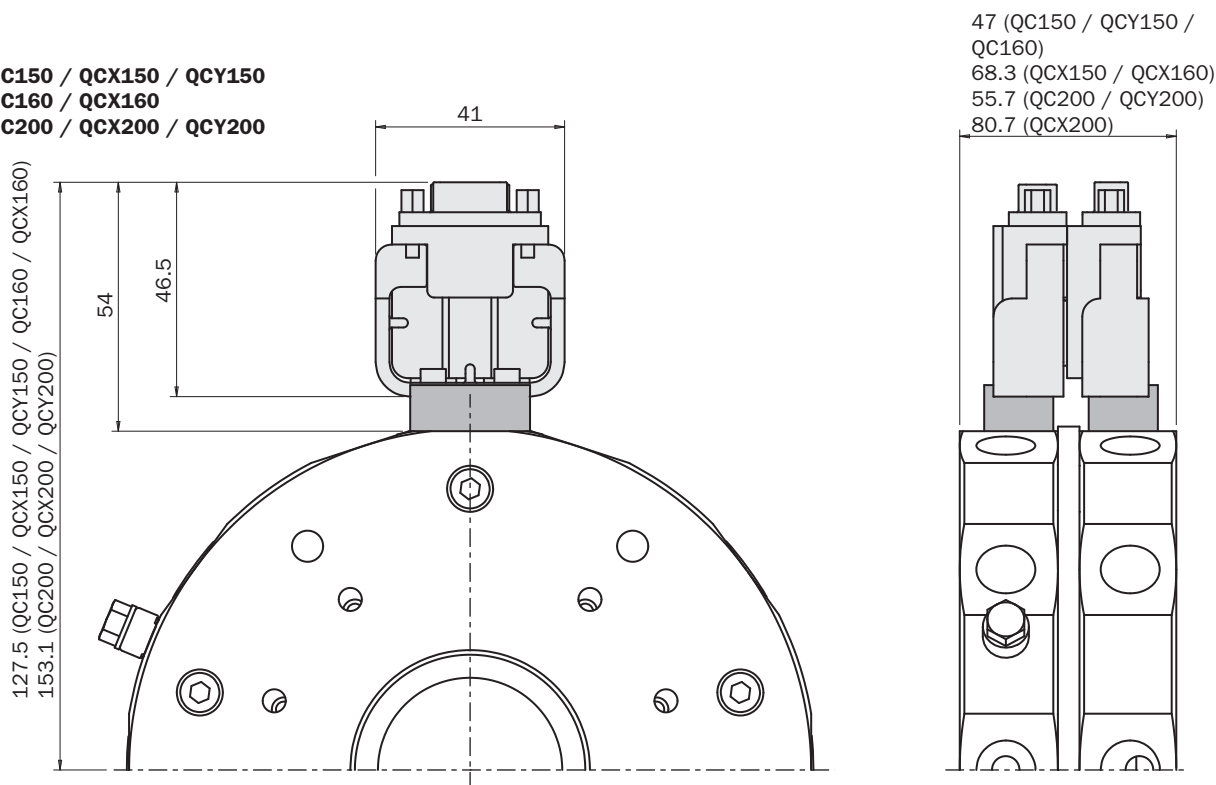
**QC50**  
**QCY50**



**QC90**  
**QCX90**  
**QCY90**



**QC150 / QCX150 / QCY150**  
**QC160 / QCX160**  
**QC200 / QCX200 / QCY200**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

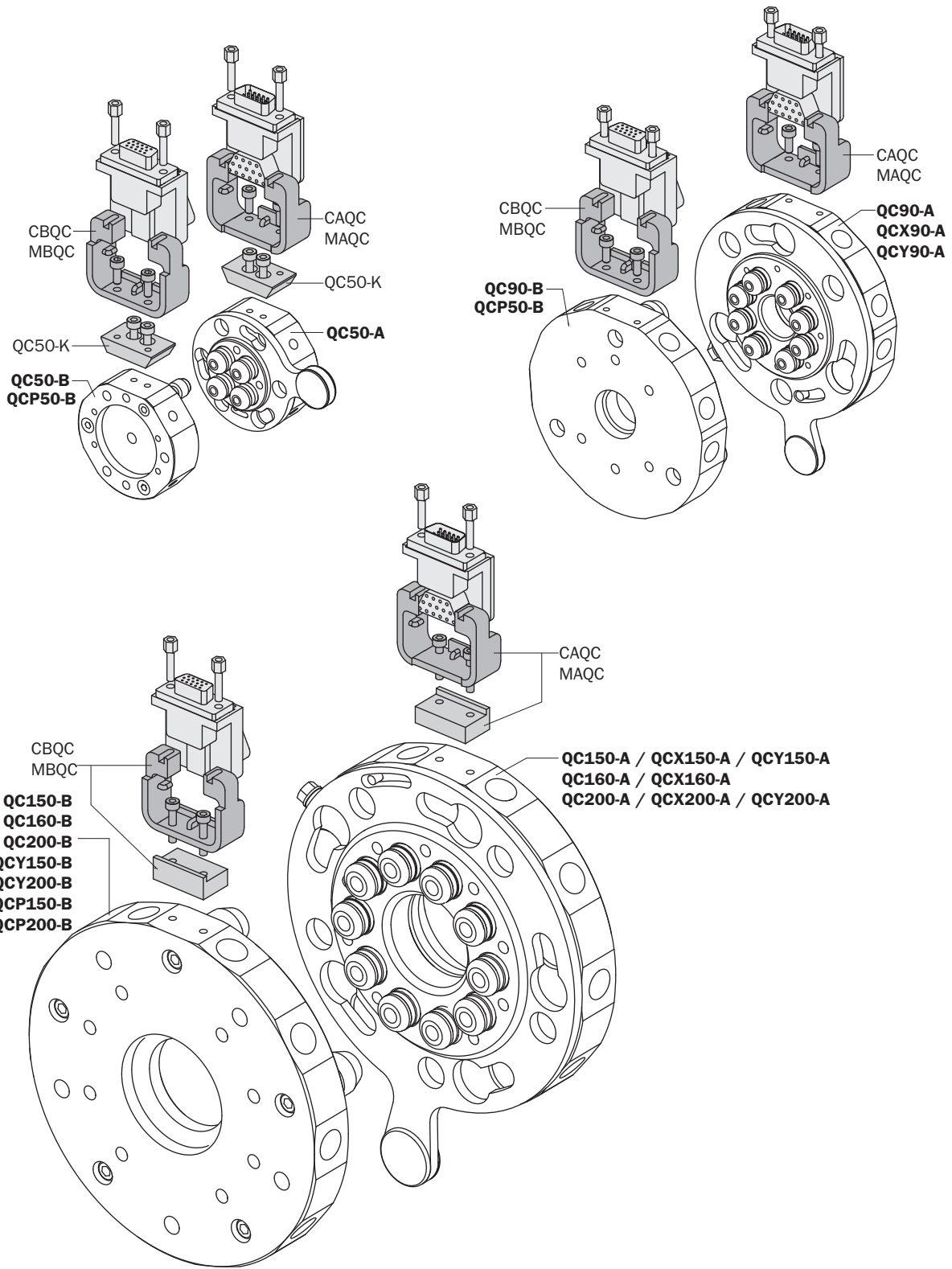
Kit-Robot  
Robot Kit

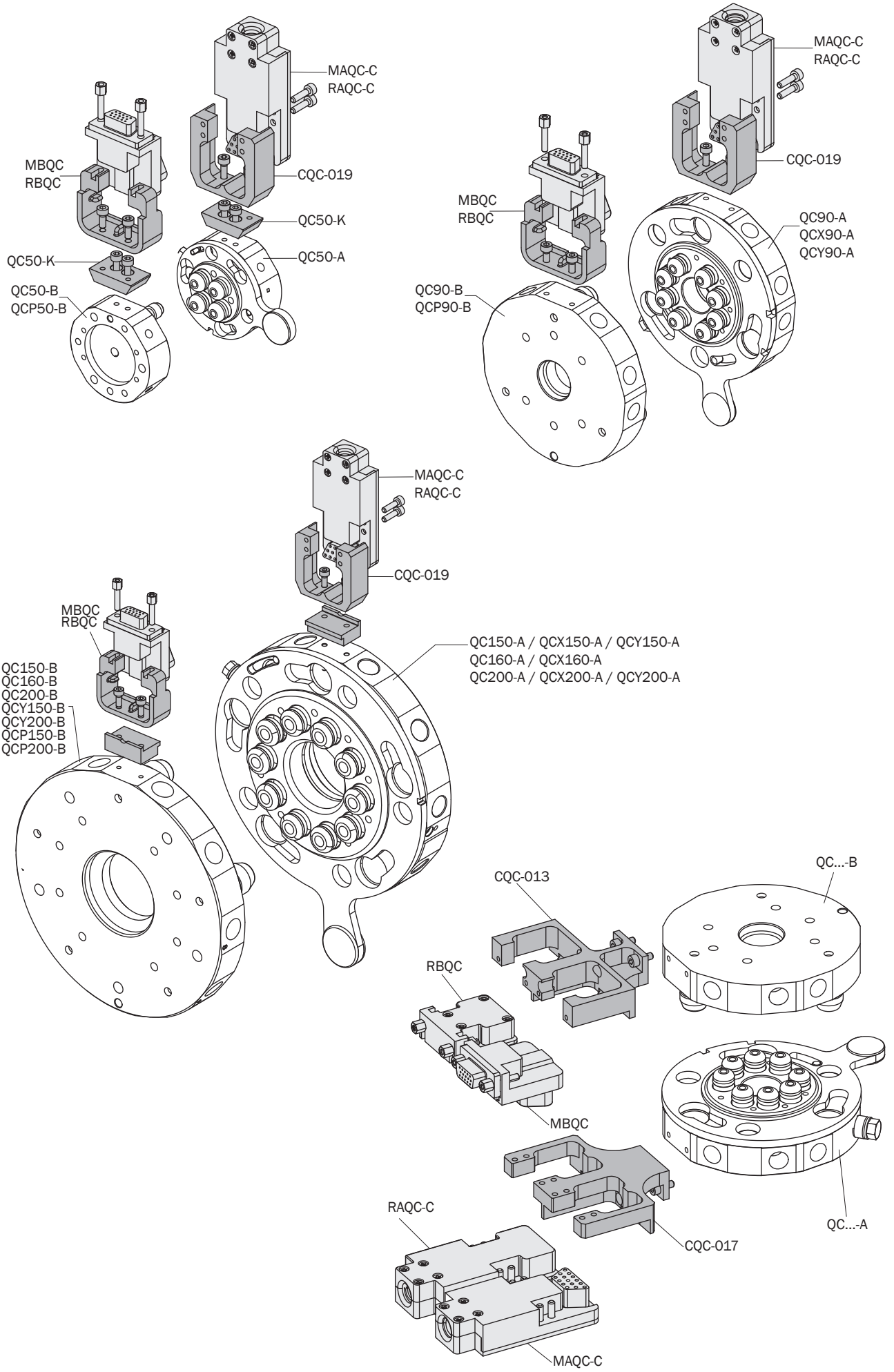
Accessori Opzionali  
Options

Sensori  
Sensors



## Fissaggio Fastening





Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

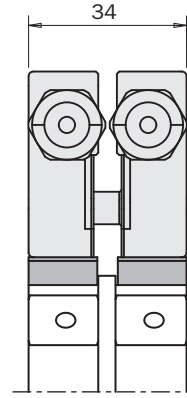
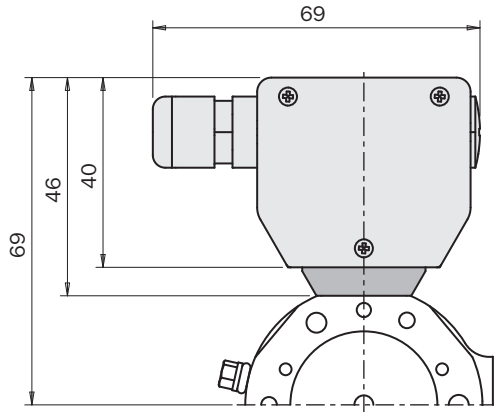
Accessori Opzionali  
Options

Sensori  
Sensors

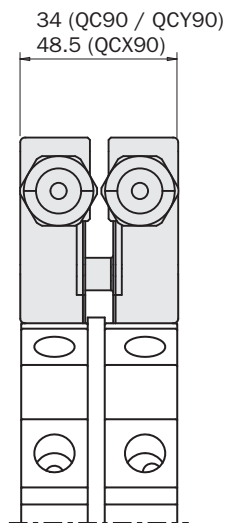
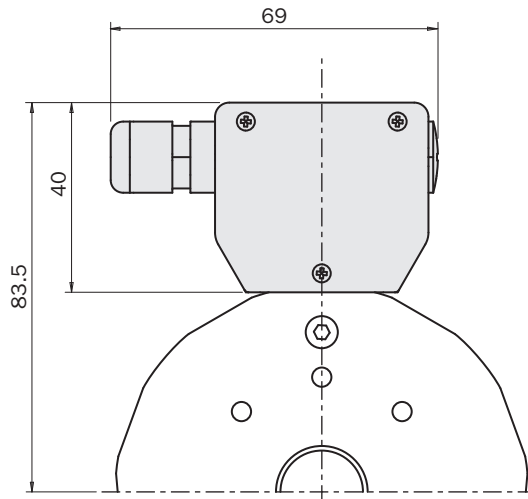
## Dimensioni (mm) Dimensions (mm)



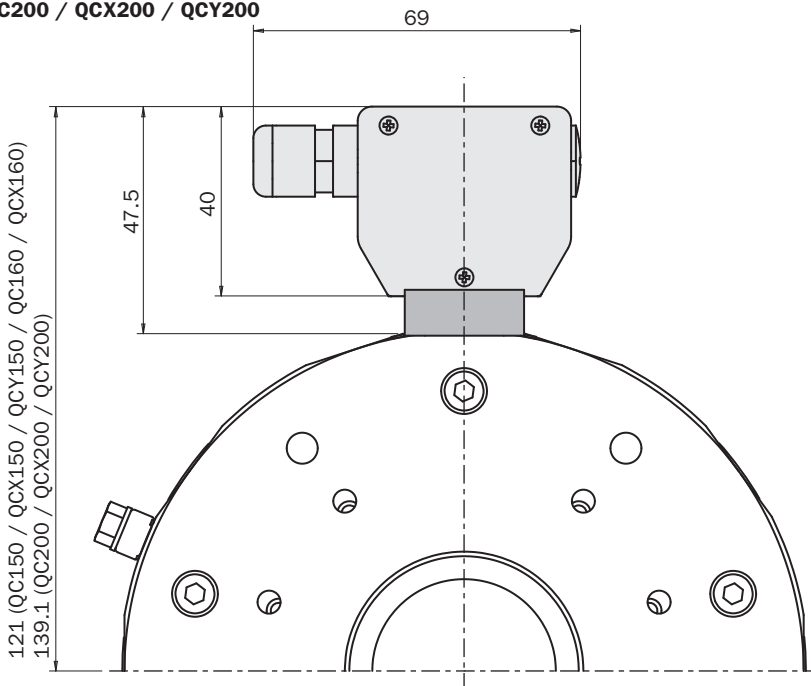
**QC50  
QCY50**



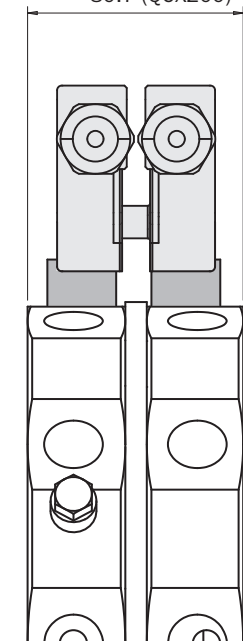
**QC90  
QCX90  
QCY90**



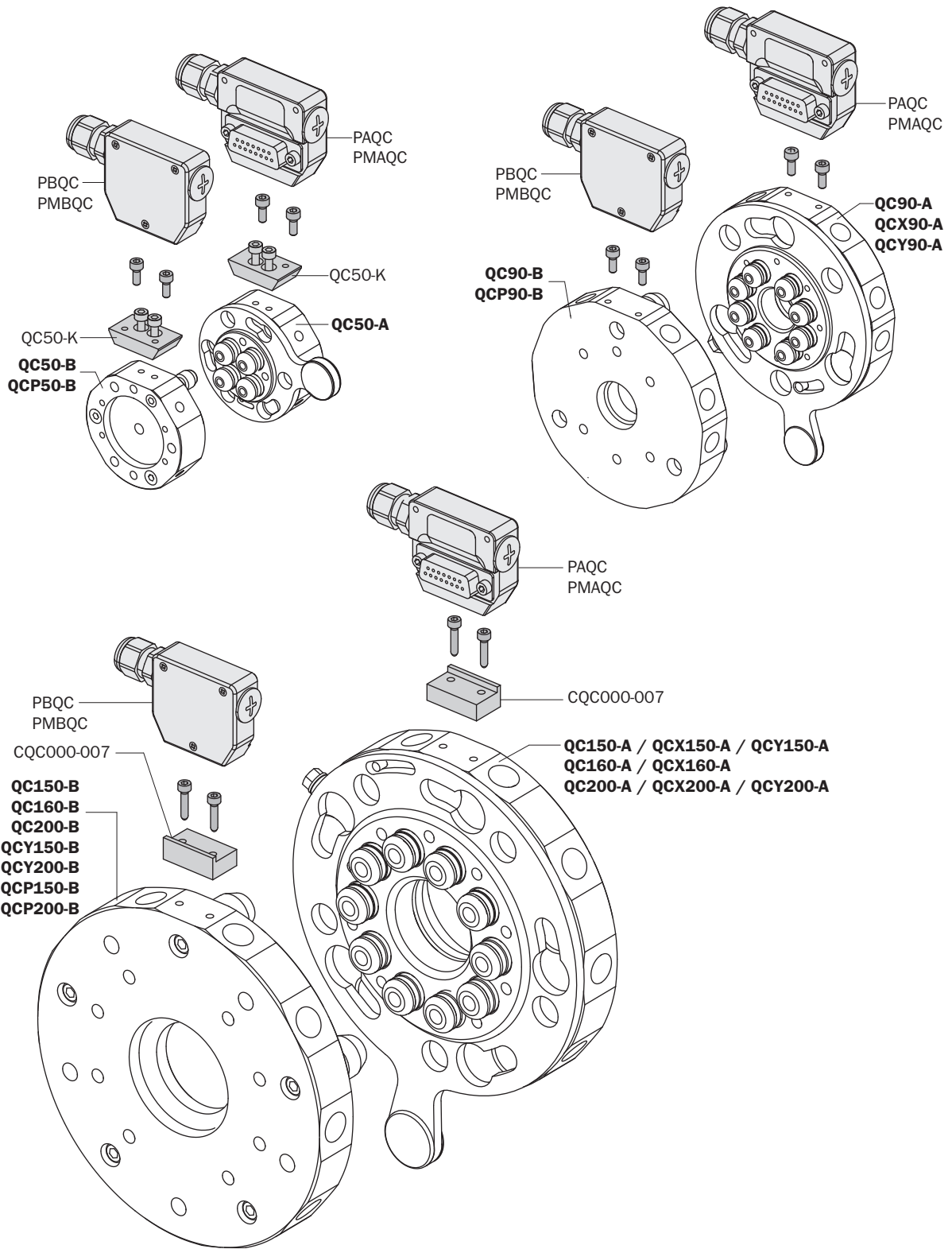
**QC150 / QCX150 / QCY150  
QC160 / QCX160  
QC200 / QCX200 / QCY200**



47 (QC150 / QCY150 / QC160)  
68.3 (QCX150 / QCX160)  
55.7 (QC200 / QCY200)  
80.7 (QCX200)

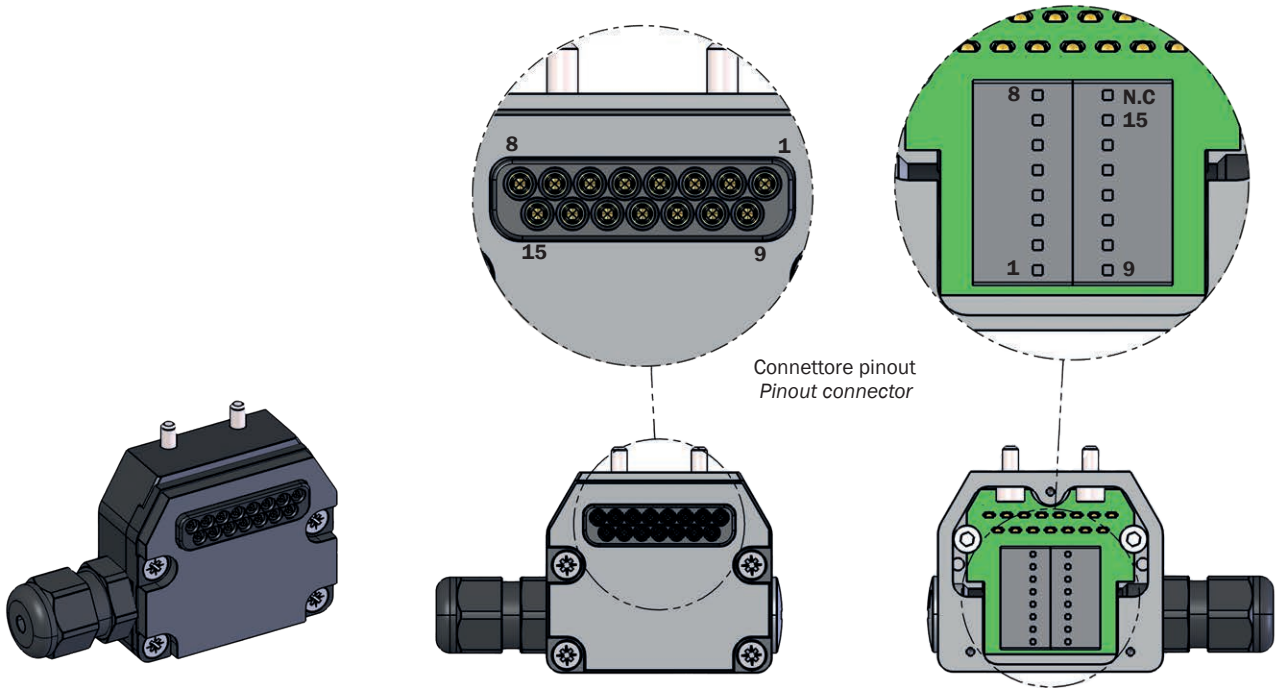


**Fissaggio  
Fastening**



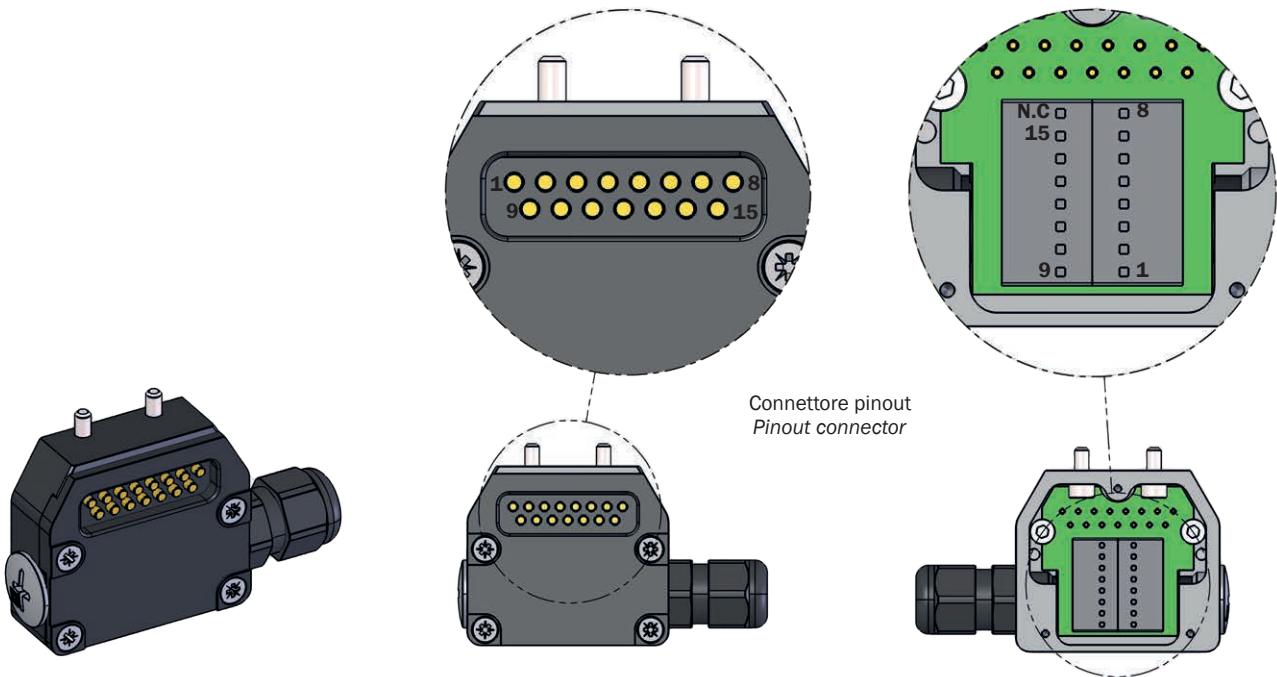
## PMAQC

### Connettore elettrico femmina Female electrical connector



## PMBQC

### Connettore elettrico maschio Male electrical connector



**RAQC / RBQC**

Moduli di identificazione RFID.

Sistema di riconoscimento automatico dell'organo di presa composto da un lettore RFID (RAQC) ed un TAG di memoria (RBQC).

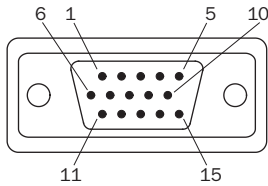
- Fino a 255 utensili distinguibili.
- Codifica binaria dell'utensile tramite 8 uscite digitali 24 Vdc.
- Ingresso digitale per il conteggio dei cicli di esecuzione dell'utensile.
- Uscita digitale per segnalazione intervento manutentivo richiesto dall'utensile al raggiungimento del numero cicli impostato.
- Attacco rapido I/O attraverso connettore VGA.
- Memorizzazione dati tecnici dell'utensile.
- Disponibile area dati utente.
- Le due parti sono fornite separatamente:  
RAQC - lato robot (Lettore);  
RBQC - lato utensile (TAG).

**RAQC / RBQC**

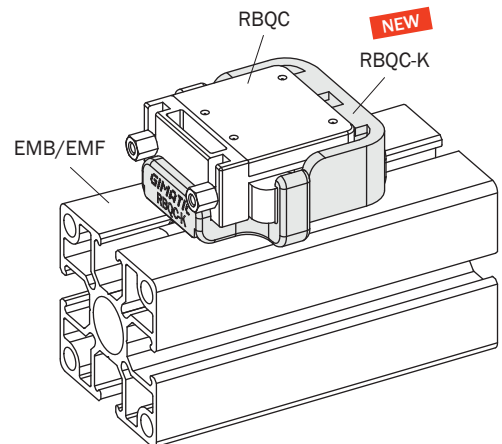
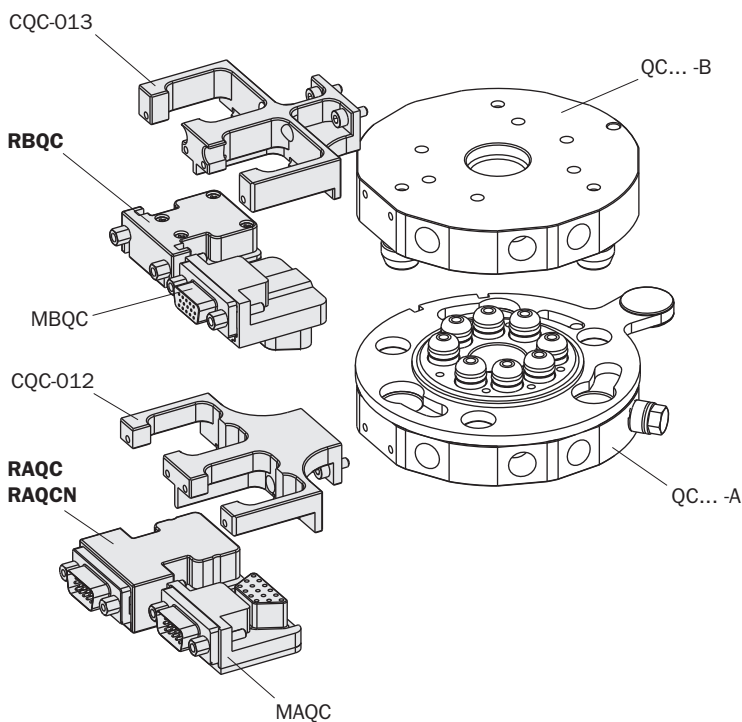
RFID identification modules.

System for automatic recognition of gripping tool composed of a RFID reader (RAQC) and a memory TAG (RBQC).

- Up to 255 identifiable tools.
- Binary coding of tools by means of 8 digital outputs 24 Vdc.
- Digital input to counting tool cycles execution.
- Generation of a maintenance warning signal once the tool reaches the preset number of cycles.
- I/O quick change by VGA connector.
- Memorization of tool technical data.
- User data memory available.
- The two parts are supplied separately:  
RAQC - robot side (Reader);  
RBQC - tool side (TAG).



1	DOUT1	6	24 Vdc	11	DOUT5
2	DOUT2	7	DOUT_CNT	12	DOUT6
3	N/C	8	DOUT3	13	DOUT7
4	GND	9	DOUT_FAULT	14	DOUT8
5	N/C	10	DOUT4	15	DIN_COUNT

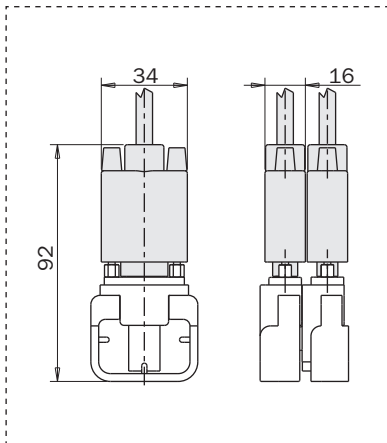
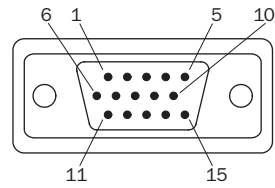
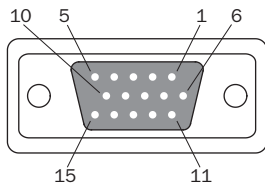
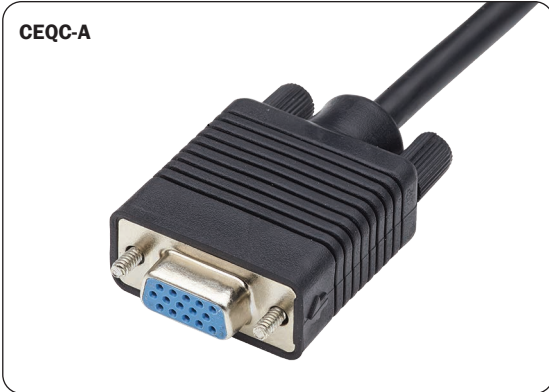


## CEQC-A, CEQC-B

Sono forniti separatamente i cavi maschio e femmina necessari alla connessione elettrica secondaria.

## CEQC-A, CEQC-B

The male and female cables required for the secondary electrical connection are supplied separately.



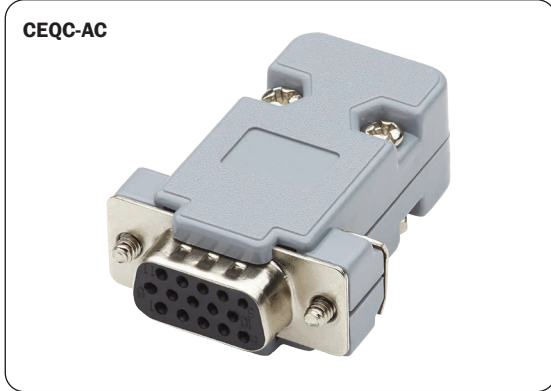
01	Arancio Orange
02	Giallo Yellow
03	Verde scuro Deep Green
04	Blu Blue
05	Verde chiaro Light Green
06	Marrone Brown
07	Marrone / Bianco Brown / White
08	Rosso Red

09	Rosso / Bianco Red / White
10	Rosa Pink
11	Viola Violet
12	Grigio Gray
13	Bianco White
14	Nero Black
15	Nero / Bianco Black / White

	CEQC-A	CEQC-B
Tipo di connessione I/O I/O connection type	15 pin D-SUB - Tipo VGA 15-pin D-SUB - VGA type	
Lunghezza cavo Cable length	1500 mm	
Isolamento Insulation	PVC	
Schermatura Shield	100% alluminio - Pellicola di mylar - 28÷26 AWG 100% aluminum - Mylar foil - 28 to 26 AWG	
Guaina Sheath	PVC nero Black PVC	
Temperatura di esercizio Temperature range	-55°C ÷ +105°C	
Gamma di tensione Voltage range	0 ÷ 250 Vac	
Corrente massima Max current	0.5 A	

**CEQC-AC / CEQC-BC**

Sono forniti separatamente i connettori a saldare maschio e femmina.



**CEQC-AC / CEQC-BC**

The male and female solder connectors are supplied separately.



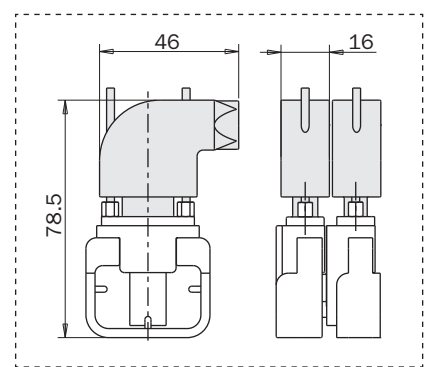
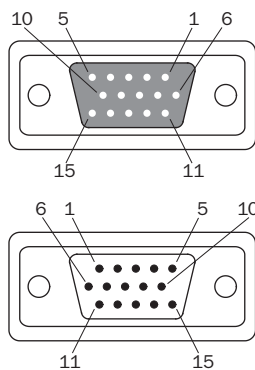
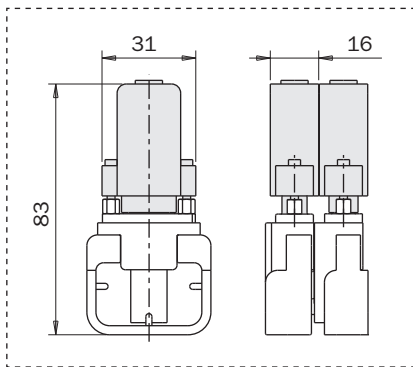
**CEQC-ACA / CEQC-BCA**

Sono forniti separatamente i connettori a saldare maschio e femmina angolari.



**CEQC-ACA / CEQC-BCA**

The angular male and female solder connectors are supplied separately.



	CEQC-AC	CEQC-BC	CEQC-ACA	CEQC-BCA
Tipo di connessione I/O I/O connection type		15 pin D-SUB - Tipo VGA 15-pin D-SUB - VGA type		
Contatti Contacts		Rame Copper		
Isolamento Insulation		Poliestere Polyester		
Temperatura di esercizio Temperature range		-20°C + +80°C		
Gamma di tensione Voltage range		0 + 300 Vac		
Corrente massima Max current		3A		
Massima sezione dei conduttori Maximum conductor cross-section		AWG28		
Diametro esterno massimo del cavo Maximum cable outer diameter		7 mm		

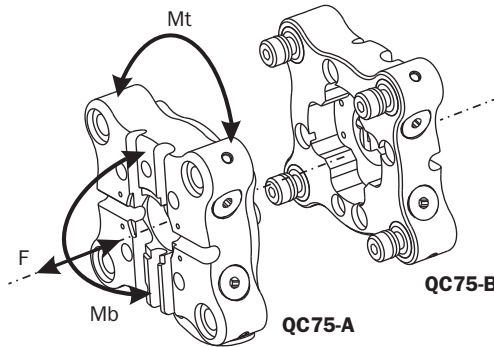
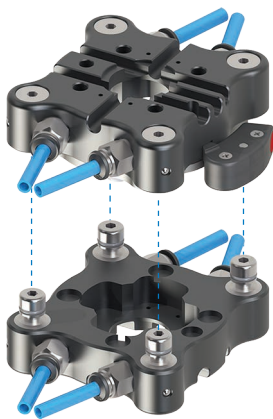
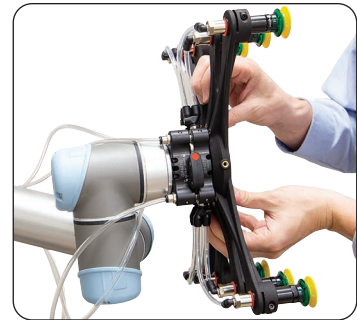
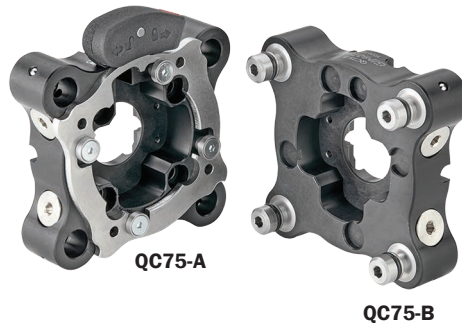
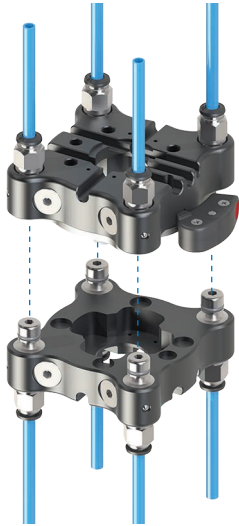


## Cambia utensile per robot collaborativi

- Superfici arrotondate.
- Fissaggio ISO-9409-1-50-4-M6.
- Foro passante centrale per le connessioni elettriche opzionali.
- 4 canali dell'aria integrati nelle spine.
- Uscita dei tubi dell'aria in linea o perpendicolare.
- Le due parti (lato robot e lato pinza) sono fornite separatamente.

## Quick changer for collaborative robots

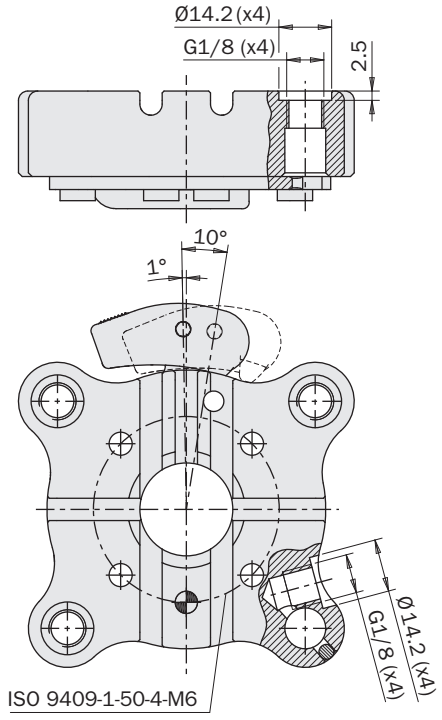
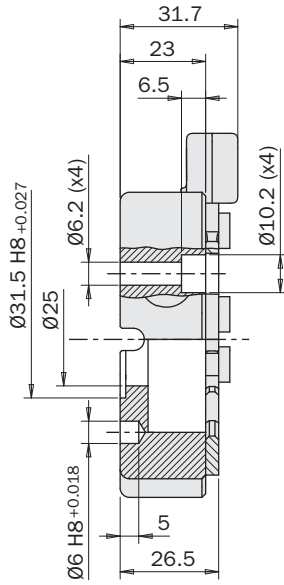
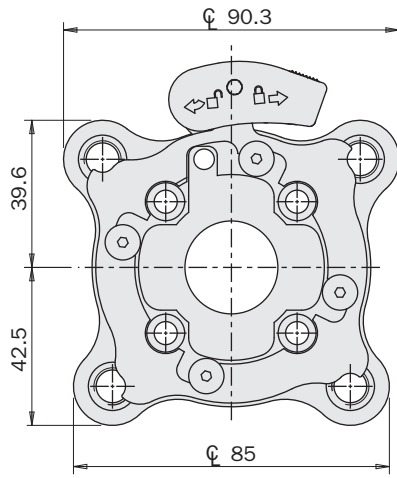
- Rounded surfaces.
- ISO-9409-1-50-4-M6 coupling system.
- Central through hole for optional electric connections.
- 4 built-in air ports in the pins.
- In-line or perpendicular air hose outlet.
- The two parts (robot side and gripper side) are supplied separately.



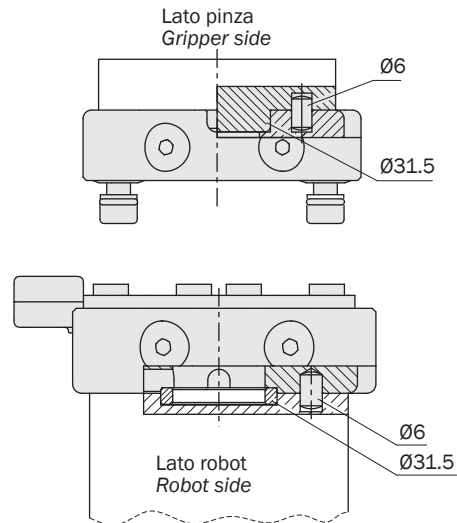
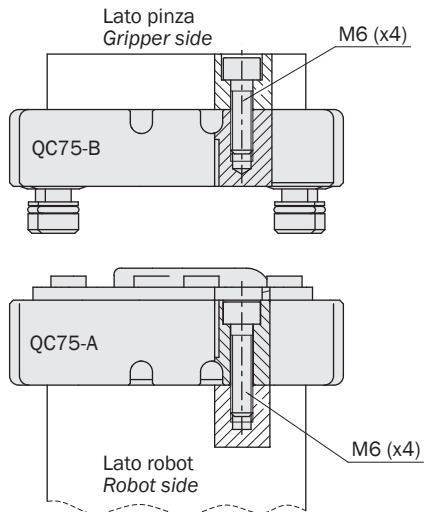
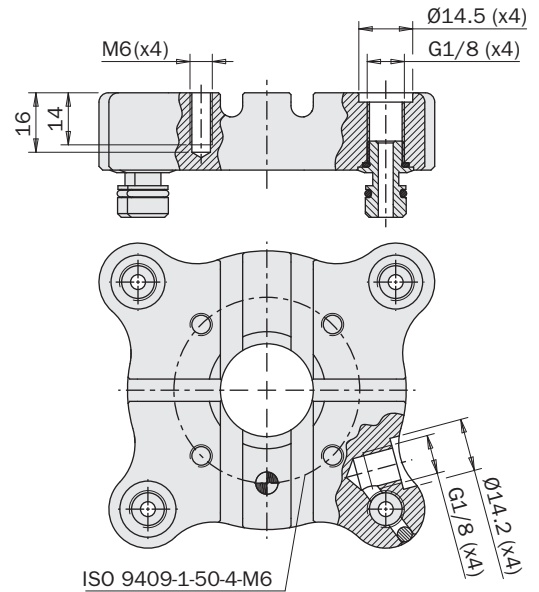
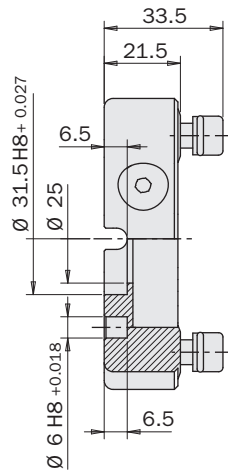
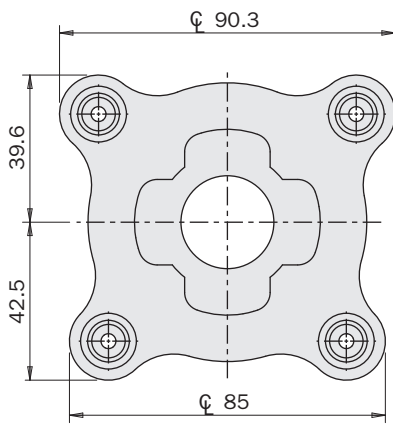
	QC75-A	QC75-B
	Cambia utensile lato robot Quick changer (robot side)	Cambia utensile lato pinza Quick changer (gripper side)
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Pressure range	-1 ÷ 8 bar	
Temperatura di esercizio Temperature range	5 ÷ 60 °C	
Peso Weight	300 g	260 g
F	1000 N	
Mt	150 Nm	
Mb	50 Nm	
Massimo carico raccomandato Maximum recommended load	20 Kg	

**Dimensioni (mm)**  
**Dimensions (mm)**

**QC75-A**



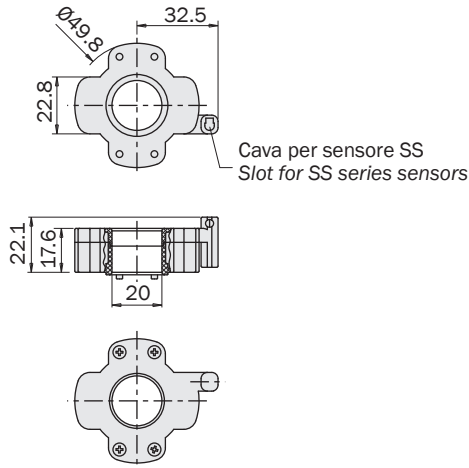
**QC75-B**



## CSAQC (Lato robot)

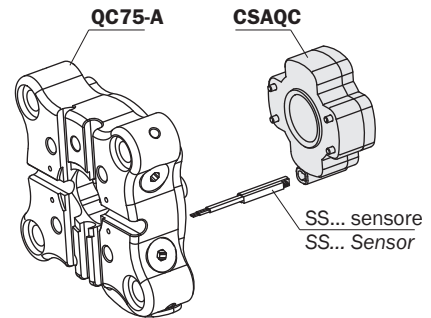
- Scatola porta sensore per la conferma dell'aggancio.

CSAQC	
Peso	15 g
Weight	



## CSAQC (Robot side)

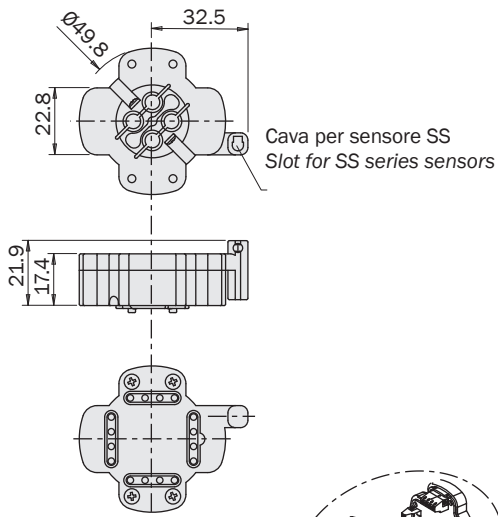
- Sensor holding box for the locking confirmation.



## CMAQC (Lato robot) + CMBQC (Lato pinza)

- Le due parti sono fornite separatamente.
- 16 connessioni elettriche configurabili con morsettiere.
- 16 connettori a molla.
- Sede sensore per la conferma dell'aggancio in CMAQC.

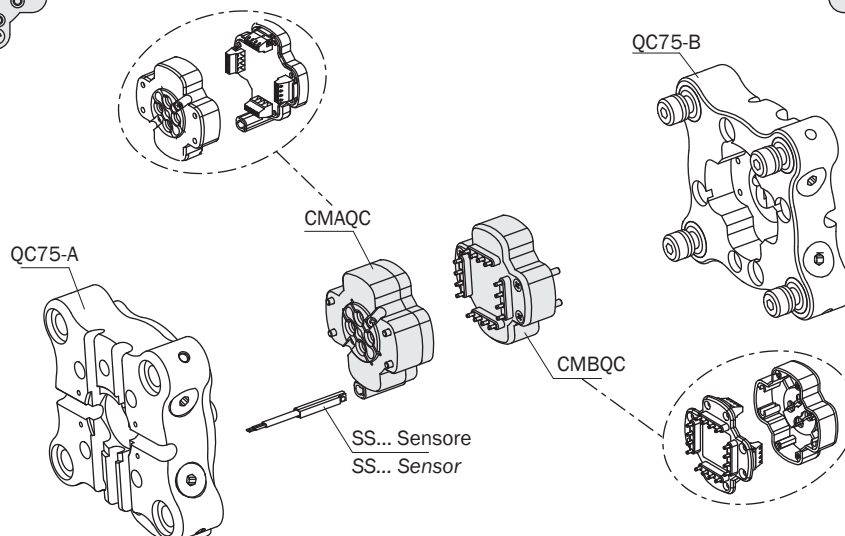
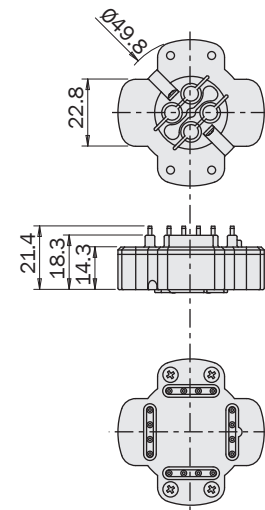
CMAQC	
Peso	19 g
Weight	



## CMAQC (Robot side) + CMBQC (Gripper side)

- The two parts are supplied separately.
- 16 reconfigurable electric lines with screw terminals.
- 16 spring connectors.
- Sensor slot for the locking confirmation in CMAQC.

CMBQC	
Peso	19 g
Weight	



**CRAQC (Lato robot) + CRBQC (Lato pinza)**

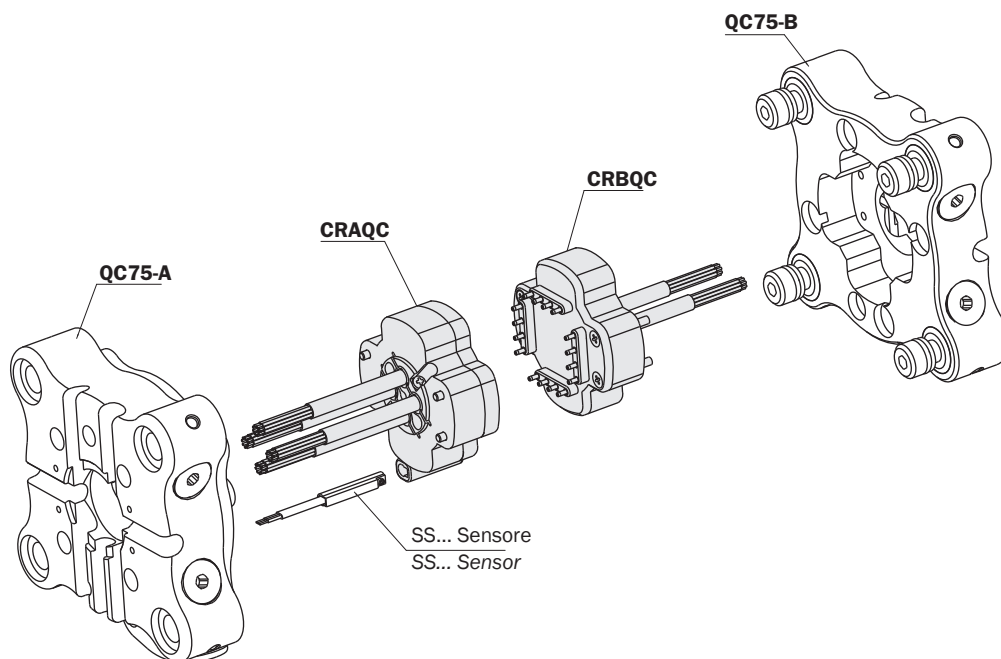
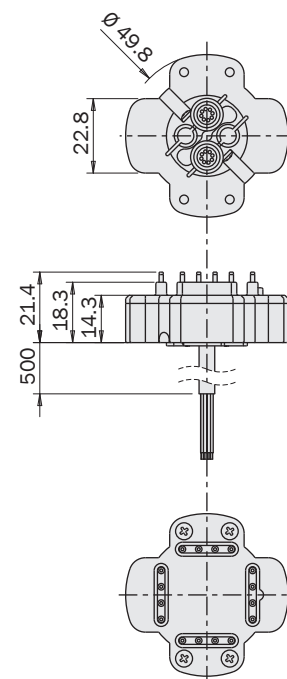
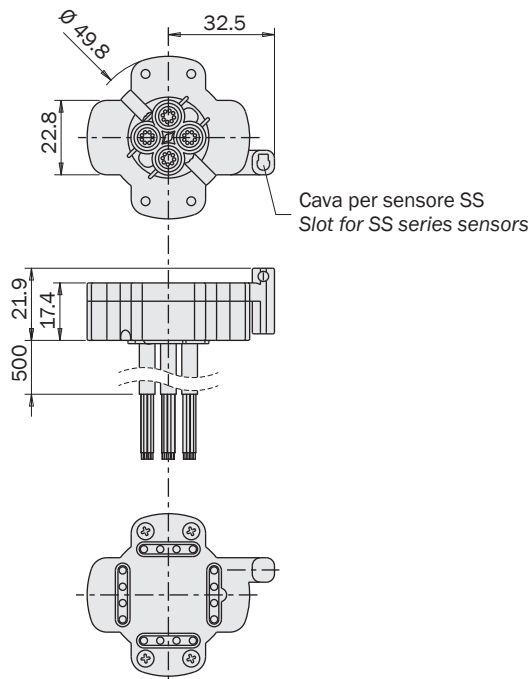
- Le due parti sono fornite separatamente.
- 16 connessioni elettriche precablate a disposizione.
- 16 connettori a molla.
- Sede sensore per la conferma dell'aggancio in CRAQC.
- Lettore RFID precablati (2 cavi aggiuntivi da 8 poli) in CRAQC.
- TAG in CRBQC per il riconoscimento della pinza.

**CRAQC (Robot side) + CRBQC (Gripper side)**

- The two parts are supplied separately.
- 16 available prewired electric lines.
- 16 spring connectors.
- Sensor slot for the locking confirmation in CRAQC.
- RFID prewired (2 additional 8-pole cables) reader in CRAQC.
- TAG in CRBQC for the gripper recognition.

CRAQC	
Peso Weight	140 g

CRBQC	
Peso Weight	80 g

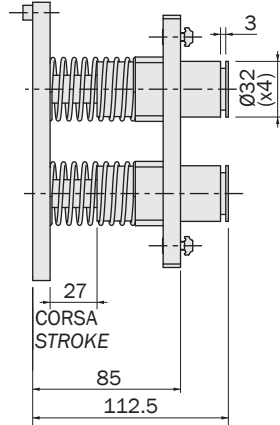
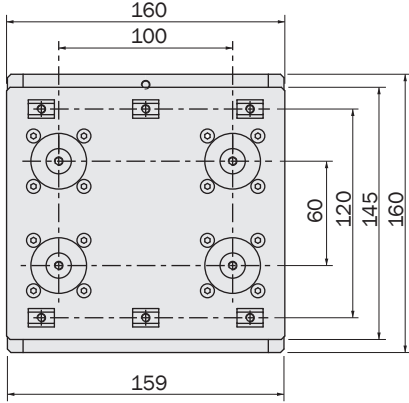


**Cambia utensile lato pinza con sospensione**

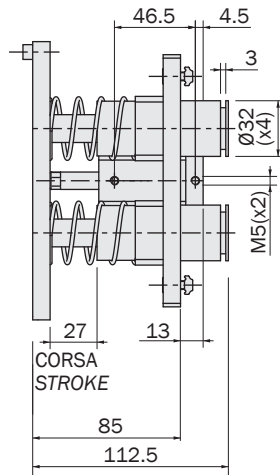
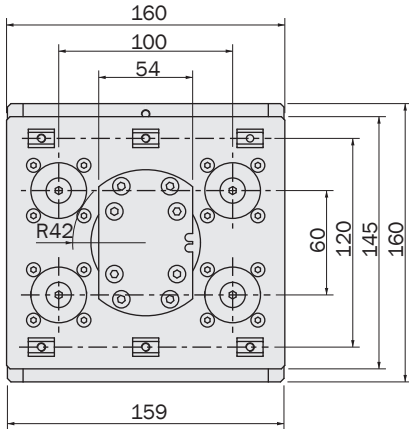
- SQM160-B con molle dure (molle morbide opzionali).
- SQP160-B con molle morbide (molle dure opzionali) e cilindro pneumatico a doppio effetto.
- Predisposti per ruotare la piastra di 90° [1].
- Adatti per SQC160-A, MFI-A42, QC150-B, QC160-B.

**Gripper side quick-changer with suspension**

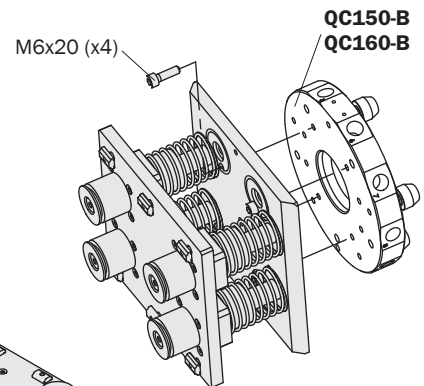
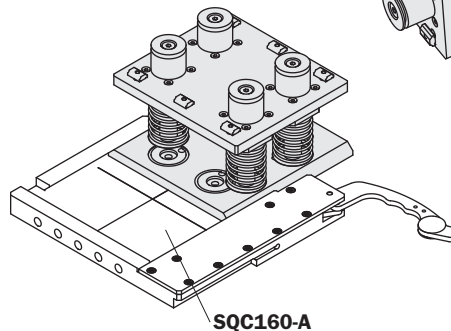
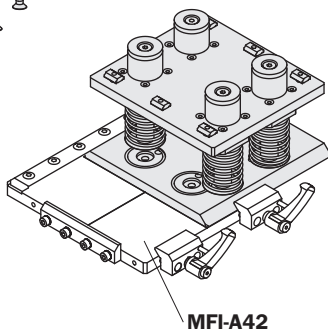
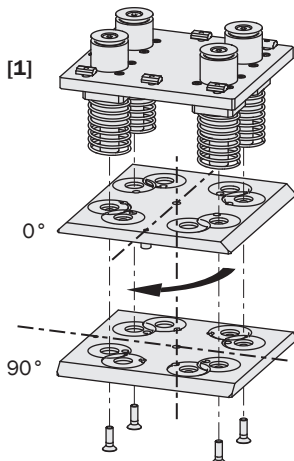
- SQM160-B with hard springs (optional soft springs).
- SQP160-B with soft springs (optional hard springs) and double-acting pneumatic cylinder.
- Ready to enable 90° plate rotation [1].
- Suitable for SQC160-A, MFI-A42, QC150-B, QC160-B.



SQM160-B	
Peso	2634 g
Weight	



SQP160-B	
Peso	2898 g
Weight	

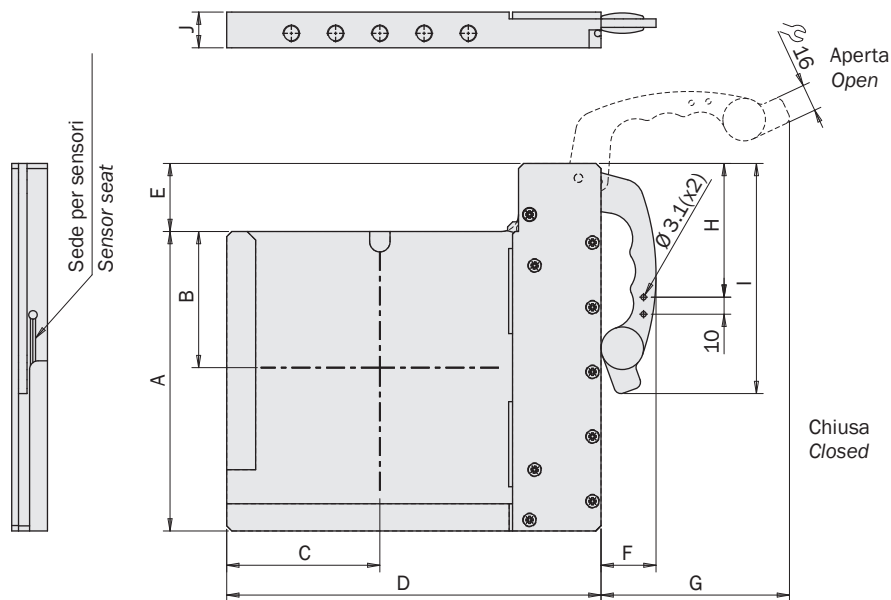


**Cambia utensile quadro (lato robot)**

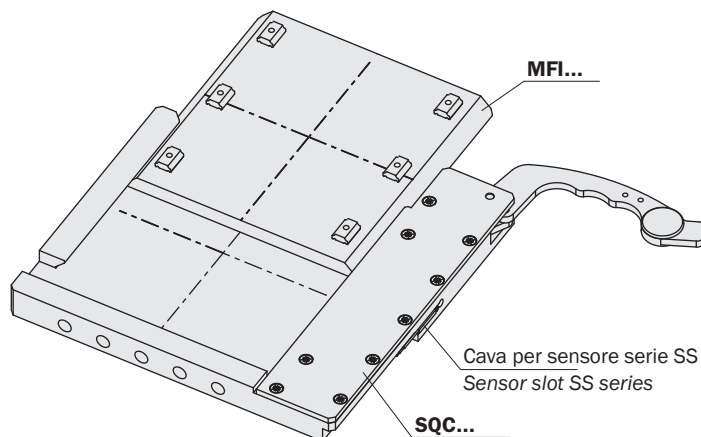
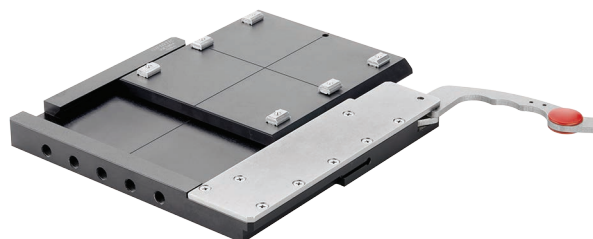
- Una sola maniglia.
- Sicurezza intrinseca.
- Conferma di chiusura con sensore magnetico (opzionale).

**Square quick changer (robot side)**

- One only handle.
- Intrinsic safety.
- Closure confirmation by an optional magnetic sensor.



	SQC100-A	SQC160-A	SQC250-A
A	110	176	270
B	50	80	125
C	57	90	150
D	147	220	325
E	5.5	40	40
F	28	32.3	32.3
G	76.6	110.8	110.8
H	55.5	78.6	78.6
I	100	135.3	135.3
J	19	21	20
Peso Weight	770 g	2050 g	3720 g
MFI..	MFI-A41	MFI-A43	MFI-A363



I sensori opzionali sono: The optional sensors are:		
SS4N225-G	PNP	Cavo 2.5m 2.5m cable
SS4M225-G	NPN	
SS3N203-G	PNP	Connettore M8
SS3M203-G	NPN	M8 snap plug connector

Cambia utensile (lato robot)

Quick changer (robot side)

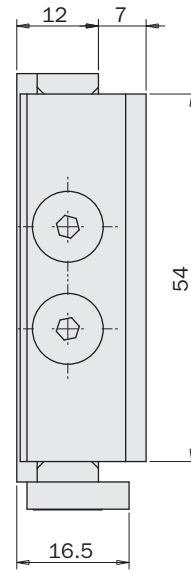
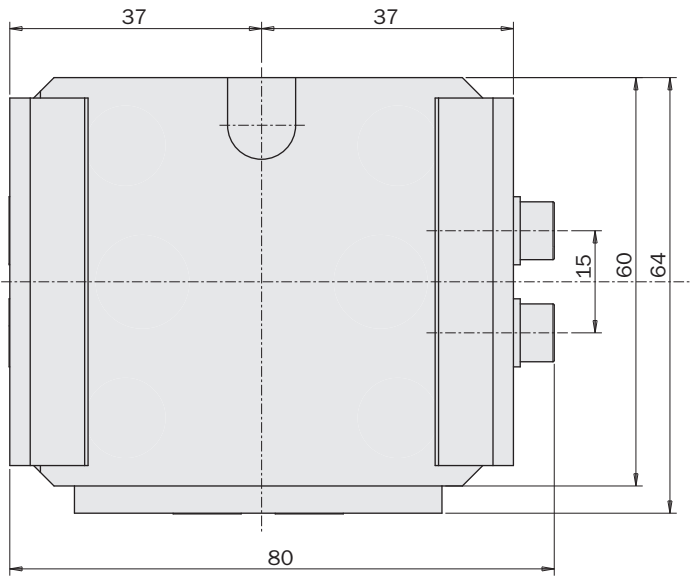
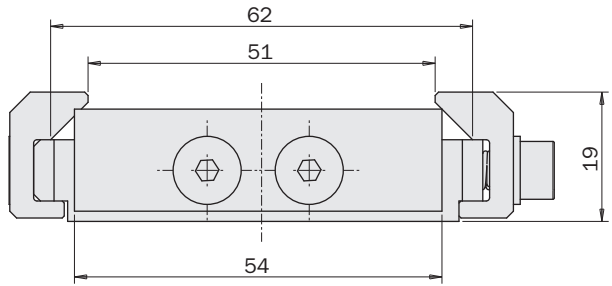
MFI-A343

FIRST ANGLE  
PROJECTION

Peso

170 g

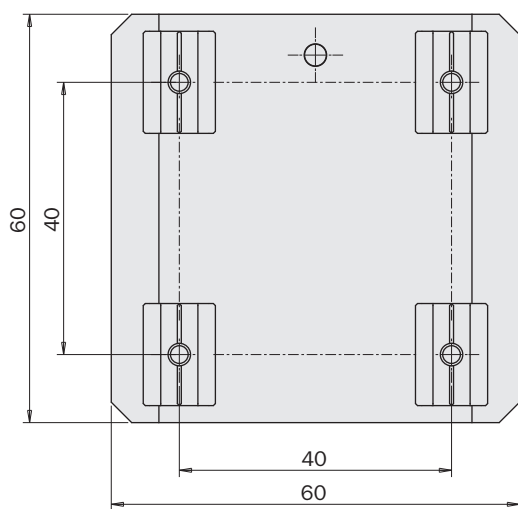
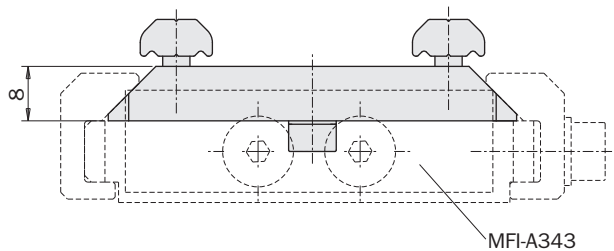
Weight



**Cambia utensile (lato pinza)**

**Quick changer (gripper side)**

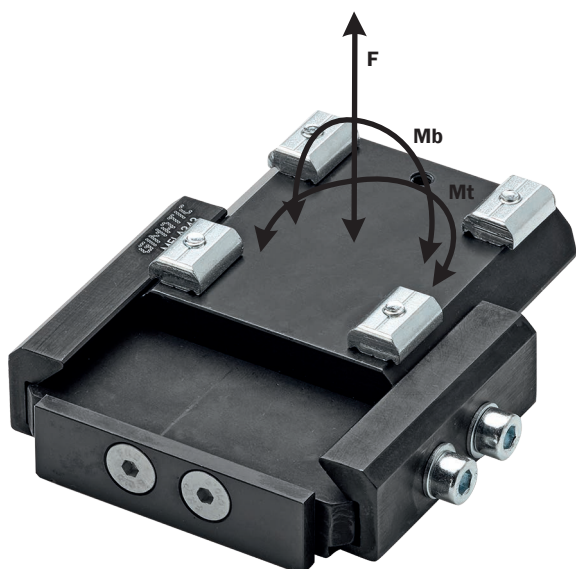
FIRST ANGLE PROJECTION



	<b>MFI-A344</b>
Peso Weight	65 g

**Carichi di sicurezza**

**Safety loads**

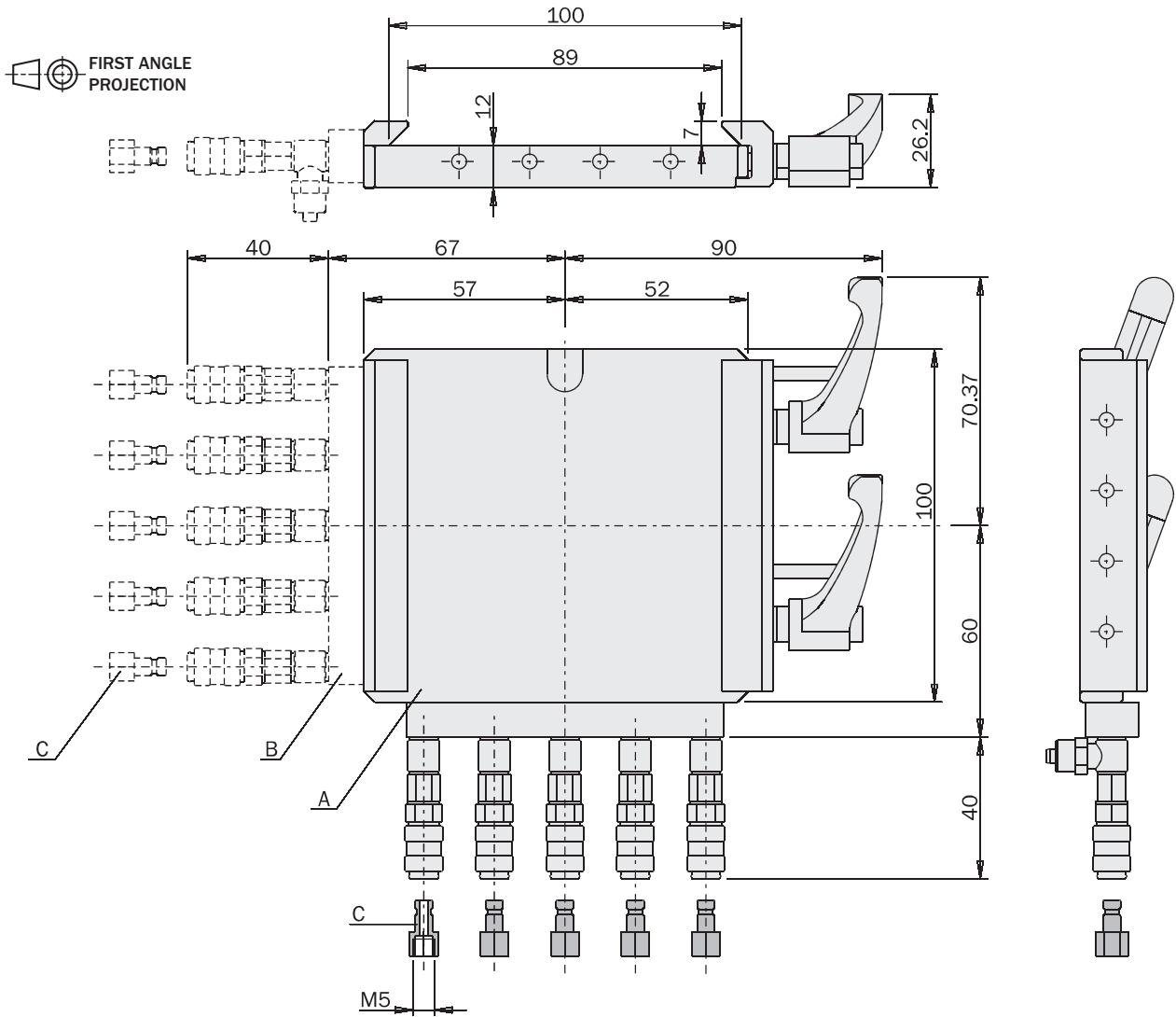


<b>Lato robot Robot side</b>	<b>MFI-A343</b>
<b>Lato pinza Gripper side</b>	<b>MFI-A344</b>
Carico utile suggerito Suggested payload	3kg
F	60N
Mt	9Nm
Mb	6Nm



Cambia utensile (lato robot)

Quick changer (robot side)

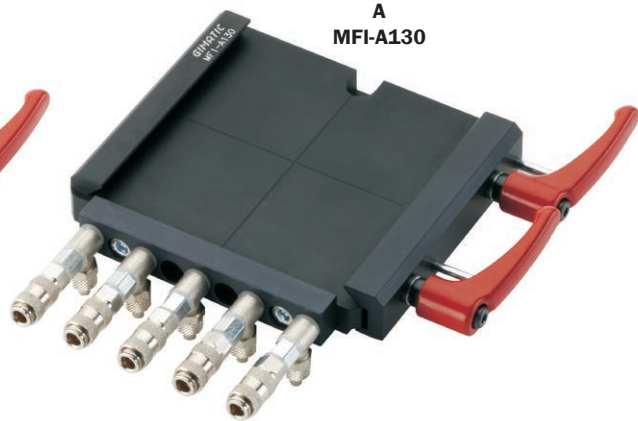


	MFI-A40	MFI-A130	MFI-A133	MFI-A135
Peso Weight	500 g	620 g	140 g	17 g

MFI-A40



A  
MFI-A130



B  
MFI-A133



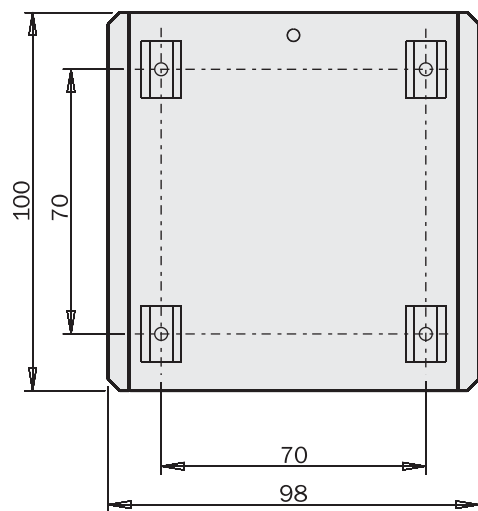
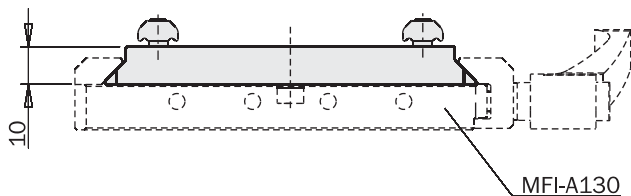
C  
MFI-A135



Innesto rapido (n° 5 pezzi)  
Quick coupling (5 pieces)

**Cambia utensile (lato pinza)**

**Quick changer (gripper side)**



**MFI-A41**

Peso	270 g
Weight	

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

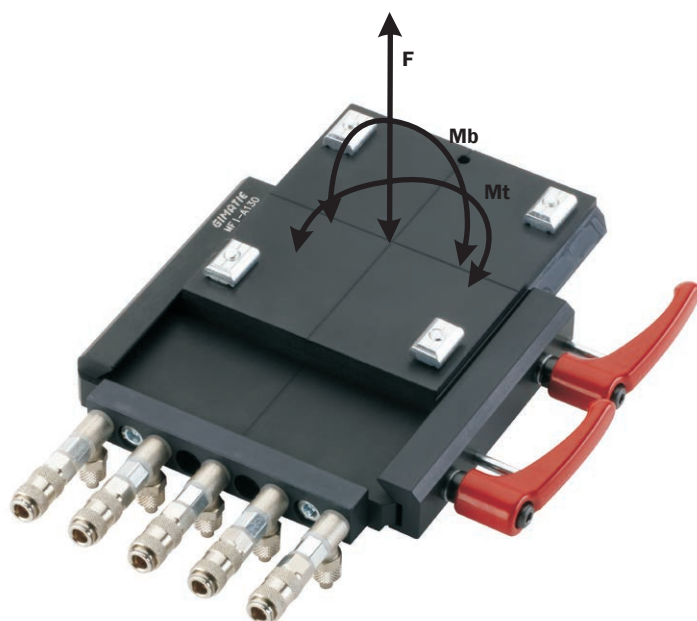
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Carichi di sicurezza**

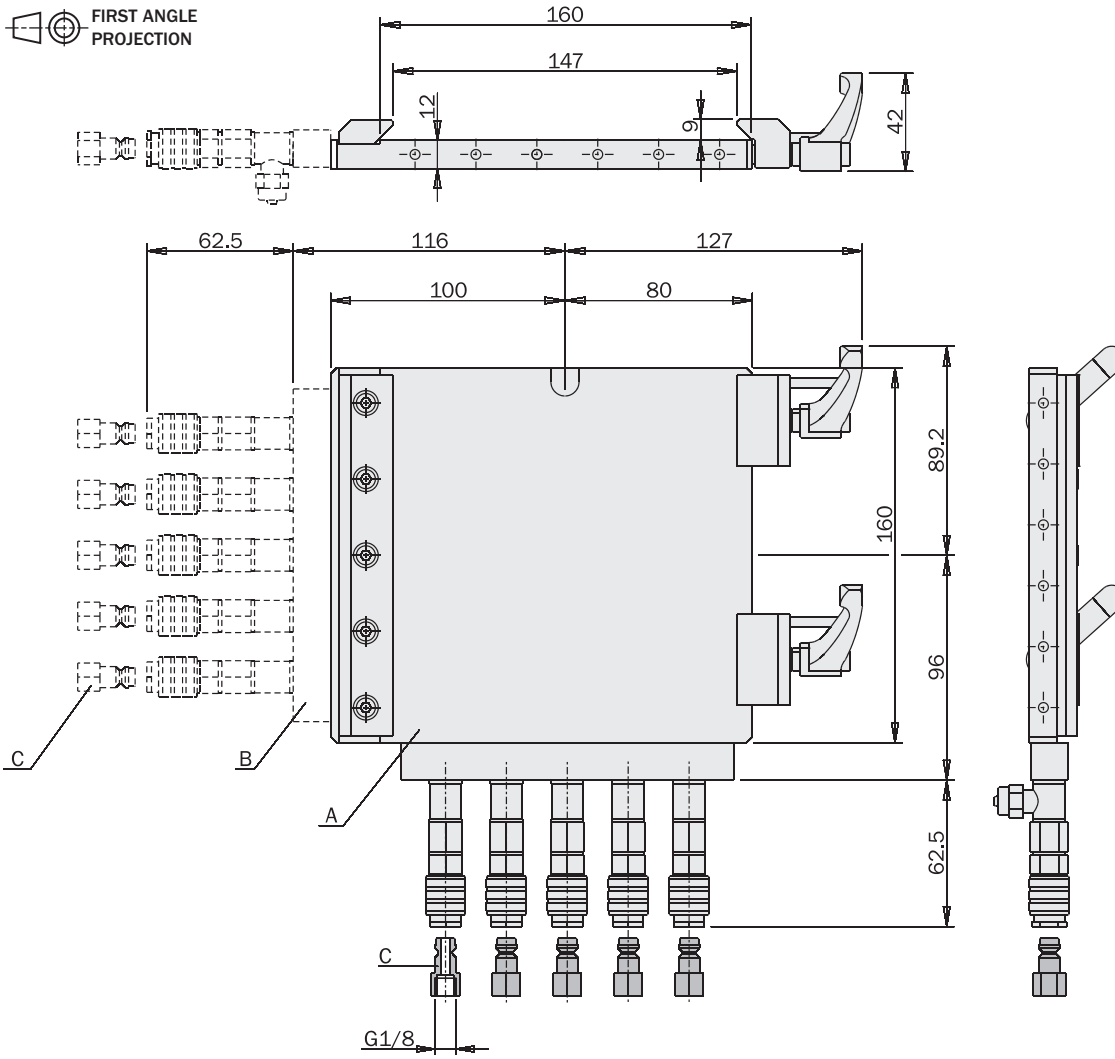
**Safety loads**



<b>Lato robot a 1 maniglia</b> <i>1-Handle robot side</i>	<b>SQC100-A</b>
<b>Lato robot a 2 maniglie</b> <i>2-Handle robot side</i>	<b>MFI-A40</b>
<b>Lato pinza</b> <i>Gripper side</i>	<b>MFI-A41</b>
Carico utile suggerito <i>Suggested payload</i>	10kg
F	200N
Mt	45Nm
Mb	30Nm

Cambia utensile (lato robot)

Quick changer (robot side)

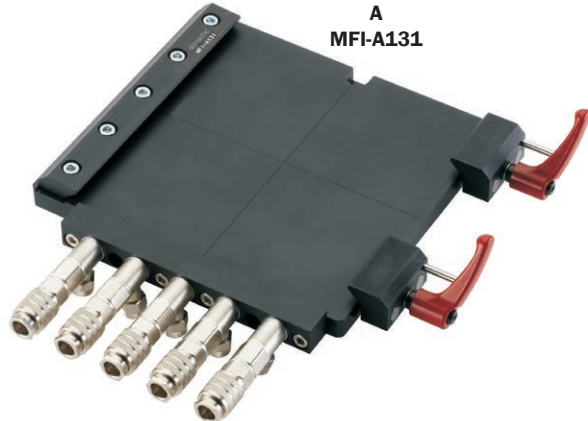


	MFI-A42	MFI-A131	MFI-A132	MFI-A134
Peso Weight	1270 g	1650 g	450 g	40 g

MFI-A42



A  
MFI-A131



B  
MFI-A132



C  
MFI-A134

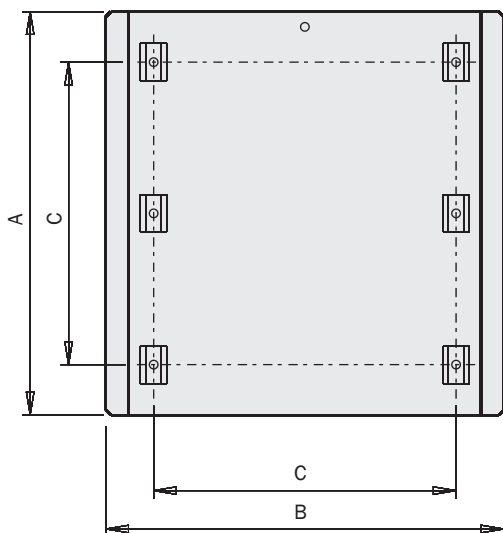
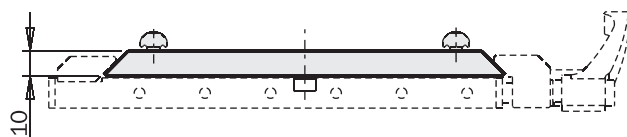


Innesto rapido (n° 5 pezzi)  
Quick coupling (5 pieces)

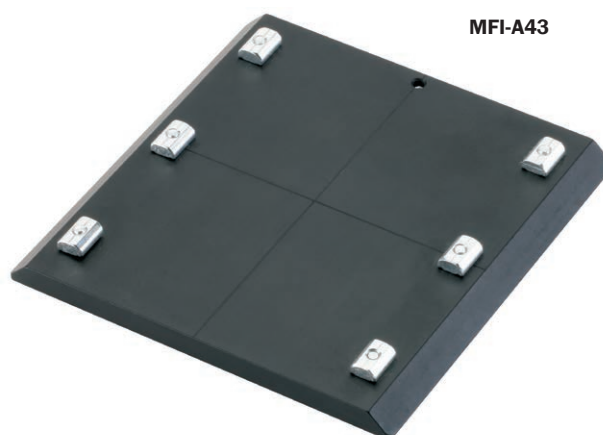
**Cambia utensile (lato pinza)**

**Quick changer (gripper side)**

FIRST ANGLE PROJECTION

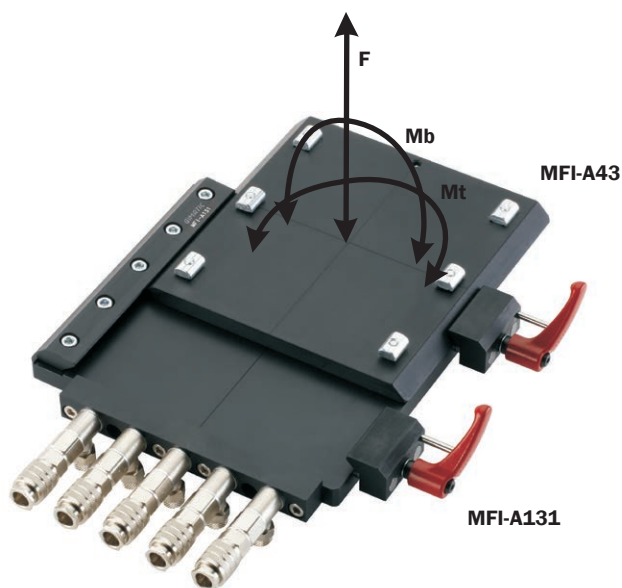


	MFI-A43	MFI-A363
Peso Weight	670 g	1600 g
A	160 mm	250 mm
B	159 mm	249 mm
C	120 mm	200 mm



**Carichi di sicurezza**

**Safety loads**



Lato robot a 1 maniglia 1-Handle robot side	SQC160-A	SQC250-A
Lato robot a 2 maniglie 2-Handle robot side	MFI-A42	-
Lato pinza Gripper side	MFI-A43	MFI-A363
Carico utile suggerito Suggested payload	20kg	40kg
F	400N	800N
Mt	120Nm	300Nm
Mb	80Nm	200Nm

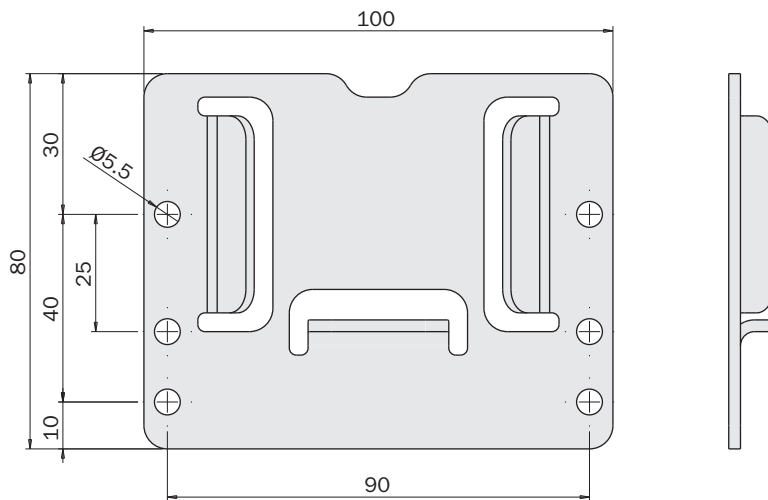
**Magazzino per EOAT MFI-A344-H**  
(da usare con MFI-A344, 60x60mm)

**EOAT storage MFI-A344-H**  
(to be used with MFI-A344, 60x60mm)



**Dimensioni (mm)**  
**Dimensions (mm)**

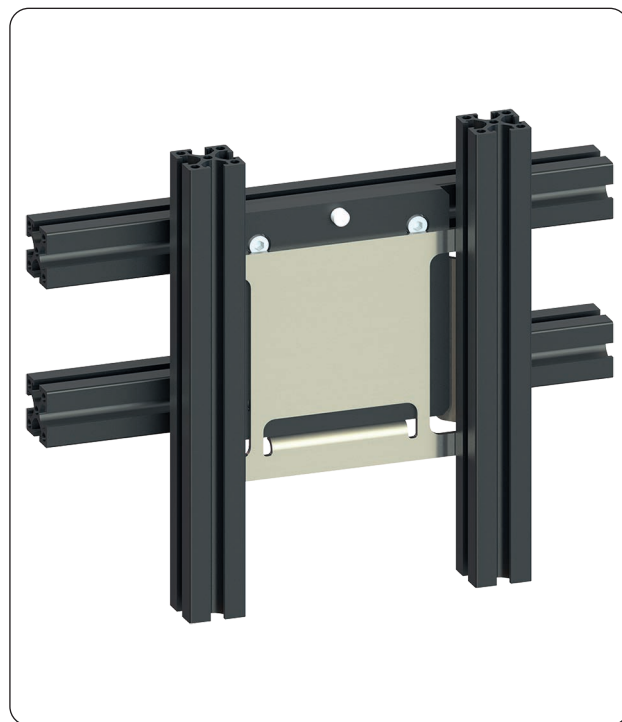
	<b>MFI-A344-H</b>
Peso	136 g
Weight	



FIRST ANGLE  
PROJECTION

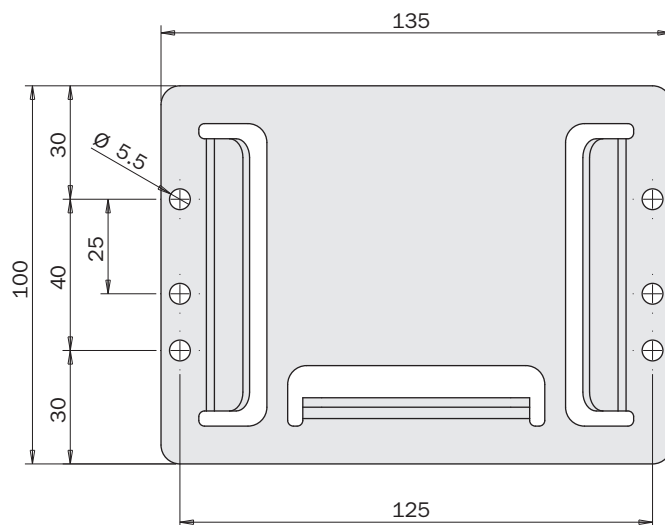
**Magazzino per EOAT MFI-A41-H**  
(da usare con MFI-A41, 98x100mm)

**EOAT storage MFI-A41-H**  
(to be used with MFI-A41, 98x100mm)



**Dimensioni (mm)**  
**Dimensions (mm)**

	<b>MFI-A41-H</b>
Peso	238 g
Weight	



FIRST ANGLE PROJECTION

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

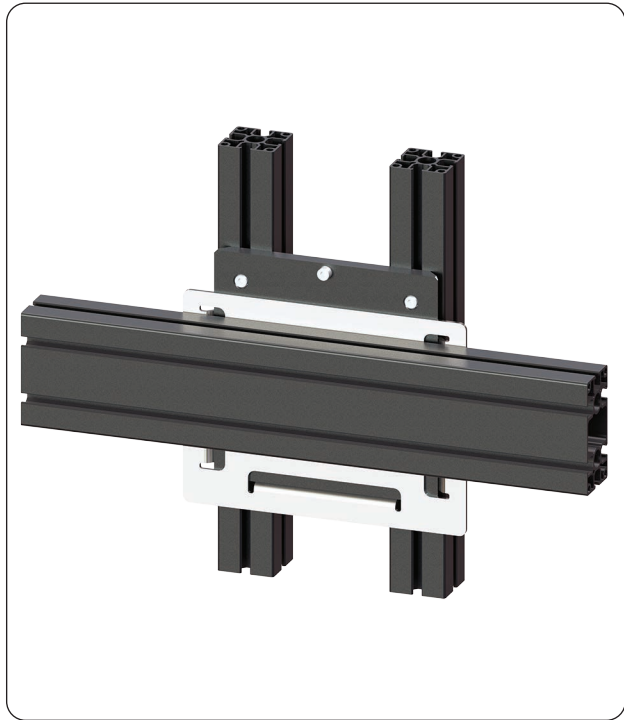
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

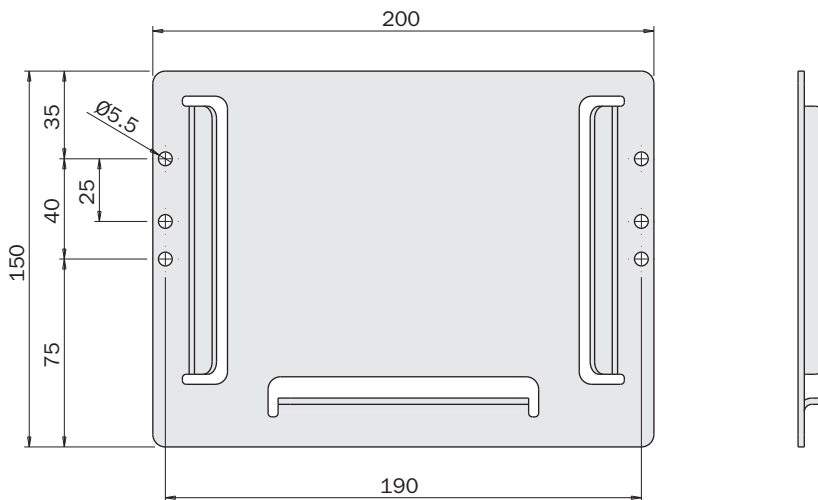
**Magazzino per EOAT MFI-A43-H**  
(da usare con MFI-A43, 158x160mm)

**EOAT storage MFI-A43-H**  
(to be used with MFI-A43, 158x160mm)



**Dimensioni (mm)**  
**Dimensions (mm)**

	MFI-A43-H
Peso	547 g
Weight	



FIRST ANGLE  
PROJECTION

Note  
Notes

Lined area for taking notes, consisting of multiple horizontal lines.

Unità Rotanti  
*Rotary Units*

Cambia Utensile  
*Quick Changer*

Profili e Staffe  
*Profiles and Brackets*

Pinze  
*Grippers*

Attuatori Lineari  
*Linear Actuators*

Sospensioni  
*Suspensions*

Taglierini  
*Nippers*

Kit-Robot  
*Robot Kit*

Accessori Opzionali  
*Options*

Sensori  
*Sensors*



## Cambia utensile elettrico

Per le applicazioni che richiedono il cambio automatico dell'organo di presa è disponibile la famiglia di cambia utensili elettrici EQC.

Si tratta di un sistema composto da una parte attiva (lato A) ed una flangia meccanica passiva (lato B).

La parte attiva tipicamente è collegata al polso di un robot mentre una o più flange sono collegate agli organi di presa intercambiabili.

- Versione completamente automatica.
- Sistema Plug & Play.
- Design studiato per applicazioni con i robot collaborativi.
- Flange ISO 9409 opzionali per una interfaccia diretta con i robot.
- Cavo di alimentazione con connettore M8x1 a 8 poli, lunghezza 200 mm.
- Alimentazione a bassa tensione 24 Vdc.
- Fino a 6 collegamenti per utenze pneumatiche.
- Connessioni elettriche opzionali posizionabili nel foro centrale passante.

## Electric quick changer

The EQC electric quick changer family is available for applications with automatic change of gripping element.

The system consists of an active part (side A) and a passive mechanical tool plate (side B).

The active part is usually connected to a robot's wrist while one or more flange are connected to the interchangeable gripping elements.

- Fully automatic version.
- Plug & Play system.
- Designed to collaborative robot application.
- Optional flange ISO 9409 to interface directly with robot.
- Power cable with 8-pin M8x1 connector, length 200 mm.
- 24 Vdc low voltage supply.
- Up to 6 user pneumatic connections.
- Optional electric connectors to be positioned in the central through hole.

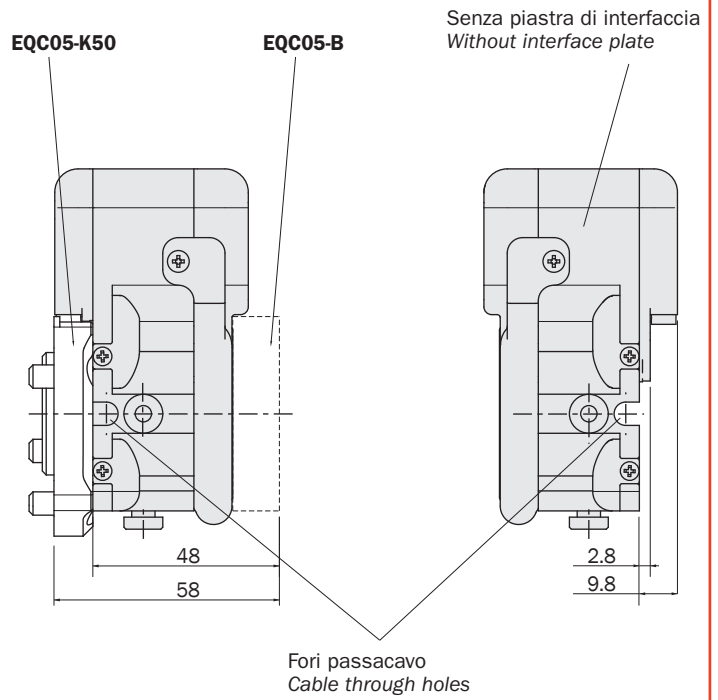
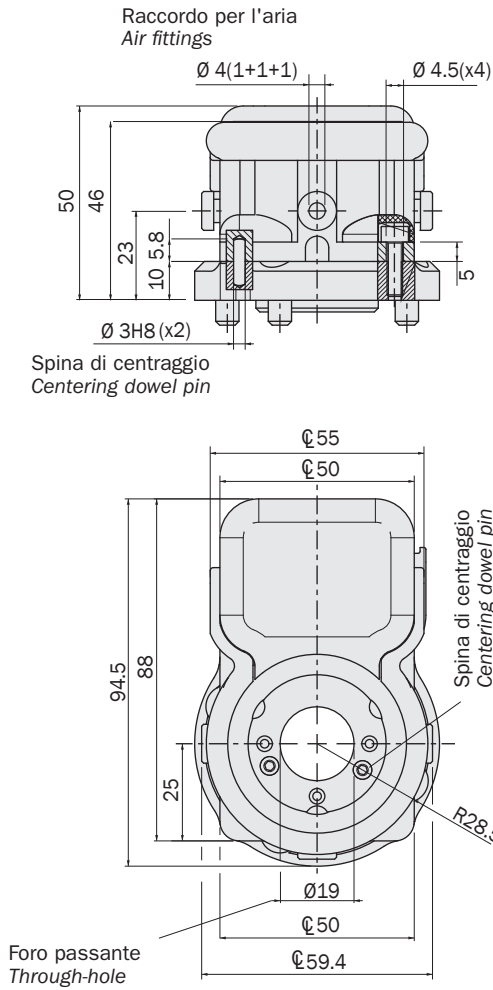


COMING SOON

	EQC05	EQC05N	EQC20	EQC20N	EQC100	EQC100N
Massa della parte attiva (lato-A) Mass of the master plate (side-A)	500 g		810 g		2700 g	
Massa della flangia (lato-B) Weight of the tool plate (side-B)	100 g		210 g		720 g	
Tempo di movimento Movement time	0.5 s		1 s		1 s	
Massima distanza di aggancio Maximum coupling distance	0.5 mm		1 mm		2 mm	
Disallineamento torsionale Torsional misalignment	± 2°		± 2°		± 2.5°	
Disallineamento planare (R) Planar misalignment (R)	1 mm		2 mm		2.5 mm	
Ripetibilità Repeatability	0.01 mm		0.01 mm		0.01 mm	
Grado di protezione Protection rating	IP40		IP54		IP54	
Capacità di carico Load capacity	5 kg		20 kg		100 kg	
Intervallo di temperatura di lavoro Allowed temperature range	5-60 °C					
Alimentazione pneumatica (integrati) Pneumatic supply (integrated)	Ø4 (x3)		Ø6 (x6)		Ø8 (x6)	
Intercambiabilità Interchangeability	X-Y: 0.1 mm Z: 0.1 mm					
Ripetibilità Repeatability	X-Y: 0.02 mm Z: 0.02 mm					
Momento d'inerzia asse Z (centro della flangia del Robot)(lato-A) Moment of inertia Z-axis (Center of the robot flange)(side-A)	3745 g · cm <sup>2</sup>		13082 g · cm <sup>2</sup>		109158 g · cm <sup>2</sup>	
Momento d'inerzia asse Z (centro della flangia del Robot)(lato-B) Moment of inertia Z-axis (Center of the robot flange)(side-B)	338 g · cm <sup>2</sup>		1719 g · cm <sup>2</sup>		21370 g · cm <sup>2</sup>	

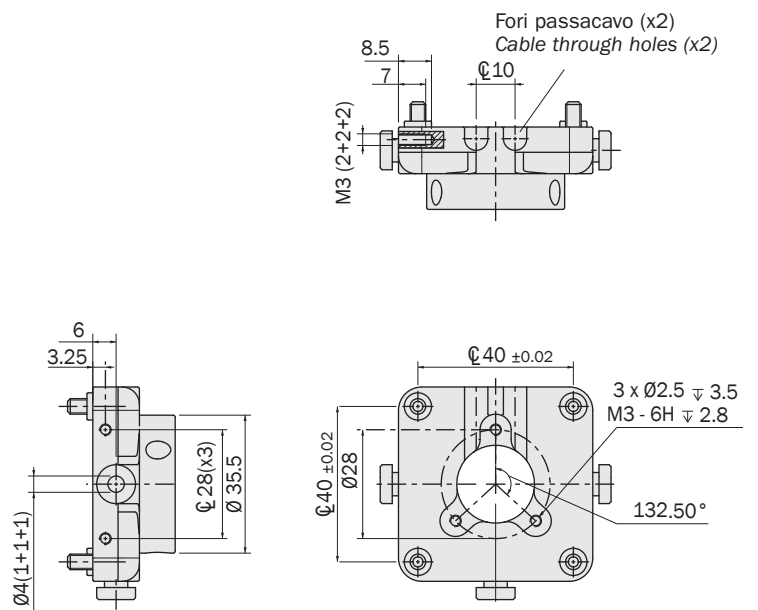
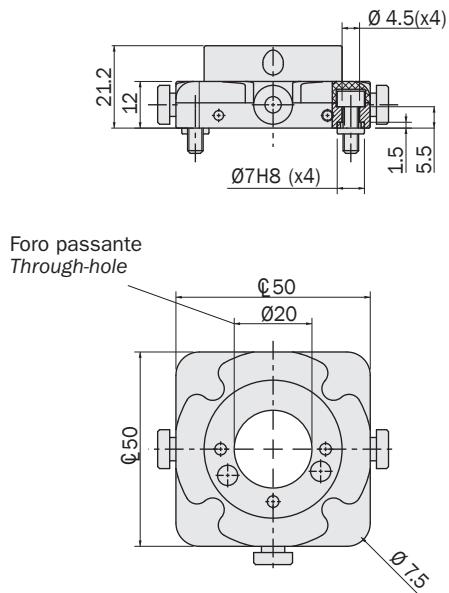
**Dimensioni (mm)**  
**Dimensions (mm)**

**EQC05-A**  
**EQC05N-A**



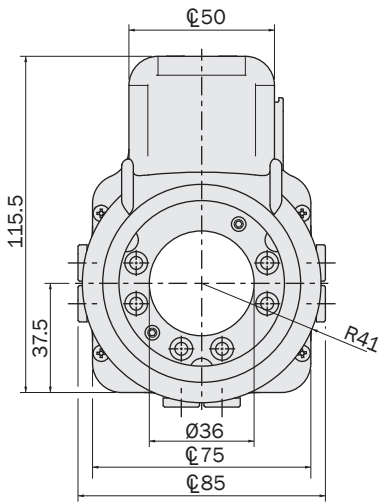
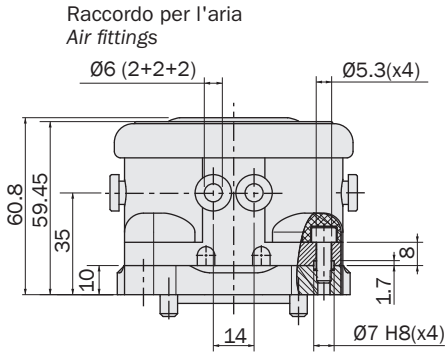
**Dimensioni (mm)**  
**Dimensions (mm)**

**EQC05-B**



**Dimensioni (mm)**  
**Dimensions (mm)**

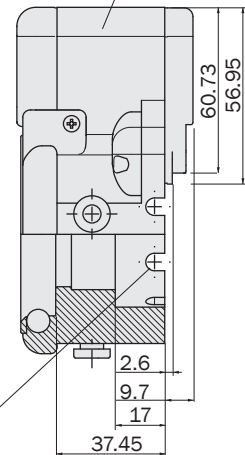
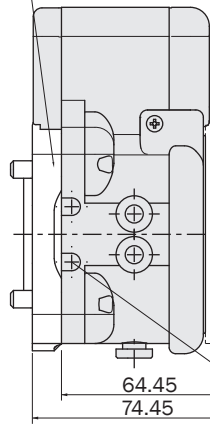
**EQC20-A**  
**EQC20N-A**



EQC20-K63

EQC20-B

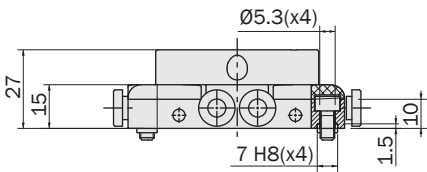
Senza piastra di interfaccia  
Without interface plate



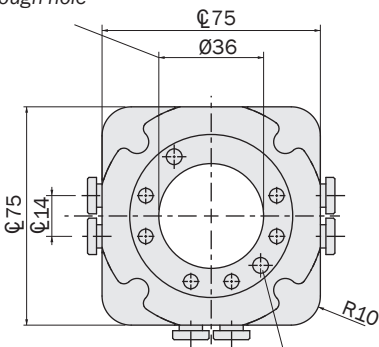
Fori passacavo (2+2+2)  
Cable through holes (2+2+2)

**Dimensioni (mm)**  
**Dimensions (mm)**

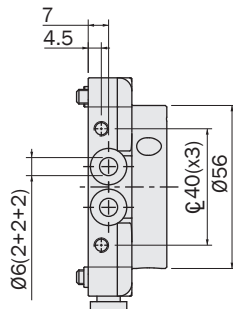
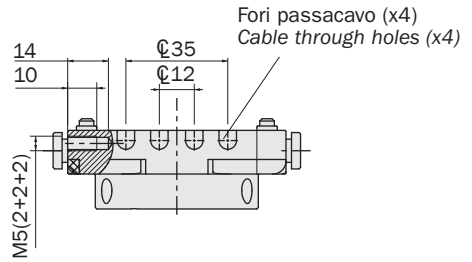
**EQC20-B**



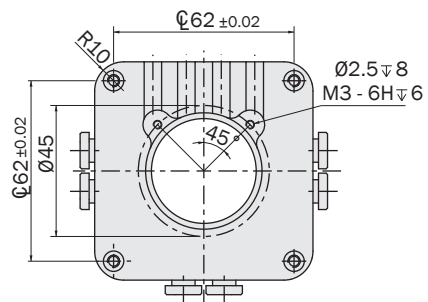
Foro passante  
Through-hole



Foro per il perno di centraggio  
Centering pin hole

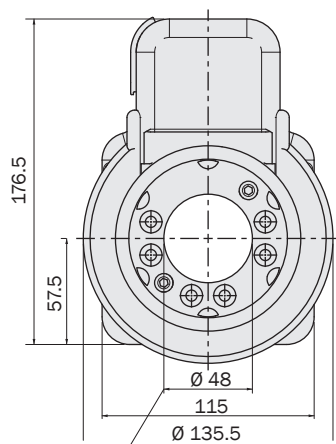
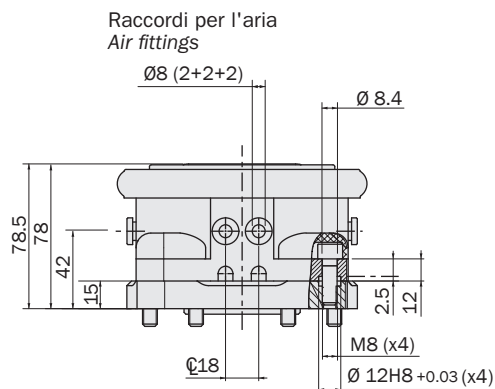


Raccordo per l'aria  
Air fittings



**Dimensioni (mm)**  
**Dimensions (mm)**

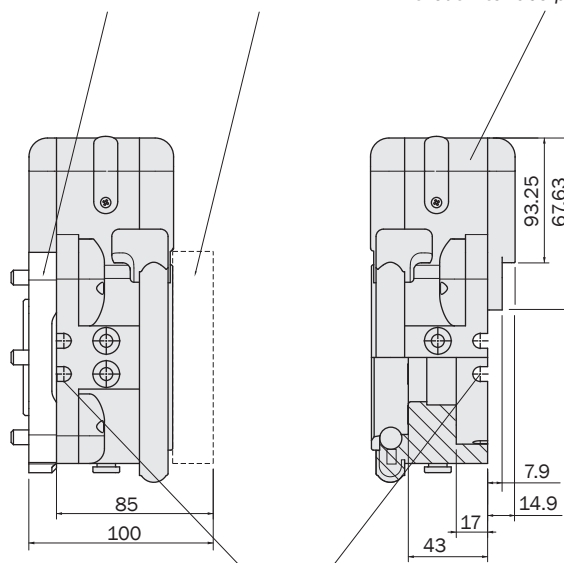
**EQC100-A**  
**EQC100N-A**



Foro passante  
Through-hole

EQC100-K100 EQC100-B

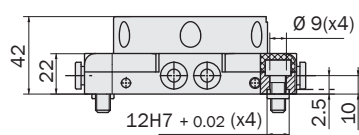
Senza piastra di interfaccia  
Without interface plate



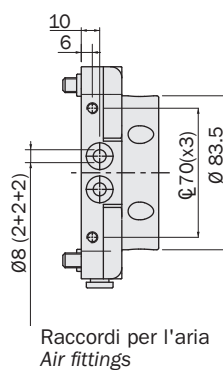
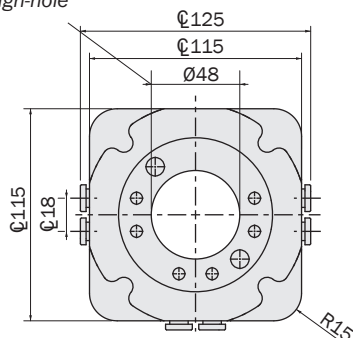
Fori passacavo (2+2+2)  
Cable through holes (2+2+2)

**Dimensioni (mm)**  
**Dimensions (mm)**

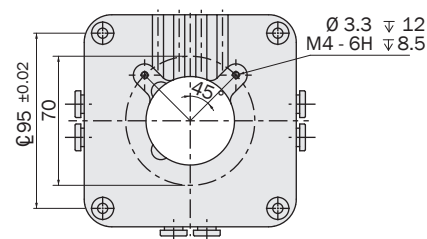
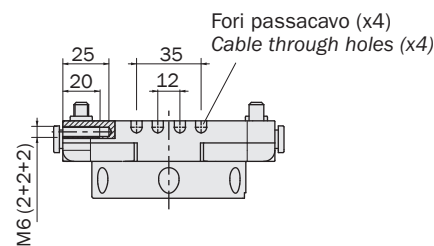
**EQC100-B**



Foro passante  
Through-hole



Raccordi per l'aria  
Air fittings



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

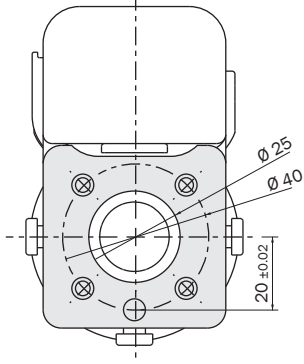
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

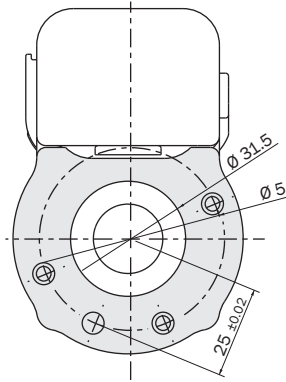
Sensori  
Sensors

EQC05-A/ EQC05N-A

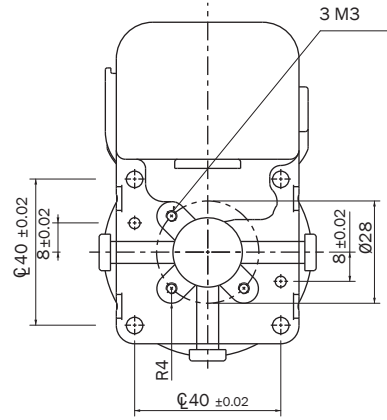
**EQC05-K40**  
ISO 9409-1-40-4-M6



**EQC05-K50**  
ISO 9409-1-50-4-M6

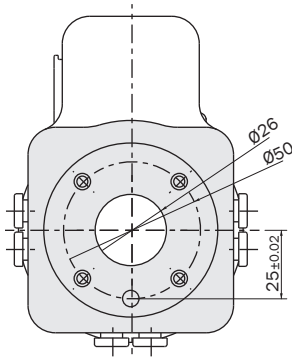


**Senza piastra**  
*Without interface plate*

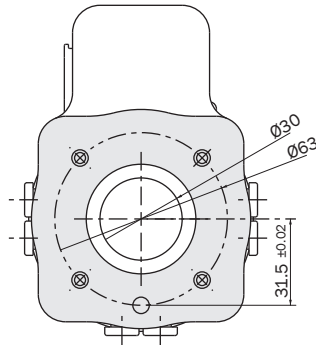


EQC20-A/ EQC20N-A

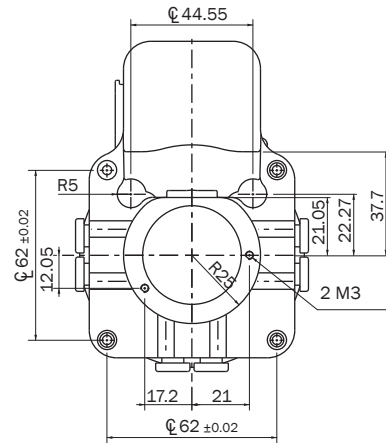
**EQC20-K50**  
ISO 9409-1-50-4-M6



**EQC20-K63**  
ISO 9409-1-63-4-M6

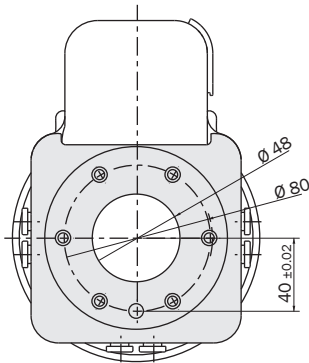


**Senza piastra**  
*Without interface plate*

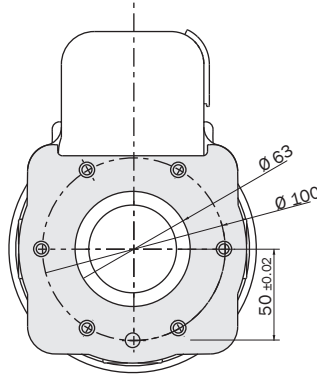


EQC100-A/ EQC100N-A

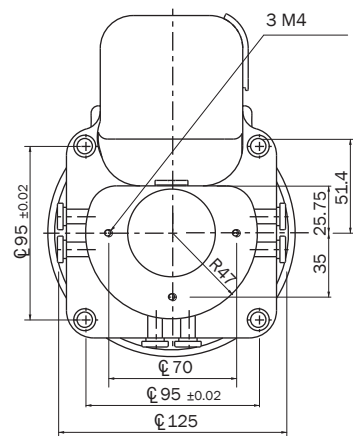
**EQC100-K80**  
ISO 9409-1-80-6-M8



**EQC100-K100**  
ISO 9409-1-100-6-M8



**Senza piastra**  
*Without interface plate*



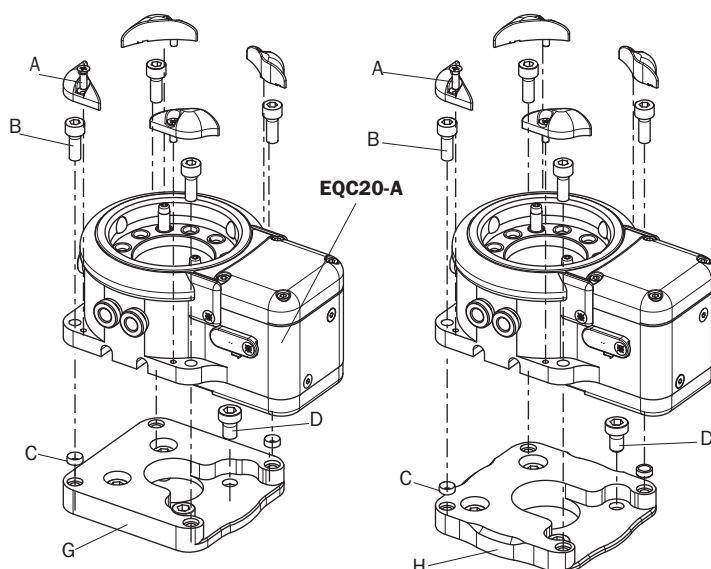
## Fissaggio

La parte attiva del cambia utensile può essere fissata esclusivamente sul fondo utilizzando quattro viti.  
La flangia B può essere fissata sul carico in modo analogo.  
Sia per la parte A che per la parte B, utilizzare per il centraggio due boccole (C), fornite nella confezione.

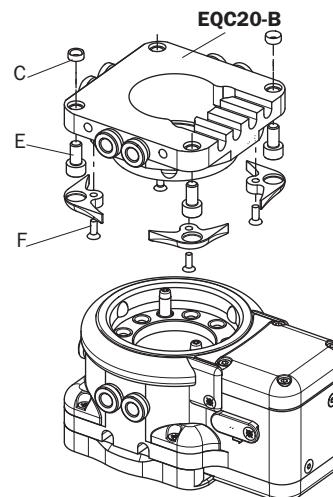
## Fastening

The active part of the quick changer can only be fastened on the bottom using four screws.  
The tool plate, B, can be fastened on the load in a similar manner.  
For proper centering of parts A and B, use the two bushes (C) supplied in the package.

### Esempio con EQC20-A



### Example with EQC20-A

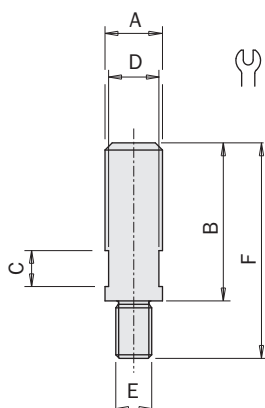


	EQC05-A/ EQC05N-A	EQC20-A/EQC20N-A	EQC100-A/EQC100N-A
A	TSP M2.5X6 DIN965	TSP M3X10 DIN 965A	M3X14 DIN7985A
B	TCEI M4X14 DIN 912	TCEI M5X14 DIN912	TCEI M8X25 DIN 912
C	Ø 3X12 DIN 6325	390677 Ø7xØ5.3x3	354236 Ø12xØ8.4x5
D	TCEI M6X10 DIN 7984	TCEI M6x10 DIN 7984	TCEI M8X16 DIN 912
E	TCEI M4 DIN912	TCEI M5 DIN912	TCEI M8 DIN912
F	TSP M2.5X8 DIN965A	TSP M3x8 DIN 965A	TSP M4X16 DIN965A
G	EQC05-K50 (ISO 9409-1-50-4-M6)	EQC20-K63 (ISO 9409-1-63-4-M6)	EQC100-K100 (ISO 9409-1-100-6-M6)
H	EQC05-K40 (ISO 9409-1-404M6)	EQC20-K50 (ISO 9409-1-50-5-M6)	EQC100-K63 (ISO 9409-1-63-6-M6)

### Kit pioli per lo stoccaggio (opzionale)

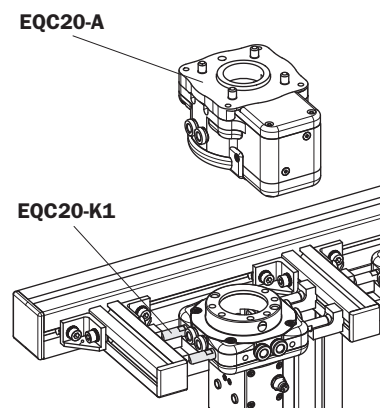
Sono forniti separatamente i pioli necessari allo stoccaggio della flangia in condizioni di non utilizzo.

	EQC05-K1	EQC20-K1	EQC100-K1
A	D7	D8	D12
B	15	22	52
C	4+1	5+1	8+1
D	6	7	10
E	M4	M5	M6
F	20	30	70
	5	7	10



### Kit pin for storage (optional)

The pins required for storage of the tool plate when not in use are supplied separately.



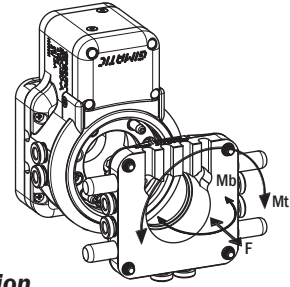
## Carichi di sicurezza

Consultare la tabella per i carichi massimi ammissibili. Forze e coppie eccessive possono danneggiare il sistema e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore.

	EQC05-A/ EQC05N-A	EQC20-A/ EQC20N-A	EQC100-A/ EQC100N-A
Mt	8 Nm	150 Nm	600 Nm
Mb	8 Nm	100 Nm	400 Nm
F	500 N	2000 N	8000 N

## Safety loads

Check the table for the maximum loads allowed. Excessive forces or torques can damage the system, cause operation problems and endanger the safety of the operator.



## Connessione elettrica principale

Il cambia utensile elettrico è dotato di un cavo con connettore maschio M8 a 8 poli per l'alimentazione a 24 Vdc, per il segnale di comando di aggancio/sgancio e per la connessione dei segnali digitali di uscita che identificano la configurazione di sistema accoppiato e disaccoppiato.

La taglia maggiore di questo cambia utensile elettrico (EQC100-A / EQC100N-A) presenta un ulteriore ingresso (IN SECURE) che deve rimanere abilitato (collegato a 24Vdc) per permettere il funzionamento del prodotto. Non è necessaria un'ulteriore elettronica di comando esterna.

## Main electrical connection

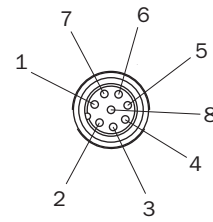
The electrical quick changer is equipped with an 8-poles M8 male connector that provides a 24Vdc power supply for the locking/unlocking command and for the connection of the digital outputs that identify the coupled and uncoupled system status. No additional external electronic control system is required. The major size of this electric tool changer (EQC100-A / EQC100N-A) has an additional input (IN SECURE) that must remain enabled (connected to 24vdc) to allow the operation of the product. No additional external electronic control system is required.

### EQC05-A / EQC20-A

1	Bianco / White	N/C
2	Marrone / Brown	N/C
3	Verde / Green	OUT CLOSED (PNP)
4	Giallo / Yellow	OUT OPENED (PNP)
5	Grigio / Grey	24 Vdc
6	Rosa / Pink	OPEN/CLOSE (PNP)*
7	Blu / Blue	N/C
8	Rosso / Red	GND

### EQC100-A

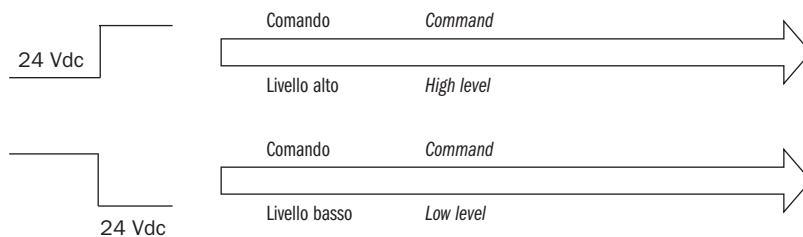
1	Bianco / White	N/C
2	Marrone / Brown	N/C
3	Verde / Green	OUT CLOSED (PNP)
4	Giallo / Yellow	OUT OPENED (PNP)
5	Grigio / Grey	24 Vdc
6	Rosa / Pink	OPEN/CLOSE (PNP)*
7	Blu / Blue	IN SECURE
8	Rosso / Red	GND



\*Per le versioni EQC05N-A, EQC20N-A e EQC100N-A il tipo di comando è NPN.

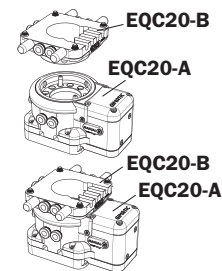
\*For EQC05N-A, EQC20N-A and EQC100N versions the type command is NPN

## Esempio di comando con EQC20-A (tipo di comando: PNP)



Basso: comando di aggancio Alto: comando di sgancio

## Command example with EQC20-A (type command: PNP)



Low: coupling command High: uncoupling command

Per la versione NPN la logic è inversa.

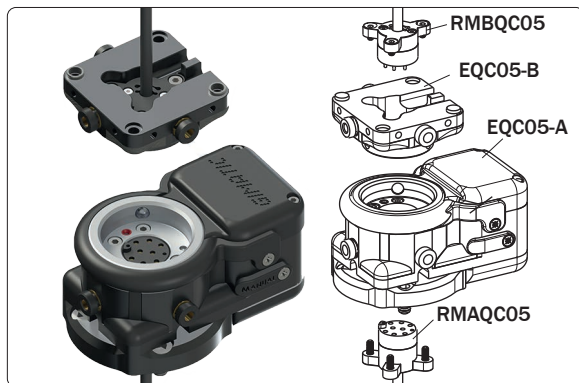
For NPN versions the logic is inverse.

	EQC05-A	EQC05N-A	EQC20-A	EQC20N-A	EQC100-A	EQC100N-A
Connessione elettrica Electrical connection	M8, 8 poli M8, 8-pole					
Alimentazione Power supply	24 Vdc ± 10% 0.35 Arms, 0.8 Apk		24 Vdc ± 10% 0.5 Arms, 1.2 Apk		24 Vdc ± 10% 1.5 Arms, 6 Apk	
Ingresso digitale PNP Digital input	PNP	NPN	PNP	NPN	PNP	NPN
Ritardo di inizializzazione uscite Output initialisation delay	200 ms					

**Modulo di connessione elettrica: RMAQC05/  
RMBQC05 (optional per EQC05)**

- Modulo di connessione elettrica per cambia utensile elettrico EQC05.
- 8 connessioni elettriche a molla.
- 1 uscita a cavo precablato.

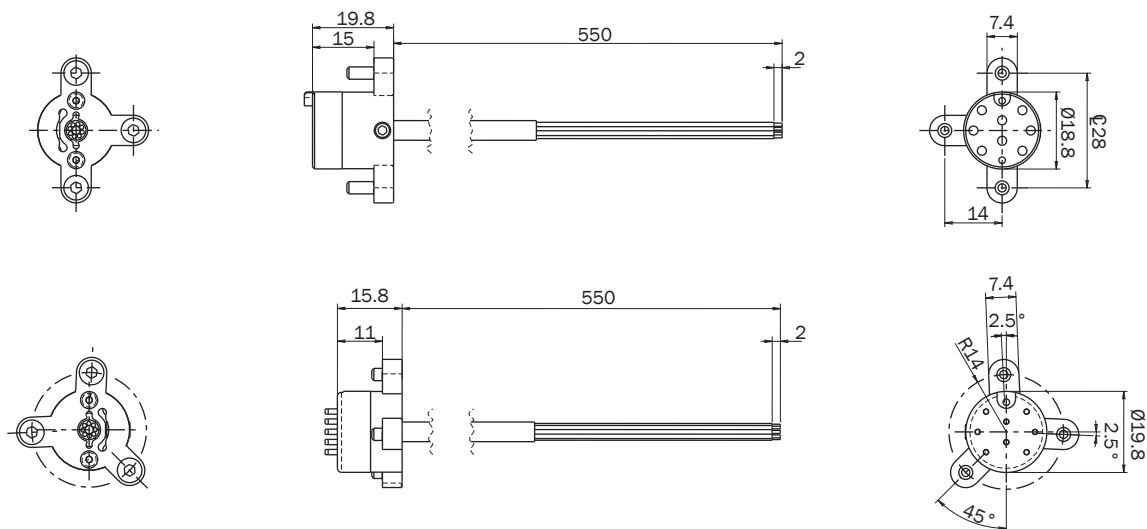
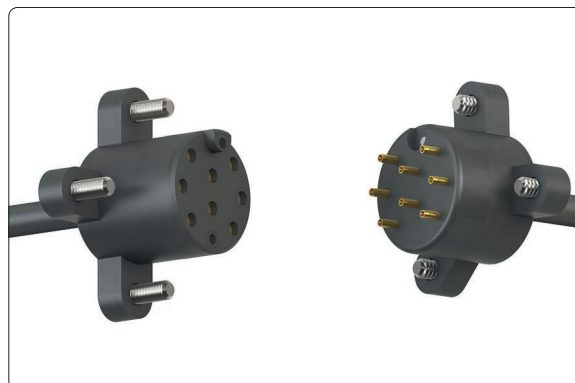
**Esempio di applicazione**



**Electrical connection module: RMAQC05/  
RMBQC05 (optional for EQC05)**

- Electrical connection module for EQC05 quick changer.
- 8 electrical spring connections.
- 1 output with pre-wired cable.

**Application example**

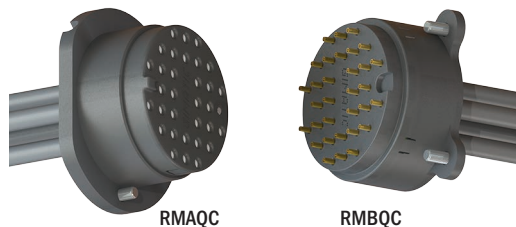


	RMAQC05	RMBQC05
Numero connessioni utente Number of user connections	8	
Rivestimento contatti Contact coating	Doratura Gold-plating	
Tipo di contatto Type of contact	Femmina Female	Maschio Male
Tensione nominale Rated voltage	24 Vdc	
Corrente massima per contatto Max current per contact	1 A	
Temperatura di esercizio Operating temperature	5/60°C	
Grado di protezione IP rating	IP40	
Connessione elettrica Electrical connection	1 cavo (8 x 0.14mm <sup>2</sup> ) 1 cable (8 x 0.14mm <sup>2</sup> )	
Lunghezza cavo Cable length	500mm	
Isolamento cavo Cable insulation	PUR	
Guaina cavo Cable sheath	PUR	
Massa Weight	70g	



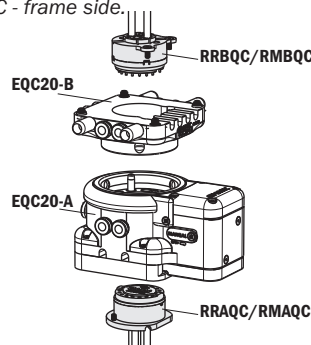
## Modulo di connessione elettrica: RMAQC/RMBQC (optional per EQC20)

- Modulo di connessione elettrica.
- 32 connessioni elettriche.
- Pin a tasteggio autopulenti.
- Uscita: 4 cavi da 8 x 0.14 mm<sup>2</sup>.
- Le due parti sono fornite separatamente:  
RMAQC – lato robot;  
RMBQC – lato utensile.



## Electrical connection module: RMAQC/RMBQC (optional for EQC20)

- Electric connection module.
- 32 electrical connection.
- Feeler pin with self-clearing heads.
- Output: four 8-pole cable x 0.14 mm<sup>2</sup>.
- The two parts are supplied separately:  
RMAQC – robot side;  
RMBQC – frame side.



## RRAQC/RRBQC (optional)

Modulo di identificazione RFID + Modulo di connessione elettrica.

Sistema di riconoscimento automatico dell'organo di presa composto da un lettore RFID (RRAQC) ed un TAG di memoria (RRBQC).

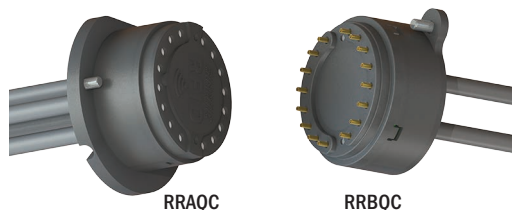
- Fino a 255 utensili distinguibili.
- Codifica binaria dell'utensile tramite 8 uscite digitali 24 Vdc.
- Ingresso digitale per il conteggio dei cicli di esecuzione dell'utensile.
- Uscita digitale per segnalazione intervento manutentivo richiesto dall'utensile al raggiungimento del numero cicli impostato.
- Memorizzazione dati tecnici dell'utensile.
- Disponibile area dati utensile.
- 16 connessioni elettriche.
- Pin a tasteggio autopulenti.
- Uscita modulo RFID: 2 cavi da 8 poli x 0.14 mm<sup>2</sup>.
- Uscita modulo connessione elettrica: 2 cavi da 8 x 0.14 mm<sup>2</sup>.
- Le due parti sono fornite separatamente:  
RRAQC – lato robot (lettore) [NPN: RRAQCN];  
RRBQC – lato utensile (TAG).
- Comunicazione anche con il tuo smartphone grazie alla nuova app "Gimatic Android App".

## RRAQC/RRBQC (optional)

RFID identification modules + Electric connection module.

System for automatic recognition of gripping tool composed of a RFID reader (RRAQC) and memory TAG (RRBQC).

- Up to 255 identifiable tools.
- Binary coding of tools by means of 8 digital outputs 24 Vdc.
- Digital input to counting tool cycles execution.
- Generation of a maintenance warning signal once the tool reaches the preset number of cycles.
- Memorization of tool technical data.
- User data memory available.
- 16 pins connections.
- Feeler pin with self-clearing heads.
- RFID module output: two 8-pole cable x 0.14 mm<sup>2</sup>.
- Electric connection module output: two 8-pole cable x 0.14 mm<sup>2</sup>.
- The two parts are supplied separately:  
RRAQC – robot side (Reader) [NPN: RRAQCN];  
RRBQC – frame side (TAG).
- Communication also through your smartphone thanks to the new app "Gimatic Android App".



	RRAQC/RRBQC	RMAQC/RMBQC
Numero connessioni utente Number of user connections	16	32
RFID	Si Yes	No No
Connessioni Connections	8 x 0.14 mm <sup>2</sup> 4 cavi (diametro cavo 4.8 mm) 8 x 0.14 mm <sup>2</sup> 4 cable (cable diametre 4.8 mm)	
Corrente max per contatto Max current per contact	1 A	
Tensione nominale Rated voltage	24 Vdc ± 10%	
Contatti Contacts	A molla autopulenti con doratura Self-cleaning spring contacts, gold-plated	
Temperatura esercizio Temperature range	5 ÷ 60°C	

**Note**  
**Notes**

Lined area for notes.

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Gripters

Attuatori Lineari  
Linear Actuators

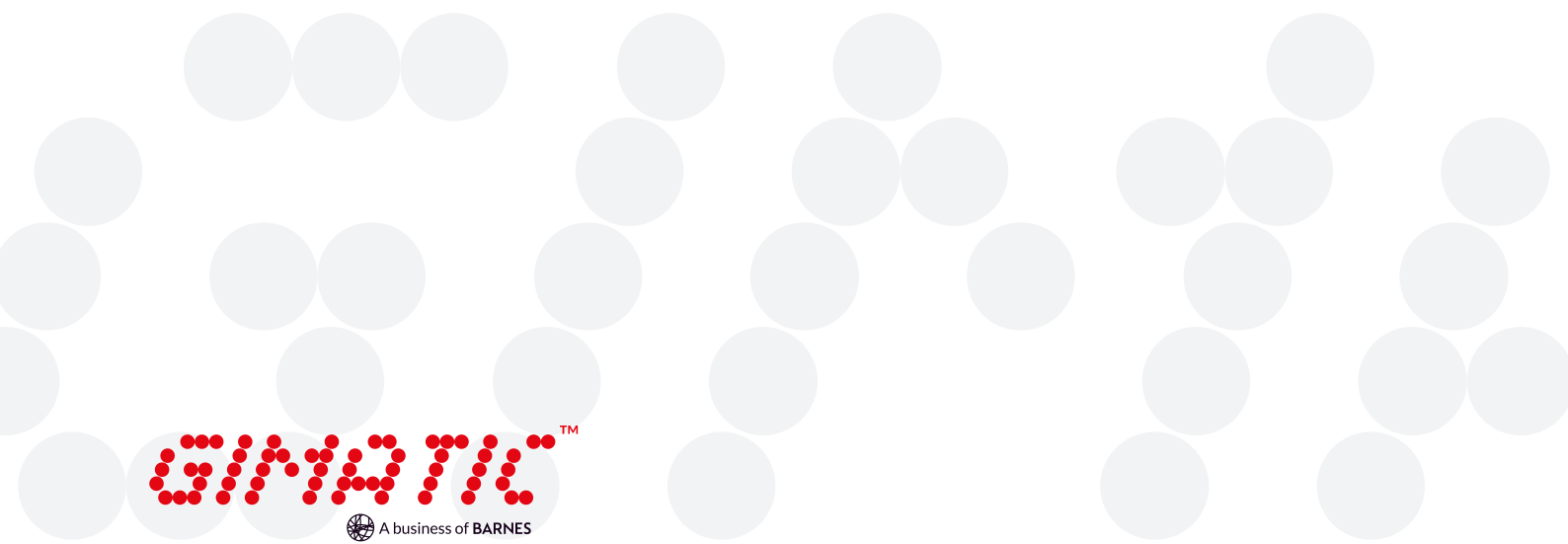
Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors



GMAZ™

A business of BARNES

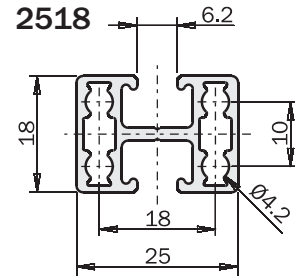
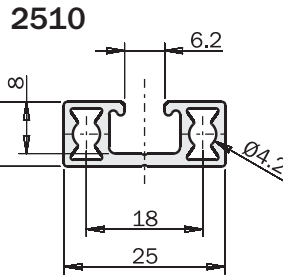
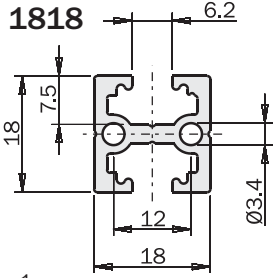
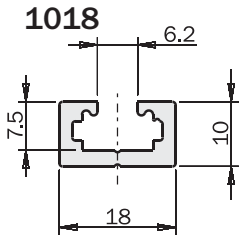
# PROFILI E STAFFE

*Profiles and brackets*



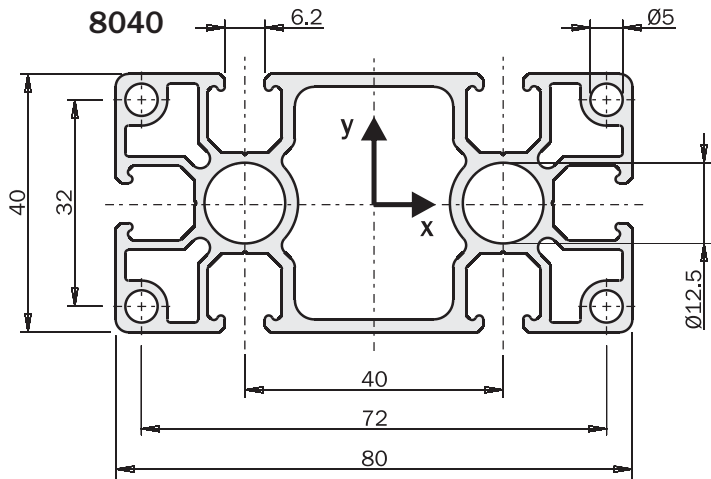
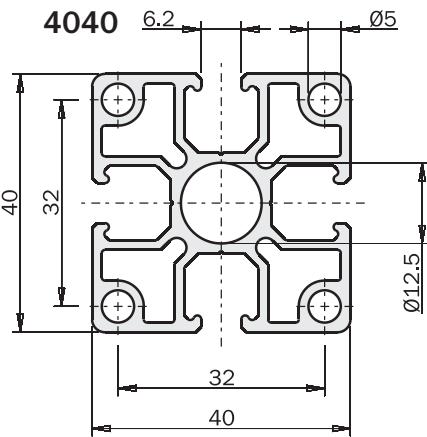
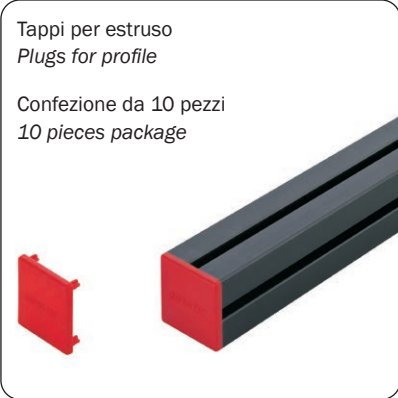
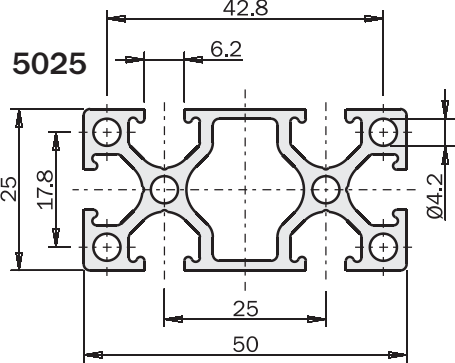
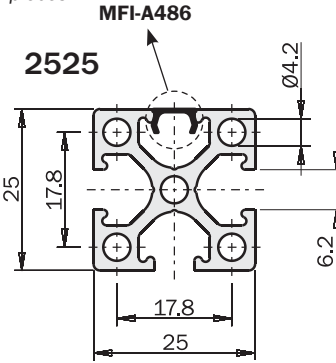
Travi quadre

Square beams



Profilo copri cava in PVC, lunghezza 1m, confezione da 20 pezzi

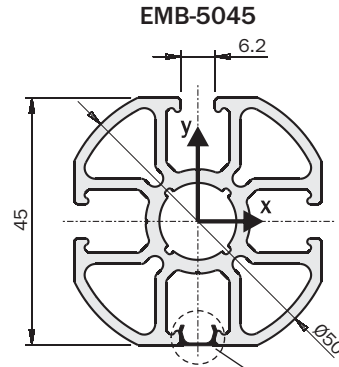
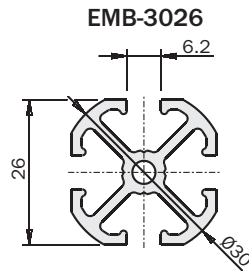
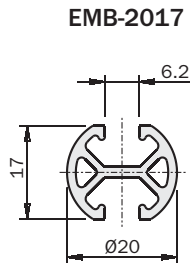
PVC slot cover profile, length 1m, pack of 20 pieces



		Lunghezza Length	Peso Weight	Ix [mm <sup>4</sup> ]	Iy [mm <sup>4</sup> ]	Tappi Plugs	Iz [mm <sup>4</sup> ]
EMB-1018-1000	EMF-1018-1000	1 m	250 g	1084	3855	MFI-A24	4940
EMB-1018-2000	EMF-1018-2000	2 m	500 g	1084	3855	MFI-A24	4940
EMB-1818-1000	EMF-1818-1000	1 m	400 g	4381	6245	MFI-A23	10627
EMB-1818-2000	EMF-1818-2000	2 m	800 g	4381	6245	MFI-A23	10627
EMB-2510-1000	EMF-2510-1000	1 m	280 g	1305	7300	MFI-A27	8605
EMB-2510-2000	EMF-2510-2000	2 m	560 g	1305	7300	MFI-A27	8605
EMB-2518-1000	EMF-2518-1000	1 m	400 g	5647	11544	MFI-A28	17191
EMB-2518-2000	EMF-2518-2000	2 m	800 g	5647	11544	MFI-A28	17191
EMB-2525-1000	EMF-2525-1000	1 m	610 g	16298	16289	MFI-A21	32302
EMB-2525-2000	EMF-2525-2000	2 m	1220 g	16298	16289	MFI-A21	32302
EMB-5025-1000	EMF-5025-1000	1 m	1040 g	28882	111103	MFI-A22	139483
EMB-5025-2000	EMF-5025-2000	2 m	2080 g	28882	111103	MFI-A22	139483
EMB-4040-1000	EMF-4040-1000	1 m	1300 g	86387	86387	MFI-A25	172773
EMB-4040-2000	EMF-4040-2000	2 m	2600 g	86387	86387	MFI-A25	172773
EMB-8040-1000	EMF-8040-1000	1 m	2180 g	155462	587130	MFI-A26	742592
EMB-8040-2000	EMF-8040-2000	2 m	4360 g	155462	587130	MFI-A26	742592

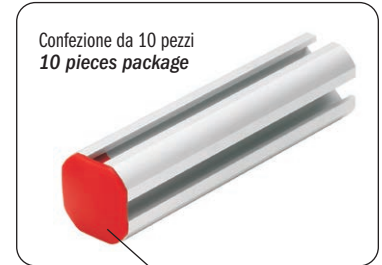
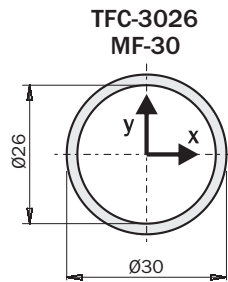
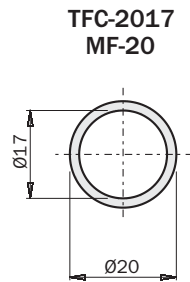
## Travi tonde

## Round beams

**MFI-A486**

Profilo copri cava in PVC, lunghezza 1m, confezione da 20 pezzi

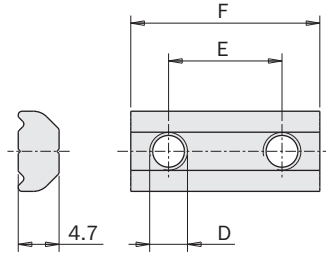
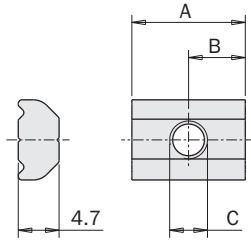
PVC slot cover profile, length 1m, pack of 20 pieces



	Materiale Material	E [GPa]	Lunghezza Length	Peso Weight	I <sub>x</sub> [mm <sup>4</sup> ]	I <sub>y</sub> [mm <sup>4</sup> ]	Tappi Plugs
<b>EMB-2017-1000</b>	Alluminio Aluminum	67	1 m	340 g	2534	5003	MFP-K29
<b>EMB-2017-2000</b>	Alluminio Aluminum	67	2 m	680 g	2534	5003	MFP-K29
<b>EMB-3026-1000</b>	Alluminio Aluminum	67	1 m	700 g	15842	15842	MFP-K28
<b>EMB-3026-2000</b>	Alluminio Aluminum	67	2 m	1400 g	15842	15842	MFP-K28
<b>EMB-5045-1000</b>	Alluminio Aluminum	67	1 m	1665 g	100773	100773	MFP-K50
<b>EMB-5045-2000</b>	Alluminio Aluminum	67	2 m	3330 g	100773	100773	MFP-K50
<b>MF-20-1000</b>	Alluminio Aluminum	67	1 m	230 g	3754	3754	MFP-K22
<b>MF-20-2000</b>	Alluminio Aluminum	67	2 m	460 g	3754	3754	MFP-K22
<b>MF-30-1000</b>	Alluminio Aluminum	67	1 m	444 g	17329	17329	MFP-K21
<b>MF-30-2000</b>	Alluminio Aluminum	67	2 m	888 g	17329	17329	MFP-K21
<b>TFC-2017-1000</b>	Carbonio Carbon composite	105	1 m	130 g	3754	3754	MFP-K22
<b>TFC-2017-1500</b>	Carbonio Carbon composite	105	1.5 m	195 g	3754	3754	MFP-K22
<b>TFC-2017-2000</b>	Carbonio Carbon composite	105	2 m	260 g	3754	3754	MFP-K22
<b>TFC-3026-1000</b>	Carbonio Carbon composite	105	1 m	260 g	17329	17329	MFP-K21
<b>TFC-3026-1500</b>	Carbonio Carbon composite	105	1.5 m	390 g	17329	17329	MFP-K21
<b>TFC-3026-2000</b>	Carbonio Carbon composite	105	2 m	520 g	17329	17329	MFP-K21

**Dadi a T**

(materiale: acciaio)

**T-Nuts**

(material: steel)

	A [mm]	B [mm]	C [mm]	Peso Weight
<b>MFI-177</b>	15	7.5	M4	5 g
<b>MFI-025</b>	15	7.5	M5	5 g
<b>MFI-178</b>	15	7.5	M6	5 g

	D [mm]	E [mm]	F [mm]	Peso Weight
<b>MFI-003</b>	M4	8	16	5 g
<b>MFI-006</b>	M5	10	20	7 g
<b>MFI-523</b>	M5	14	25	9 g
<b>MFI-009</b>	M5	15	25	9 g
<b>MFI-148</b>	M5	17	25	9 g
<b>MFI-016</b>	M5	22	32	11 g
<b>MFI-027</b>	M5	25	35	13 g
<b>MFI-055</b>	M5	28	38	14 g
<b>MFI-050</b>	M5	30	40	15 g
<b>MFI-029</b>	M5	35	45	16 g
<b>MFI-020</b>	M5	40	50	18 g
<b>MFI-043</b>	M5	50	60	22 g
<b>MFI-022</b>	M5	60	70	26 g
<b>MFI-045</b>	M5	90	100	38 g
<b>MFI-555</b> <b>NEW</b>	M6	20	32	11 g

**Dadi a molla**

Mantengono la posizione nella cava senza scivolare durante l'assemblaggio.

Adatti per le travi:

EMB-5045  
EMB-3026  
EMB-2017  
EMB/EMF-8040  
EMB/EMF-4040  
EMB/EMF-5025  
EMB/EMF-2525  
EMB/EMF-2518  
EMB/EMF-2510  
EMB/EMF-1818  
EMB/EMF-1018

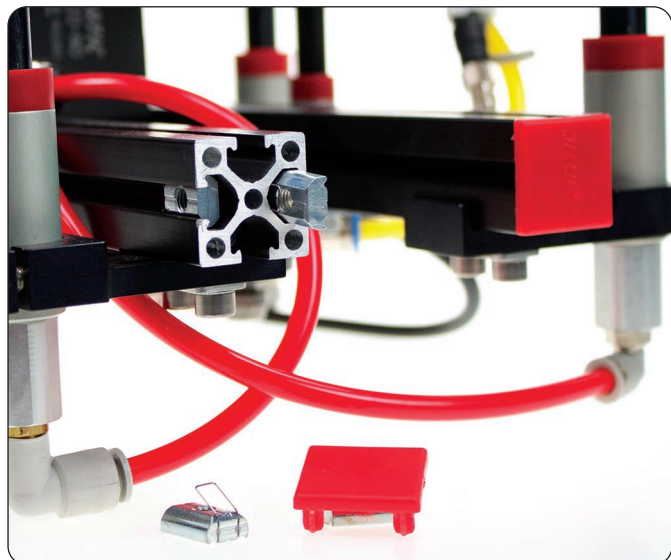
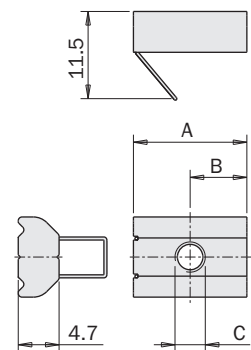
**Spring nuts**

They hold the position in the slot without slipping during assembly.

Suitable for the beams:

EMB-5045  
EMB-3026  
EMB-2017  
EMB/EMF-8040  
EMB/EMF-4040  
EMB/EMF-5025  
EMB/EMF-2525  
EMB/EMF-2518  
EMB/EMF-2510  
EMB/EMF-1818  
EMB/EMF-1018

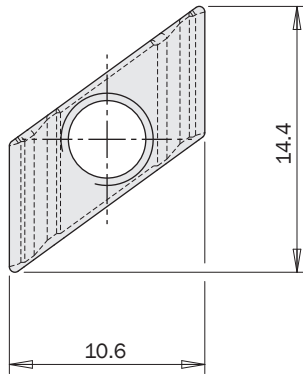
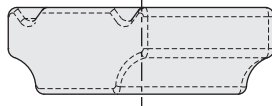
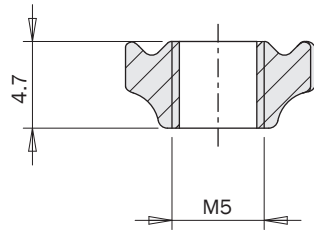
	A [mm]	B [mm]	C [mm]	Peso Weight
<b>MFI-A329</b>	15	7.5	M4	5 g
<b>MFI-A331</b>	15	7.5	M5	5 g



**Dado last-minute**

(materiale: acciaio)

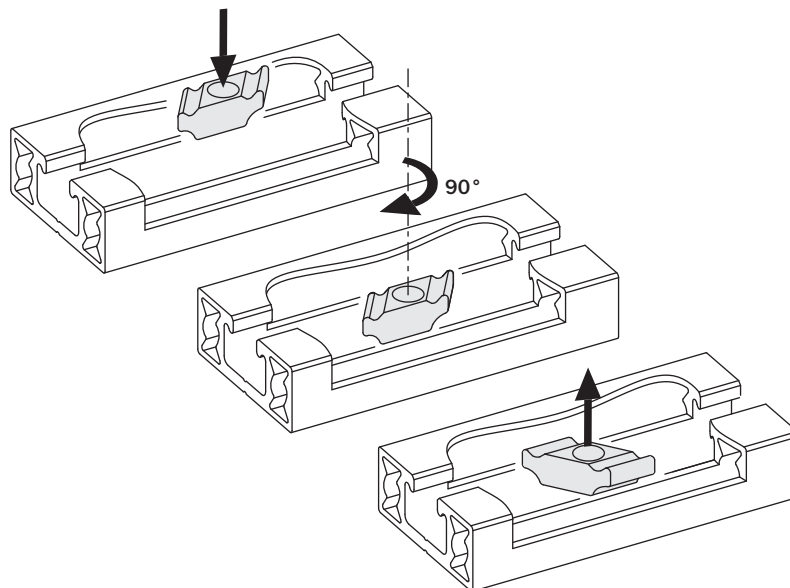
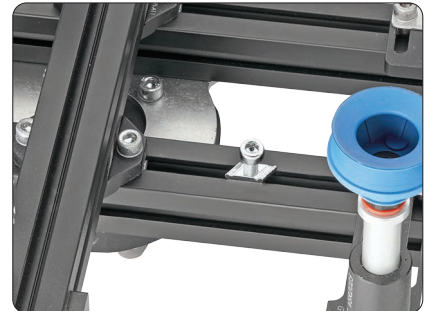
Da usare quando si deve aggiungere qualcosa ad un EOAT già assemblato.

**Last-minute nut**

(material: steel)

To be used when you need to add something to an already assembled EOAT.

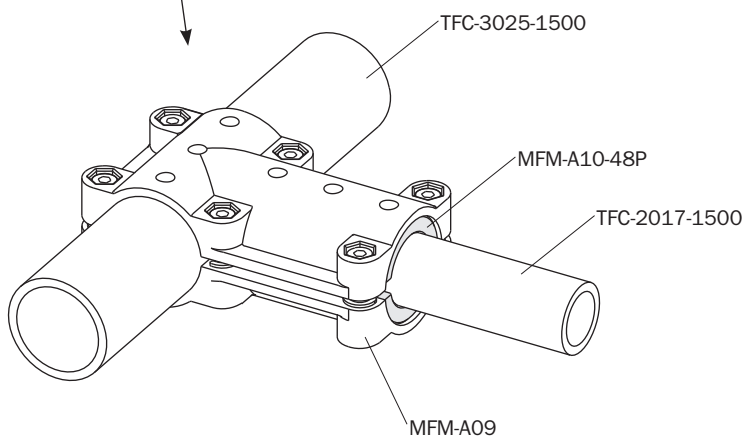
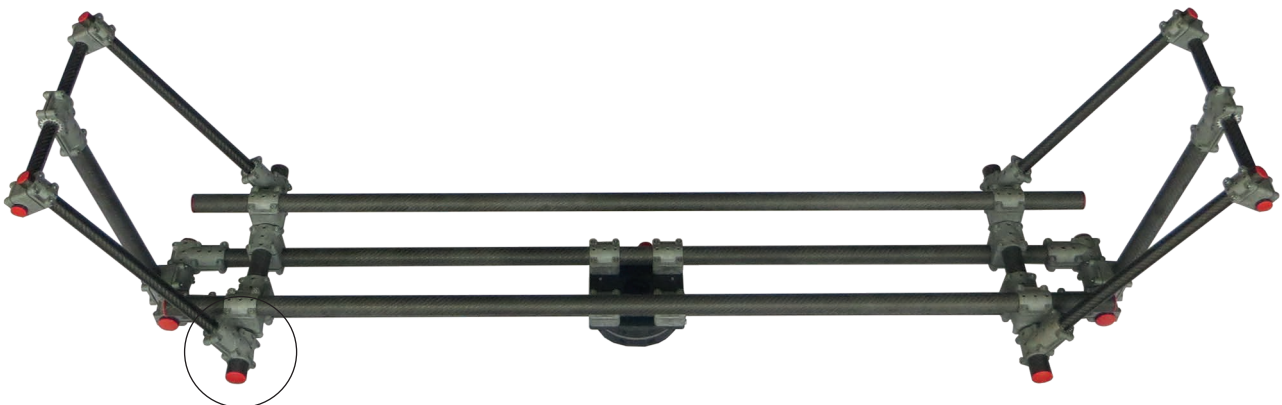
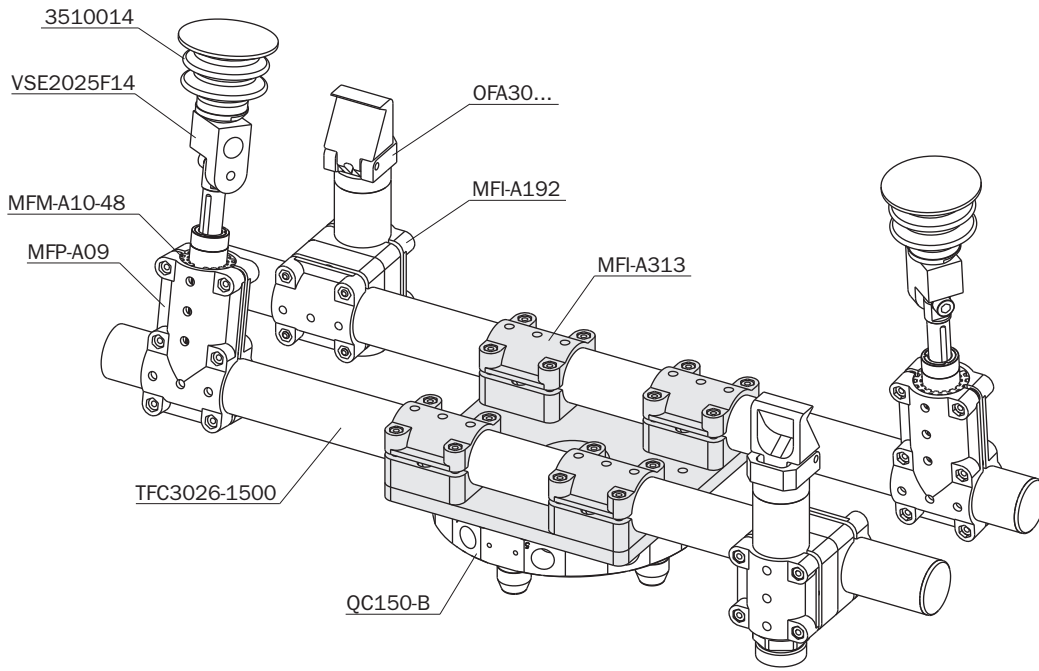
	A	Peso Weight
<b>MFI-477</b>	M5	2 g
<b>MFI-489</b>	M4	
<b>MFI-490</b>	M3	





**Esempio di applicazione con TFC**

**Application example with TFC**

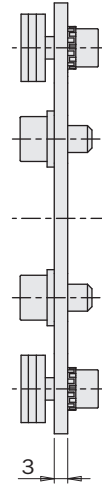
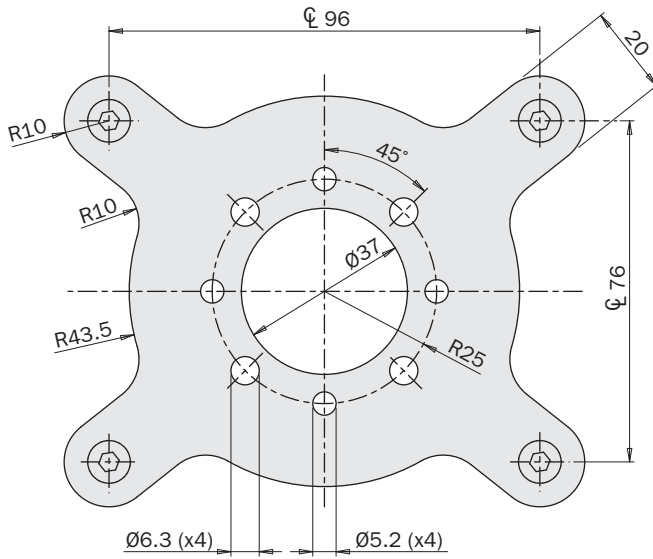


**Interfaccia 96x76 mm per fissaggio EOAT su polso  
ISO 9409-1-50-4-M6 o su QC90-B**

(kit completo di viti)  
(materiale: acciaio)

**Interface 96x76 mm for EOAT mounting on  
ISO 9409-1-50-4-M6 wrist or on QC90-B**

(kit with screws)  
(material: steel)

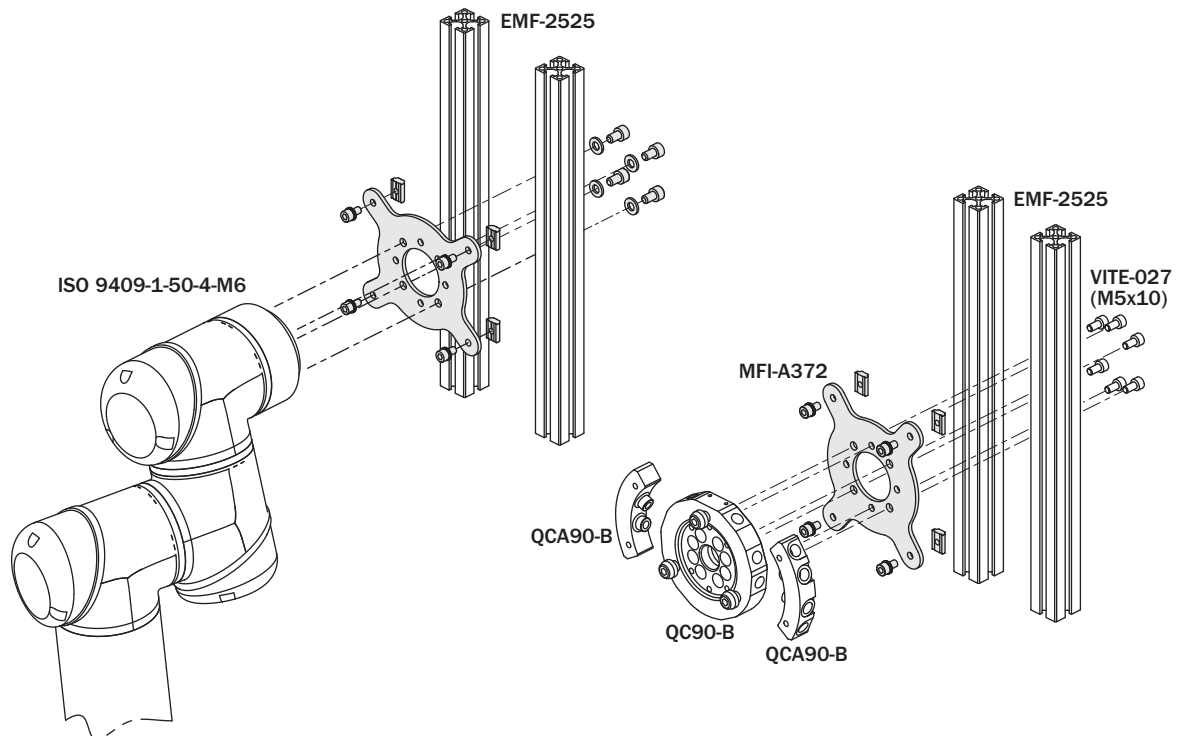


**MFI-A372**

Peso	218 g
Weight	



**Esempio di utilizzo  
Application example**

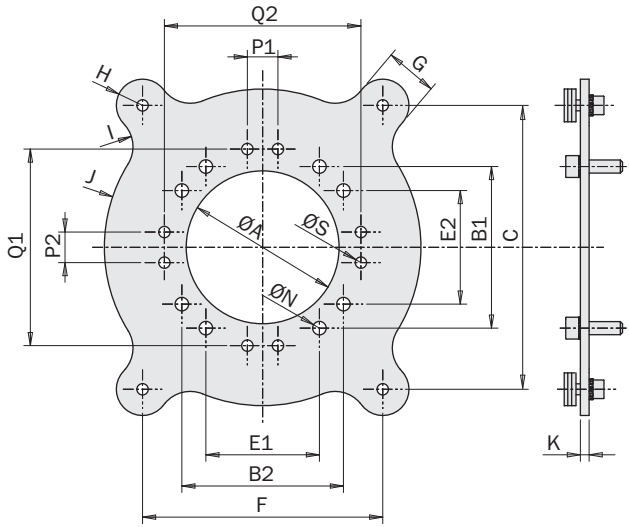


**Interfaccia per cambia utensile QC**

(kit completo di viti)

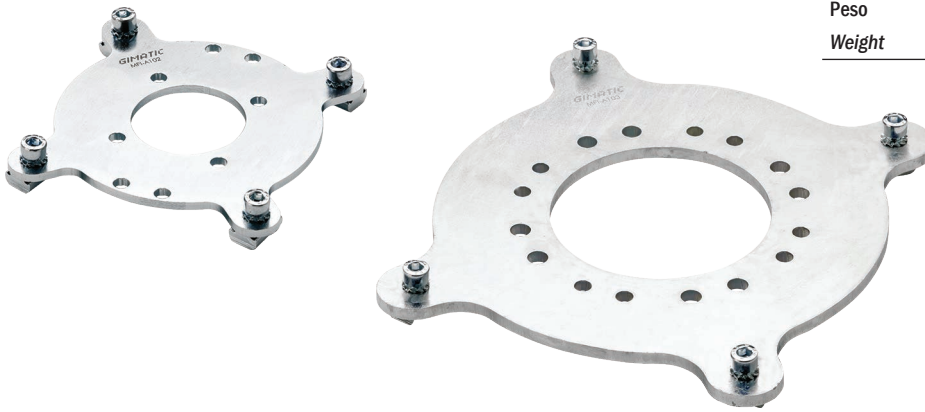
**Interface for QC quick changer**

(kit with screws)

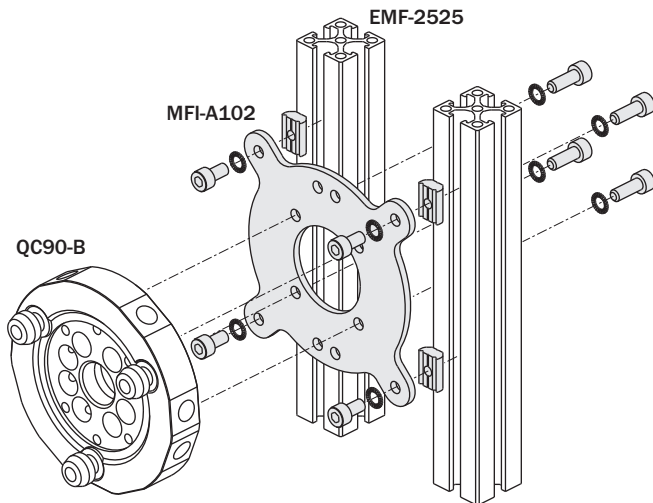


FIRST ANGLE PROJECTION

	MFI-A102	MFI-A103
A [mm]	Ø37	Ø70
B1 [mm]	35	74
B2 [mm]	-	74
C [mm]	76	130
E1 [mm]	35	52
E2 [mm]	-	52
F [mm]	76	110
G [mm]	16	24
H [mm]	8	12
I [mm]	6	15
J [mm]	43.5	72.5
K [mm]	3	4
N [mm]	Ø5.2	Ø6.2
P1 [mm]	14	14
P2 [mm]	-	14
Q1 [mm]	78	90
Q2 [mm]	-	90
S [mm]	Ø5.2	Ø5.2
QC...-B	QC90-B	QC150-B QC160-B
Peso	190 g	540 g
Weight		



**Esempio di utilizzo**  
**Application example**

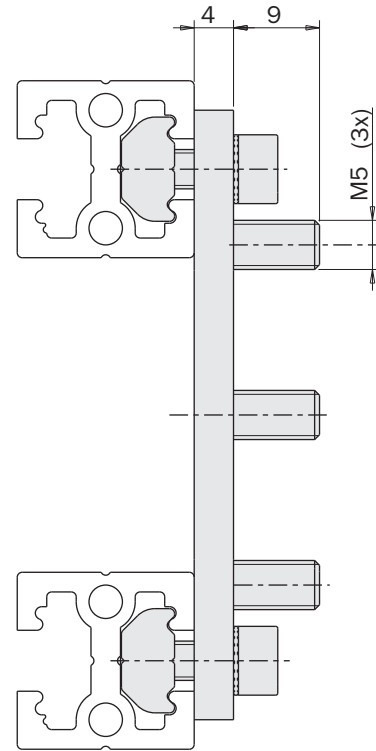
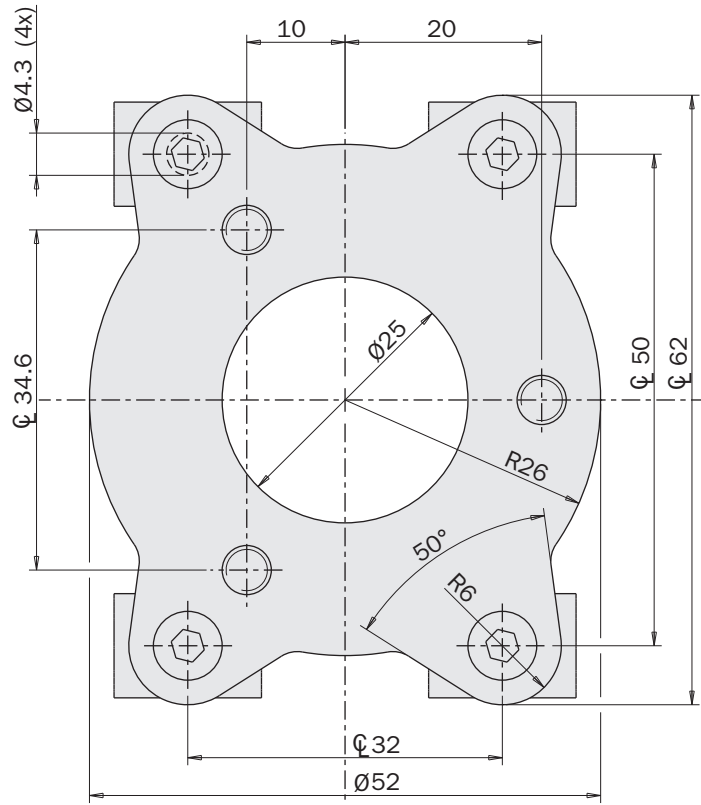


**Interfaccia per cambia utensile QC**

(kit completo di viti)

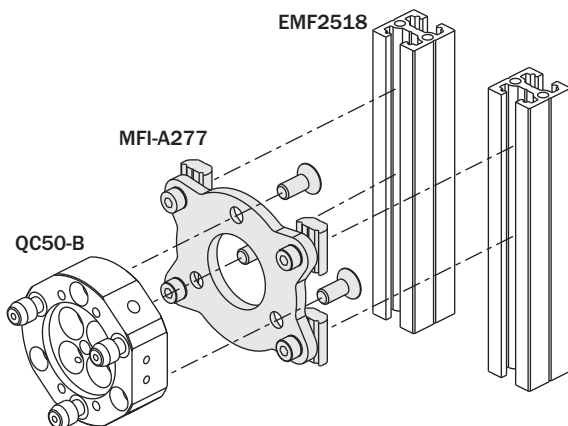
**Interface for QC quick changer**

(kit with screws)



FIRST ANGLE PROJECTION

**Esempio di utilizzo**  
**Application example**



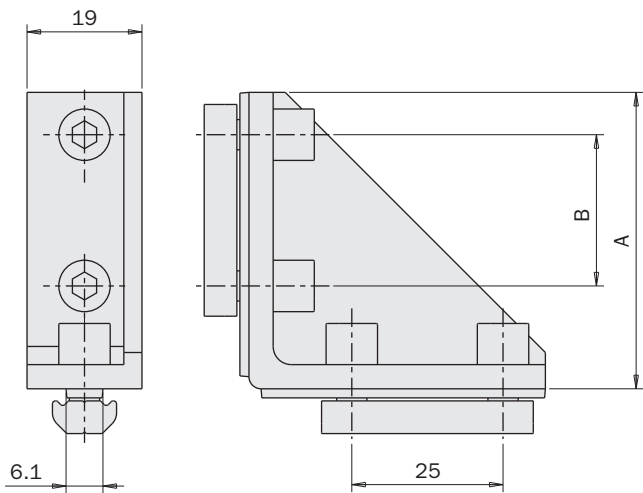
MFI-A277	
QC...-B	QC50-B
Peso	90 g
Weight	

**Staffa per fissaggio a 90° di profili**

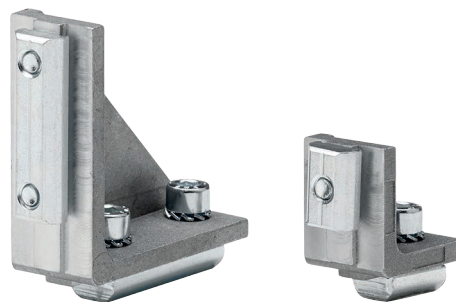
(kit completo di viti)

**Angle bracket for profiles**

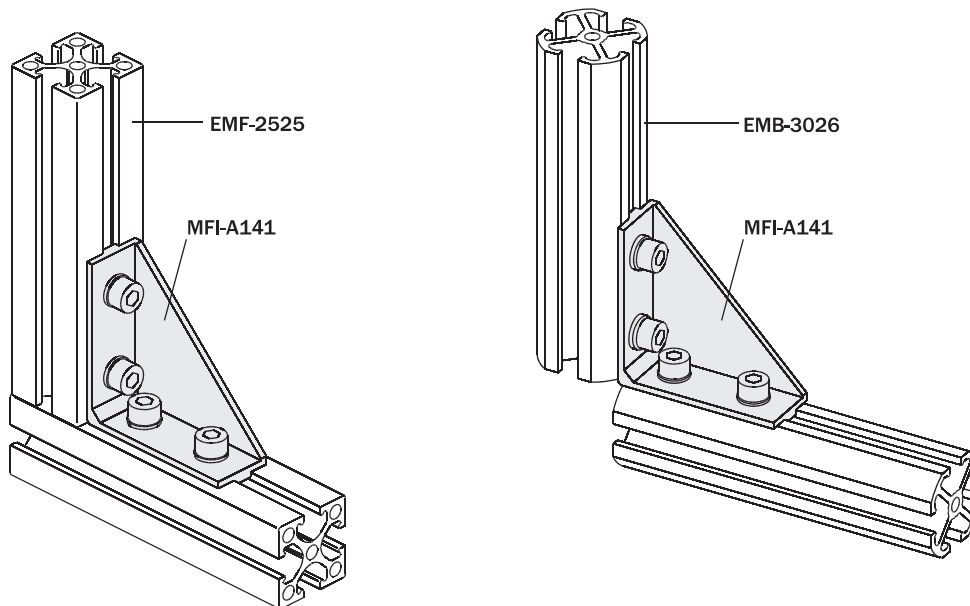
(kit with screws)



	MFI-A140	MFI-A141
A [mm]	24.5	49
B [mm]	-	25
Peso Weight	33 g	82 g



**Esempio di utilizzo**  
**Application example**



**Piastra di fissaggio dritta**

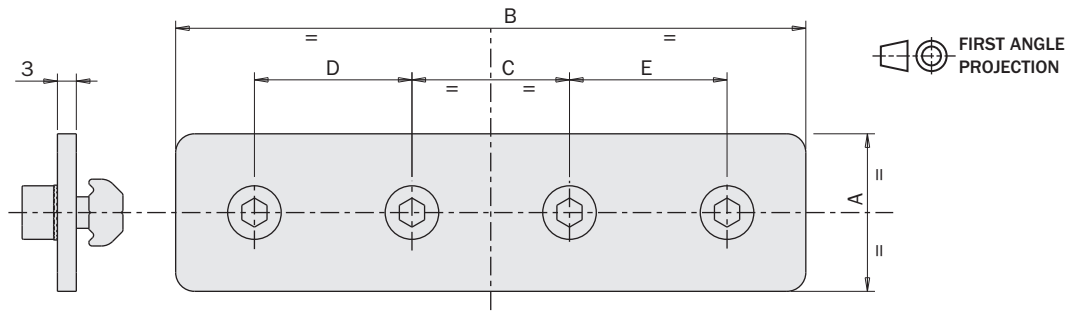
(kit completo di viti)

**Straight fixing plate**

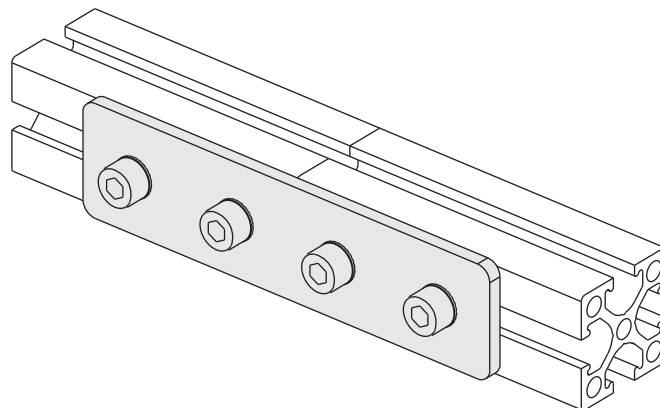
(kit with screws)



	MFI-A226	MFI-A227	MFI-A228
A [mm]	25	25	40
B [mm]	50	100	160
C [mm]	25	25	40
D [mm]	-	25	40
E [mm]	-	25	40
	2510	2510	-
	2518	2518	-
Compatibile con: Compatible with:	2525	2525	-
	5025	5025	-
	-	-	4040
	-	-	8040
Peso Weight	45 g	95 g	195 g



**Esempio di utilizzo**  
**Application example**



**Piastra di fissaggio a L**

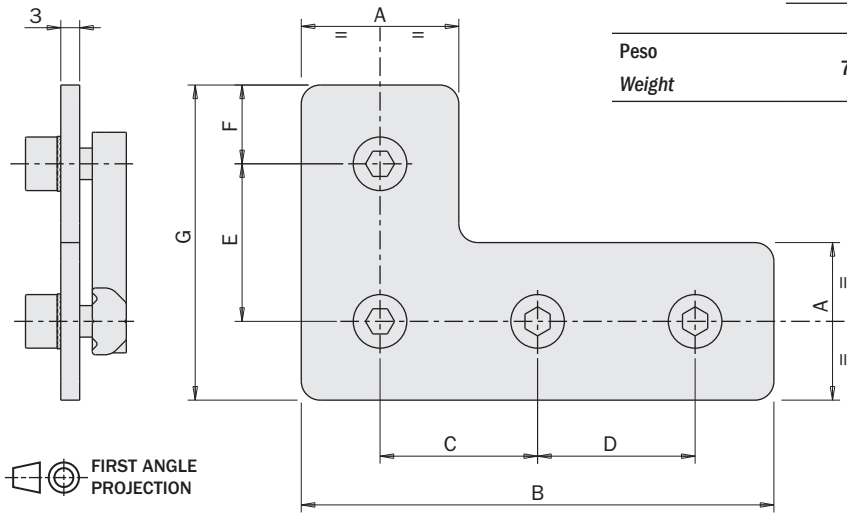
(kit completo di viti)  
(materiale: acciaio)

**L-shaped fixing plate**

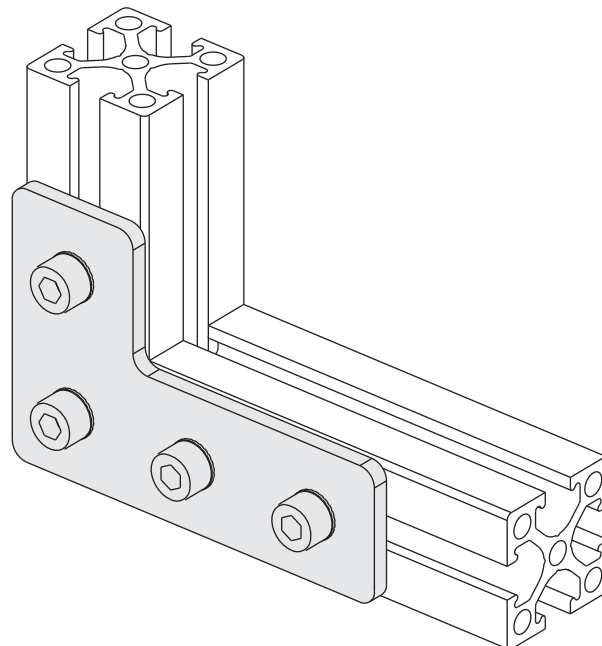
(kit with screws)  
(material: steel)



	MFI-A232	MFI-A233	MFI-A234
A [mm]	25	25	40
B [mm]	50	75	120
C [mm]	25	25	40
D [mm]	-	25	40
E [mm]	25	25	40
F [mm]	12.5	12.5	20
G [mm]	50	50	80
	2510	2510	-
	2518	2518	-
Compatibile con:	2525	2525	-
Compatible with:	5025	5025	-
	-	-	4040
	-	-	8040
Peso	70 g	104 g	200 g
Weight			



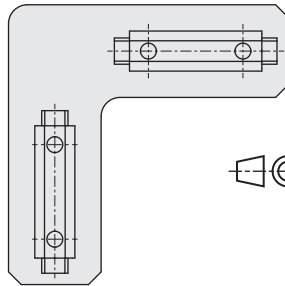
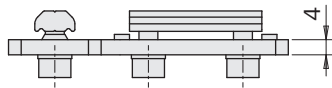
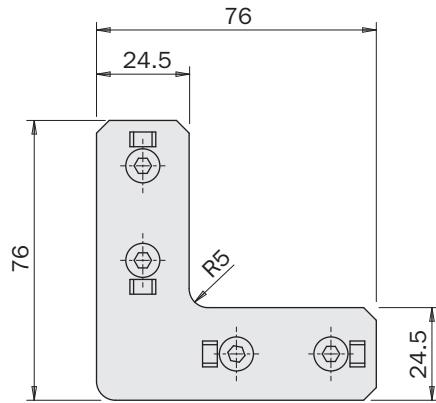
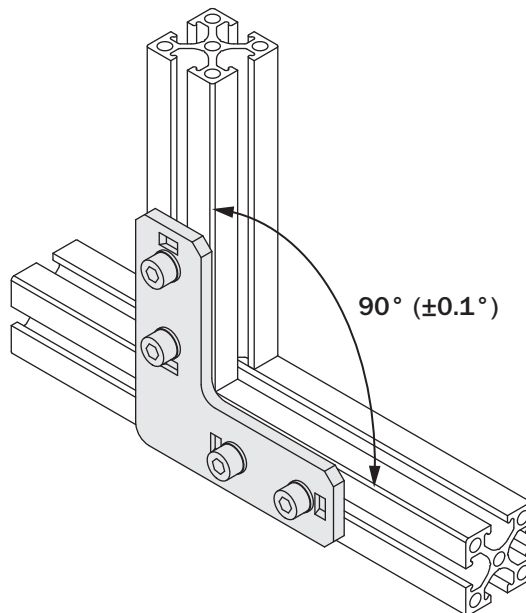
**Esempio di utilizzo**  
**Application example**



**Piastra di fissaggio a L in alluminio**

(materiale: alluminio)

- Chiavette di centraggio integrate, per assemblare due travi perpendicolari e senza gioco.
- Chiavette piramidali, per uno scorrimento facile nelle cave delle travi durante l'assemblaggio.
- kit completo di viti.


 FIRST ANGLE PROJECTION
**Esempio di utilizzo**  
**Application example****L-shaped aluminium fixing plate**

(material: aluminium)

- Integrated centering keys, for a backlash-free mounting of two perpendicular extruded beams.
- Pyramidal keys, for an easy sliding in the beam slots during the assembly.
- Kit with screws.

**MFI-A353**

Peso	68 g
Weight	





**Piastra di fissaggio a T**

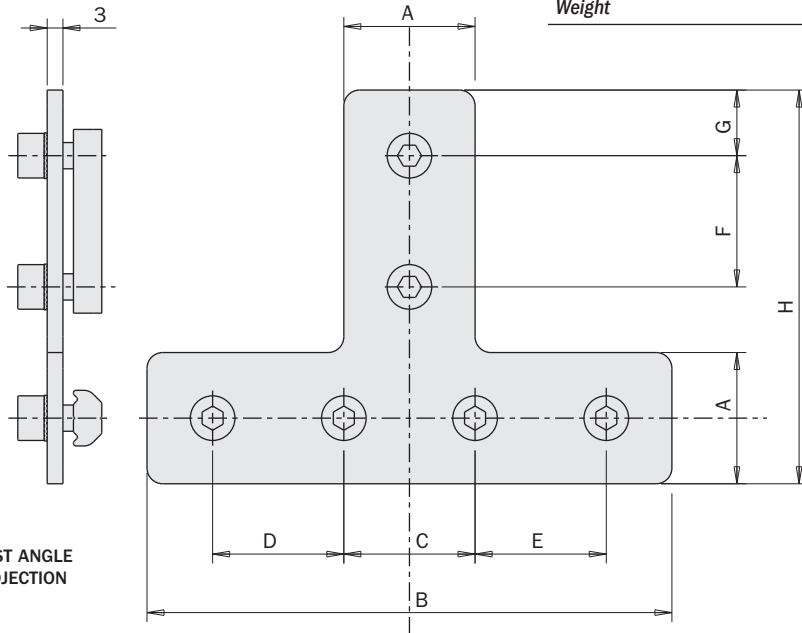
(kit completo di viti)  
(materiale: acciaio)

**T-shaped fixing plate**

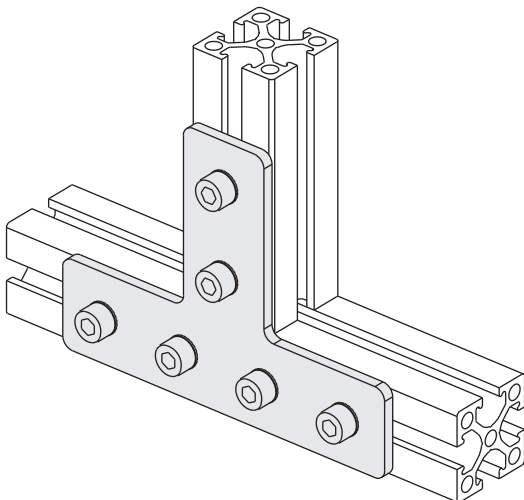
(kit with screws)  
(material: steel)



	MFI-A229	MFI-A230	MFI-A231
A [mm]	25	25	40
B [mm]	50	100	120
C [mm]	25	25	90
D [mm]	-	25	-
E [mm]	-	25	-
F [mm]	25	25	40
G [mm]	12.5	12.5	15
H [mm]	75	75	110
	2510	2510	-
	2518	2518	-
Compatibile con: Compatible with:	2525	2525	-
	5025	5025	-
	-	-	4040
	-	-	8040
Peso Weight	95 g	145 g	250 g



**Esempio di utilizzo**  
**Application example**



**Piastra di fissaggio a 45°**

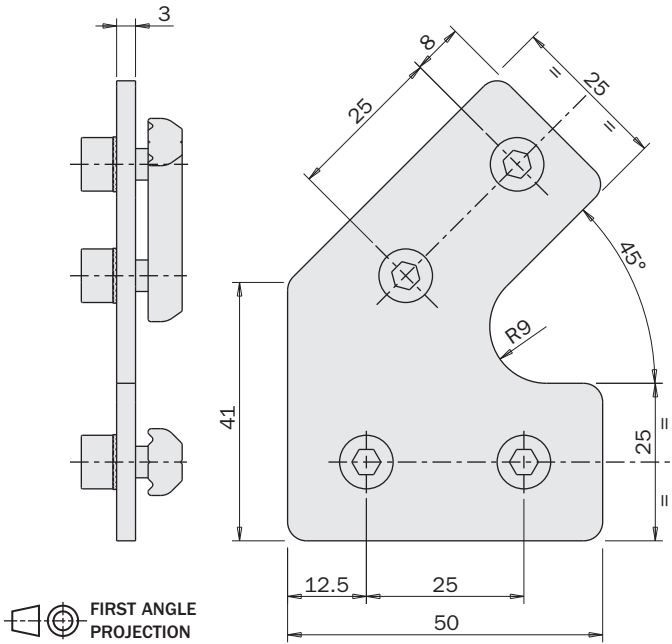
(kit completo di viti)  
(materiale: acciaio)

**45° fixing plate**

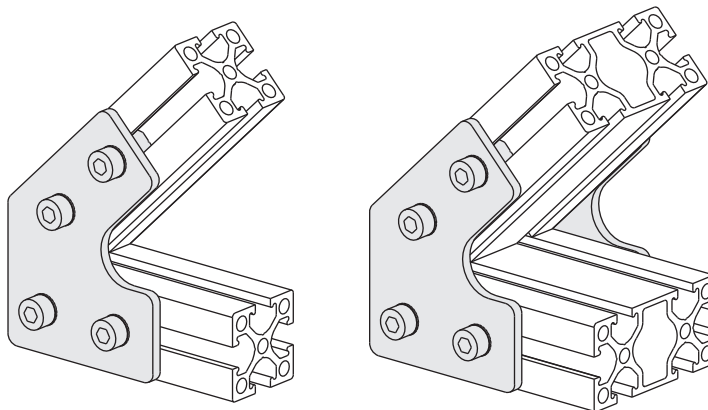
(kit with screws)  
(material: steel)

**MFI-A221**

Peso	100 g
Weight	



**Esempio di utilizzo**  
**Application example**

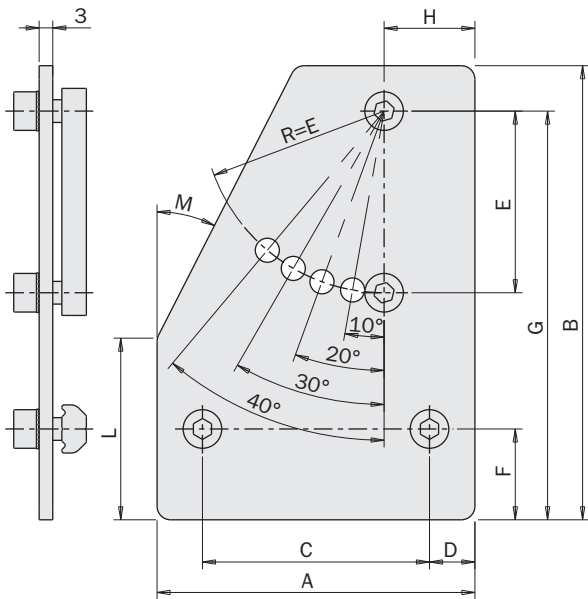


**Piastra di fissaggio con angolo regolabile**

(kit completo di viti)  
(materiale: acciaio)

**Fixing plate with adjustable angle**

(kit with screws)  
(material: steel)



FIRST ANGLE PROJECTION

	MFI-A222	MFI-A224
A [mm]	60	70
B [mm]	85	100
C [mm]	40	50
D [mm]	10	10
E [mm]	40	40
F [mm]	12.5	20
G [mm]	76	90
H [mm]	12.5	20
L [mm]	25	40
M [mm]	30°	27°

Compatibile con:  
Compatible with:

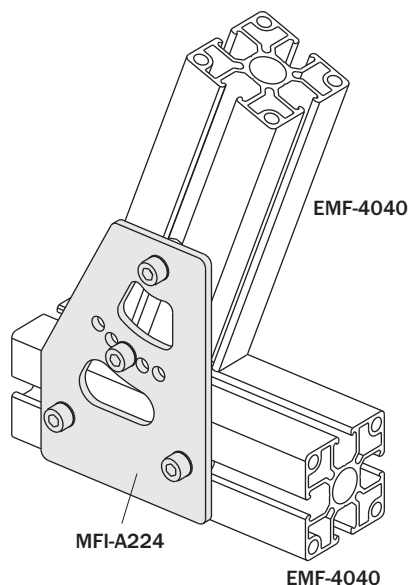
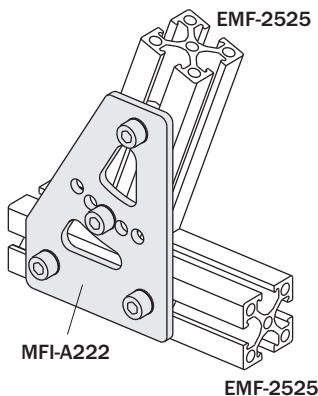
2510	-
2518	-
2525	-
5025	-
-	4040
-	8040

Peso  
Weight

130 g      175 g



**Esempio di utilizzo**  
**Application example**

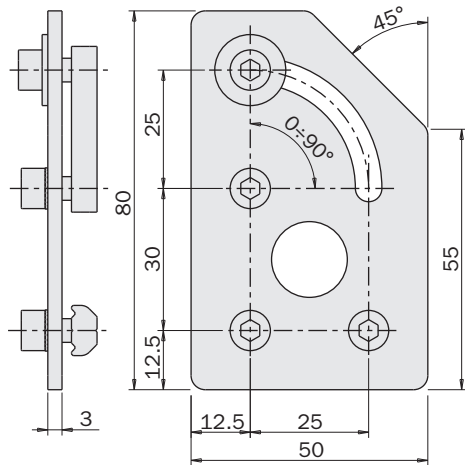


**Piastra di fissaggio con angolo regolabile**

(kit completo di viti)  
(materiale: acciaio)

**Fixing plate with adjustable angle**

(kit with screws)  
(material: steel)

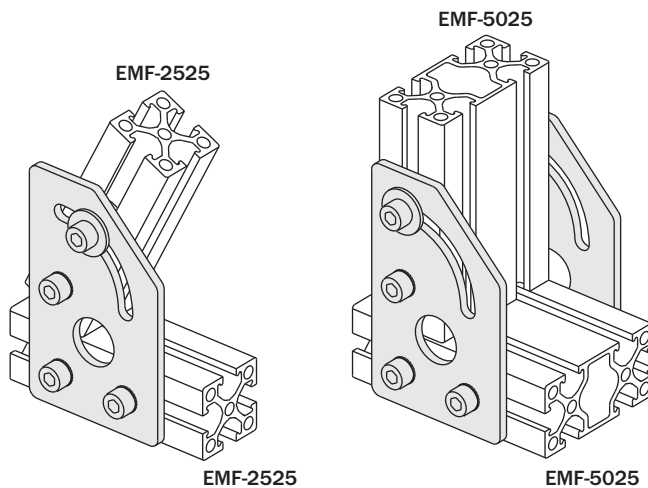


FIRST ANGLE PROJECTION

	<b>MFI-A225</b>
Peso	
Weight	115 g

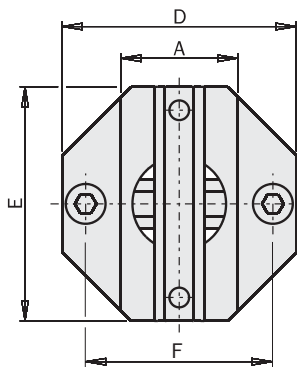


**Esempio di utilizzo**  
**Application example**



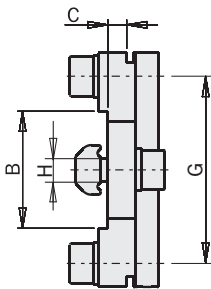
**Staffa per fissaggio a croce di profili**

(kit completo di viti)  
(materiale: alluminio)



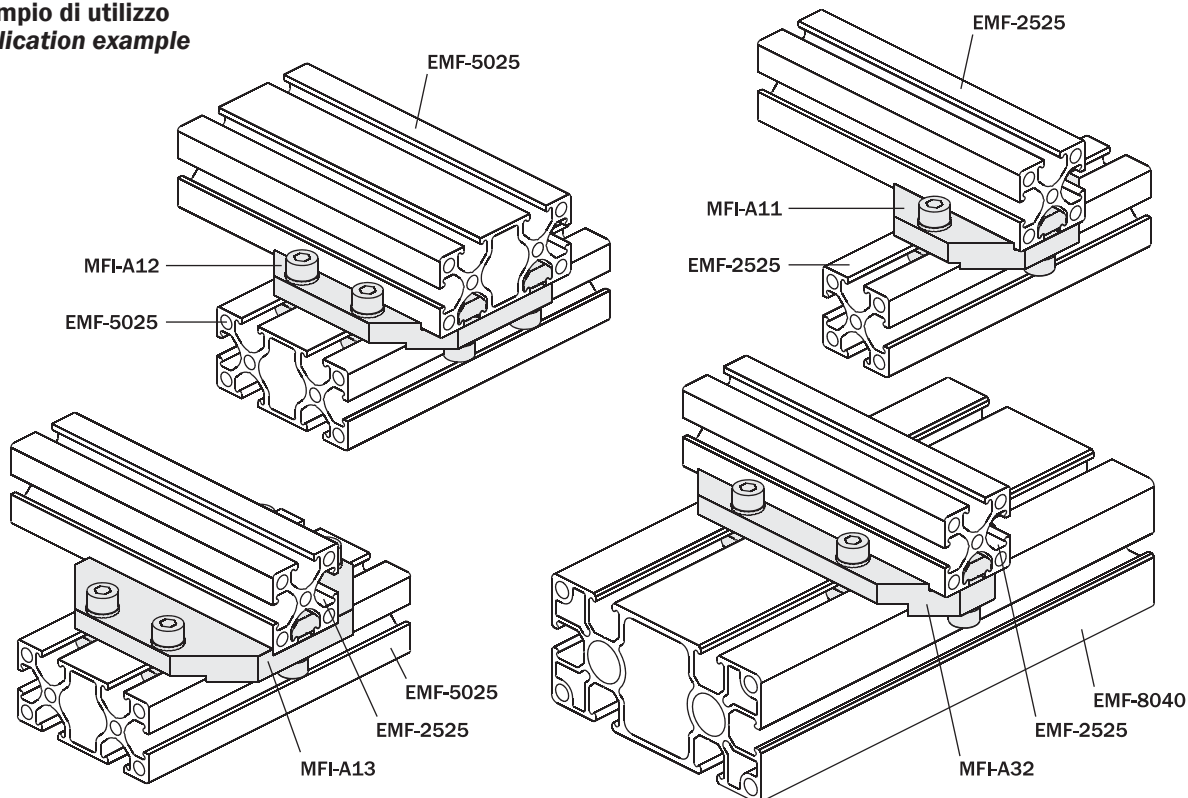
**Cross mounting bracket for profiles**

(kit with screws)  
(material: aluminium)



	MFI -A175	MFI -A265	MFI -A11	MFI -A12	MFI -A13	MFI -A29	MFI -A29-H	MFI -A30	MFI -A31	MFI -A32	MFI -A33
A [mm]	18	18	25	50	25	40	40	80	40	25	25
B [mm]	18	25	25	50	50	40	40	80	80	80	40
C [mm]	2	4	4	4	4	4	4	4	4	4	4
D [mm]	38	38	45	70	45	60	60	100	60	45	45
E [mm]	38	45	45	70	70	60	60	100	100	100	60
F [mm]	28	35	35	60	35	50	50	90	50	35	35
G [mm]	28	35	35	60	60	50	50	90	90	90	50
H [mm]	M5	M5	M5	M5	M5	M5	M6	M5	M5	M5	M5
EMF-1018	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐
EMF-1818	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐
EMF-2510	☐	☑	☑	☐	☑	☐	☐	☐	☐	☑	☑
EMF-2518	☐	☑	☑	☐	☑	☐	☐	☐	☐	☑	☑
EMF-2525	☐	☑	☑	☐	☑	☐	☐	☐	☐	☑	☑
EMF-5025	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☑
EMF-4040	☐	☐	☐	☐	☐	☑	☑	☐	☑	☐	☑
EMF-8040	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑
Peso Weight	40 g	60 g	75 g	170 g	155 g	85 g	85 g	255 g	175 g	140 g	75 g

**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

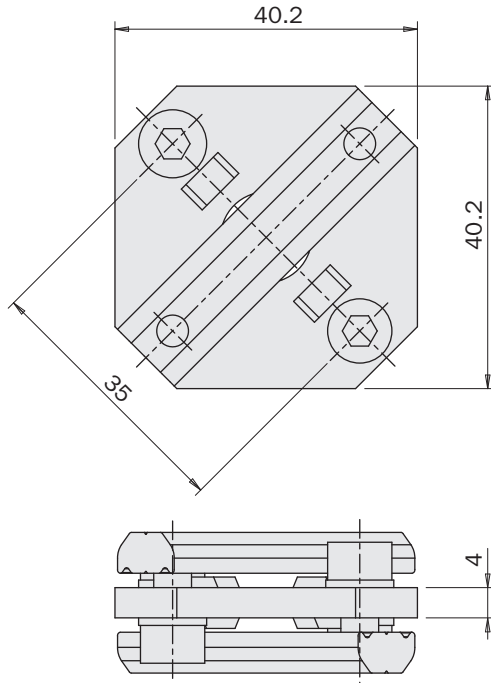
Accessori Opzionali  
Options

Sensori  
Sensors

**Staffa in alluminio per fissaggio a croce**

(materiale: alluminio)

- Chiavette di centraggio integrate, per assemblare due travi estruse perpendicolari e senza gioco.
- Chiavette piramidali, per uno scorrimento facile nelle cave delle travi durante l'assemblaggio.
- kit completo di viti.



**Cross mounting aluminium bracket**

(material: aluminium)

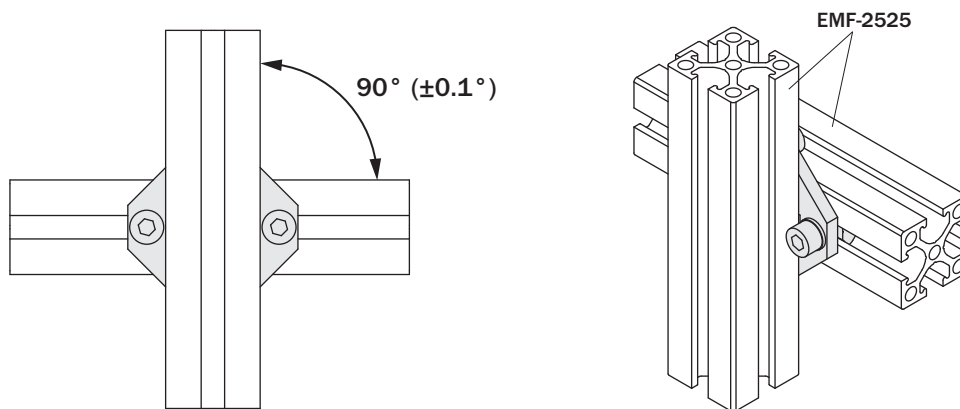
- Integrated centering keys, for a backlash-free mounting of two perpendicular extruded beams.
- Pyramidal keys, for an easy sliding in the beam slots during the assembly.
- Kit with screws.

**MFI-A356**

Peso	57 g
Weight	



**Esempio di utilizzo**  
**Application example**

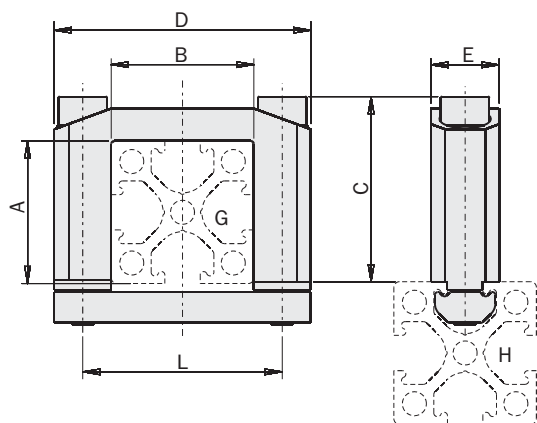


**Staffa (quadra) per fissaggio a croce**

(kit completo di viti)  
(materiale: alluminio)

**Cross (square) joint connector**

(kit with screws)  
(material: aluminium)

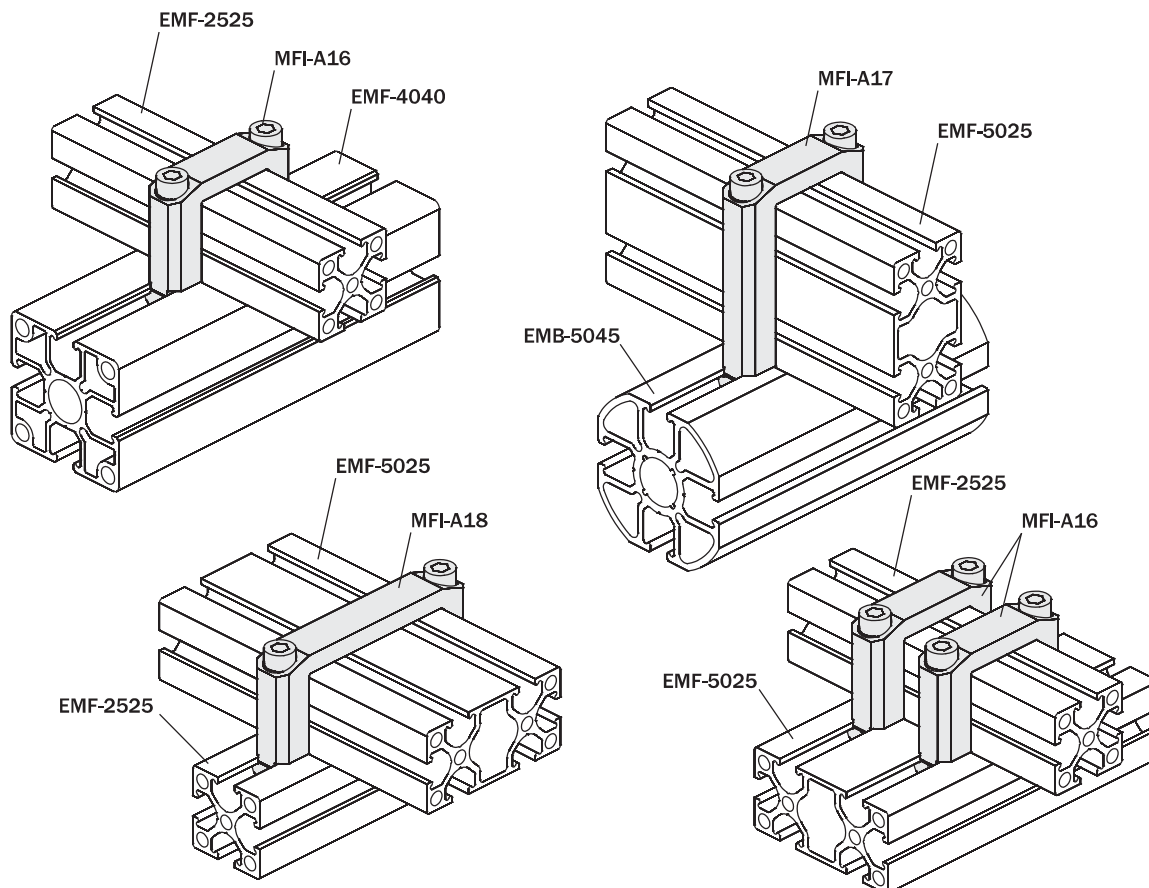


FIRST ANGLE  
PROJECTION



	MFI-A244	MFI-A16	MFI-A17	MFI-A18
A [mm]	18	25	50	25
B [mm]	18	25	25	50
C [mm]	29	32	57	32
D [mm]	38	45	45	70
E [mm]	12	12	12	12
G	EMF-1818	EMF-2525	EMF-5025	EMF-5025
H	EMF-1818	-	-	-
	EMF-2518	-	-	-
	EMF-2510	EMF-2510	-	-
	EMF-2518	EMF-2518	-	-
	EMF-2525	EMF-2525	EMF-2525	EMF-2525
	EMF-5025	EMF-5025	EMF-5025	EMF-5025
	EMF-4040	EMF-4040	EMF-4040	EMF-4040
	EMF-8040	EMF-8040	EMF-8040	EMF-8040
L [mm]	28	35	35	60
	Peso			
	41 g	45 g	65 g	50 g
Weight				

**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

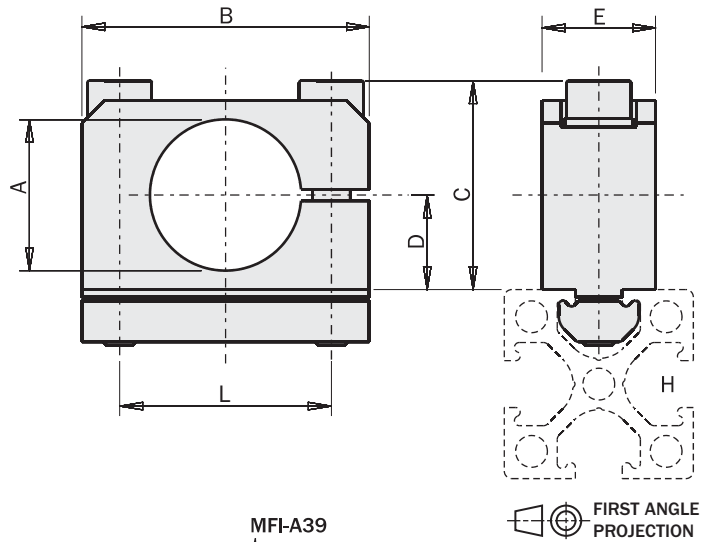
**Staffa (tonda) per fissaggio a croce**

(kit completo di viti)  
(materiale: alluminio)

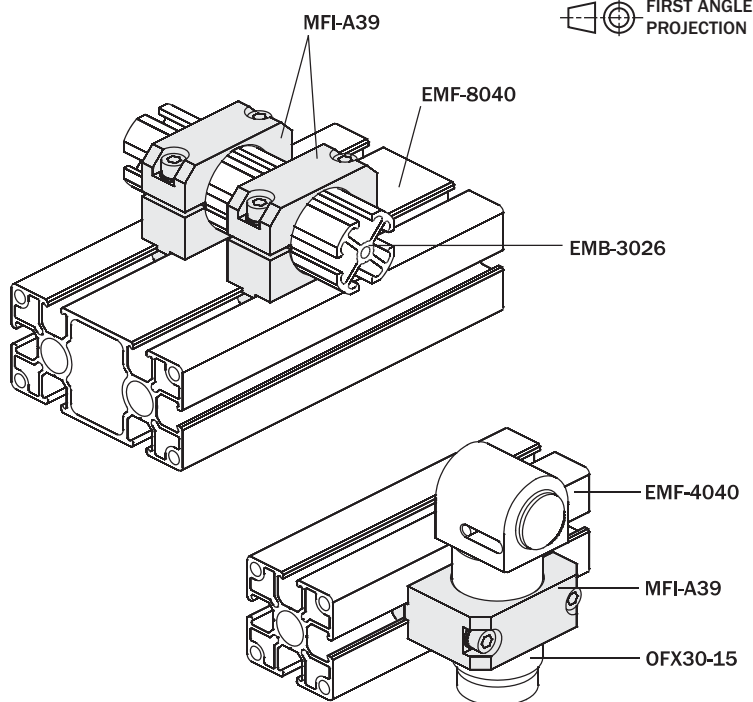
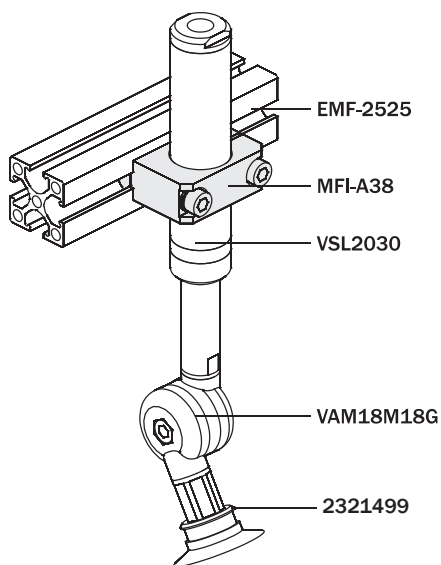
**Cross (round) joint connector**

(kit with screws)  
(material: aluminium)

	MFI-A156	MFI-A37	MFI-A38	MFI-A39
A [mm]	Ø10	Ø14	Ø20	Ø30
B [mm]	25	32	38	50
C [mm]	18.5	23	28	34
D [mm]	7	9	12.5	17
E [mm]	10	12	15	20
	EMF-1018	-	-	-
	EMF-1818	-	-	-
	EMF-2510	EMF-2510	-	-
	EMF-2518	EMF-2518	-	-
	EMF-2525	EMF-2525	EMF-2525	EMF-2525
H	EMF-5025	EMF-5025	EMF-5025	EMF-5025
	EMF-4040	EMF-4040	EMF-4040	EMF-4040
	EMF-8040	EMF-8040	EMF-8040	EMF-8040
	EMB-2017	-	-	-
	EMB-3026	EMB-3026	EMB-3026	EMB-3026
	EMB-5045	EMB-5045	EMB-5045	EMB-5045
L [mm]	17	22	28	40
Peso Weight	15 g	32 g	45 g	75 g



**Esempio di utilizzo**  
**Application example**



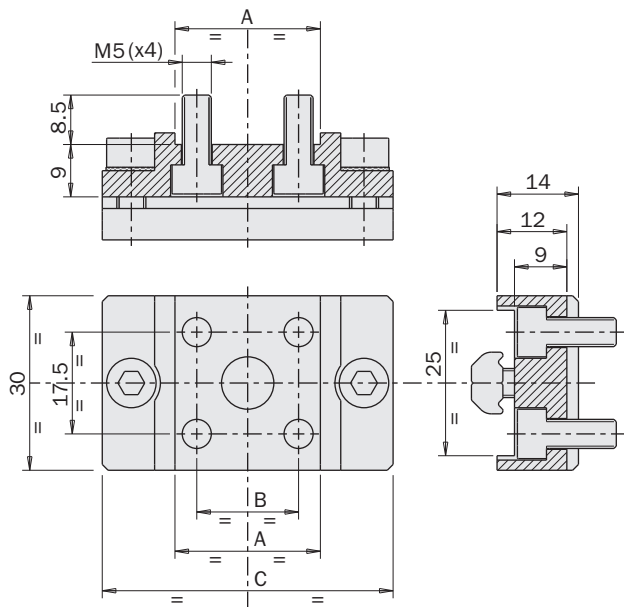


**Fissaggio verticale profili**

(kit completo di viti)  
(materiale: alluminio)

**Vertical fastening of the profiles**

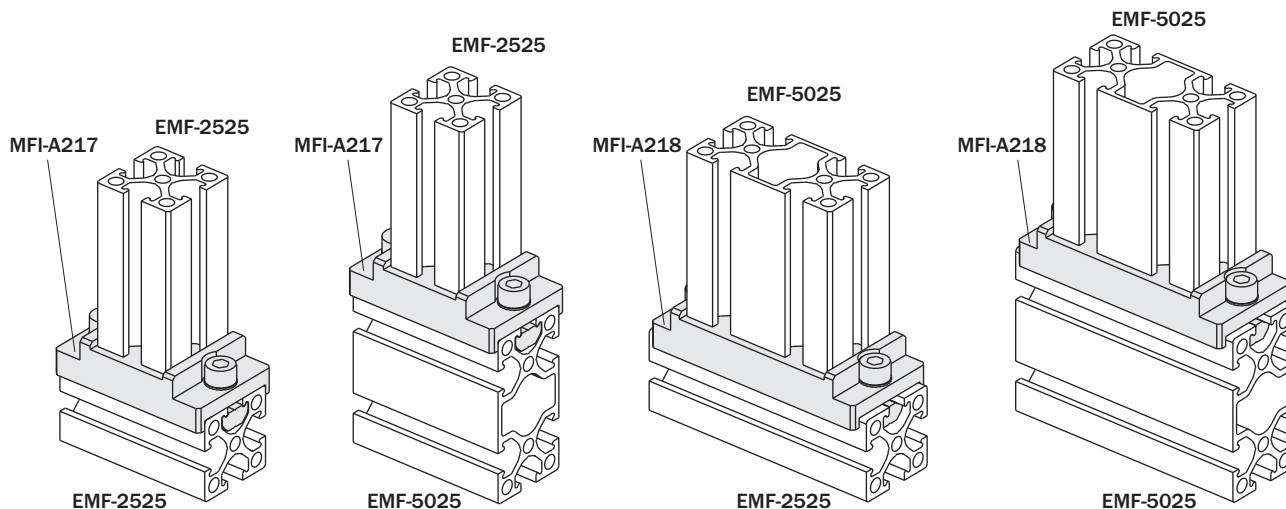
(kit with screws)  
(material: aluminium)



	MFI-A217	MFI-A218
A [mm]	25	50
B [mm]	17.5	42.5
C [mm]	50	70
Compatible con: Compatible with:	EMB-2525, EMF-2525	
	EMB-5025, EMF-5025	
Peso Weight	65 g	85 g



**Esempio di utilizzo**  
**Application example**



**Fissaggio verticale profili**

(kit completo di viti)  
(materiale: alluminio)

**Vertical fastening of the profiles**

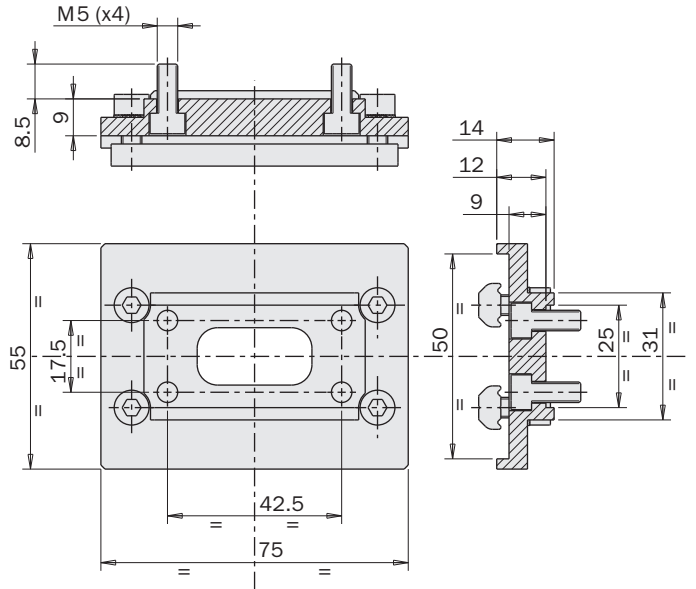
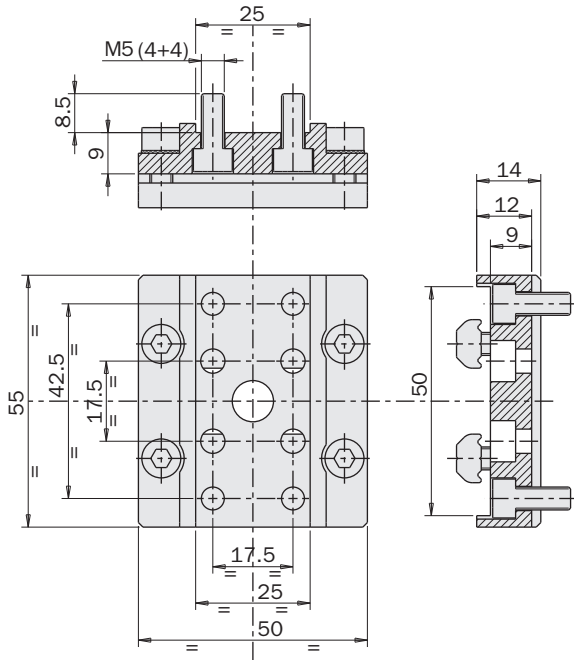
(kit with screws)  
(material: aluminium)

**MFI-A219**

Peso	110 g
Weight	

**MFI-A220**

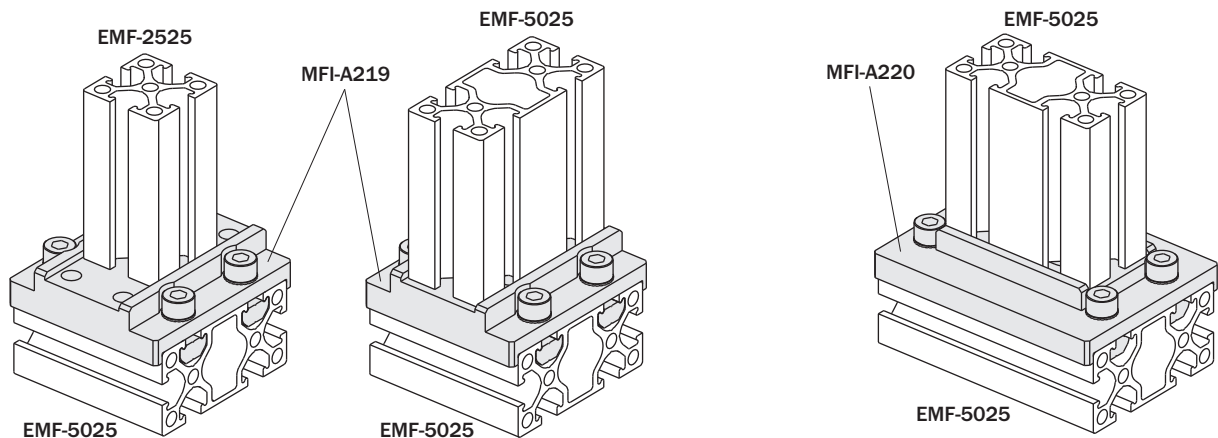
Peso	140 g
Weight	



FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**

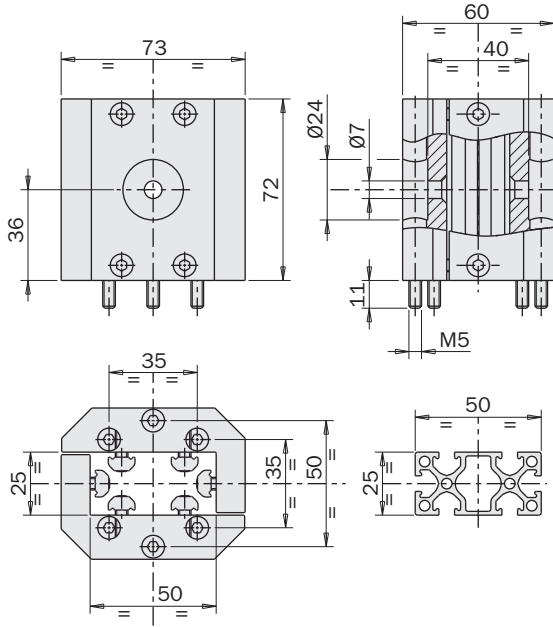


**Interfaccia per braccio a sbalzo**

(kit completo di viti)  
(materiale: alluminio)

**MFI-A254**

Peso	680 g
Weight	



FIRST ANGLE PROJECTION

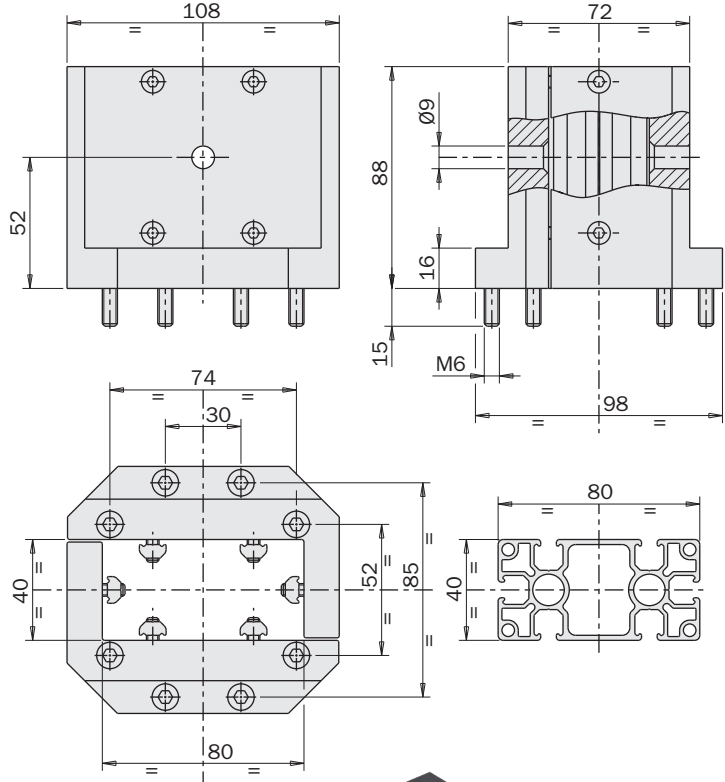


**Interface for square profile/Quick Changer**

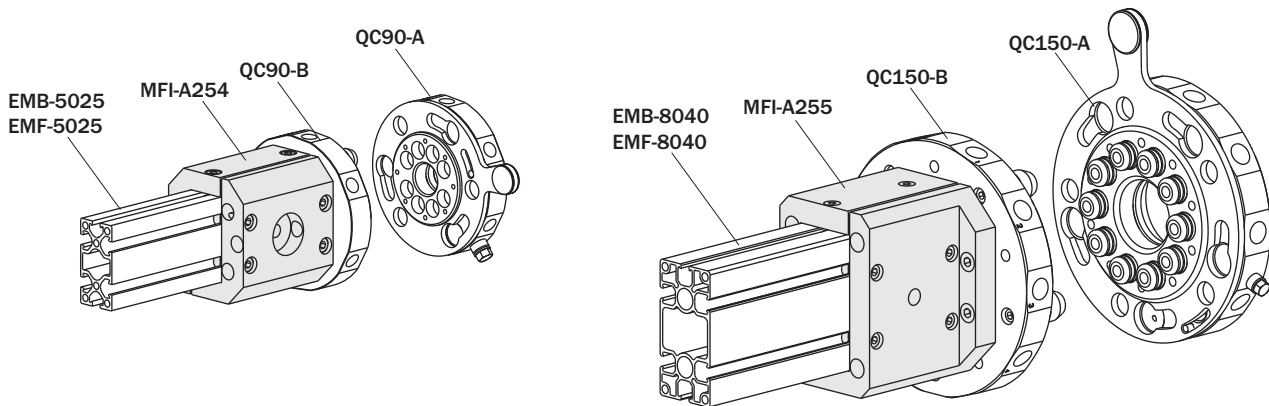
(kit with screws)  
(material: aluminium)

**MFI-A255**

Peso	1300 g
Weight	



**Esempio di utilizzo**  
**Application example**



**Connettore piatto dritto**

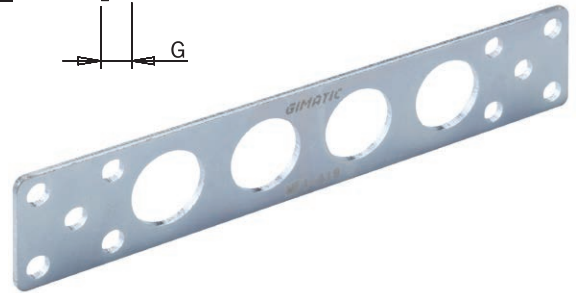
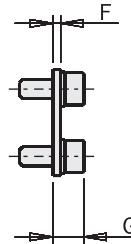
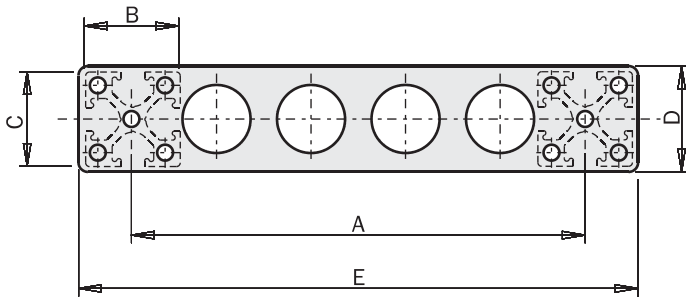
(kit completo di viti)  
(materiale: acciaio)

**Flat straight connector**

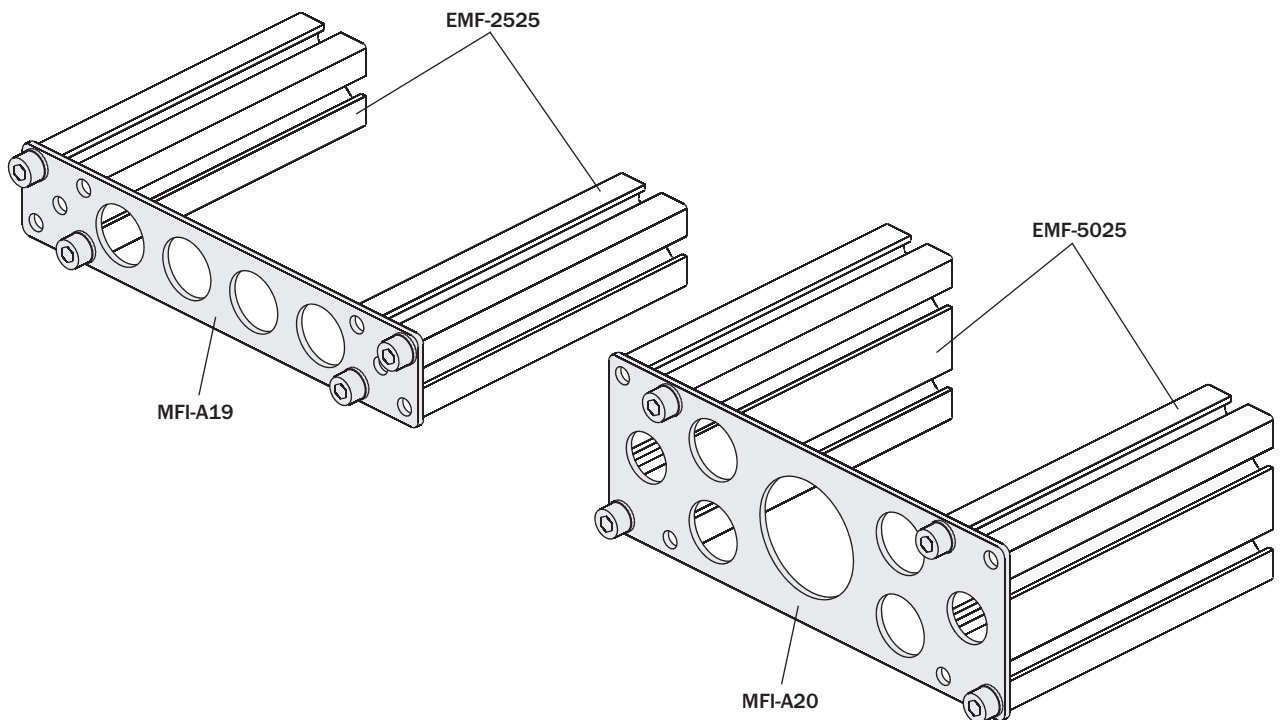
(kit with screws)  
(material: steel)

	MFI-A101	MFI-A19	MFI-A201	MFI-A20
A [mm]	76	120	130	120
B [mm]	25	25	25	25
C [mm]	25	25	25	50
D [mm]	28	28	28	53
E [mm]	104	148	158	148
F [mm]	2	2	2	2
G [mm]	8	8	8	8
Compatibile con: Compatible with:	EMF-2525	EMF-2525	EMF-2525	EMF-5025
Peso Weight	50 g	60 g	65 g	100 g

FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



**Staffa**

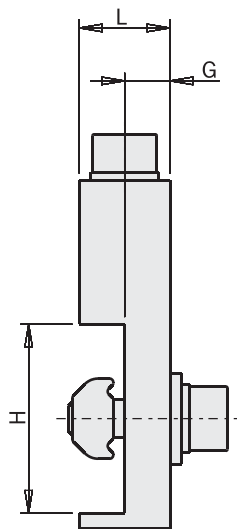
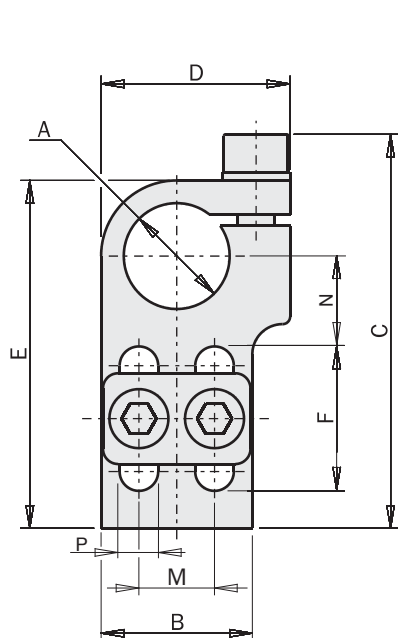
(kit completo di viti)  
(materiale: alluminio)

**Mounting bracket**

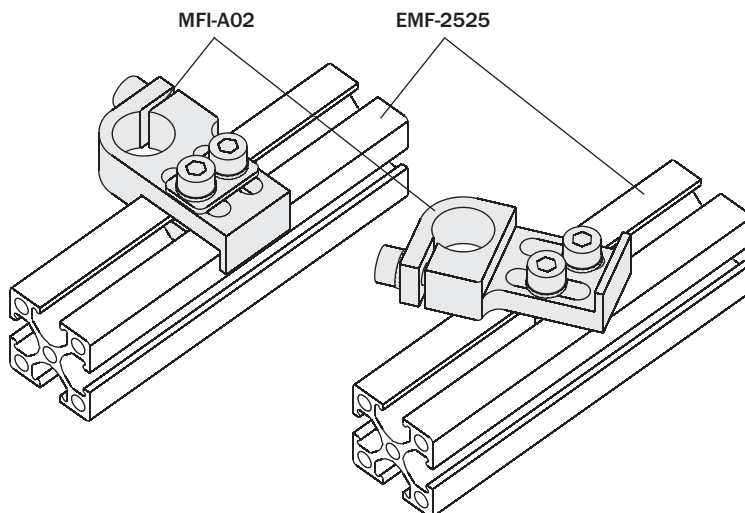
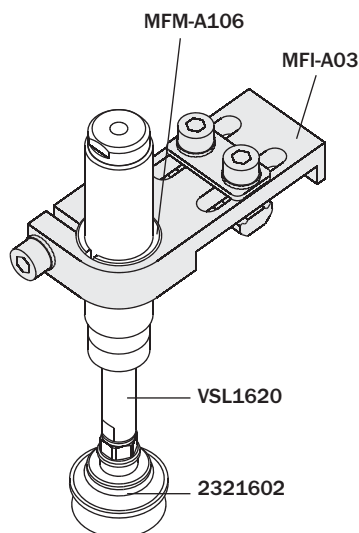
(kit with screws)  
(material: aluminium)

	MFI-A01	MFI-A270	MFI-A02	MFI-A204	MFI-A03
A [mm]	Ø10	Ø10	Ø14	Ø20	Ø20
B [mm]	16	16	20	25	25
C [mm]	43	49	52.1	57.1	74.1
D [mm]	20	20	25	30	30
E [mm]	38	44	46	51.5	68
F [mm]	14.2	18.2	19.2	19.2	27.2
G [mm]	4.5	4.5	6	6.2	6
H [mm]	18	25	25	25	40
L [mm]	8	8	12	12	12
M [mm]	8	8	10	15	15
N [mm]	12.4	12.9	11.9	14.9	19.4
P [mm]	4.1	4.1	5.1	5.1	5.1
Compatibile con: Compatible with:	EMF-1018 EMF-1818	EMF-2510 EMF-2518 EMF-2525 EMF-5025	EMF-2510 EMF-2518 EMF-2525 EMF-5025	EMF-2510 EMF-2518 EMF-2525 EMF-5025	EMF-4040 EMF-8040
Peso Weight	20 g	21 g	34 g	45 g	48 g

FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



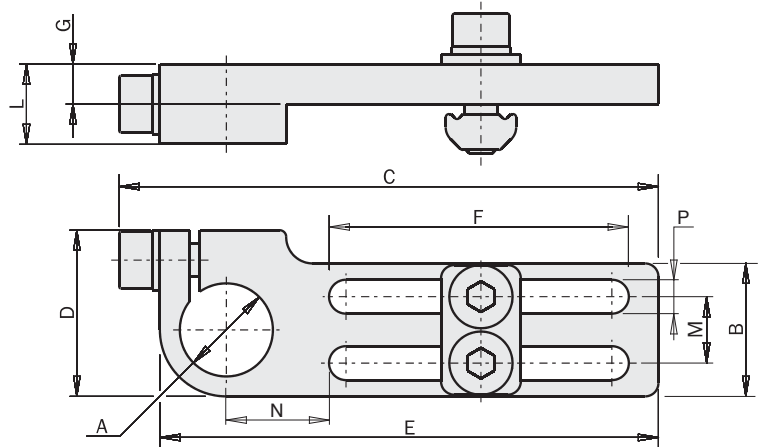
**Staffa**

(kit completo di viti)  
(materiale: alluminio)

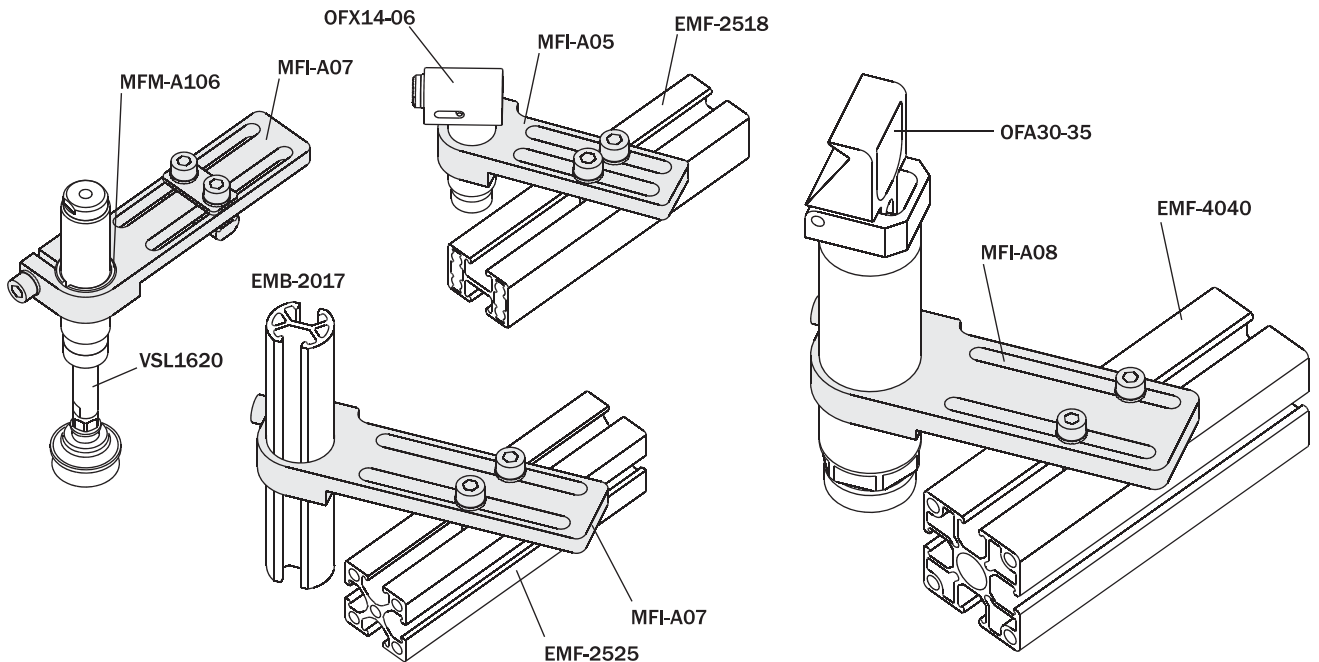
**Mounting bracket**

(kit with screws)  
(material: aluminium)

	MFI-A04	MFI-A05	MFI-A06	MFI-A07	MFI-A08
A [mm]	Ø10	Ø14	Ø14	Ø20	Ø30
B [mm]	16	20	20	25	35
C [mm]	75	81.1	91.1	111.1	121.1
D [mm]	20	25	25	30	42
E [mm]	70	75	85	105	115
F [mm]	42.2	45.2	55.2	65.2	65.5
G [mm]	4.5	6	6	6	8
L [mm]	8	12	12	12	12
M [mm]	8	10	10	15	20
N [mm]	13.9	15.4	15.4	21.4	26.5
P [mm]	4.1	5.1	5.1	5.1	8
Compatibile con: Compatible with:	EMF-1018	EMF-1018	EMF-1018	-	-
	EMF-1818	EMF-1818	EMF-1818	-	-
	EMF-2510	EMF-2510	EMF-2510	EMF-2510	EMF-2510
	EMF-2518	EMF-2518	EMF-2518	EMF-2518	EMF-2518
	EMF-2525	EMF-2525	EMF-2525	EMF-2525	EMF-2525
	EMF-5025	EMF-5025	EMF-5025	EMF-5025	EMF-5025
	-	EMF-4040	EMF-4040	EMF-4040	EMF-4040
	-	EMF-8040	EMF-8040	EMF-8040	EMF-8040
	EMB-2017	EMB-2017	EMB-2017	-	-
	EMB-3026	EMB-3026	EMB-3026	EMB-3026	EMB-3026
EMB-5045	EMB-5045	EMB-5045	EMB-5045	EMB-5045	
Peso Weight	23 g	38 g	40 g	55 g	95 g



**Esempio di utilizzo**  
**Application example**



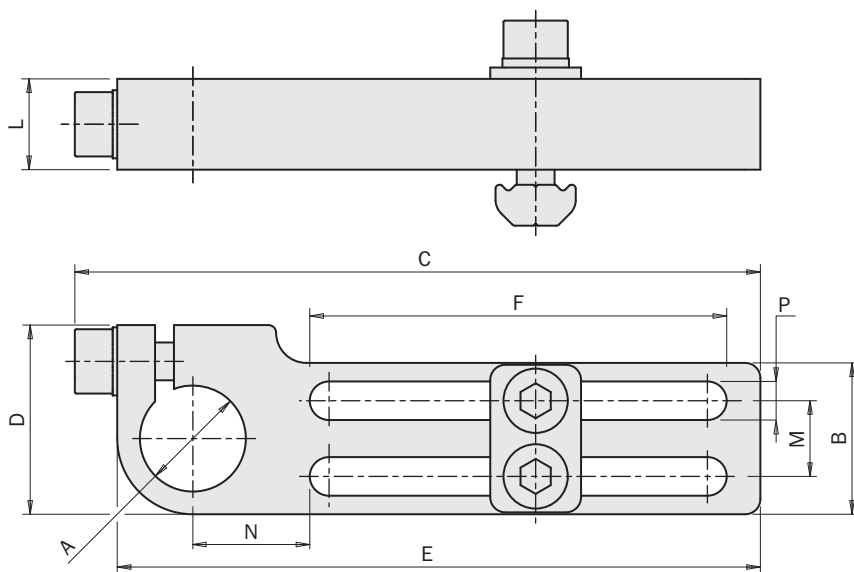
**Staffa robusta**

(kit completo di viti)  
(materiale: alluminio)

**Heavy duty mounting bracket**

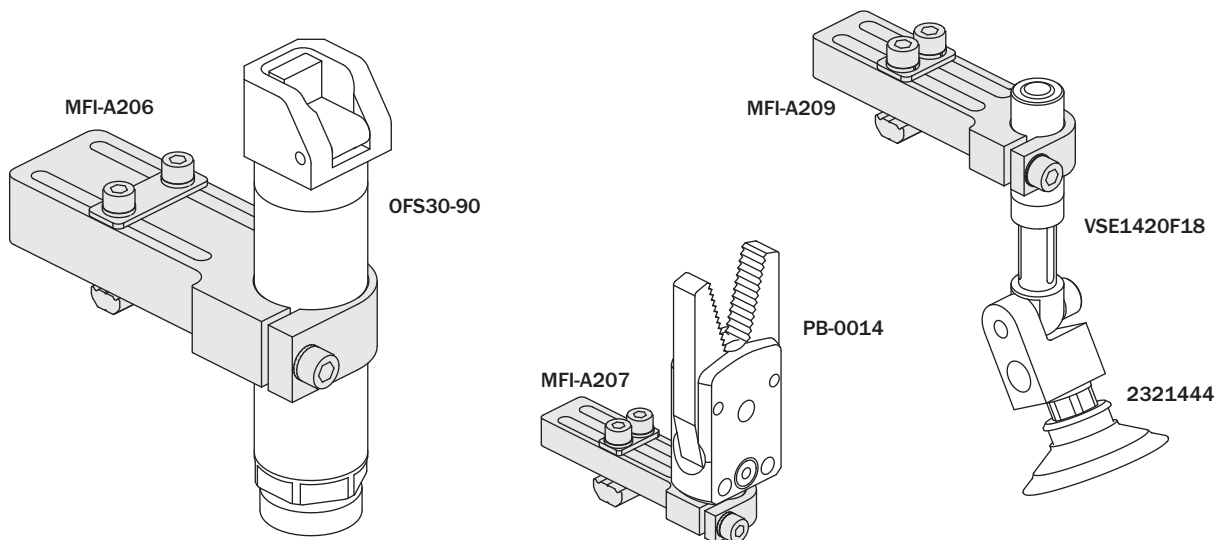
(kit with screws)  
(material: aluminium)

		MFI-A207	MFI-A209	MFI-A205	MFI-A206
A	[mm]	Ø10	Ø14	Ø20	Ø30
B	[mm]	16	20	25	35
C	[mm]	75	90.6	110.6	122.2
D	[mm]	20	25	30	42
E	[mm]	70	85	105	115
F	[mm]	44.2	55.2	65.2	65.5
L	[mm]	8.3	12	15	20
M	[mm]	8	10	15	20
N	[mm]	13.9	15.4	21.4	26.5
P	[mm]	4.1	5.1	5.1	8
Peso Weight		30 g	60 g	85 g	175 g



FIRST ANGLE PROJECTION

**Esempio di utilizzo**  
**Application example**



**Staffa robusta con giunto sferico**

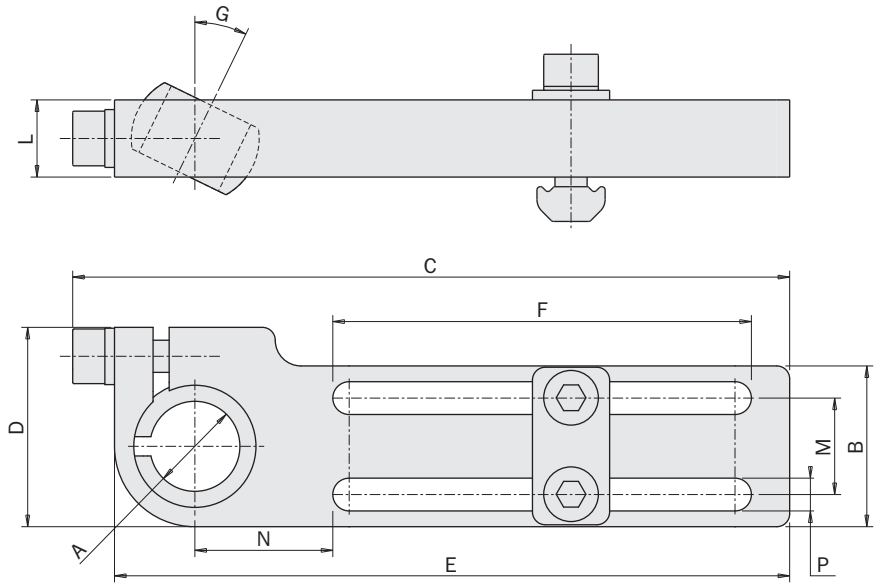
(kit completo di viti)  
(materiale: alluminio)



**Heavy-duty mounting bracket with ball joint**

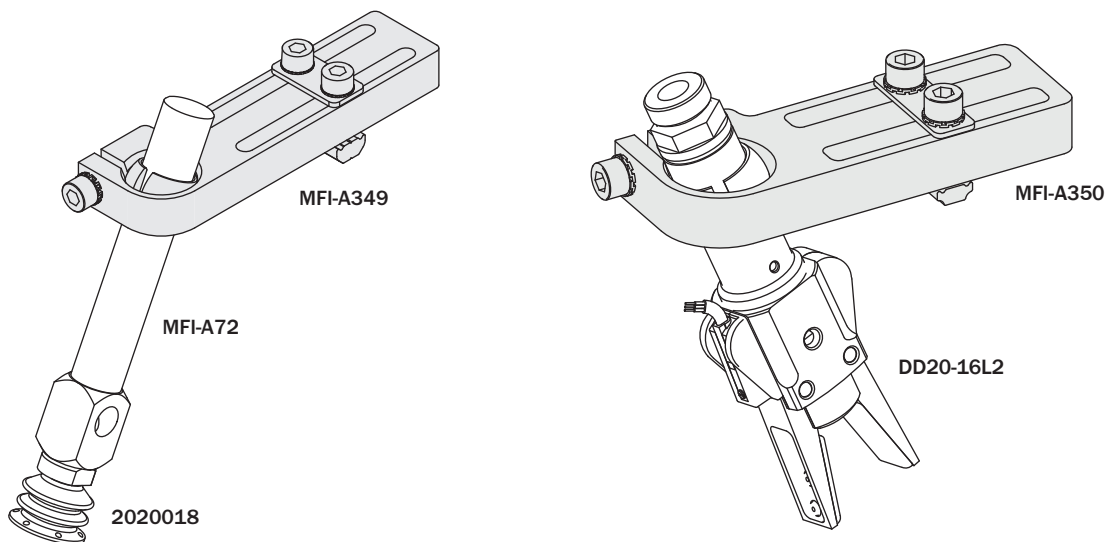
(kit with screws)  
(material: aluminium)

	MFI-A348	MFI-A349	MFI-A350
A [mm]	Ø10	Ø14	Ø20
B [mm]	20	25	35
C [mm]	89.5	111.5	121.8
D [mm]	25	30	42
E [mm]	85	105	115
F [mm]	55.2	65.2	65.5
G	0-26°	0-26°	0-26°
L [mm]	8.3	12	15
M [mm]	10	15	20
N [mm]	15.4	21.4	26.5
P [mm]	5.1	5.1	8
Peso Weight	45 g	86 g	160 g



FIRST ANGLE PROJECTION

**Esempio di utilizzo**  
**Application example**





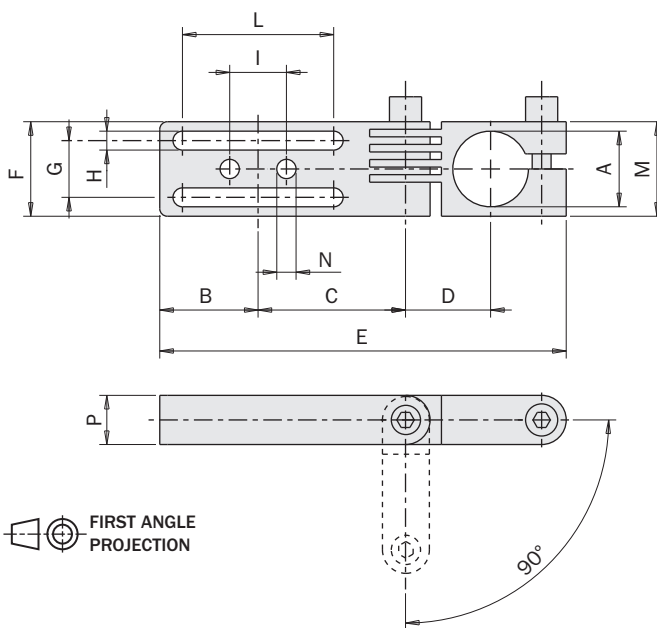
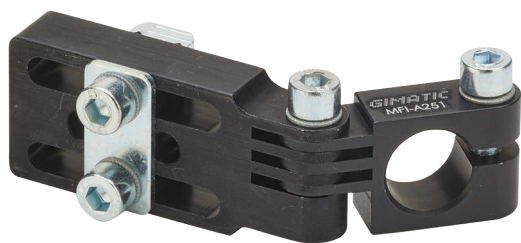
**Staffa asolata angolare**

(kit completo di viti)  
(materiale: alluminio)

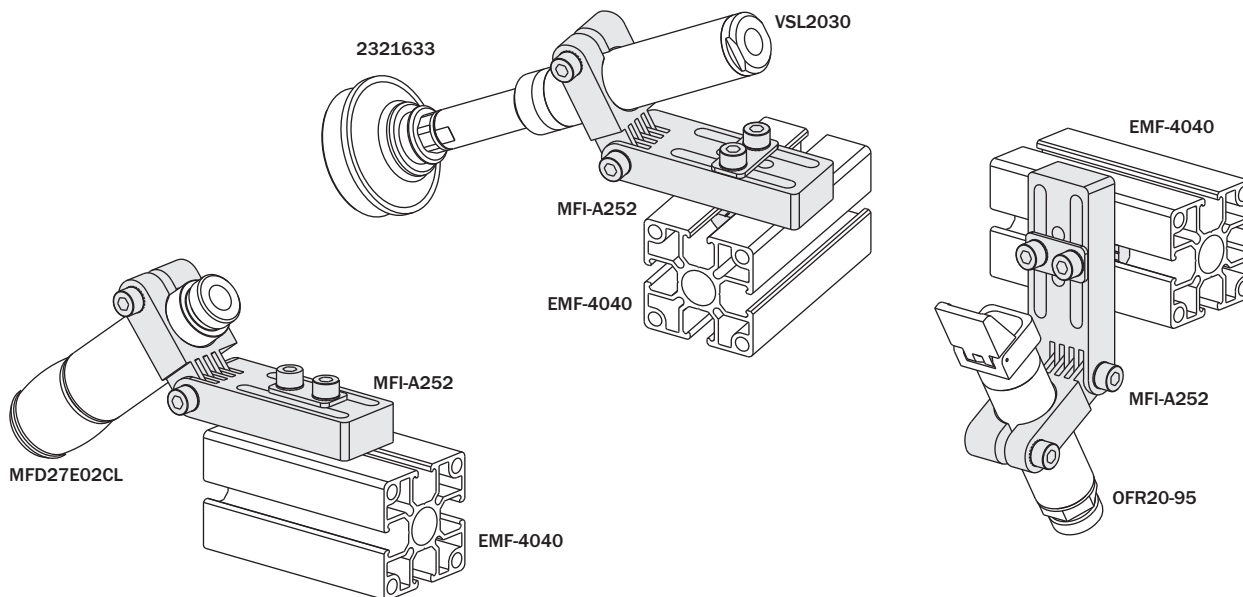
**Slotted angular bracket**

(kit with screws)  
(material: aluminium)

		MFI-A250	MFI-A251	MFI-A252	MFI-A253
A	[mm]	Ø10	Ø14	Ø20	Ø30
B	[mm]	15	21	26	32
C	[mm]	23	31	39	49
D	[mm]	14	17.5	22.5	29
E	[mm]	64.5	85.5	107.5	136.5
F	[mm]	16	25	25	36
G	[mm]	8	15	15	22
H	[mm]	4.1	5.1	5.1	5.1
I	[mm]	-	15	15	22
L	[mm]	20	30	40	50
M	[mm]	16	20	25	36
N	[mm]	-	Ø5.1	Ø5.1	Ø5.1
P	[mm]	9	11	13	16
Peso Weight		30 g	50 g	90 g	185 g



**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

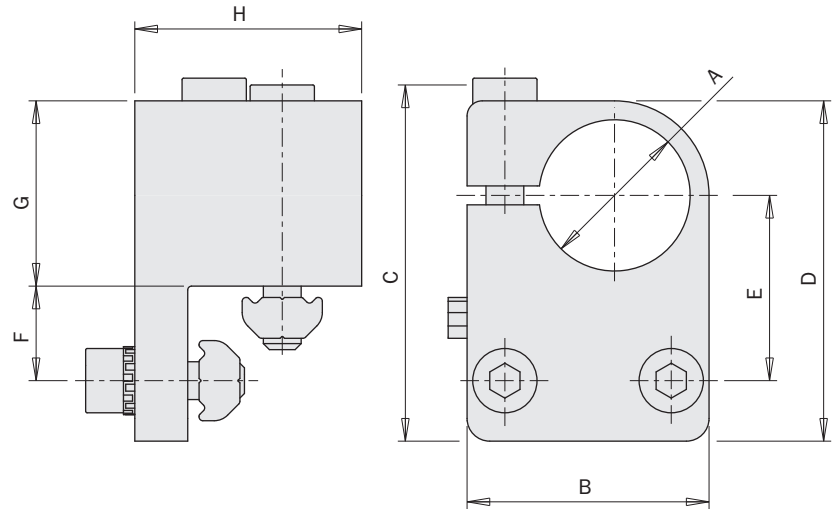
**Staffa**

(kit completo di viti)  
(materiale: alluminio)

**Mounting bracket**

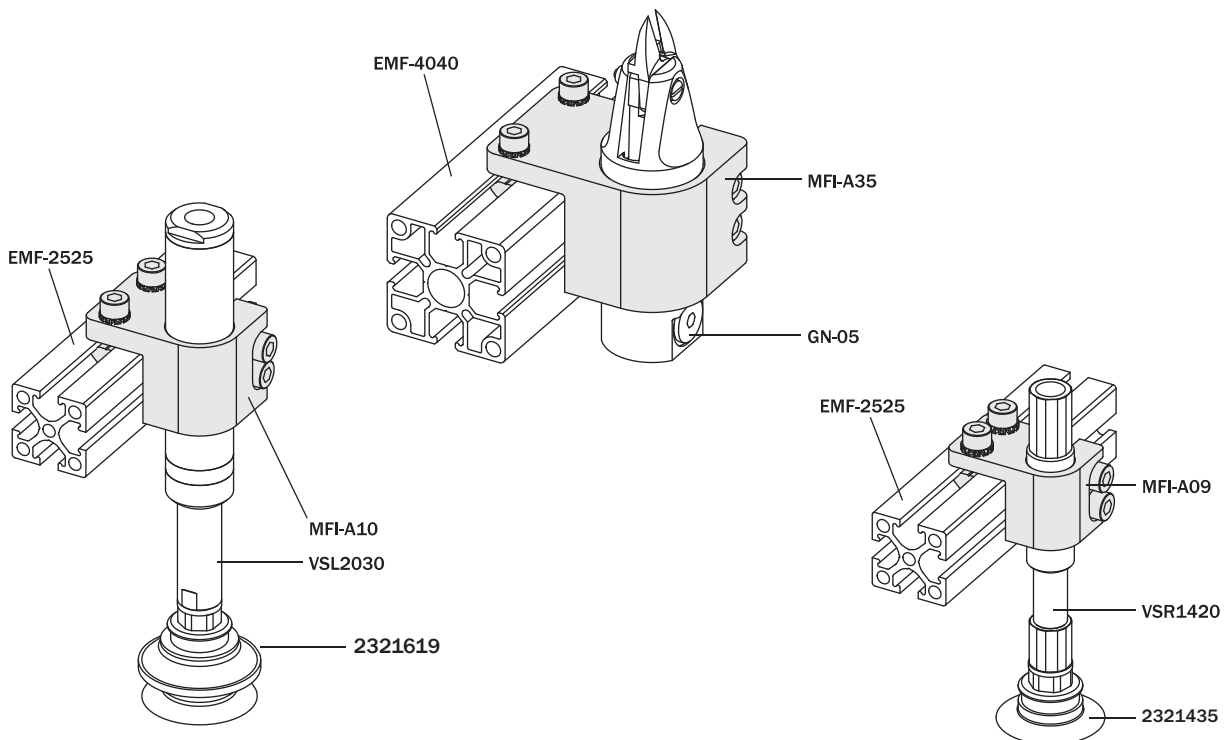
(kit with screws)  
(material: aluminium)

	MFI-A09	MFI-A10	MFI-A36	MFI-A36-H	MFI-A34	MFI-A35	MFI-A35-H
A [mm]	Ø14	Ø20	Ø20	Ø20	Ø30	Ø30	Ø30
B [mm]	25	32	35	47	40	45	47
C [mm]	42.6	47.6	54.1	64.7	53.1	64.1	64.7
D [mm]	40	45	54.5	65.5	55	65.5	65.5
E [mm]	22	24.5	33	35	29.5	39	39
F [mm]	12.5	12.5	20	20	12.5	20	20
G [mm]	19.5	24.5	26.5	37.5	34.5	37.5	37.5
H [mm]	25	30	35	40	30	40	40
Compatibile con: Compatible with:	EMF-2525 EMF-5025	EMF-2525 EMF-5025	EMF-4040 EMF-8040	EMF-4040 EMF-8040	EMF-2525 EMF-5025	EMF-4040 EMF-8040	EMF-4040 EMF-8040
Peso Weight	50 g	70 g	95 g	209 g	90 g	150 g	168 g



**Esempio di utilizzo**  
**Application example**

FIRST ANGLE PROJECTION



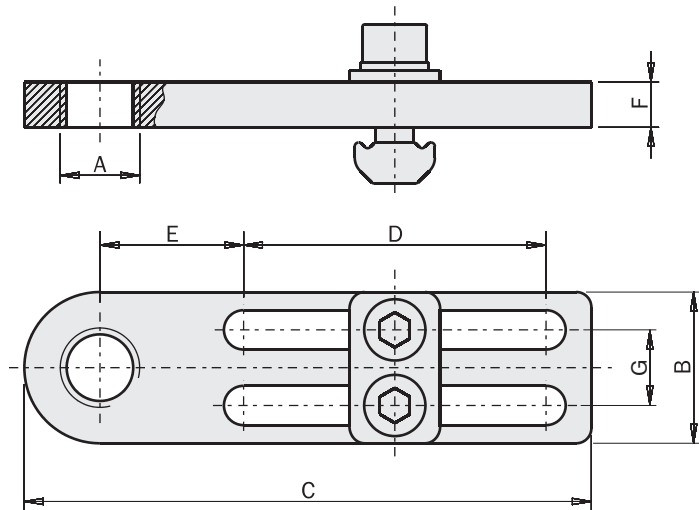
**Staffa**

(kit completo di viti)  
(materiale: alluminio)

**Mounting bracket**

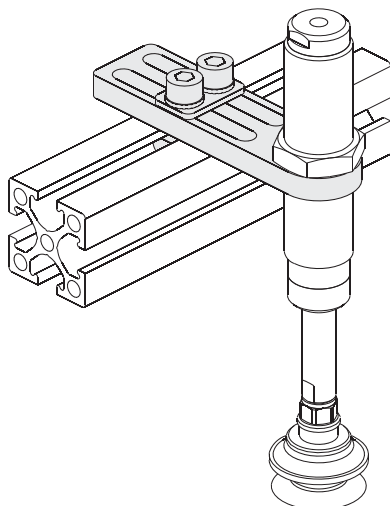
(kit with screws)  
(material: aluminium)

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Peso Weight
<b>MFI-A104</b>	G1/8"	20	75	40	19	6	10	25 g
<b>MFI-A105</b>	G1/8"	25	105	60	26.5	6	15	42 g
<b>MFI-A106</b>	M10x1	20	75	40	19	6	10	30 g
<b>MFI-A107</b>	M10x1	25	105	60	26.5	6	15	40 g
<b>MFI-A266</b>	M12x1	20	75	40	19	6	10	30 g
<b>MFI-A267</b>	M12x1	25	105	60	26.5	6	15	47 g
<b>MFI-A108</b>	M14x1	20	75	40	19	6	10	20 g
<b>MFI-A109</b>	M14x1	25	105	60	26.5	6	15	40 g
<b>MFI-A210</b>	M14x1.5	25	75	40	19	6	10	20 g
<b>MFI-A211</b>	M14x1.5	25	105	60	26.5	6	15	40 g
<b>MFI-A110</b>	M16x1	20	75	40	19	6	10	20 g
<b>MFI-A111</b>	M16x1	25	105	60	26.5	6	15	40 g
<b>MFI-A112</b>	M20x1.5	25	75	40	19	6	15	30 g
<b>MFI-A113</b>	M20x1.5	25	105	60	26.5	6	15	35 g
<b>MFI-A269</b>	M25x1.5	30	115	60	34	8	15	67 g



FIRST ANGLE PROJECTION

**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

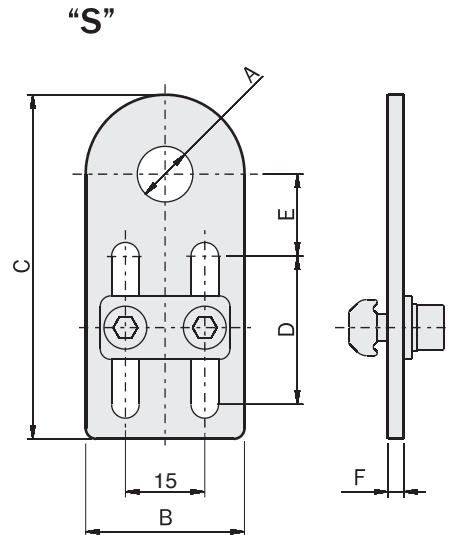
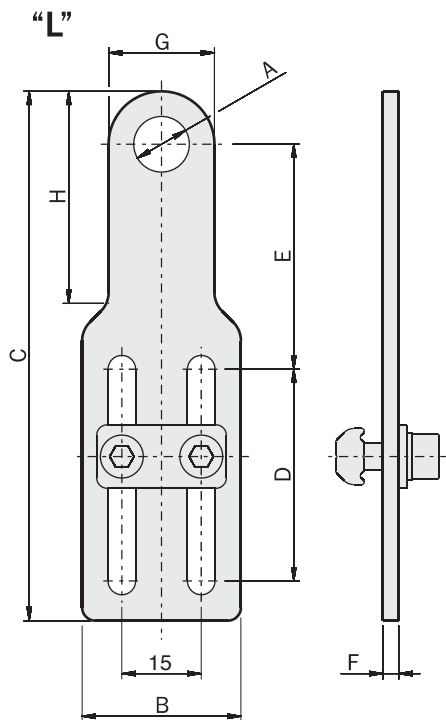
**Staffa**

(kit completo di viti)  
(materiale: acciaio)

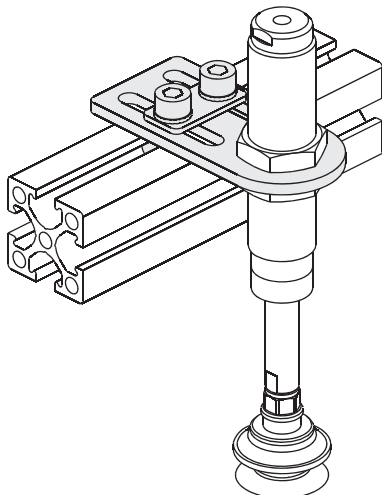
**Mounting bracket**

(kit with screws)  
(material: steel)

	Tipo Type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Peso Weight
<b>MFI-A116</b>	L	Ø10.5	30	100	40	42.5	3	20	38	60 g
<b>MFI-A117</b>	L	Ø12.5	30	100	40	42.5	3	20	38	60 g
<b>MFI-A118</b>	L	Ø14.5	30	100	40	42.5	3	24	38	60 g
<b>MFI-A119</b>	L	Ø16.5	30	100	40	42.5	3	30	-	65 g
<b>MFI-A120</b>	L	Ø20.5	30	100	40	42.5	3	30	-	60 g
<b>MFI-A121</b>	S	Ø10.5	30	65	28	15.5	3	-	-	45 g
<b>MFI-A122</b>	S	Ø12.5	30	65	28	15.5	3	-	-	45 g
<b>MFI-A123</b>	S	Ø14.5	30	65	28	15.5	3	-	-	45 g
<b>MFI-A124</b>	S	Ø16.5	30	65	28	15.5	3	-	-	45 g
<b>MFI-A125</b>	S	Ø20.5	30	65	28	15.5	3	-	-	40 g



**Esempio di utilizzo**  
**Application example**



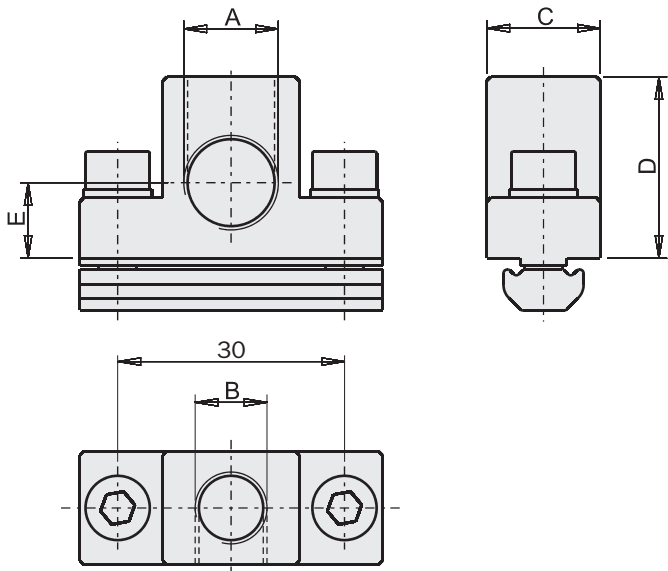
**Staffa per attacco diretto ventosa**

(kit completo di viti)  
(materiale: alluminio)

**Direct connector for vacuum cup**

(kit with screws)  
(material: aluminium)

**NEW**

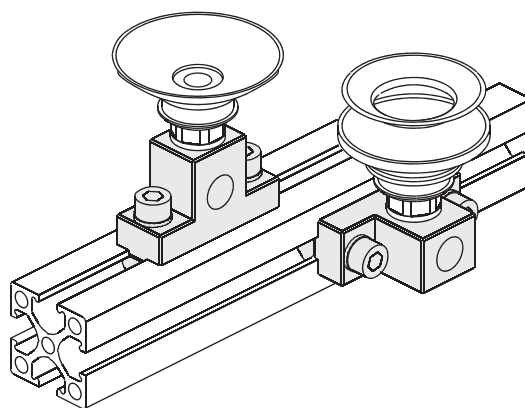


	MFI-A46	MFI-A47	MFI-A508
A [mm]	G1/8"	G1/4"	G3/8"
B [mm]	G1/8"	G1/8"	G3/8"
C [mm]	15	15	35
D [mm]	24	24	34
E [mm]	12	10	12
EMF-1018	-	-	-
EMF-1818	-	-	-
EMF-2510	EMF-2510	EMF-2510	EMF-2510
EMF-2518	EMF-2518	EMF-2518	EMF-2518
EMF-2525	EMF-2525	EMF-2525	EMF-2525
EMF-5025	EMF-5025	EMF-5025	EMF-5025
EMF-4040	EMF-4040	EMF-4040	EMF-4040
EMF-8040	EMF-8040	EMF-8040	EMF-8040
EMB-2017	-	-	-
EMB-3026	EMB-3026	EMB-3026	EMB-3026
EMB-5045	EMB-5045	EMB-5045	EMB-5045
Peso Weight	42 g	40 g	100 g

Compatible con:  
Compatible with:



**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

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Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

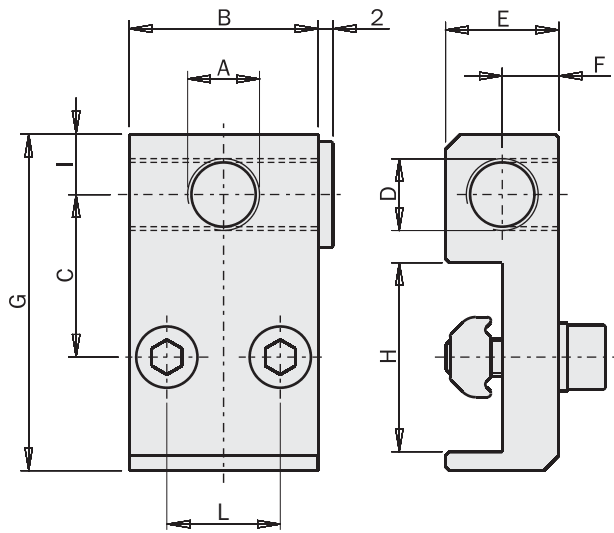
Sensori  
Sensors

**Staffa per ventosa**

(kit completo di viti)  
(materiale: alluminio)

**Mounting bracket for vacuum cup**

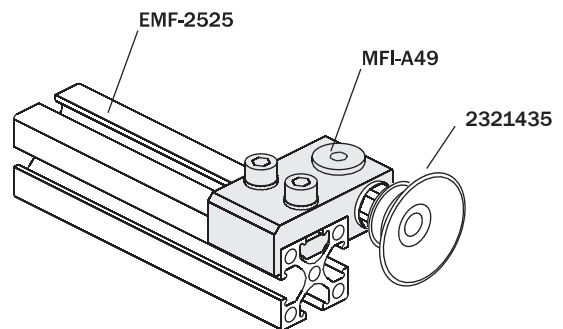
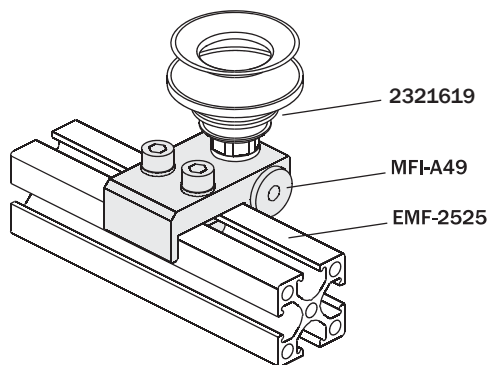
(kit with screws)  
(material: aluminium)



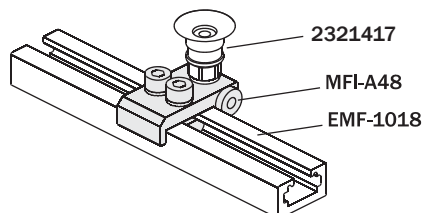
	MFI-A48	MFI-A49	MFI-A50
A [mm]	M5	G1/8"	G1/4"
B [mm]	16	25	25
C [mm]	13.5	21.5	21.5
D [mm]	M5	G1/8"	G1/8"
E [mm]	8	15	15
F [mm]	4	7.5	7.5
G [mm]	29	44.5	46.5
H [mm]	18	25	25
I [mm]	4.3	8	10
L [mm]	8	15	15
Compatibile con: Compatible with:	EMF-1818	EMF-2510	EMF-2510
	EMF-1018	EMF-2518	EMF-2518
	-	EMF-2525	EMF-2525
	-	EMF-5025	EMF-5025
Peso Weight	15 g	45 g	45 g



**Esempio di utilizzo**  
**Application example**



Solo per MFI-A48 e MFI-A49  
Only for MFI-A48 and MFI-A49

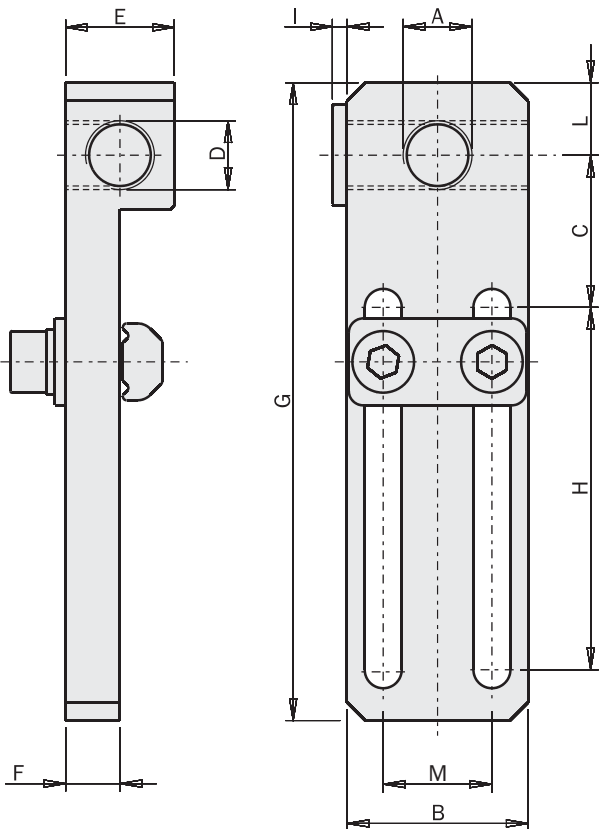


**Staffa per attacco diretto ventosa**

(kit completo di viti)  
(materiale: alluminio)

**Direct connector for vacuum cup**

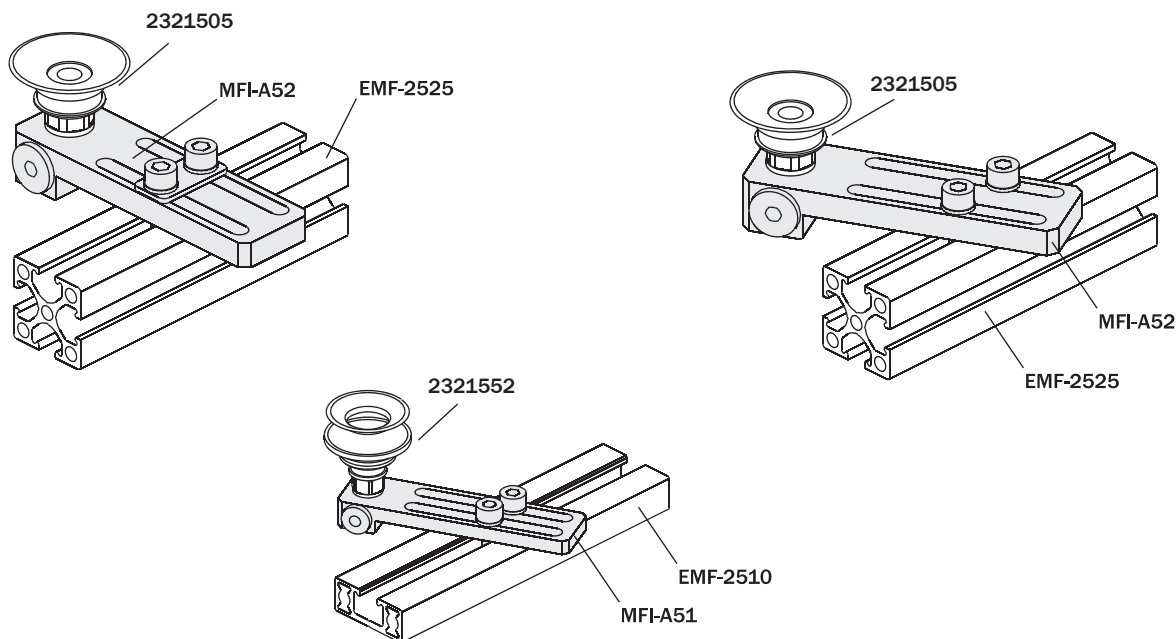
(kit with screws)  
(material: aluminium)



	MFI-A51	MFI-A52	MFI-A53
A [mm]	M5	G1/8"	G1/4"
B [mm]	16	25	25
C [mm]	14	21	21
D [mm]	M5	G1/8"	G1/8"
E [mm]	8	15	15
F [mm]	4	7.5	7.5
G [mm]	65	88	88
H [mm]	40	50	50
I [mm]	2	2	2
L [mm]	6	10	10
M [mm]	8	15	15
Compatible con:	EMF-1018	EMF-1018	EMF-1018
Compatible with:	EMF-1818	EMF-1818	EMF-1818
	EMF-2510	EMF-2510	EMF-2510
	EMF-2518	EMF-2518	EMF-2518
	EMF-2525	EMF-2525	EMF-2525
	EMF-5025	EMF-5025	EMF-5025
	-	EMF-4040	EMF-4040
	-	EMF-8040	EMF-8040
	EMB-2017	EMB-2017	EMB-2017
	EMB-3026	EMB-3026	EMB-3026
	EMB-5045	EMB-5045	EMB-5045
Peso			
Weight	20 g	60 g	60 g



**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
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Grippers

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Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

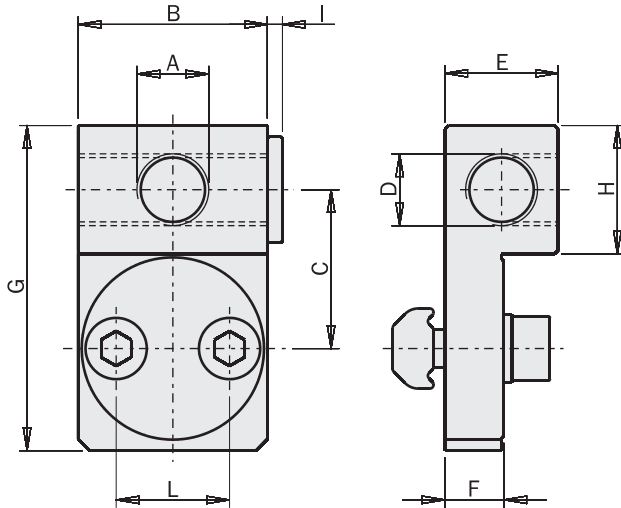
**Staffa per ventosa**

(kit completo di viti)  
(materiale: alluminio)

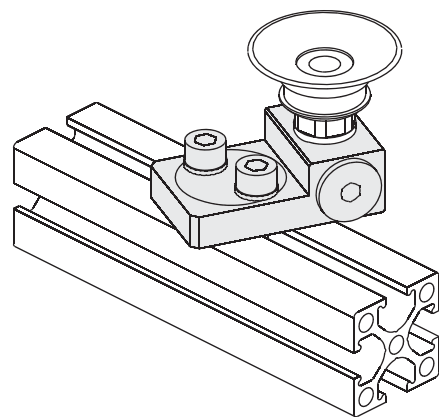
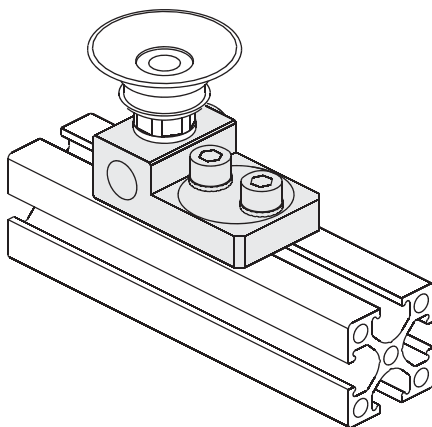
**Mounting bracket for vacuum cup**

(kit with screws)  
(material: aluminium)

FIRST ANGLE  
PROJECTION



**Esempio di utilizzo**  
**Application example**



	MFI-A54	MFI-A55	MFI-A56
A [mm]	M5	G1/8"	G1/4"
B [mm]	16	25	25
C [mm]	13	21	21
D [mm]	M5	G1/8"	G1/8"
E [mm]	10	15	15
F [mm]	5.3	7.8	7.8
G [mm]	28	43	43
H [mm]	10	17	17
I [mm]	2	2	2
L [mm]	8	15	15
	EMF-1018	-	-
	EMF-1818	-	-
	EMF-2510	EMF-2510	EMF-2510
	EMF-2518	EMF-2518	EMF-2518
	EMF-2525	EMF-2525	EMF-2525
Compatibile con:	EMF-5025	EMF-5025	EMF-5025
Compatible with:	-	EMF-4040	EMF-4040
	-	EMF-8040	EMF-8040
	EMB-2017	EMB-2017	EMB-2017
	EMB-3026	EMB-3026	EMB-3026
	EMB-5045	EMB-5045	EMB-5045
Peso	15 g	45 g	42 g
Weight			



**Gambo per ventosa**

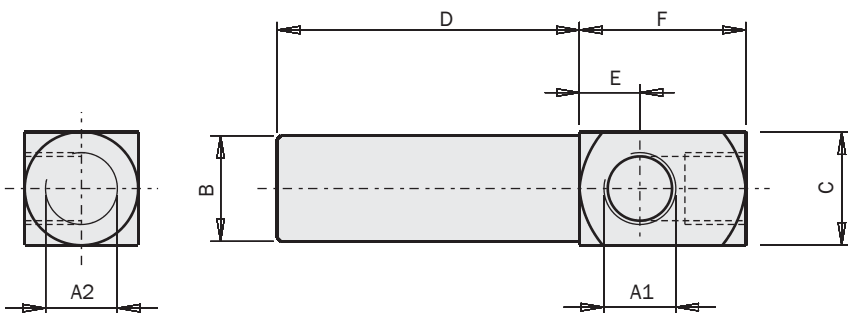
(materiale: alluminio)

**Leg for vacuum cup**

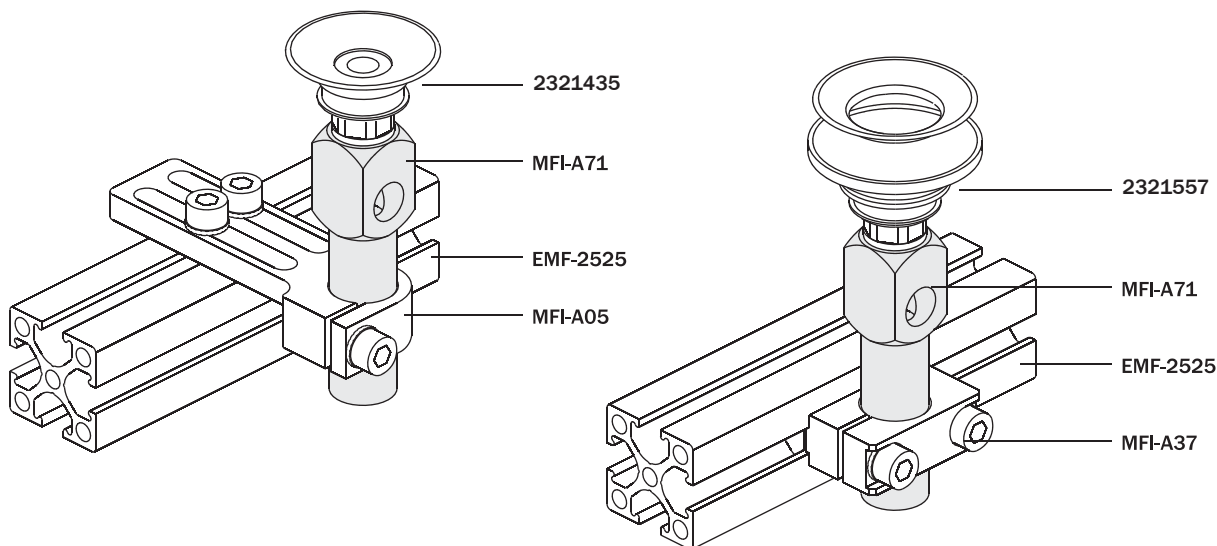
(material: aluminium)

	MFI-A170	MFI-A171	MFI-A172	MFI-A71	MFI-A72	MFI-A73	MFI-A74	MFI-A75	MFI-A76
A1 [mm]	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"
A2 [mm]	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/4"	G1/4"
B [mm]	Ø10	Ø10	Ø10	Ø14	Ø14	Ø14	Ø20	Ø20	Ø20
C [mm]	11	11	11	15	15	15	20	20	20
D [mm]	30	60	90	40	80	120	50	100	150
E [mm]	6	6	6	8	8	8	8	8	8
F [mm]	16	16	16	22	22	22	23	23	23
Peso Weight	11 g	17 g	23.5 g	18.5 g	42.5 g	59 g	59 g	101 g	98.5 g

FIRST ANGLE  
PROJECTION



**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

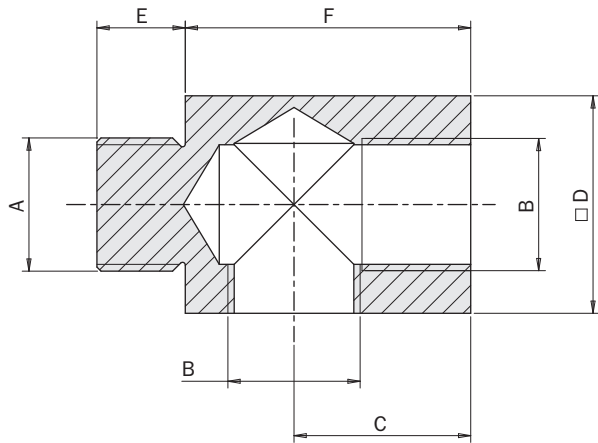
Sensori  
Sensors

**Adattatore per montaggio ventosa**

(materiale: alluminio)

**Mounting adapter for vacuum cup**

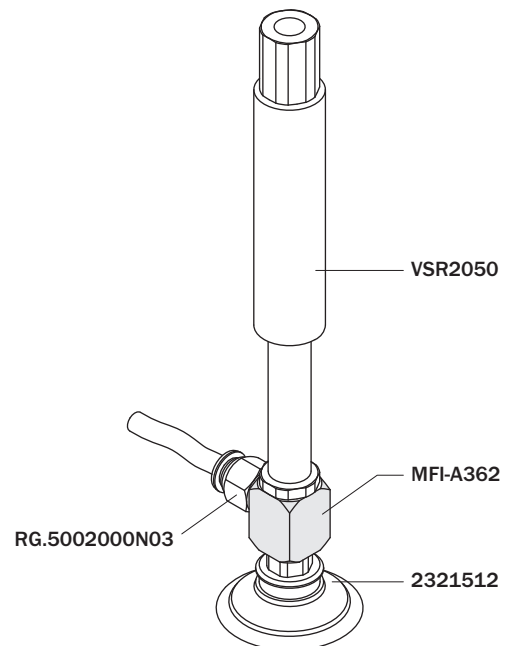
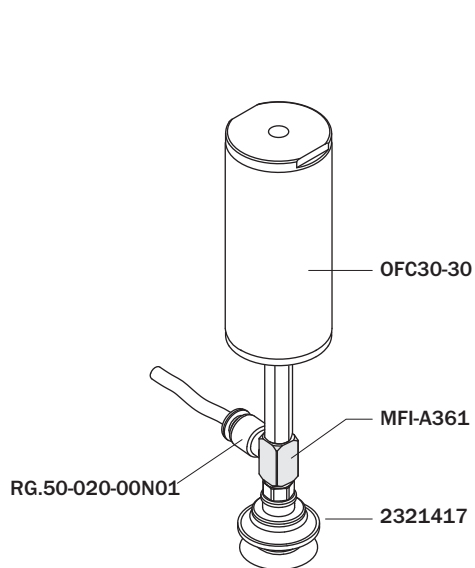
(material: aluminium)



	MFI-A361	MFI-A362	MFI-A364	MFI-A365
A [mm]	M5	G1/8	M4	M3
B [mm]	M5	G1/8	M5	M5
C [mm]	8	13	8	8
D [mm]	8	16	8	8
E [mm]	5	6.5	5	4
F [mm]	14	21	12	12
Peso Weight	2.2 g	11.6 g	1.8 g	1.6 g



**Esempio di utilizzo**  
**Application example**



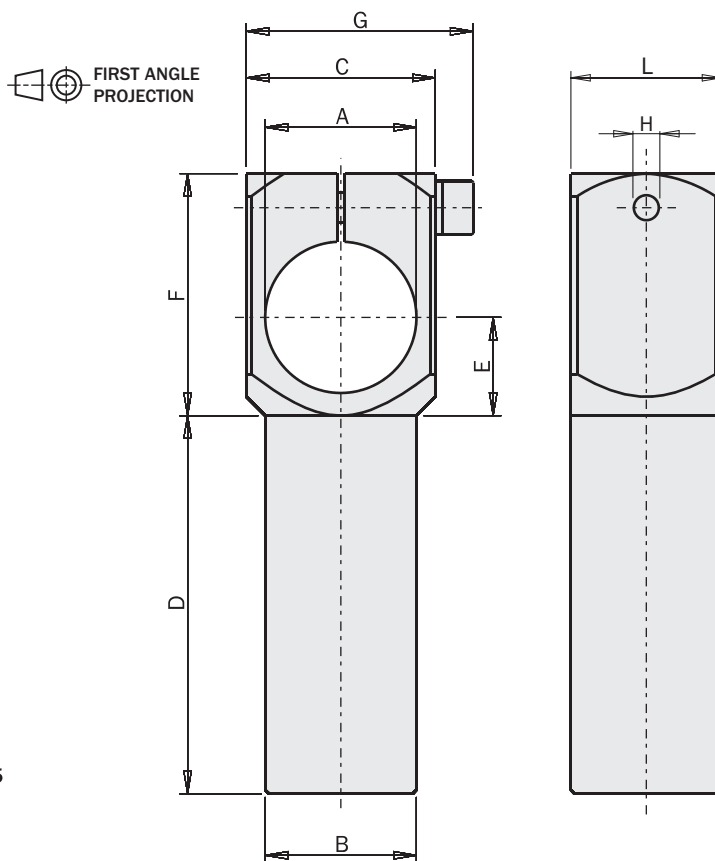
**Gambo con cravatta**

(kit completo di viti)  
(materiale: alluminio)

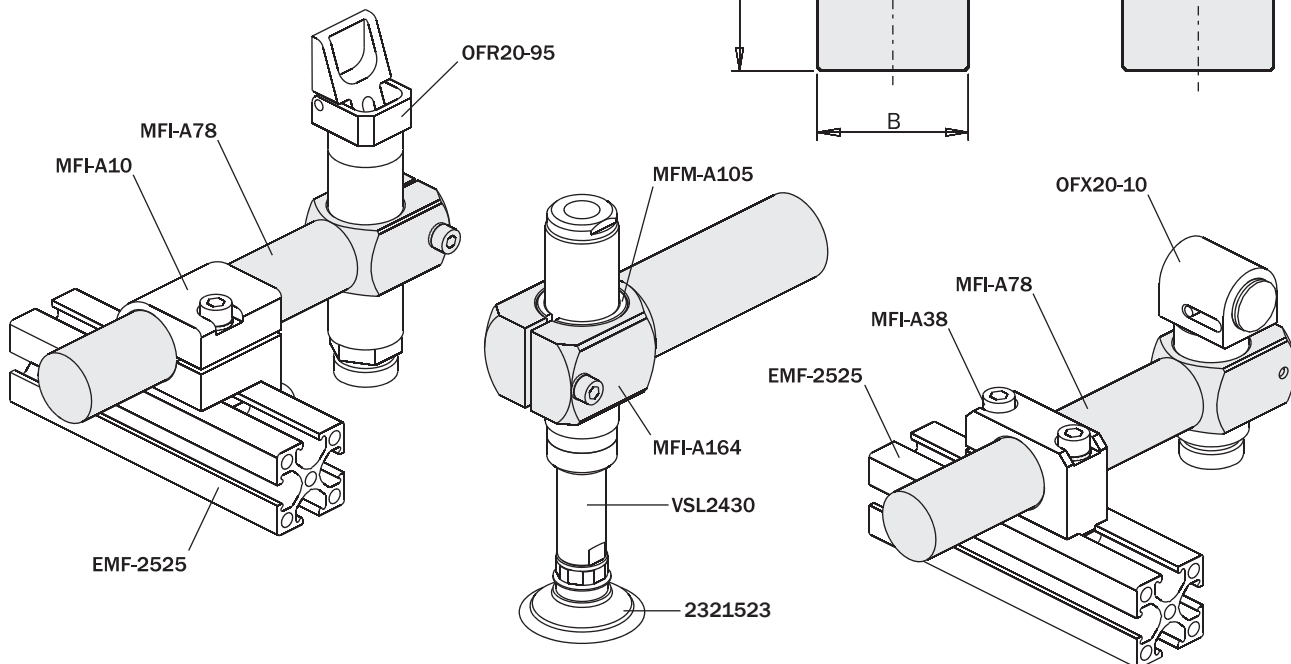
**Clamp leg**

(kit with screws)  
(material: aluminium)

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	Peso Weight
<b>MFI-A158</b>	Ø10	Ø10	14	30	7	19	19	M4	10	13 g
<b>MFI-A159</b>	Ø10	Ø10	14	60	7	19	19	M4	10	19.5 g
<b>MFI-A160</b>	Ø10	Ø10	14	90	7	19	19	M4	10	26 g
<b>MFI-A161</b>	Ø14	Ø14	18	40	10	26	24	M5	14	31 g
<b>MFI-A162</b>	Ø14	Ø14	18	80	10	26	24	M5	14	48 g
<b>MFI-A163</b>	Ø14	Ø14	18	120	10	26	24	M5	14	50 g
<b>MFI-A77</b>	Ø20	Ø20	25	50	13	32	32	M6	20	45 g
<b>MFI-A78</b>	Ø20	Ø20	25	100	13	32	32	M6	20	70 g
<b>MFI-A79</b>	Ø20	Ø20	25	150	13	32	32	M6	20	112 g
<b>MFI-A164</b>	Ø30	Ø30	40	80	19	44	46	M6	30	238.5 g
<b>MFI-A165</b>	Ø30	Ø30	40	140	19	44	46	M6	30	353 g
<b>MFI-A165-H</b>	Ø30	Ø30	40	140	19	44	46	2xM6	40	282 g
<b>MFI-A166</b>	Ø30	Ø30	40	200	19	44	46	M6	30	467.5 g
<b>MFI-A166-H</b>	Ø30	Ø30	40	210	19	44	46	2xM6	40	528 g



**Esempio di utilizzo**  
**Application example**



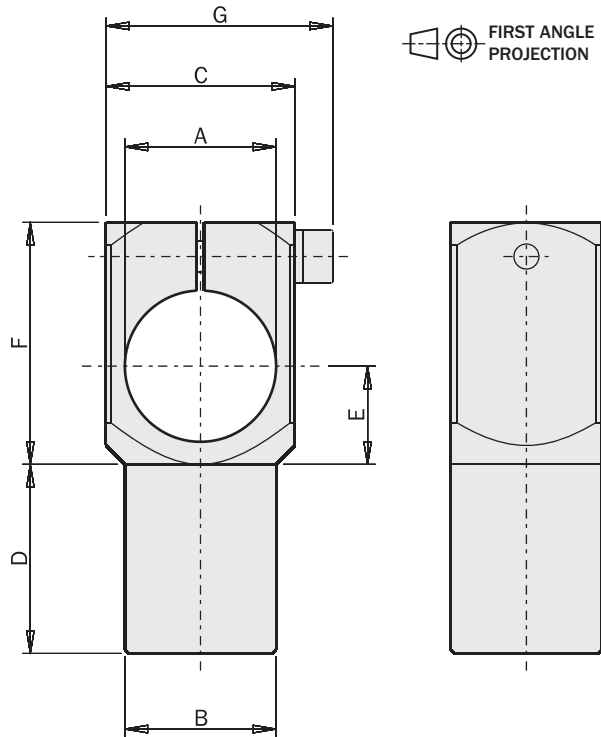
**Gambo con cravatta**

(kit completo di viti)  
(materiale: alluminio)

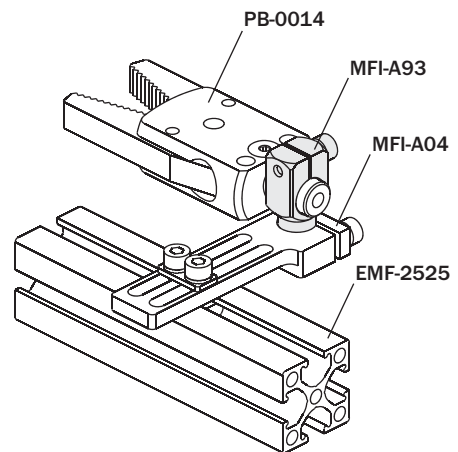
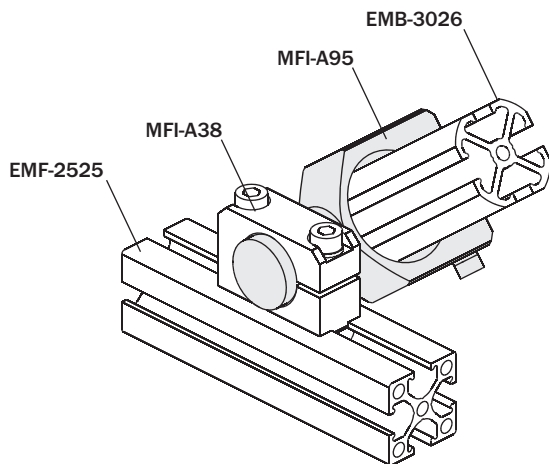
**Clamp leg**

(kit with screws)  
(material: aluminium)

		MFI-A93	MFI-A157	MFI-A94	MFI-A95
A	[mm]	Ø10	Ø14	Ø20	Ø30
B	[mm]	Ø10	Ø14	Ø20	Ø20
C	[mm]	14x10	18x14	25x20	40x20
D	[mm]	15	20	25	25
E	[mm]	7	10	13	19
F	[mm]	19	26	32	44
G	[mm]	19	24	30	45
Peso		10 g	23 g	50 g	78 g
Weight					



**Esempio di utilizzo**  
**Application example**



**Gambo con cravatta robusto**

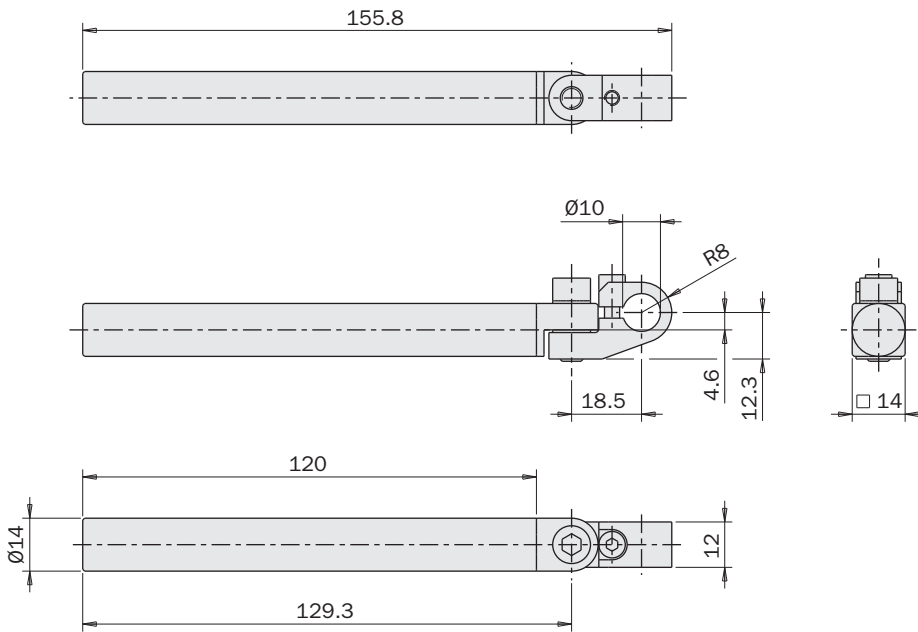
(kit completo di viti)  
(materiale: alluminio)

**Heavy duty clamp leg**

(kit with screws)  
(material: aluminium)

**MFI-A332**

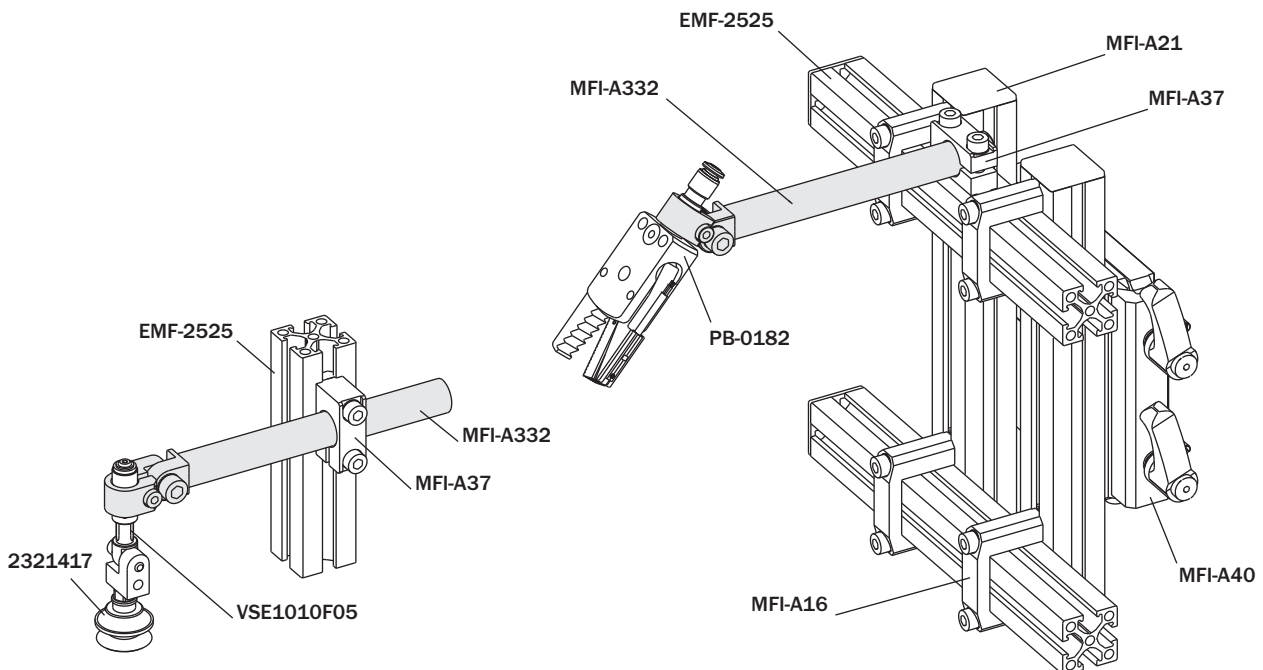
Peso	72 g
Weight	



FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



**Blocco distributore laterale (1 canale)**

(kit completo di viti)  
(materiale: alluminio)



G1/8" (x5)



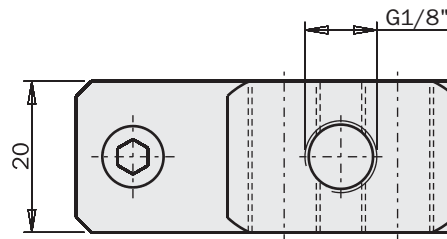
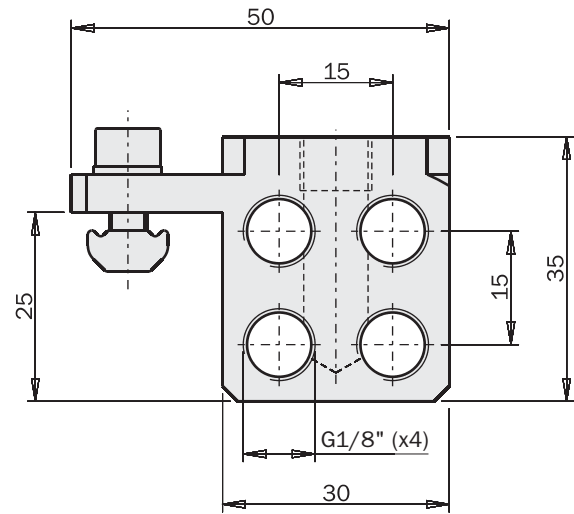
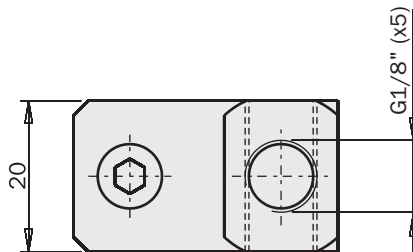
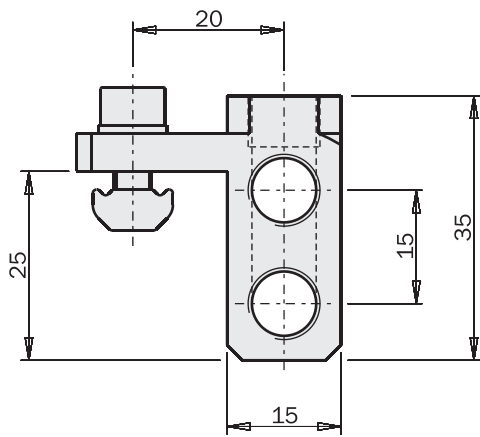
G1/8" (x9)

**Side manifold block (1 channel)**

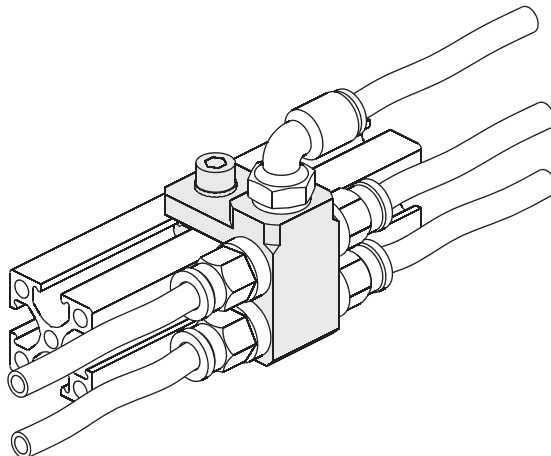
(kit with screws)  
(material: aluminium)

	MFI-A68	MFI-A69
Compatibile con:	EMF-2518	EMF-2518
Compatible with:	EMF-2525	EMF-2525
	EMF-5025	EMF-5025
Peso	30 g	50 g
Weight		

FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



**Blocco distributore laterale (2 canali)**

(kit completo di viti)  
(materiale: alluminio)

**Side manifold block (2 channels)**

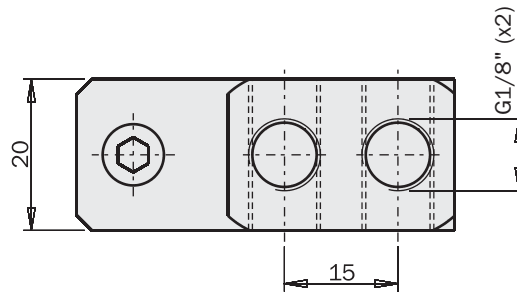
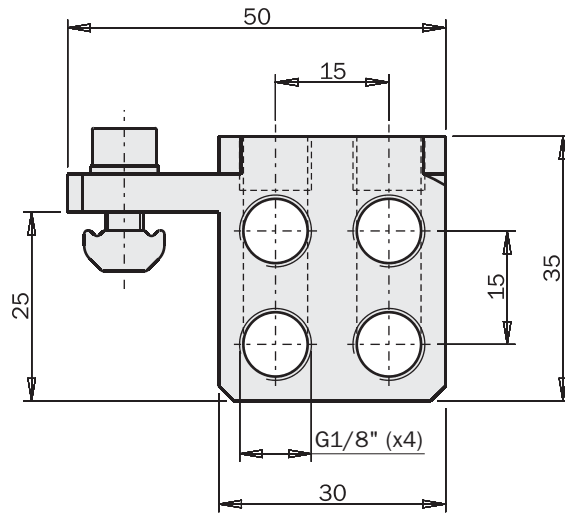
(kit with screws)  
(material: aluminium)



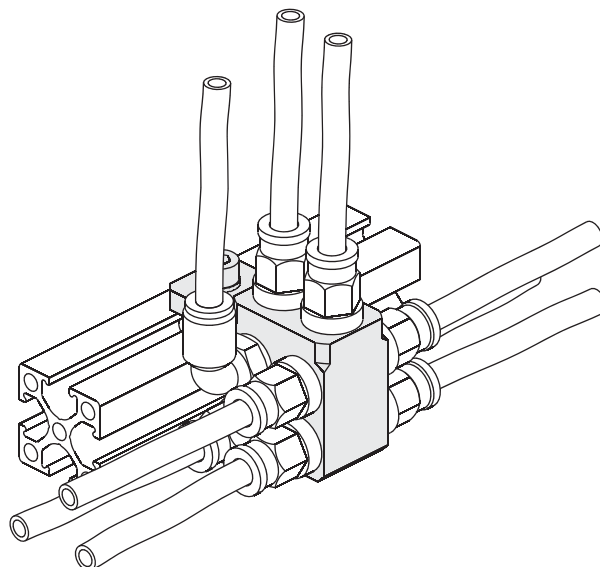
G1/8" (5+5)

	<b>MFI-A70</b>
	EMF-2518
Compatibile con: Compatible with:	EMF-2525
	EMF-5025
Peso Weight	48 g

FIRST ANGLE  
PROJECTION



**Esempio di utilizzo**  
**Application example**

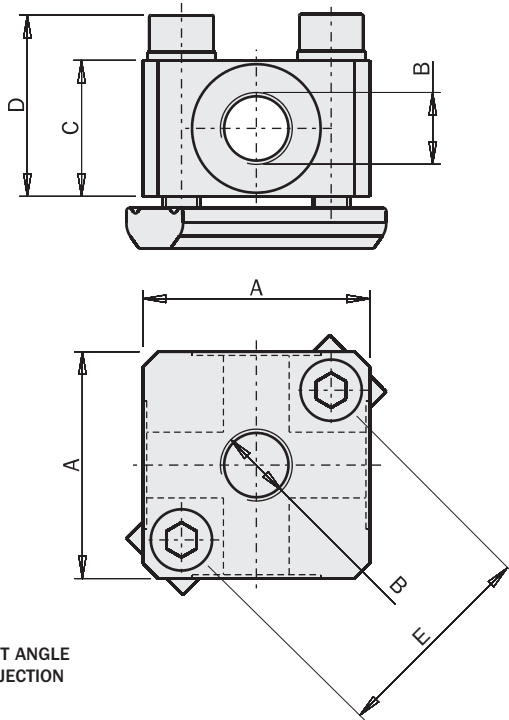


**Blocco distributore**

(kit completo di viti)  
(materiale: alluminio)

**Manifold block**

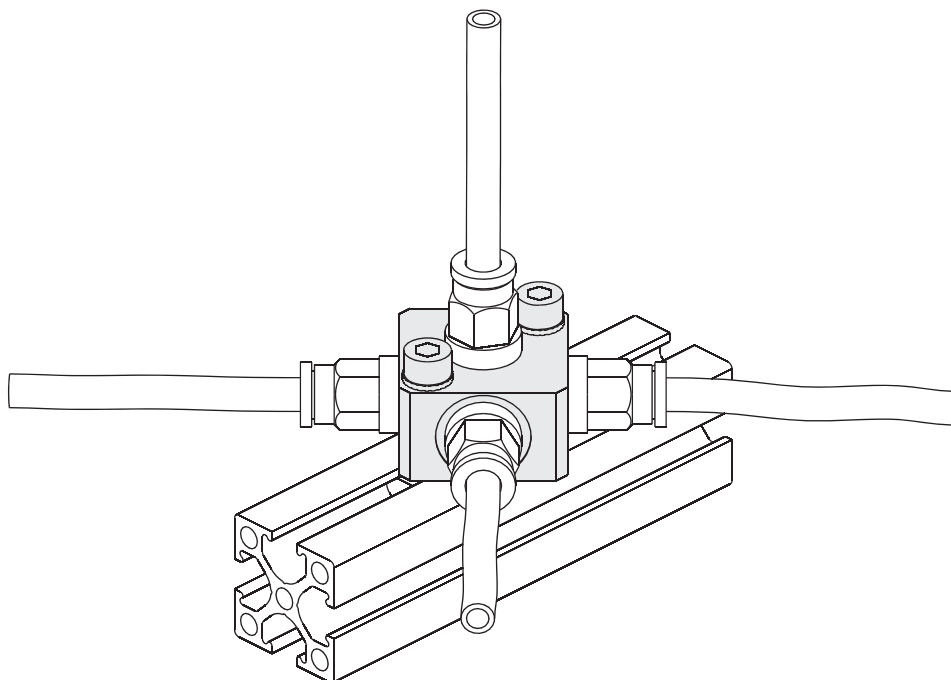
(kit with screws)  
(material: aluminium)



	MFI-A66	MFI-A67
A [mm]	30	40
B [mm]	(x5) G1/8"	(x5) G1/4"
C [mm]	18	20
D [mm]	24	23
E [mm]	28	35
Peso Weight	50 g	80 g



**Esempio di utilizzo**  
**Application example**





**Blocchi distributori universali (1 canale)**

(materiale: alluminio)

- Adatti a tutte le travi EMB/EMF.
- Orientabili in qualsiasi posizione.
- Raccordi dell'aria integrati.
- Dado last-minute incluso.

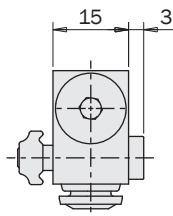
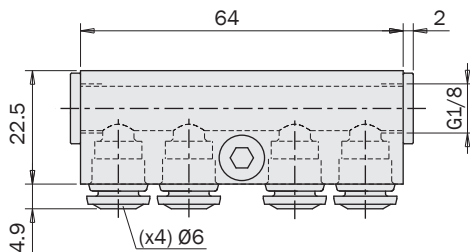
**Universal distributor blocks (1 channel)**

(material: aluminium)

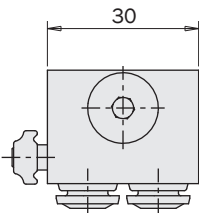
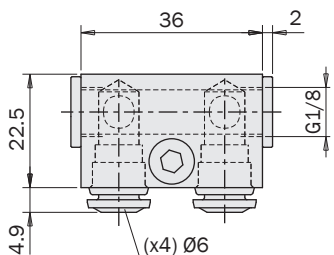
- Suitable for all EMB/EMF beams.
- Adjustable in any position.
- Built-in air fittings.
- Last-minute nut included.

Peso  
Weight

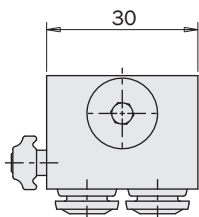
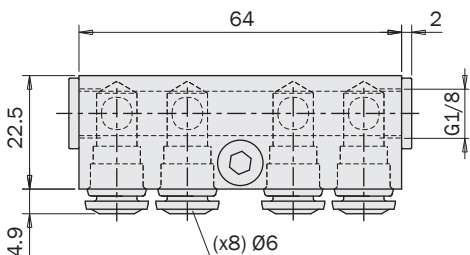
<b>MFI-A379</b>	60 g
<b>MFI-A380</b>	70 g
<b>MFI-A381</b>	110 g
<b>MFI-A384</b>	90 g



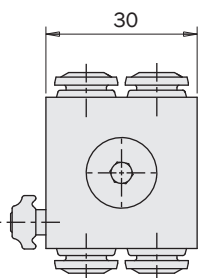
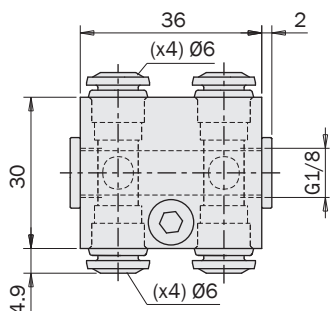
**MFI-A379**



**MFI-A380**

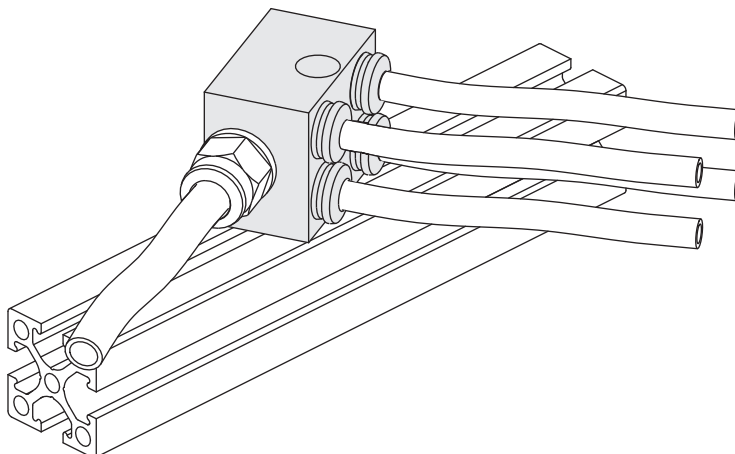


**MFI-A381**



**MFI-A384**

**Esempio di utilizzo  
Application example**

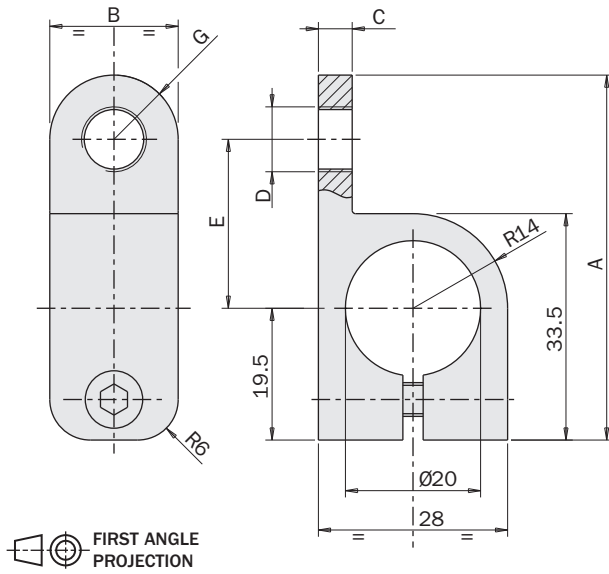


**Supporto orientabile**

(kit completo di viti)  
(materiale: alluminio)

**Swivelling support**

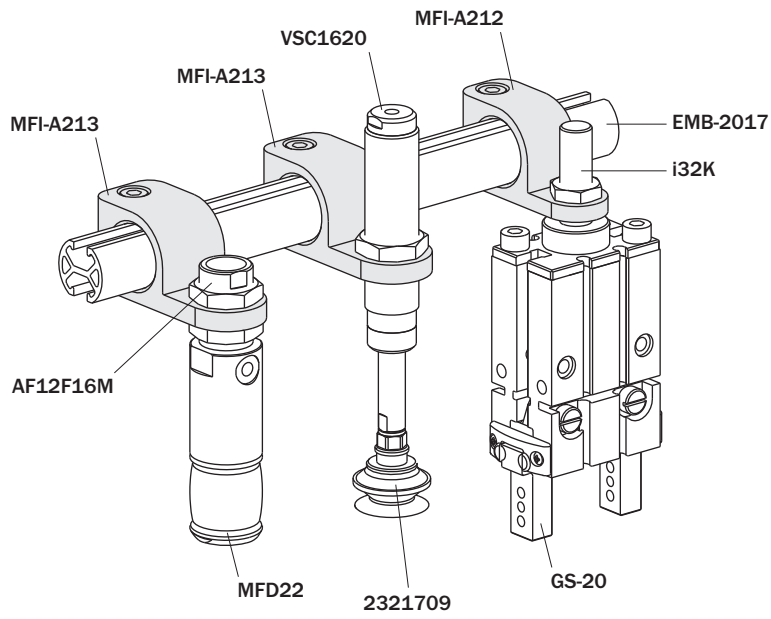
(kit with screws)  
(material: aluminium)



	MFI-A212	MFI-A213
A [mm]	53.5	60.5
B [mm]	19	24
C [mm]	5	6
D [mm]	G1/8"	M16x1
E [mm]	25	29
G [mm]	R9.5	R12
Peso Weight	30 g	40 g



**Esempio di utilizzo**  
**Application example**



**Blocco di connessione a croce**

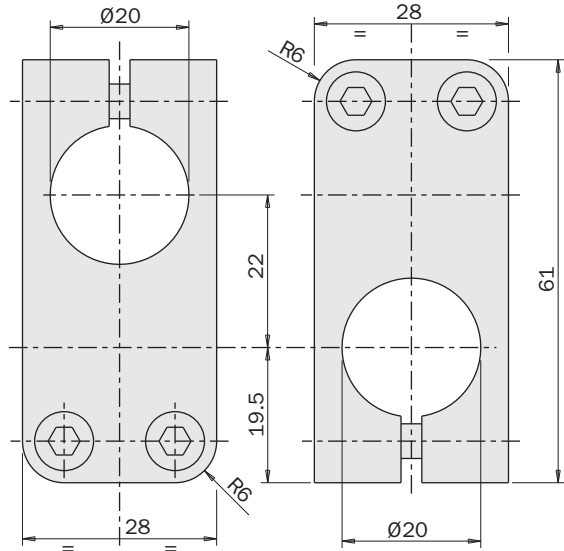
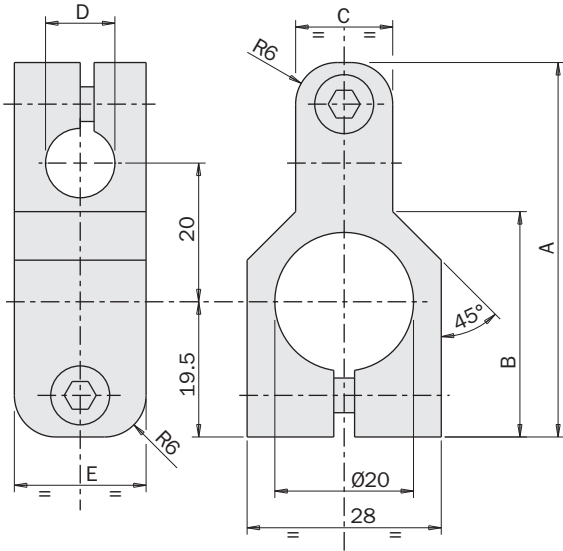
(kit completo di viti)  
(materiale: alluminio)

**Cross connection block**

(kit with screws)  
(material: aluminium)

	MFI-A214	MFI-A215
A [mm]	54	56
B [mm]	32.5	30.5
C [mm]	14	18
D [mm]	Ø10	Ø14
E [mm]	19	22
Peso Weight	40 g	45 g

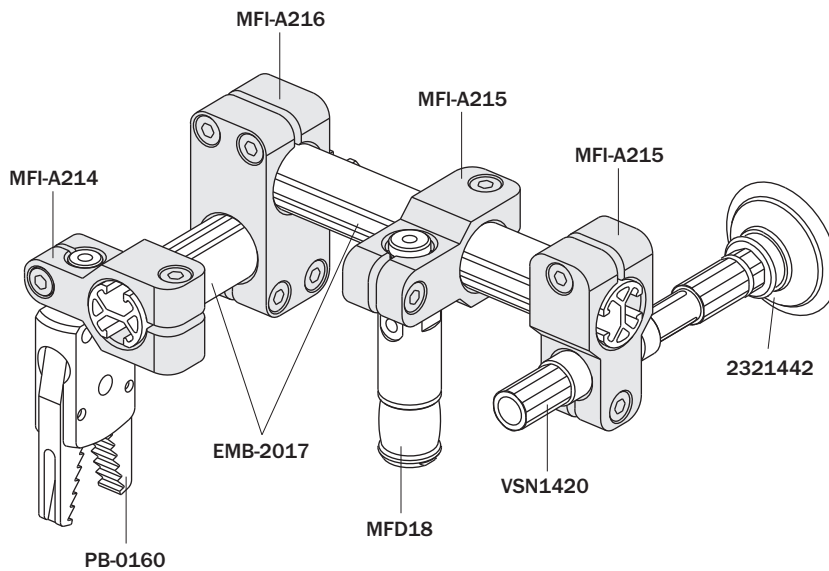
	MFI-A216
Peso Weight	70 g



FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



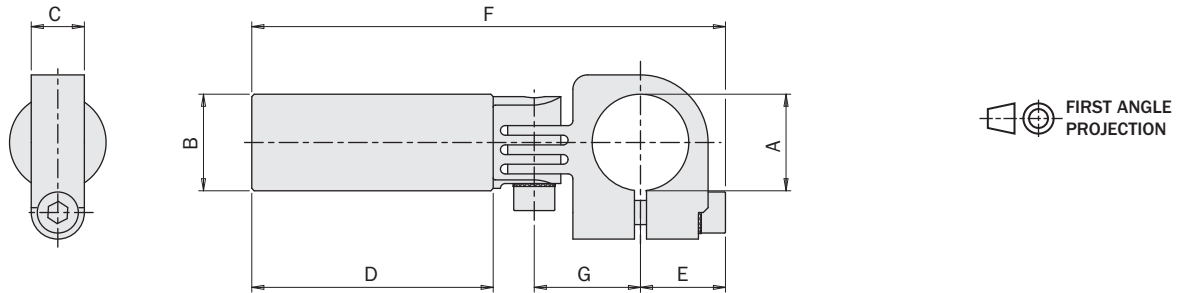
**Gomito con cravatta**

(kit completo di viti)  
(materiale: alluminio)

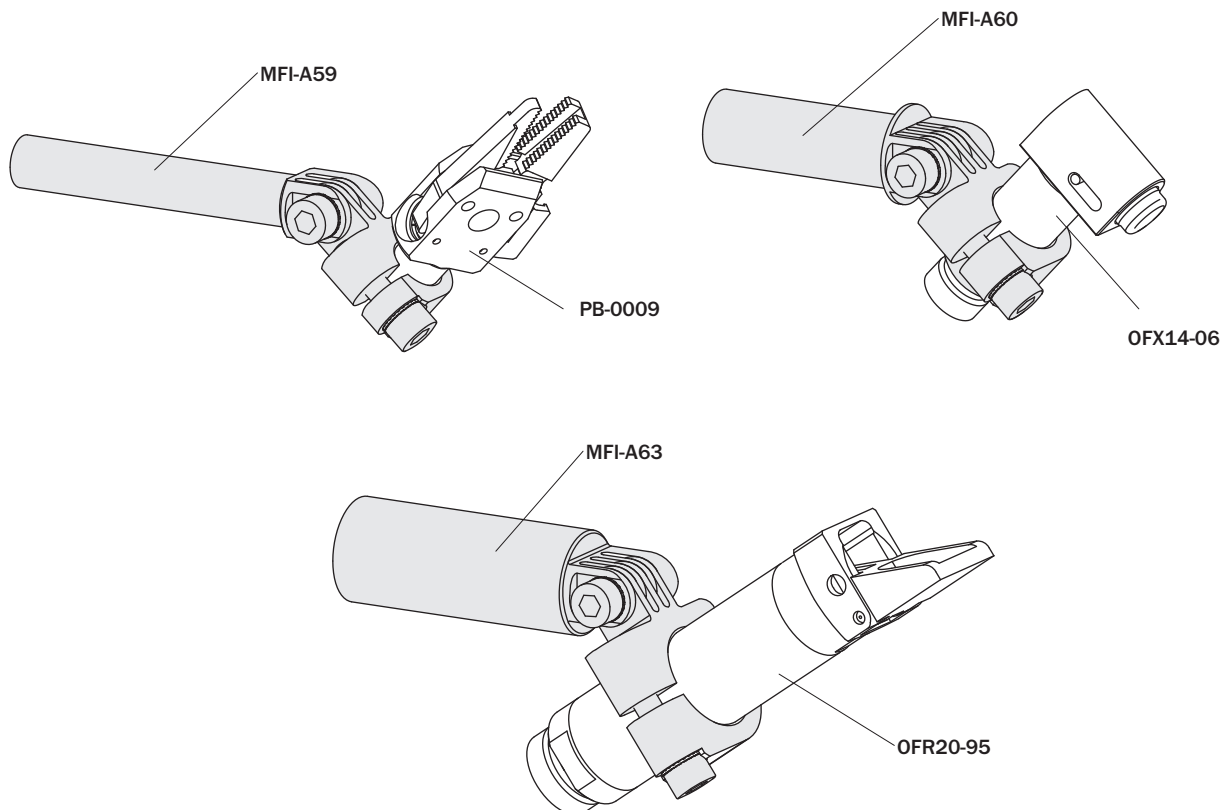
**Elbow arm**

(kit with screws)  
(material: aluminium)

	MFI-A59	MFI-A60	MFI-A61	MFI-A62	MFI-A63	MFI-A64	MFI-A65	MFI-A167	MFI-A168	MFI-A169
A [mm]	Ø10	Ø14	Ø14	Ø14	Ø20	Ø20	Ø20	Ø30	Ø30	Ø30
B [mm]	Ø10	Ø14	Ø14	Ø14	Ø20	Ø20	Ø20	Ø30	Ø30	Ø30
C [mm]	11	11	11	11	11	11	11	16	16	16
D [mm]	60	40	80	120	50	100	150	80	140	200
E [mm]	12.5	15	15	15	18.5	18.5	18.5	24.7	24.7	24.7
F [mm]	99.5	82.5	124	164	100	150	200	146	206	266
G [mm]	18.5	19	19	19	23	23	23	31	31	31
Peso Weight	33 g	43 g	60 g	77 g	75 g	117 g	160 g	230 g	344.5 g	459 g



**Esempio di utilizzo**  
**Application example**



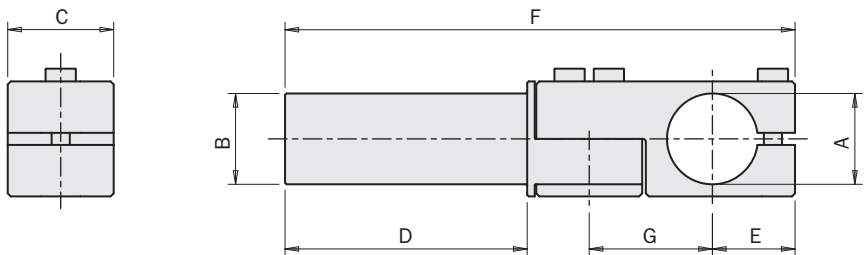
**Snodo robusto con cravatta**

(kit completo di viti)  
(materiale: alluminio)

**Heavy duty elbow arm**

(kit with screws)  
(material: aluminium)

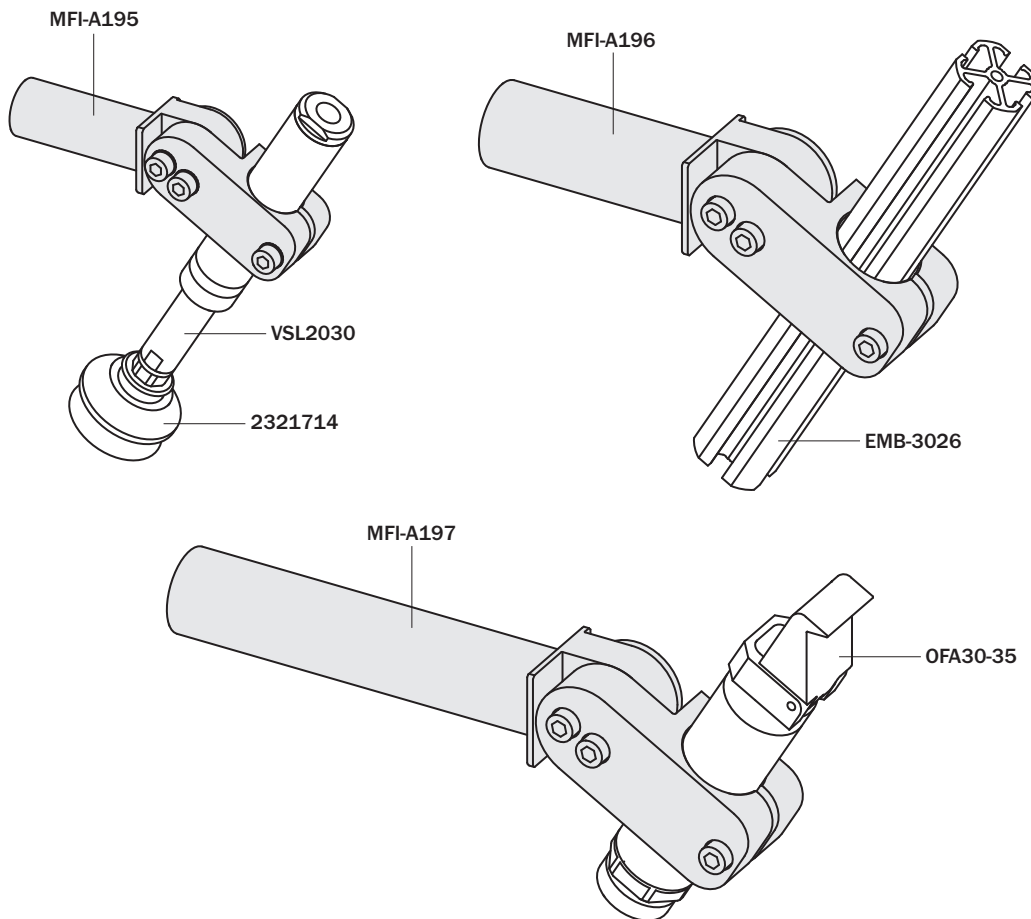
	MFI-A195	MFI-A199	MFI-A200	MFI-A196	MFI-A197	MFI-A198
A [mm]	Ø20	Ø20	Ø20	Ø30	Ø30	Ø30
B [mm]	Ø20	Ø20	Ø20	Ø30	Ø30	Ø30
C [mm]	25	25	25	35	35	35
D [mm]	50	100	150	80	140	200
E [mm]	19.5	19.5	19.5	27.3	27.3	27.3
F [mm]	113.5	163.5	213.5	168.5	228.5	288.5
G [mm]	28.7	28.7	28.7	40.7	40.7	40.7
Peso Weight	132.5 g	175 g	217 g	393.5 g	482.5 g	597 g



FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
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Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

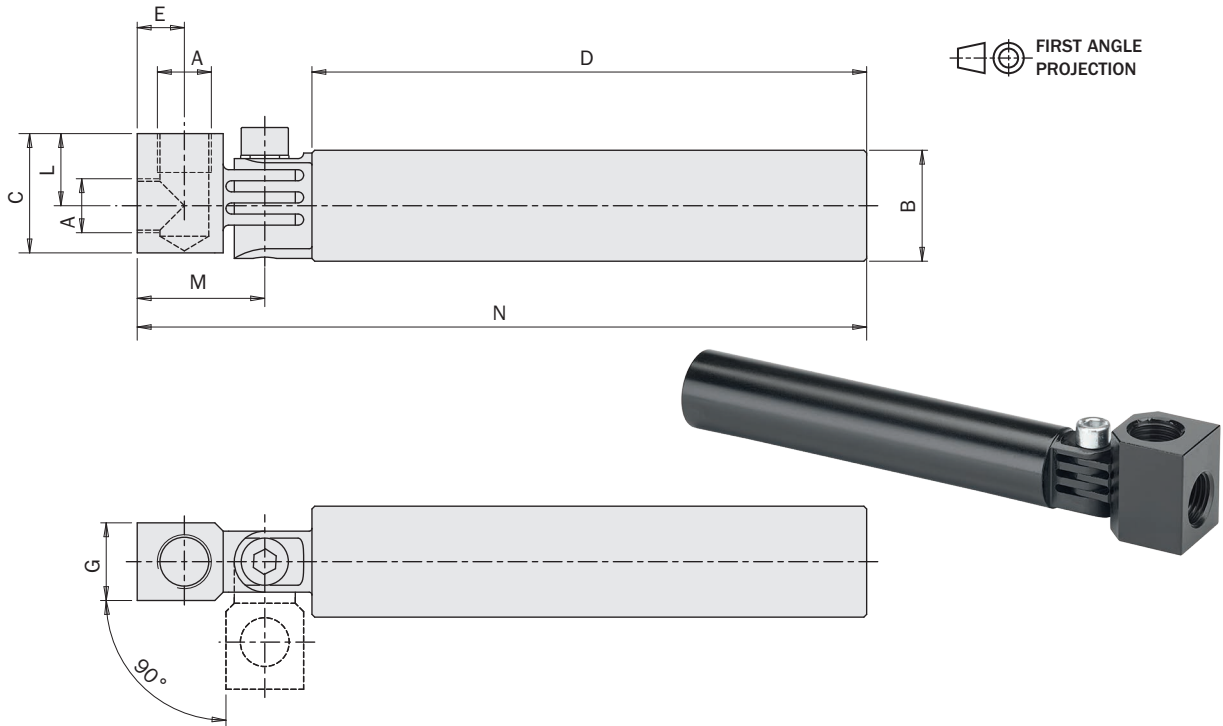
**Gomito per ventosa**

(kit completo di viti)  
(materiale: alluminio)

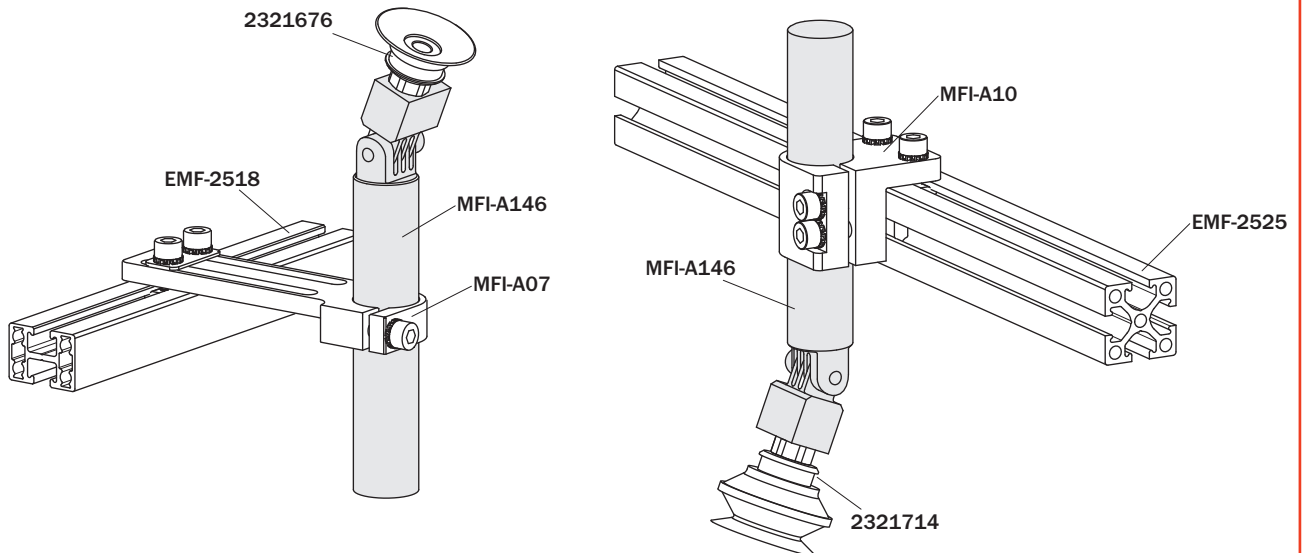
**Elbow arm for vacuum cup**

(kit with screws)  
(material: aluminium)

	A	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]	L [mm]	M [mm]	N [mm]	Peso Weight
<b>MFI-A142</b>	M5	Ø10	16	60	5.5	12	8.5	18	86.5	27 g
<b>MFI-A143</b>	M5	Ø10	16	90	5.5	12	8.5	18	116.5	33 g
<b>MFI-A144</b>	G1/8"	Ø14	21.5	80	8.5	14	13	23	113	54 g
<b>MFI-A145</b>	G1/8"	Ø14	21.5	120	8.5	14	13	23	153	71 g
<b>MFI-A146</b>	G1/8"	Ø20	21.5	100	8.5	14	13	23	131.5	104.5 g
<b>MFI-A147</b>	G1/8"	Ø20	21.5	150	8.5	14	13	23	181.5	147 g
<b>MFI-A148</b>	G1/4"	Ø20	26	100	12	20	15.5	28.5	137	115.6 g
<b>MFI-A149</b>	G1/4"	Ø20	26	150	12	20	15.5	28.5	187	158 g
<b>MFI-A507</b> <span style="background-color: #f08080;">NEW</span>	G 3/8"	Ø30	34	200	21	24	19.5	42.5	253	450 g



**Esempio di utilizzo**  
**Application example**



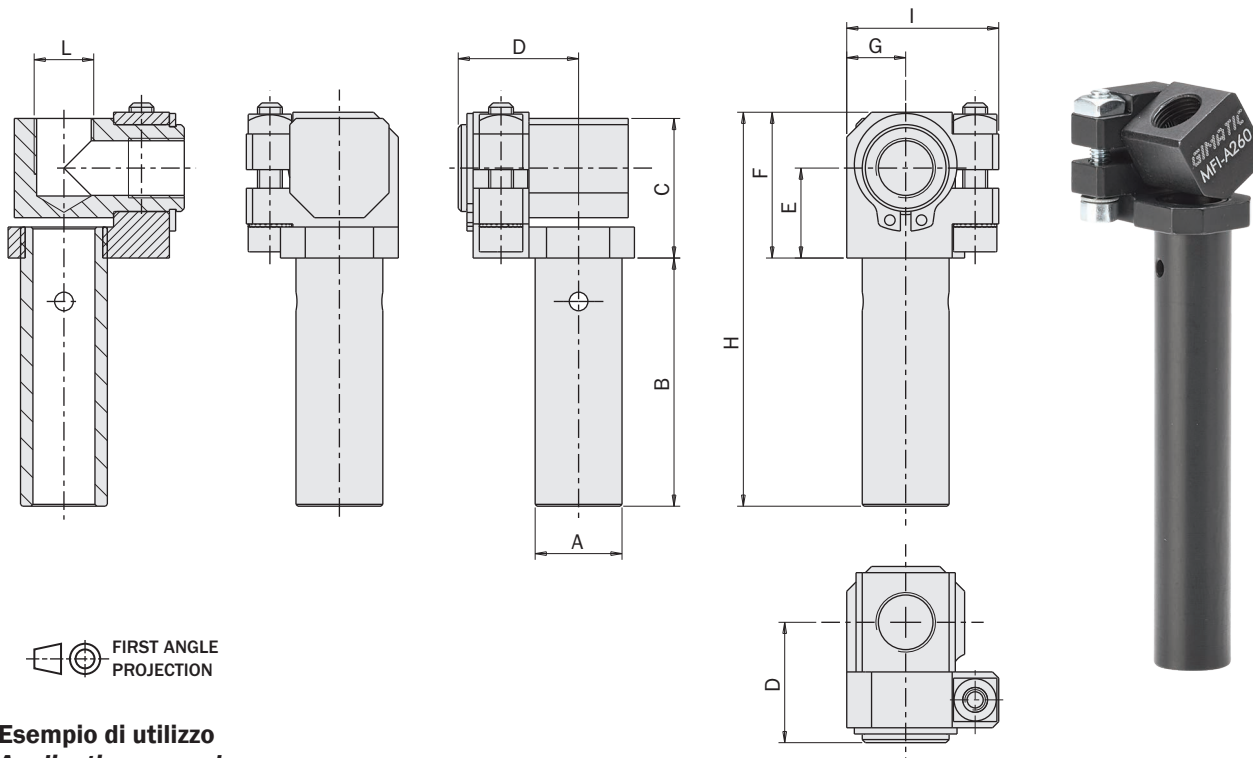
**Gomito a cravatta per ventosa**

(kit completo di viti)  
(materiale: alluminio)

**Elbow arm for vacuum cup clamping**

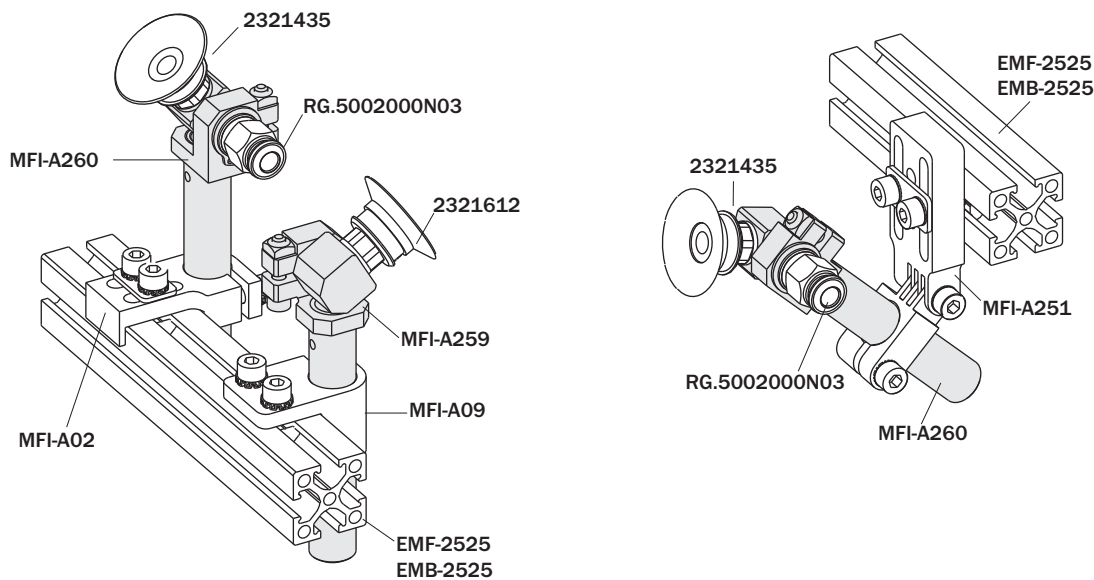
(kit with screws)  
(material: aluminium)

	A	B	C	D	E	F	G	H	I	L	Peso
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	Weight
<b>MFI-A256</b>	Ø10	30	17	14.5	11	18	7	48	18.5	M5	14 g
<b>MFI-A257</b>	Ø10	60	17	14.5	11	18	7	78	18.5	M5	17 g
<b>MFI-A258</b>	Ø10	90	17	14.5	11	18	7	108	18.5	M5	20 g
<b>MFI-A259</b>	Ø14	40	22.5	19.4	14.5	23.5	9.5	63.5	24.5	G1/8"	32 g
<b>MFI-A260</b>	Ø14	80	22.5	19.4	14.5	23.5	9.5	103.5	24.5	G1/8"	40 g
<b>MFI-A261</b>	Ø14	120	22.5	19.4	14.5	23.5	9.5	143.5	24.5	G1/8"	48 g
<b>MFI-A290</b>	Ø20	50	28	23.3	18	30	12	80	33	G1/8"	63 g
<b>MFI-A291</b>	Ø20	100	28	23.3	18	30	12	130	33	G1/8"	78 g
<b>MFI-A292</b>	Ø20	150	28	23.3	18	30	12	180	33	G1/8"	93 g
<b>MFI-A262</b>	Ø20	50	30.5	23.3	18	30	12	80	30	G1/4"	58 g
<b>MFI-A263</b>	Ø20	100	30.5	23.3	18	30	12	130	30	G1/4"	73 g
<b>MFI-A264</b>	Ø20	150	30.5	23.3	18	30	12	180	30	G1/4"	88 g



FIRST ANGLE PROJECTION

**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

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Grippers

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Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

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Options

Sensori  
Sensors

**Prolunga con canale per l'aria**

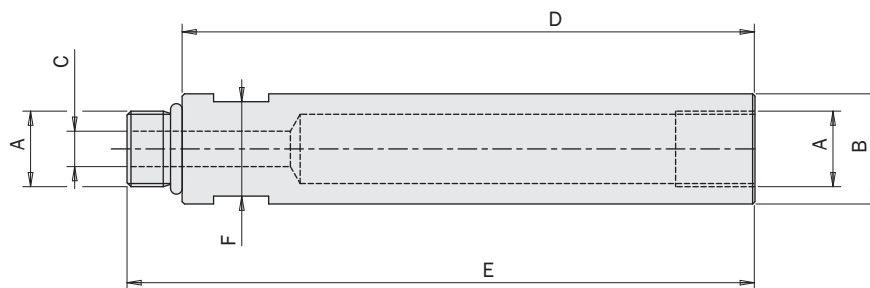
(materiale: alluminio)

**Extension tube with air lead**

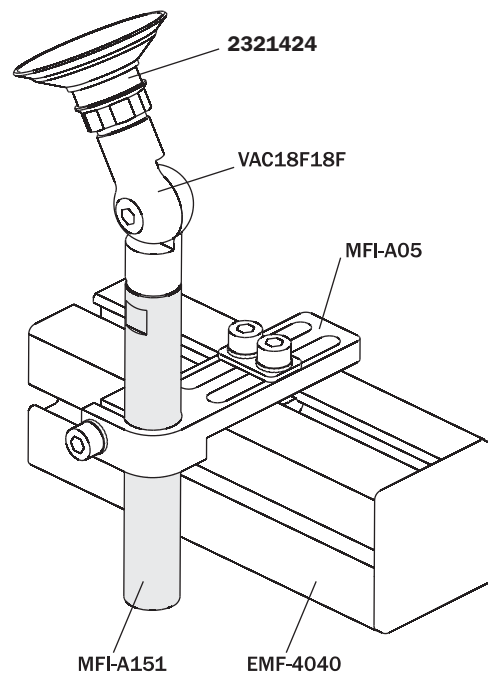
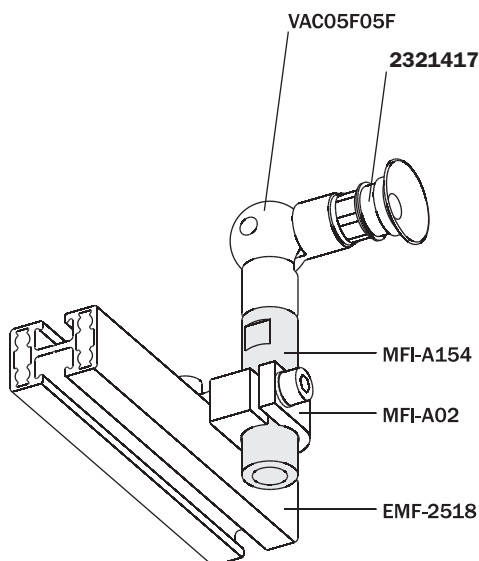
(material: aluminium)

NEW

	MFI-A154	MFI-A155	MFI-A150	MFI-A151	MFI-A152	MFI-A153	MFI-A506
A [mm]	M5	M5	G1/8"	G1/8"	G1/4"	G1/4"	G 3/8"
B [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20	Ø30
C [mm]	Ø2	Ø2	Ø4.5	Ø4.5	Ø6.5	Ø6.5	Ø10
D [mm]	45	90	45	90	45	90	150
E [mm]	50	95	52	97	53	98	159
F [mm]	8	8	12	12	17	17	22
Peso Weight	10 g	15 g	15 g	25 g	30 g	55 g	210 g



**Esempio di utilizzo**  
**Application example**





**Staffa per il montaggio della pinza OFP20 su profilo**

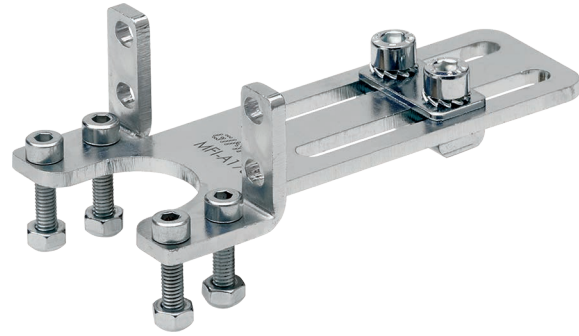
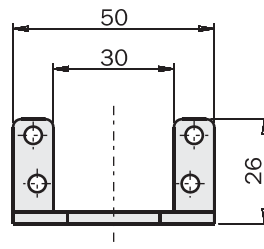
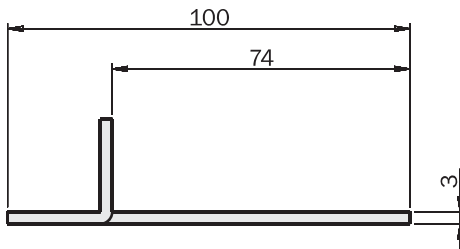
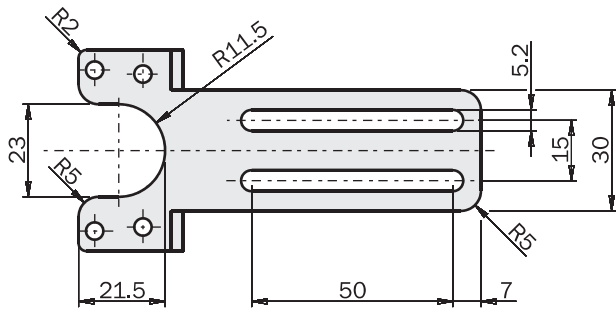
(kit completo di viti)  
(materiale: acciaio)

**OFP20 gripper mounting bracket, to use with profile**

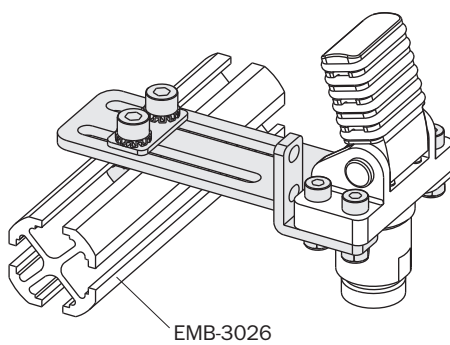
(kit with screws)  
(material: steel)

**MFI-A176**

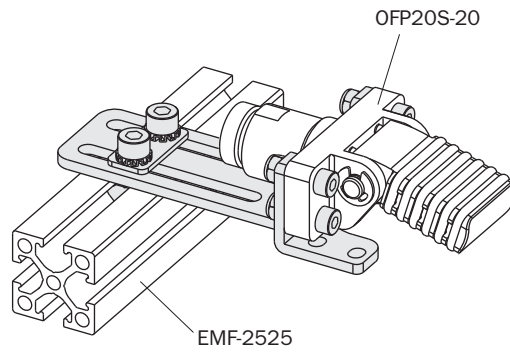
Peso	95 g
Weight	



**Esempio di utilizzo**  
**Application example**



EMB-3026



EMF-2525

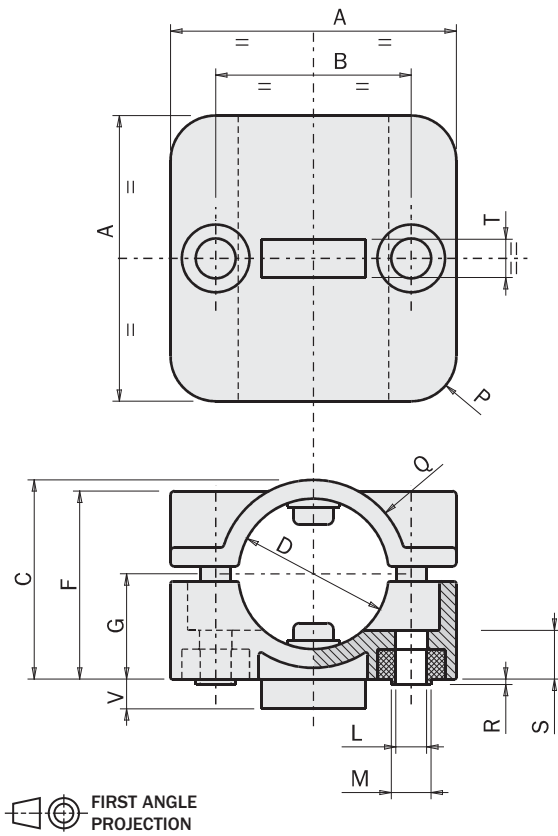
OFP20S-20

**Kit di bloccaggio in plastica per estruso**

(kit completo di viti)  
(materiale: PA66)

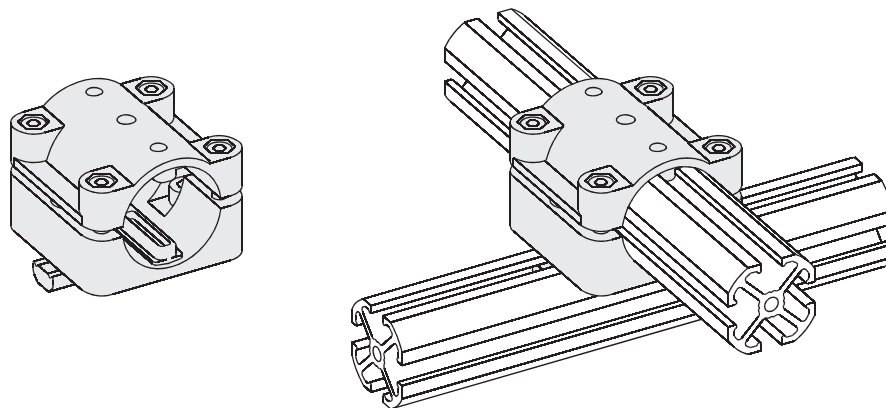
**Locking kit in technopolymer for extruded profile**

(kit with screws)  
(material: PA66)



	MFI-A188	MFI-A189
A [mm]	38	48
B [mm]	26	36
C [mm]	26.5	36.5
D [mm]	Ø20	Ø30
F [mm]	25	32
G [mm]	14	18.5
L [mm]	Ø4.1	Ø5.1
M [mm]	Ø5.3	Ø6.4
P [mm]	6	6
Q [mm]	12.5	12.5
R [mm]	0.7	1
S [mm]	6.5	6.5
T [mm]	-	-
V [mm]	-	-
Peso Weight	48 g	77 g

**Esempio di utilizzo**  
**Application example**

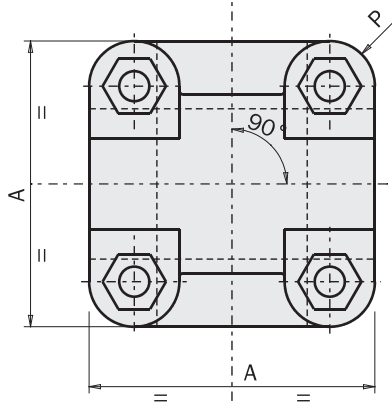
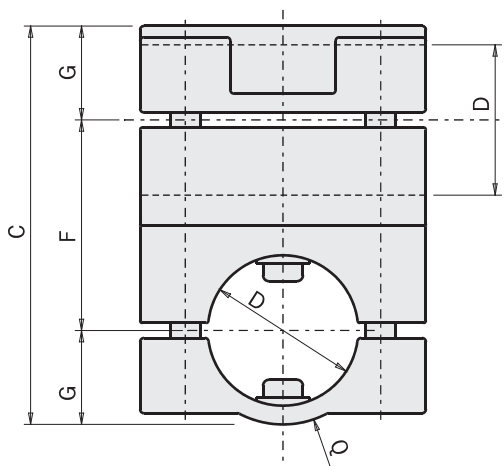


**Kit di bloccaggio in plastica per doppio estruso**

(kit completo di viti)  
(materiale: PA66)

**Locking kit in technopolymer for double extruded profile**

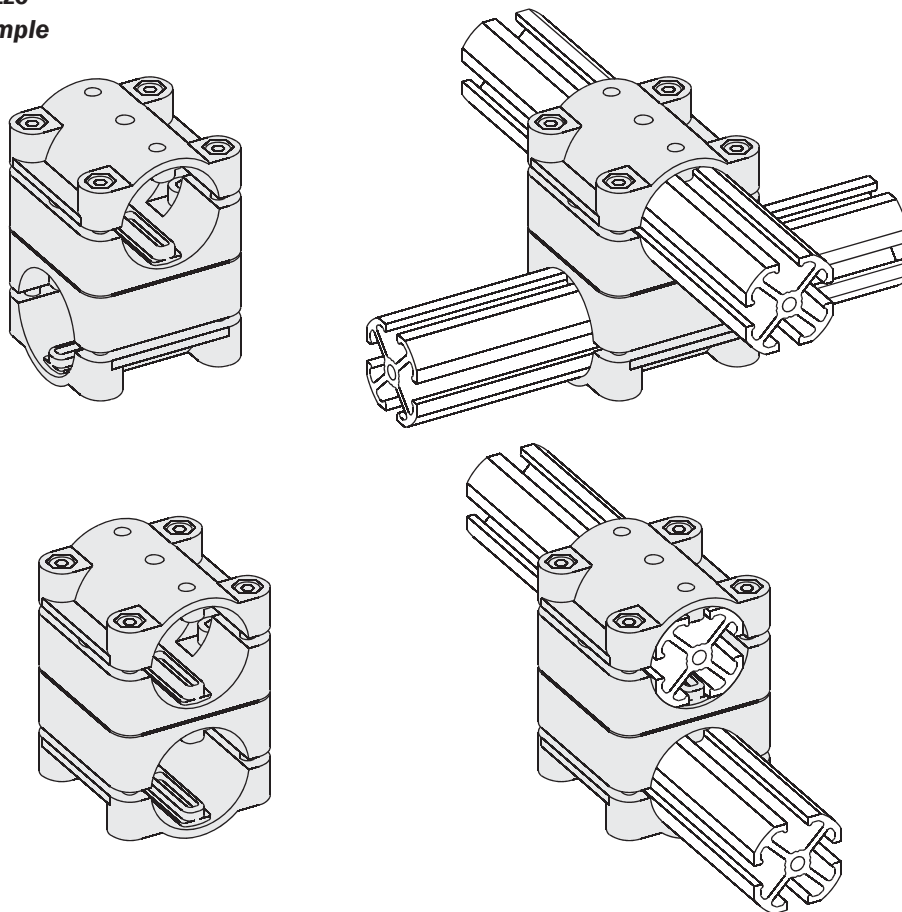
(kit with screws)  
(material: PA66)



FIRST ANGLE PROJECTION

	MFI-A191	MFI-A192
A [mm]	38	48
C [mm]	53	73
D [mm]	Ø20	Ø30
F [mm]	28	37
G [mm]	12.5	18
P [mm]	6	6
Q [mm]	12.5	18
Peso Weight	77 g	122 g

**Esempio di utilizzo**  
**Application example**



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Suspensions

Taglierini  
Nippers

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Robot Kit

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Options

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Sensors

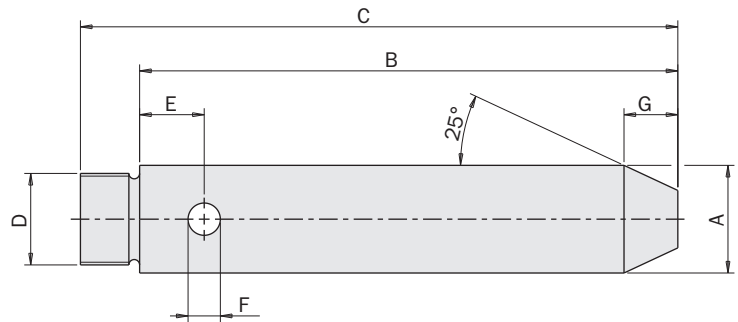
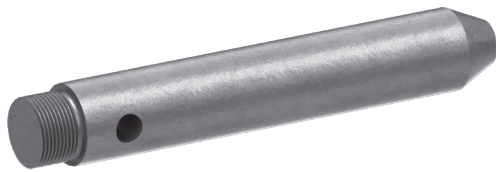
**Spina di centraggio filettata**

(materiale: POM)

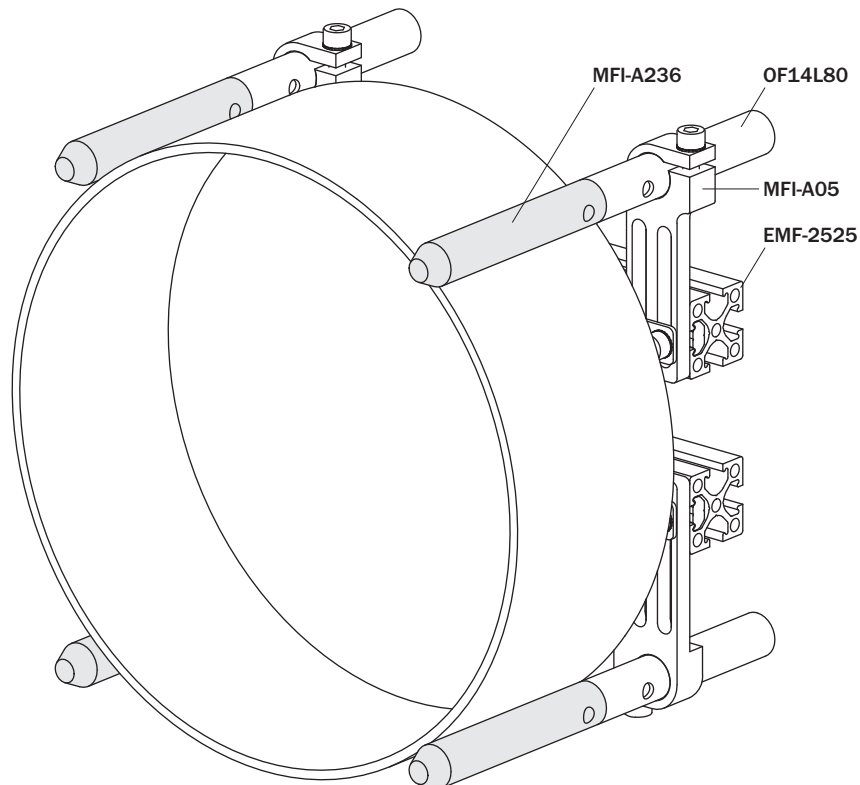
**Threaded centering pin**

(material: POM)

	MFI-A235	MFI-A236	MFI-A237	MFI-A238
A [mm]	Ø10	Ø14	Ø20	Ø30
B [mm]	60	80	100	100
C [mm]	68	88	111	113
D [mm]	M8x1	M12x1	M17x1	M27x1
E [mm]	6	8	12	15
F [mm]	Ø3.5	Ø5	Ø6	Ø8
G [mm]	5	7	10	14
Peso Weight	7 g	20 g	45 g	104 g



**Esempio di utilizzo**  
**Application example**



**Staffa per fissaggio cavi**

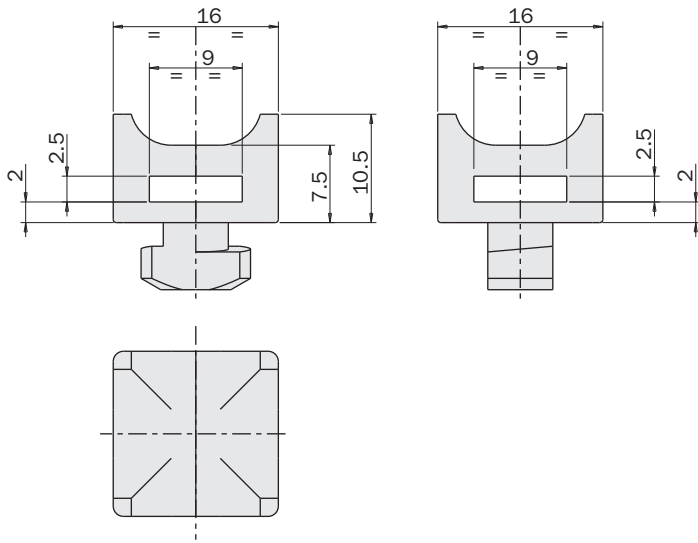
(confezione da 10 pezzi)  
(materiale: PA66)

**Hose mounting bracket**

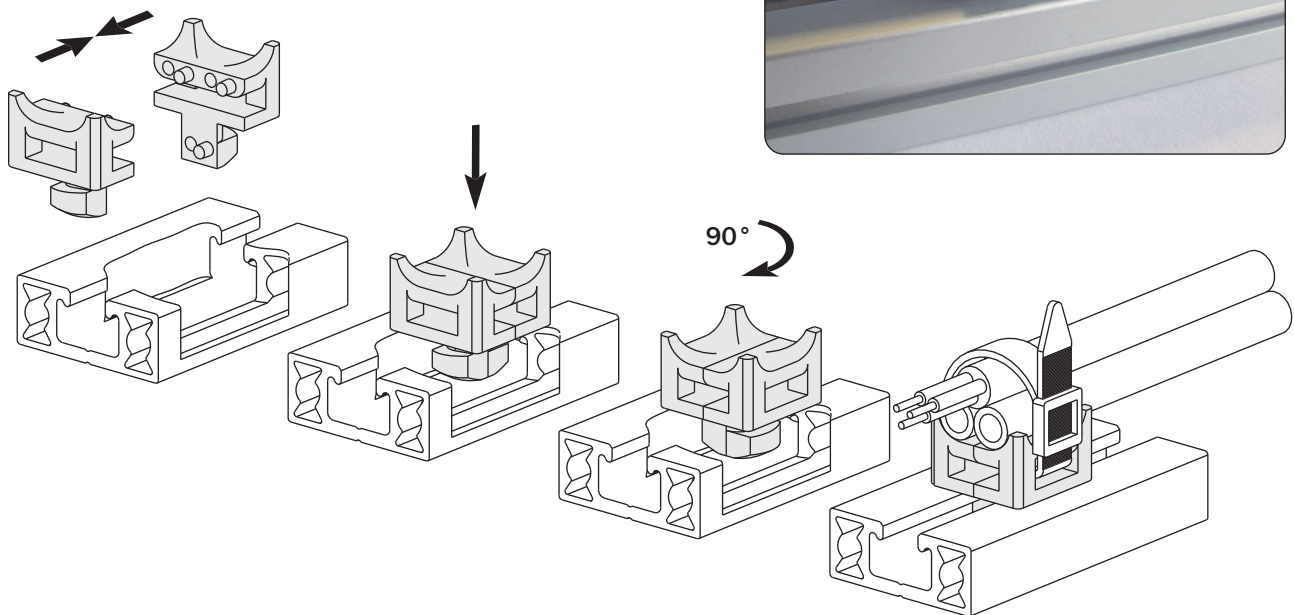
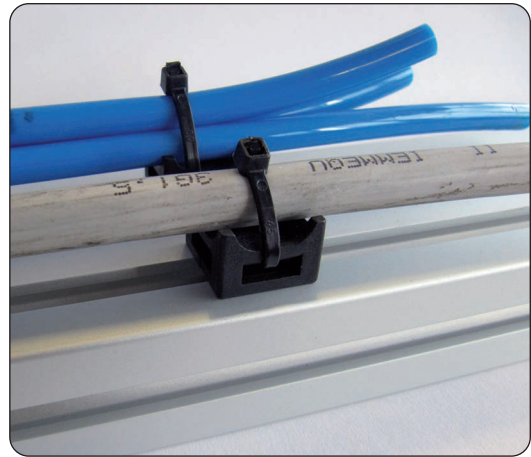
(10 pieces package)  
(material: PA66)

**MFI-A239**

Peso Weight	20 g
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**Esempio di utilizzo**  
**Application example**

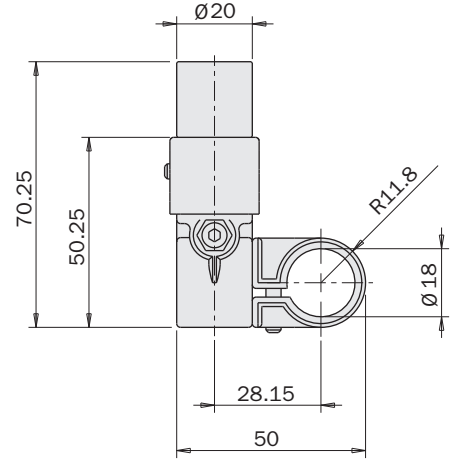
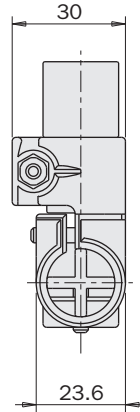
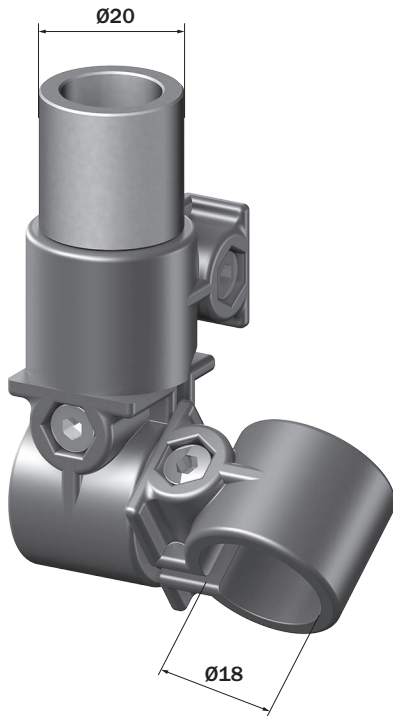


**Porta sensore Ø18**

(materiale: PA66 e alluminio)

**Sensor holder Ø18**

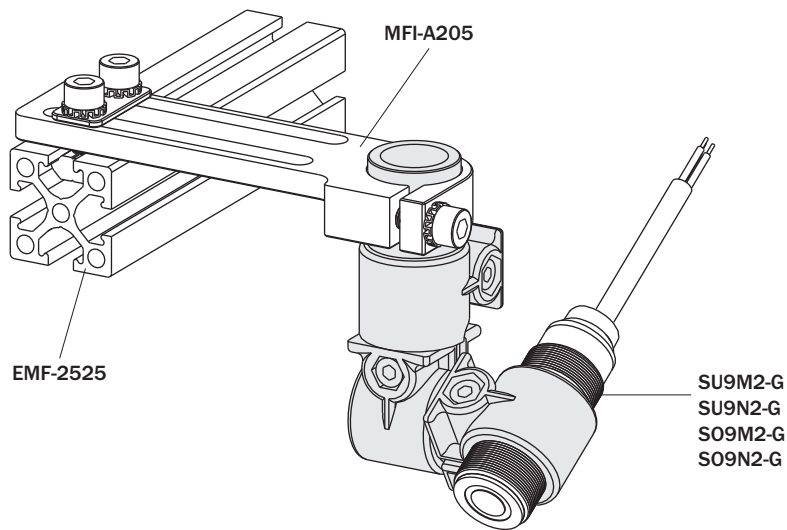
(material: PA66 and aluminium )



**MFI-A310**

Peso Weight	47 g
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**Esempio di utilizzo**  
**Application example**



**Staffa per sensori ottici**

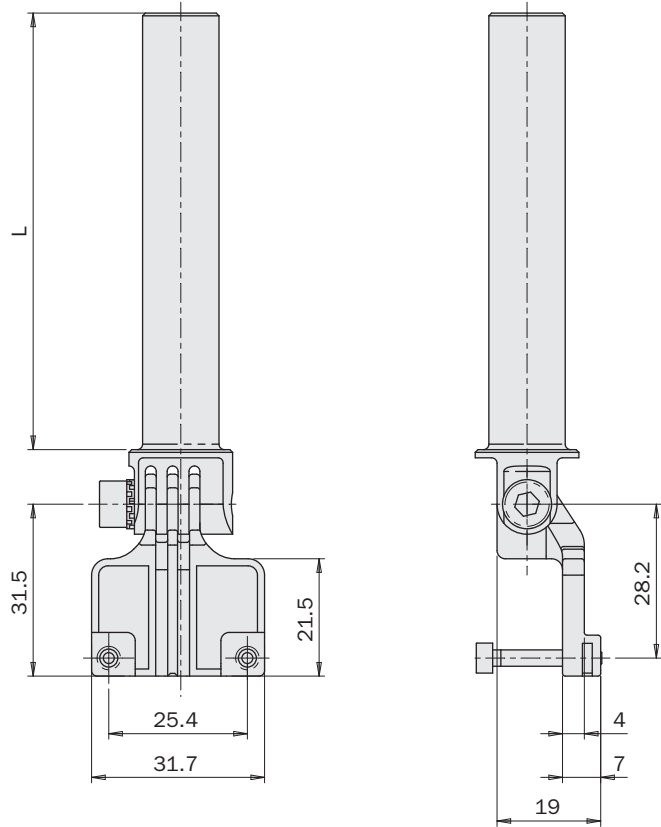
(kit completo di viti)

**Mounting bracket for optical sensors**

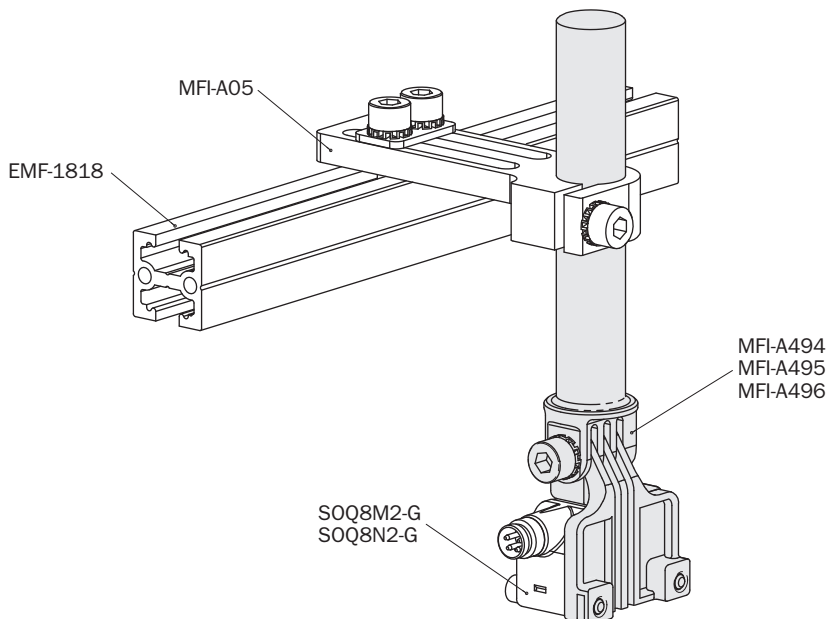
(kit with screws)



	MFI-A494	MFI-A495	MFI-A496
L [mm]	40	80	120
Peso Weight	41 g	58 g	75 g



**Esempio di utilizzo**  
**Application example**



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Robot Kit

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**Staffa per fissaggio pinza**

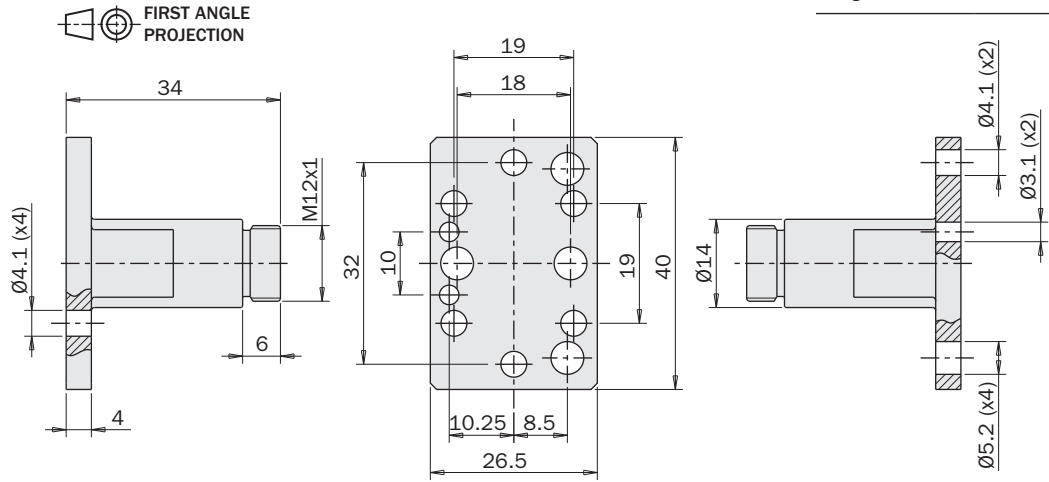
(kit completo di viti)  
(materiale: alluminio)

**Gripper mounting bracket**

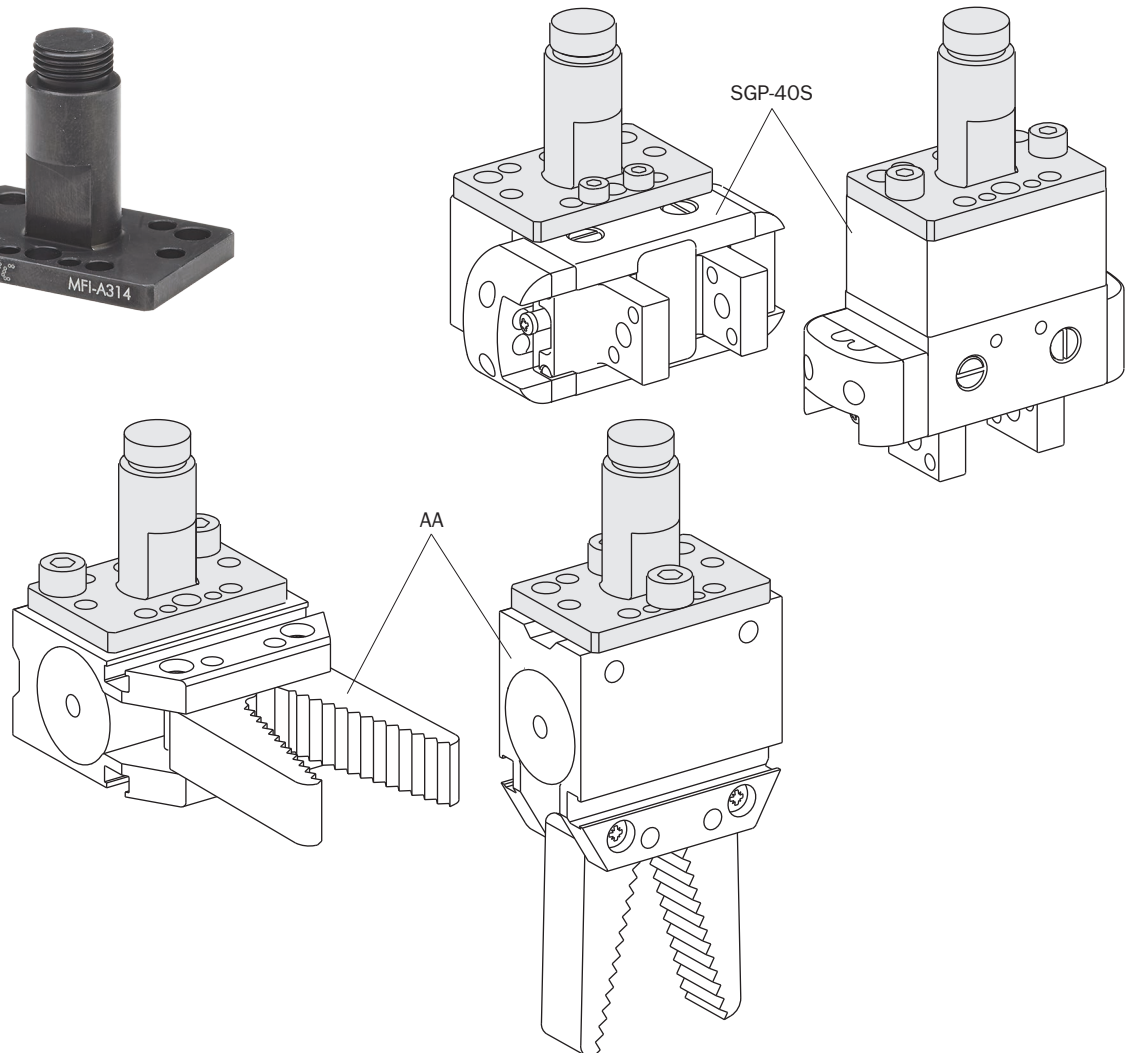
(kit with screws)  
(material: aluminium)

**MFI-A314**

per for	AA / SGP-40S
Peso Weight	25 g



**Esempio di utilizzo**  
**Application example**





**Staffa per fissaggio pinza**

(kit completo di viti)  
(materiale: alluminio)

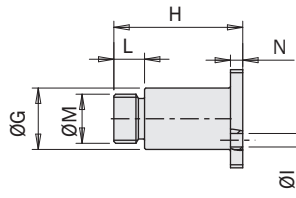
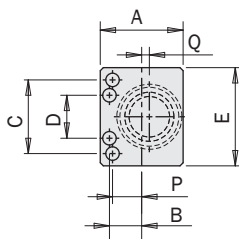
**Gripper mounting bracket**

(kit with screws)  
(material: aluminium)

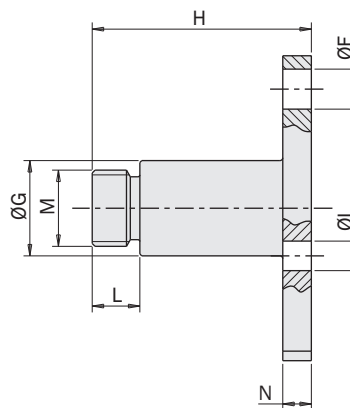
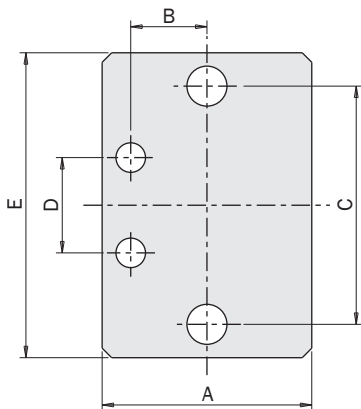


	MFI-A502	MFI-A317	MFI-A316	MFI-A315	MFI-A503
per for	SGP-16S	SGP-20S	SGP-25S	SGP-32S	SGP-50S
A [mm]	13.5	16	18	22	30
B [mm]	5.25	5.5	6	8	/
C [mm]	12	15	20	25	40
D [mm]	7	8	10	10	/
E [mm]	16	20	26	32	50
F [mm]	/	Ø2.6	Ø3.1	Ø4.2	Ø5.2
G [mm]	Ø10	Ø10	Ø10	Ø10	Ø20
H [mm]	21	21	22	23	39
I [mm]	Ø2.2	Ø2.6	Ø3.1	Ø3.1	/
L [mm]	5	5	5	5	8
M [mm]	M8x1	M8x1	M8x1	M8x1	M17x1
N [mm]	2	2	3	3	4
P [mm]	4.75	/	/	/	/
Q [mm]	1.25	/	/	/	/
Peso Weight	4.67 g	11 g	9 g	7 g	43.25 g

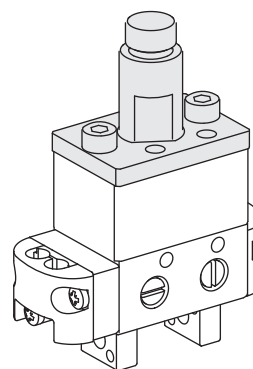
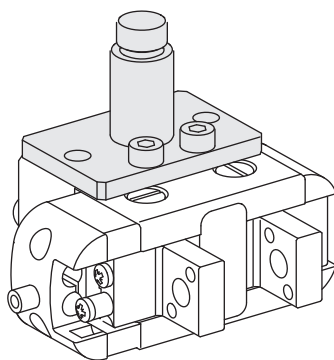
**MFI-A502**



**MFI-A315  
MFI-A316  
MFI-A317  
MFI-A503**



**Esempio di utilizzo  
Application example**



### Staffa per fissaggio pinza

(kit completo di viti)  
(materiale: alluminio)

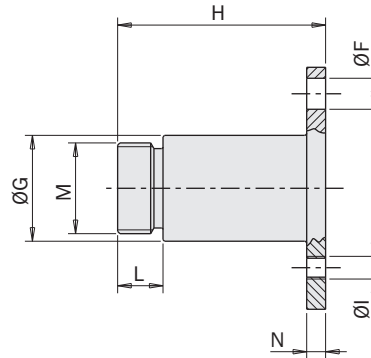
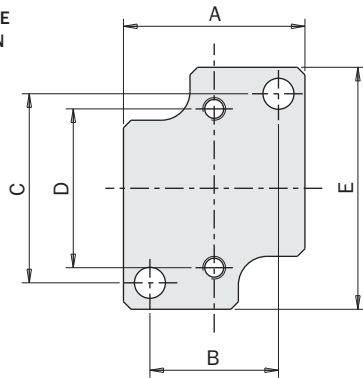


### Gripper mounting bracket

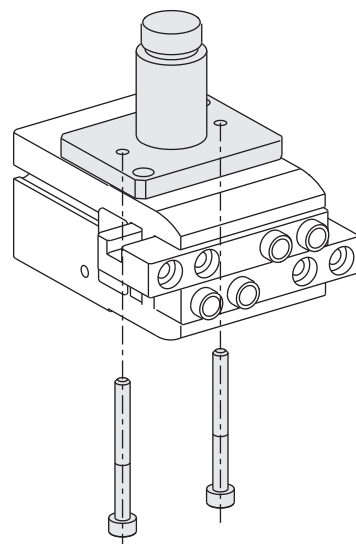
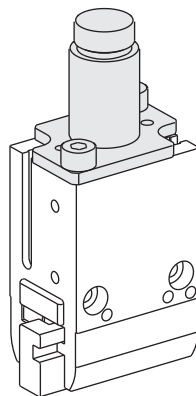
(kit with screws)  
(material: aluminium)

		MFI-A318	MFI-A319	MFI-A320
per for		PQ1608	PQ2012	PQ2516
A	[mm]	19.5	24	28
B	[mm]	14	17	21
C	[mm]	20	25	29
D	[mm]	17	21	24
E	[mm]	25.5	32	36
F	[mm]	Ø3.1	Ø4.2	Ø4.2
G	[mm]	Ø10	Ø14	Ø14
H	[mm]	22	27.5	29
I	[mm]	M2.5	M3	M3
L	[mm]	5	6	6
M	[mm]	M8x1	M12x1	M12x1
N	[mm]	3	2.5	4
Peso Weight		11 g	18 g	20 g

FIRST ANGLE PROJECTION



### Esempio di utilizzo Application example



**Staffa per fissaggio pinza**

(kit completo di viti)  
(materiale: alluminio)

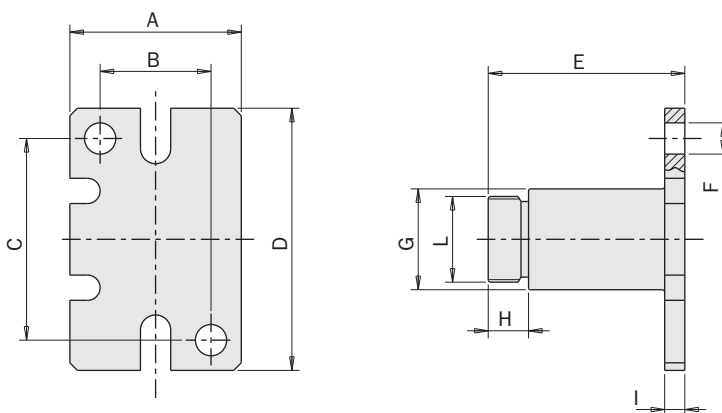
**Gripper mounting bracket**

(kit with screws)  
(material: aluminium)

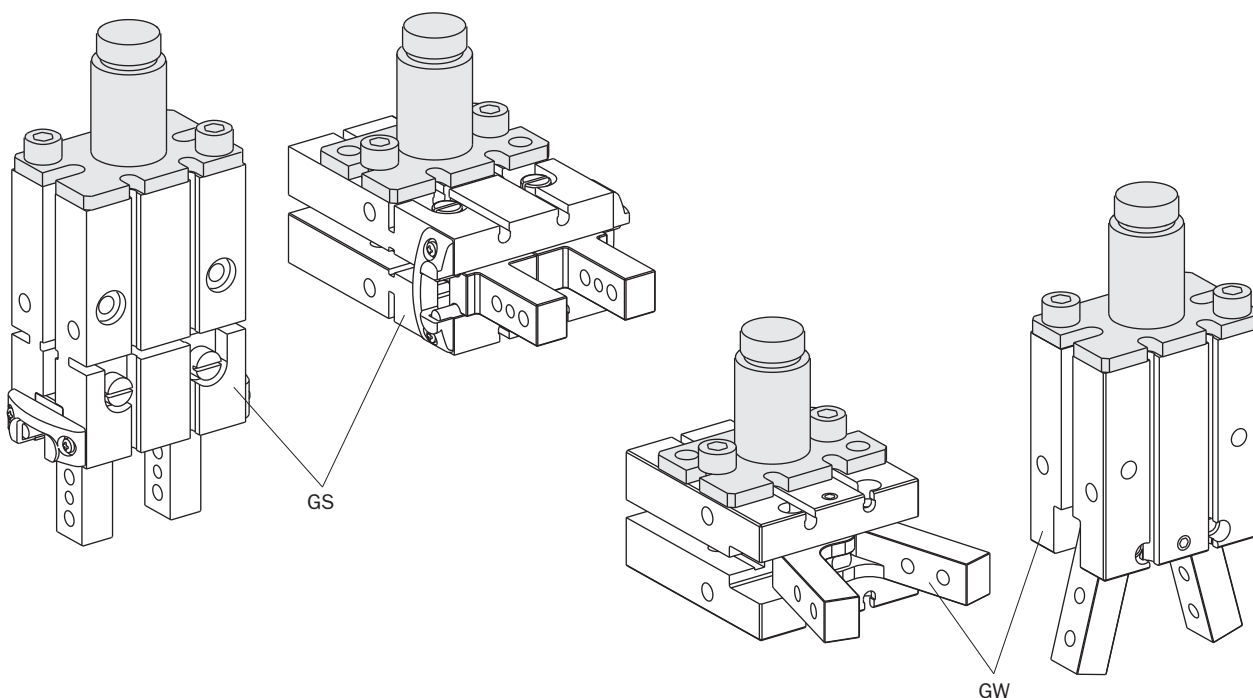


	MFI-A321	MFI-A322	MFI-A323	MFI-A324
per for	GS-10 / GW-10	GS-16 / GW-16	GS-20 / GW-20	GS-25 / GW-25
A [mm]	17.5	24	28	34
B [mm]	12	15	18	22
C [mm]	18	22	32	40
D [mm]	23.5	31	42	52
E [mm]	21	26.5	30	39
F [mm]	Ø3.1	Ø4.1	Ø5.2	Ø6.2
G [mm]	Ø10	Ø14	Ø14	Ø20
H [mm]	5	6	6	8
I [mm]	2	2.5	4	4
L [mm]	M8x1	M12x1	M12x1	M17x1
Peso Weight	8 g	18 g	29 g	57 g

FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



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**Staffa per fissaggio pinza**

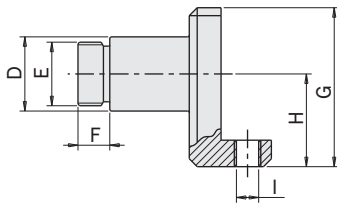
(kit completo di viti)  
(materiale: alluminio)



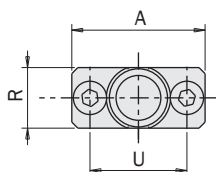
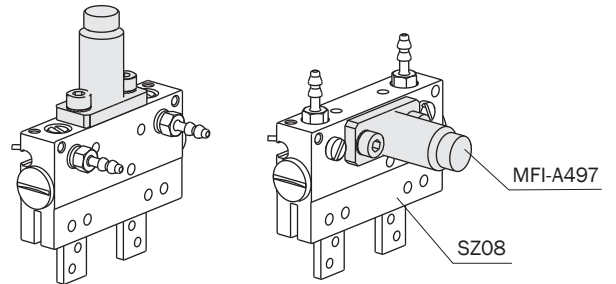
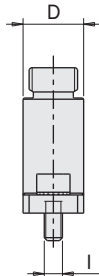
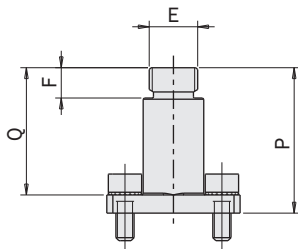
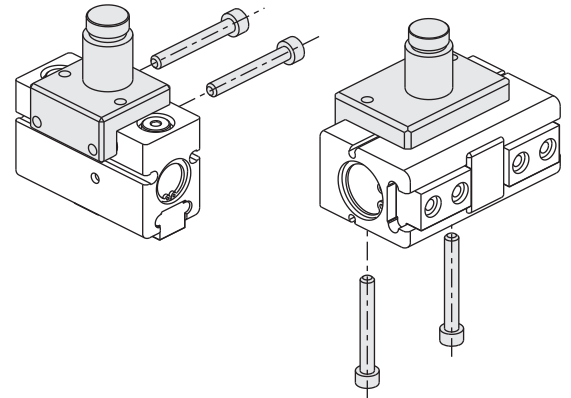
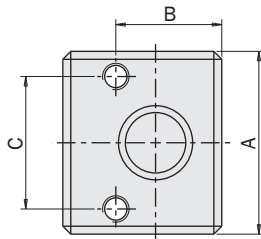
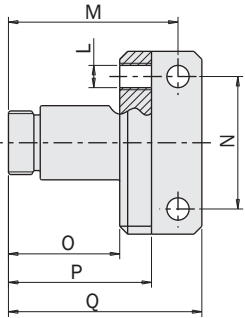
**Gripper mounting bracket**

(kit with screws)  
(material: aluminium)

	MFI-A497	MFI-A325	MFI-A326	MFI-A499	MFI-A327
per for	SZ08	SZ12	SZ16	SZ20	SZ25
A [mm]	22	29	34.5	50	62
B [mm]	-	17	20	25	30
C [mm]	16	22	25	40	50
D [mm]	Ø10	Ø14	Ø14	Ø20	Ø20
E [mm]	M8x1	M12x1	M12x1	M17x1	M17x1
F [mm]	5	6	6	8	8
G [mm]	-	28	30	38	45
H [mm]	-	17	17.5	23	26.5
I [mm]	M3	M4	M5	M5	M6
L [mm]	-	M4	M5	M5	M6
M [mm]	-	32	32	42	46
N [mm]	-	22	25	40	50
O [mm]	-	21	21	29	29
P [mm]	24	27	27	37	39
Q [mm]	21	35.5	36.5	49	52
R [mm]	10	-	-	-	-
Peso Weight	8 g	33 g	41 g	90 g	140 g



FIRST ANGLE PROJECTION

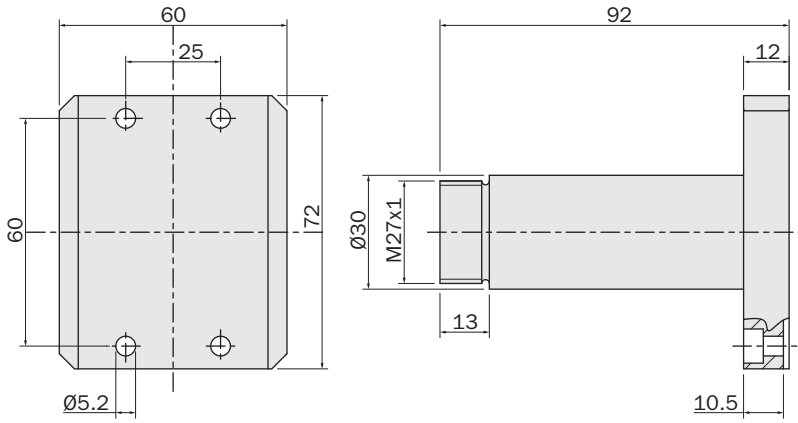


**Interfaccia per slitta ZJ**

(kit completo di viti)  
(materiale: alluminio)

**Interface for ZJ slide**

(kit with screws)  
(material: aluminium)

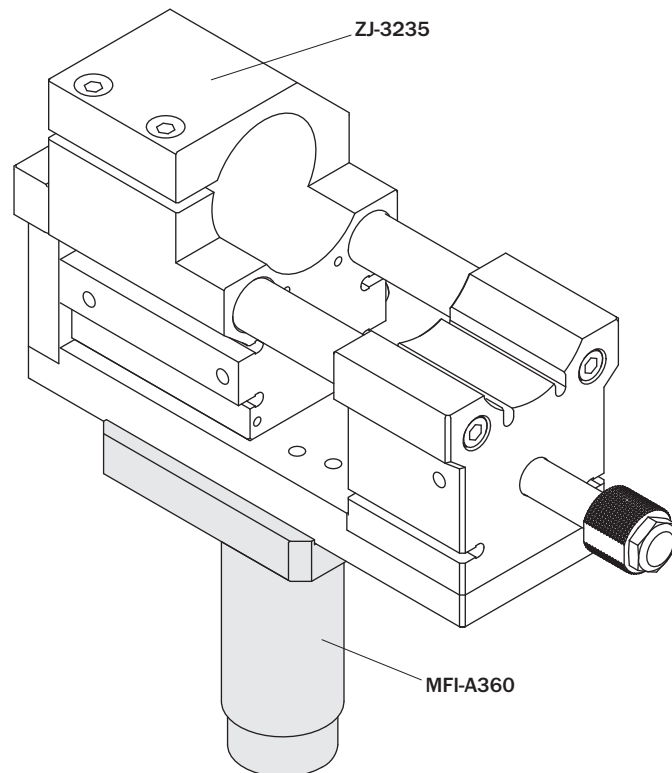


FIRST ANGLE  
PROJECTION

	<b>MFI-A360</b>
per for	ZJ-3235
Peso Weight	220 g



**Esempio di utilizzo**  
**Application example**

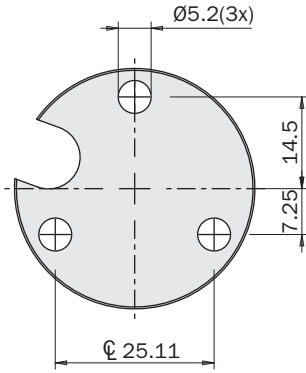


**Interfaccia per TGP20**

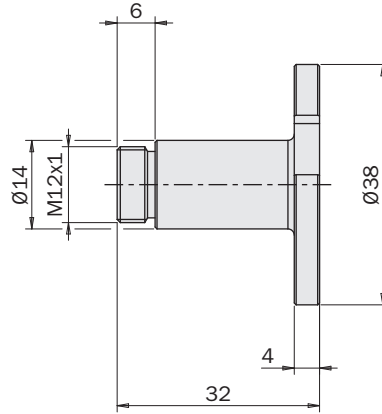
(kit completo di viti)  
(materiale: alluminio)

**Interface for TGP20**

(kit with screws)  
(material: aluminium)

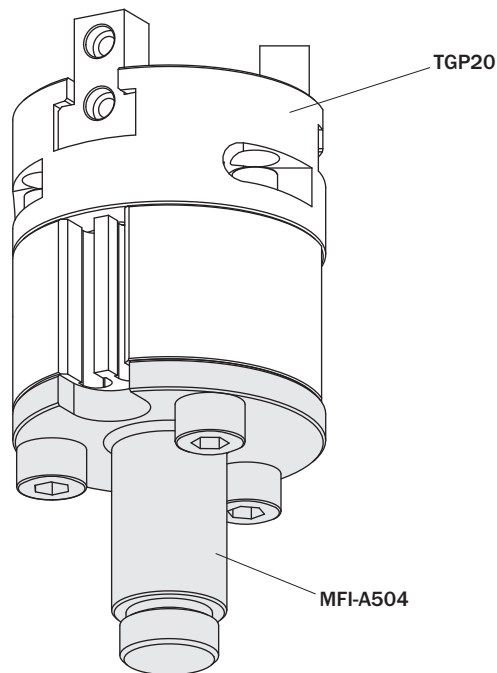


FIRST ANGLE PROJECTION



	<b>MFI-A504</b>
per for	TGP20
Peso Weight	32 g

**Esempio di utilizzo**  
**Application example**

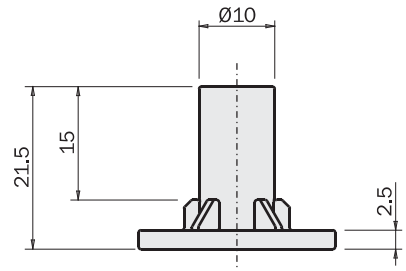
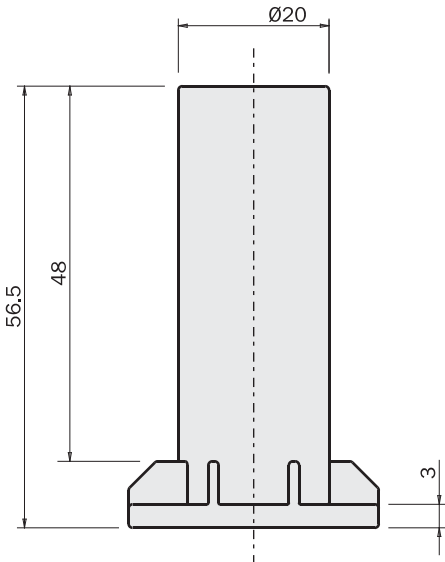
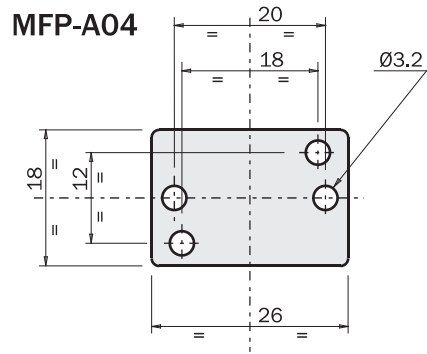
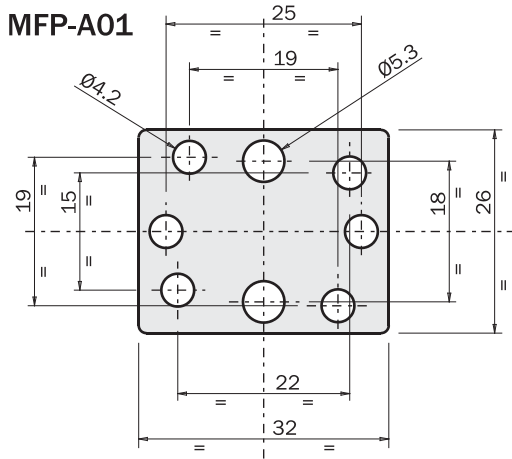


**Basetta in plastica per fissaggio pinza**

(kit completo di viti)  
(materiale: PA66)

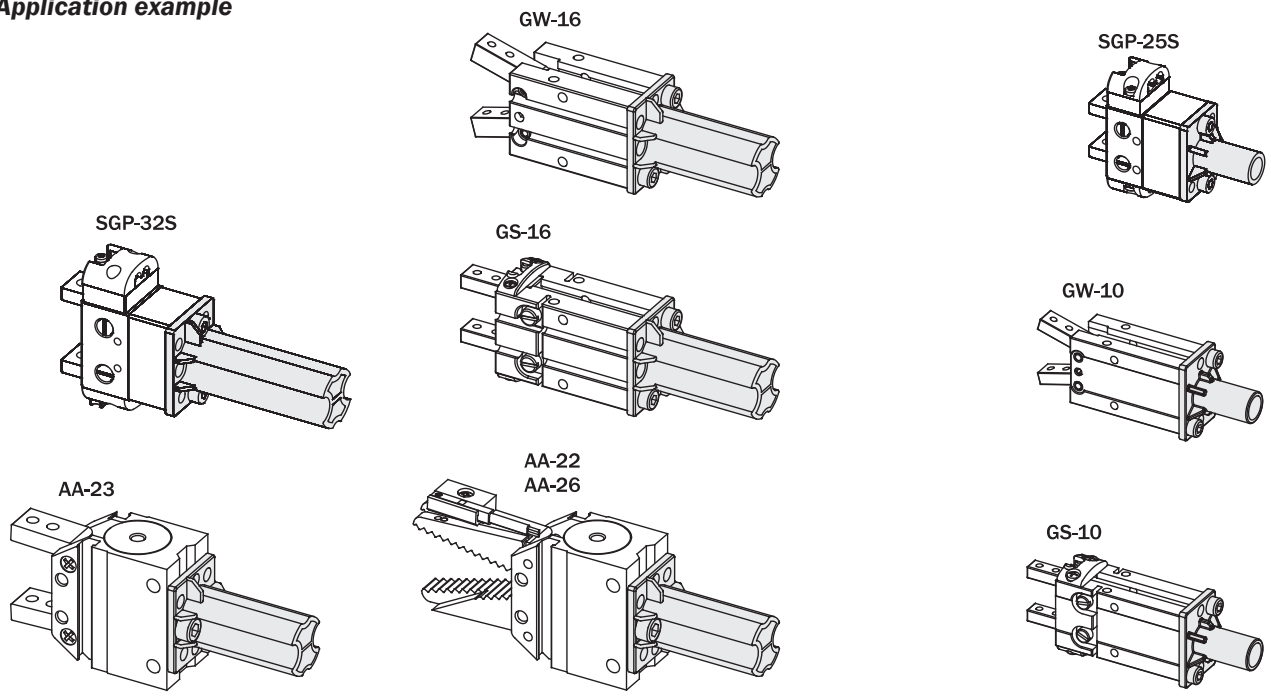
**Polymer mounting bracket for gripper**

(kit with screws)  
(material: PA66)



	MFP-A01	MFP-A04
Peso Weight	26 g	5 g

**Esempio di utilizzo  
Application example**

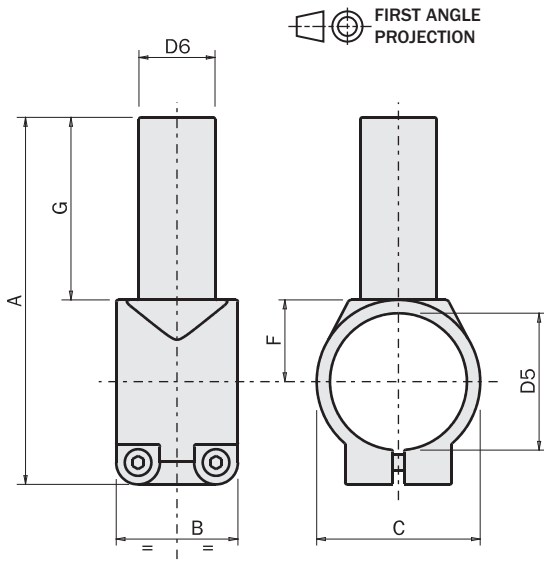


**Staffa in plastica**

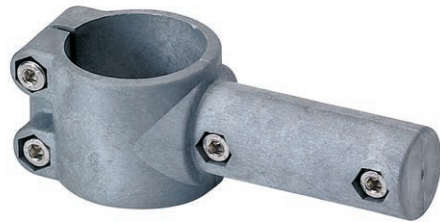
(kit con 2 semicorpi + viti)  
(materiale: PA66)

**Polymer mounting bracket**

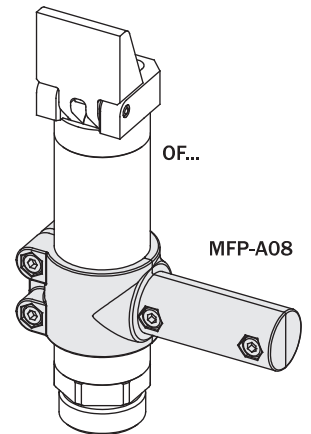
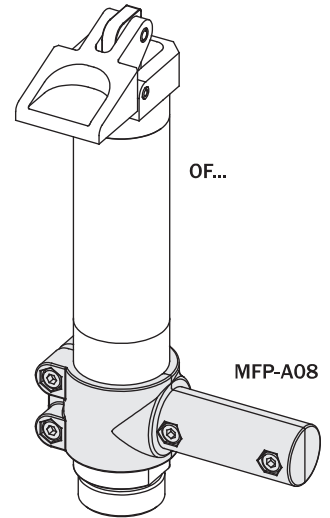
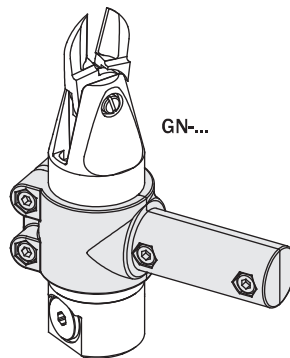
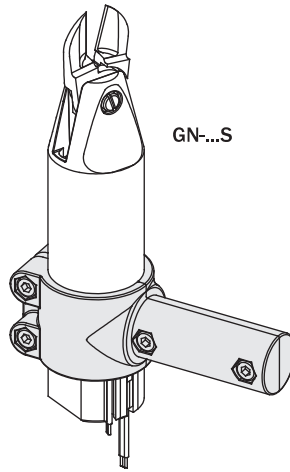
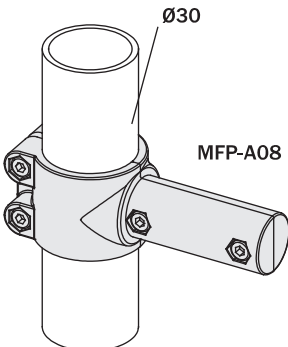
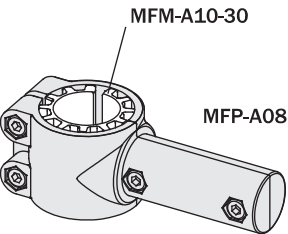
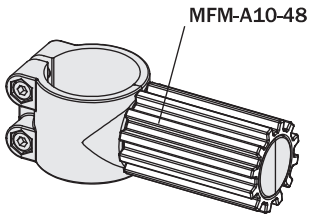
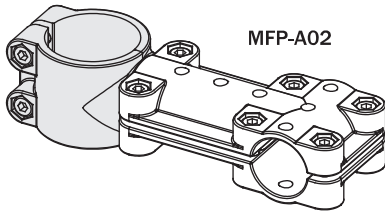
(2 half-pieces + screws)  
(material: PA66)



	MFP-A05	MFP-A06	MFP-A07	MFP-A08
A [mm]	96.5	107.5	118.5	90
B [mm]	32	36	40	30
C [mm]	Ø43	Ø52.6	Ø64	Ø36
D5 [mm]	Ø36	Ø45	Ø56	Ø30
D6 [mm]	Ø20	Ø20	Ø20	Ø20
F [mm]	21.5	26.3	32	18
G [mm]	48	48	48	48
Peso Weight	54 g	65 g	82 g	48 g



**Esempio di utilizzo**  
**Application example**



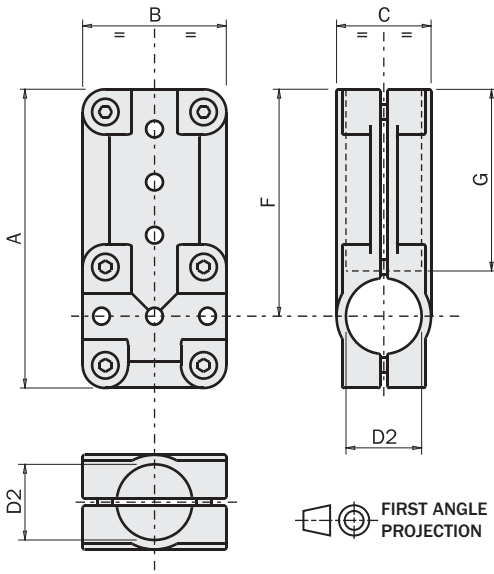


**Giunto angolare in plastica**

(kit con 2 semicorpi + viti)  
(materiale: PA66)

**Polymer T connector**

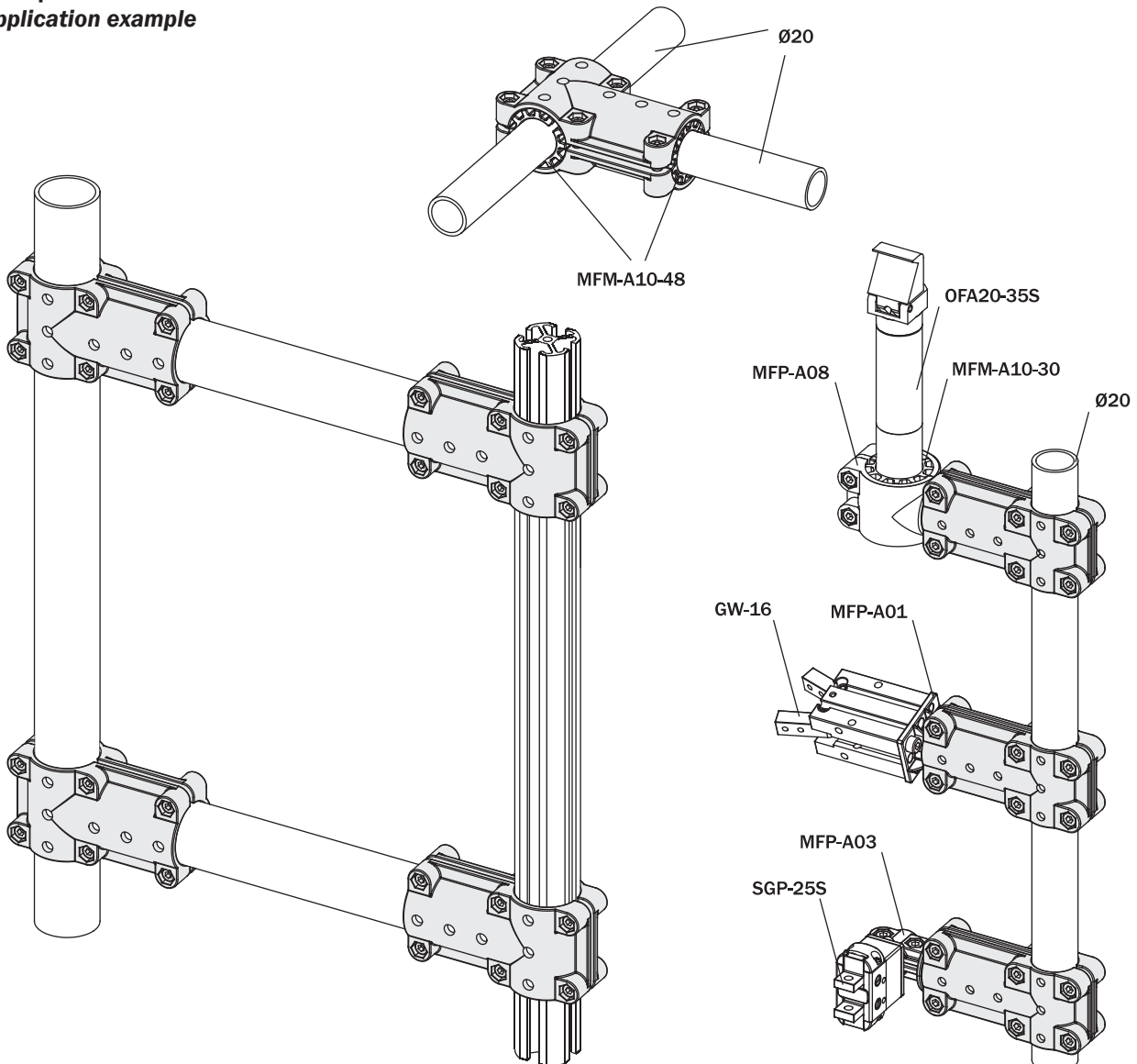
(2 half-pieces + screws)  
(material: PA66)



	MFP-A02	MFP-A09
A [mm]	79	90
B [mm]	38	48
C [mm]	25	36
D2 [mm]	Ø20	Ø30
F [mm]	60	66
G [mm]	48	48
Peso Weight	53 g	82 g

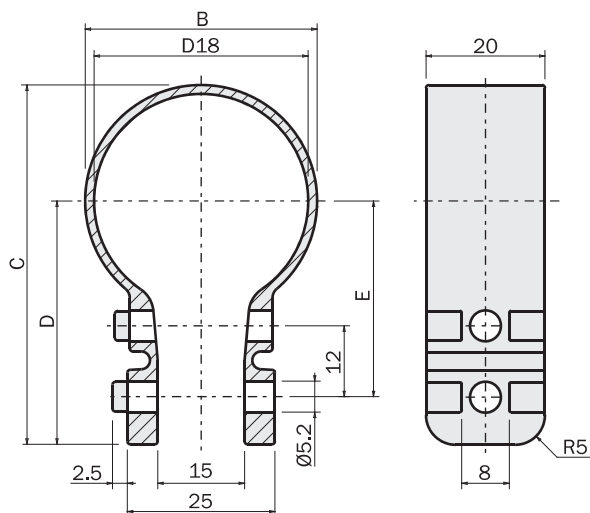


**Esempio di utilizzo**  
**Application example**



**Staffa in acciaio**

(kit completo di viti)  
(materiale: acciaio)



FIRST ANGLE PROJECTION

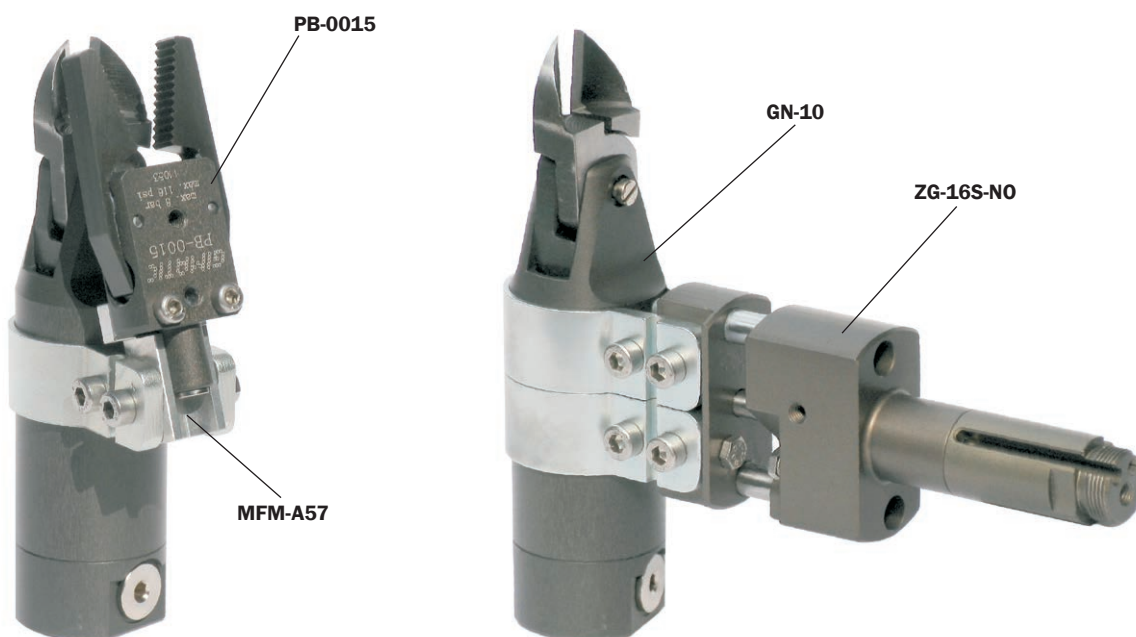
**Steel mounting bracket**

(kit with screws)  
(material: steel)

	MFM-A30	MFM-A36	MFM-A45	MFM-A56
D18 [mm]	Ø30	Ø36	Ø45	Ø56
B [mm]	Ø33	Ø39	Ø48	Ø60
C [mm]	55	60.5	70	83.5
D [mm]	38.5	41	46	53.5
E [mm]	30.5	33	38	45.5
Peso	69 g	75 g	80 g	102 g
Weight				



**Esempio di utilizzo**  
**Application example**



**Staffa in alluminio**

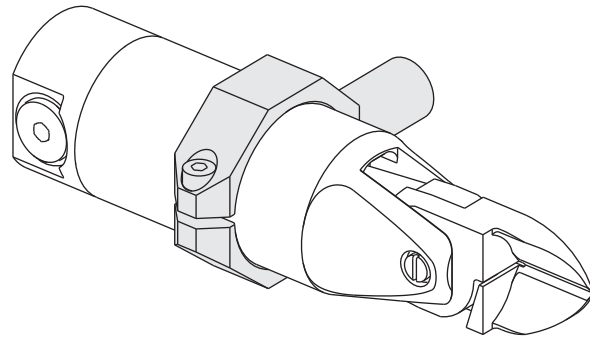
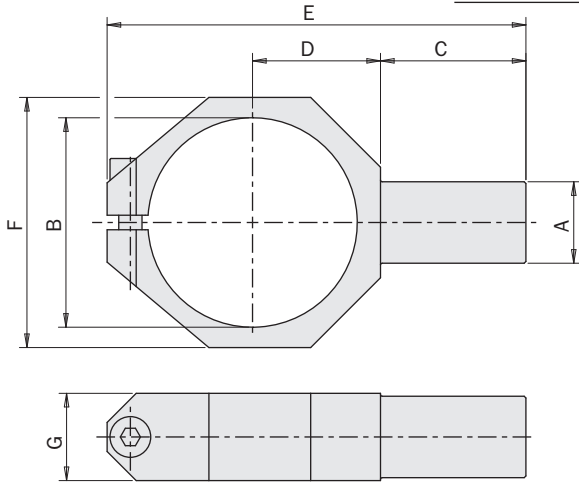
(kit completo di viti)  
(materiale: alluminio)

**Aluminium mounting bracket**

(kit with screws)  
(material: aluminium)



	MFM-A110	MFM-A110-H	MFM-A111	MFM-A112	MFM-A11
A [mm]	Ø14	Ø20	Ø20	Ø20	Ø30
B [mm]	Ø36	Ø36	Ø45	Ø56	Ø75
C [mm]	25	50	35	40	48
D [mm]	22	22	28	33	41
E [mm]	72	99.5	94.5	111	138
F [mm]	43	43	53	65	83
G [mm]	15	20	20	25	40
Peso Weight	35g	88 g	80 g	123 g	308 g



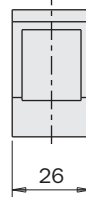
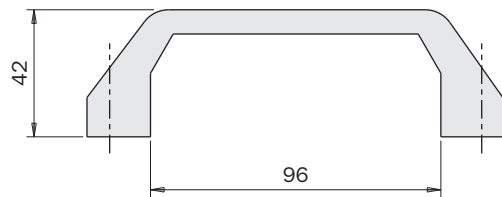
FIRST ANGLE  
PROJECTION

**Maniglia per EOAT**

(kit con dadi last-minute)  
(materiale: POM)

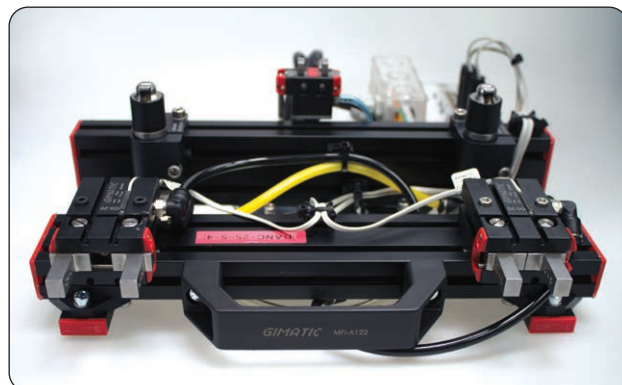
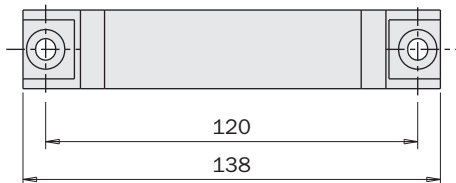
**EOAT handle**

(kit with last-minute nuts)  
(material: POM)



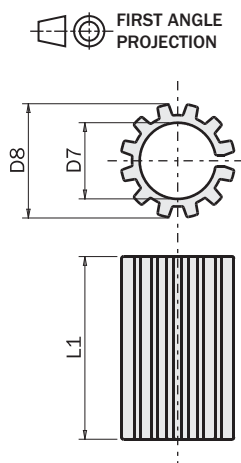
**MFM-A122**

Peso	60 g
Weight	



**Riduzione**

(materiale: alluminio)



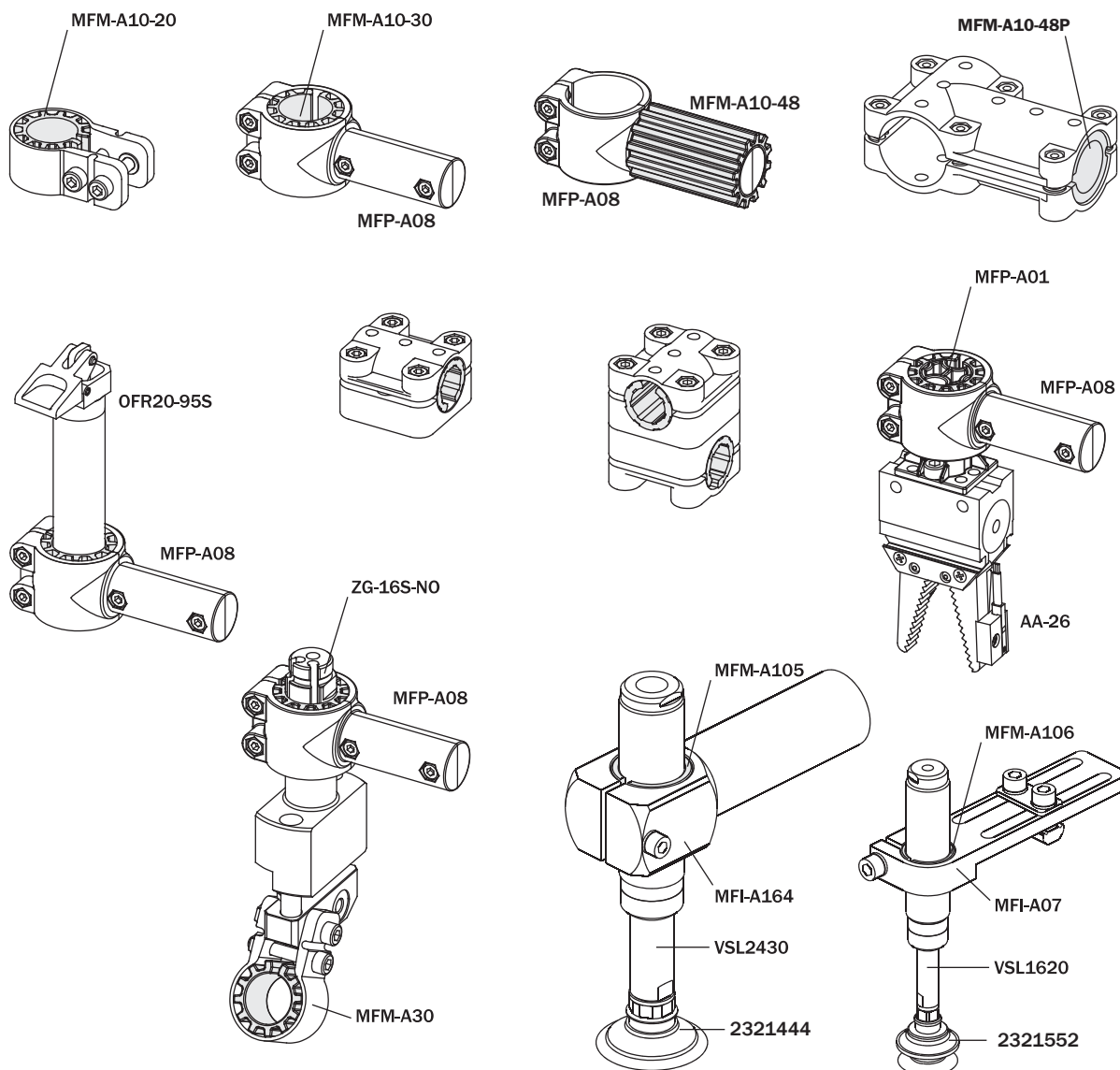
**Adapter**

(material: aluminium)

	D7 [mm]	D8 [mm]	L1 [mm]	Peso Weight
<b>MFM-A120</b>	Ø10	Ø14	13	3 g
<b>MFM-A114</b>	Ø12	Ø14	14	2 g
<b>MFM-A55-38</b>	Ø14	Ø20	38	16 g
<b>MFM-A55-48</b>	Ø14	Ø20	48	19 g
<b>MFM-A106</b>	Ø16	Ø20	12	5 g
<b>MFM-A115</b>	Ø16	Ø20	20	6 g
<b>MFM-A10-20</b>	Ø20	Ø30	20	13 g
<b>MFM-A10-30</b>	Ø20	Ø30	30	21 g
<b>MFM-A10-48</b>	Ø20	Ø30	48	33 g
<b>MFM-A10-48P</b>	Ø20	Ø30	48	24 g
<b>MFM-A105</b>	Ø24	Ø30	12	8 g
<b>MFM-A116</b>	Ø25	Ø30	30	17 g
<b>MFM-A96</b>	Ø30	Ø50	65	240 g



**Esempio di utilizzo**  
**Application example**

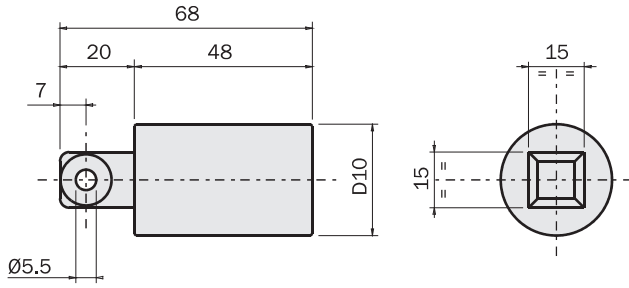


**Supporto orientabile**

(materiale: alluminio)

**Hinge with stud**

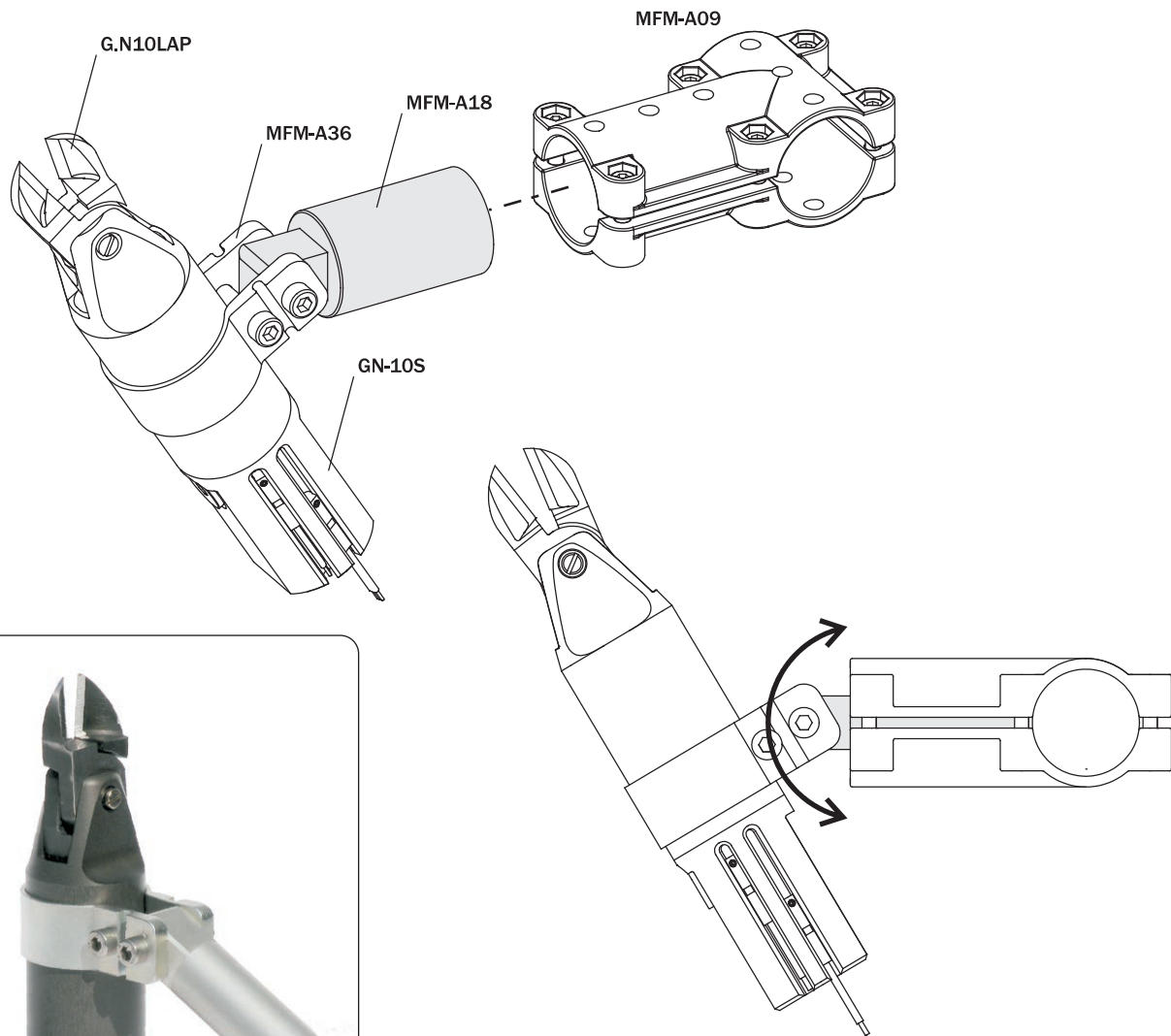
(material: aluminium)



	MFM-A17	MFM-A18
D10	Ø20 mm	Ø30 mm
Peso Weight	56 g	106 g



**Esempio di utilizzo**  
**Application example**

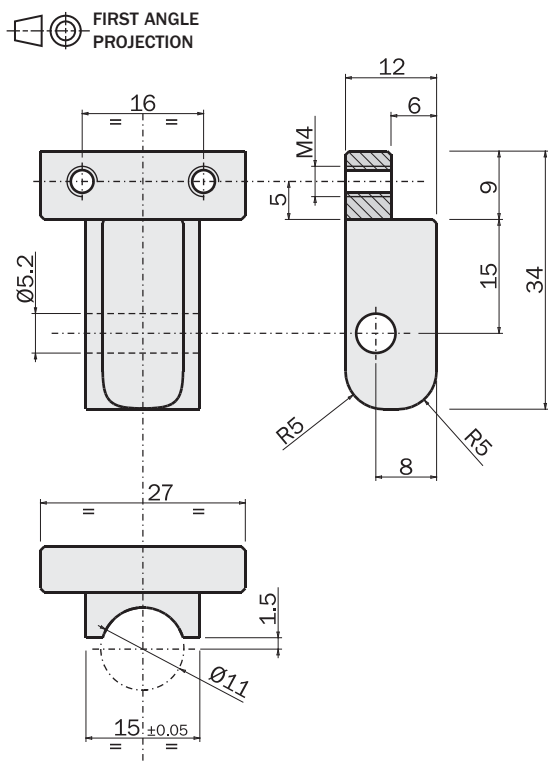


**Bloccetto di fissaggio per PB**

(kit completo di viti)  
(materiale: alluminio)

**PB mounting connector**

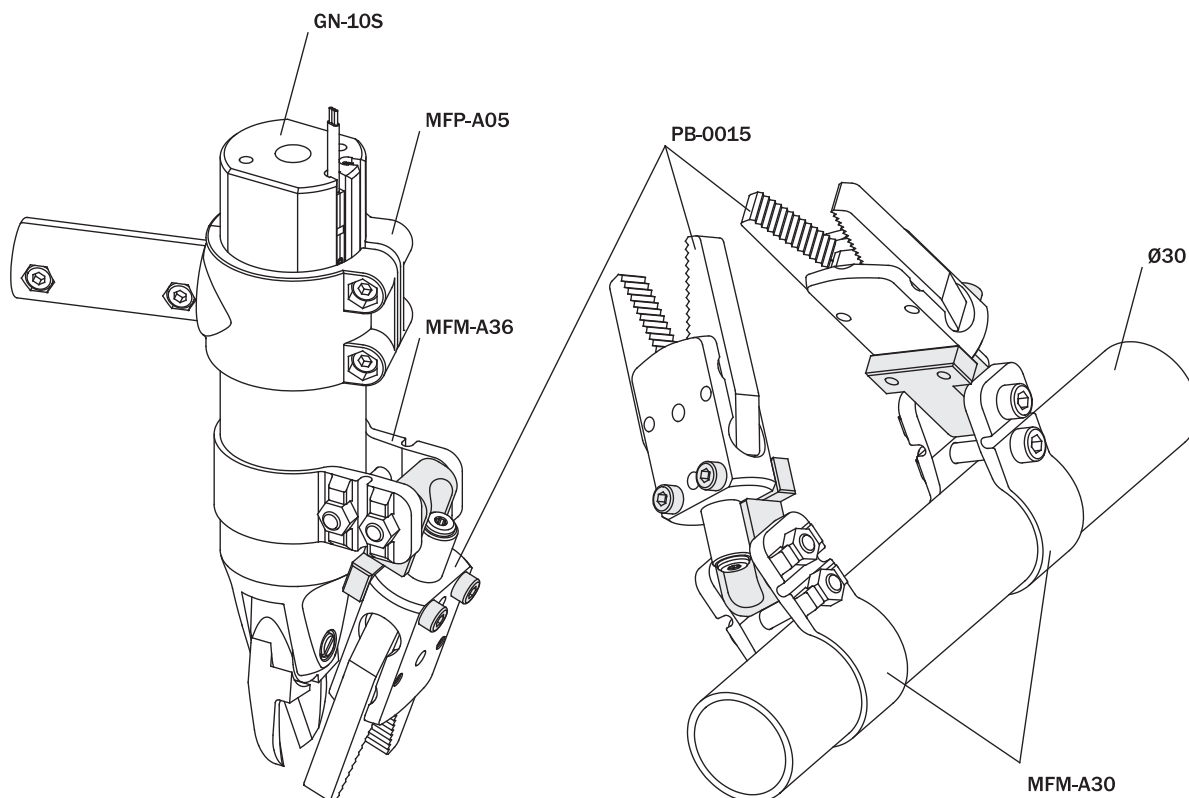
(kit with screws)  
(material: aluminium)



	<b>MFM-A57</b>
Peso	25 g
Weight	

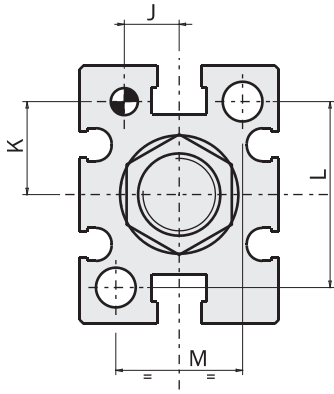


**Esempio di utilizzo**  
**Application example**



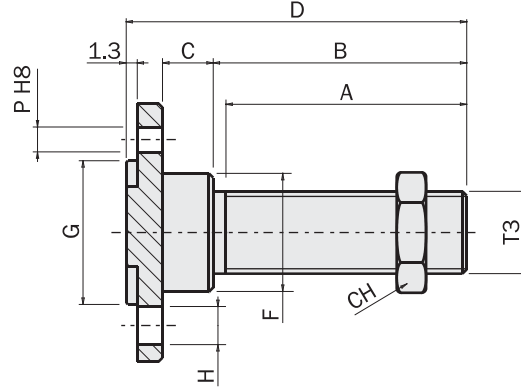
**Interfaccia per pinze**

(kit completo di viti)  
(materiale: alluminio)



**Interface for grippers**

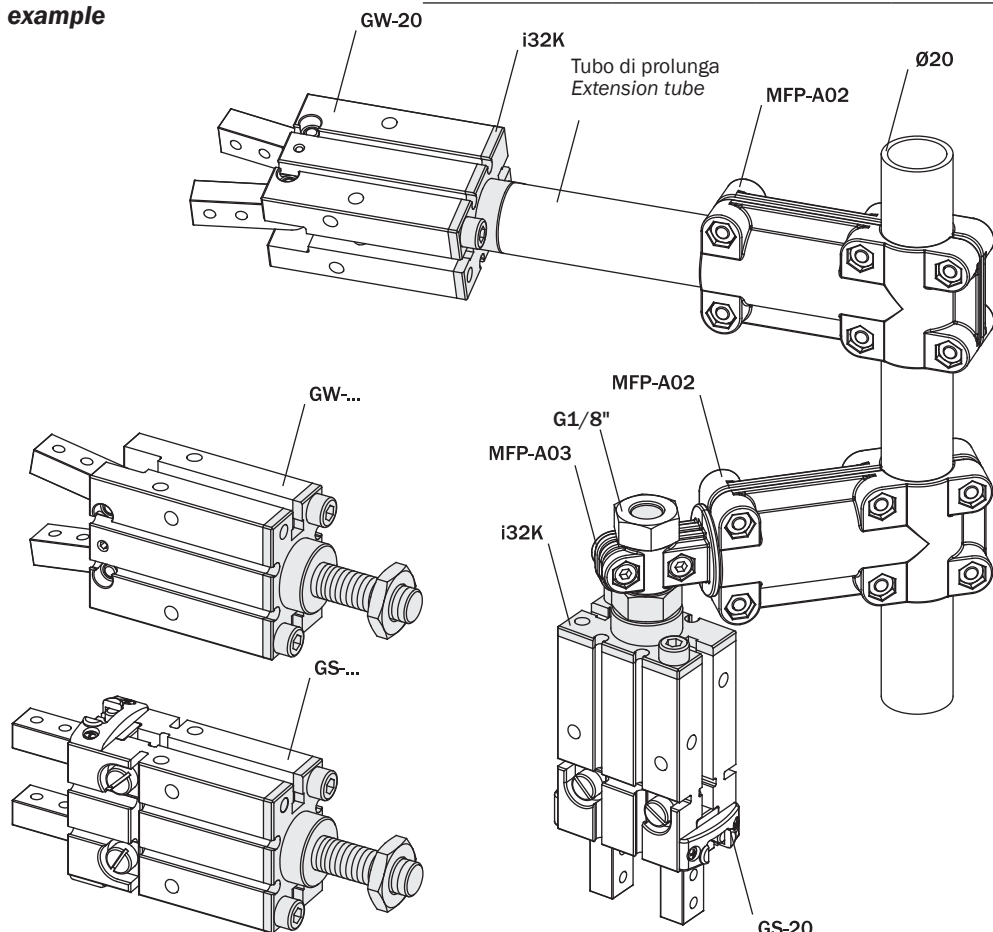
(kit with screws)  
(material: aluminium)



FIRST ANGLE PROJECTION

		i30K	i31K	i32K	i33K
A	[mm]	25	28.5	28.5	28.5
B	[mm]	25	30	30	30
C	[mm]	5	6	7	8
CH	[mm]	14	14	14	17
D	[mm]	34.3	40.3	41.3	44.3
T3	[mm]	G1/8"	G1/8"	G1/8"	M15x1
F	[mm]	Ø10	Ø14	Ø20	Ø20
G	[mm]	Ø11	Ø17	Ø21	Ø26
H	[mm]	Ø3.3	Ø4.5	Ø5.5	Ø6.5
J	[mm]	5.2	6.5	7.5	10
K	[mm]	7.6	11	16	21
L	[mm]	18	22	32	40
M	[mm]	12	15	18	22
P	[mm]	Ø2 H8	Ø3 H8	Ø4 H8	Ø4 H8
per for		GS-10/GW-10	GS-16/GW-16	GS-20/GW-20	GS-25/GW-25
Peso Weight		9 g	14 g	14 g	43 g

**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

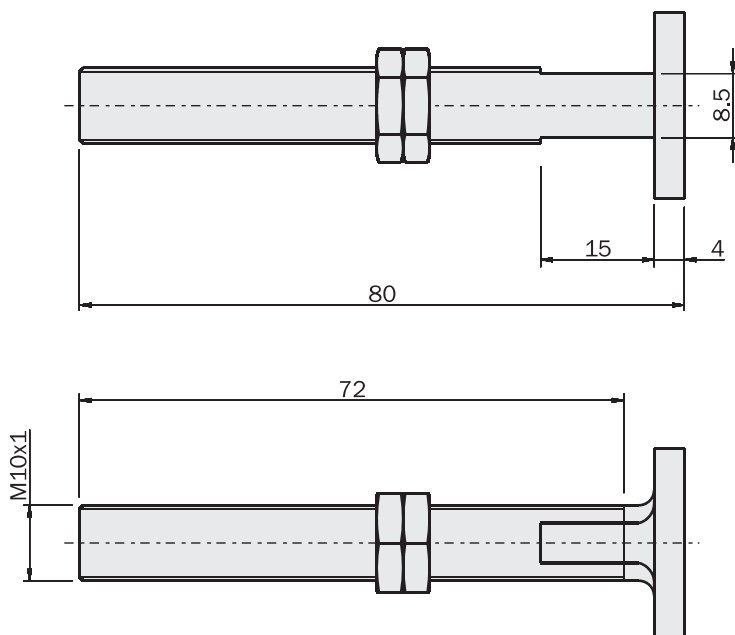
Sensori  
Sensors

**Interfaccia per pinze**

(kit completo di viti)  
(materiale: acciaio)

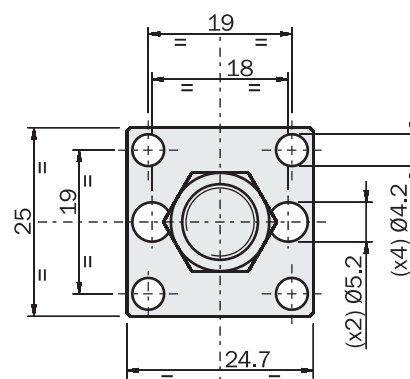
**Interface for grippers**

(kit with screws)  
(material: steel)

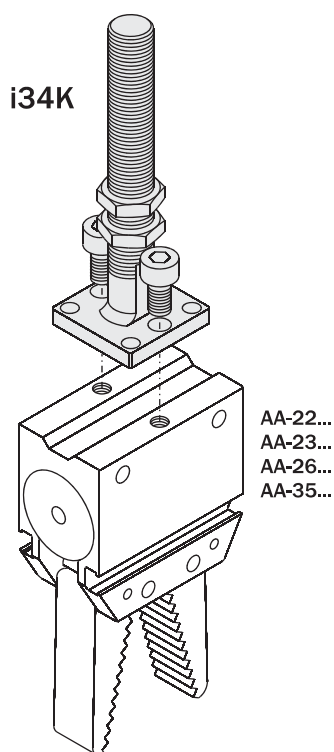


	<b>i34K</b>
Peso	65 g
Weight	65 g

FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

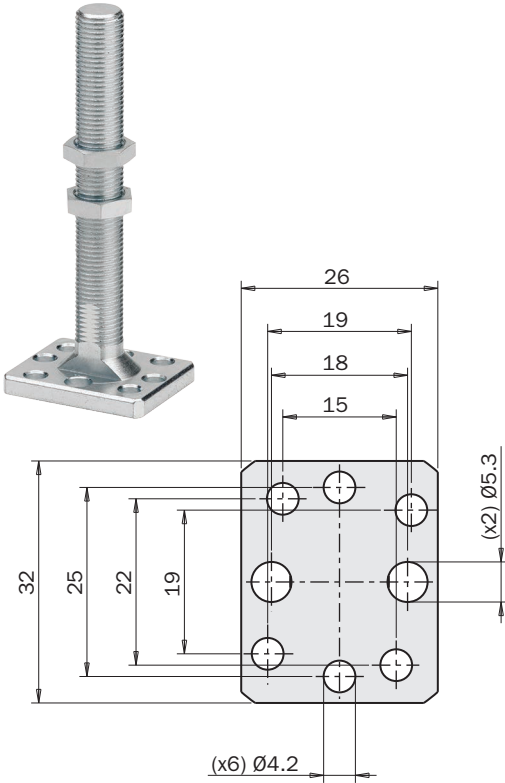
Accessori Opzionali  
Options

Sensori  
Sensors



**Interfaccia per pinze**

(materiale: acciaio)

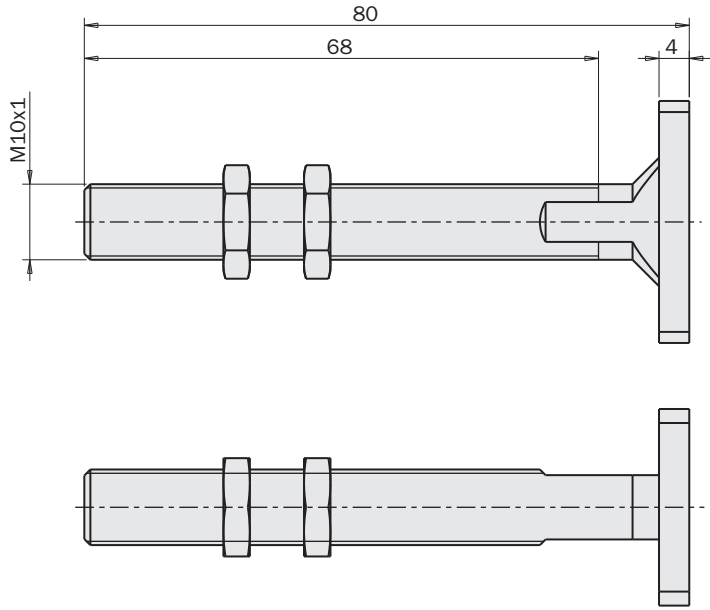


FIRST ANGLE PROJECTION

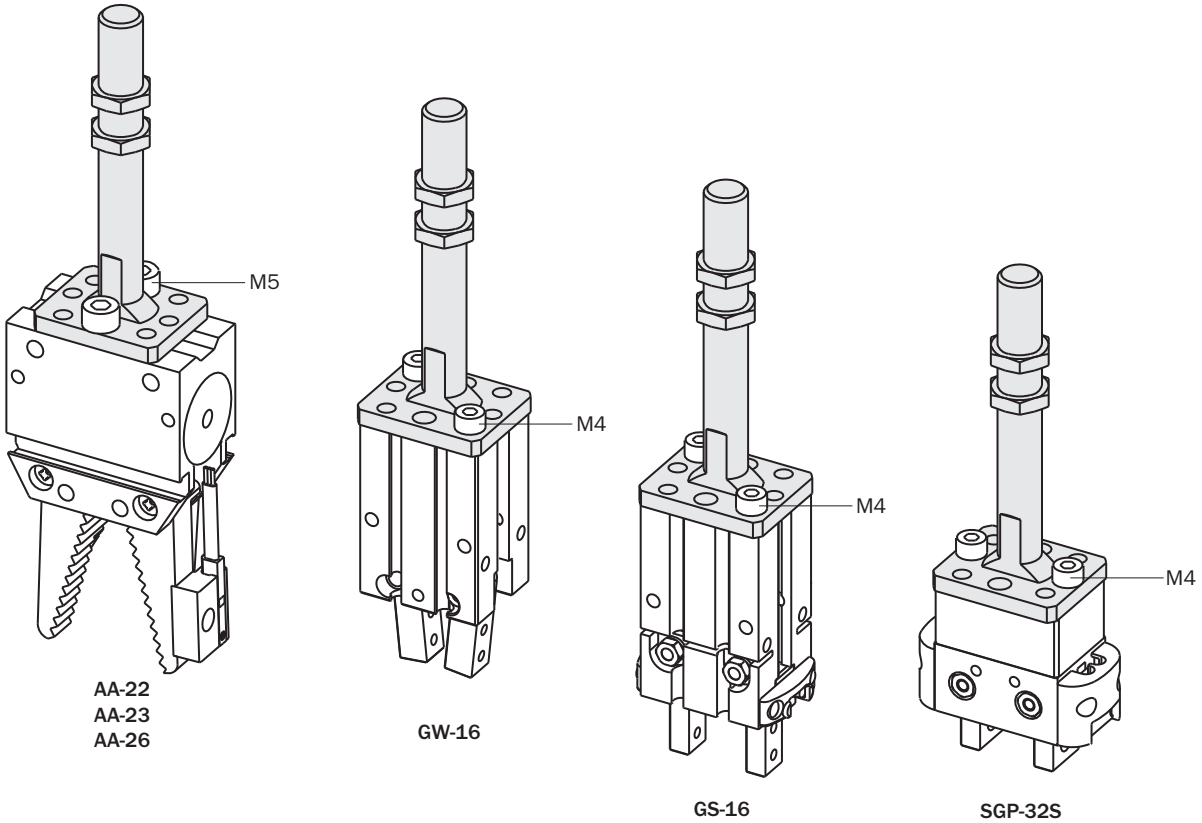
**Interface for grippers**

(material: steel)

	<b>i37K</b>
Peso	85 g
Weight	



**Esempio di utilizzo**  
*Application example*

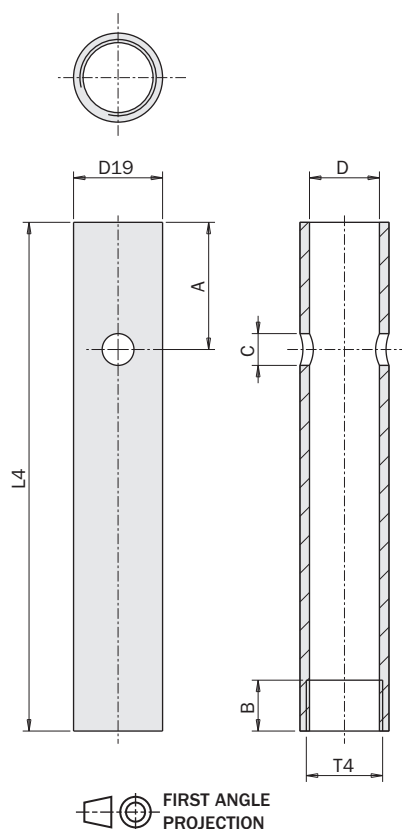


**Tubo di prolunga**

(materiale: alluminio)

**Extension tube**

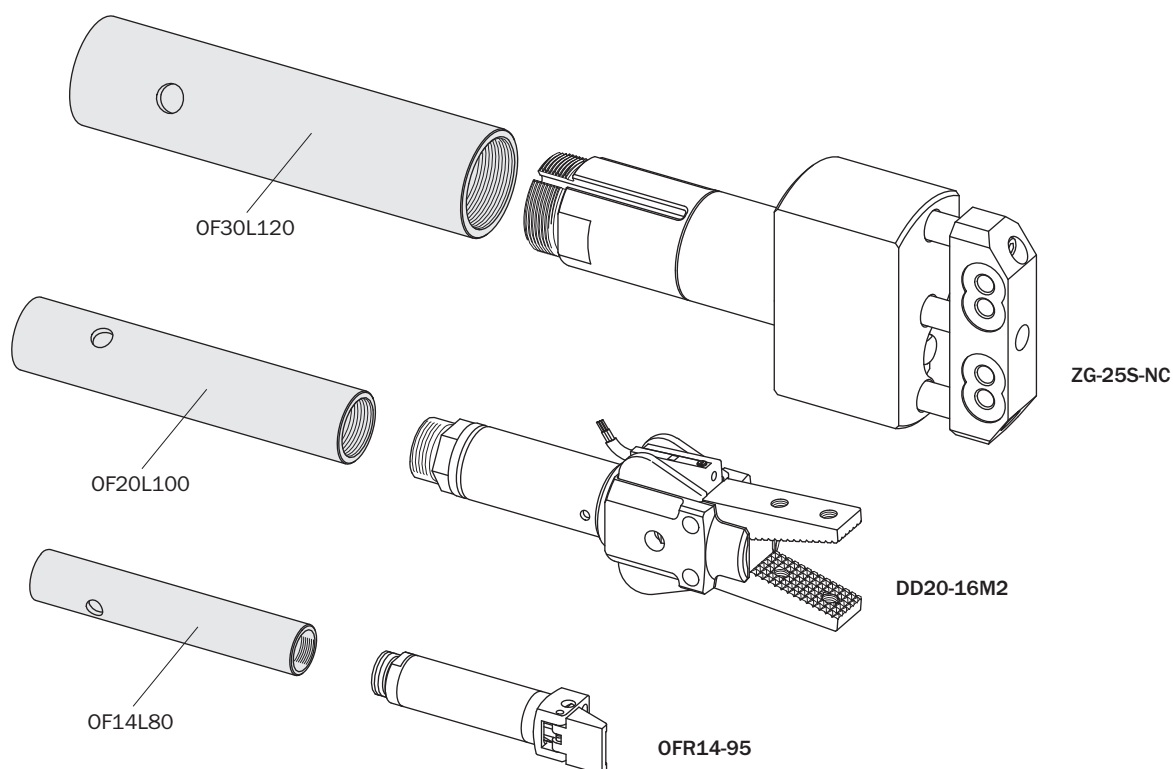
(material: aluminium)



	OF10L60	OF14L80	OF20L100	OF20L250	OF30L120	OF30L250
A [mm]	15	20	25	125	30	125
B [mm]	8	8	12	12	14	14
C [mm]	Ø3.5	Ø5	Ø6	Ø6	Ø8	Ø8
D [mm]	Ø7	Ø11	Ø16	Ø16	Ø25	Ø25
D19 [mm]	Ø10	Ø14	Ø20	Ø20	Ø30	Ø30
L4 [mm]	60	80	100	250	120	250
T4 [mm]	M8x1	M12x1	M17x1	M17X1	M27x1	M27X1
Peso Weight	7 g	10 g	30 g	76 g	65 g	145 g



**Esempio di utilizzo**  
**Application example**



**Interfaccia per taglierino GNS**

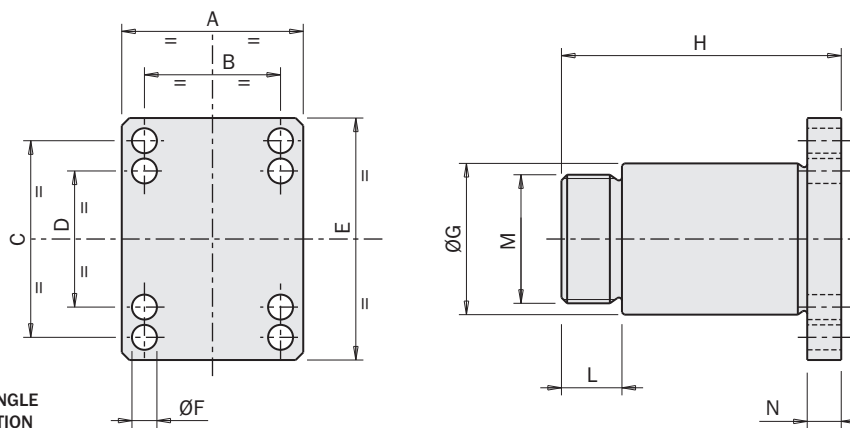
(kit completo di viti)  
(materiale: alluminio)

**GNS nipper mounting bracket**

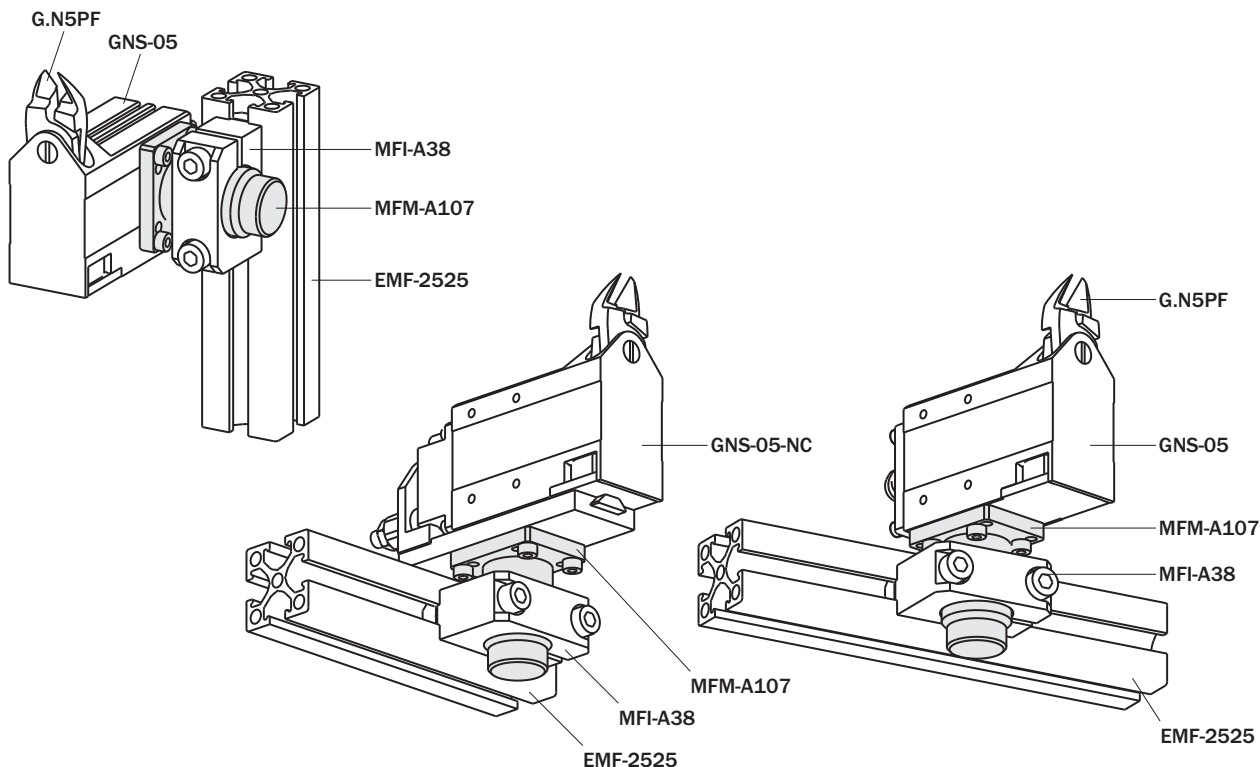
(kit with screws)  
(material: aluminium)



	MFM-A107	MFM-A108	MFM-A109
A [mm]	24	32	39
B [mm]	18	24	30
C [mm]	26	32	40
D [mm]	18	-	-
E [mm]	32	39	48
F [mm]	Ø3.3 (x8)	Ø4.3 (x4)	Ø5.3 (x4)
G [mm]	Ø20	Ø20	Ø30
H [mm]	37	39	55
L [mm]	8	8	11
M [mm]	M17x1	M17x1	M27x1
N [mm]	4.5	5.5	6.5
per for	GNS-05	GNS-10	GNS-20
Peso Weight	30 g	35 g	100 g



**Esempio di utilizzo**  
**Application example**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

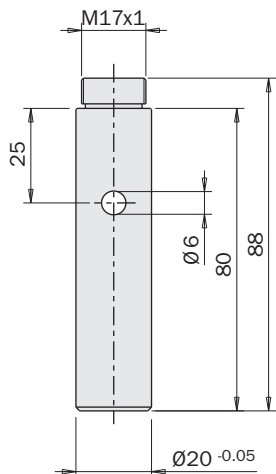
Accessori Opzionali  
Options

Sensori  
Sensors

### Interfacce per cilindro guidato

(kit completo di viti)  
(materiale: alluminio)

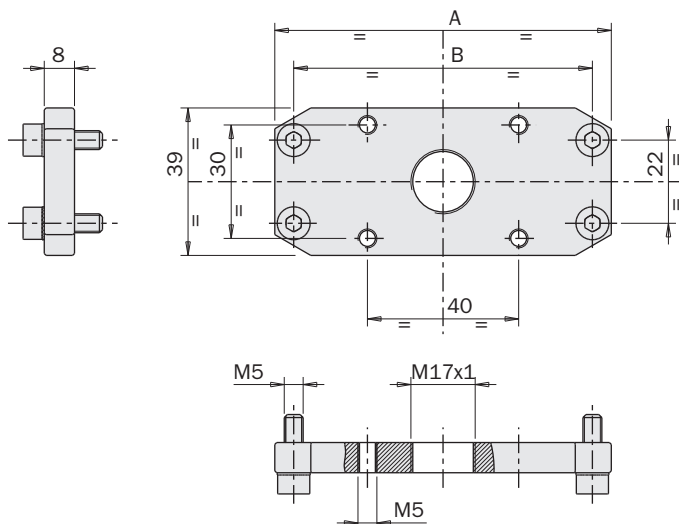
MFM-A117	
Peso	70 g
Weight	



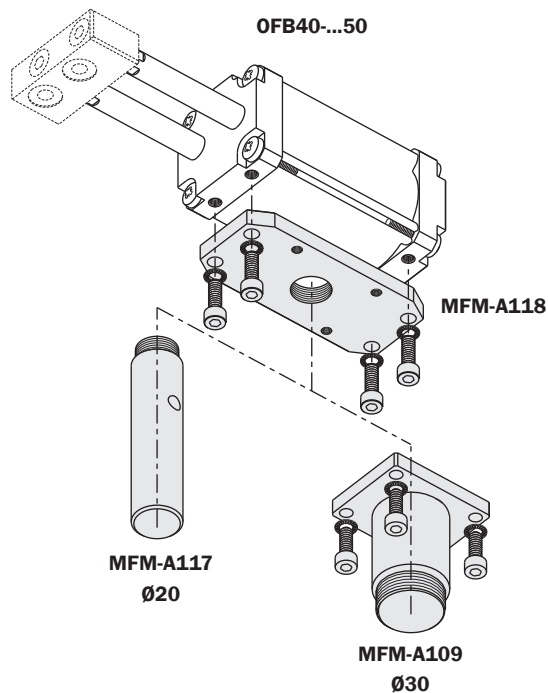
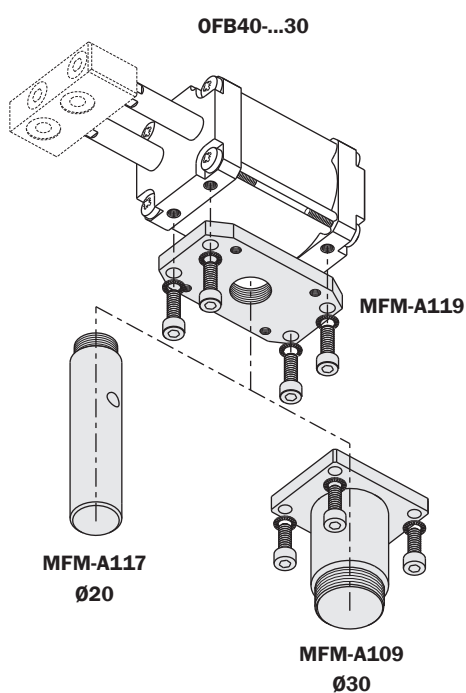
### Interfaces for guided cylinder

(kit with screws)  
(material: aluminium)

	MFM-A118	MFM-A119
A [mm]	89	69
B [mm]	79	59
per for	OFB40-...50	OFB40-...30
Peso	80 g	60 g
Weight		



### Esempio di utilizzo Application example



**Cravatte per telai tubolari**

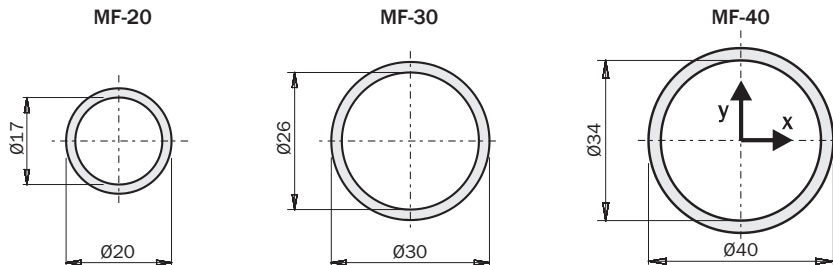
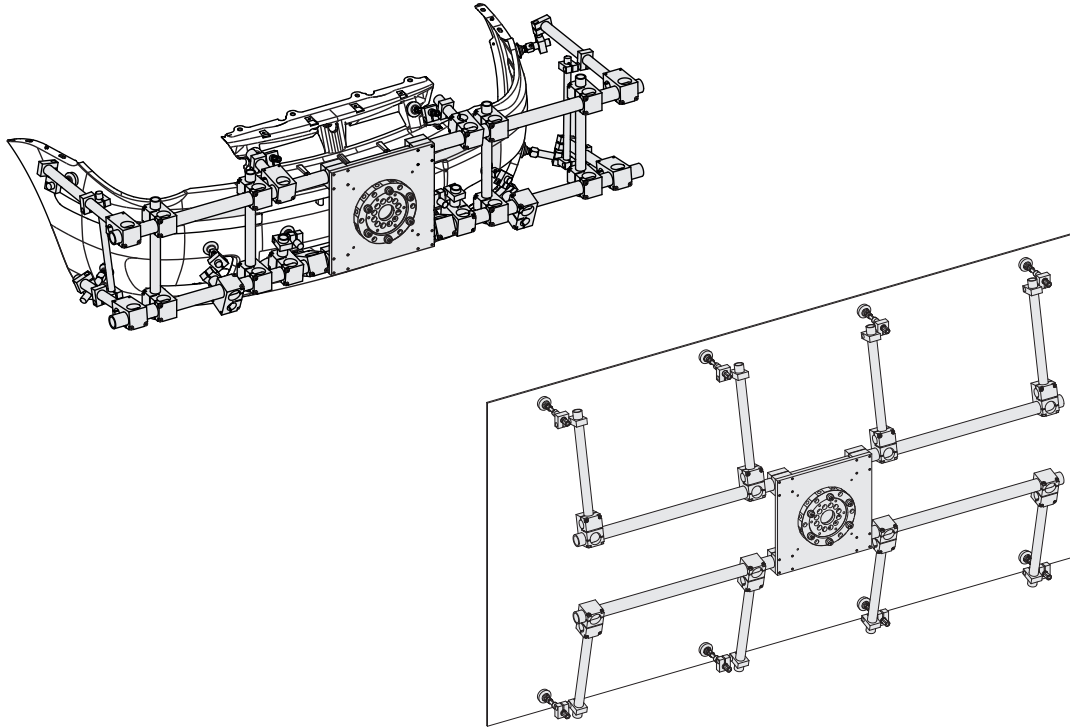
- Per i diametri 40mm, 30mm, 20mm
- Kit completi di viti

**Clamps for tubular frames**

- For 40 mm, 30 mm and 20 mm diameters
- Kit complete with screws

**Esempi di telaio**

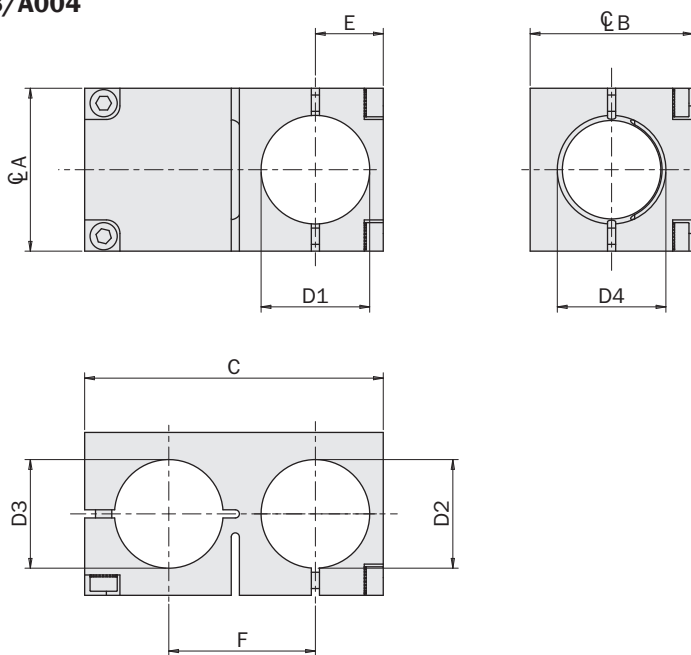
**EOAT examples**



	Materiale Material	E [GPa]	Lunghezza Length	Peso Weight	Ix [mm <sup>4</sup> ]	Iy [mm <sup>4</sup> ]	Tappi Plugs
<b>MF-20-1000</b>	Alluminio Aluminum	67	1 m	230 g	3754	3754	MFP-K22
<b>MF-20-2000</b>	Alluminio Aluminum	67	2 m	460 g	3754	3754	MFP-K22
<b>MF-30-1000</b>	Alluminio Aluminum	67	1 m	444 g	17329	17329	MFP-K21
<b>MF-30-2000</b>	Alluminio Aluminum	67	2 m	888 g	17329	17329	MFP-K21
<b>MF-40-1000</b>	Alluminio Aluminum	67	1 m	930 g	60066	60066	-
<b>MF-40-2000</b>	Alluminio Aluminum	67	2 m	1860 g	60066	60066	-

**Dimensioni (mm)**  
**Dimensions (mm)**

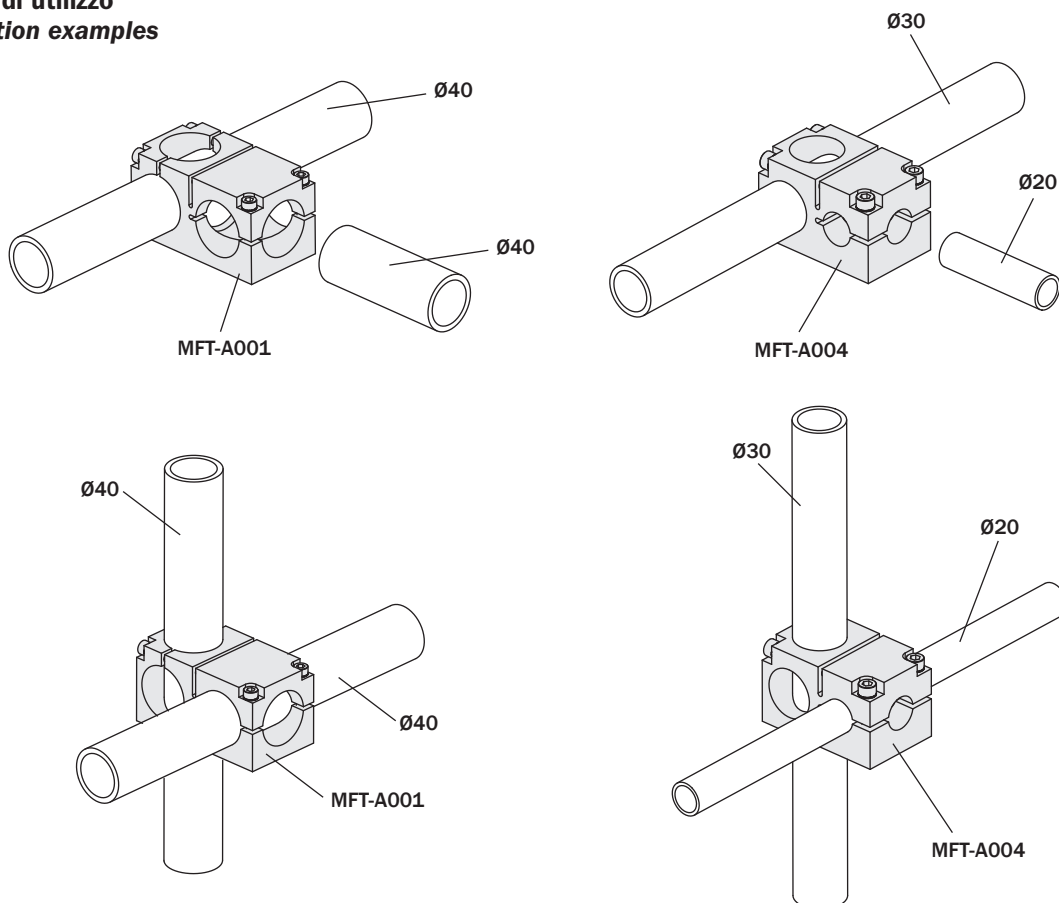
**MFT-A001/A002/A003/A004**



FIRST ANGLE PROJECTION

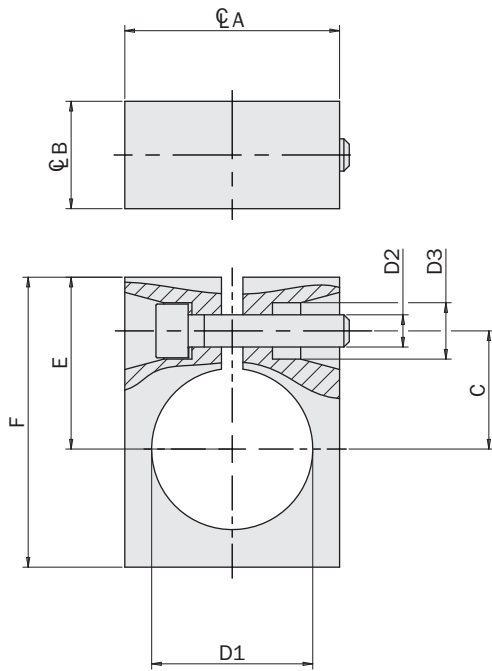
	A [mm]	B [mm]	C [mm]	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	E [mm]	F [mm]
<b>MFT-A001</b>	60	60	110	Ø40	Ø40	Ø40	Ø40	25	54
<b>MFT-A002</b>	60	60	100	Ø40	Ø40	Ø30	Ø30	25	49
<b>MFT-A003</b>	50	50	90	Ø30	Ø30	Ø30	Ø30	20	42
<b>MFT-A004</b>	50	50	80	Ø30	Ø30	Ø20	Ø20	20	37

**Esempi di utilizzo**  
**Application examples**

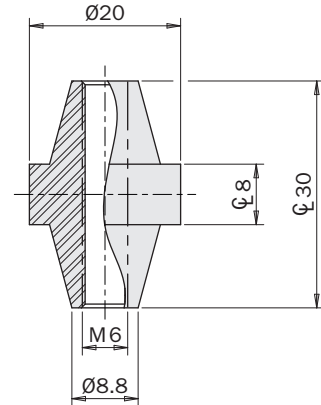


**Dimensioni (mm)**  
**Dimensions (mm)**

**MFT-A006/A007**



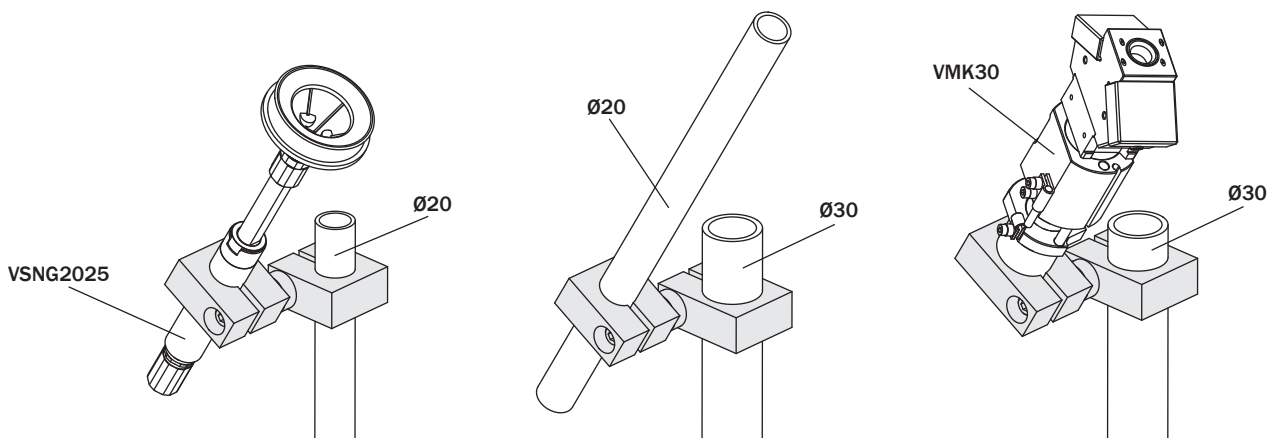
**MFT-A008**



FIRST ANGLE PROJECTION

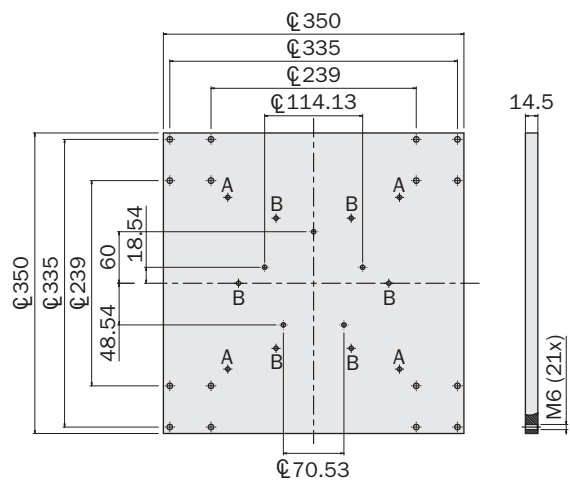
	A [mm]	B [mm]	C [mm]	D1 [mm]	D2 [mm]	D3 [mm]	E [mm]	F [mm]
<b>MFT-A006</b>	40	20	22	$\varnothing 30$	M6	10.5	32	54
<b>MFT-A007</b>	40	20	17	$\varnothing 20$	M6	10.5	27	44

**Esempi di utilizzo**  
**Application examples**

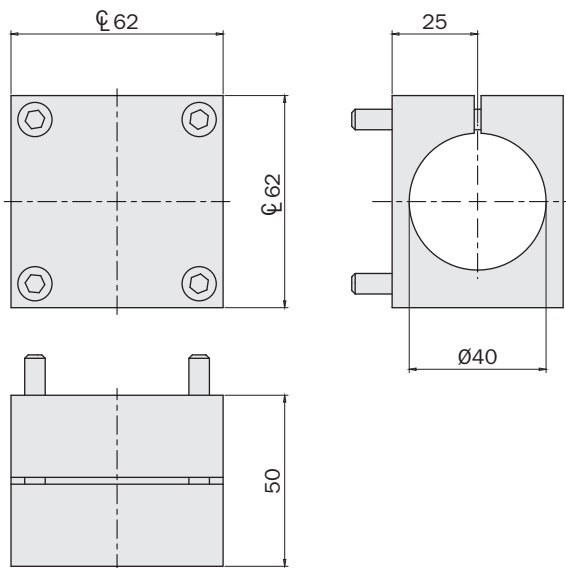


**Dimensioni (mm)**  
**Dimensions (mm)**

**MFT-A009**



**MFT-A010**

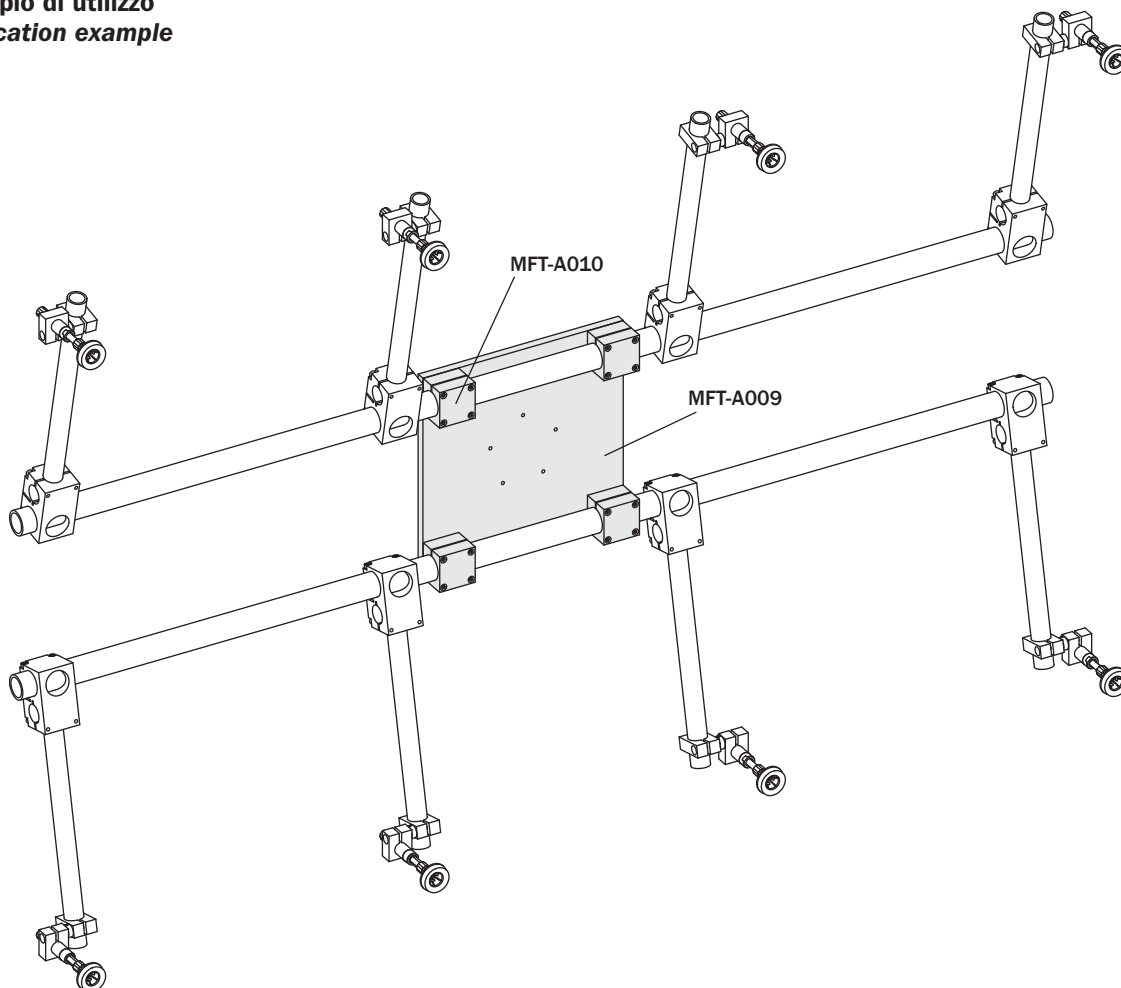


Predisposizione fori di fissaggio  
Prearrangement of fixing holes

- A MFI-A363
- B QC200-B



**Esempio di utilizzo**  
**Application example**





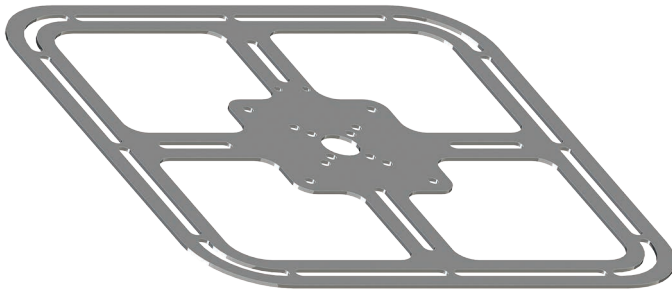
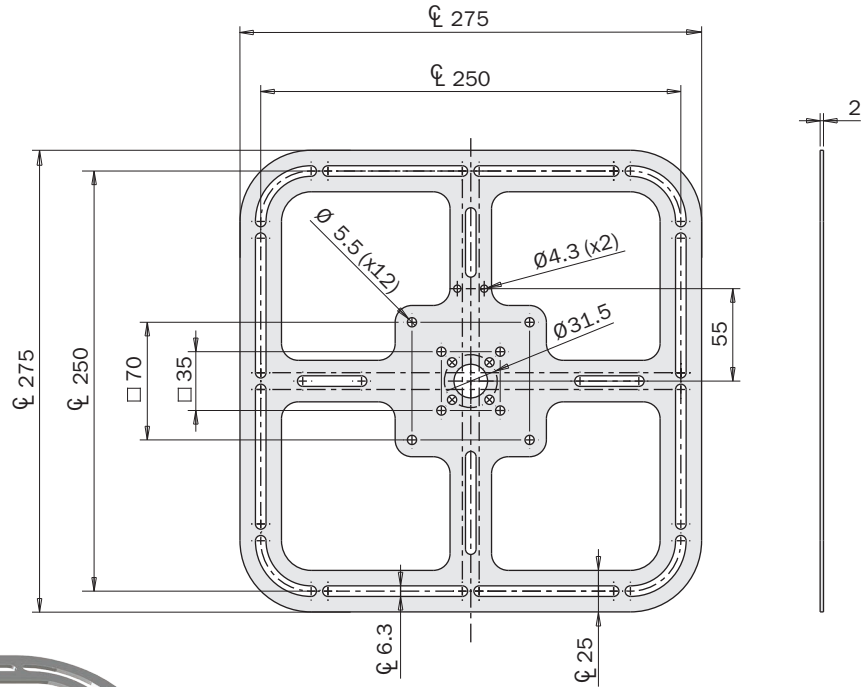
**Piastra 250x250 per EOAT basico**

- In acciaio zincato tagliato al laser.
- Schemi di fissaggio preforati per QC90-B (1), MFI-A41 (2), IS09409-1 (3).
- Compatibile con le staffe ed i dadi MFI.

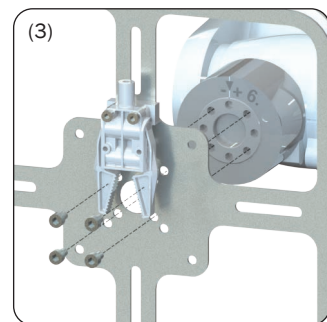
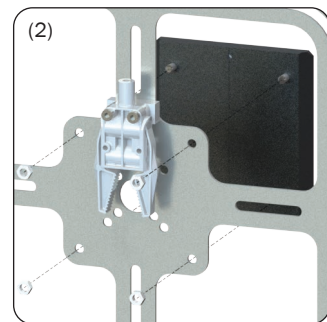
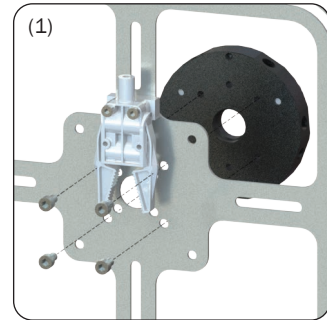
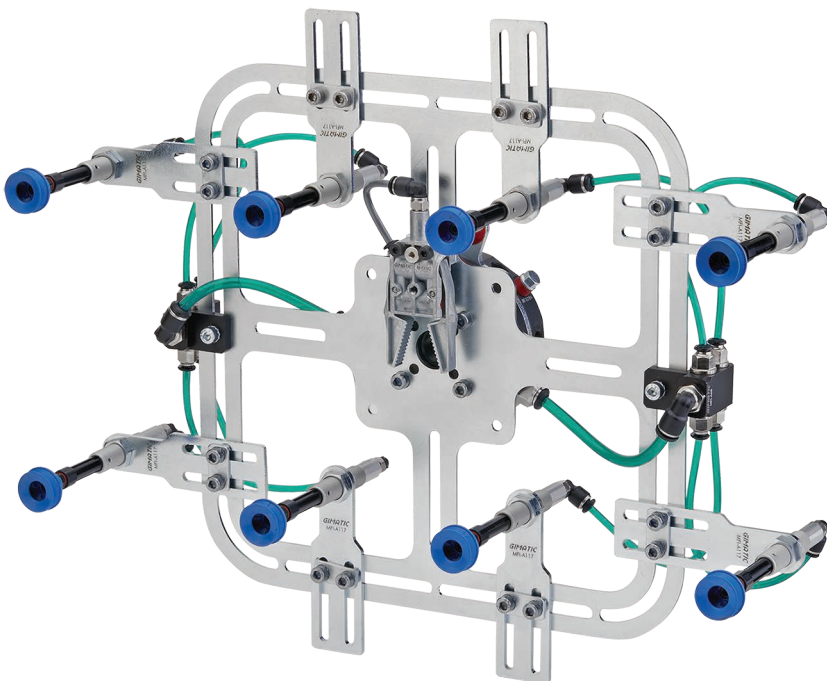
**Basic EOAT plate 250x250**

- Laser cut in zinc plated steel.
- Drilled mounting patterns for QC90-B (1), MFI-A41 (2), IS09409-1 (3).
- Suitable for the MFI brackets and nuts.

	<b>PLA2525</b>
Peso	485 g
Weight	



**Esempio di utilizzo**  
**Application example**

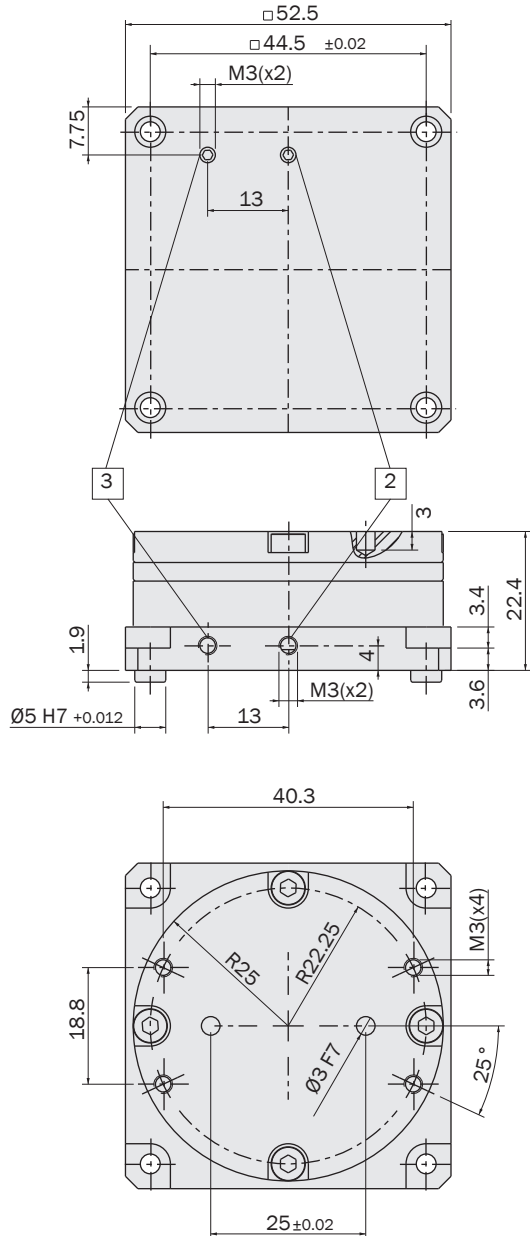


**Mini compensatore per pinze piccole**

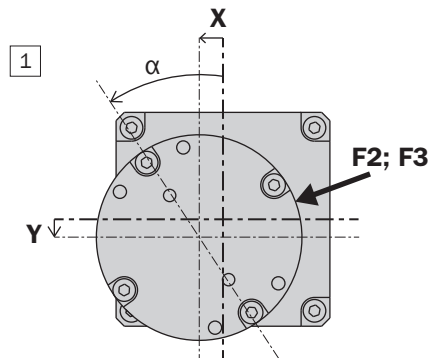
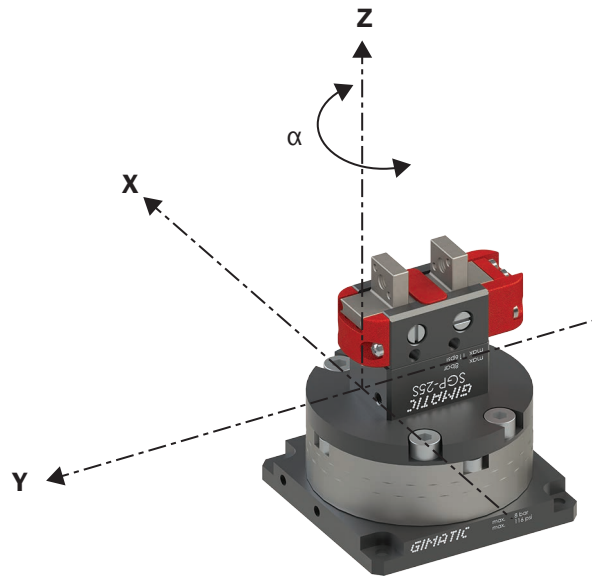
- Compensazione in X-Y e nell'angolo  $\alpha$  [1].
- Rigido in direzione Z.
- Un canale dell'aria per avere la posizione di zero centrale [2].
- Un altro canale per il bloccaggio fuori centro [3].

**Mini compliance device, for small grippers**

- X-Y and angle  $\alpha$  compliance [1].
- Rigid in Z direction.
- One air lead to get the central zero position [2].
- Another air lead to lock in any offset position [3].



		MCD124
Peso Weight		204 g
Compensazione radiale massima Maximum radial compliance	$\sqrt{X^2 + Y^2}$	1 mm
Compensazione angolare massima Maximum angular compliance	$\alpha$	10°
Forza di bloccaggio nella posizione centrale Locking force in central position	F2	200 N (6 bar)
Forza di bloccaggio fuori centro Locking force in off-centre position	F3	20 N (6 bar)



**awix**<sup>TM</sup>

 A business of BARNES

**PINZE**

*Grippers*

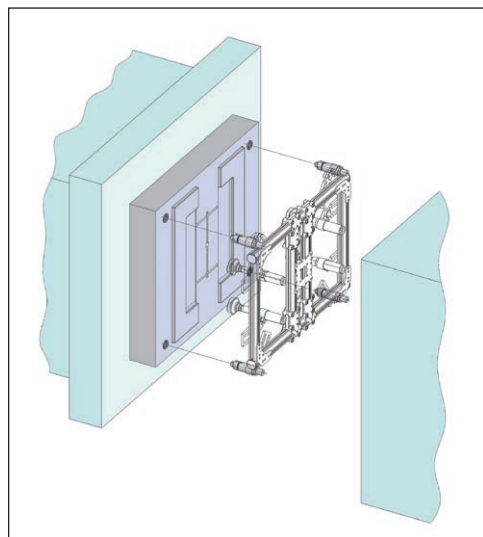
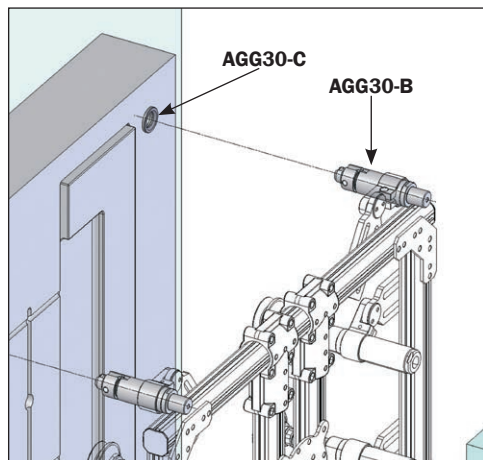


**Pinza per agganciamento**

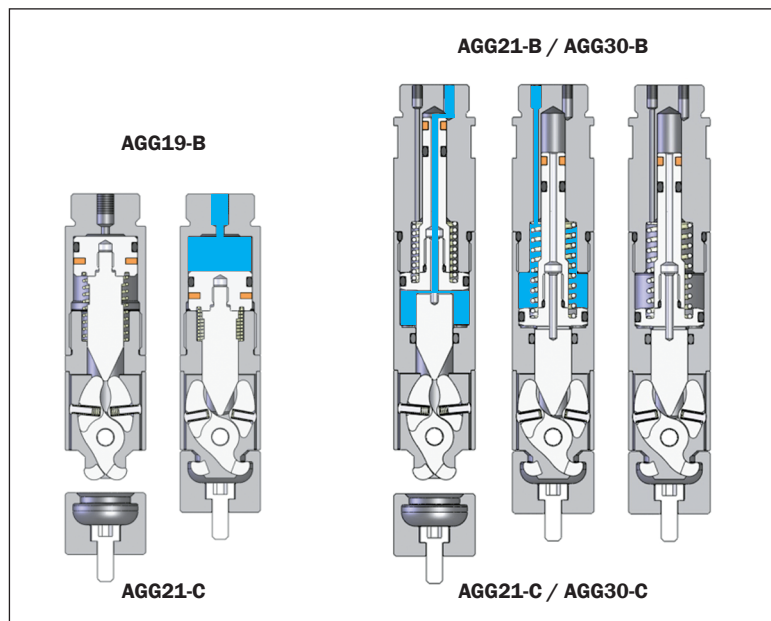
La AGG é usata per centrare in modo preciso il robot sullo stampo. Questo é necessario quando si devono posizionare degli inserti metallici nello stampo, prima di iniettare la plastica. La pinza AGG...-B è montata sull'EOAT e la bussola AGG...-C in acciaio sullo stampo. Dopo che il robot si é avvicinato allo stampo, la pinza viene alimentata, così si chiude e si aggrappa sulla bussola. AGG21-B e AGG30-B sono a doppio effetto con molla di sicurezza che mantiene agganciata la pinza anche in mancanza d'aria (NC). AGG19-B è a semplice effetto con molla di ritorno (NO).

**Gripper for engagement**

The AGG is used to provide a precise centering between the robot and the mould. This is necessary when metal inserts must be placed in the mould, before the plastic injection. The gripper AGG...-B is fitted on the EOAT, while the steel bushing AGG...-C is fitted on the mould. Once the robot has approached the mould, the gripper is pressurized, thus it closes and engages the bushing. AGG21-B and AGG30-B are double-acting with a safety spring to keep the gripper engaged even without compressed air (NC). AGG19-B is single-acting with reset spring (NO).



	AGG19-B	AGG21-B	AGG30-B
Massimo carico assiale senza aria compressa prima del rilascio <i>Maximum axial load without compressed air before releasing</i>	0 N	600 N	1400 N
Massimo carico assiale con aria compressa prima della rottura <i>Maximum axial load with compressed air before breakage</i>	2000 N	2000 N	5000 N
Pressione di esercizio <i>Pressure range</i>	2 ÷ 8 bar (NO)	4 ÷ 8 bar (NC)	4.5 ÷ 8 bar (NC)
Temperatura di esercizio <i>Temperature range</i>	5 ÷ 60 °C.		



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

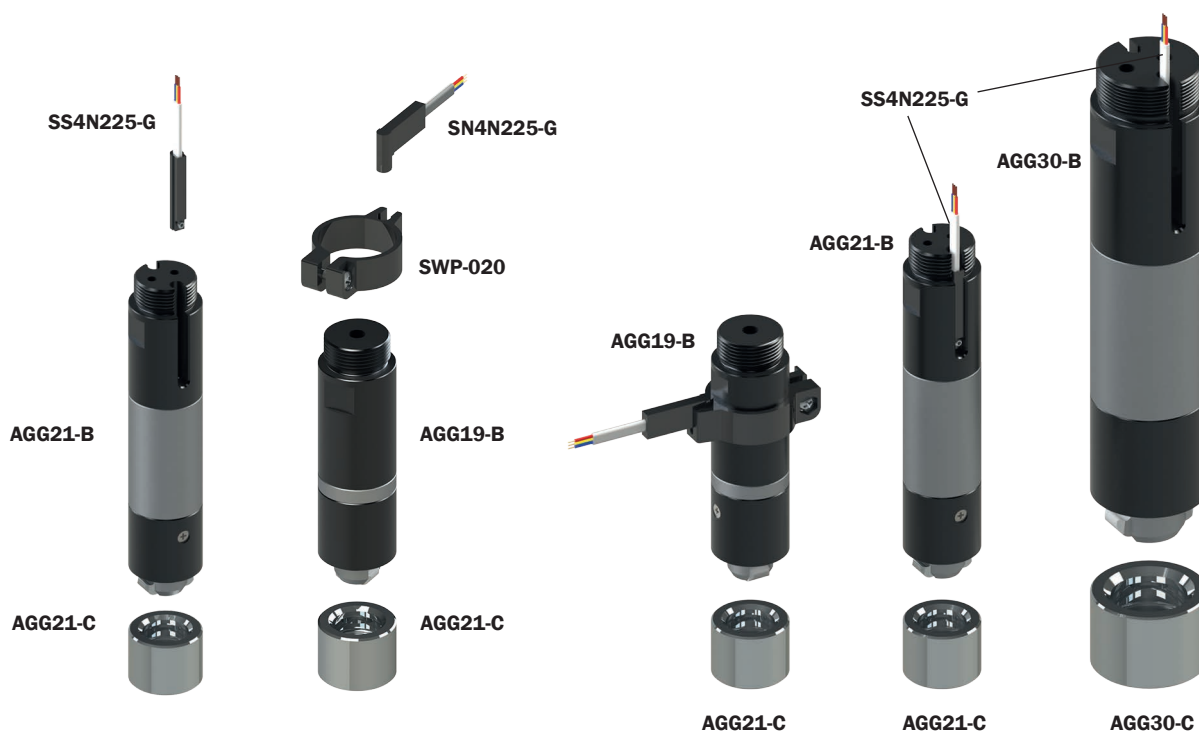
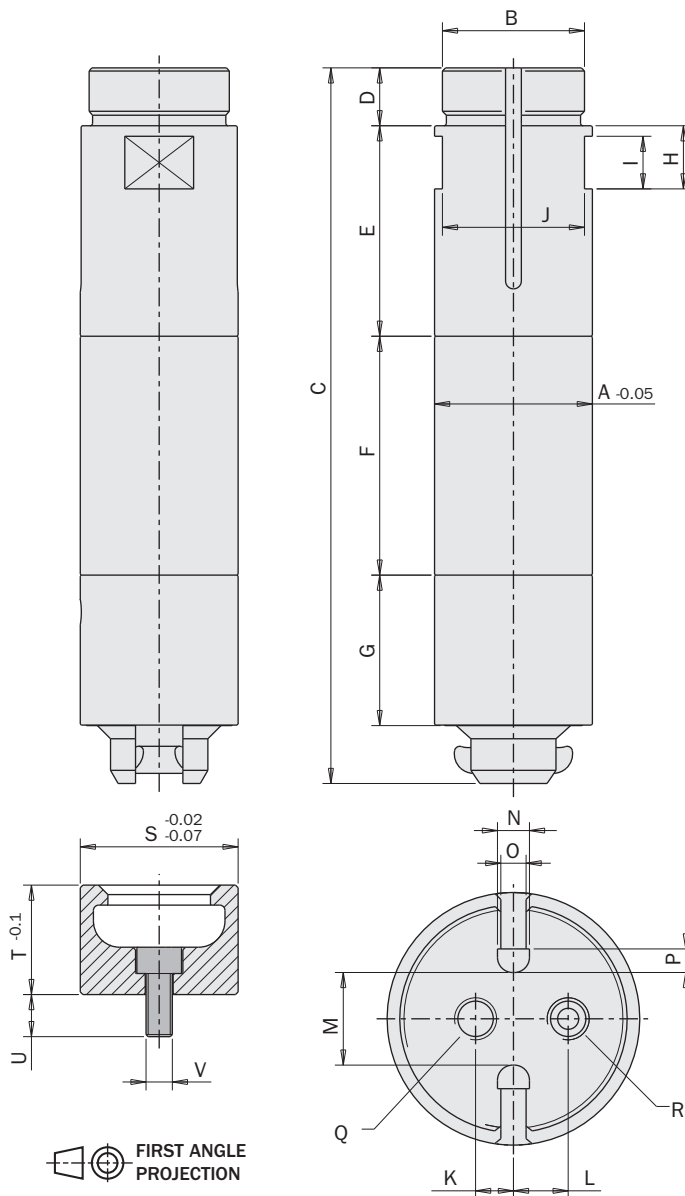
Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

	AGG19-B	AGG21-B	AGG30-B
A	Ø20	Ø20	Ø30
B	M17x1	M17x1	M27x1
C	70.5	96.5	136
D	8	8	11
E	32	28	40
F	4	34	45.4
G	19.5	19.5	28.6
H	10	10	12
I	8	8	10
J	18	18	27
K	0	2.8	4.5
L	-	4.6	6.5
M	-	6	11
N	-	3.8	3.8
O	-	3	3
P	-	2.8	2.8
Q	M5	M3	M5
R	-	M3	M5
Peso Weight	85 g	115 g	390 g

	AGG21-C	AGG30-C
S	Ø20	Ø30
T	15.3	20.8
U	6.7	8
V	M4	M5
Peso Weight	25 g	75 g



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

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Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

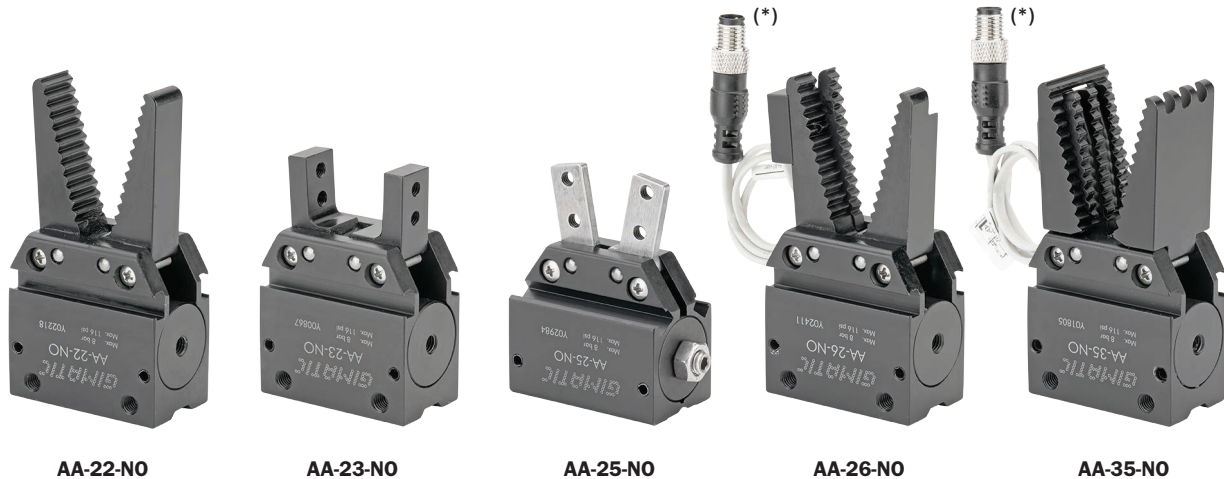
Sensori  
Sensors

## Pinza pneumatica per materozze, angolare autocentrante a due griffe serie AA

- A doppio effetto o con molla in apertura (-NO).
- Forza di serraggio molto elevata in rapporto al peso ed alle dimensioni.
- Varie possibilità di fissaggio.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

## 2-jaw self-centering angular pneumatic sprue gripper series AA

- Double acting or spring open (-NO).
- Very high gripping force related to the weight and dimensions.
- Different options for fastening.
- Optional magnetic sensors.
- Food grade grease FDA-H1.



AA-22-NO

AA-23-NO

AA-25-NO

AA-26-NO

AA-35-NO

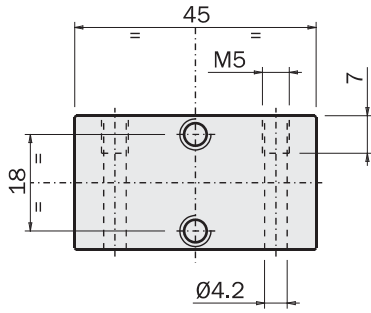
(\*)

Il sensore SS3N203-G è incluso  
The sensor SS3N203-G is included

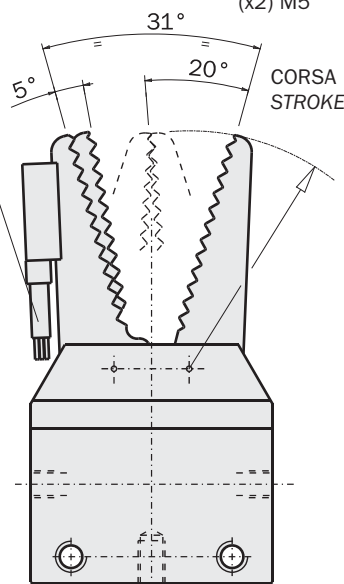
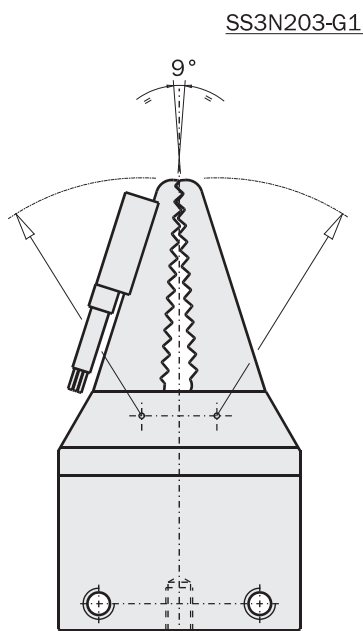
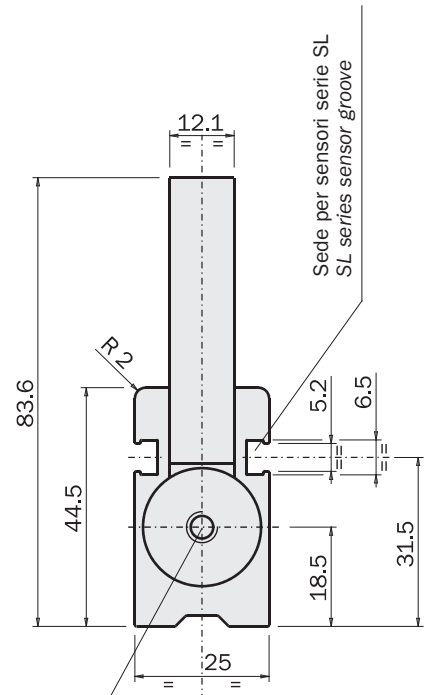
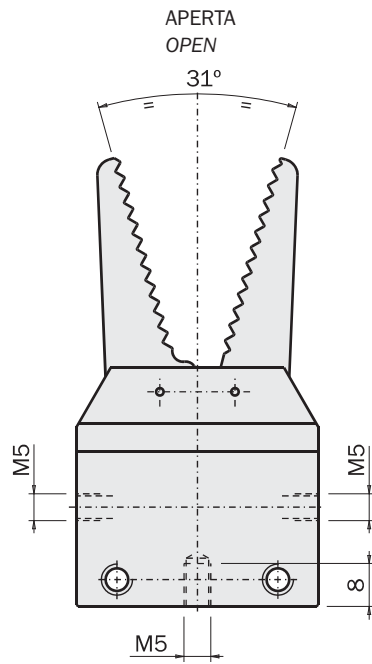
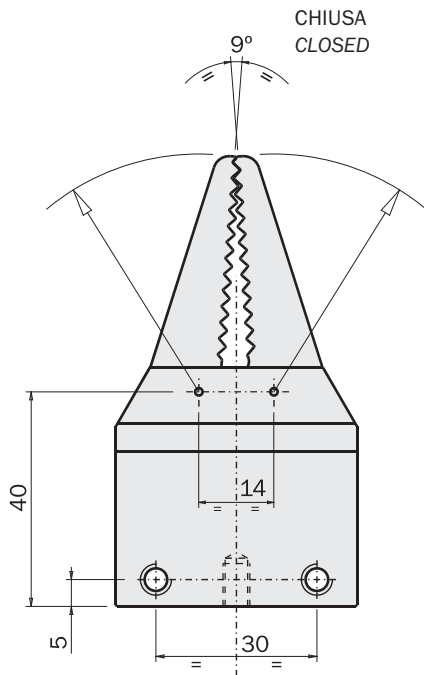
	AA-22	AA-22-NO	AA-23	AA-23-NO AA-25-NO	AA-26	AA-26-NO	AA-35	AA-35-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]							
Pressione di esercizio Pressure range	2.5 ÷ 8 bar							
Temperatura di esercizio Temperature range	5 ÷ 60 °C.							
Corsa Stroke (±1°)	2 x 20°							
Coppia di chiusura per griffa a 6 bar Closing torque at 6 bar each jaw	150 Ncm	125 Ncm	150 Ncm	125 Ncm	150 Ncm	125 Ncm	150 Ncm	125 Ncm
Coppia di chiusura totale a 6 bar Total closing torque at 6 bar	300 Ncm	250 Ncm	300 Ncm	250 Ncm	300 Ncm	250 Ncm	300 Ncm	250 Ncm
Coppia di apertura per griffa a 6 bar Opening torque at 6 bar each jaw	150 Ncm	175 Ncm	150 Ncm	175 Ncm	150 Ncm	175 Ncm	150 Ncm	175 Ncm
Coppia di apertura totale a 6 bar Total opening torque at 6 bar	300 Ncm	350 Ncm	300 Ncm	350 Ncm	300 Ncm	350 Ncm	300 Ncm	350 Ncm
Coppia di apertura per griffa a 0 bar Opening torque at 0 bar each jaw	0 Ncm	25 Ncm	0 Ncm	25 Ncm	0 Ncm	25 Ncm	0 Ncm	25 Ncm
Coppia di apertura totale a 0 bar Total opening torque at 0 bar	0 Ncm	50 Ncm	0 Ncm	50 Ncm	0 Ncm	50 Ncm	0 Ncm	50 Ncm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	2 Hz	2 Hz	2 Hz	2 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	5 cm <sup>3</sup>	2 cm <sup>3</sup>	5 cm <sup>3</sup>	2 cm <sup>3</sup>	5 cm <sup>3</sup>	2 cm <sup>3</sup>	5 cm <sup>3</sup>	2 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.02 s	0.02 s	0.02 s	0.02 s	0.02 s	0.02 s	0.02 s
Peso Weight	115 g	115 g	100 g	100 g	120 g	120 g	140 g	140 g

**Dimensioni (mm)**  
**Dimensions (mm)**

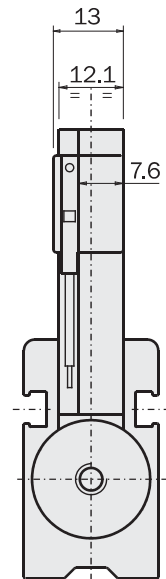
**AA-22**  
**AA-22-NO**  
**AA-26**  
**AA-26-NO**



**AA-22**



Ingresso aria  
Air connection  
(x2) M5



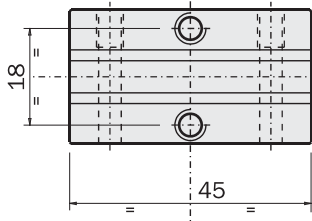
**AA-26**



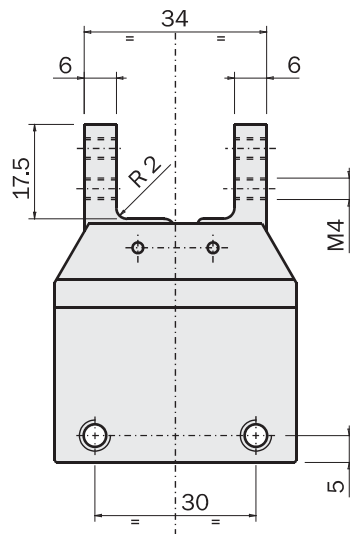
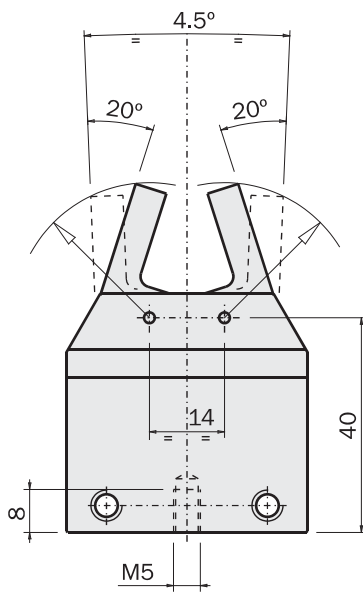


**Dimensioni (mm)**  
**Dimensions (mm)**

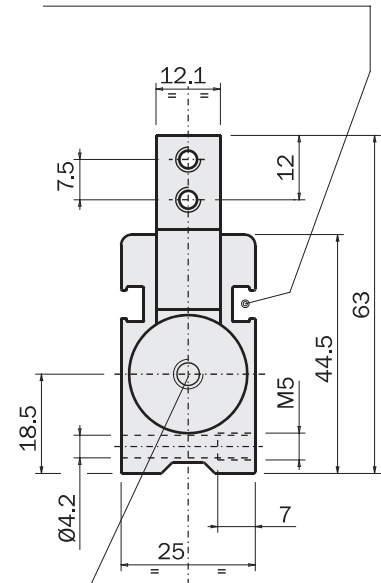
**AA-23**  
**AA-23-NO**



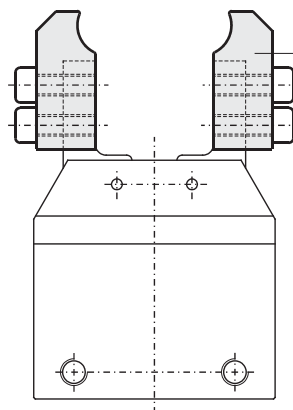
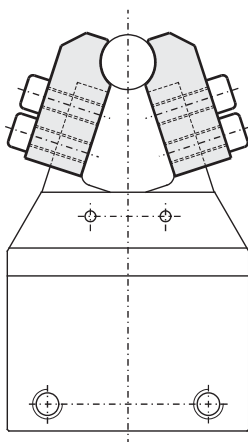
APERTA  
OPEN



Sede per sensori serie SL  
SL series sensor groove



Ingresso aria  
Air connection  
(x2) M5



Dito di presa (non fornito)  
Gripping tool (not supplied)

FIRST ANGLE  
PROJECTION

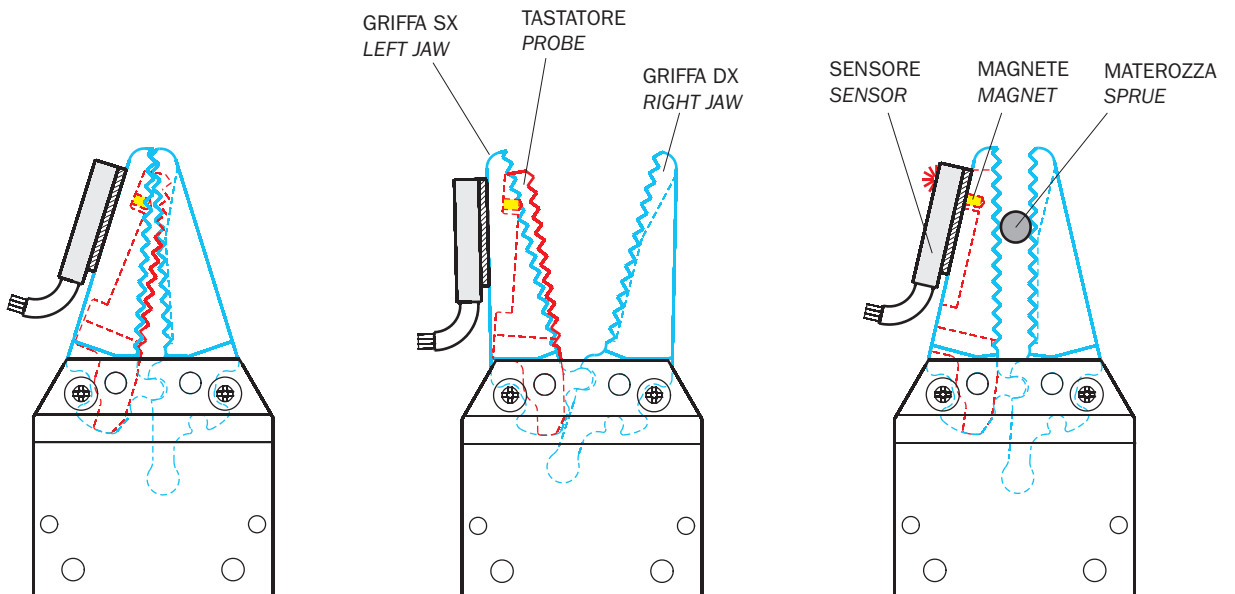
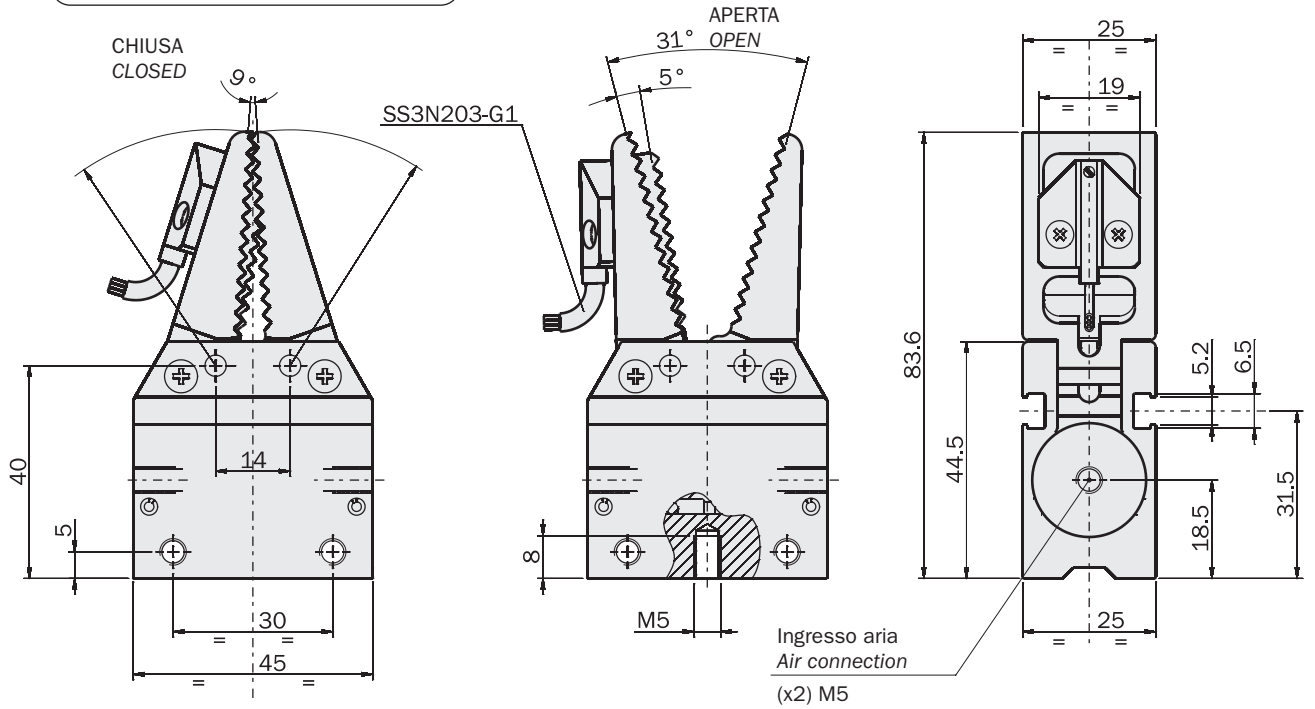
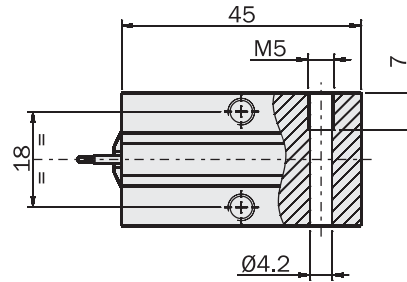
**Dimensioni (mm)**  
**Dimensions (mm)**

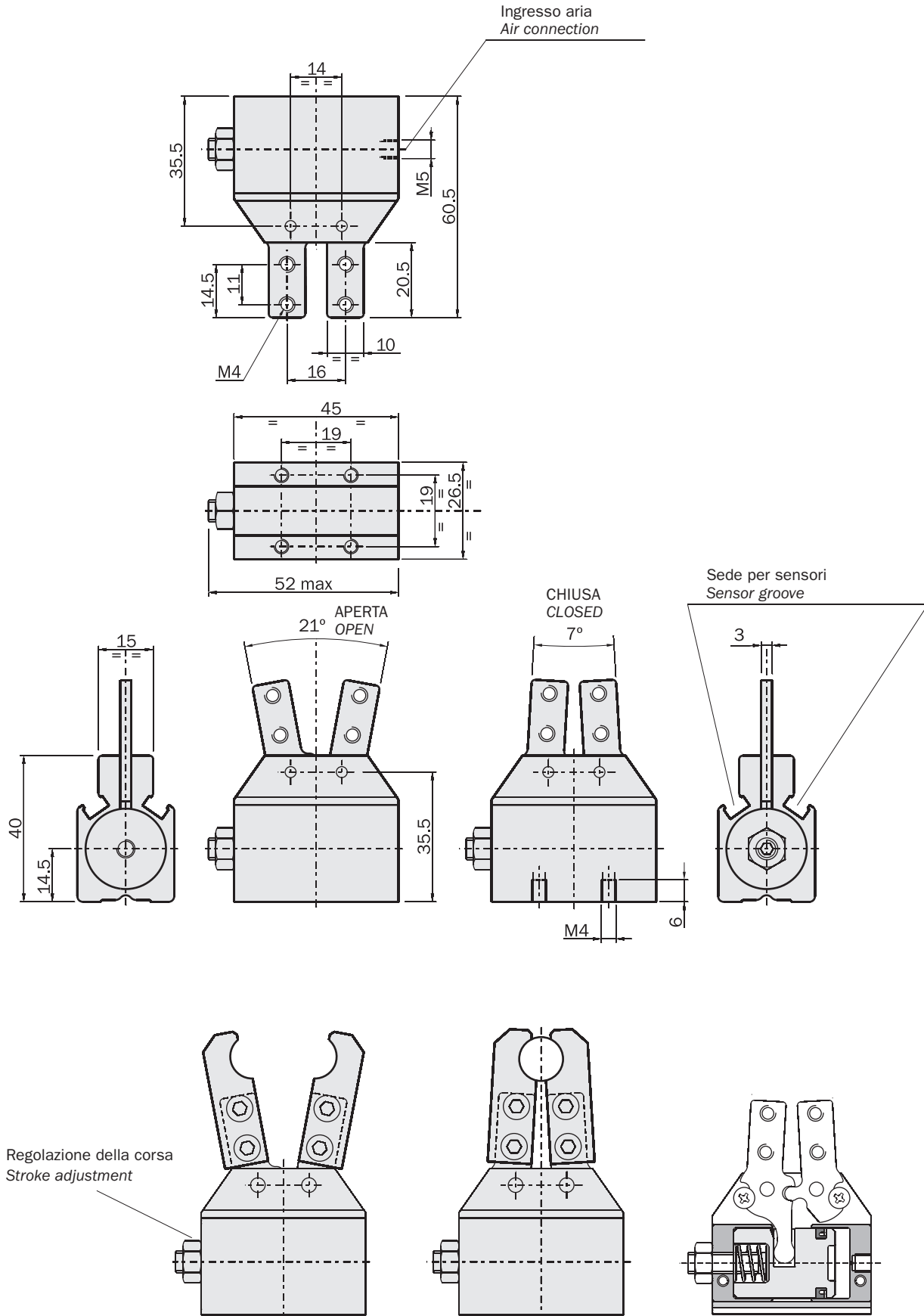
Dita più larghe e scanalate per una presa migliore  
Wider, grooved fingers for a better gripping

**AA-35**  
**AA-35-NO**



FIRST ANGLE PROJECTION



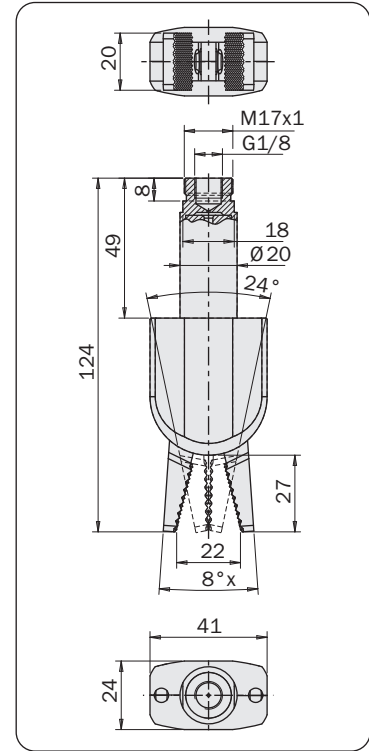
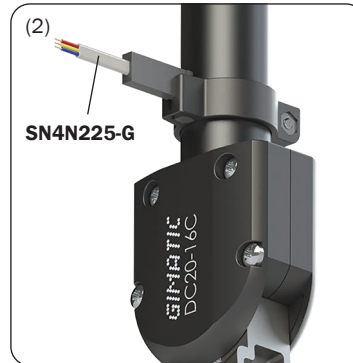
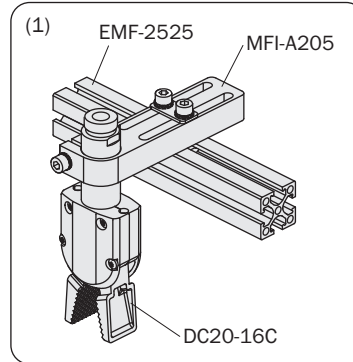


## Pinza pneumatica per materozze, angolare autocentrante a due griffe, serie DC

- Azionamento a semplice effetto con apertura a molla.
- Vari accessori disponibili per il fissaggio (1).
- Griffe in acciaio.
- Corpo composito in plastica, acciaio, alluminio.
- Grasso alimentare FDA-H1.
- Sensori e fascette opzionali (2).

## 2-jaw self-centering angular pneumatic sprue gripper, series DC

- Single acting with spring opening (1).
- Several mounting accessories.
- Steel jaws.
- Plastic-steel-aluminium composite body.
- FDA-H1 food-grade grease.
- Optional sensors and clamps (2).



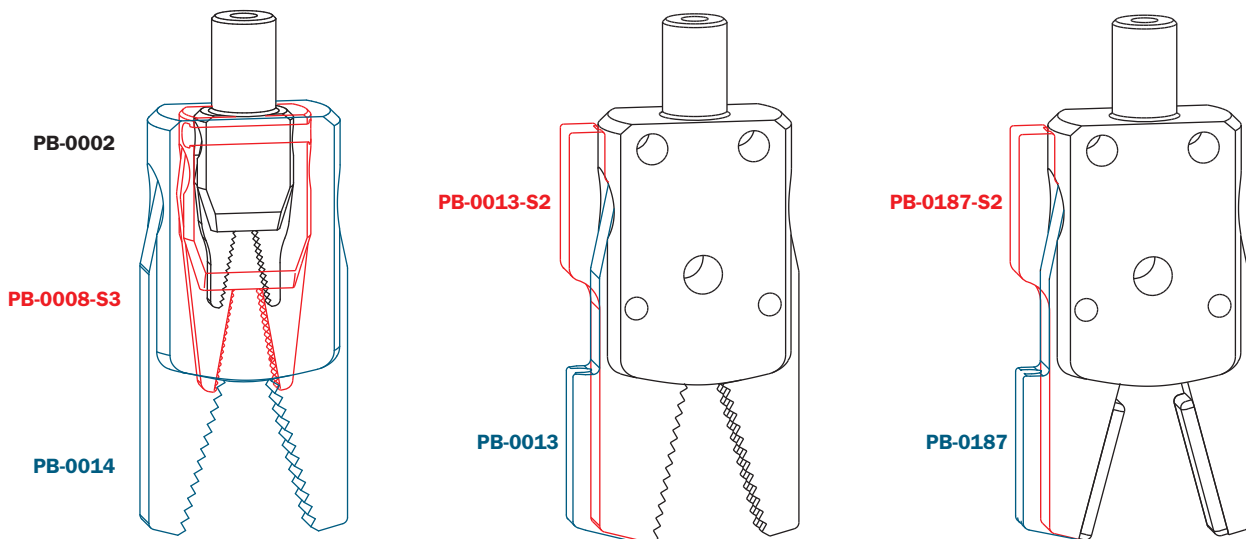
	DC20-16C
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>
Pressione di esercizio <i>Pressure range</i>	2 ÷ 8 bar
Temperatura di esercizio <i>Temperature range</i>	5 ÷ 60 °C.
Corsa <i>Stroke</i>	2 x 15°
Coppia di chiusura per griffa a 6 bar <i>Closing torque at 6 bar each jaw</i>	300 Ncm
Coppia di chiusura totale a 6 bar <i>Total closing torque at 6 bar</i>	600 Ncm
Coppia di apertura per griffa a 0 bar <i>Opening torque at 0 bar each jaw</i>	20 Ncm
Coppia di apertura totale a 0 bar <i>Total opening torque at 0 bar</i>	40 Ncm
Frequenza max funzionamento continuativo <i>Maximum working frequency</i>	2 Hz
Consumo d'aria per ciclo <i>Cycle air consumption</i>	3.6 cm <sup>3</sup>
Tempo di chiusura <i>Closing time</i>	0.02 s
Peso <i>Weight</i>	148 g

**Pinza pneumatica per materozze, angolare non autocentrante a due griffe serie PB**

- Grasso alimentare FDA-H1.
- Tre taglie disponibili con alesaggio 6mm, 8mm, 12mm.
- Sensore sulla punta, o sul fondo della griffa.
- Griffe con denti (per presa materozze), o con pastiglie (per contatto morbido).
- Griffe in alluminio o acciaio.

**2-jaw non-selfcentering angular pneumatic sprue gripper series PB**

- FDA-H1 food-grade grease.
- Three available sizes with piston bore 6mm, 8mm, 12mm.
- Sensor on the tip of the jaw, or on the tail.
- Jaws with teeth (for sprue gripping), or with pads (for soft contact).
- Jaws in aluminium or steel.



	PB-0002	NEW PB-0007-S3	NEW PB-0008-S3	PB-0013	NEW PB-0013-S2	PB-0014	PB-0015	PB-0017	PB-0160 PB-0181 PB-0182	PB-0180	NEW PB-0180-SV	NEW PB-0180-S2	PB-0187	NEW PB-0187-S2	NEW PB-0187-SV
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]														
Pressione di esercizio Pressure range	4 ÷ 8 bar														
Temperatura di esercizio Temperature range	5 ÷ 60 °C.														
Peso Weight	7 g	17 g	18 g	55 g	64 g	50g	50 g	45 g	75 g	60 g	74 g	70 g	58 g	62 g	
Corsa Stroke (±2°)	2x10°			2x15°			2x16°		2x15°						
Consumo d'aria per ciclo Cycle air consumption	0.3 cm³			1.2 cm³			1.5 cm³		1.2 cm³						
Coppia di serraggio per griffa in chiusura a 6 bar Closing gripping torque at 6 bar each jaw	10 Ncm	24 Ncm		80 Ncm			60 Ncm		80 Ncm						
Coppia per griffa in apertura (a 6 bar) Opening gripping torque (at 6 bar) each jaw	1 Ncm	2 Ncm		5 Ncm			5 Ncm (25 Ncm)		5 Ncm						
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz														
Tempo di chiusura senza carico Closing time without load	0.01 s														

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

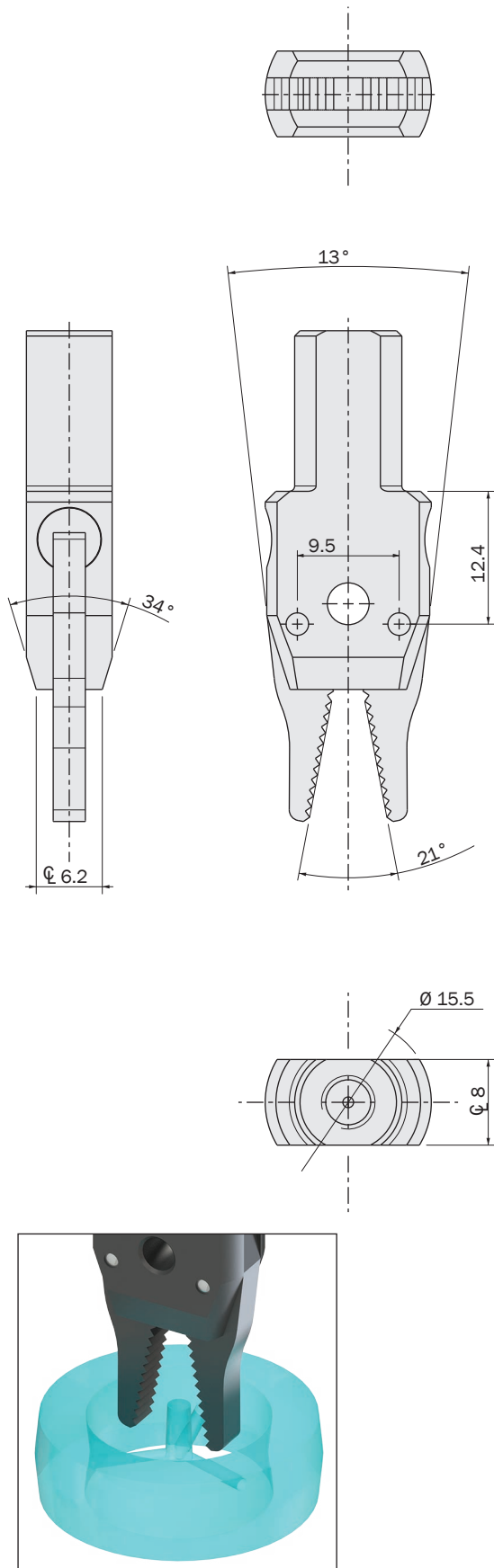
Accessori Opzionali  
Options

Sensori  
Sensors

**PB-0002**

- Alesaggio: 6mm.
- 8mm di spessore.
- A semplice effetto con molla in apertura.

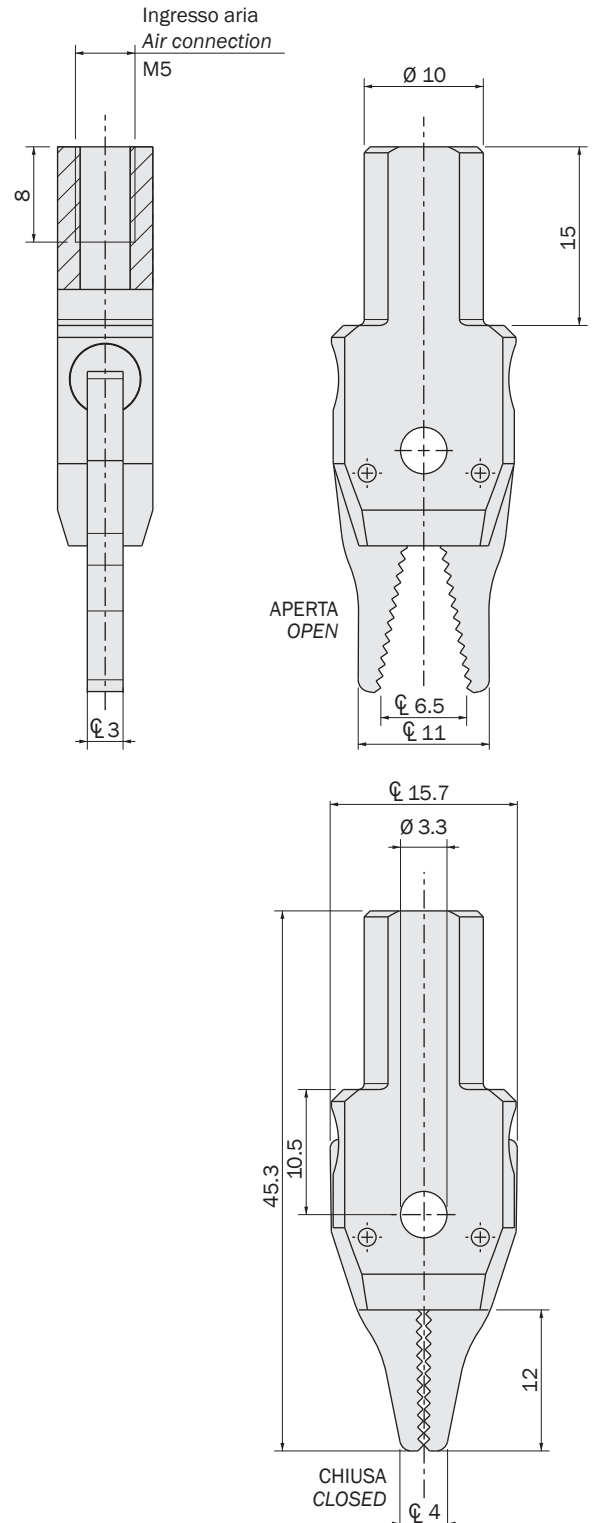
**Dimensioni (mm)**



**PB-0002**

- Piston bore: 6mm.
- 8mm thickness.
- Single-acting with opening spring.

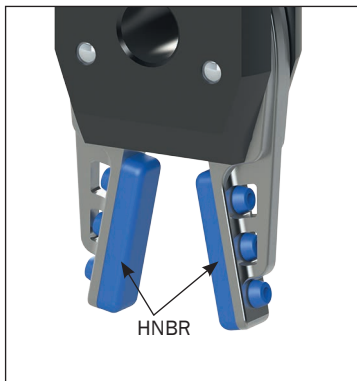
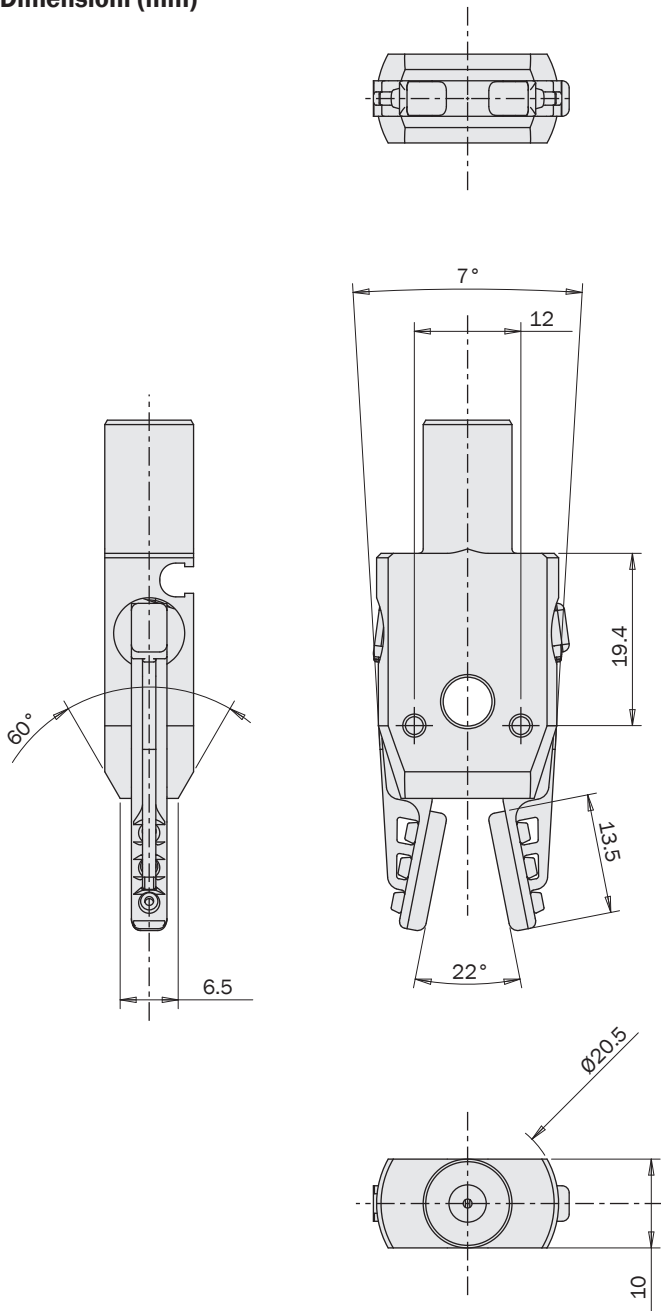
**Dimensions (mm)**



**PB-0007-S3**

- Alesaggio: 8mm.
- A semplice effetto con molla in apertura.
- Pastiglia in gomma (HNBR) per contatto morbido.
- Predisposta per sensore magnetico programmabile PRO-SSR.
- Spessore minimo rilevabile: 2mm.

**Dimensioni (mm)**



**PB-0007-S3**

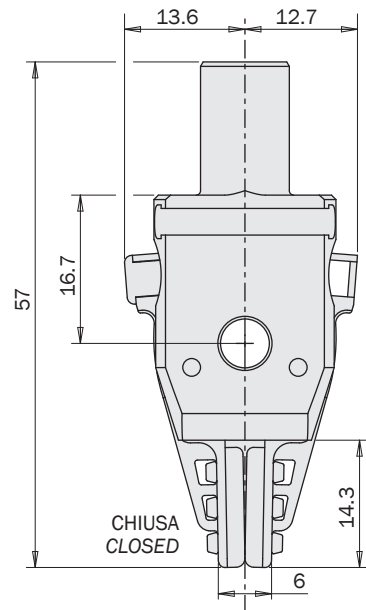
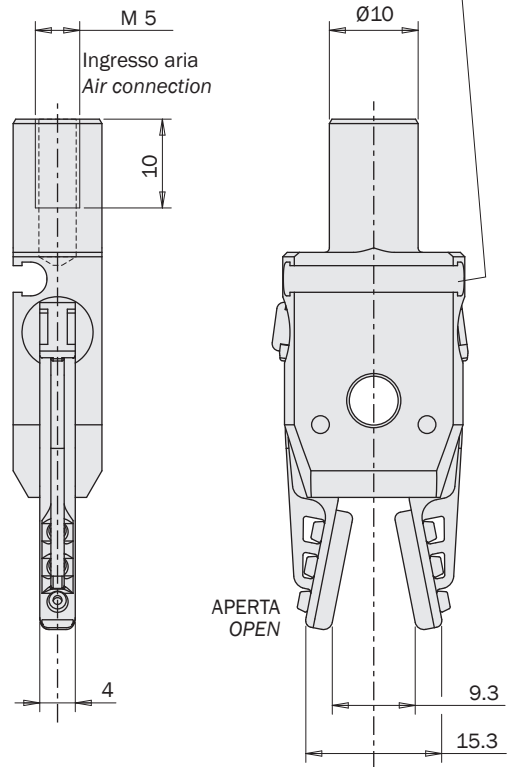
- Piston bore: 8mm.
- Single-acting with opening spring.
- Rubber (HNBR) pads for a soft contact.
- Ready for PRO-SSR programmable magnetic sensor.
- Minimum detectable thickness: 2mm.

**Dimensions (mm)**



**I sensori opzionali sono:  
The optional sensors are:**

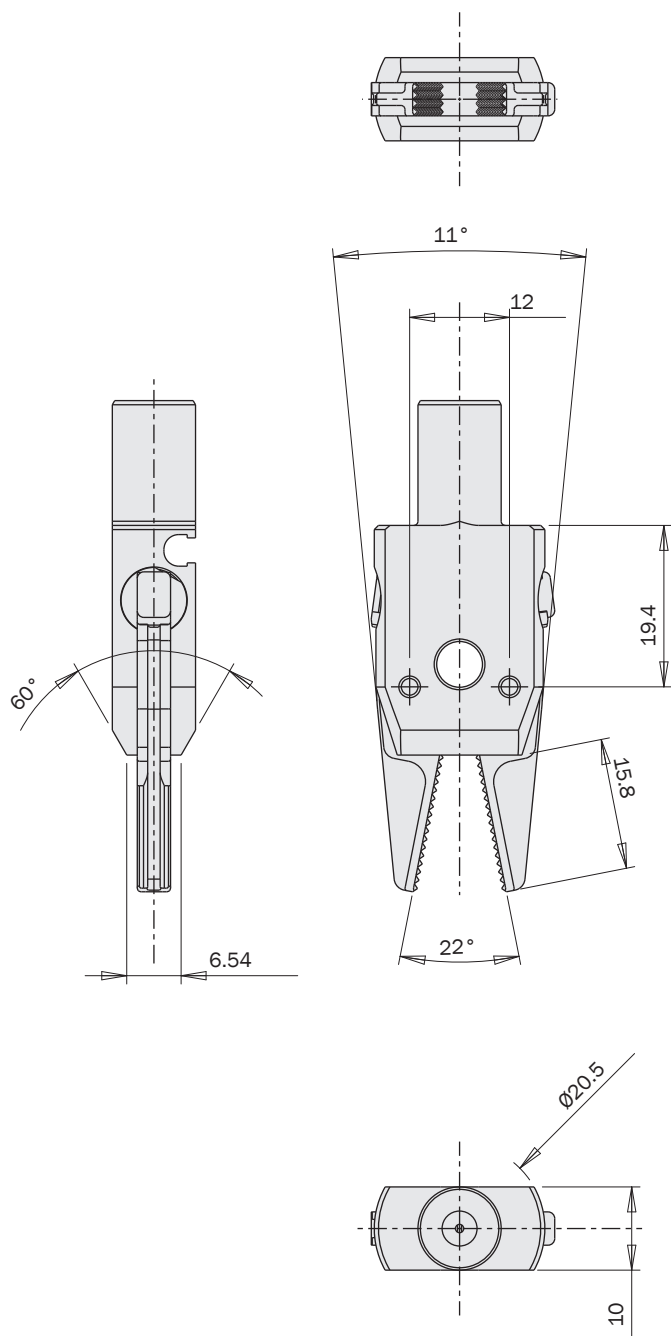
PRO-SSR3M215-G	NPN	Connettore M8
PRO-SSR3N215-G	PNP	M8 snap plug connector
PRO-SSR4M225-G	NPN	Cavo 2.5m
PRO-SSR4N225-G	PNP	2.5m cable



**PB-0008-S3**

- Alesaggio: 8mm.
- A semplice effetto con molla in apertura.
- Predisposta per sensore magnetico programmabile PRO-SSR.
- Spessore minimo rilevabile: 2mm.

**Dimensioni (mm)**



**PB-0008-S3**

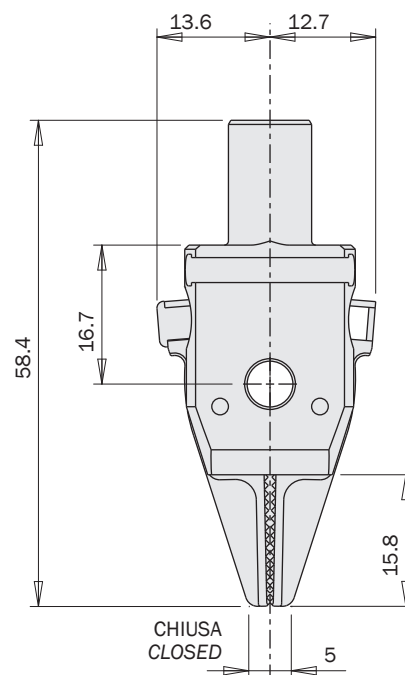
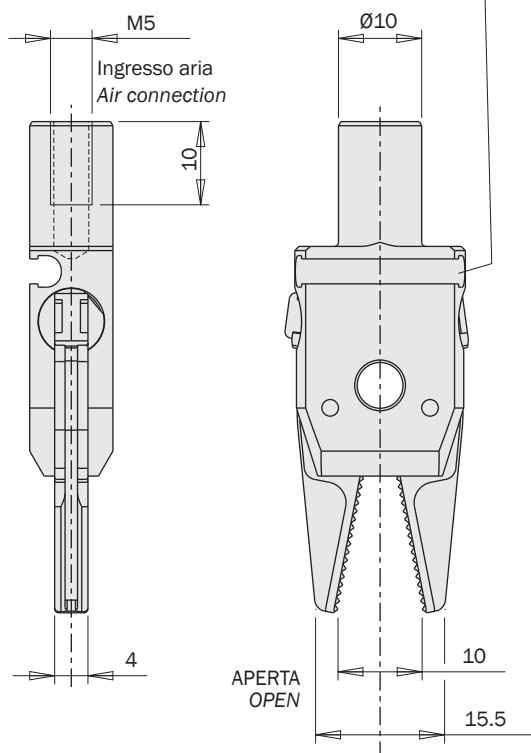
- Piston bore: 8mm.
- Single-acting with opening spring.
- Ready for PRO-SSR programmable magnetic sensor.
- Minimum detectable thickness: 2mm.

**Dimensions (mm)**



**I sensori opzionali sono:**  
**The optional sensors are:**

PRO-SSR3M215-G	NPN	Connettore M8
PRO-SSR3N215-G	PNP	M8 snap plug connector
PRO-SSR4M225-G	NPN	Cavo 2.5m
PRO-SSR4N225-G	PNP	2.5m cable

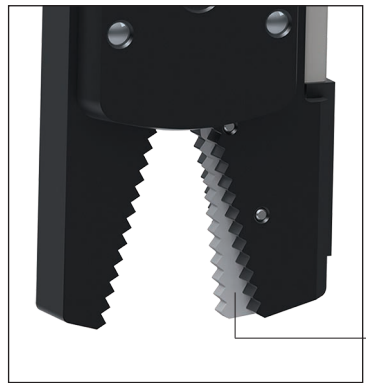
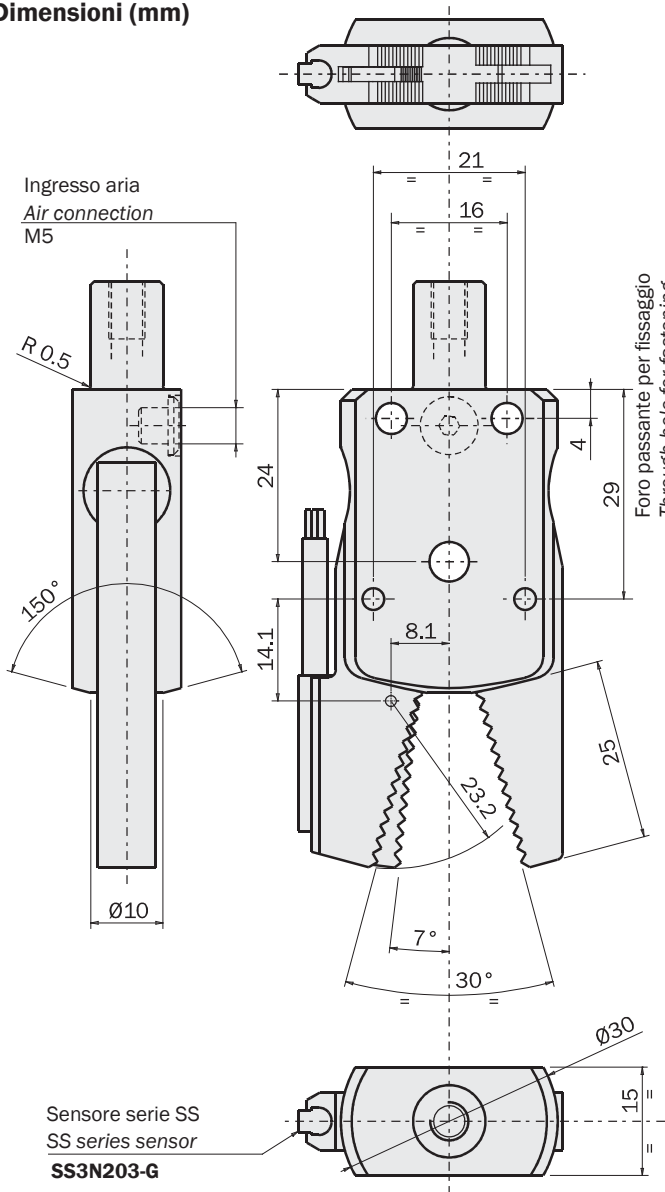




**PB-0013**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore SS3N203-G incluso e montato sulla punta della griffa.

**Dimensioni (mm)**

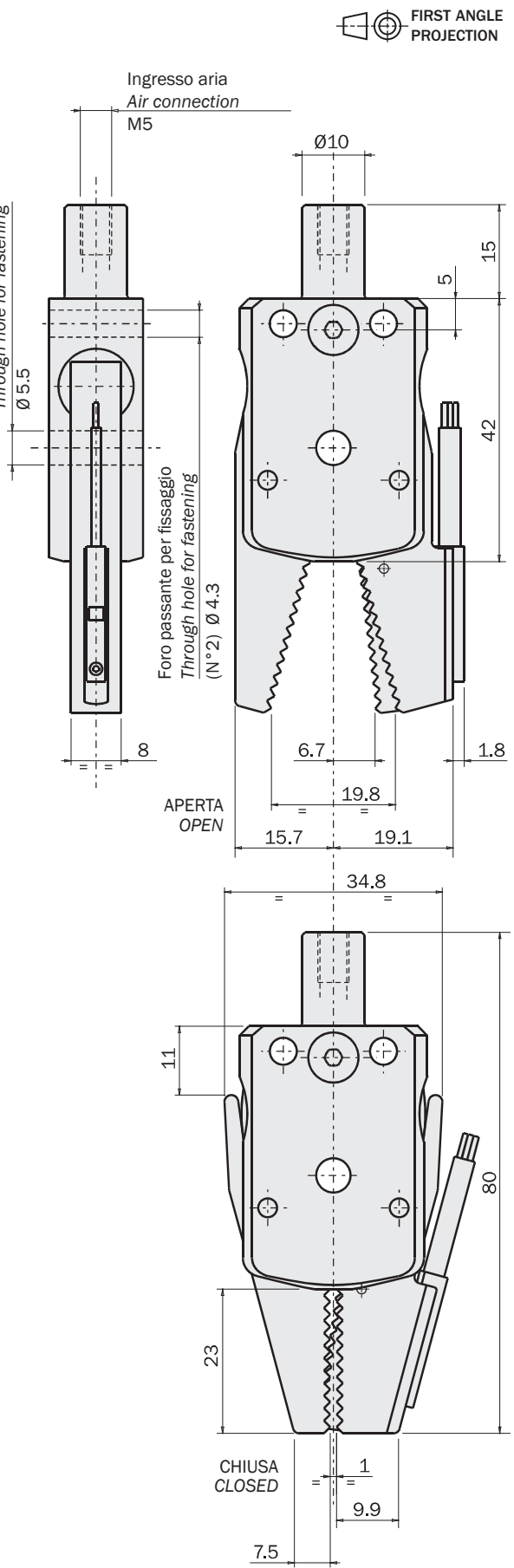


Tastatore in acciaio  
Steel probe

**PB-0013**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Sensor SS3N203-G included and fitted to the tip of the jaw.

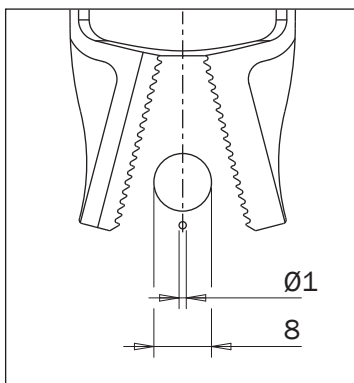
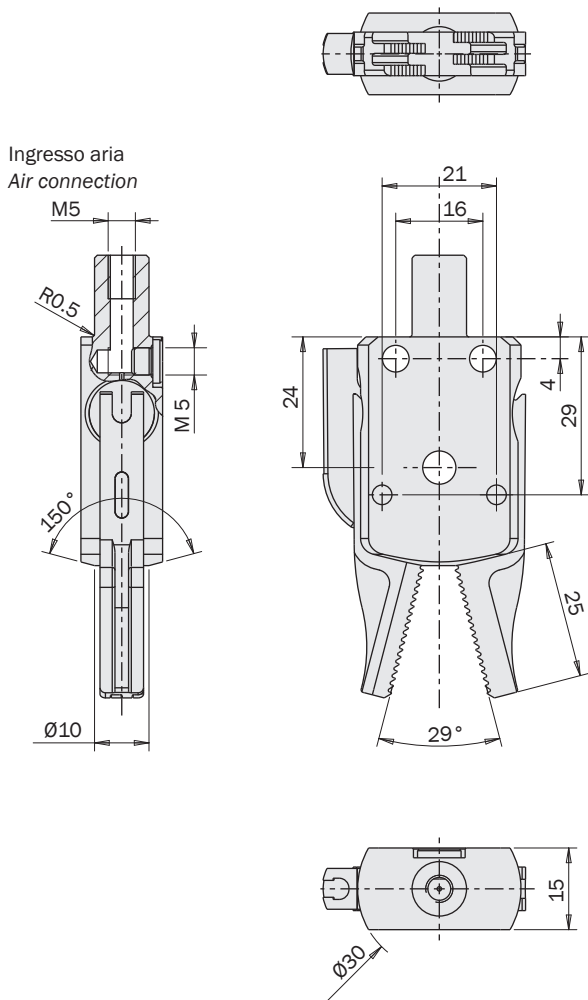
**Dimensions (mm)**



**PB-0013-S2**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore magnetico SSY opzionale con ingombro ridotto nella zona di presa.

**Dimensioni (mm)**



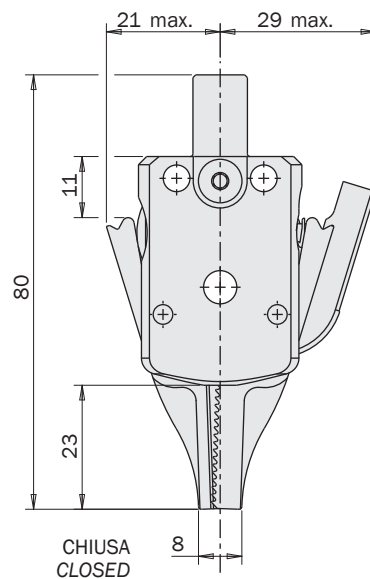
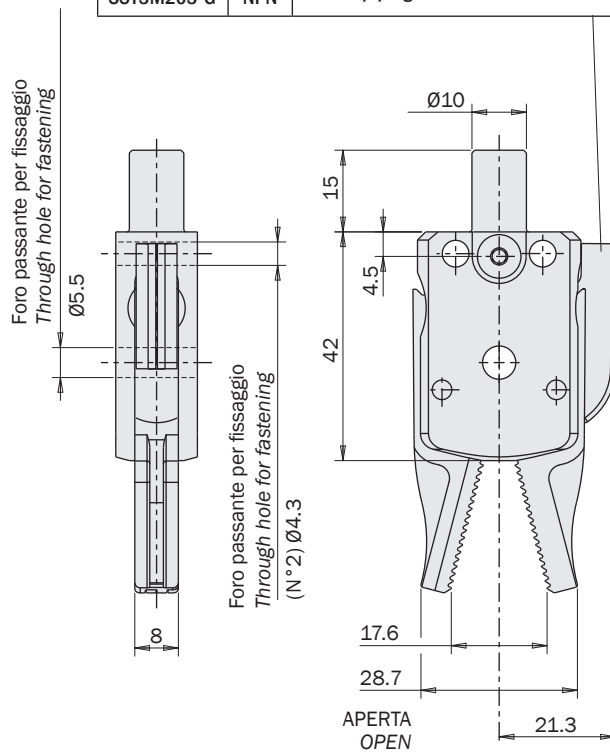
**PB-0013-S2**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Optional magnetic sensor SSY with reduced encumbrance in the grip area.

**Dimensions (mm)**



<b>I sensori opzionali sono:</b>		
<b>The optional sensors are:</b>		
SSY4N225-G	PNP	Cavo 2.5m
SSY4M225-G	NPN	2.5m cable
SSY3N203-G	PNP	Connettore M8
SSY3M203-G	NPN	M8 snap plug connector



**PB-0014**

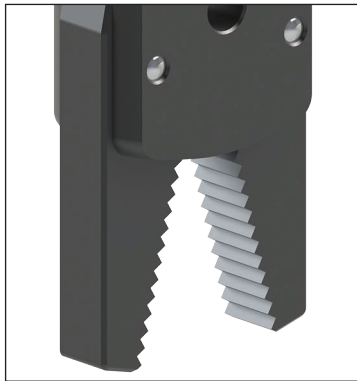
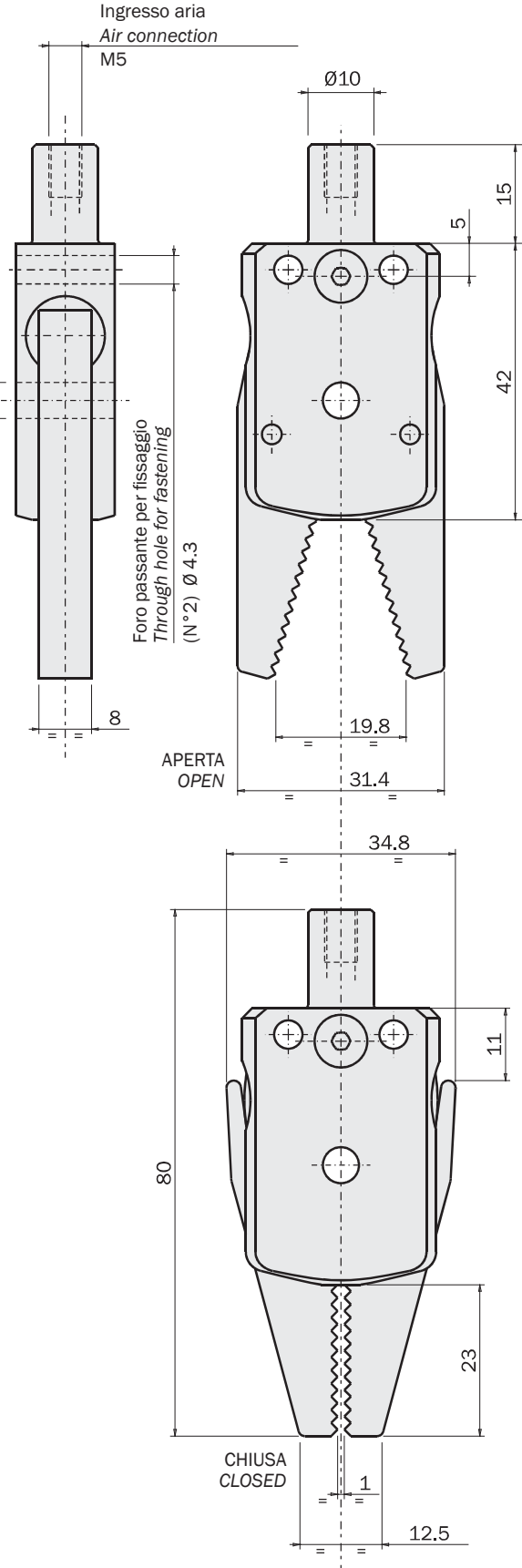
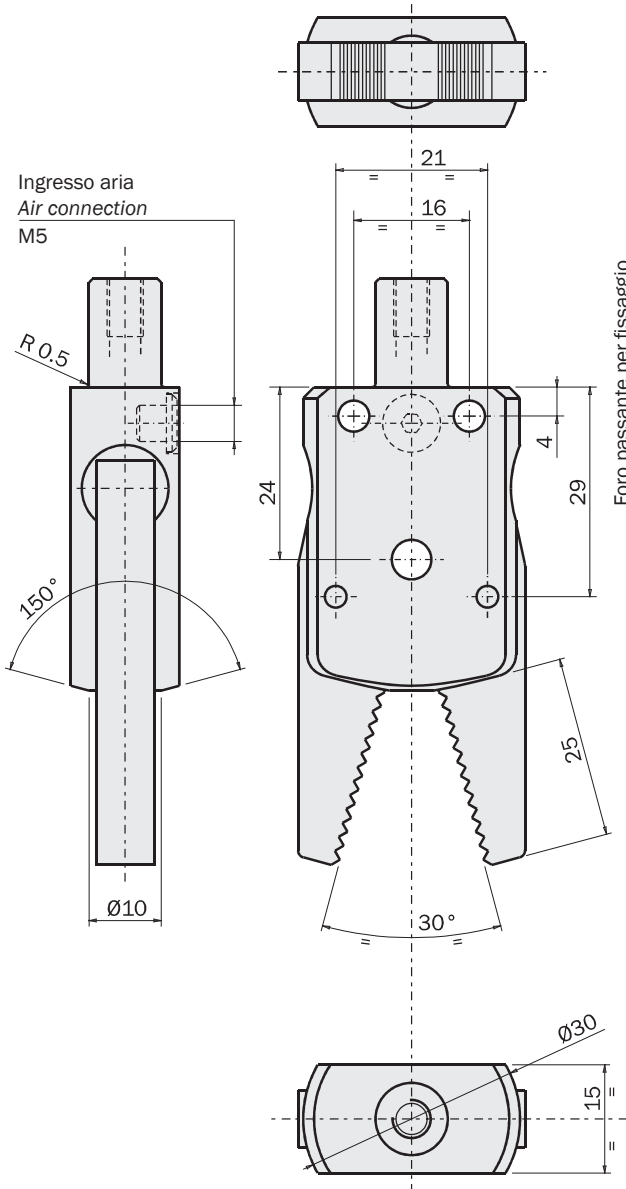
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.

**PB-0014**

- Piston bore: 12mm.
- Single-acting with opening spring.

**Dimensioni (mm)**

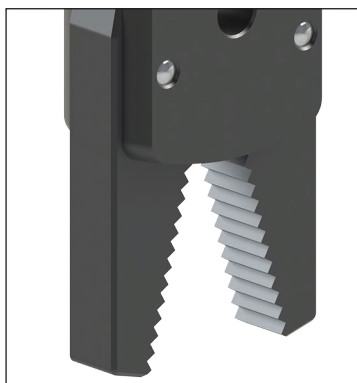
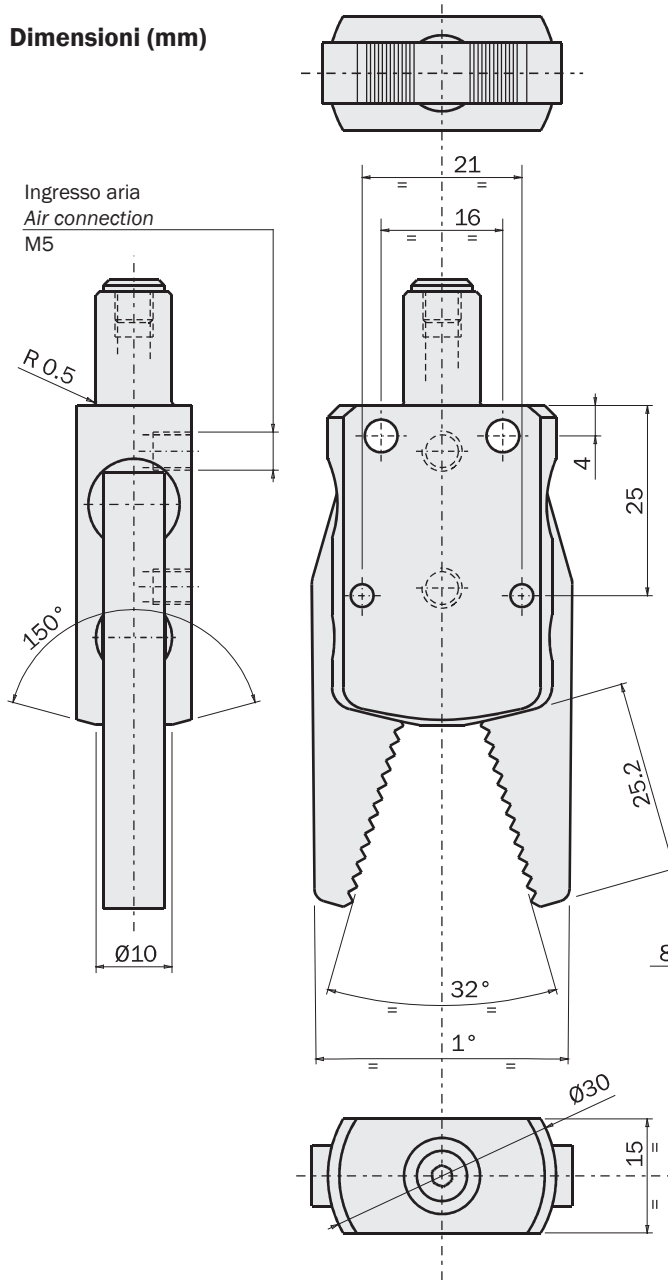
**Dimensions (mm)**



**PB-0015**

- Alesaggio: 12mm.
- A doppio effetto con molla in apertura.

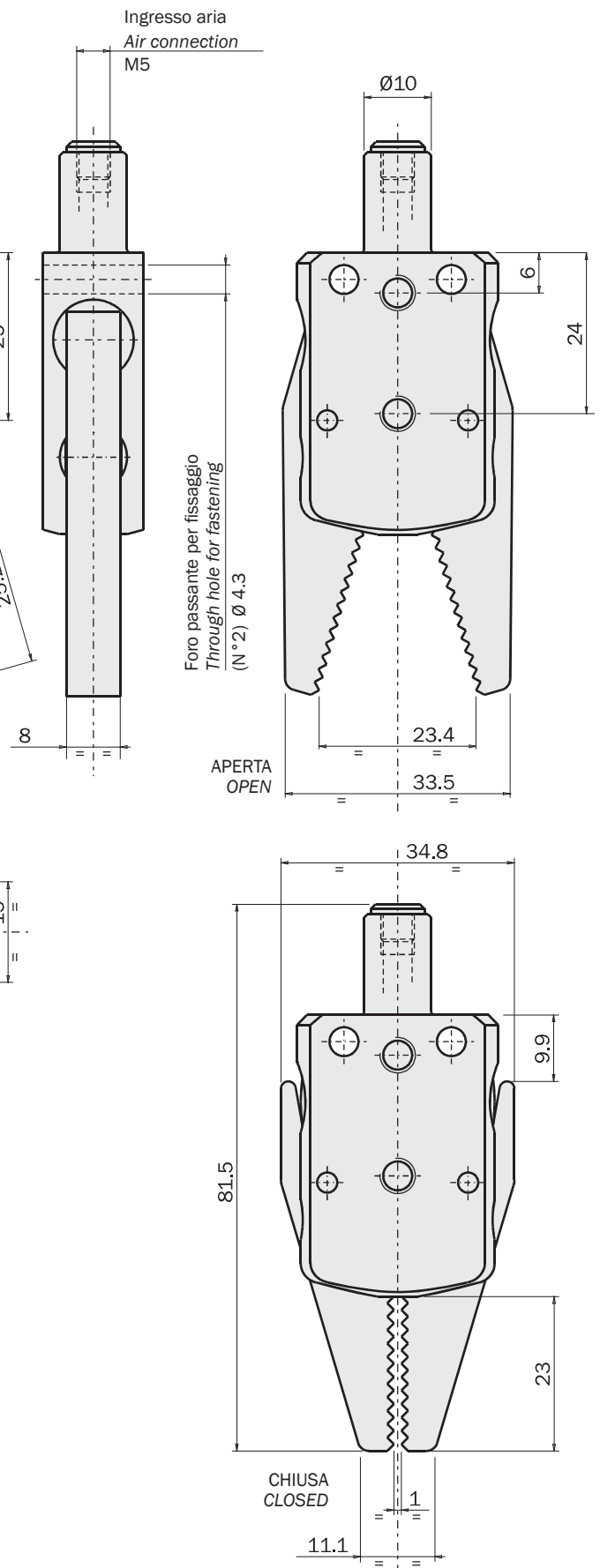
**Dimensioni (mm)**



**PB-0015**

- Piston bore: 12mm.
- Double-acting with opening spring.

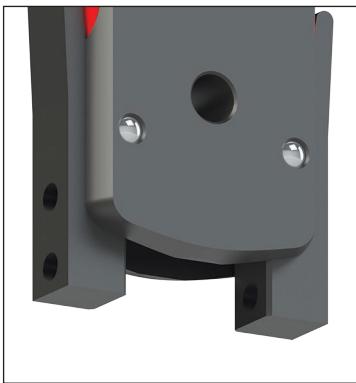
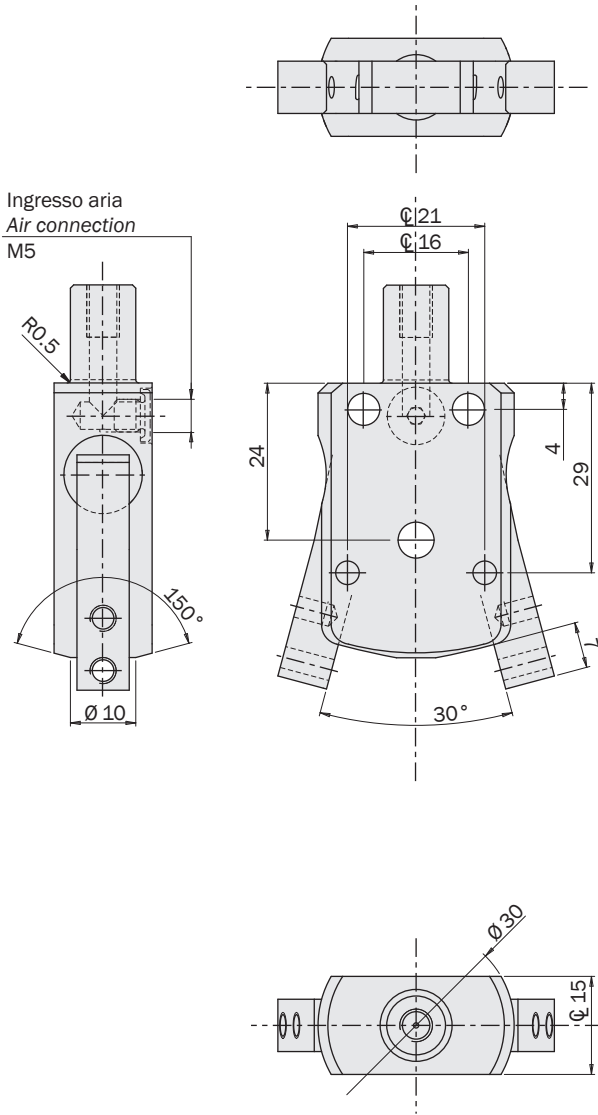
**Dimensions (mm)**



**PB-0017**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffe personalizzabili.

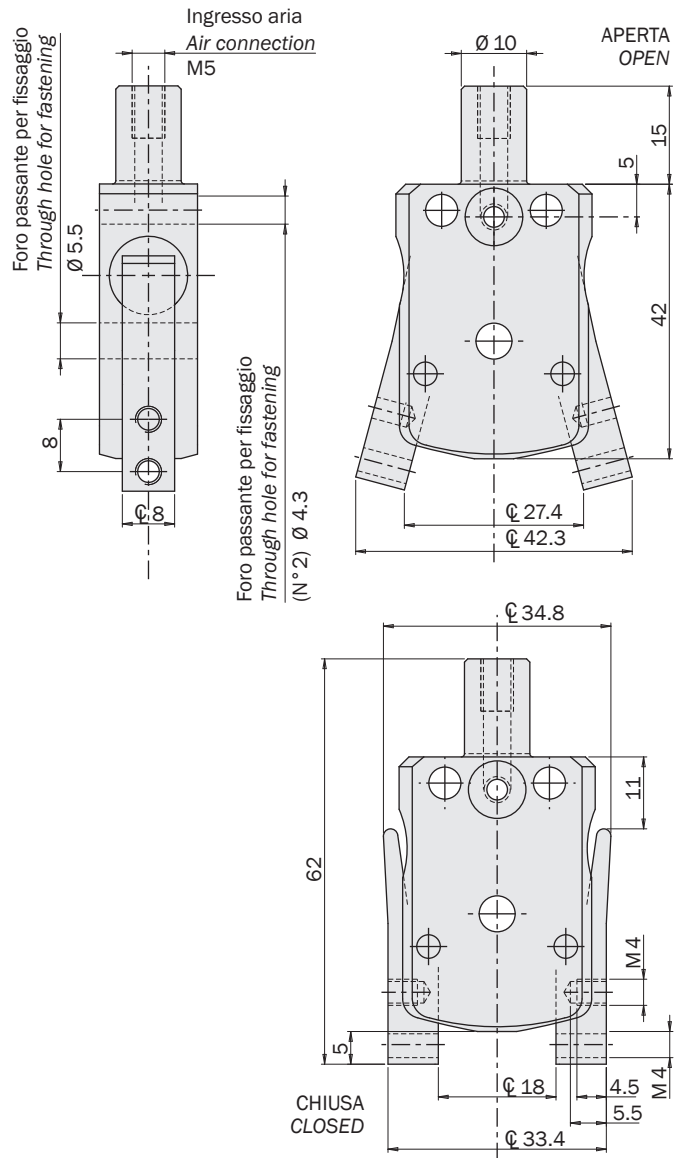
**Dimensioni (mm)**



**PB-0017**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Custom jaws.

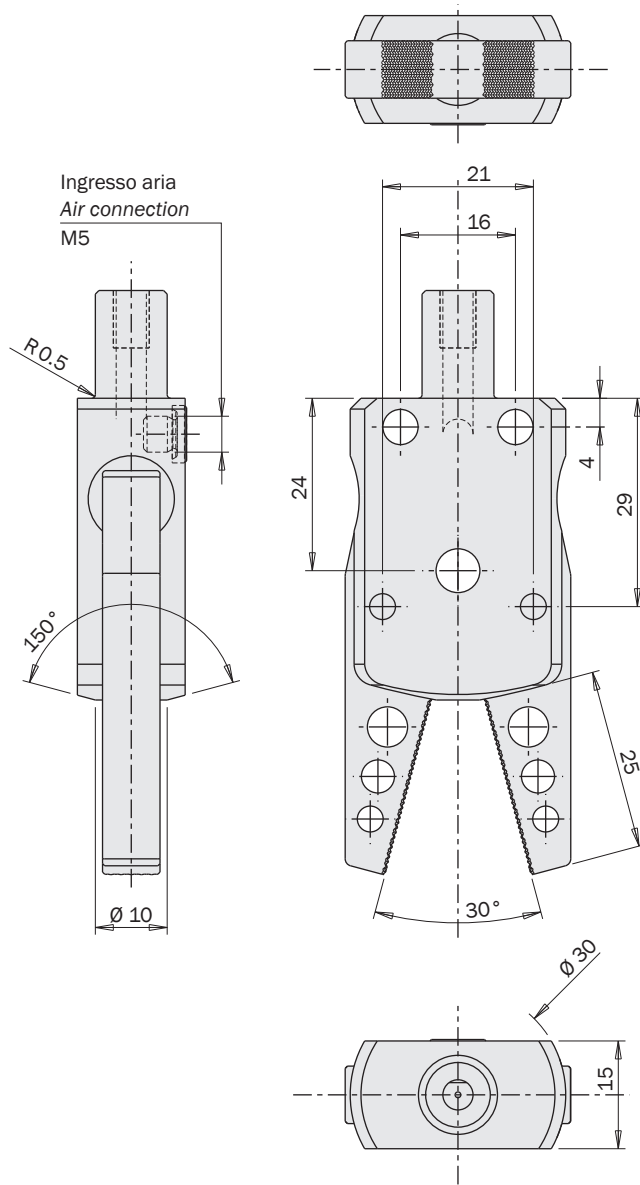
**Dimensions (mm)**



**PB-0140**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffi in acciaio.

**Dimensioni (mm)**



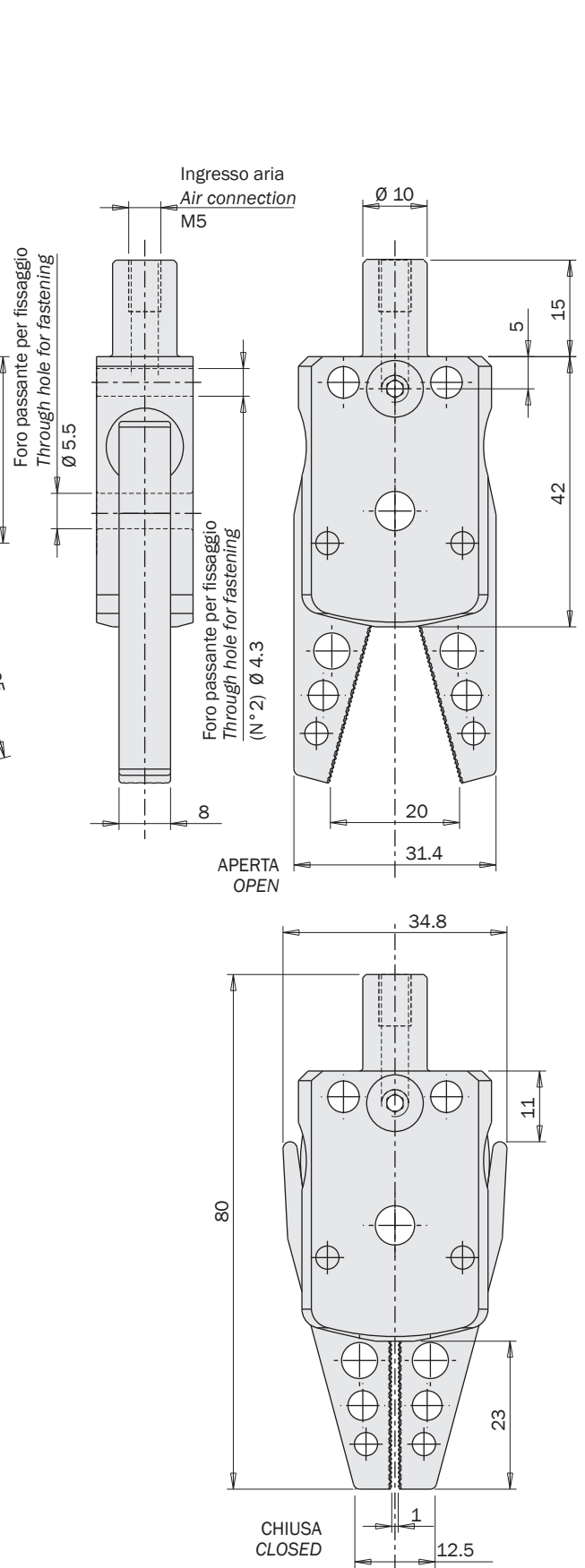
Griffe in acciaio con zigrinatura spinata (90°)  
Steel jaws with diamond knurl (90°)



**PB-0140**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Steel jaws.

**Dimensions (mm)**



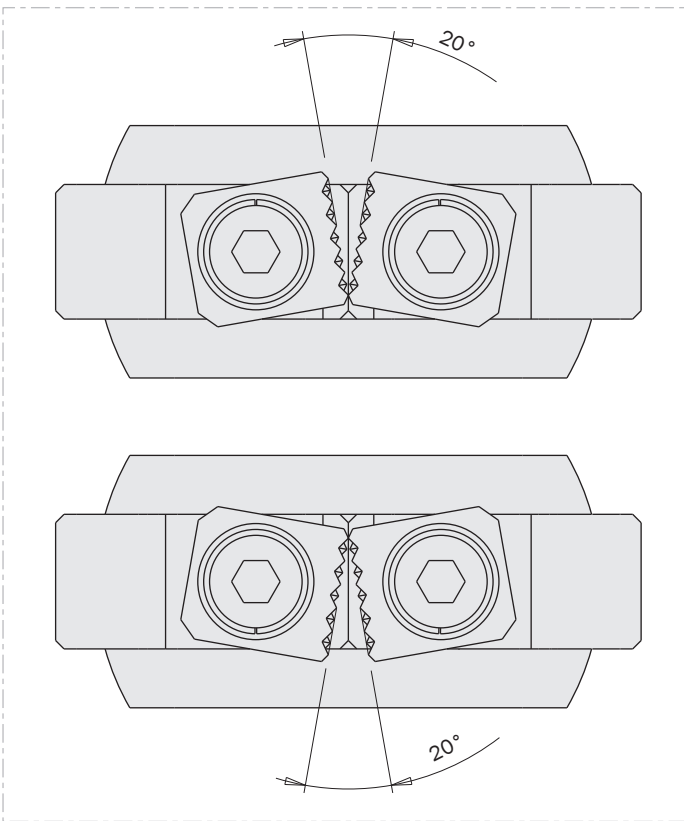
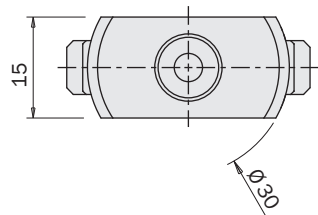
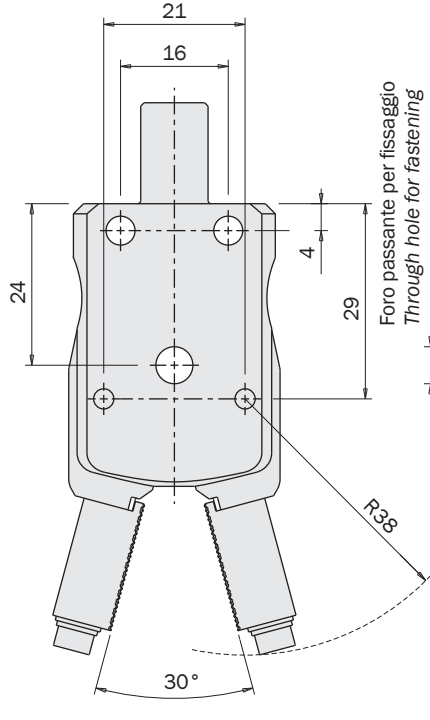
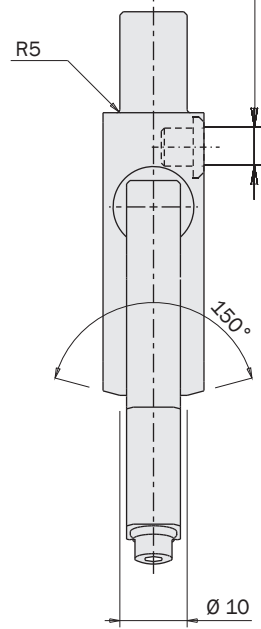
CHIUSA  
CLOSED

**PB-0150**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffe oscillanti per materozze coniche.

**Dimensioni (mm)**

Ingresso aria  
Air connection  
M5

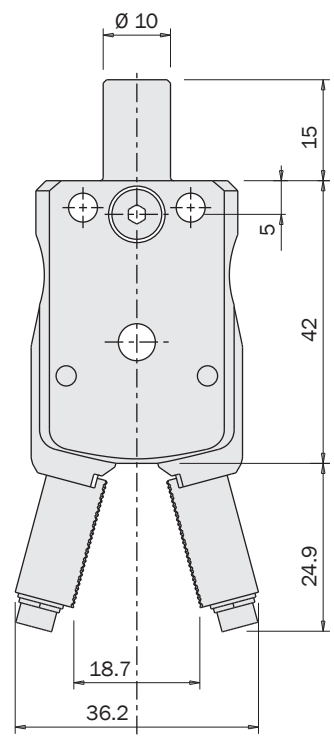
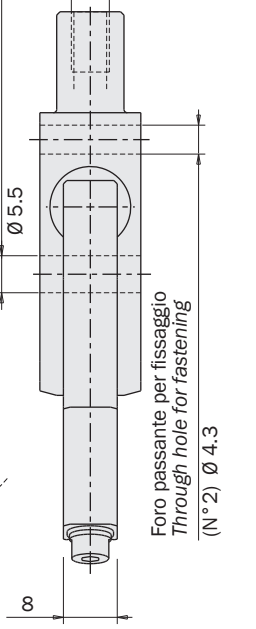


**PB-0150**

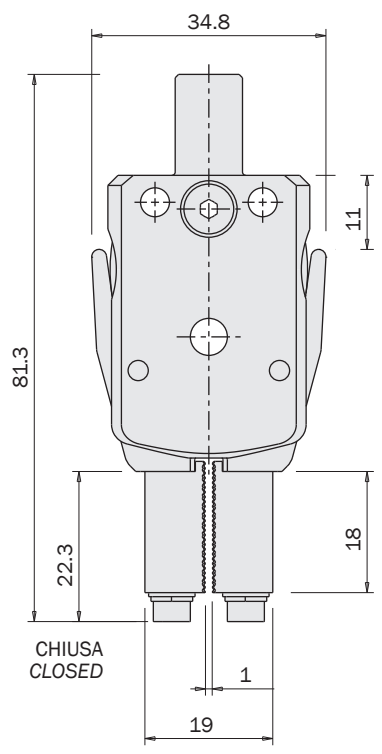
- Piston bore: 12mm.
- Single-acting with opening spring.
- Swiveling jaws for conical sprues.

**Dimensions (mm)**

Ingresso aria  
Air connection  
M5



APERTA  
OPEN



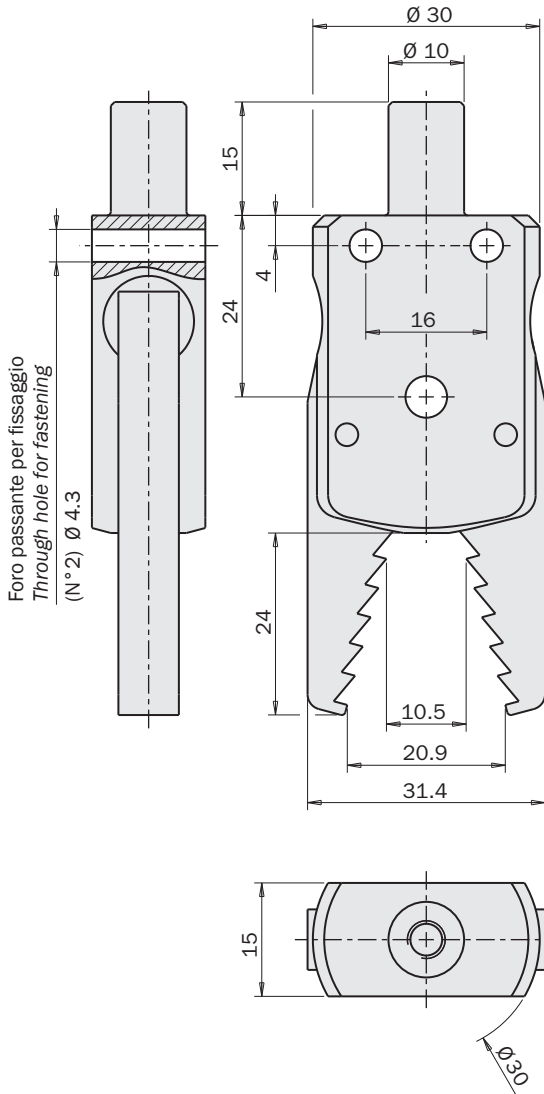
CHIUSA  
CLOSED

FIRST ANGLE  
PROJECTION

**PB-0160**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffe in acciaio.

**Dimensioni (mm)**

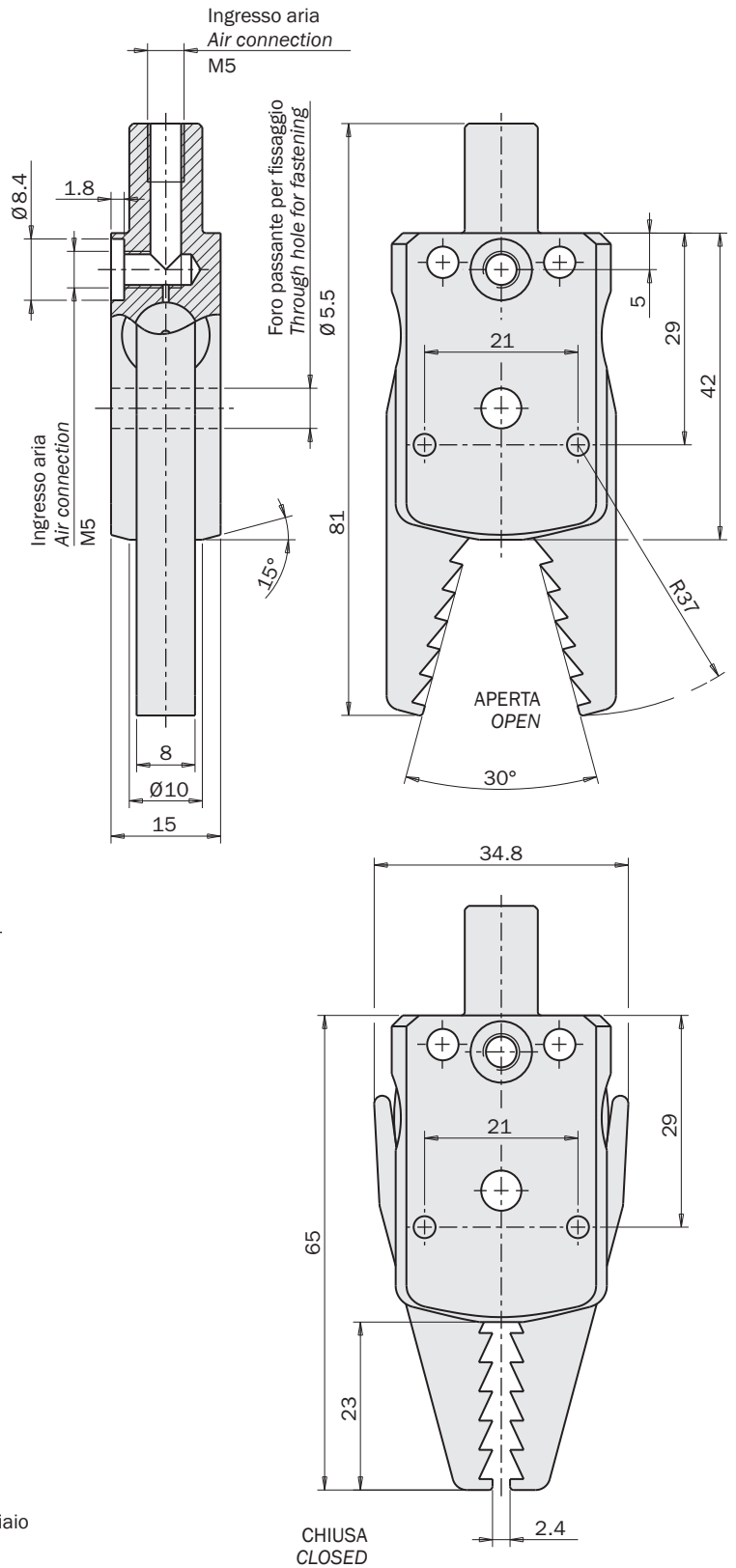


Griffe in acciaio  
Steel jaws

**PB-0160**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Steel jaws.

**Dimensions (mm)**



CHIUSA  
CLOSED

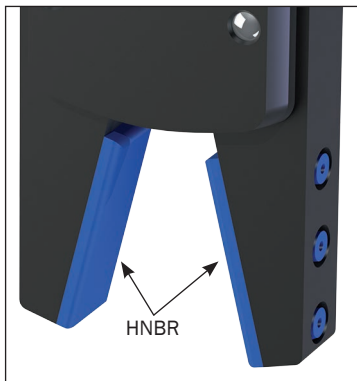
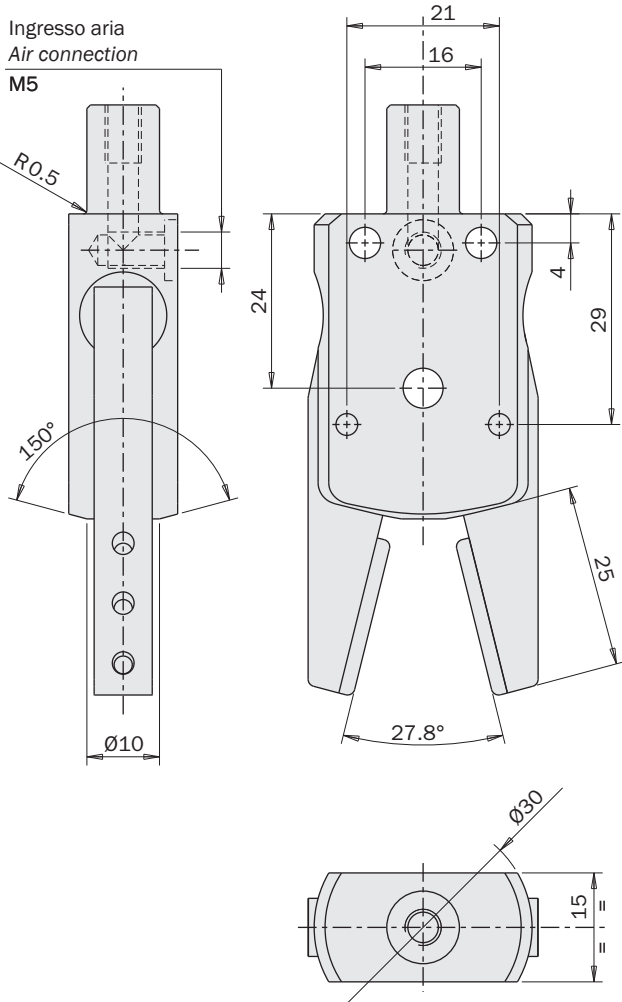
FIRST ANGLE  
PROJECTION



**PB-0170**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Pastiglia in gomma (HNBR) per contatto morbido.

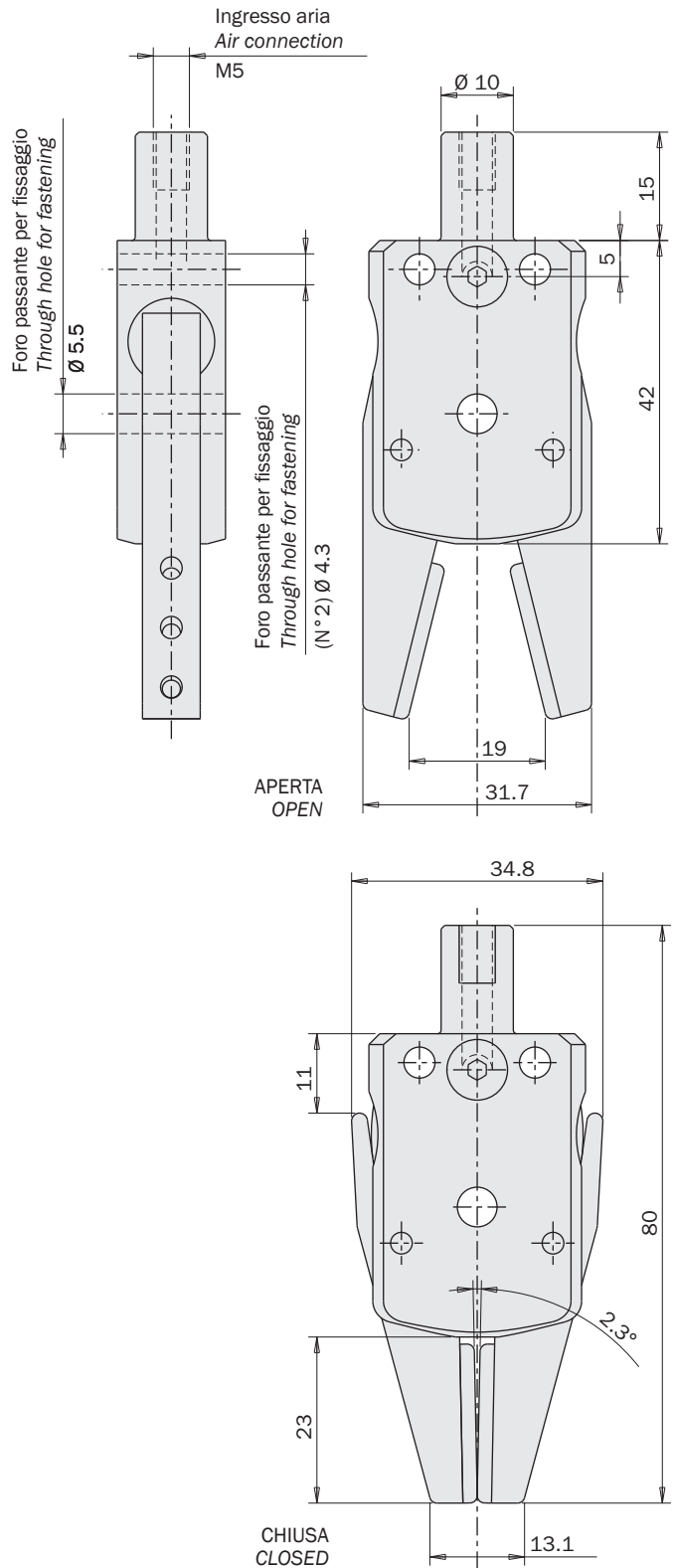
**Dimensioni (mm)**



**PB-0170**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Rubber (HNBR) pads for a soft contact.

**Dimensioni (mm)**

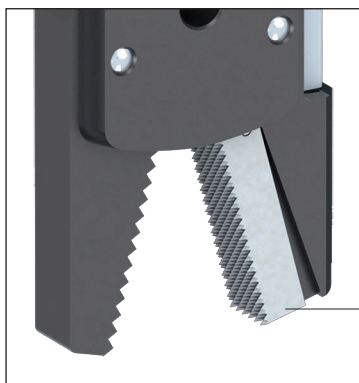
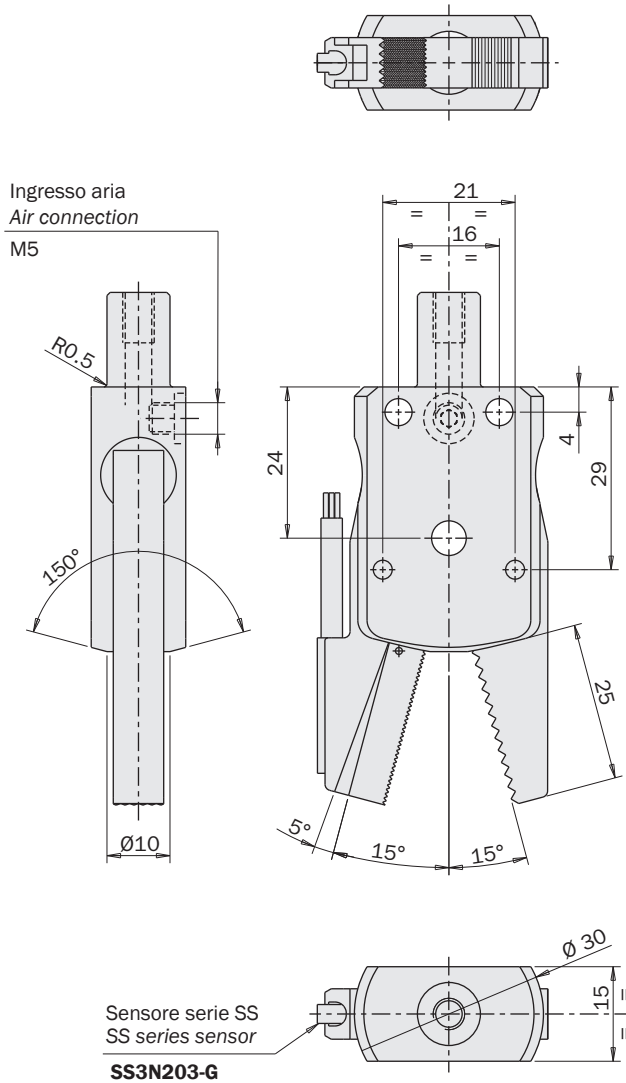


FIRST ANGLE PROJECTION

**PB-0180**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore SS3N203-G incluso e montato sulla punta della griffa.
- Tastatore in acciaio.

**Dimensioni (mm)**

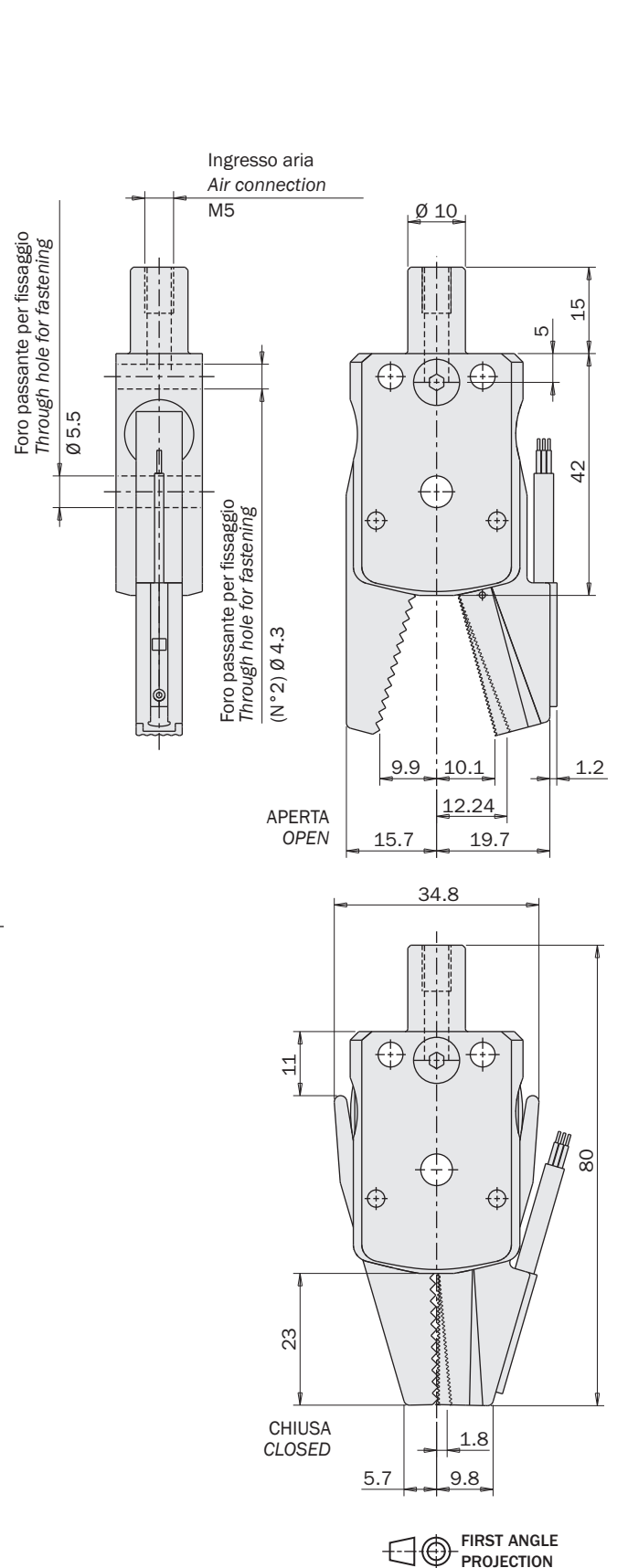


Tastatore in acciaio  
Steel probe

**PB-0180**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Sensor SS3N203-G included and fitted to the tip of the jaw.
- Steel probe.

**Dimensions (mm)**



**PB-0180-S2**

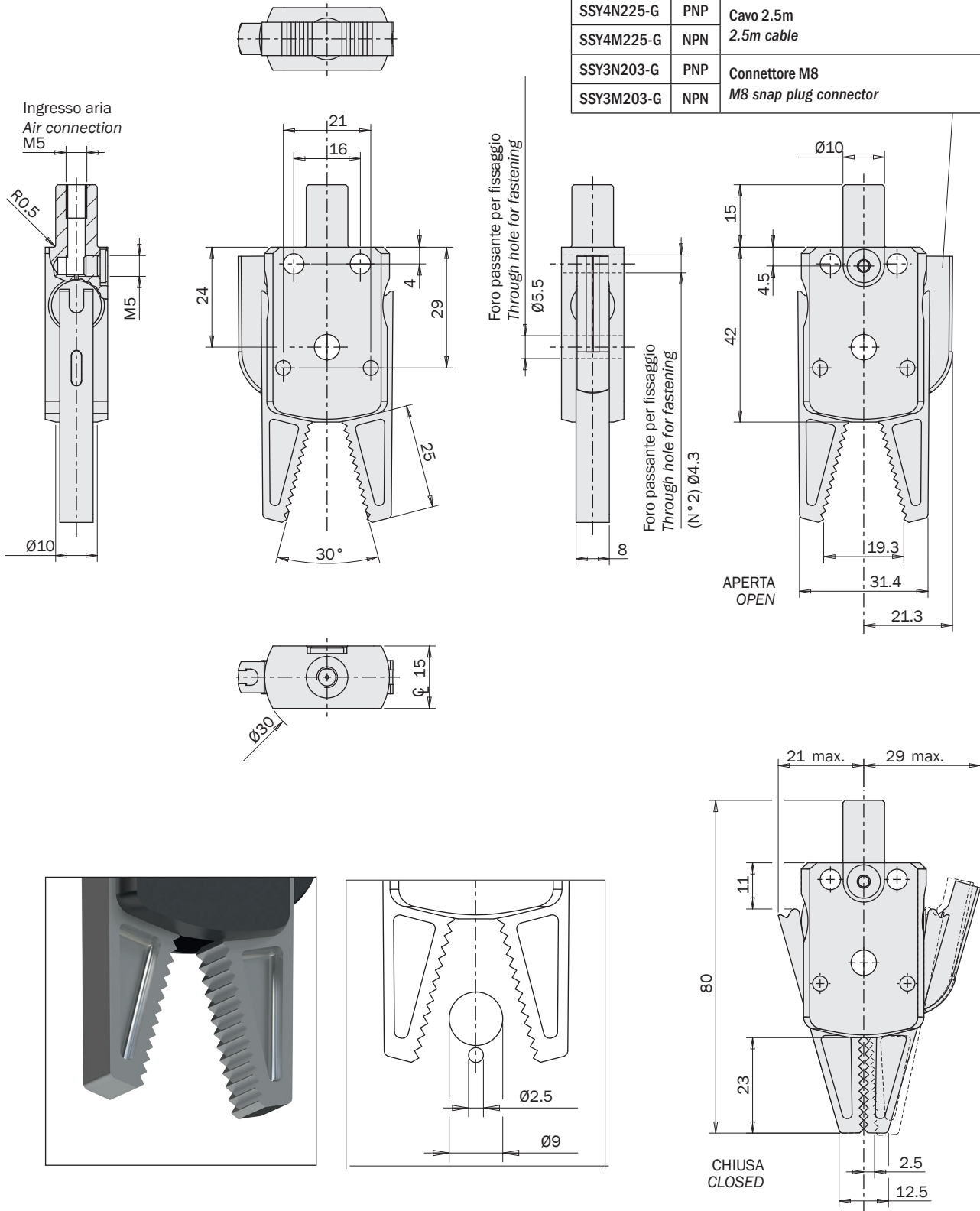
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore magnetico SSY opzionale con ingombro ridotto nella zona di presa.

**Dimensioni (mm)**

**PB-0180-S2**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Optional magnetic sensor SSY with reduced encumbrance in the grip area.

**Dimensions (mm)**

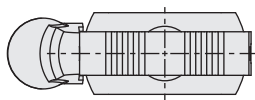


**PB-0180-SV**

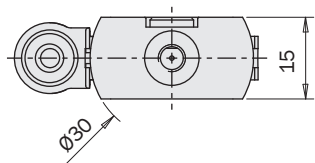
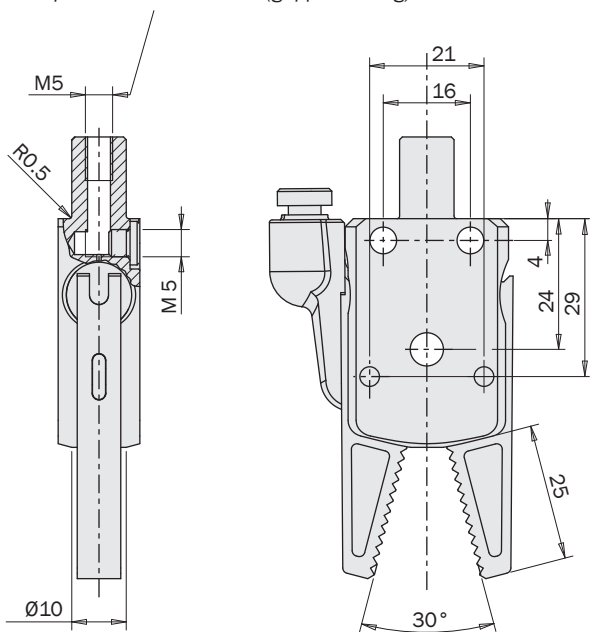
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Rilevamento della presa con sensore di vuoto.

**PB-0180-SV**

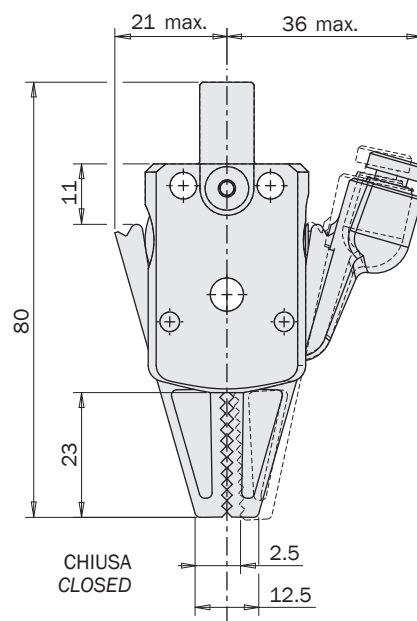
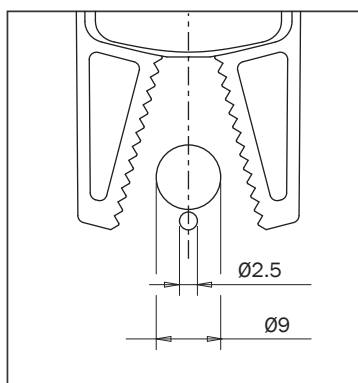
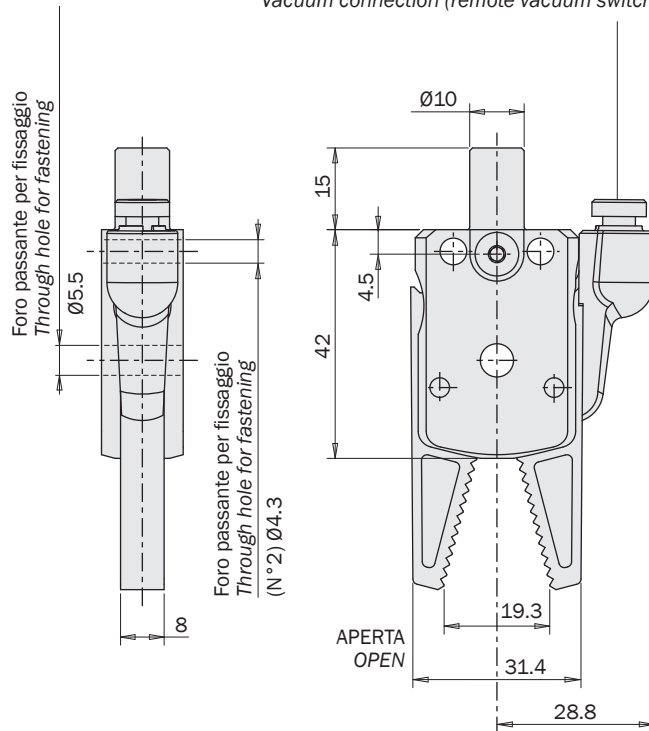
- Piston bore: 12mm.
- Single-acting with opening spring.
- Grip detection by vacuum sensor



Connessione per aria compressa (chiusura pinza)  
Compressed air connection (gripper closing)



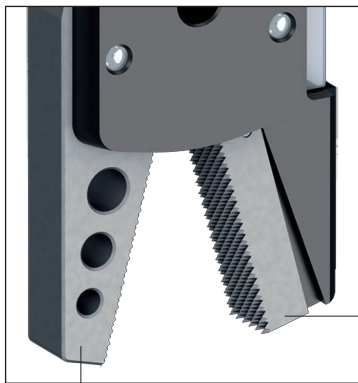
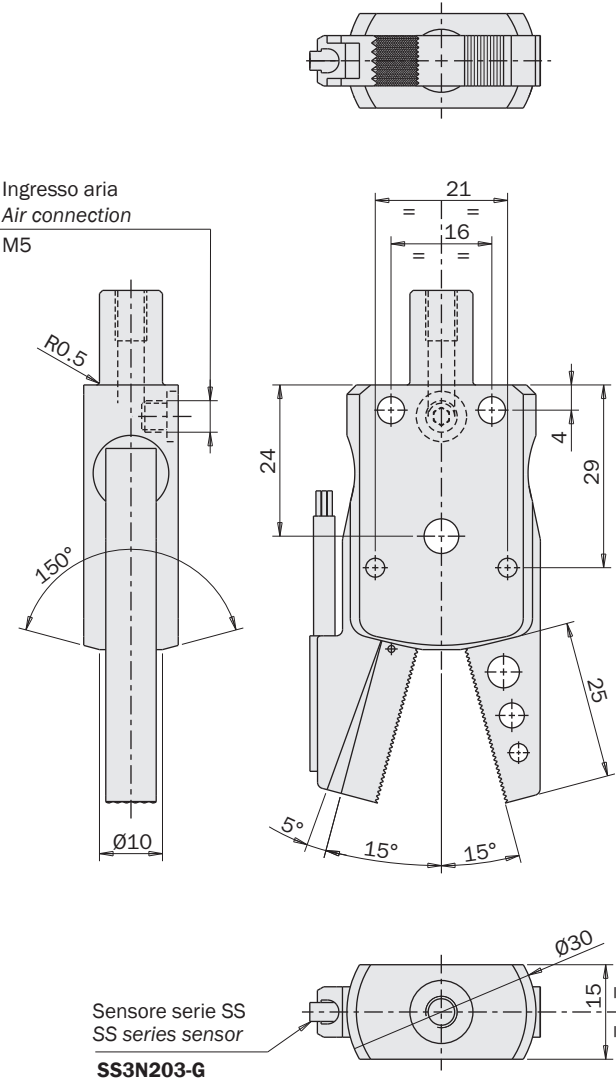
Connessione per vuoto (vacuostato remoto)  
Vacuum connection (remote vacuum switch)



**PB-0181**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore SS3N203-G incluso e montato sulla punta della griffa.
- Griffa e tastatore in acciaio.

**Dimensioni (mm)**



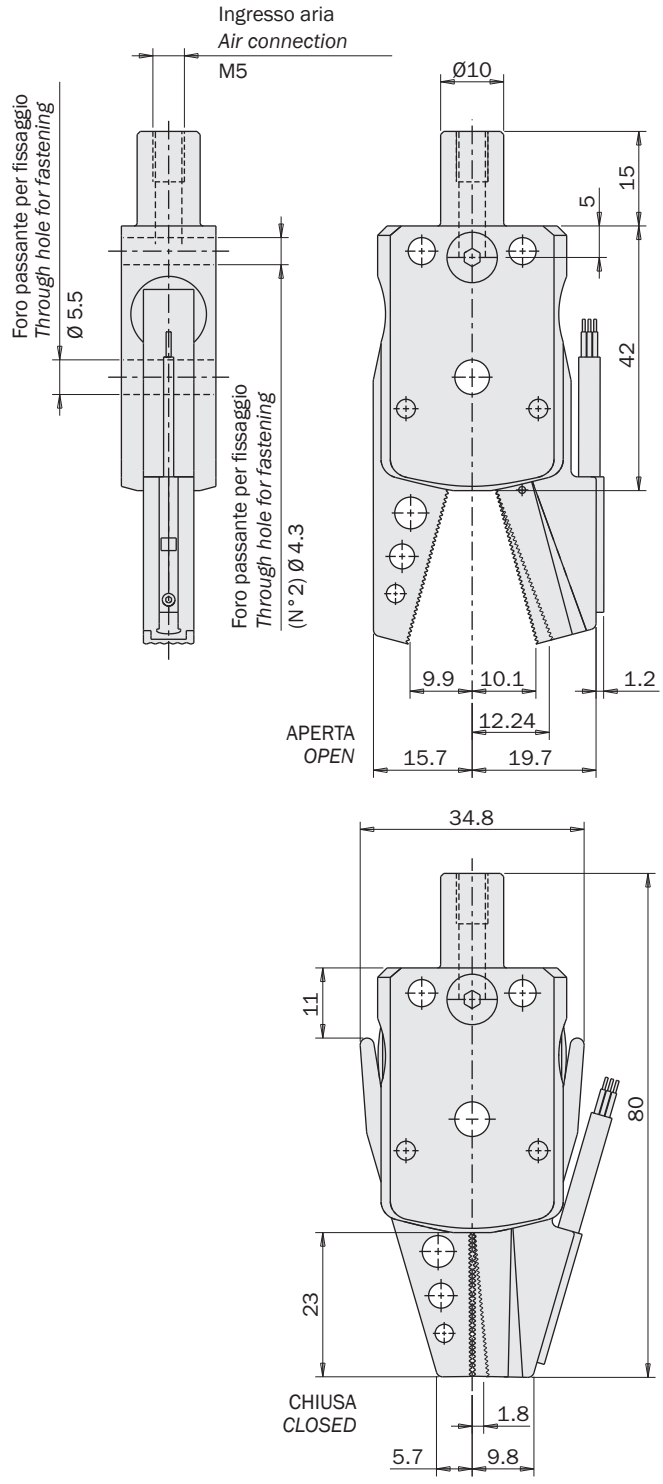
Griffa in acciaio  
Steel jaw

Tastatore in acciaio  
Steel probe

**PB-0181**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Sensor SS3N203-G included and fitted to the tip of the jaw.
- Steel jaw and probe.

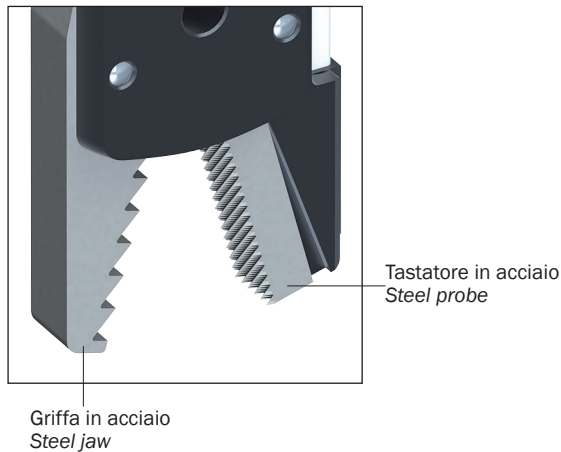
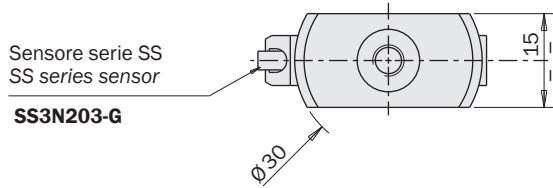
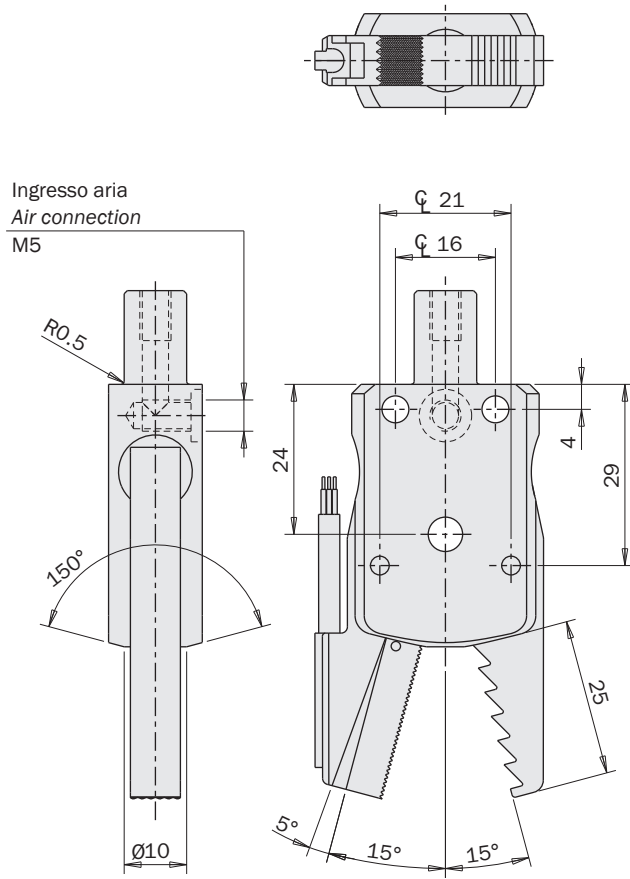
**Dimensions (mm)**



**PB-0182**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore SS3N203-G incluso e montato sulla punta della griffa.
- Griffa e tastatore in acciaio.

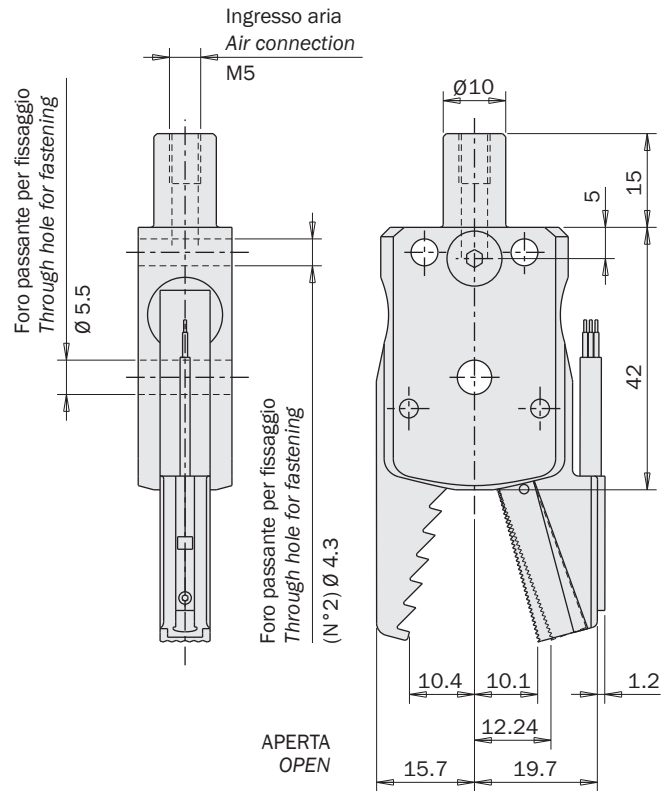
**Dimensioni (mm)**



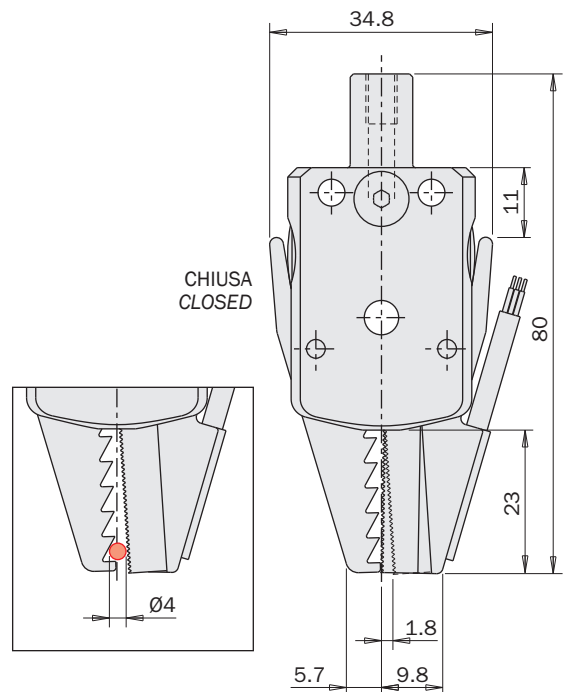
**PB-0182**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Sensor SS3N203-G included and fitted to the tip of the jaw.
- Steel jaw and probe.

**Dimensions (mm)**



APERTA  
OPEN



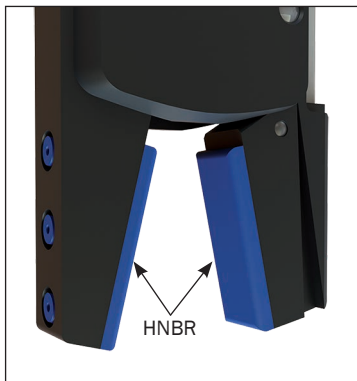
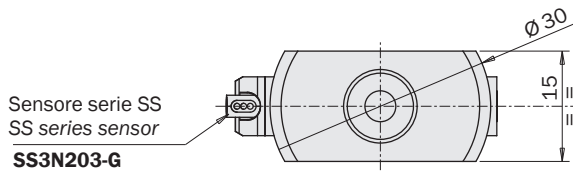
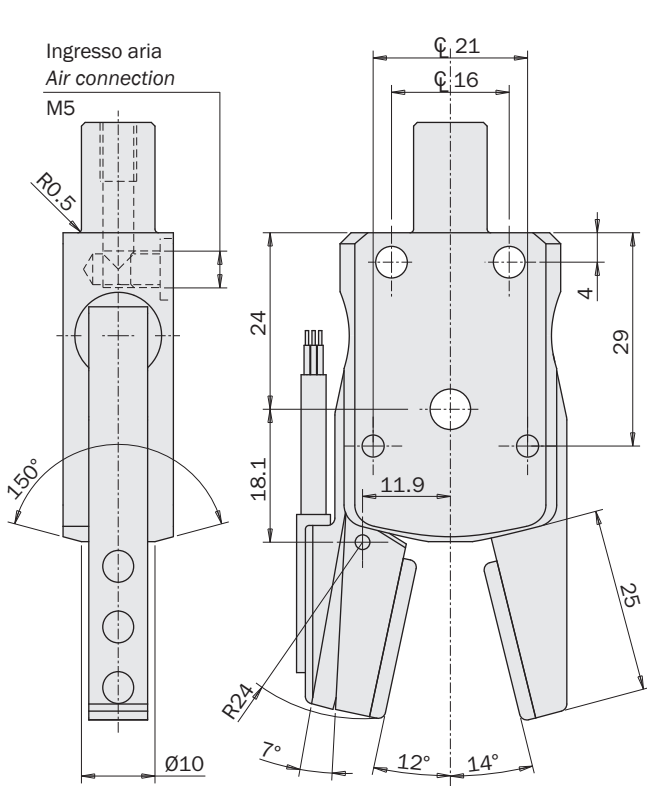
CHIUSA  
CLOSED

FIRST ANGLE  
PROJECTION

**PB-0187**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Pastiglia in gomma (HNBR) per contatto morbido.
- Sensore SS3N203-G incluso e montato sulla punta della griffa.

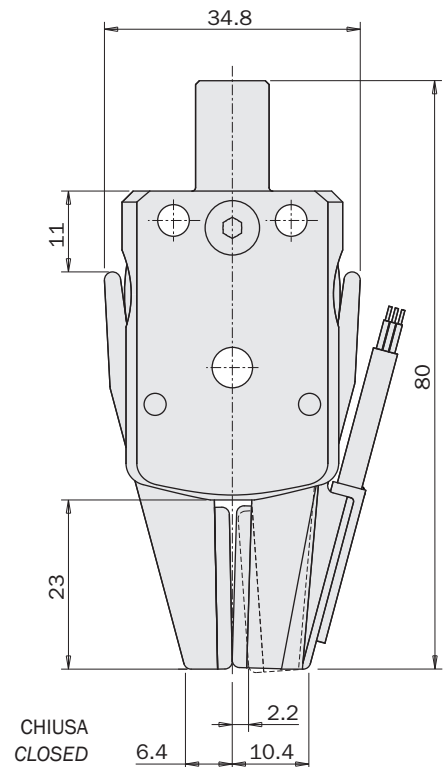
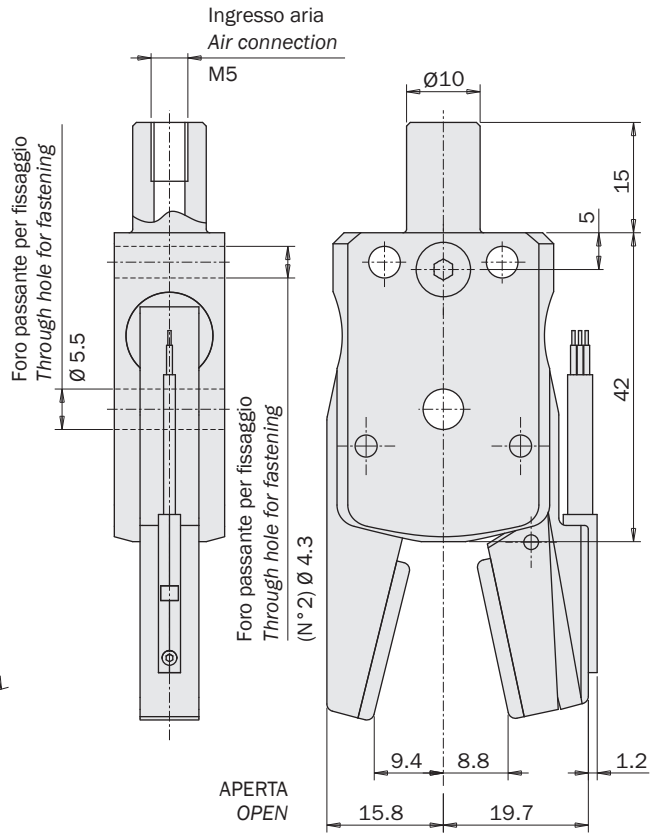
**Dimensioni (mm)**



**PB-0187**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Rubber (HNBR) pads for a soft contact.
- Sensor SS3N203-G included and fitted to the tip of the jaw.

**Dimensions (mm)**

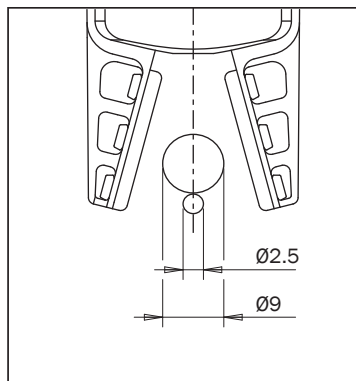
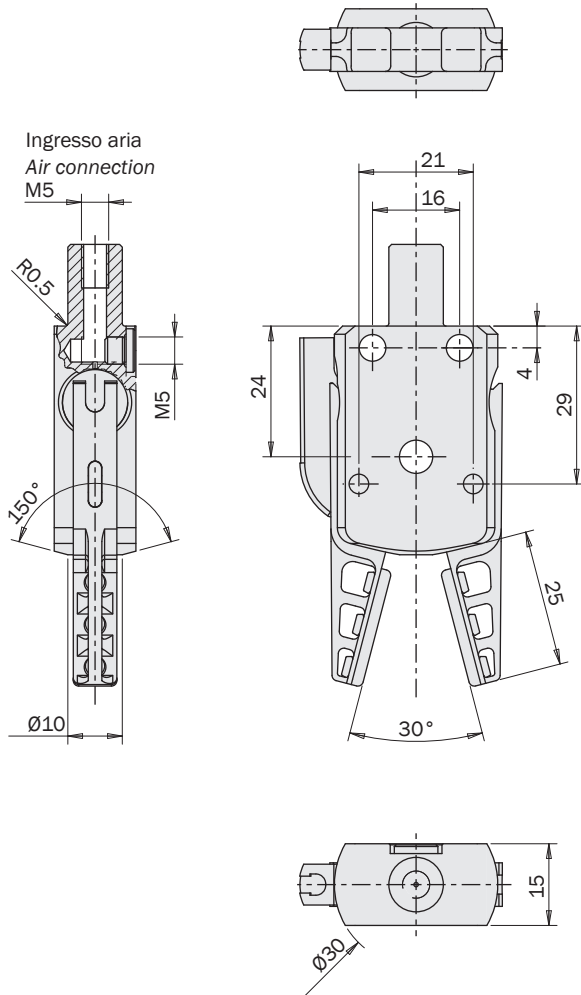


FIRST ANGLE  
PROJECTION

**PB-0187-S2**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Pastiglia in gomma (HNBR) per contatto morbido.
- Sensore magnetico SSY opzionale con ingombro ridotto nella zona di presa.

**Dimensioni (mm)**



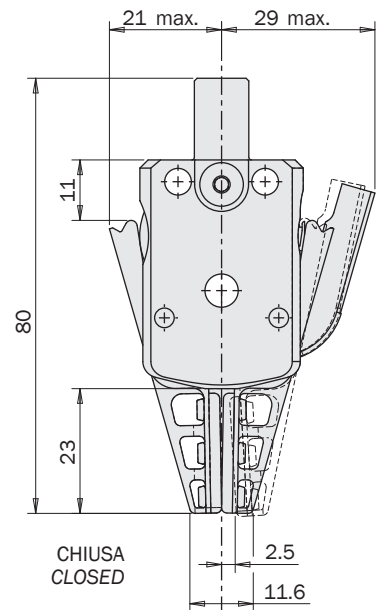
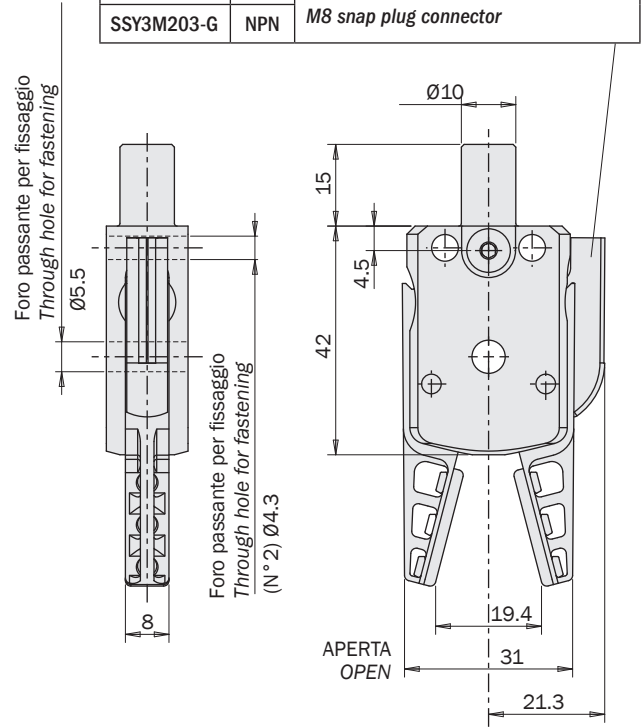
**PB-0187-S2**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Rubber (HNBR) pads for a soft contact.
- Optional magnetic sensor SSY with reduced encumbrance in the grip area.

**Dimensions (mm)**

**I sensori opzionali sono:**  
**The optional sensors are:**

SSY4N225-G	PNP	Cavo 2.5m
SSY4M225-G	NPN	2.5m cable
SSY3N203-G	PNP	Connettore M8
SSY3M203-G	NPN	M8 snap plug connector



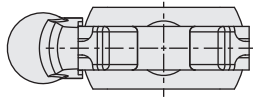


**PB-0187-SV**

- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Rilevamento della presa con sensore di vuoto.

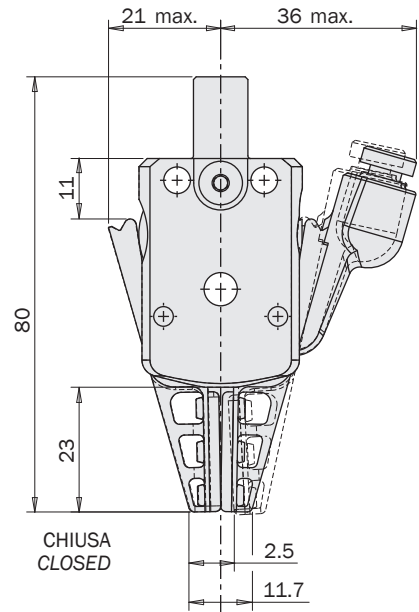
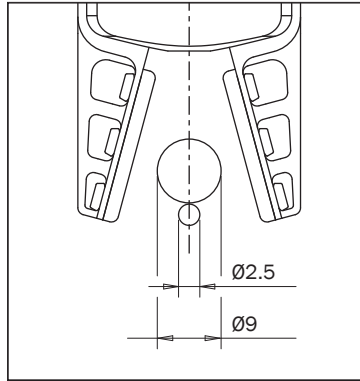
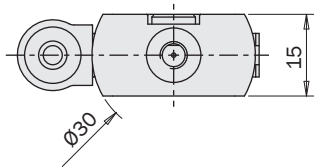
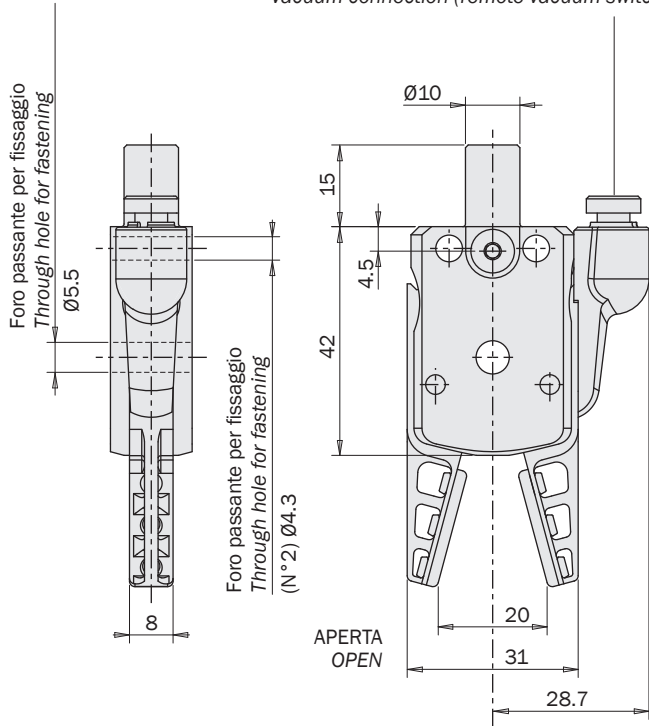
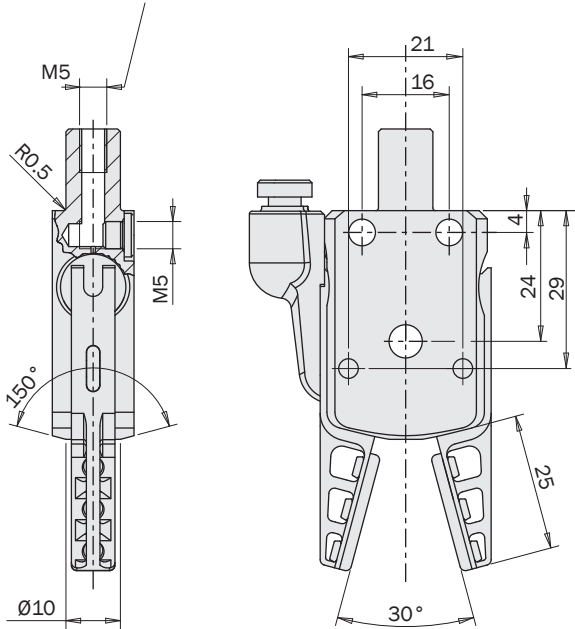
**PB-0187-SV**

- Piston bore: 12mm.
- Single-acting with opening spring.
- Grip detection by vacuum sensor



Connessione per aria compressa (chiusura pinza)  
Compressed air connection (gripper closing)

Connessione per vuoto (vacuostato remoto)  
Vacuum connection (remote vacuum switch)



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

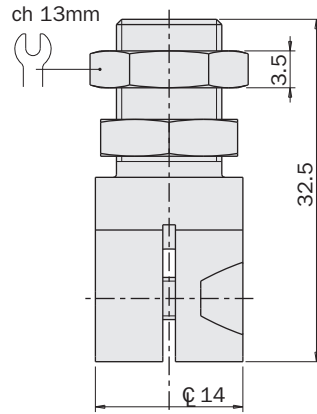
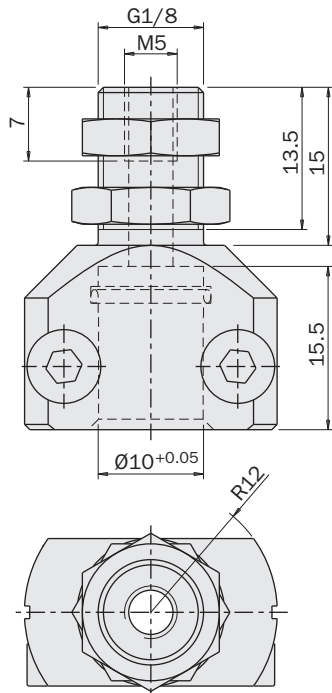
Sensori  
Sensors

**Adattatore per pinze PB**

(Non per PB-0002)

**Adapter fitting for PB grippers**

(Not for PB-0002)

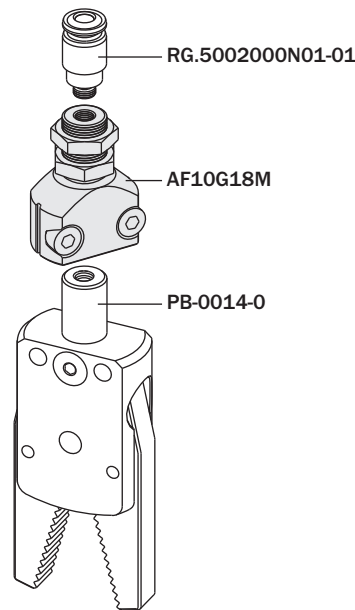
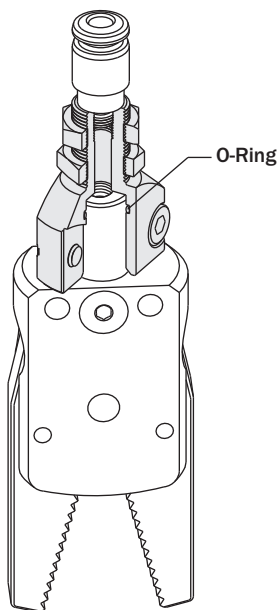


FIRST ANGLE PROJECTION

	<b>AF10G18M</b>
<b>Peso</b> <b>Weight</b>	<b>18 g</b>



**Esempi di utilizzo**  
**Application example**



**Pinza pneumatica per materozze, angolare non autocentrante a due griffe serie BB**

- BB-12-00 a doppio effetto.
- BB-12-NO normale aperta.
- BB-13-NO normale aperta con sensore.
- Corpo e griffe fusi in lega di zinco (zama).
- Profilo sottile.
- Doppia possibilità di fissaggio.
- Grasso alimentare FDA-H1.

**2-jaw non-selfcentering angular pneumatic sprue gripper series BB**

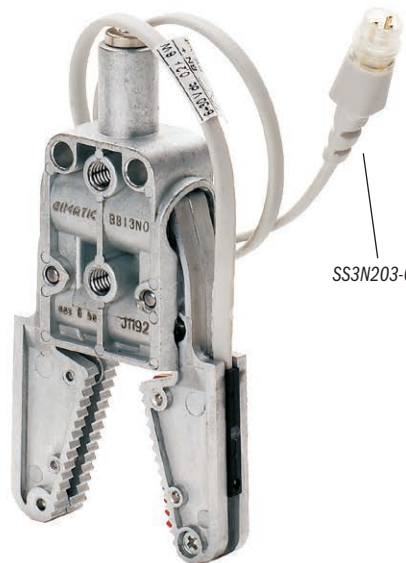
- BB-12-00 double-acting.
- BB-12-NO normally open.
- BB-13-NO normally open with sensor.
- Housing and jaws die-casted in zinc alloy (zamak).
- Flat profile.
- Two fastening options.
- Food grade grease FDA-H1.



**BB-12-00**



**BB-12-NO**



**BB-13-NO**

SS3N203-G (\*)

(\*)  
Il sensore SS3N203-G è incluso.  
The sensor SS3N203-G is included.

	BB-12-00	BB-12-NO	BB-13-NO
Fluido Medium	Aria compressa filtrata, lubrificata / non lubrificata Filtered, lubricated / non lubricated compressed air		
Pressione di esercizio Pressure range	2.5 ÷ 8 bar		
Temperatura di esercizio Temperature range	5 ÷ 60 °C.		
Corsa Stroke	2 x 15°		
Coppia di serraggio per griffa in chiusura a 6 bar Closing gripping torque at 6 bar each jaw	65 Ncm	60 Ncm	60 Ncm
Coppia per griffa in apertura a 6 bar Opening gripping torque at 6 bar each jaw	20 Ncm	-	-
Coppia per griffa in apertura a 0 bar Opening gripping torque at 0 bar each jaw	-	5 Ncm	5 Ncm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	3 Hz
Consumo d'aria per ciclo Cycle air consumption	1.5 cm <sup>3</sup>	1.1 cm <sup>3</sup>	1.1 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.01 s	0.01 s	0.01 s
Peso Weight	75 g	77 g	90 g

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

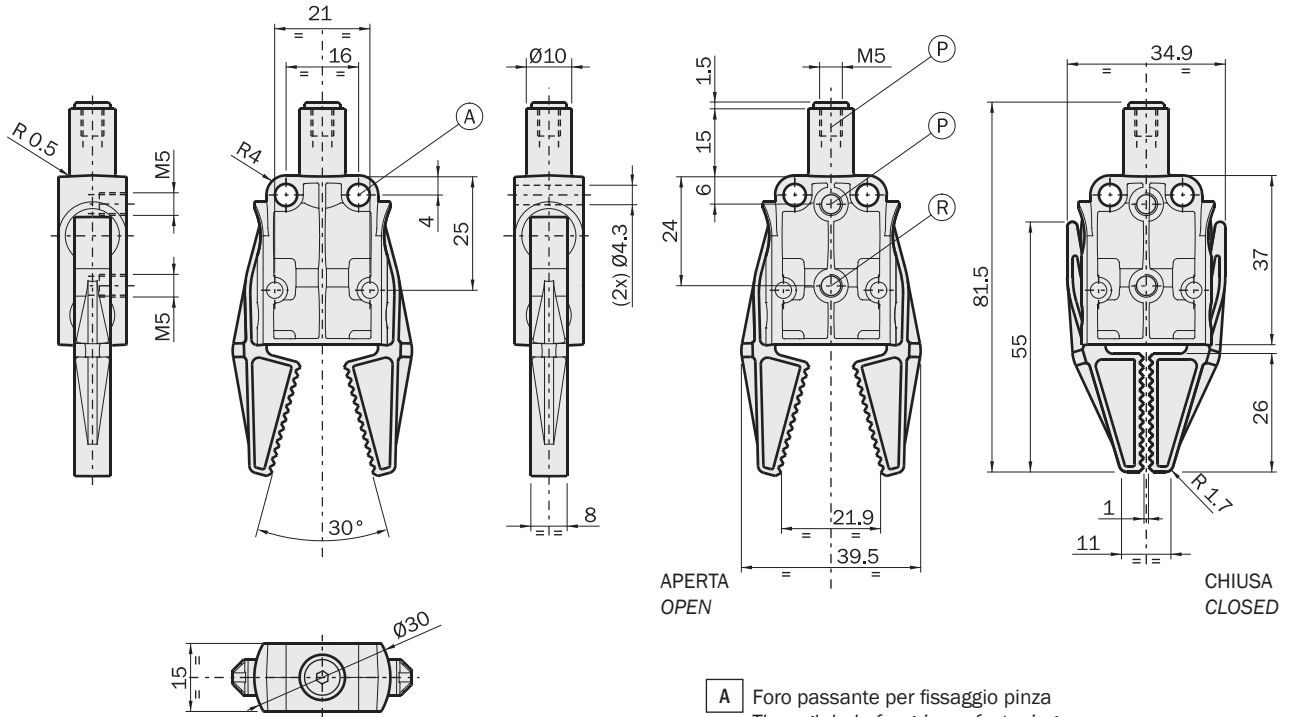
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**BB-12-00**  
**BB-12-NO**



- A** Foro passante per fissaggio pinza  
*Through hole for gripper fastening*
- P** Aria compressa in P: chiusura della pinza  
*Compressed air in P: gripper closing*
- R** Aria compressa in R: apertura della pinza  
*Compressed air in R: gripper opening*

FIRST ANGLE  
PROJECTION

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

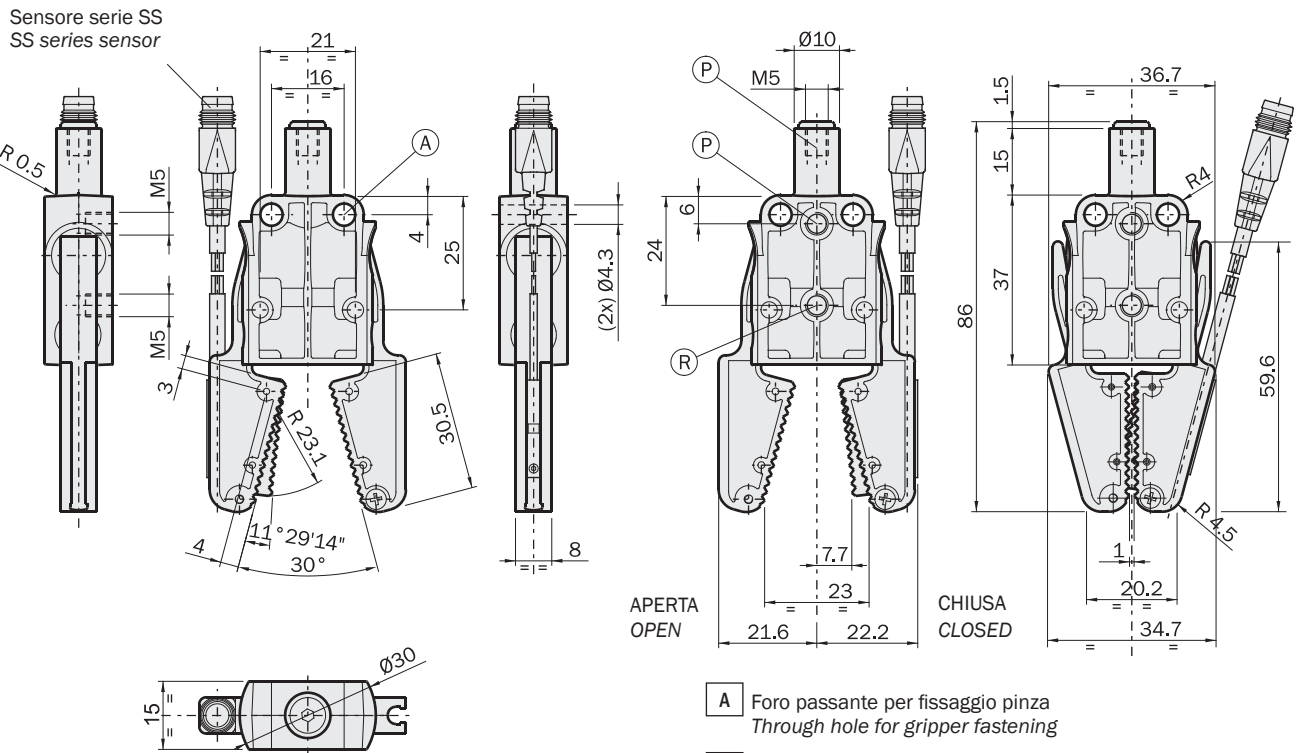
Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

**Dimensioni (mm)**  
**Dimensions (mm)**

**BB-13-NO**



- A** Foro passante per fissaggio pinza  
*Through hole for gripper fastening*
- P** Aria compressa in P: chiusura della pinza  
*Compressed air in P: gripper closing*
- R** Aria compressa in R: apertura della pinza  
*Compressed air in R: gripper opening*

FIRST ANGLE  
PROJECTION

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

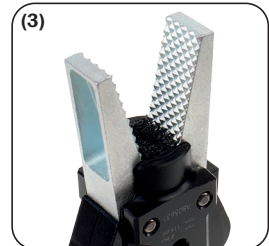
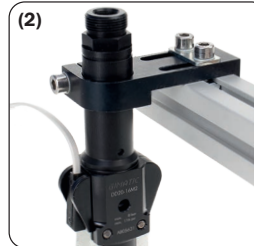
## Pinza pneumatica per materozze, angolare autocentrante a due griffe, serie DD

- Nuovo concetto con sensore arretrato e minore ingombro nella zona di presa.
- Sensori magnetici opzionali (1).
- Il sensore è acceso solo quando viene pinzato qualcosa.
- Azionamento a semplice effetto con apertura a molla.
- Elevata forza di serraggio.
- Vari accessori disponibili per il fissaggio (2).
- Griffe in acciaio.
- Grasso alimentare FDA-H1.
- Protezione contro l'ingresso di piccoli corpi estranei (3).
- Fine corsa robusti.

## 2-jaw self-centering angular pneumatic sprue gripper, series DD

- New concept with retracted sensor and smaller dimensions in the grip area.
- Optional magnetic sensors (1).
- The sensor is ON only when something is gripped.
- Single acting with spring opening.
- Very high closing force.
- Several mounting accessories (2).
- Steel jaws.
- FDA-H1 food-grade grease.
- Protection against the entry of small foreign bodies (3).
- Heavy-duty end-strokes.

SS4N225-G	PNP	Cavo 2.5m
SS4M225-G	NPN	2.5m cable
SS3N203-G	PNP	Connettore M8
SS3M203-G	NPN	



NEW

NEW

NEW

NEW

NEW

NEW

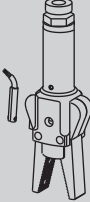
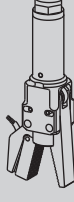
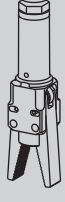
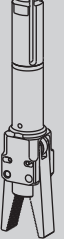
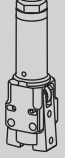


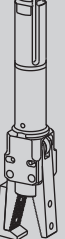
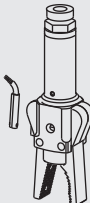
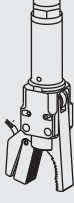
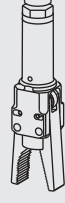
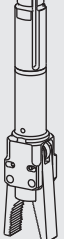
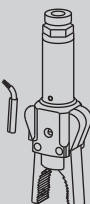
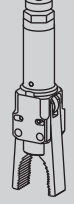
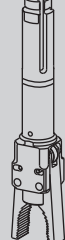

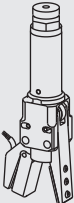
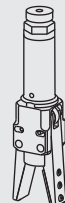
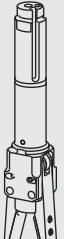

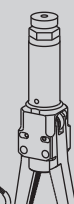
	DD20-16MV	DD20-16LV	DD20-16M2	DD20-16L2	DD20-16E2	DD20-16W2	DD20-16B2
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]						
Pressione di esercizio Pressure range	3.5 ÷ 8 bar						
Temperatura di esercizio Temperature range	5 ÷ 60 °C.						
Corsa Stroke	2 x 15°						
Coppia di chiusura per griffa a 6 bar Closing torque at 6 bar each jaw	300 Ncm						
Coppia di chiusura totale a 6 bar Total closing torque at 6 bar	600 Ncm						
Coppia di apertura per griffa a 0 bar Opening torque at 0 bar each jaw	20 Ncm						
Coppia di apertura totale a 0 bar Total opening torque at 0 bar	40 Ncm						
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz						
Consumo d'aria per ciclo Cycle air consumption	3.6 cm <sup>3</sup>						
Tempo di chiusura senza carico Closing time without load	0.03 s						
Peso Weight	119 g	116 g	114 g	110 g	123 g	118 g	140 g

## Passare alla nuova versione

Le vecchie pinze DD verranno dismesse, ma quelle nuove sono intercambiabili. Le dimensioni esterne sono le stesse e tutte le opzioni del dito sono ancora disponibili. Con il vecchio schema c'erano versioni con sensore (o sulla punta del dito o sulla coda del corpo) e versioni senza. Con il nuovo schema è possibile utilizzare la stessa pinza con o senza sensore. E il sensore può essere scelto tra le versioni PNP/NPN e cavo/connettore.

## Change to the new version

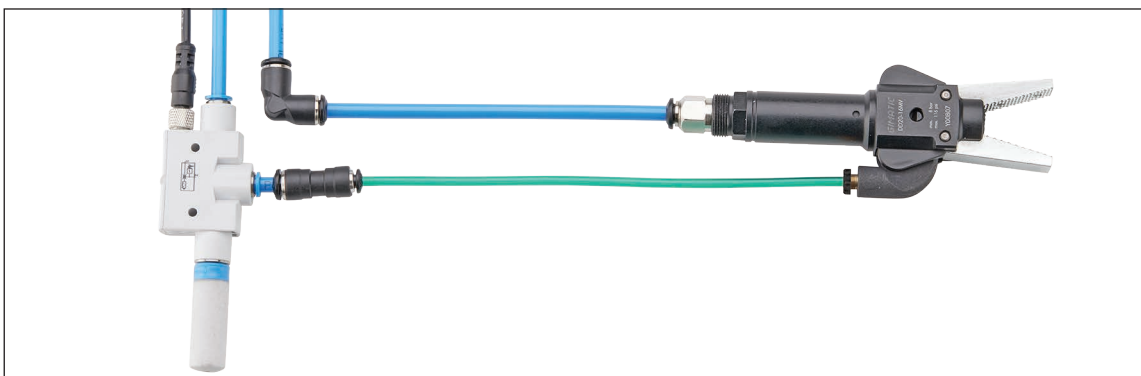
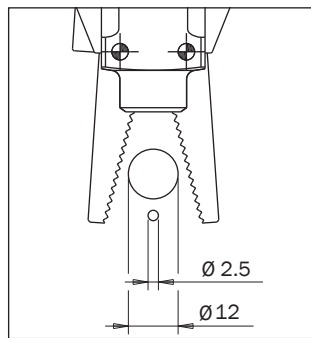
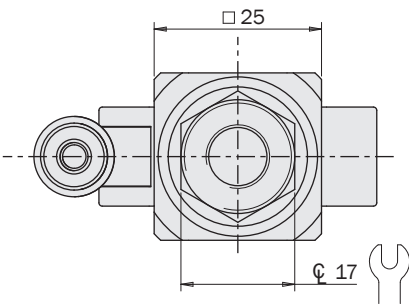
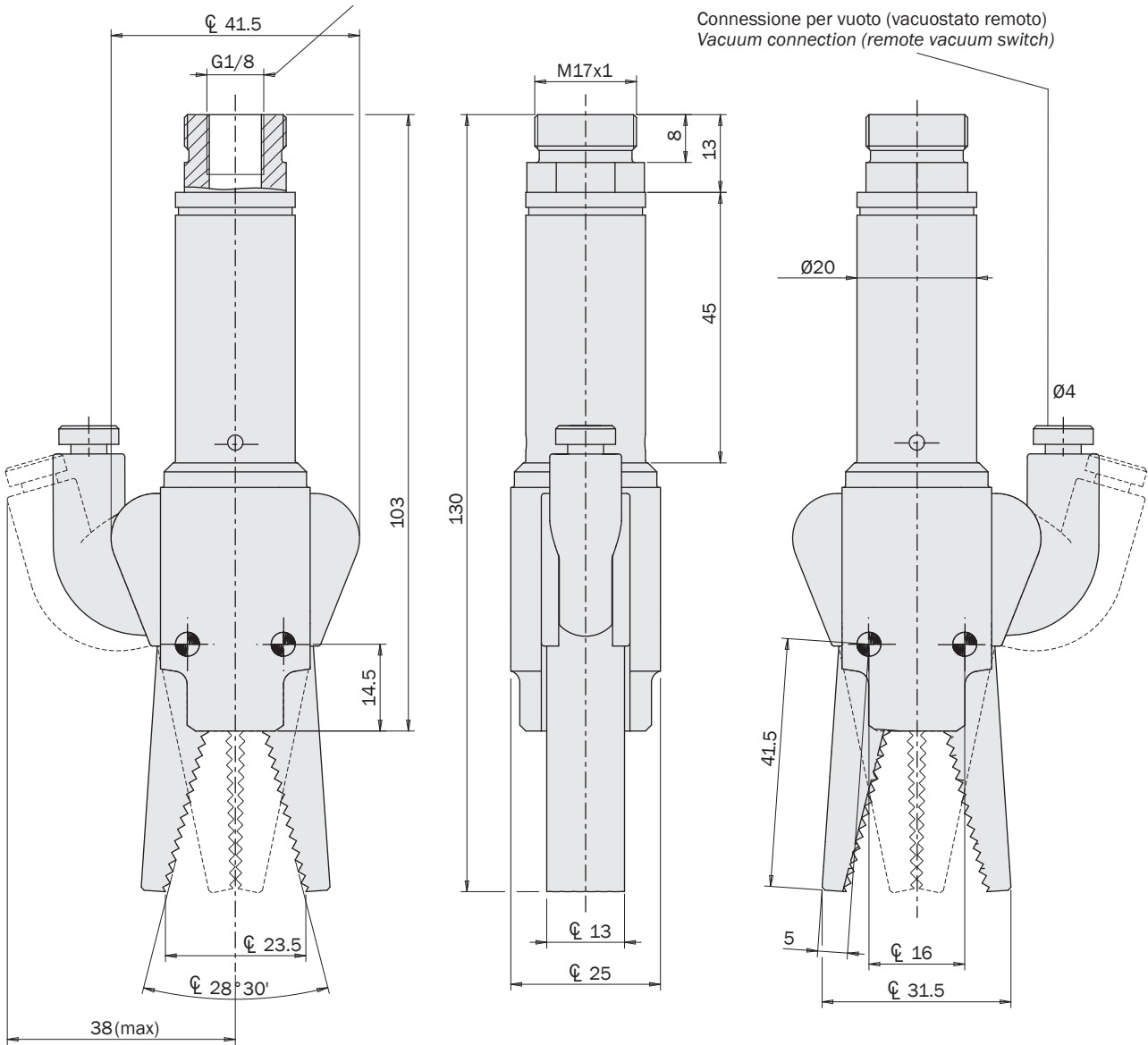
The old DD grippers will be discontinued, however the new ones are compatible. Outer dimensions are the same and all the finger options are still available. The old scheme had versions with sensor (either on the finger tip or on the body tail) and versions without sensor. The new scheme enables to use the same gripper with or without sensor. Moreover, the sensor can be chosen amongst the PNP/NPN and cable/connector versions.

Nuova versione New version	Vecchia versione Old version							
<b>DD20-16M2</b> 	<b>DD20-16M</b> 	<b>DD20-16R</b> 	<b>DD20-16RS</b> 	<b>DD20-16A</b> 	<b>DD20-16AS</b> 	<b>DD20-16T</b> 	<b>DD20-16TS</b> 	
<b>DD20-16W2</b> 	<b>DD20-16W</b> 	<b>DD20-16K</b> 	<b>DD20-16KS</b> 					
<b>DD20-16E2</b> 	<b>DD20-16E</b> 	<b>DD20-16ES</b> 						
<b>DD20-16L2</b> 	<b>DD20-16L</b> 	<b>DD20-16P</b> 	<b>DD20-16PS</b> 					
<b>DD20-16B2</b> 	<b>DD20-16B</b> 							

**Dimensioni (mm)**  
**Dimensions (mm)**

Connessione per aria compressa (chiusura pinza)  
Compressed air connection (gripper closing)

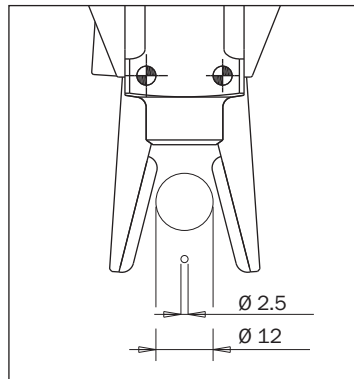
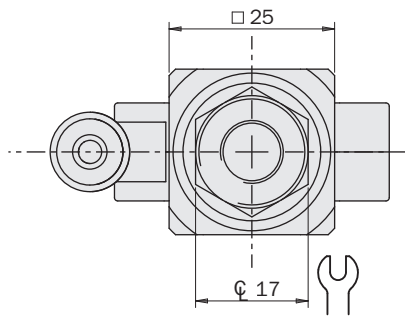
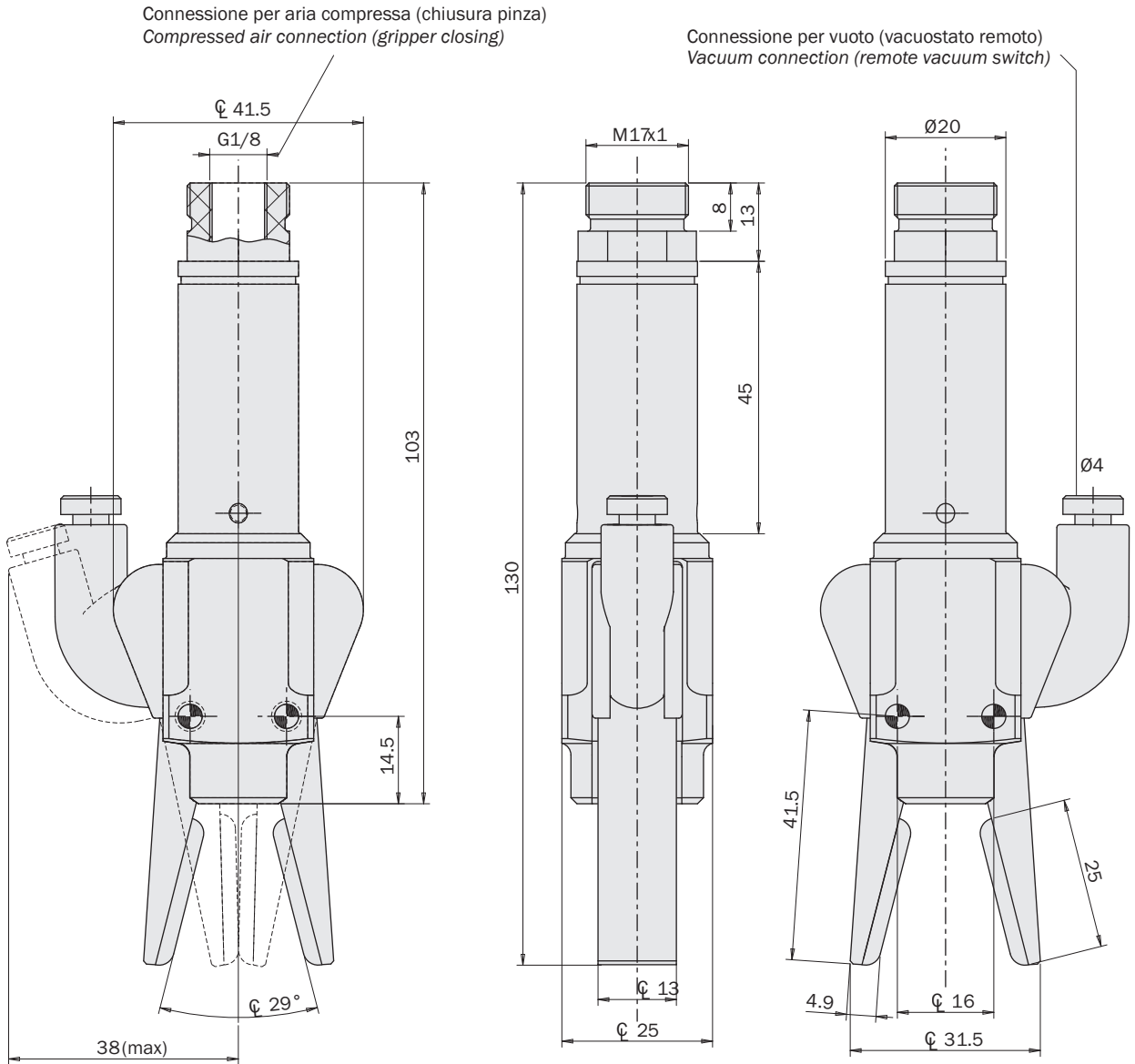
Connessione per vuoto (vacuostato remoto)  
Vacuum connection (remote vacuum switch)



- Unità Rotanti  
Rotary Units
- Cambia Utensile  
Quick Changer
- Profili e Staffe  
Profiles and Brackets
- Pinze  
Grippers
- Attuatori Lineari  
Linear Actuators
- Sospensioni  
Suspensions
- Taglierini  
Nippers
- Kit-Robot  
Robot Kit
- Accessori Opzionali  
Options
- Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

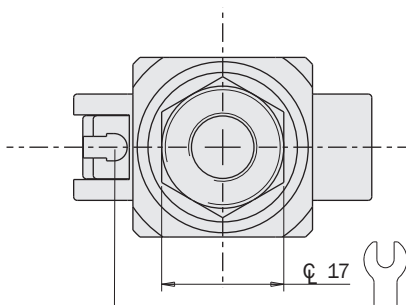
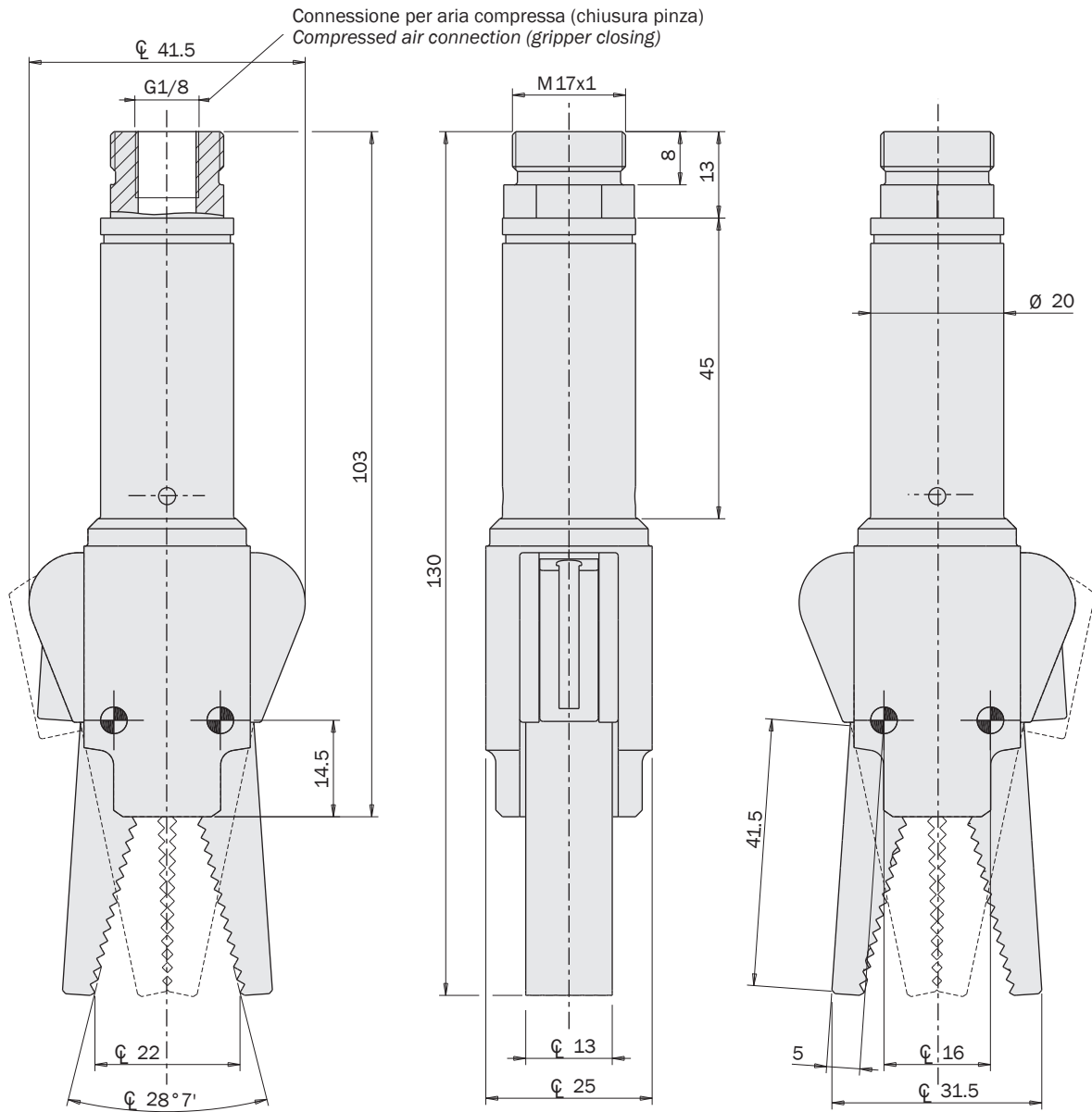
**DD20-16LV**



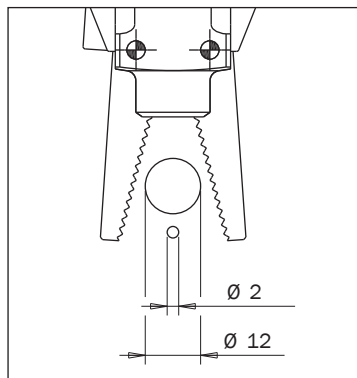


**Dimensioni (mm)**  
**Dimensions (mm)**

**DD20-16M2**



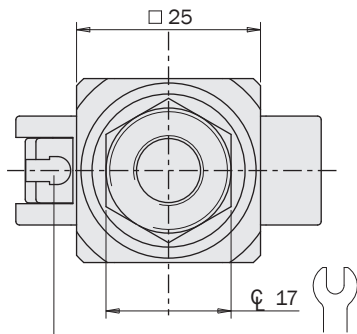
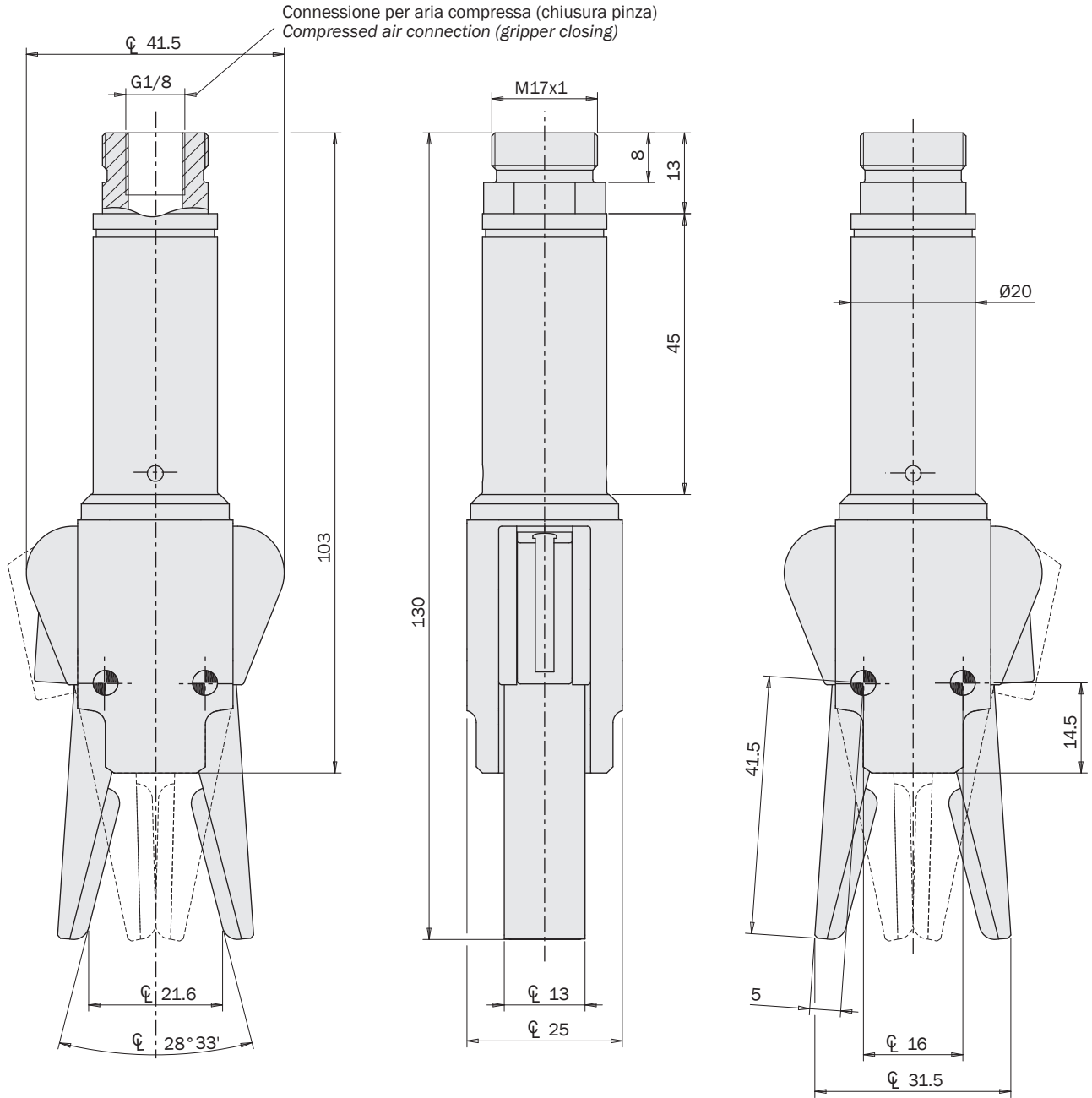
Cava del sensore serie SS  
Sensor slot SS series



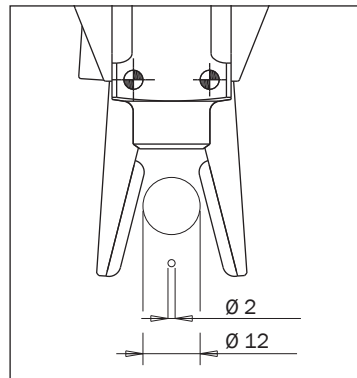
- Unità Rotanti  
Rotary Units
- Cambia Utensile  
Quick Changer
- Profili e Staffe  
Profiles and Brackets
- Pinze  
Grippers
- Attuatori Lineari  
Linear Actuators
- Sospensioni  
Suspensions
- Taglierini  
Nippers
- Kit-Robot  
Robot Kit
- Accessori Opzionali  
Options
- Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**DD20-16L2**



Cava del sensore serie SS  
Sensor slot SS series



**Dimensioni (mm)**  
**Dimensions (mm)**

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

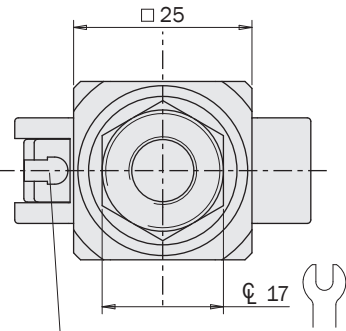
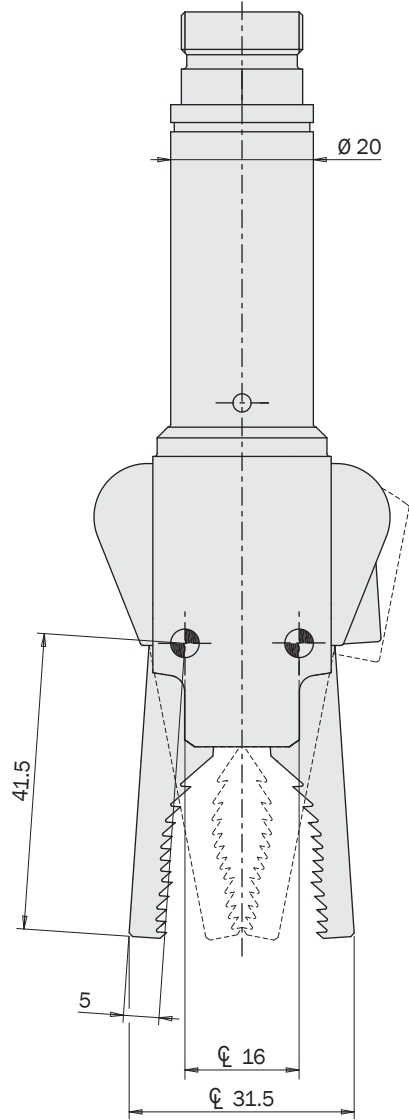
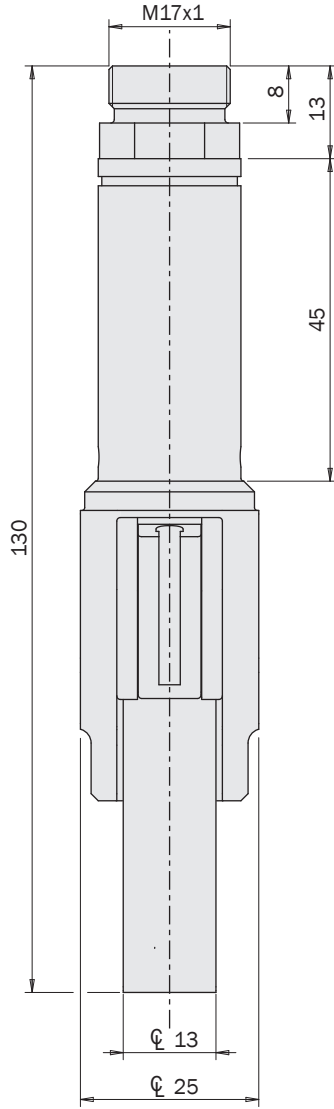
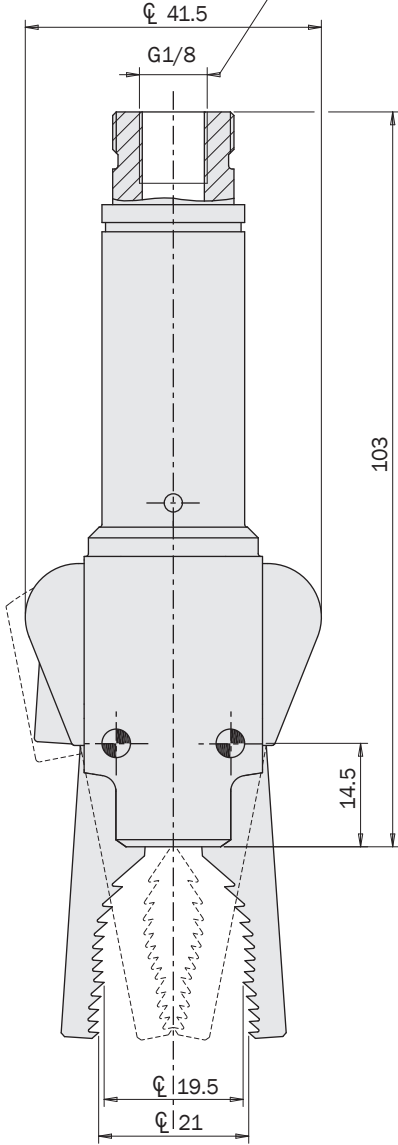
Taglierini  
Nippers

Kit-Robot  
Robot Kit

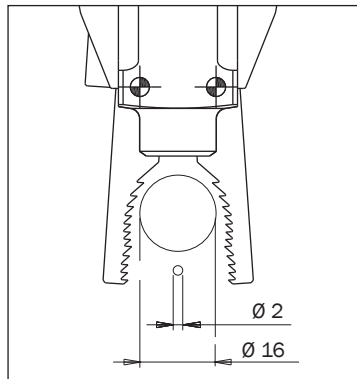
Accessori Opzionali  
Options

Sensori  
Sensors

Connessione per aria compressa (chiusura pinza)  
Compressed air connection (gripper closing)

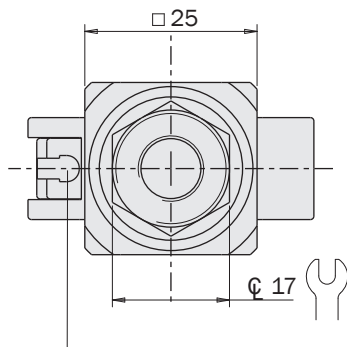
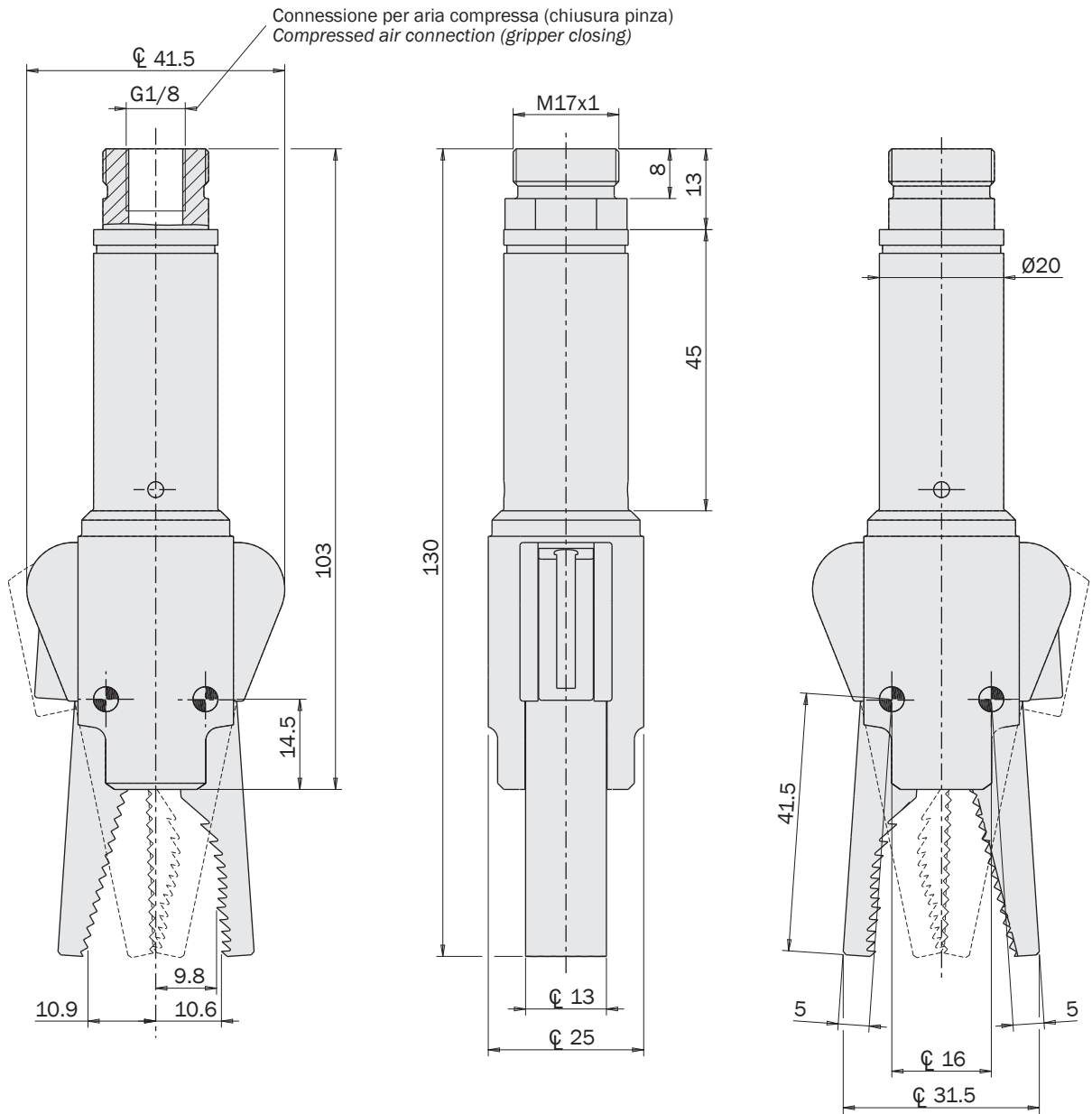


Cava del sensore serie SS  
Sensor slot SS series

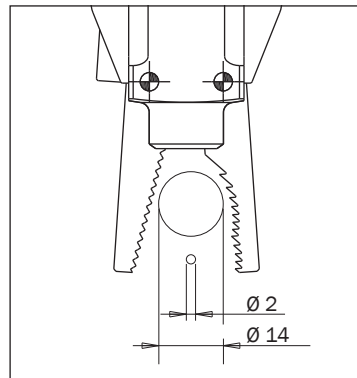


**Dimensioni (mm)**  
**Dimensions (mm)**

**DD20-16W2**



Cava del sensore serie SS  
Sensor slot SS series

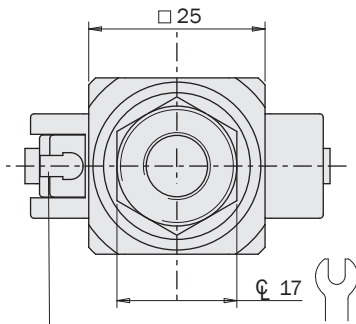
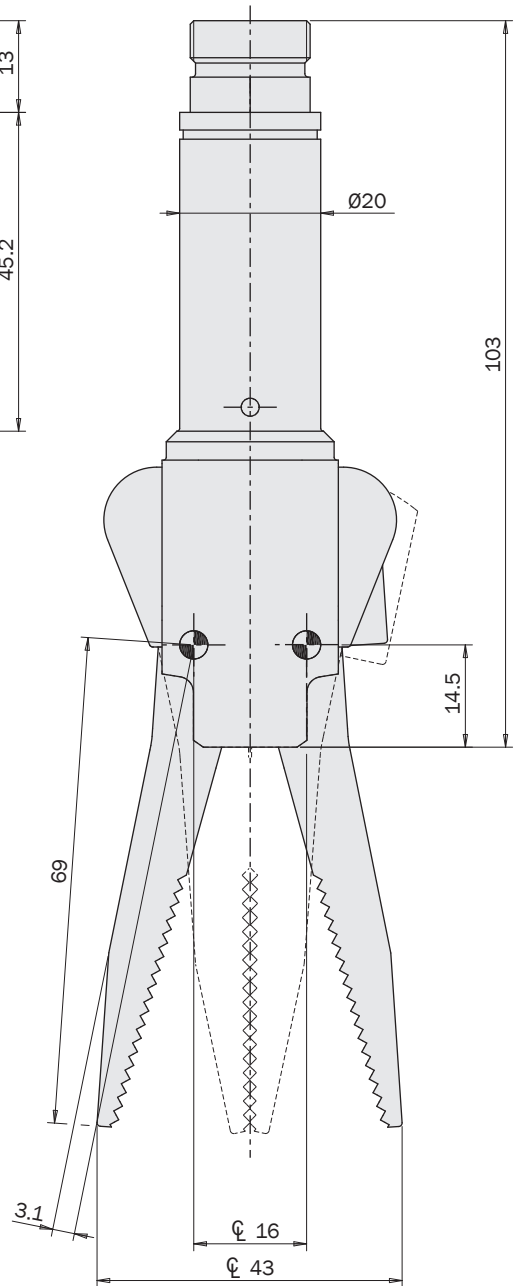
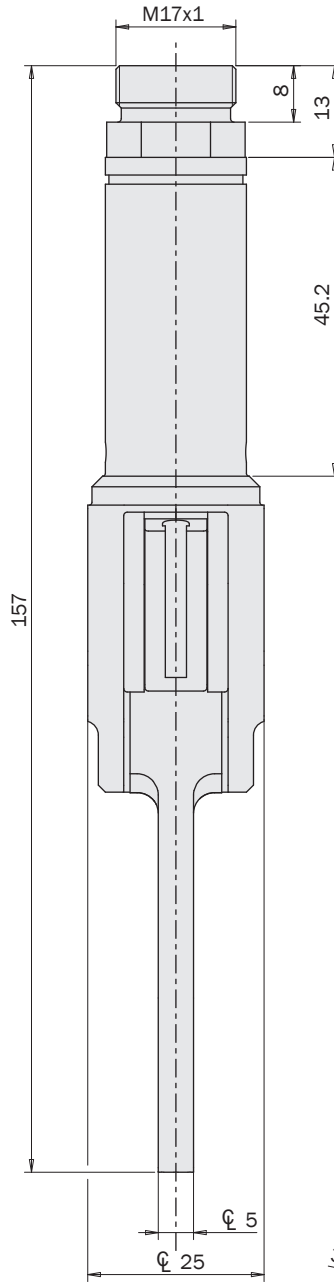
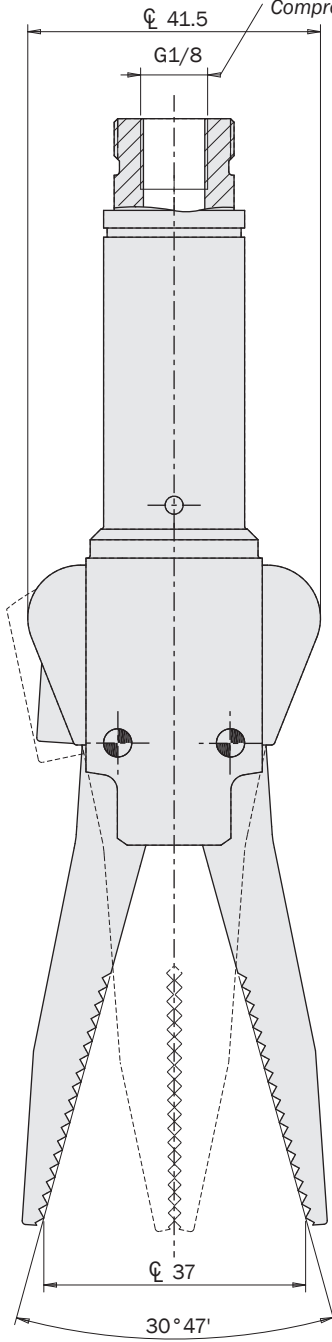


**Dimensioni (mm)**  
**Dimensions (mm)**

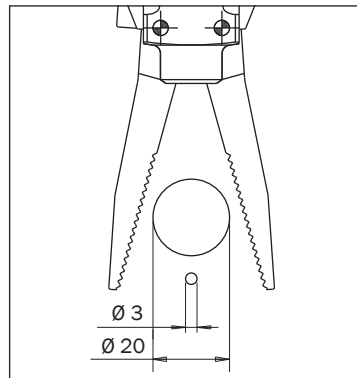
**DD20-16B2**

FIRST ANGLE PROJECTION

Connessione per aria compressa (chiusura pinza)  
Compressed air connection (gripper closing)



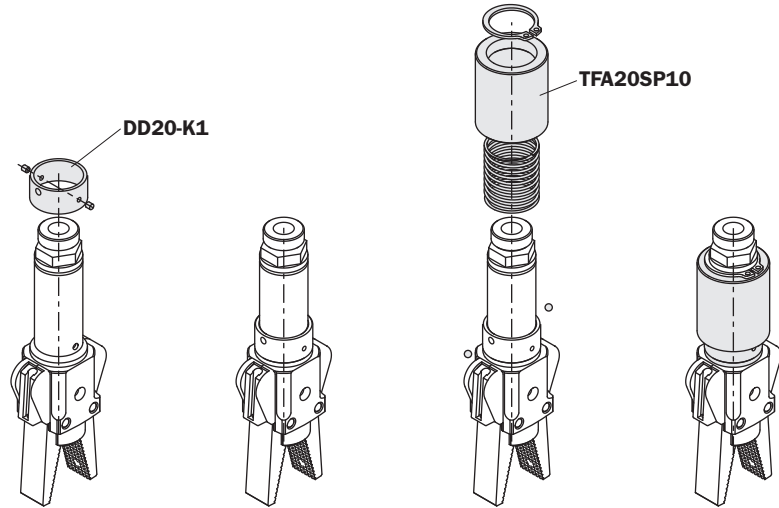
Cava del sensore serie SS  
Sensor slot SS series



**Accessori**  
**Accessories**

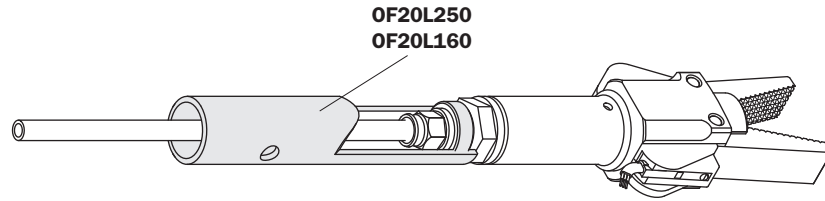
**DD20-K1 + TFA20SP10**

Sospensione  
Suspension



**OF20L...**

Tubo di prolunga  
Extension tube



**DD20-16...**

Pastiglia di ricambio per DD20-16L2  
Spare pad for DD20-16L2



**DD20-16P-13**  
HNBR 60Sh.A

**DD20-16P-13F**  
HNBR 60Sh.A  
Floccato  
HNBR 60Sh.A  
Flocked

**DD20-16P-10**  
TPU 70Sh.A

**DD20-16P-17**  
PU 70Sh.A

**3D...**  
Personalizzate con Servizio Stampa  
3D (PA12)  
  
Customised with the new 3D printing  
service (PA12)

**Pinza pneumatica ad azione basculante autocentrante a 2 griffe (serie GW)**

- Azionamento a doppio effetto.
- Grande durata e affidabilità senza manutenzione.
- Diverse possibilità di fissaggio.
- Sensori magnetici opzionali.
- Disponibile anche con molla in chiusura (-NC) o in apertura (-NO).
- Grasso alimentare FDA-H1.

**2-jaw self centering angular pneumatic gripper (series GW)**

- Double acting.
- Long life and reliability, maintenance free.
- Various options for fastening.
- Optional proximity magnetic sensors.
- Spring closed (-NC) or spring open (-NO) option.
- FDA-H1 food-grade grease.



	GW-10	GW-16	GW-20	GW-25
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Operating pressure range	2 ÷ 8 bar			
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.			
Coppia di serraggio per griffa in apertura a 6 bar Opening torque at 6 bar on each jaw	11 Ncm	45 Ncm	89 Ncm	178 Ncm
Coppia di serraggio totale in apertura a 6 bar Opening total torque at 6 bar	22 Ncm	90 Ncm	178 Ncm	356 Ncm
Coppia di serraggio per griffa in chiusura a 6 bar Closing torque at 6 bar on each jaw	8 Ncm	36 Ncm	78 Ncm	160 Ncm
Coppia di serraggio totale in chiusura a 6 bar Closing total torque at 6 bar	16 Ncm	72 Ncm	156 Ncm	320 Ncm
Corsa Stroke (±1°)	2x20°	2x20°	2x20°	2x20°
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	0.7 cm <sup>3</sup>	3 cm <sup>3</sup>	6 cm <sup>3</sup>	11 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.005 s	0.005 s	0.02 s	0.02 s
Ripetibilità Repetition accuracy	0.04°	0.04°	0.04°	0.04°
Peso Weight	39 g	88 g	180 g	300 g

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

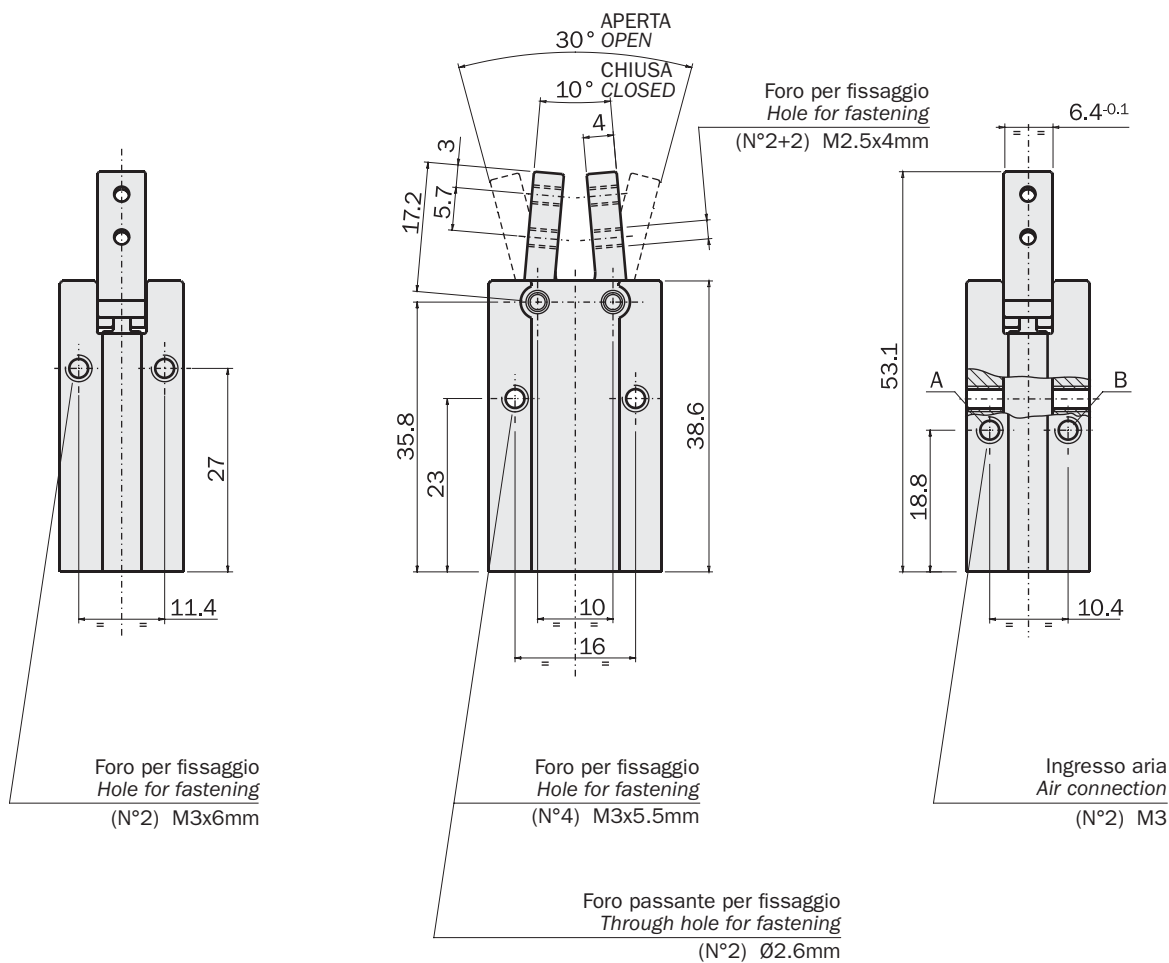
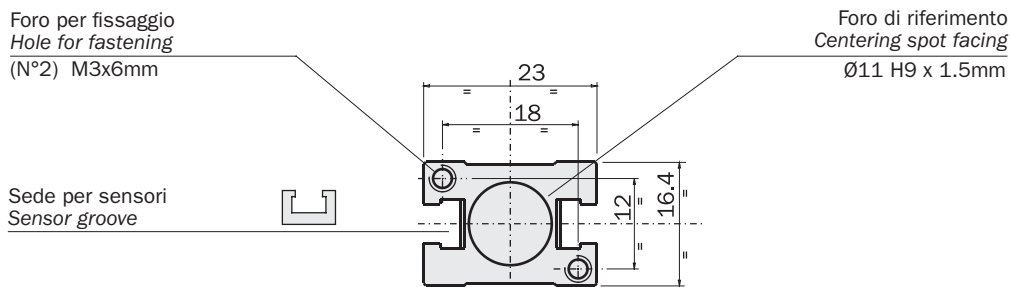
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

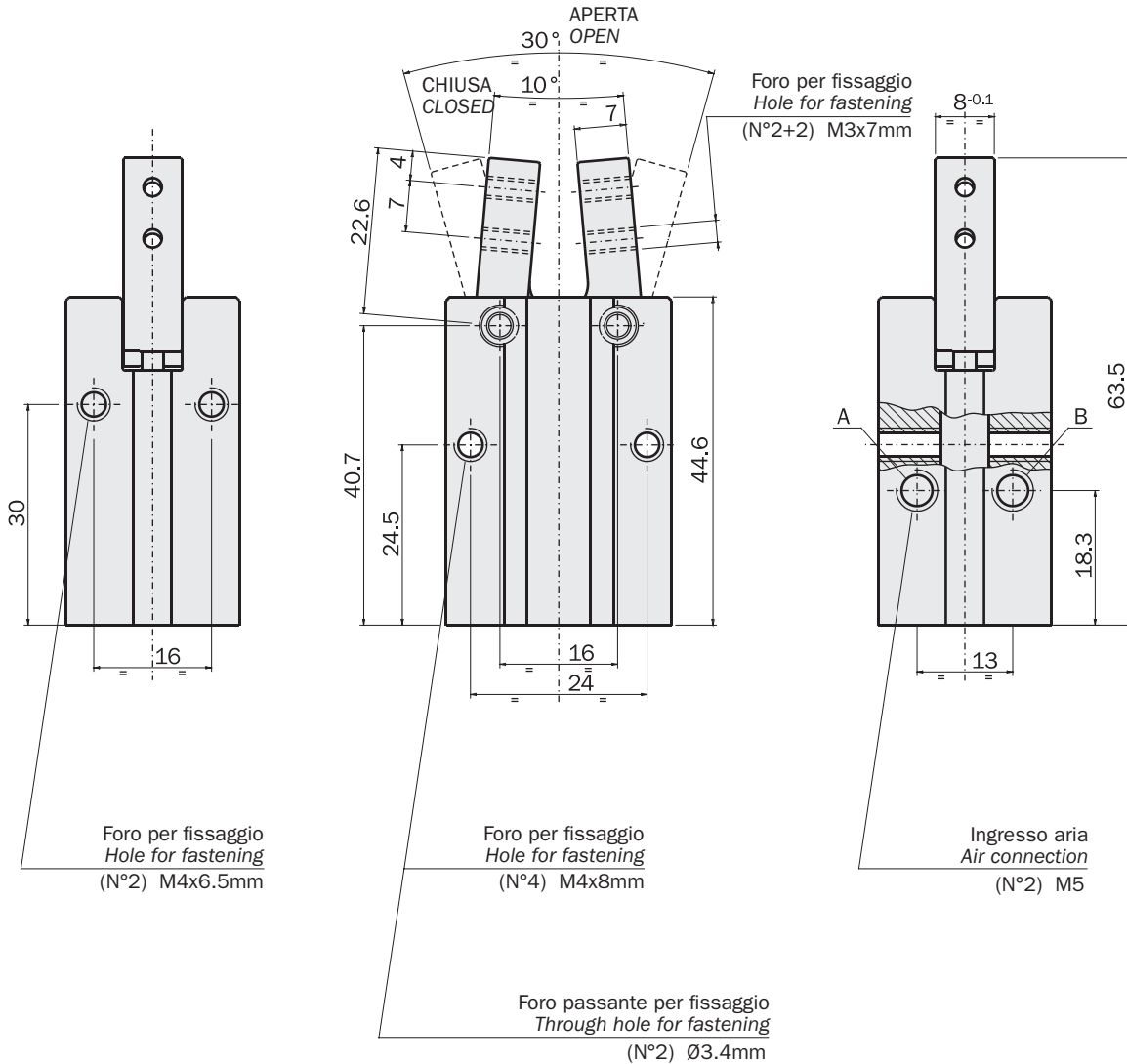
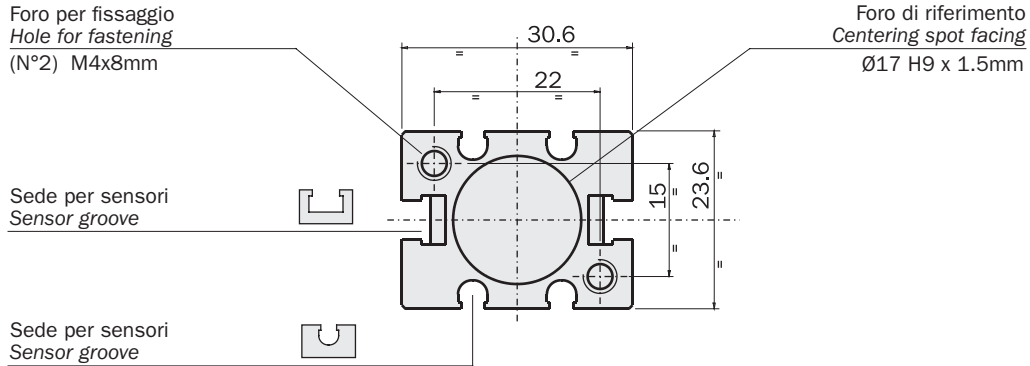
**Dimensioni (mm)**  
**Dimensions (mm)**

GW-10



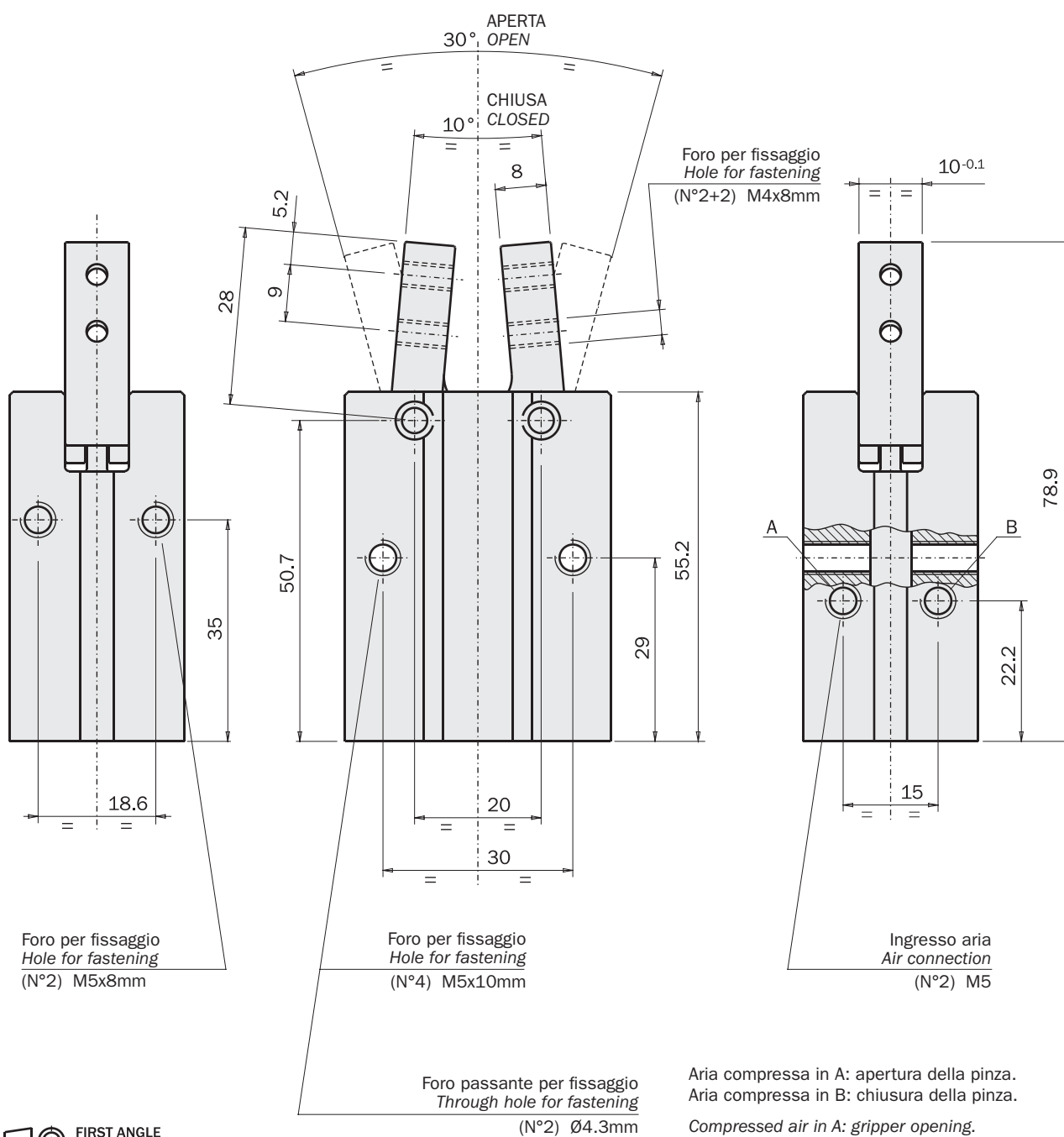
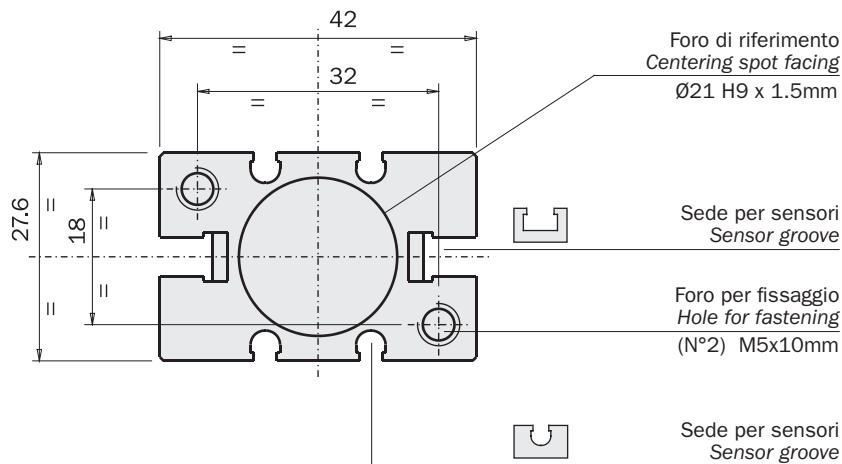
Aria compressa in A: apertura della pinza.  
Aria compressa in B: chiusura della pinza.  
Compressed air in A: gripper opening.  
Compressed air in B: gripper closing.



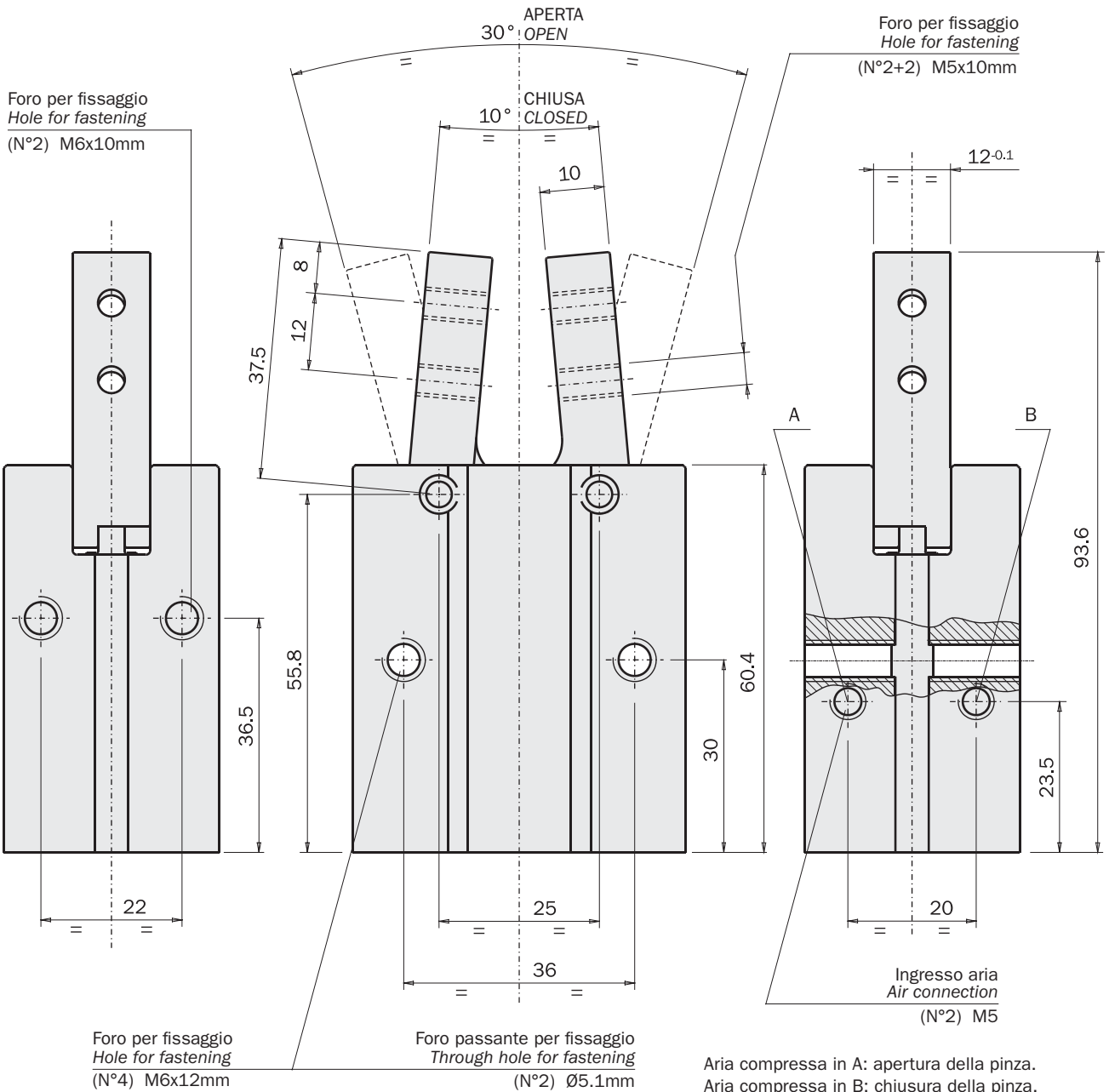
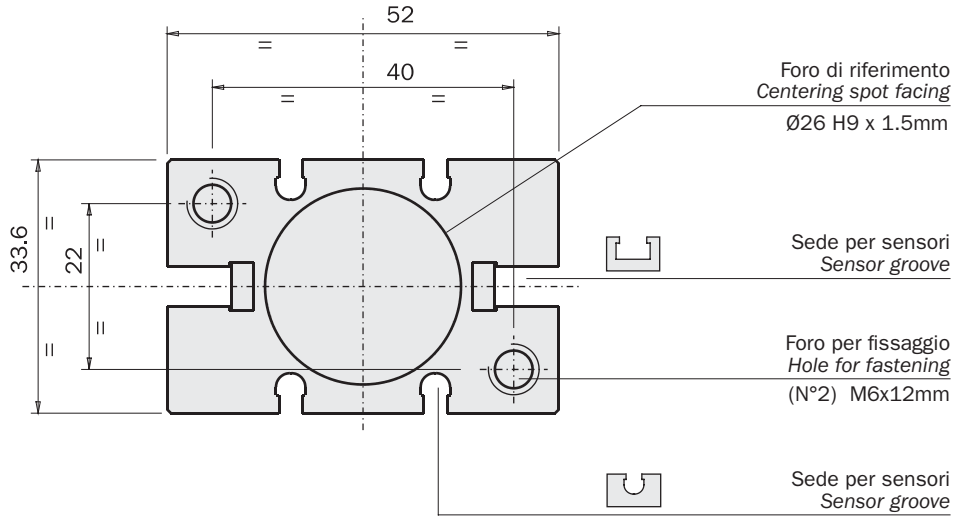


**Dimensioni (mm)**  
**Dimensions (mm)**

GW-20



**Dimensioni (mm)**  
**Dimensions (mm)**



FIRST ANGLE  
PROJECTION

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

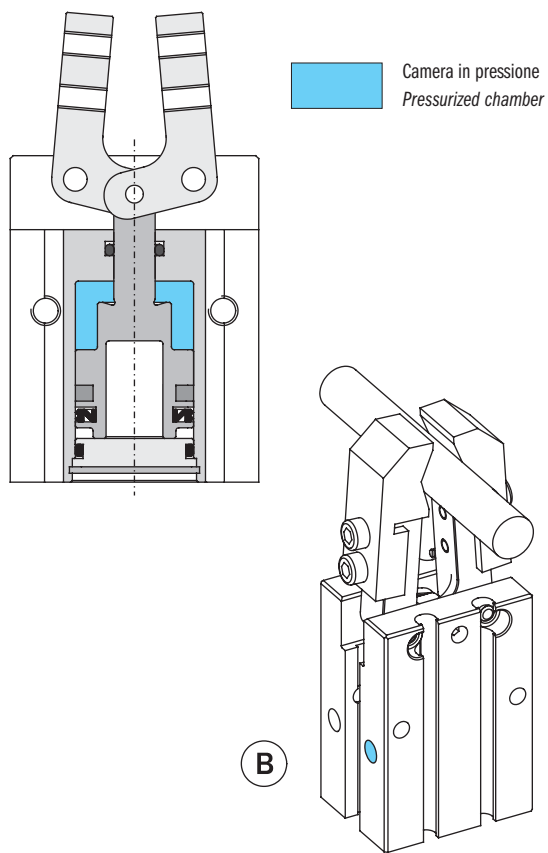
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

### Serraggio

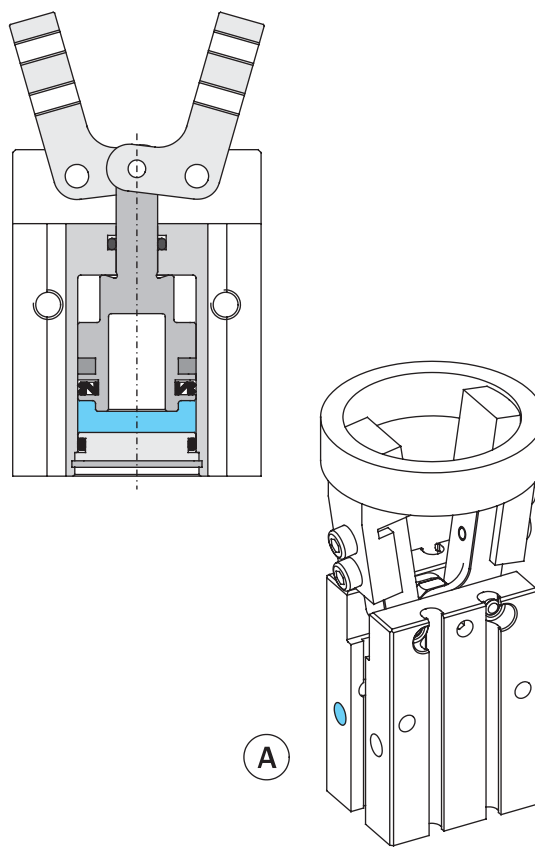
La pinza è a doppio effetto e può quindi essere usata per serrare il carico sia dall'esterno (B) che dall'interno (A). La forza di serraggio è maggiore in apertura.



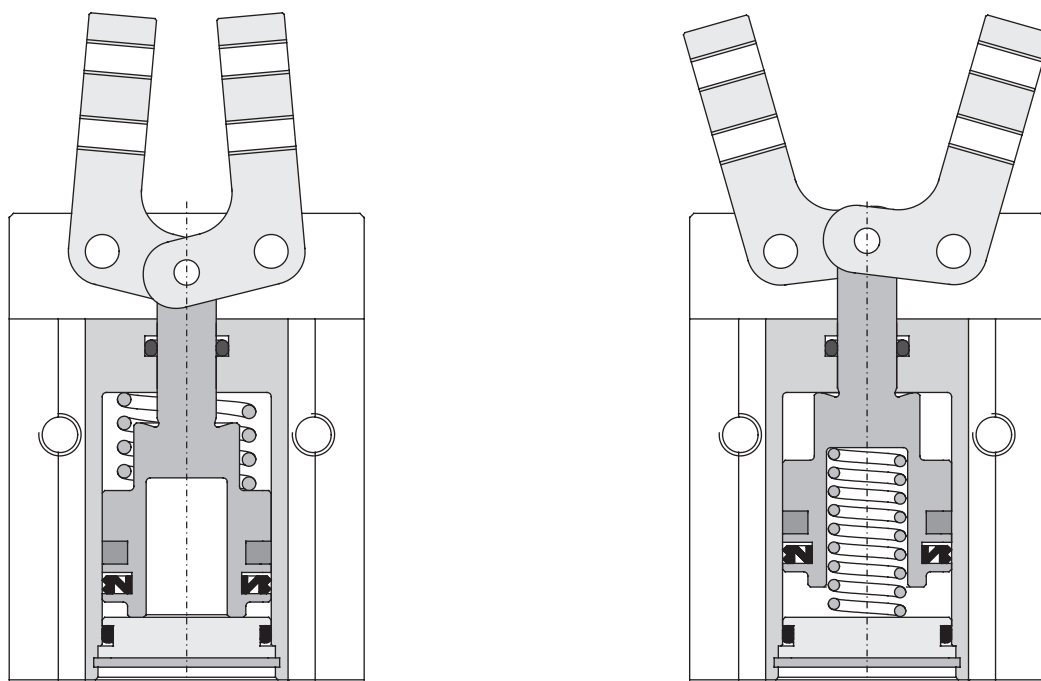
A richiesta è disponibile la versione con la molla in chiusura (-NC) o in apertura (-NO), che in assenza d'aria garantisce circa un quarto della forza disponibile a 6 bar.

### Gripping

The gripper is double-acting for either internal (A) or external (B) gripping applications. The opening force is higher.



It is also available, on request, with a closing (-NC) or opening (-NO) spring, providing, after a pressure black-out, about one fourth of the output force at 6 bar.



**Pinze pneumatiche ad azione basculante autocentrante**

- Azionamento a doppio effetto.
- Rendimento ed affidabilità elevati, dovuti all'assenza di organi di trasmissione.
- Possibilità di scelta: 2 o 3 griffe.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

**Self-centering angular pneumatic grippers**

- Double acting.
- High efficiency and reliability due to the lack of driving parts.
- 2 or 3 jaws.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.



	PN-010-3	PN-010-2	PN-016-3	PN-016-2	PN-025-3	PN-025-2	PN-040-3	PN-040-2
Azionamento <i>Design</i>	Pinza pneumatica ad azionamento basculante autocentrante <i>Self - centering angular motion gripper</i>							
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>							
Pressione di esercizio <i>Compressed air control range</i>	2 ÷ 8 bar							
Corsa <i>Stroke</i> (± 1°)	3 x 19°	2 x 19°	3 x 19°	2 x 19°	3 x 19°	2 x 19°	3 x 19°	2 x 19°
Temperatura di esercizio <i>Permitted temperature range</i>	5 ÷ 60°C.							
Coppia di serraggio per ogni griffa a 6 bar <i>Maximum gripper torque at 6 bar on each jaw</i>	10 Ncm	15 Ncm	38 Ncm	57 Ncm	166 Ncm	249 Ncm	434 Ncm	651 Ncm
Coppia di serraggio totale a 6 bar <i>Total gripper torque at 6 bar</i>	30 Ncm		114 Ncm		498 Ncm		1302 Ncm	
Tempo di chiusura a 6 bar senza carico <i>Closing time at 6 bar without load</i>	0.02 s		0.03 s		0.06 s		0.1 s	
Frequenza max funzionamento continuativo a 6 bar <i>Maximum working frequency at 6 bar</i>	3 Hz				2 Hz		1 Hz	
Consumo d'aria per ciclo a 6 bar <i>Air consumption for cycle at 6 bar</i>	0.49 cm <sup>3</sup>		2.61 cm <sup>3</sup>		10.8 cm <sup>3</sup>		41.1 cm <sup>3</sup>	
Ripetibilità <i>Repetition accuracy</i>	0.1°				0.1°			
Peso <i>Weight</i>	36 g	33 g	110 g	100 g	410 g	960 g	1070 g	940 g

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

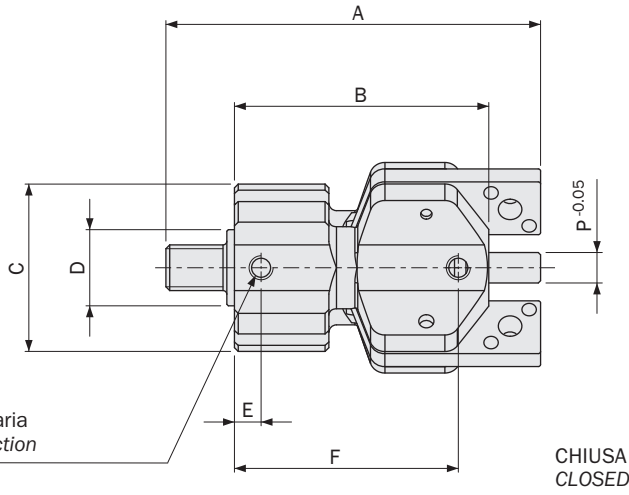
Taglierini  
Nippers

Kit-Robot  
Robot Kit

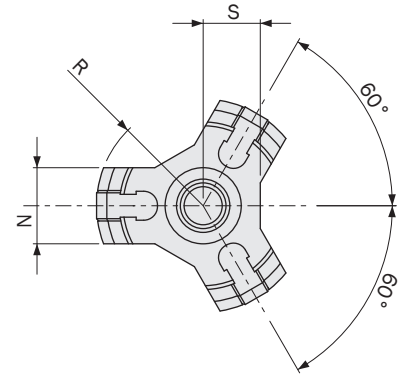
Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

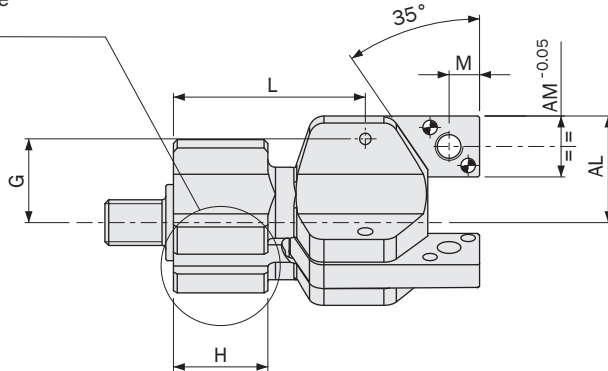


Ingresso aria  
Air connection  
(2) AR



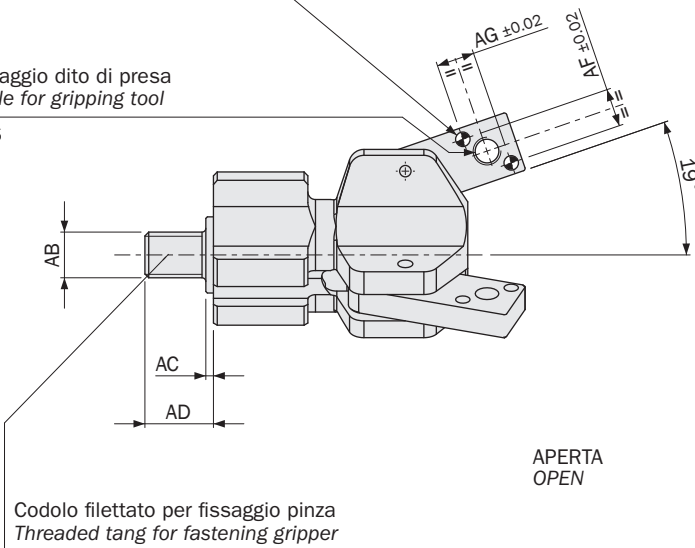
FIRST ANGLE  
PROJECTION

Sede per sensore  
Sensor slot



Foro di riferimento dito di presa  
Dowel pin hole for gripping tool  
(2+2+2) AT

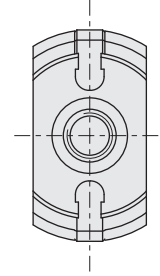
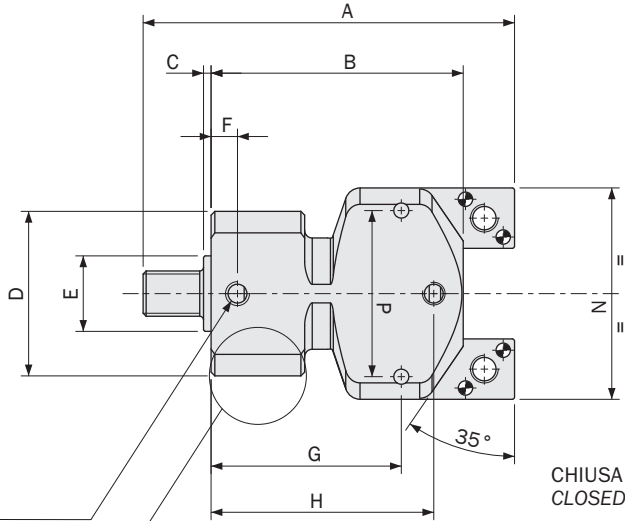
Foro per fissaggio dito di presa  
Threaded hole for gripping tool  
(1+1+1) AS



Codolo filettato per fissaggio pinza  
Threaded tang for fastening gripper

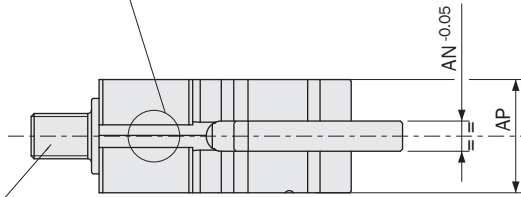
	PN-010-3	PN-016-3
A	49.2	70.5
B	33.4	48.2
C	Ø22	Ø28.8
D	Ø10 h8	Ø10 h8
E	3.5	4.5
F	29.4	41
G	11	17.5
H	12.4	19.5
L	25.2	36
M	4	5.5
N	10	15
P	4	6
R	Ø28	Ø44
S	7.5	11
AB	M6	M8
AC	1	1
AD	9	12.5
AF	5	8
AG	5	7
AL	14	22
AM	8	12
AR	M3	M5
AS	M3	M4
AT	Ø1.5 H8	Ø2 H8

**Dimensioni (mm)**  
**Dimensions (mm)**



FIRST ANGLE PROJECTION

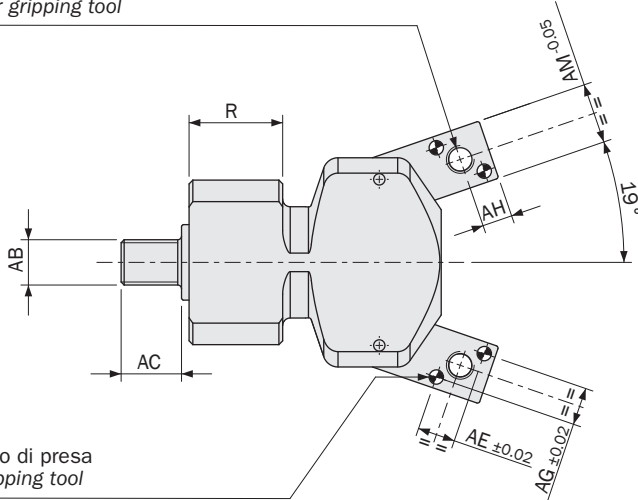
Sede per sensore  
Sensor slot



Codolo filettato per fissaggio pinza  
Threaded tang for fastening gripper

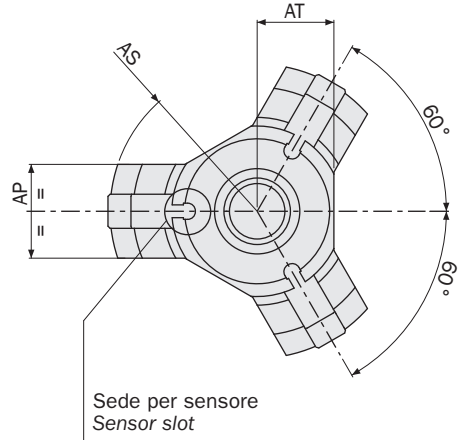
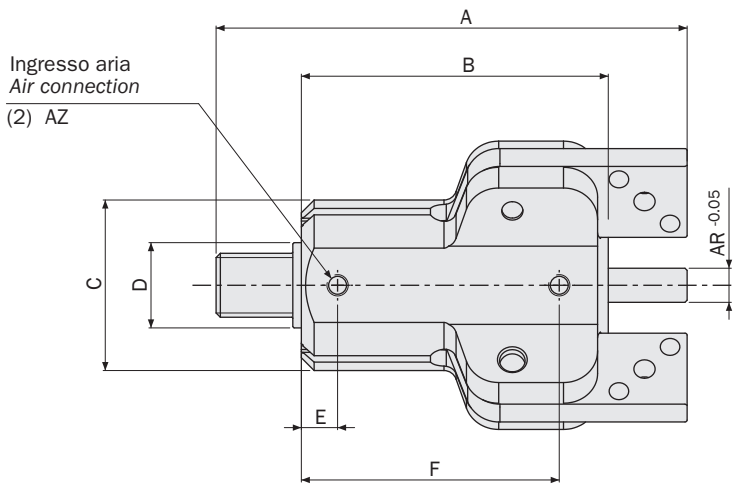
Foro per fissaggio dito di presa  
Threaded hole for gripping tool

(1+1) AS



	PN-010-2	PN-016-2
A	49.2	70.5
B	33.4	48.2
C	1	1
D	Ø22	Ø28.8
E	Ø10 h8	Ø10 h8
F	3.5	4.5
G	25.2	36
H	29.5	41
N	28	44
P	22	35
R	12.4	19.5
AB	M6	M8
AC	8	11.5
AE	5	7
AG	5	8
AH	4	5.5
AM	8	12
AN	4	6
AP	15	22
AR	M3	M5
AS	M3	M4
AT	Ø1.5 H8	Ø2 H8
AV	Ø28	Ø44

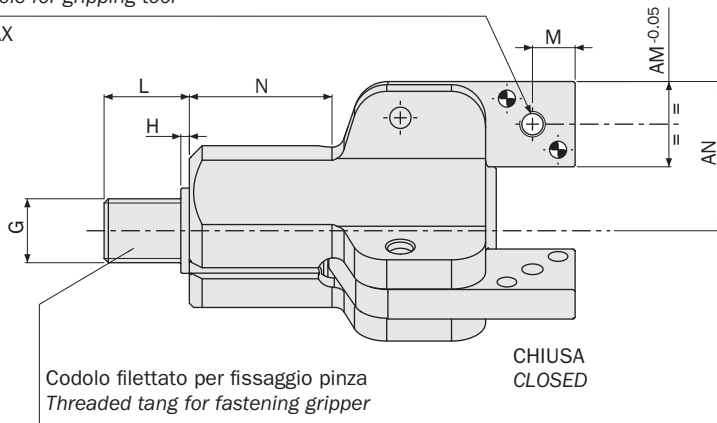
**Dimensioni (mm)**  
**Dimensions (mm)**



FIRST ANGLE PROJECTION

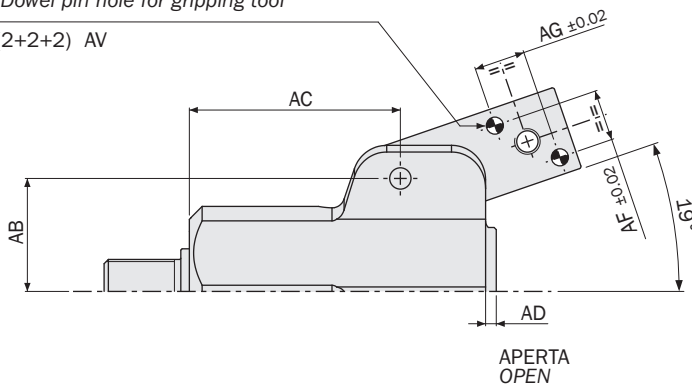
**Foro per fissaggio dito di presa**  
**Threaded hole for gripping tool**

(1+1+1) AX



**Foro di riferimento dito di presa**  
**Dowel pin hole for gripping tool**

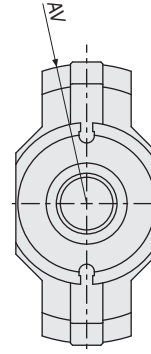
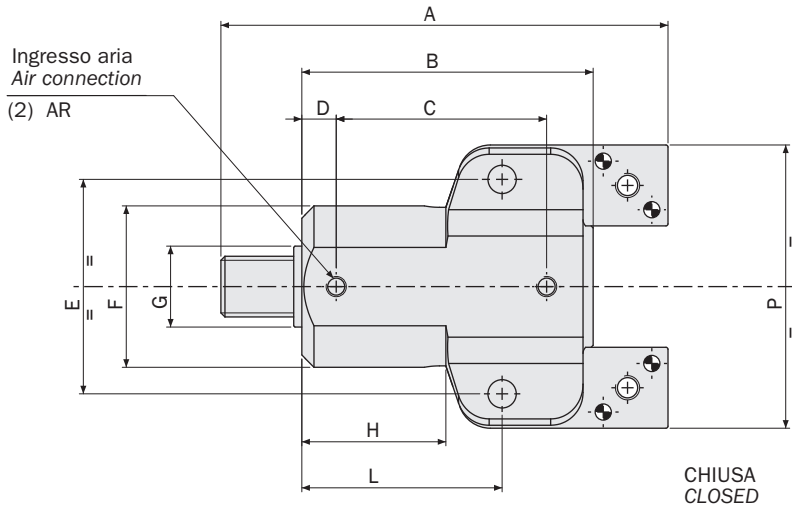
(2+2+2) AV



	PN-025-3	PN-040-3
A	110.5	150
B	72	102
C	Ø40	Ø60
D	Ø20 f7	Ø30 f7
E	8.5	12
F	60.5	85
G	M15x1	M20x1
H	2	3
L	20	28
M	10	12
N	33.5	44.2
AB	26.5	39.5
AC	49.5	74
AD	2.5	6.5
AF	12	15
AG	12	15
AM	20	24
AN	35	48.5
AP	22	25
AR	8	10
AS	Ø69	Ø97
AT	18	28
AV	Ø4 H8	Ø5 H8
AX	M6	M8
AZ	M5	1/8 Gas

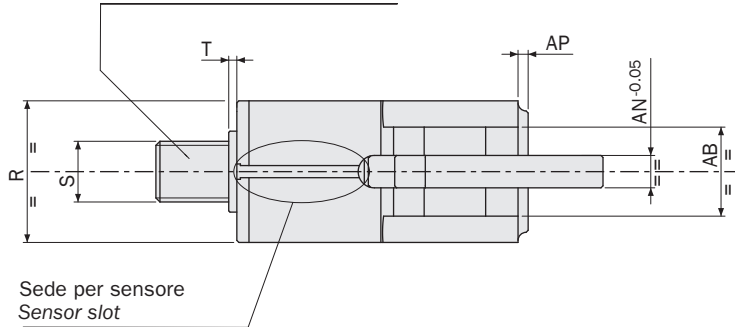


**Dimensioni (mm)**  
**Dimensions (mm)**

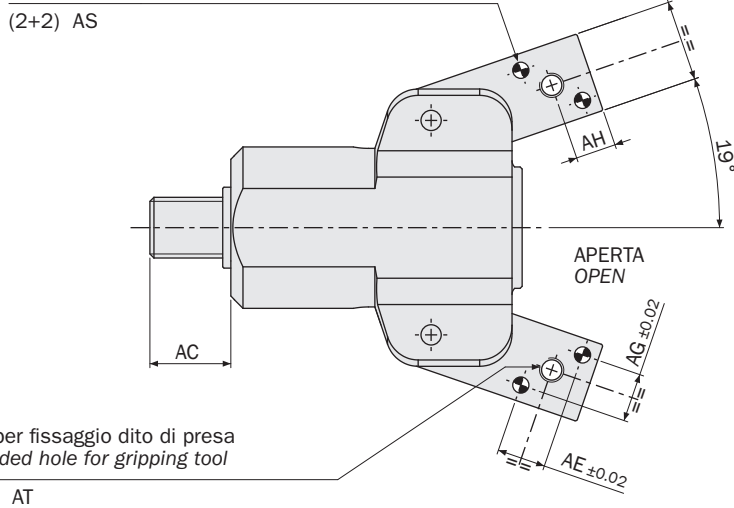


FIRST ANGLE PROJECTION

Codolo filettato per fissaggio pinza  
Threaded tang for fastening gripper



Foro di riferimento dito di presa  
Dowel pin hole for gripping tool



	PN-025-2	PN-040-2
A	110.5	150
B	72	102
C	52	73
D	8.5	12
E	53	79
F	Ø40	Ø60
G	Ø20 f7	Ø30 f7
H	35.6	44.2
L	49.5	74
P	70	97
R	35	56
S	M15x1	M20x1
T	2	3
AB	22	25
AC	20	28
AE	12	15
AG	12	19.5
AH	10	12
AM	20	24
AN	8	10
AP	2.5	6.5
AR	M5	1/8 Gas
AS	Ø4 H8	Ø5 H8
AT	M6	M8
AV	Ø69	Ø97

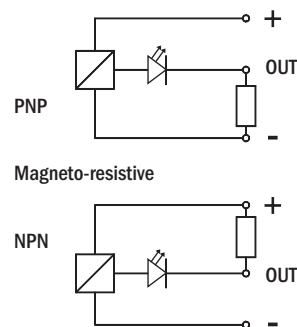
**Sensori**

Il rilevamento della posizione di lavoro è affidata ad uno o più sensori magnetici di prossimità inseriti nelle guide del corpo pinza.  
Essi rilevano la posizione attraverso un magnete applicato sul pistone.

**Sensors**

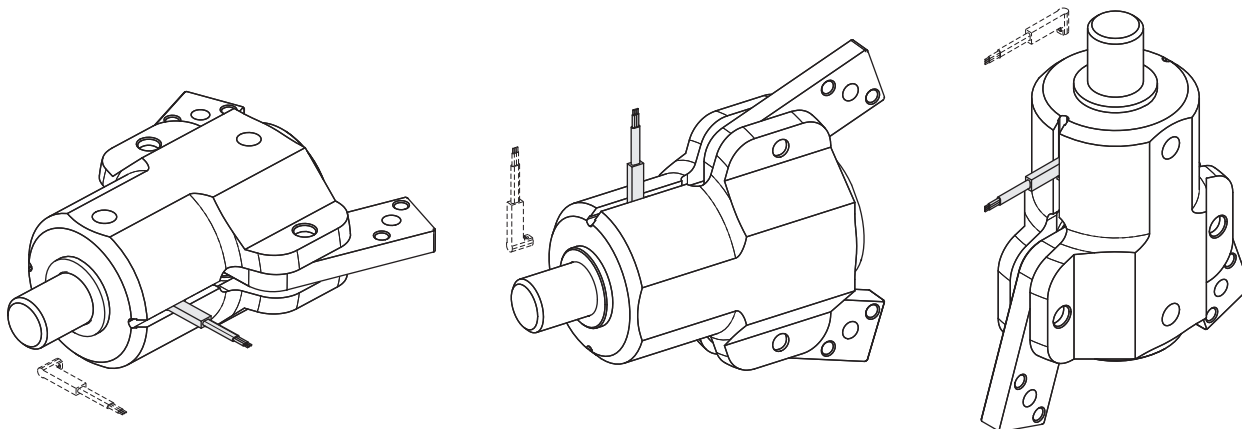
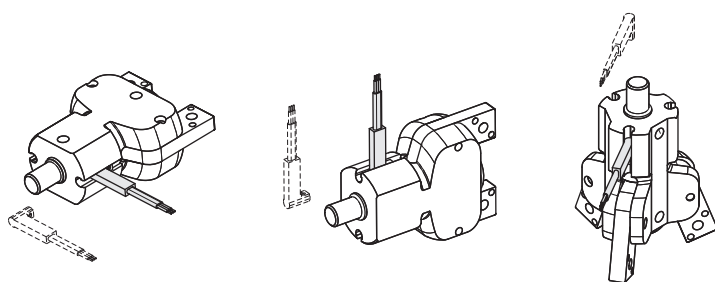
The operating position is detected by proximity magnetic sensors, fitted in the guides of the gripper's body.  
These sensors detect the position by means of a magnet placed on the piston.

SN4N225-G	PNP	Cavo 2.5m 2.5m cable
SN4M225-G	NPN	
SN3N203-G	PNP	Connettore M8 M8 snap plug connector
SN3M203-G	NPN	



Sono tutti dotati di un cavo piatto a tre fili e di un led.

They are all provided with a 3-wire flat cable and a LED.



### Mini pinza angolare a due griffe autocentrante, serie TFA

- Azionamento a semplice effetto con apertura a molla.
- Vari accessori disponibili per il fissaggio.
- Kit opzionale per la sospensione (1).
- Grasso alimentare FDA-H1.

### 2-jaw self-centering angular mini gripper, series TFA

- Single acting with spring opening.
- Several mounting accessories.
- Optional suspension kit (1).
- FDA-H1 food-grade grease.

(1)



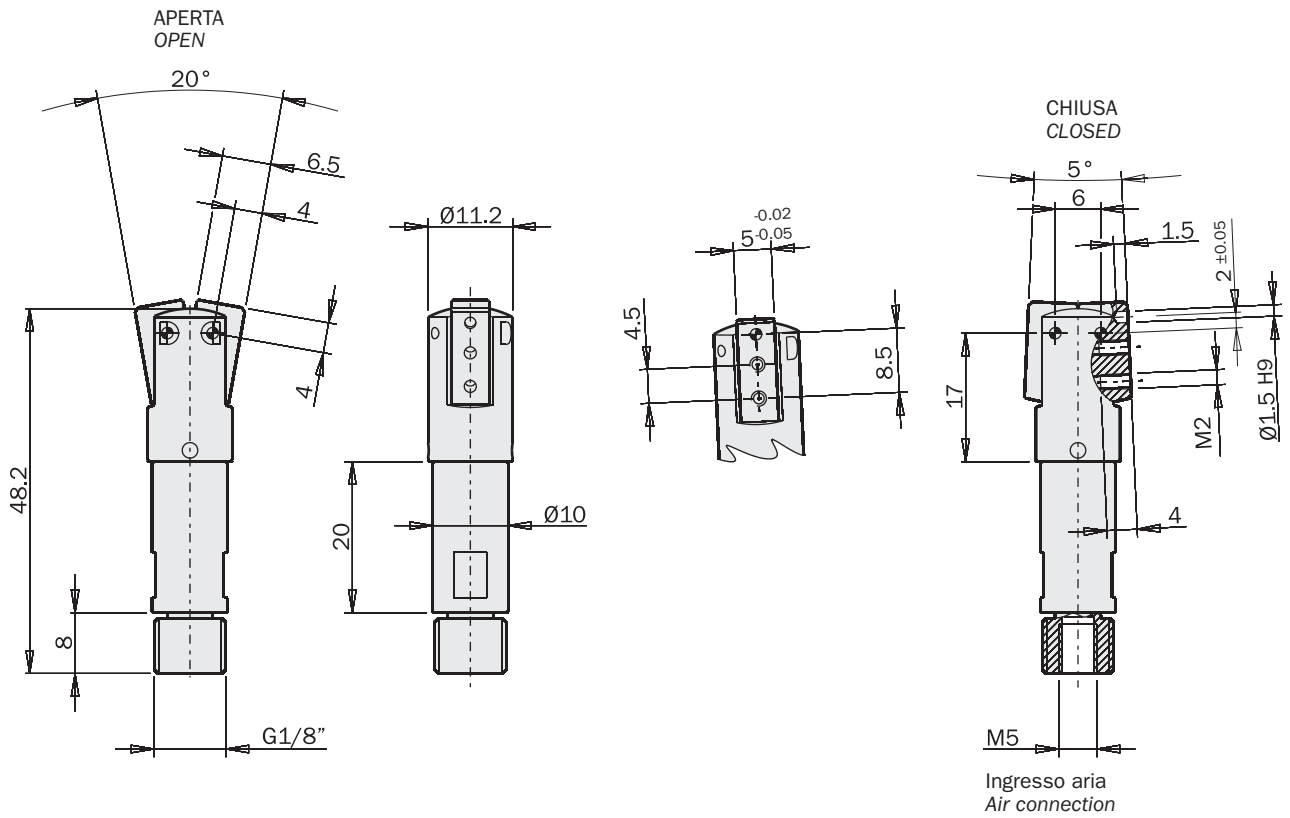
	TFA10-25	TFA14-25	TFA20-25 TFA20-25S
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2.5 ÷ 8 bar		
Temperatura di esercizio Temperature range	5 ÷ 60 °C.		
Corsa Stroke	2 x 12.5°		
Coppia di chiusura per griffa a 6 bar Closing torque at 6 bar each jaw	17 Ncm	48 Ncm	215 Ncm
Coppia di chiusura totale a 6 bar Total closing torque at 6 bar	34 Ncm	96 Ncm	430 Ncm
Coppia di apertura per griffa a 0 bar Opening torque at 0 bar each jaw	0.5 Ncm	0.8 Ncm	1.3 Ncm
Coppia di apertura totale a 0 bar Total opening torque at 0 bar	1 Ncm	1.6 Ncm	2.6 Ncm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	0.2 cm <sup>3</sup>	0.5 cm <sup>3</sup>	2 cm <sup>3</sup>
Peso Weight	12 g	30 g	95 g (TFA20-25) 120 g (TFA20-25S)

(1)

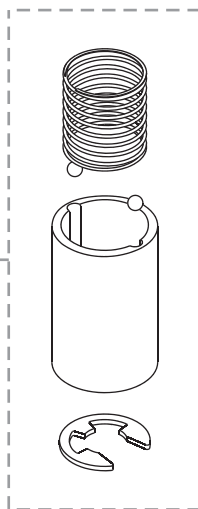
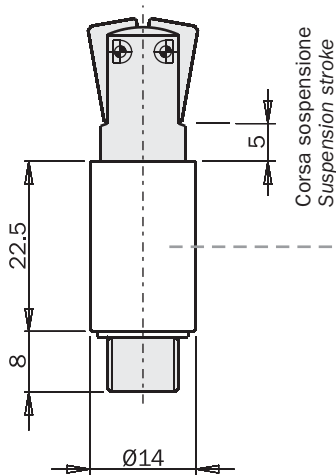
	TFA10SP05	TFA14SP05	TFA20SP10
Forza della molla Spring force	1.9 ÷ 2.2 N	3.0 ÷ 3.5 N	4.1 ÷ 6.7 N
Peso Weight	10 g	35 g	85 g

**Dimensioni (mm)**  
**Dimensions (mm)**

**TFA10-25**



Pinza + Sospensione  
Gripper + Suspension

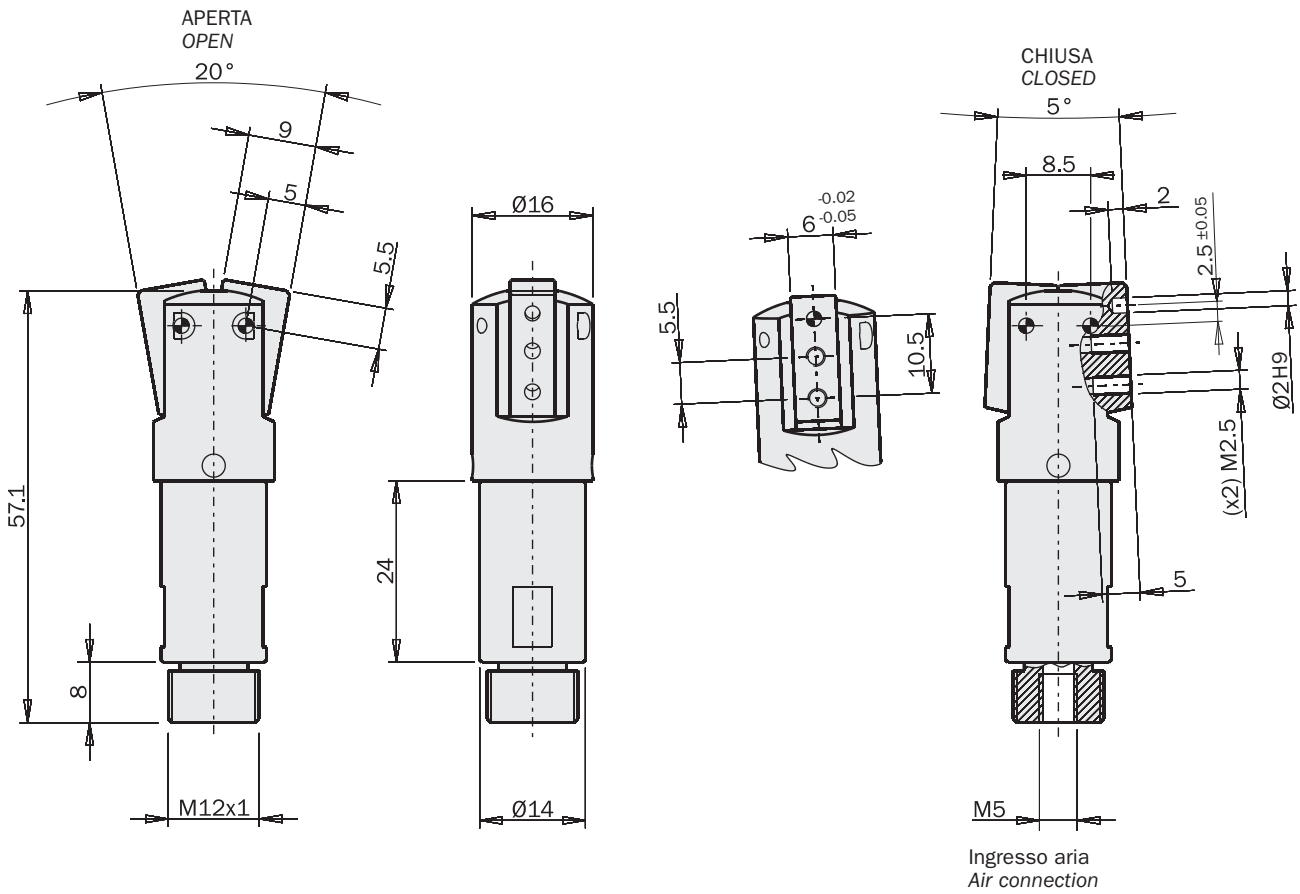


**TFA10SP05**

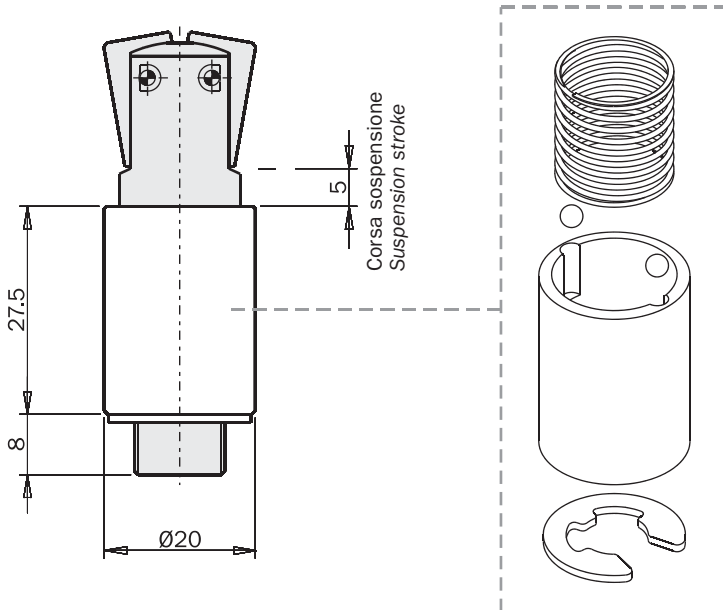
Kit opzionale per la sospensione  
Optional suspension kit



**Dimensioni (mm)**  
**Dimensions (mm)**



**Pinza + Sospensione**  
**Gripper + Suspension**



**TFA14SP05**  
Kit opzionale per la sospensione  
Optional suspension kit



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

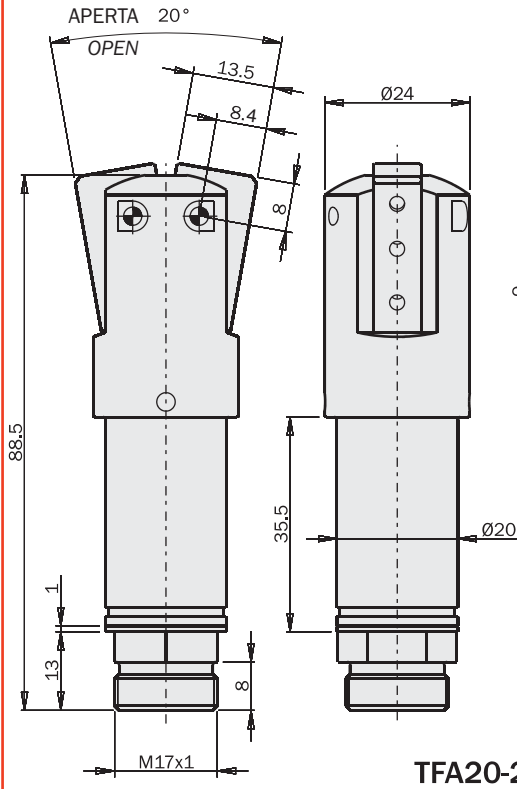
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

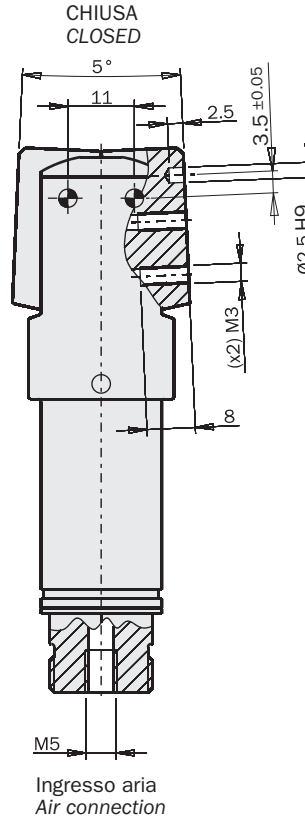
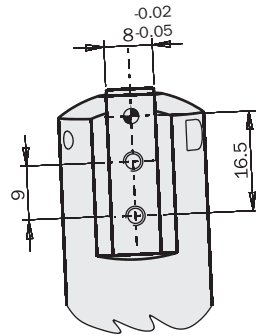
Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**TFA20-25**  
**TFA20-25S**

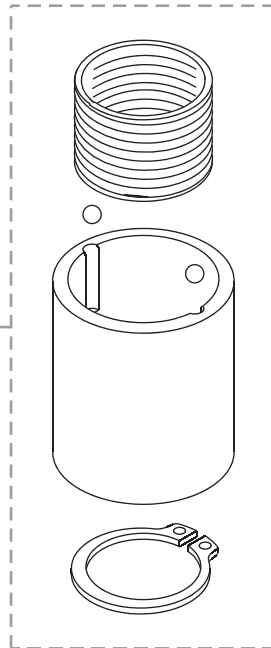
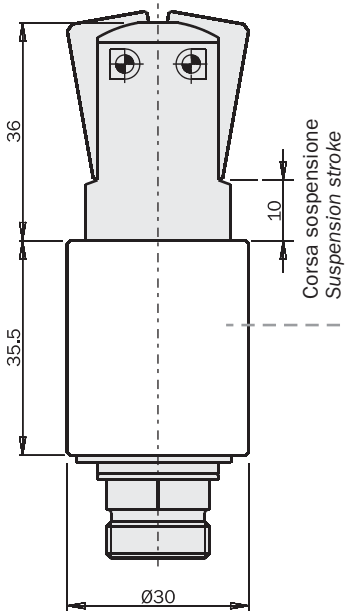


**TFA20-25**



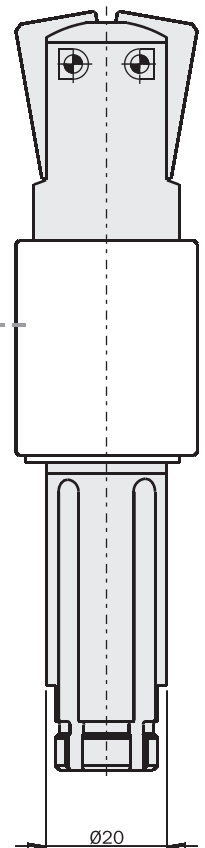
**TFA20-25S**

Pinza + Sospensione  
Gripper + Suspension



**TFA20SP10**  
Kit opzionale per la  
sospensione  
Optional suspension kit

Pinza + Sospensione  
Gripper + Suspension



## Pinza elettrica angolare 2 griffe autocentrante

- Semplice azionamento Plug&Play.
- Nessun consumo elettrico quando la pinza è in presa.
- Nessuna programmazione richiesta.
- Tenuta pezzo garantita in caso di interruzione d'energia.
- Si adatta ad ogni dimensione di pezzo entro griffe.
- Motore senza spazzole a lunga vita elettrica (Brushless DC).
- Azionamento motore integrato nella pinza.
- Alimentazione in bassa tensione 24 Vdc.
- Connessione M8x1, 3 poli standard.
- Controllabile con segnale PLC come una Valvola Pneumatica.
- Sistema di riduzione in fibra di carbonio.
- Esente da manutenzione per 10 milioni di cicli.
- Griffe contenute nell'ingombro pinza.
- Miglior compromesso peso-dimensioni-forza.
- Compatibile con attuatori rotanti.
- Sensori magnetici opzionali.

## 2-jaw angular self-centering electric gripper

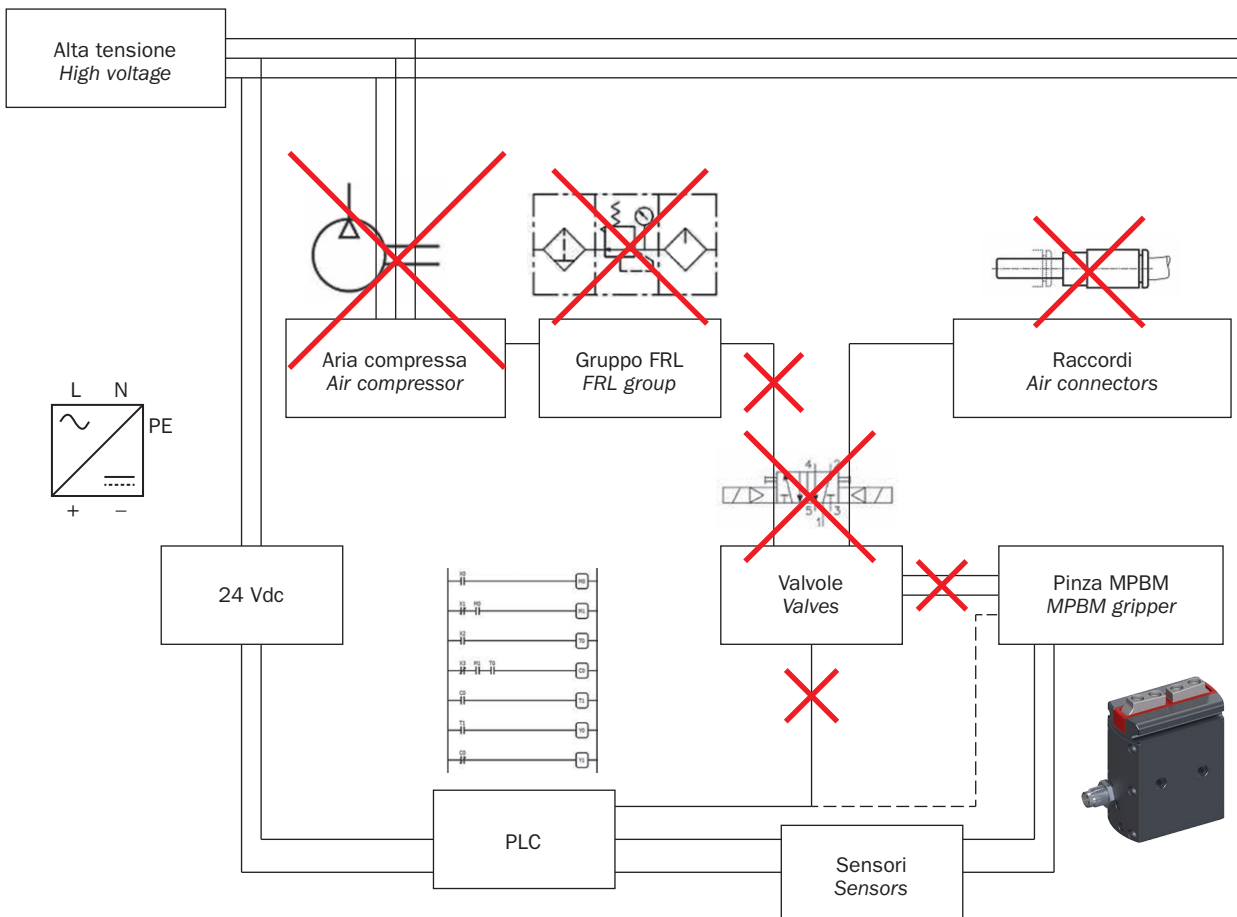
- Plug & play user friendly gripper.
- No electricity consumption when gripper is engaged.
- No programming required.
- Gripper retention guaranteed in event of blackout.
- Self Adapting jaws part.
- Long life Brushless motor (Brushless DC).
- Built-in motor driver.
- 24 Vdc Low Voltage Power Supply.
- M8x1, 3 poles standard connection.
- Controllable by PLC as a pneumatic valve.
- Fiber-carbon gear reduction.
- 10 million cycle maintenance-free.
- Jaws contained within gripper profile.
- Weight-dimensions-force best trade off.
- Rotary actuator fitting compatible.
- Optional magnetic sensors.



MPBM1640

MPBM2540

MPBM3240





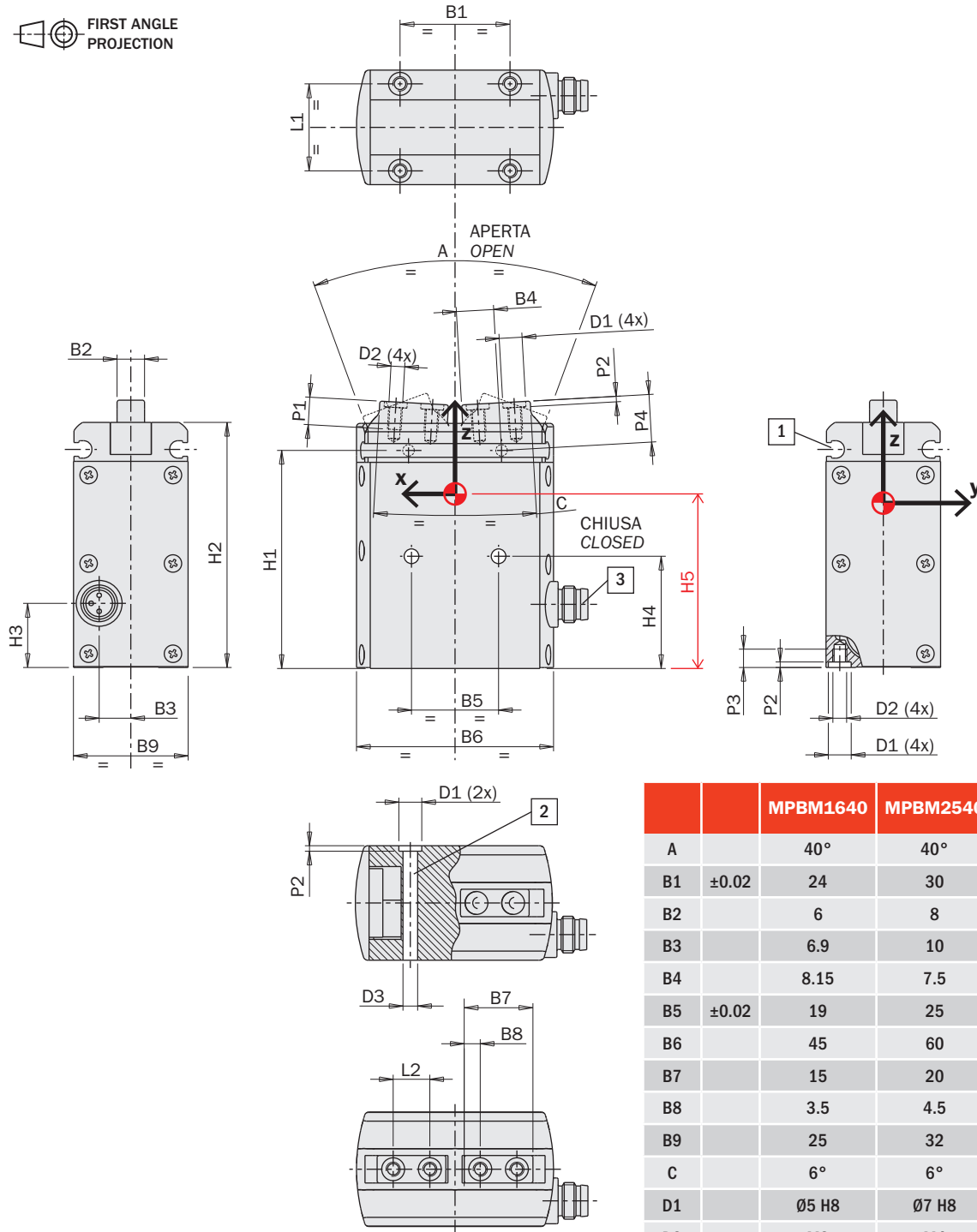
	MPBM1640	MPBM2540	MPBM3240
Coppia di serraggio totale <i>Total gripping torque</i>	68 Ncm	151 Ncm	277 Ncm
Corsa <i>Stroke</i>	2x23° (±2°)	2x23° (±2°)	2x23° (±2°)
Frequenza alla temperatura ambiente di 30°C <i>Frequency at an ambient temperature of 30°C</i>	0.93 Hz	0.85 Hz	0.81 Hz
Tempo chiusura griffe <i>Jaw closing time</i>	0.09 s	0.13 s	0.14 s
Tempo di lavoro pinza <i>Working gripper time</i>	0.18 s	0.31 s	0.25 s
Ciclo di lavoro alla temperatura ambiente di 30°C <i>Duty cycle at an ambient temperature of 30°C</i>	34%	53%	41%
Tensione d'alimentazione <i>Power supply</i>	24 Vdc ±10%	24 Vdc ±10%	24 Vdc ±10%
Corrente di picco <i>Peak current</i>	0.9 Apk	1.2 Apk	3.8 Apk
Corrente nominale <i>Nominal current</i>	0.3 Arms	0.4 Arms	0.8 Arms
Potenza motore brushless <i>Brushless motor power</i>	6 W	11 W	23 W
Connessione <i>Connection</i>	M8 - 3 poli <i>M8 - 3 poles</i>		
Segnale d'ingresso apertura/chiusura <i>Open/closed input signal</i>	PNP open collector <i>PNP open collector</i>		
Ripetibilità <i>Repetition accuracy</i>	0.02 mm	0.02 mm	0.02 mm
Temperatura di esercizio <i>Operating temperature</i>	5° ÷ 60°C	5° ÷ 60°C	5° ÷ 60°C
Grado di protezione <i>Environmental Degree</i>	IP54	IP54	IP54
Rumorosità <i>Noise level</i>	< 70 dB	< 70 dB	< 70 dB
Massa (motore incluso) <i>Mass (motor included)</i>	140 g	315 g	510 g
Carico inerziale massimo <i>Maximum inertial load</i>	-	-	-
Certificazione Camera Bianca IPA <i>IPA Clean Room Certification</i>	-	-	-
Normative di riferimento <i>Reference standards</i>	EN 61000-6-2 + EC + IS1; EN 61000-6-3 + A1		
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jxx	0.42 kgcm <sup>2</sup>	1.72 kgcm <sup>2</sup>
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jyy	0.53 kgcm <sup>2</sup>	2.18 kgcm <sup>2</sup>
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jzz	0.23 kgcm <sup>2</sup>	0.94 kgcm <sup>2</sup>
Tecnologia e opzioni <i>Technology and options</i>	Pagina 570 - 571 <i>Page 570 - 571</i>		

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors



## Dimensioni (mm) Dimensions (mm)

FIRST ANGLE  
PROJECTION

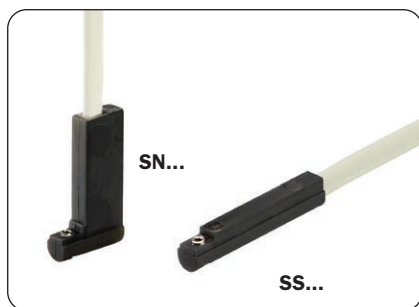


- 1** Cava per sensore magnetico  
Magnetic sensor slot
- 2** Foro passante per fissaggio pinza  
Through hole for gripper fastening
- 3** Connessione elettrica  
Electrical connection

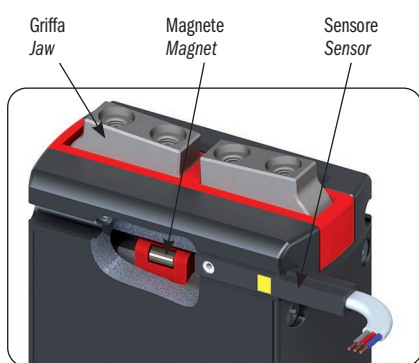
		MPBM1640	MPBM2540	MPBM3240
A		40°	40°	40°
B1	±0.02	24	30	36
B2		6	8	9
B3		6.9	10	11
B4		8.15	7.5	12.25
B5	±0.02	19	25	30
B6		45	60	73
B7		15	20	24
B8		3.5	4.5	5
B9		25	32	35
C		6°	6°	6°
D1		Ø5 H8	Ø7 H8	Ø7 H8
D2		M3	M4	M5
D3		Ø3.2	Ø4.2	Ø5.2
H1		47.6	63	72
H2		53.5	70	80
H3		14	17	19
H4	±0.02	24.5	32	38
H5		32.3	42.5	48.5
L1	±0.02	19	24	26
L2	±0.02	8	11	14
P1		6	8	10
P2	+0.1	1.2	1.5	1.5
P3		4	6	8
P4		10.4	14	16

**Sensori**

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso i magneti sulle griffe. Per i dettagli si veda la sezione "Accessori".



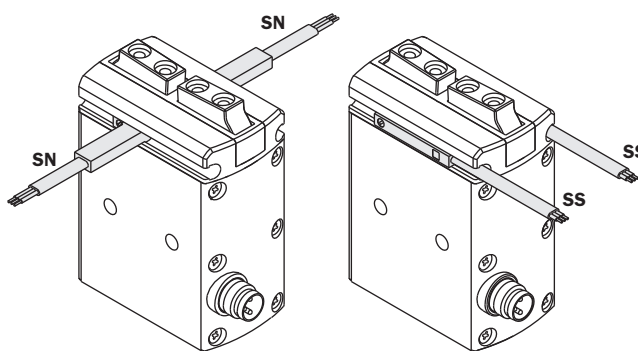
Sono tutti dotati di un cavo piatto a tre fili e di un led.



**Sensors**

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by the magnets on the jaws inside. For details, see the "Accessories" section.

They are all provided with a 3-wire flat cable and a LED.



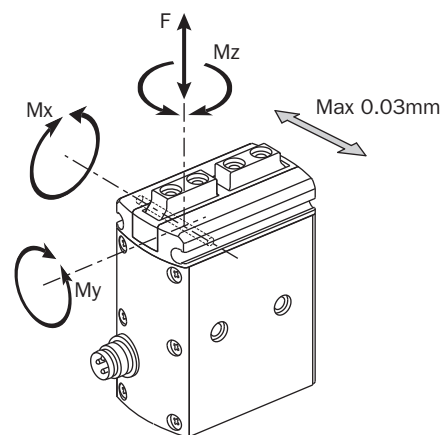
**Carichi di sicurezza e giochi**

Consultare la tabella per i carichi massimi ammissibili. Forze e coppie eccessive possono danneggiare la pinza e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore. F s, Mx s, My s, Mz s, sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme. J è il massimo momento d'inerzia ammissibile per ogni dito di presa. La figura sotto mostra anche il gioco massimo delle griffe.

	MPBM1640	MPBM2540	MPBM3240
F s	40 N	80 N	120 N
Mx s	0.5 Nm	1 Nm	2.5 Nm
My s	1 Nm	2 Nm	5 Nm
Mz s	1 Nm	2 Nm	5 Nm
J	0.4 kgcm <sup>2</sup>	2 kgcm <sup>2</sup>	5 kgcm <sup>2</sup>

**Safety loads and backlashes**

Check the table for the maximum permitted loads. Excessive forces or torques can damage the gripper, cause operation problems and endanger the safety of the operator. F s, Mx s, My s, Mz s, are the maximum permitted loads under static conditions, that is with motionless jaws. J is the maximum permitted moment of inertia on each gripping tool. The picture below shows also the jaw maximum backlash.



## Pinza pneumatica radiale autocentrante a 2 griffe (serie PS)

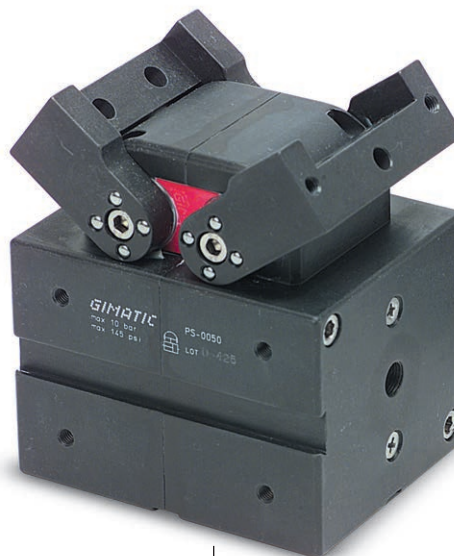
- Azionamento radiale a doppio effetto.
- Forza di serraggio totalmente disponibile su tutta la corsa (da 0° a 90° sia in apertura che in chiusura).
- Basso peso ottenuto con l'impiego di leghe leggere.
- Costruzione robusta.
- Protezione contro la polvere.
- Grasso alimentare FDA-H1.

## 2-jaw self-centering radial pneumatic gripper (series PS)

- Double acting radial motion.
- The gripping force is totally available on both directions from 0° to 90°.
- Light weight, due to its alloy construction.
- Rugged construction.
- Well protected against dusty environment.
- FDA-H1 food-grade grease.



PS-0030



PS-0050

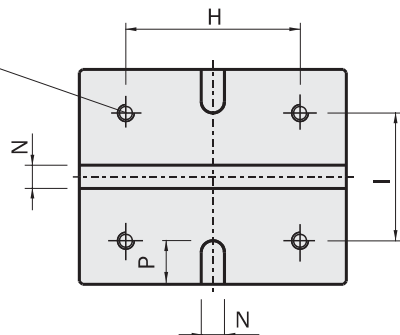
	PS-0030	PS-0050
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Operating pressure range	2 ÷ 8 bar	
Temperatura di esercizio Operating temperature range	5 ÷ 60 °C.	
Corsa Stroke (±1°)	2 x 91°	
Coppia di serraggio per griffa a 6 bar Gripping torque at 6 bar on each jaw	200 Ncm	600 Ncm
Coppia di serraggio totale a 6 bar Total gripping torque at 6 bar	400 Ncm	1200 Ncm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	37 cm <sup>3</sup>	105 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.08 s	0.1 s
Ripetibilità Repetition accuracy	0.1°	0.1°
Peso Weight	750 g	1100 g

**Dimensioni (mm)**  
**Dimensions (mm)**



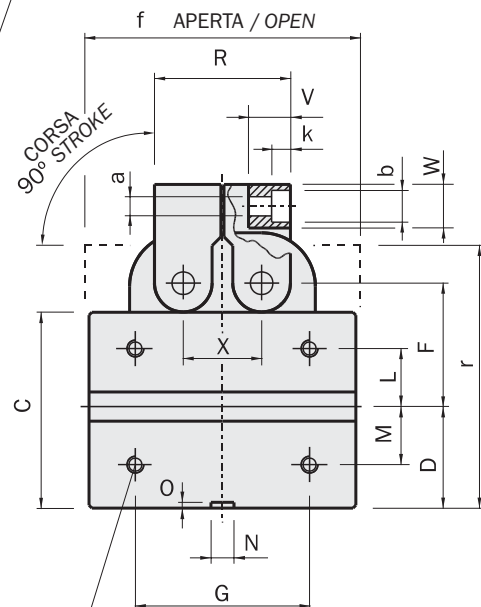
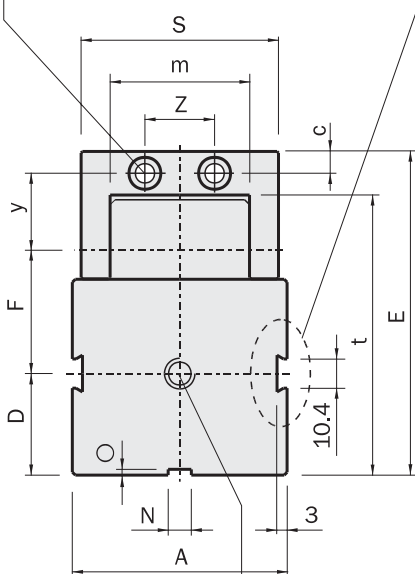
	PS-0030	PS-0050
A	49	74
B	81	92
C	45	67.5
D	24	35
E	83	111.5
F	30	42.5
G	50	60
H	65	60
I	39	44
L	11.5	20
M	13.5	20
N	6 +0.05	8 +0.05
O	2	2
P	12.5	15
Q	M4x8	M5x10
R	41.8	46.8
S	48	68
T	38	58
U	10.2	11.5
V	12.4	14.4
Z	20	24
J	M4x5	M5x8
a	Ø5.5	Ø6.6
b	Ø9	Ø11
c	6	7.5
d	1/8 Gas	1/8 Gas
e	6.4	7.2
f	82	95
g	M4x10	M5x15
h	Ø5H8x12	Ø6H8x15
m	31	48
q	20.3	22.8
r	65.5	90.5
t	70.5	96
k	5.5	6.5
y	23	26.5
w	12	15
x	24	27

Foro filettato per fissaggio pinza  
Threaded hole for gripper fastening  
(N°4) Q



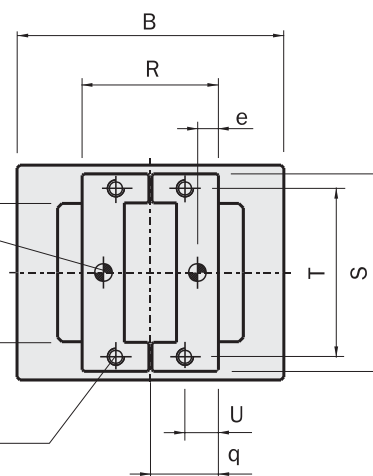
Sede per sensori  
Sensor groove

Foro di riferimento dito di presa  
Dowel pin hole for gripping tool



Ingresso aria  
Air connection  
(N°2) d

Foro filettato per fissaggio pinza  
Threaded hole for gripper fastening  
(N°4+4) J



Foro di riferimento dito di presa  
Dowel pin hole for gripping tool  
(N°1+1) h

Foro di riferimento dito di presa  
Dowel pin hole for gripping tool  
(N°2+2) g

**Pinza pneumatica radiale autocentrante a 2 griffe (serie PS-P)**

- Azionamento radiale a doppio effetto.
- Forza di serraggio totalmente disponibile su tutta la corsa (da 0° a 90° sia in apertura che in chiusura).
- Basso peso ottenuto con una costruzione interamente in lega leggera.
- Profilo piatto.
- Protezione contro la polvere.
- Versatilità di gestione anche con più di due sensori alloggiabili nelle cave integrate.
- Grasso alimentare FDA-H1.

**2-jaw self-centering radial pneumatic gripper (series PS-P)**

- Double acting radial motion.
- The gripping force is totally available on both directions from 0° to 90°.
- Lightweight, being totally in light alloy.
- Flat profile.
- Well protected against dusty environment.
- As more than two sensors can be mounted, versatile operating is possible.
- FDA-H1 food-grade grease.



PS-0016-P



PS-0025-P



PS-0045-P

	PS-0016-P	PS-0025-P	PS-0045-P
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2 ÷ 8 bar		
Temperatura di esercizio Operating temperature range	5 ÷ 60 °C.		
Corsa Stroke (±1°)	2 x 90°		
Coppia di serraggio per griffa a 6 bar Gripping torque at 6 bar on each jaw	100 Ncm	280 Ncm	1800 Ncm
Coppia di serraggio totale a 6 bar Total gripping torque at 6 bar	200 Ncm	560 Ncm	3600 Ncm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	2 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	16 cm <sup>3</sup>	57 cm <sup>3</sup>	382 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.06 s	0.09 s	0.15 s
Ripetibilità Repetition accuracy	0.1°	0.1°	0.1°
Peso Weight	320 g	650 g	2700 g

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
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Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

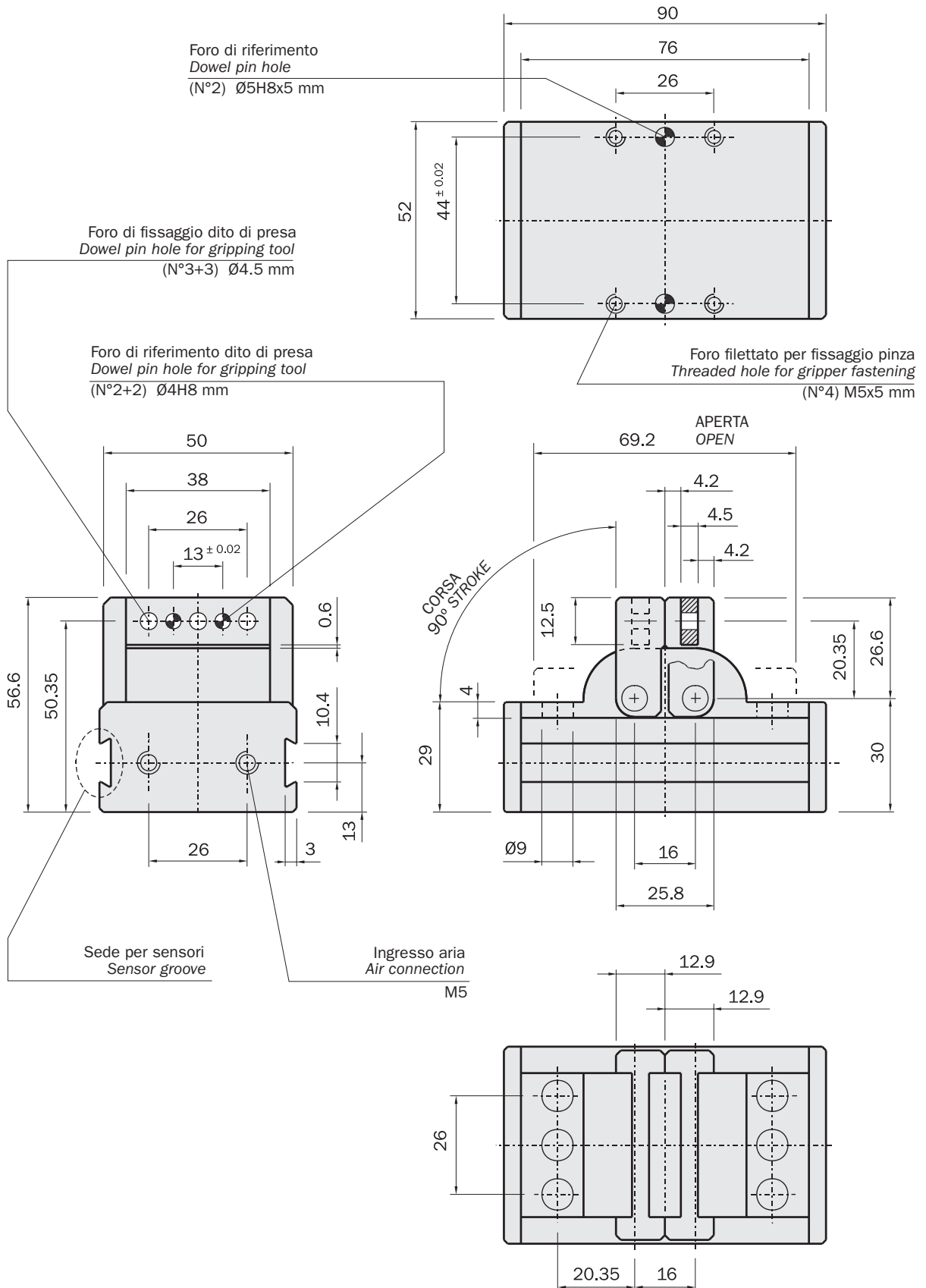
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

PS-0016-P



**Dimensioni (mm)**  
**Dimensions (mm)**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

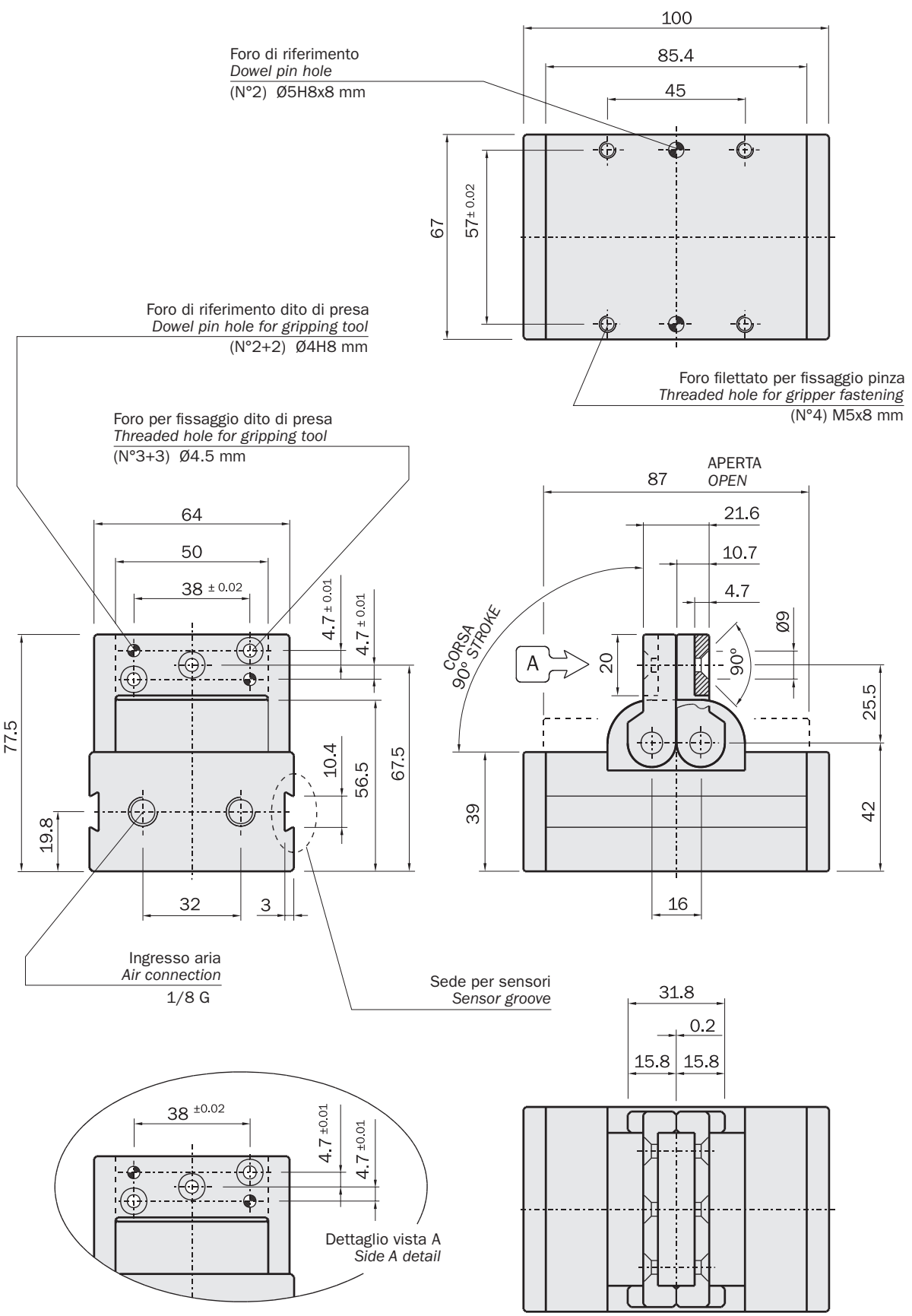
Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

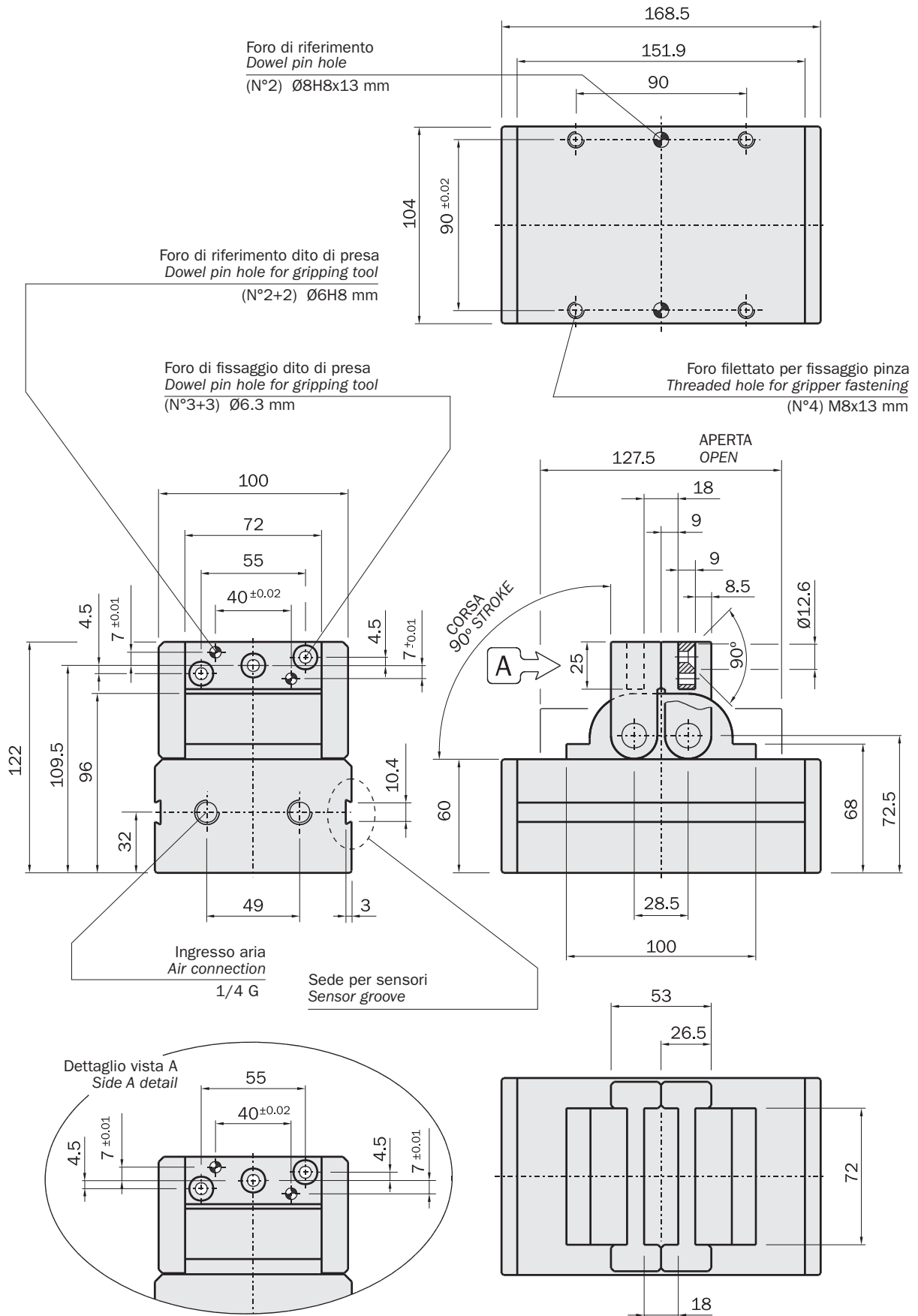
Accessori Opzionali  
Options

Sensori  
Sensors



**Dimensioni (mm)**  
**Dimensions (mm)**

PS-0045-P





## Pinza pneumatica radiale autocentrante a 2 griffe (serie GX-S)

- Azionamento a doppio effetto.
- Elevata forza di serraggio alla fine della corsa di chiusura.
- Grande durata e affidabilità senza manutenzione.
- Diverse possibilità di fissaggio.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

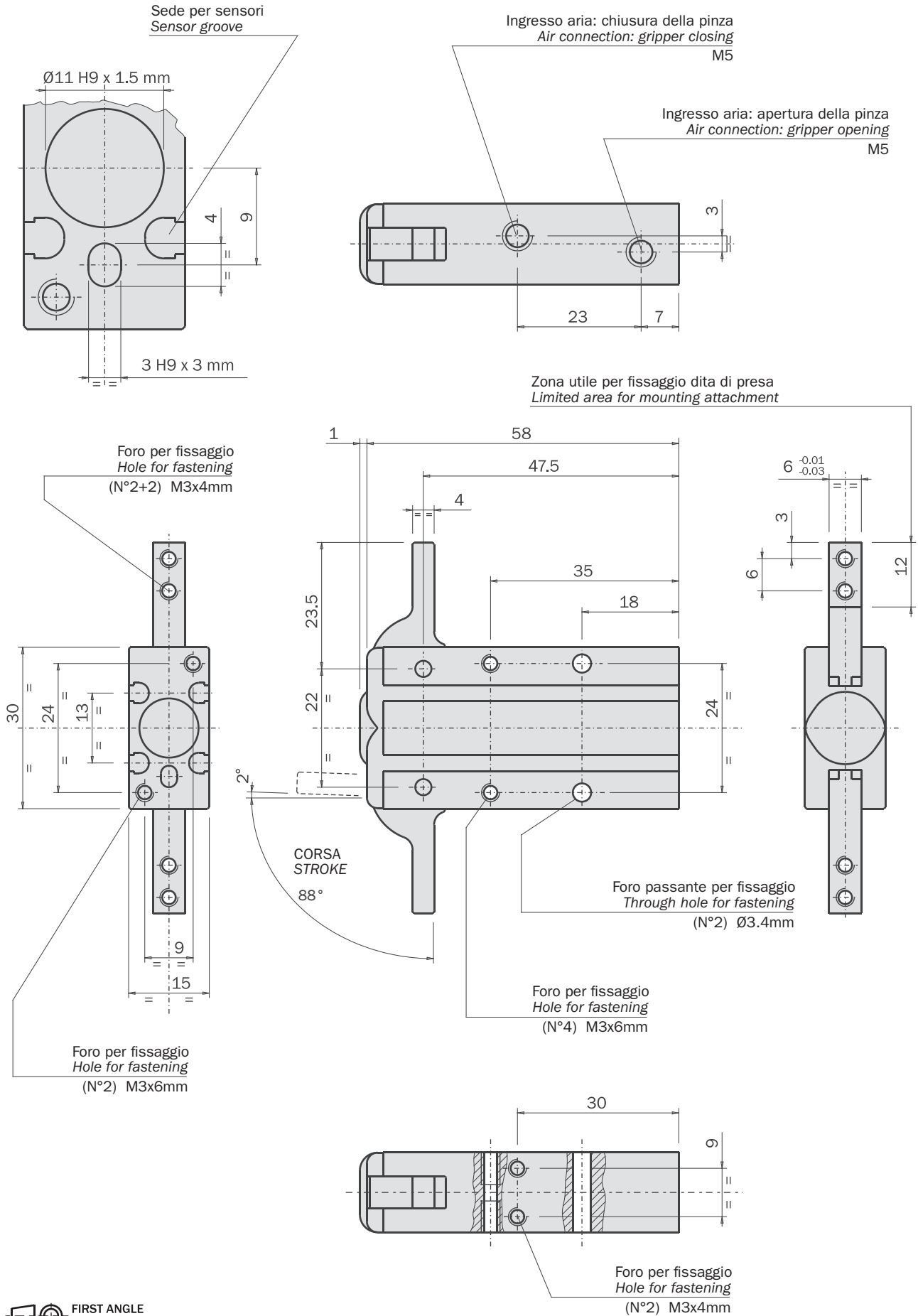
## 2-jaw self centering radial pneumatic gripper (series GX-S)

- Double acting.
- Very high gripping force at the end of the closing stroke.
- Long life and reliability, maintenance free.
- Various options for fastening.
- Optional proximity magnetic sensors.
- FDA-H1 food-grade grease.

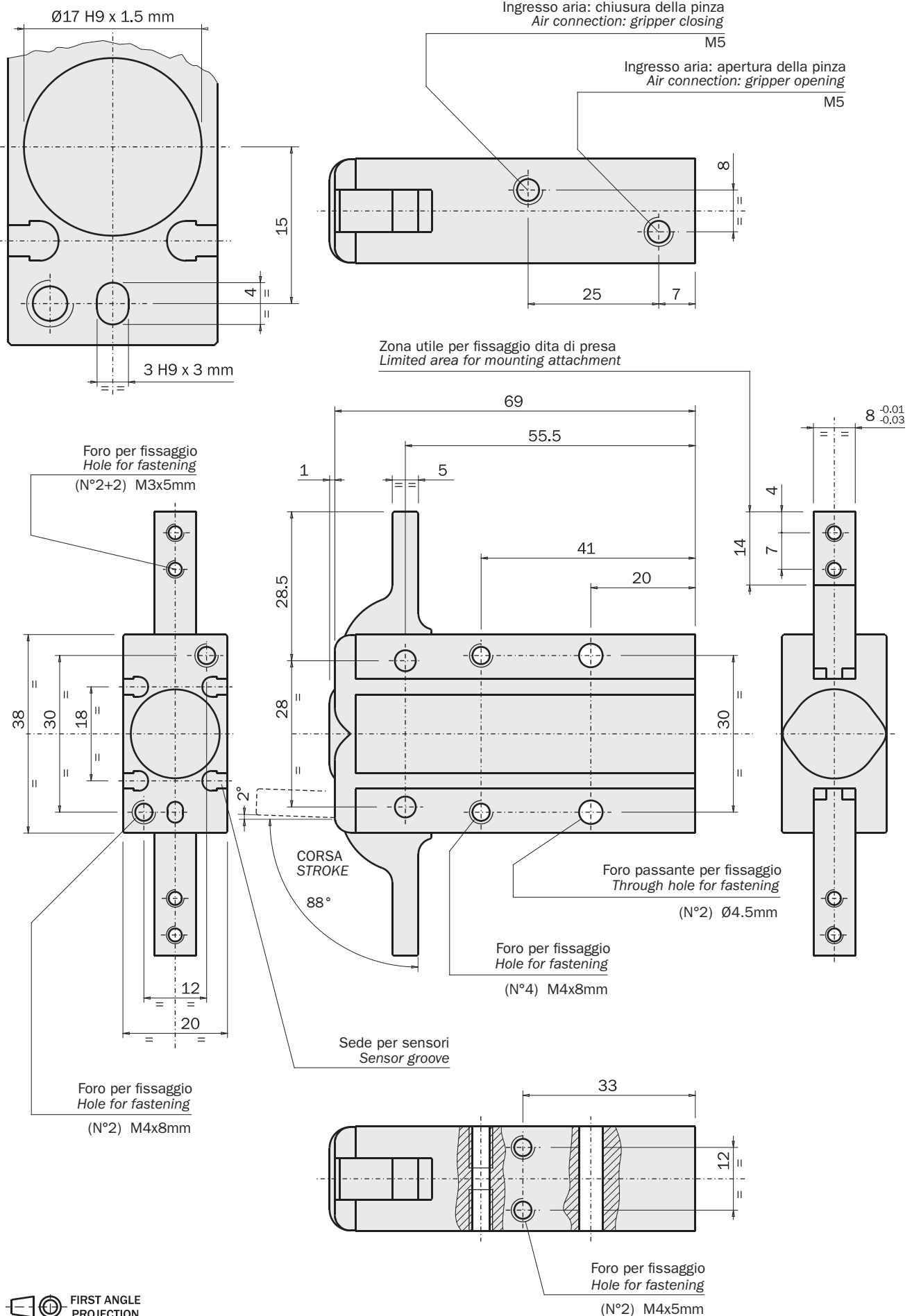


	GX-10S	GX-16S	GX-20S	GX-25S
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Operating pressure range	2 ÷ 8 bar			
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.			
Coppia massima per griffa in apertura a 6 bar Opening maximum torque at 6 bar on each jaw	35 Ncm	120 Ncm	230 Ncm	430 Ncm
Coppia massima totale in apertura a 6 bar Opening maximum total torque at 6 bar	70 Ncm	240 Ncm	460 Ncm	860 Ncm
Coppia massima per griffa in chiusura a 6 bar Closing maximum torque at 6 bar on each jaw	26 Ncm	105 Ncm	210 Ncm	400 Ncm
Coppia massima totale in chiusura a 6 bar Closing maximum total torque at 6 bar	52 Ncm	210 Ncm	420 Ncm	800 Ncm
Corsa Stroke (±4°)	2x90°	2x90°	2x90°	2x90°
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	2 cm <sup>3</sup>	6 cm <sup>3</sup>	11 cm <sup>3</sup>	22 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.04 s	0.08 s	0.10 s	0.08 s
Ripetibilità Repetition accuracy	0.05°	0.05°	0.05°	0.05°
Peso Weight	70 g	140 g	290 g	510 g

**Dimensioni (mm)**  
**Dimensions (mm)**



**Dimensioni (mm)**  
**Dimensions (mm)**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

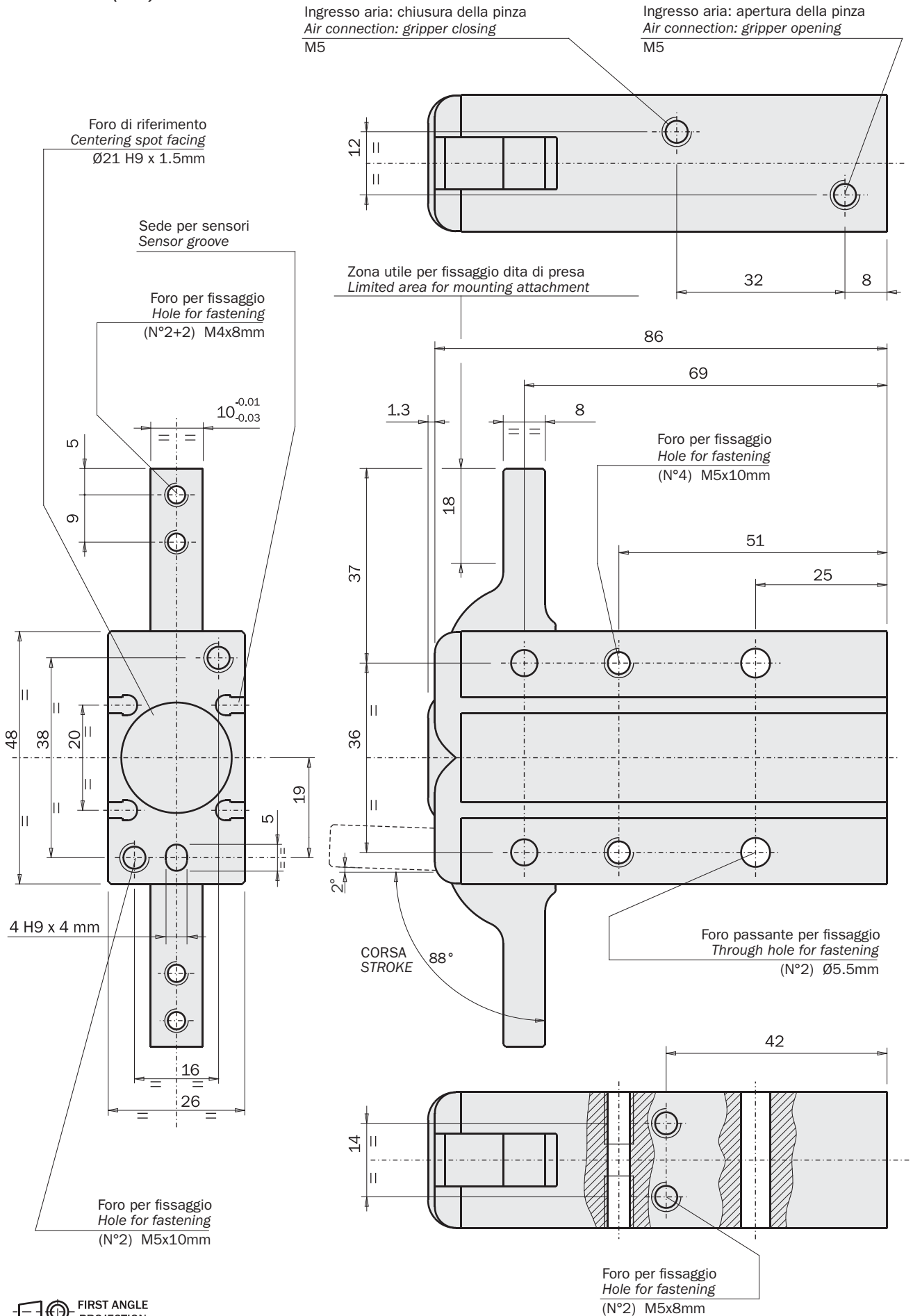
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**GX-20S**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

**Pinze**  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

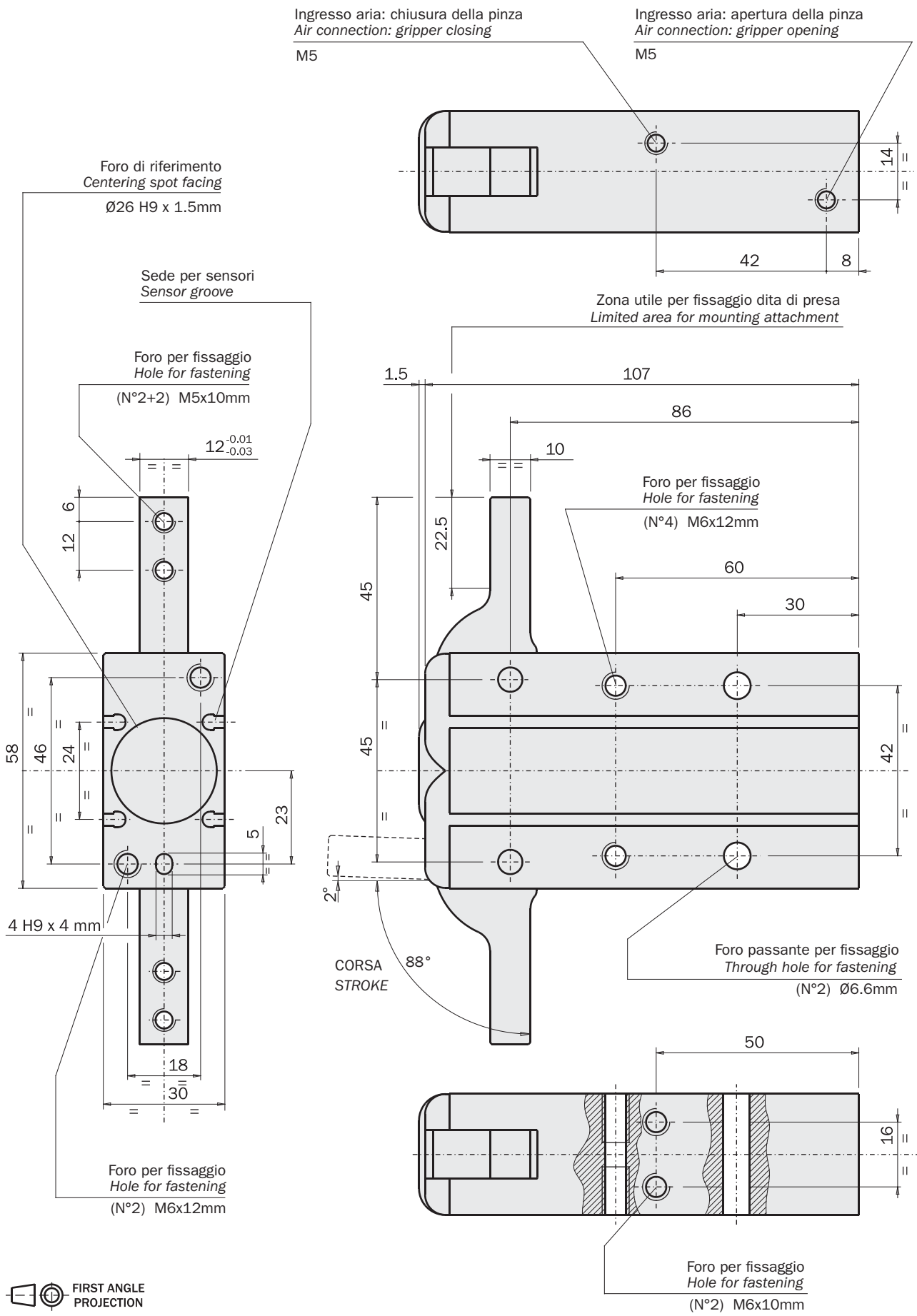
Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**



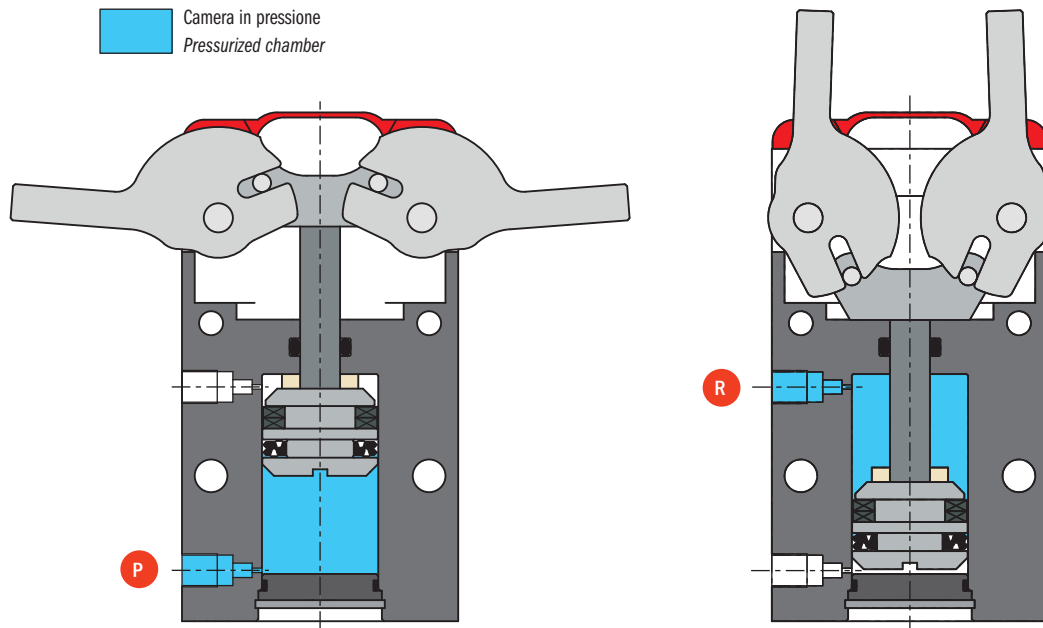
FIRST ANGLE  
PROJECTION

**Serraggio**

La pinza è a doppio effetto e quindi può essere usata per la presa di un pezzo indifferentemente sia in chiusura che in apertura delle griffe.

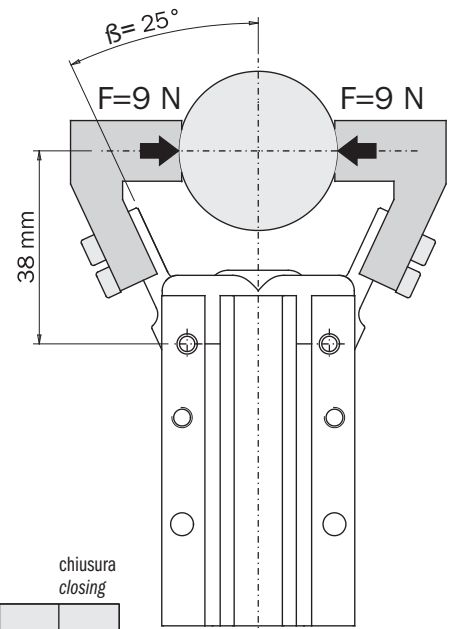
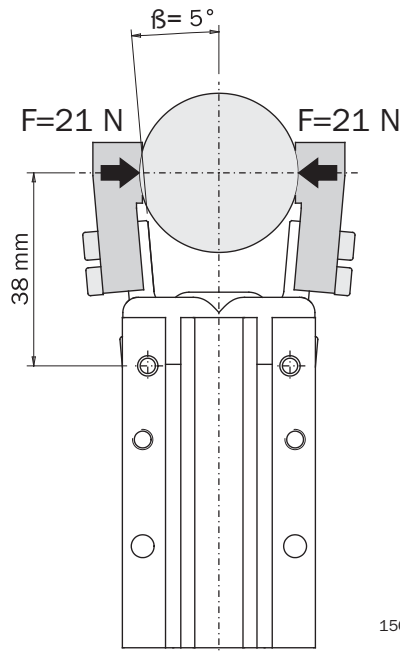
**Gripping**

As the gripper has a double acting motion, it can be used like internal or external gripping.

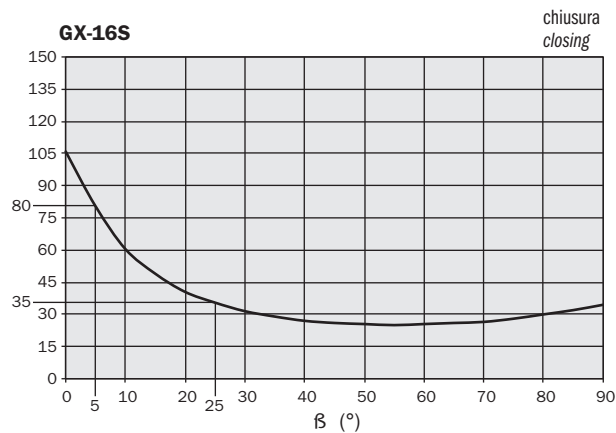


La forza di serraggio dipende dalla forma delle dita.

The gripping force depends on the shape of the gripping tools.



Coppia  
Torque (Ncm)

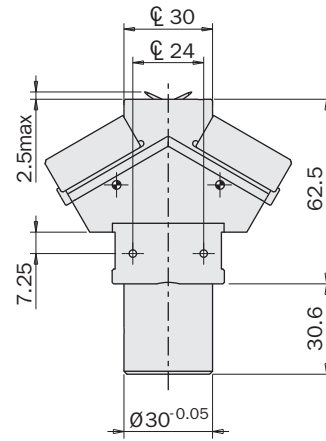
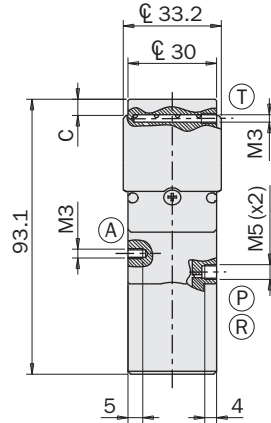
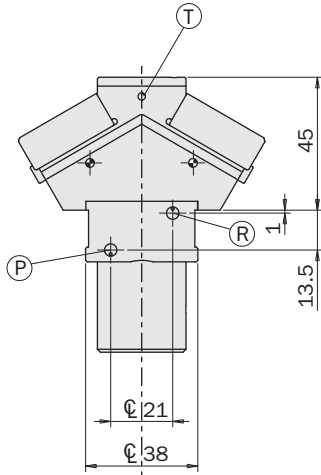


**Pinza ad aghi pneumatica autocentrante serie PT**

- 4 aghi (PT25) o 8 aghi (PT28) diametro 2mm.
- Adatta per l'industria plastica, tessile e alimentare.
- Azionamento a doppio effetto.
- Regolazione simultanea della corsa degli aghi (1).
- Vari accessori disponibili per il fissaggio (2).
- PT25: Ampio foro passante (3).
- PT28: Canale di soffiaggio (T) per pulizia e rilascio.
- PT28: Pastiglia in PTFE (4) per contatto con superfici calde.
- PT28: Sensori magnetici opzionali (5).

**Self-centering pneumatic needle gripper series PT**

- 4 needles (PT25) or 8 needles (PT28) with 2mm diameter.
- Suitable for plastics, textile and food industry.
- Double acting.
- Needle simultaneous stroke adjustment (1).
- Several mounting accessories (2).
- PT25: Large through hole (3).
- PT28: Blow-off port (T) for cleaning and releasing.
- PT28: Pad in PTFE (4) for hot surface contact.
- PT28: Optional magnetic sensors (5).

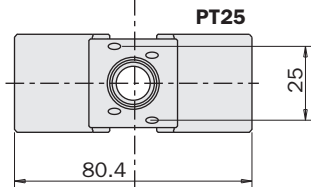
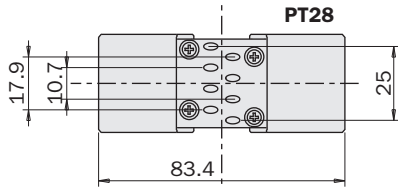


(A) Foro per fissaggio  
Hole for fastening

(T) Soffiaggio  
Air connection

(P) Aghi dentro  
Needles in

(R) Aghi fuori  
Needles out



	PT25	PT28
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Pressure range	3 ÷ 8 bar	
Temperatura di esercizio Temperature range	5° ÷ 60 °C.	
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	90 N	
Corsa degli aghi Needle stroke	1 ÷ 7 mm	
Consumo d'aria per ciclo Cycle air consumption	3.5 cm <sup>3</sup>	
Peso Weight	165 g	182 g

## Regolazione della corsa

La pinza è autocentrante.

Quindi il fine corsa del pistone determina la corsa di tutti gli aghi.

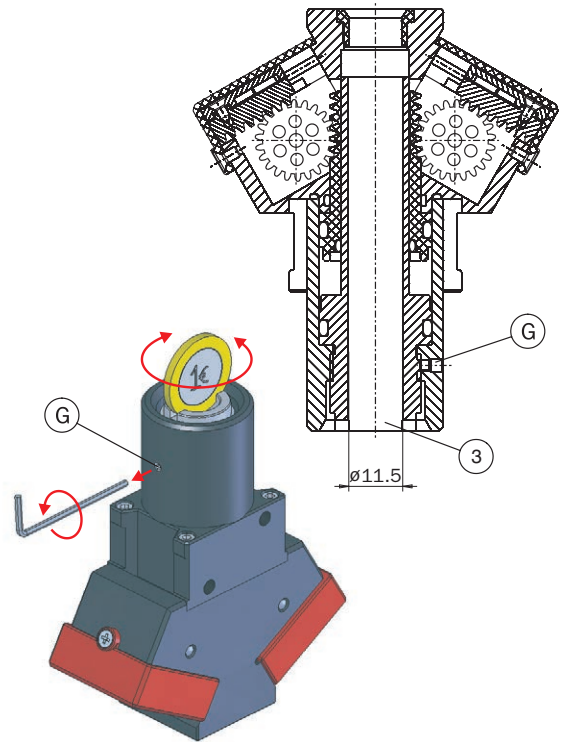
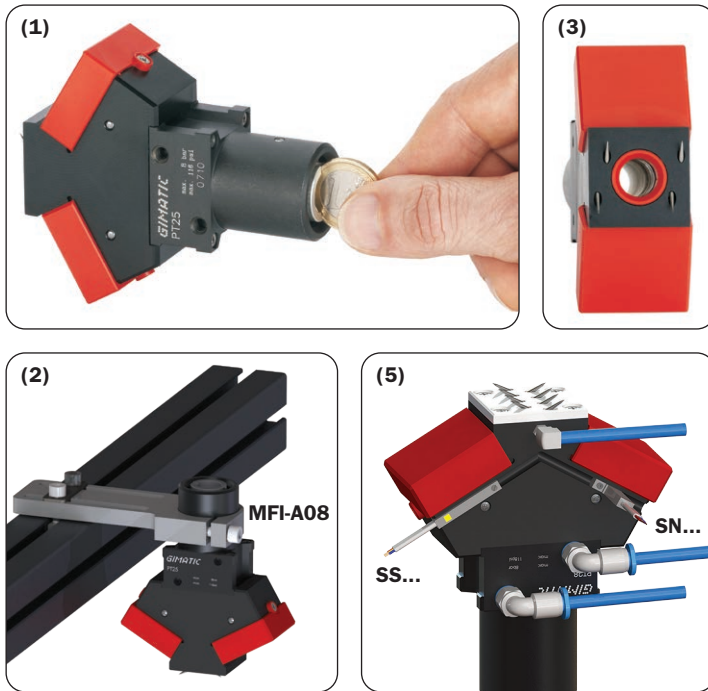
Questa si può regolare con una moneta da 1 euro, dopo aver allentato il grano di fermo (G).

## Stroke adjustment

The gripper is self-centering.

Therefore the piston end-stroke determines the stroke of all needles.

It is possible to adjust this stroke, by a 1-euro coin, after the grub screw (G) has been loosened.



## Manutenzione

Quando necessario, gli aghi possono essere facilmente rimpiazzati.

Il codice di ordinazione di un ago é PT-25-13.

Dopo cinque milioni di cicli la pinza deve essere re-ingrassata.

Grasso suggerito: BERULUB FG-H 2 SL

(Lubrificante NSF H1 Registrazione No. 135919).

## Maintenance

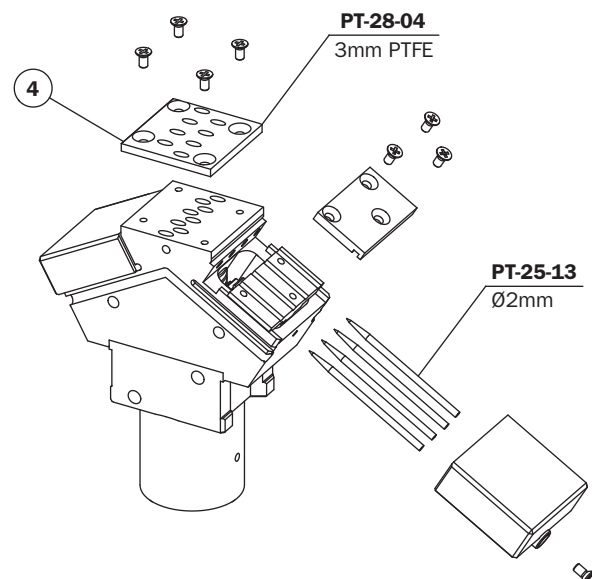
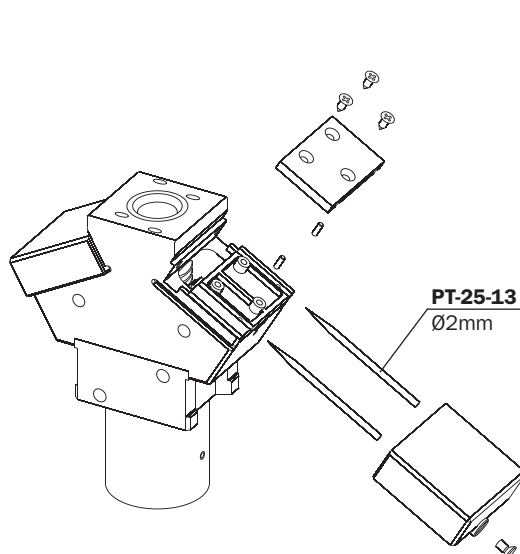
The needles can be easily replaced, when necessary.

The ordering code of one needle is PT-25-13.

After five million cycles re-lubricate the gripper.

Suggested grease: BERULUB FG-H 2 SL

(Lubricant NSF H1 Registration No. 135919).



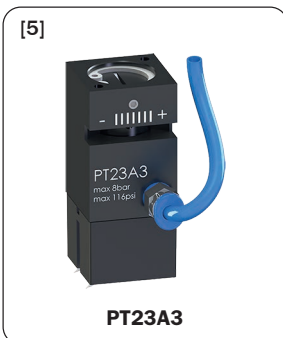
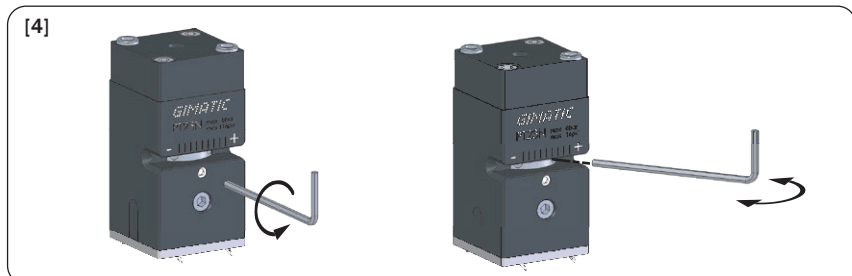
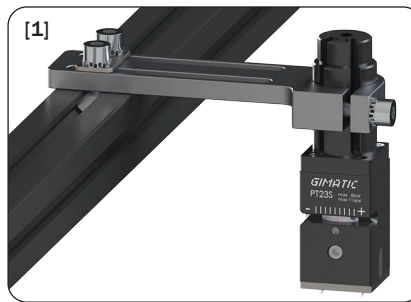
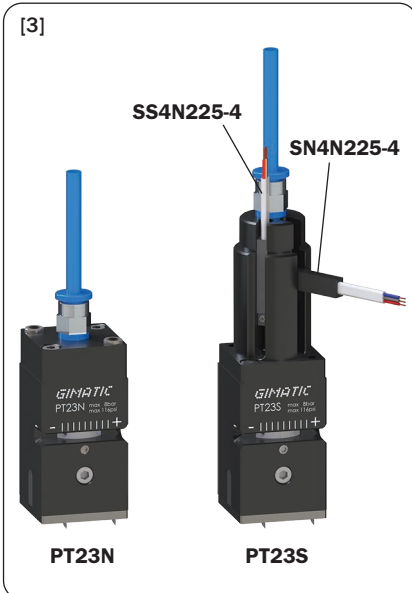


## Minipinza ad aghi pneumatica autocentrante serie PT

- 4 aghi diametro 1.5mm.
- Adatta per l'industria plastica, tessile e alimentare.
- Azionamento a semplice effetto (normale chiusa).
- Regolazione simultanea della corsa degli aghi [4].
- PT23S e PT30S: fissaggio a cravatta [1].
- PT23A3, PT23N e PT30N: fissaggio su piastra [2].
- Sensori magnetici opzionali per PT23S e PT30S [3].
- PT23A3 con alimentazione laterale [5].

## Self-centering pneumatic needle mini-gripper series PT

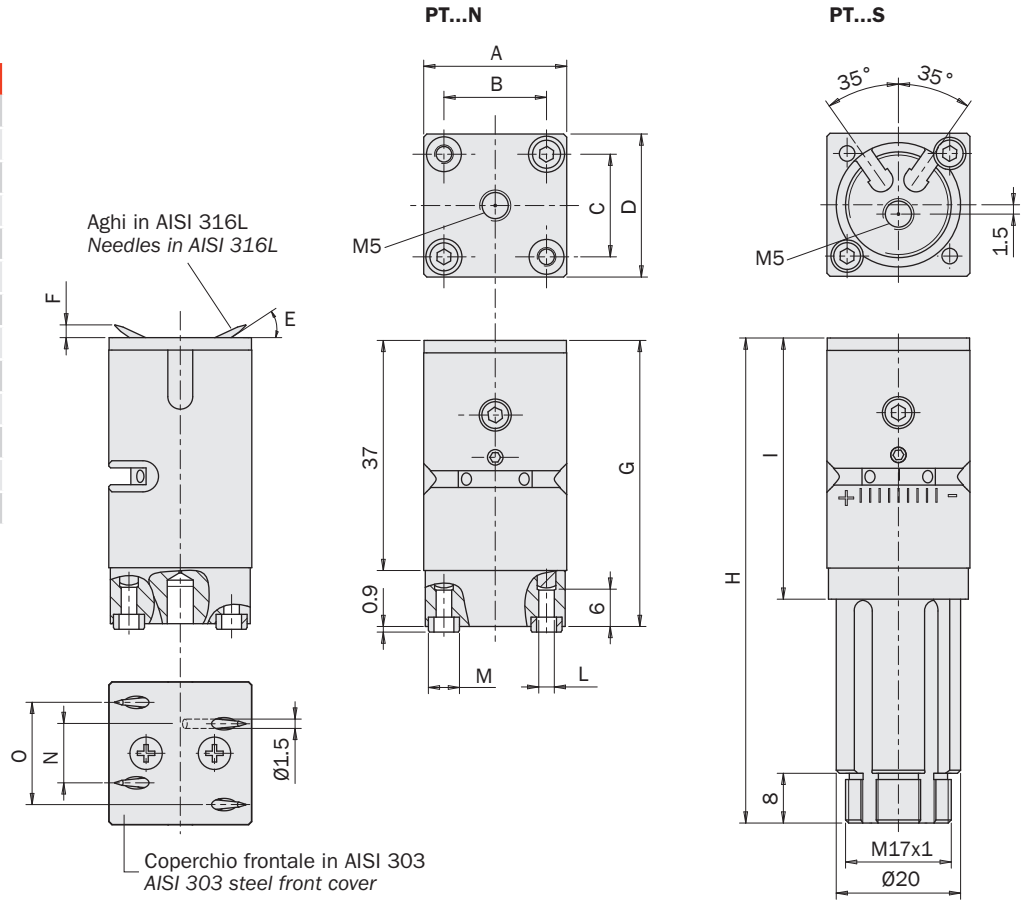
- 4 needles with diameter 1.5mm.
- Suitable for plastics, textile and food industry.
- Single acting (normally closed).
- Needle simultaneous stroke adjustment[4].
- PT23S and PT30S: clamp mounting [1].
- PT23A3 PT23N and PT30N: plate mounting [2].
- Optional magnetic sensors for PT23S and PT30S [3].
- PT23A3 with side air 2 part [5].



	PT23A3	PT23N	PT23S	PT30N	PT30S
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]				
Pressione di esercizio Pressure range	3 ÷ 8 bar				
Temperatura di esercizio Temperature range	5° ÷ 60 °C.				
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar		40 N			50 N
Corsa degli aghi Needle stroke		0 ÷ 4 mm			0 ÷ 7 mm
Consumo d'aria per ciclo Cycle air consumption		0.6 cm <sup>3</sup>			1.1 cm <sup>3</sup>
Peso Weight	63 g	74 g	92 g	115 g	134 g

**Dimensioni (mm)**  
**Dimensions (mm)**

	PT23...	PT30..
A	23	28
B	16.5	18
C	16.5	18
D	23	28
E	30°	35°
F	0÷2	0÷4
G	46.5	54
H	78.5	87.5
I	42.5	51.5
L	M3(x2)	M4(2x)
M	5 h8 (x2)	7 h8 (2x)
N	9.5	9
O	16.5	18



FIRST ANGLE PROJECTION

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

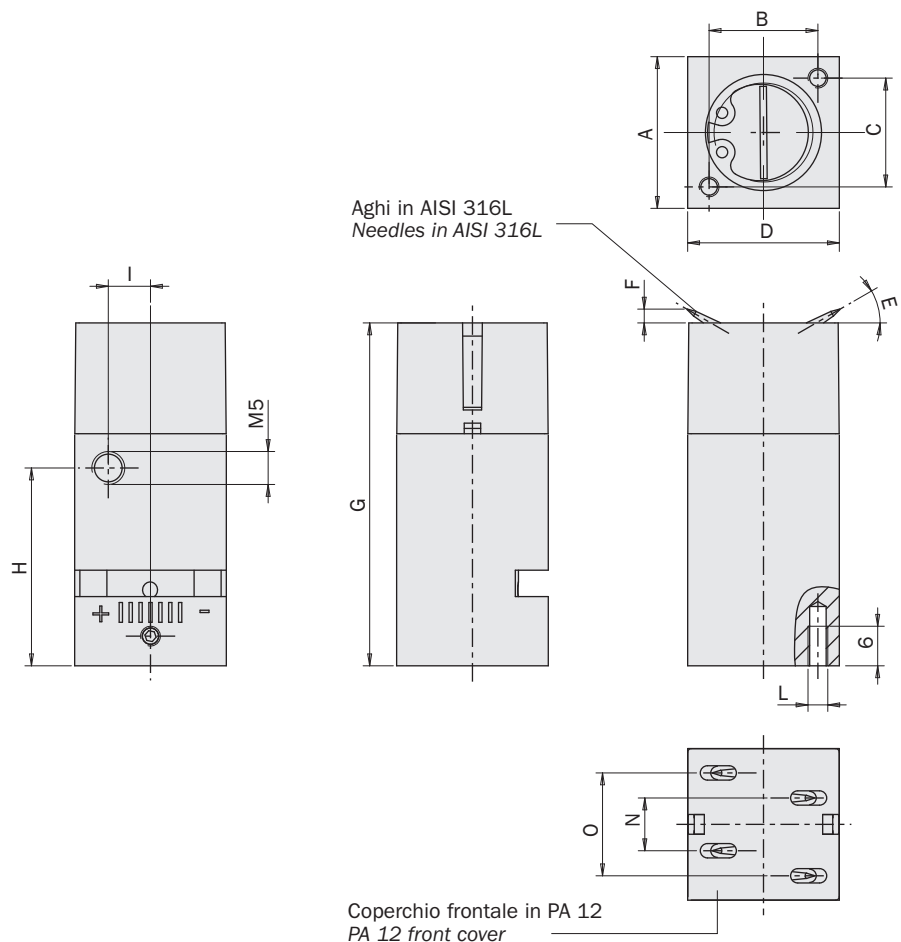
Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

**Dimensioni (mm)**  
**Dimensions (mm)**

	PT23A3
A	23
B	16.5
C	16.5
D	23
E	30°
F	1÷2
G	52
H	30
I	6.4
L	M3(x2)
M	-
N	8
O	15.6



Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

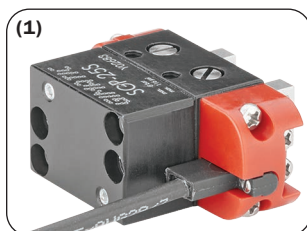
Sensori  
Sensors

## Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie SGP-S)

- Azionamento a doppio effetto.
- Meccanismo di regolazione del gioco.
- Prestazioni elevate in dimensioni ridotte.
- Costruzione robusta: grande durata e affidabilità senza manutenzione.
- Diverse possibilità di fissaggio e alimentazione.
- Predisposta per sensore magnetico programmabile PRO-SN ...HS (1).
- Grasso alimentare FDA-H1.

## 2-jaw parallel self-centering pneumatic gripper (series SGP-S)

- Double acting.
- Backlash adjusting system.
- High performance in small dimensions.
- The rugged construction lends itself to heavy duty applications for a trouble free long life without maintenance.
- Various fastening and air feeding options.
- Ready for PRO-SN ...HS (1) programmable magnetic sensor.
- Food grade grease FDA-H1.



SGP-16S

SGP-20S

SGP-25S

SGP-32S

SGP-40S

SGP-50S

	SGP-16S	SGP-20S	SGP-25S	SGP-32S	SGP-40S	SGP-50S
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	2.5 ÷ 8 bar		2 ÷ 8 bar			
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	16 N	23 N	52 N	67 N	80 N	145 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	32 N	46 N	104 N	134 N	160 N	290 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	14 N	20 N	47 N	60 N	73 N	126 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	28 N	40 N	94 N	120 N	146 N	252 N
Corsa totale Total stroke (±0.3 mm)	3 mm	4 mm	6 mm	8 mm	12 mm	16 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	3 Hz	3 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	0.2 cm <sup>3</sup>	0.5 cm <sup>3</sup>	1.4 cm <sup>3</sup>	2.4 cm <sup>3</sup>	4.5 cm <sup>3</sup>	10 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.02 s	0.02 s	0.02 s	0.05 s	0.05 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Peso Weight	19 g	33 g	43 g	86 g	170 g	250 g

### Sensori

Le posizioni di funzionamento possono essere verificate grazie ad un sensore programmabile a 3 uscite (non incluso), che rileva la posizione del magnete nella griffa destra.

**I sensori consigliati per le pinze SGP-20S/25S/32S/40S/50S sono:**  
**The recommended sensors for the grippers SGP-20S/25S/32S/40S/50S are:**

PRO-SN4N225HS-G	PNP	Cavo 2.5m
PRO-SN4M225HS-G	NPN	2.5m cable
PRO-SN3N215HS-G	PNP	Connettore M8
PRO-SN3M215HS-G	NPN	M8 snap plug connector

**I sensori opzionali per la pinza SGP-16S sono:**  
**The recommended sensors for the gripper SGP-16S are:**

PRO-SN4N225-G	PNP	Cavo 2.5m
PRO-SN4M225-G	NPN	2.5m cable
PRO-SN3N215-G	PNP	Connettore M8
PRO-SN3M215-G	NPN	M8 snap plug connector

La posizioni rilevate possono essere regolate tramite la procedura di configurazione, in questo modo le 3 uscite digitali possono essere:

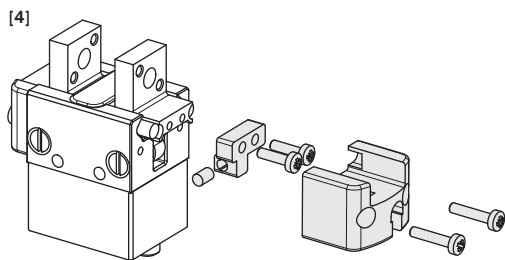
- Uscita 1 – griffe completamente chiuse [1];
- Uscita 2 – griffe in presa dell’oggetto (posizione intermedia) [2];
- Uscita 3 – griffe completamente aperte [3].

### Upgrade

Le vecchie pinze possono essere aggiornate per utilizzare il nuovo sensore programmabile [4].

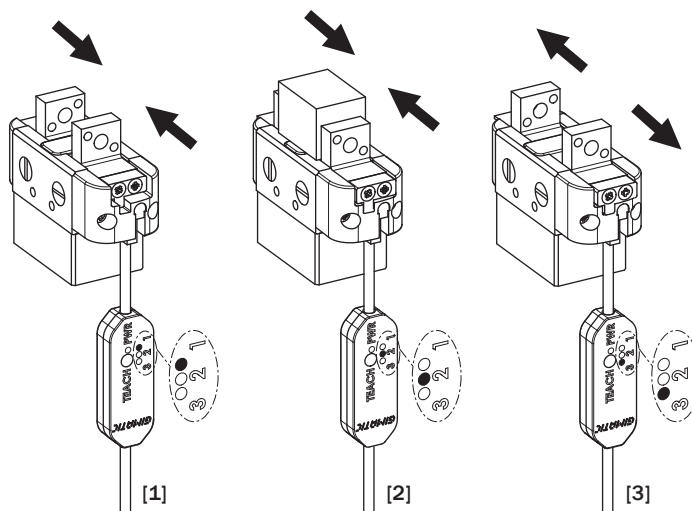
### Downgrade

Le nuove pinze possono essere aggiornate per utilizzare i sensori induttivi [5 e 6].



### Sensors

The operating position can be checked by one 3 - outputs programmable sensor (not included), detecting the position of the magnet on the right jaw.



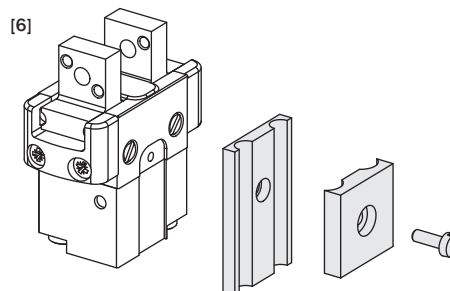
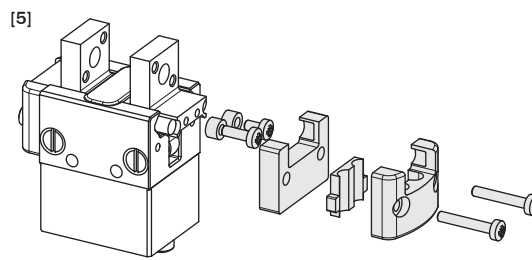
The detected positions can be adjusted by a teaching procedure, so that 3 digital outputs can be:  
 Output 1 - totally closed jaws [1];  
 Output 2 - gripped part (intermediate position) [2];  
 Output 3 - totally open jaws [3].

### Upgrade

Old grippers can be upgraded in order to use the new teachable sensor [4].

### Downgrade

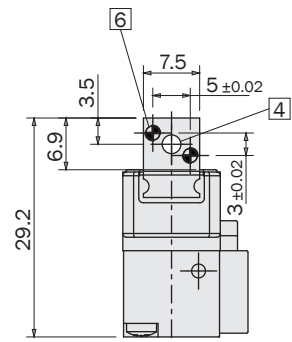
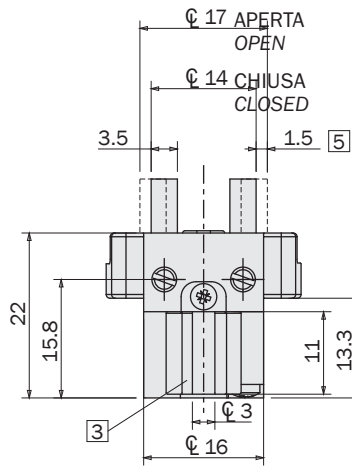
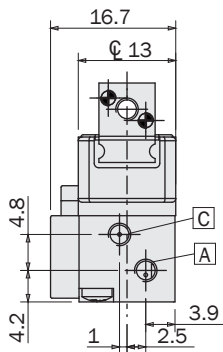
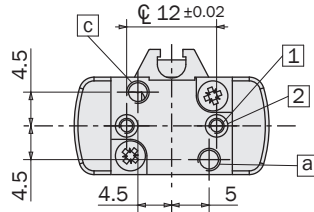
New grippers can be downgraded in order to use the inductive sensors [5 and 6].



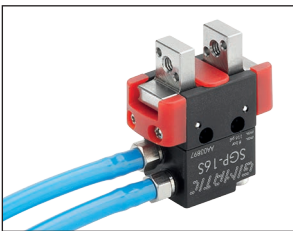
	Upgrade [4]	Downgrade [5]	Downgrade [6]
SGP-16S	-	-	SGP-16S-KD
SGP-20S	SGP-20S-KU	SGP-20S-KD	-
SGP-25S	SGP-25S-KU	SGP-25S-KD	-
SGP-32S	SGP-32S-KU	SGP-32S-KD	-
SGP-40S	SGP-40S-KU	SGP-40S-KD	-
SGP-50S	-	SGP-50S-KD	-

### Dimensioni (mm) Dimensions (mm)

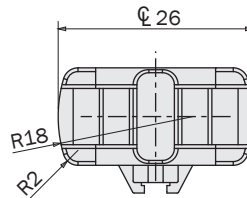
- 1** (N°2) M2x2.8mm  
Foro per fissaggio  
*Hole for fastening*
- 2** (N°2) Ø3H8x1.2mm  
Sede per boccole di centraggio  
*Hole for fastening*
- 3** Supporto per posizionamento sensore magnetico PRO-SN/SS  
*Magnetic sensor slot (PRO-SN/SS)*
- 4** M3  
Foro passante per fissaggio  
*Through hole for fastening*



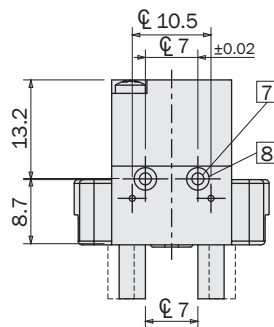
### RG.R0-1376-AS1 Raccordo M3 diretto *Straight M3 fitting*



- 5** Corsa per griffa  
*Stroke each jaw*
- 6** Ø1.5H8x3.5mm  
Foro di riferimento  
*Dowel pin hole*
- 7** (N°2) M2x1.5mm  
Foro per fissaggio  
*Hole for fastening*
- 8** (N°2) Ø3H8x1.5mm  
Foro di riferimento  
*Hole for fastening*

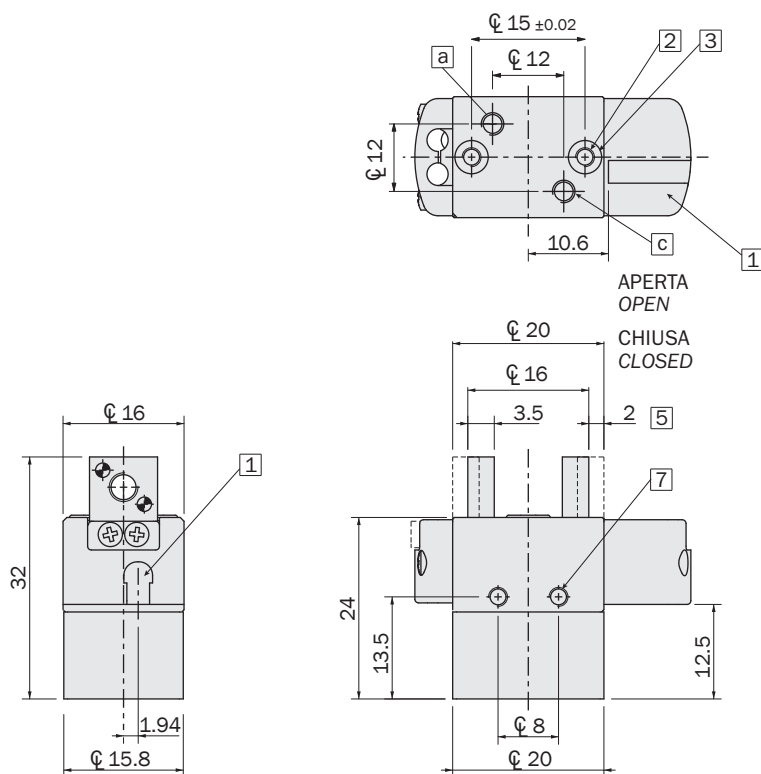


- a** M2.5  
Aria compressa in a: apertura della pinza  
*Compressed air in a: gripper opening*
- A** M3  
Aria compressa in A: apertura della pinza  
*Compressed air in A: gripper opening*
- c** M2.5  
Aria compressa in c: chiusura della pinza  
*Compressed air in c: gripper closing*
- C** M3  
Aria compressa in C: chiusura della pinza  
*Compressed air in C: gripper closing*

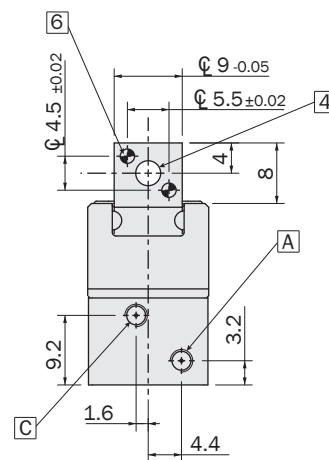


**Dimensioni (mm)**  
**Dimensions (mm)**

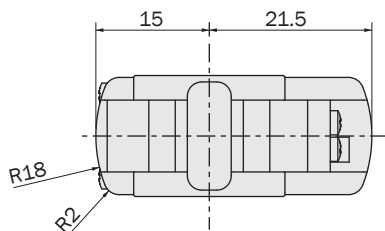
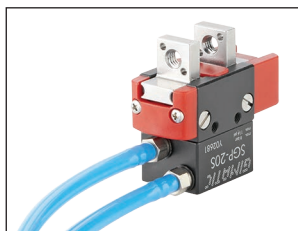
**SGP-20S**



- 1 Foro per sensore programmabile PRO-SN ...HS  
Hole for programmable sensor PRO-SN ...HS
- 2 (N°2) M2.5x6mm  
Foro per fissaggio  
Hole for fastening
- 3 (N°2) Ø4H8x2mm  
Sede per boccole di centraggio  
Centering sleeve hole
- 4 M4  
Foro passante per fissaggio  
Through hole for fastening

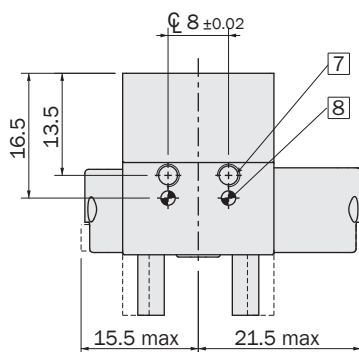
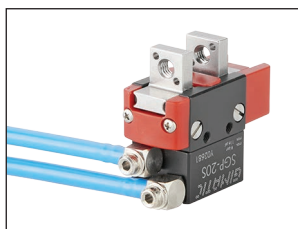


**RG.RO-1376-AS1**  
Raccordo M3 diretto  
Straight M3 fitting



- 5 Corsa per griffa  
Stroke each jaw
- 6 Ø1.5H8x3.5mm  
Foro di riferimento  
Dowel pin hole
- 7 (N°2) M2.5x4mm  
Foro per fissaggio  
Hole for fastening
- 8 Ø1.5H8x3mm  
Foro di riferimento  
Dowel pin hole

**RG.RO-1376-AS2**  
Raccordo M3 orientabile a "L"  
Adjustable M3 fitting



- a M2.5  
Aria compressa in a: apertura della pinza  
Compressed air in a: gripper opening
- A M3  
Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening
- c M2.5  
Aria compressa in c: chiusura della pinza  
Compressed air in c: gripper closing
- C M3  
Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing



**Dimensioni (mm)**  
**Dimensions (mm)**

**SGP-25S**

Foro per sensore programmabile  
PRO-SN...HS  
Hole for programmable sensor  
PRO-SN...HS

1

(N°2) M3x7mm  
Foro per fissaggio  
Hole for fastening

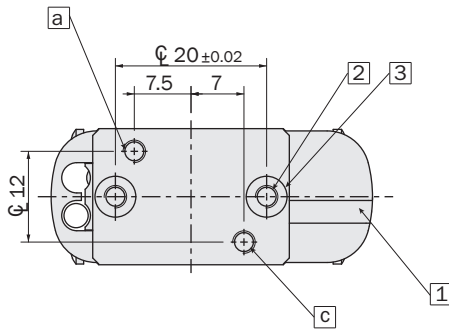
2

(N°2) Ø5H8x2.4mm  
Sede per boccole di centraggio  
Centering sleeve hole

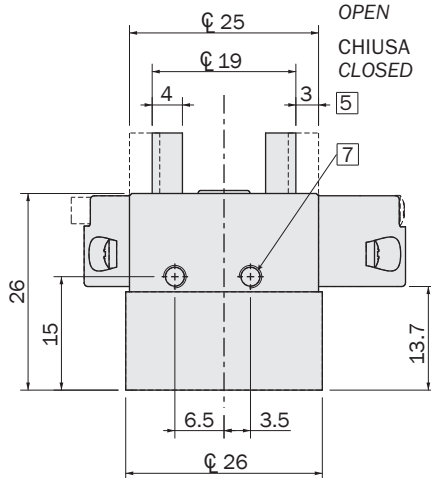
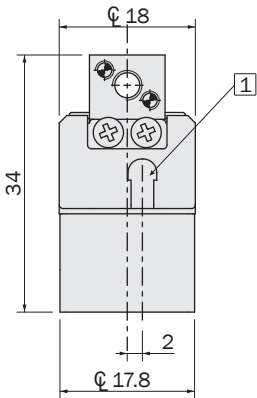
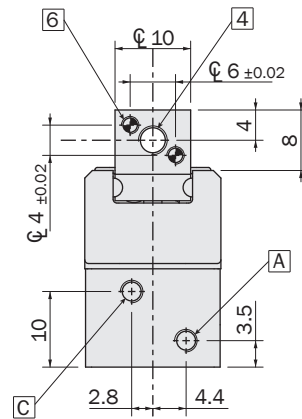
3

M4  
Foro passante per fissaggio  
Through hole for fastening

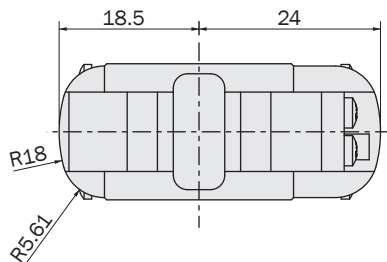
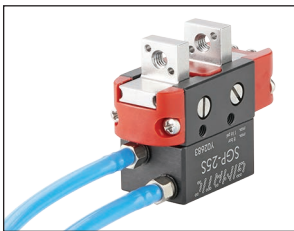
4



APERTA  
OPEN  
CHIUSA  
CLOSED



**RG.R0-1376-AS1**  
Raccordo M3 diretto  
Straight M3 fitting



5 Corsa per griffa  
Stroke each jaw

5

Ø1.5H8x4mm  
Foro di riferimento  
Dowel pin hole

6

(N°2) M3x5mm  
Foro per fissaggio  
Hole for fastening

7

Ø2H8x4mm  
Foro di riferimento  
Dowel pin hole

8

M3  
Aria compressa in a: apertura della pinza  
Compressed air in a: gripper opening

a

M3  
Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening

A

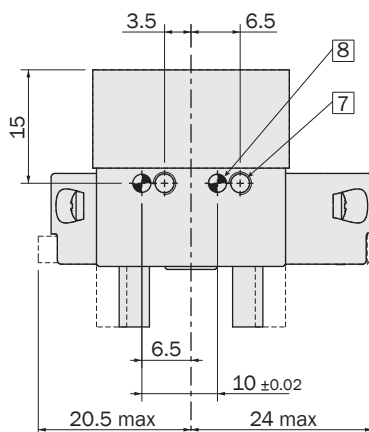
M3  
Aria compressa in c: chiusura della pinza  
Compressed air in c: gripper closing

c

M3  
Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

C

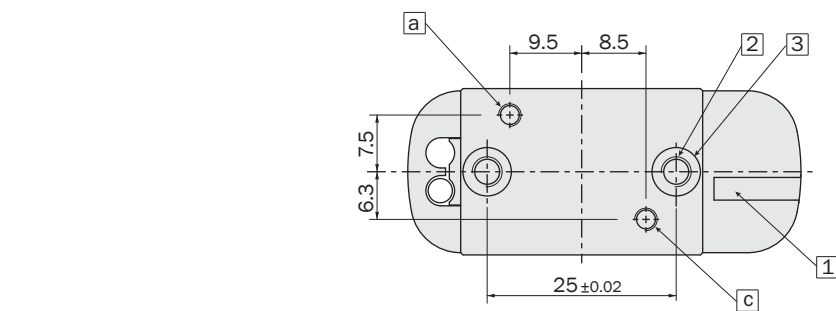
**RG.R0-1376-AS2**  
Raccordo M3 orientabile a "L"  
Adjustable M3 fitting



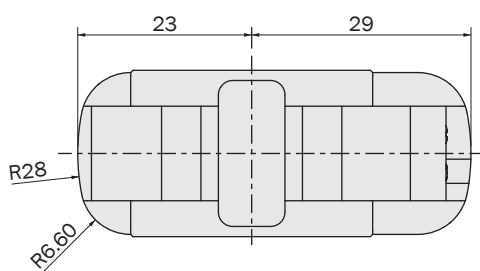
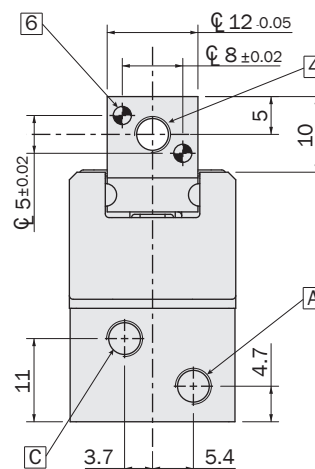
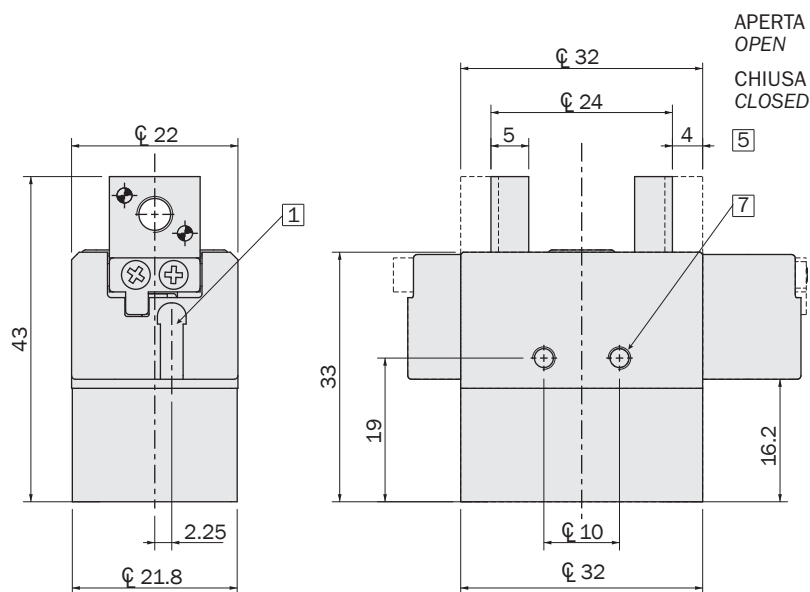
FIRST ANGLE  
PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

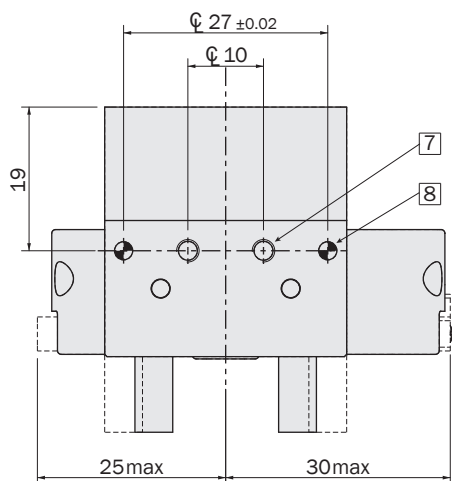
**SGP-32S**



- 1** Foro per sensore programmabile  
PRO-SN...HS  
*Hole for programmable sensor  
PRO-SN...HS*
- 2** (N°2) M4x7.5mm  
Foro per fissaggio  
*Hole for fastening*
- 3** (N°2) Ø6H8x2.9mm  
Sede per boccole di centraggio  
*Centering sleeve hole*
- 4** M5  
Foro passante per fissaggio  
*Through hole for fastening*



- 5** Corsa per griffa  
*Stroke each jaw*
- 6** Ø2H8x5mm  
Foro di riferimento  
*Dowel pin hole*
- 7** (N°2) M3x5mm  
Foro per fissaggio  
*Hole for fastening*
- 8** Ø2H8x5mm  
Foro di riferimento  
*Dowel pin hole*



- a** M3  
Aria compressa in a: apertura della pinza  
*Compressed air in a: gripper opening*
- A** M5  
Aria compressa in A: apertura della pinza  
*Compressed air in A: gripper opening*
- c** M3  
Aria compressa in c: chiusura della pinza  
*Compressed air in c: gripper closing*
- C** M5  
Aria compressa in C: chiusura della pinza  
*Compressed air in C: gripper closing*





**Dimensioni (mm)**  
**Dimensions (mm)**

Foro per sensore programmabile  
PRO-SN...HS  
Hole for programmable sensor  
PRO-SN...HS

1

(N°2) M4x9.5mm  
Foro per fissaggio  
Hole for fastening

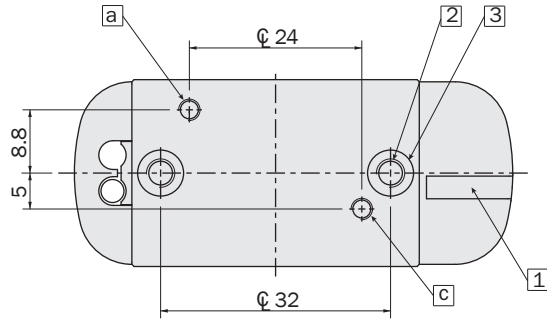
2

(N°2) Ø6H8x2.9mm  
Sede per boccole di centraggio  
Centering sleeve hole

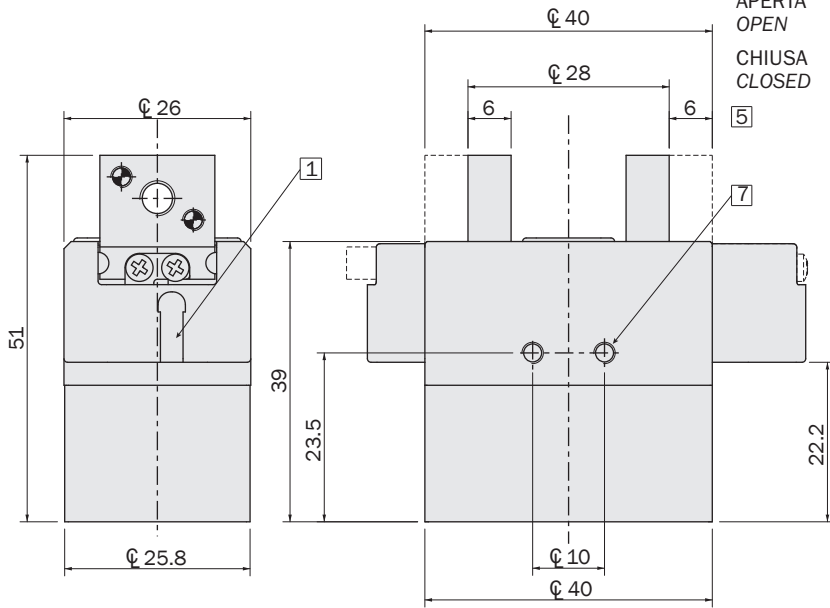
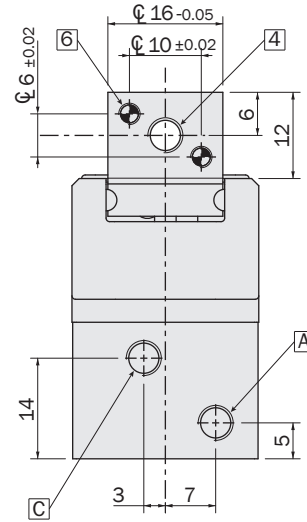
3

M5  
Foro passante per fissaggio  
Through hole for fastening

4



APERTA  
OPEN  
CHIUSA  
CLOSED



5 Corsa per griffa  
Stroke each jaw

Ø2.5H8x6mm  
Foro di riferimento  
Dowel pin hole

(N°2) M3x5mm  
Foro per fissaggio  
Hole for fastening

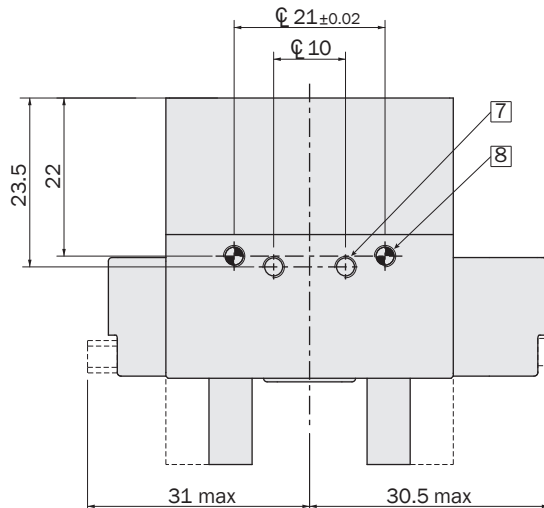
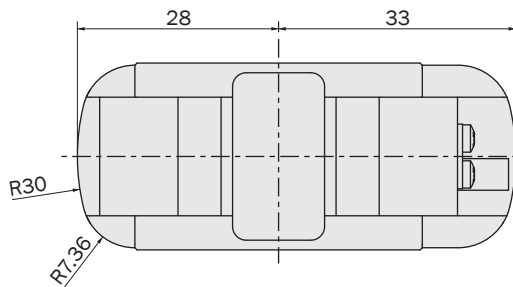
Ø2.5H8x6mm  
Foro di riferimento  
Dowel pin hole

M3  
Aria compressa in a: apertura della pinza  
Compressed air in a: gripper opening

M5  
Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening

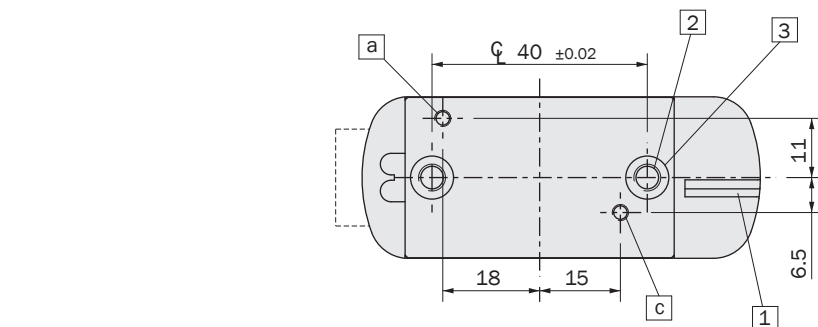
M3  
Aria compressa in c: chiusura della pinza  
Compressed air in c: gripper closing

M5  
Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

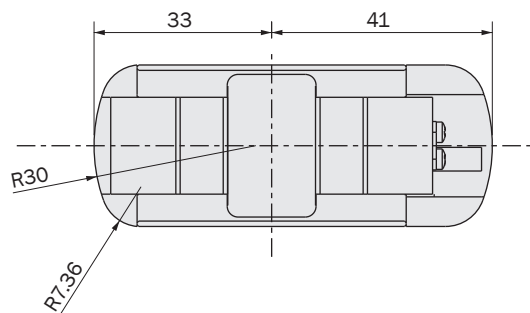
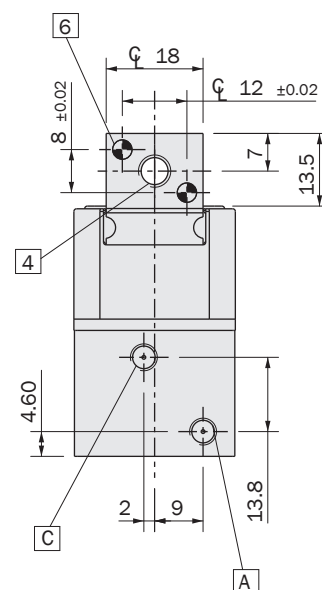
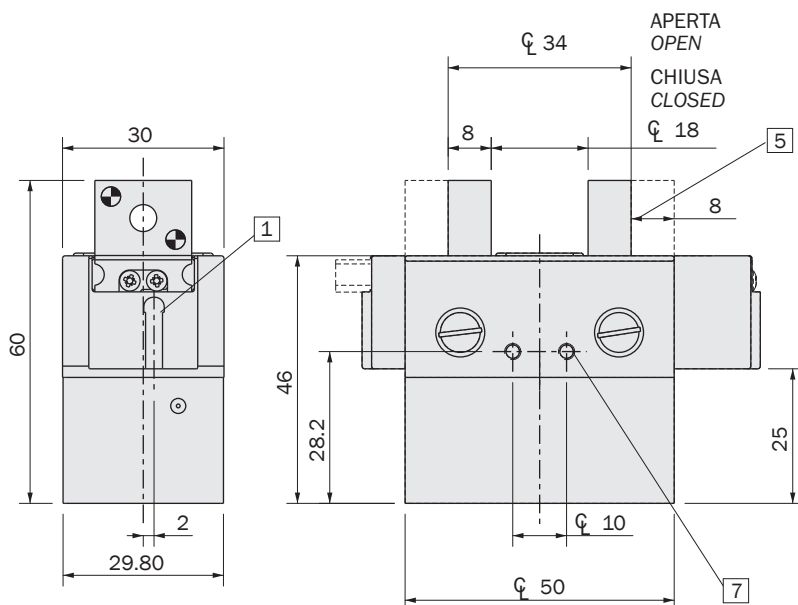


**Dimensioni (mm)**  
**Dimensions (mm)**

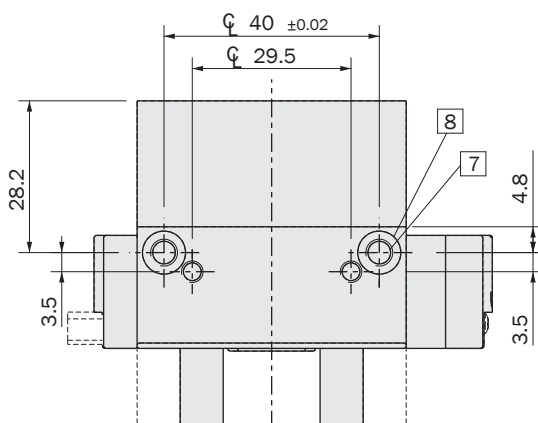
## SGP-50S



- 1** Foro per sensore programmabile  
PRO-SN...HS  
*Hole for programmable sensor  
PRO-SN...HS*
- 2** (N°2) M5x5.9mm  
Foro per fissaggio  
*Hole for fastening*
- 3** (N°2) Ø8H8x2.9mm  
Sede per boccole di centraggio  
*Centering sleeve hole*
- 4** M6  
Foro passante per fissaggio  
*Through hole for fastening*



- 5** Corsa per griffa  
*Stroke each jaw*
- 6** Ø3H8x8mm  
Foro di riferimento  
*Dowel pin hole*
- 7** (N°2) M5x5.5mm  
Foro per fissaggio  
*Hole for fastening*
- 8** Ø8H8x2.5mm  
Sede per boccole di centraggio  
*Centering sleeve hole*
- a** M3  
Aria compressa in a: apertura della pinza  
*Compressed air in a: gripper opening*
- A** M5  
Aria compressa in A: apertura della pinza  
*Compressed air in A: gripper opening*
- c** M3  
Aria compressa in c: chiusura della pinza  
*Compressed air in c: gripper closing*
- C** M5  
Aria compressa in C: chiusura della pinza  
*Compressed air in C: gripper closing*



## Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie GS)

- Azionamento a doppio effetto.
- Meccanismo di regolazione del gioco esclusivo.
- Grande durata e affidabilità senza manutenzione.
- Diverse possibilità di fissaggio.
- Sensori magnetici opzionali.
- Disponibile anche con molla in chiusura (-NC) o in apertura (-NO).
- Grasso alimentare FDA-H1.

## 2-jaw parallel self-centering pneumatic gripper (series GS)

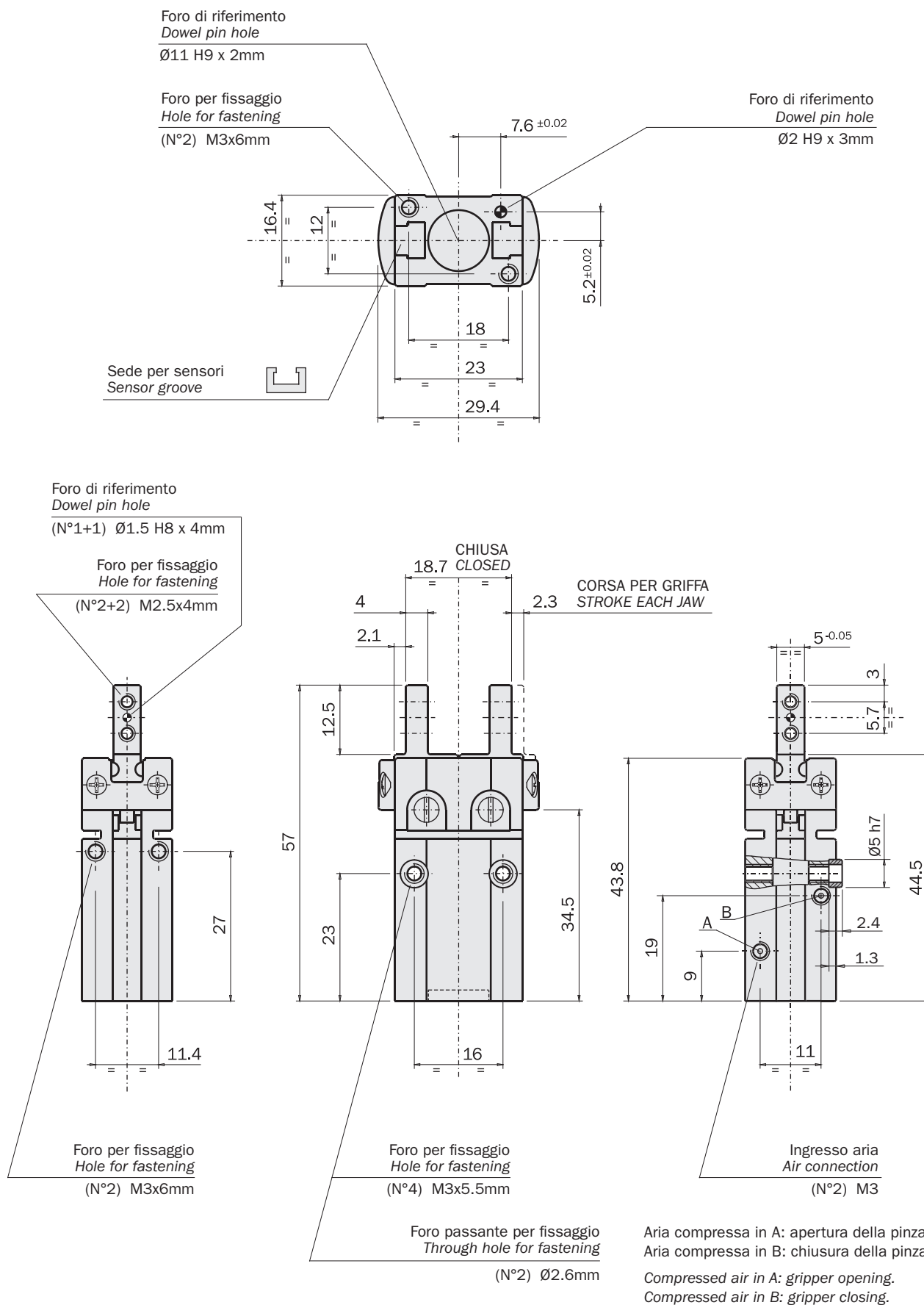
- Double acting.
- Exclusive backlash adjusting system.
- Long life and reliability, maintenance free.
- Various options for fastening.
- Optional proximity magnetic sensors.
- Spring closed (-NC) or spring open (-NO) option.
- FDA-H1 food-grade grease.



	GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	2.5 ÷ 8 bar		1.5 ÷ 8 bar			1 ÷ 8 bar
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	18 N	50 N	106 N	141 N	250 N	350 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	36 N	100 N	212 N	282 N	500 N	700 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	14 N	43 N	93 N	127 N	215 N	307 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	28 N	86 N	186 N	254 N	430 N	614 N
Corsa totale Total stroke (±0.3 mm)	4.6 mm	6.8 mm	10.4 mm	14.4 mm	22 mm	30 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	0.7 cm <sup>3</sup>	3 cm <sup>3</sup>	7 cm <sup>3</sup>	14 cm <sup>3</sup>	28 cm <sup>3</sup>	61 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.01 s	0.02 s	0.05 s	0.07 s	0.09 s	0.12 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Peso Weight	45 g	98 g	207 g	365 g	645 g	1155 g

**Dimensioni (mm)**  
**Dimensions (mm)**

**GS-10**



**Dimensioni (mm)**  
**Dimensions (mm)**

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

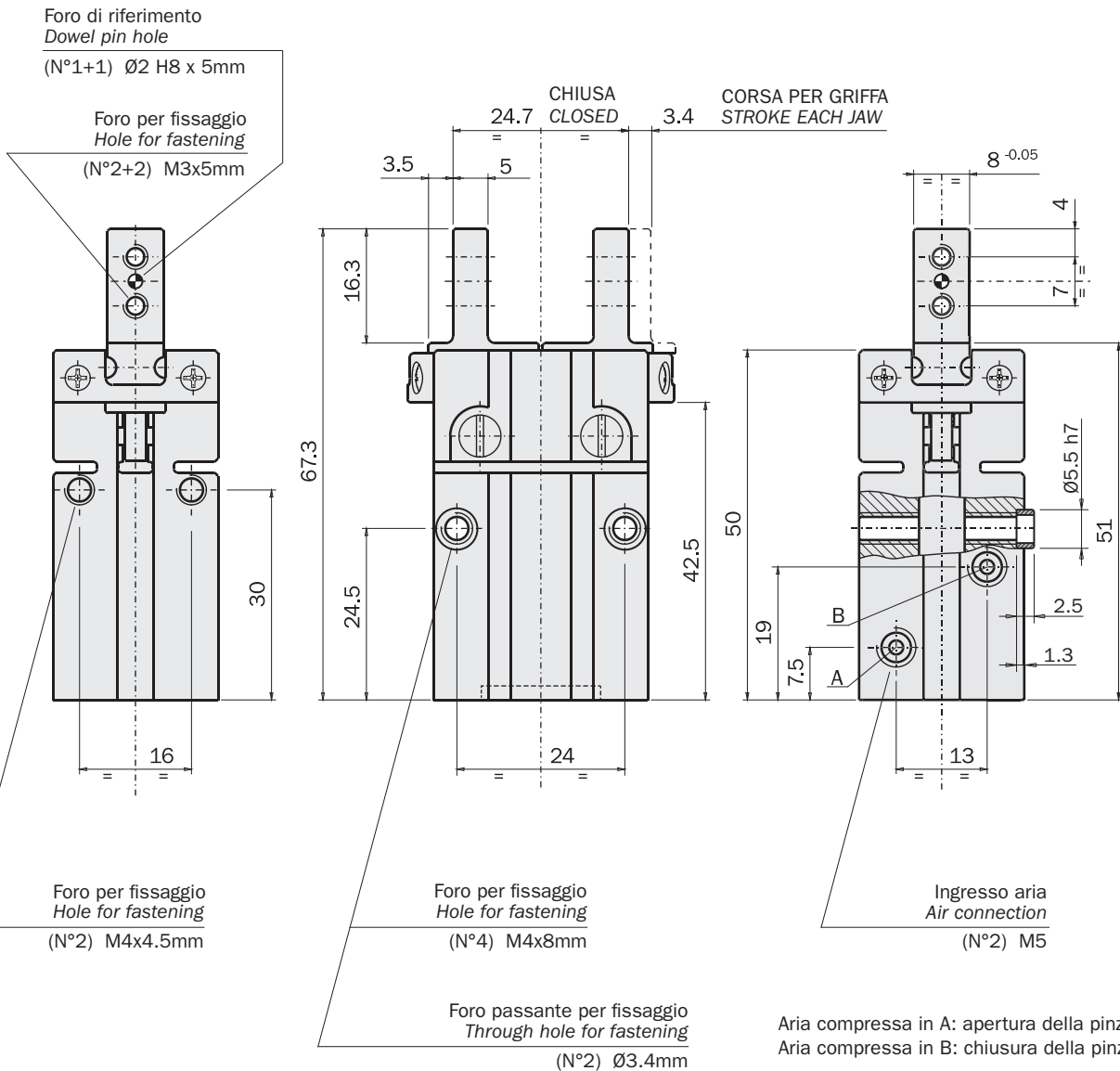
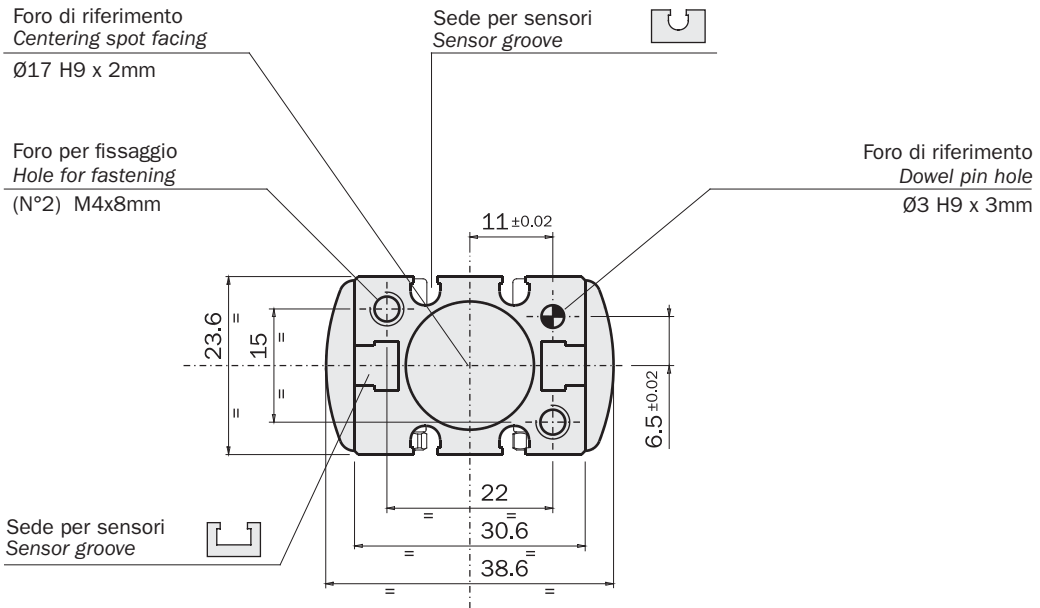
Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

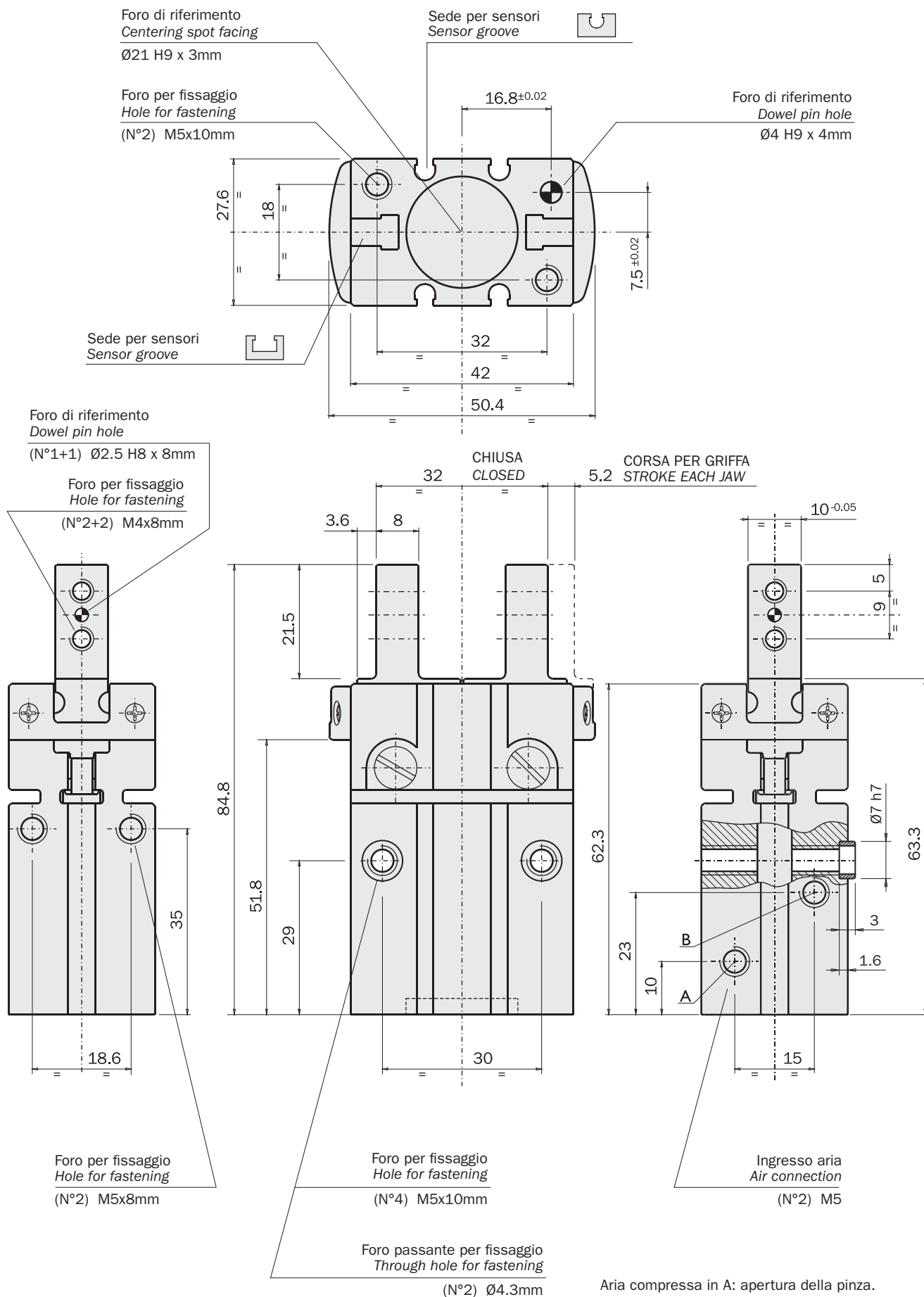


Aria compressa in A: apertura della pinza.  
Aria compressa in B: chiusura della pinza.  
Compressed air in A: gripper opening.  
Compressed air in B: gripper closing.



**Dimensioni (mm)**  
**Dimensions (mm)**

GS-20



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

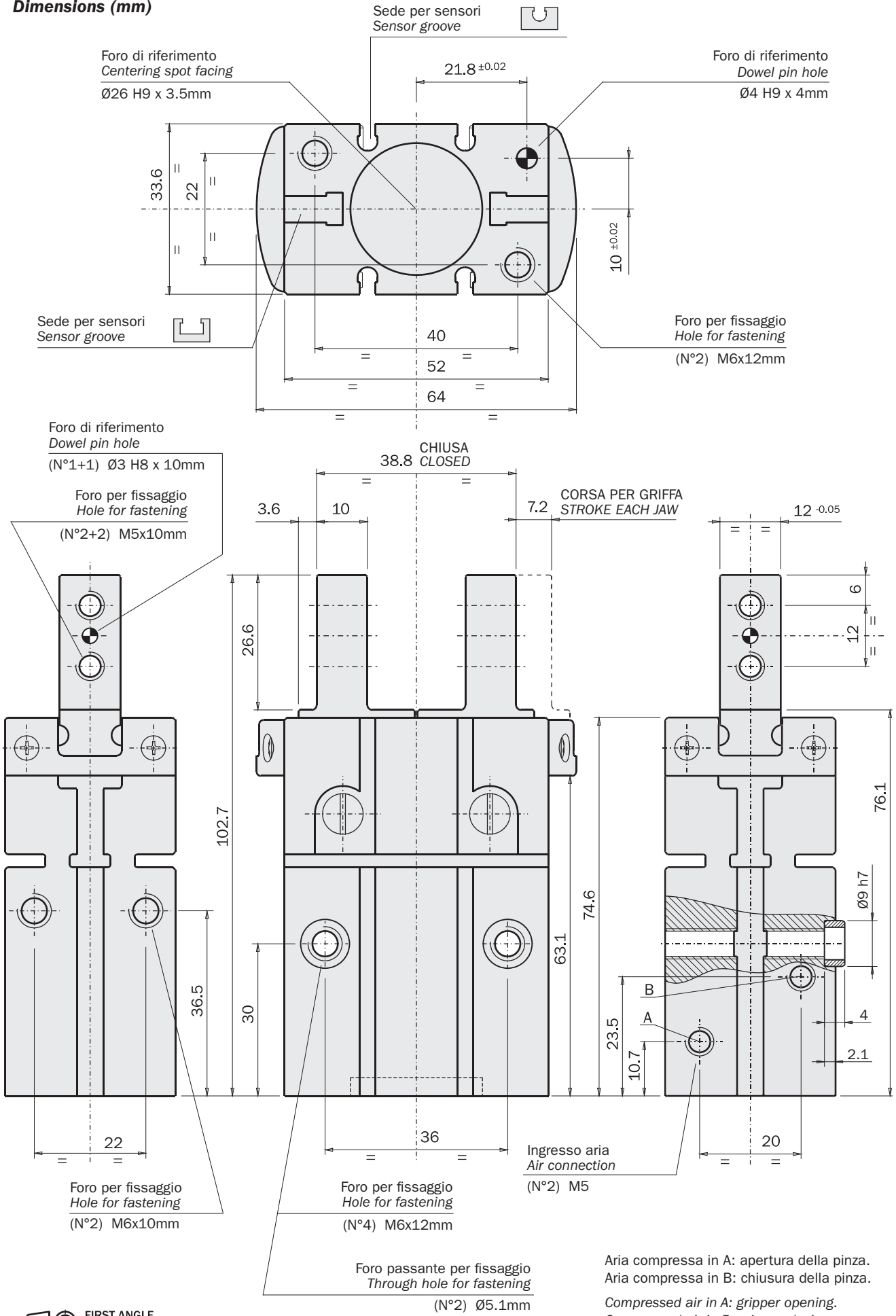
Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**



Unità Rotanti / Rotary Units

Cambia Utensile / Quick Changer

Profili e Staffe / Profiles and Brackets

Pinze / Grippers

Attuatori Lineari / Linear Actuators

Sospensioni / Suspensions

Taglierini / Nippers

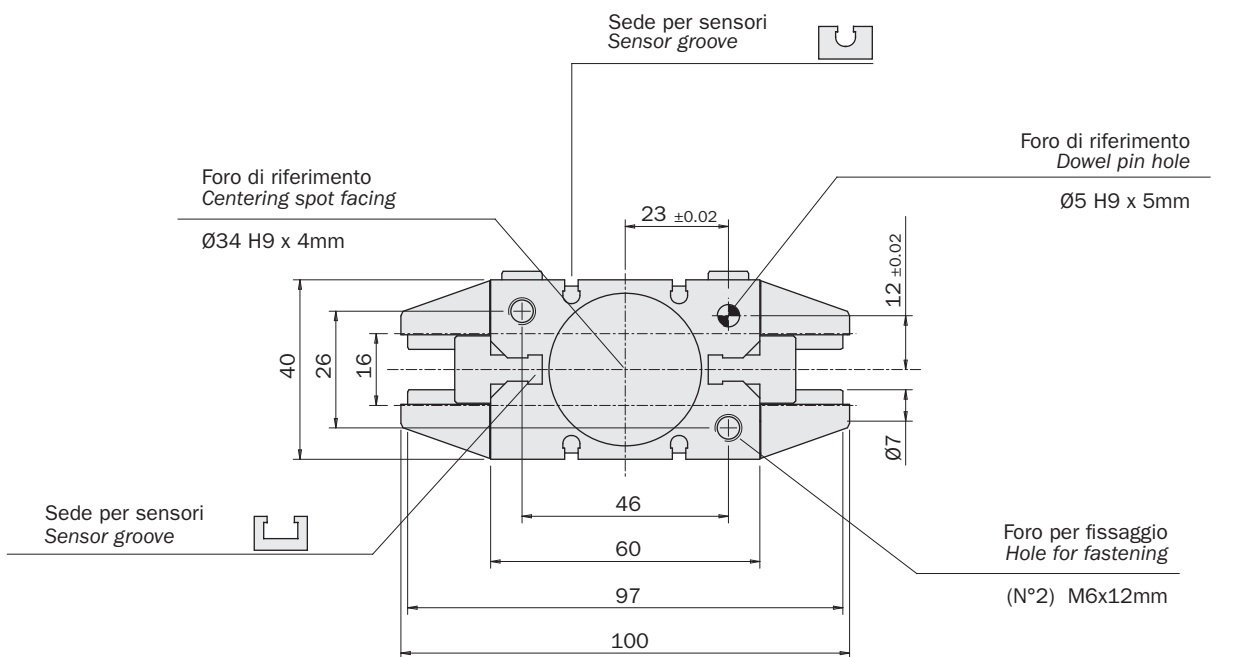
Kit-Robot / Robot Kit

Accessori Opzionali / Options

Sensori / Sensors

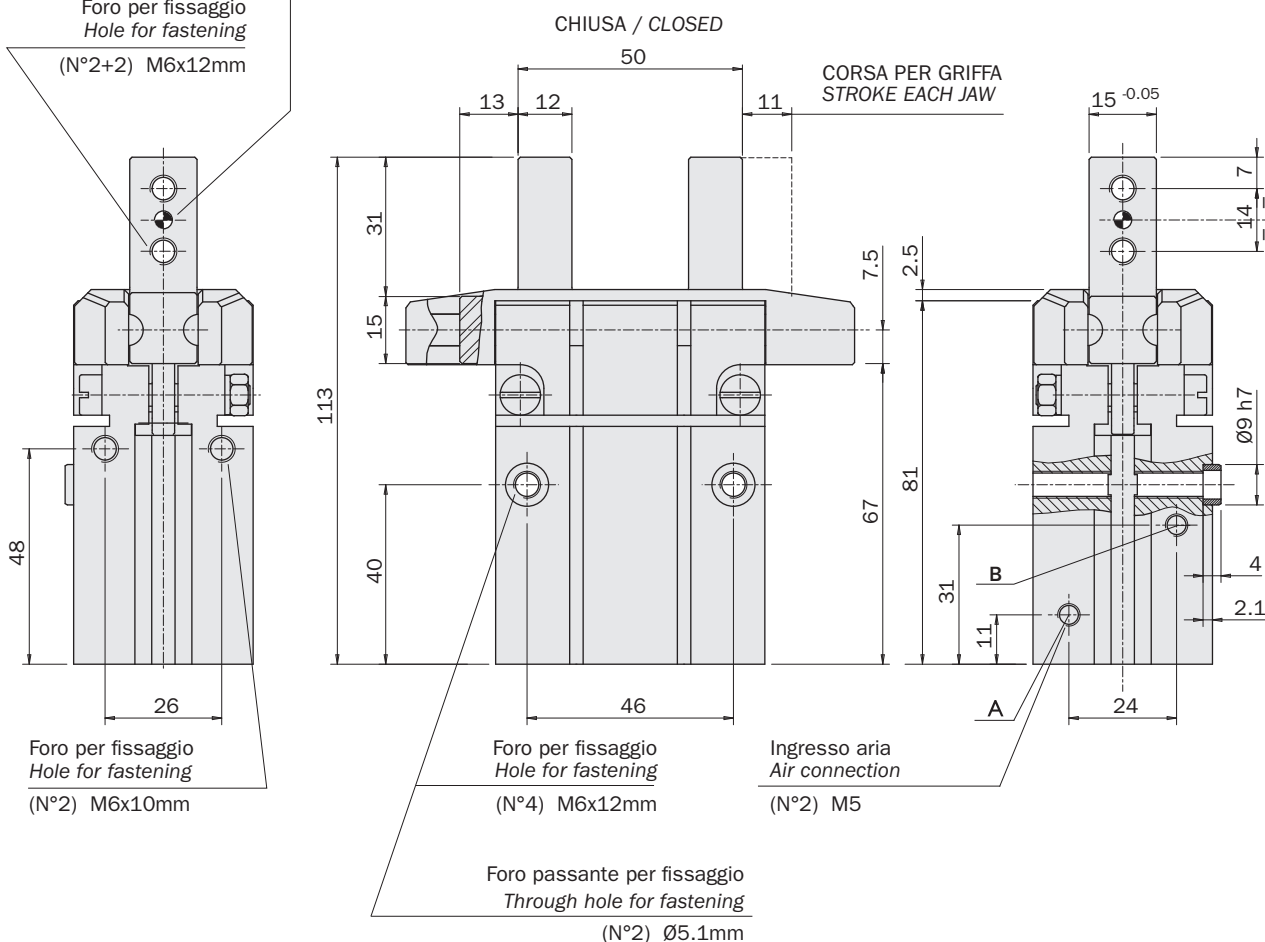
**Dimensioni (mm)**  
**Dimensions (mm)**

GS-32



Foro di riferimento  
Dowel pin hole  
(N°1+1) Ø4 H8 x 12mm

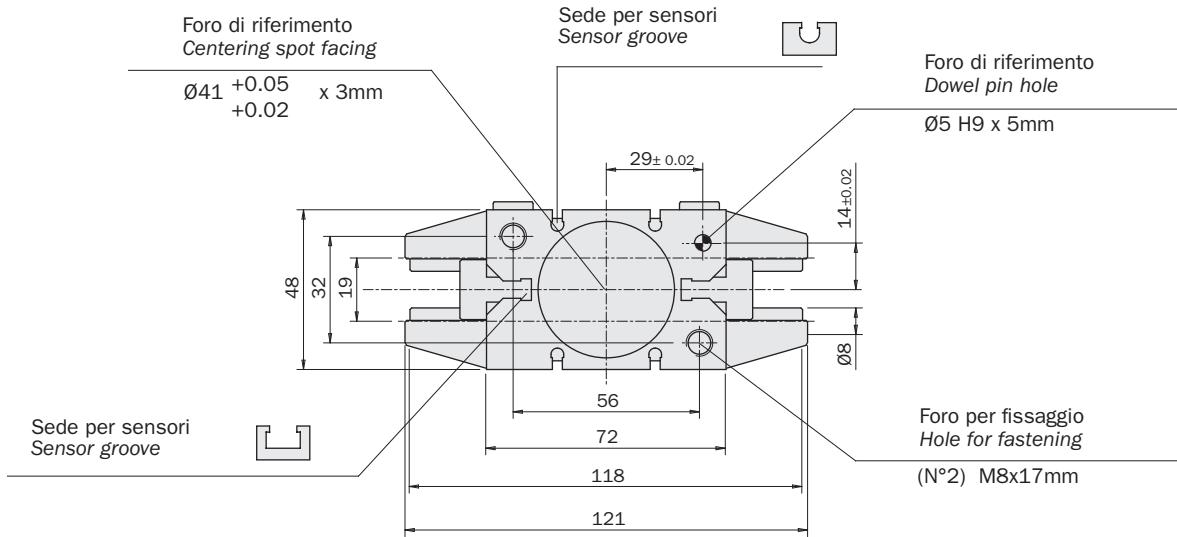
Foro per fissaggio  
Hole for fastening  
(N°2+2) M6x12mm



Aria compressa in A: apertura della pinza.  
Aria compressa in B: chiusura della pinza.  
Compressed air in A: gripper opening.  
Compressed air in B: gripper closing.

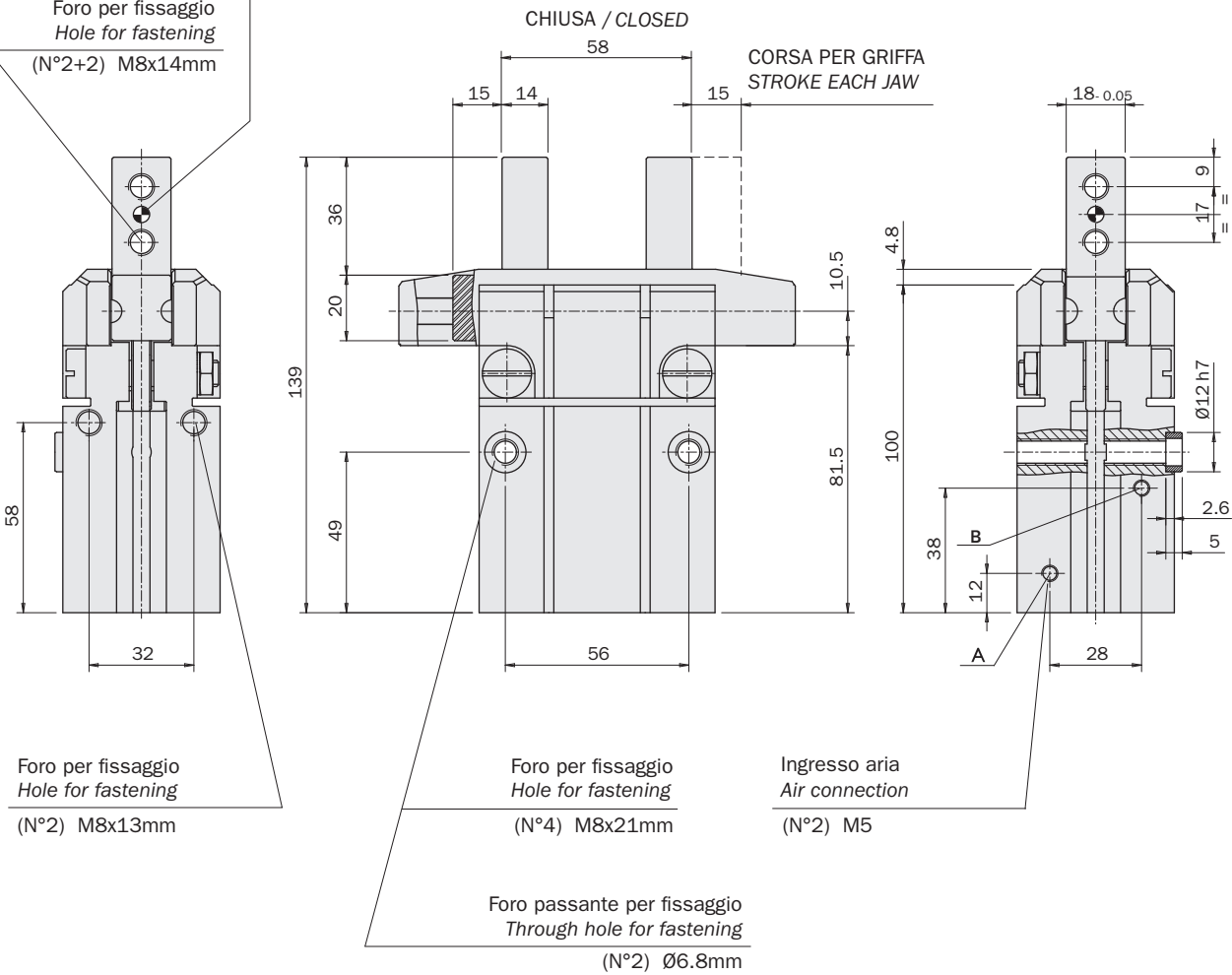


**Dimensioni (mm)**  
**Dimensions (mm)**



Foro di riferimento  
Dowel pin hole  
(N°1+1)  $\varnothing 5 \text{H}8 \times 14\text{mm}$

Foro per fissaggio  
Hole for fastening  
(N°2+2) M8x14mm



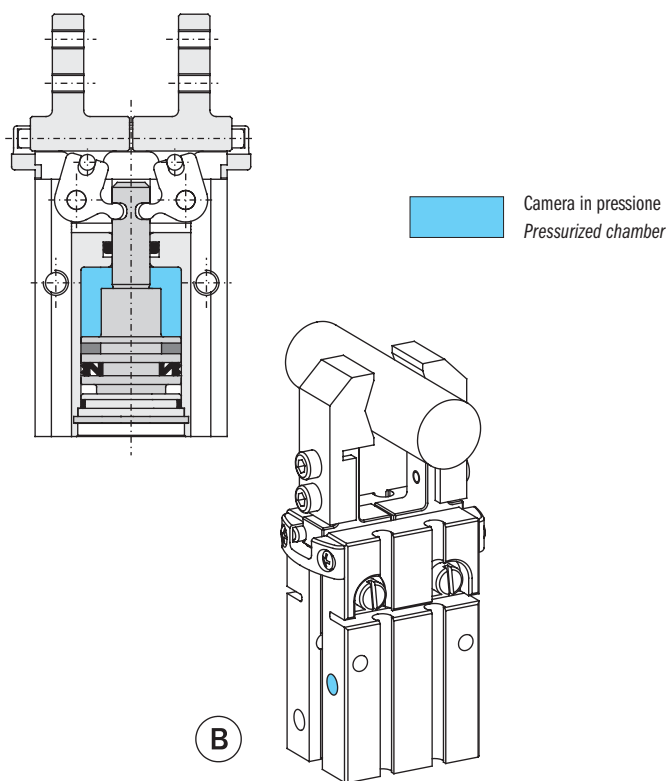
Aria compressa in A: apertura della pinza.  
Aria compressa in B: chiusura della pinza.

Compressed air in A: gripper opening.  
Compressed air in B: gripper closing.



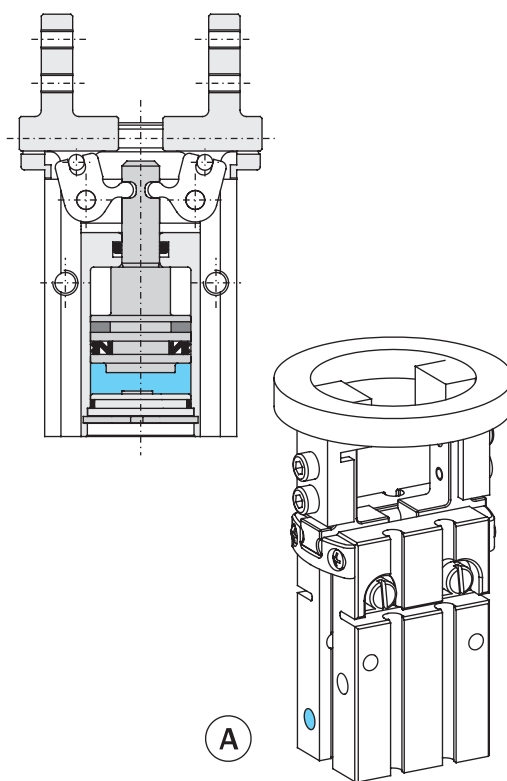
### Serraggio

La pinza è a doppio effetto e può quindi essere usata per serrare il carico sia dall'esterno (B) che dall'interno (A). La forza di serraggio è maggiore in apertura.



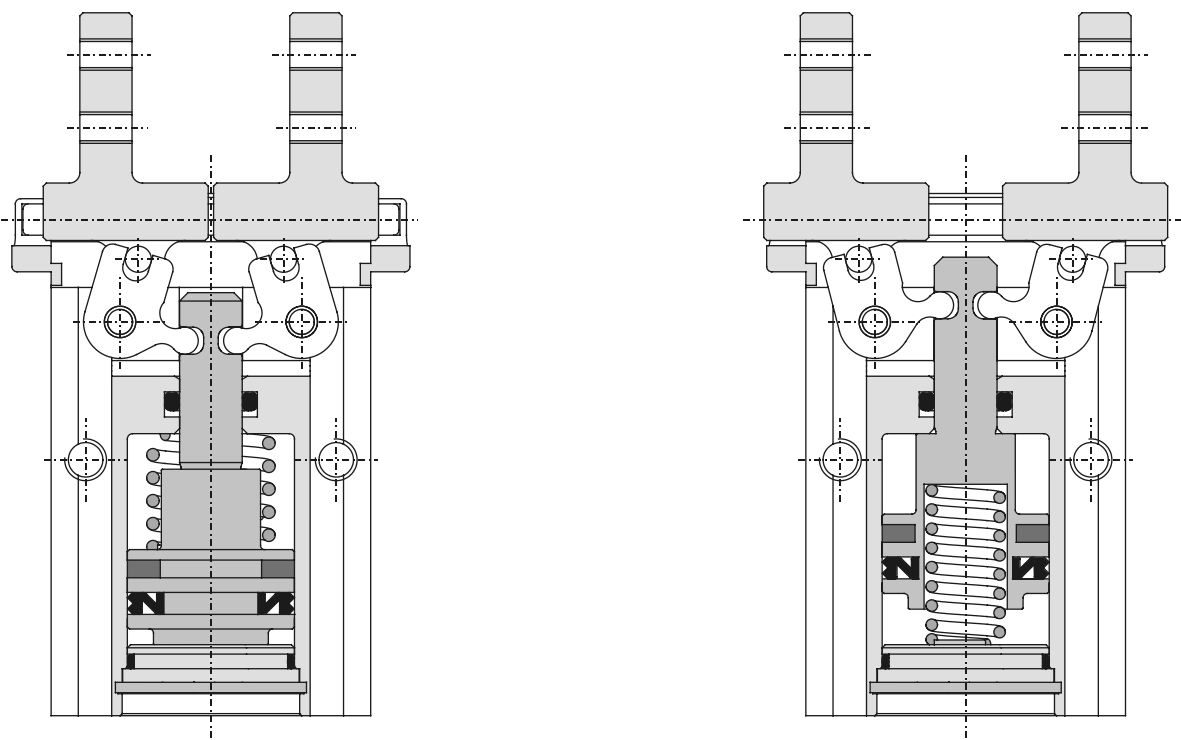
### Gripping

The gripper is double-acting for either internal (A) or external (B) gripping applications. The opening force is higher.



A richiesta è disponibile la versione con la molla in chiusura (-NC) o in apertura (-NO).

It is also available, on request, with a closing (-NC) or opening (-NO) spring.



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

## Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie SZ)

- Azionamento a doppio effetto.
- Su richiesta con molla in chiusura o apertura.
- Diverse possibilità di fissaggio e alimentazione.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.
- Griffe in acciaio inox.

## 2-jaw parallel self-centering pneumatic gripper (series SZ)

- Double acting.
- Available with normally closed or normally open spring on request.
- Various options for fastening and feeding.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.
- Stainless steel jaws.



	SZ08	SZ12	SZ16	SZ20	SZ25	SZ32	SZ40
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>						
Pressione di esercizio <i>Operating pressure range</i>	2 ÷ 8 bar			1 ÷ 8 bar			
Temperatura di esercizio <i>Operating temperature range</i>	5° + 60°C.						
Forza di serraggio per griffa in apertura a 6 bar <i>Opening gripping force at 6 bar on each jaw</i>	14 N	25 N	45 N	75 N	115 N	190 N	310 N
Forza di serraggio totale in apertura a 6 bar <i>Opening total gripping force at 6 bar</i>	28 N	50 N	90 N	150 N	230 N	380 N	620 N
Forza di serraggio per griffa in chiusura a 6 bar <i>Closing gripping force at 6 bar on each jaw</i>	14 N	25 N	45 N	75 N	115 N	190 N	310 N
Forza di serraggio totale in chiusura a 6 bar <i>Closing total gripping force at 6 bar</i>	28 N	50 N	90 N	150 N	230 N	380 N	620 N
Corsa totale <i>Total stroke</i> (±0.4 mm)	7 mm	8 mm	12 mm	16 mm	20 mm	25 mm	30 mm
Frequenza max funzionamento continuativo <i>Maximum working frequency</i>	3 Hz	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo <i>Cycle air consumption</i>	0.5 cm <sup>3</sup>	1 cm <sup>3</sup>	3 cm <sup>3</sup>	7 cm <sup>3</sup>	12 cm <sup>3</sup>	24 cm <sup>3</sup>	48 cm <sup>3</sup>
Tempo di apertura / chiusura senza carico <i>Opening / Closing time without load</i>	0.02 s	0.02 s	0.03 s	0.05 s	0.06 s	0.08 s	0.10 s
Peso <i>Weight</i>	35 g	101 g	164 g	337 g	474 g	783 g	1214 g

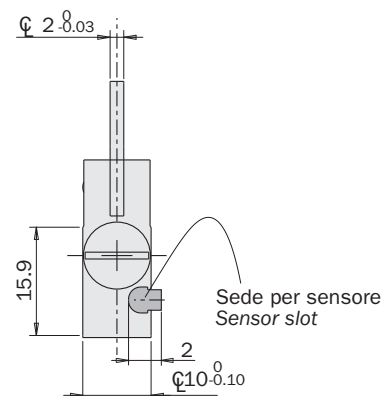
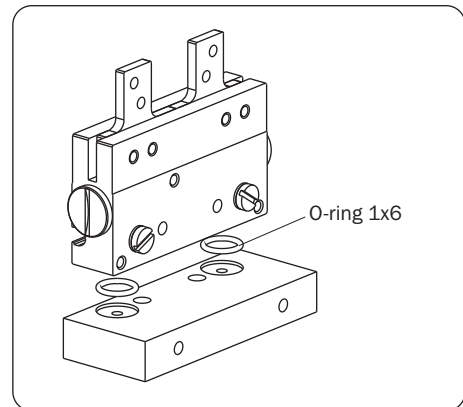
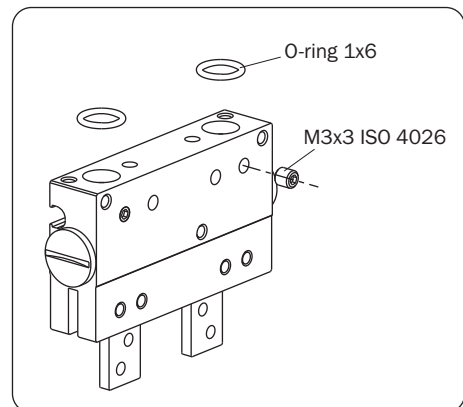
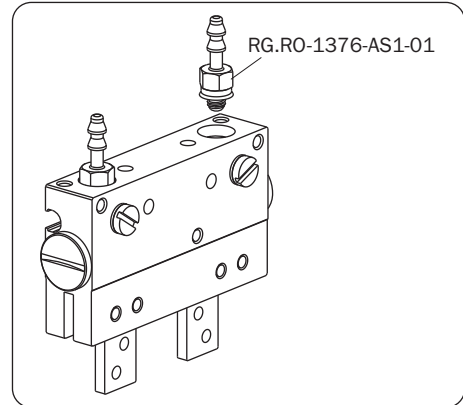
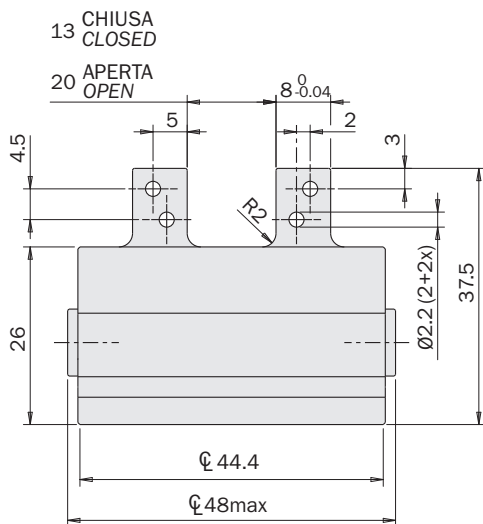
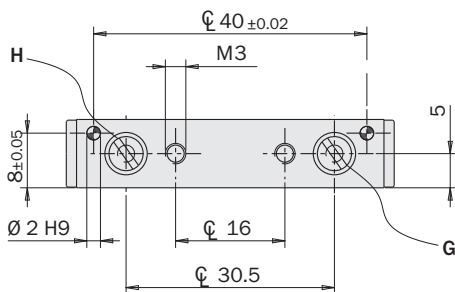
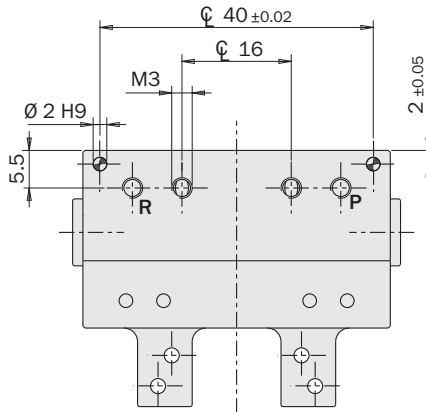
**Dimensioni (mm)**  
**Dimensions (mm)**

**SZ08**

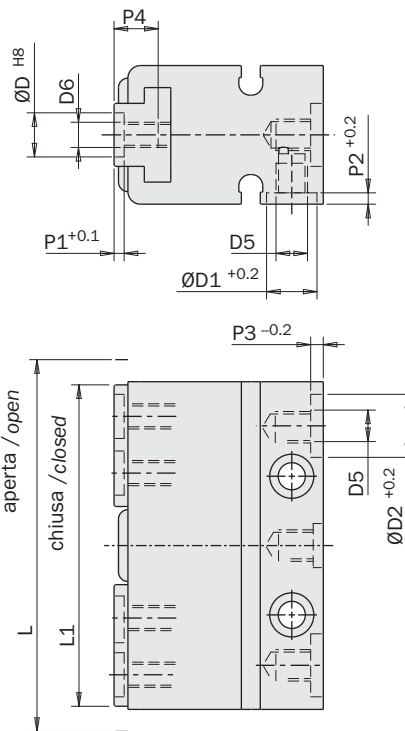
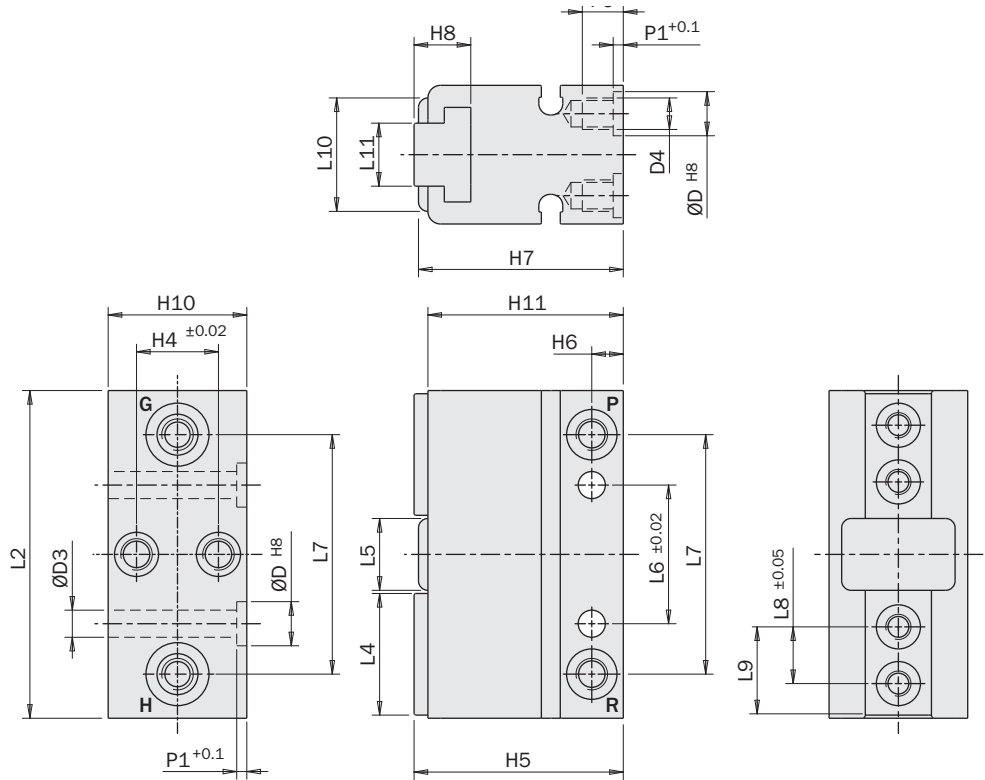
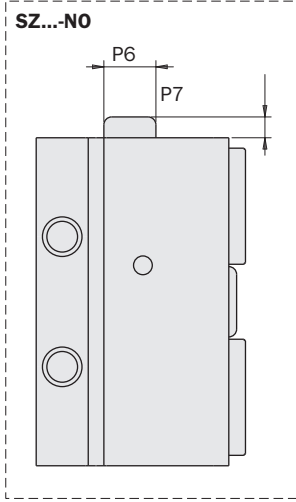


**G** **P** Aria compressa in G/P: apertura della pinza  
Compressed air in G/P: gripper opening

**H** **R** Aria compressa in H/R: chiusura della pinza  
Compressed air in H/R: gripper closing



**Dimensioni (mm)**  
**Dimensions (mm)**



	SZ12	SZ16	SZ20	SZ25	SZ32	SZ40
D H8	Ø7	Ø7	Ø7	Ø9	Ø9	Ø12
D1 +0.2	Ø8	Ø8	Ø8	Ø8	Ø15.6	Ø15.6
D2 +0.2	Ø10	Ø10	Ø10	Ø10	Ø19	Ø19
D3	Ø4.3	Ø5.3	Ø5.3	Ø6.3	Ø6.3	Ø8.3
D4	M5	M5	M5	M6	M6	M8
D5	M5	M5	M5	M5	1/8"G	1/8"G
D6	M4	M5	M5	M6	M6	M8
H4 +0.02	13	15	20	24	29	35
H5	33.2	40.2	46	55	70.5	78.5
H6	5	5	5	7	7	9
H7	32.5	38.5	44.5	53	68.5	76.5
H8	9	12	14	15	19	19
H10	22	25	30	37	42	51
H11	31	37	43	51.5	67	75
L	59	71	86	102	117	146
L1	51	59	70	82	92	116
L2	52	63	78	92	105	130
L4	19.3	22.3	24	29.8	32.3	41.8
L5	11.4	13.5	21.4	21.4	26.4	31.4
L6 ±0.02	22	25	40	50	55	70
L7	38	45	62	73	84	104
L8 ±0.05	9	12	14	16	18	24
L9	14	17	19	23	25	33
L10	18	19	29	29	34	37
L11	10	11.5	14	18	20	22
P1 +0.1	1.6	1.6	1.6	2.1	2.1	2.6
P2 +0.2	1.8	1.8	1.8	1.8	3	3
P3 -0.2	2	2	2	2	1.3	1.3
P4	6.5	9	10	14	15	16
P5	6.5	6.5	6.5	11	11	15
P6	Ø6.5	Ø10	Ø15	Ø19	Ø23.9	-
P7	0.7	4	3.4	2.1	1.7	-

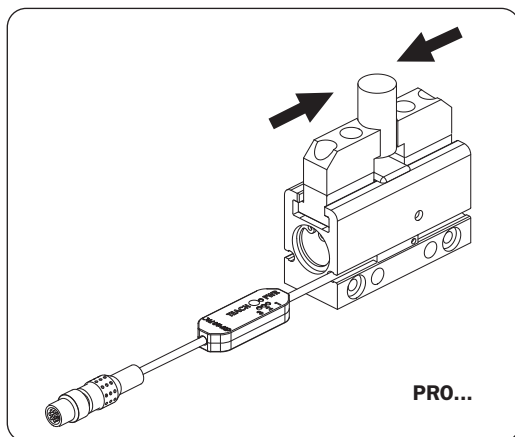
(D5) Ingresso aria  
Air connection

(G) (P) Aria compressa in G/P: apertura della pinza  
Compressed air in G/P: gripper opening

(H) (R) Aria compressa in H/R: chiusura della pinza  
Compressed air in H/R: gripper closing

## Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso il magnete sul pistone. Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.



## Sensors

The operating position is detected by proximity magnetic sensors (optional) through a magnet placed on the piston. Therefore, avoid using the gripper in the vicinity of intense magnetic fields or near a large mass of ferromagnetic material as this may cause detection errors.



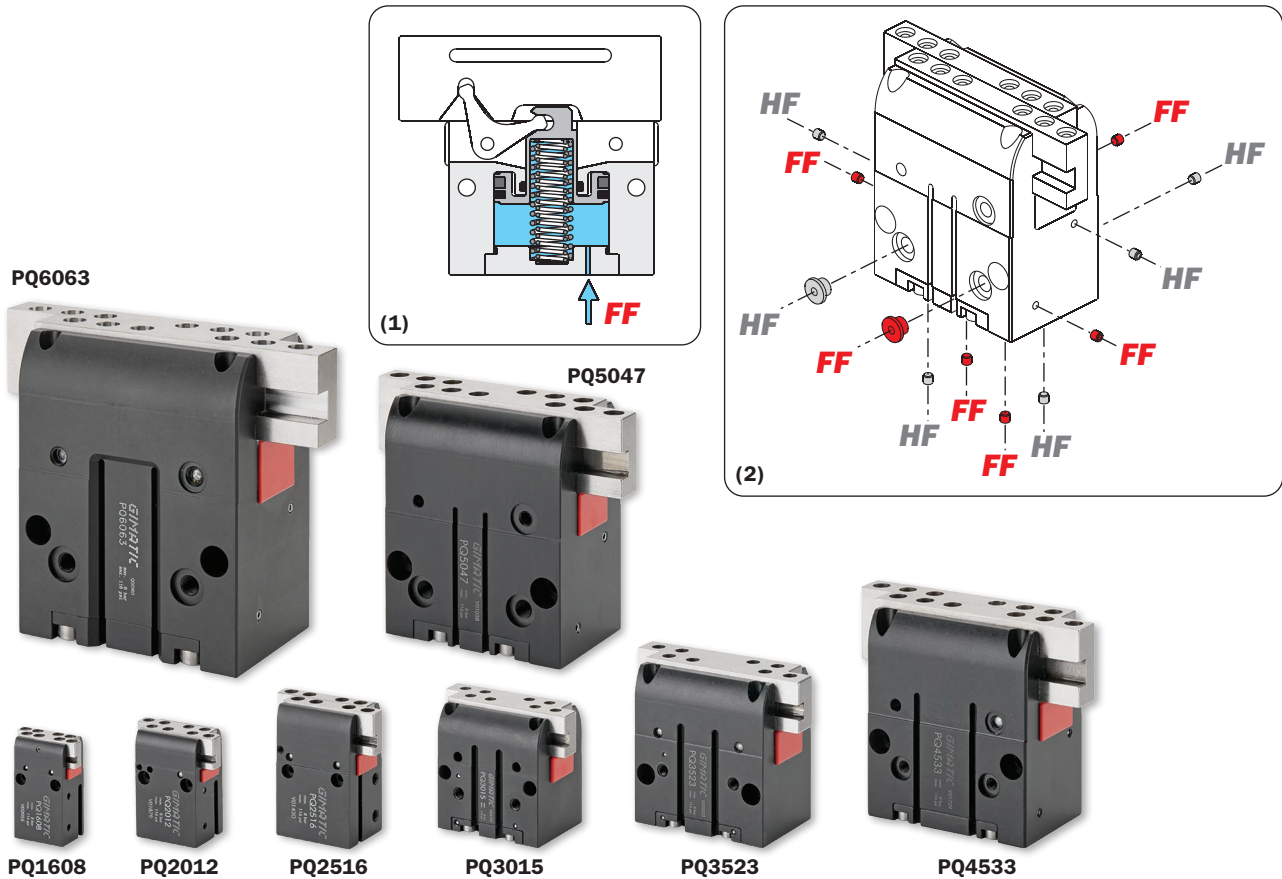
Codice Code	OUTPUT	Connessione Connection	Tipo Type
PRO-SN3M215-G	3 output NPN	Connettore M8	Programmabile Programmable 3 set point
PRO-SN3N215-G	3 output PNP	M8 plug connector	
PRO-SN4M225-G	3 output NPN	Cavo 2.5m	
PRO-SN4N225-G	3 output PNP	2.5m cable	
PRO-SS3M215-G	3 output NPN	Connettore M8	Programmabile Programmable 3 set point
PRO-SS3N215-G	3 output PNP	M8 plug connector	
PRO-SS4M225-G	3 output NPN	Cavo 2.5m	
PRO-SS4N225-G	3 output PNP	2.5m cable	
PRO-SSR3M215-G	3 output NPN	Connettore M8	Programmabile Programmable 2 set point
PRO-SSR3N215-G	3 output PNP	M8 plug connector	
PRO-SSR4M225-G	3 output NPN	Cavo 2.5m	
PRO-SSRN225-G	3 output PNP	2.5m cable	
SN4N225-G	1 output PNP	Cavo 2.5m	Isteresi standard Standard hysteresis
SN4M225-G	1 output NPN	2.5m cable	
SN3N203-G	1 output PNP	Connettore M8	
SN3M203-G	1 output NPN	M8 plug connector	
SS4N225-G	1 output PNP	Cavo 2.5m	Isteresi standard Standard hysteresis
SS4M225-G	1 output NPN	2.5m cable	
SS3N203-G	1 output PNP	Connettore M8	
SS3M203-G	1 output NPN	M8 plug connector	
SSY3M203-G	1 output PNP	Connettore M8	Isteresi ridotta Reduced hysteresis
SSY3N203-G	1 output NPN	M8 plug connector	
SSY4M225-G	1 output PNP	Cavo 2.5m	
SSY4N225-G	1 output NPN	2.5m cable	
SSQ3M203-G	1 output PNP	Connettore M8	Isteresi ultra bassa Ultra low hysteresis
SSQ3N203-G	1 output NPN	M8 plug connector	
SSQ4M225-G	1 output PNP	Cavo 2.5m	
SSQ4N225-G	1 output NPN	2.5m cable	

**Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie PQ)**

- Guida robusta.
- Corsa lunga.
- Molle integrate (1).
- Diverse possibilità di fissaggio ed alimentazione (2).
- Grasso alimentare FDA-H1.

**2-jaw self-centering pneumatic parallel gripper (series PQ)**

- Robust guide.
- Long stroke.
- Integrated springs (1).
- Various fastening and air feeding options (2).
- FDA-H1 food-grade grease.



	PQ1608	PQ2012	PQ2516	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]							
Pressione di esercizio Operating pressure range	3.5 ÷ 8 bar							
Temperatura di esercizio Operating temperature range	5 ÷ 100 °C							
Forza di serraggio per griffa (6 bar in FF) Gripping force on each jaw (6 bar in FF)	60 N	90 N	150 N	200 N	280 N	460 N	670 N	930 N
Forza di serraggio totale (6 bar in FF) Total gripping force (6 bar in FF)	120 N	180 N	300 N	400 N	560 N	920 N	1340 N	1860 N
Corsa totale (±0.5 mm) Total stroke	8 mm	12 mm	16 mm	15 mm	23 mm	33 mm	47 mm	63 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	2 Hz	2 Hz	2 Hz	2 Hz	1 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	2 cm <sup>3</sup>	4 cm <sup>3</sup>	8 cm <sup>3</sup>	12 cm <sup>3</sup>	23 cm <sup>3</sup>	55 cm <sup>3</sup>	114 cm <sup>3</sup>	210 cm <sup>3</sup>
Tempo di serraggio (aria in FF) Gripping time (air in FF)	20 ms	40 ms	40 ms	60 ms	60 ms	100 ms	140 ms	190 ms
Tempo di rilascio (aria in HF) Release time (air in HF)	20 ms	50 ms	50 ms	110 ms	110 ms	160 ms	230 ms	400 ms
Ripetibilità Repetition accuracy	0.02 mm							
Peso Weight	63 g	110 g	200 g	330 g	610 g	1270 g	2430 g	4900 g

### Circuito pneumatico

Possibili inconvenienti sul circuito di alimentazione dell'aria compressa:

- 1- Oscillazioni di pressione;
- 2- Riempimento pinza vuota all'avvio;
- 3- Velocità di azionamento eccessiva.

Accorgimenti per risolvere i problemi:

- 1- Serbatoio esterno (A);
- 2- Valvola di avviamento progressivo (B);
- 3- Regolatore di flusso (C).

La pinza può funzionare sia a semplice effetto che a doppio effetto.

Quest'ultima soluzione (circuito sotto indicato, con valvola 5/2) è consigliata quando è necessaria una forza di serraggio elevata.

### Pneumatic circuit

Possible problems on a compressed air supply circuit:

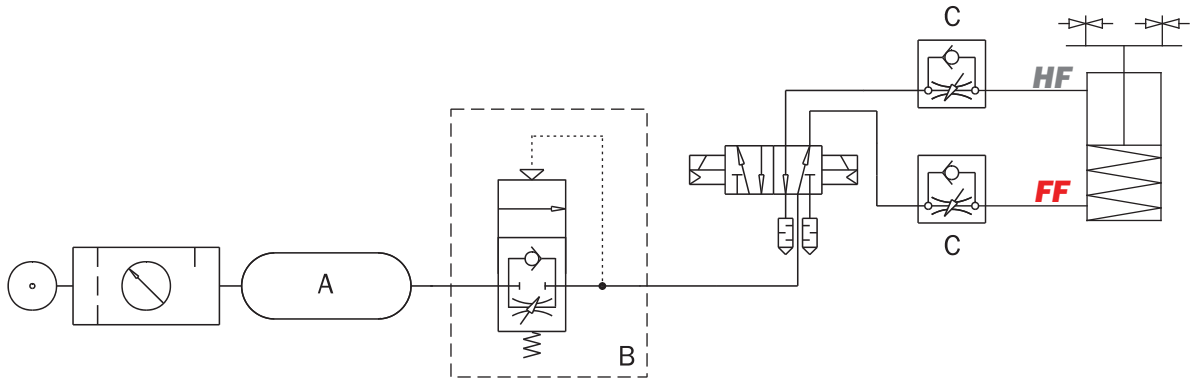
- 1- Pressure variation.
- 2- Pressurizing with empty gripper.
- 3- Excessive operating speed.

Possible solutions:

- 1- External air tank (A).
- 2- Start-up valve (B).
- 3- Flow controller (C).

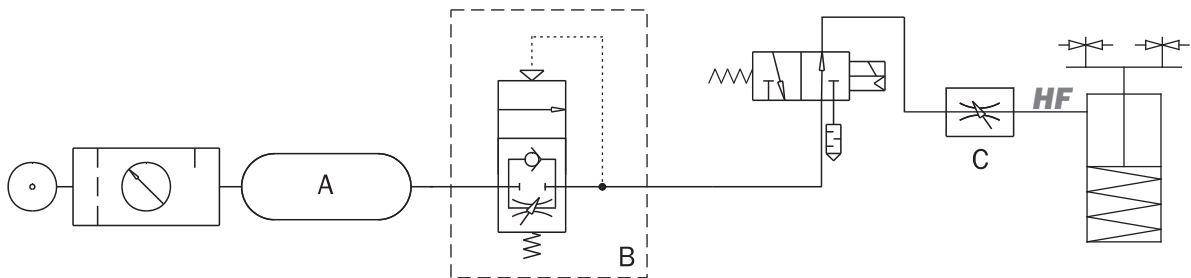
The gripper can operate either in single-effect mode or double-effect mode.

The double-effect mode (see circuit below, with 5/2 valve) is recommended when the highest gripping force is required.

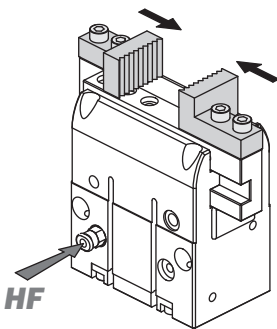


Per un funzionamento a semplice effetto, con molla di reset, il circuito pneumatico deve essere come quello sotto indicato, con valvola 3/2.

For single-effect operation with reset spring, the pneumatic circuit must be similar to that shown below, with a 3/2 valve.

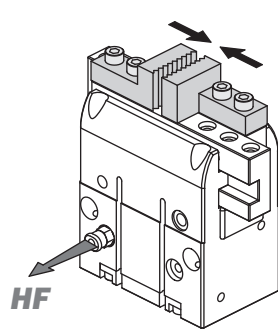


Normalmente aperta  
con serraggio esterno



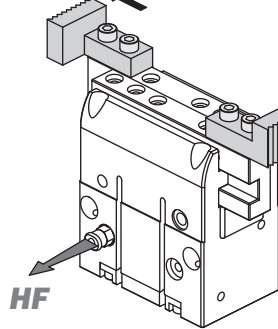
Normally open with  
outside gripping

Normalmente chiusa  
con serraggio esterno



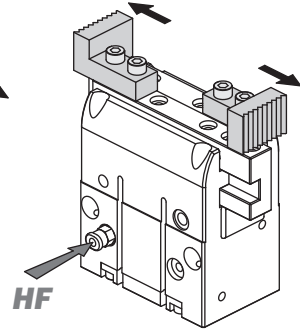
Normally closed with  
outside gripping

Normalmente aperta  
con serraggio interno



Normally open with  
inside gripping

Normalmente chiusa  
con serraggio interno



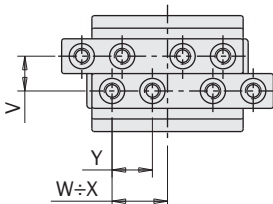
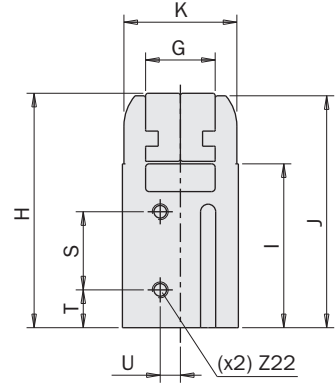
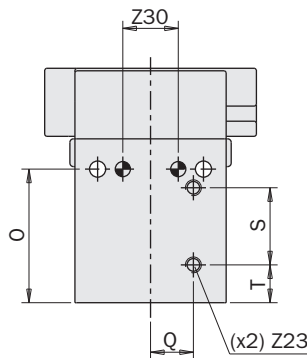
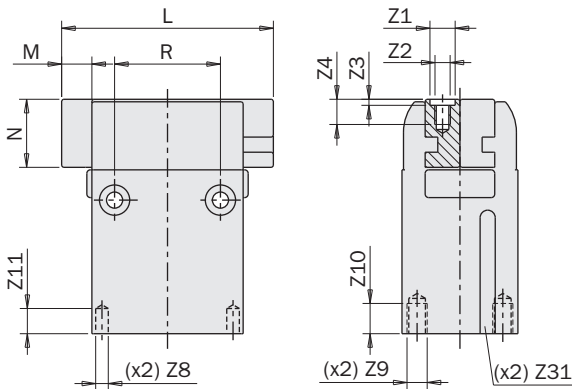
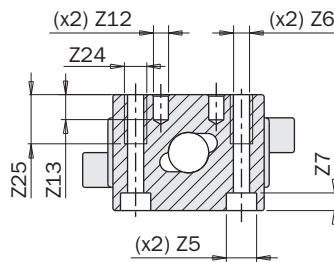
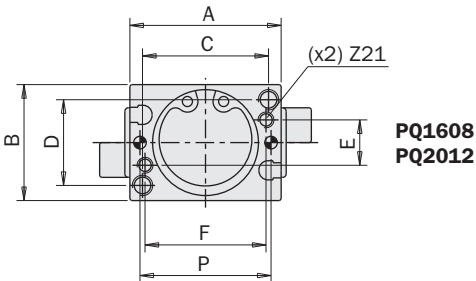
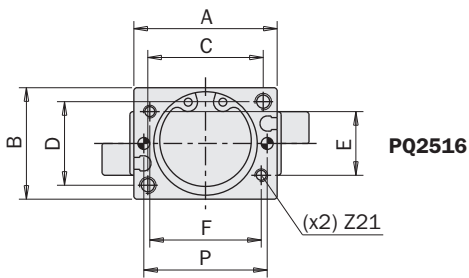
Normally closed with  
inside gripping



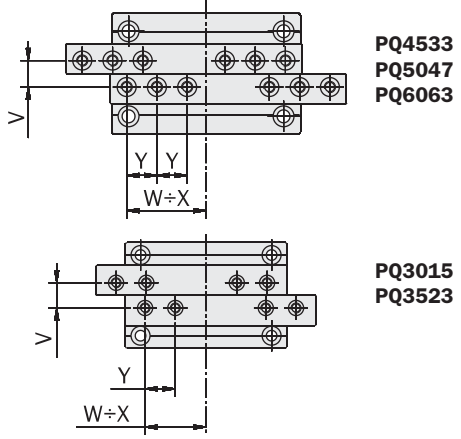
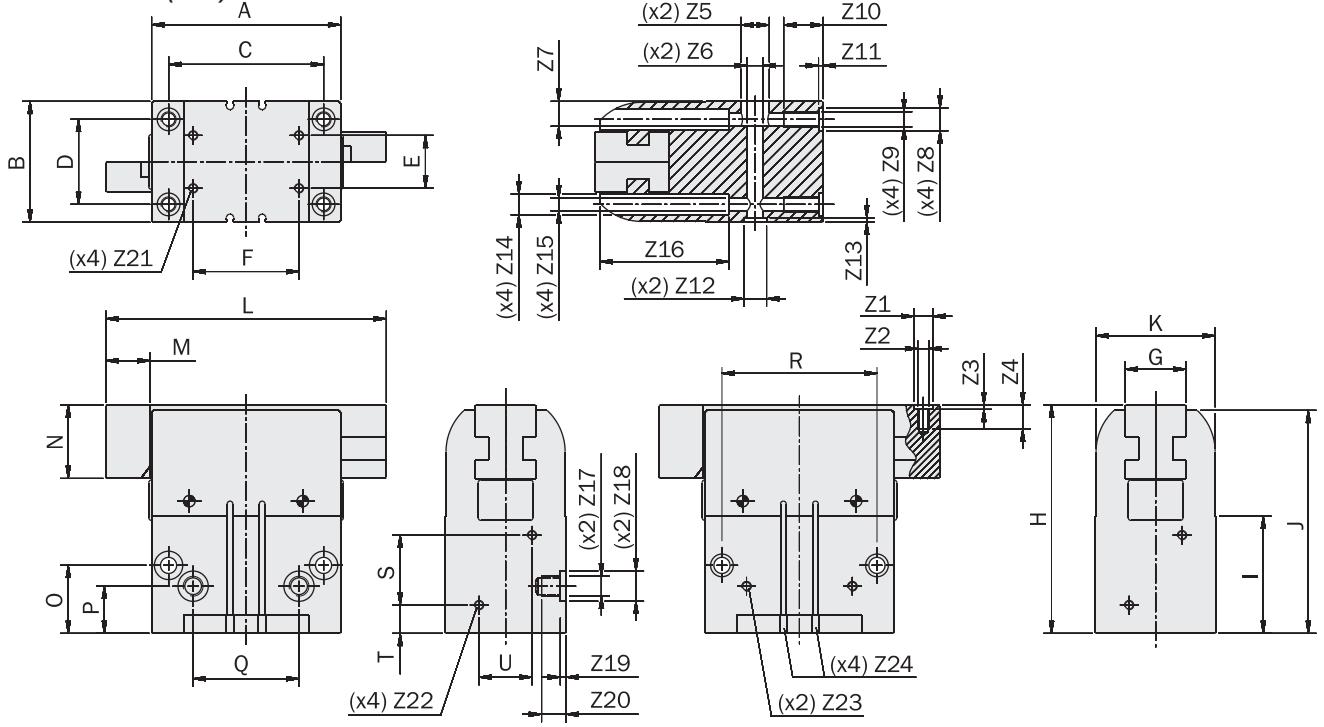
**Dimensioni (mm)**  
**Dimensions (mm)**

- Z1** Lamatura boccola per centraggio del dito di presa  
*Spot face for the centering sleeve of the gripping tool*
- Z2** Foro filettato per fissaggio del dito di presa  
*Threaded hole for the gripping tool fastening*
- Z6** Foro passante per fissaggio laterale della pinza  
*Through hole for the gripper side fastening*
- Z9** Foro filettato per fissaggio della pinza sulla base  
*Threaded hole for the gripper fastening on the bottom*
- Z12** Lamatura boccola per centraggio del corpo pinza  
*Spot face for the centering sleeve of the gripper body*
- Z21** Fori per alimentazione diretta dal fondo  
*Ports for direct air supply from the bottom*
- Z22** Fori per alimentazione  
*Air supply ports*
- Z23** Fori per alimentazione  
*Air supply ports*
- Z31** Cave per sensori magnetici  
*Magnetic sensor slots*

	PQ1608	PQ2012	PQ2516
A	24	30	36
B	18	23	28
C ±0.02	20	25	29
D ±0.02	14	17	21
E	6.6	8	16
F	20	25	28
G	11	13.8	16
H	44	46.5	57
I	32.5	32.5	37.5
J	43.5	46	56
K	17.5	22.4	27
L	32	42	52
M	4	6	8
N	11	13.5	18
O ±0.02	26	26.5	28.5
P	21	26	31
Q	7.5	8.5	11
R ±0.02	17	21	24
S	13.5	15.3	16
T	7	7.5	8
U	3.7	4	8
V	5.5	6.9	8
W	13	17	21
X	9	11	13
Y ±0.02	6	8	9
Z1	Ø5 H8	Ø5 H8	Ø6 H8
Z2	M3	M3	M4
Z3	1.2	1.2	2.5
Z4	4	5	7.5
Z5	Ø5	Ø6	Ø6
Z6	Ø2.6	Ø3.2	Ø3.2
Z7	3	3.5	3.5
Z8	Ø2 H7	Ø2.5 H7	Ø3 H7
Z9	M3	M4	M4
Z10	5	6	6
Z11	3	5	5
Z12	Ø2 H7	Ø2.5 H7	Ø3 H7
Z13	3	5	5
Z21	M2	M2.5	M3
Z22	M3	M3	M5
Z23	M2.5	M3	M3
Z24	M3	M4	M4
Z25	7	7	7
Z30 ±0.02	9	11	12



**Dimensioni (mm)**  
**Dimensions (mm)**



	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
A	50	64	80	100	125
B	38	42	50	64	80
C ±0.02	42	52	66	82	100
D ±0.02	27	32	38	45	56
E	20	18	26	28	34
F	28	36	44	56	70
G	20	24	28	32	42
H	55	70	93	121	156
I	30	38	45	62	85
J	53	68	90	118	153
K	37.6	41.6	49	63	79
L	65.5	87.5	118.5	148.5	191.5
M	7.5	11.5	16.5	23.5	31.5
N	18	22	33	39	45
O ±0.02	25	22	34	36	55
P	17	25	24	25	40
Q	28	35	44	56	70
R ±0.02	42	52	66	82	100
S	-	-	-	37	44
T	-	-	-	15	24
U	-	-	-	28	34
V	8	10	12	14	16
W	24.8	35.7	52.2	65.6	79.8
X	17.3	24.2	35.7	42	48.3
Y ±0.02	10	12	14	16	20
Z1	Ø5 H8	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8
Z2	M3	M4	M5	M6	M6
Z3	1.2	2.5	2.5	2.5	2.5
Z4	7.2	9.5	11.5	13	12.5
Z5	Ø6	Ø9	Ø11	Ø15	Ø15
Z6	Ø3.5	Ø5.2	Ø6.6	Ø8.5	Ø8.5
Z7	10	10	9	13.2	17
Z8	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8	Ø12 H8
Z9	M4	M5	M6	M8	M8
Z10	10.5	14	18	21	22.5
Z11	2.5	2.5	2.5	2.5	2.5
Z12	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8	Ø12 H8
Z13	2.5	2.5	2.5	2.5	2.5
Z14	Ø6	Ø7.5	Ø9	Ø11	Ø11
Z15	Ø3.3	Ø4.2	Ø5	Ø6.8	Ø6.8
Z16	22	38	45	68	82
Z17	M5	M5	M5	G1/8"	G1/8"
Z18	-	-	Ø10	Ø16	Ø18
Z19	-	-	2.5	3	3
Z20	5	5	9.3	13	16.3
Z21	M3	M4	M5	M5	M5
Z22	-	-	-	M5	M5
Z23	M5	M5	M5	M5	M5

- Z1** Lamatura boccola per centraggio del dito di presa  
*Spot face for the centering sleeve of the gripping tool*
- Z2** Foro filettato per fissaggio del dito di presa  
*Threaded hole for the gripping tool fastening*
- Z6** Foro passante per fissaggio laterale della pinza  
*Through hole for the gripper side fastening*
- Z9** Foro filettato per fissaggio della pinza sulla base  
*Threaded hole for the gripper fastening on the bottom*
- Z12** Lamatura boccola per centraggio del corpo pinza  
*Spot face for the centering sleeve of the gripper body*
- Z15** Foro passante per fissaggio della pinza sulla base  
*Through hole for the gripper fastening on the bottom*
- Z17** Connessione principale per raccordi dell'aria  
*Main port for air fittings*
- Z21** Fori per alimentazione diretta dal fondo  
*Ports for direct air supply from the bottom*
- Z22** Fori per alimentazione  
*Air supply ports*
- Z23** Fori per alimentazione  
*Air supply ports*
- Z24** Cave per sensori magnetici  
*Magnetic sensor slots*

09/2022

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

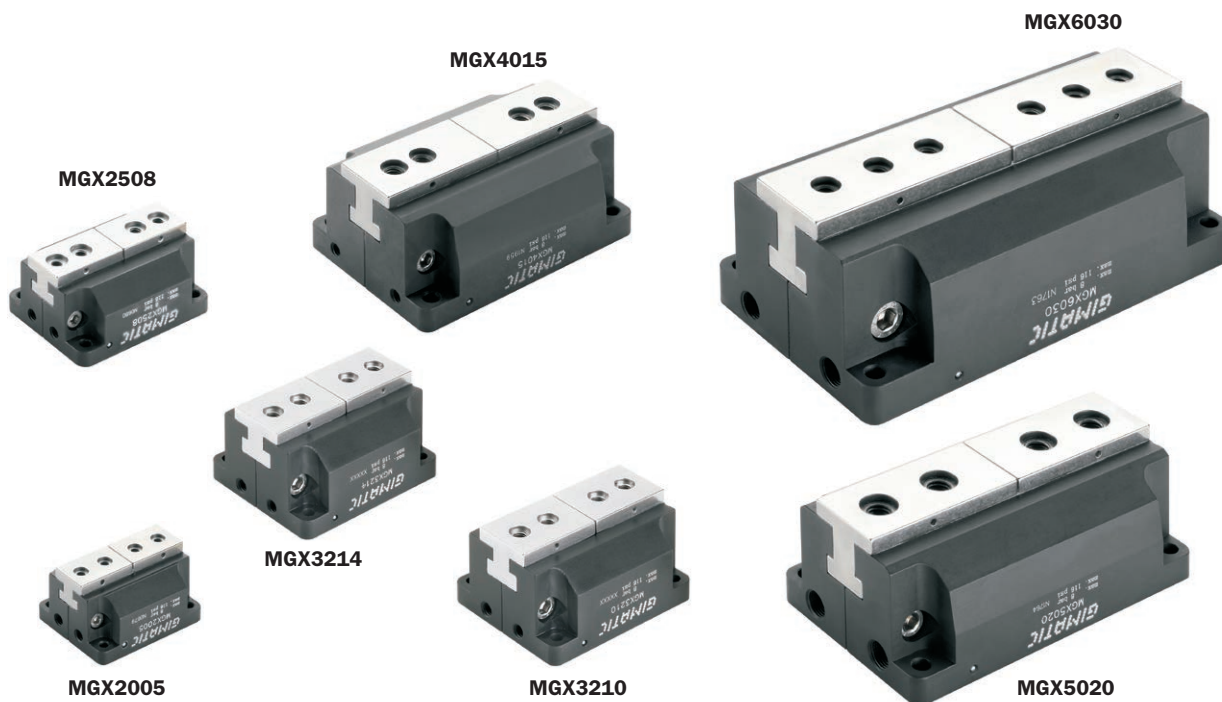
Sensori  
Sensors

## Pinza pneumatica a 2 griffe ad azione parallela autocentrante serie MGX

- Profilo piatto.
- Guida robusta.
- Elevata forza di serraggio.
- Peso ed ingombri ridotti.
- Precisione dimensionale elevata.
- Disponibile anche con molla in chiusura (-NC) o in apertura (-NO).
- Grasso alimentare FDA-H1.

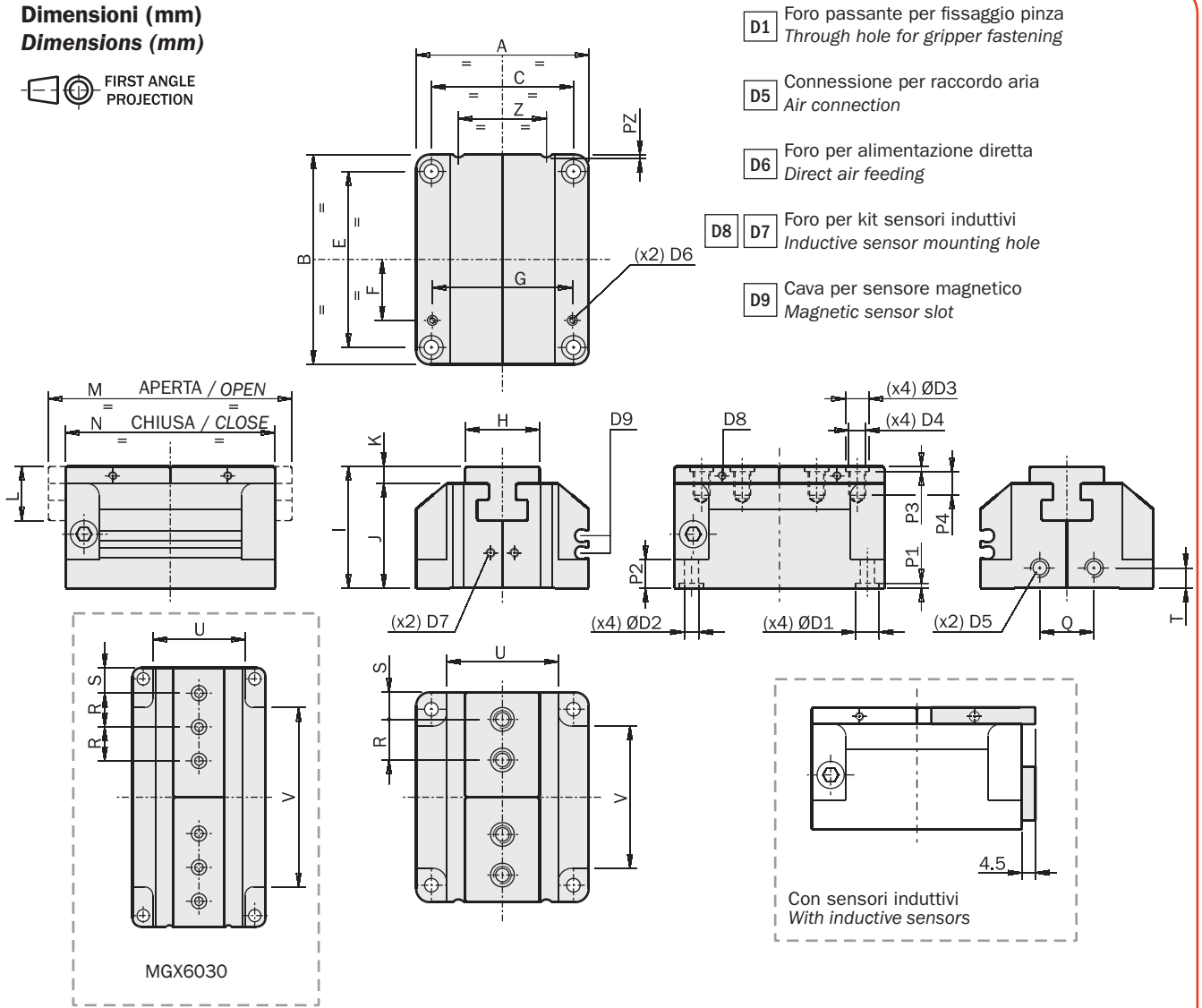
## 2-jaw parallel self-centering pneumatic gripper series MGX

- Flat profile.
- Robust guide.
- High gripping force.
- Small weight and dimensions.
- High dimensional accuracy.
- Spring closed (-NC) or spring open (-NO) option.
- FDA-H1 food-grade grease.



	MGX2005	MGX2508	MGX3210	MGX3214	MGX4015	MGX5020	MGX6030
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]						
Pressione di esercizio Operating pressure range	1.5 ÷ 8 bar						
Temperatura di esercizio Operating temperature range	5° ÷ 50°C.						
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	90 N	145 N	230 N	160 N	375 N	650 N	830 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	180 N	290 N	460 N	320 N	750 N	1300 N	1660 N
Corsa totale Total stroke (±0.3 mm)	5 mm	8 mm	10 mm	14.6 mm	15 mm	20 mm	30 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	5 cm <sup>3</sup>	10 cm <sup>3</sup>	22 cm <sup>3</sup>	22 cm <sup>3</sup>	48 cm <sup>3</sup>	86 cm <sup>3</sup>	169 cm <sup>3</sup>
Tempo di apertura / chiusura senza carico Opening / Closing time without load	7 ms	10 ms	20 ms	20 ms	50 ms	70 ms	140 ms
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Peso Weight	95 g	150 g	270 g	270 g	545 g	900 g	1525 g

**Dimensioni (mm)**  
**Dimensions (mm)**



	MGX2005	MGX2508	MGX3210	MGX3214	MGX4015	MGX5020	MGX6030	
A	35.8	42	51	51	61.2	70	78.6	
B	44	55	62	62	93	118	153	
C	±0.04	28.3	33	42	51	58	66	
D1	Ø5 H7	Ø7 H7	Ø7 H7	Ø7 H7	Ø7 H7	Ø9 H7	Ø9 H7	
D2		Ø3.2	Ø4.2	Ø4.2	Ø5.2	Ø6.2	Ø6.2	
D3		Ø5 H7	Ø7 H7	Ø7 H7	Ø9 H7	Ø12 H7	Ø9 H7	
D4		M3	M4	M5	M5	M6	M6	
D5		M5	M5	M5	M5	G1/8"	G1/8"	
D6		M3	M3	M3	M3	M3	M3	
E	±0.02	36.5	46	52	80	105	140	
F		12.5	15.5	18	18	27.5	37	43.5
G		27.2	33.6	41.4	41.4	49.6	58.6	67.6
H	±0.05	14	16	22	22	25	28	30
I		26	28.5	36	36	42	49	58
J		22	24	31	31	37	43	51
K		4	4.5	5	5	5	6	7
L		11.2	12.7	16	16	20	25	29
M		49	63	72	76	108	138	183
N		44	55	62	62	93	118	153
P1		1.2	1.5	1.5	1.5	1.5	2	2
P2		5.5	6	8.4	8.4	9	10	13.5
P3		1.2	1.5	1.5	1.5	2	2.5	2.5
P4		5	5.2	7	7	9	12	12
Q		11	12	16	16	31.2	32	40
R	±0.02	9	10	12	12	12	24	20
S		5.5	6	8	8	12.5	14	15
T		5.8	6	6	6	6	8	8
U		20.8	24	33	33	41.2	46	54.6
V		29	37	42	42	65	88	106
Z		17	20	26	26	30	33	35
PZ		0.5	0.5	0.8	0.8	0.8	0.8	0.8

**Sensori**

Il rilevamento della posizione di lavoro può essere effettuato con sensori magnetici (opzionali), che rilevano il magnete sul pistone, oppure con sensori induttivi (opzionali), che rilevano la presenza delle sfere (SY) inserite nell'appendice (Y).  
Due appendici regolabili possono essere fissate alla griffa con le due viti (TY) fornite.  
I sensori induttivi devono avere diametro 4mm.

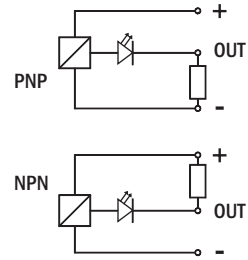
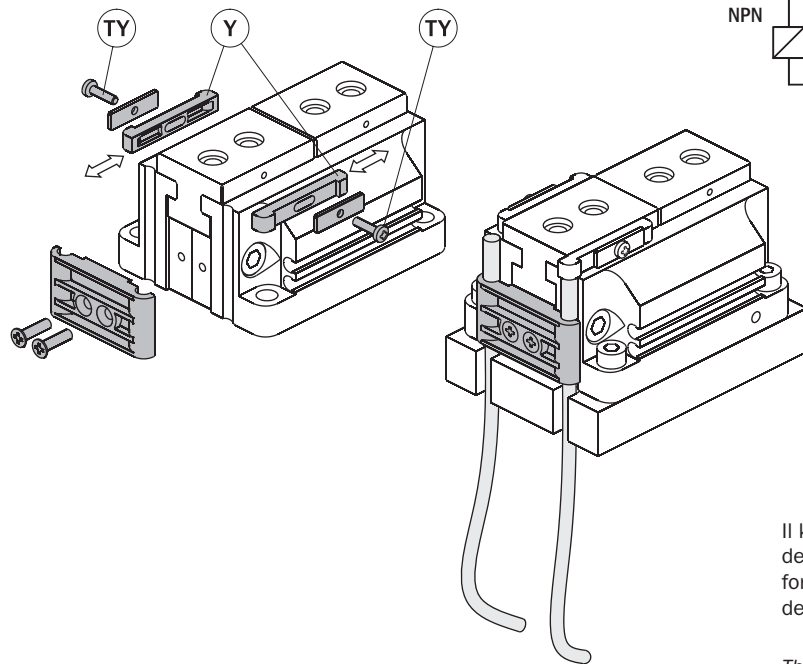
**Sensors**

The operating position can be checked by magnetic sensors (optional), detecting the magnet of the piston, or by inductive sensors (optional), detecting the magnet the ball (SY) in the appendix (Y).  
Two adjustable appendixes can be mounted on the jaw using the supplied screws (TY).  
Use 4mm diameter inductive sensors.

Codici di ordinazione dei sensori induttivi:

Ordering codes of the inductive sensors:

SI4M225-G	NPN	Cavo 2.5m 2.5m cable
SI4N225-G	PNP	



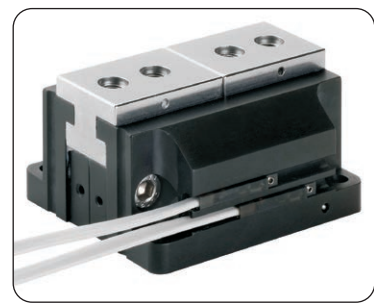
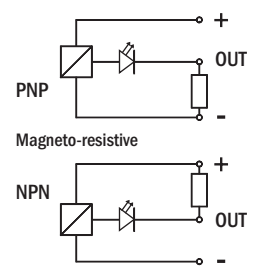
Il kit per il fissaggio dei sensori induttivi è fornito nella confezione della pinza.  
The accessories to fix the inductive sensors are supplied in the packaging.



I sensori magnetici utilizzabili sono i codici Gimatic:

The magnetic sensors from Gimatic are the codes:

SS4N225-G	PNP	Cavo 2.5m 2.5m cable
SS4M225-G	NPN	
SS3N203-G	PNP	Connettore M8 M8 snap plug connector
SS3M203-G	NPN	



**Versioni a molla**

A richiesta è disponibile la versione con la molla in chiusura (-NC) o in apertura (-NO), che in assenza d'aria garantisce circa un quarto della forza disponibile a 6 bar.

**Spring option**

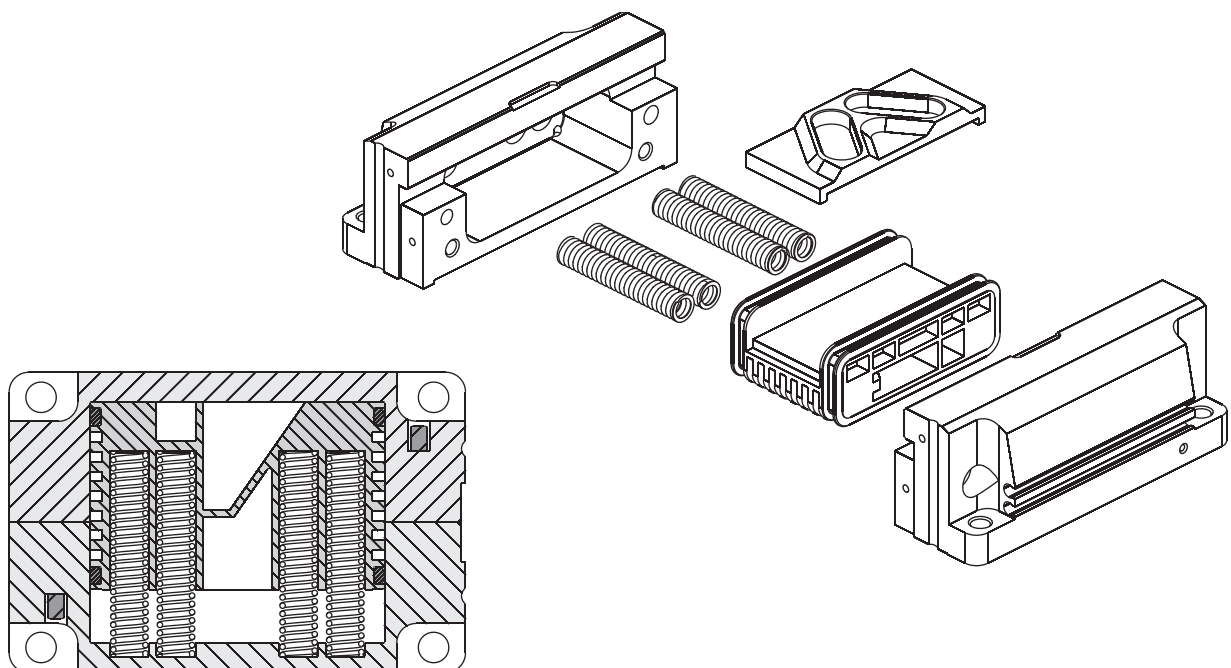
It is also available, on request, with a closing (-NC) or opening (-NO) spring, providing, after a pressure black-out, about one fourth of the output force at 6 bar.

	MGX2005-NC	MGX2508-NC	MGX3210-NC	MGX3214-NC	MGX4015-NC	MGX5020-NC	MGX6030-NC
Forza di chiusura per griffa a 6 bar <i>Closing force at 6 bar each jaw</i>	114÷121 N	179÷195 N	285÷306 N	199÷213 N	467÷510 N	792÷871 N	1016÷1110 N
Forza di apertura per griffa a 6 bar <i>Opening force at 6 bar each jaw</i>	59÷66 N	95÷111 N	154÷175 N	107÷122 N	240÷283 N	429÷508 N	550÷644 N
Forza di chiusura per griffa a 0 bar <i>Closing force at 0 bar each jaw</i>	24÷31 N	34÷50 N	55÷76 N	38÷53 N	92÷135 N	142÷221 N	186÷280 N
Forza di apertura per griffa a 0 bar <i>Opening force at 0 bar each jaw</i>	0 N	0 N	0 N	0 N	0 N	0 N	0 N

	MGX2005-NO	MGX2508-NO	MGX3210-NO	MGX3214-NO	MGX4015-NO	MGX5020-NO	MGX6030-NO
Forza di chiusura per griffa a 6 bar <i>Closing force at 6 bar each jaw</i>	59÷66 N	95÷111 N	154÷175 N	107÷122 N	240÷283 N	429÷508 N	550÷644 N
Forza di apertura per griffa a 6 bar <i>Opening force at 6 bar each jaw</i>	114÷121 N	179÷195 N	285÷306 N	199÷213 N	467÷510 N	792÷871 N	1016÷1110 N
Forza di chiusura per griffa a 0 bar <i>Closing force at 0 bar each jaw</i>	0 N	0 N	0 N	0 N	0 N	0 N	0 N
Forza di apertura per griffa a 0 bar <i>Opening force at 0 bar each jaw</i>	24÷31 N	34÷50 N	55÷76 N	38÷53 N	92÷135 N	142÷221 N	186÷280 N

Nelle versioni con le molle la lunghezza massima delle estremità di presa deve essere ridotta del 20%.  
Nelle versioni con le molle la minima pressione di utilizzo é 3.5bar.

*In the spring versions the maximum gripping tool length should be 20% shorter.  
In the spring versions the minimum operating pressure is 3.5bar.*

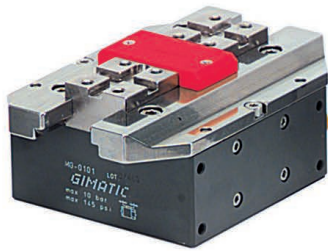


**Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie MG)**

- Azionamento a doppio effetto.
- Costruzione robusta: grande durata e affidabilità senza manutenzione.
- Possibilità di scelta su un'ampia gamma di corse e forze di serraggio.
- Forza di serraggio costante su tutta la corsa in apertura ed in chiusura.
- Profilo piatto.
- Predisposta per sensori induttivi.
- Grasso alimentare FDA-H1.

**2-jaw parallel self-centering pneumatic gripper (series MG)**

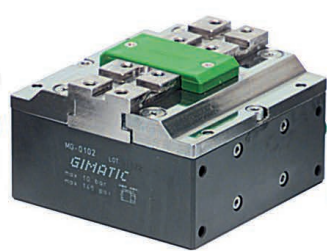
- Double acting.
- The rugged construction lends itself to heavy duty applications for a trouble free long life without maintenance.
- Wide choice of gripping force and stroke length options.
- The gripping force is constant on both directions along total stroke.
- Flat profile.
- Prepared for mounting inductive sensors.
- FDA-H1 food-grade grease.



MG-0100



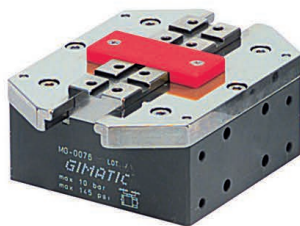
MG-0101



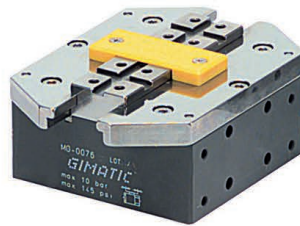
MG-0102



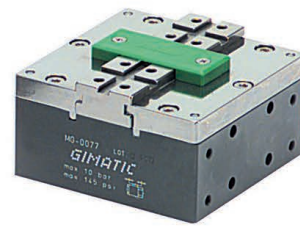
MG-0103



MG-0075



MG-0076



MG-0077



MG-0050



MG-0051



MG-0052



MG-0025



MG-0026



MG-0027



MG-0010



MG-0011



MG-0012

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

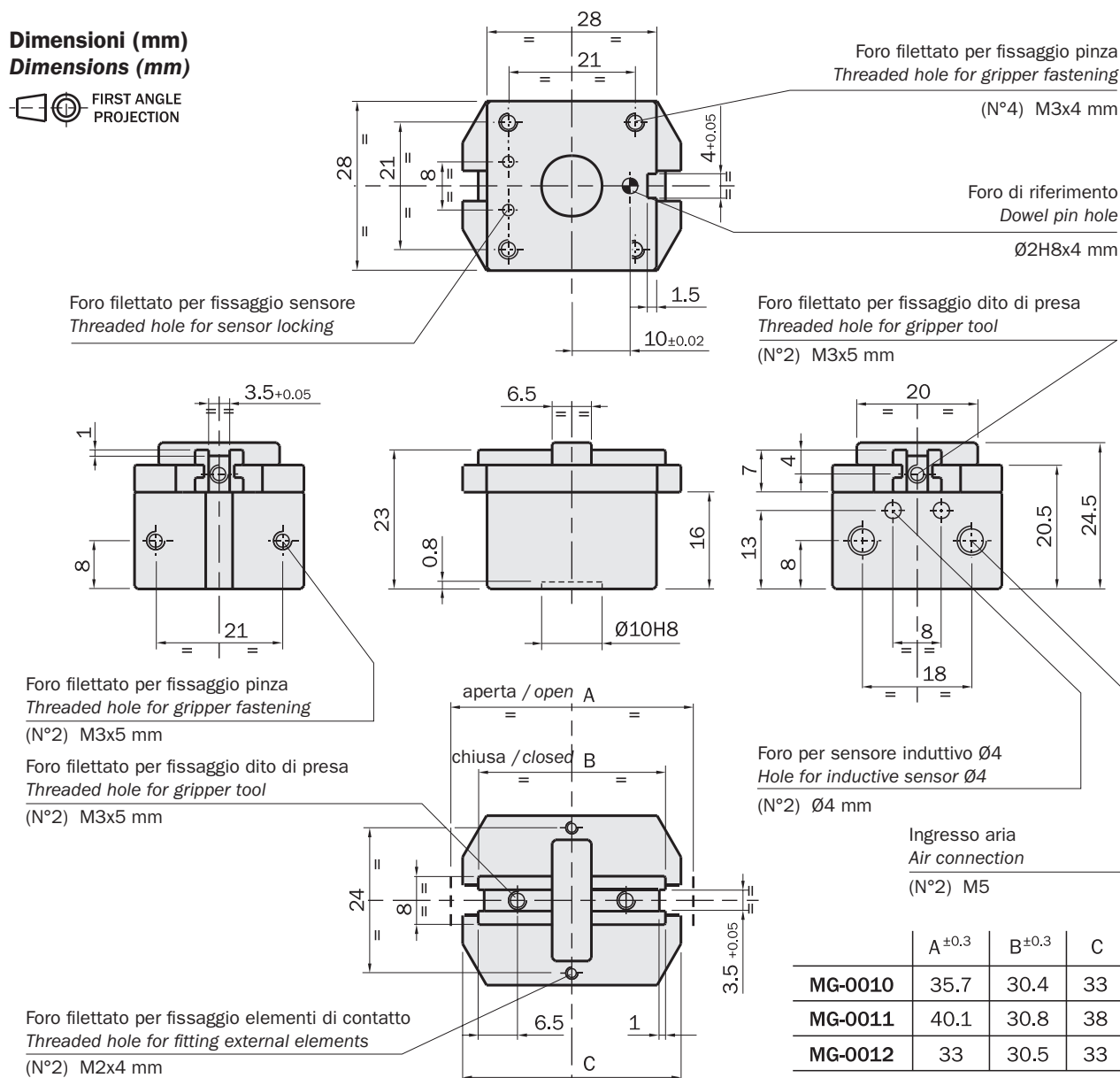
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

	MG-0010	MG-0011	MG-0012
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2÷8 bar		
Temperatura di esercizio Operating temperature range	5÷60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	35 N	18 N	70 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	70 N	36 N	140 N
Corsa totale (±0.3 mm) Total stroke	5.3 mm	9.3 mm	2.5 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz		
Consumo d'aria per ciclo Cycle air consumption	1.5 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.03 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	60 g	65 g	60 g

**Dimensioni (mm)**  
**Dimensions (mm)**

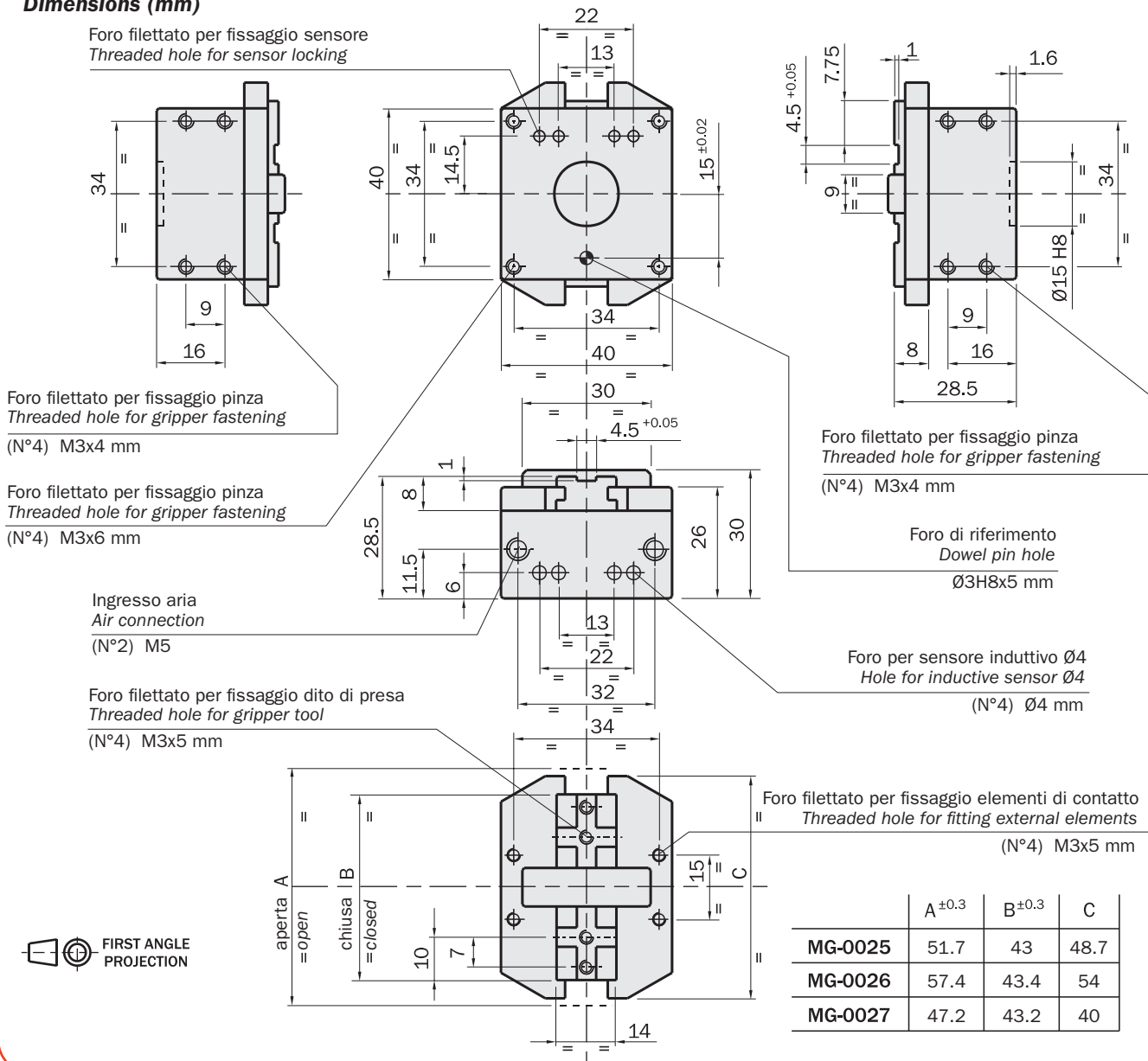


	A ±0.3	B ±0.3	C
MG-0010	35.7	30.4	33
MG-0011	40.1	30.8	38
MG-0012	33	30.5	33



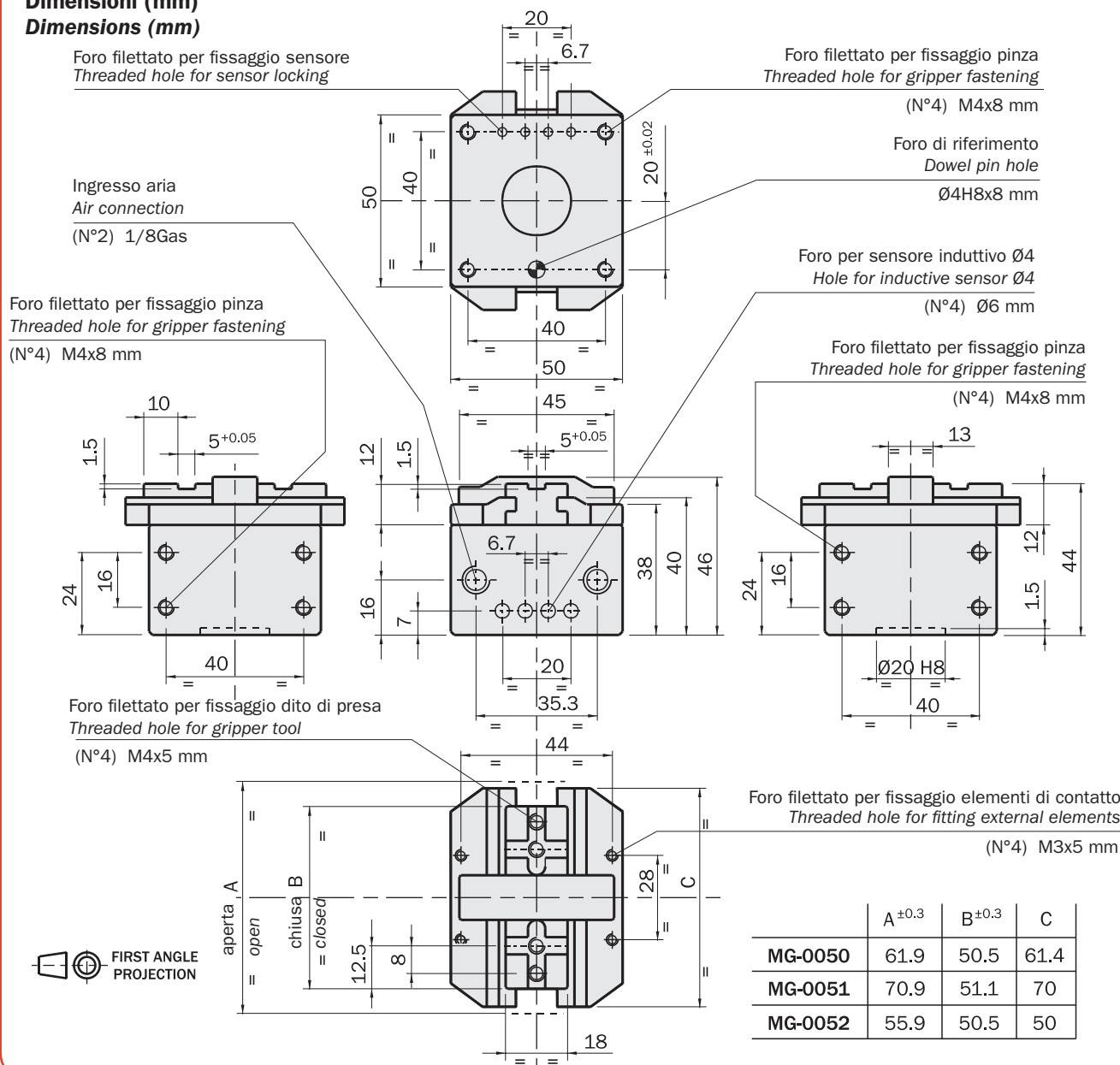
	MG-0025	MG-0026	MG-0027
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2÷8 bar		
Temperatura di esercizio Operating temperature range	5÷60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	70 N	40 N	130 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	140 N	80 N	260 N
Corsa totale (±0.3 mm) Total stroke	8.7 mm	14 mm	4 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz		
Consumo d'aria per ciclo Cycle air consumption	3.4 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.05 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	160 g	170 g	150 g

**Dimensioni (mm)**  
**Dimensions (mm)**



	MG-0050	MG-0051	MG-0052
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2÷8 bar		
Temperatura di esercizio Operating temperature range	5÷60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	160 N	90 N	300 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	320 N	180 N	600 N
Corsa totale (±0.3 mm) Total stroke	11.4 mm	19.8 mm	5.4 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz		
Consumo d'aria per ciclo Cycle air consumption	12 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.09 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	370 g	380 g	350 g

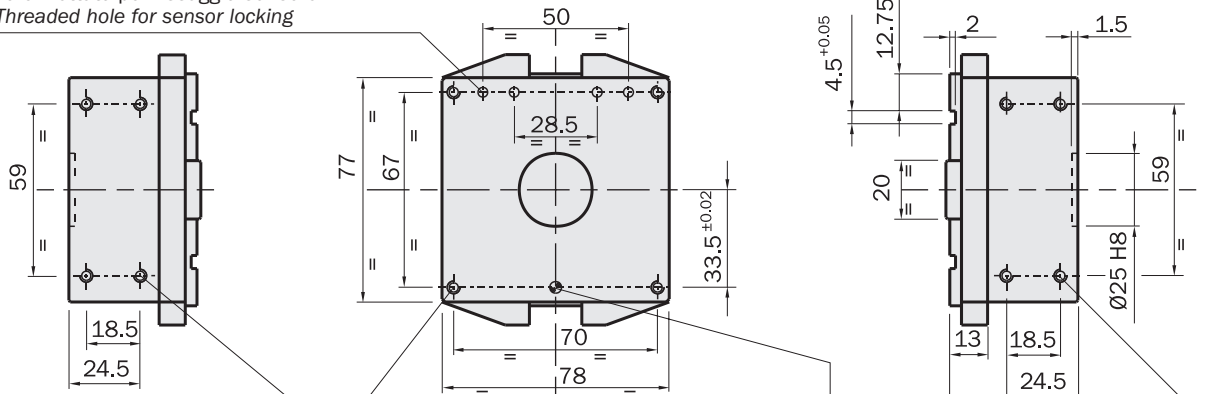
**Dimensioni (mm)**  
**Dimensions (mm)**



	MG-0075	MG-0076	MG-0077
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2÷8 bar		
Temperatura di esercizio Operating temperature range	5÷60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	250 N	160 N	540 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	500 N	320 N	1080 N
Corsa totale (±0.3 mm) Total stroke	19.1 mm	32.9 mm	9 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz		
Consumo d'aria per ciclo Cycle air consumption	34 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.14 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	940 g	980 g	900 g

**Dimensioni (mm)**  
**Dimensions (mm)**

Foro filettato per fissaggio sensore  
Threaded hole for sensor locking



Foro filettato per fissaggio pinza  
Threaded hole for gripper fastening  
(N°4) M4x5.5 mm

Foro filettato per fissaggio pinza  
Threaded hole for gripper fastening  
(N°4) M4x7 mm

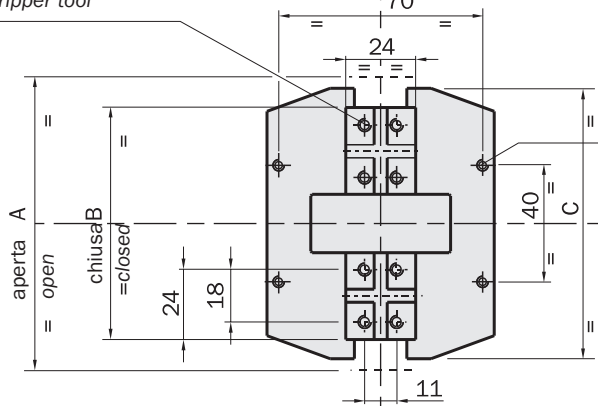
Ingresso aria  
Air connection  
(N°2) 1/8Gas

Foro filettato per fissaggio dito di presa  
Threaded hole for gripper tool  
(N°8) M4x6 mm

Foro filettato per fissaggio pinza  
Threaded hole for gripper fastening  
(N°4) M4x5.5 mm

Foro di riferimento  
Dowel pin hole  
Ø4H8x8 mm

Foro per sensore induttivo Ø4  
Hole for inductive sensor Ø4  
(N°4) Ø6 mm



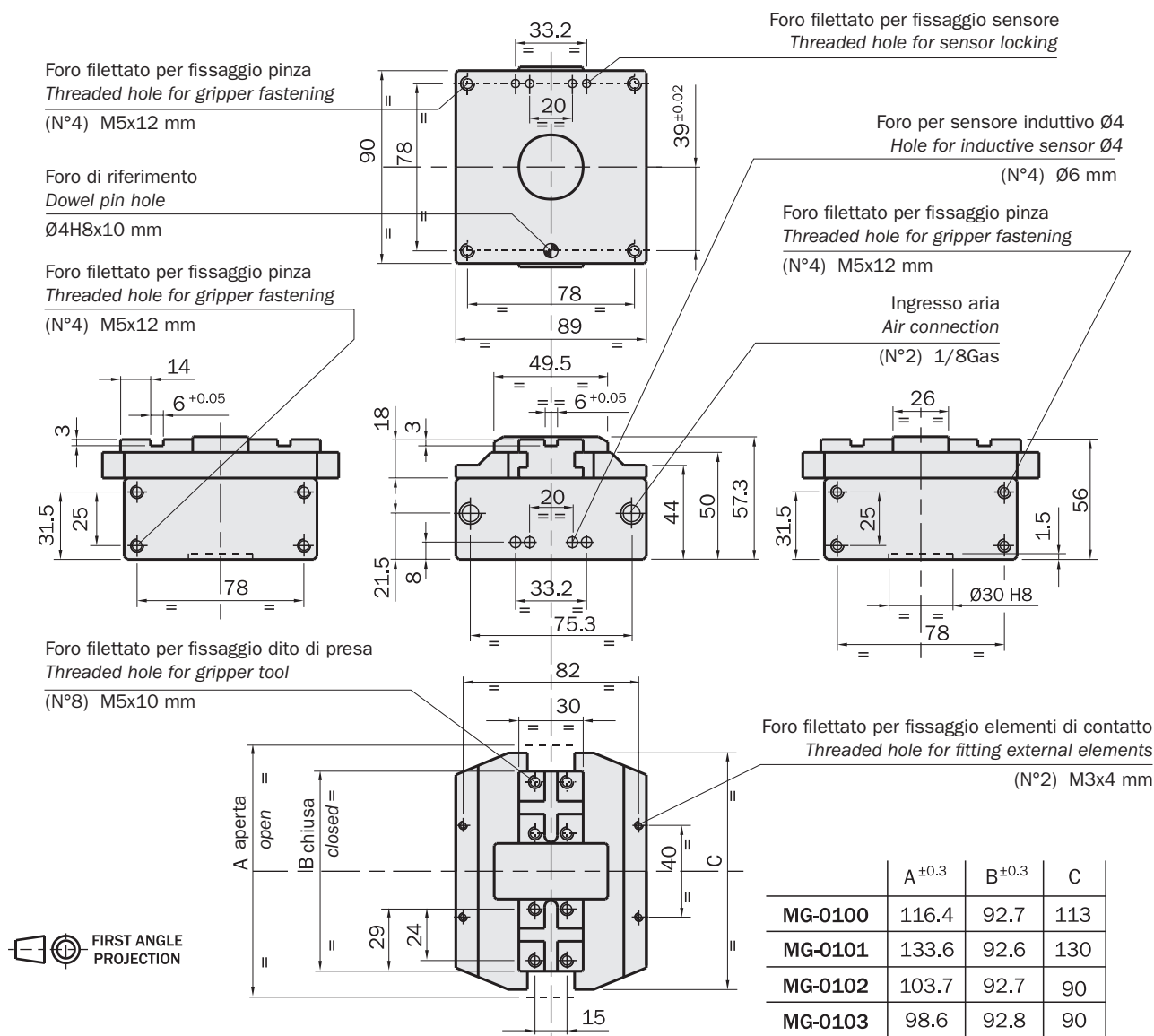
Foro filettato per fissaggio elementi di contatto  
Threaded hole for fitting external elements  
(N°4) M3x8 mm



	A <sup>±0.3</sup>	B <sup>±0.3</sup>	C
MG-0075	98.4	79.3	95
MG-0076	112	79.1	109
MG-0077	88.3	79.3	77

	MG-0100	MG-0101	MG-0102	MG-0103
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Operating pressure range	2÷8 bar			
Temperatura di esercizio Operating temperature range	5÷60 °C.			
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	450 N	210 N	770 N	1200 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	900 N	420 N	1540 N	2400 N
Corsa totale Total stroke (±0.3 mm)	23.7 mm	41 mm	11 mm	5.8 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz			
Consumo d'aria per ciclo Cycle air consumption	61 cm <sup>3</sup>			
Tempo di chiusura senza carico Closing time without load	0.14 s			
Ripetibilità Repetition accuracy	0.02mm			
Peso Weight	1500 g	1600 g	1400 g	1400 g

**Dimensioni (mm)**  
**Dimensions (mm)**

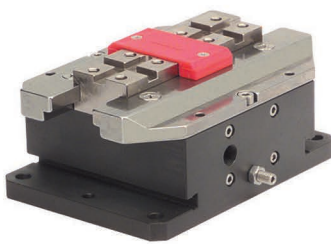


## Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie GM)

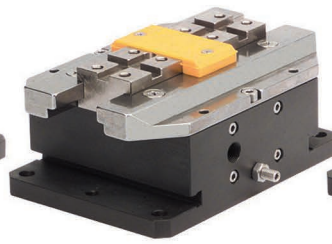
- Azionamento a doppio effetto.
- Costruzione robusta: grande durata e affidabilità senza manutenzione.
- Possibilità di scelta su un'ampia gamma di corse e forze di serraggio.
- Forza di serraggio costante su tutta la corsa in apertura ed in chiusura.
- Profilo piatto.
- Fissaggio semplificato attraverso una flangia dotata di fori passanti.
- Regolazione della corsa.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

## 2-jaw parallel self-centering pneumatic gripper (series GM)

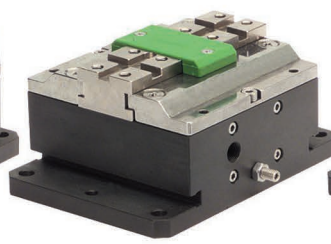
- Double acting.
- The rugged construction lends itself to heavy duty applications for a trouble free long life without maintenance.
- Wide choice of stroke length and gripping force options.
- The gripping force is constant on both directions along the total stroke.
- Flat profile.
- Easy fastening by through holes on the flange.
- Stroke adjustment.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.



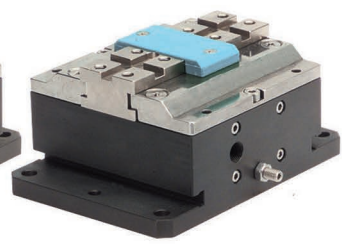
GM-0100



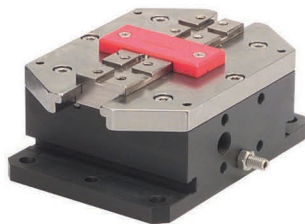
GM-0101



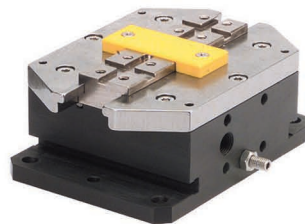
GM-0102



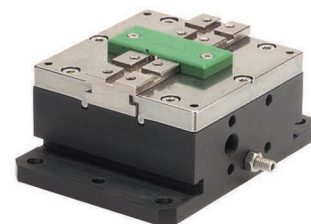
GM-0103



GM-0075



GM-0076



GM-0077



GM-0050



GM-0051



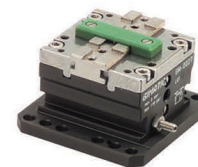
GM-0052



GM-0025



GM-0026



GM-0027



GM-0010



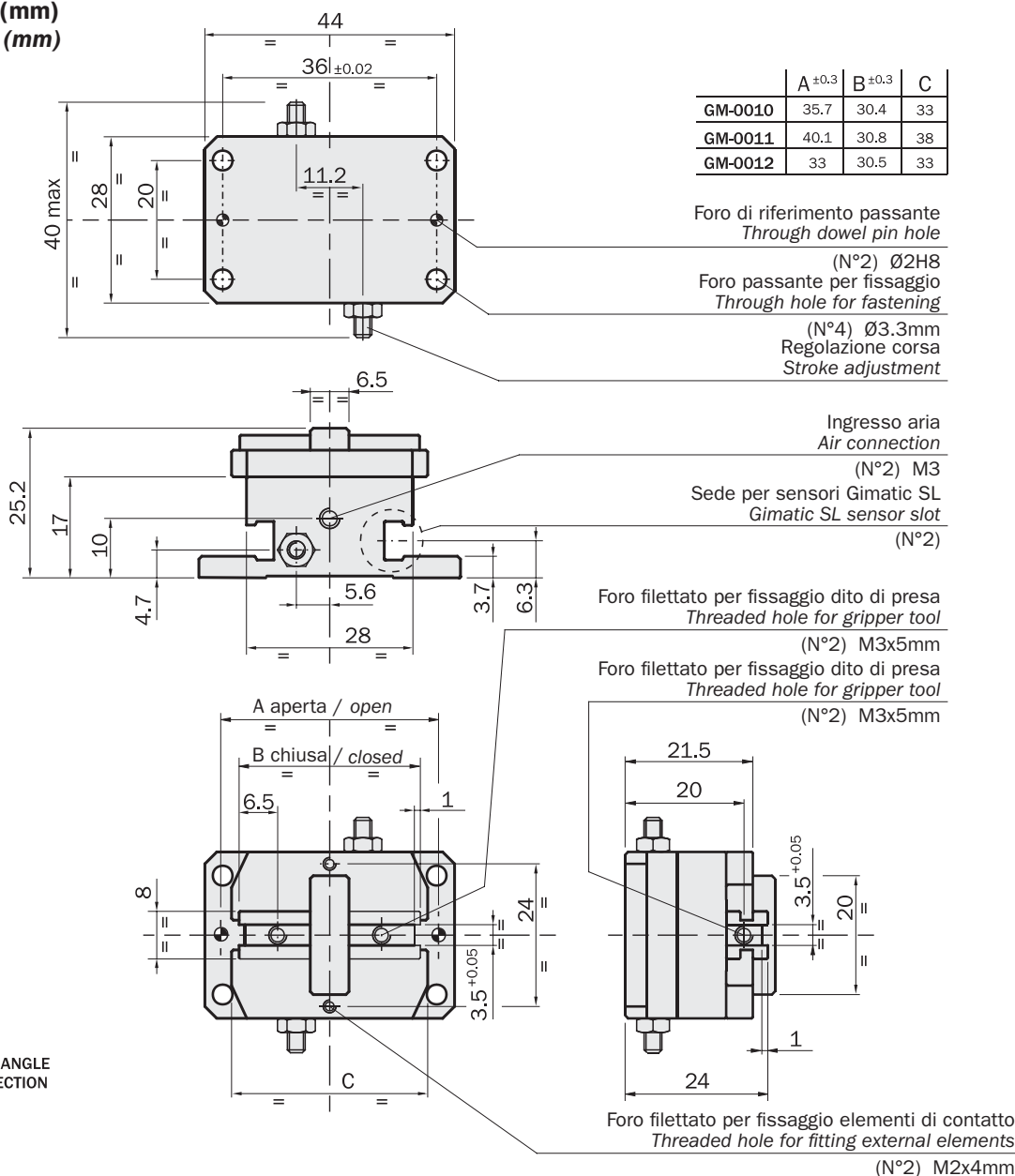
GM-0011



GM-0012

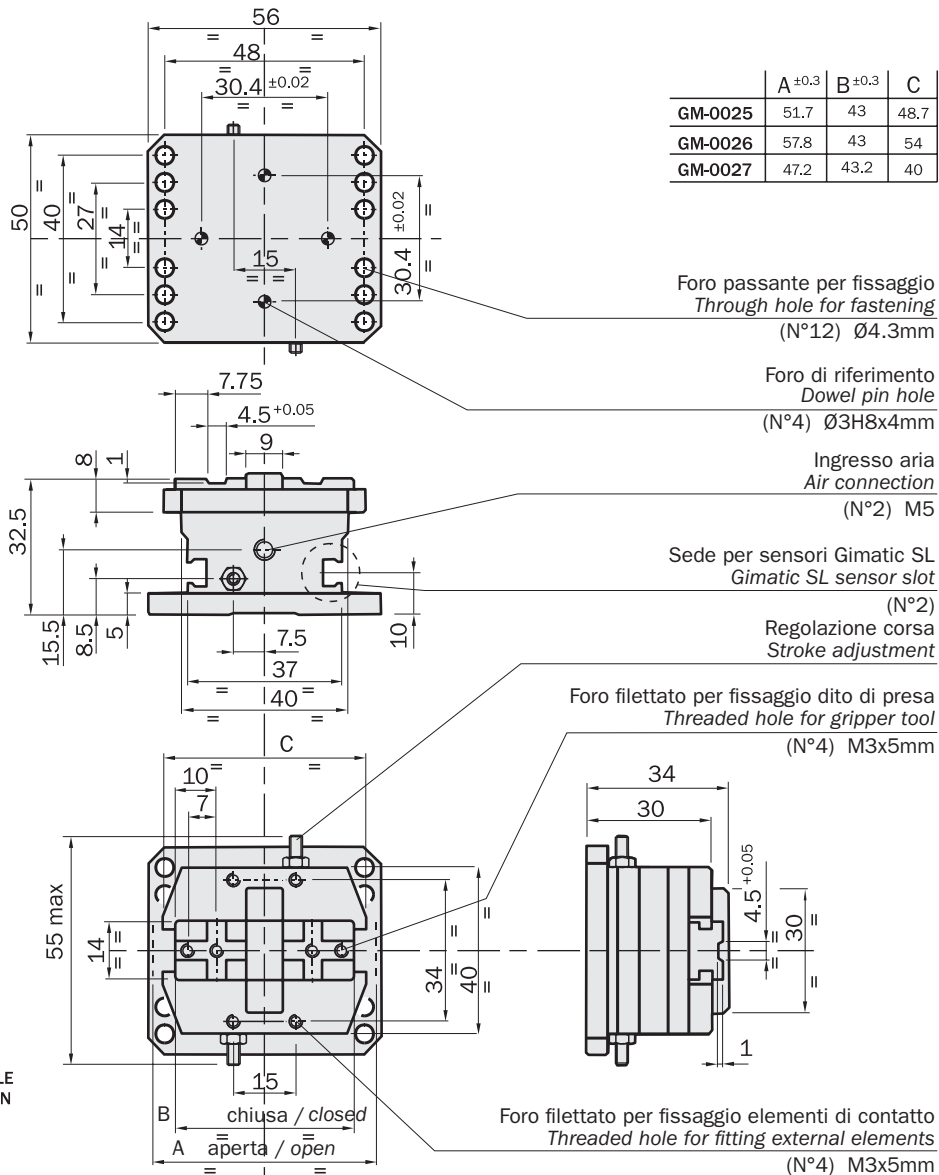
	GM-0010	GM-0011	GM-0012
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2+8 bar		
Temperatura di esercizio Temperature range	5+60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	35 N	18 N	70 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	70 N	36 N	140 N
Corsa totale (±0.3 mm) Total stroke	5.3 mm	9.3 mm	2.5 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz		
Consumo d'aria per ciclo Cycle air consumption	1.5 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.03 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	70 g	75 g	70 g

**Dimensioni (mm)**  
**Dimensions (mm)**



	GM-0025	GM-0026	GM-0027
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2÷8 bar		
Temperatura di esercizio Operating temperature range	5÷60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	70 N	40 N	130 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	140 N	80 N	260 N
Corsa totale (±0.3 mm) Total stroke	8.7 mm	14.8 mm	4 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz		
Consumo d'aria per ciclo Cycle air consumption	3.4 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.05 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	200 g	210 g	190 g

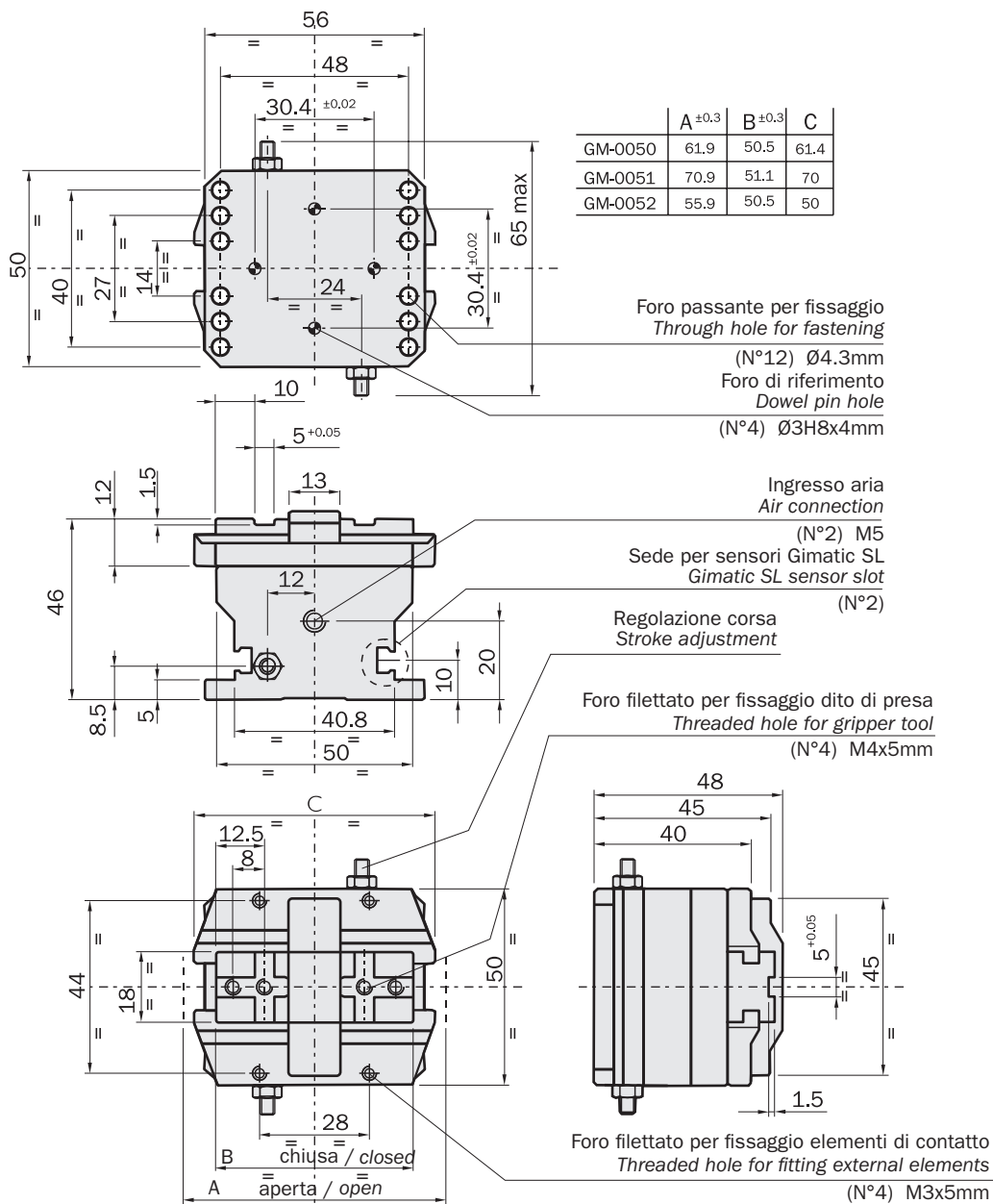
**Dimensioni (mm)**  
**Dimensions (mm)**



FIRST ANGLE PROJECTION

	GM-0050	GM-0051	GM-0052
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2+8 bar		
Temperatura di esercizio Temperature range	5+60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	160 N	90 N	300 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	320 N	180 N	600 N
Corsa totale (±0.3 mm) Total stroke	11.4 mm	19.8 mm	5.4 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz		
Consumo d'aria per ciclo Cycle air consumption	12 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.09 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	370 g	380 g	350 g

**Dimensioni (mm)**  
**Dimensions (mm)**

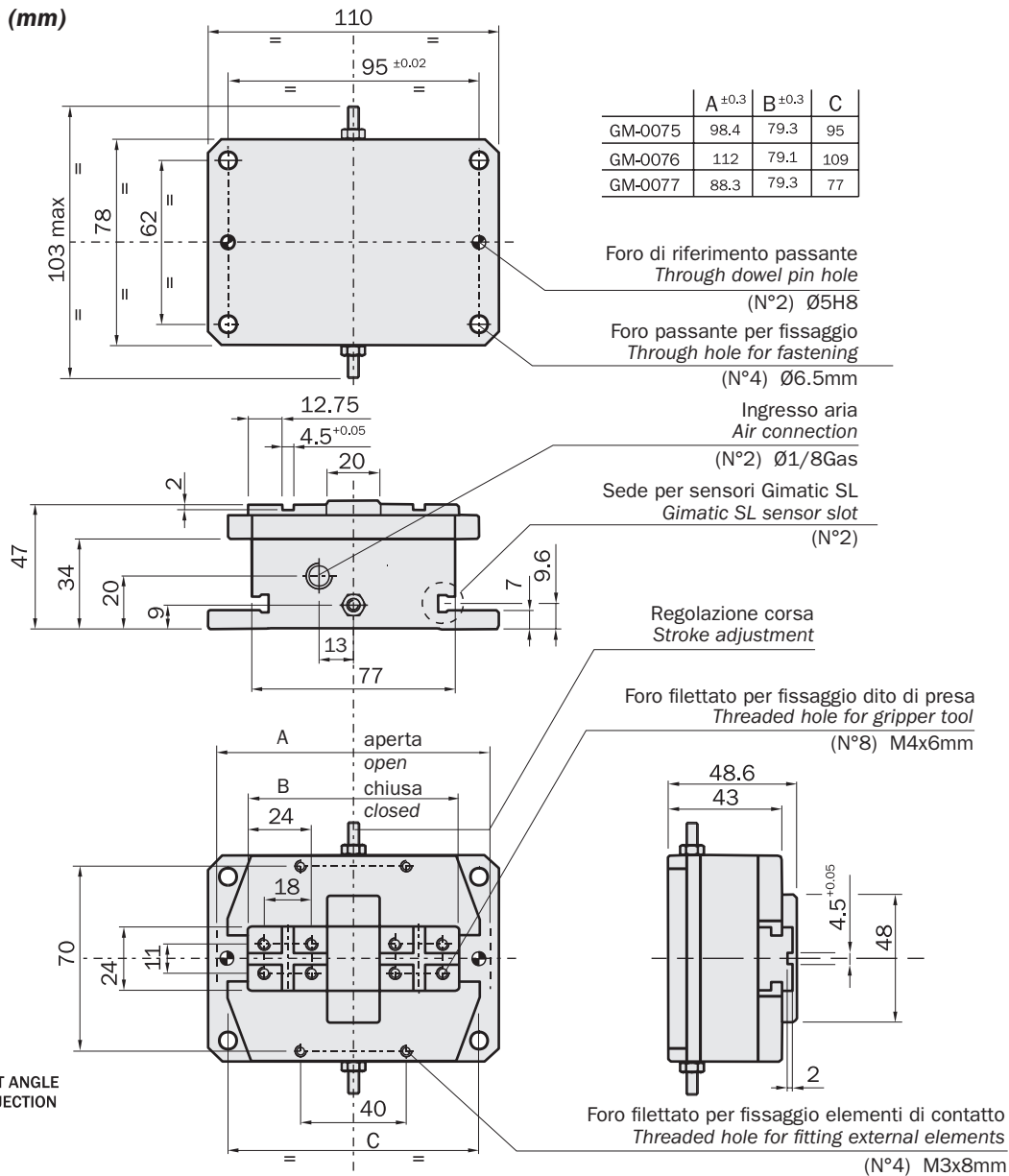




	GM-0075	GM-0076	GM-0077
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2÷8 bar		
Temperatura di esercizio Temperature range	5÷60 °C.		
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	250 N	160 N	540 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	500 N	320 N	1080 N
Corsa totale (±0.3 mm) Total stroke	19.1 mm	32.9 mm	9 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz		
Consumo d'aria per ciclo Cycle air consumption	34 cm <sup>3</sup>		
Tempo di chiusura senza carico Closing time without load	0.14 s		
Ripetibilità Repetition accuracy	0.02 mm		
Peso Weight	1050 g	1100 g	1000 g

**Dimensioni (mm)**

**Dimensions (mm)**

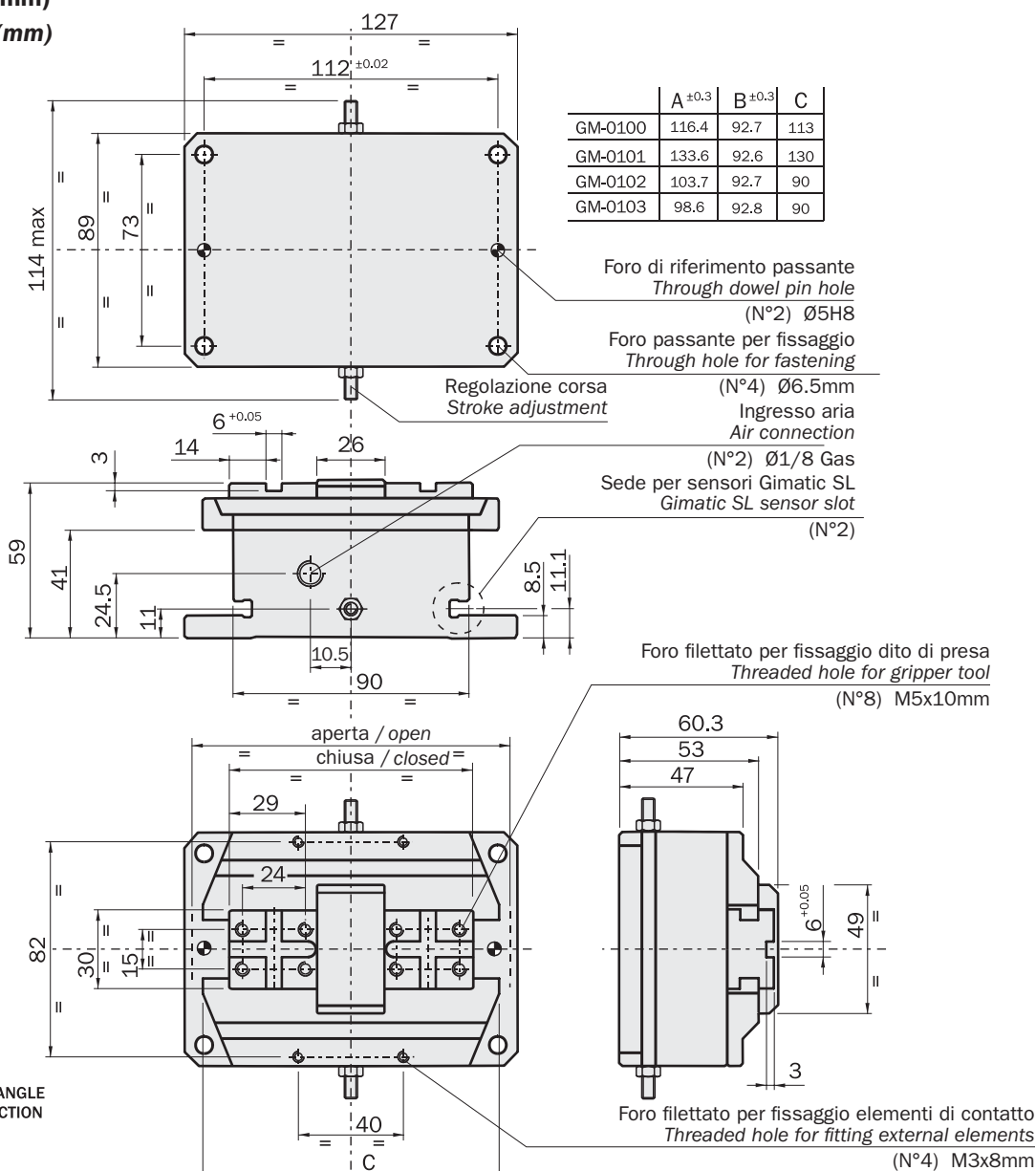


	A ±0.3	B ±0.3	C
GM-0075	98.4	79.3	95
GM-0076	112	79.1	109
GM-0077	88.3	79.3	77



	GM-0100	GM-0101	GM-0102	GM-0103
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Pressure range	2÷8 bar			
Temperatura di esercizio Temperature range	5÷60 °C.			
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	450 N	210 N	770 N	1200 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	900 N	420 N	1540 N	2400 N
Corsa totale (±0.3 mm) Total stroke	23.7 mm	41 mm	11 mm	5.8 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz			
Consumo d'aria per ciclo Cycle air consumption	61 cm <sup>3</sup>			
Tempo di chiusura senza carico Closing time without load	0.14 s			
Ripetibilità Repetition accuracy	0.02 mm			
Peso Weight	1600 g	1700 g	1600 g	1580 g

**Dimensioni (mm)**  
**Dimensions (mm)**



FIRST ANGLE PROJECTION

**Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie SX)**

- Azionamento a doppio effetto (normale chiusa su richiesta).
- Forza di serraggio elevata.
- Grado di protezione IP67.
- Colonne sigillate con doppio O-Ring.
- Adatta per ambienti difficili.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

**2-jaw self-centering pneumatic parallel gripper (series SX)**

- Double acting (normally closed on request).
- High gripping force.
- Protection class: IP67.
- Double O-Ring sealing on the columns.
- Suitable for harsh environments.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.



	SX2510	SX2520	SX4020	SX4040	SX5030	SX5060	SX6340	SX6380
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]							
Pressione di esercizio Operating pressure range	2 ÷ 8 bar							
Temperatura di esercizio Operating temperature range	5 ÷ 100 °C							
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	250 N	250 N	650 N	650 N	1050 N	1050 N	1700 N	1700 N
Forza di serraggio totale in apertura a 6 bar Total opening gripping force at 6 bar	500 N	500 N	1300 N	1300 N	2100 N	2100 N	3400 N	3400 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	195 N	195 N	500 N	500 N	800 N	800 N	1250 N	1250 N
Forza di serraggio totale in chiusura a 6 bar Total closing gripping force at 6 bar	390 N	390 N	1000 N	1000 N	1600 N	1600 N	2500 N	2500 N
Corsa totale Total stroke (±0.5 mm)	10 mm	20 mm	20 mm	40 mm	30 mm	60 mm	40 mm	80 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	2 Hz	2 Hz	2 Hz	2 Hz	1 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	11 cm <sup>3</sup>	20 cm <sup>3</sup>	50 cm <sup>3</sup>	95 cm <sup>3</sup>	115 cm <sup>3</sup>	220 cm <sup>3</sup>	230 cm <sup>3</sup>	450 cm <sup>3</sup>
Tempo di apertura / chiusura senza carico Opening / Closing time without load	0.03 s	0.05 s	0.03 s	0.08 s	0.06 s	0.10 s	0.20 s	0.30 s
Ripetibilità Repetition accuracy	0.05 mm							
Peso Weight	260 g	310 g	750 g	900 g	1300 g	1700 g	2800 g	3500 g

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

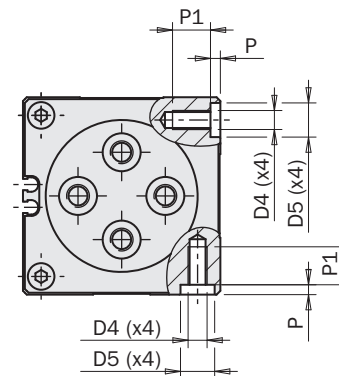
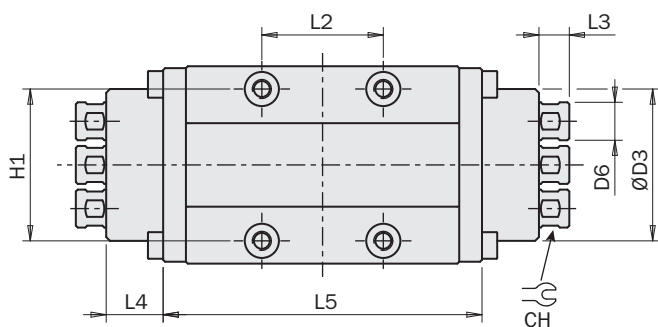
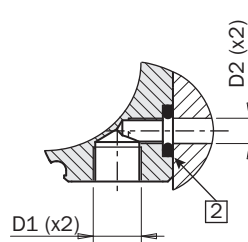
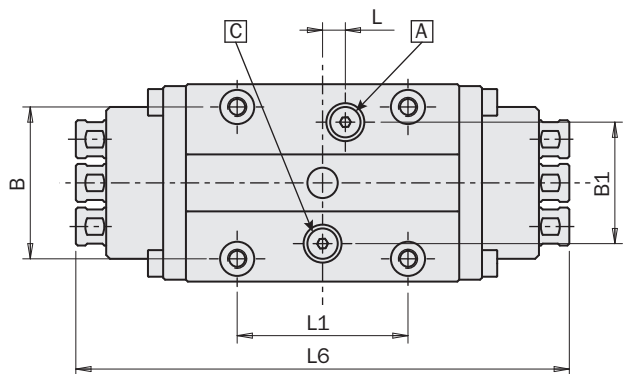
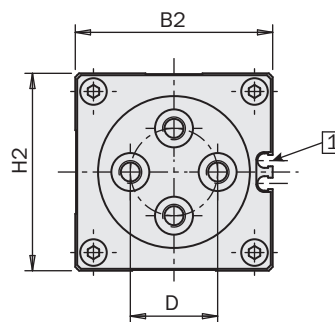
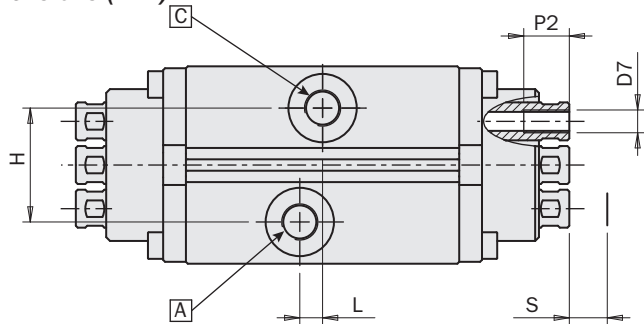
Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**



		SX2510	SX2520	SX4020	SX4040	SX5030	SX5060	SX6340	SX6380
B	±0.02	23	23	40	40	50	50	60	60
B1		22.5	22.5	32	32	38	38	45	45
B2		38	38	52	52	64	64	79	79
D	±0.02	15	15	Ø23	Ø23	Ø33	Ø33	Ø38	Ø38
D1		M5	M5	G1/8	G1/8	G1/8	G1/8	G1/8	G1/8
D2		M5	M5	M5	M5	M5	M5	G1/8	G1/8
D3		27	27	Ø40	Ø40	Ø50	Ø50	Ø63	Ø63
D4		M4	M4	M5	M5	M6	M6	M8	M8
D5	H8	7	7	Ø9	Ø9	Ø9	Ø9	Ø12	Ø12
D6	f7	Ø6	Ø6	Ø10	Ø10	Ø12	Ø12	Ø16	Ø16
D7		M3	M3	M6	M6	M8	M8	M10	M10
H		22.5	22.5	30	30	40	40	45	45
H1	±0.02	23	23	40	40	50	50	60	60
H2		38	38	52	52	64	64	79	79
L		-	-	6	6	10	10	10	10
L1	±0.02	30	30	45	45	50	50	70	70
L2	±0.02	30	30	32	32	35	35	50	50
L3		7.5	7.5	8	8	8.5	8.5	9.5	9.5
L4		7.5	7.5	15	15	18	18	26	26
L5		59	73	84	110	106	146	133	185
L6		89	103	130	156	159	199	204	256
P		2.1	2.1	2.6	2.6	2.6	2.6	2.6	2.6
P1		6.5	6.5	10	10	10	10	15	15
P2		6	6	12	12	20	20	20	20
S (x2)		5	10	10	20	15	30	20	40
CH		5	5	9	9	11	11	14	14



1

Sede per sensori  
Sensor seat

2

O-Ring (non fornito)  
O-Ring (not supplied)

A

Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening

C

Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

**Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie PE)**

- Azionamento a doppio effetto (a semplice effetto su richiesta per PE-25... e PE-45...).
- Assenza di organi di trasmissione: elevato rendimento e affidabilità.
- Possibilità di scelta su un'ampia gamma di corse.
- Forza di serraggio costante su tutta la corsa in apertura ed in chiusura.
- Basso peso ottenuto con una costruzione interamente in lega leggera.
- Grasso alimentare FDA-H1.

**2-jaw parallel self-centering pneumatic gripper (series PE)**

- Double acting (single acting upon request for PE-25... and PE-45...).
- High efficiency and reliability due to the lack of driving parts.
- Wide choice of stroke length options.
- The gripping force is constant on both directions along total stroke.
- Light weight; due to its alloy construction.
- FDA-H1 food-grade grease.



PE-4580



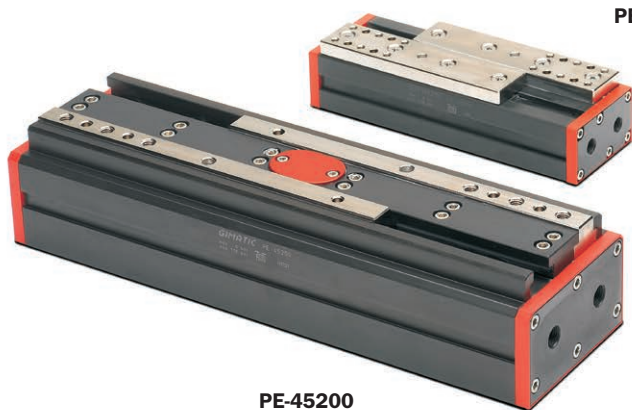
PE-4560



PE-4540



PE-4520



PE-45200

PE-25100



PE-25200



PE-2560



PE-2540



PE-2520



PE-16200



PE-16150



PE-1680



PE-1640



PE-1625



PE-1610

Unità Rotanti  
Rotary Units

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Quick Changer

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Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

	PE-1610	PE-1625	PE-1640	PE-1680	PE-16150	PE-16200
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	2÷8 bar					
Temperatura di esercizio Operating temperature range	5÷60 °C.					
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	100 N					
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	200 N					
Corsa Stroke (±0.25 mm)	2x5 mm	2x12.5 mm	2x20 mm	2x40 mm	2x75 mm	2x100 mm
Frequenza max funzionamento Maximum working frequency	3 Hz	2 Hz	2 Hz	2 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	7 cm <sup>3</sup>	14 cm <sup>3</sup>	21 cm <sup>3</sup>	39 cm <sup>3</sup>	71 cm <sup>3</sup>	97 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.05 s	0.1 s	0.2 s	0.4 s	0.5 s
Ripetibilità Repetition accuracy	0.03 mm	0.03 mm	0.03 mm	0.03 mm	0.03 mm	0.03 mm
Peso Weight	200 g	250 g	350 g	500 g	900 g	1200 g

### Forza di serraggio

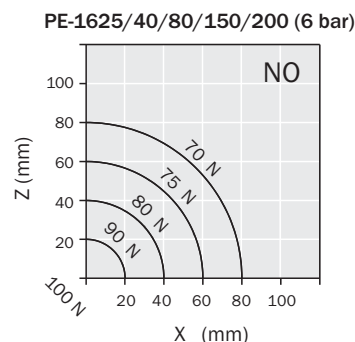
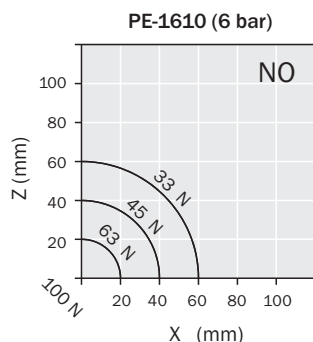
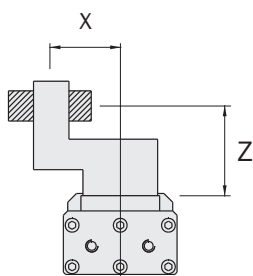
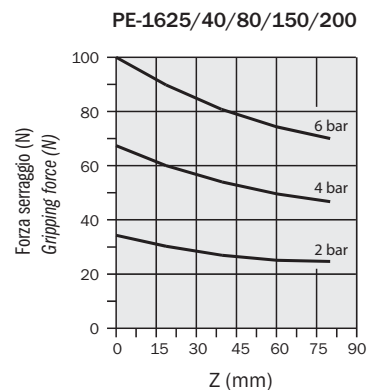
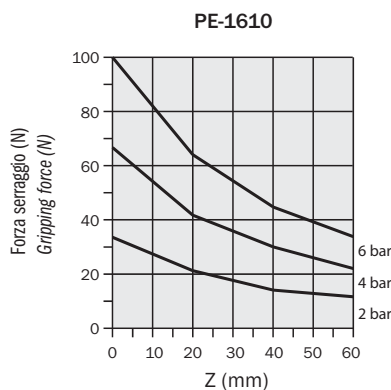
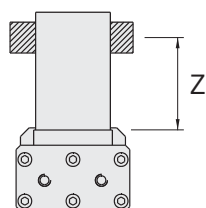
I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione, del braccio Z e del disassamento del punto di presa X.

### Gripping force

The graphs show the gripping force on each jaw, as a function of the operating pressure, the gripping tool length Z and the overhanging X.

La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il doppio.

The force shown in these graphs refers to one jaw. The total force is double.



	PE-2520	PE-2540	PE-2560	PE-25100	PE-25200
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]				
Pressione di esercizio Operating pressure range	2÷8 bar				
Temperatura di esercizio Operating temperature range	5÷60 °C.				
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	230 N				
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	460 N				
Corsa (±0.25 mm) Stroke	2x10 mm	2x20 mm	2x30 mm	2x50 mm	2x100 mm
Frequenza max funzionamento Maximum working frequency	3 Hz	2 Hz	2 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	44 cm <sup>3</sup>	74 cm <sup>3</sup>	102 cm <sup>3</sup>	146 cm <sup>3</sup>	263 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.04 s	0.06 s	0.08 s	0.17 s
Ripetibilità Repetition accuracy	0.04 mm	0.04 mm	0.04 mm	0.04 mm	0.04 mm
Peso Weight	700 g	980 g	1285 g	1235 g	2080 g

**Forza di serraggio**

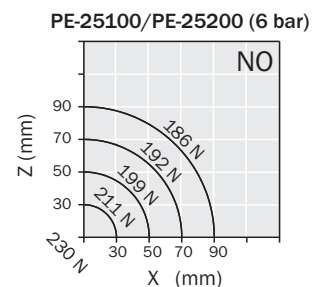
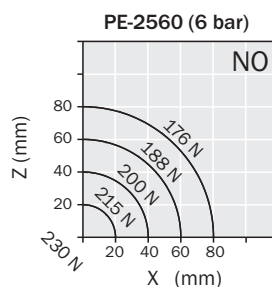
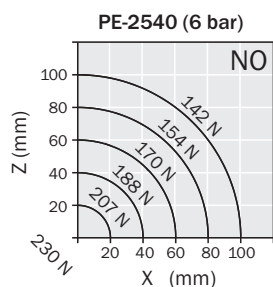
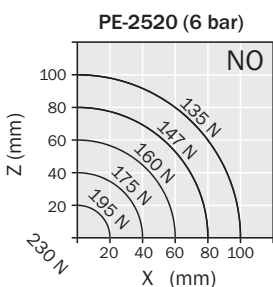
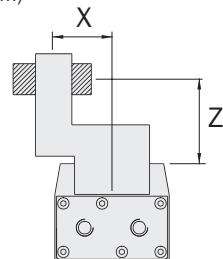
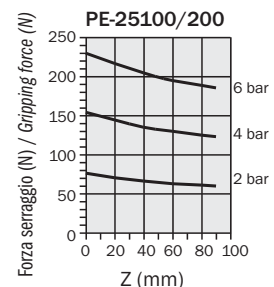
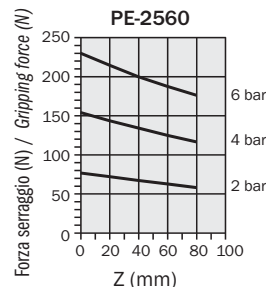
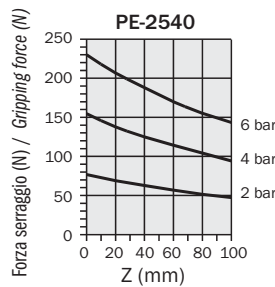
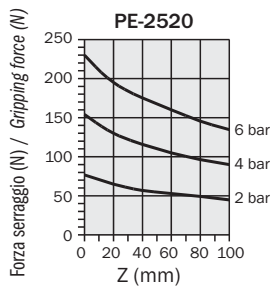
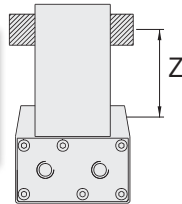
I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione, del braccio Z e del disassamento del punto di presa X.

**Gripping force**

The graphs show the gripping force on each jaw, as a function of the operating pressure, the gripping tool length Z and the overhanging X.

La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il doppio.

The force shown in these graphs refers to one jaw. The total force is double.



	PE-4520	PE-4540	PE-4560	PE-4580	PE-45200
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]				
Pressione di esercizio Operating pressure range	2÷8 bar				
Temperatura di esercizio Operating temperature range	5÷60 °C.				
Forza di serraggio per griffa a 6 bar Gripping force at 6 bar on each jaw	700 N	700 N	700 N	700 N	900 N
Forza di serraggio totale a 6 bar Total gripping force at 6 bar	1400 N	1400 N	1400 N	1400 N	1800 N
Corsa (±0.25 mm) Stroke	2x10 mm	2x20 mm	2x30 mm	2x40 mm	2x100 mm
Frequenza max funzionamento Maximum working frequency	3 Hz	2 Hz	1 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	132 cm <sup>3</sup>	208 cm <sup>3</sup>	257 cm <sup>3</sup>	371 cm <sup>3</sup>	940 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.05 s	0.1 s	0.15 s	0.2 s	0.2 s
Ripetibilità Repetition accuracy	0.04 mm	0.04 mm	0.04 mm	0.04 mm	0.04 mm
Peso Weight	1840 g	2250 g	2715 g	3300 g	3800 g

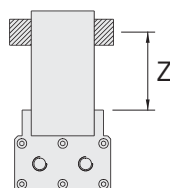
### Forza di serraggio

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione, del braccio Z e del disassamento del punto di presa X.

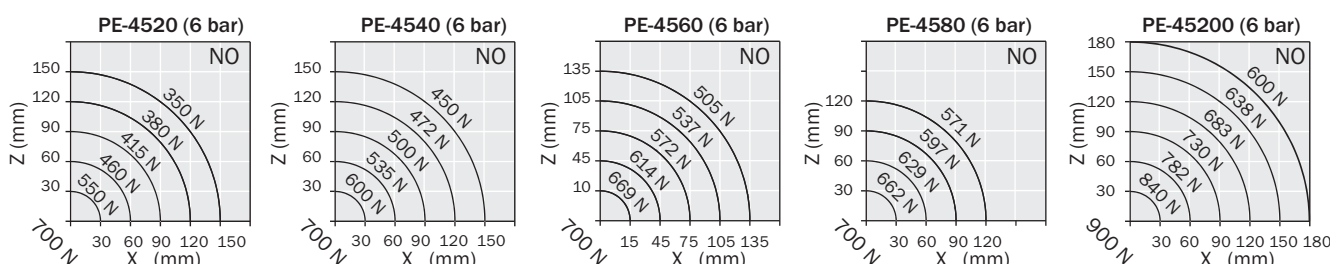
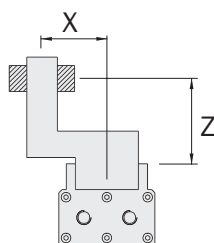
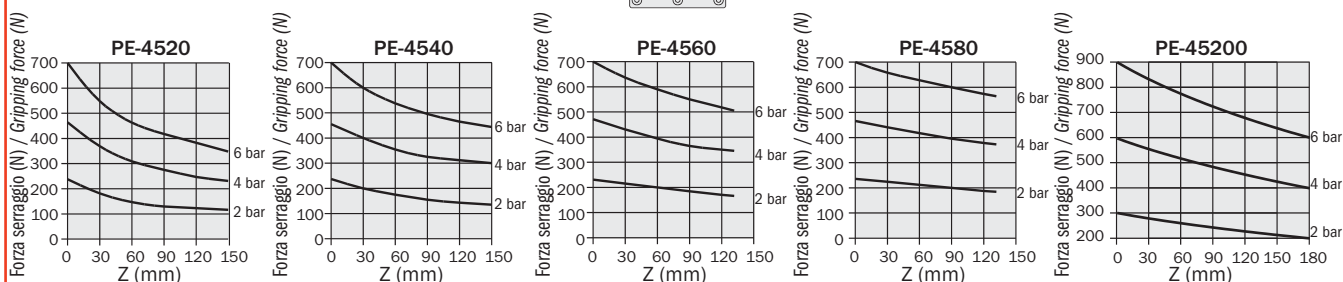
### Gripping force

The graphs show the gripping force on each jaw, as a function of the operating pressure, the gripping tool length Z and the overhanging X.

La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il doppio.



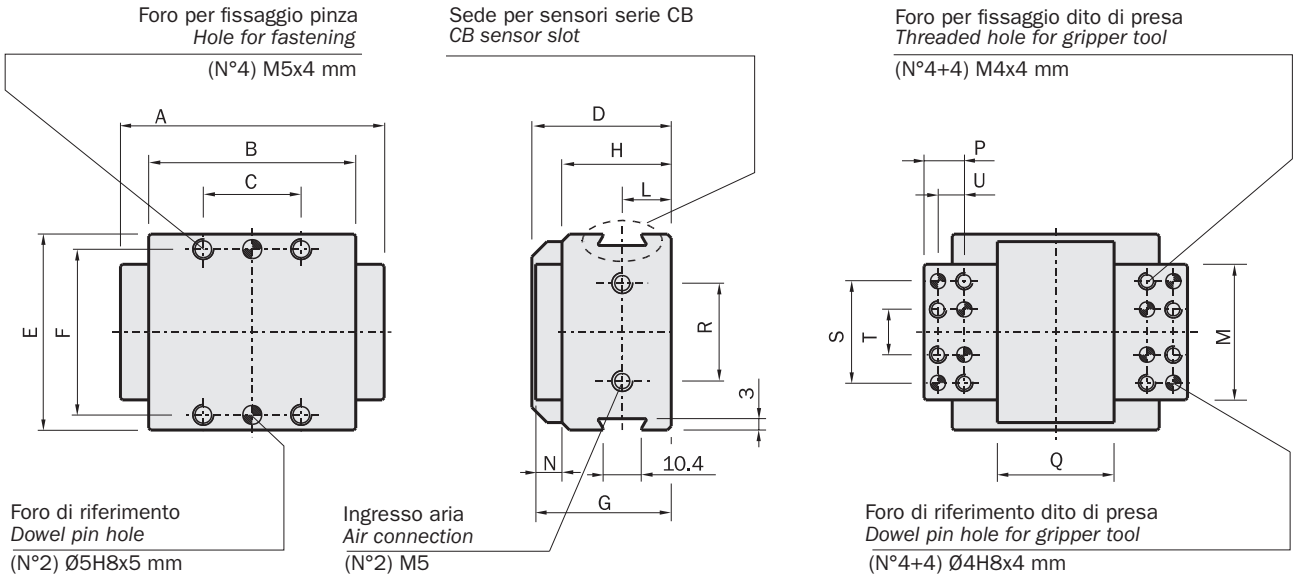
The force shown in these graphs refers to one jaw. The total force is double.



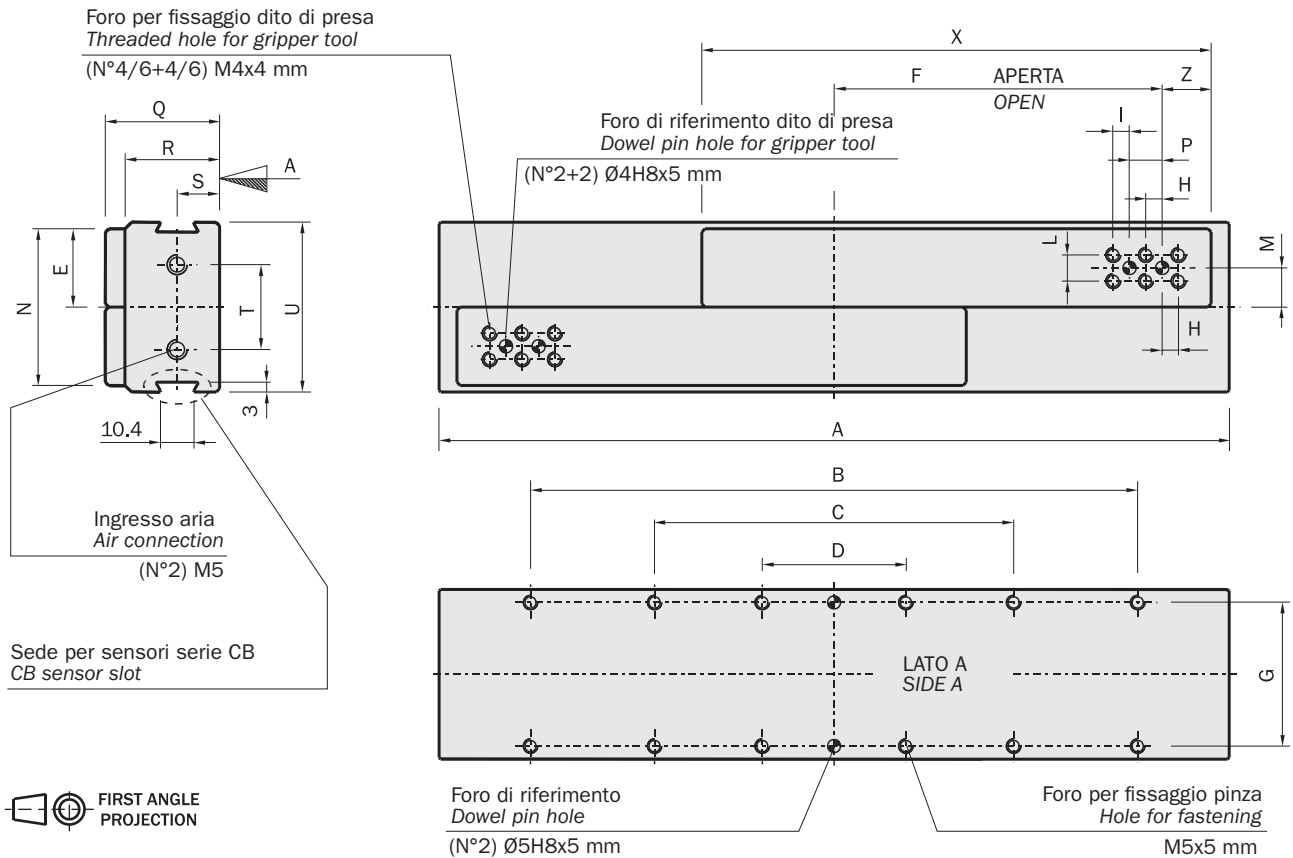


**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B	C	D	E	F ±0.02	G	H	L	M	N	P	Q	R ±0.02	S ±0.02	T ±0.02	U ±0.02
PE-1610	62	60	26	37	52	44	36	29	13	36	7	11.75	31	26	27	12	7

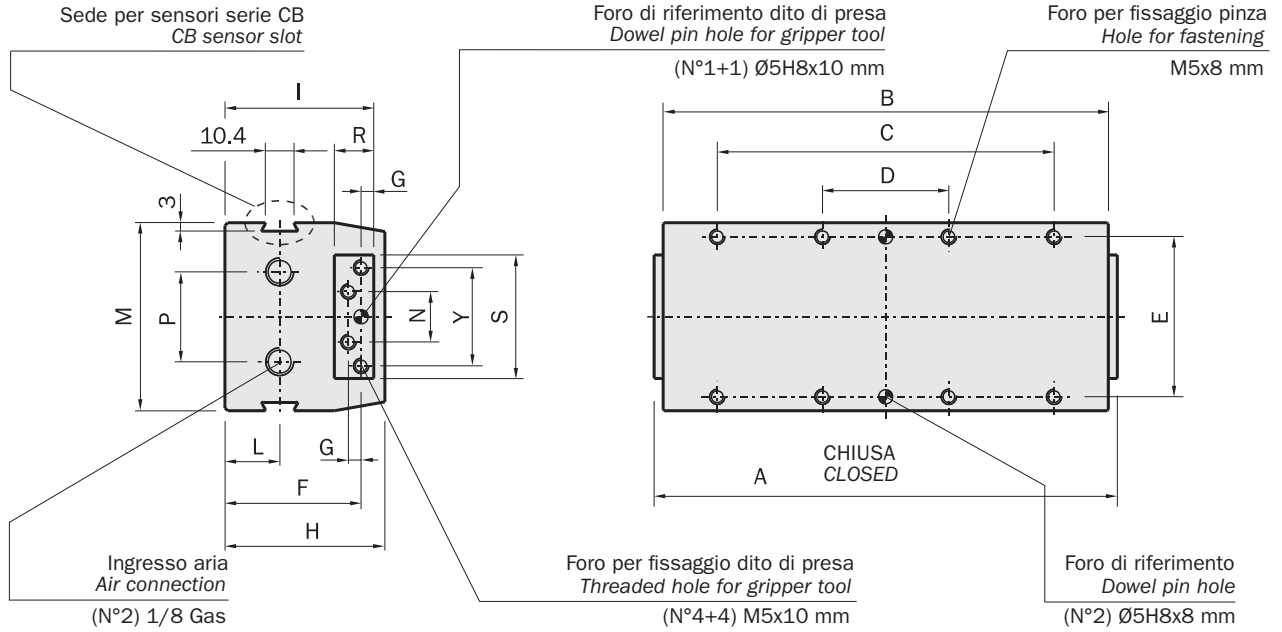


	A	B	C	D	E	F	G ±0.02	H	I	L	M	N	P ±0.02	Q	R	S	T	U	X	Z
PE-1625	70	-	-	26	24	12.5	44	5	-	12	12	48	12	37	29	13	26	52	41.5	14.5
PE-1640	99	-	-	60	24	26.5	44	5	-	8	12	48	10	37	29	13	26	52	63	15
PE-1680	155	-	-	60	24	54.5	44	5	5	8	12	48	10	37	29	13	26	52	99	15
PE-16150	263	-	200	60	24	108.5	44	5	5	8	12	48	10	37	29	13	26	52	172	15
PE-16200	337	280	200	60	24	145.5	44	5	5	8	12	48	10	37	29	13	26	52	221	15

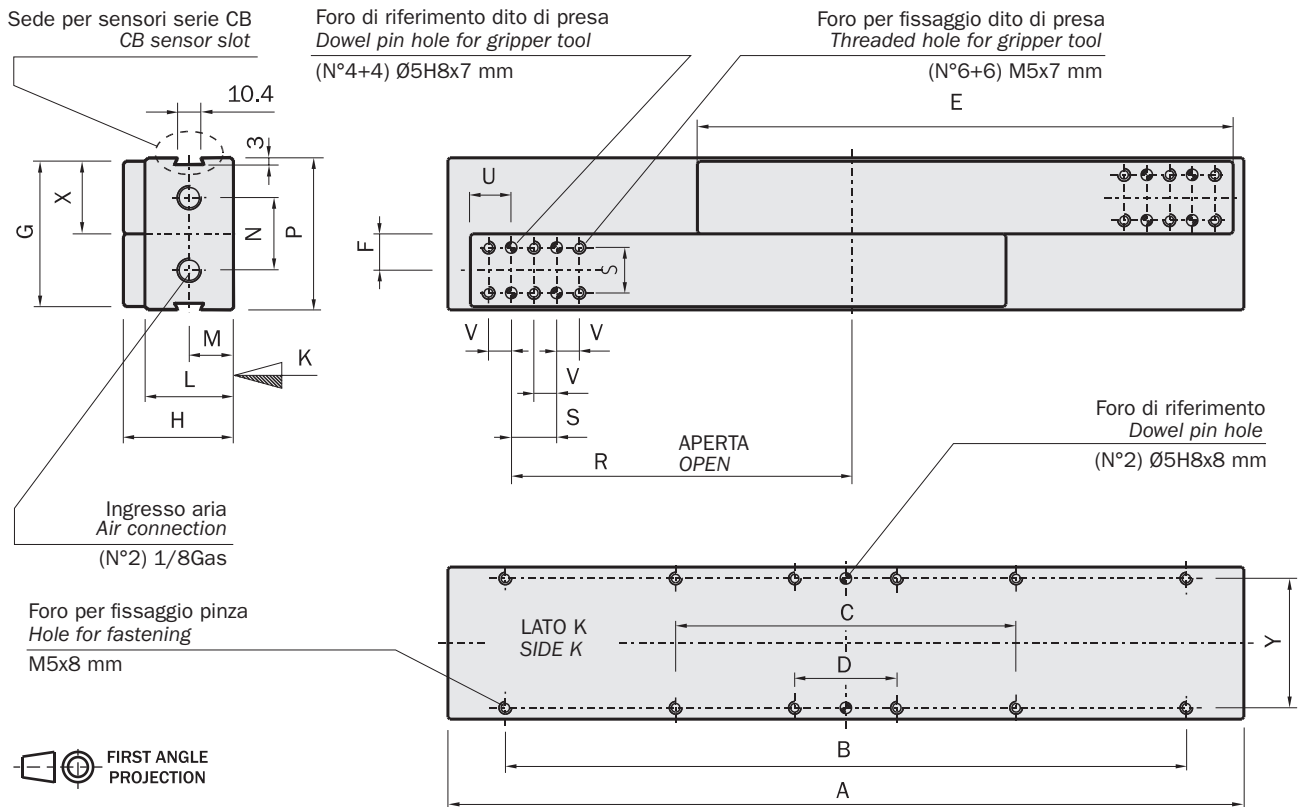


**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B	C	D	E ±0.02	F	G ±0.02	H	I	L	M	N	P	Y	R -0.05	S -0.05
PE-2520	90	83.6	-	45	57	48.5	4.5	57	53	19.5	67	18	32	35	14	44
PE-2540	130	123.6	-	45	57	48.5	4.5	57	53	19.5	67	18	32	35	14	44
PE-2560	165	158.6	120	45	57	48.5	4.5	57	53	19.5	67	18	32	35	14	44



	A	B	C	D	E	F	G	H	L	M	N	P	Y ±0.02	R	S ±0.02	U	X	V
PE-25100	200.6	-	150	45	136	16	64	48.5	39	19.5	32	67	57	75	20	18	32	10
PE-25200	350.6	300	150	45	236	16	64	48.5	39	19.5	32	67	57	150	20	18	32	10



09/2022

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

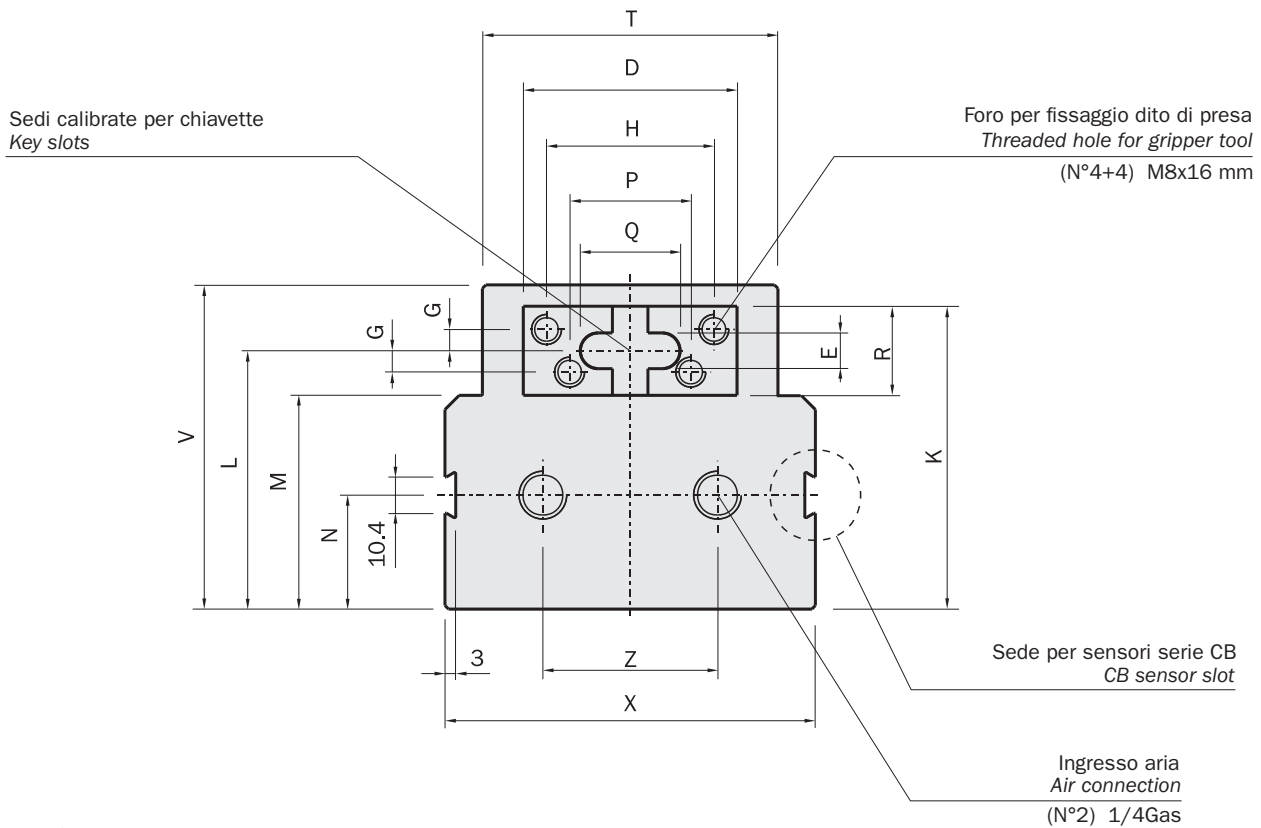
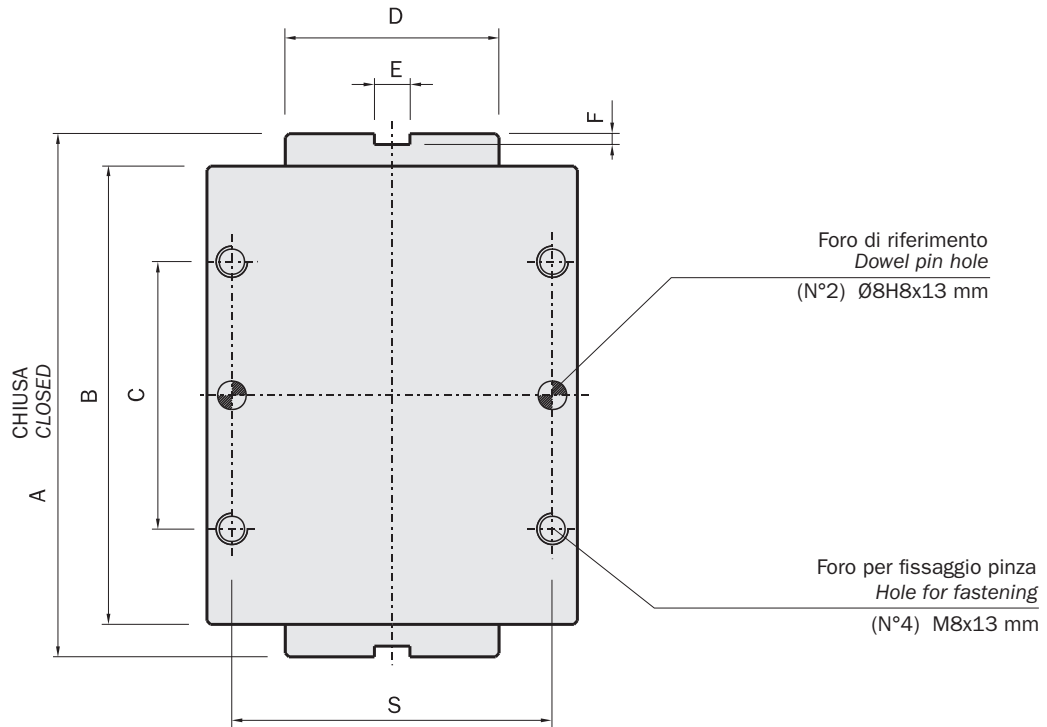
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B	C	D -0.05	E +0.05	F	G	H	L	M	N	P	Q	R -0.05	S ±0.02	T	V	X	K	Z
PE-4520	110	100.6	50	60	10	3	6	47	72.5	60	32	34	28	25	90	83	91	104	85	49
PE-4540	140	128.6	75	60	10	3	6	47	72.5	60	32	34	28	25	90	83	91	104	85	49
PE-4560	170	160.6	90	60	10	3	6	47	72.5	60	32	34	28	25	90	83	91	104	85	49
PE-4580	210	200.6	90	60	10	3	6	47	72.5	60	32	34	28	25	90	83	91	104	85	49



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

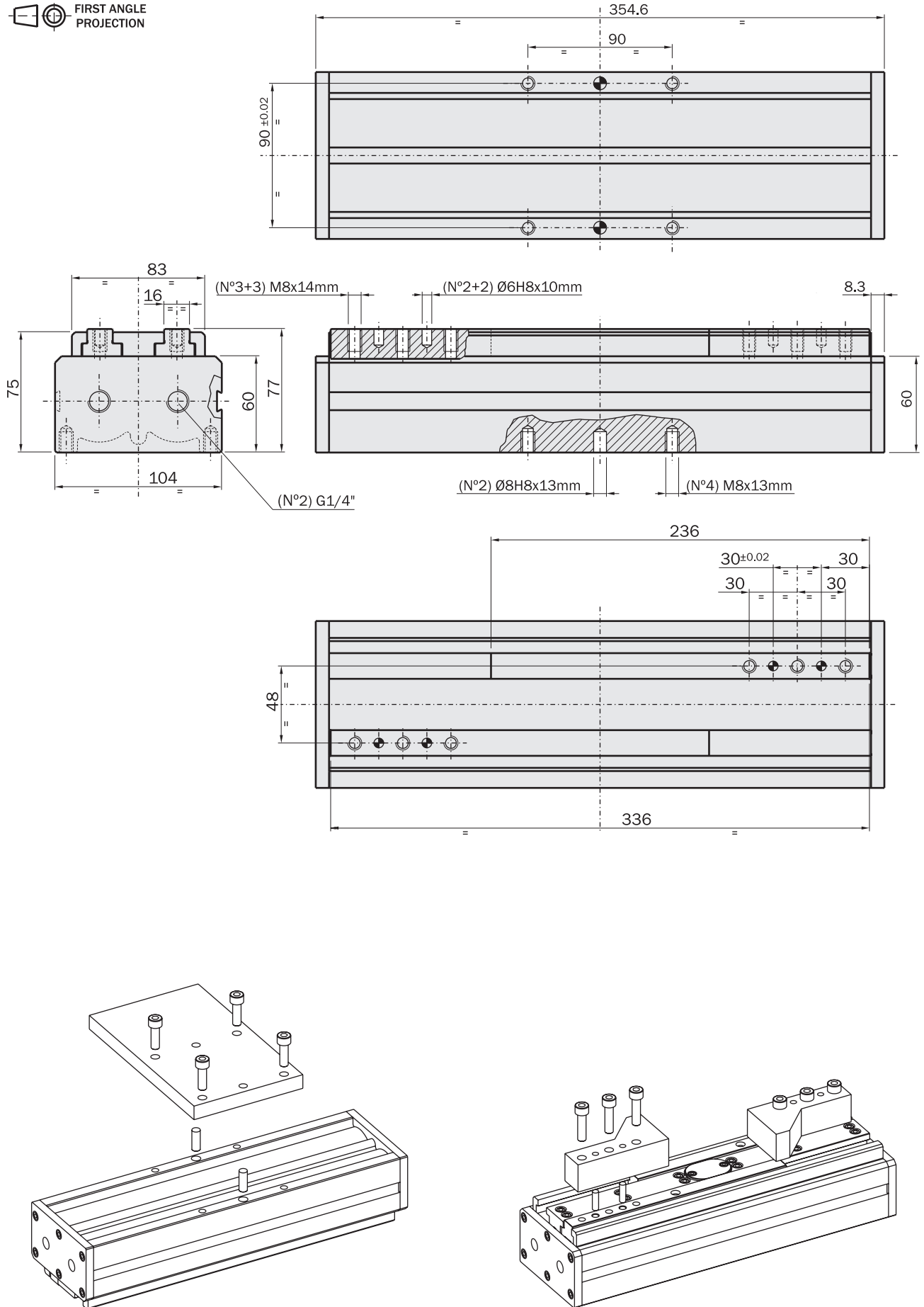
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

PE-45200



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

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Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

## Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie DH)

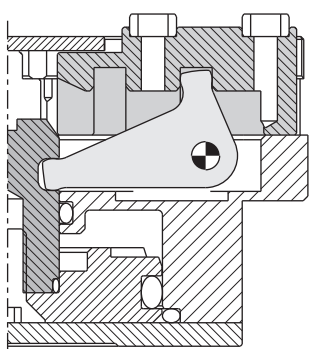
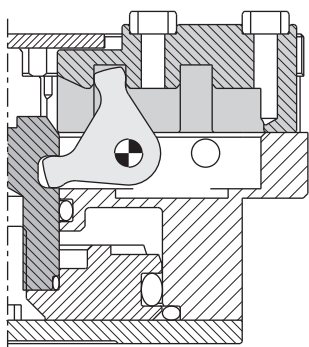
- Azionamento a doppio effetto, con molle opzionali (in chiusura o apertura).
- Corsa lunga o corsa corta (1).
- Possibilità di fissaggio frontale con viti passanti (2).
- Meccanismo di trasmissione ad alta efficienza (1).
- Sensori magnetici o induttivi opzionali (3).
- Grasso alimentare FDA-H1.

## 2-jaw self-centering pneumatic parallel gripper (series DH)

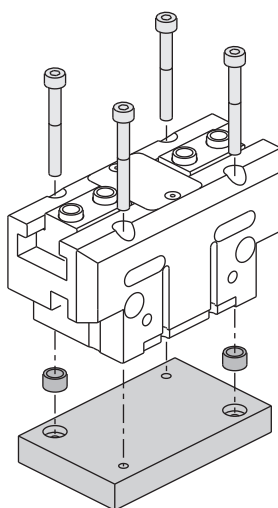
- Double acting with optional springs (normally closed or normally open).
- Long stroke or short stroke (1).
- Possibility of front fastening with through screws (2).
- High efficiency force transmission (1).
- Optional magnetic or inductive sensors (3).
- FDA-H1 food-grade grease.



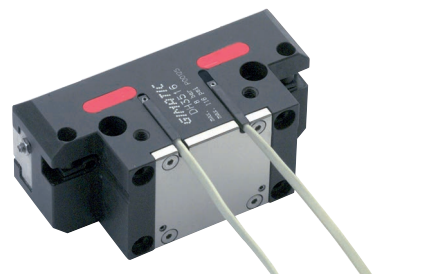
[1]



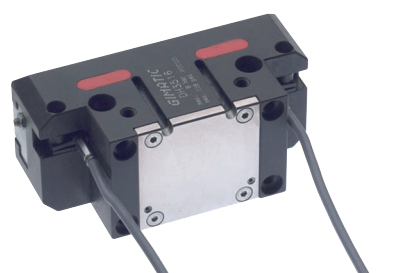
[2]



[3]



[3]



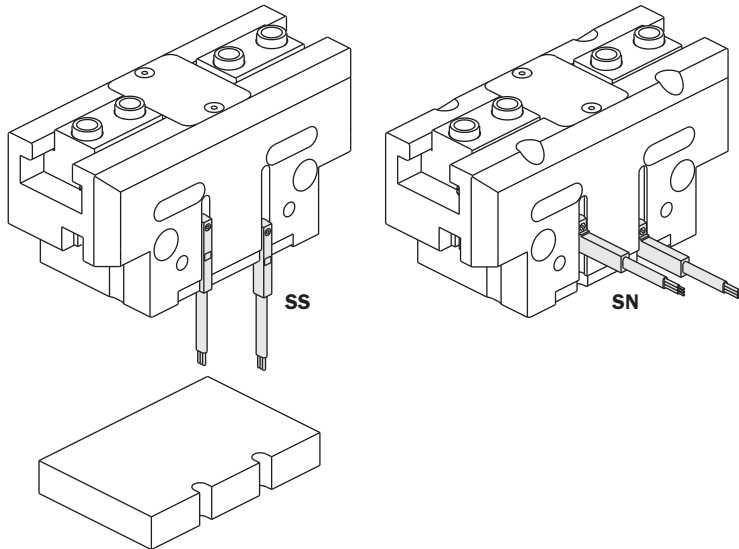
**Sensori (opzionali)**

Il rilevamento della posizione di lavoro può essere effettuato con sensori magnetici che rilevano il magnete sul pistone, oppure con sensori induttivi (diametro 4mm), che rilevano una parte metallica (M) la cui posizione nella griffa è regolabile.

I sensori magnetici utilizzabili sono i codici Gimatic:

SN4N225-G	PNP	Cavo 2.5m
SN4M225-G	NPN	2.5m cable
SN3N203-G	PNP	Connettore M8
SN3M203-G	NPN	M8 snap plug connector
SS4N225-G	PNP	Cavo 2.5m
SS4M225-G	NPN	2.5m cable
SS3N203-G	PNP	Connettore M8
SS3M203-G	NPN	M8 snap plug connector

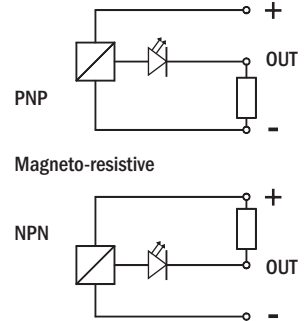
Sono tutti dotati di un cavo piatto a tre fili e di un led.



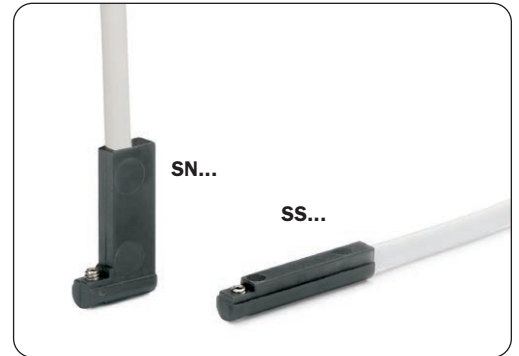
**Sensors (optional)**

The operating position can be checked by magnetic sensors which detect a magnet on the piston, or by inductive sensors (4mm diameter), which detect a metal part (M) in an adjustable position into the jaw.

The magnetic sensors from Gimatic are the codes:



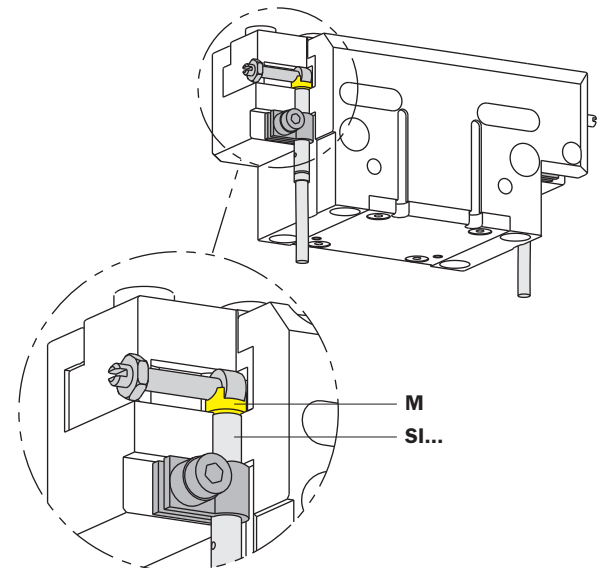
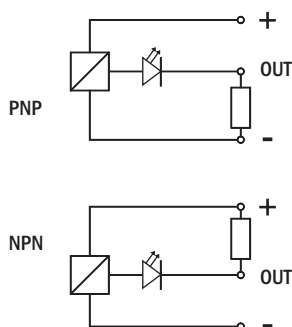
They are all provided with a 3-wire flat cable and a LED.



Sensori induttivi regolabili (non per DH19 e DH22):

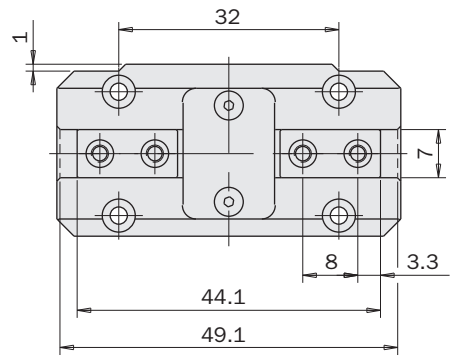
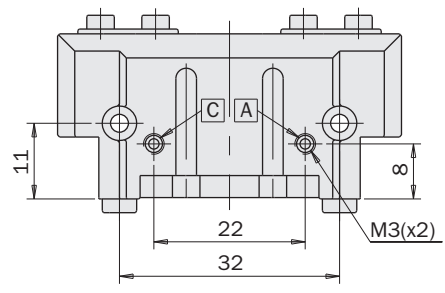
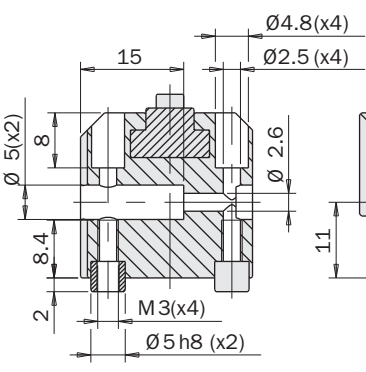
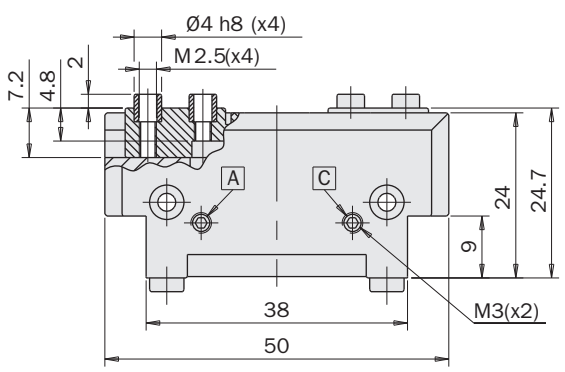
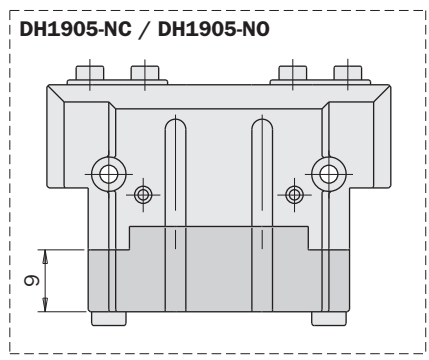
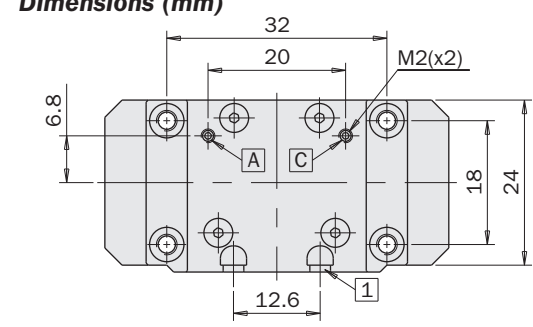
			DH27 DH35 DH44 DH55 DH66 DH87
SI4M225-G	NPN	Cavo 2.5m	<input type="checkbox"/>
SI4N225-G	PNP	2.5m cable	<input checked="" type="checkbox"/>

Adjustable inductive sensors (not for DH19 and DH22):



	DH1905	DH1905-NC	DH1905-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.		
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	75N	43 ÷ 49N	101 ÷ 107N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	150N	86 ÷ 98N	202 ÷ 214N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	68N	94 ÷ 100N	36 ÷ 42N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	136N	188 ÷ 200N	72 ÷ 84N
Corsa totale (±0.3mm) Total stroke	5mm		
Frequenza max funzionamento continuativo Maximum working frequency	3Hz		
Consumo d'aria per ciclo Cycle air consumption	2cm <sup>3</sup>	3cm <sup>3</sup>	3cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.01s / 0.01s	0.01s / 0.02s	0.02s / 0.01s
Ripetibilità Repetition accuracy	0.02mm		
Peso Weight	87g	100g	98g

**Dimensioni (mm)**  
**Dimensions (mm)**

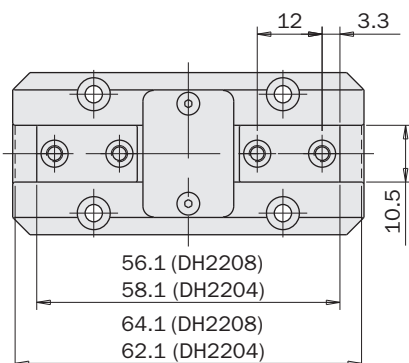
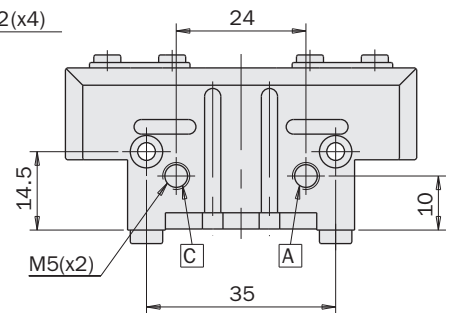
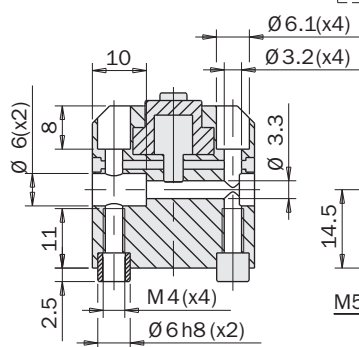
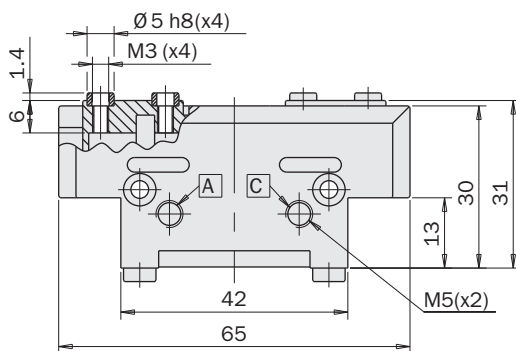
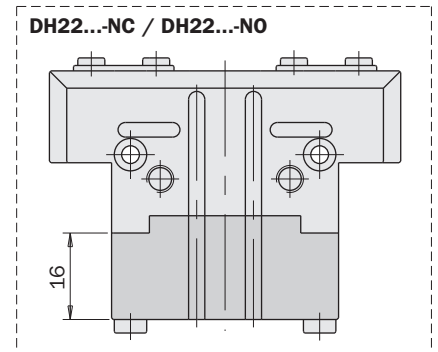
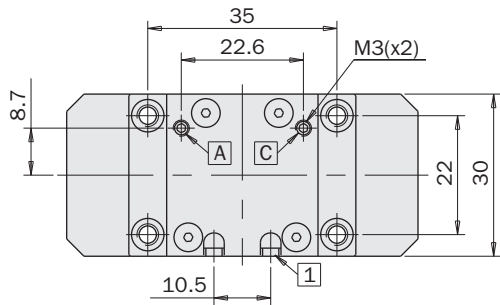


FIRST ANGLE PROJECTION

- 1** Sede per sensori  
Sensor groove
- A** Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening
- C** Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

	DH2208	DH2208-NC	DH2208-NO	DH2204	DH2204-NC	DH2204-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	2 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar	2 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	100N	58 ÷ 67N	134 ÷ 142N	200N	116 ÷ 133N	267 ÷ 284N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	200N	116 ÷ 134N	268 ÷ 284N	400N	232 ÷ 266N	534 ÷ 568N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	90N	123 ÷ 132N	48 ÷ 56N	180N	247 ÷ 264N	96 ÷ 113N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	180N	246 ÷ 264N	96 ÷ 112N	360N	494 ÷ 528N	192 ÷ 226N
Corsa totale (±0.3mm) Total stroke	8mm			4mm		
Frequenza max funzionamento continuativo Maximum working frequency	3Hz					
Consumo d'aria per ciclo Cycle air consumption	4cm <sup>3</sup>	7cm <sup>3</sup>	7cm <sup>3</sup>	4cm <sup>3</sup>	7cm <sup>3</sup>	7cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.02s / 0.02s	0.02s / 0.03s	0.03s / 0.02s	0.02s / 0.02s	0.02s / 0.03s	0.03s / 0.02s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm
Peso Weight	148g	188g	184g	150g	190g	186g

**Dimensioni (mm)**  
**Dimensions (mm)**



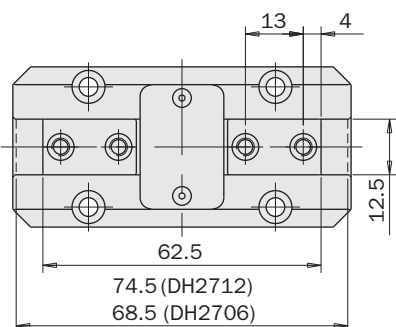
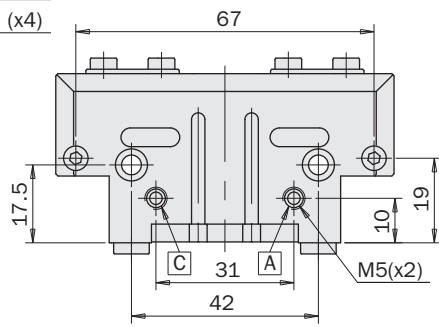
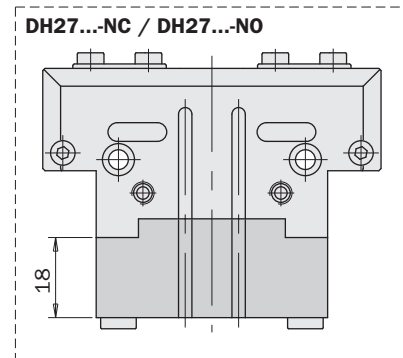
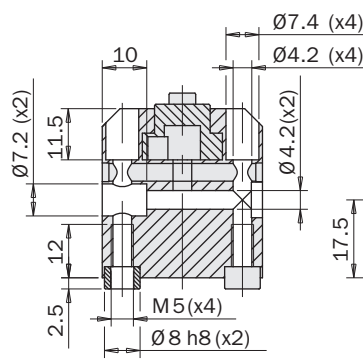
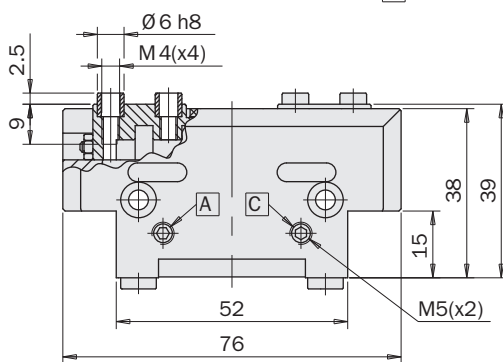
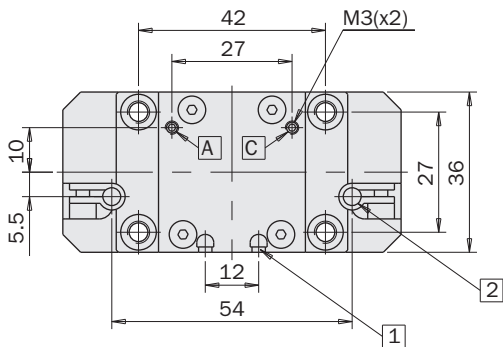
FIRST ANGLE PROJECTION

- 1 Sede per sensori  
Sensor groove
- A Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening
- C Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing



	DH2712	DH2712-NC	DH2712-NO	DH2706	DH2706-NC	DH2706-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	2 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar	2 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	145N	85 ÷ 97N	194 ÷ 206N	290N	170 ÷ 194N	389 ÷ 413N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	290N	170 ÷ 194N	388 ÷ 412N	580N	340 ÷ 388N	778 ÷ 826N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	130N	178 ÷ 190N	69 ÷ 81N	260N	356 ÷ 380N	138 ÷ 162N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	260N	356 ÷ 380N	138 ÷ 162N	520N	712 ÷ 760N	276 ÷ 324N
Corsa totale (±0.3mm) Total stroke	12mm			6mm		
Frequenza max funzionamento continuativo Maximum working frequency	3Hz					
Consumo d'aria per ciclo Cycle air consumption	9cm <sup>3</sup>	13cm <sup>3</sup>	13cm <sup>3</sup>	9cm <sup>3</sup>	13cm <sup>3</sup>	13cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.03s / 0.03s	0.03s / 0.04s	0.04s / 0.03s	0.03s / 0.03s	0.03s / 0.04s	0.04s / 0.03s
Ripetibilità Repetition accuracy	0.02mm					
Peso Weight	255g	325g	315g	260g	330g	320g

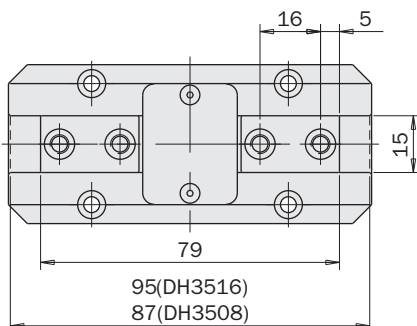
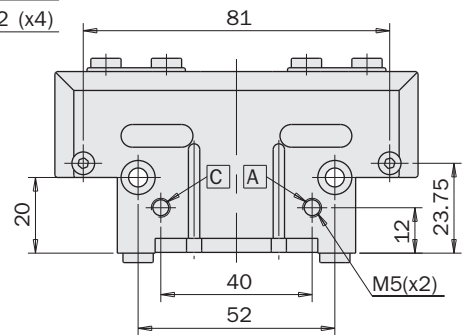
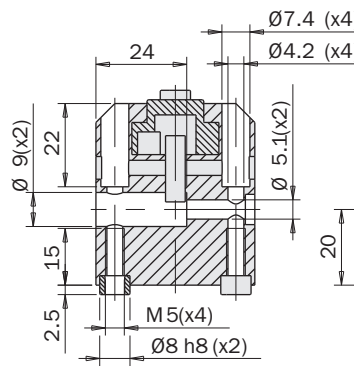
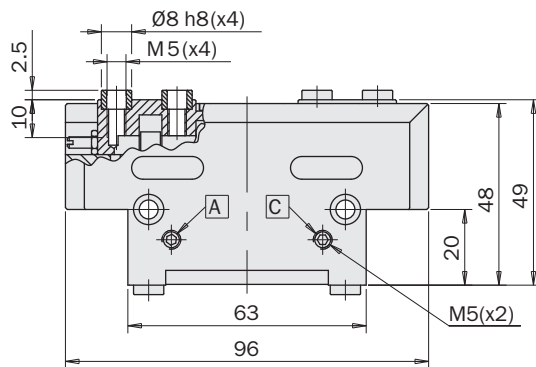
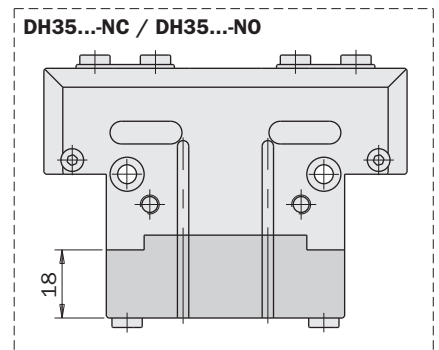
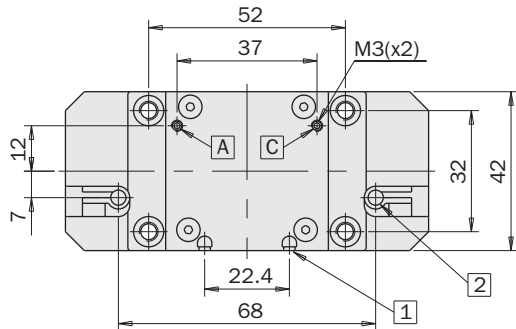
## Dimensioni (mm) Dimensions (mm)



- 1** Sede per sensori  
Sensor groove
- 2** Porta sensori induttivi Ø4  
Ø4 inductive sensor holder
- A** Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening
- C** Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

	DH3516	DH3516-NC	DH3516-NO	DH3508	DH3508-NC	DH3508-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	250N	140 ÷ 177N	323 ÷ 360N	500N	280 ÷ 353N	647 ÷ 720N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	500N	280 ÷ 354N	646 ÷ 720N	1000N	560 ÷ 706N	1294 ÷ 1440N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	220N	298 ÷ 319N	122 ÷ 143N	440N	595 ÷ 639N	244 ÷ 287N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	440N	596 ÷ 638N	244 ÷ 286N	880N	1190 ÷ 1278N	488 ÷ 574N
Corsa totale (±0.3mm) Total stroke	16mm			8mm		
Frequenza max funzionamento continuativo Maximum working frequency	3Hz					
Consumo d'aria per ciclo Cycle air consumption	18cm <sup>3</sup>	25cm <sup>3</sup>	25cm <sup>3</sup>	18cm <sup>3</sup>	25cm <sup>3</sup>	25cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.03s / 0.03s	0.03s / 0.04s	0.04s / 0.03s	0.03s / 0.03s	0.03s / 0.04s	0.04s / 0.03s
Ripetibilità Repetition accuracy	0.02mm					
Peso Weight	460g	550g	540g	470g	560g	550g

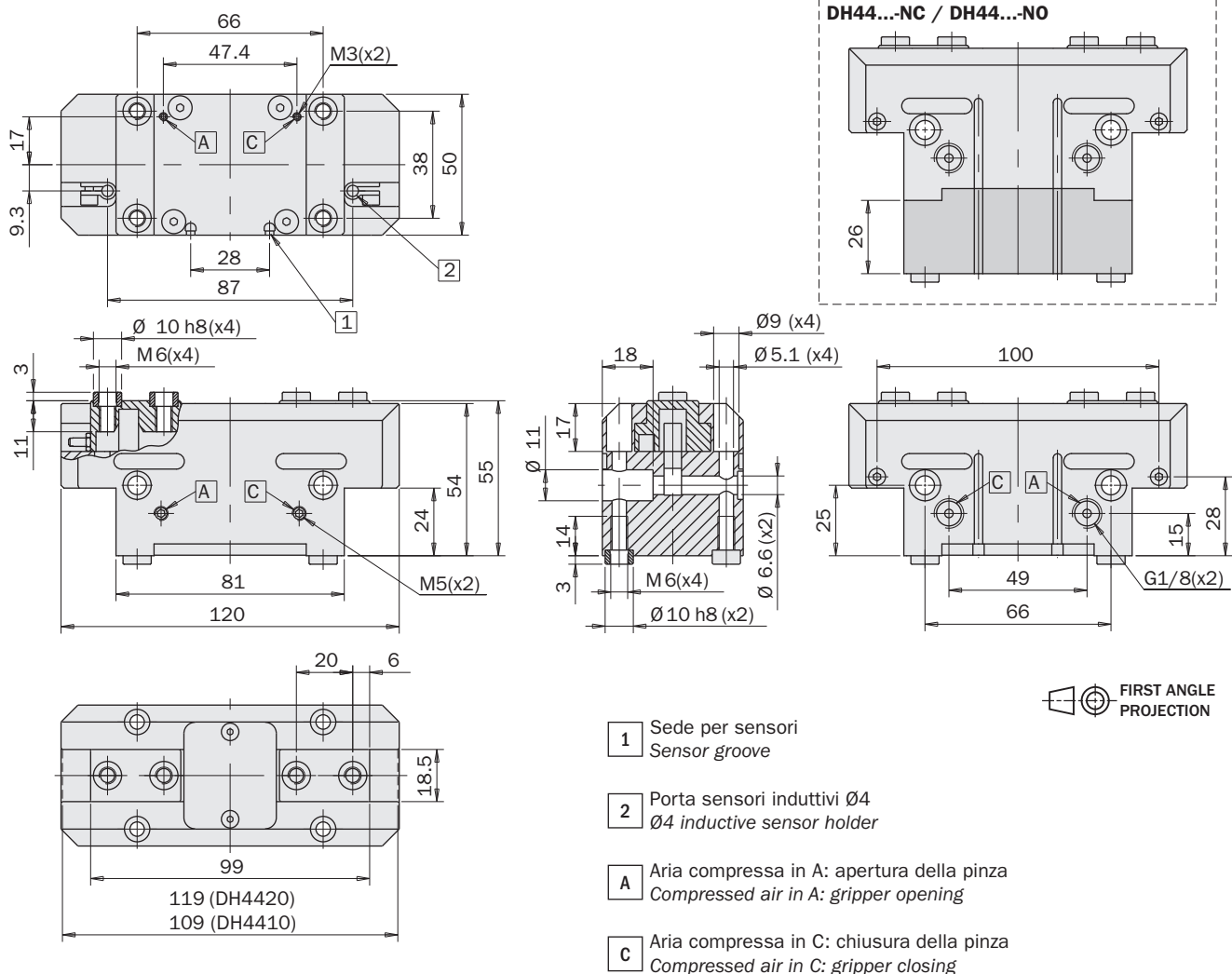
**Dimensioni (mm)**  
**Dimensions (mm)**



- 1 Sede per sensori  
Sensor groove
- 2 Porta sensori induttivi Ø4  
Ø4 inductive sensor holder
- A Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening
- C Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

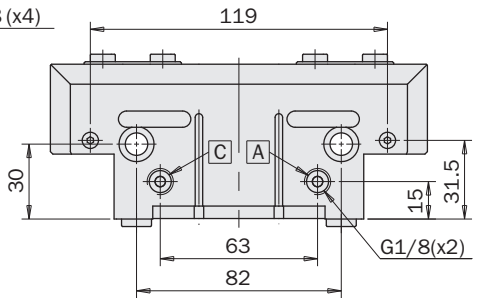
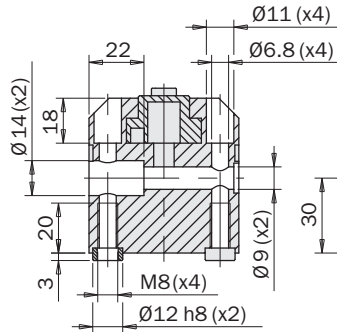
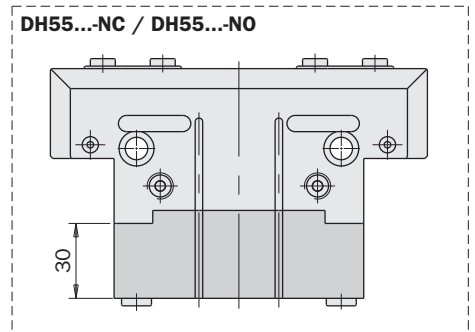
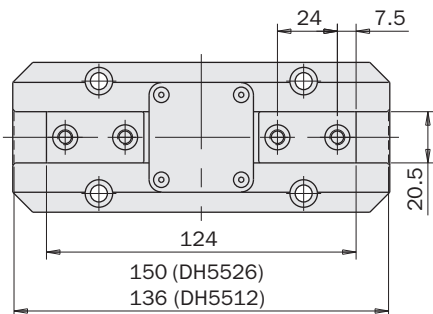
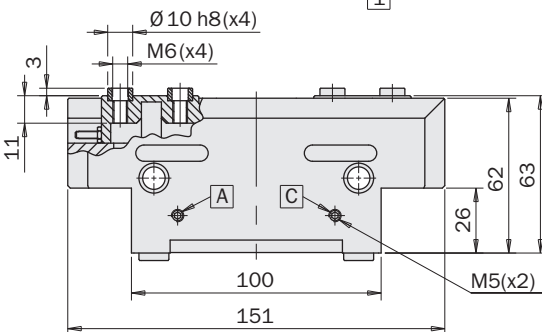
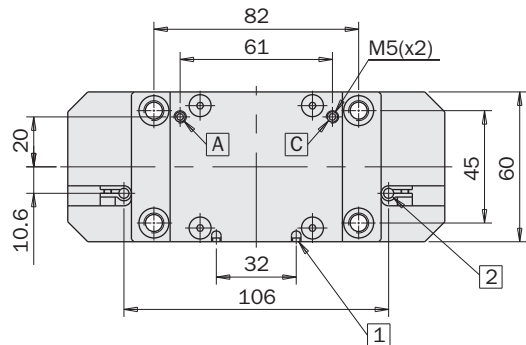
	DH4420	DH4420-NC	DH4420-NO	DH4410	DH4410-NC	DH4410-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	405N	236 ÷ 298N	513 ÷ 575N	810N	472 ÷ 595N	1027 ÷ 1150N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	810N	472 ÷ 596N	1026 ÷ 1150N	1620N	944 ÷ 1190N	2054 ÷ 2300N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	365N	472 ÷ 534N	195 ÷ 257N	730N	945 ÷ 1068N	390 ÷ 513N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	730N	944 ÷ 1068N	390 ÷ 514N	1460N	1890 ÷ 2136N	780 ÷ 1026N
Corsa totale ±0.3mm Total stroke	20mm			10mm		
Frequenza max funzionamento continuativo Maximum working frequency	2Hz					
Consumo d'aria per ciclo Cycle air consumption	36cm <sup>3</sup>	52cm <sup>3</sup>	52cm <sup>3</sup>	36cm <sup>3</sup>	52cm <sup>3</sup>	52cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.08s / 0.08s	0.06s / 0.13s	0.13s / 0.06s	0.08s / 0.08s	0.06s / 0.13s	0.13s / 0.06s
Ripetibilità Repetition accuracy	0.02mm					
Peso Weight	780g	990g	960g	800g	1010g	980g

### Dimensioni (mm) Dimensions (mm)



	DH5526	DH5526-NC	DH5526-NO	DH5512	DH5512-NC	DH5512-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	625N	359 ÷ 443N	807 ÷ 891N	1350N	774 ÷ 957N	1742 ÷ 1924N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	1250N	718 ÷ 886N	1614 ÷ 1782N	2700N	1548 ÷ 1914N	3484 ÷ 3884N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	555N	739 ÷ 823N	290 ÷ 375N	1200N	1595 ÷ 1777N	627 ÷ 809N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	1110N	1478 ÷ 1646N	580 ÷ 750N	2400N	3190 ÷ 3554N	1254 ÷ 1618N
Corsa totale (±0.3mm) Total stroke	26mm			12mm		
Frequenza max funzionamento continuativo Maximum working frequency	2Hz					
Consumo d'aria per ciclo Cycle air consumption	70cm <sup>3</sup>	97cm <sup>3</sup>	97cm <sup>3</sup>	70cm <sup>3</sup>	97cm <sup>3</sup>	97cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.11s / 0.11s	0.08s / 0.13s	0.13s / 0.08s	0.08s / 0.08s	0.06s / 0.13s	0.13s / 0.06s
Ripetibilità Repetition accuracy	0.02mm					
Peso Weight	1350g	1750g	1700g	1370g	1770g	1720g

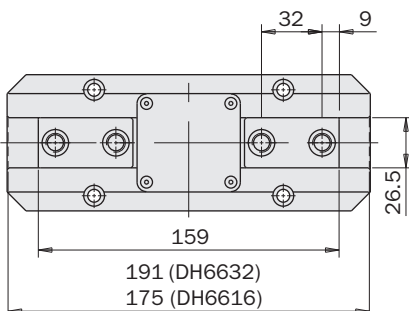
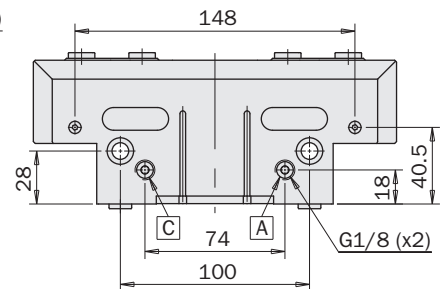
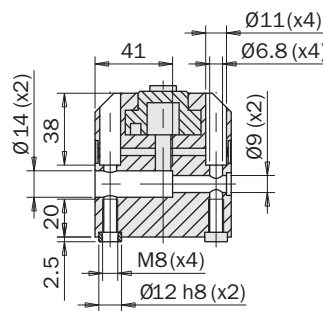
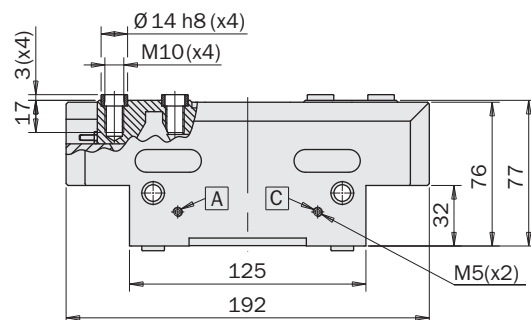
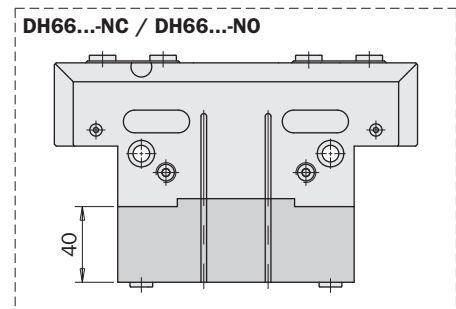
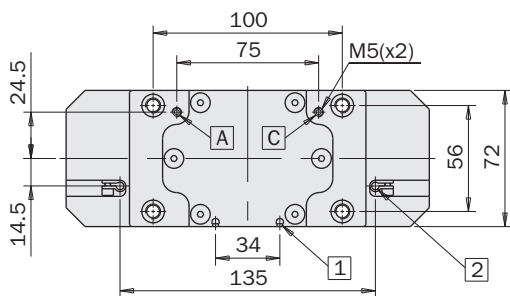
**Dimensioni (mm)**  
**Dimensions (mm)**



- 1** Sede per sensori  
Sensor groove
- 2** Porta sensori induttivi Ø4  
Ø4 inductive sensor holder
- A** Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening
- C** Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

	DH6632	DH6632-NC	DH6632-NO	DH6616	DH6616-NC	DH6616-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	920N	559 ÷ 663N	1180 ÷ 1284N	1840N	1119 ÷ 1326N	2361 ÷ 2568N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	1840N	1118 ÷ 1326N	2360 ÷ 2568N	3680N	2238 ÷ 2652N	4722 ÷ 5136N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	820N	1078 ÷ 1181N	457 ÷ 560N	1640N	2156 ÷ 2363N	914 ÷ 1121N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	1640N	2156 ÷ 2362N	914 ÷ 1120N	3280N	4312 ÷ 4726N	1828 ÷ 2242N
Corsa totale (±0.3mm) Total stroke	32mm			16mm		
Frequenza max funzionamento continuativo Maximum working frequency	2Hz					
Consumo d'aria per ciclo Cycle air consumption	127cm <sup>3</sup>	178cm <sup>3</sup>	178cm <sup>3</sup>	127cm <sup>3</sup>	178cm <sup>3</sup>	178cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.15s / 0.15s	0.12s / 0.18s	0.18s / 0.12s	0.15s / 0.15s	0.12s / 0.18s	0.18s / 0.12s
Ripetibilità Repetition accuracy	0.02mm					
Peso Weight	2630g	3430g	3300g	2670g	3470g	3340g

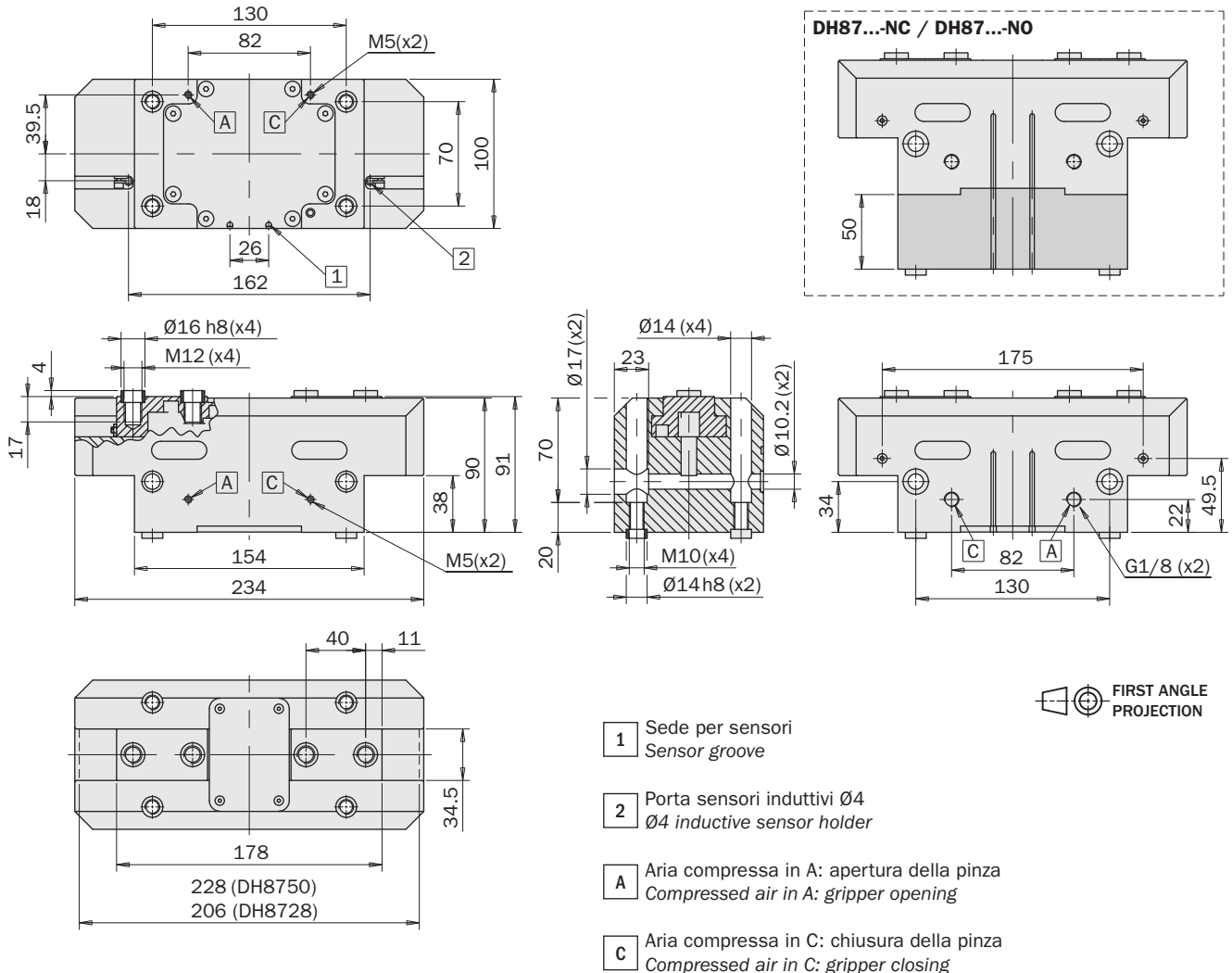
## Dimensioni (mm) Dimensions (mm)



- 1 Sede per sensori  
Sensor groove
- 2 Porta sensori induttivi Ø4  
Ø4 inductive sensor holder
- A Aria compressa in A: apertura della pinza  
Compressed air in A: gripper opening
- C Aria compressa in C: chiusura della pinza  
Compressed air in C: gripper closing

	DH8750	DH8750-NC	DH8750-NO	DH8728	DH8728-NC	DH8728-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar	1.5 ÷ 8bar	4 ÷ 8bar	4 ÷ 8bar
Temperatura di esercizio Temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar each jaw	1560N	977 ÷ 1129N	1992 ÷ 2144N	2750N	1720 ÷ 1988N	3509 ÷ 3776N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	3120N	1954 ÷ 2258N	3984 ÷ 4288N	5500N	3440 ÷ 3976N	7018 ÷ 7552N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar each jaw	1420N	1853 ÷ 2005N	837 ÷ 989N	2500N	3263 ÷ 3531N	1475 ÷ 1742N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	2840N	3706 ÷ 4010N	1674 ÷ 1978N	5000N	6526 ÷ 7026N	2950 ÷ 3484N
Corsa totale (±0.3mm) Total stroke	50mm			28mm		
Frequenza max funzionamento continuativo Maximum working frequency	1Hz					
Consumo d'aria per ciclo Cycle air consumption	347cm <sup>3</sup>	472cm <sup>3</sup>	472cm <sup>3</sup>	347cm <sup>3</sup>	472cm <sup>3</sup>	472cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.21s / 0.21s	0.19s / 0.31s	0.31s / 0.19s	0.21s / 0.21s	0.19s / 0.31s	0.31s / 0.19s
Ripetibilità Repetition accuracy	0.02mm					
Peso Weight	4990g	6920g	6750g	5050g	6980g	6810g

**Dimensioni (mm)**  
**Dimensions (mm)**



**Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie SP)**

- Azionamento a doppio effetto.
- Meccanismo di regolazione del gioco.
- Grande durata e affidabilità senza manutenzione.
- Diverse possibilità di fissaggio e alimentazione.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

**2-jaw self-centering parallel pneumatic gripper (series SP)**

- Double-acting drive.
- Backlash adjusting system.
- Maintenance-free long life and reliability.
- Various mounting and feeding options.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.

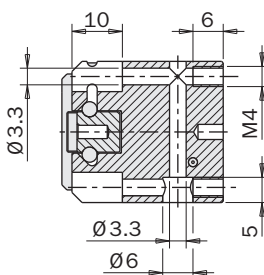
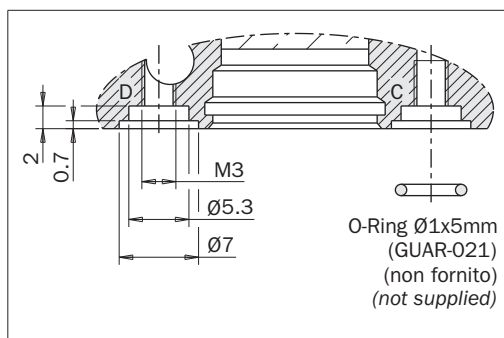
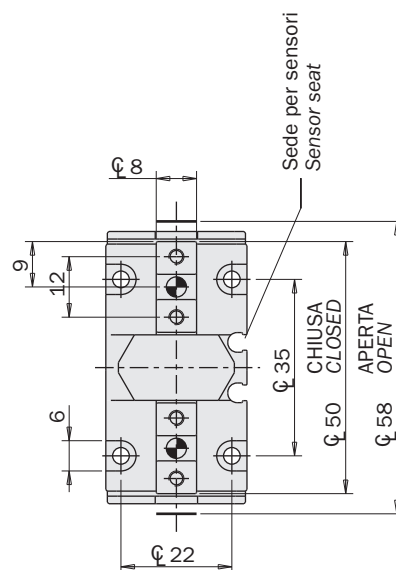
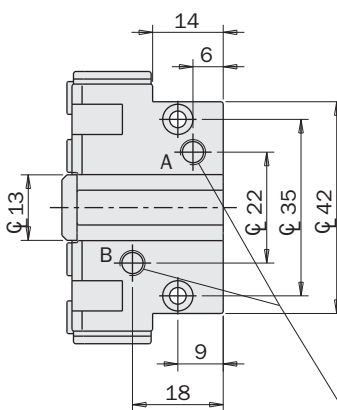
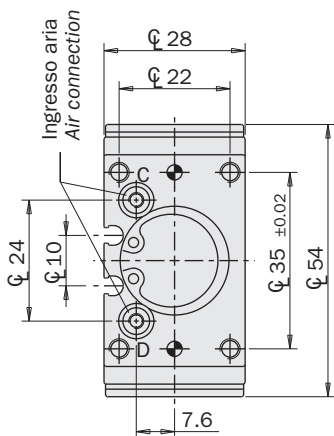
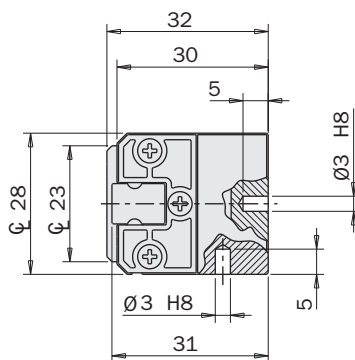
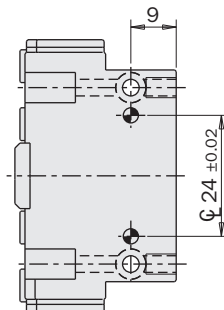
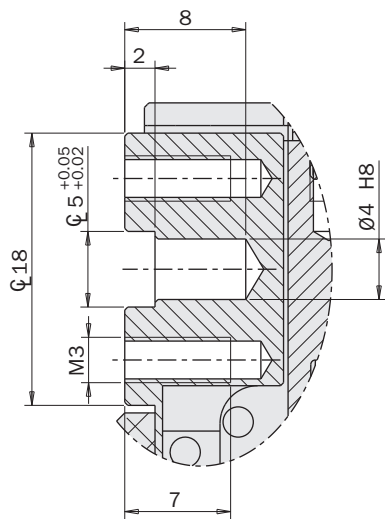


	SP-20	SP-25	SP-32	SP-40
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>			
Pressione di esercizio <i>Operating pressure range</i>	2.5 ÷ 8 bar			
Temperatura di esercizio <i>Operating temperature range</i>	5° ÷ 60°C.			
Forza di serraggio per griffa in apertura a 6 bar <i>Opening gripping force at 6 bar on each jaw</i>	70 N	120 N	220 N	350 N
Forza di serraggio totale in apertura a 6 bar <i>Total opening gripping force at 6 bar</i>	140 N	240 N	440 N	700 N
Forza di serraggio per griffa in chiusura a 6 bar <i>Closing gripping force at 6 bar on each jaw</i>	65 N	110 N	200 N	320 N
Forza di serraggio totale in chiusura a 6 bar <i>Total closing gripping force at 6 bar</i>	130 N	220 N	400 N	640 N
Corsa totale (± 0.2 mm) <i>Total stroke</i>	8 mm	12 mm	16 mm	20 mm
Frequenza max funzionamento continuativo <i>Maximum continuous operating frequency</i>	3 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo <i>Air consumption per cycle</i>	3 cm <sup>3</sup>	6 cm <sup>3</sup>	13 cm <sup>3</sup>	31 cm <sup>3</sup>
Tempo di chiusura senza carico <i>Closing time without load</i>	0.03 s	0.05 s	0.05 s	0.05 s
Tolleranza max ripetibilità <i>Maximum repeatability tolerance</i>	±0.02 mm	±0.02 mm	±0.02 mm	±0.02 mm
Peso <i>Weight</i>	105 g	210 g	380 g	600 g

**Dimensioni (mm)**  
**Dimensions (mm)**

SP-20

Dettaglio griffa sezionata  
Jaw cross section



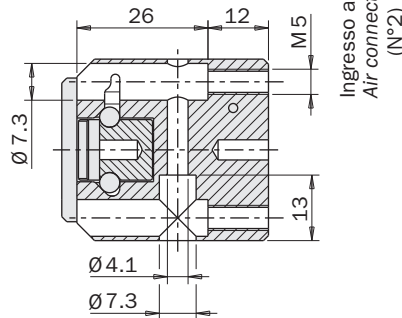
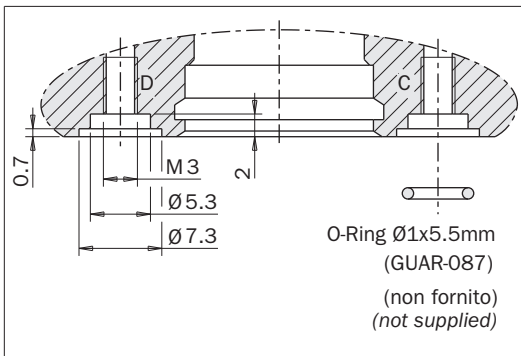
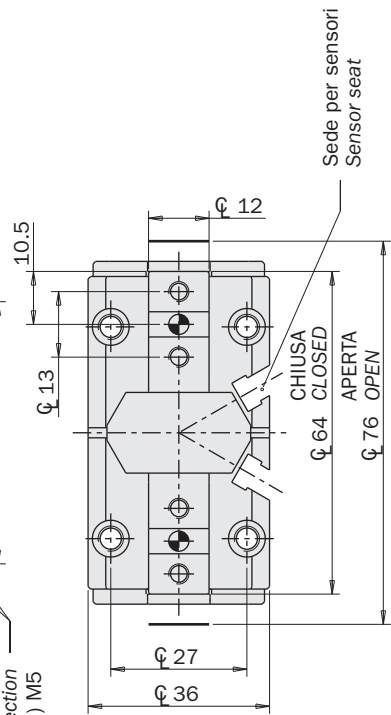
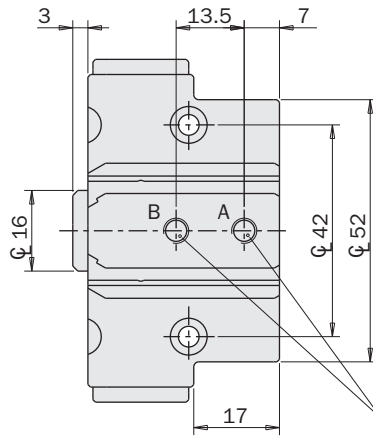
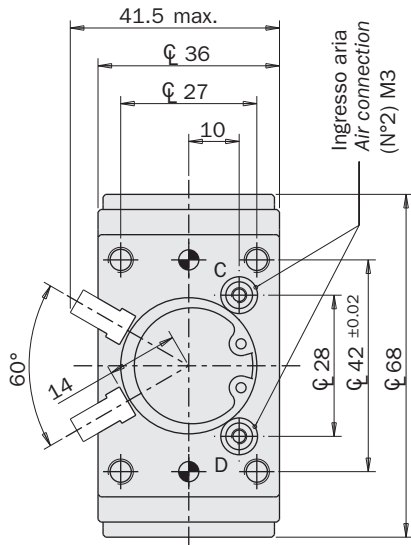
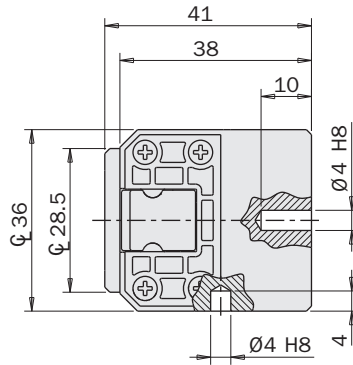
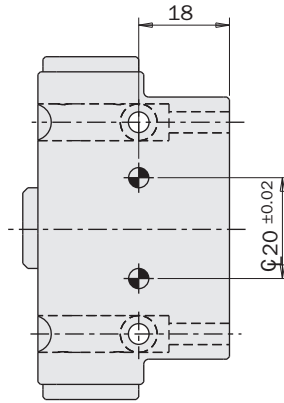
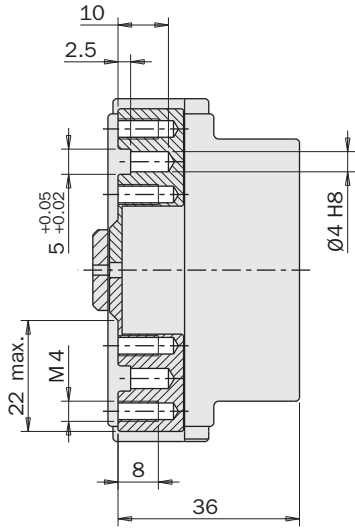
Ingresso aria  
Air connection  
(N°2) M5

FIRST ANGLE  
PROJECTION



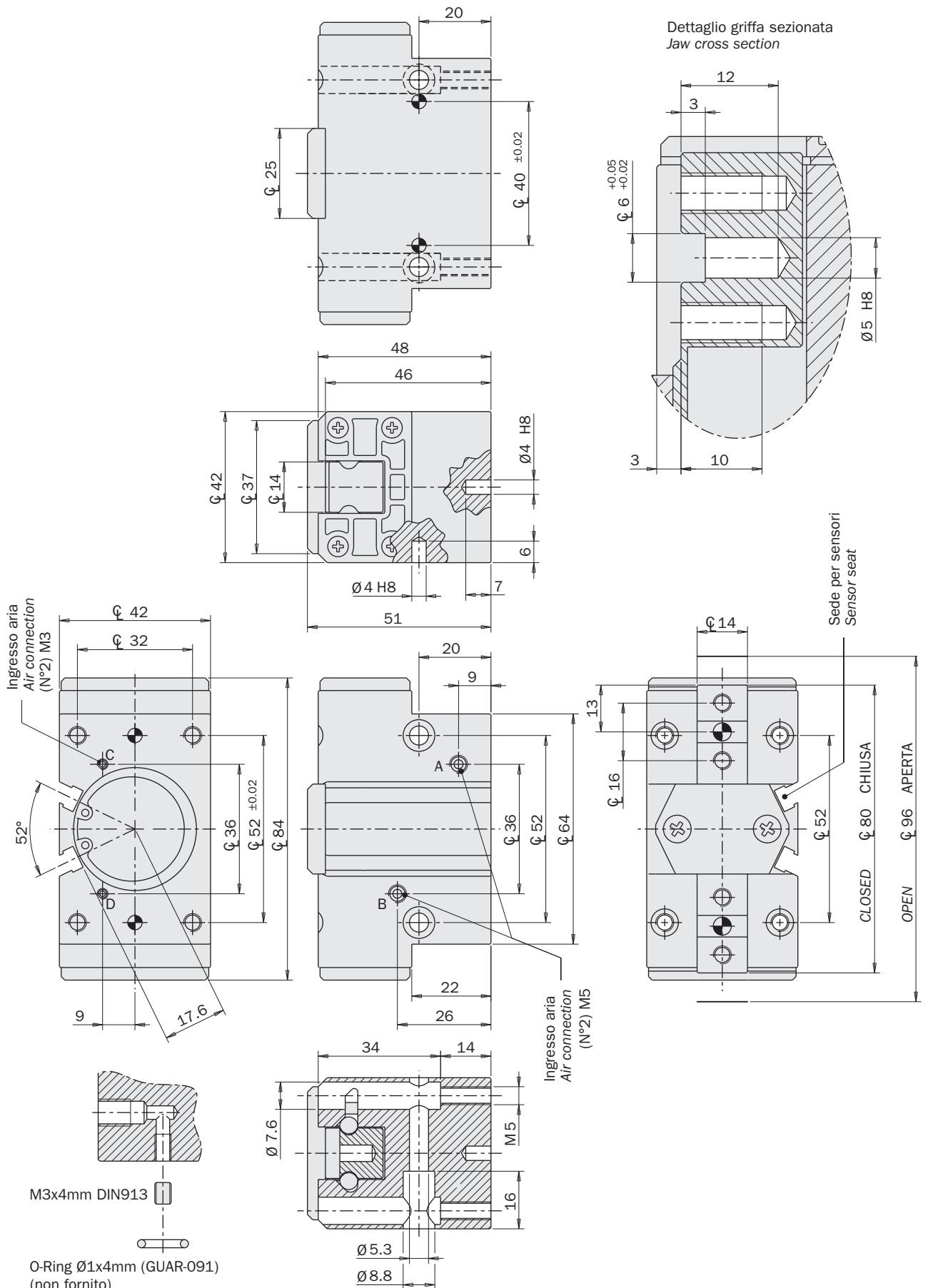
**Dimensioni (mm)**  
**Dimensions (mm)**

Dettaglio griffa sezionata  
Jaw cross section



**Dimensioni (mm)**  
**Dimensions (mm)**

**SP-32**



FIRST ANGLE PROJECTION

Dimensioni (mm)  
Dimensions (mm)

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

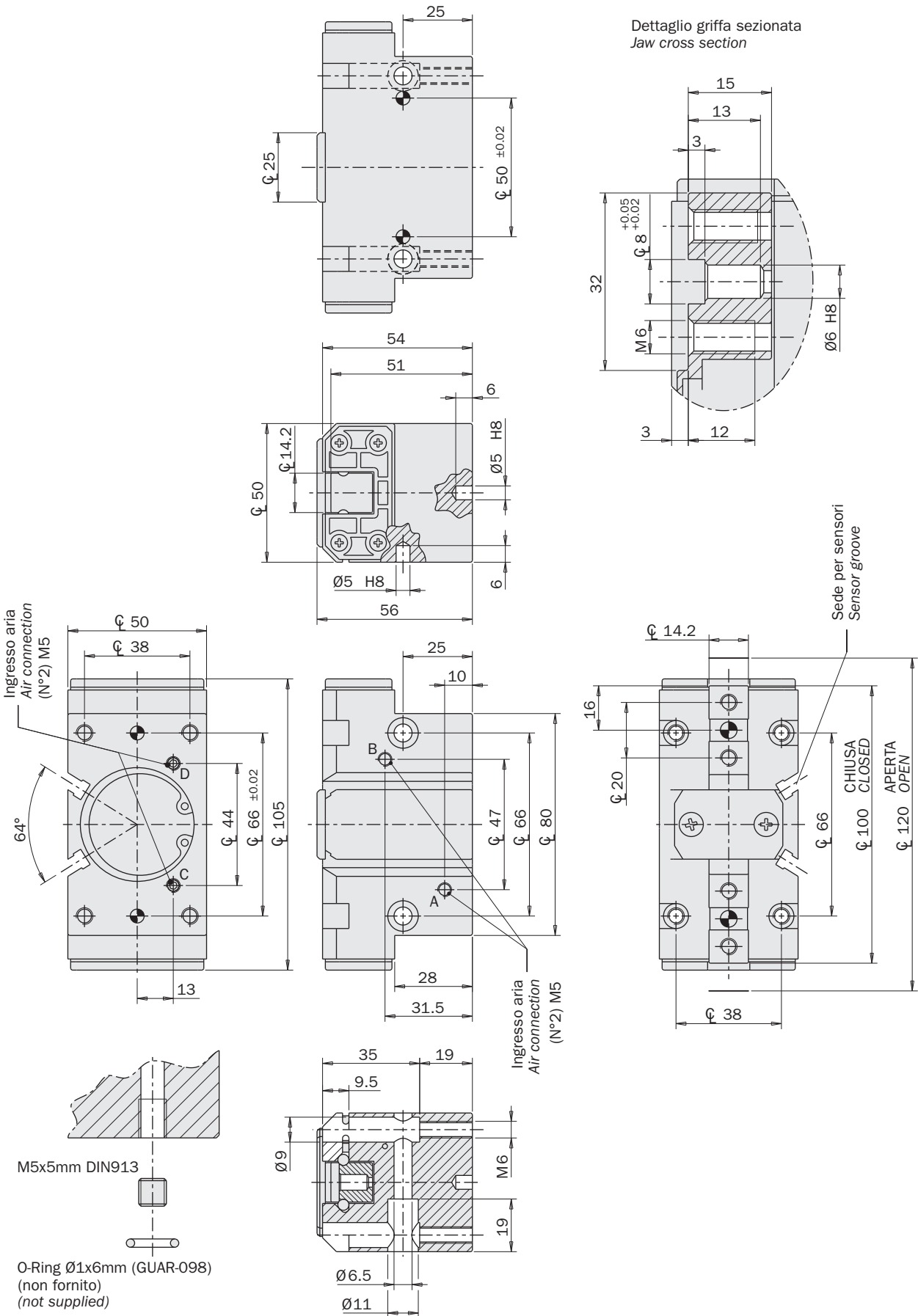
Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors



FIRST ANGLE  
PROJECTION

### Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso il magnete sul pistone.

Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.

I sensori utilizzabili sono:

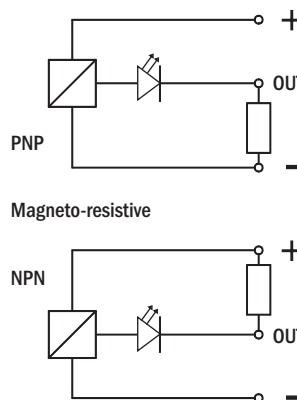


### Sensors

The operating position is detected by magnetic proximity sensors (optional) through a magnet placed on the piston.

The use of magnetic proximity sensors is to be avoided in the vicinity of large masses of ferromagnetic material or intense magnetic fields as this may cause detection problems.

The sensors that can be used are:



			SP-20 ⌋	SP-25 / SP-32 / SP-40 ⌋
SL4N225-G	PNP	Cavo 2.5m 2.5m cable	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SL4M225-G	NPN			
SL3N203-G	PNP	Connettore M8 M8 connector	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SL3M203-G	NPN			
SN4N225-G	PNP	Cavo 2.5m 2.5m cable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (*)
SN4M225-G	NPN			
SN3N203-G	PNP	Connettore M8 M8 connector	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (*)
SN3M203-G	NPN			
SS4N225-G	PNP	Cavo 2.5m 2.5m cable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (*)
SS4M225-G	NPN			
SS3N203-G	PNP	Connettore M8 M8 connector	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> (*)
SS3M203-G	NPN			

(\*) Utilizzando l'adattatore SS.004.000 fornito con il sensore.

(\*) Using the adapter SS.004.000 supplied with the sensor.

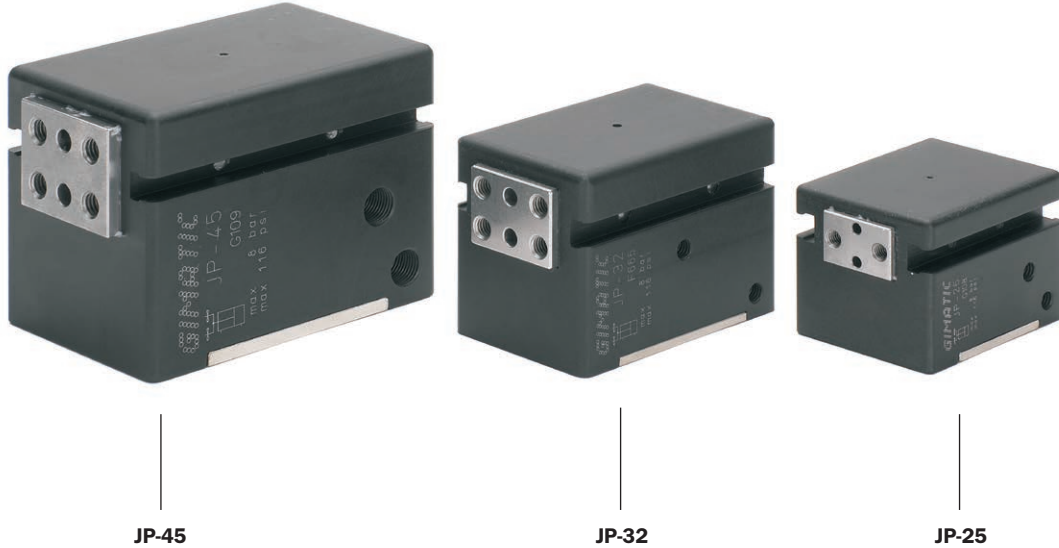


**Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie JP)**

- Azionamento a doppio effetto.
- Forza di serraggio elevata.
- Adatta per applicazioni pesanti.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

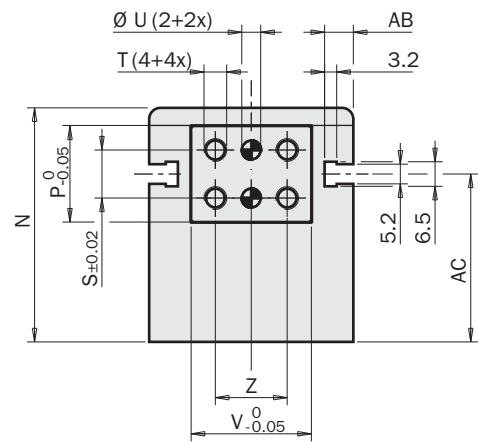
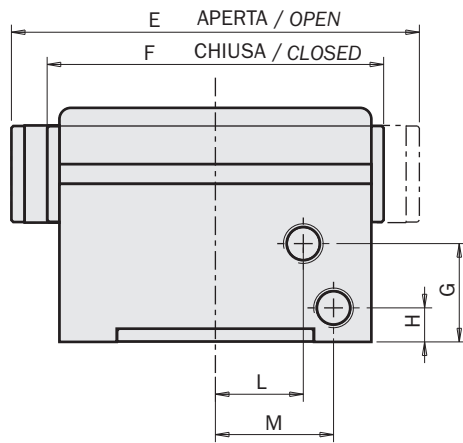
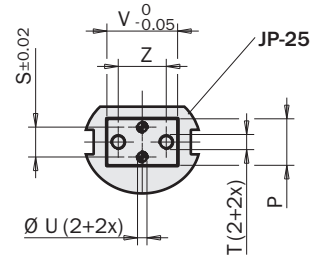
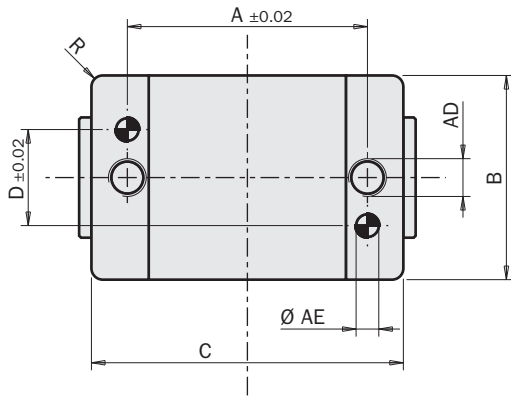
**2-jaw self-centering pneumatic parallel gripper (series JP)**

- Double acting.
- High gripping force.
- Suitable for heavy duty applications.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.

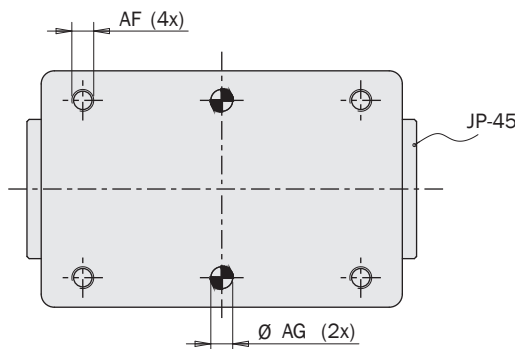


	JP-25	JP-32	JP-45
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2.5 ÷ 8 bar		
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.		
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	135 N	350 N	500 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	270 N	700 N	1000 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	120 N	300 N	465 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	240 N	600 N	930 N
Corsa totale (±0.2 mm) Total stroke	9.5 mm	12 mm	18.9 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	3 Hz	3 Hz
Consumo d'aria per ciclo Cycle air consumption	6 cm <sup>3</sup>	16 cm <sup>3</sup>	20 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.04 s	0.09 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm	0.02 mm
Peso Weight	240 g	450 g	1050 g

**Dimensioni (mm)**  
**Dimensions (mm)**



	A	B	C	D	E	F	G	H	L	M	N	P	R	S	T	U	V	Z	AB	AC	AD	AE	AF	AG
<b>JP-25</b>	38.1	38.1	50.8	25.4	63.5	54	14.8	6	11.3	18.1	35.9	12.3	2	7.9	M4 x6.5mm	$\varnothing 2.5H8$ x6mm	18.7	12.7	6.2	26.3	M6 x12mm	$\varnothing 5H8$ x6mm	-	-
<b>JP-32</b>	50.8	41.3	63.5	19	80	68	22.5	6	-	24	47.3	18.7	3	9.5	M5 x10mm	$\varnothing 4H8$ x10mm	25	17.5	4.6	33.2	M6 x12mm	$\varnothing 5H8$ x6mm	-	-
<b>JP-45</b>	63.5	54	82.5	25.4	107.9	89	26	9	23.2	31.2	61.9	25.4	3	12.7	M6 x12mm	$\varnothing 5H8$ x10mm	31.8	19	7.6	44.4	M10 x18mm	$\varnothing 6H8$ x12mm	M5x4 mm	$\varnothing 5H9x4$ x12mm



## Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie HS)

- Progettata per macchine ad alta velocità.
- Tempo di chiusura / apertura ridottissimo.
- Basso peso.
- Grande durata e affidabilità senza manutenzione.
- Corsa lunga.
- Possibilità di ridurre la corsa (su richiesta).
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

## 2-jaw parallel self-centering pneumatic gripper (series HS)

- Specially suited for high speed machines.
- Very short closing/opening time.
- Low weight.
- Trouble free long life without maintenance.
- Long stroke.
- Reduced stroke (upon request).
- Optional magnetic sensors.
- FDA-H1 food-grade grease.



**HS-2012**



**HS-2518**

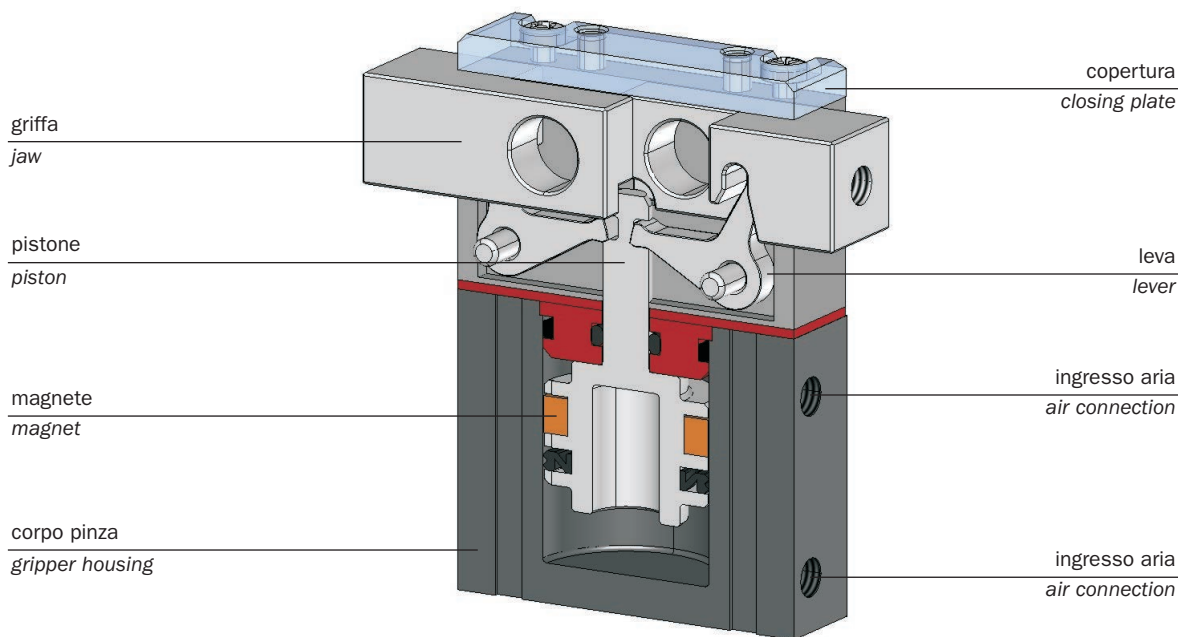
	HS-2012	HS-2518
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Operating pressure range	2.5 ÷ 8 bar	
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.	
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	60 N	90 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	120 N	180 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	55 N	83 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	110 N	166 N
Corsa totale Total stroke (±0.3 mm)	11.6 mm	17.6 mm
Frequenza max funzionamento continuativo Maximum working frequency	6 Hz	5 Hz
Consumo d'aria per ciclo Cycle air consumption	5 cm <sup>3</sup>	12 cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening time minimum	0.007 s	0.018 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm
Peso Weight	144 g	270 g

**Schema di funzionamento**

Le griffe sono azionate tramite leve dallo stelo del pistone.

**Lay-out**

The gripper is driven by the piston rod, that operates the jaws by levers.



**Riduzione della corsa**

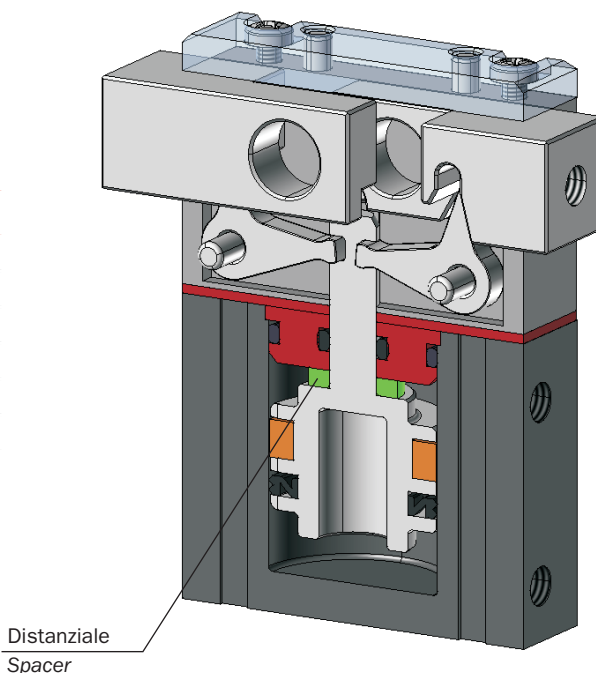
È possibile ridurre la corsa con distanziali che limitano l'apertura delle griffe. In questo modo diminuisce ulteriormente il tempo di apertura e chiusura della pinza.

**Stroke reduction**

The stroke can be reduced by spacers which limit the jaw opening. In this way the opening and closing time can be further decreased.

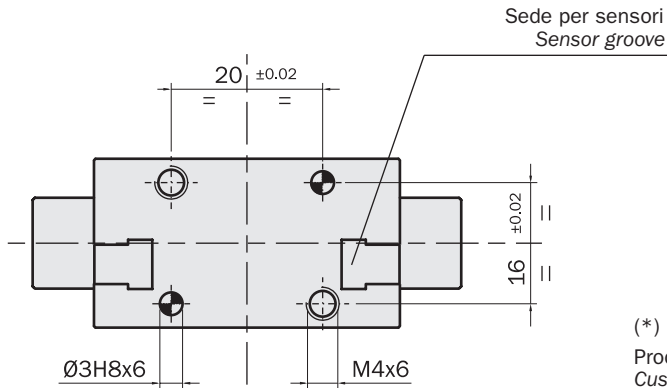
	Distanziale Spacer	Corsa Stroke
HS-2012	/	2 x 5.8 mm
HS-2008 (*)	1 x XP-16-3	2 x 3.9 mm
HS-2004 (*)	2 x XP-16-3	2 x 2 mm
HS-2518	/	2 x 8.9 mm
HS-2512 (*)	1 x XA-26-3	2 x 6.1 mm
HS-2506 (*)	2 x XA-26-3	2 x 3.25 mm

(\*) Prodotto speciale (chiedere in Fabbrica)  
Custom product (consult Factory)

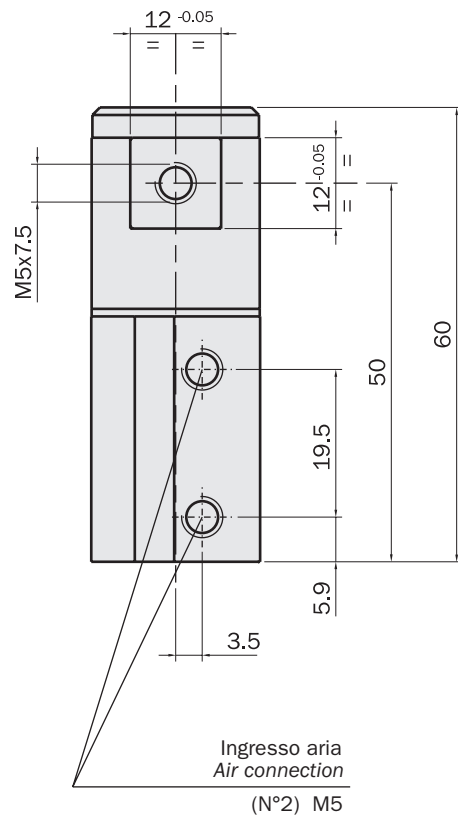
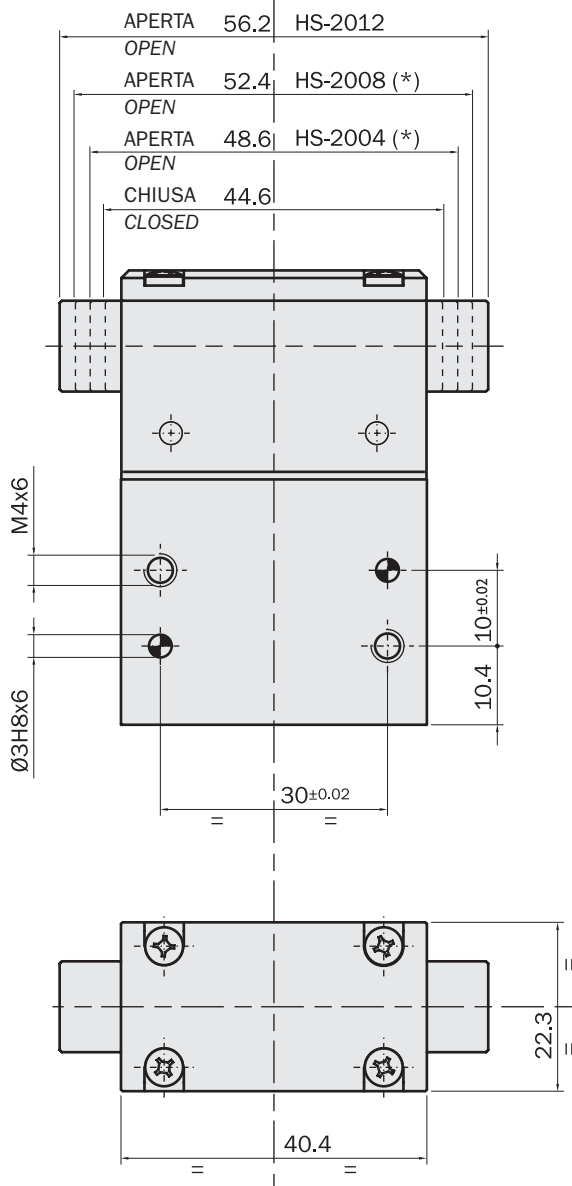




**Dimensioni (mm)**  
**Dimensions (mm)**

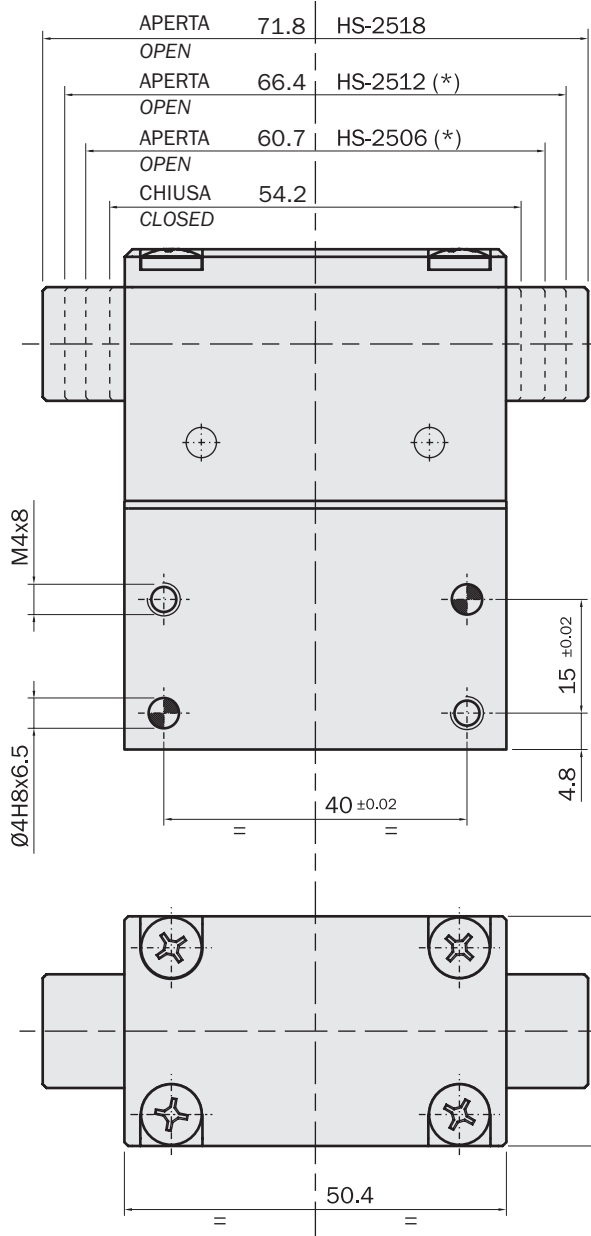
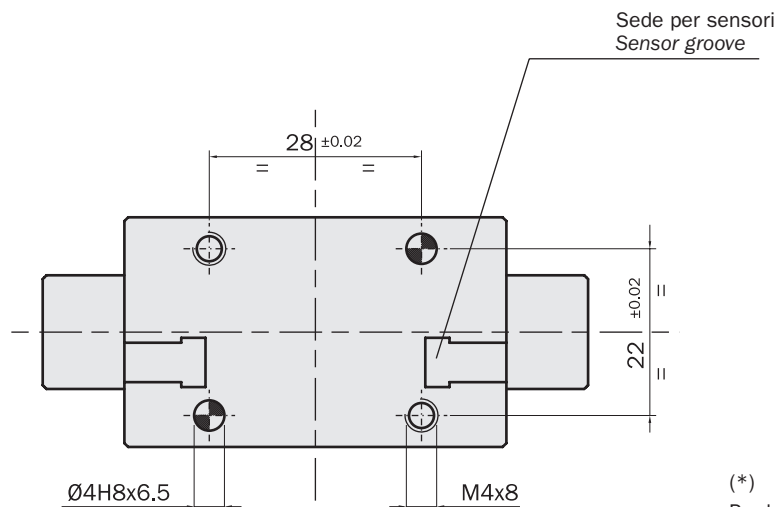


(\*)  
Prodotto speciale (chiedere in Fabbrica)  
Custom product (consult Factory)

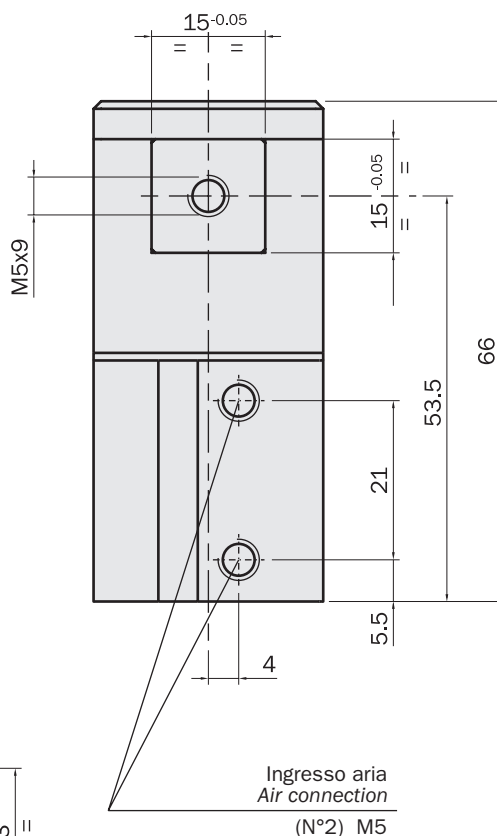


**Dimensioni (mm)**  
**Dimensions (mm)**

**HS-2518**



(\*)  
Prodotto speciale (chiedere in Fabbrica)  
Custom product (consult Factory)



### Pinza pneumatica autocentrante (serie X)

- XP-...: pinza parallela a 2 griffe.
- XT-...: pinza parallela a 3 griffe.
- XA-...: pinza angolare a 2 griffe.
- XR-...: pinza radiale a 2 griffe.
- Azionamento a doppio effetto.
- Rapporto qualità/prezzo molto favorevole.
- Basso peso ottenuto utilizzando leghe leggere e polimeri.
- Doppia possibilità di fissaggio.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

### Self-centering pneumatic gripper (series X)

- XP-...: 2 jaw parallel gripper.
- XT-...: 3 jaw parallel gripper.
- XA-...: 2 jaw angular gripper.
- XR-...: 2 jaw radial gripper.
- Double acting.
- Excellent cost/performance ratio.
- Light weight, due to its alloy and plastic resin construction.
- Gripper mounting possible on two sides.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.



XR-26



XR-20



XA-26



XA-20



XP-26



XP-20



XT-26



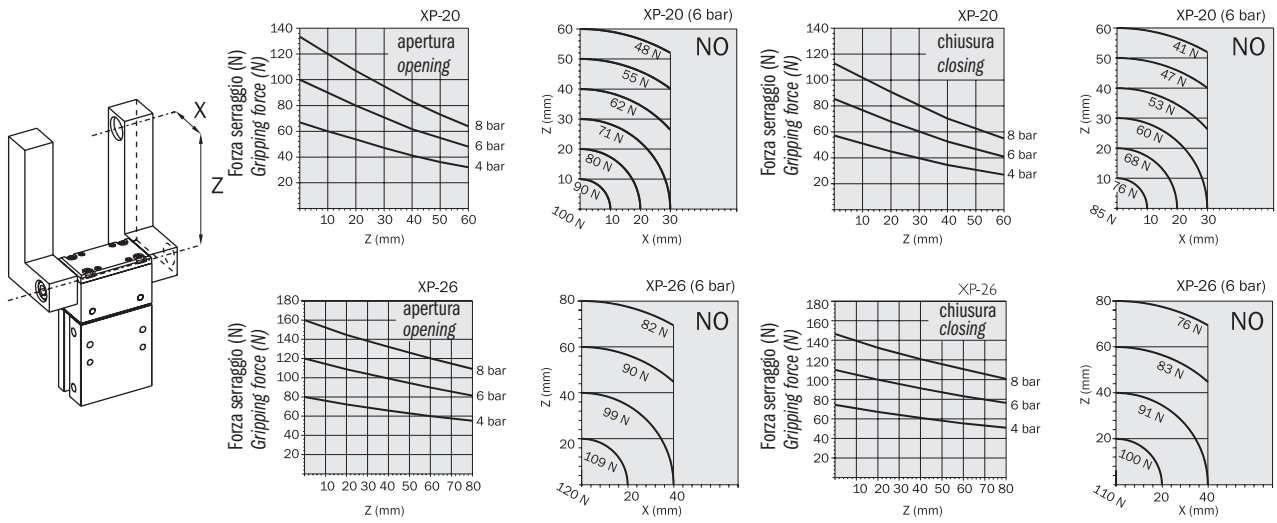
XT-20

### Forza di serraggio

XP... I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione, del braccio di leva Z e del disassamento del punto di presa X.

### Gripping force

XP... The graphs show the gripping force on each jaw, as a function of the operating pressure, the gripping tool length Z and the overhanging X.

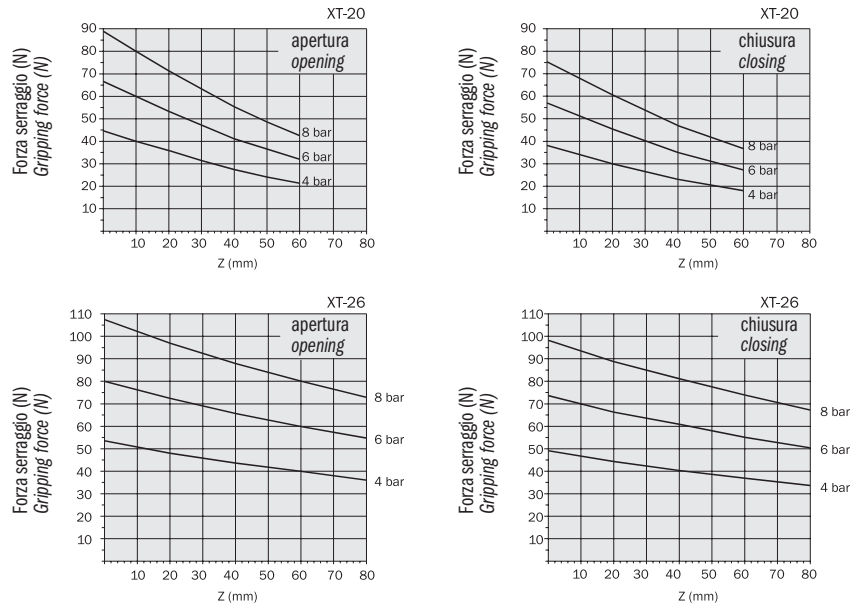


XT... I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

XT... The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.

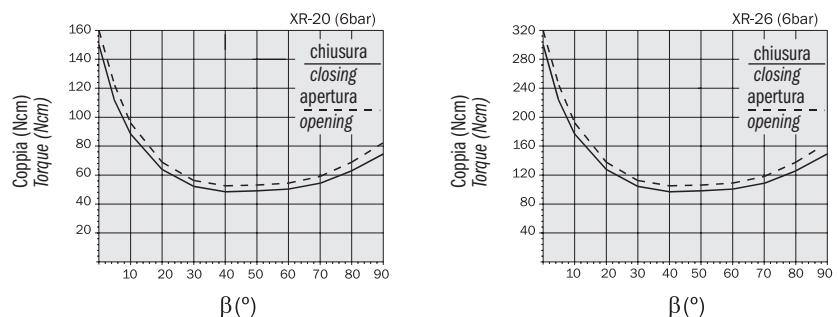
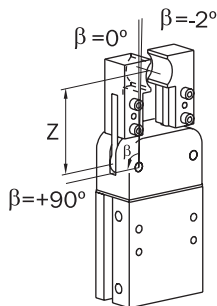
**La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il doppio.**

**The force shown in these graphs refers to one jaw. The total force is double.**



XR... I grafici mostrano la coppia per griffa espressa dalla pinza in funzione della posizione angolare  $\beta$  della griffa.

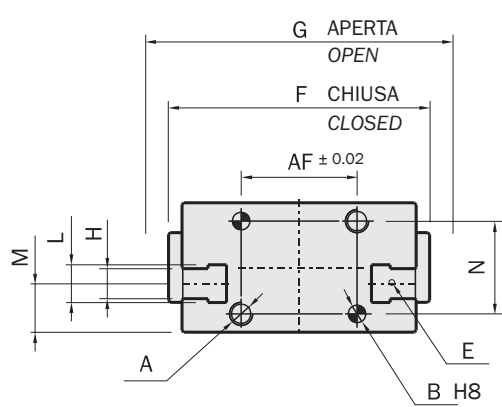
XR... The graphs show the gripping torque on each jaw, as a function of the angular position  $\beta$  of the jaw.



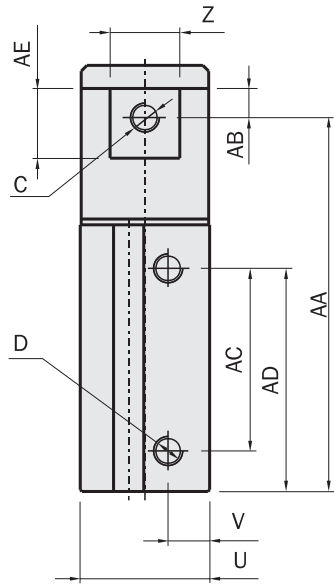
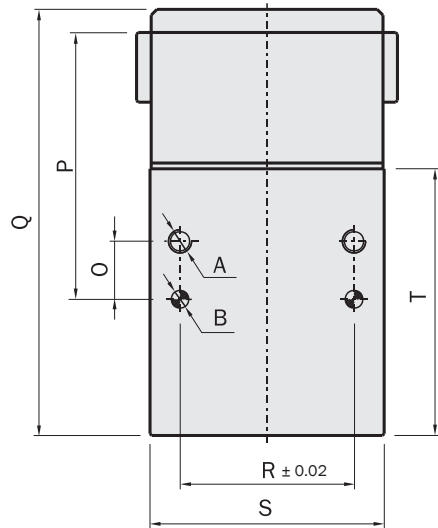
	XP-20	XP-26
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Operating pressure range	2 ÷ 8 bar	
Temperatura di esercizio Operating temperature range	5 ÷ 60 °C.	
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	85 N	110 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	170 N	220 N
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	100 N	120 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	200 N	240 N
Corso totale (±0.2 mm) Total stroke	8 mm	13.2 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	7 cm <sup>3</sup>	12 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.05 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm
Peso Weight	160 g	300 g

**Dimensioni (mm)**  
**Dimensions (mm)**

	XP-20	XP-26
A	M4x6	M5x10
B	Ø3x6	Ø4x6
C	M5x8	M6x9
D	M5	
E	SC - SL - SS - SN	
F	44.8	54.6
G	52.8	67.8
H	5.2	
L	6.5	
M	8.35	11.15
N	16	21
O	10	12
P	46	56
Q	73.5	77
R	30	36
S	40.4	50.4
T	46	42.8
U	22.3	30.3
V	7.15	10.15
Z	12	15
AA	64.5	65.5
AB	5	6.5
AC	31.5	30
AD	38.5	36.5
AE	12	15
AF	20	25



- A** Foro filettato per fissaggio  
Threaded hole for fastening
- B** Foro di riferimento  
Dowel pin hole
- C** Foro filettato per fissaggio dita di presa  
Threaded hole for gripping tool fastening
- D** Ingresso aria  
Air connection
- E** Sede per sensori Gimatic  
Gimatic sensor slot

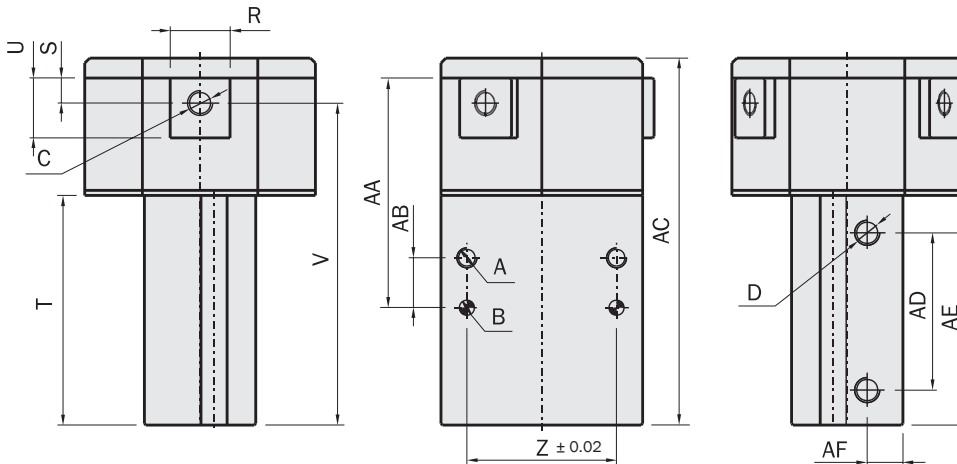
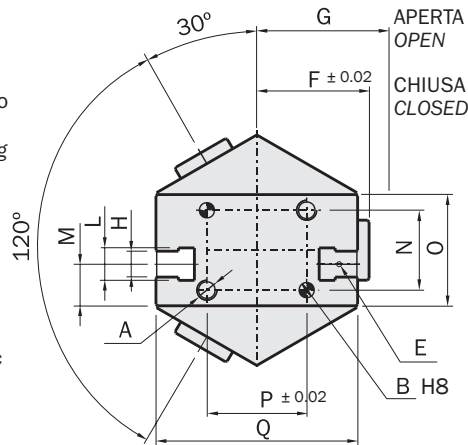


	XT-20	XT-26
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Operating pressure range	2.5 ÷ 8 bar	
Temperatura di esercizio Operating temperature range	5 ÷ 60 °C.	
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	57 N	73 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	171 N	219 N
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	67 N	80 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	201 N	240 N
Corsa Stroke (±0.2 mm)	3 x 3.6 mm	3 x 6.6 mm
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	7 cm <sup>3</sup>	12 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.05 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm
Peso Weight	210 g	350 g

**Dimensioni (mm)**  
**Dimensions (mm)**



- A** Foro filettato per fissaggio  
Threaded hole for fastening
- B** Foro di riferimento  
Dowel pin hole
- C** Foro filettato per fissaggio dita di presa  
Threaded hole for gripping tool fastening
- D** Ingresso aria  
Air connection
- E** Sede per sensori Gimatic  
Gimatic sensor slot

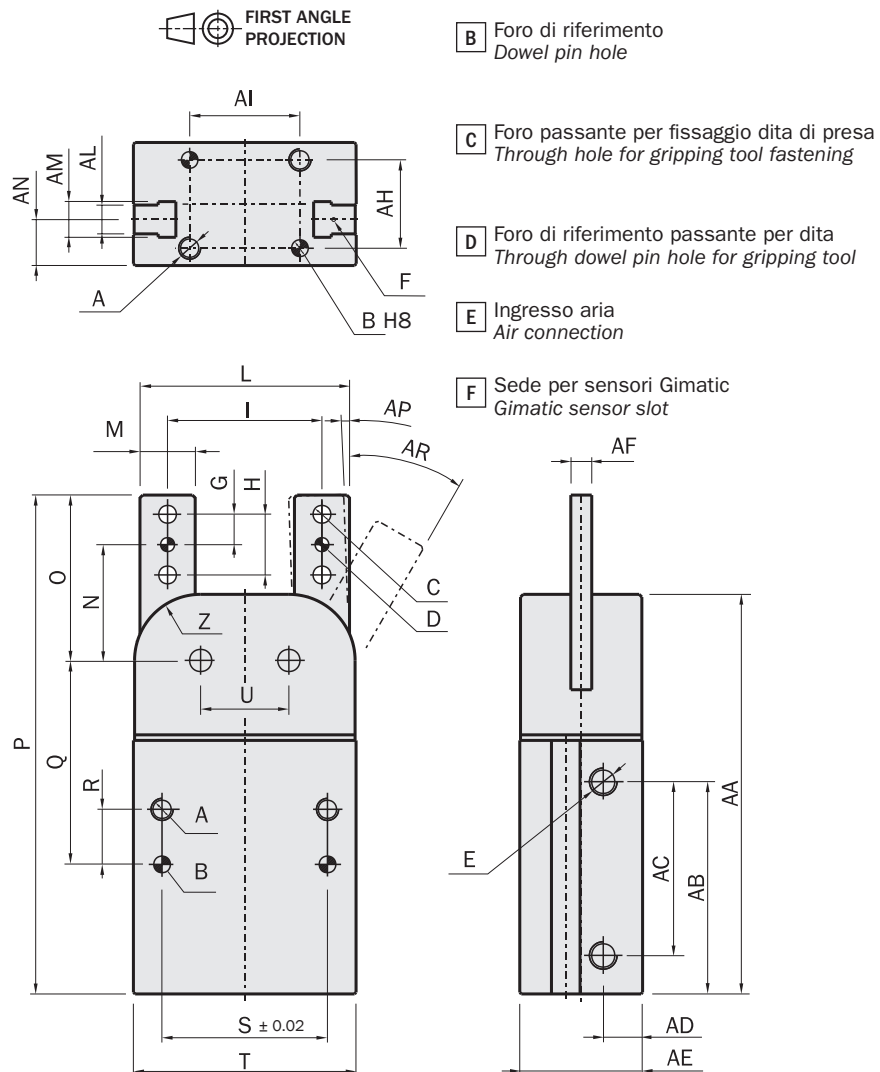


	XT-20	XT-26
A	M4x6	M5x10
B	Ø3x6	Ø4x6
C	M5x8	M6x9
D	M5	
E	SC - SL - SS - SN	
F	22.4	27.1
G	26	33.7
H	5.2	
L	6.5	
M	8.35	11.15
N	16	21
O	22.3	30.3
P	20	25
Q	40.4	50.4
R	12	15
S	5	6.5
T	46	42.8
U	12	15
V	64.5	65.5
Z	30	36
AA	46	56
AB	10	12
AC	73.5	77
AD	31.5	30
AE	38.5	36.5
AF	7.15	10.15

	XA-20	XA-26
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Operating pressure range	2 ÷ 8 bar	
Temperatura di esercizio Operating temperature range	5 ÷ 60 °C.	
Coppia per griffa in chiusura a 6 bar Closing torque at 6 bar on each jaw	46 Ncm	79 Ncm
Coppia totale in chiusura a 6 bar Closing torque force at 6 bar	92 Ncm	158 Ncm
Coppia per griffa in apertura a 6 bar Opening torque at 6 bar on each jaw	50 Ncm	85 Ncm
Coppia totale in apertura a 6 bar Opening torque force at 6 bar	100 Ncm	170 Ncm
Corsa (±2°) Stroke	2 x 30°	2 x 32°
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	6 cm <sup>3</sup>	11 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.02 s	0.03 s
Ripetibilità Repetition accuracy	0.04°	0.04°
Peso Weight	140 g	250 g

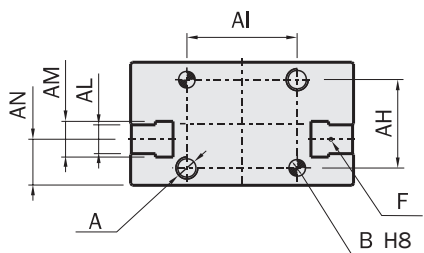
**Dimensioni (mm)**  
**Dimensions (mm)**

	XA-20	XA-26
A	M4x6	M5x10
B	Ø3x6	Ø4x8
C	Ø3.2	Ø4.3
D	Ø2.5H8	Ø3H8
G	5.5	6
H	11	12
I	28	31
L	38	45
M	10	14
N	21	25.7
O	30	36.7
P	90.5	95.1
Q	37	42.4
R	10	12
S	30	36
T	40.4	50.4
U	16	19.3
Z	R=12	R=16
AA	72.5	73.6
AB	38.5	36.5
AC	31.5	30
AD	7.15	10.15
AE	22.3	30.3
AF	3.8	5.4
AH	16	21
AI	20	25
AL	5.2	
AM	6.5	
AN	8.35	11.15
AP	4°	2°
AR	26°	30°

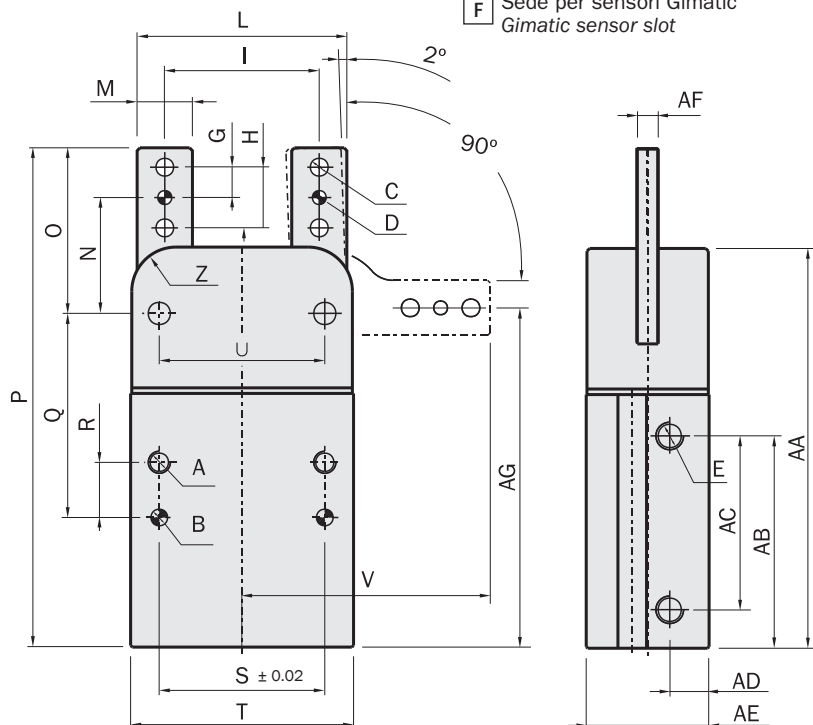


	XR-20	XR-26
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>	
Pressione di esercizio <i>Operating pressure range</i>	2 ÷ 8 bar	
Temperatura di esercizio <i>Operating temperature range</i>	5 ÷ 60 °C.	
Coppia massima per griffa in chiusura a 6 bar <i>Closing maximum torque at 6 bar on each jaw</i>	150 Ncm	300 Ncm
Coppia massima per griffa in apertura a 6 bar <i>Opening maximum torque at 6 bar on each jaw</i>	160 Ncm	320 Ncm
Corsa <i>Stroke</i> (±2°)	2 x 92°	2 x 92°
Frequenza max funzionamento continuativo <i>Maximum working frequency</i>	2 Hz	2 Hz
Consumo d'aria per ciclo <i>Cycle air consumption</i>	11 cm <sup>3</sup>	19 cm <sup>3</sup>
Tempo di chiusura senza carico <i>Closing time without load</i>	0.08 s	0.12 s
Ripetibilità <i>Repetition accuracy</i>	0.06°	0.06°
Peso <i>Weight</i>	140 g	260 g

**Dimensioni (mm)**  
**Dimensions (mm)**



- A** Foro filettato per fissaggio  
*Threaded hole for fastening*
- B** Foro di riferimento  
*Dowel pin hole*
- C** Foro passante per fissaggio dita di presa  
*Through hole for gripping tool fastening*
- D** Foro di riferimento passante per dita  
*Through dowel pin hole for gripping tool*
- E** Ingresso aria  
*Air connection*
- F** Sede per sensori Gimatic  
*Gimatic sensor slot*



	XR-20	XR-26
A	M4x6	M5x10
B	Ø3x6	Ø4x8
C	Ø3.2	Ø4.3
D	Ø2.5H8	Ø3H8
E	M5	
F	SC - SL - SS - SN	
G	5.5	6
H	11	12
I	28	31
L	38	45
M	10	14
N	21	25.7
O	30	36.7
P	90.5	95.1
Q	37	42.4
R	10	12
S	30	36
T	40.4	50.4
U	30	39
V	45	56.2
Z	R=8	
AA	72.5	73.6
AB	38.5	36.5
AC	31.5	30
AD	7.15	10.15
AE	22.3	30.3
AF	3.8	5.4
AG	61.5	62.4
AH	16	21
AI	20	25
AL	5.2	
AM	6.5	
AN	8.35	11.15

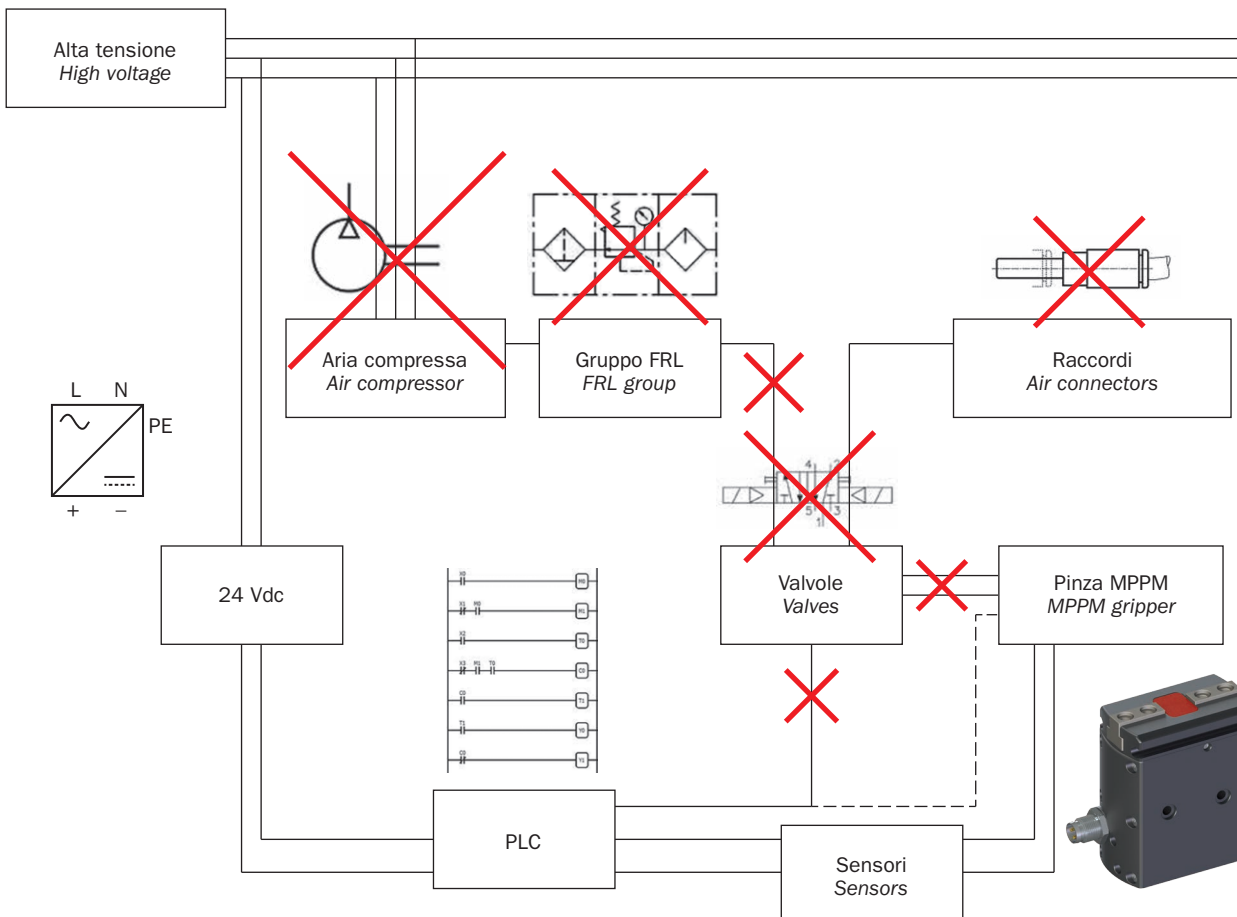


## Pinza elettrica parallela 2 griffe autocentrante

- Semplice azionamento Plug&Play.
- Nessun consumo elettrico quando la pinza è in presa.
- Nessuna programmazione richiesta.
- Tenuta pezzo garantita in caso di interruzione d'energia.
- Si adatta ad ogni dimensione di pezzo entro griffe.
- Motore senza spazzole a lunga vita elettrica (Brushless DC).
- Azionamento motore integrato nella pinza.
- Alimentazione in bassa tensione 24 Vdc.
- Connessione M8x1, 3 poli standard.
- Controllabile con segnale PLC come una Valvola Pneumatica.
- Sistema di riduzione in fibra di carbonio.
- Esente da manutenzione per 10 milioni di cicli.
- Griffe a T per carichi elevati.
- Miglior compromesso peso-dimensioni-forza.
- Compatibile con attuatori rotanti.
- Sensori magnetici opzionali.

## 2-jaw parallel self-centering electric gripper

- Plug & play user friendly gripper.
- No electricity consumption when gripper is engaged.
- No programming required.
- Gripper retention guaranteed in event of blackout.
- Self Adapting jaws part.
- Long life Brushless motor (Brushless DC).
- Built-in motor driver.
- 24 Vdc Low Voltage Power Supply.
- M8x1, 3 poles standard connection.
- Controllable by PLC as a pneumatic valve.
- Fiber-carbon gear reduction.
- 10 million cycle maintenance-free.
- T-slot style jaws for heavy loads.
- Weight-dimensions-force best trade off.
- Rotary actuator fitting compatible.
- Optional magnetic sensors.

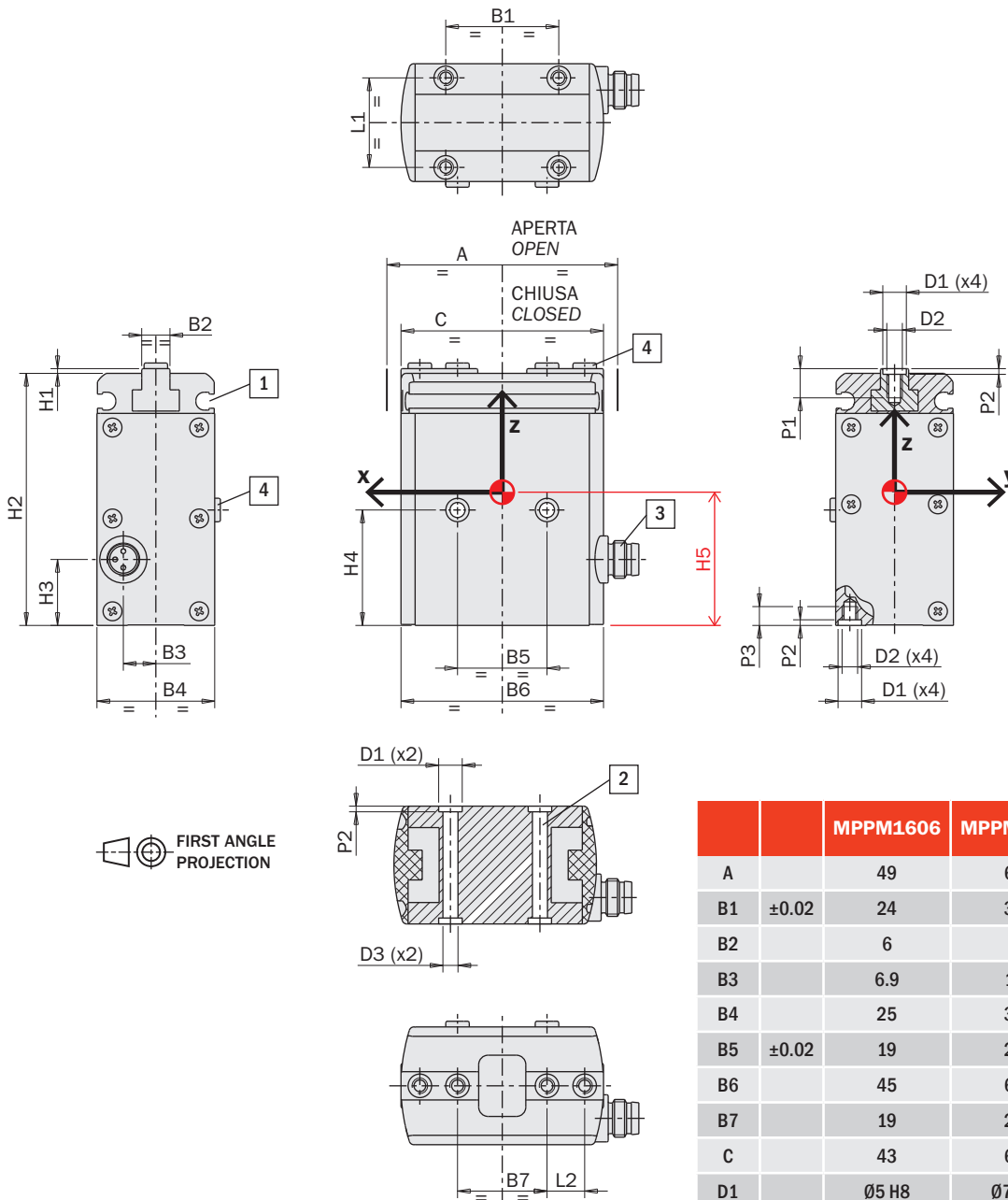




	MPPM1606	MPPM2508	MPPM3210	
Forza di serraggio totale <i>Total gripping force</i>	67 N	125 N	245 N	
Corsa <i>Stroke</i>	2x3 mm	2x4 mm	2x5 mm	
Frequenza alla temperatura ambiente di 30°C <i>Frequency at an ambient temperature of 30°C</i>	1 Hz	0.91 Hz	0.91 Hz	
Tempo chiusura griffe <i>Jaw closing time</i>	0.08 s	0.121 s	0.15 s	
Tempo di lavoro pinza <i>Working gripper time</i>	0.21 s	0.3 s	0.27 s	
Ciclo di lavoro alla temperatura ambiente di 30°C <i>Duty cycle at an ambient temperature of 30°C</i>	43%	55%	50%	
Tensione d'alimentazione <i>Power supply</i>	24 Vdc ±10%	24 Vdc ±10%	24 Vdc ±10%	
Corrente di picco <i>Peak current</i>	0.9 Apk	1.2 Apk	3.8 Apk	
Corrente nominale <i>Nominal current</i>	0.3 Arms	0.4 Arms	0.8 Arms	
Potenza motore brushless <i>Brushless motor power</i>	6 W	11 W	23 W	
Connessione <i>Connection</i>	M8 - 3 poli M8 - 3 poles			
Segnale d'ingresso apertura/chiusura <i>Open/closed input signal</i>	PNP open collector PNP open collector			
Ripetibilità <i>Repetition accuracy</i>	0.02 mm	0.02 mm	0.02 mm	
Temperatura di esercizio <i>Operating temperature</i>	5° ÷ 60°C	5° ÷ 60°C	5° ÷ 60°C	
Grado di protezione <i>Environmental Degree</i>	IP54	IP54	IP54	
Rumorosità <i>Noise level</i>	< 70 dB	< 70 dB	< 70 dB	
Massa (motore incluso) <i>Mass (motor included)</i>	145 g	330 g	525 g	
Certificazione Camera Bianca ISO14644-1 <i>ISO14644-1 Clean Room Certification</i>	CLASS 4	-	-	
Normative di riferimento <i>Reference standards</i>	EN 61000-6-2 + EC + IS1; EN 61000-6-3 + A1			
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jxx	0.42 kgcm <sup>2</sup>	1.68 kgcm <sup>2</sup>	3.4 kgcm <sup>2</sup>
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jyy	0.54 kgcm <sup>2</sup>	2.22 kgcm <sup>2</sup>	4.83 kgcm <sup>2</sup>
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jzz	0.25 kgcm <sup>2</sup>	1.03 kgcm <sup>2</sup>	2.33 kgcm <sup>2</sup>
Tecnologia e opzioni <i>Technology and options</i>	Pagina 570 - 571 Page 570 - 571			

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

## Dimensioni (mm) Dimensions (mm)

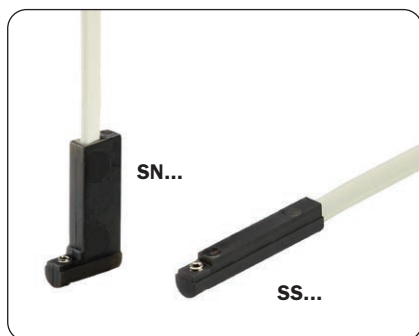


- 1** Cava per sensore magnetico  
*Magnetic sensor slot*
- 2** Foro passante per fissaggio pinza  
*Through hole for gripper fastening*
- 3** Connessione elettrica  
*Electrical connection*
- 4** Boccole di centraggio  
*Centering sleeves*

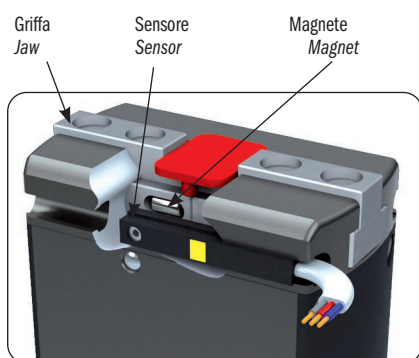
	MPPM1606	MPPM2508	MPPM3210
A	49	68	83
B1	±0.02	24	30
B2	6	8	9
B3	6.9	10	11
B4	25	32	35
B5	±0.02	19	25
B6	45	60	73
B7	19	26	32
C	43	60	73
D1	Ø5 H8	Ø7 H8	Ø7 H8
D2	M3	M4	M5
D3	Ø3.2	Ø4.2	Ø5.2
H1	1	1	1
H2	53.5	70	80
H3	14	17	19
H4	±0.02	24.5	32
H5	32.5	42.6	48.4
L1	±0.02	19	24
L2	±0.02	8	12
P1	6.2	8	8.5
P2	+0.1	1.2	1.5
P3	4	6	8

### Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso i magneti sulle griffe. Per i dettagli si veda la sezione "Accessori".



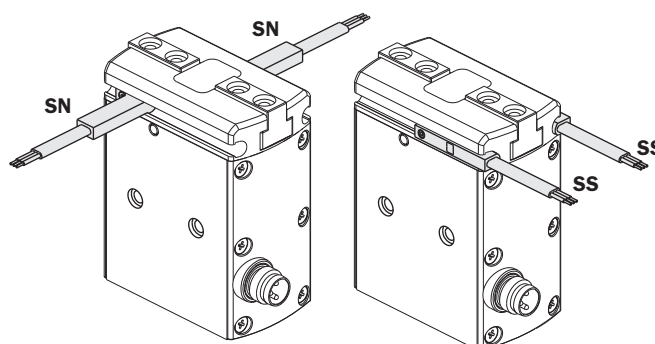
Sono tutti dotati di un cavo piatto a tre fili e di un led.



### Sensors

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by the magnets on the jaws inside. For details, see the "Accessories" section.

They are all provided with a 3-wire flat cable and a LED.



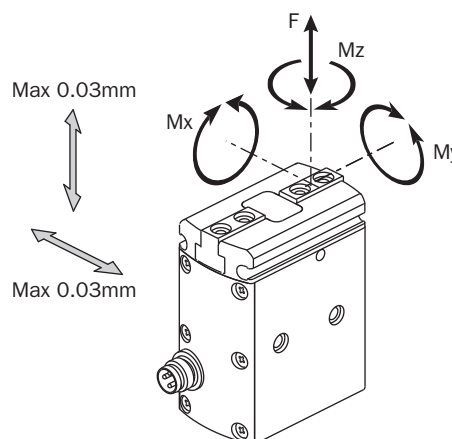
### Carichi di sicurezza e giochi

Consultare la tabella per i carichi massimi ammissibili. Forze e coppie eccessive possono danneggiare la pinza e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore. F s, Mx s, My s, Mz s, sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme. F d, Mx d, My d, Mz d, sono i carichi massimi ammissibili in condizioni dinamiche, cioè con le griffe in movimento. La tabella mostra inoltre la massa ammissibile (m) per ogni dito di presa quando la pinza è usata al massimo delle prestazioni. La figura sotto mostra anche il gioco massimo delle griffe.

	MPPM1606	MPPM2508	MPPM3210
F s	60 N	120 N	200 N
Mx s	3 Nm	8 Nm	20 Nm
My s	3 Nm	8 Nm	20 Nm
Mz s	3 Nm	8 Nm	20 Nm
F d	0.6 N	1.2 N	2 N
Mx d	3 Ncm	8 Ncm	20 Ncm
My d	3 Ncm	8 Ncm	20 Ncm
Mz d	3 Ncm	8 Ncm	20 Ncm
m	60 g	120 g	200 g

### Safety loads and backlashes

Check the table for the maximum permitted loads. Excessive forces or torques can damage the gripper, cause operation problems and endanger the safety of the operator. F s, Mx s, My s, Mz s, are the maximum permitted loads under static conditions, that is with motionless jaws. F d, Mx d, My d, Mz d, are the maximum permitted loads under dynamic conditions, that is with running jaws. The following table also shows the maximum permitted load (m) on each gripping tool when the gripper operates at peak performance. The picture below shows also the jaw maximum backlash.



## Soluzione per manipolazione in camera bianca

Le pinze elettriche Gimatic possono operare in aree produttive ad elevato livello di pulizia e igiene mediante integrazione del KIT-GMP-G. L'uso di un adattatore consente di fissare la pinza elettrica ad un'interfaccia robot (non inclusa) e di proteggerne il funzionamento con una cover silconica sterilizzabile.

Il fissaggio delle dita di presa (non incluse) è reso possibile mediante speciali viti igieniche in acciaio inossidabile.

Il sistema soddisfa i requisiti richiesti dalle massime classi di pulizia GMP (good manufacturing practice) di livello A e B.

Le principali caratteristiche sono:

- Adatto per pinza MPPM1606.
- Classi di pulizia GMP A e B.
- Cover realizzata in Silicone Silpuran® Wacker FDA 21 CFR §177.2600.
- Compatibile con procedura di pulizia con perossido di idrogeno (VHP-H2O2) e raggi ultravioletti UV.
- Grado di protezione del sistema completo IP65.
- Il Kit MPPM1606-KIT-GMP ha la Certificazione ISO14644-1 per camera bianca ISO 2, mentre la singola pinza MPPM1606 ha la certificazione ISO14644-1 per camera bianca ISO4.
- Viti igieniche in acciaio inossidabile (Novonox).
- Superficie trasparente che permette la lettura dei LED dei sensori interni o dei LED di stato dell'alimentazione.
- Superfici dal design igienico che prevengono l'accumulo di batteri.
- Semplice fissaggio delle dita di presa con sistema antirotazione.

## Cleanroom Gripping Solution

*Gimatic electric grippers can operate in environments characterised by a high standard of cleanliness and hygiene by integrating the KIT-GMP-G. An adapter enables fastening the electric gripper to a robot interface (not included) and protecting its operation by means of a sterilisable silicone cover. The gripping fingers (not included) can be fastened by means of special hygienic stainless steel screws. The systems meets the most stringent GMP (Good Manufacturing Practice) cleanliness standards for Grade A and B.*

*Its main characteristics are:*

- Suitable for gripper MPPM1606.
- Compliant with GMP Grade A and B cleanliness standards.
- Cover made in Silicone Silpuran®Wacker FDA 21 CFR §177.2600.
- Compatible with hydrogen peroxide (VHP-H2O2) and UV cleaning procedures.
- Complete system with IP65 protection rating.
- The MPPM1606-KIT-GMP kit is certified to ISO14644-1 for ISO 2 cleanrooms, while the single gripper MPPM1606 is certified to ISO14644-1 for ISO 4 cleanrooms.
- Stainless steel hygienic screws (Novonox).
- Transparent surface that enables reading the LEDs of the internal sensors and the power supply status LEDs.
- Hygienic design surfaces preventing the build-up of bacteria.
- Easy fastening of gripping fingers with anti-rotation system.



**MPPM1606-KIT-GMP  
AIR CLEANING CLASS 2**



**MPPM1606  
AIR CLEANING CLASS 4**



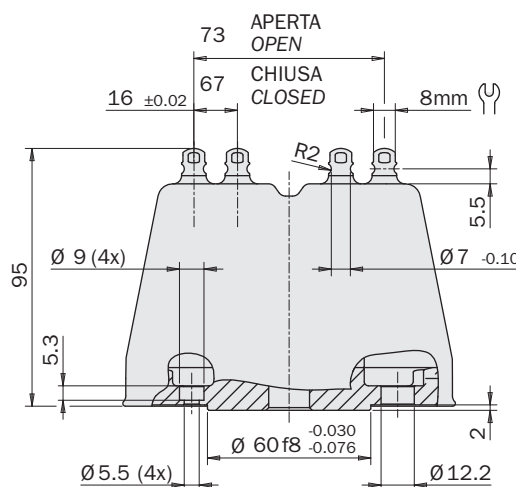
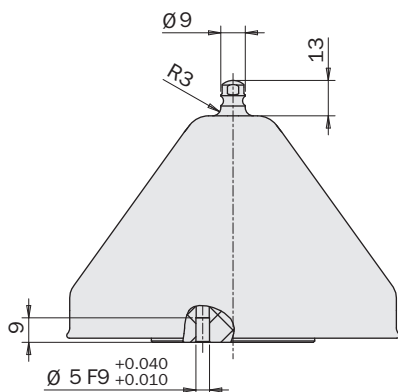
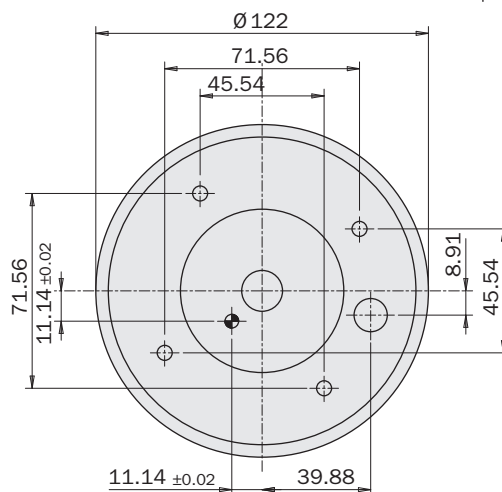
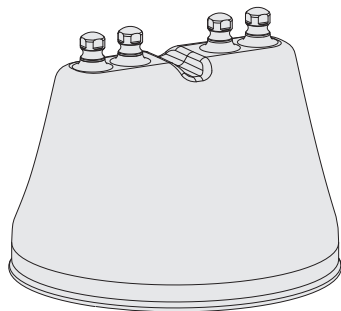
**IP65  
ENVIRONMENT DEGREE**

**H<sub>2</sub>O<sub>2</sub>  
CLEANING PROCEDURE**

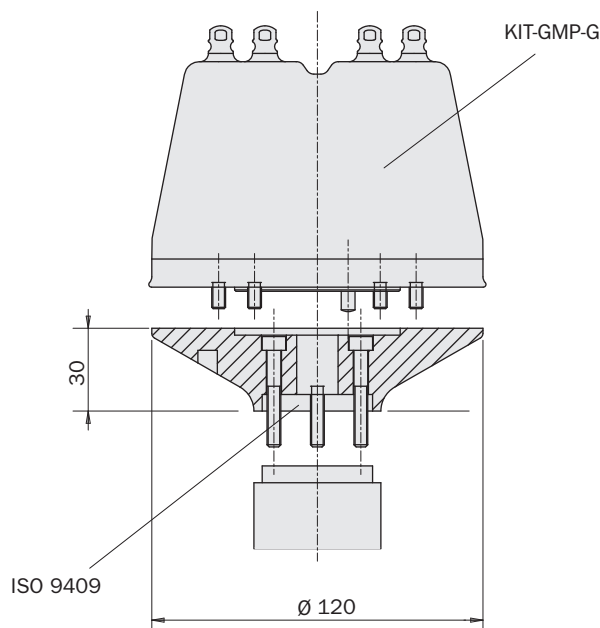
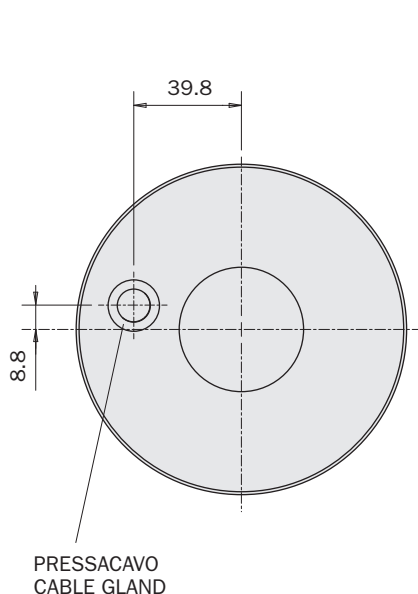
**EMC / CE**



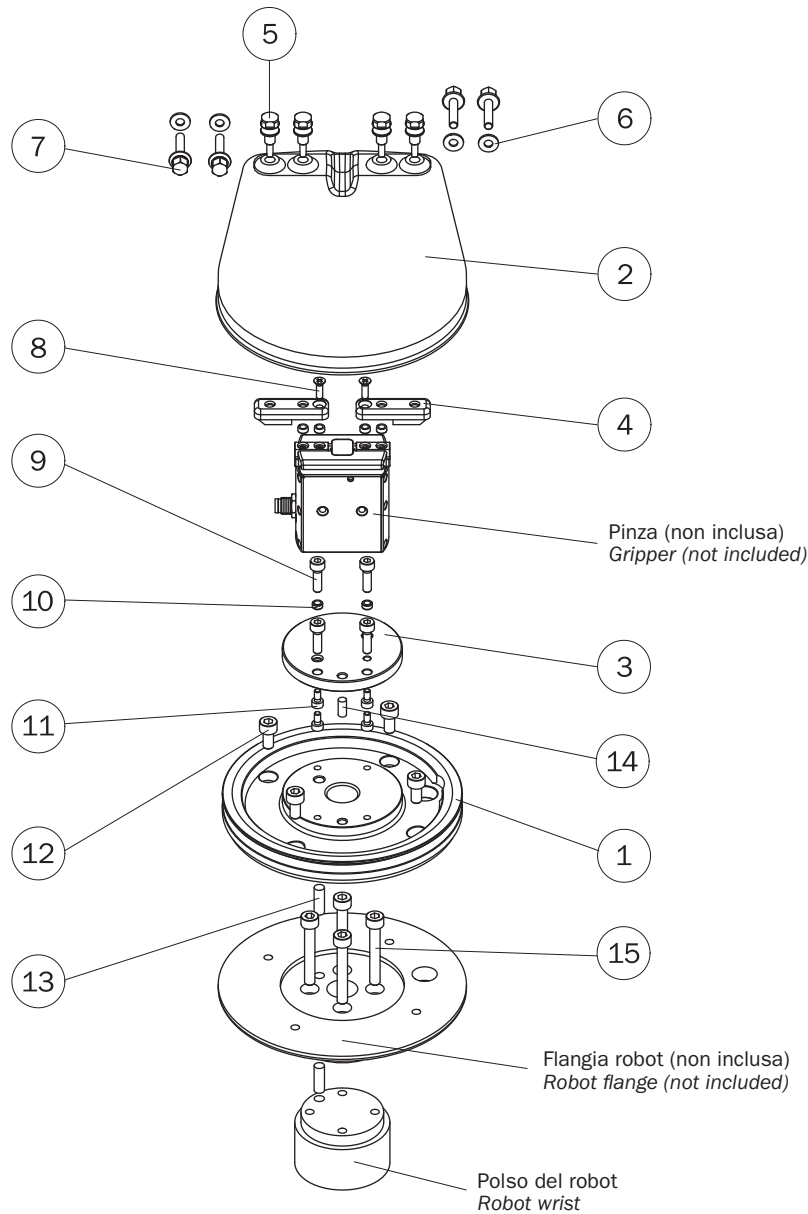
**Dimensioni (mm)**  
**Dimensions (mm)**



**Esempio di applicazione**  
**Application example**



## Elenco delle parti Part list



## Parti incluse Included parts

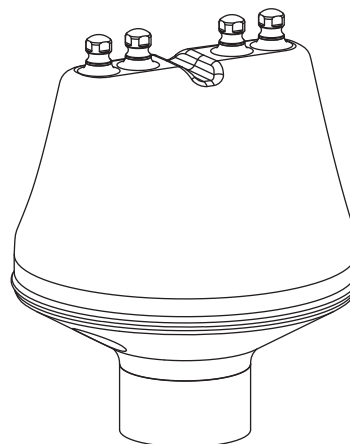
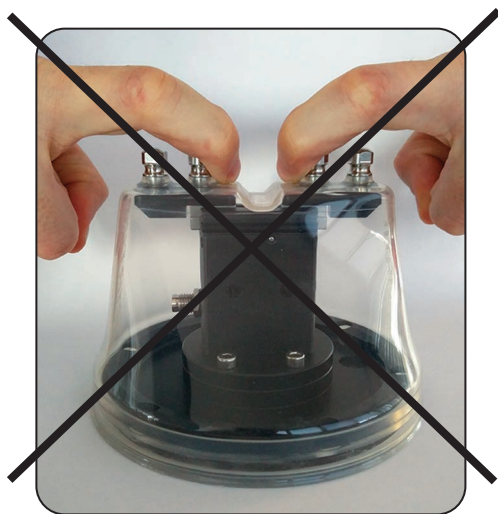
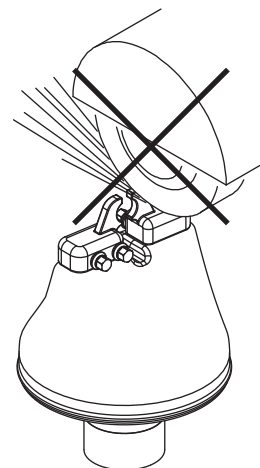
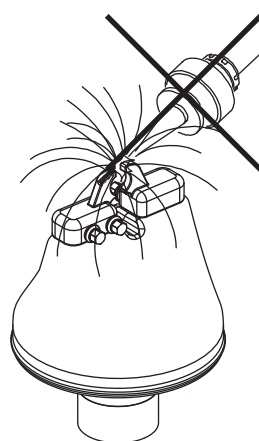
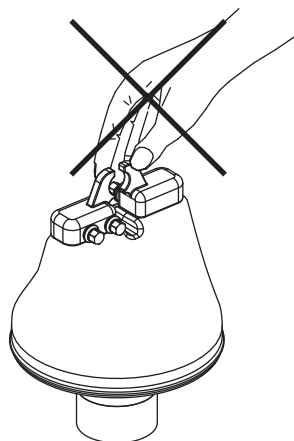
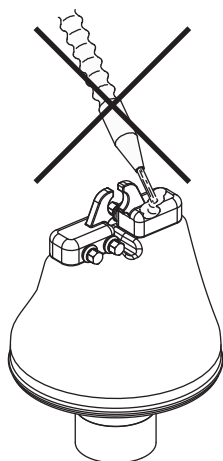
Part Number	Description	Quantity	Weight	Part Name	Part Number
1	Interfaccia robot	1	1 x 142 g	Robot interface	1
2	Cover	1	1 x 86 g	Cover	2
3	Interfaccia pinza	1	1 x 41 g	Gripper interface	3
4	Griffe interne	2	2 x 6.2 g	Internal jaws	4
5	Spina	4	4 x 5.3 g	Pin	5
6	Rondella igienica 4.1x9.7 (Novonox)	4	4 x 0.1 g	Hygienic sealing 4.1x9.7 (Novonox)	6
7	Vite lucidata a testa esagonale M4x20 (Novonox)	4	4 x 5.0 g	Hex head screw polished M4x20 (Novonox)	7
8	Vite testa svasata taglio a croce M3x10 A4	2	2 x 0.5 g	Cross recessed flat countersunk head M3x10 A4	8
9	Vite testa cilindrica esagono incassato M4x14 A4	4	4 x 1.8 g	Hex socket head cap screw M4x14 A4	9
10	Boccole di centraggio Ø5x3.2x2.4	6	6 x 0.3 g	Centering Sleeve Ø5x3.2x2.4	10
11	Vite testa cilindrica esagono incassato M3x6 A4	4	4 x 0.8 g	Hex socket head cap screw M3x6 A4	11
12	Vite testa cilindrica esagono incassato M5x10 A4	4	4 x 2.9 g	Hex socket head cap screw M5x10 A4	12
13	Spina di centraggio Ø5x16 (m6)	1	2 x 1.7 g	Dowel pin Ø5x16 (m6)	13
14	Spina di centraggio Ø4x10 (m6)	1	1 x 1.5 g	Dowel pin Ø4x10 (m6)	14
15	Vite testa cilindrica esagono incassato M5x35 A4	4	4 x 6.2 g	Hex socket head cap screw M5x35 A4	15

**Avvertenze**

- Non mettere il prodotto in posti dove potrebbe entrare in contatto con corpi estranei, materiali simili a olii, oppure in atmosfere con gas corrosivi, infiammabili, ne vicino ad altrettanti materiali infiammabili.
- Non installare il prodotto vicino ad elementi riscaldanti.
- Non eseguire il cablaggio ne utilizzare il prodotto con le mani bagnate.
- Non spostare il prodotto tramite il cavo.
- Non forzare il movimento delle griffe manualmente.

**Caution**

- Do not place the product in place where it may come in contact with foreign matter such as oil nor in an atmosphere of corrosive gas or flammable gases nor in place near inflammable material.
- Do not install the product near heating element.
- Do not perform wiring nor operate the product with wet hand.
- Do not transfer the product by holding only the cable.
- Do not attempt to force gripper jaws' movement by hand.



**Marcatura CE**

Il sistema è conforme con:

Directive 2004/108/CE, EN 62233 (2008-04), EN 61000-6-2+EC+IS1 (2005-08; 2005-09; 2005-11), EN 61000-6-3+A1 (2007-01; 2011-03), EN 61000-6-4 (2007-01), EN 55016-2-1+A1 (2004-10; 2005-08), EN 55016-2-3 (2006-12), EN 61000-4-2 (2009-03), EN 61000-4-3+A1+IS1+A2 (2006-05; 2008-02; 2009-02; 2010-07), EN 61000-4-4+A1 (2004-12; 2010-03), EN 61000-4-5 (2006-11), EN 61000-4-6+A1+IS1 (1996-07; 2001-12; 2004-07), EN 61000-4-6 (2009-03), CEI EN 60529 (1997-06).

**CE Marking reference**

The system is in conformance with:

**Certificazioni IPA**

Il sistema è dichiarato adatto per l'uso in camera bianca dall'istituto Fraunhofer, come indicato nella relazione N° GI1410-728

**IPA Certification reference**

The system has been declared suitable for use in hygienic areas by Fraunhofer IPA Institute as stated in report No. GI 1410-728



## Pinza elettrica parallela 2 griffe autocentrante

- Semplice azionamento Plug&Play.
- Nessun consumo elettrico quando la pinza è in presa.
- Nessuna programmazione richiesta.
- Tenuta pezzo garantita in caso di interruzione d'energia.
- Si adatta ad ogni dimensione di pezzo entro griffe.
- Corsa extra.
- Motore senza spazzole a lunga vita elettrica (Brushless DC).
- Azionamento motore integrato nella pinza.
- Alimentazione in bassa tensione 24 Vdc.
- Connessione M8x1, 3 poli standard.
- Controllabile con segnale PLC come una Valvola Pneumatica.
- Sistema di riduzione in fibra di carbonio.
- Esente da manutenzione per 10 milioni di cicli.
- Griffe a T per carichi elevati.
- Miglior compromesso peso-dimensioni-forza.
- Compatibile con attuatori rotanti.
- Sensori magnetici opzionali.

## 2-jaw parallel self-centering electric gripper

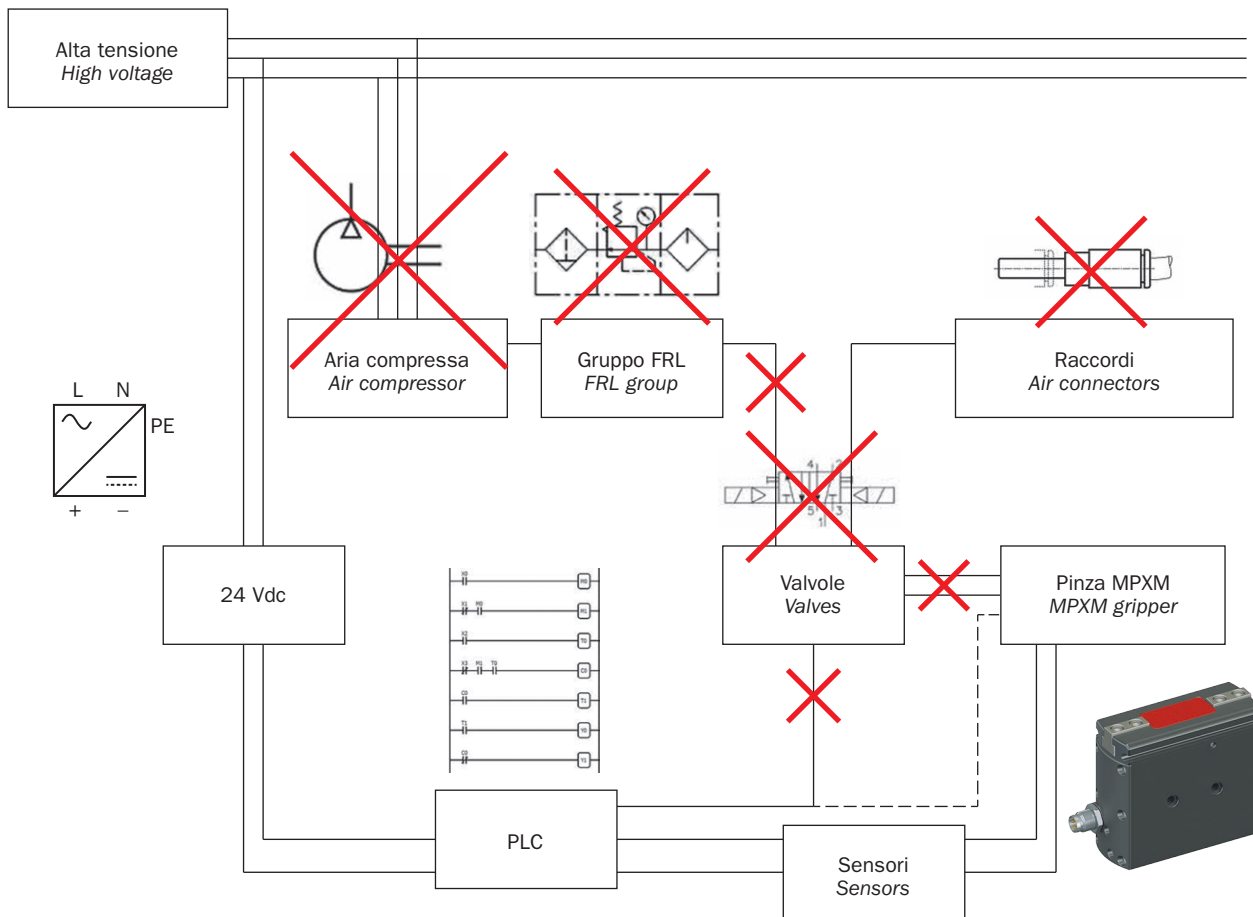
- Plug & play user friendly gripper.
- No electricity consumption when gripper is engaged.
- No programming required.
- Gripper retention guaranteed in event of blackout.
- Self Adapting jaws part.
- Extra stroke.
- Long life Brushless motor (Brushless DC).
- Built-in motor driver.
- 24 Vdc Low Voltage Power Supply.
- M8x1, 3 poles standard connection.
- Controllable by PLC as a pneumatic valve.
- Fiber-carbon gear reduction.
- 10 million cycle maintenance-free.
- T-slot style jaws for heavy loads.
- Weight-dimensions-force best trade off.
- Rotary actuator fitting compatible.
- Optional magnetic sensors.



MPXM1612

MPXM2516

MPXM3220

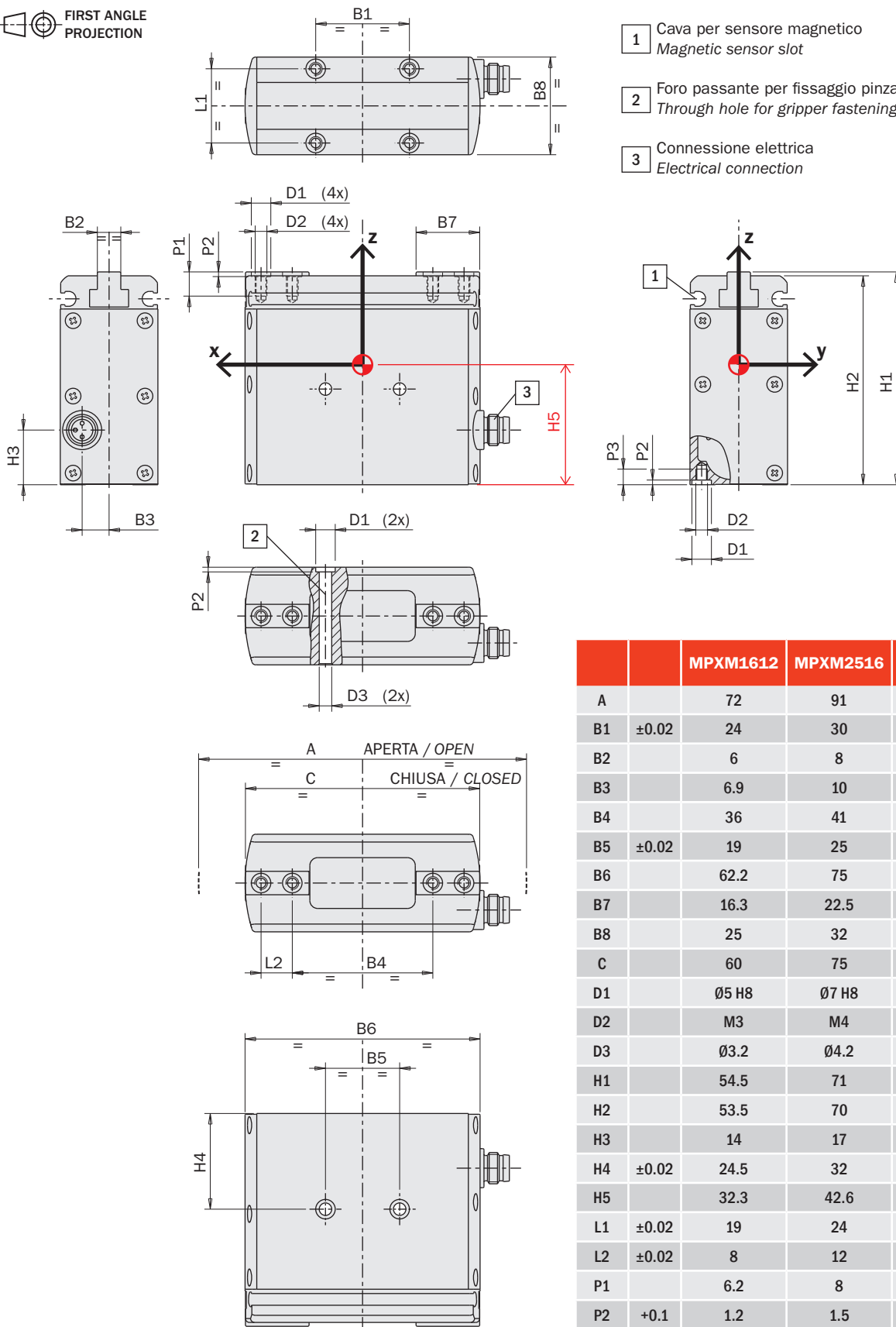




	MPXM1612	MPXM2516	MPXM3220	
Forza di serraggio totale <i>Total gripping force</i>	68 N	95 N	215 N	
Corsa <i>Stroke</i>	2x6 mm ( $\pm 2^\circ$ )	2x8 mm ( $\pm 2^\circ$ )	2x10 mm ( $\pm 2^\circ$ )	
Frequenza alla temperatura ambiente di 30°C <i>Frequency at an ambient temperature of 30°C</i>	0.75 Hz	1.2 Hz	0.85 Hz	
Tempo chiusura griffe <i>Jaw closing time</i>	0.21 s	0.19 s	0.23 s	
Tempo di lavoro pinza <i>Working gripper time</i>	0.3 s	0.28 s	0.3 s	
Ciclo di lavoro alla temperatura ambiente di 30°C <i>Duty cycle at an ambient temperature of 30°C</i>	45%	68%	51%	
Tensione d'alimentazione <i>Power supply</i>	24 Vdc $\pm 10\%$	24 Vdc $\pm 10\%$	24 Vdc $\pm 10\%$	
Corrente di picco <i>Peak current</i>	0.9 Apk	1.2 Apk	3.8 Apk	
Corrente nominale <i>Nominal current</i>	0.3 Arms	0.4 Arms	0.8 Arms	
Potenza motore brushless <i>Brushless motor power</i>	6 W	11 W	23 W	
Connessione <i>Connection</i>	M8 - 3 poli <i>M8 - 3 poles</i>			
Segnale d'ingresso apertura/chiusura <i>Open/closed input signal</i>	PNP open collector <i>PNP open collector</i>			
Ripetibilità <i>Repetition accuracy</i>	0.02 mm	0.02 mm	0.02 mm	
Temperatura di esercizio <i>Operating temperature</i>	5° ÷ 60°C	5° ÷ 60°C	5° ÷ 60°C	
Grado di protezione <i>Environmental Degree</i>	IP54	IP54	IP54	
Rumorosità <i>Noise level</i>	< 70 dB	< 70 dB	< 70 dB	
Massa (motore incluso) <i>Mass (motor included)</i>	184 g	390 g	604 g	
Certificazione Camera Bianca IPA <i>IPA Clean Room Certification</i>	-	-	-	
Normative di riferimento <i>Reference standards</i>	EN 61000-6-2 + EC + IS1; EN 61000-6-3 + A1			
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jxx	0.55 kgcm <sup>2</sup>	2.02 kgcm <sup>2</sup>	3.99 kgcm <sup>2</sup>
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jyy	0.93 kgcm <sup>2</sup>	3.18 kgcm <sup>2</sup>	6.69 kgcm <sup>2</sup>
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jzz	0.55 kgcm <sup>2</sup>	1.76 kgcm <sup>2</sup>	3.78 kgcm <sup>2</sup>
Tecnologia e opzioni <i>Technology and options</i>	Pagina 570 - 571 <i>Page 570 - 571</i>			

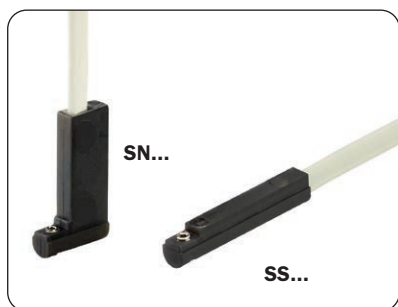
## Dimensioni (mm) Dimensions (mm)

FIRST ANGLE  
PROJECTION

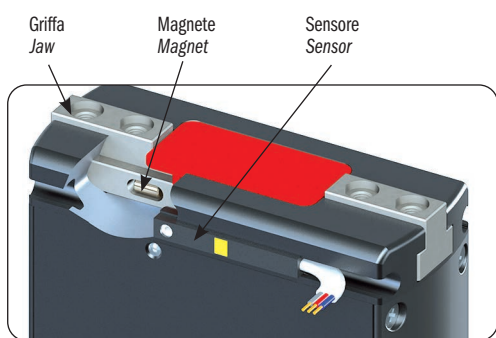


**Sensori**

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso i magneti sulle griffe. Per i dettagli si veda la sezione "Accessori".



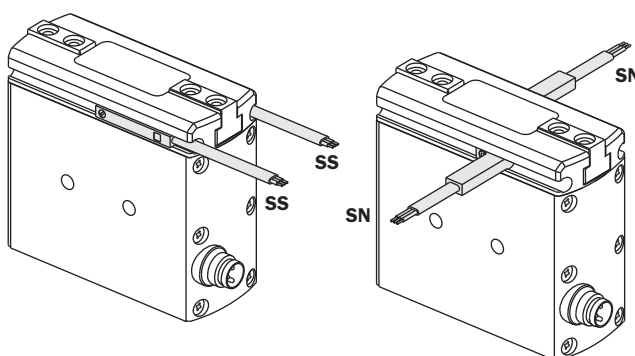
Sono tutti dotati di un cavo piatto a tre fili e di un led.



**Sensors**

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by the magnets on the jaws inside. For details, see the "Accessories" section.

They are all provided with a 3-wire flat cable and a LED.



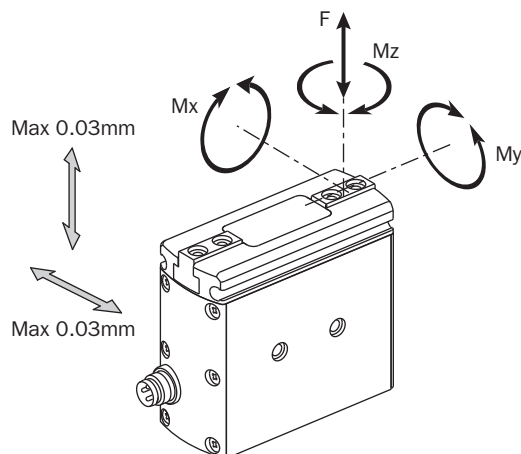
**Carichi di sicurezza e giochi**

Consultare la tabella per i carichi massimi ammissibili. Forze e coppie eccessive possono danneggiare la pinza e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore. F s, Mx s, My s, Mz s, sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme. F d, Mx d, My d, Mz d, sono i carichi massimi ammissibili in condizioni dinamiche, cioè con le griffe in movimento. La tabella mostra inoltre la massa ammissibile (m) per ogni dito di presa quando la pinza è usata al massimo delle prestazioni. La figura sotto mostra anche il gioco massimo delle griffe.

**Safety loads and backlashes**

Check the table for the maximum permitted loads. Excessive forces or torques can damage the gripper, cause operation problems and endanger the safety of the operator. F s, Mx s, My s, Mz s, are the maximum permitted loads under static conditions, that is with motionless jaws. F d, Mx d, My d, Mz d, are the maximum permitted loads under dynamic conditions, that is with running jaws. The following table also shows the maximum permitted load (m) on each gripping tool when the gripper operates at peak performance. The picture below shows also the jaw maximum backlash.

	MPXM1612	MPXM2516	MPXM3220
F s	60 N	120 N	200 N
Mx s	3 Nm	8 Nm	20 Nm
My s	3 Nm	8 Nm	20 Nm
Mz s	3 Nm	8 Nm	20 Nm
F d	0.6 N	1.2 N	2 N
Mx d	3 Ncm	8 Ncm	20 Ncm
My d	3 Ncm	8 Ncm	20 Ncm
Mz d	3 Ncm	8 Ncm	20 Ncm
m	60 g	120 g	200 g



## Pinza elettrica parallela corsa lunga 2 griffe autocentrante

- Semplice azionamento Plug&Play.
- Nessun consumo elettrico quando la pinza è in presa.
- Nessuna programmazione richiesta.
- Tenuta pezzo garantita in caso di interruzione d'energia.
- Si adatta ad ogni dimensione di pezzo entro griffe.
- Motore senza spazzole a lunga vita elettrica (Brushless DC).
- Azionamento motore integrato nella pinza.
- Alimentazione in bassa tensione 24 Vdc.
- Connessione M8x1, 3 poli standard.
- Controllabile con segnale PLC come una Valvola Pneumatica.
- Sistema di riduzione in fibra di carbonio.
- Esente da manutenzione per 10 milioni di cicli.
- Griffe a T per carichi elevati.
- Miglior compromesso peso-dimensioni-forza.
- Compatibile con attuatori rotanti.
- Sensori magnetici opzionali.

## Self-centering 2-jaw electric parallel gripper with long stroke

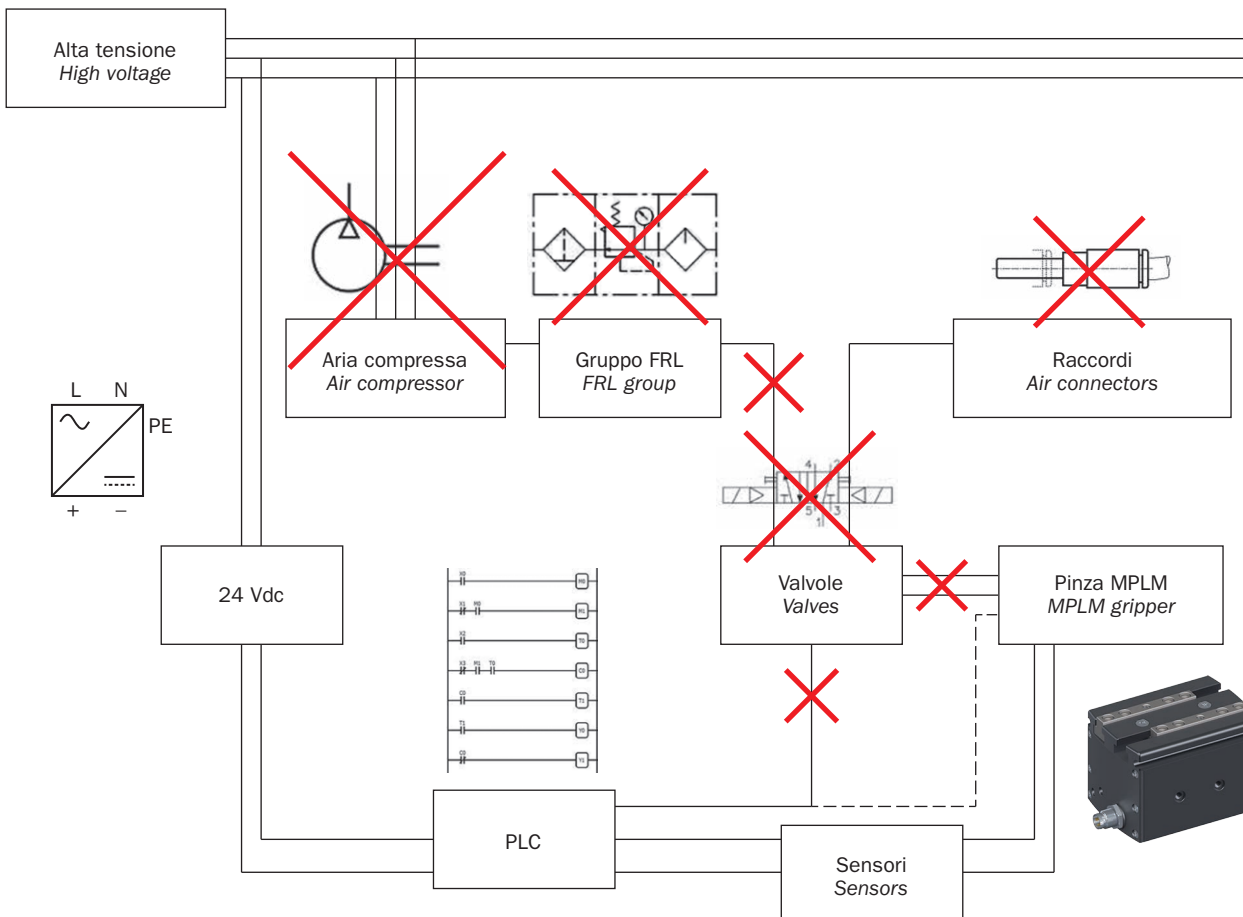
- Plug & play user friendly gripper.
- No electricity consumption when gripper is engaged.
- No programming required.
- Gripper retention guaranteed in event of blackout.
- Self Adapting jaws part.
- Long life Brushless motor (Brushless DC).
- Built-in motor driver.
- 24 Vdc Low Voltage Power Supply.
- M8x1, 3 poles standard connection.
- Controllable by PLC as a pneumatic valve.
- Fiber-carbon gear reduction.
- 10 million cycle maintenance-free.
- T-slot style jaws for heavy loads.
- Weight-dimensions-force best trade off.
- Rotary actuator fitting compatible.
- Optional magnetic sensors.



MPLM1630

MPLM2535

MPLM3240



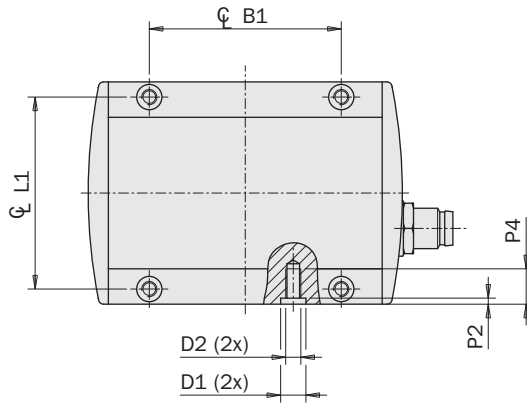


	MPLM1630	MPLM2535	MPLM3240
Forza di serraggio totale <i>Total gripping force</i>	63 N	98 N	210 N
Corsa <i>Stroke (±0.3 mm)</i>	2x15 mm	2x17.5 mm	2x20 mm
Frequenza alla temperatura ambiente di 30°C <i>Frequency at an ambient temperature of 30°C</i>	0.51 Hz	0.93 Hz	0.70 Hz
Tempo chiusura griffe <i>Jaw closing time</i>	0.37 s	0.42 s	0.50 s
Tempo di lavoro pinza <i>Working gripper time</i>	0.52 s	0.53 s	0.53 s
Ciclo di lavoro alla temperatura ambiente di 30°C <i>Duty cycle at an ambient temperature of 30°C</i>	54%	100%	74%
Tensione d'alimentazione <i>Power supply</i>	24 Vdc ±10%	24 Vdc ±10%	24 Vdc ±10%
Corrente di picco <i>Peak current</i>	0.9 Apk	1.2 Apk	3.8 Apk
Corrente nominale <i>Nominal current</i>	0.3 Arms	0.4 Arms	0.8 Arms
Potenza motore brushless <i>Brushless motor power</i>	6 W	11 W	23 W
Connessione <i>Connection</i>	M8 - 3 poli M8 - 3 poles		
Segnale d'ingresso apertura/chiusura <i>Open/closed input signal</i>	PNP open collector PNP open collector		
Ripetibilità <i>Repetition accuracy</i>	0.02 mm	0.02 mm	0.02 mm
Temperatura di esercizio <i>Operating temperature</i>	5° ÷ 60°C	5° ÷ 60°C	5° ÷ 60°C
Grado di protezione <i>Environmental Degree</i>	IP54	IP54	IP54
Rumorosità <i>Noise level</i>	< 70 dB	< 70 dB	< 70 dB
Massa (motore incluso) <i>Mass (motor included)</i>	263 g	500 g	844 g
Certificazione Camera Bianca IPA <i>IPA Clean Room Certification</i>	-	-	-
Normative di riferimento <i>Reference standards</i>	EN 61000-6-2 + EC + IS1; EN 61000-6-3 + A1		
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jxx	0.82 kgcm <sup>2</sup>	2.32 kgcm <sup>2</sup>
	Jyy	1.07 kgcm <sup>2</sup>	3.03 kgcm <sup>2</sup>
	Jzz	0.98 kgcm <sup>2</sup>	2.96 kgcm <sup>2</sup>
Tecnologia e opzioni <i>Technology and options</i>	Pagina 570 - 571 Page 570 - 571		

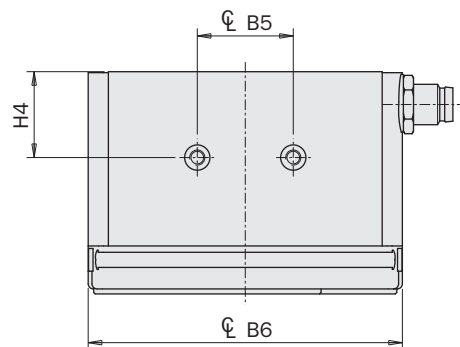
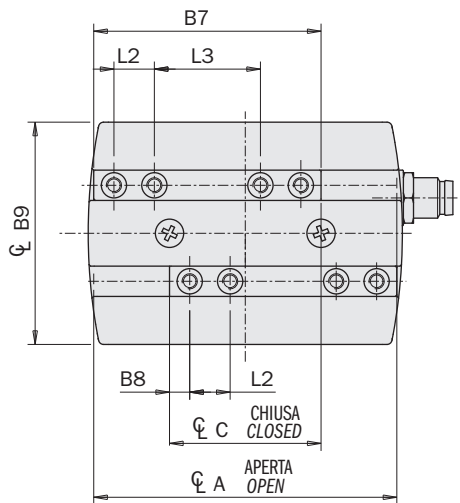
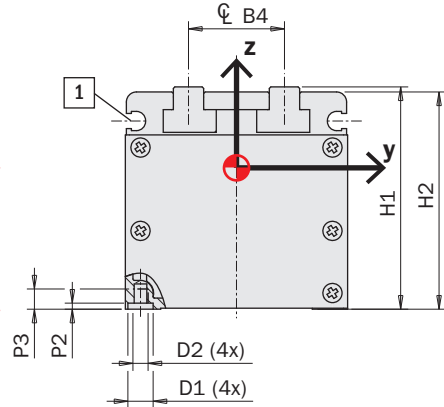
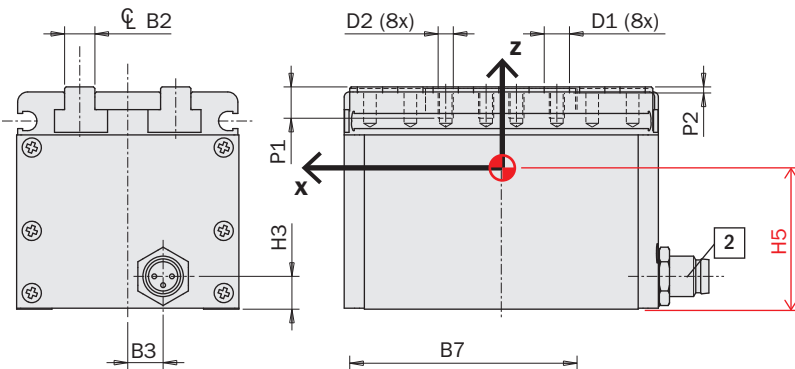
Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

## Dimensioni (mm) Dimensions (mm)

FIRST ANGLE  
PROJECTION



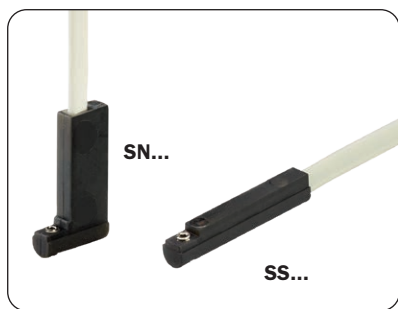
- 1 Cava per sensore magnetico  
Magnetic sensor slot
- 2 Connessione elettrica  
Electrical connection



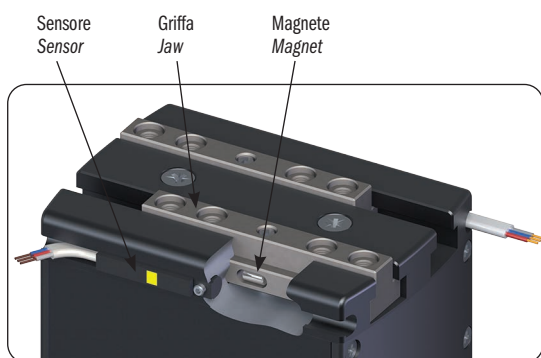
		MPLM1630	MPLM2535	MPLM3240
A		60	74	88
B1	±0.02	38	45	54
B2		6	8	9
B3		7	17	15
B4		19	23	28
B5	±0.02	19	25	30
B6		62.2	77	91
B7		45	56.5	68
B8		4	5	6.5
B9		44	54	62
C		30	39	48
D1		Ø5 H8	Ø7 H8	Ø7 H8
D2		M3	M4	M5
H1		44	54	62
H2		43	53	61
H3		6.5	11.7	9.5
H4	±0.02	17	19.5	23
H5		26.6	32.2	36.7
L1	±0.02	38	45	54
L2	±0.02	8	12	14
L3		21	22.5	27
P1		6.2	8	8.5
P2	+0.1	1.2	1.5	1.5
P3		4	6	8
P4		7	6	14

### Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso i magneti sulle griffe. Per i dettagli si veda la sezione "Accessori".



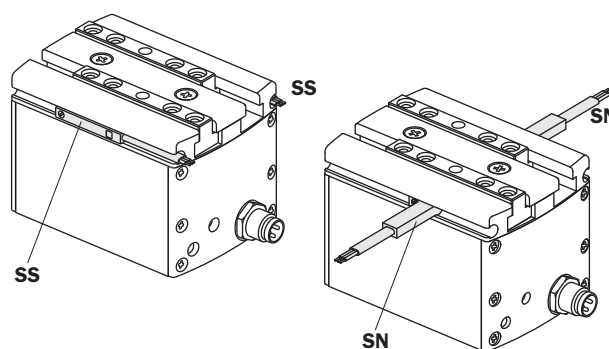
Sono tutti dotati di un cavo piatto a tre fili e di un led.



### Sensors

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by the magnets on the jaws inside. For details, see the "Accessories" section.

They are all provided with a 3-wire flat cable and a LED.



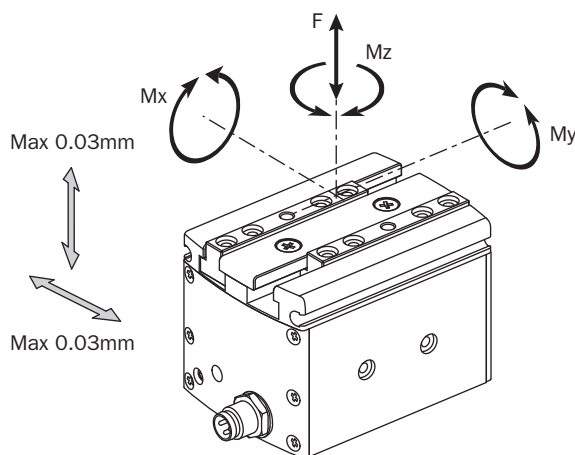
### Carichi di sicurezza e giochi

Consultare la tabella per i carichi massimi ammissibili. Forze e coppie eccessive possono danneggiare la pinza e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore.  $F_s, M_x s, M_y s, M_z s$ , sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme.  $F_d, M_x d, M_y d, M_z d$ , sono i carichi massimi ammissibili in condizioni dinamiche, cioè con le griffe in movimento. La tabella mostra inoltre la massa ammissibile (m) per ogni dito di presa quando la pinza è usata al massimo delle prestazioni. La figura sotto mostra anche il gioco massimo delle griffe.

	MPLM1630	MPLM2535	MPLM3240
$F_s$	60 N	120 N	180 N
$M_x s$	3 Nm	8 Nm	20 Nm
$M_y s$	3 Nm	8 Nm	20 Nm
$M_z s$	3 Nm	8 Nm	20 Nm
$F_d$	0.6 N	1.2 N	2 N
$M_x d$	3 Ncm	8 Ncm	20 Ncm
$M_y d$	3 Ncm	8 Ncm	20 Ncm
$M_z d$	3 Ncm	8 Ncm	20 Ncm
m	60 g	120 g	200 g

### Safety loads and backlashes

Check the table for the maximum permitted loads. Excessive forces or torques can damage the gripper, cause operation problems and endanger the safety of the operator.  $F_s, M_x s, M_y s, M_z s$ , are the maximum permitted loads under static conditions, that is with motionless jaws.  $F_d, M_x d, M_y d, M_z d$ , are the maximum permitted loads under dynamic conditions, that is with running jaws. The following table also shows the maximum permitted load (m) on each gripping tool when the gripper operates at peak performance. The picture below shows also the jaw maximum backlash.





## Soluzione per manipolazione in camera bianca

Le pinze elettriche Gimatic possono operare in aree produttive ad elevato livello di pulizia e igiene mediante integrazione del KIT-GMPLM3240. L'uso di un adattatore consente di fissare la pinza elettrica ad un'interfaccia robot (non inclusa) e di proteggerne il funzionamento con una cover silconica sterilizzabile.

Il fissaggio delle dita di presa (non incluse) è reso possibile mediante speciali viti igieniche in acciaio inossidabile. Il sistema soddisfa i requisiti richiesti dalle massime classi di pulizia GMP (good manufacturing practice) di livello A e B.

Le principali caratteristiche sono:

- Adatto per pinze MPLM3240 (1), MPLF3270 (2) e MPCF3270 (3).
- Classi di pulizia GMP A e B.
- Cover realizzata in Silicone Silpuran® Wacker FDA 21 CFR §177.2600.
- Compatibile con procedura di pulizia con perossido di idrogeno (VHP-H<sub>2</sub>O<sub>2</sub>) e raggi ultravioletti UV.
- Grado di protezione del sistema completo IP65.
- Certificazione ISO14644-1 per camera bianca ISO 5.
- Viti igieniche in acciaio inossidabile (Novonox).
- Superficie trasparente che permette la lettura dei LED dei sensori interni o dei LED di stato dell'alimentazione.
- Superfici dal design igienico che prevengono l'accumulo di batteri.
- Semplice fissaggio delle dita di presa con sistema antirotazione.


## Cleanroom Gripping Solution

Gimatic electric grippers can operate in environments characterised by a high standard of cleanliness and hygiene by integrating the KIT-GMPLM3240. An adapter enables fastening the electric gripper to a robot interface (not included) and protecting its operation by means of a sterilisable silicone cover. The gripping fingers (not included) can be fastened by means of special hygienic stainless steel screws. The systems meets the most stringent GMP (Good Manufacturing Practice) cleanliness standards for Grade A and B.

Its main characteristics are:

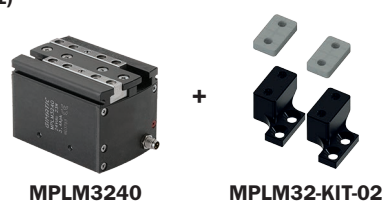
- Suitable for the MPLM3240 (1), MPLF3270 (2) and MPCF3270 (3) grippers.
- Compliant with GMP Grade A and B cleanliness standards.
- Cover made in Silicone Silpuran® Wacker FDA 21 CFR §177.2600.
- Compatible with hydrogen peroxide (VHP-H<sub>2</sub>O<sub>2</sub>) and UV cleaning procedures.
- Complete system with IP65 protection rating.
- ISO14644-1 certification for ISO 5 cleanrooms.
- Stainless steel hygienic screws (Novonox).
- Transparent surface that enables reading the LEDs of the internal sensors and the power supply status LEDs.
- Hygienic design surfaces preventing the build-up of bacteria.
- Easy fastening of gripping fingers with anti-rotation system.






**KIT-GMPLM3240**

(1)



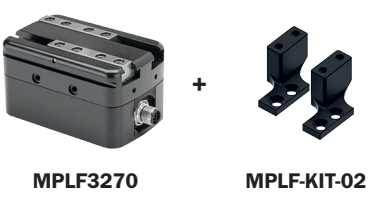
**MPLM3240** + **MPLM32-KIT-02**

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**KIT-GMPLM3240**

(2)



**MPLF3270** + **MPLF-KIT-02**


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**KIT-GMPLM3240**

(3)

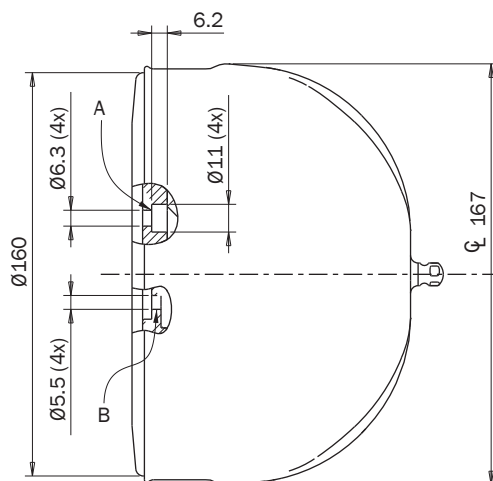
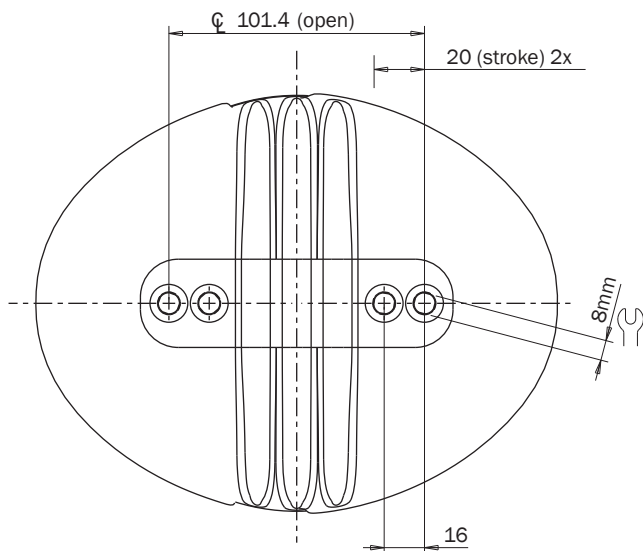
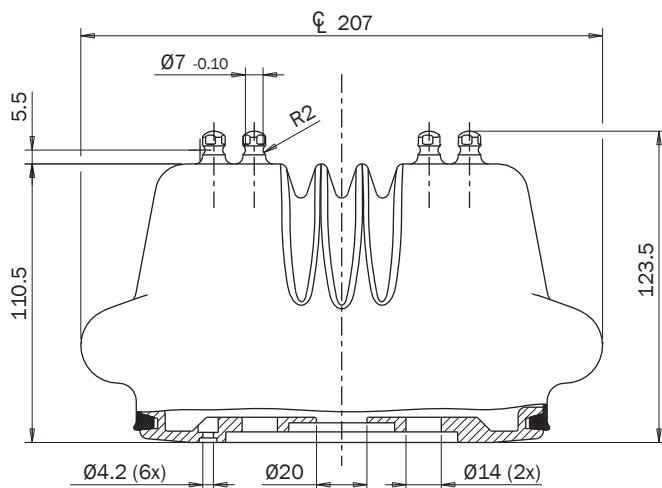
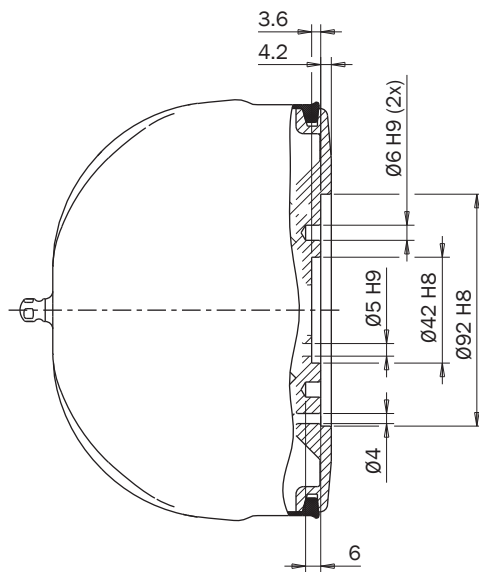
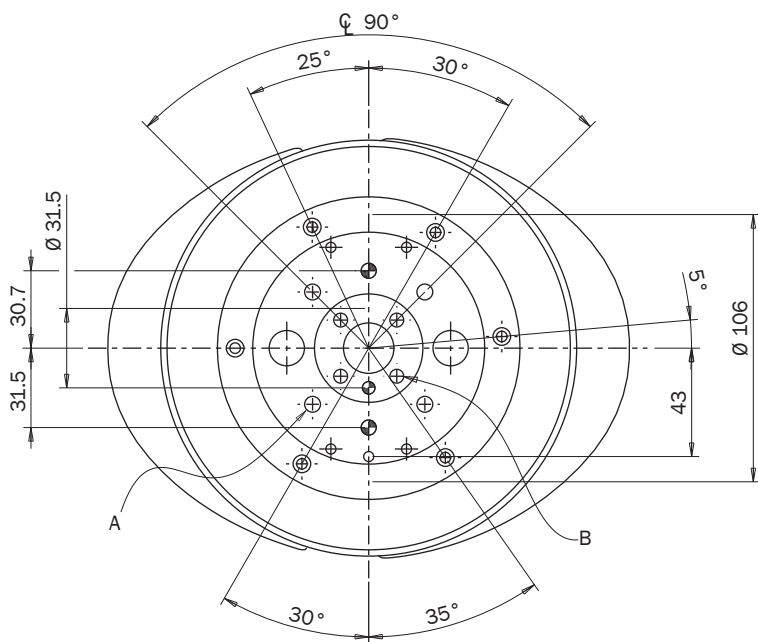
COMING SOON



**MPCF3270** + **MPCF-KIT-01**



**Dimensioni (mm)**  
**Dimensions (mm)**



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

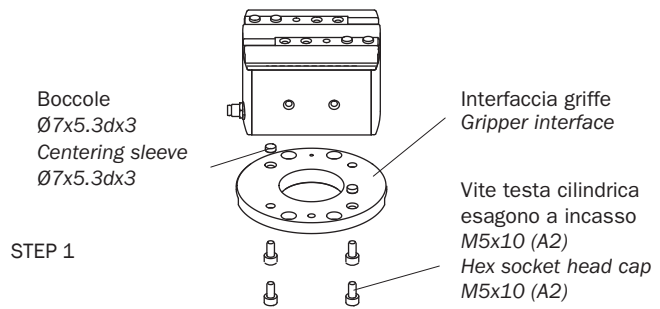
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

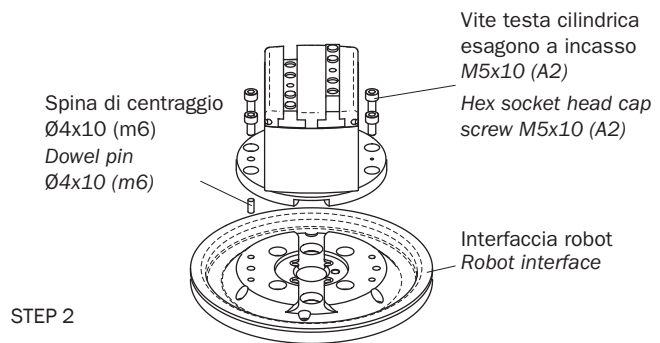
## Assemblaggio Assembly

- Montare la pinza (non inclusa nel KIT-GMPLM3240) sulla piastra di interfaccia della pinza utilizzando le viti a testa cilindrica con esagono incassato e le boccole di centraggio incluse nel kit, formando così il sottosistema pinza.



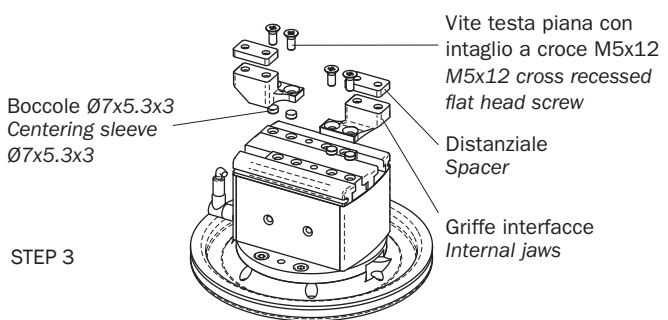
- Mount the gripper (not included in the KIT-GMPLM3240 box) onto the gripper interface using the hex socket head cap screws and the centering sleeves included in the box and forming the gripper subsystem.

- Connettere il connettore M8 femmina alla pinza ed eventualmente guidare il cavo attraverso il foro al centro della piastra di interfaccia della pinza (a seconda dell'applicazione e della messa in funzione del robot).
- Fissare il sottosistema pinza sulla piastra di interfaccia del robot utilizzando le viti e spine di centraggio, formando così il sotto assieme pinza.
- Coppia di serraggio applicabile alle viti = 1.5 Nm.



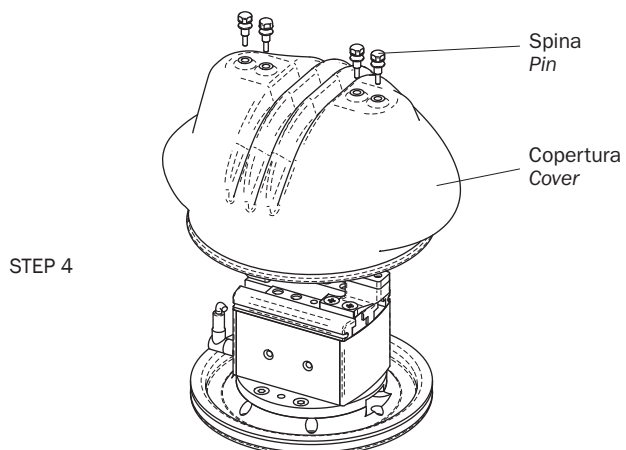
- Connect the female M8 connector to the gripper and eventually drive the cable below the gripper interface along the central groove of the robot interface (depending on the application constraint and commissioning of the robot).
- Fix gripper subsystem onto the robot interface using the screws and the centering pin forming the gripper subassembly.
- Maximum clamping torque of the screws = 1.5 Nm.

- Fissare le griffe interne e i distanziali utilizzando le viti a testa piana con intaglio a croce e le boccole di centraggio incluse nel kit.



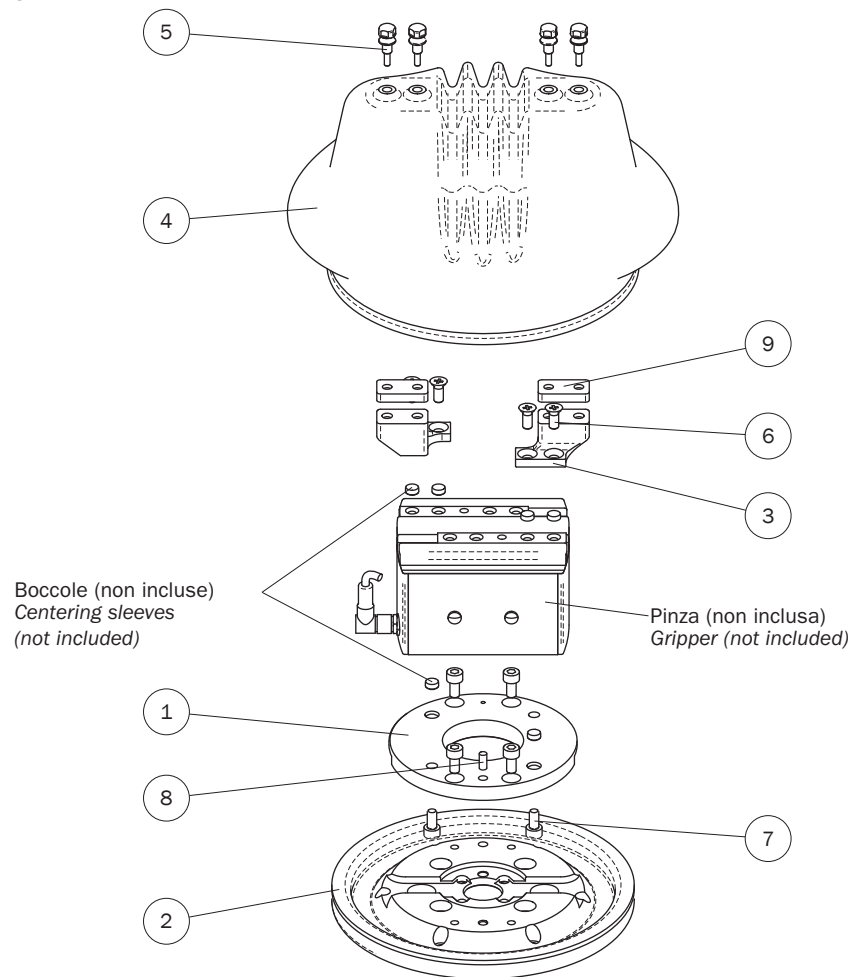
- Fix the internal jaws and the spacers using the cross recessed countersunk head screws and the centering sleeves included in the box.

- Infine, installare la cover di silicone e i pin esterni. Prestare attenzione che la cover di silicone sia correttamente inserita in ogni punto nella cava circolare della interfaccia del robot.



- Finally, install the silicon cover and the external pins. Pay attention the silicon cover is correctly in place inside the circular groove of the robot interface all around the part.

## Elenco delle parti Part list



## Parti incluse Included parts

Q.tà	Descrizione	Q.tà	Peso	Descrizione	Q.tà
1	Interfaccia pinza	1	120 g	Gripper interface	1
2	Interfaccia robot	1	400 g	Robot interface	2
3	Griffe interfacce	2	20 g	Internal jaws	3
4	Cover	1	152 g	Cover	4
5	Spina	4	5.3 g	Pin	5
6	Vite testa piana M5x12 inox a2	4	2 g	Cross recessed flat countersunk head M5x12 inox a2	6
7	Vite testa cilindrica esagono incassato M5x10 inox a2	8	2.9 g	Hex socket head cap M5x10 inox a2	7
8	Spina di centraggio ø4x10 (m6)	1	1.5 g	Dowel pin ø4x10 (m6)	8
9	Distanziale	2	1 g	Spacer	9

## Marcatura CE

Il sistema è conforme con:

Directive 2004/108/CE, EN 62233 (2008-04), EN 61000-6-2+EC+IS1 (2005-08; 2005-09; 2005-11), EN 61000-6-3+A1 (2007-01; 2011-03), EN 61000-6-4 (2007-01), EN 55016-2-1+A1 (2004-10; 2005-08), EN 55016-2-3 (2006-12), EN 61000-4-2 (2009-03), EN 61000-4-3+A1+IS1+A2 (2006-05; 2008-02; 2009-02; 2010-07), EN 61000-4-4+A1 (2004-12; 2010-03), EN 61000-4-5 (2006-11), EN 61000-4-6+A1+IS1 (1996-07; 2001-12; 2004-07), EN 61000-4-6 (2009-03), CEI EN 60529 (1997-06).

## Certificazioni IPA

Il sistema è dichiarato adatto per l'uso in camera bianca dall'istituto Fraunhofer, come indicato nella relazione N° GI 1904-1109.

## CE Marking reference

The system is in conformance with:

## IPA Certification reference

The system has been declared suitable for use in hygienic areas by Fraunhofer IPA Institute as stated in report No. GI 1904-1109.

## Pinza servo elettrica parallela corsa lunga 2 griffe autocentrante

- Controllo tramite elettronica esterna.
- Motore senza spazzole a lunga vita elettrica (Brushless DC).
- Alimentazione in bassa tensione 24 Vdc.
- Connessione M12-12 poli standard.
- Meccanismo di autocentraggio.
- Esente da manutenzione per 10 milioni di cicli.
- Griffe a T per carichi elevati.
- Miglior compromesso peso-dimensioni-forza.
- Sensori magnetici opzionali.
- Encoder incrementale integrato.

## Self-centering 2-jaw servo-electric parallel gripper with long stroke

- Control via external electronics.
- Long life Brushless motor (Brushless DC).
- 24 Vdc Low voltage power supply.
- M12-12 poles standard connection.
- Self-centering system.
- 10 million cycle maintenance-free.
- T-slot style jaws for heavy loads.
- Weight-dimensions-force best trade off.
- Optional magnetic sensors.
- Integrated incremental encoder.



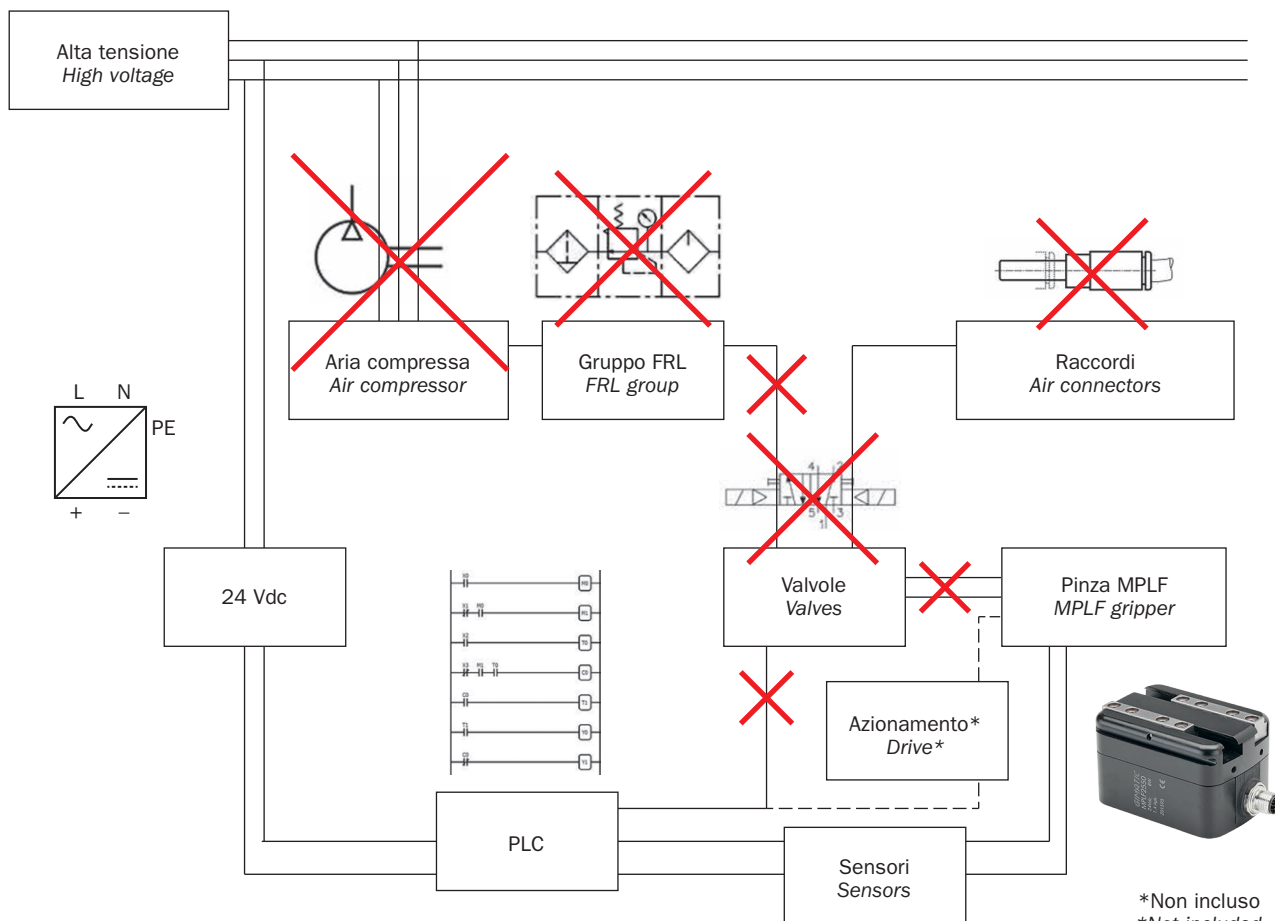
MPLF1630



MPLF2550



MPLF3270



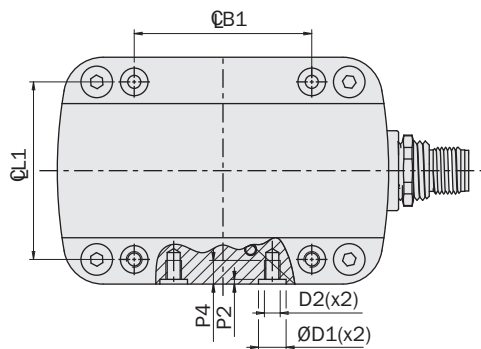


	MPLF1630	MPLF2550	MPLF3270
Corsa Stroke	30 mm (2x15mm)	50 mm (2x25mm)	70 mm (2x35mm)
Forza di presa nominale (picco) Nominal gripping force (peak)	45 N (100 N)	100 N (250 N)	160 N (470 N)
Tempo di chiusura griffe (corsa completa) Jaw closing time (full stroke)	0.15 s	0.2 s	0.25 s
Massa totale Total mass	250 g	500 g	840 g
Corrente nominale Rated current	0.32 A	0.4 A	1.5 A
Corrente di picco Peak current	0.8 A	1.4 A	4.8 A
Alimentazione Supply	24 V	24 V	24 V
Velocità senza carico No load speed	9500 rpm	4500 rpm	6500 rpm
Numero di coppie polari Number of Pole Pairs	4	6	8
Rapporto trasmissione encoder/motore Gear ratio encoder/motor	1/5	2/9	1/5
Resistenza fase-fase Line to Line resistance	25.8 ohm	12.9 ohm	1.47 ohm
Induttanza fase-fase Line to Line inductance	2.8 mH	5.34 mH	0.61 mH
Grado di protezione Environmental degree	IP40		
Temperatura di esercizio Temperature range	+5°C - 60°C		
Risoluzione all'asse del motore Resolution @ motor axis	51 impulsi / giro 51 pulse/turn	57 impulsi / giro 57 pulse/turn	51 impulsi / giro 51 pulse/turn
Risoluzione all'asse dell'encoder Resolution @ encoder axis	256 impulsi / giro 256 pulse/turn		
Tipo di feedback Feedback type	Encoder incrementale ABZ ABZ incremental encoder		
Tipo di motore Motor type	Motore brushless + sensore Hall Brushless Motor +Hall sensor		
Configurazione di avvolgimenti Winding configuration	Stella Star		
Costante termica motore Thermal time constant winding	3 s	5 s	10 s
	<b>RISOLUZIONE ALLE GRIFFE POSITION RESOLUTION @ JAWS</b>		
MPLF1630	0.06 mm/impulsi 0.06 mm/pulse		
MPLF2550	0.06 mm/impulsi 0.06 mm/pulse		
MPLF3270	0.07 mm/impulsi 0.07 mm/pulse		

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

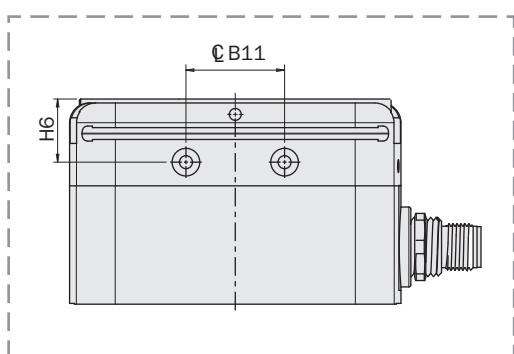
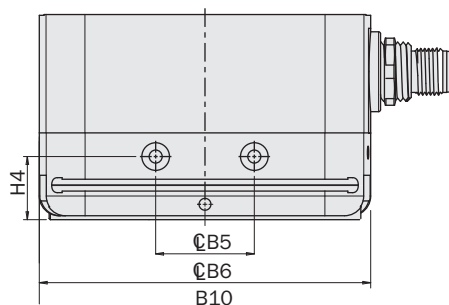
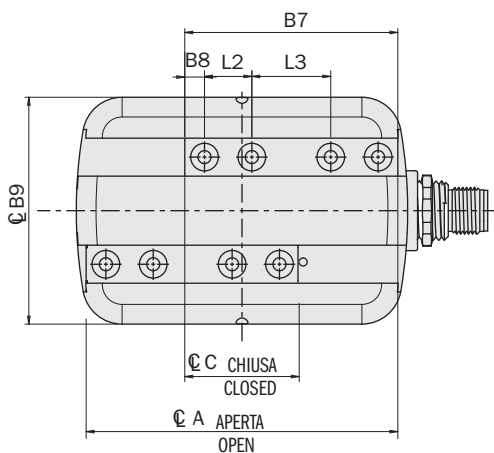
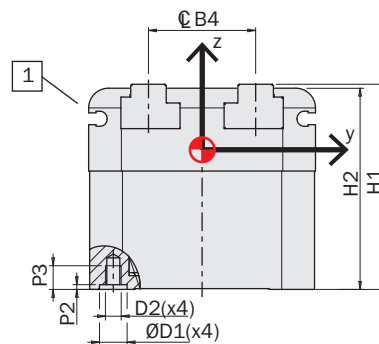
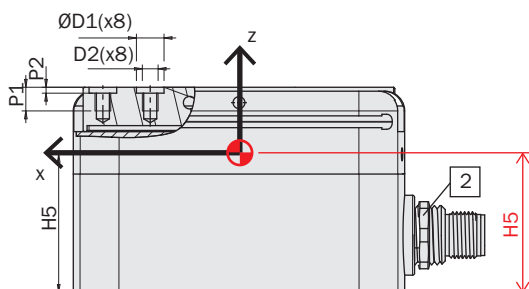
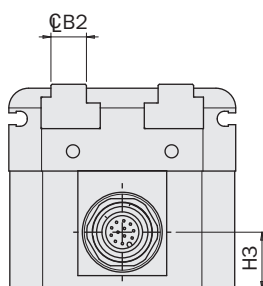
## Dimensioni (mm) Dimensions (mm)

FIRST ANGLE  
PROJECTION



1 Cava per sensore magnetico  
Magnetic sensor slot

2 Connessione elettrica  
Electrical connection



		MPLF 1630	MPLF 2550	MPLF 3270
A		50	79	95
B1	+0.02	38	45	54
B2		6	9	10
B3		/	/	/
B4		22.2	27.2	30.5
B5		20	25	/
B6		52.2	84	100
B7		35	54	60
B8		4	5	6.5
B9		45.5	57.5	62.5
B10		79.7	105	111
B11		/	/	30
C		20	29	25
D1		5 H8	7 H8	7 H8
D2		M3	M4	M5
H1	+0.02	47	52	55
H2		46	51	54
H3		14.5	14.5	14.5
H4		14.5	16	/
H5		36.3	29.5	31.5
H6		/	/	20.5
L1	+0.02	38	45	54
L2		8	12	14
L3		11	20	19
P1		6	6	7.2
P2	+0.1 +0	1.2	1.5	1.5
P3		6	6	8
P4		6	6	8

## Connessione elettrica

La pinza è dotata di connettore maschio M12-12 poli per l'alimentazione e la connessione dei sensori di HALL e del feedback (encoder incrementale) con l'elettronica esterna.

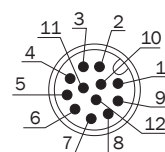
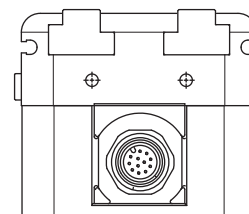
Il motore è un Brushless con sensori di HALL.

## Electrical connection

The gripper is equipped with a M12-12 poles male connector for power supply, HALL sensors and feedback (incremental encoder) with an external drive.

The Brushless motor has HALL sensors.

PIN	Colore Color	Nome Name	Descrizione Description
1	Marrone Brown	HU	Sensore HALL 1 Hall sensor 1
2	Blu Blue	HW	Sensore HALL 3 Hall sensor 3
3	Bianco White	B	Segnale Encoder Encoder Signal
4	Verde Green	A	Segnale Encoder Encoder Signal
5	Rosa Pink	U	Fase 1 Phase 1
6	Giallo Yellow	V	Fase 2 Phase 2
7	Nero Black	W	Fase 3 Phase 3
8	Grigio Grey	GND	GND Ground
9	Rosso Red	+5V	Alimentazione 5V Power Supply 5V
10	Viola Violet	HV	Sensore HALL 2 Hall sensor 2
11	Grigio-Rosa Grey-Pink	Z	Segnale Encoder Encoder Signal
12	Rosso-Blu Red-Blue	N.C	Non Connesso Not Connected



Il segnale Z non è indicativo della corsa, ma solo dei giri del motore.

Z signal doesn't indicate the stroke, but only motor rotations.

## Kit di valutazione

La scelta del drive è a discrezione dell'utente. Gimatic offre due Kit di valutazione per le pinze MPLF. Includono drive compatibili, cablaggio e istruzioni d'uso.

MPLF-KIT-01: Basato su drive Maxon Epos4. Può essere configurato tramite applicativo Windows ed è adatto in applicazioni che prevedono un puro nodo CanOpen slave.

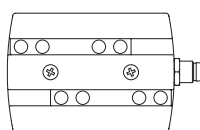
MPLF-KIT-11: Basato su drive miControl mcDSA-E50. Può essere configurato tramite applicativo Windows ed è adatto sia per applicazioni basate su un Fieldbus slave, sia per applicazioni Stand-Alone (interfacciamento tramite I/O e/o programmazione con linguaggio Python).

## Evaluation Kits

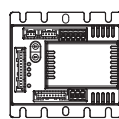
La scelta del drive è a discrezione dell'utente. Gimatic offre due Kit di valutazione per le pinze MPLF. Includono drive compatibili, cablaggio e istruzioni d'uso.

MPLF-KIT-01: Basato su drive Maxon Epos4. Può essere configurato tramite applicativo Windows ed è adatto in applicazioni che prevedono un puro nodo CanOpen slave.

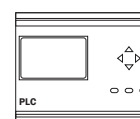
MPLF-KIT-11: Basato su drive miControl mcDSA-E50. Può essere configurato tramite applicativo Windows ed è adatto sia per applicazioni basate su un Fieldbus slave, sia per applicazioni Stand-Alone (interfacciamento tramite I/O e/o programmazione con linguaggio Python).



MPLF con connettore M12 – 12 poli  
MPLF with M12 12 poles connector



Servo Drive 24 Vdc  
Servo Drive 24 Vdc



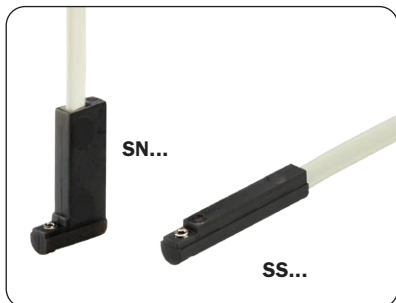
Connessione Fieldbus  
Servo Drive 24 Vdc



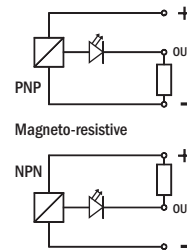
## Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso i magneti sulle griffe. Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.

I sensori utilizzabili sono:

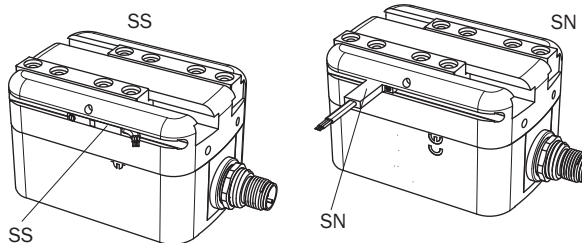
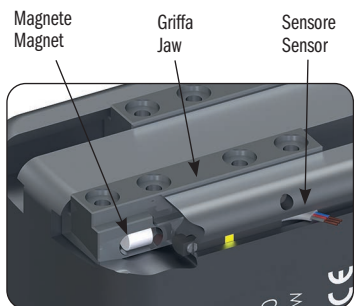


SN4N225-G SS4N225-G	PNP	Cavo 2.5m 2.5m cable
SN4M225-G SS4M225-G	NPN	Cavo 2.5m 2.5m cable
SN3N203-G SS3N203-G	PNP	Connettore M8 Snap M8 plug connector
SN3M203-G SS3M203-G	NPN	Connettore M8 Snap M8 plug connector



Sono tutti dotati di un cavo piatto a tre fili e di un led.

They are all provided with a 3-wire flat cable and a LED.



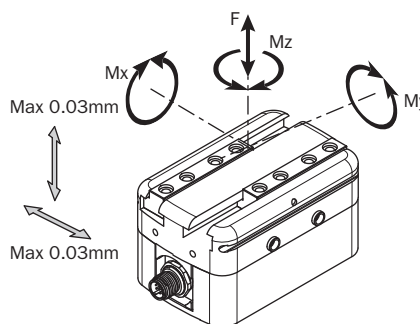
## Carichi di sicurezza e giochi

Consultare la tabella per i carichi massimi ammissibili. Forze e coppie eccessive possono danneggiare la pinza e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore.  $F_s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$ , sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme.  $F_d$ ,  $M_x d$ ,  $M_y d$ ,  $M_z d$ , sono i carichi massimi ammissibili in condizioni dinamiche, cioè con le griffe in movimento. La tabella mostra inoltre la massa ammissibile ( $m$ ) per ogni dito di presa quando la pinza è usata al massimo delle prestazioni. La figura sotto mostra anche il gioco massimo delle griffe.

## Safety loads and backlashes

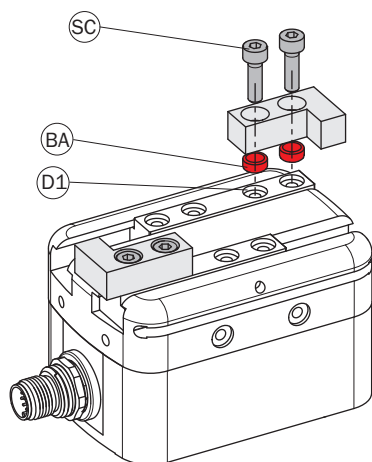
Check the table for the maximum permitted loads. Excessive forces or torques can damage the gripper, cause operation problems and endanger the safety of the operator.  $F_s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$ , are the maximum permitted loads under static conditions, that is with motionless jaws.  $F_d$ ,  $M_x d$ ,  $M_y d$ ,  $M_z d$ , are the maximum permitted loads under dynamic conditions, that is with running jaws. The following table also shows the maximum permitted load ( $m$ ) on each gripping tool when the gripper operates at peak performance. The picture below shows also the jaw maximum backlash.

	MPLF1630	MPLF2550	MPLF3270
$F_s$	60 N	120 N	180 N
$M_x s$	3 Nm	8 Nm	20 Nm
$M_y s$	3 Nm	8 Nm	20 Nm
$M_z s$	3 Nm	8 Nm	20 Nm
$F_d$	0.6 N	1.2 N	2 N
$M_x d$	3 Ncm	8 Ncm	20 Ncm
$M_y d$	3 Ncm	8 Ncm	20 Ncm
$M_z d$	3 Ncm	8 Ncm	20 Ncm
$m$	60 g	120 g	200 g



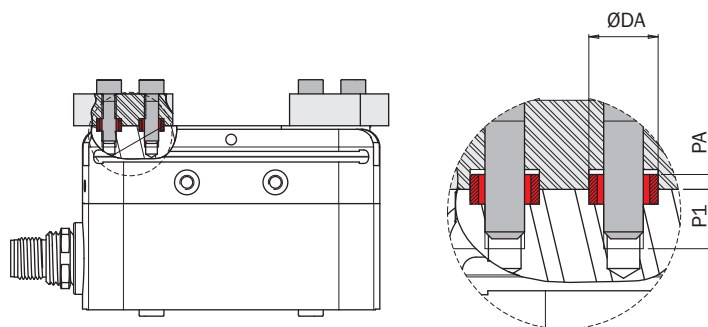
### Fissaggio delle estremità di presa

Costruire le dita di presa il più possibile corte e leggere.  
Fissarle con due viti (SC) e due boccole di centraggio (BA) nei fori calibrati (D1) delle griffe.



### Gripping tool fastening

The gripping tools must be as short and light as possible.  
They must be fastened by two screws (SC) and two centering sleeves (BA) in the calibrated holes (D1) of the jaws.



	MPLF1630	MPLF2550	MPLF3270
DA	Ø5 h7	Ø7 h7	Ø7 h7
P1	6.2	8	8.5
PA	1.2	1.5	1.5
SC	M3	M4	M5

### Compatibilità serie

E' possibile equipaggiare la pinza MPLF3270 con la cover GMP a corsa lunga (codice: KIT-GMPLM3240 + MPLF-KIT-02).

Questa cover, realizzata in silicone, permette di utilizzare la pinza in ambienti estremamente puliti, come l'industria farmaceutica.

Nell'esempio di utilizzo si può notare un azionamento esterno installato sotto la cover (codice: MPLF-KIT-01).

### Serie compatibility

It is possible to equip the gripper MPLF3270 with the cover GMP long stroke (code: KIT-GMPLM3240 + MPLF-KIT-02).

This cover, made of silicone, allows you to use the gripper in extremely clean environments, such as the pharmaceutical industry.

In the example of use you can see an external drive installed under the cover (code: MPLF-KIT-01).

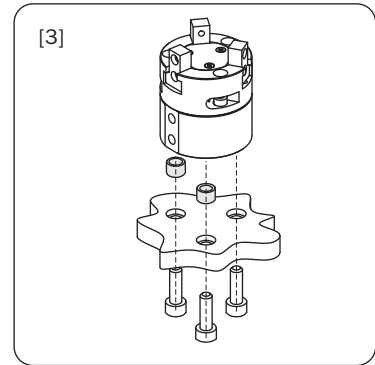
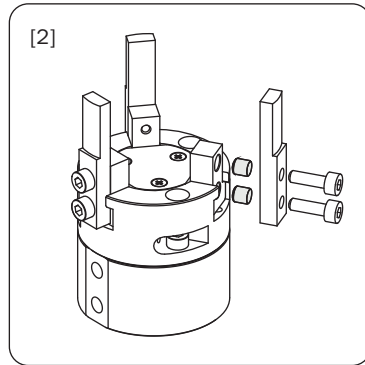
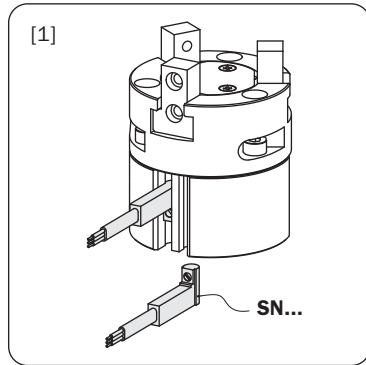


**Pinza pneumatica autocentrante a 3 griffe TGP20**

- Azionamento a doppio effetto.
- Disponibile anche con molla in apertura (TGP20-NO).
- Sensori magneti opzionali [1].
- Grasso alimentare FDA-H1.
- Fornita con boccole di centraggio per griffe [2] e corpo [3].

**3-jaw self-centring pneumatic gripper - TGP20**

- Double-acting drive.
- Also available with spring open (TGP20-NO).
- Optional magnetic sensors [1].
- FDA-H1 food-grade grease.
- Supplied with centring sleeves for jaws [2] and body [3].



I sensori utilizzabili sono:  
Use sensors:

SN4N225-G	PNP	Cavo 2.5m 2.5m cable
SN4M225-G	NPN	
SN3N203-G	PNP	Connettore M8 Snap M8 plug connector
SN3M203-G	NPN	



TGP20



TGP20-NO

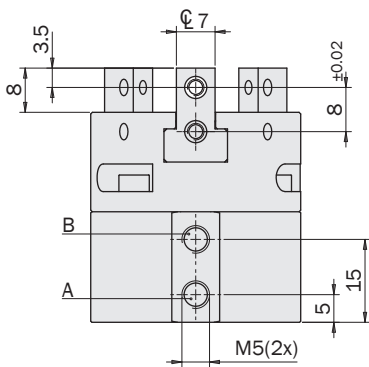
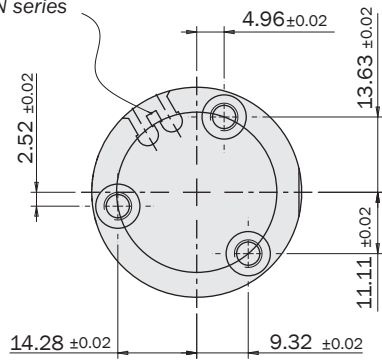
	TGP20	TGP20-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Operating pressure range	2 ÷ 8 bar	4 ÷ 8 bar
Temperatura di esercizio Operating temperature range	5° ÷ 100°C	
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	55 N	65 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	46 N	36 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	165 N	195 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	138 N	108 N
Corsa Stroke (±0.2 mm)	3x4 mm	
Frequenza max funzionamento continuativo Maximum working frequency	3 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	3 cm <sup>3</sup>	
Tempo di chiusura senza carico Closing time without load	0.02 s	0.03 s
Ripetibilità Repetition accuracy	0.02 mm	
Peso Weight	132 g	133 g

Unità Rotanti  
Rotary Units  
Cambia Utensile  
Quick Changer  
Profili e Staffe  
Profiles and Brackets  
Pinze  
Grippers  
Attuatori Lineari  
Linear Actuators  
Sospensioni  
Suspensions  
Taglierini  
Nippers  
Kit-Robot  
Robot Kit  
Accessori Opzionali  
Options  
Sensori  
Sensors

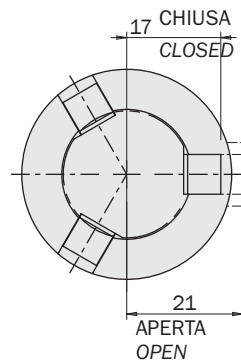
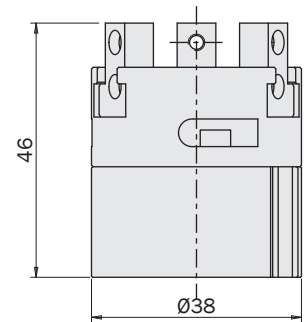
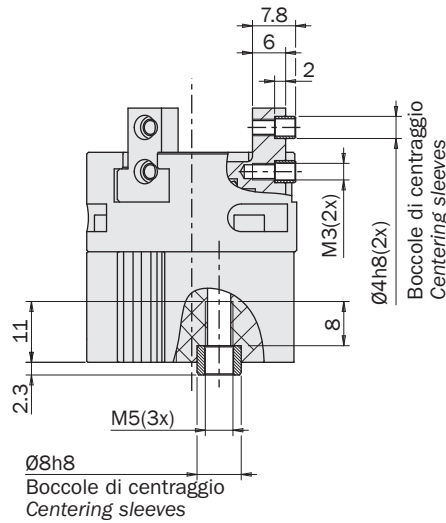
**Dimensioni (mm)**  
**Dimensions (mm)**



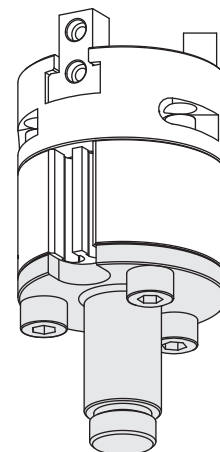
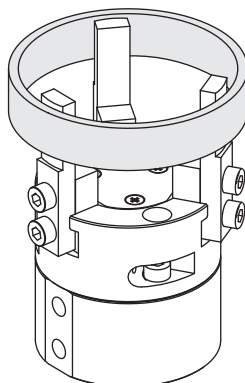
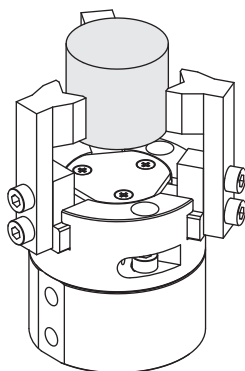
Cava per sensore serie SN  
Sensor slot SN series



Aria compressa in A: apertura della pinza.  
Aria compressa in B: chiusura della pinza.  
Compressed air in A: gripper opening.  
Compressed air in B: gripper closing.



**Esempio di utilizzo**  
**Application example**



TGP20

MFI-A504

## Pinza pneumatica autocentrante a 3 griffe (serie T)

- Integrabile con gli altri elementi del Gimapick.
- Azionamento a doppio effetto.
- Alimentazione dell'aria compressa possibile direttamente dalla piastra di fissaggio.
- Possibilità di fissaggio dalla parte anteriore con viti passanti.
- Elevata forza di serraggio e basso peso.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

## 3-jaw self-centring pneumatic gripper (series T)

- Modular with Gimapick system.
- Double acting.
- Air feeding possible directly from the fixing plate.
- Possibility to mount it on front with through screws.
- High gripping force with low weight.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.



T63



T40

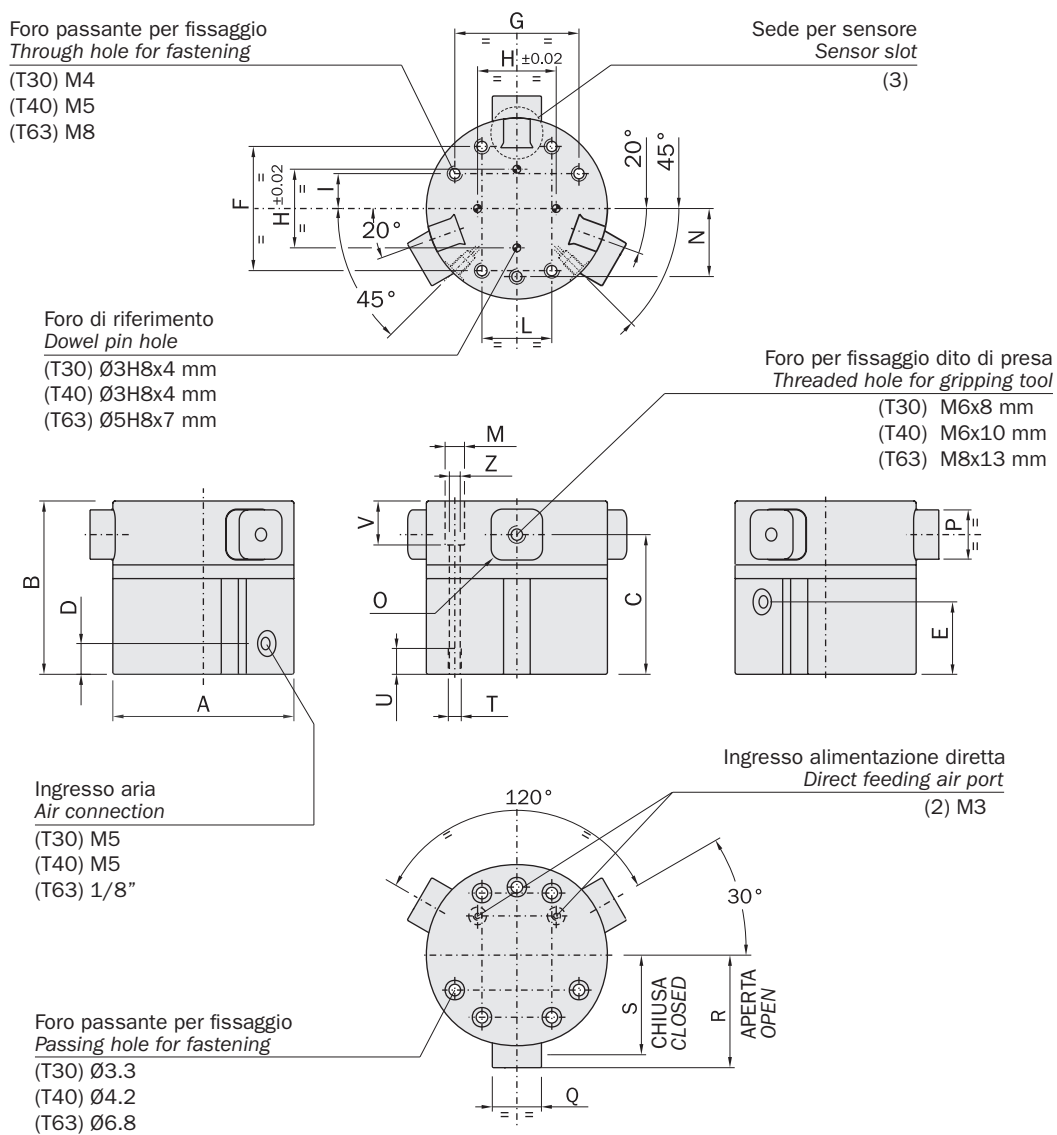


T30

	T30	T40	T63
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	2.5 ÷ 8 bar		
Temperatura di esercizio Operating temperature range	5° ÷ 60°C.		
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	115 N	200 N	480 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	105 N	180 N	440 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	345 N	600 N	1440 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	315 N	540 N	1320 N
Corsa Stroke (±0.2 mm)	3x3 mm	3x5 mm	3x9 mm
Frequenza max funzionamento continuativo Maximum working frequency	4 Hz	3 Hz	2 Hz
Consumo d'aria per ciclo Cycle air consumption	12 cm <sup>3</sup>	19 cm <sup>3</sup>	94 cm <sup>3</sup>
Tempo di chiusura senza carico Closing time without load	0.01 s	0.01 s	0.05 s
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm	0.02 mm
Peso Weight	325 g	745 g	1680 g

**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B	C	D	E	F	G	H ±0.02	I	L	M	N	O	P -0.05	Q -0.05	R	S	T	U	V	Z
T30	Ø50	59	49.5	8	27	37	-	30.4	-	21	Ø6	-	3	14	14	30.5	27.5	M4	8	14	Ø3.3
T40	Ø70	67	54	11.9	28	48	48	30.4	13.5	27	Ø7.5	26.3	4	19	19	43.6	38.5	M5	10	17	Ø4.2
T63	Ø90	90.5	72.8	12	38	66	-	59	-	38	Ø10.5	-	5	26	26	60.6	51.5	M8	16	28.5	Ø6.8

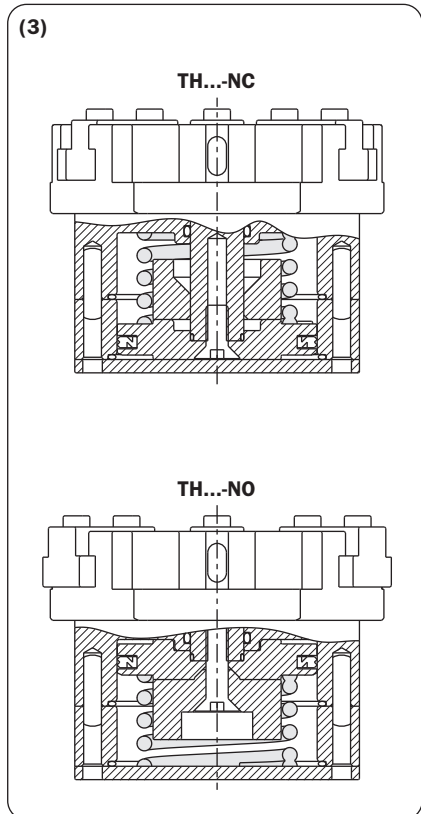
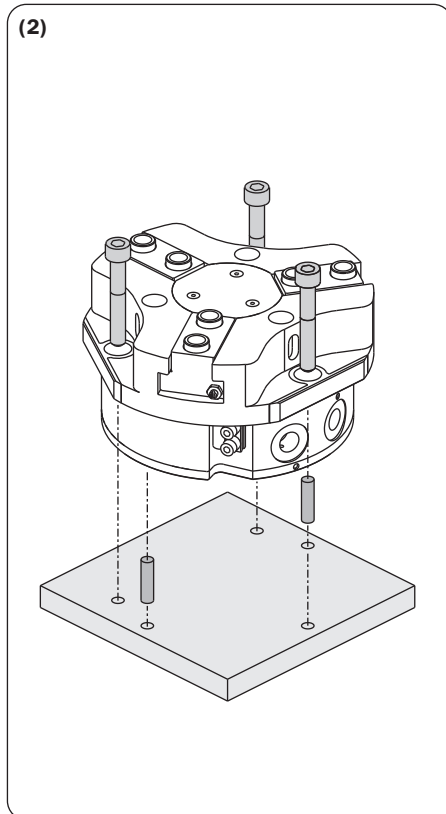
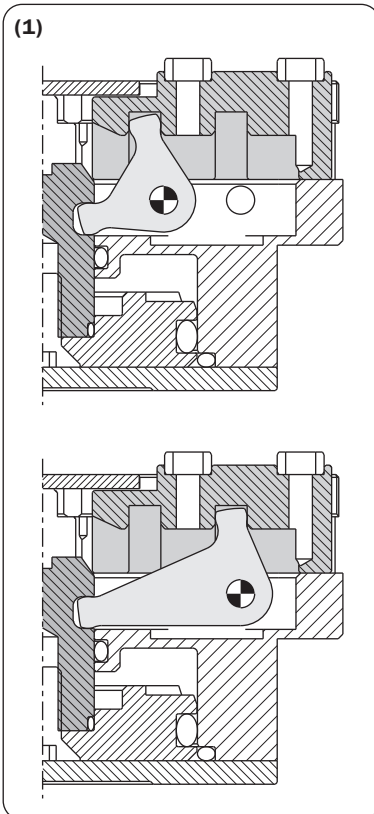


**Pinza pneumatica autocentrante a 3 griffe (serie TH)**

- Azionamento a doppio effetto, con molle opzionali (in chiusura o apertura) (3).
- Corsa lunga o corsa corta (1).
- Possibilità di fissaggio frontale con viti passanti (2).
- Meccanismo di trasmissione ad alta efficienza (1).
- Sensori magnetici o induttivi opzionali.
- Grasso alimentare FDA-H1.

**3-jaw self-centring pneumatic gripper (series TH)**

- Double acting with optional springs (normally closed or normally open) (3).
- Long stroke or short stroke (1).
- Possibility of front fastening with through screws (2).
- High efficiency force transmission (1).
- Optional magnetic or inductive sensors.
- FDA-H1 food-grade grease.



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

## Spintore opzionale

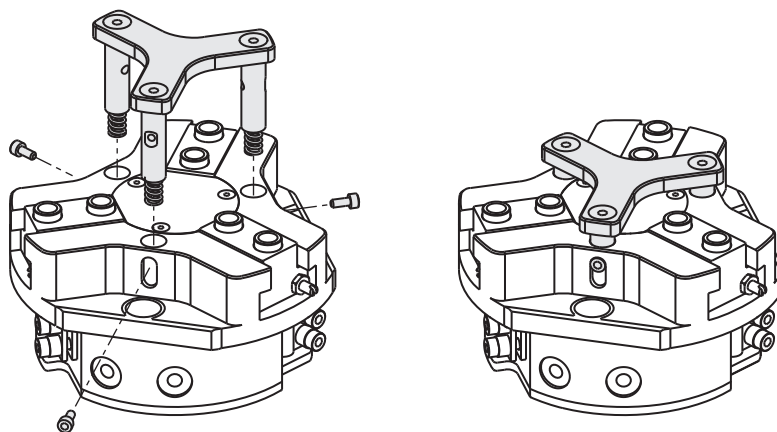
Questo accessorio si può installare sulle pinze TH, per tenere premuto il pezzo durante il rilascio, con una Forza F.  
Ad esempio quando si carica il mandrino di una macchina utensile.

Viene fornito smontato, con i codici indicati in tabella.

## Optional pusher

This accessory can be installed in the TH grippers, to hold the payload during the gripper release, by a pushing force F.  
As an example, when the chuck of a machining equipment is loaded.

It is supplied disassembled, with the codes in the table below.

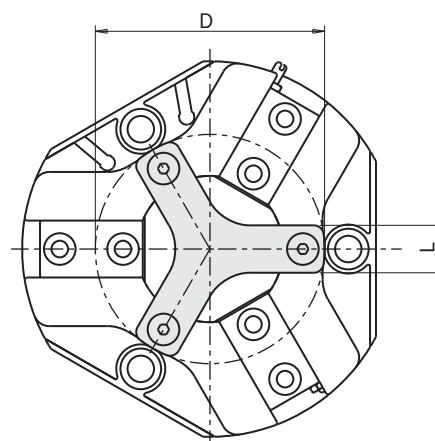
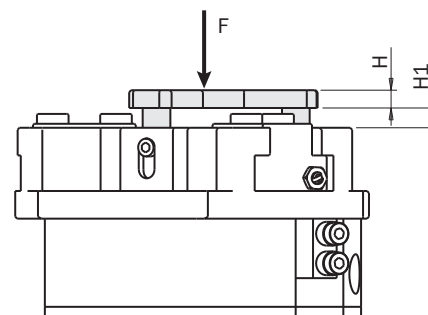


## Forza Force

	TH27K	TH33K	TH45K	TH54K	TH76K	TH96K	TH125K
F	10N	15N	20N	30N	50N	100N	200N

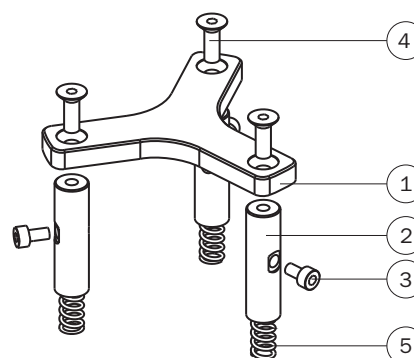
## Dimensioni (mm) Dimensions (mm)

	TH27K	TH33K	TH45K	TH54K	TH76K	TH96K	TH125K
D	Ø28	Ø37	Ø44	Ø58	Ø74	Ø86	Ø118
H	3.5	4	4	4.5	5.5	5.5	6
H1	0÷2.5	0÷3	0÷4	0÷5	0÷5	0÷6	0÷6
L	6.5	8	10	12	14	16	19
m	10g	20g	30g	50g	100g	170g	285g



## Elenco delle parti Part list

	TH27K	TH33K	TH45K	TH54K	TH76K	TH96K	TH125K
1	TH2725-14	TH3304-15	TH4506-09	TH5408-22	TH7610-10	TH9613-10	TH12516-17
2	TH2725-15	TH3304-14	TH4506-10	TH5408-23	TH7610-11	TH9613-11	TH12516-18
3	VITE-434 M1.6x3 DIN7985	VITE-435 M2x4 DIN7985	VITE-436 M2x5 DIN912	VITE-217 M2.5x6 DIN912	VITE-017 M3x6 DIN912	VITE-009 M4x8 DIN912	VITE-275 M4x8 DIN912
4	VITE-068 M2x6 DIN965	VITE-170 M2.5x6 DIN965	VITE-306 M3x8 DIN7991	VITE-305 M4x8 DIN7991	VITE-437 M4x12 DIN7991	VITE-438 M5x12 DIN7991	VITE-438 M5x12 DIN7991
5	TH2725-16	TH3304-16	TH4506-11	TH5408-24	TH7610-12	TH9613-12	TH12516-19





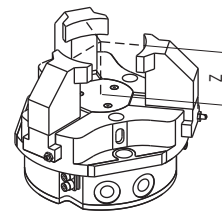
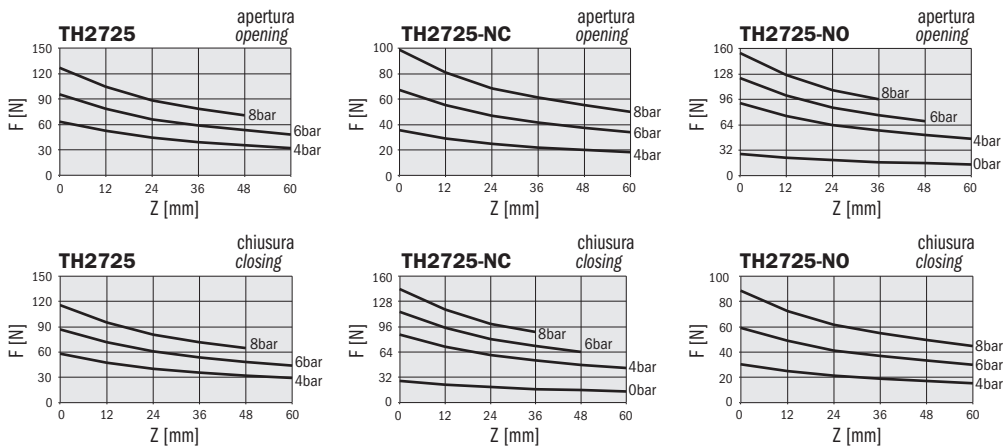
	TH2725	TH2725-NC	TH2725-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Operating pressure range	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar
Temperatura di esercizio Operating temperature range	5 ÷ 100°C.		
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	95N	65 ÷ 70N	121 ÷ 125N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	285N	195 ÷ 210N	363 ÷ 375N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	87N	112 ÷ 117N	57 ÷ 61N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	261N	336 ÷ 351N	171 ÷ 183N
Corsa Stroke (±0.2 mm)	3x2.5mm	3x2.5mm	3x2.5mm
Frequenza max funzionamento Maximum working frequency	3Hz	3Hz	3Hz
Consumo d'aria per ciclo Cycle air consumption	3cm <sup>3</sup>	6cm <sup>3</sup>	6cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.02s / 0.02s	0.01s / 0.02s	0.03s / 0.01s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm
Peso Weight	117g	140g	139g

**Forza di serraggio**

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

**Gripping force**

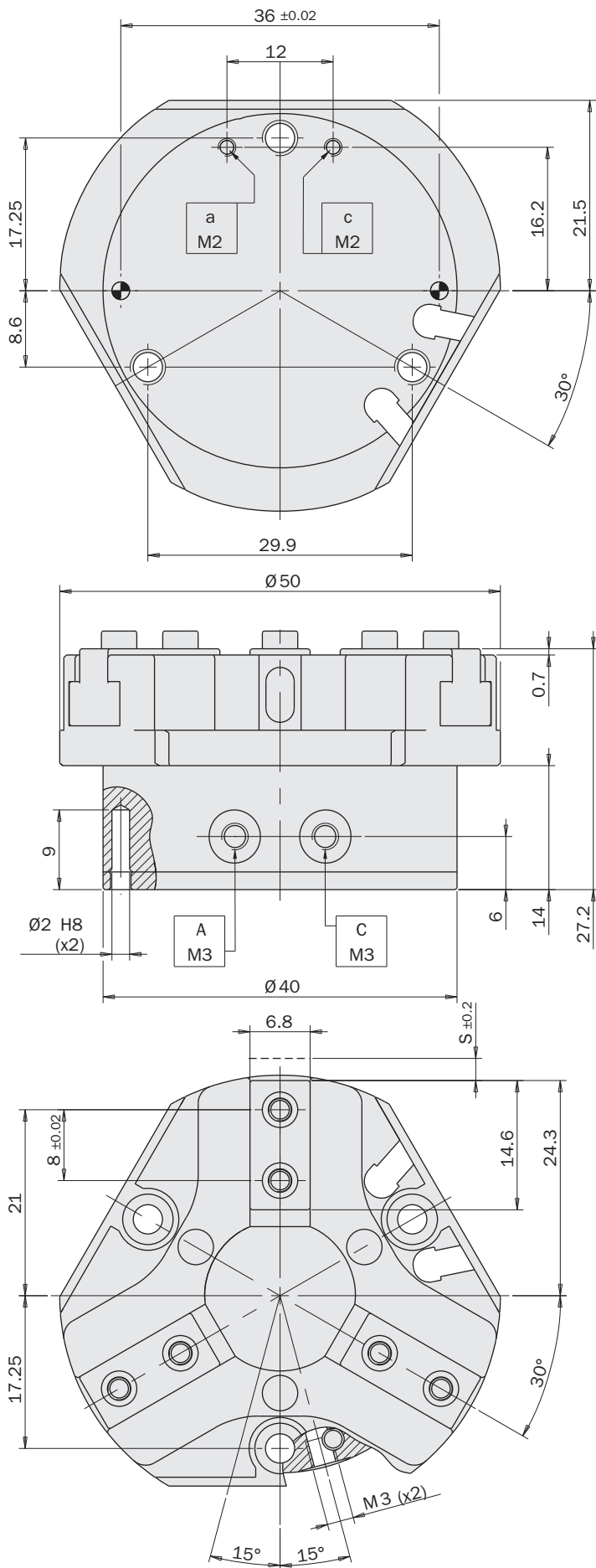
The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.



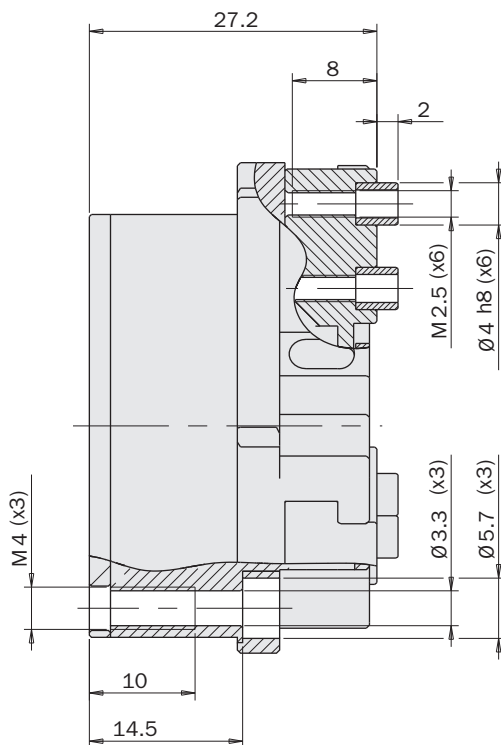
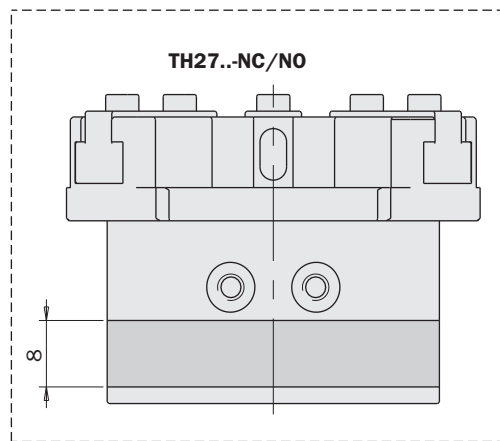
**La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il triplo.**

**The force shown in these graphs refers to one jaw. The total force is triple.**

**Dimensioni (mm)**  
**Dimensions (mm)**



	TH2725	TH2725-NC	TH2725-NO
S	3x2.5mm	3x2.5mm	3x2.5mm



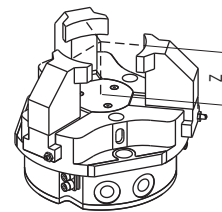
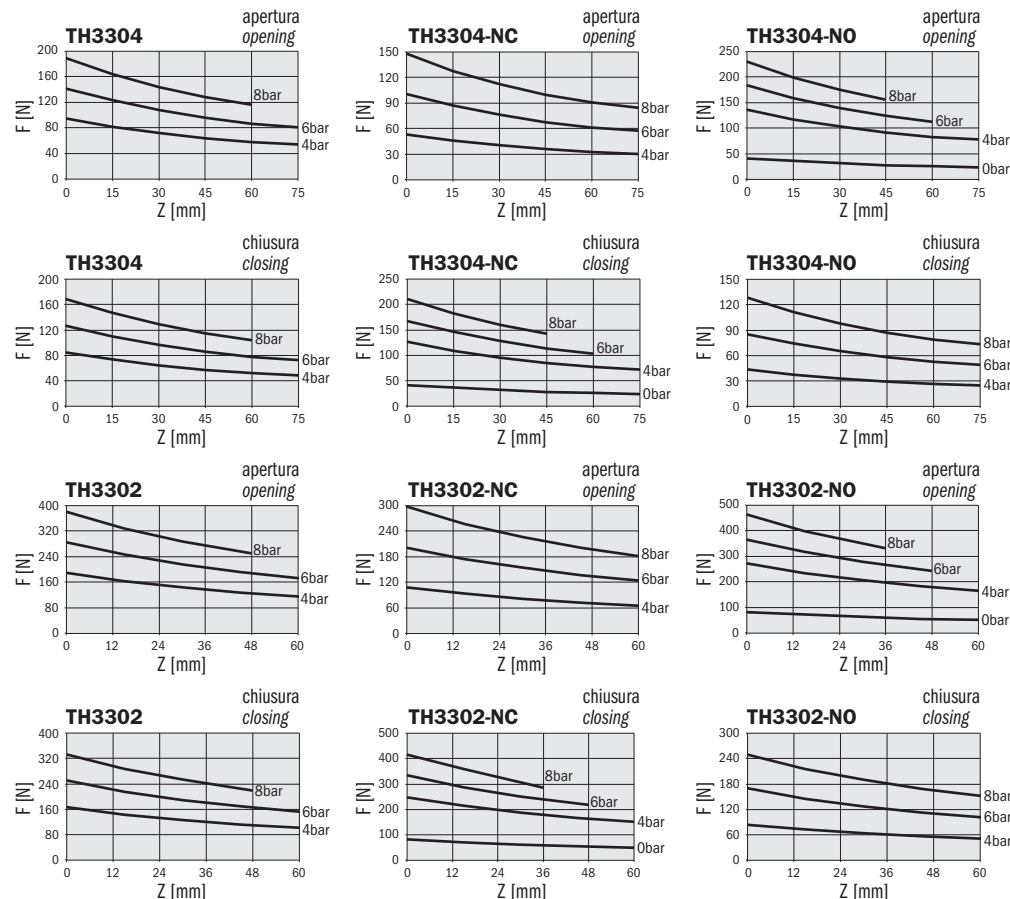
	TH3304	TH3304-NC	TH3304-NO	TH3302	TH3302-NC	TH3302-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar
Temperatura di esercizio Operating temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	142N	97 ÷ 106N	179 ÷ 188N	285N	192 ÷ 210N	358 ÷ 375N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	426N	291 ÷ 318N	537 ÷ 564N	855N	576 ÷ 630N	1074 ÷ 1125N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	127N	164 ÷ 172N	81 ÷ 90N	250N	326 ÷ 344N	161 ÷ 179N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	381N	492 ÷ 516N	243 ÷ 270N	750N	978 ÷ 1032N	483 ÷ 537N
Corsa Stroke (±0.2 mm)	3x4mm	3x4mm	3x4mm	3x2mm	3x2mm	3x2mm
Frequenza max funzionamento Maximum working frequency	3Hz	3Hz	3Hz	3Hz	3Hz	3Hz
Consumo d'aria per ciclo Cycle air consumption	8cm <sup>3</sup>	13cm <sup>3</sup>	13cm <sup>3</sup>	8cm <sup>3</sup>	13cm <sup>3</sup>	13cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.02s / 0.02s	0.02s / 0.02s	0.02s / 0.02s	0.02s / 0.02s	0.02s / 0.02s	0.02s / 0.02s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm
Peso Weight	237g	293g	285g	240g	296g	288g

**Forza di serraggio**

I grafici mostrano la forza (F) per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

**Gripping force**

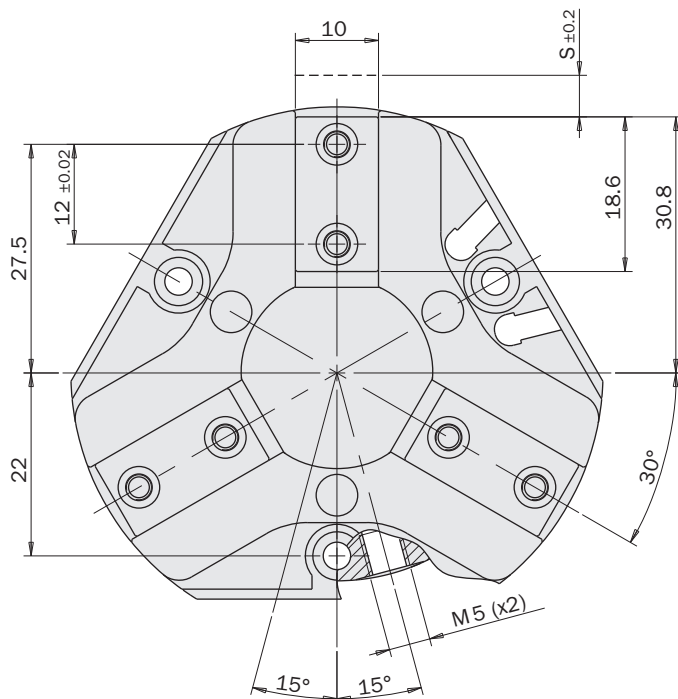
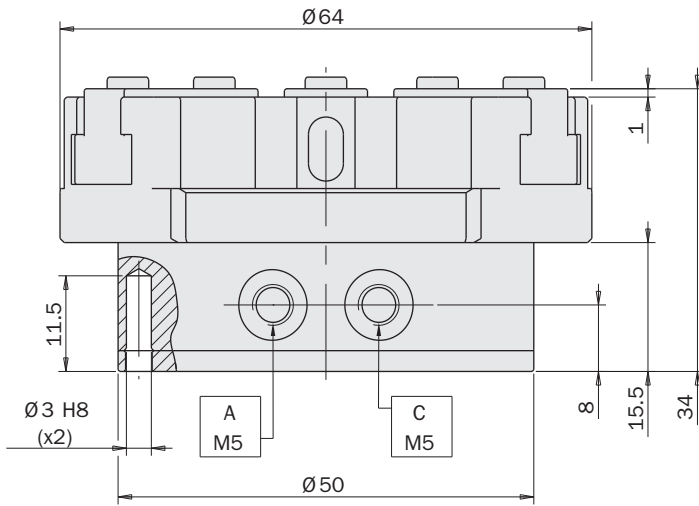
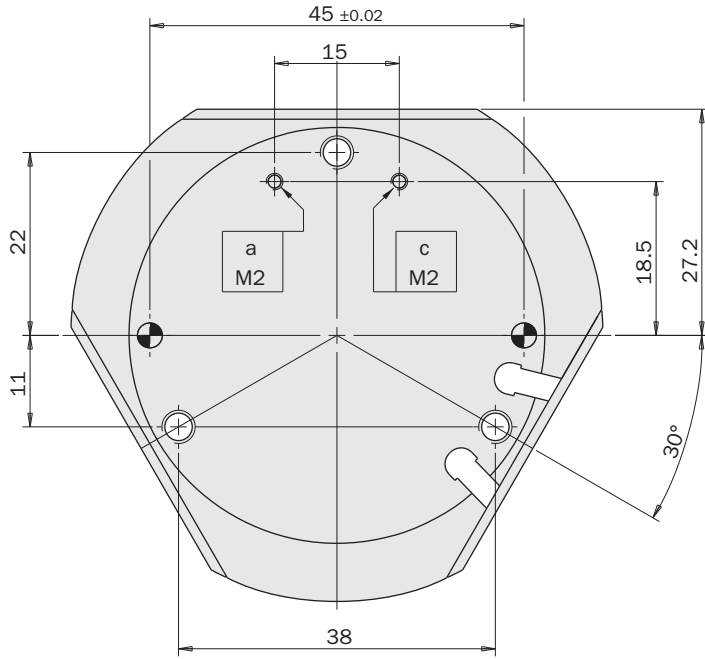
The graphs show the gripping force (F) on each jaw, as a function of the operating pressure and the gripping tool length Z.



**La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il triplo.**

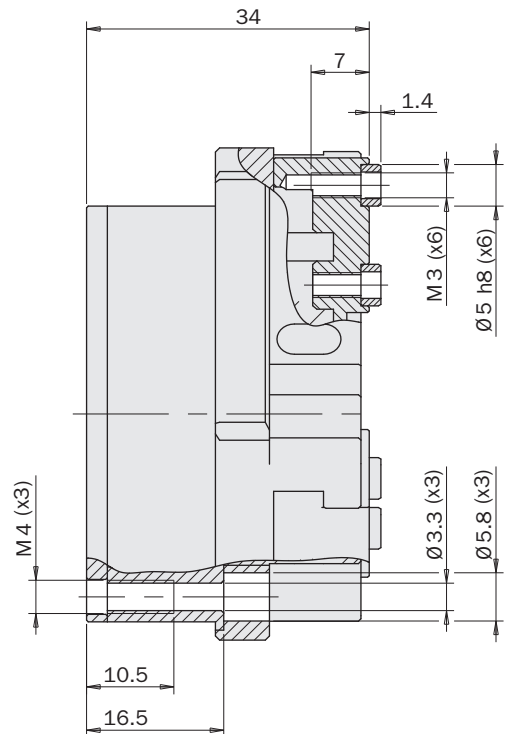
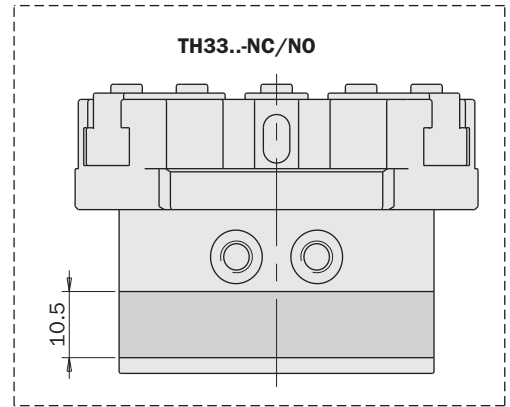
**The force shown in these graphs refers to one jaw. The total force is triple.**

**Dimensioni (mm)**  
**Dimensions (mm)**



	TH3304	TH3304-NC	TH3304-N0
S	3x4mm	3x4mm	3x4mm

	TH3302	TH3302-NC	TH3302-N0
S	3x2mm	3x2mm	3x2mm



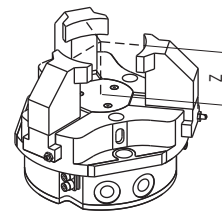
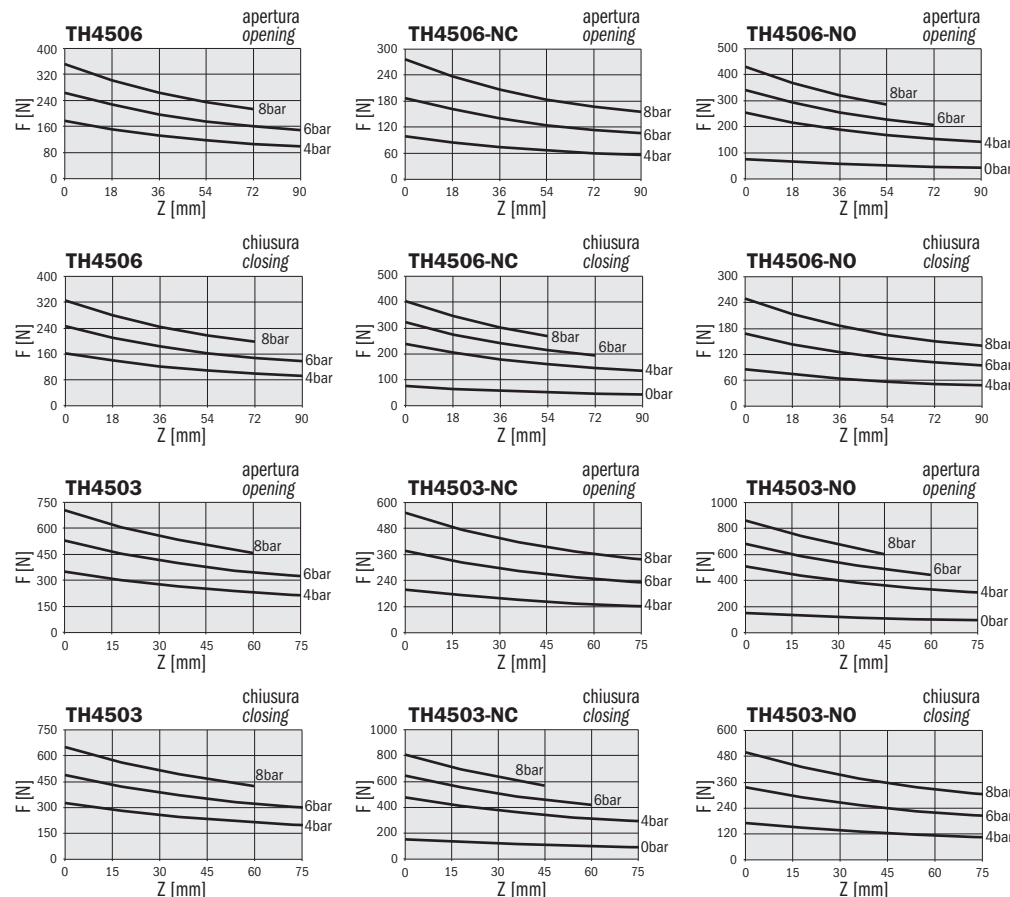
	TH4506	TH4506-NC	TH4506-NO	TH4503	TH4503-NC	TH4503-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar
Temperatura di esercizio Operating temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	265N	173 ÷ 202N	328 ÷ 356N	530N	346 ÷ 403N	653 ÷ 710N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	795N	519 ÷ 606N	984 ÷ 1068N	1590N	1038 ÷ 1209N	1959 ÷ 2130N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	245N	309 ÷ 337N	155 ÷ 184N	490N	615 ÷ 673N	308 ÷ 366N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	735N	927 ÷ 1011N	465 ÷ 552N	1470N	1845 ÷ 2019N	924 ÷ 1098N
Corsa Stroke (±0.2 mm)	3x6mm	3x6mm	3x6mm	3x3mm	3x3mm	3x3mm
Frequenza max funzionamento Maximum working frequency	2Hz	2Hz	2Hz	2Hz	2Hz	2Hz
Consumo d'aria per ciclo Cycle air consumption	22cm <sup>3</sup>	37cm <sup>3</sup>	37cm <sup>3</sup>	22cm <sup>3</sup>	37cm <sup>3</sup>	37cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.05s / 0.05s	0.05s / 0.07s	0.07s / 0.05s	0.05s / 0.05s	0.05s / 0.07s	0.07s / 0.05s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm
Peso Weight	430g	540g	530g	440g	550g	530g

**Forza di serraggio**

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

**Gripping force**

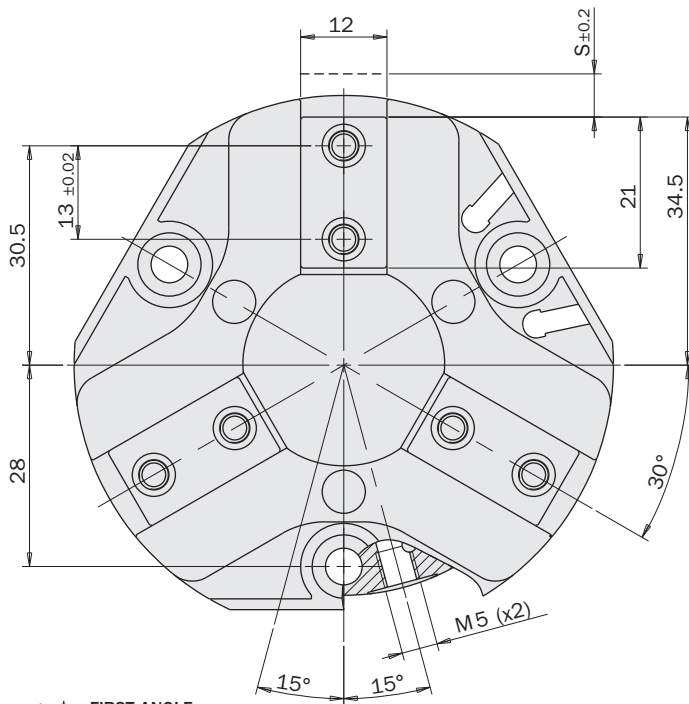
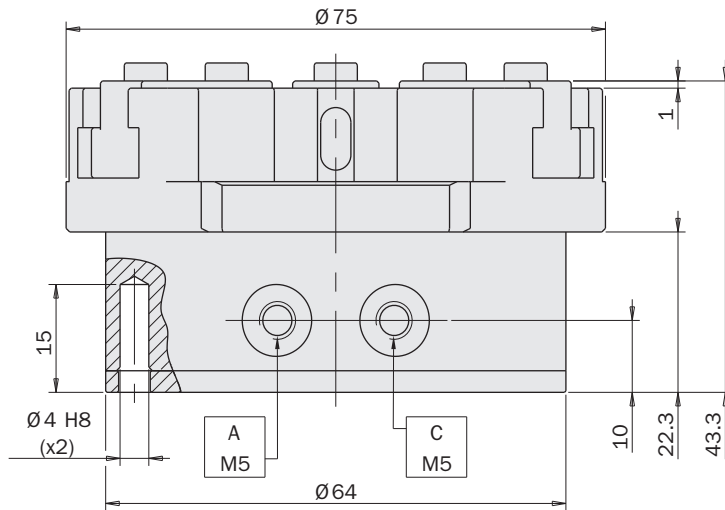
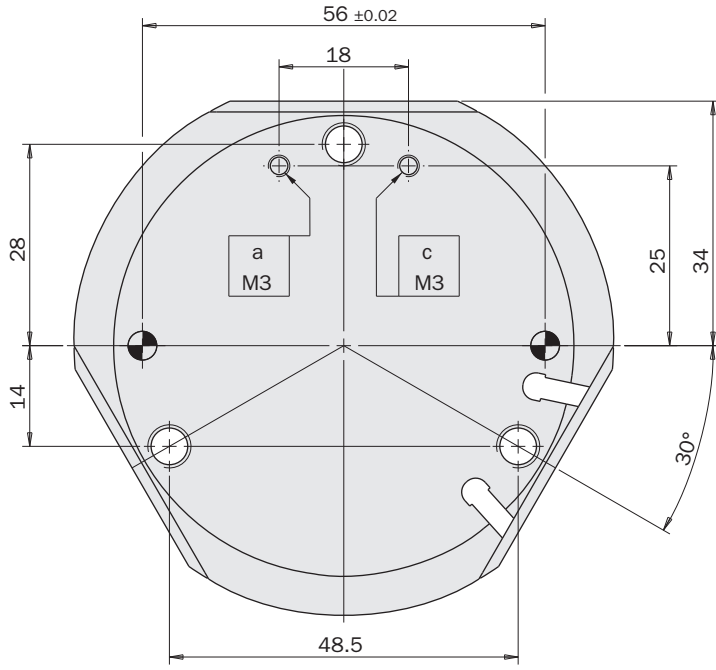
The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.



**La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il triplo.**

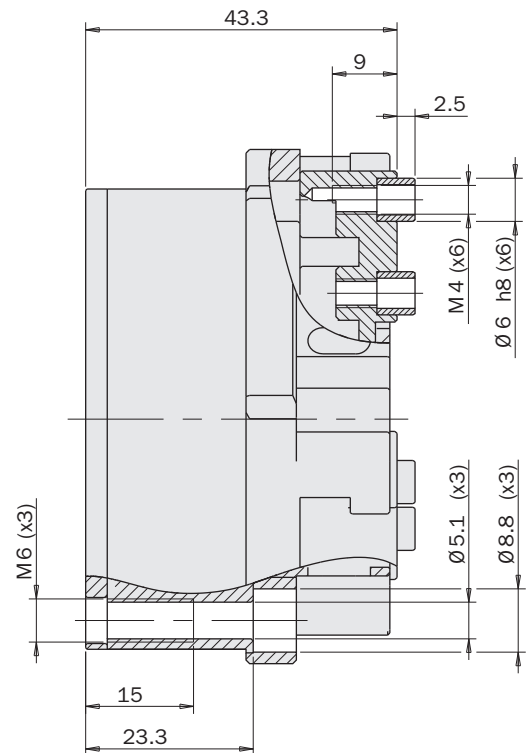
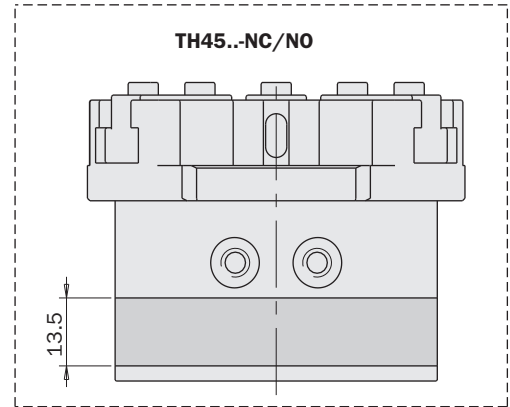
**The force shown in these graphs refers to one jaw. The total force is triple.**

**Dimensioni (mm)**  
**Dimensions (mm)**



	TH4506	TH4506-NC	TH4506-NO
S	3x6mm	3x6mm	3x6mm

	TH4503	TH4503-NC	TH4503-NO
S	3x3mm	3x3mm	3x3mm



09/2022



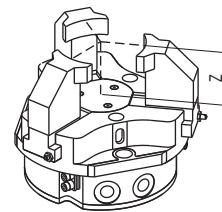
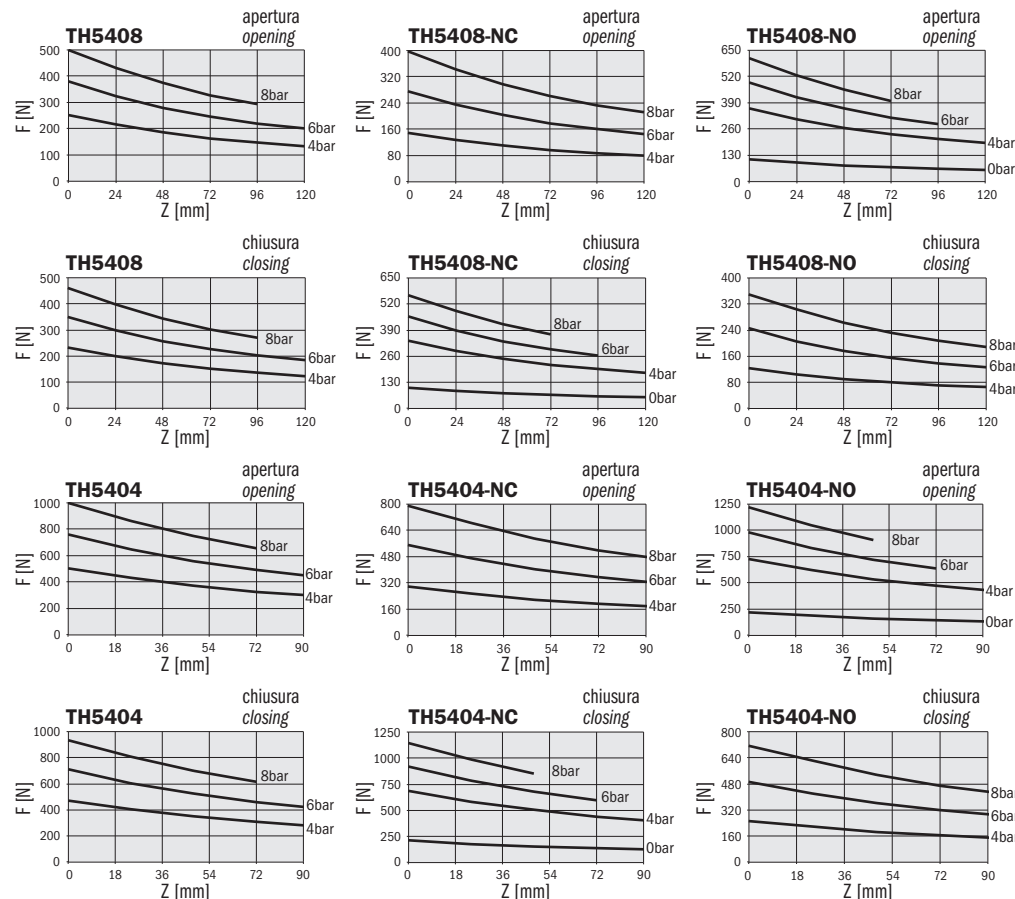
	TH5408	TH5408-NC	TH5408-NO	TH5404	TH5404-NC	TH5404-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar
Temperatura di esercizio Operating temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	380N	252 ÷ 299N	466 ÷ 514N	760N	504 ÷ 597N	931 ÷ 1029N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	1140N	756 ÷ 897N	1398 ÷ 1542N	2280N	1512 ÷ 1791N	2793 ÷ 3087N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	350N	436 ÷ 483N	220 ÷ 269N	710N	872 ÷ 966N	441 ÷ 538N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	1050N	1308 ÷ 1449N	660 ÷ 807N	2130N	2616 ÷ 2898N	1323 ÷ 1614N
Corsa Stroke (±0.2 mm)	3x8mm	3x8mm	3x8mm	3x4mm	3x4mm	3x4mm
Frequenza max funzionamento Maximum working frequency	2Hz	2Hz	2Hz	2Hz	2Hz	2Hz
Consumo d'aria per ciclo Cycle air consumption	42cm <sup>3</sup>	67cm <sup>3</sup>	67cm <sup>3</sup>	42cm <sup>3</sup>	67cm <sup>3</sup>	67cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.05s / 0.05s	0.05s / 0.07s	0.07s / 0.05s	0.05s / 0.05s	0.05s / 0.07s	0.07s / 0.05s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm
Peso Weight	760g	930g	920g	770g	940g	930g

**Forza di serraggio**

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

**Gripping force**

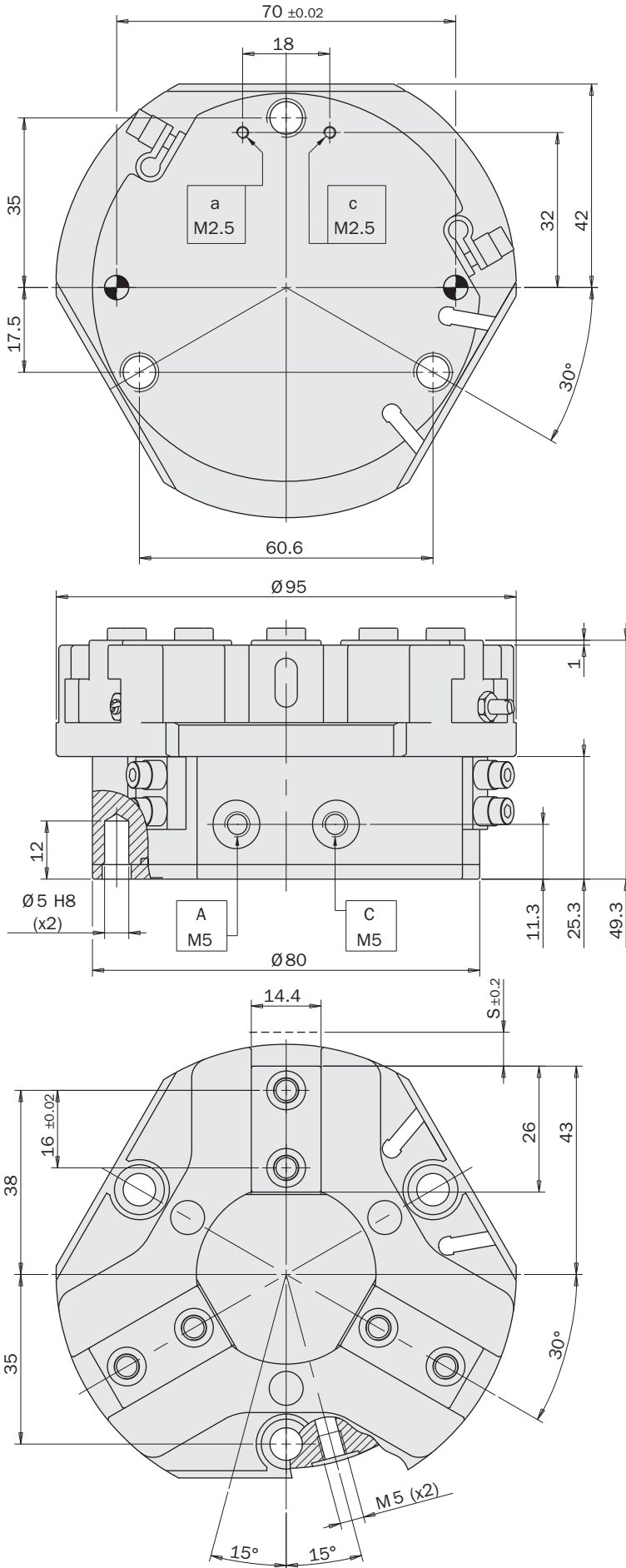
The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.



La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il triplo.

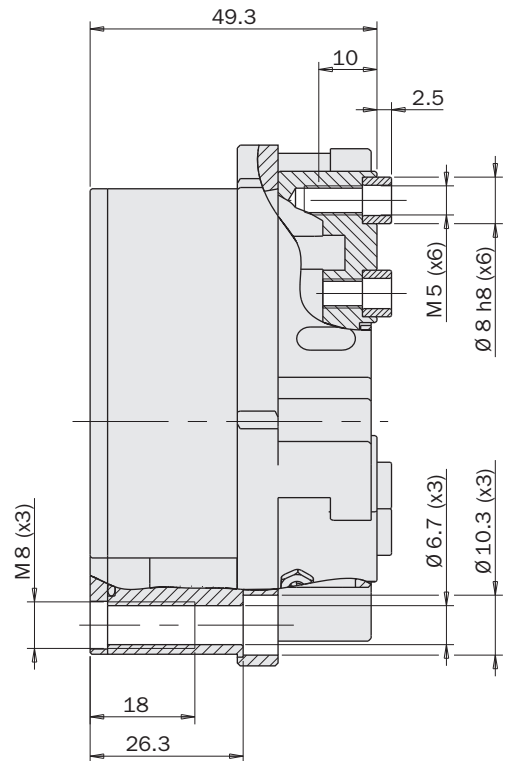
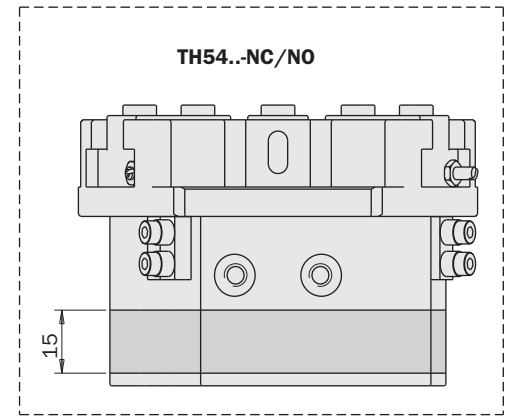
The force shown in these graphs refers to one jaw. The total force is triple.

**Dimensioni (mm)**  
**Dimensions (mm)**



	TH5408	TH5408-NC	TH5408-NO
S	3x8mm	3x8mm	3x8mm

	TH5404	TH5404-NC	TH5404-NO
S	3x4mm	3x4mm	3x4mm



FIRST ANGLE PROJECTION



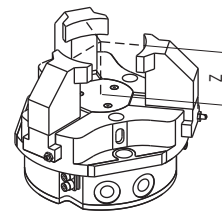
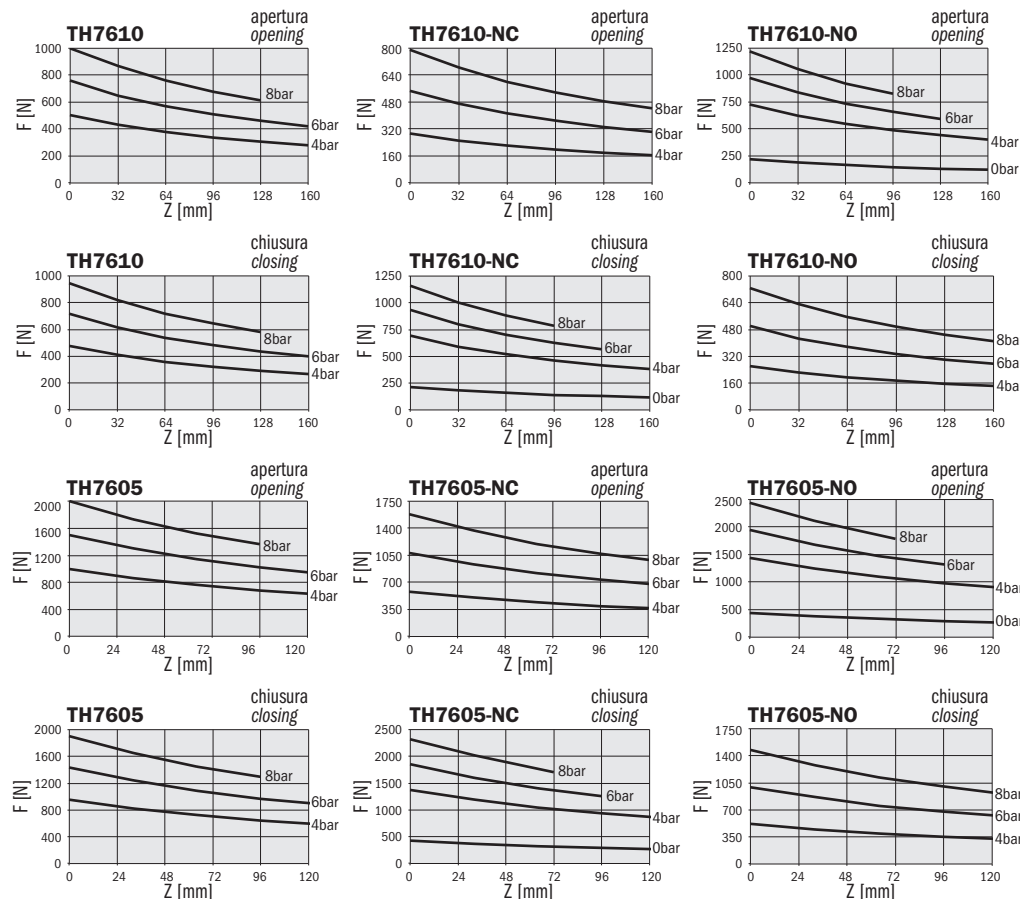
	TH7610	TH7610-NC	TH7610-NO	TH7605	TH7605-NC	TH7605-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar
Temperatura di esercizio Operating temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	760N	515 ÷ 577N	954 ÷ 1000N	1500N	1024 ÷ 1148N	1896 ÷ 1989N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	2280N	1545 ÷ 1731N	2862 ÷ 3000N	4500N	3072 ÷ 3444N	5688 ÷ 5967N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	720N	890 ÷ 962N	477 ÷ 524N	1430N	1789 ÷ 1913N	948 ÷ 1041N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	2160N	2670 ÷ 2886N	1431 ÷ 1572N	4290N	5367 ÷ 5739N	2844 ÷ 3123N
Corsa Stroke (±0.2 mm)	3x10mm	3x10mm	3x10mm	3x5mm	3x5mm	3x5mm
Frequenza max funzionamento Maximum working frequency	1Hz	1Hz	1Hz	1Hz	1Hz	1Hz
Consumo d'aria per ciclo Cycle air consumption	106cm <sup>3</sup>	174cm <sup>3</sup>	174cm <sup>3</sup>	106cm <sup>3</sup>	174cm <sup>3</sup>	174cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.2s / 0.2s	0.2s / 0.3s	0.3s / 0.2s	0.2s / 0.2s	0.2s / 0.3s	0.3s / 0.2s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm
Peso Weight	1420g	1870g	1840g	1430g	1880g	1850g

**Forza di serraggio**

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

**Gripping force**

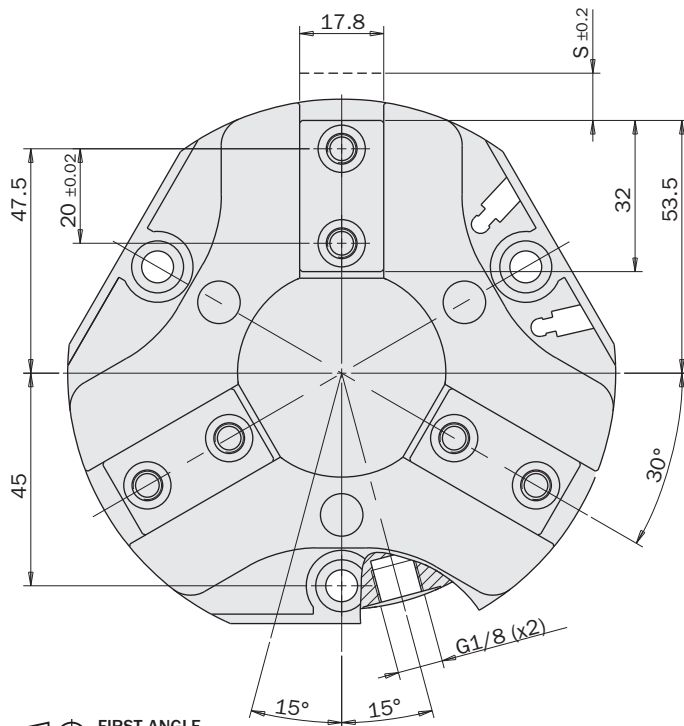
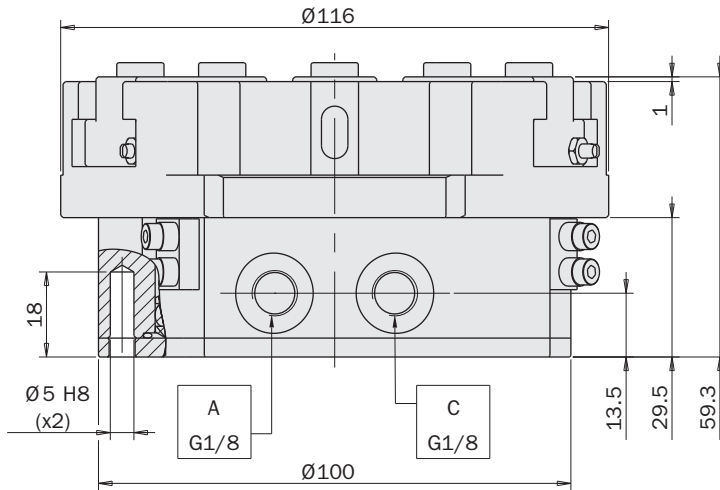
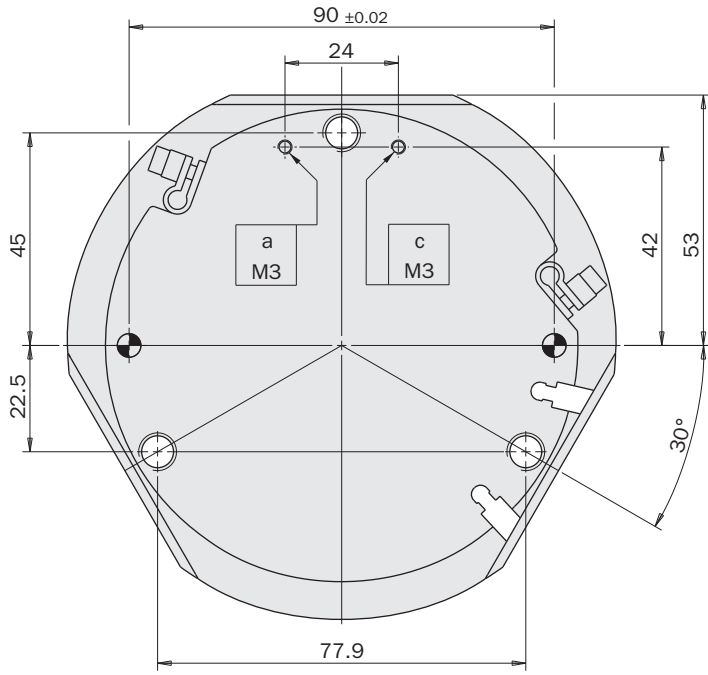
The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.



**La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il triplo.**

**The force shown in these graphs refers to one jaw. The total force is triple.**

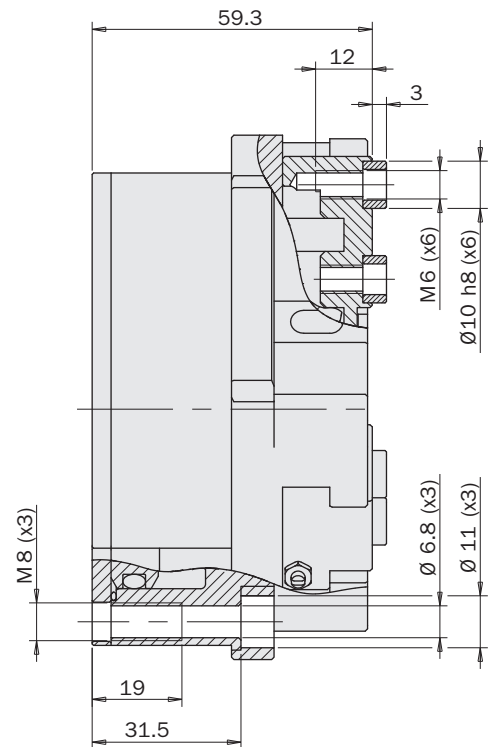
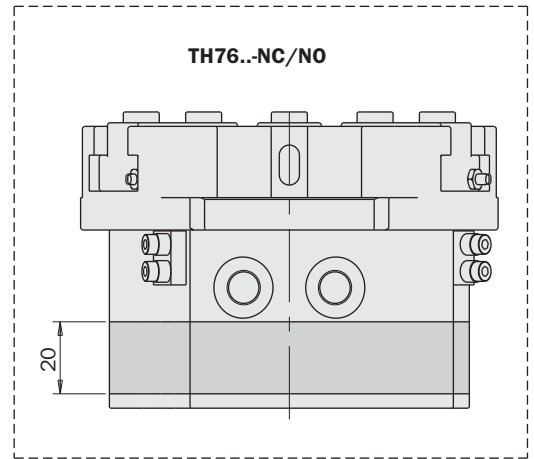
**Dimensioni (mm)**  
**Dimensions (mm)**



FIRST ANGLE PROJECTION

	TH7610	TH7610-NC	TH7610-NO
S	3x10mm	3x10mm	3x10mm

	TH7605	TH7605-NC	TH7605-NO
S	3x5mm	3x5mm	3x5mm



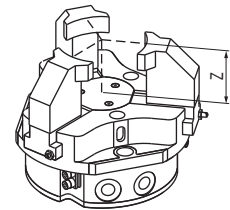
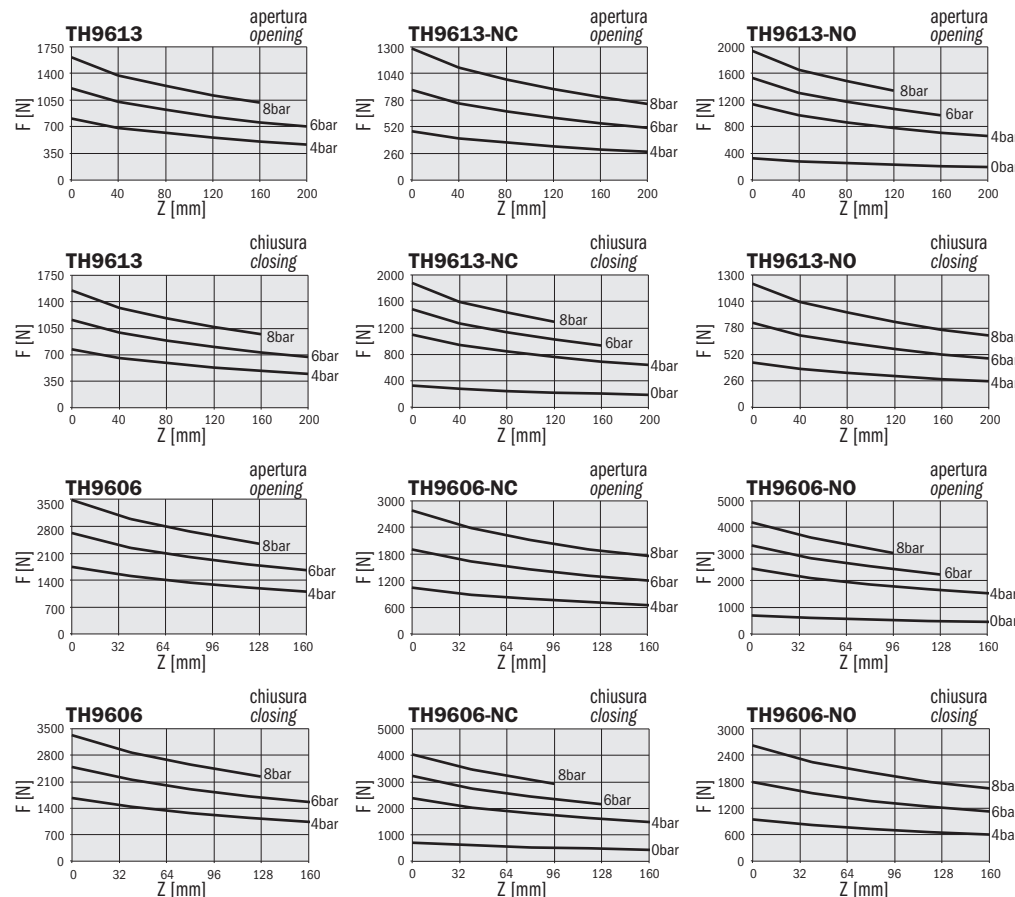
	TH9613	TH9613-NC	TH9613-NO	TH9606	TH9606-NC	TH9606-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar	1.5 ÷ 8bar	3.5 ÷ 8bar	3.5 ÷ 8bar
Temperatura di esercizio Operating temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	1210N	821 ÷ 946N	1485 ÷ 1594N	2620N	1779 ÷ 2048N	3216 ÷ 3451N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	3630N	2463 ÷ 2838N	4455 ÷ 4782N	7860N	5337 ÷ 6144N	9648 ÷ 10353N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	1160N	1422 ÷ 1564N	774 ÷ 883N	2500N	3079 ÷ 3348N	1675 ÷ 1911N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	3480N	4266 ÷ 4638N	2322 ÷ 2649N	7500N	9327 ÷ 10044N	5025 ÷ 5733N
Corsa Stroke (±0.2 mm)	3x13mm	3x13mm	3x13mm	3x6mm	3x6mm	3x6mm
Frequenza max funzionamento Maximum working frequency	1Hz	1Hz	1Hz	1Hz	1Hz	1Hz
Consumo d'aria per ciclo Cycle air consumption	221cm <sup>3</sup>	335cm <sup>3</sup>	335cm <sup>3</sup>	221cm <sup>3</sup>	335cm <sup>3</sup>	335cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.2s / 0.2s	0.2s / 0.3s	0.3s / 0.2s	0.2s / 0.2s	0.2s / 0.3s	0.3s / 0.2s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm
Peso Weight	2450g	3230g	3140g	2490g	3270g	3180g

**Forza di serraggio**

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

**Gripping force**

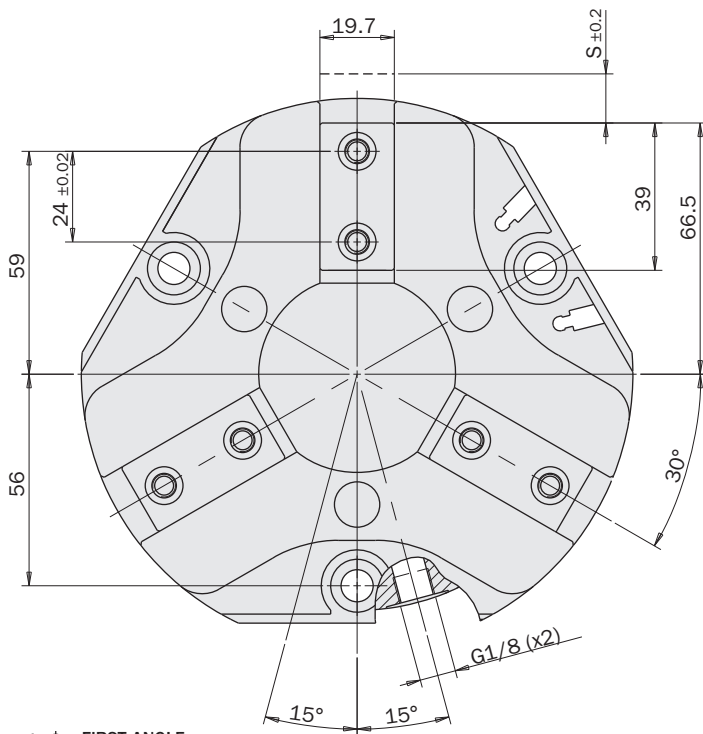
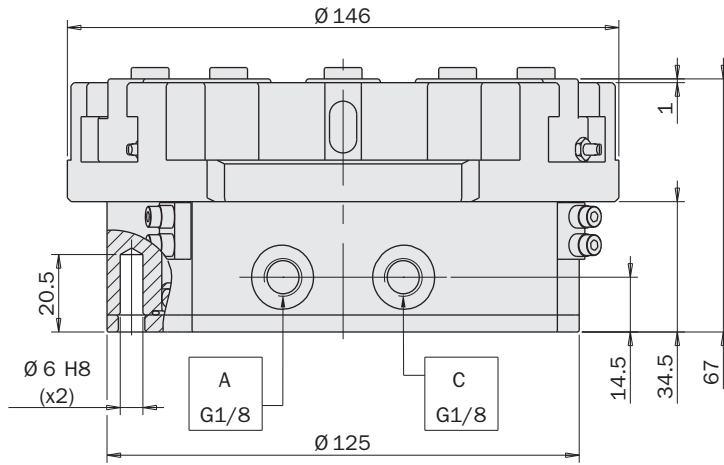
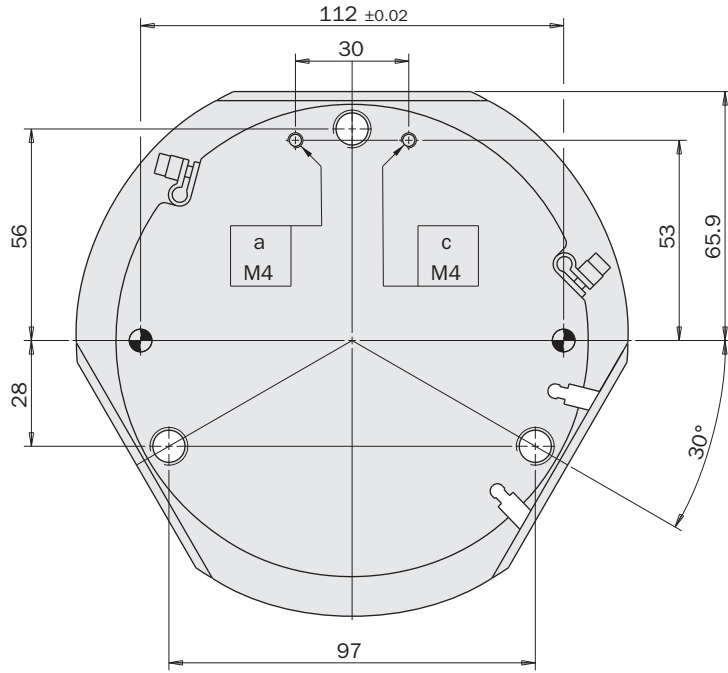
The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.



**La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il triplo.**

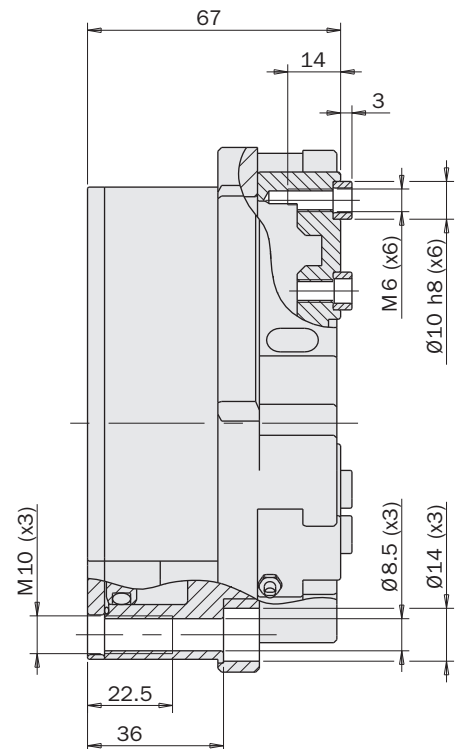
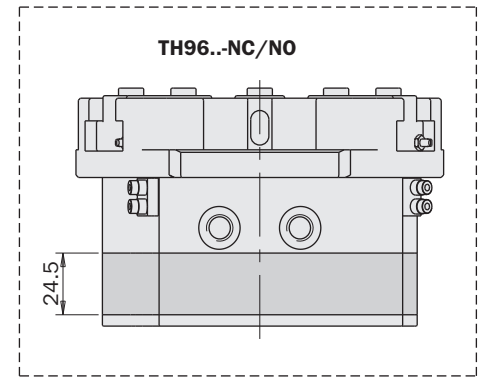
**The force shown in these graphs refers to one jaw. The total force is triple.**

**Dimensioni (mm)**  
**Dimensions (mm)**



	TH9613	TH9613-NC	TH9613-NO
S	3x13mm	3x13mm	3x13mm

	TH9606	TH9606-NC	TH9606-NO
S	3x6mm	3x6mm	3x6mm



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

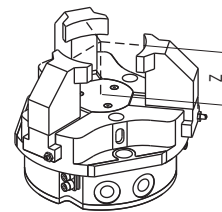
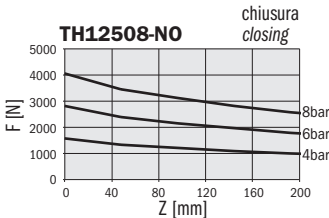
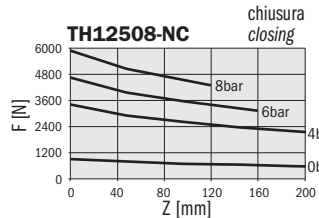
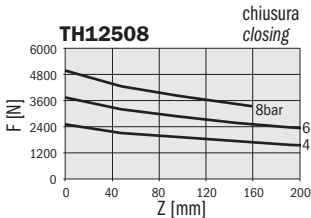
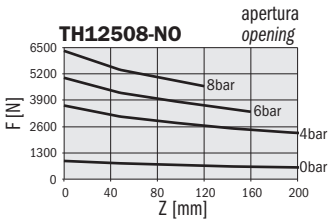
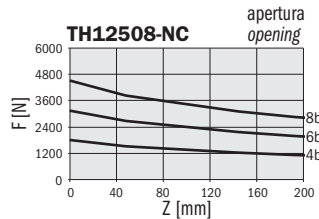
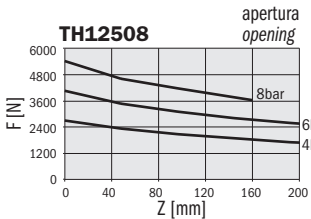
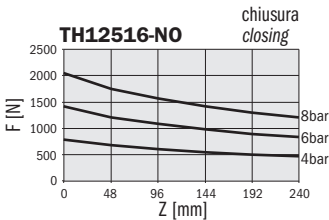
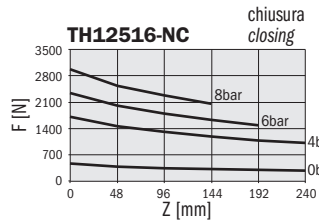
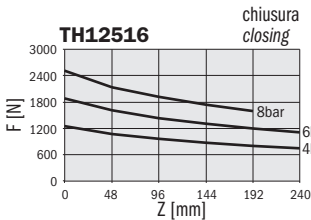
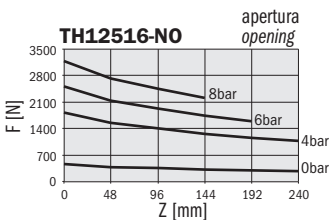
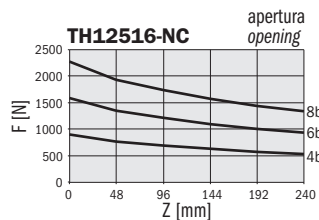
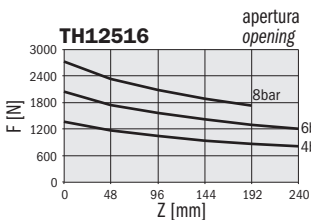
	TH12516	TH12516-NC	TH12516-NO	TH12508	TH12508-NC	TH12508-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Operating pressure range	1.5 ÷ 8bar	3 ÷ 8bar	3 ÷ 8bar	1.5 ÷ 8bar	3 ÷ 8bar	3z ÷ 8bar
Temperatura di esercizio Operating temperature range	5 ÷ 100°C.					
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force on each jaw at 6 bar	2050N	1538 ÷ 1644N	2465 ÷ 2571N	4070N	3050 ÷ 3260N	4888 ÷ 5099N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	6150N	4614 ÷ 4932N	7395 ÷ 7713N	12210N	9150 ÷ 9780N	14664 ÷ 15297N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force on each jaw at 6 bar	1880N	2294 ÷ 2400N	1367 ÷ 1473N	3740N	4550 ÷ 4761N	2712 ÷ 2922N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	5640N	6882 ÷ 7200N	4101 ÷ 4419N	11220N	13650 ÷ 14283N	8136 ÷ 8766N
Corsa Stroke (±0.2 mm)	3x16mm	3x16mm	3x16mm	3x8mm	3x8mm	3x8mm
Frequenza max funzionamento Maximum working frequency	1Hz	1Hz	1Hz	1Hz	1Hz	1Hz
Consumo d'aria per ciclo Cycle air consumption	452cm <sup>3</sup>	700cm <sup>3</sup>	700cm <sup>3</sup>	452cm <sup>3</sup>	700cm <sup>3</sup>	700cm <sup>3</sup>
Tempo minimo di chiusura / apertura Closing / opening minimum time	0.3s / 0.3s	0.3s / 0.4s	0.4s / 0.3s	0.3s / 0.3s	0.3s / 0.4s	0.4s / 0.3s
Ripetibilità Repetition accuracy	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm	0.02mm
Peso Weight	4920g	6640g	6460g	4990g	6710g	6530g

**Forza di serraggio**

I grafici mostrano la forza per griffa espressa dalla pinza in funzione della pressione e del braccio di leva Z.

**Gripping force**

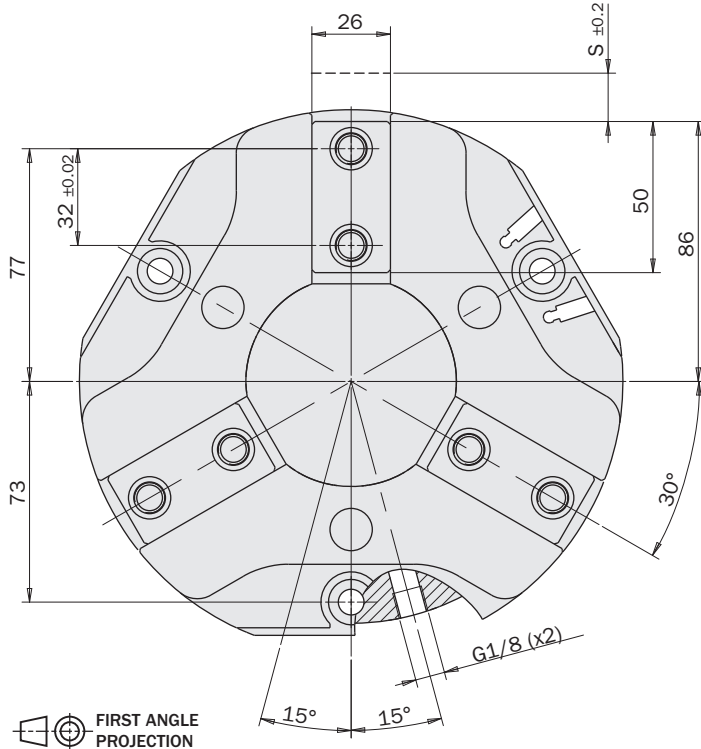
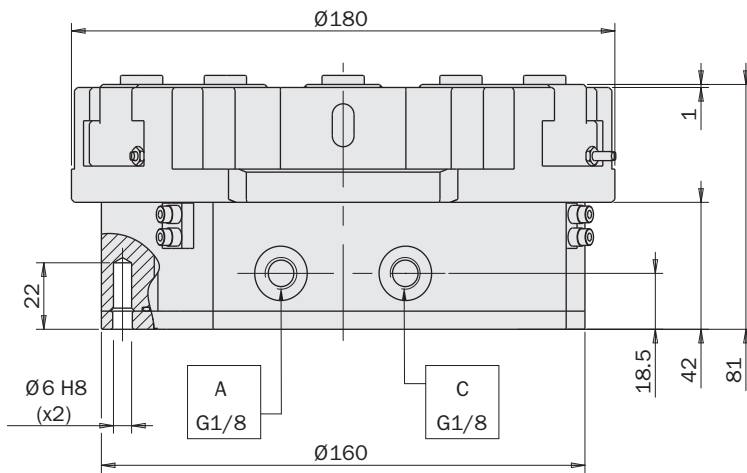
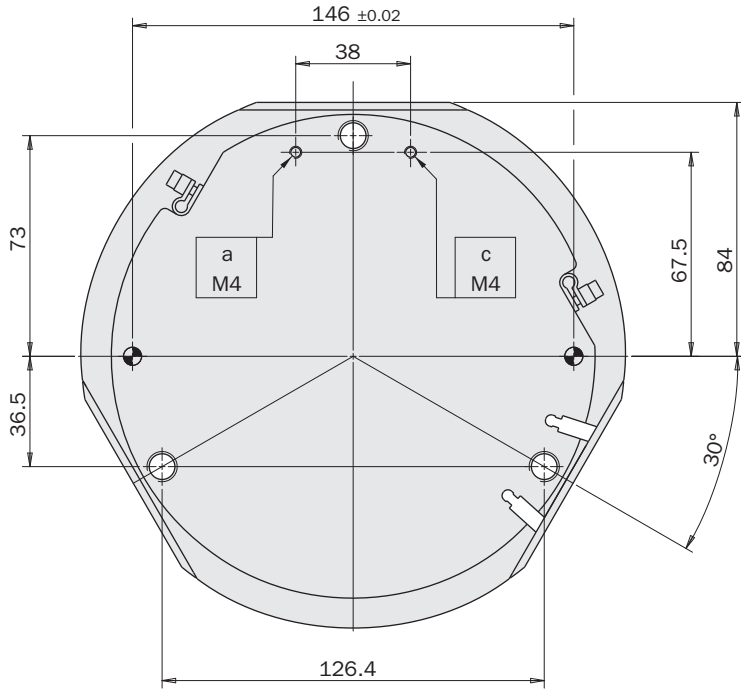
The graphs show the gripping force on each jaw, as a function of the operating pressure and the gripping tool length Z.



La forza indicata in questi grafici è riferita alla singola griffa. La forza totale è il triplo.

The force shown in these graphs refers to one jaw. The total force is triple.

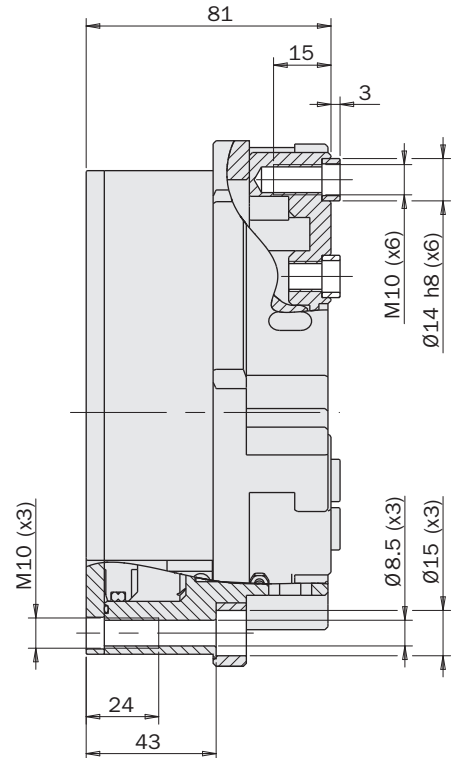
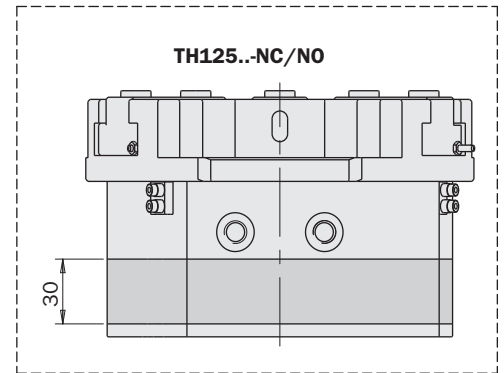
**Dimensioni (mm)**  
**Dimensions (mm)**



FIRST ANGLE PROJECTION

	TH12516	TH12516-NC	TH12516-NO
S	3x16mm	3x16mm	3x16mm

	TH12508	TH12508-NC	TH12508-NO
S	3x8mm	3x8mm	3x8mm



**Sensori magnetici (opzionali)**

Il rilevamento della posizione di lavoro è affidato a uno o due sensori magnetici di prossimità, che rilevano la posizione attraverso il magnete sul pistone. Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.

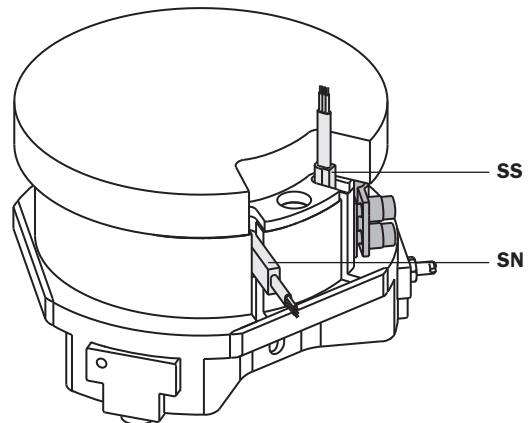
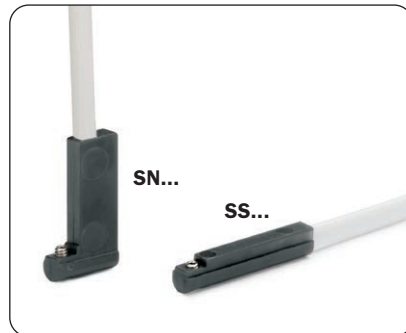
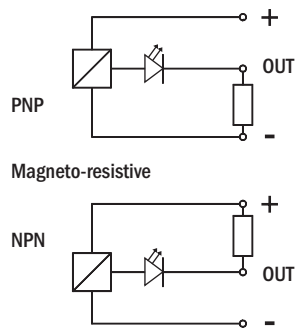
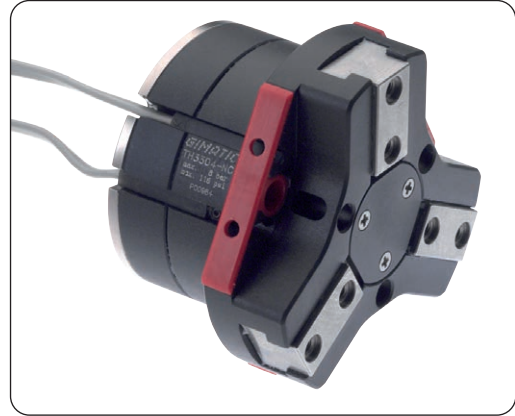
**Magnetic sensors (optional)**

The operating position can be checked by one or two magnetic sensors, that detect the magnet on the piston inside. Therefore a near big mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.

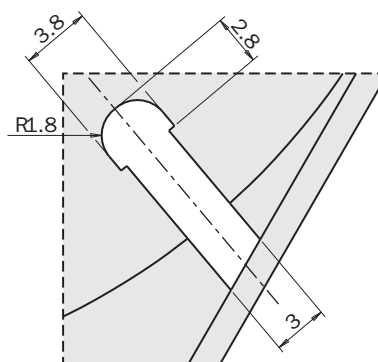
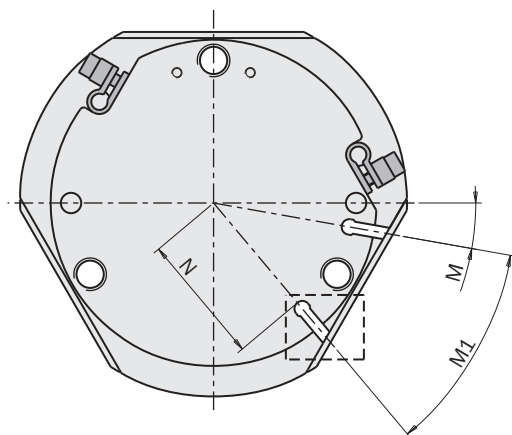
I sensori utilizzabili sono:

Use sensors:

SN4N225-G	PNP	Cavo 2.5m 2.5m cable
SN4M225-G	NPN	
SN3N203-G	PNP	Connettore M8 M8 snap plug connector
SN3M203-G	NPN	
SS4N225-G	PNP	Cavo 2.5m 2.5m cable
SS4M225-G	NPN	
SS3N203-G	PNP	Connettore M8 M8 snap plug connector
SS3M203-G	NPN	



	TH27...	TH33...	TH46...	TH54...	TH76...	TH96...	TH125...
N	15.4	19.6	25.5	32	41.2	53.5	67
M	11.5°	14°	12°	10°	13°	14°	18°
M1	37°	32°	36°	40°	34°	32°	24°



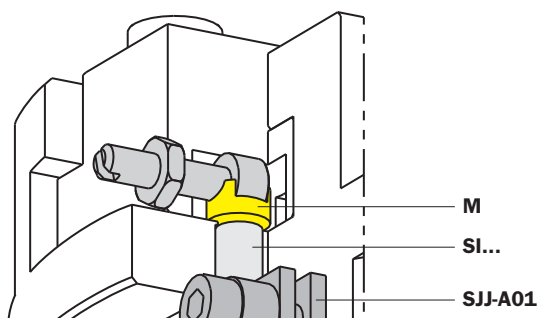
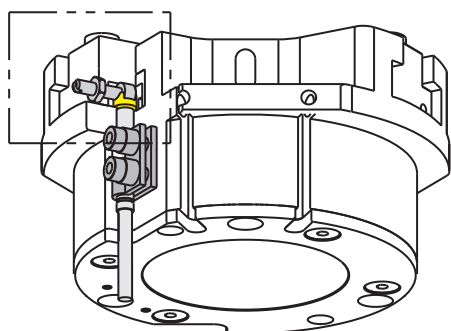
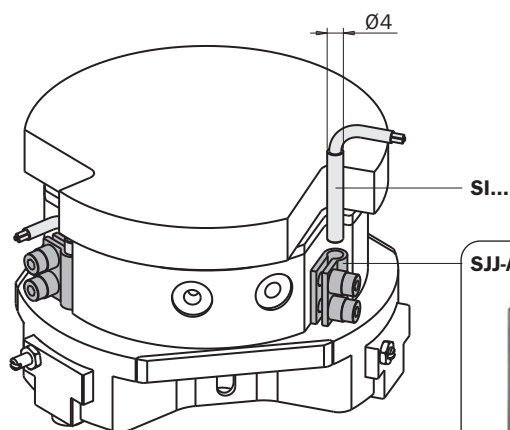
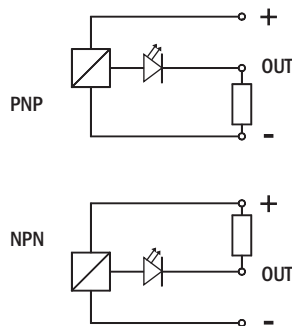
**Sensori induttivi (opzionali)**

Sulle taglie più grandi é anche possibile usare sensori induttivi di diametro 4mm, che si fissano con i supporti SJJ-A01 (forniti nella confezione).  
Dopo aver fissato il sensore va regolata la posizione della parte metallica (M) per stabilire il punto di accensione.

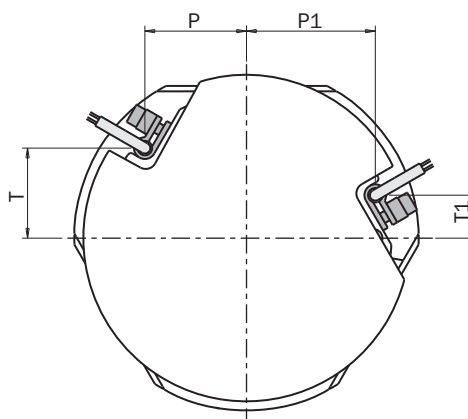
**Inductive sensors (optional)**

With the larger sizes it is also possible to use inductive sensors diameter 4mm, which can be fastened by the holders SJJ-A01 (supplied).  
After the sensor fastening, the position of the metal part (M) must be adjusted to select the on point.

			TH54... TH76... TH96... TH125...
SI4M225-G	NPN	Cavo 2.5m 2.5m cable	<input checked="" type="checkbox"/>
SI4N225-G	PNP		<input checked="" type="checkbox"/>



	TH54...	TH76...	TH96...	TH125...
P	28	34.8	45.6	56.8
P1	35.5	44.1	56.2	71.3
T	10.9	14.7	20.2	24.4
T1	24.9	30.8	38.6	49.6





## Pinza pneumatica autocentrante a 3 griffe (serie SXT)

- Azionamento a doppio effetto (normale chiusa su richiesta).
- Forza di serraggio elevata.
- Grado di protezione IP67.
- Colonne sigillate con doppio O-Ring.
- Adatta per ambienti difficili.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

## 3-jaw self-centring pneumatic gripper (series SXT)

- Double acting (normally closed on request).
- Strong gripping force.
- Protection class: IP67.
- Double O-Ring sealing on the columns.
- Suitable for harsh environments.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.



SXT2505



SXT4008



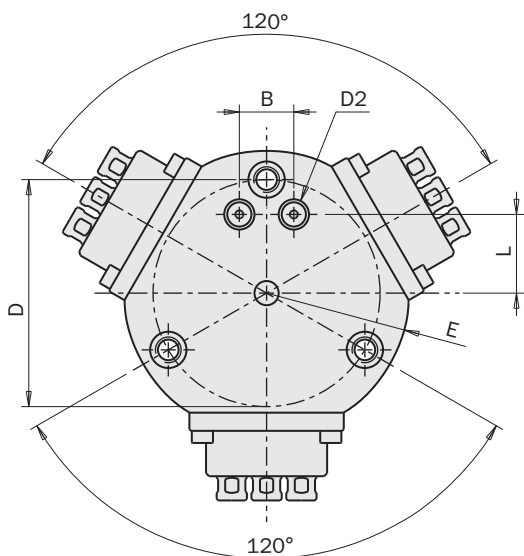
SXT5012



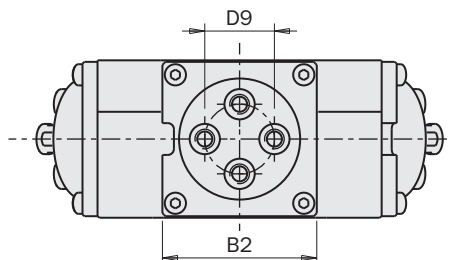
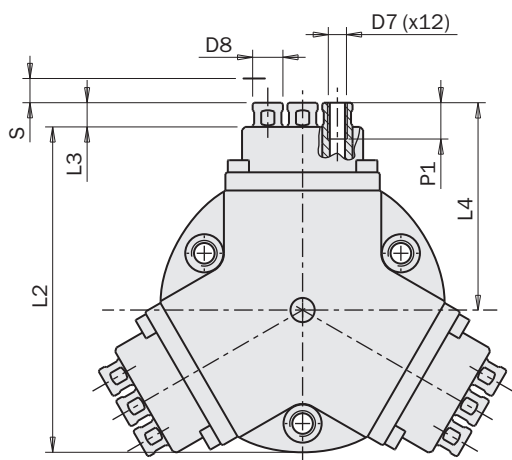
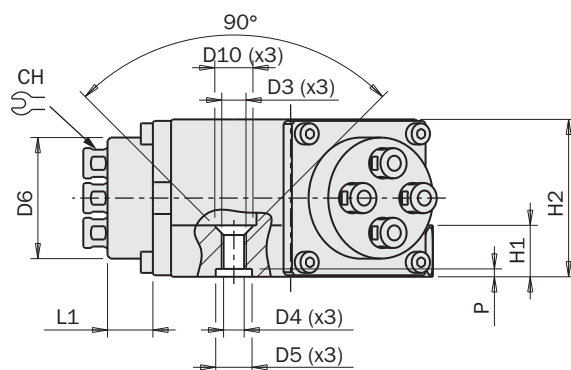
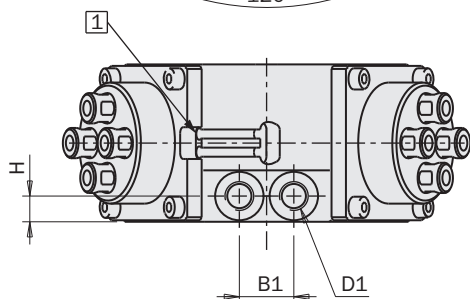
SXT6315

	SXT2505	SXT4008	SXT5012	SXT6315
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Operating pressure range	2 ÷ 8 bar			
Temperatura di esercizio Operating temperature range	5 ÷ 100 °C			
Forza di serraggio per griffa in apertura a 6 bar Opening gripping force at 6 bar on each jaw	250 N	650 N	1050 N	1650 N
Forza di serraggio totale in apertura a 6 bar Opening total gripping force at 6 bar	750 N	1950 N	3150 N	4950 N
Forza di serraggio per griffa in chiusura a 6 bar Closing gripping force at 6 bar on each jaw	195 N	500 N	800 N	1200 N
Forza di serraggio totale in chiusura a 6 bar Closing total gripping force at 6 bar	585 N	1500 N	2400 N	3600 N
Corsa Stroke (±0.5)	3x5 mm	3x8 mm	3x12 mm	3x15 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz	2 Hz	2 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	16 cm <sup>3</sup>	60 cm <sup>3</sup>	140 cm <sup>3</sup>	270 cm <sup>3</sup>
Tempo di apertura / chiusura senza carico Opening / Closing time without load	0.02 s	0.02 s	0.05 s	0.15 s
Ripetibilità Repetition accuracy	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Peso Weight	420 g	1100 g	2000 g	3800 g

**Dimensioni (mm)**  
**Dimensions (mm)**



1 Sede per sensori  
Sensor groove



	SXT2505	SXT4008	SXT5012	SXT6315
B	16	18	24	24
B1	16	18	24	24
B2	38	51	63	78
D	±0.02 Ø59	Ø75	Ø98	Ø114
D1	M5	G1/8	G1/8	G1/8
D2	M3	M5	M5	M5
D3	Ø5.2	Ø6.8	Ø6.8	Ø8.5
D4	M6	M8	M8	M10
D5	H8 Ø9	Ø12	Ø12	Ø14
D6	Ø27	Ø40	Ø50	Ø63
D7	M3	M6	M8	M10
D8	f7 Ø6	Ø10	Ø12	Ø16
D9	±0.02 15	Ø23	Ø33	Ø38
D10	Ø11.2	Ø12.6	Ø12.6	Ø17.3
E	R36	R47	R58	R69
H	6	8.5	10	11
H1	12	17	20	22
H2	38	52	64	80
L	24	26	38	45
L1	7.5	15	18	26
L2	78	107.5	133	162
L3	7.5	8	8.5	9.5
L4	49.5	68.5	83.5	102.5
P	+0.1 2.1	2.6	2.6	2.6
P1	6	12	20	20
S (x2)	5	8	12	15
CH	5	9	11	14

## Pinza elettrica autocentrante a 3 griffe

- Semplice azionamento Plug&Play.
- Nessun consumo elettrico quando la pinza è in presa.
- Nessuna programmazione richiesta.
- Tenuta pezzo garantita in caso di interruzione d'energia.
- Si adatta ad ogni dimensione di pezzo entro griffe.
- Motore senza spazzole a lunga vita elettrica (Brushless DC).
- Azionamento motore integrato nella pinza.
- Alimentazione in bassa tensione 24 Vdc.
- Connessione M8x1, 3 poli standard.
- Controllabile con segnale PLC come una Valvola Pneumatica.
- Sistema di riduzione in fibra di carbonio.
- Esente da manutenzione per 10 milioni di cicli.
- Griffe a T per carichi elevati.
- Miglior compromesso peso-dimensioni-forza.
- Compatibile con attuatori rotanti.
- Sensori magnetici opzionali.

## 3-jaw self-centring electric gripper

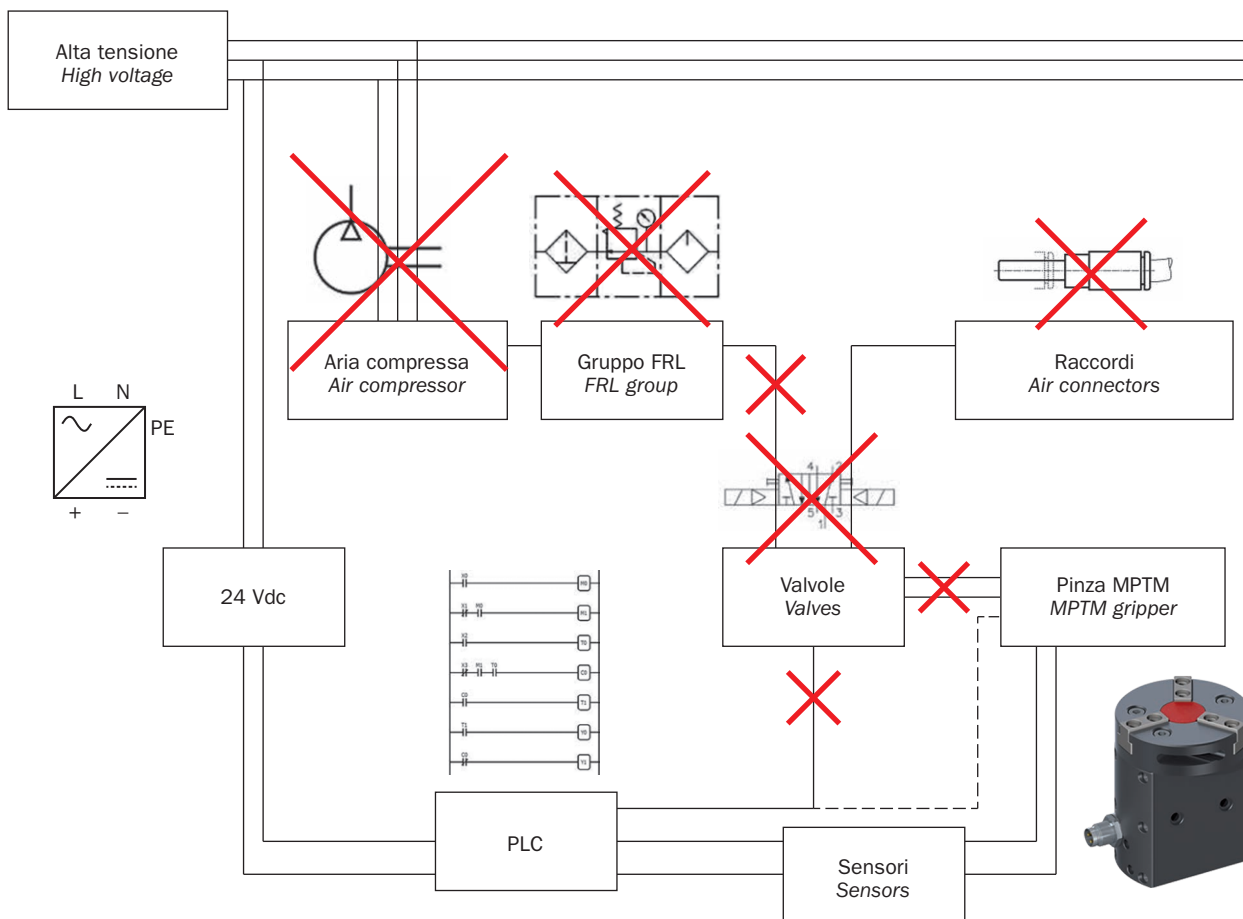
- Plug & play user friendly gripper.
- No electricity consumption when gripper is engaged.
- No programming required.
- Gripper retention guaranteed in event of blackout.
- Self Adapting jaws part.
- Long life Brushless motor (Brushless DC).
- Built-in motor driver.
- 24 Vdc Low Voltage Power Supply.
- M8x1, 3 poles standard connection.
- Controllable by PLC as a pneumatic valve.
- Fiber-carbon gear reduction.
- 10 million cycle maintenance-free.
- T-slot style jaws for heavy loads.
- Weight-dimensions-force best trade off.
- Rotary actuator fitting compatible.
- Optional magnetic sensors.



MPTM1606

MPTM2508

MPTM3210

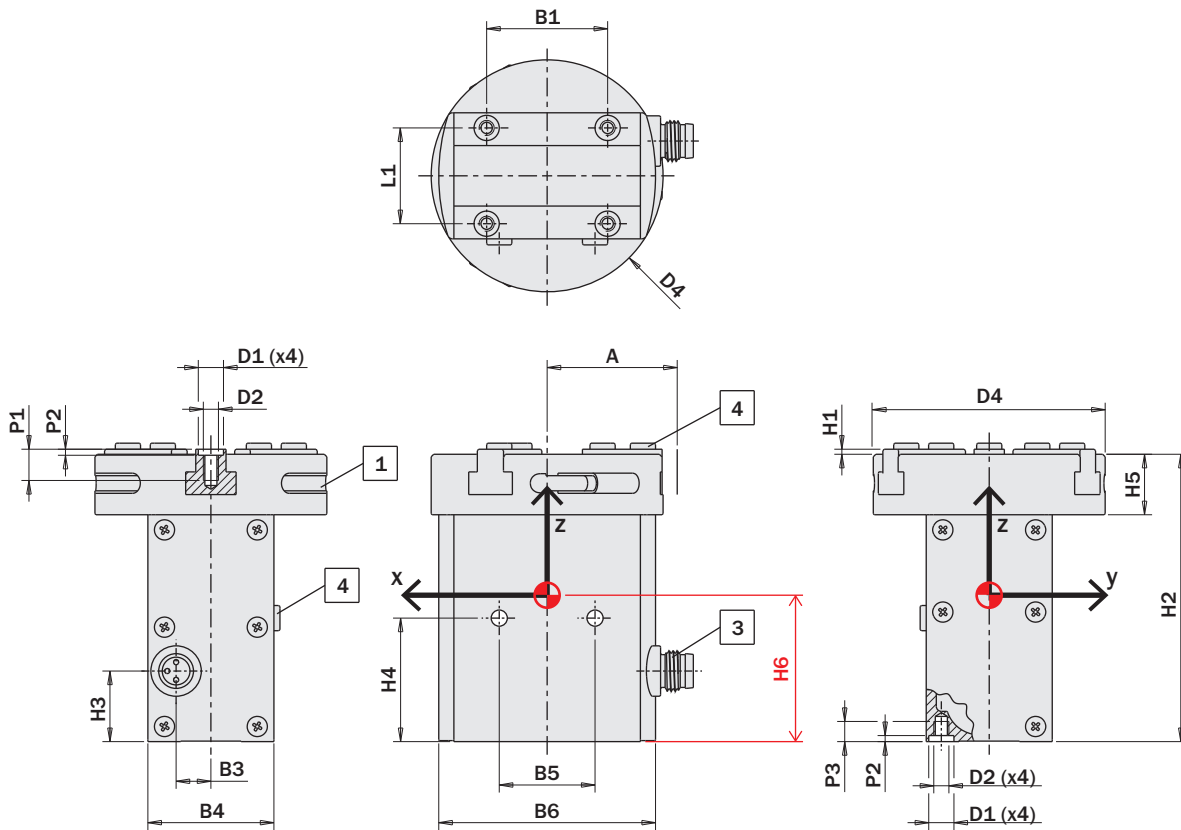




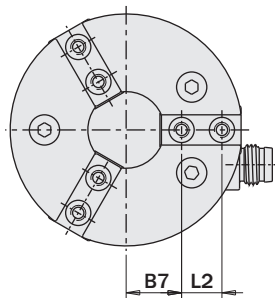
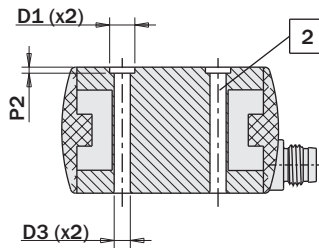
	MPTM1606	MPTM2508	MPTM3210
Forza di serraggio totale <i>Total gripping force</i>	57 N	124 N	220 N
Corsa <i>Stroke</i>	3x3 mm (±0.2 mm)	3x4 mm (±0.2 mm)	3x5 mm (±0.2 mm)
Frequenza alla temperatura ambiente di 30°C <i>Frequency at an ambient temperature of 30°C</i>	0.95 Hz	0.83 Hz	0.85 Hz
Tempo chiusura griffe <i>Jaw closing time</i>	0.08 s	0.12 s	0.16 s
Tempo di lavoro pinza <i>Working gripper time</i>	0.19 s	0.31 s	0.26 s
Ciclo di lavoro alla temperatura ambiente di 30°C <i>Duty cycle at an ambient temperature of 30°C</i>	36%	52%	44%
Tensione d'alimentazione <i>Power supply</i>	24 Vdc ±10%	24 Vdc ±10%	24 Vdc ±10%
Corrente di picco <i>Peak current</i>	0.9 Apk	1.2 Apk	3.8 Apk
Corrente nominale <i>Nominal current</i>	0.3 Arms	0.4 Arms	0.8 Arms
Potenza motore brushless <i>Brushless motor power</i>	6 W	11 W	23 W
Connessione <i>Connection</i>	M8 - 3 poli M8 - 3 poles		
Segnale d'ingresso apertura/chiusura <i>Open/closed input signal</i>	PNP open collector PNP open collector		
Ripetibilità <i>Repetition accuracy</i>	0.02 mm	0.02 mm	0.02 mm
Temperatura di esercizio <i>Operating temperature</i>	5° ÷ 60°C	5° ÷ 60°C	5° ÷ 60°C
Grado di protezione <i>Environmental Degree</i>	IP54	IP54	IP54
Rumorosità <i>Noise level</i>	< 70 dB	< 70 dB	< 70 dB
Massa (motore incluso) <i>Mass (motor included)</i>	183 g	430 g	693 g
Certificazione Camera Bianca ISO14644-1 <i>ISO14644-1 Clean Room Certification</i>	CLASS 7	-	-
Normative di riferimento <i>Reference standards</i>	EN 61000-6-2 + EC + IS1; EN 61000-6-3 + A1		
Momento d'inerzia baricentrale <i>Barycentric moment of inertia</i>	Jxx	0.66 kgcm <sup>2</sup>	2.75 kgcm <sup>2</sup>
	Jyy	0.75 kgcm <sup>2</sup>	3.13 kgcm <sup>2</sup>
	Jzz	0.36 kgcm <sup>2</sup>	1.6 kgcm <sup>2</sup>
Tecnologia e opzioni <i>Technology and options</i>	Pagina 570 - 571 Page 570 - 571		

Unità Rotanti  
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SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

## Dimensioni (mm) Dimensions (mm)



FIRST ANGLE  
PROJECTION

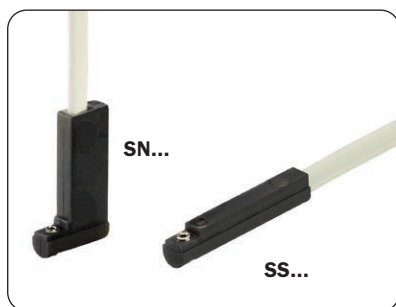


- 1** Cava per sensore magnetico  
*Magnetic sensor slot*
- 2** Foro passante per fissaggio pinza  
*Through hole for gripper fastening*
- 3** Connessione elettrica  
*Electrical connection*
- 4** Boccole di centraggio  
*Centering sleeves*

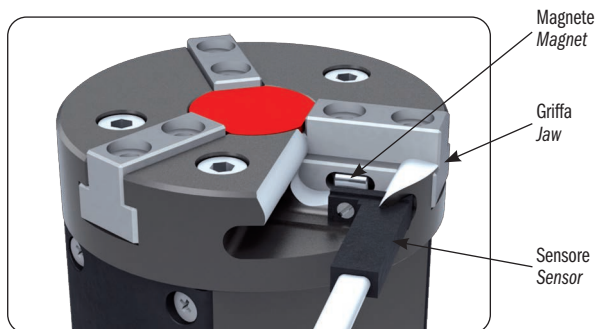
		MPTM1606	MPTM2508	MPTM3210
A		25.8	36	44
B1	±0.02	24	30	36
B2		6	8	9
B3		6.9	10	11
B4		25	32	35
B5	±0.02	19	25	30
B6		45	60	73
B7		11	15	18.5
C		22.8	32	39
D1		Ø5 H8	Ø7 H8	Ø7 H8
D2		M3	M4	M5
D3		Ø3.2	Ø4.2	Ø5.2
D4		Ø46	Ø64	Ø78
H1		1	1	1
H2		57	74.5	85.5
H3		14	17	19
H4	±0.02	24.5	32	38
H5		12	15	17
H6		37	49.3	56.5
L1	±0.02	19	24	26
L2	±0.02	8	12	14
P1		6.2	8	8.5
P2	+0.1	1.2	1.5	1.5
P3		4	6	8

## Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso i magneti sulle griffe. Per i dettagli si veda la sezione "Accessori".



Sono tutti dotati di un cavo piatto a tre fili e di un led.

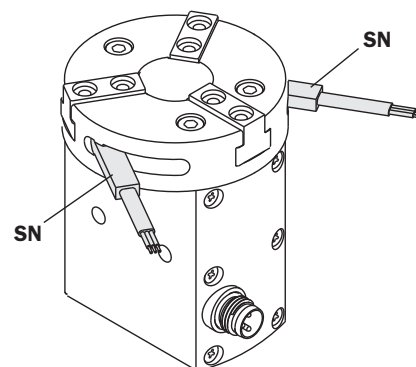


## Sensors

The operating position can be checked by one or more magnetic sensors (optional), that detect the position by the magnets on the jaws inside.

For details, see the "Accessories" section.

They are all provided with a 3-wire flat cable and a LED.



## Carichi di sicurezza e giochi

Consultare la tabella per i carichi massimi ammissibili. Forze e coppie eccessive possono danneggiare la pinza e causare difficoltà di funzionamento compromettendo la sicurezza dell'operatore.

$F_s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$ , sono i carichi massimi ammissibili in condizioni statiche, cioè con le griffe ferme.

$F_d$ ,  $M_x d$ ,  $M_y d$ ,  $M_z d$ , sono i carichi massimi ammissibili in condizioni dinamiche, cioè con le griffe in movimento.

La tabella mostra inoltre la massa ammissibile ( $m$ ) per ogni dito di presa quando la pinza è usata al massimo delle prestazioni.

La figura sotto mostra anche il gioco massimo delle griffe.

	MPTM1606	MPTM2508	MPTM3210
$F_s$	60 N	120 N	200 N
$M_x s$	3 Nm	8 Nm	20 Nm
$M_y s$	3 Nm	8 Nm	20 Nm
$M_z s$	3 Nm	8 Nm	20 Nm
$F_d$	0.6 N	1.2 N	2 N
$M_x d$	3 Ncm	8 Ncm	20 Ncm
$M_y d$	3 Ncm	8 Ncm	20 Ncm
$M_z d$	3 Ncm	8 Ncm	20 Ncm
$m$	60 g	120 g	200 g

## Safety loads and backlashes

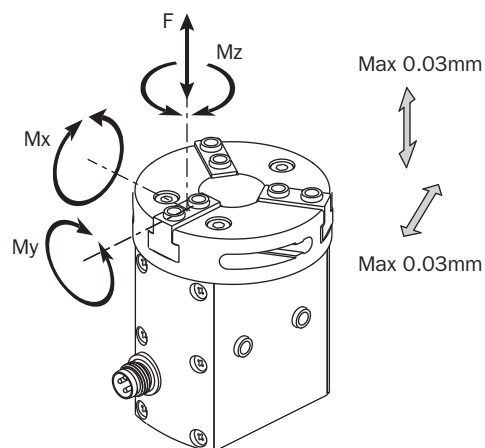
Check the table for the maximum permitted loads.

Excessive forces or torques can damage the gripper, cause operation problems and endanger the safety of the operator.  $F_s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$ , are the maximum permitted loads under static conditions, that is with motionless jaws.

$F_d$ ,  $M_x d$ ,  $M_y d$ ,  $M_z d$ , are the maximum permitted loads under dynamic conditions, that is with running jaws.

The following table also shows the maximum permitted load ( $m$ ) on each gripping tool when the gripper operates at peak performance.

The picture below shows also the jaw maximum backlash.



## Pinze ad espansione per interni serie MFD/MFU

- Nuovo concetto di pinza innovativa.
- Movimento verso il basso (MFD), o verso l'alto (MFU).
- La parte elastica può essere in Silicone o EPDM.
- Diametro di presa da 8 a 85 mm.
- Coni di centraggio opzionali.
- Sensori magnetici opzionali.
- Vari accessori disponibili per il fissaggio.

## ID expansion grippers series MFD/MFU

- New concept for innovative air hands.
- Downward movement (MFD), or upward movement (MFU).
- The elastic part can be in Silicone or EPDM.
- Grip diameters from 8 to 85 mm.
- Optional nose cones for centering.
- Optional proximity magnetic sensors.
- Several mounting accessories.



MFD



MFU



**MFD16E02CL**

### Direzione del movimento

#### Actuation direction

D - Verso il basso  
D - Downward  
U - Verso l'alto  
U - Upward

### Alimentazione

#### Air feeding

C - Con raccordo coassiale  
C - With coaxial air fitting  
H - Con raccordo laterale e foro passante  
H - With side air fitting and through hole

### Diametro nominale

#### Base diameter

08 - 10 - 12 - 14 - 16 - 18 - 20 - 22  
27 - 33 - 41 - 47 - 51 - 63

### Parte elastica

#### Elastic part

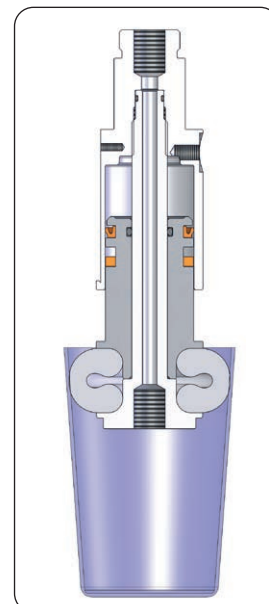
S01 - in Silicone bianco  
S01 in white Silicone  
E02 - in EPDM nero  
E02 in black EPDM

### Foro passante

I modelli ...HL sono dotati di un foro passante, che si può usare per immettere aria compressa o in depressione, allo scopo di raffreddare delle parti o di controllarne la tenuta.

### Through hole

The ...HL models have a central through hole. It can be used to blow compressed air, or to provide vacuum, with the purpose to cool a part, or to check the sealing.



**Silicone o EPDM?**

La parte elastica può essere in Silicone bianco o EPDM nero. Il Silicone può essere usato su un campo di temperature più ampio e garantisce una maggiore durata, ma non è adatto in alcuni settori merceologici, perchè rende difficoltosa la verniciatura o il rivestimento delle parti che tocca.

Invece l'EPDM non lascia impronte e assicura anche un maggior coefficiente di attrito.

La parte elastica in Silicone o EPDM è fornita come ricambio e può essere sostituita, quando usurata.

La vita media della parte elastica in EPDM è di circa 0.5 milioni di cicli.

La vita media della parte elastica in Silicone è di circa 1 milione di cicli.

**Silicone or EPDM?**

The elastic part can be in white silicone or black EPDM.

Silicone can be used over a wider temperature range and assures a longer life time, but it is not suitable in some industries, because it makes it difficult to paint or to coat the parts that are touched.

EPDM is mark-free and provides a higher coefficient of friction. The elastic part in Silicone or EPDM is available as a spare part and can be replaced, when worn out.

The expected medium life time of the elastic part in EPDM is about 0.5 million cycles.

The expected medium life time of the elastic part in Silicone is about 1 million cycles.

Ricambio per la parte elastica  
Spare elastic part

T	MFD / MFU													
	Ø8	Ø10	Ø12	Ø14	Ø16	Ø18	Ø20	Ø22	Ø27	Ø33	Ø41	Ø47	Ø51	Ø63
-70°C +200°C	IF08S01	IF10S01	IF12S01U	IF14S01U	IF16S01U	IF18S01	IF20S01	IF22S01	IF27S01	IF33S01	IF41S01	IF47S01	IF51S01	IF63S01
-50°C +140°C	IF08E02	IF10E02	IF12E02U	IF14E02U	IF16E02U	IF18E02	IF20E02	IF22E02	IF27E02	IF33E02	IF41E02	IF47E02	IF51E02	IF63E02



Silicone  
Silicone



EPDM

T - Temperatura d'esercizio della parte elastica (5÷60°C per il corpo pinza)

T - Operating temperature of the elastic part (5÷60°C for the gripper body)

**Coni di centraggio**

Sono disponibili come accessori dei coni di centraggio in nylon, con la vite inox.

Per le taglie maggiori di 33, sono anche dotati del foro passante.

**Centering cones**

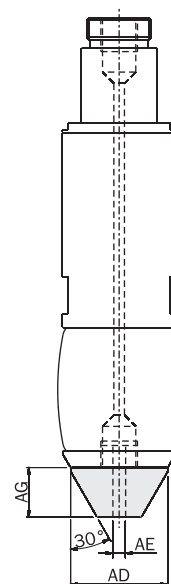
Centering cones in nylon with the stainless screw, are available as an option.

For the sizes larger than 33, they are also provided with a through hole.



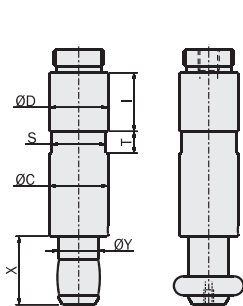
	MFC10	MFC12	MFC14	MFC18	MFC22	MFC27	MFC33	MFC41	MFC51	MFC63
Peso Weight	0.5 g	1 g	1 g	1.5 g	2 g	5 g	7 g	12 g	21 g	30 g
ØAD [mm]	7.8	10	11.8	15.5	18.8	21.3	28	37	47	56
ØAE [mm]	-	-	-	-	-	-	4	4	4	4
ØAG [mm]	2.9	3.5	4.5	6.5	8	9.5	12	19	26	30
MFD MFU	Ø10	Ø12	Ø14 Ø16	Ø18 Ø20	Ø22	Ø27	Ø33	Ø41 Ø47	Ø51	Ø63

**MFD / MFU**

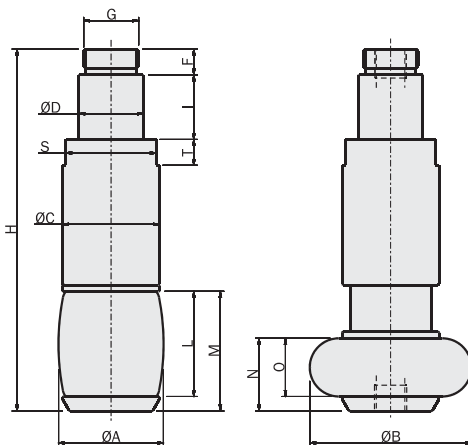




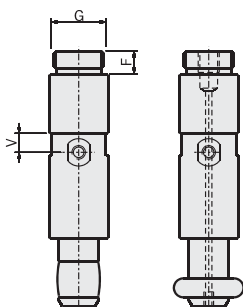
## Dimensioni (mm) Dimensions (mm)



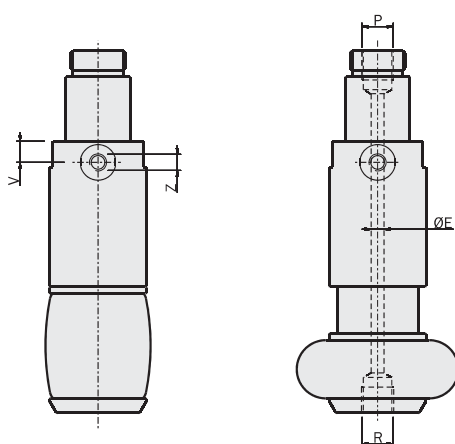
**MFD 08/10/12**



**MFD...E02CL  
MFD...S01CL**



**MFD 08/10/12**

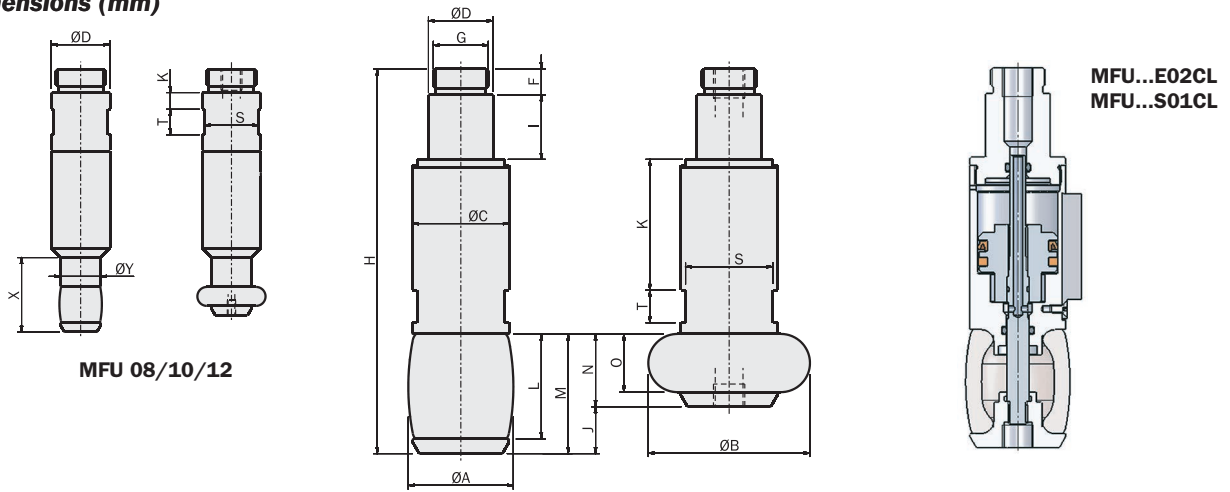


**MFD...E02HL  
MFD...S01HL**

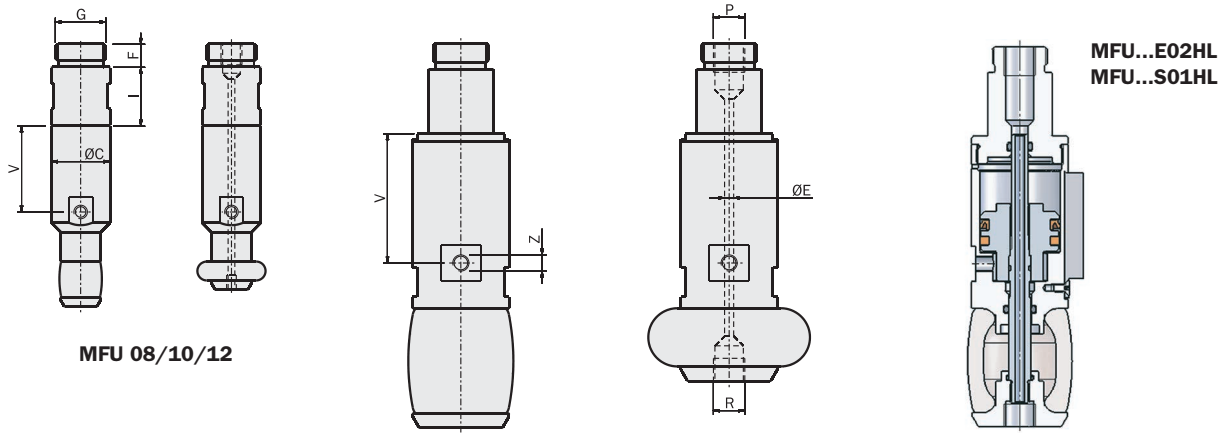
	m	ØA	ØB	ØC	ØD	ØE	F	G	H	I	L	M	N	O	P	R	S	T	V	Z	X	ØY
MFD08...CL MFD08...HL	15g	8	11	14	14	-1.5	5.5	M12x1	59.2	14	7	9.2	5.7	3.5	M5	M2	13	6	-4.5	-M3	14.7	7.6
MFD10...CL MFD10...HL	16g	10.5	13.5	14	14	-1.5	5.5	M12x1	60.7	14	8.5	10.7	6.7	4.5	M5	M2	13	6	-4.5	-M3	16.2	9.5
MFD12...CL MFD12...HL	17g	13	17	14	14	-2	5.5	M12x1	62	14	10.5	13	7.5	5	M5	M3	13	6	-4.5	-M3	16.8	11.8
MFD14...CL MFD14...HL	17g	15	19.5	14	14	-2	5.5	M12x1	62.3	14	13	15.8	8.8	6	M5	M3	13	6	-4.5	-M3	-	-
MFD16...CL MFD16...HL	17g	18	21.5	14	14	-2	5.5	M12x1	62.3	14	13	15.8	8.8	6	M5	M3	13	6	-4.5	-M3	-	-
MFD18...CL MFD18...HL	28g	19.5	24.5	18	14	-2.5	5.5	M12x1	70.5	14	16.5	19.5	12	9	M5	M3	16	6	-5.3	-M5	-	-
MFD20...CL MFD20...HL	28g	22.5	26.5	18	14	-2.5	5.5	M12x1	70.5	14	16.5	19.5	12	9	M5	M3	16	6	-5.3	-M5	-	-
MFD22...CL MFD22...HL	43g	24	31.5	21.5	14	-2.5	5.5	M12x1	80	14	21	24.2	12.2	11	M5	M3	19	7	-5.5	-M5	-	-
MFD27...CL MFD27...HL	79g	28	36	25	20	-3	8	M17x1	98	20	26	30	18	14	G1/8	M5	22	8	-7	-M5	-	-
MFD33...CL MFD33...HL	118g	34	44	30	20	-4	8	M17x1	112	20	32.5	37	22.5	18	G1/8	G1/8	28	8	-6.5	-M5	-	-
MFD41...CL MFD41...HL	280g	42	54	40	30	-4.3	11	M27x1	142.5	30	39.5	45	29.5	24	G1/8	G1/8	36	11	-7.5	-M5	-	-
MFD47...CL MFD47...HL	280g	50	58	40	30	-4.3	11	M27x1	142.5	30	39.5	45	29.5	24	G1/8	G1/8	36	11	-7.5	-M5	-	-
MFD51...CL MFD51...HL	490g	54	68	50	30	-5.5	11	M27x1	168	30	48	55	37	30	G1/8	G1/8	45	13	-10.5	-G1/8	-	-
MFD63...CL MFD63...HL	800g	66	84	60	30	-6	11	M27x1	198	30	61	70	45	36	G1/8	G1/8	54	16	-14	-G1/8	-	-

m [Peso]  
[Weight]

**Dimensioni (mm)**  
**Dimensions (mm)**



**MFU 08/10/12**



**MFU 08/10/12**

	m	ØA	ØB	ØC	ØD	ØE	F	G	H	I	J	K	L	M	N	O	P	R	S	T	V	Z	X	ØY
MFU08...CL MFU08...HL	16g	8	11	14	14	1.1	5.5	M12x1	61.5	14	3.5	4	7	9.2	5.7	3.5	M5	M2	13	6	-	-	16.3	7.6
MFU10...CL MFU10...HL	17g	10.5	13.5	14	14	1.1	5.5	M12x1	62.5	14	4	4	8.5	10.7	6.7	4.5	M5	M2	13	6	20.5	-	17.7	9.5
MFU12...CL MFU12...HL	18g	13	17	14	14	1.3	5.5	M12x1	65	14	5.5	4	10.5	13	7.5	5	M5	M3	13	6	21.5	-	20	11.8
MFU14...CL MFU14...HL	20g	15	19.5	14	14	1.3	5.5	M12x1	68.5	14	7	24.2	13	15.8	8.8	6	M5	M3	13	6	23.2	-	-	-
MFU16...CL MFU16...HL	20g	18	21.5	14	14	1.3	5.5	M12x1	68.5	14	7	24.2	13	15.8	8.8	6	M5	M3	13	6	23.2	-	-	-
MFU18...CL MFU18...HL	35g	19.5	24.5	18	14	1.3	5.5	M12x1	78	14	7.5	29	16.5	19.5	12	9	M5	M3	16	7	28	-	-	-
MFU20...CL MFU20...HL	35g	22.5	26.5	18	14	1.3	5.5	M12x1	78	14	7.5	29	16.5	19.5	12	9	M5	M3	16	7	28	-	-	-
MFU22...CL MFU22...HL	50g	24	31.5	21.5	14	1.8	5.5	M12x1	86.5	14	10	31.8	21	24.2	14.2	11	M5	M3	20	8	31.5	-	-	-
MFU27...CL MFU27...HL	100g	28	36	25	20	2.5	8	M17x1	108	20	12	37.5	26	30	18	14	G1/8	M5	22	9	37	-	-	-
MFU33...CL MFU33...HL	130g	34	44	30	20	2.8	8	M17x1	119	20	14.5	40.5	32.5	37	22.5	18	G1/8	G1/8	28	10	40	-	-	-
MFU41...CL MFU41...HL	300g	42	54	40	30	4.5	11	M27x1	147	30	15.5	45	39.5	45	29.5	24	G1/8	G1/8	36	12	45	-	-	-
MFU47...CL MFU47...HL	300g	50	58	40	30	4.5	11	M27x1	147	30	15.5	45	39.5	45	29.5	24	G1/8	G1/8	36	12	45	-	-	-
MFU51...CL MFU51...HL	500g	54	68	50	30	5	11	M27x1	169	30	18	54	48	55	37	30	G1/8	G1/8	45	14	56.5	-	-	-
MFU63...CL MFU63...HL	785g	66	84	60	30	5	11	M27x1	194	30	25	62	61	70	45	36	G1/8	G1/8	54	16	64.5	-	-	-

m [Peso]  
[Weight]

## Diametri di presa

La taglia è indicata nel codice con un diametro nominale della parte elastica.  
Ma ogni modello può lavorare fra un diametro minimo ed un diametro massimo.

## Grip diameters

The gripper size is indicated in the gripper code with a nominal diameter of the elastic part.  
Each model can work in a diameter range between a minimum and a maximum value.

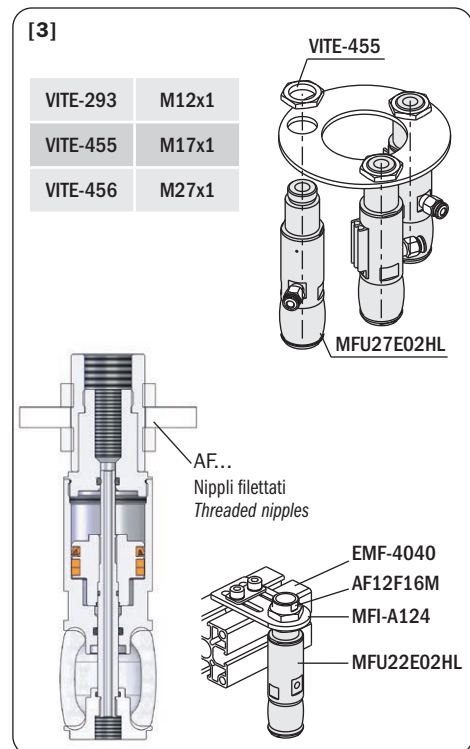
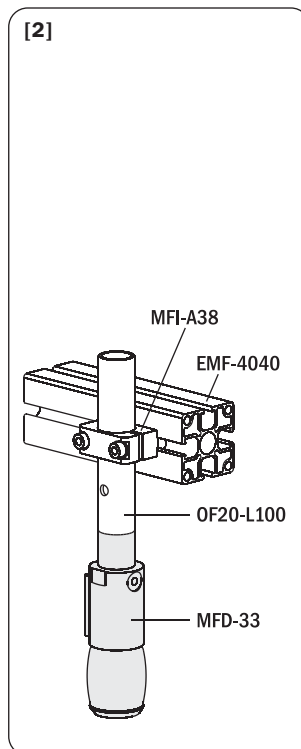
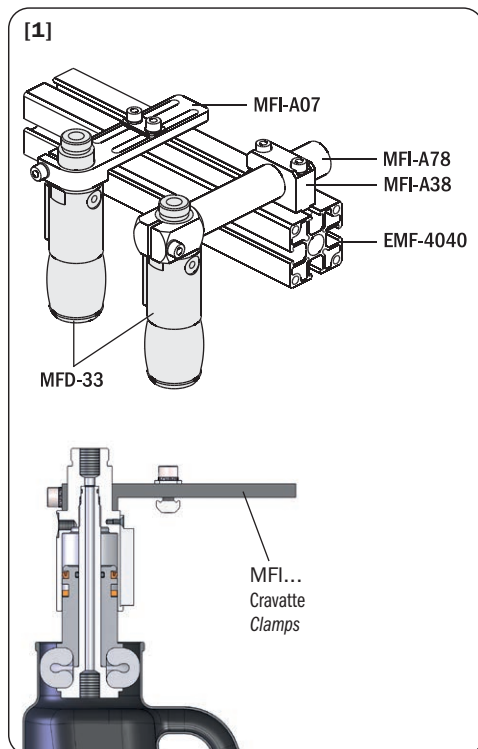
Taglia MFD-MFU / MFD-MFU Size	Diametro (mm) / Diameter (mm)								
	10	20	30	40	50	60	70	80	
08	8	11							
10	10.5	13.5							
12		13	17						
14		15	19.5						
16			18	21.5					
18			19.5	24.5					
20			22.5	26.5					
22			24	31.5					
27			28	36					
33				34	44				
41					42	54			
47						50	58		
51							54	68	
63								66	84

## Fissaggio

La pinza può essere montata, con una staffa a cravatta, direttamente sul suo codolo [1].  
Con una staffa a cravatta, sulla prolunga opzionale [2].  
Oppure attraverso i nippli filettati opzionali [3].

## Fastening

The gripper can be fitted with a clamp, either directly on its tail [1], or on the optional extension tube [2].  
Alternatively, it can be fitted through the optional threaded nipples [3].

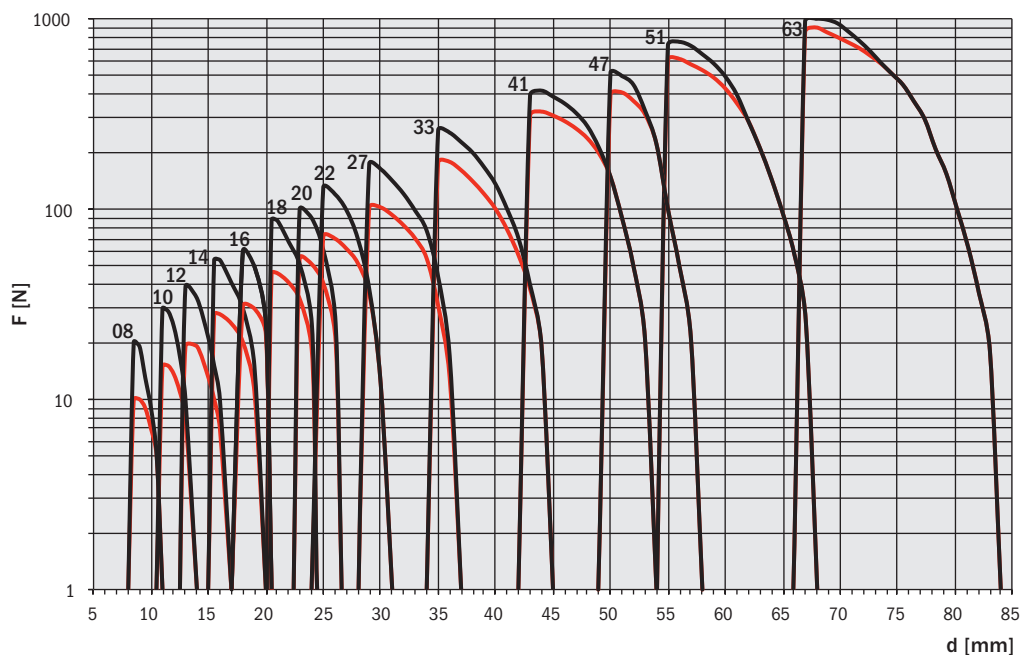
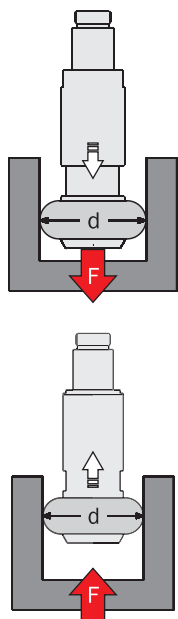
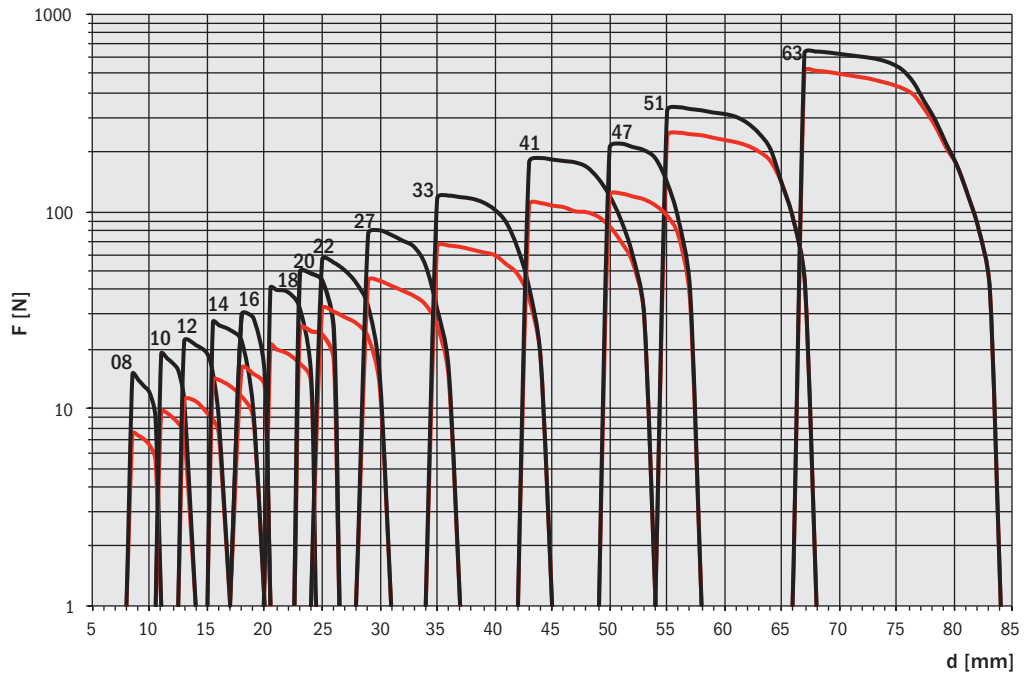
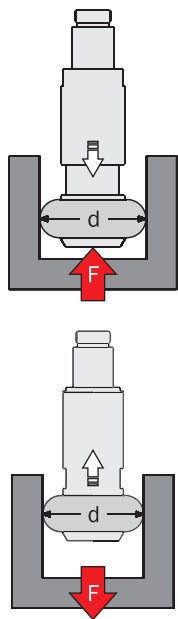


**Forza di serraggio**

La forza esercitata da una pinza MFD/MFU dipende da molteplici fattori. Principalmente il diametro dell'oggetto, ma anche la sua finitura superficiale, il coefficiente di attrito e la pressione di alimentazione. I grafici mostrano la forza di sfilamento (F) di un carico preso con la pinza a espansione, in funzione del diametro (d). Per le misurazioni sono stati usati anelli di alluminio, con rugosità Ra=0.8 e le pinze alimentate a 6 bar. Le linee nere si riferiscono alle pinze in EPDM e quelle rosse alle pinze in Silicone.

**Gripping force**

The force output of an MFD/MFU gripper depends on several variables. Mainly on the diameter of the picked object, but also on the surface finishing, the coefficient of friction and the air pressure. The graphs show the extraction force (F) on the gripped object as a function of its diameter (d). Measurements were performed with aluminum rings, with roughness Ra=0.8 while the grippers were fed with 6 bar compressed air. The black lines refer to the grippers in EPDM, while the red ones to the grippers in Silicone.



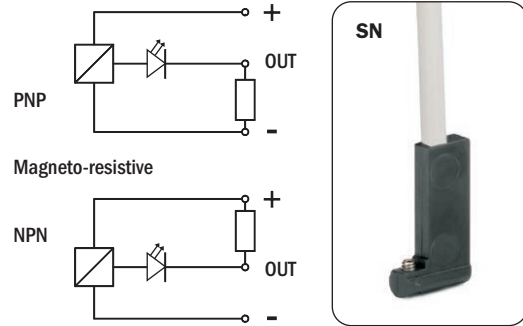
## Sensori

Nelle taglie più grandi un magnete è integrato nel pistone.  
E' disponibile un accessorio per montare i sensori della serie SN. Possono essere fissati uno o due sensori per pinza.

## Sensors

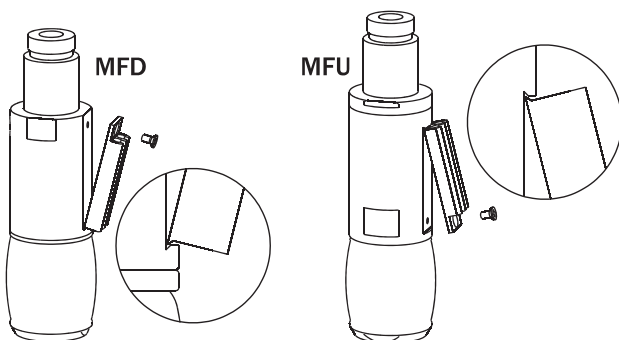
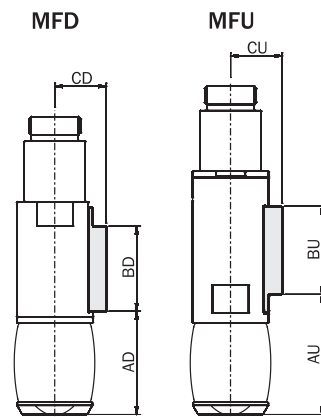
In the larger sizes a magnet is integrated in the piston.  
An optional housing for the sensors of the SN series is available.  
One or two sensors can be fitted on a gripper.

SN		
SN4N225-G	PNP	Cavo 2.5m 2.5m Cable
SN4M225-G	NPN	
SN3N203-G	PNP	Connettore M8 Snap M8 plug connector
SN3M203-G	NPN	



	MFD27-K	MFD33-K	MFD41-K	MFD51-K	MFD63-K
Peso Weight	4 g	5 g	5 g	6 g	7 g
AD [mm]	34	41.5	52	65	85.5
BD [mm]	28	34.5	40.5	49	54.5
CD [mm]	17	19.7	23.8	28.5	33.5
MFD	Ø27	Ø33	Ø41 Ø47	Ø51	Ø63

	MFU27-K	MFU33-K	MFU41-K	MFU51-K	MFU63-K
Peso Weight	4 g	5 g	5 g	6 g	7 g
AU [mm]	39.5	46.5	55.5	71.5	87.5
BU [mm]	29	33	36.5	39	45
CU [mm]	17	19.8	23.8	28.5	33.5
MFU	Ø27	Ø33	Ø41 Ø47	Ø51	Ø63

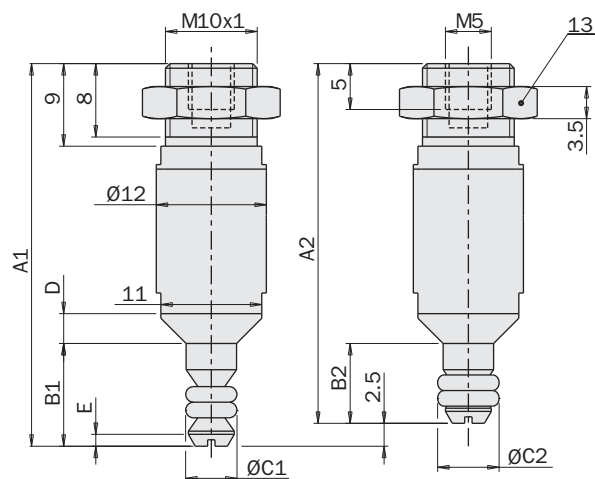


**Micro pinze ad espansione per interni serie IFU**

- Nuovo concetto di pinza innovativa.
- Movimento verso l'alto.
- La parte elastica può essere in Silicone o NBR.
- Diametro di presa da 4.5 a 8.7 mm.

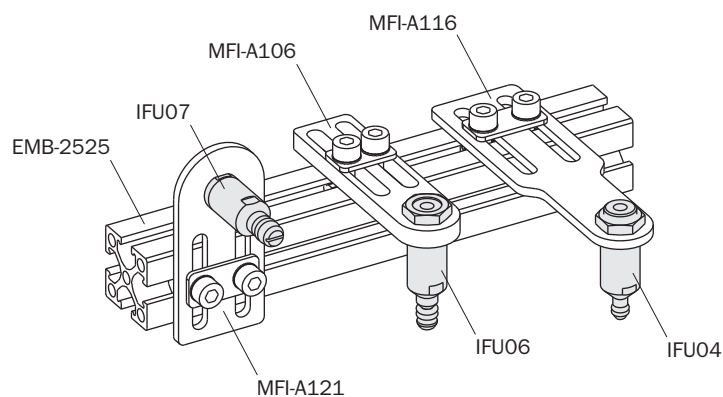
**ID expansion micro grippers series IFU**

- New concept for innovative air hands.
- Upward movement.
- The elastic part can be in Silicone or NBR.
- Grip diameters from 4.5 to 8.7 mm.



	IFU04S01RT IFU04N03RT	IFU05S01RT IFU05N03RT	IFU06S01RT IFU06N03RT	IFU07S01RT IFU07N03RT
A1	40.9	41.7	42	42
A2	38.4	39.2	39.5	39.5
B1	9.9	11.2	11.5	11.5
B2	7.4	8.7	9	9
C1	Ø4.5	Ø5.6	Ø6.6	Ø7.6
C2	Ø5.4	Ø6.7	Ø7.6	Ø8.7
X1	3	3.4	3.4	3.4
X2	2.7	3.4	3.4	3.4
W1	4	4.8	5.1	5.1
W2	2.7	3.6	3.8	3.9
D	3.75x45°	3.25x45°	2.75x45°	2.4x45°
E	1x60°	1.3x60°	1.4x60°	1.5x60°
Peso Weight	7g	7g	8g	9g

**Esempi di utilizzo**  
**Application examples**

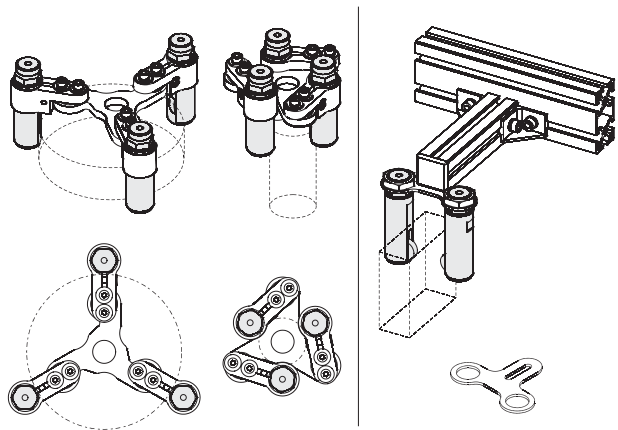
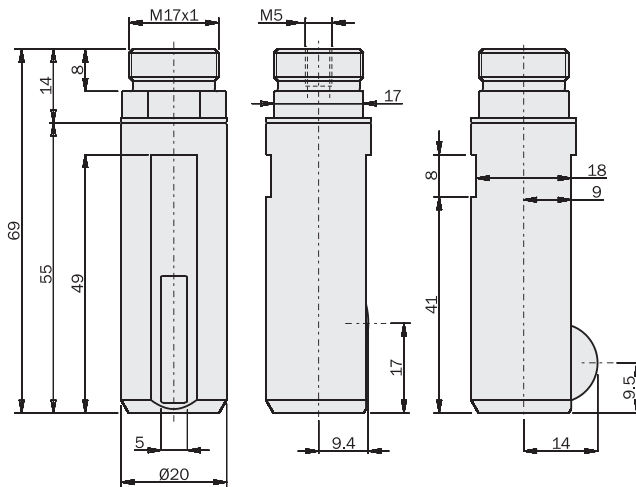
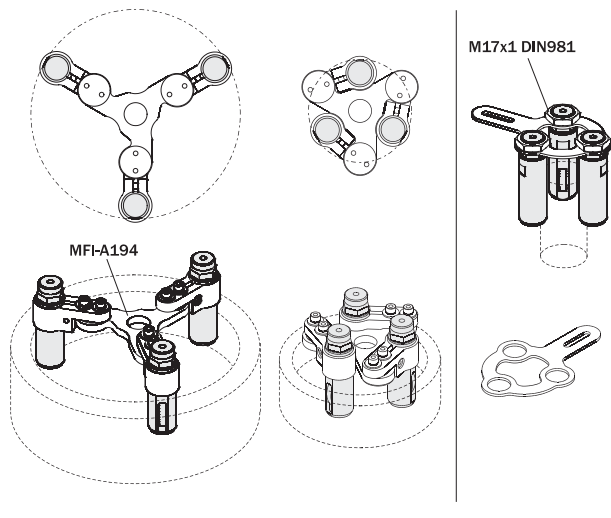


**Pinza elastica mono-dito**

- Azionamento a semplice effetto con ritorno elastico.
- Corpo da Ø20mm cravattabile.
- Vari accessori per il fissaggio.
- Modularità.

**One finger elastic module**

- Single acting with spring reset.
- Clampable Ø20mm body.
- Several mounting accessories.
- Modularity.



	OFD20
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]
Pressione di esercizio Pressure range	3 ÷ 8 bar
Temperatura di esercizio Temperature range	5° ÷ 60 °C.
Forza Force	0 ÷ 145 N
Corsa a 6 bar 6 bar stroke	4.5 mm
Frequenza max funzionamento continuativo Maximum working frequency	2 Hz
Consumo d'aria per ciclo Cycle air consumption	3 cm <sup>3</sup>
Peso Weight	40 g

**Attuatori pneumatici mono-dito angolari per staffaggio, serie OFG**

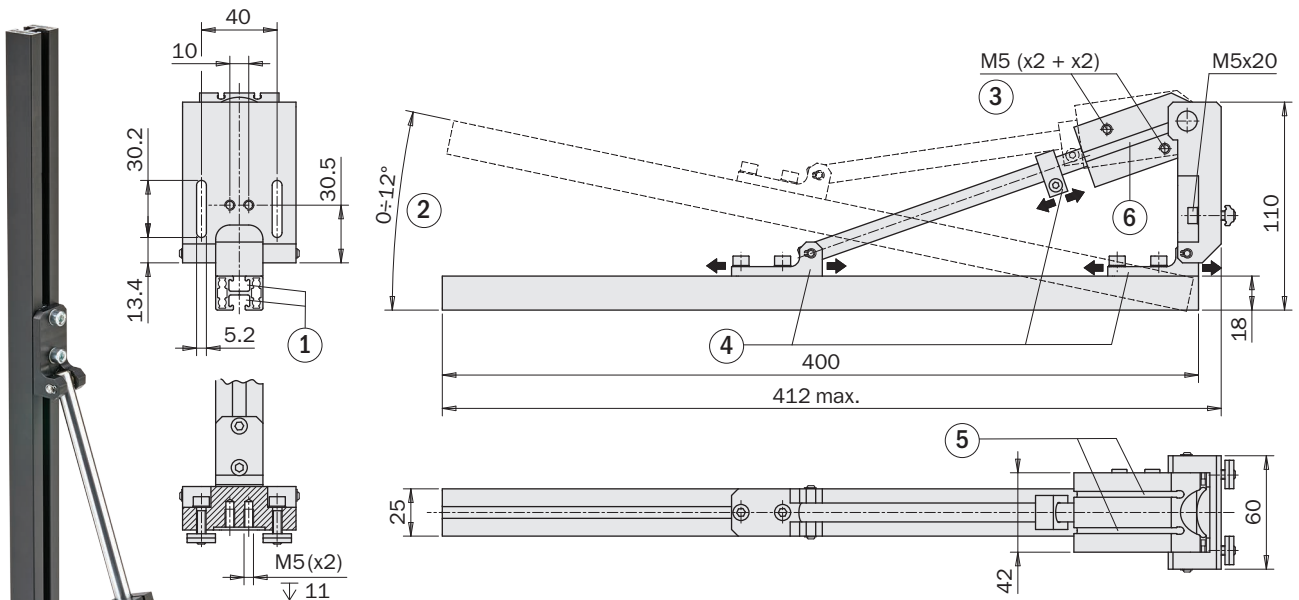
- Azionamento a doppio effetto su entrambi i lati.
- Alesaggio: 25mm.
- Corsa angolare regolabile fino a 12°.
- Compatibile con tutti gli accessori della serie MFI.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

**One-finger angular pneumatic actuators for clamping (series OFG)**

- Double-acting drive on both sides.
- Bore: 25mm.
- Angular stroke adjustable up to 12°.
- Compatible with all the accessories of the MFI series.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.

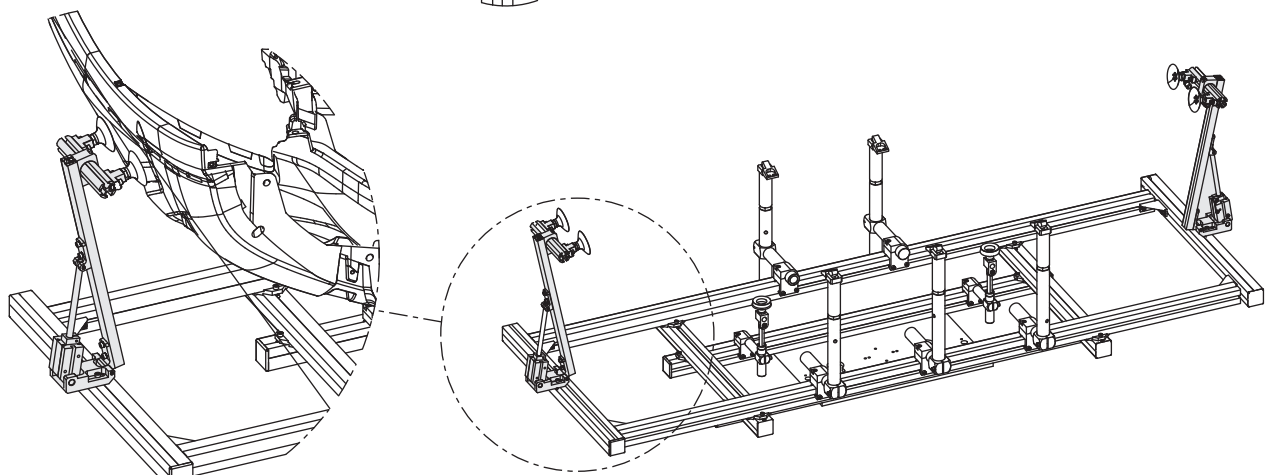
	OFG3012
Pressione di esercizio <i>Operating pressure</i>	2÷8 bar
Temperatura di esercizio <i>Operating temperature</i>	5°÷60° C
Coppia di chiusura a 6 bar <i>Closing torque at 6 bar</i>	18 Nm
Peso <i>Weight</i>	0.75 kg

- ① Cave per serie MFI...  
*Slots for the MFI series...*
- ② Corsa  
*Stroke*
- ③ Ingresso aria  
*Air connection*
- ④ Regolazione della corsa  
*Stroke adjustment*
- ⑤ Cave per sensori magnetici serie SS o SN  
*Slots for magnetic sensors of the SS or SN series*



⑥ Cave per sensori magnetici serie SL  
*Slots for magnetic sensors of the SL series*

⑦ Si può usare il Servizio Stampa 3D di Gimatic per ordinare dita di presa personalizzate  
*Custom fingers can be ordered from Gimatic's 3D Printing Service*





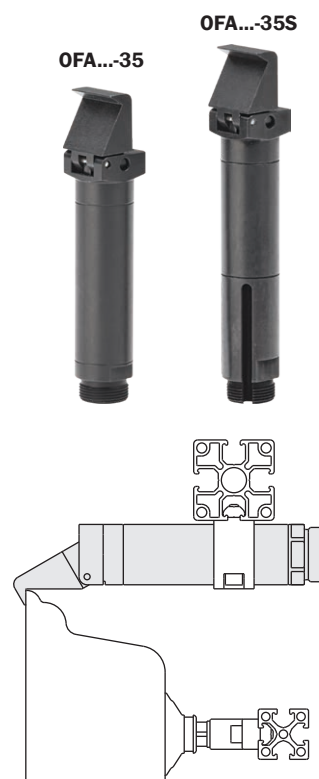
## Pinze pneumatiche mono-dito angolari per staffaggio, serie OF

- Azionamento a semplice effetto.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

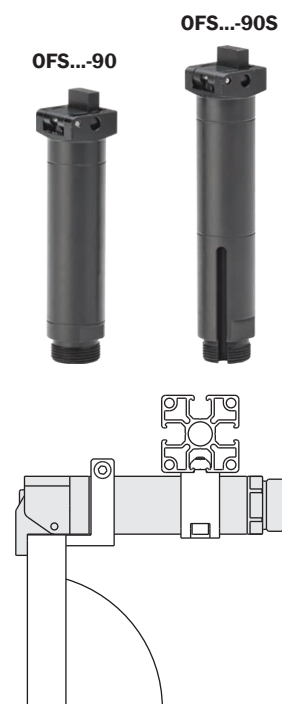
## One finger angular pneumatic grippers for clamping, series OF

- Single acting.
- Optional magnetic sensors.
- Food grade grease FDA-H1.

	OFA14-35	OFA20-35 OFA20-35S	OFA30-35 OFA30-35S	OFA50-35 OFA50-35S
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Corpo pinza Gripper body	Alluminio Aluminium			
Pressione di esercizio Pressure range	2.5 ÷ 8 bar			
Temperatura di esercizio Temperature range	5 ÷ 60 °C.			
Corsa Stroke	35°			
Alesaggio Piston bore	Ø10 mm	Ø16 mm	Ø25 mm	Ø40 mm
Coppia di chiusura a 6 bar Closing torque at 6 bar	26 Ncm	100 Ncm	430 Ncm	1900 Ncm
Consumo d'aria per ciclo Cycle air consumption	0.4 cm <sup>3</sup>	1.24 cm <sup>3</sup>	4.56 cm <sup>3</sup>	43 cm <sup>3</sup>
Peso Weight	25 g	65 g 86 g	206 g 272 g	860 g 1060 g



	OFS14-90	OFS20-90 OFS20-90S	OFS30-90 OFS30-90S
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Corpo pinza Gripper body	Alluminio Aluminium		
Pressione di esercizio Pressure range	2.5 ÷ 8 bar		
Temperatura di esercizio Temperature range	5 ÷ 60 °C.		
Corsa Stroke	95°		
Alesaggio Piston bore	Ø10 mm	Ø16 mm	Ø25 mm
Coppia di chiusura a 6 bar Closing torque at 6 bar	19 Ncm	70 Ncm	300 Ncm
Consumo d'aria per ciclo Cycle air consumption	1 cm <sup>3</sup>	3.52 cm <sup>3</sup>	12.9 cm <sup>3</sup>
Peso Weight	23 g	60 g 80 g	185 g 245 g



## Pinze pneumatiche mono-dito angolari per staffaggio, serie OF

- Azionamento a semplice effetto.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.

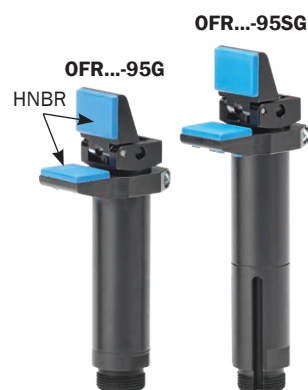
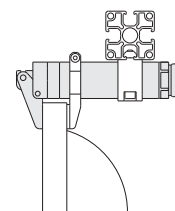
## One finger angular pneumatic grippers for clamping, series OF

- Single acting.
- Optional magnetic sensors.
- Food grade grease FDA-H1.

	OFR14-95	OFR20-95 OFR20-95S	OFR30-95 OFR30-95S	OFR50-95 OFR50-95S
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Corpo pinza Gripper body	Alluminio Aluminium			
Pressione di esercizio Pressure range	2.5 ÷ 8 bar			
Temperatura di esercizio Temperature range	5 ÷ 60 °C.			
Corsa Stroke	95°			
Alesaggio Piston bore	Ø10 mm	Ø16 mm	Ø25 mm	Ø40 mm
Coppia di chiusura a 6 bar Closing torque at 6 bar	19 Ncm	70 Ncm	300 Ncm	1250 Ncm
Consumo d'aria per ciclo Cycle air consumption	1 cm <sup>3</sup>	3.52 cm <sup>3</sup>	12.9 cm <sup>3</sup>	80 cm <sup>3</sup>
Peso Weight	25 g	60 g 81 g	193 g 257 g	790 g 990 g

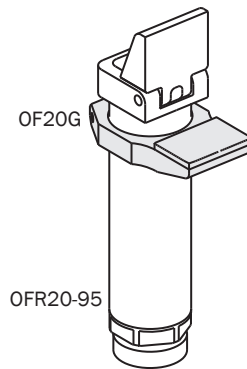
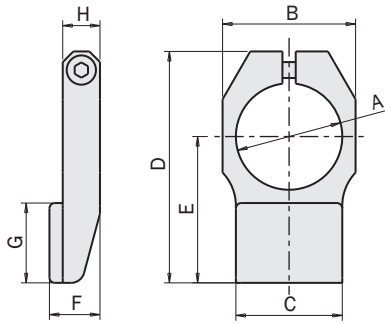
	OFR14-95M	OFR20-95M OFR20-95SM	OFR30-95M OFR30-95SM
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Corpo pinza Gripper body	Alluminio Aluminium		
Pressione di esercizio Pressure range	2.5 ÷ 8 bar		
Temperatura di esercizio Temperature range	5 ÷ 60 °C.		
Corsa Stroke	95°		
Alesaggio Piston bore	Ø10 mm	Ø16 mm	Ø25 mm
Coppia di chiusura a 6 bar Closing torque at 6 bar	19 Ncm	70 Ncm	300 Ncm
Consumo d'aria per ciclo Cycle air consumption	1 cm <sup>3</sup>	3.52 cm <sup>3</sup>	12.9 cm <sup>3</sup>
Peso Weight	25 g	60 g 81 g	790 g 990 g

	OFR14-95G	OFR20-95G OFR20-95SG	OFR30-95G OFR30-95SG
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Corpo pinza Gripper body	Alluminio Aluminium		
Pressione di esercizio Pressure range	2.5 ÷ 8 bar		
Temperatura di esercizio Temperature range	5 ÷ 60 °C.		
Corsa Stroke	95°		
Alesaggio Piston bore	Ø10 mm	Ø16 mm	Ø25 mm
Coppia di chiusura a 6 bar Closing torque at 6 bar	19 Ncm	70 Ncm	300 Ncm
Consumo d'aria per ciclo Cycle air consumption	1 cm <sup>3</sup>	3.52 cm <sup>3</sup>	12.9 cm <sup>3</sup>
Peso Weight	30 g	80 g 100 g	230 g 300 g

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

**Riscontro per pinze OFR**

(kit completo di viti)



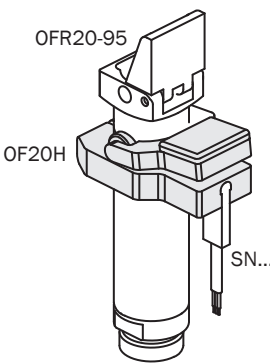
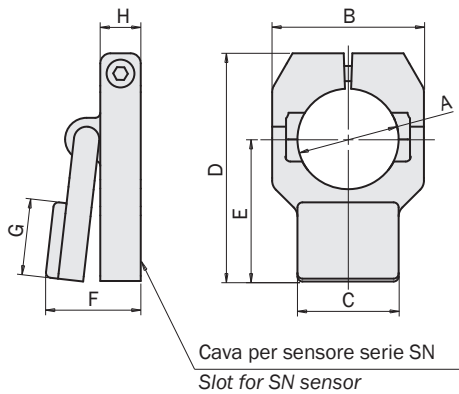
**Fixed stopper for OFR grippers**

(kit with screws)

	OF14G	OF20G	OF30G
A [mm]	Ø14	Ø20	Ø30
B [mm]	19	25	37
C [mm]	14	20	30
D [mm]	32	43.5	63
E [mm]	19	27.5	40
F [mm]	10	9.5	12
G [mm]	11	15	20
H [mm]	6	7	9
Peso Weight	6g	12g	30g

**Riscontro per sensore magnetico**

(kit completo di viti)



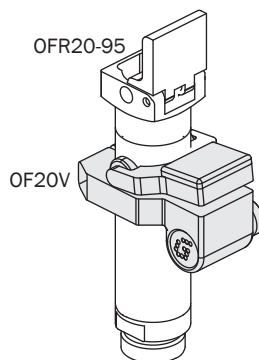
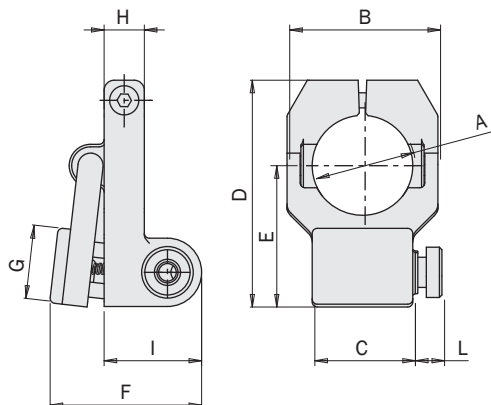
**Stopper for magnetic sensor**

(kit with screws)

	OF14H	OF20H	OF30H
A [mm]	Ø14	Ø20	Ø30
B [mm]	22	30	42
C [mm]	14	20	30
D [mm]	34.5	45	64
E [mm]	21	28	40
F [mm]	17.6	18.7	25.5
G [mm]	11	15	20
H [mm]	8	8	12
I [mm]	Cava per sensori SN Slot for SN sensors		
Peso Weight	15g	20g	28g

**Riscontro per sensore di vuoto**

(kit completo di viti)



**Stopper for vacuum sensor**

(kit with screws)

	NEW OF14V	NEW OF20V	NEW OF30V
A [mm]	Ø14	Ø20	Ø30
B [mm]	22	30	42
C [mm]	14	20	30
D [mm]	34.5	45.1	64
E [mm]	21	28.1	40
F [mm]	28.9	30.1	38
G [mm]	11	15	20
H [mm]	8	8	12
I [mm]	19.3	19.5	24.4
L [mm]	11.3	5.8	5.8
Peso Weight	?	?	?

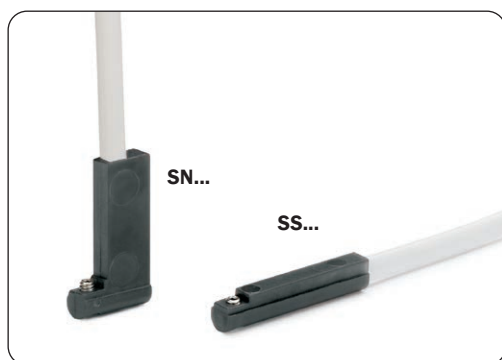
## Sensori magnetici opzionali

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso il magnete sul pistone. Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.

I sensori utilizzabili sono:

SN4N225-G	PNP	Cavo 2.5m 2.5m cable
SN4M225-G	NPN	
SN3N203-G	PNP	Connettore M8 Snap M8 plug connector
SN3M203-G	NPN	
SS4N225-G	PNP	Cavo 2.5m 2.5m cable
SS4M225-G	NPN	
SS3N203-G	PNP	Connettore M8 Snap M8 plug connector
SS3M203-G	NPN	

Sono tutti dotati di un cavo piatto a tre fili e di un led.



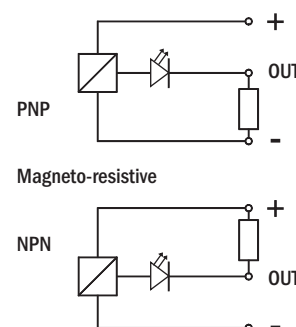
OF...	SWP...
OF14...	SWP-014
OF20...	SWP-020
OF30...	SWP-030

Nelle versioni ...S i sensori sono annegati nelle apposite cave. Nelle altre versioni è necessaria una fascetta esterna (SWP-...).

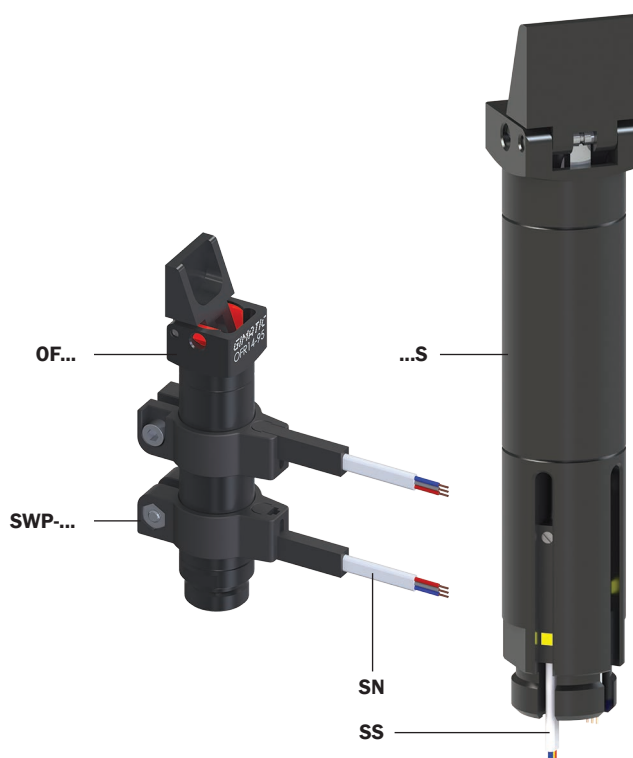
## Optional magnetic sensors

The operating position is detected by magnetic proximity sensors (optional) through a magnet placed on the piston. The use of magnetic proximity sensors is to be avoided in the vicinity of large masses of ferromagnetic material or intense magnetic fields as this may cause detection problems.

The sensors that can be used are:



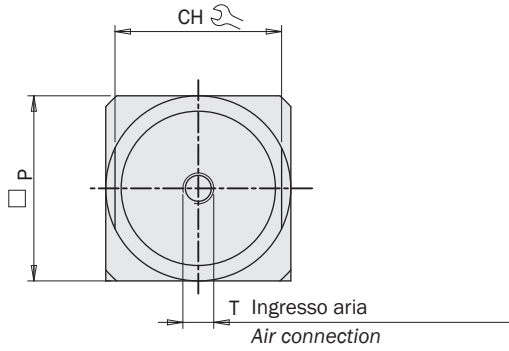
They are all provided with a 3-wire flat cable and a LED.



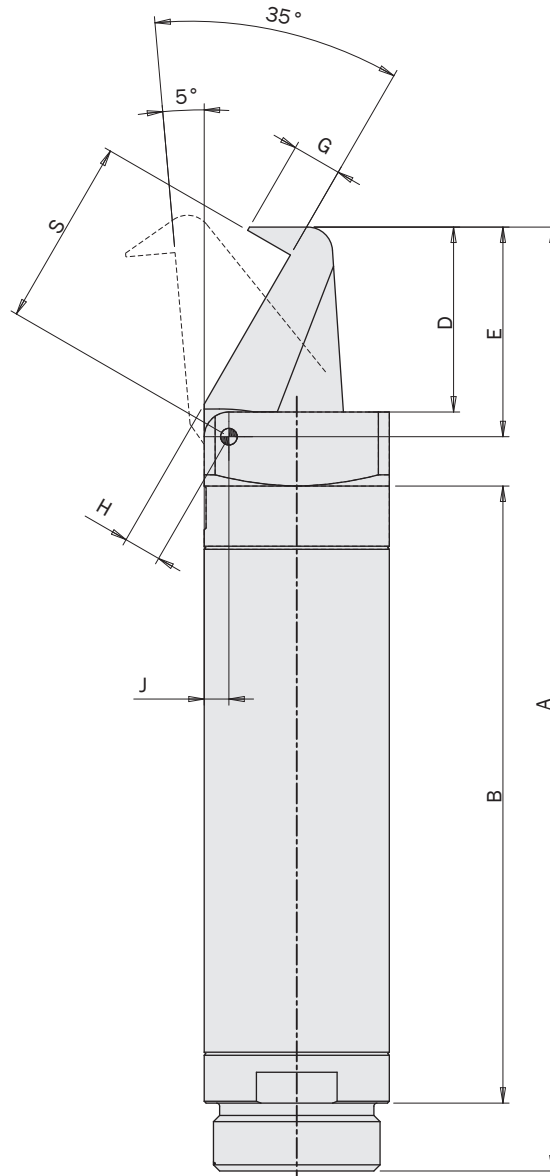
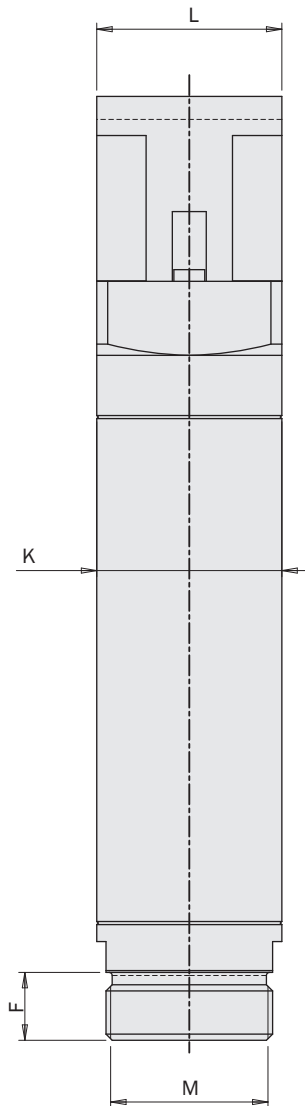
In the ...S versions, the sensors are embedded in their slots. In the other versions, an external bracket (SWP-...) is required.

**Dimensioni (mm)**  
**Dimensions (mm)**

OFA...



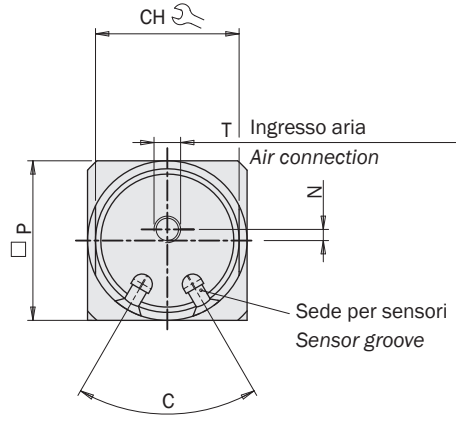
	OFA14-35	OFA20-35	OFA30-35	OFA50-35
A	74	106	153	235.5
B	45.5	68.5	100	139
D	14	20.5	30	49.5
E	16	23	34	56
F	5.5	8	11	25
G	4.5	6	8	14
H	3.4	3.9	6	10
J	2	2.5	4	6.5
K	Ø14	Ø20	Ø30	Ø50
L	14	20	30	50
M	M12x1	M17x1	M27x1	M45x1
P	14	20	30	50
S	13.5	20.2	30.5	50
T	M5	M5	M5	G1/8"
CH	12	17	27	46



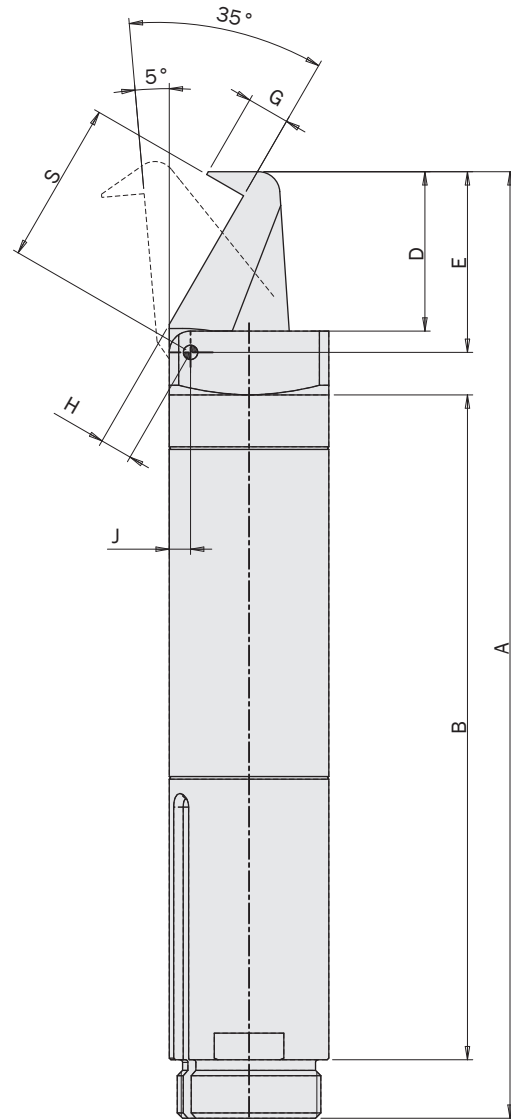
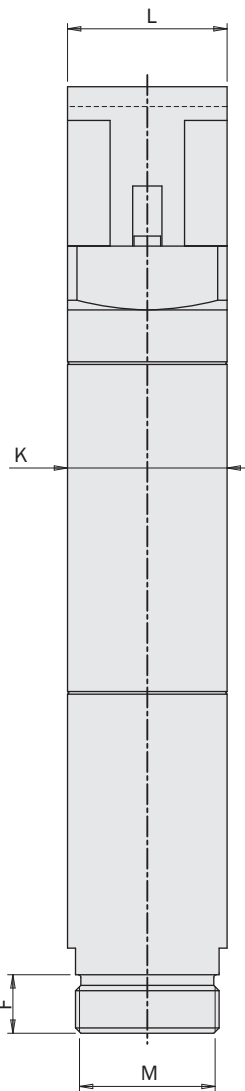
FIRST ANGLE  
PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

**OFA...S**



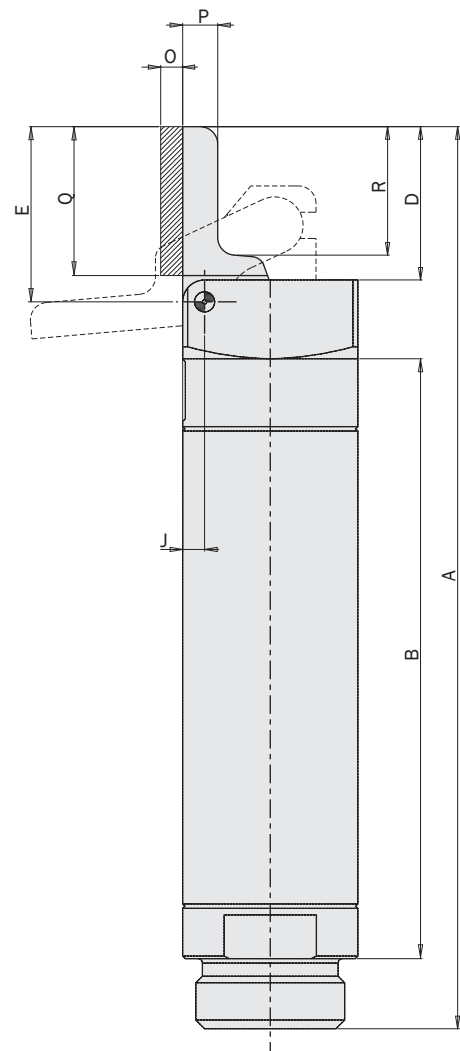
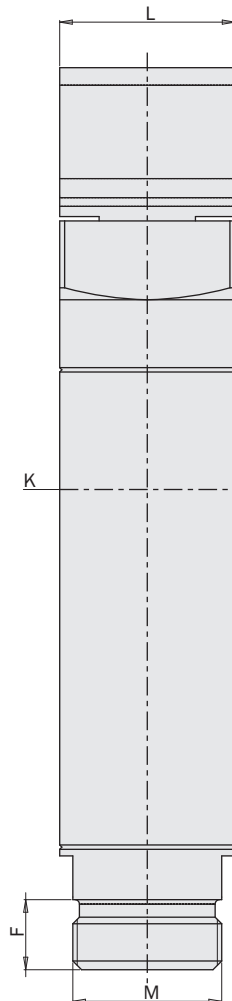
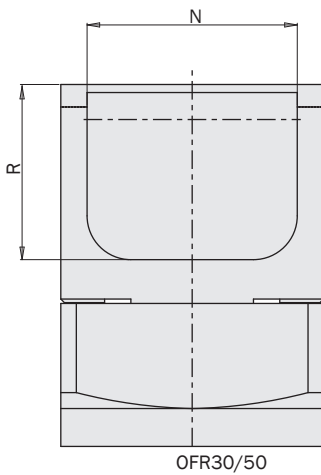
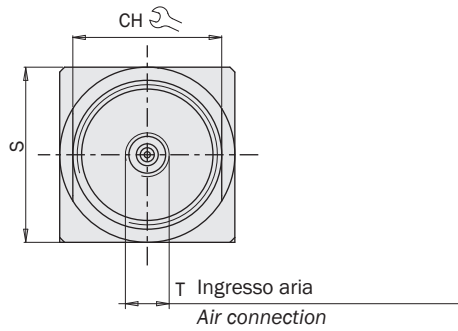
	OFA20-35S	OFA30-35S	OFA50-35S
A	120.5	178	280
B	83	125	184
C	80°	60°	60°
D	20.5	30	49.5
E	23	34	56
F	8	11	25
G	6	8	14
H	3.9	6	10
J	2.5	4	6.5
K	Ø20	Ø30	Ø50
L	20	30	50
M	M17x1	M27x1	M45x1.5
N	1.5	-	-
P	20	30	50
S	20.2	30.5	50
T	M5	M5	G1/8"
CH	17	27	46



**Dimensioni (mm)**  
**Dimensions (mm)**

OFR...

	A	B	D	E	F	J	K	L	M	N	O	P	Q	R	S	T	CH
OFR14-95	72	45.5	12	14	5.5	2	Ø14	14	M12x1	-	-	3	-	9.5	14	M5	12
OFR20-95	103	68.5	17.5	20	8	2.5	Ø20	20	M17x1	-	-	4	-	14.5	20	M5	17
OFR30-95	148	100	25	29	11	4	Ø30	30	M27x1	24	-	5	-	20	30	M5	27
OFR50-95	227.5	139	41.5	48	25	6.5	Ø50	50	M45x1.5	38	-	7	-	34	50	G1/8"	46
OFR14-95M	72	45.5	12	14	5.5	2	Ø14	14	M12x1	-	2.5	3	11	9.5	14	M5	12
OFR20-95M	103	68.5	17.5	20	8	2.5	Ø20	20	M17x1	-	2.5	4	15	14.5	20	M5	17
OFR30-95M	148	100	25	29	11	4	Ø30	30	M27x1	24	3	5	20	20	30	M5	27



FIRST ANGLE PROJECTION

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

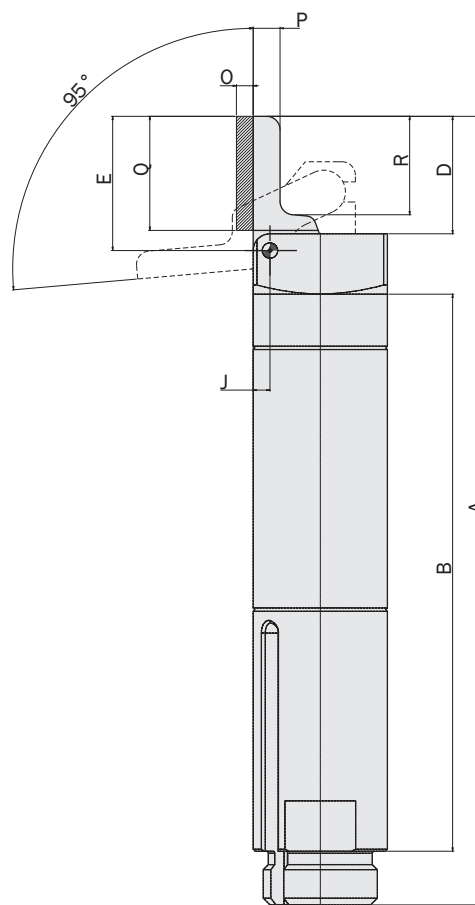
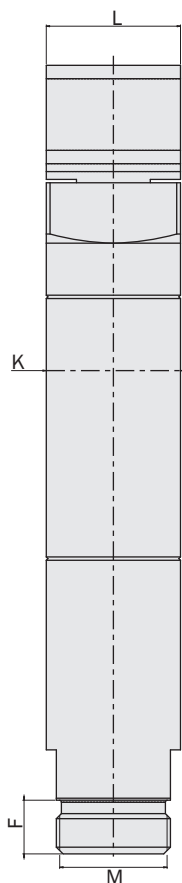
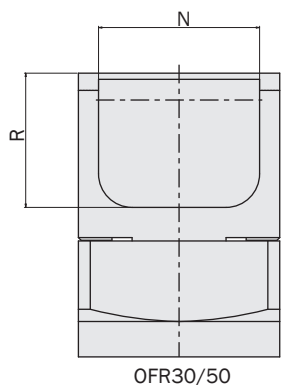
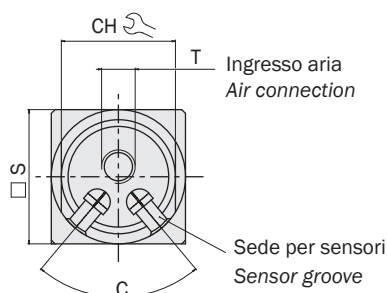
Accessori Opzionali  
Options

Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**OFR...S**

	A	B	C	D	E	F	J	K	L	M	N	O	P	Q	R	S	T	U	CH
OFR20-95S	117.5	83	80°	17.5	20	8	2.5	Ø20	20	M17x1	-	-	4	-	14.5	20	M5	1.5	17
OFR30-95S	173	125	60°	25	29	11	4	Ø30	30	M27x1	24	-	5	-	20	30	M5	-	27
OFR50-95S	272.5	209	60°	41.5	48	25	6.5	Ø50	50	M45x1.5	36	-	7	-	34	50	G1/8"	-	46
OFR20-95SM	117.5	83	80°	17.5	20	8	2.5	Ø20	20	M17x1	-	2.5	4	15	14.5	20	M5	1.5	17
OFR30-95SM	173	125	60°	25	29	11	4	Ø30	30	M27x1	24	3	5	20	20	30	M5	-	27

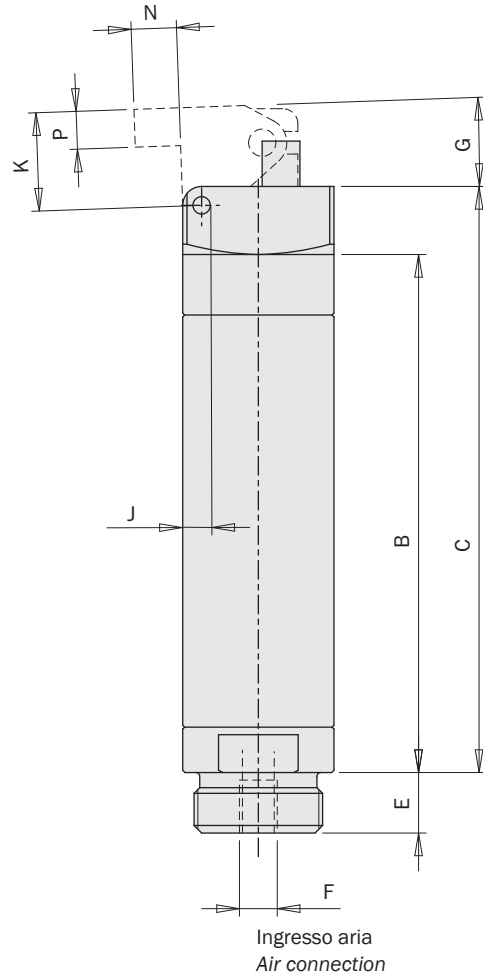
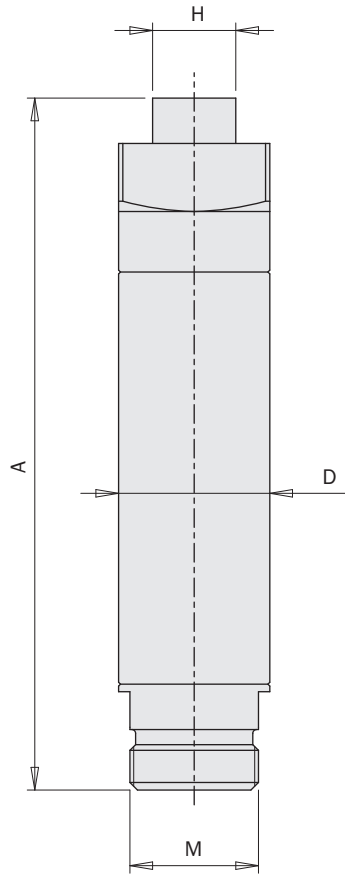
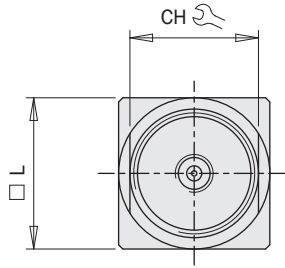




**Dimensioni (mm)**  
**Dimensions (mm)**

OFS...

	A	B	C	D	E	F	G	H	J	K	L	M	N	P	CH
OFS14-90	64	45.5	54.5	Ø14	5.5	M5	2°	8	2	9	14	M12x1	4	4	12
OFS20-90	91.5	68.5	77.5	Ø20	8	M5	2°	11	2.5	13	20	M17x1	6	5	17
OFS30-90	134	100	112	Ø30	11	M5	2°	14	4	20	30	M27x1	11	6	27

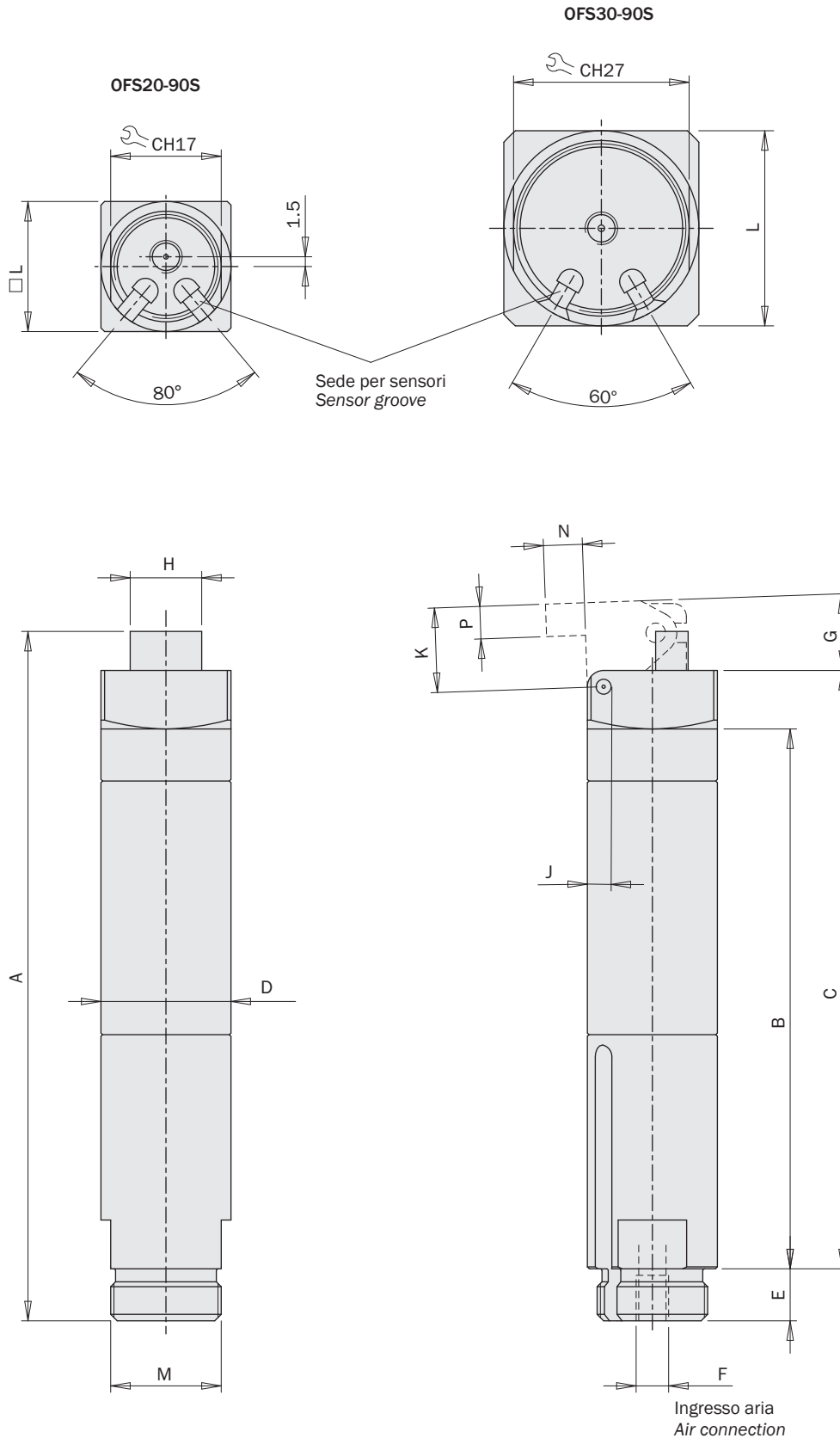


FIRST ANGLE  
PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

**OFS...S**

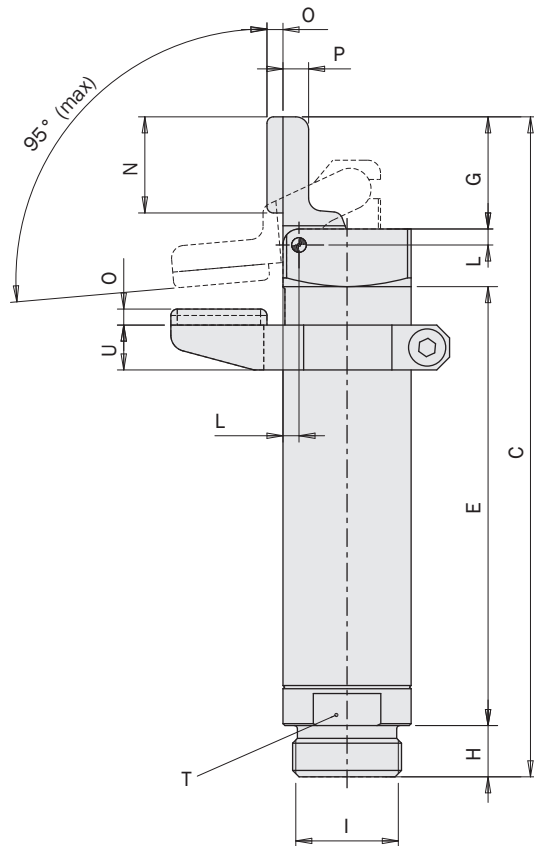
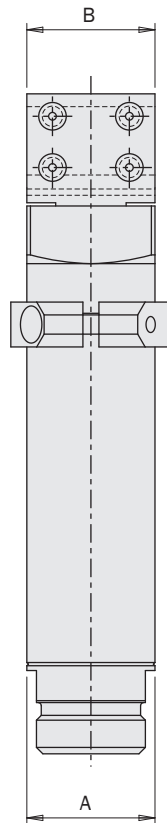
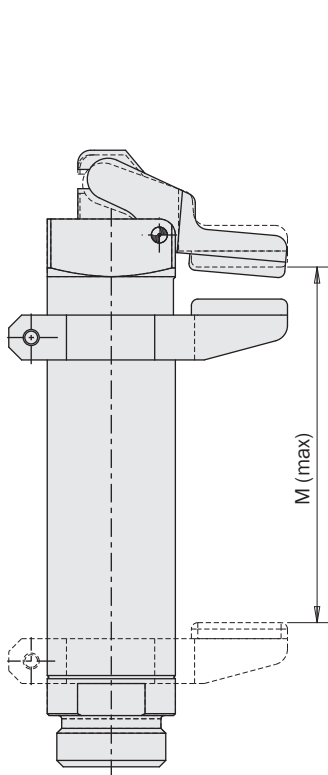
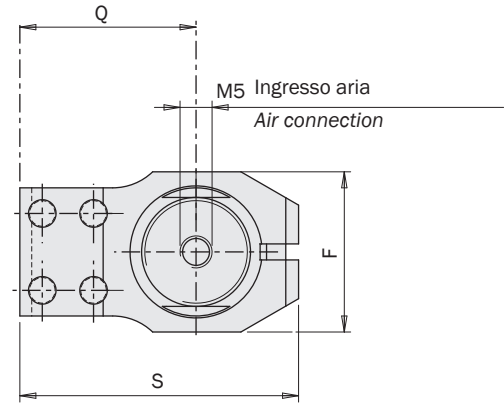
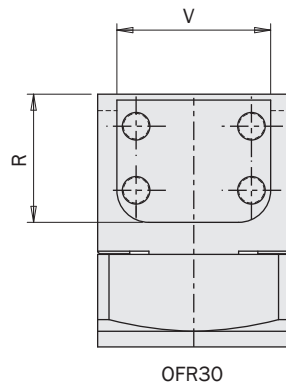
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
OFS20-90S	106	83	92	Ø20	8	M5	2°	11	2.5	13	20	M17x1	6	5
OFS30-90S	159	125	137	Ø30	11	M5	2°	14	4	20	30	M27x1	11	6



**Dimensioni (mm)**  
**Dimensions (mm)**

**OFR...-95G**

	A	B	C	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U	V
OFR14-95G	Ø14	14	72	45.5	19	12	5.5	M12x1	2	32.5	11	2.5	3	19	-	32	12	7.5	-
OFR20-95G	Ø20	20	103	68.5	25	17.5	8	M17x1	2.5	55.5	15	2.5	4	27.5	-	43.5	17	7	-
OFR30-95G	Ø30	30	148	100	37	25.5	11	M27x1	4	84	20	3	5	40	20	63	27	9	24



FIRST ANGLE PROJECTION

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

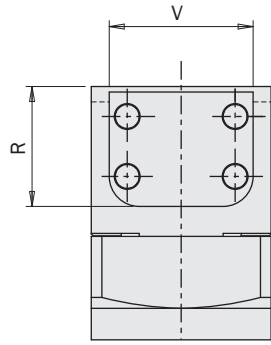
Accessori Opzionali  
Options

Sensori  
Sensors

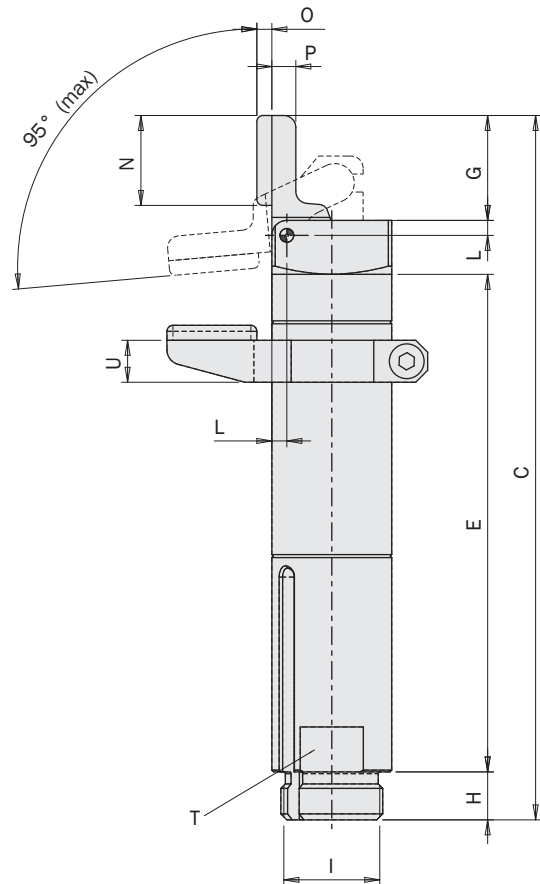
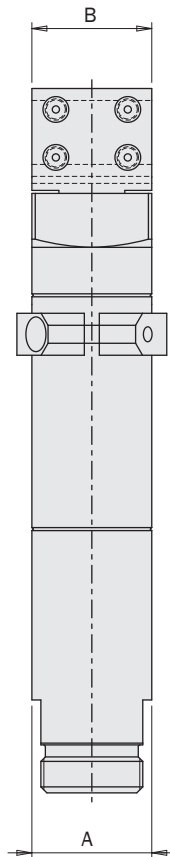
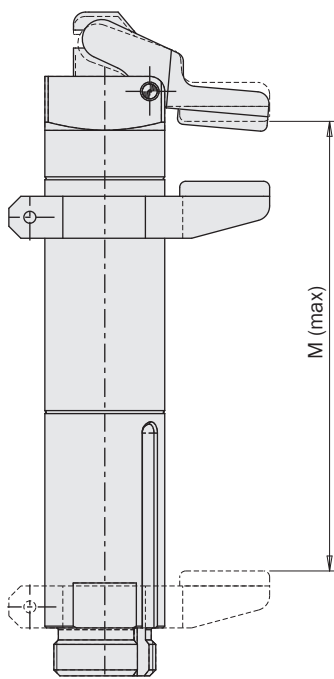
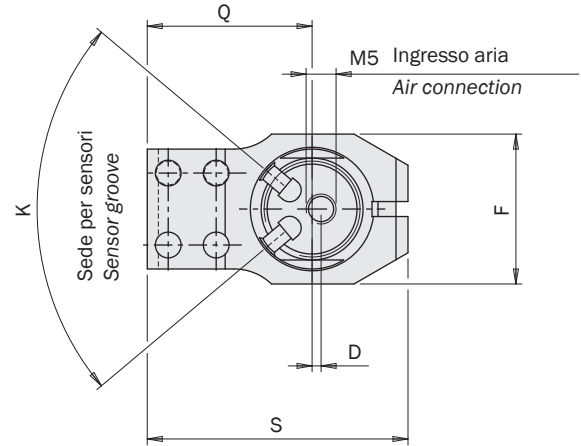
**Dimensioni (mm)**  
**Dimensions (mm)**

**OFR...-95SG**

	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q	R	S	T	U	V
OFR20-95SG	Ø20	20	117.5	1.5	83	25	17.5	8	M17x1	80°	2.5	75	15	2.5	4	27.5	-	43.5	17	7	-
OFR30-95SG	Ø30	30	173	-	124.7	37	25	11	M27x1	60°	4	113	20	3	5	40	20	63	27	9	24



OFR30



**Pinze pneumatiche mono-dito angolari per staffaggio, serie OFFP**

- Azionamento a semplice effetto.
- Contatto morbido con pastiglie in HNBR, con dita personalizzate, oppure con O-Ring in NBR, Silicone, Viton.
- Vari accessori per il fissaggio.
- Sensori magnetici e relative staffe in opzione.
- Grasso alimentare FDA-H1.

**One finger angular pneumatic grippers for clamping, series OFFP**

- Single acting.
- Soft contact by means of HNBR pads, custom fingers, or NBR, Silicone or Viton O-rings.
- Several mounting accessories.
- Magnetic sensors and relevant mounting brackets as option.
- Food grade grease FDA-H1.

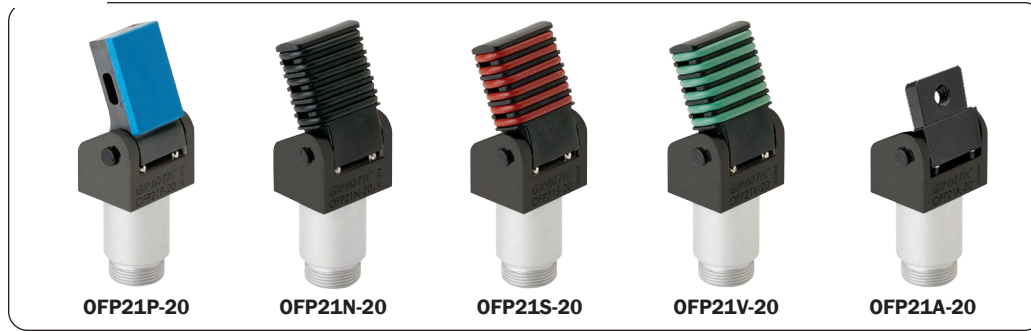
**OFFP20**



**OFFP14**



**OFFP21**



	OFFP20A-20	OFFP21A-20	OFFP14A-25
<b>HNBR</b>	OFFP20P-20	OFFP21P-20	OFFP14P-25
<b>NBR</b>	OFFP20N-20	OFFP21N-20	
<b>Silicone Silicone</b>	OFFP20S-20	OFFP21S-20	
<b>Viton</b>	OFFP20V-20	OFFP21V-20	
<b>Materiale del corpo Body construction</b>	plastica (nylon) / alluminio plastic (nylon) / aluminium		alluminio aluminium
<b>Fluido Medium</b>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
<b>Pressione di esercizio Pressure range</b>	2 ÷ 8 bar		
<b>Temperatura di esercizio Temperature range</b>	5° ÷ 60 °C.		
<b>Corsa Stroke</b>	21°	21°	25°
<b>Alesaggio Piston bore</b>	16 mm	16 mm	12 mm
<b>Coppia di chiusura a 6 bar Closing torque at 6 bar</b>	100 Ncm	100 Ncm	40 Ncm
<b>Consumo d'aria per ciclo Cycle air consumption</b>	1 cm <sup>3</sup>	1 cm <sup>3</sup>	0.4 cm <sup>3</sup>
<b>Peso Weight</b>	40 g	33 g	13 g
<b>Frequenza max funzionamento continuativo Maximum working frequency</b>	2 Hz		
<b>Tempo di chiusura senza carico Closing time without load</b>	0.02 sec		

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

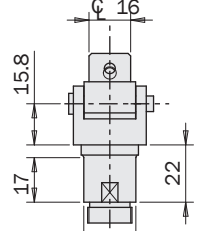
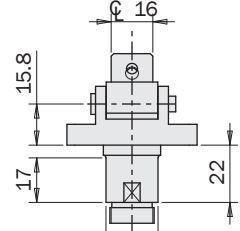
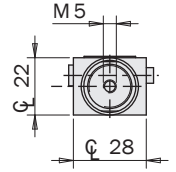
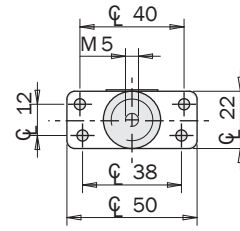
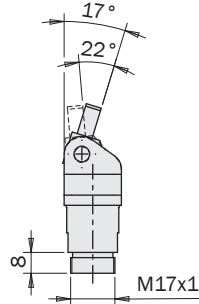
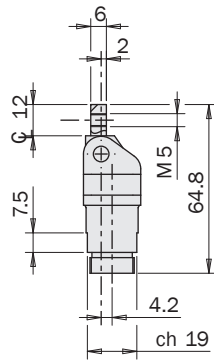
Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

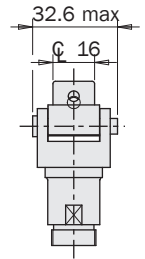
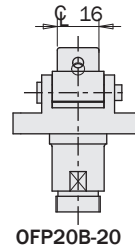
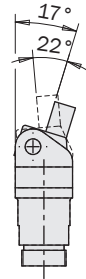
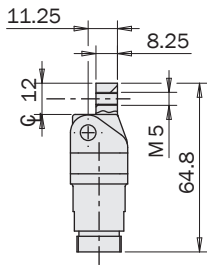
Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**



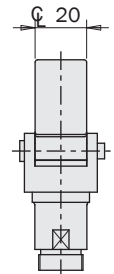
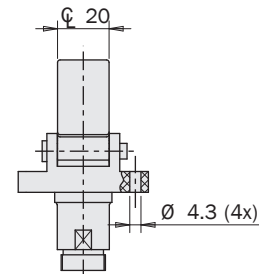
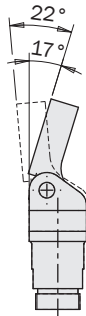
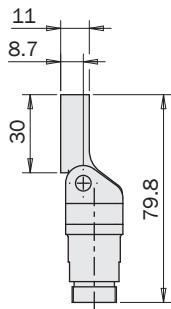
OFP20A-20

OFP21A-20



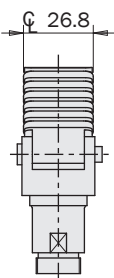
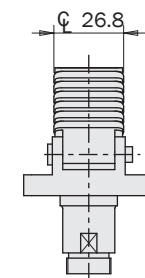
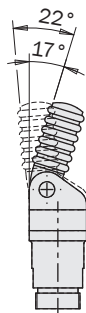
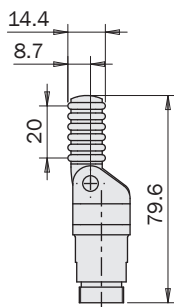
OFP20B-20

OFP21B-20



OFP20P-20

OFP21P-20



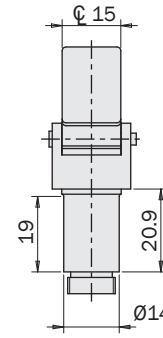
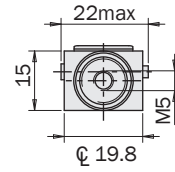
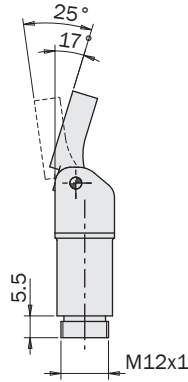
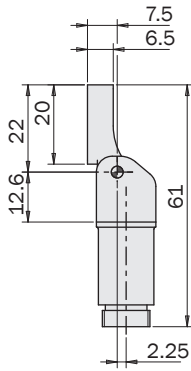
OFP20N-20  
OFP20S-20

OFP21N-20  
OFP21S-20

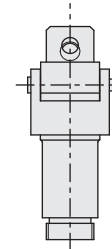
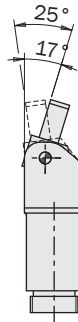
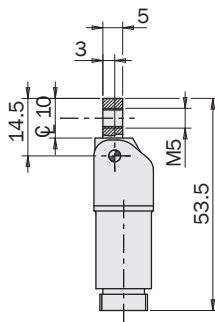


## Dimensioni (mm) Dimensions (mm)

OFFP14P-25



OFFP14A-25



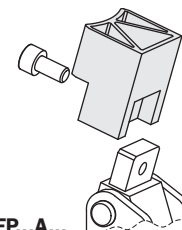
FIRST ANGLE PROJECTION

## O-Ring di ricambio Spare O-Ring



	KIT3-OFP20N	KIT3-OFP20S	KIT3-OFP20V
Materiale Material	NBR	Silicone Silicone	Viton
Pinza Gripper	OFP20N-20 OFP21N-20	OFP20S-20 OFP21S-20	OFP20V-20 OFP21V-20
Temperatura di esercizio Temperature range	5° ÷ 100 °C.	5° ÷ 200 °C.	5° ÷ 200 °C.

## Custom service HP



## Pastiglia di ricambio Spare pad

	OFR20-95-43	OFR30-95-42
Materiale Material	HNBR	HNBR
Pinza Gripper	OFP14P-25	OFP20P-20 OFP21P-20
Temperatura di esercizio Temperature range	5° ÷ 150 °C.	5° ÷ 150 °C.

## OFF...A...

Si può usare il Servizio Stampa 3D di Gimatic per ordinare dita di presa personalizzate.

Custom fingers can be ordered from Gimatic's 3D Printing Service.

### Fissaggio

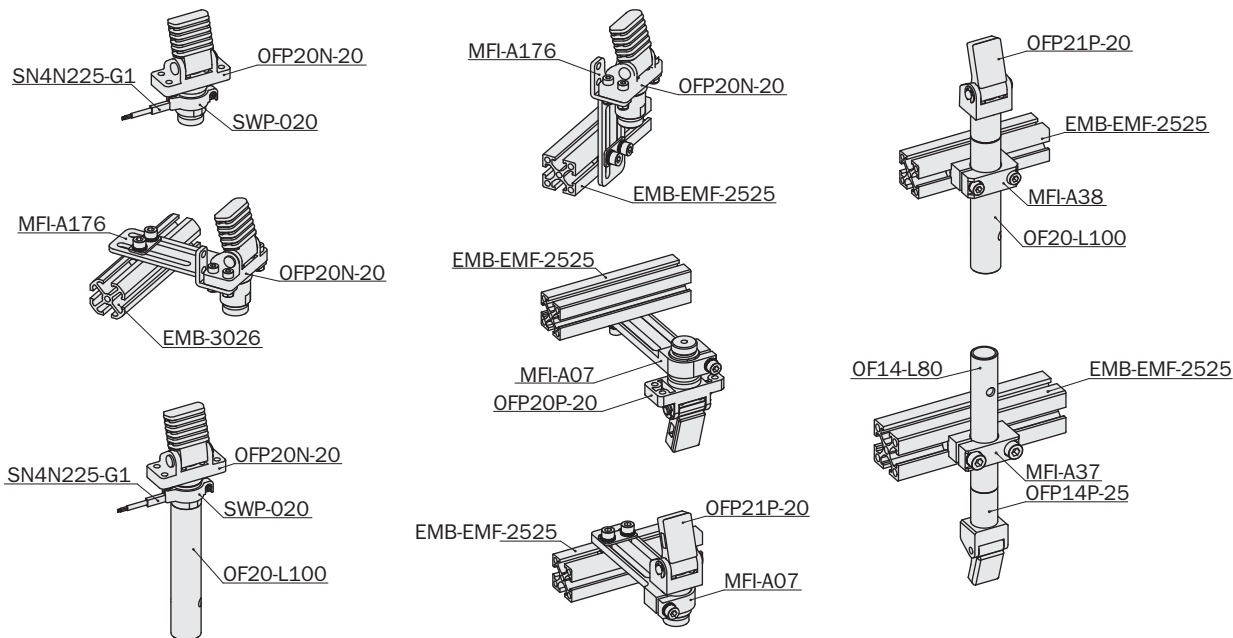
Le pinze OFF hanno il corpo in alluminio e possono essere incravattate con tutti gli accessori MFI con diametro di 14mm e 20mm.

MFI-A176 può essere usato con OFF20.

### Fastening

The OFF grippers have an aluminum body and can be clamped with all MFI accessories with 14mm and 20mm diameter.

MFI-A176 can be used with OFF20.

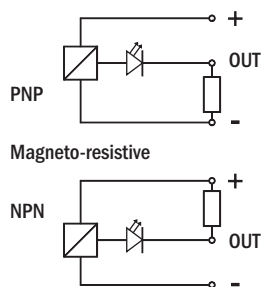


### Sensori

Il rilevamento della posizione di lavoro è affidato a uno o più sensori magnetici di prossimità (opzionali), che rilevano la posizione attraverso il magnete sul pistone. Quindi, per un corretto funzionamento, è da evitare l'impiego in presenza di forti campi magnetici od in prossimità di grosse masse di materiale ferromagnetico.

I sensori utilizzabili sono:

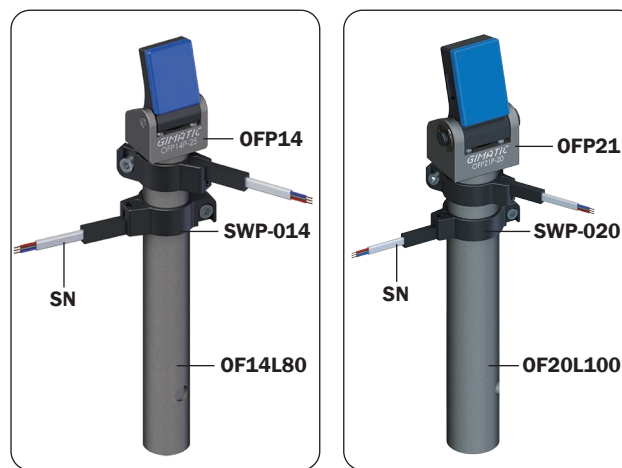
SN4N225-G	PNP	Cavo 2.5m
SN4M225-G	NPN	2.5m cable
SN3N203-G	PNP	Connettore M8
SN3M203-G	NPN	Snap M8 plug connector



### Sensors

The operating position is detected by magnetic proximity sensors (optional) through a magnet placed on the piston. The use of magnetic proximity sensors is to be avoided in the vicinity of large masses of ferromagnetic material or intense magnetic fields as this may cause detection problems.

The sensors that can be used are:



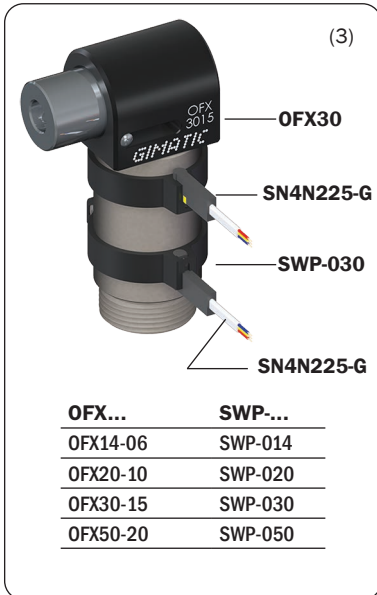


**Pinze pneumatiche perpendicolari per staffaggio mono-dito, serie OFX**

- Azionamento con pistone pneumatico a semplice effetto.
- Movimento lineare del dito perpendicolare al pistone.
- Dito con foro passante, per alimentare una ventosa (1).
- Pastiglia rimovibile (2) in gomma (HNBR) sul dito, per contatto morbido.
- Sensori e fascette opzionali (3).
- Grasso alimentare FDA-H1.

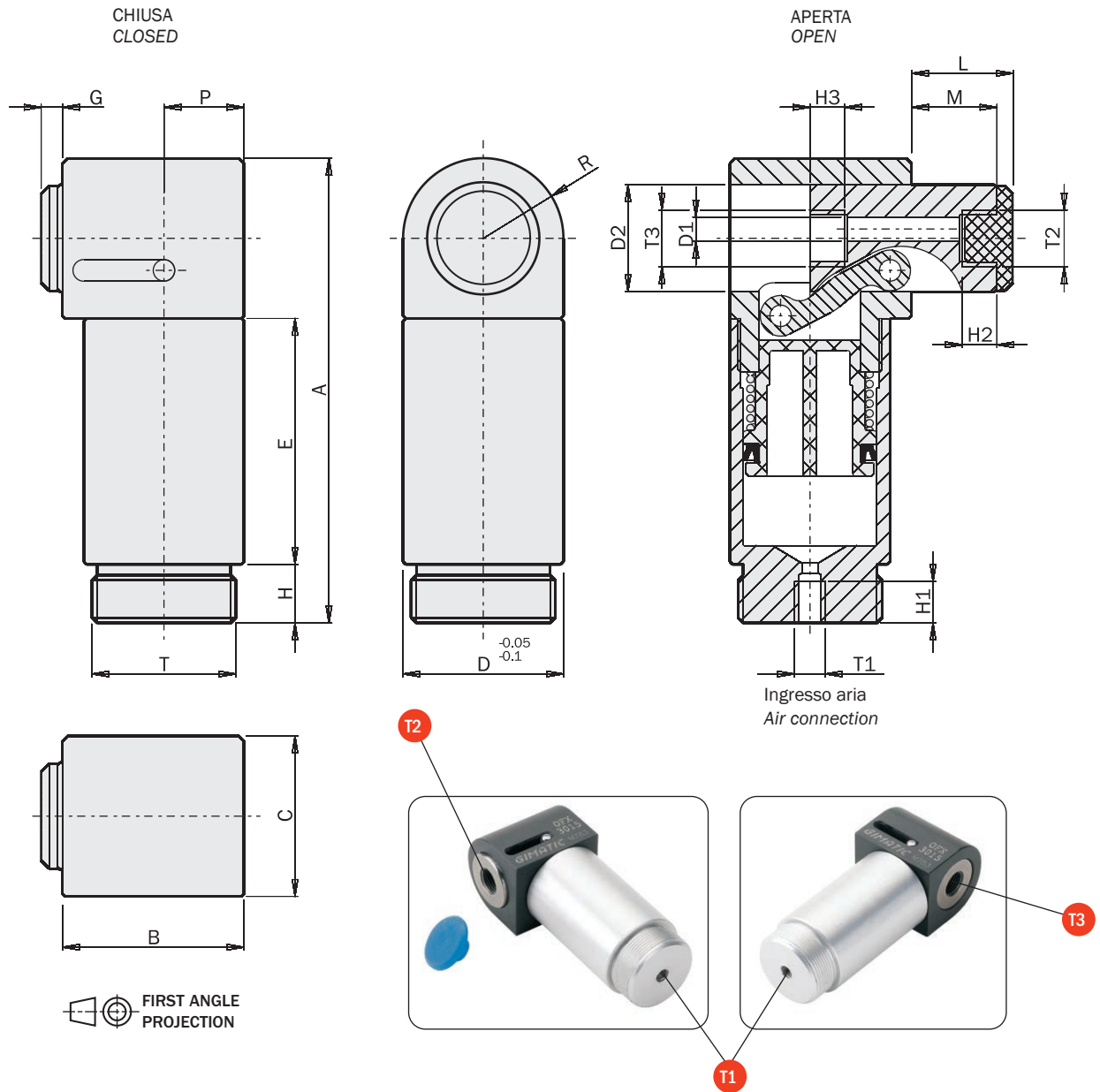
**One finger, perpendicular acting, pneumatic grippers for clamping, series OFX**

- Single-acting pneumatic piston drive.
- Finger linear motion, perpendicular to the piston.
- Finger with through hole, to provide vacuum to a cup (1).
- Removable HNBR rubber pad (2) on the finger, for a soft touch.
- Optional sensors and clamps (3).
- FDA-H1 food-grade grease.



	OFX14-06	OFX20-10	OFX30-15	OFX50-20
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Pressure range	2.5 ÷ 8 bar			
Temperatura di esercizio Temperature range	5° ÷ 60 °C.			
Forza di serraggio in apertura a 6 bar Opening gripping force at 6 bar	13 ÷ 63 N	20 ÷ 115 N	44 ÷ 230 N	100 ÷ 900 N
Corsa totale Total stroke (±0.2 mm)	6 mm	10 mm	15 mm	20 mm
Frequenza max funzionamento continuativo Maximum working frequency	1 Hz	1 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	0.5 cm <sup>3</sup>	3.5 cm <sup>3</sup>	15 cm <sup>3</sup>	50 cm <sup>3</sup>
Peso Weight	30 g	65 g	190 g	740 g

**Dimensioni (mm)**  
**Dimensions (mm)**



	OFX14-06	OFX20-10	OFX30-15	OFX50-20
A	52	62.5	87	143
B	23	25	34	60
C	14	20	30	50
D	Ø14	Ø20	Ø30	Ø50
D1	Ø1.5	Ø2.4	Ø4.5	Ø9
D2	Ø10	Ø14	Ø20	Ø35
E	30	34.5	46	68
G	3.5	3.5	4	4
H	8	8	11	25
H1	7	7	7	10
H2	5	5	6	9
H3	5	5	6	9
L	9.5	13.5	19	24
M	7	11	16	21
P	9	10	15	25
R	R7	R10	R15	R25
T	M12x1	M17x1	M27x1	M45x1.5
T1	M5	M5	M5	G1/8"
T2	M5	M5	G1/8"	G1/4"
T3	M5	M5	G1/8"	G1/4"

## Pinza pneumatica a magnete

- Pistone pneumatico a doppio effetto.
- Mantenimento pezzo anche in assenza di alimentazione.
- Campo magnetico concentrato nel punto di presa.
- Sensori magnetici opzionali.
- Grasso alimentare FDA-H1.
- MAG20; adatta per la movimentazione di piccole parti in materiale ferromagnetico e movimentazione di magneti (polarità nel punto di presa: sud).
- MAG20: predisposta per il fissaggio a cravatta sul diametro esterno.
- MAG35: regolazione della forza magnetica per evitare la deformazione dei pezzi e l'attrazione accidentale di un secondo pezzo.
- MAG35: predisposta al fissaggio su piastra laterale o superiore.

## Pneumatic magnetic gripper

- Double-acting pneumatic piston.
- Workpiece held even without pneumatic power supply.
- Magnetic field concentrated at the holding point.
- Optional magnetic sensors.
- FDA-H1 food-grade grease.
- MAG20: suitable for handling small ferromagnetic parts and for handling magnets (polarity at the grip point: south).
- MAG20: designed to allow mounting with clamp bracket on the outer diameter.
- MAG35: adjustment of the magnetic force to prevent the deformation of workpieces and the accidental attraction of a second workpiece.
- MAG35: designed to allow mounting on side or upper plate.

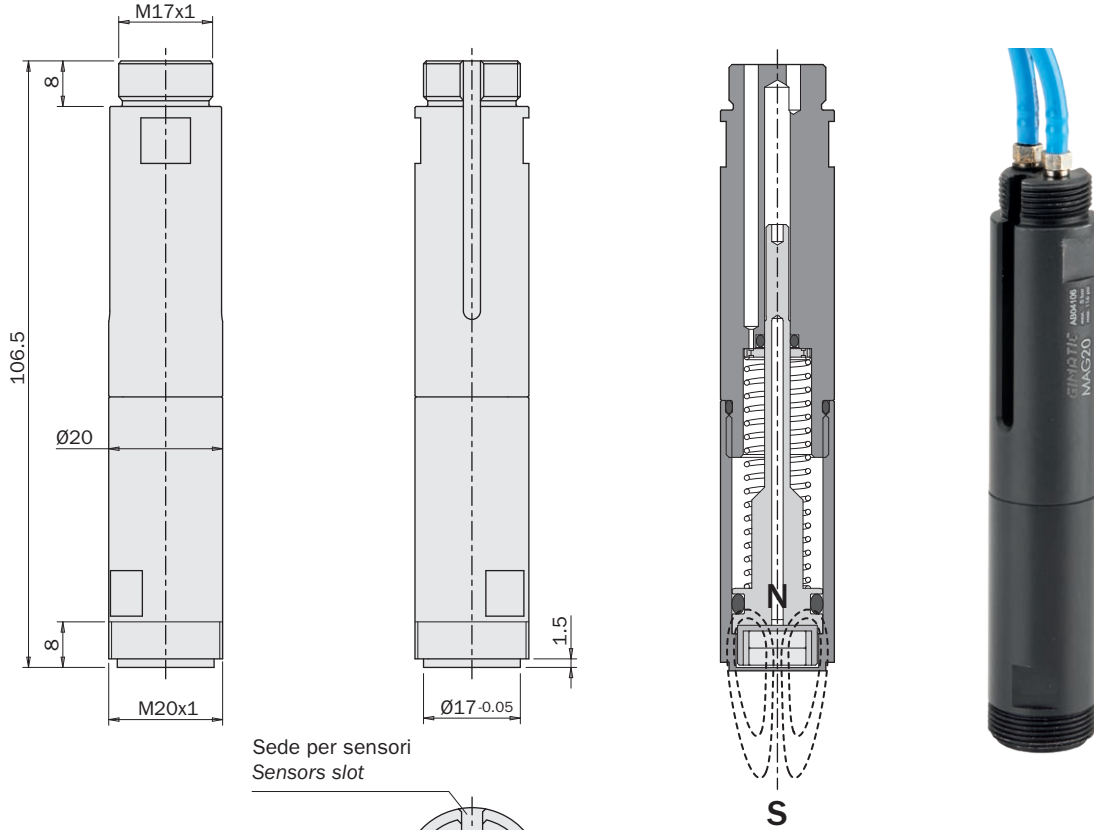


NEW

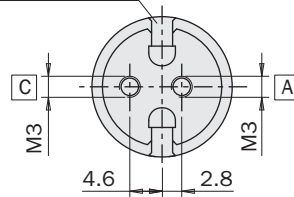
	MAG20	MAG35
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Pressure range	2 ÷ 8 bar	2 ÷ 6 bar
Temperatura di esercizio Temperature range	5 ÷ 60 °C.	
Corsa pistone Piston stroke	23 mm	15 mm
Alesaggio pistone Piston diameter	Ø16 mm	Ø35 mm
Forza magnetica Magnetic strength	7 N	120 N
Frequenza max funzionamento continuativo Maximum working frequency	1.5 Hz	1 Hz
Consumo d'aria per ciclo Cycle air consumption	11 cm <sup>3</sup>	40 cm <sup>3</sup>
Peso Weight	72 g	400 g
Tempo di azionamento minimo Minimum activating time	0.05 s	0.04 s

**Dimensioni (mm)**  
**Dimensions (mm)**

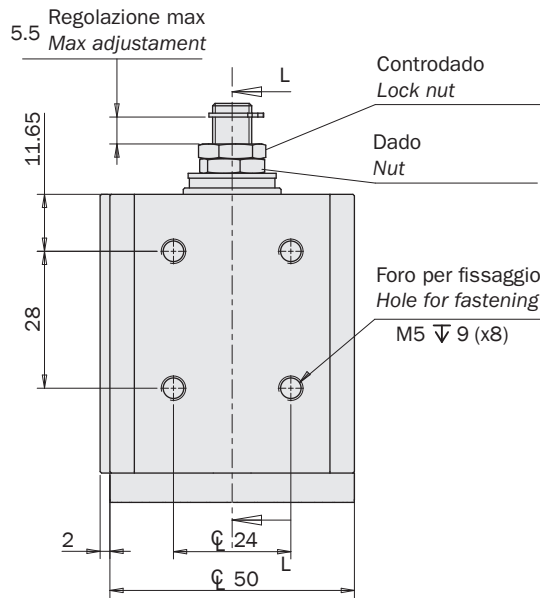
**MAG20**



Sede per sensori  
Sensors slot

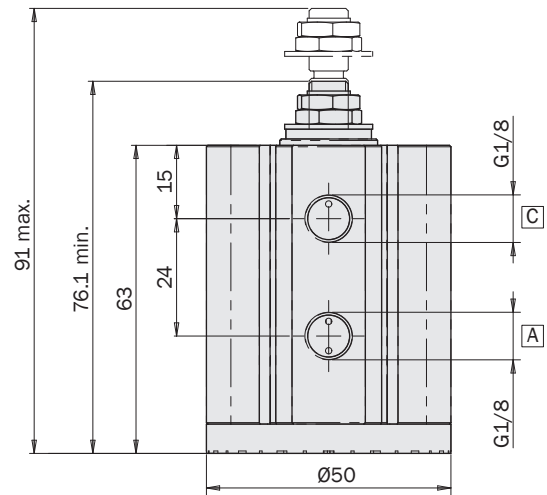


**MAG35**



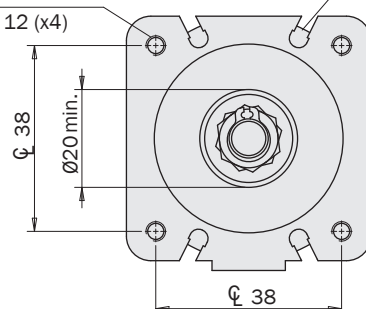
Aria compressa in A: rilascio pezzo  
Compressed air in A: workpiece release

Aria compressa in C: presa pezzo  
Compressed air in C: workpiece clamping



Foro per fissaggio  
Hole for fastening

Sede per sensori  
Sensors slot



**Esempi di utilizzo**  
**Application examples**

**MAG20**

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

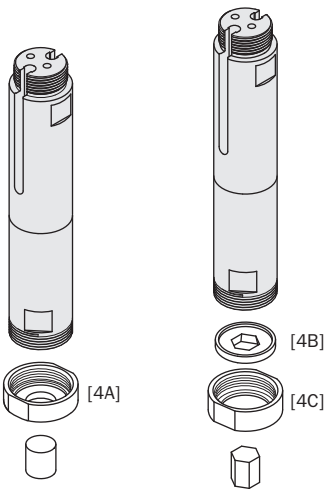
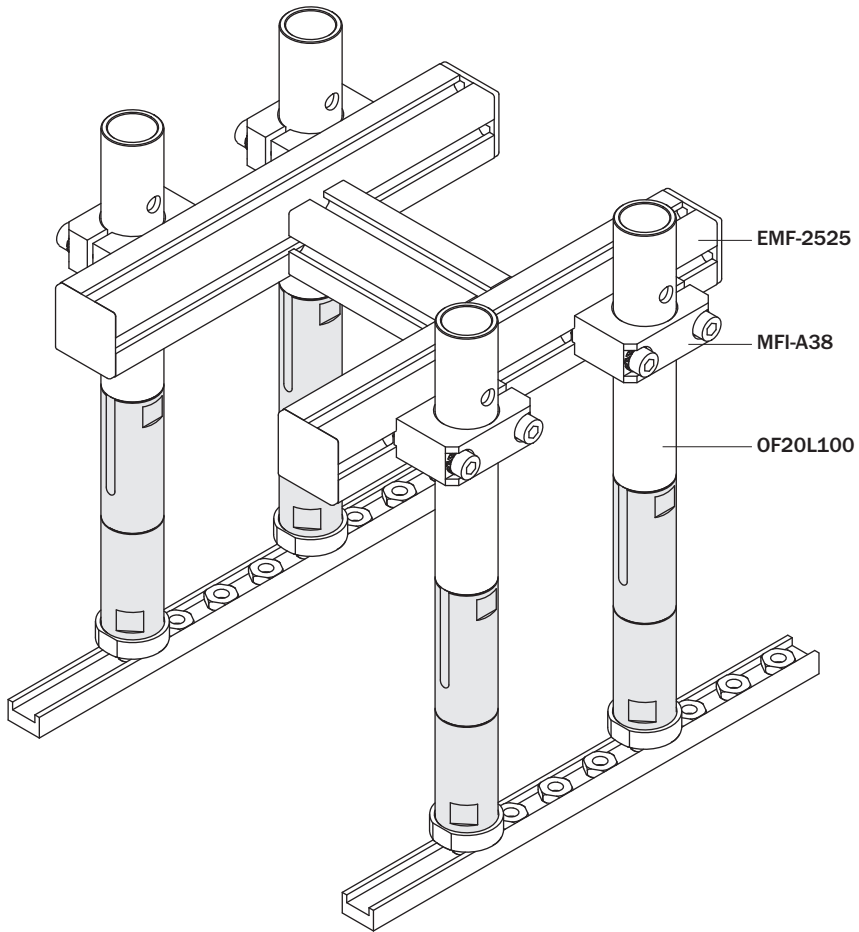
Sospensioni  
Suspensions

Taglierini  
Nippers

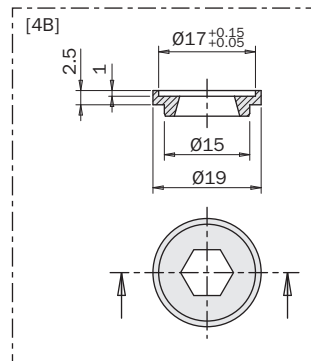
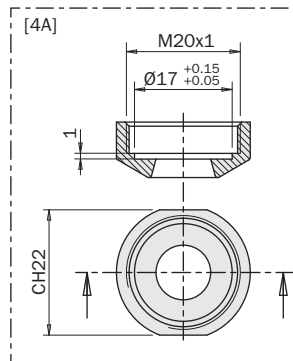
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

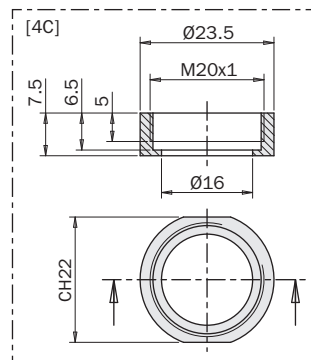


(\*)  
Accessori non forniti  
Accessories not supplied



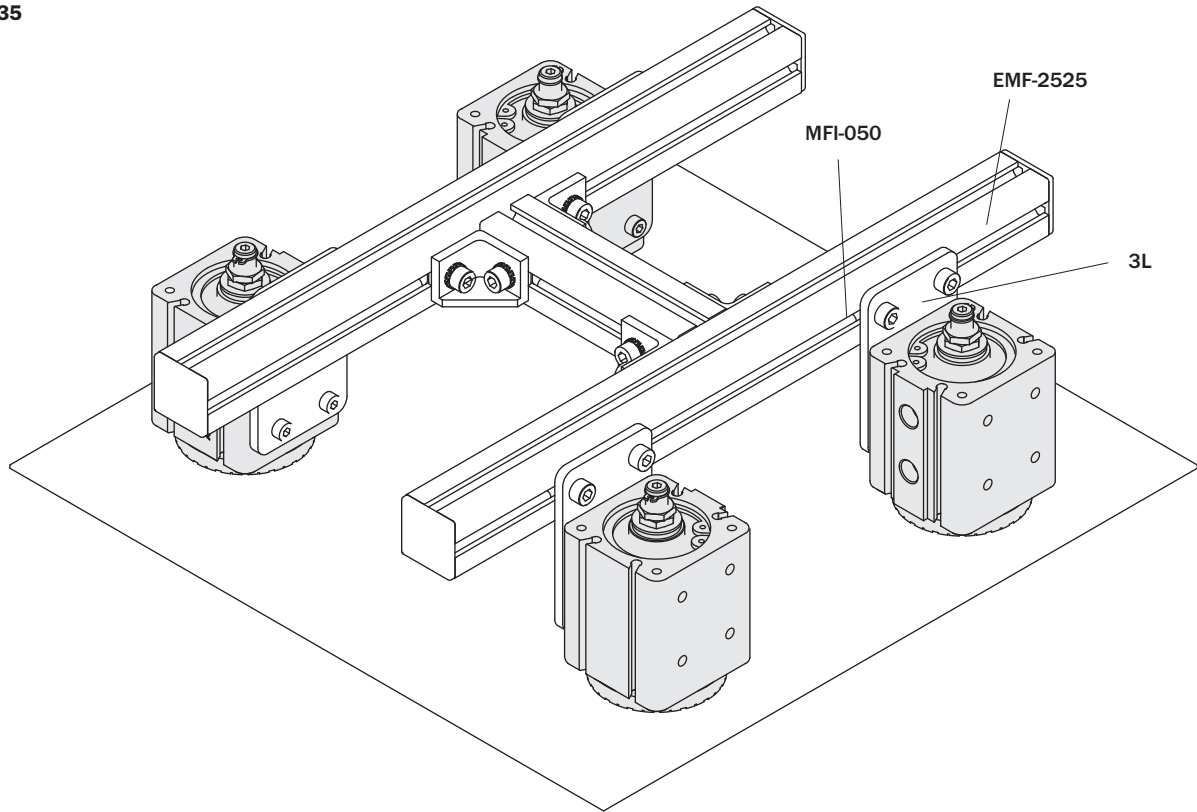
Facile centraggio della parte  
manipolata (accessori non  
forniti).

Easy centring of handled part  
(accessories not provided).



**Esempi di utilizzo**  
**Application examples**

MAG35



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Regolazione forza di tenuta**

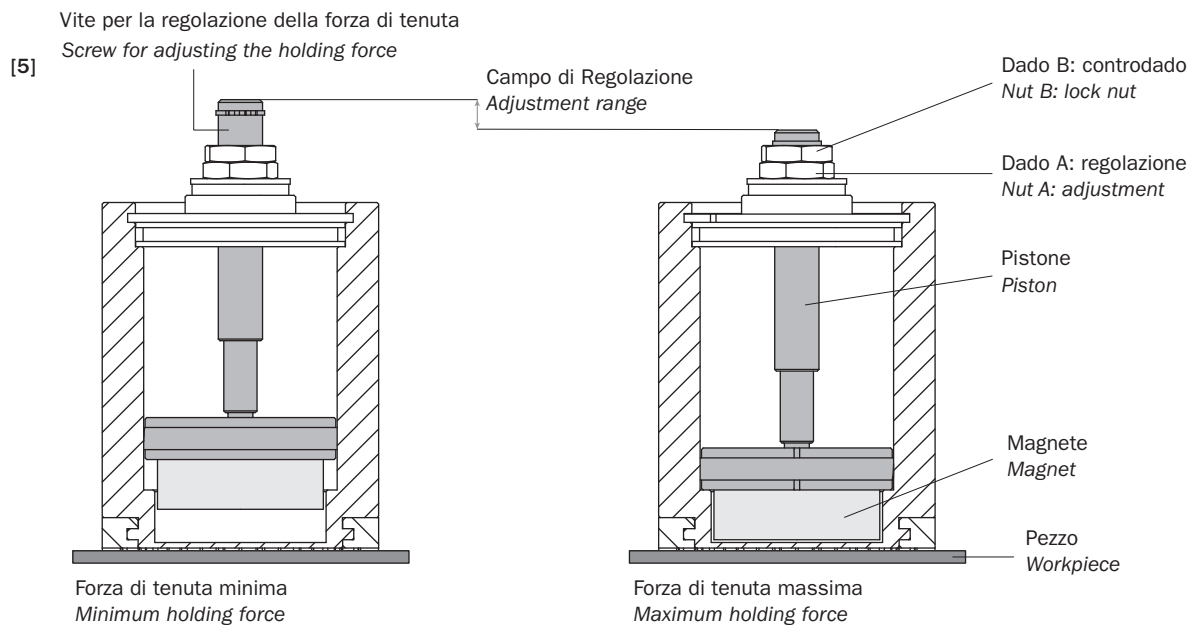
La forza di tenuta può essere regolata modificando la distanza tra magneti e pezzo.

- 1- Tenere fermo il dado "A" e svitare il dado "B" per allentarlo.
- 2- Tenere ferma la vite di regolazione, ruotare il dado "A" fino alla regolazione desiderata .
- 3- Tenere fermo il dado "A" e serrare il dado "B" a 5.2 Nm.

**Holding force adjustment**

The holding force can be adjusted by modifying the distance between the magnet and the workpiece.

- 1- Hold nut „A” in place and unscrew nut „B” to loosen it.
- 2- Hold the adjusting screw in place, turn nut „A” until the desired adjustment is achieved.
- 3- Hold nut „A” in place and tighten nut „B” to 5.2 Nm.



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## ATTUATORI

*Linear actuators*





**Cilindro pneumatico a corsa breve, con stelo antirotazione, foro passante e codolo**

- Azionamento a doppio effetto.
- Due taglie disponibili.
- Foro passante per l'alimentazione di ventose (4).
- Tre cave con sfere per l'anti-rotazione dello stelo (1).
- Codolo standard per il montaggio con i prodotti MFI (2).
- Sensori magnetici opzionali (3).
- Grasso alimentare FDA-H1.

**Short stroke pneumatic cylinder, with non-rotative through hole rod and mounting stud**

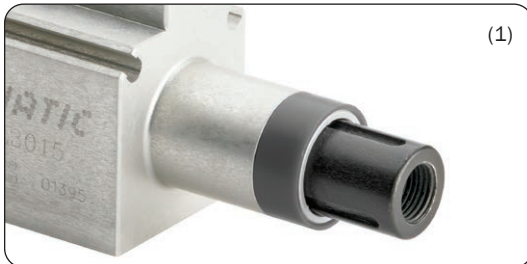
- Double-effect.
- Two sizes available.
- Through hole for vacuum cup feeding (4).
- Three grooves with balls for non-rotative rod (1).
- Clampable stud for mounting by MFI products (2).
- Optional magnetic sensors (3).
- FDA-H1 food-grade grease.



(3)



(4)



(1)

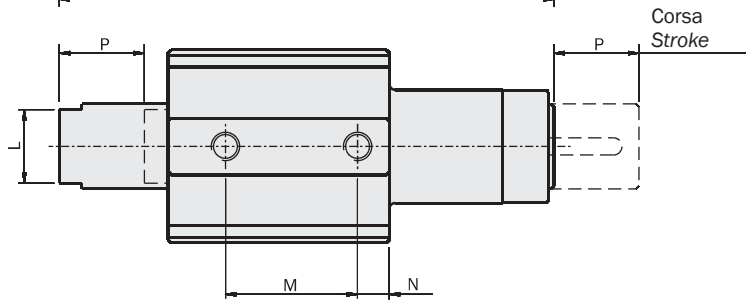
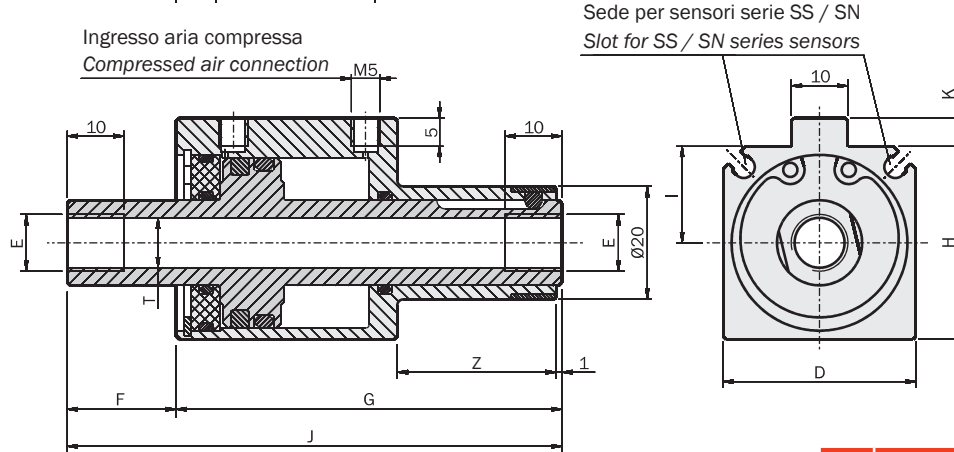
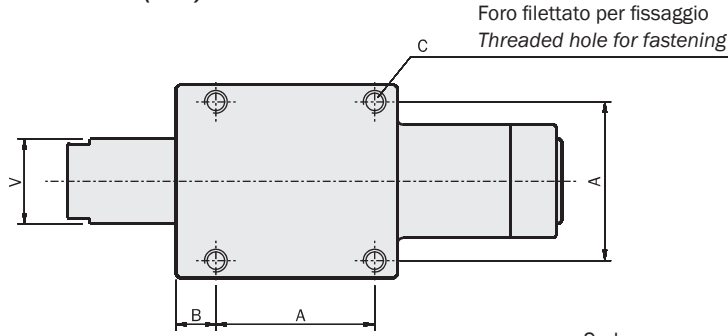


(2)



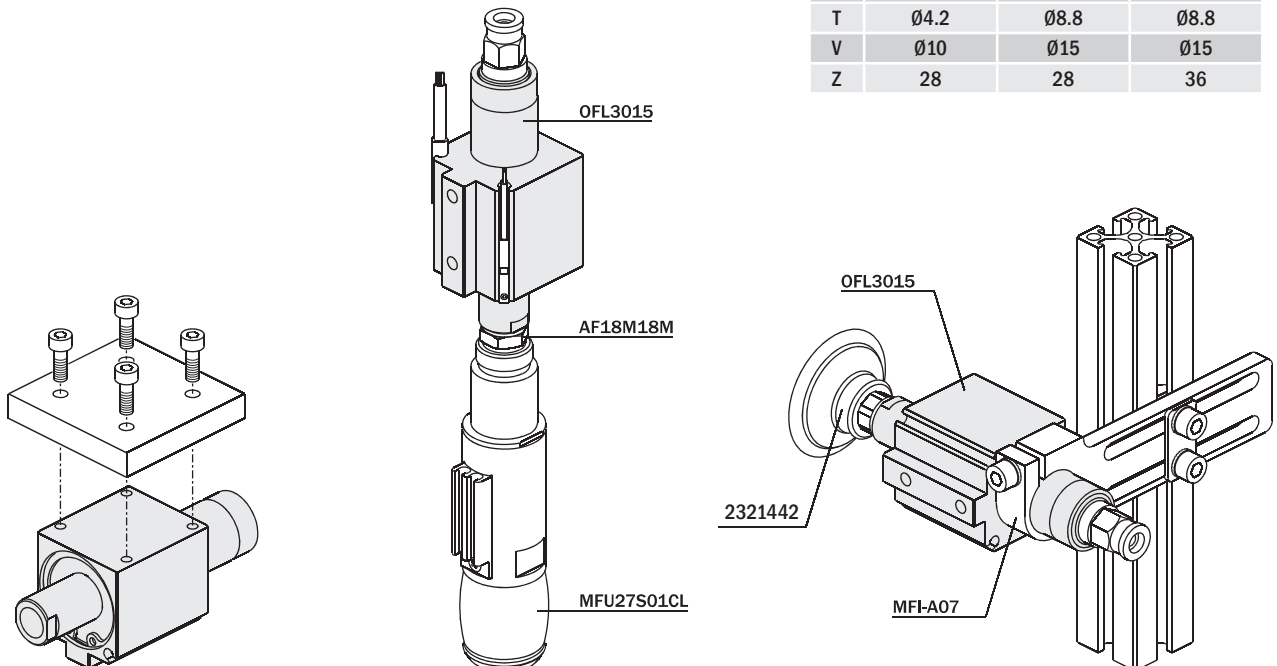
	OFL2010	OFL3015	OFL3030
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2 ÷ 8 bar		
Temperatura di esercizio Temperature range	5° ÷ 60 °C.		
Corsa Stroke	10 mm	15 mm	30 mm
Alesaggio Piston bore	20 mm	30 mm	30 mm
Forza di chiusura / apertura a 6 bar Closing /opening force at 6 bar	130 N	300 N	300 N
Consumo d'aria per ciclo Cycle air consumption	4.7 cm <sup>3</sup>	16 cm <sup>3</sup>	32 cm <sup>3</sup>
Tempo di azionamento minimo Minimum actuating time	0.02 s	0.06 s	0.15 s
Peso Weight	60 g	110 g	140 g

**Dimensioni (mm)**  
**Dimensions (mm)**



	OFL2010	OFL3015	OFL3030
A	19	28	28
B	9	7	7
C	M3x4	M4x6	M4x6
D	24	34	34
E	M5	G1/8"	G1/8"
F	14.2	19.2	34.2
G	59	68	91
H	25	34	34
I	13	17	17
J	74.2	87.2	125.2
K	4	5	5
L	8	13	13
M	16	23.3	38.3
N	5	5.6	5.6
P	10	15	30
T	Ø4.2	Ø8.8	Ø8.8
V	Ø10	Ø15	Ø15
Z	28	28	36

**Esempi di utilizzo**  
**Application examples**

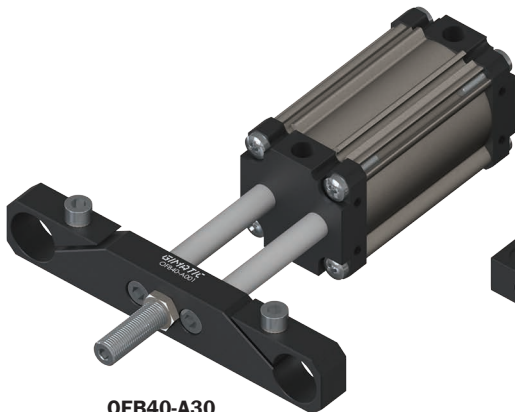
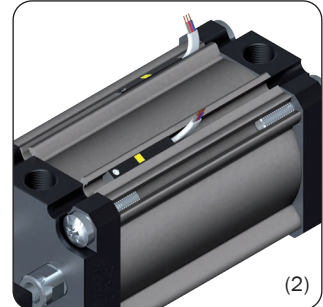
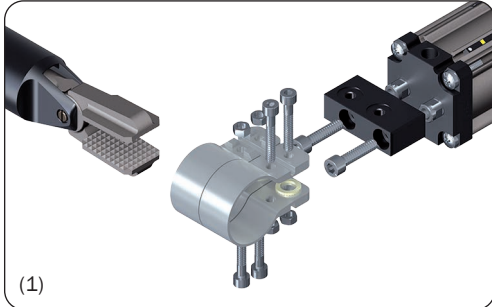


## Cilindro guidato con steli gemellati

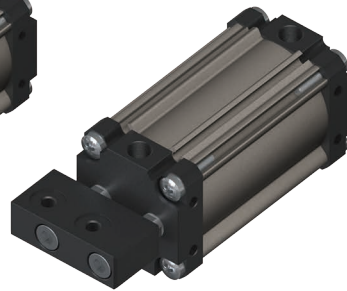
- Doppio effetto.
- Alesaggio: 40mm.
- Corsa: 30mm oppure 50mm.
- Vari accessori per il fissaggio (1).
- Sensori magnetici opzionali (2).
- Grasso alimentare FDA-H1.

## Guided cylinder with twin rods

- Double acting.
- Piston bore: 40mm.
- Stroke: 30mm or 50mm.
- Several mounting accessories (1).
- Optional magnetic sensors (2).
- FDA-H1 food-grade grease.



**OFB40-A30**  
**OFB40-A50**



**OFB40-B30**  
**OFB40-B50**



**OFB40-C30**  
**OFB40-C50**

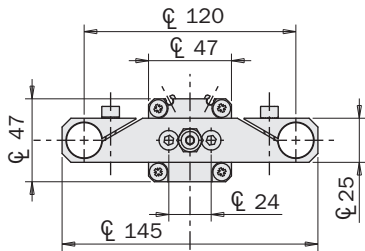
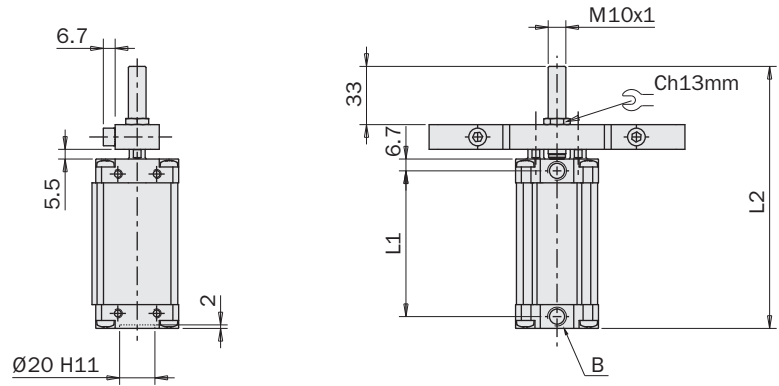
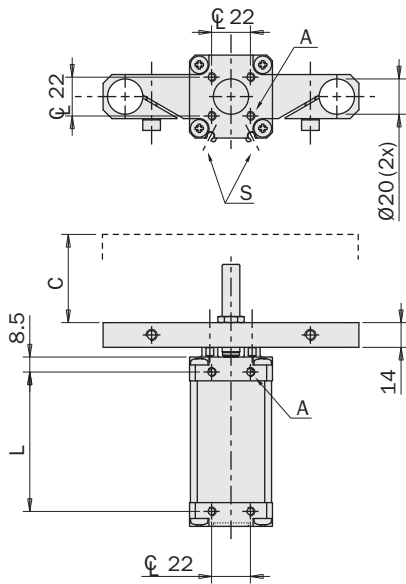
	OFB40-A30	OFB40-A50	OFB40-B30	OFB40-B50	OFB40-C30	OFB40-C50
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	2 ÷ 8 bar					
Temperatura di esercizio Temperature range	5° ÷ 60 °C.					
Alesaggio Piston bore	Ø40 mm					
Forza di chiusura a 6 bar Retraction force at 6 bar	660 N					
Forza di apertura a 6 bar Extension force at 6 bar	754 N					
Corsa (±0.3 mm) Stroke	30 mm	50 mm	30 mm	50 mm	30 mm	50 mm
Consumo d'aria per ciclo Cycle air consumption	71 cm <sup>3</sup>	118 cm <sup>3</sup>	71 cm <sup>3</sup>	118 cm <sup>3</sup>	71 cm <sup>3</sup>	118 cm <sup>3</sup>
Peso Weight	475 g	520 g	395 g	445 g	405 g	455 g

**Dimensioni (mm)**  
**Dimensions (mm)**

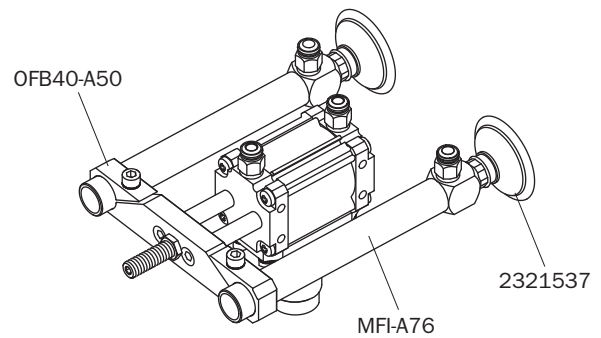
	OFB40-A30	OFB40-A50
A	M5x10	M5x10
B	1/8	1/8
C	30	50
L	59	79
L1	62.6	82.6
L2	128.5	148.5

- A** Fori di fissaggio  
Fastening holes
- B** Connessione per raccordo aria  
Air connection port
- C** Corsa  
Stroke
- S** Cava per sensore magnetico  
Magnetic sensor slot

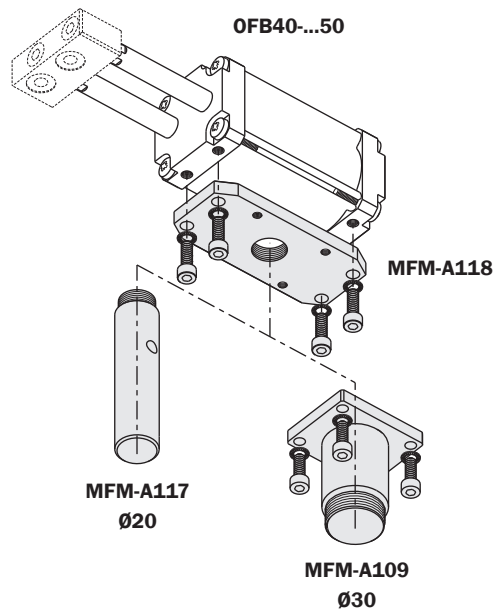
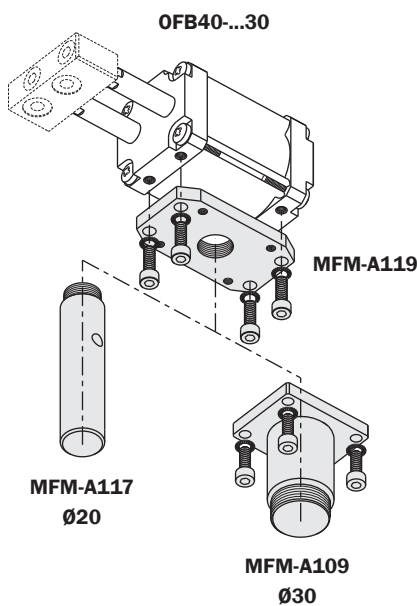
FIRST ANGLE PROJECTION



**Esempi di utilizzo**  
**Application examples**



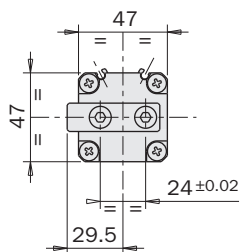
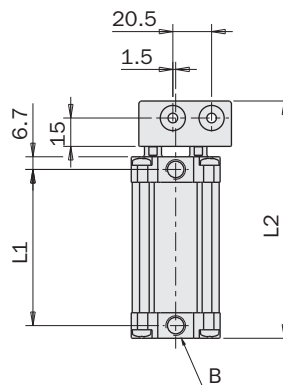
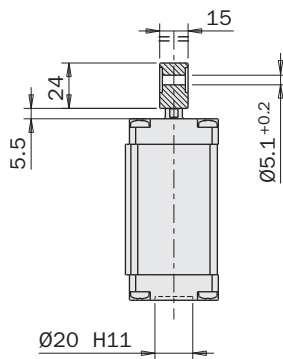
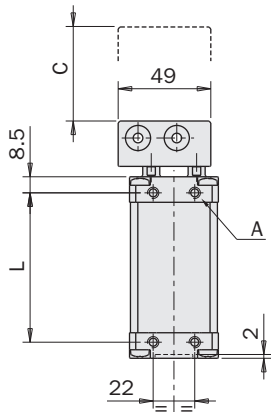
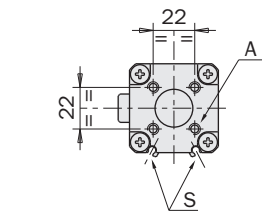
**Fissaggio del cilindro**  
**Cylinder mounting**



**Dimensioni (mm)**  
**Dimensions (mm)**

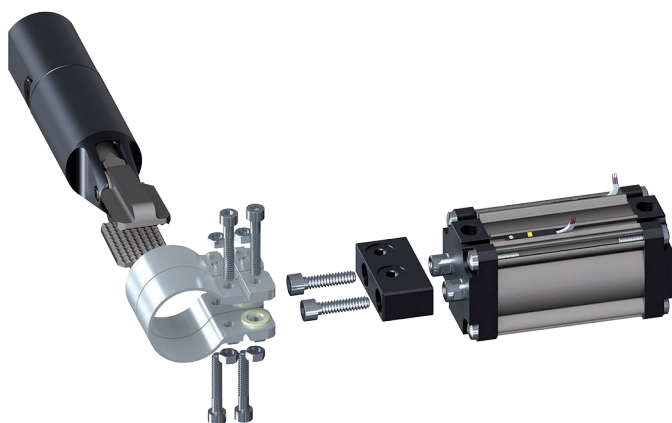
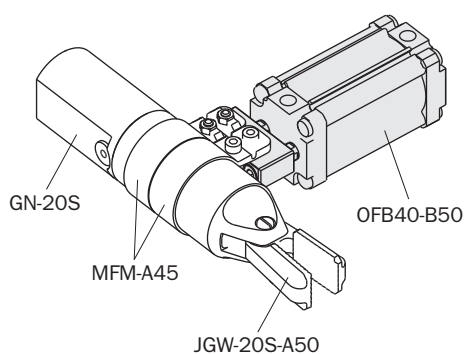
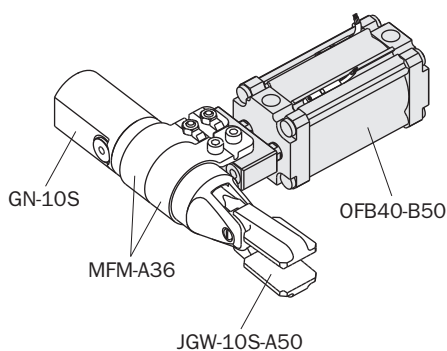
	OFB40-B30	OFB40-B50
A	M5x10	M5x10
B	1/8	1/8
C	30	50
L	59	79
L1	62.6	82.6
L2	105.5	125.5

FIRST ANGLE PROJECTION

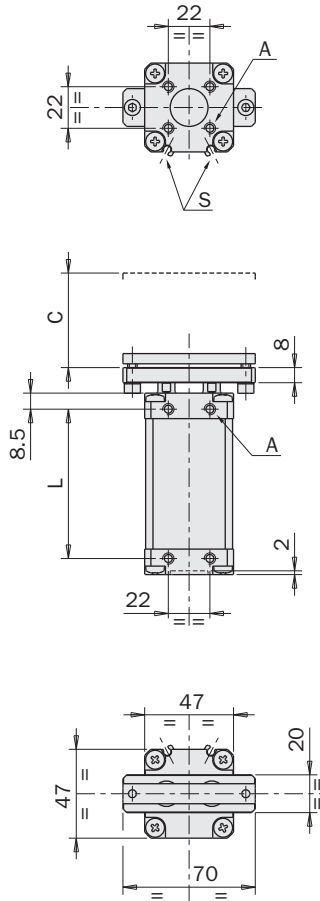


- A** Fori di fissaggio  
Fastening holes
- B** Connessione per raccordo aria  
Air connection port
- C** Corsa  
Stroke
- S** Cava per sensore magnetico  
Magnetic sensor slot

**Esempi di utilizzo**  
**Application examples**



**Dimensioni (mm)**  
**Dimensions (mm)**

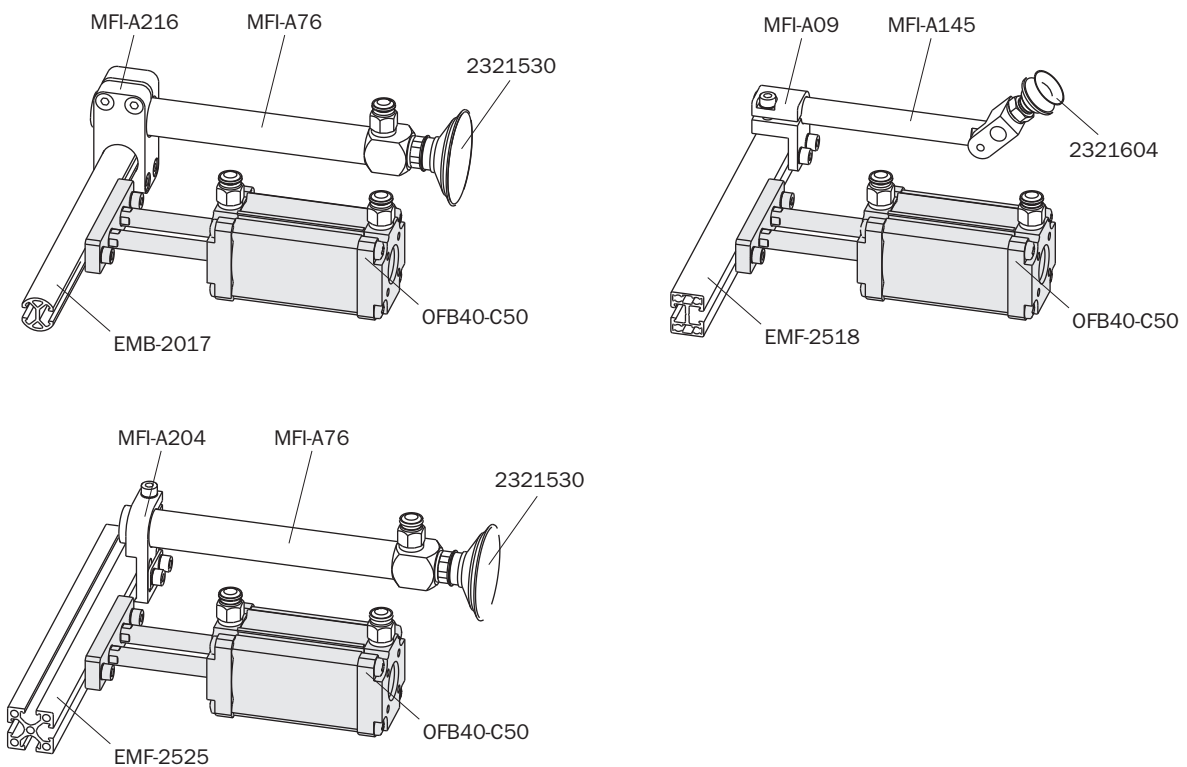


	OFB40-C30	OFB40-C50
A	M5x10	M5x10
B	1/8	1/8
C	30	50
L	59	79
L1	62.6	82.6
L2	89.5	109.5



- A** Fori di fissaggio  
Fastening holes
- B** Connessione per raccordo aria  
Air connection port
- C** Corsa  
Stroke
- S** Cava per sensore magnetico  
Magnetic sensor slot

**Esempi di utilizzo**  
**Application examples**

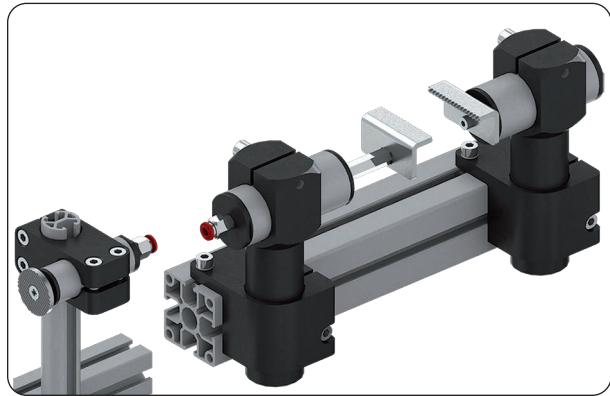
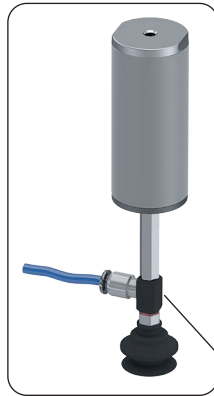
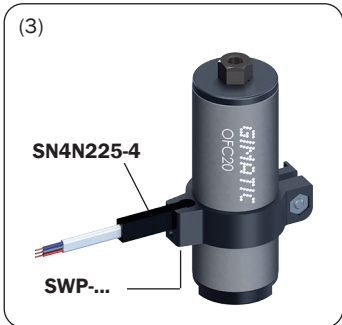
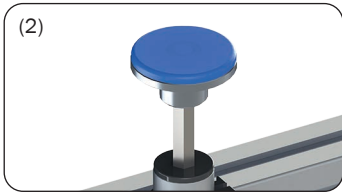
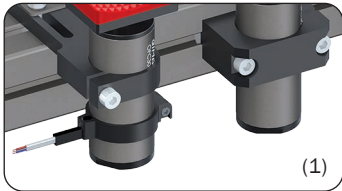


**Mini cilindri universali a semplice effetto, antirotazione**

- Alesaggio: 10mm, 16mm, 25mm.
- Corsa: 10mm, 20mm, 30mm.
- Vari accessori MFI... per il fissaggio a cravatta sul diametro esterno (1).
- Vari accessori da montare sullo stelo (2).
- Sensori e fascette opzionali (3).
- Grasso alimentare FDA-H1.

**General purpose, single-acting, anti-rotation mini cylinders**

- Piston bore: 10mm, 16mm, 25mm.
- Stroke: 10mm, 20mm, 30mm.
- Several accessories MFI... for the clamp mounting on the external diameter (1).
- Several accessories to be mounted on the rod (2).
- Optional sensors and clamps (3).
- Food grade grease FDA-H1.

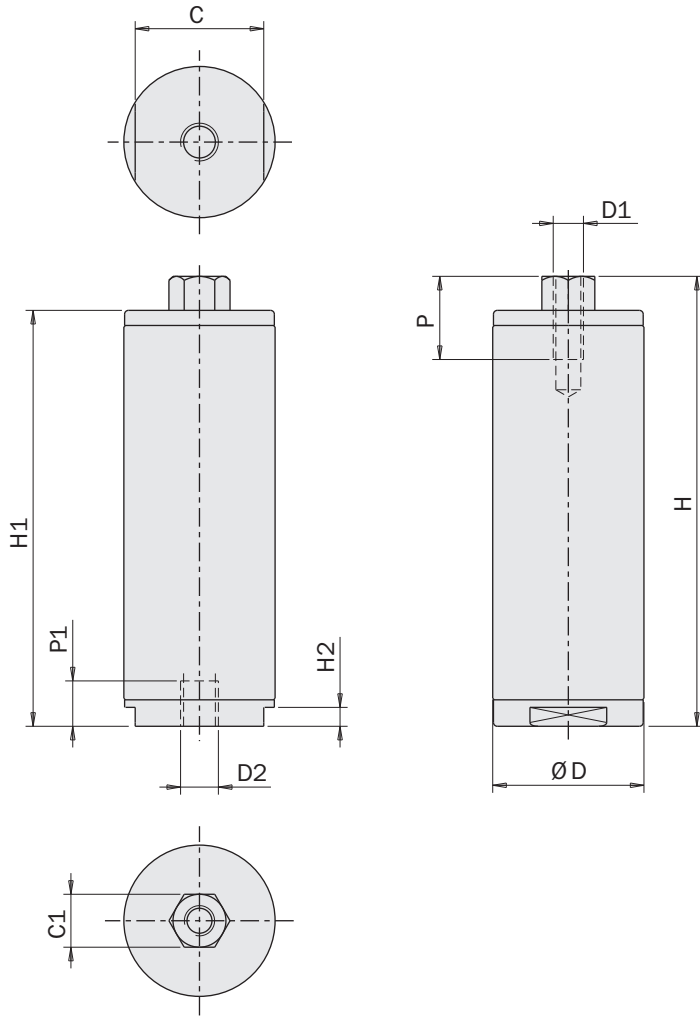


	MFI-A361	MFI-A362	MFI-A364	MFI-A365
A	M5	G1/8	M4	M3
B	M5	G1/8	M5	M5



	OFC14-10	OFC20-20	OFC30-30
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2 ÷ 8 bar		
Temperatura di esercizio Temperature range	5° ÷ 60 °C.		
Corsa Stroke	10 mm	20 mm	30 mm
Alesaggio Piston bore	Ø10 mm	Ø16 mm	Ø25 mm
Forza di chiusura a 0 bar Closing force at 0 bar	4 N	8 N	23 N
Forza di apertura a 6 bar Opening force at 6 bar	43 N	113 N	271 N
Consumo d'aria per ciclo Cycle air consumption	1 cm <sup>3</sup>	4 cm <sup>3</sup>	15 cm <sup>3</sup>
Peso Weight	20 g	40 g	85 g

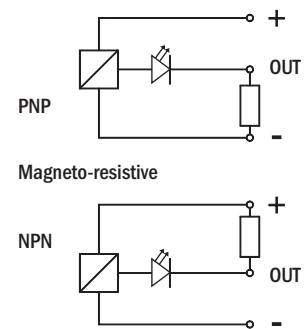
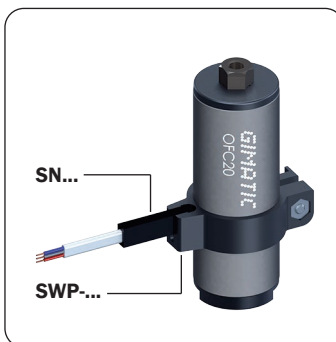
**Dimensioni (mm)**  
**Dimensions (mm)**



	OFC14-10	OFC20-20	OFC30-30
C	12	17	27
C1	5.5	7	7
D	Ø14	Ø20	Ø30
D1	M3	M4	M4
D2	M5	M5	M5
H	50	59.5	75
H1	45.5	55	70.5
H2	2.5	2.5	2.5
P	7	9	9
P1	6	6	6

FIRST ANGLE PROJECTION

OFC	SWP...
OFC14-10	SWP-014
OFC20-20	SWP-020
OFC30-30	SWP-030



SN...		
SN4N225-G	PNP	Cavo 2.5m 2.5m cable
SN4M225-G	NPN	
SN3N203-G	PNP	Connettore M8 Snap M8 plug connector
SN3M203-G	NPN	

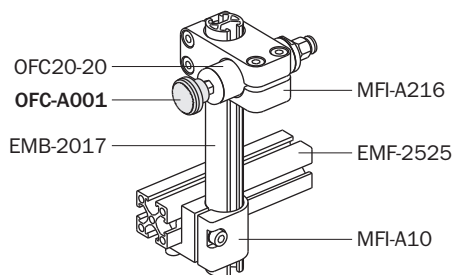
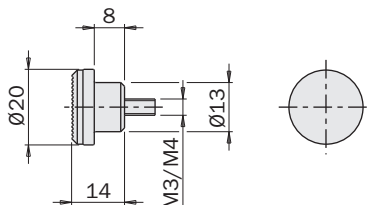


**Kit opzionali**  
**Optional kits**

	OFC-A001	OFC-A002	OFC-A003	OFC-A004	OFC-A005	OFC-A006	OFC-A007	OFC-A008	OFC5
OFC14-10	☑	☑	☑	☐	☑	☑	☐	☑	☐
OFC20-20	☑	☑	☑	☑	☑	☐	☑	☐	☑
OFC30-30	☑	☑	☑	☑	☑	☐	☑	☐	☑
Peso Weight	15 g	25 g	15 g	25 g	35 g	19 g	11 g	50 g	40 g

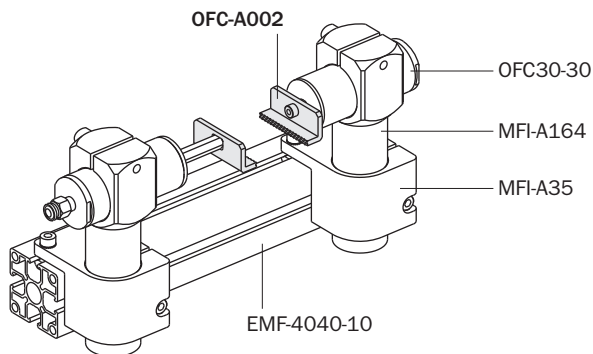
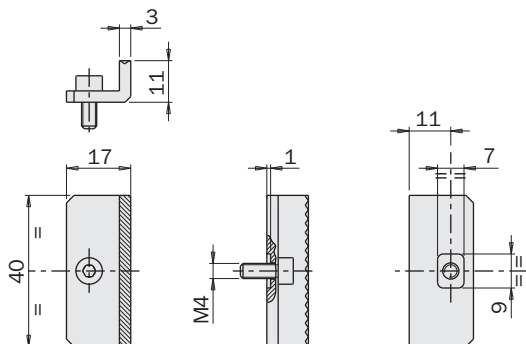
**OFC-A001**

Bottone con gommino in HNBR  
Button with HNBR rubber pad



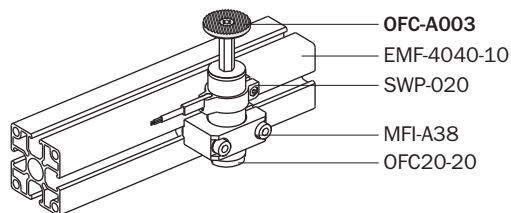
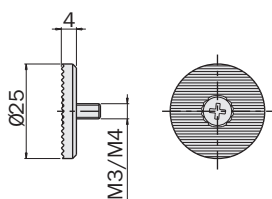
**OFC-A002**

Artiglio in acciaio  
Steel claw



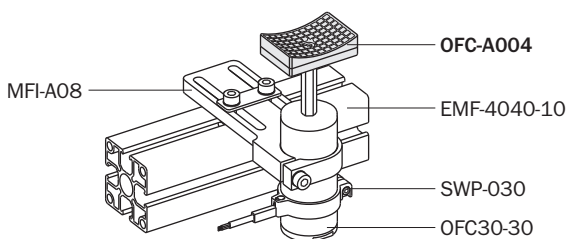
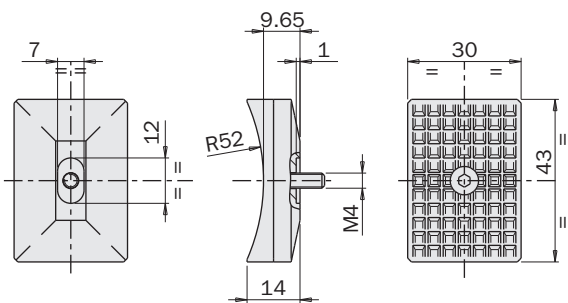
**OFC-A003**

Bottone in acciaio  
Steel button



**OFC-A004**

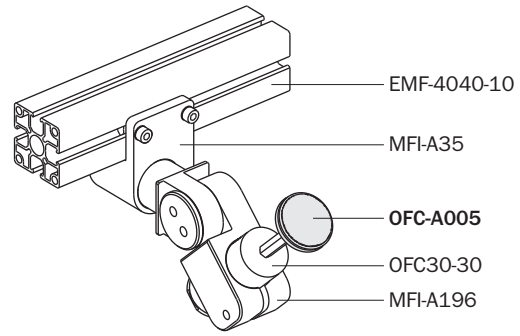
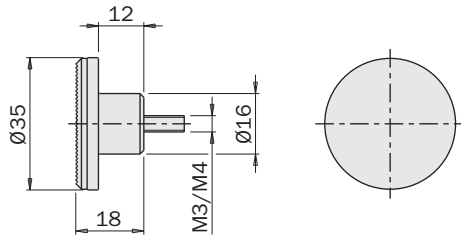
Spintore concavo con gommino in TPU  
Concave pusher with TPU rubber pad



**Kit opzionali**  
**Optional kits**

**OFC-A005**

Bottone con gommino in HNBR  
Button with HNBR rubber pad



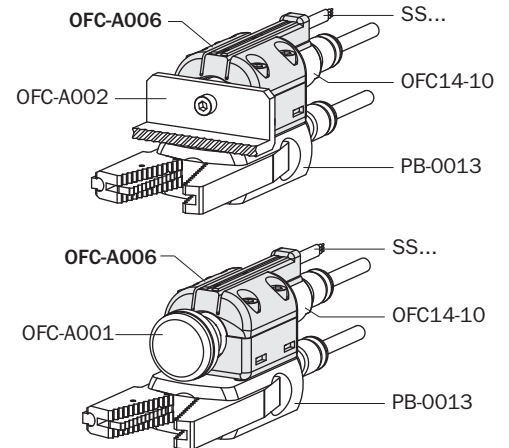
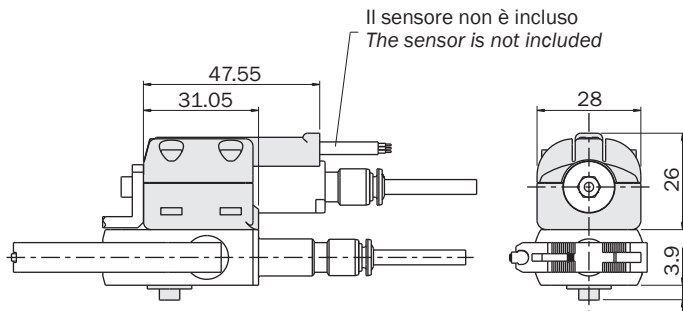
**OFC-A006**

Staffa per il fissaggio di OFC14-10 sulle pinze PB

- Utile per espellere la materozza quando si incastra sulle dita della pinza.
- Layout compatto di tubi e cavi.
- Sensore magnetico SS opzionale.
- Materiale PA12GB.

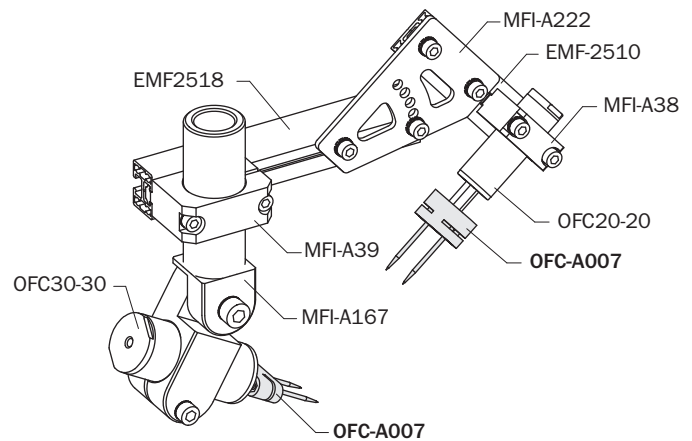
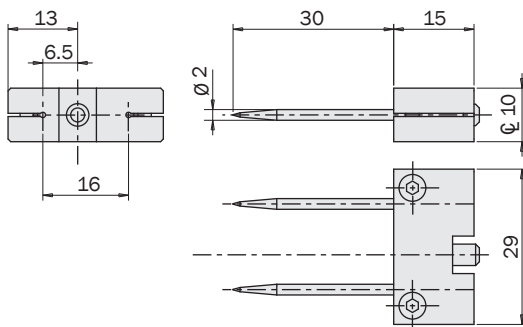
Bracket for mounting cylinder OFC14-10 on PB grippers

- Useful to extract the sprue when it is stuck on the gripper fingers.
- Compact layout of hoses and cables.
- Optional SS magnetic sensor.
- Material PA12GB.



**OFC-A007**

Porta aghi  
Needle holder



**Kit opzionali**  
**Optional kits**

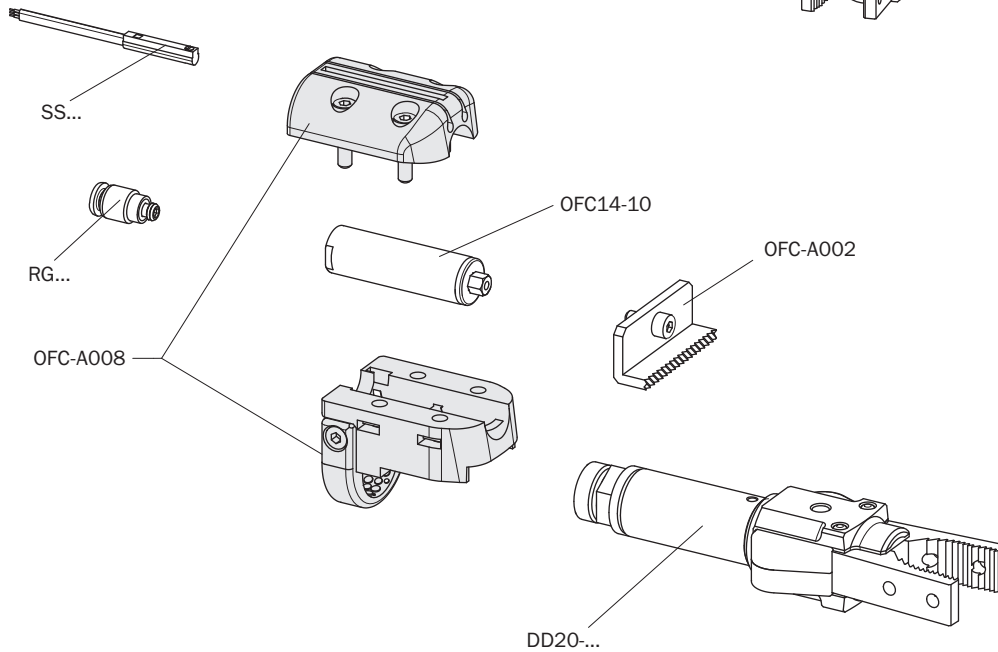
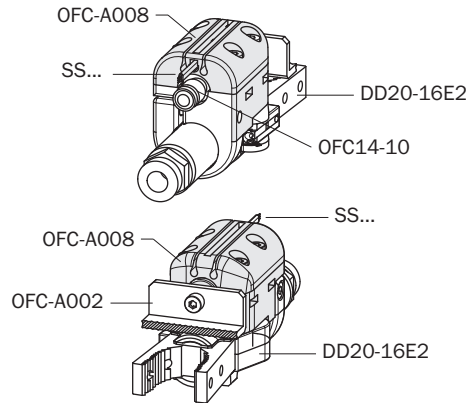
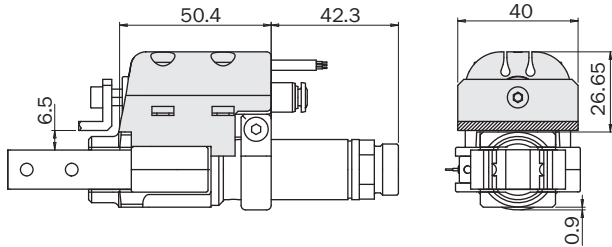
**OFC-A008**

Staffa per il fissaggio di OFC14-10 sulle pinze DD

- Utile per espellere la materozza quando si incastra sulle dita della pinza.
- Layout compatto di tubi e cavi.
- Sensore magnetico SS opzionale.
- Materiale PA12GB.

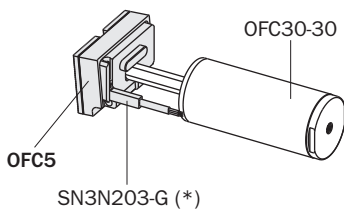
Bracket for mounting cylinder OFC14-10 on DD grippers

- Useful to extract the sprue when it is stuck on the gripper fingers.
- Compact layout of hoses and cables.
- Optional SS magnetic sensor.
- Material PA12GB.

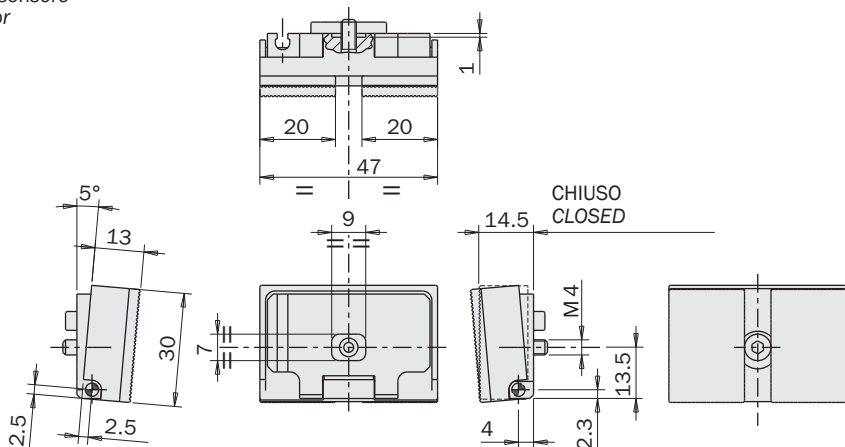


**OFC5**

Spintore a interruttore con gommino in HNBR e sensore  
Switch pusher with HNBR rubber pad and sensor



(\*) Il sensore SN3N203-G è incluso  
The sensor SN3N203-G is included





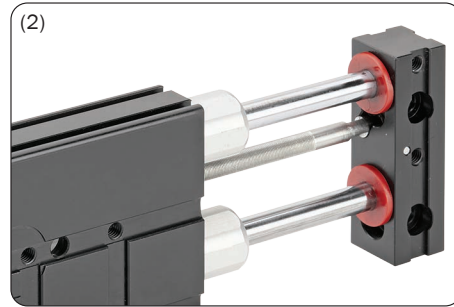
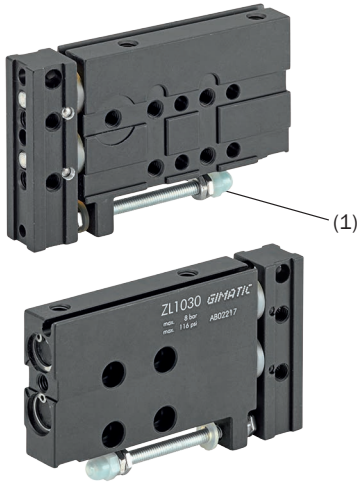
**Slitte pneumatiche (serie ZL)**

- Disegnate per gli EOAT.
- Azionamento a doppio effetto.
- Profilo piatto.
- Regolazione della corsa di apertura (1).
- Ammortizzatori in poliuretano (2).
- Sensori magnetici opzionali (3).

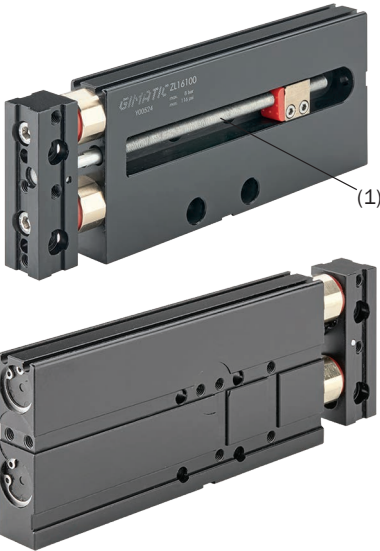
**Pneumatic slides (series ZL)**

- Designed for EOATs.
- Double-acting.
- Flat profile.
- Opening stroke adjustment (1).
- Polyurethane shock-absorbers (2).
- Optional magnetic sensors (3).

**ZL1030**



**ZL16...  
ZL25...**



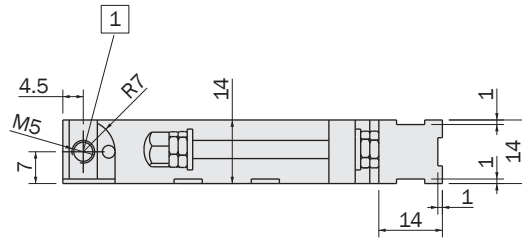
SS4N225-G	PNP	Cavo 2.5m
SS4M225-G	NPN	2.5m cable
SS3N203-G	PNP	Connettore M8
SS3M203-G	NPN	M8 snap plug connector

	ZL1030	ZL1650	ZL16100	ZL2550	ZL25100
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]				
Pressione di esercizio Pressure range	2 ÷ 8 bar				
Temperatura di esercizio Temperature range	5 ÷ 60 °C				
Forza di chiusura a 6 bar Retraction force at 6 bar	60 N	150 N		380 N	
Forza di apertura a 6 bar Extension force at 6 bar	80 N	200 N		500 N	
Corsa Stroke (±0.3 mm)	0 ÷ 30 mm	0 ÷ 50 mm	0 ÷ 100 mm	0 ÷ 50 mm	0 ÷ 100 mm
Consumo d'aria per ciclo Cycle air consumption	9 cm <sup>3</sup>	37 cm <sup>3</sup>	70 cm <sup>3</sup>	90 cm <sup>3</sup>	177 cm <sup>3</sup>
Tempo di azionamento minimo Minium actuating time	0.06 s	0.13 s	0.24 s	0.24 s	0.45 s
Frequenza massima di lavoro Maximum working frequency	1 Hz				
Peso Weight	0.13 kg	0.41 kg	0.58 kg	0.88 kg	1.16 kg

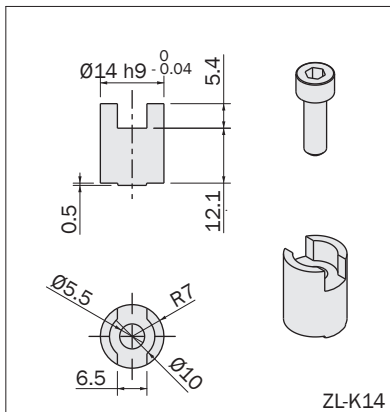
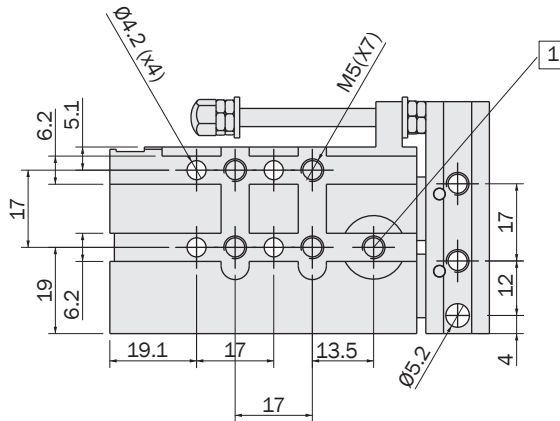
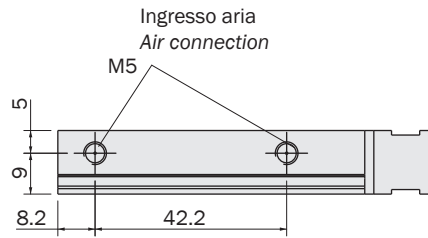
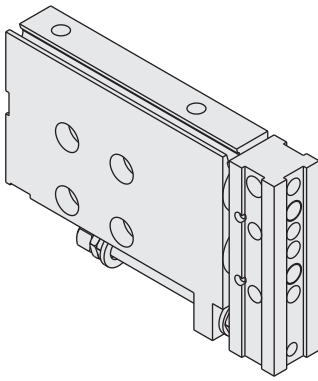
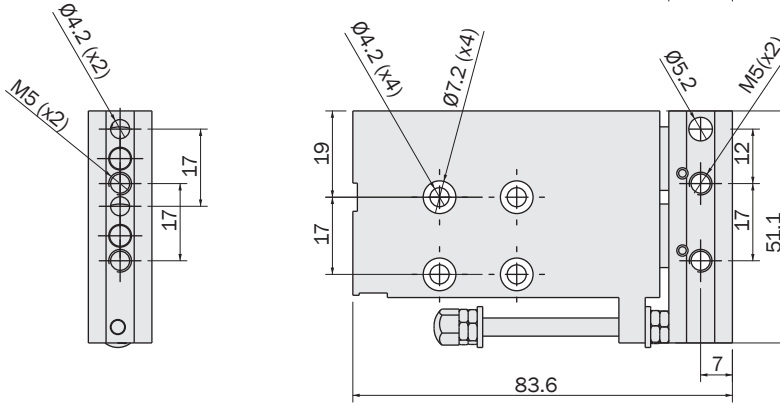
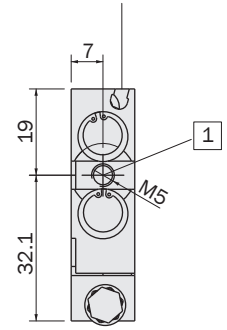
Unità Rotanti Rotary Units  
Cambia Utensile Quick Changer  
Profili e Staffe Profiles and Brackets  
Pinze Grippers  
Attuatori Lineari Linear Actuators  
Suspensioni Suspensions  
Taglierini Nippers  
Kit-Robot Robot Kit  
Accessori Opzionali Options  
Sensori Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

1 Posizione di montaggio per ZL-K14  
Mounting position for ZL-K14



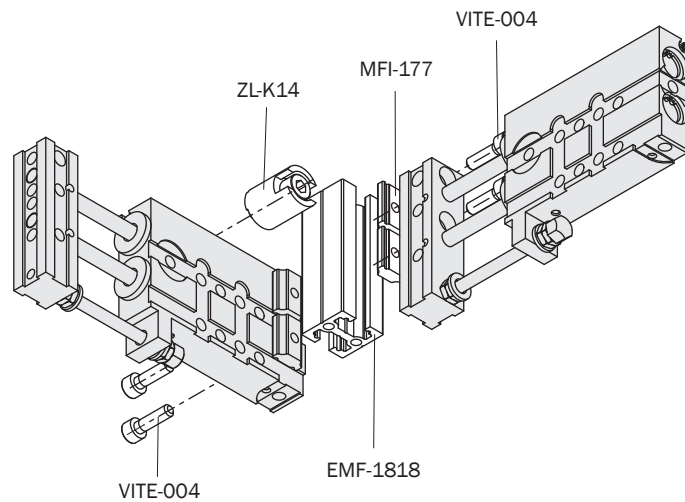
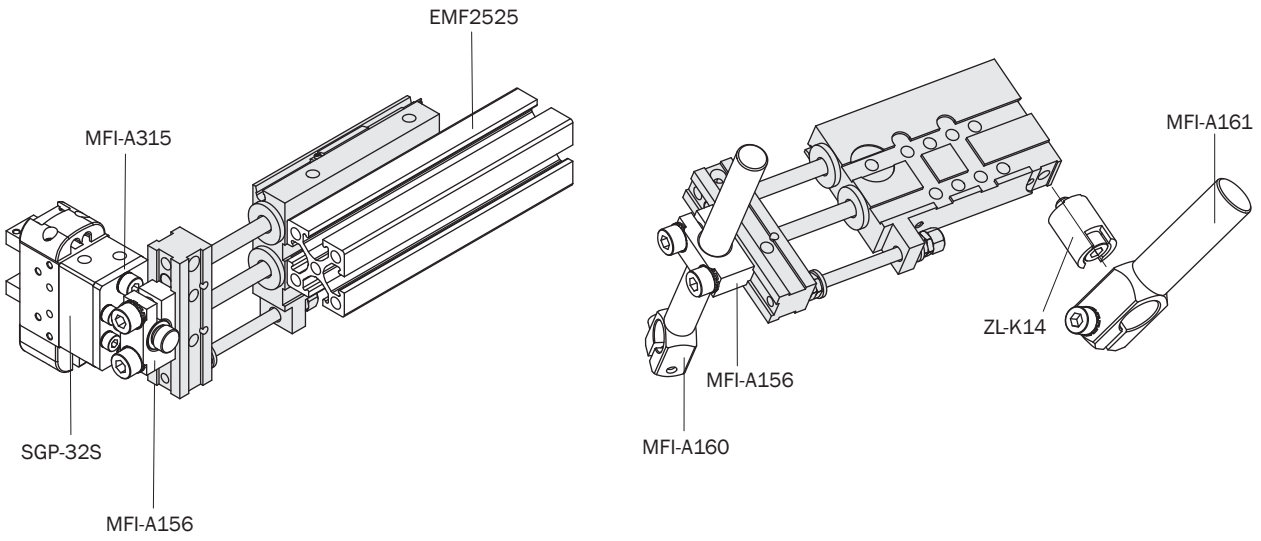
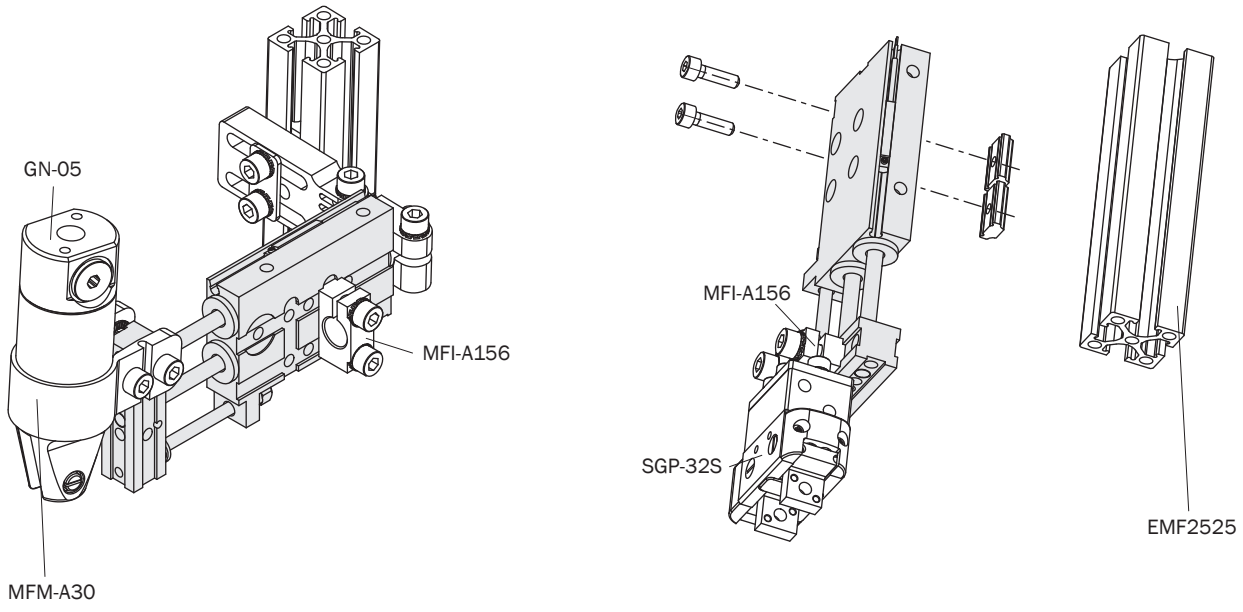
Cava per sensore serie SS  
Slot for SS sensor



FIRST ANGLE PROJECTION

**Esempio di utilizzo**  
**Application example**

ZL 10



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

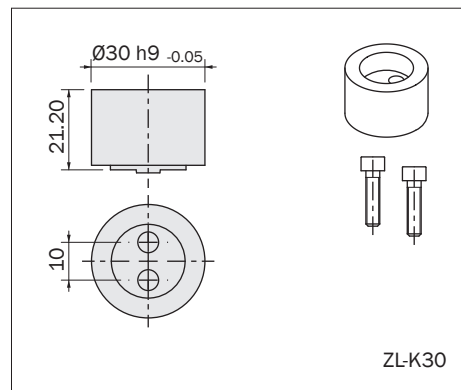
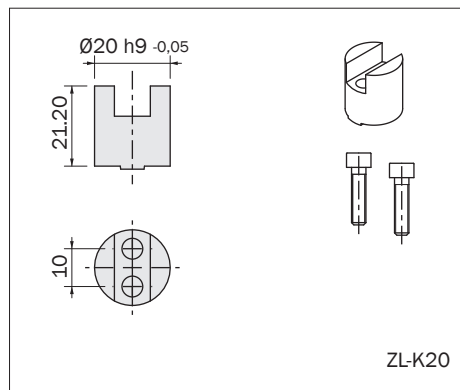
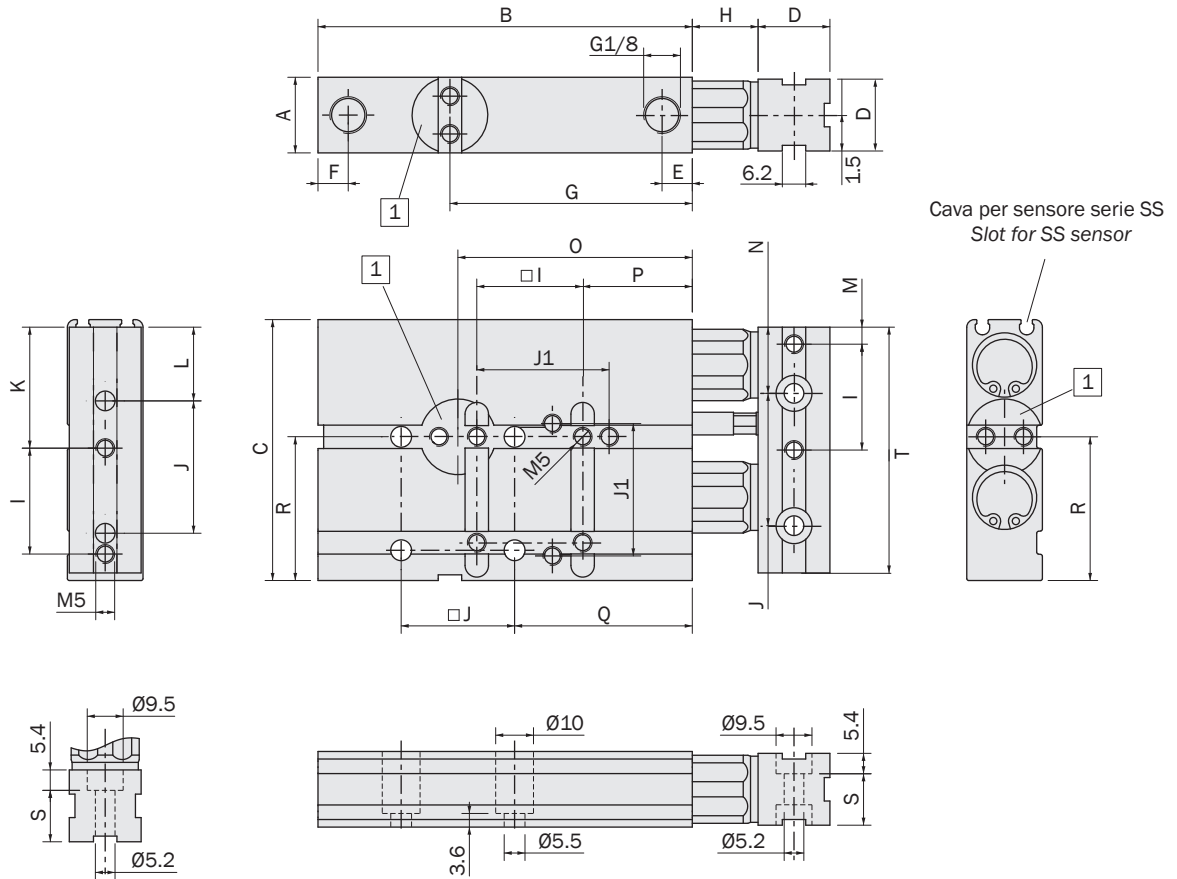
Sensori  
Sensors

**Dimensioni (mm)**  
**Dimensions (mm)**

**ZL16**  
**ZL25**

	A	B	C	D	E	F	G	H	I	J	J1	K	L	M	N	O	P	Q	R	S	T
ZL1650	20	99	69	19	8	8	64.1	17.4	28	35	35	32	19.5	4.5	17.5	62	29	47	38	13.6	65
ZL16100	20	149	69	19	8	8	64.1	17.4	28	35	35	32	19.5	4.5	17.5	62	29	47	38	13.6	65
ZL2550	30	101	87	29	8.5	9.5	64.1	17.4	40	40	-	24.5	31.5	7	22	62	17	37	47	23.6	78
ZL25100	30	151	87	29	8.5	9.5	64.1	17.4	40	40	-	24.5	31.5	7	22	62	17	37	47	23.6	78

1 Posizione di montaggio per ZL-K20 e ZL-K30  
Mounting position for ZL-K20 e ZL-K30

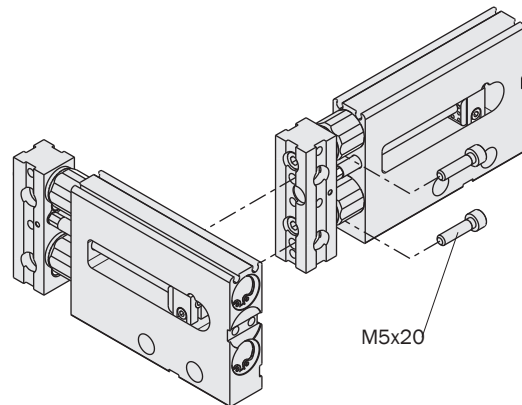
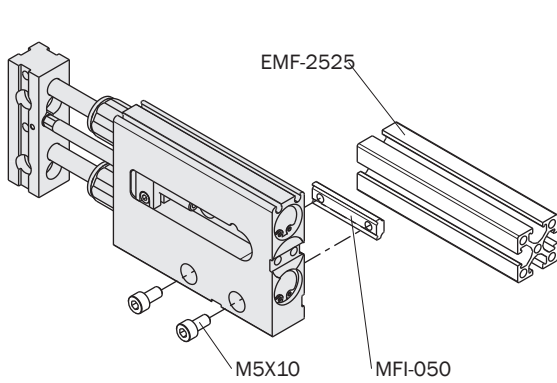
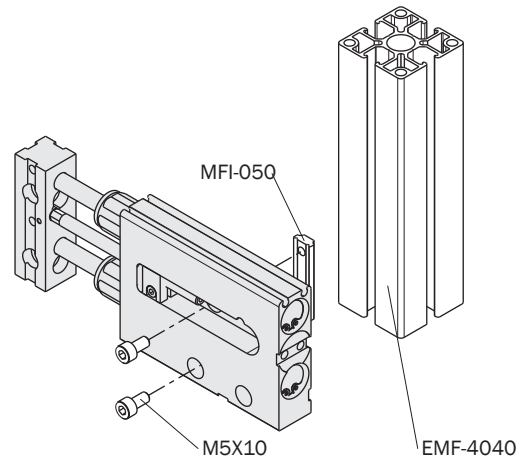
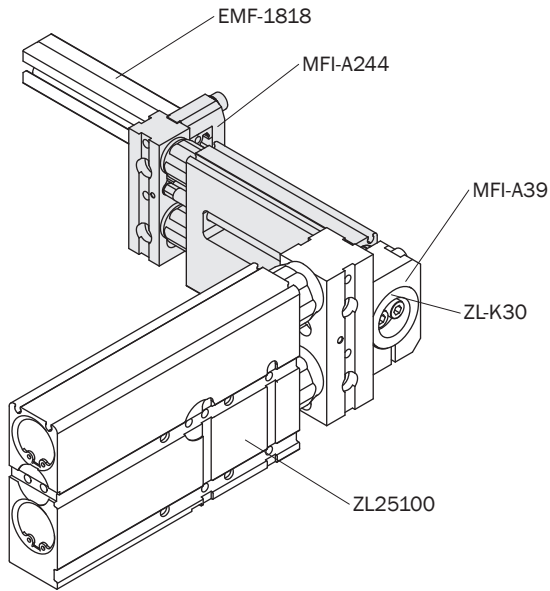
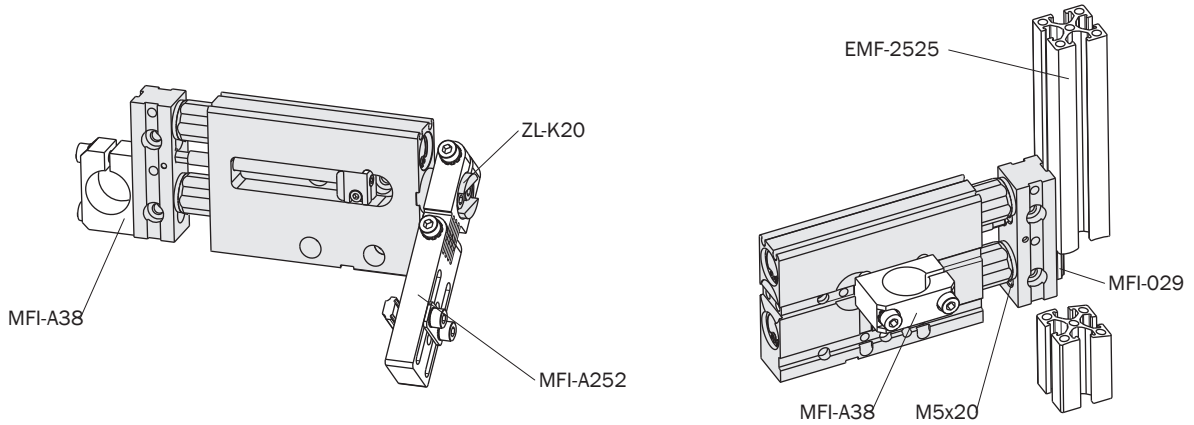


FIRST ANGLE PROJECTION



**Esempio di utilizzo**  
**Application example**

ZL 16



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

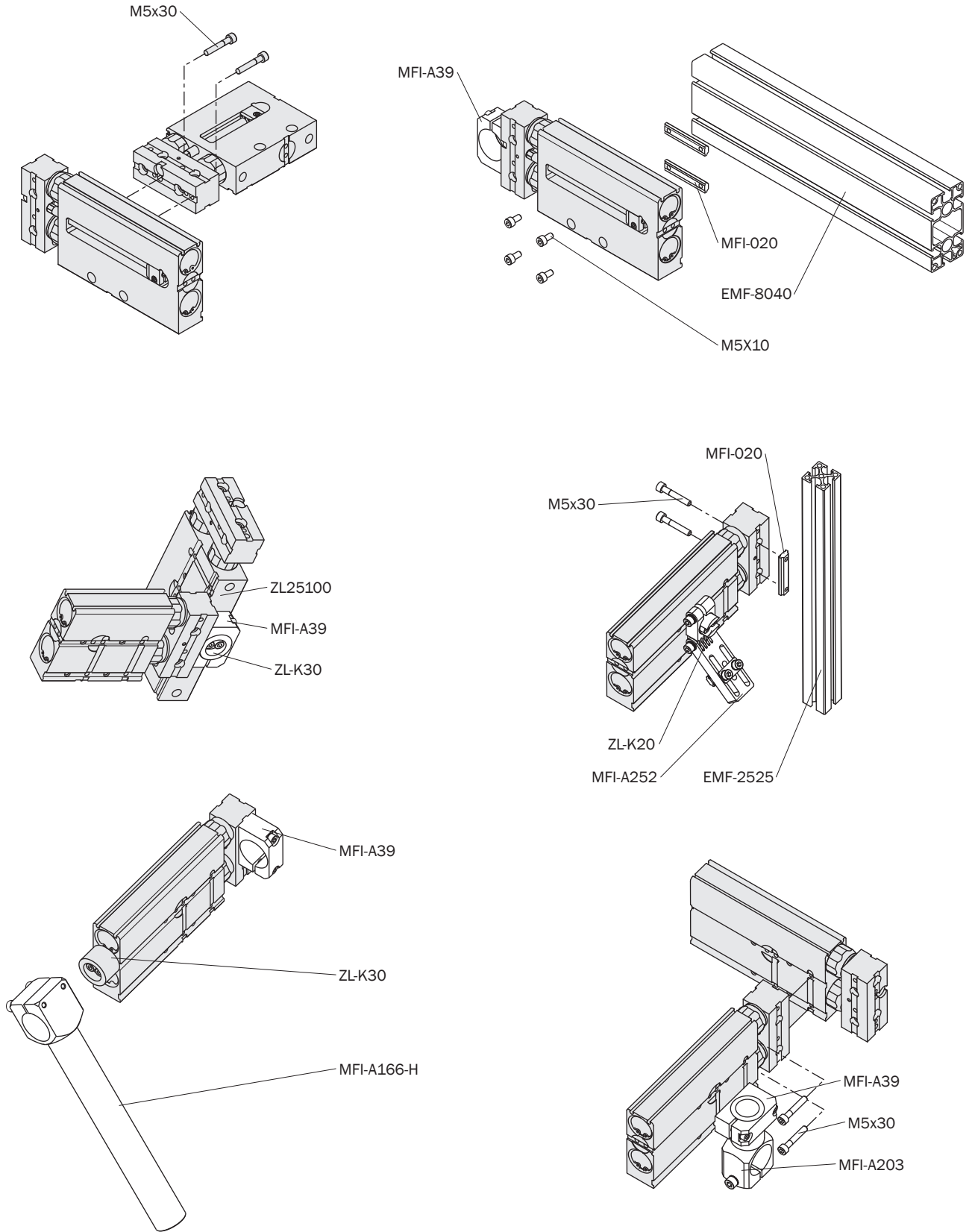
Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

**Esempio di utilizzo**  
**Application example**

ZL 25



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

## Mini slitte pneumatiche serie ZE-P

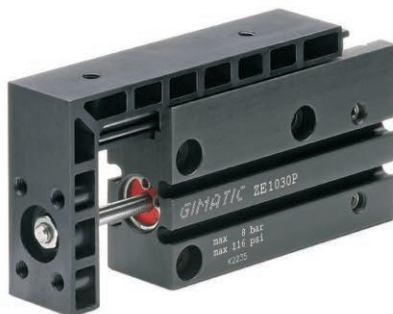
- Alesaggio 6, 10 oppure 16 mm.
- Corsa 10, 20, 30 mm.
- Varie possibilità di fissaggio.
- Azionamento a doppio effetto.
- Ammortizzatori elastici interni.
- Sensori magnetici opzionali.

## Pneumatic mini-slides series ZE-P

- Piston bore 6, 10 or 16 mm.
- Stroke 10, 20, 30 mm.
- Several fastening options.
- Double acting.
- Internal elastic bumpers.
- Optional magnetic sensors.



**ZE0630P**



**ZE1030P**



**ZE1630P**

Pur essendo perfettamente intercambiabile con la precedente serie ZE, la ZE-P può contare su:

- 1- Cuscinetti lineari a sfere, con gabbia in poliossimetilene.
- 2- Guida su alberini temprati e rettificati.
- 3- Carrello monoblocco stampato in zama.

Even if it is completely interchangeable with the previous ZE series, the ZE-P is provided with:

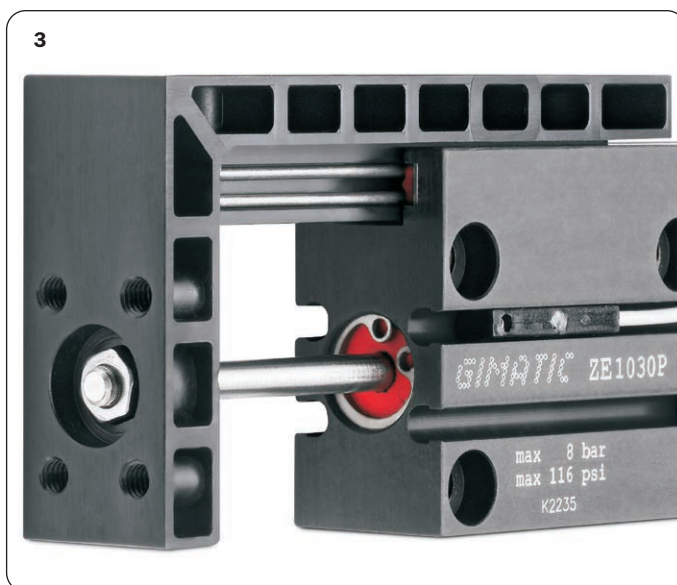
- 1- Linear ball bearings, with cage in polyoxymethylene.
- 2- Guide with built-in hardened and ground shafts.
- 3- One-block carrier moulded in zamak.



**1**



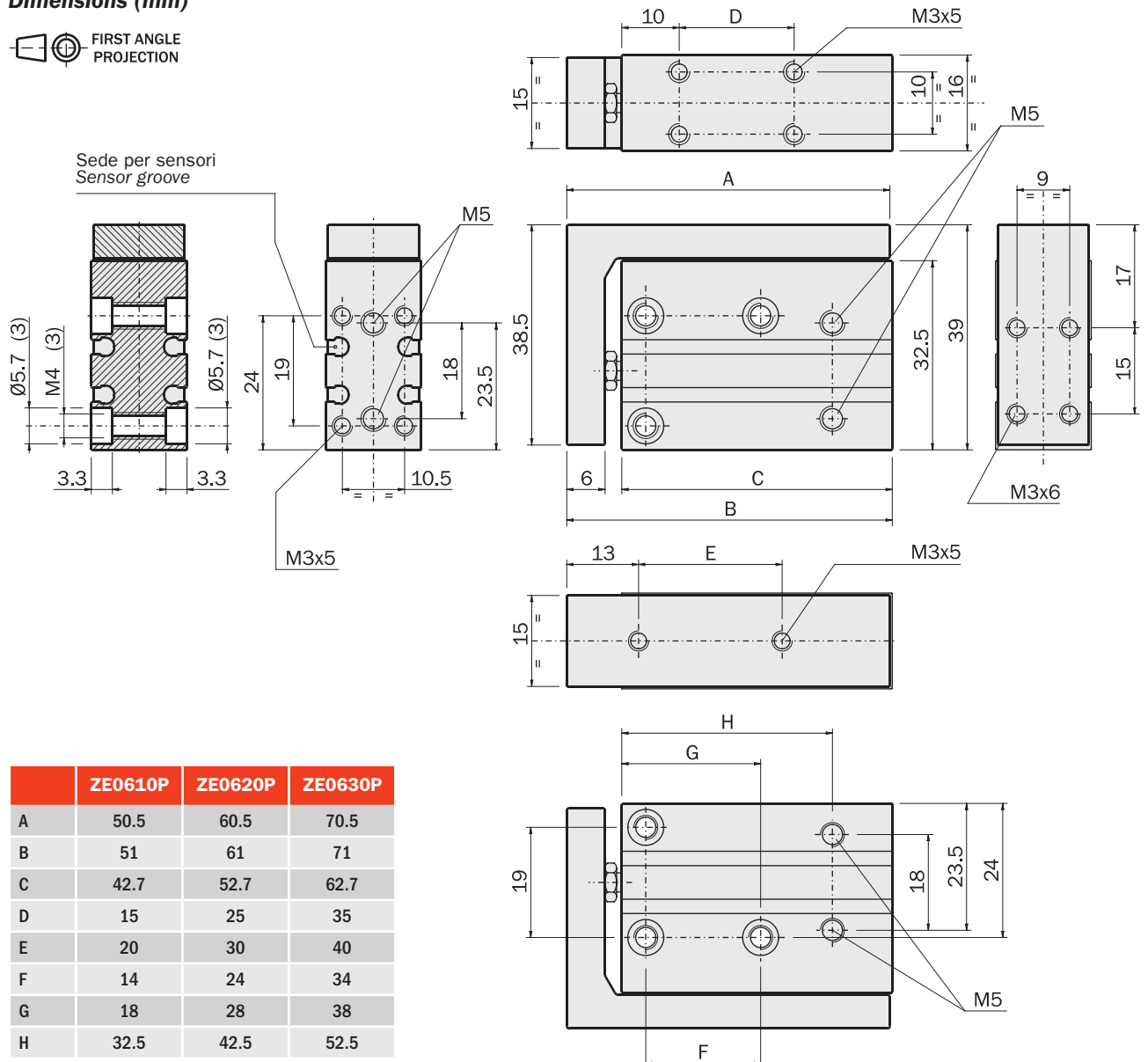
**2**



**3**

	ZE0610P	ZE0620P	ZE0630P
Peso Weight	90 g	105 g	120 g
Tempo di azionamento minimo Minimum actuating time	0.015 s	0.020 s	0.030 s
Frequenza massima di lavoro Maximum working frequency	3 Hz	3 Hz	3 Hz
Consumo d'aria per ciclo Air consumption per cycle	0.7 cm <sup>3</sup>	1.3 cm <sup>3</sup>	1.9 cm <sup>3</sup>
Corsa Stroke (+1 mm)	10 mm	20 mm	30 mm
Forza di apertura a 6 bar Extension force at 6 bar	13 N		
Forza di chiusura a 6 bar Retraction force at 6 bar	10 N		
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2÷8 bar		
Temperatura di esercizio Temperature range	5÷60 °C		

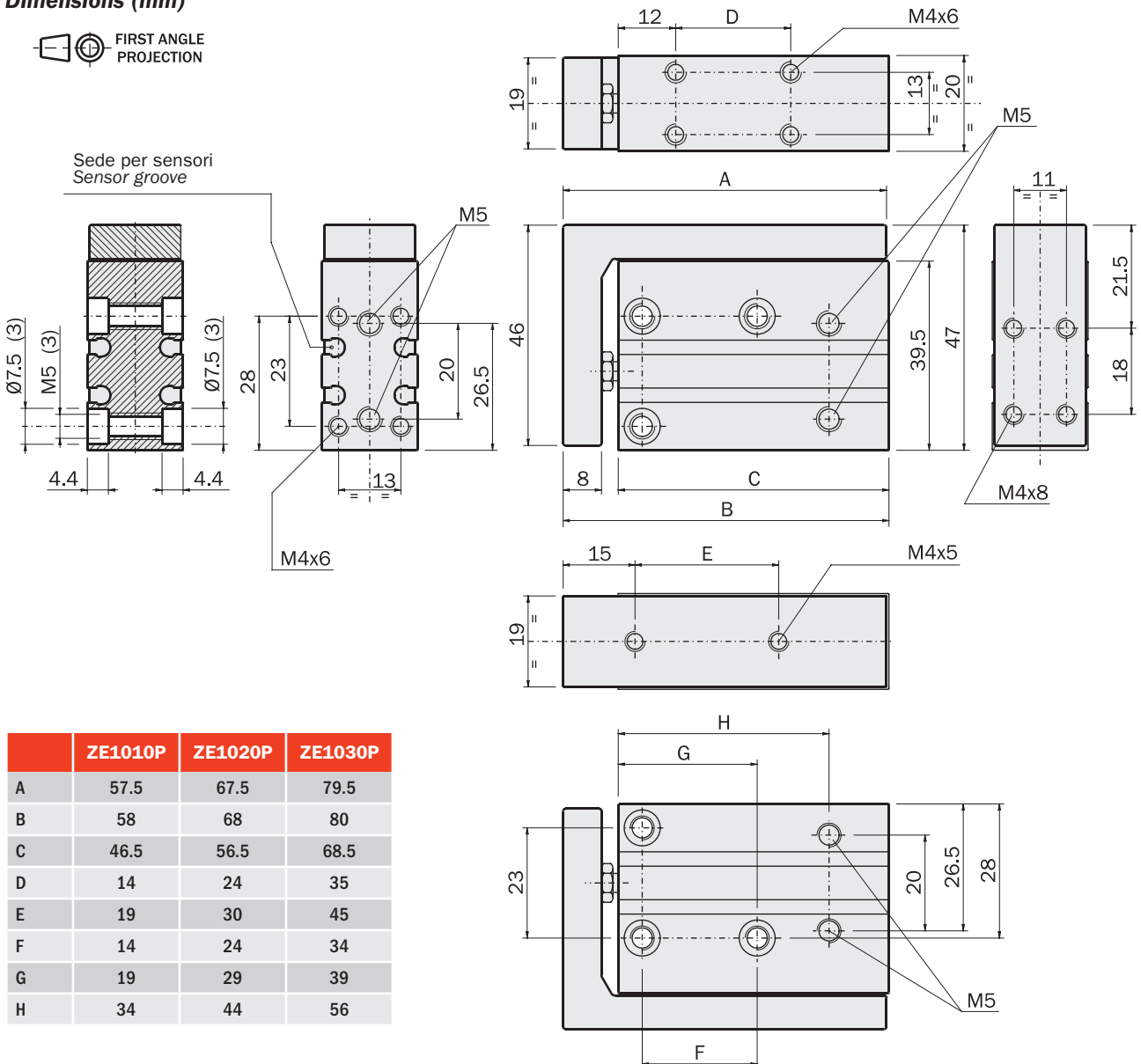
**Dimensioni (mm)**  
**Dimensions (mm)**



	ZE0610P	ZE0620P	ZE0630P
A	50.5	60.5	70.5
B	51	61	71
C	42.7	52.7	62.7
D	15	25	35
E	20	30	40
F	14	24	34
G	18	28	38
H	32.5	42.5	52.5

	ZE1010P	ZE1020P	ZE1030P
Peso Weight	150 g	175 g	200 g
Tempo di azionamento minimo Minimum actuating time	0.030 s	0.050 s	0.060 s
Frequenza massima di lavoro Maximum working frequency	3 Hz	3 Hz	3 Hz
Consumo d'aria per ciclo Air consumption per cycle	1.7 cm <sup>3</sup>	3.3 cm <sup>3</sup>	4.8 cm <sup>3</sup>
Corsa Stroke (+1 mm)	10 mm	20 mm	30 mm
Forza di apertura a 6 bar Extension force at 6 bar	40 N		
Forza di chiusura a 6 bar Retraction force at 6 bar	33 N		
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2÷8 bar		
Temperatura di esercizio Temperature range	5÷60 °C		

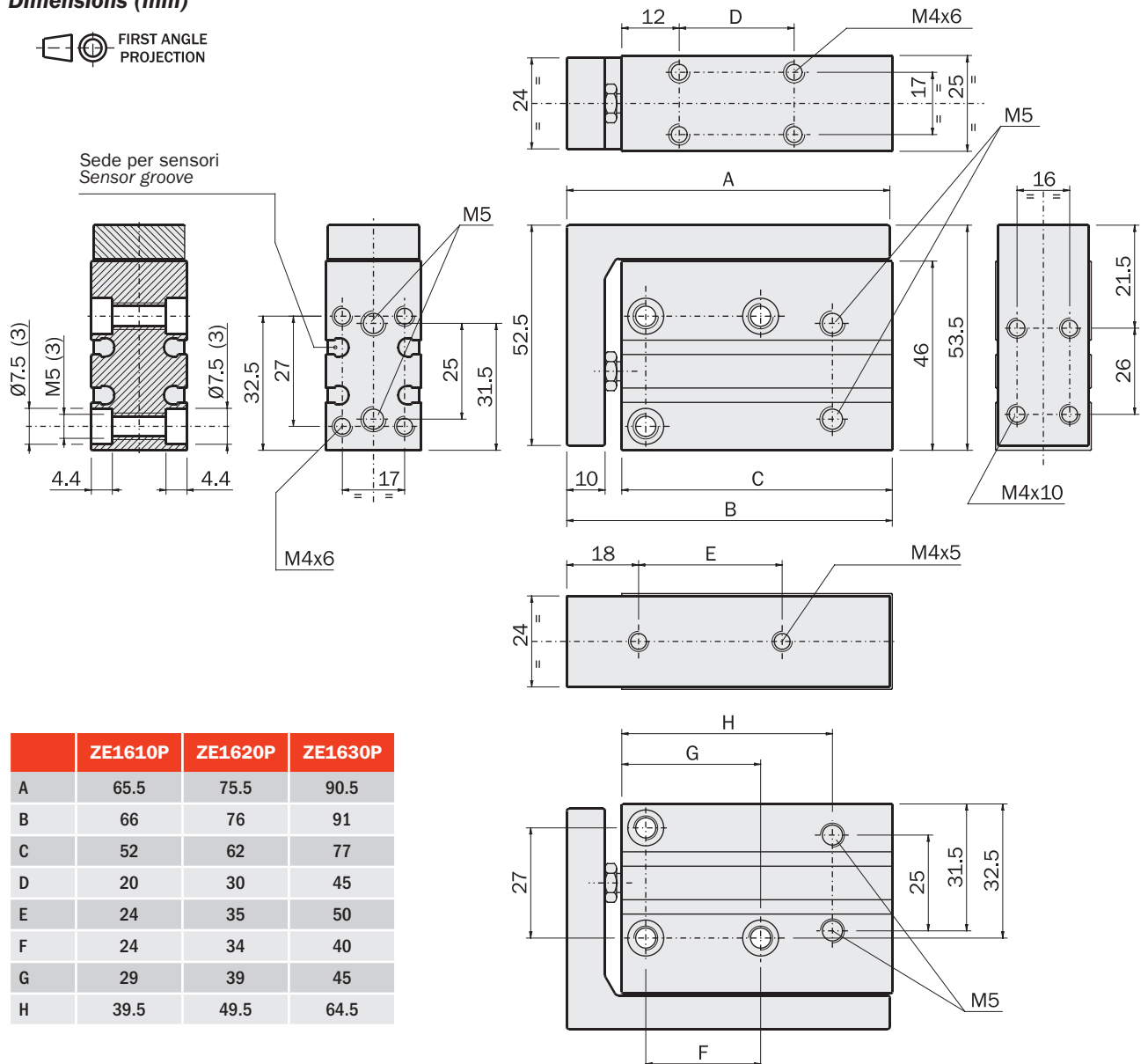
## Dimensioni (mm) Dimensions (mm)



	ZE1010P	ZE1020P	ZE1030P
A	57.5	67.5	79.5
B	58	68	80
C	46.5	56.5	68.5
D	14	24	35
E	19	30	45
F	14	24	34
G	19	29	39
H	34	44	56

	ZE1610P	ZE1620P	ZE1630P
Peso Weight	265 g	295 g	340 g
Tempo di azionamento minimo Minimum actuating time	0.050 s	0.070 s	0.090 s
Frequenza massima di lavoro Maximum working frequency	3 Hz	3 Hz	3 Hz
Consumo d'aria per ciclo Air consumption per cycle	4.4 cm <sup>3</sup>	8.3 cm <sup>3</sup>	12 cm <sup>3</sup>
Corsa (+1 mm) Stroke	10 mm	20 mm	30 mm
Forza di apertura a 6 bar Extension force at 6 bar	110 N		
Forza di chiusura a 6 bar Retraction force at 6 bar	100 N		
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	2÷8 bar		
Temperatura di esercizio Temperature range	5÷60 °C		

**Dimensioni (mm)**  
**Dimensions (mm)**



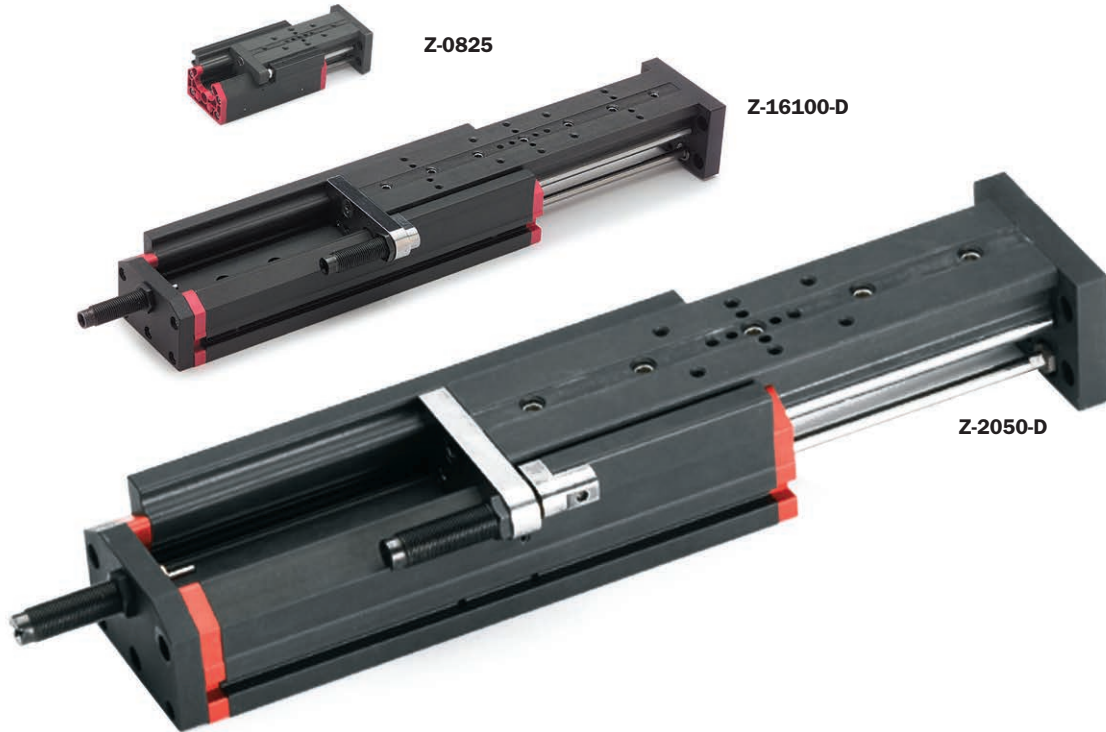
	ZE1610P	ZE1620P	ZE1630P
A	65.5	75.5	90.5
B	66	76	91
C	52	62	77
D	20	30	45
E	24	35	50
F	24	34	40
G	29	39	45
H	39.5	49.5	64.5

### Slitte pneumatiche (serie Z)

- Alesaggio 2x8mm, 2x16mm oppure 2x20mm.
- Corsa 25mm, 50mm, 100mm, 150mm e 200mm.
- Con o senza deceleratori.
- Azionamento a doppio effetto.
- Rapporto qualità / prezzo molto favorevole.
- Sensori magnetici opzionali.

### Pneumatic slides (series Z)

- Bore 2x8mm, 2x16 or 2x20mm.
- Stroke 25mm, 50mm, 100mm, 150mm and 200mm.
- With or without shock-absorbers.
- Double acting.
- Very favorable performance/price ratio.
- Optional magnetic sensors.



### Guida di scorrimento a ricircolo di sfere registrabile

- Struttura in estruso di alluminio quindi peso ridotto.
- Grande rigidità dovuta alle guide in acciaio temprato inserite nella struttura.
- Guida a ricircolo di sfere a bassa usura e lunga durata di vita.
- Possibilità di registrazione del precarico sulla guida con recupero dei possibili giochi.

### Adjustable recirculating ball-bearing system

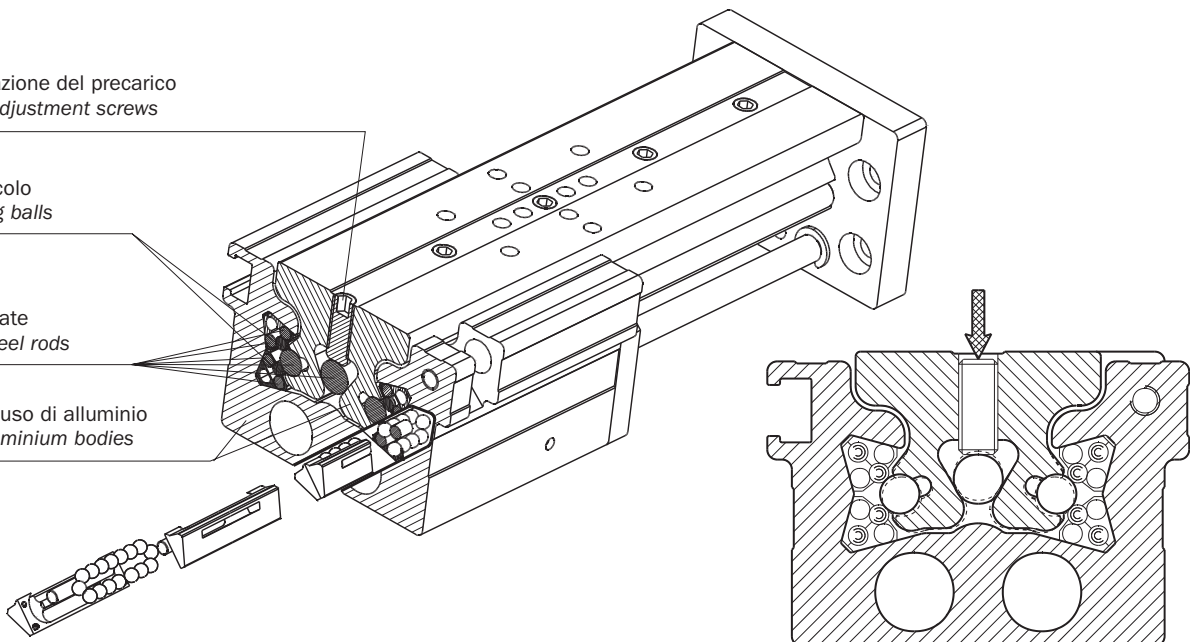
- Low weight as made from extruded aluminium profile.
- High stiffness thanks to the inserted hardened steel rods for guidance.
- Recirculating ball-bearing system provides wear resistance and extended performances.
- Possible adjustment of the preloading and taking up slack.

Viti di regolazione del precarico  
Preloading adjustment screws

Sfere a ricircolo  
Recirculating balls

Spine temprate  
Hardened steel rods

Corpi in estruso di alluminio  
Extruded aluminium bodies



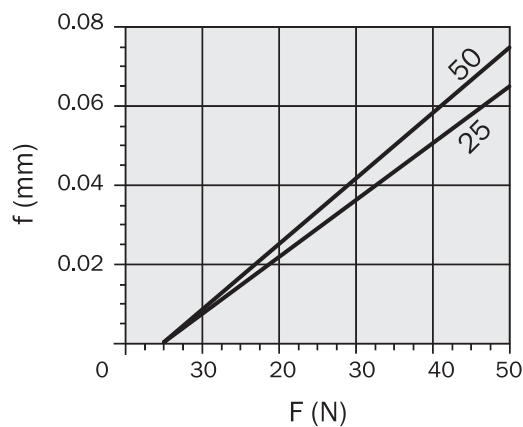
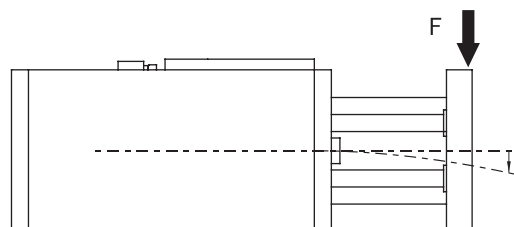
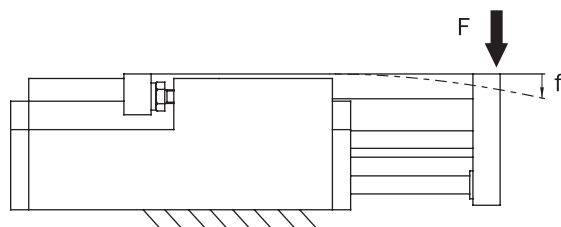
	Z-0825	Z-0825-D	Z-0850	Z-0850-D
Peso Weight	230 g	270 g	320 g	360 g
Ripetibilità Repetition accuracy	0.2 mm	0.02 mm	0.2 mm	0.02 mm
Tempo di azionamento minimo Minimum actuating time	0.054 s	0.100 s	0.080 s	0.130 s
Frequenza massima di lavoro Maximum working frequency	2 Hz	1 Hz	2 Hz	1 Hz
Consumo d'aria per ciclo Air consumption per cycle	6 cm <sup>3</sup>		11 cm <sup>3</sup>	
Corsa totale massima Maximun total stroke	25 mm		50 mm	
Forza di apertura a 6 bar Extension force at 6 bar	50 N			
Forza di chiusura a 6 bar Retraction force at 6 bar	37 N			
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Pressure range	2 ÷ 8 bar			
Temperatura di esercizio Temperature range	5 ÷ 60°C.			

### Flessione

Il grafico mostra la flessione  $f$  (mm) nei due sensi indicati, in funzione della forza  $F$  (N) e della corsa della slitta.

### Deflection

The graph shows the deflection  $f$  (mm) in two showed directions, as function of the force  $F$  (N) and the stroke of the slide.





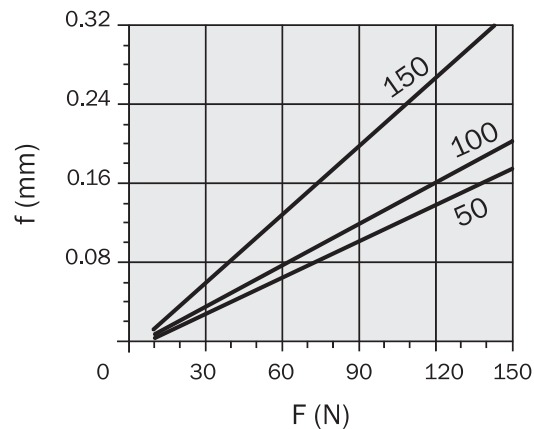
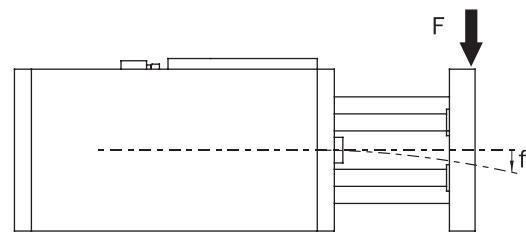
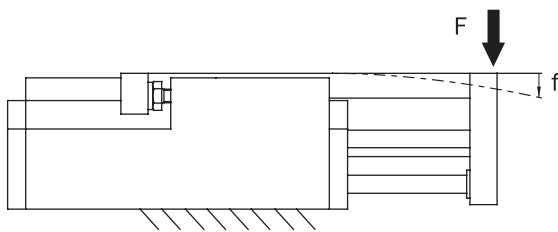
	Z-1650	Z-1650-D	Z-16100	Z-16100-D	Z-16150	Z-16150-D
Peso <i>Weight</i>	620 g	730 g	1010 g	1120 g	1340 g	1450 g
Ripetibilità <i>Repetition accuracy</i>	0.2 mm	0.02 mm	0.2 mm	0.02 mm	0.2 mm	0.02 mm
Tempo di azionamento minimo <i>Minimum actuating time</i>	0.080 s	0.100 s	0.120 s	0.150 s	0.220 s	0.230 s
Frequenza massima di lavoro <i>Maximum working frequency</i>	2 Hz	1 Hz	2 Hz	1 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo <i>Air consumption per cycle</i>	44 cm <sup>3</sup>		95 cm <sup>3</sup>		141 cm <sup>3</sup>	
Corsa totale massima <i>Maximun total stroke</i>	50 mm		100 mm		150 mm	
Forza di apertura a 6 bar <i>Extension force at 6 bar</i>	200 N					
Forza di chiusura a 6 bar <i>Retraction force at 6 bar</i>	170 N					
Fluido <i>Medium</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>					
Pressione di esercizio <i>Pressure range</i>	2 ÷ 8 bar					
Temperatura di esercizio <i>Temperature range</i>	5 ÷ 60°C.					

## Flessione

Il grafico mostra la flessione  $f$  (mm) nei due sensi indicati, in funzione della forza  $F$  (N) e della corsa della slitta.

## Deflection

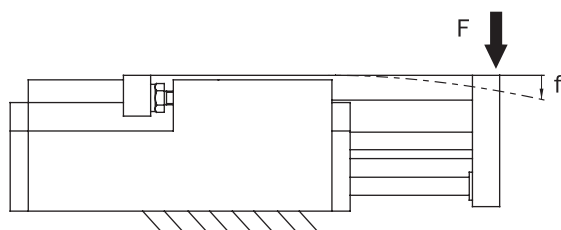
The graph shows the deflection  $f$  (mm) in two showed directions, as function of the force  $F$  (N) and the stroke of the slide.



	Z-2050-D	Z-20100-D	Z-20150-D	Z-20200-D
Peso Weight	1300 g	1950 g	2500 g	3100 g
Ripetibilità Repetition accuracy	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Tempo di azionamento minimo Minimum actuating time	0.12 s	0.19 s	0.26 s	0.31 s
Frequenza massima di lavoro Maximum working frequency	1 Hz	1 Hz	1 Hz	1 Hz
Consumo d'aria per ciclo Air consumption per cycle	76 cm <sup>3</sup>	155 cm <sup>3</sup>	227 cm <sup>3</sup>	310 cm <sup>3</sup>
Corsa totale massima Maximun total stroke	50 mm	100 mm	150 mm	200 mm
Forza di apertura a 6 bar Extension force at 6 bar	330 N			
Forza di chiusura a 6 bar Retraction force at 6 bar	300 N			
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Pressure range	2 ÷ 8 bar			
Temperatura di esercizio Temperature range	5 ÷ 60°C.			

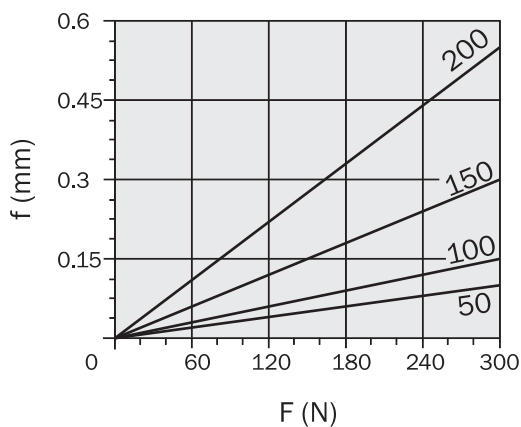
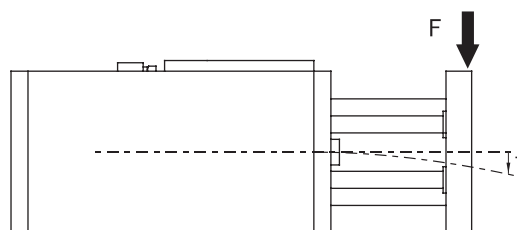
## Flessione

Il grafico mostra la flessione  $f$  (mm) nei due sensi indicati, in funzione della forza  $F$  (N) e della corsa della slitta.



## Deflection

The graph shows the deflection  $f$  (mm) in two showed directions, as function of the force  $F$  (N) and the stroke of the slide.



## Carichi di sicurezza

Controllare le tabelle sottostanti.

Carichi eccessivi possono danneggiare la slitta, causare difficoltà di funzionamento e compromettere la sicurezza dell'operatore.

$F_x s$ ,  $F_z s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$  sono i carichi statici massimi ammissibili.

$F_x d$ ,  $F_z d$ ,  $M_x d$ ,  $M_y d$ ,  $M_z d$  sono i massimi carichi dinamici ammissibili.

È indicato il minimo tempo di azionamento  $t$  in funzione della massa trasportata  $m$ .

(\*) Quando il tempo e la massa comportano un'eccessiva energia cinetica si deve diminuire la velocità con regolatori di flusso (non forniti).

## Safety loads

Check the tables below.

Excessive loads can damage the slide, cause functioning troubles and endanger the safety of the operator.

$F_x s$ ,  $F_z s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$  are maximum permitted static loads.  $F_x d$ ,  $F_z d$ ,  $M_x d$ ,  $M_y d$ ,  $M_z d$  are maximum permitted dynamic loads.

It is also indicated the minimum actuating time  $t$  as a factor of the pay-load  $m$ .

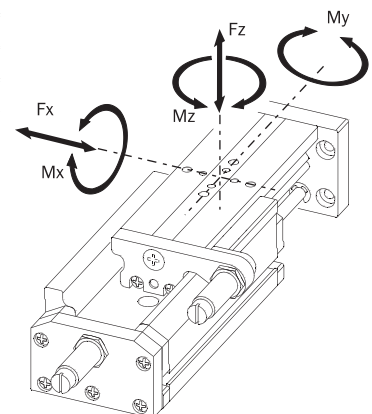
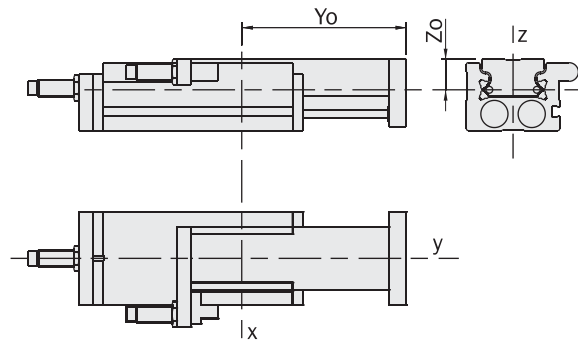
(\*) When the actuating time and the pay-load produce an excessive kinetic energy you must reduce the speed by flow controllers (not supplied).

	Z-0825 Z-0825-D	Z-0850 Z-0850-D	Z-1650 Z-1650-D	Z-16100 Z-16100-D	Z-16150 Z-16150-D	Z-2050-D	Z-20100-D	Z-20150-D	Z-20200-D
Zo	14.5 mm	14.5 mm	18 mm	18 mm	18 mm	24 mm	24 mm	24 mm	24 mm
Yo	57 mm	87 mm	97mm	157 mm	217 mm	102 mm	167 mm	227 mm	295 mm
$F_x s$	60 N	60 N	200 N	250 N	250 N	250 N	350 N	350 N	450 N
$F_z s$	60 N	60 N	200 N	250 N	250 N	250 N	350 N	350 N	450 N
$M_x s$	3 Nm	6 Nm	12 Nm	24 Nm	30 Nm	15 Nm	36 Nm	45 Nm	66 Nm
$M_y s$	3 Nm	3 Nm	15 Nm	24 Nm	24 Nm	24 Nm	36 Nm	36 Nm	48 Nm
$M_z s$	3 Nm	6 Nm	12 Nm	24 Nm	30 Nm	15 Nm	36 Nm	45 Nm	66 Nm
$F_x d$	10 N	10 N	40 N	50 N	50 N	50 N	70 N	70 N	80 N
$F_z d$	10 N	10 N	40 N	50 N	50 N	50 N	70 N	70 N	80 N
$M_x d$	0.5 Nm	1 Nm	2 Nm	4 Nm	5 Nm	2.5 Nm	6 Nm	7.5 Nm	11 Nm
$M_y d$	0.5 Nm	0.5 Nm	2.5 Nm	4 Nm	4 Nm	4 Nm	6 Nm	6 Nm	8 Nm
$M_z d$	0.5 Nm	1 Nm	2 Nm	4 Nm	5 Nm	2.5 Nm	6 Nm	7.5 Nm	11 Nm
m max	1 kg	1 kg	4 kg	5 kg	5 kg	5 kg	7 kg	7 kg	8 kg

m	t Z-0825	t Z-0825-D	t Z-0850	t Z-0850-D
0.1 kg	0.054 s	0.180 s	0.113 s (*)	0.140 s
0.2 kg	0.066 s (*)	0.170 s	0.135 s (*)	0.137 s
0.3 kg	0.075 s (*)	0.160 s	0.155 s (*)	0.135 s
0.4 kg	0.084 s (*)	0.150 s	0.172 s (*)	0.133 s
0.5 kg	0.092 s (*)	0.140 s	0.187 s (*)	0.130 s
0.6 kg	0.099 s (*)	0.130 s	0.201 s (*)	0.136 s (*)
0.7 kg	0.106 s (*)	0.120 s	0.215 s (*)	0.142 s (*)
0.8 kg	0.112 s (*)	0.110 s	0.227 s (*)	0.147 s (*)
0.9 kg	0.118 s (*)	0.100 s	0.239 s (*)	0.152 s (*)
1 kg	0.124 s (*)	0.103 s (*)	0.250 s (*)	0.157 s (*)

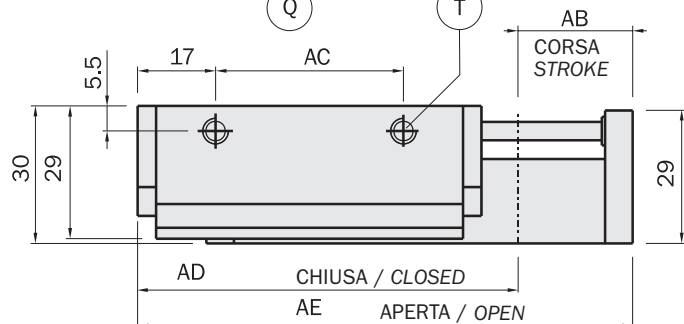
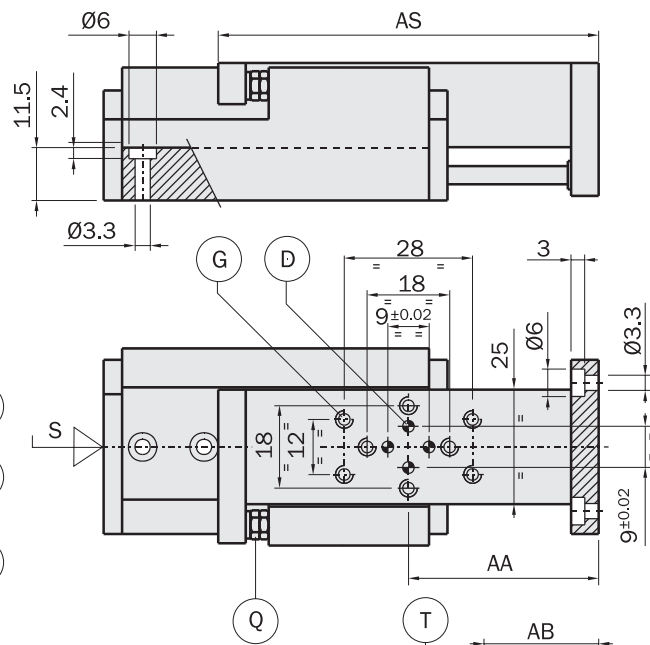
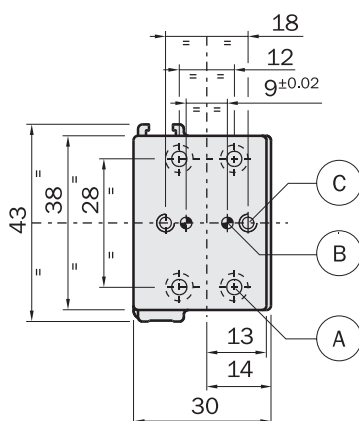
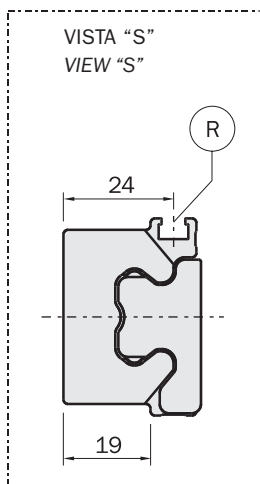
m	t Z-1650	t Z-1650-D	t Z-16100	t Z-16100-D	t Z-16150	t Z-16150-D
0.1 kg	0.080 s	0.120 s	0.163 s (*)	0.160	0.274 s (*)	0.240 s
0.5 kg	0.108 s (*)	0.115 s	0.231 s (*)	0.155	0.367 s (*)	0.230 s
1 kg	0.141 s (*)	0.110 s	0.294 s (*)	0.180 (*)	0.458 s (*)	0.264 s (*)
1.5 kg	0.168 s (*)	0.116 s (*)	0.346 s (*)	0.207 (*)	0.534 s (*)	0.303 s (*)
2 kg	0.191 s (*)	0.128 s (*)	0.392 s (*)	0.230 (*)	0.600 s (*)	0.336 s (*)
2.5 kg	0.212 s (*)	0.138 s (*)	0.432 s (*)	0.251 (*)	0.659 s (*)	0.367 s (*)
3 kg	0.231 s (*)	0.148 s (*)	0.469 s (*)	0.270 (*)	0.714 s (*)	0.395 s (*)
3.5 kg	0.248 s (*)	0.157 s (*)	0.503 s (*)	0.287 (*)	0.765 s (*)	0.421 s (*)
4 kg	0.265 s (*)	0.165 s (*)	0.535 s (*)	0.303 (*)	0.812 s (*)	0.445 s (*)
4.5 kg	-	-	0.566 s (*)	0.319 s (*)	0.857 s (*)	0.468 s (*)
5 kg	-	-	0.594 s (*)	0.334 s (*)	0.900 s (*)	0.490 s (*)

m	t Z-2050-D	t Z-20100-D	t Z-20150-D	t Z-20200-D
1 kg	0.135 s	0.200 s	0.265 s	0.310 s
2 kg	0.130 s	0.195 s	0.260 s	0.319 s (*)
3 kg	0.125 s	0.190 s	0.270 s (*)	0.357 s (*)
4 kg	0.120 s	0.207 s (*)	0.296 s (*)	0.391 s (*)
5 kg	0.129 s (*)	0.224 s (*)	0.320 s (*)	0.422 s (*)
6 kg	-	0.239 s (*)	0.342 s (*)	0.451 s (*)
7 kg	-	0.252 s (*)	0.363 s (*)	0.478 s (*)
8 kg	-	-	-	0.503 s (*)

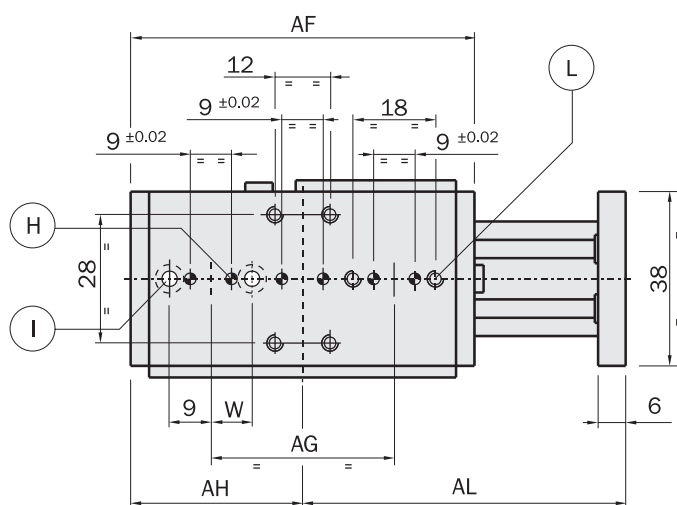


**Dimensioni (mm)**  
**Dimensions (mm)**

	AA	AB	AC	AD	AE	AF	AG	AH	AL	W	AS
Z-0825	41.5	25	41	83	108	75	40	37.5	70.5	-	83
Z-0850	59	50	76	118	168	110	50	55	113	9	118



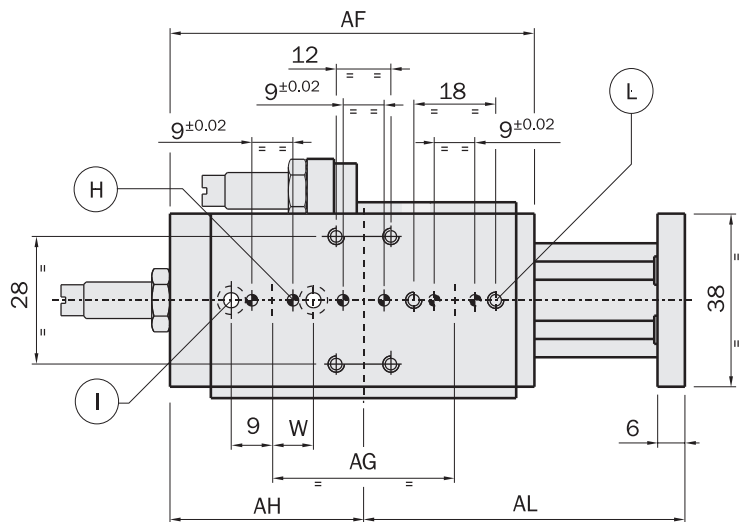
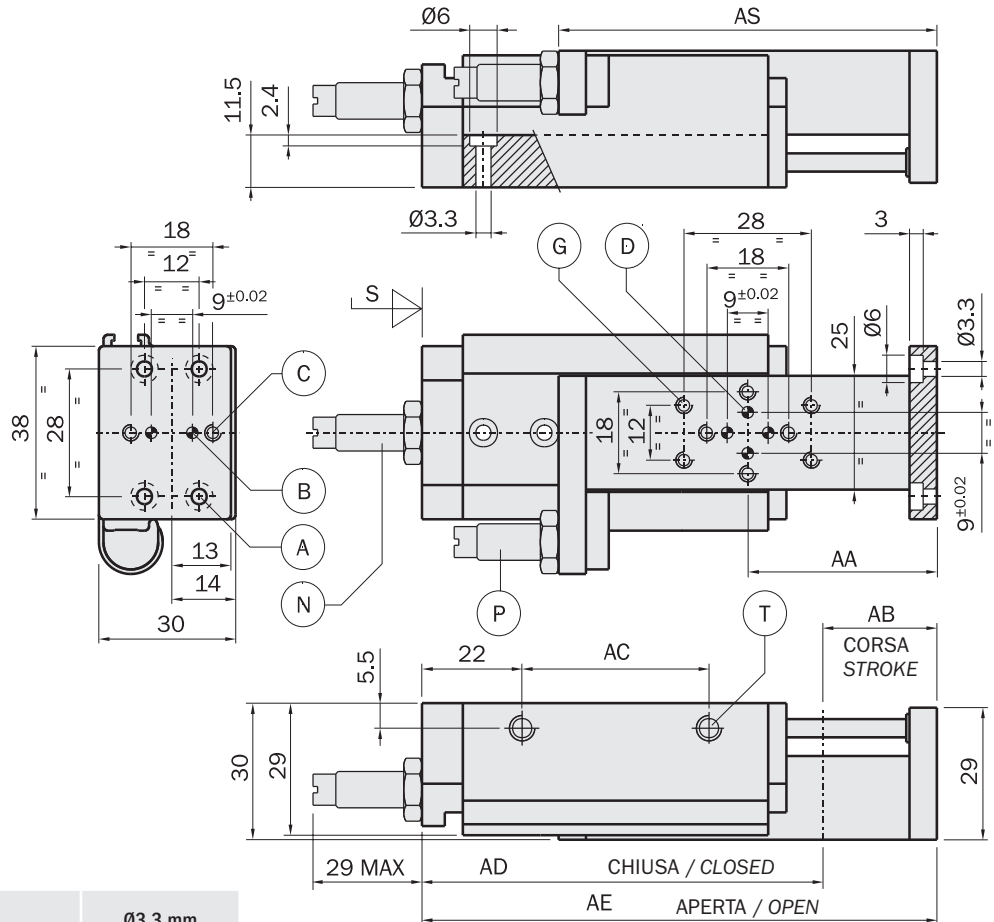
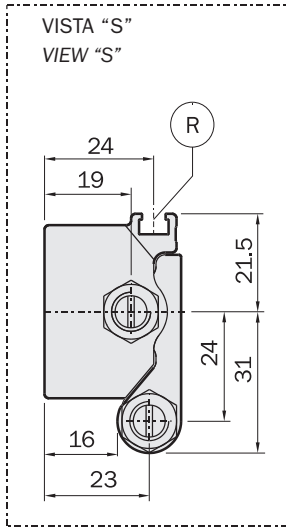
A	Foro passante per fissaggio Through hole for fastening	Ø3.3 mm
B	Foro di riferimento Dowel pin hole	Ø2.5H8x4.5 mm
C	Foro filettato per fissaggio Threaded hole for fastening	M3x6 mm
D	Foro di riferimento Dowel pin hole	Ø2.5H8x5 mm
G	Foro filettato per fissaggio Threaded hole for fastening	M3x5 mm
H	Foro di riferimento Dowel pin hole	Ø2.5H8x6 mm
I	Foro passante per fissaggio Through hole for fastening	Ø3.3 mm
L	Foro filettato per fissaggio Threaded hole for fastening	M3x6 mm
N	Regolazione corsa in chiusura Retraction stroke adjustment	
P	Regolazione corsa in apertura Extension stroke adjustment	
R	Sede per sensori Gimatic Gimatic sensor slot	
T	Ingresso aria Air connection	M5



 FIRST ANGLE  
 PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

	AA	AB	AC	AD	AE	AF	AG	AH	AL	W	AS
Z-0825-D	41.5	25	41	88	113	80	40	42.5	70.5	-	83
Z-0850-D	59	50	76	123	173	115	50	60	113	9	118

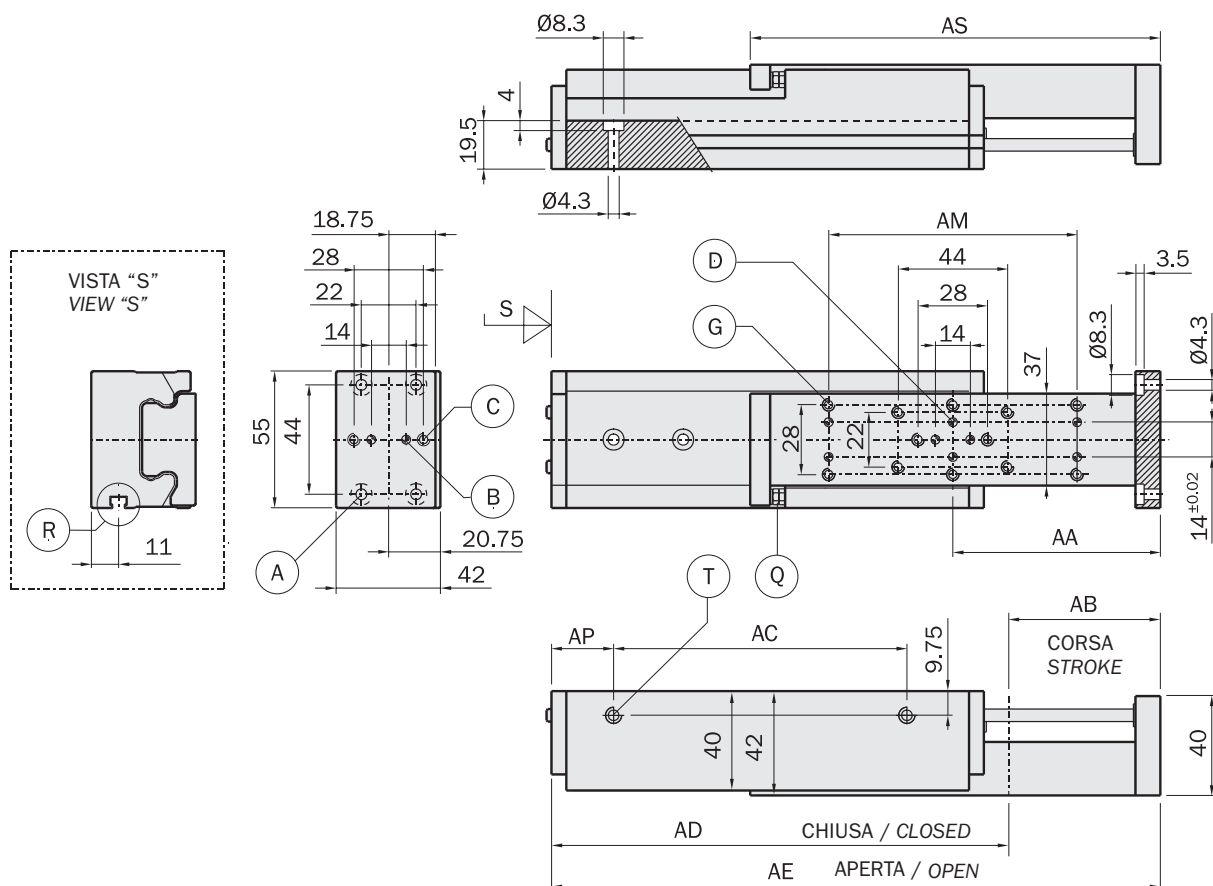


A	Foro passante per fissaggio Through hole for fastening	Ø3.3 mm
B	Foro di riferimento Dowel pin hole	Ø2.5H8x4.5 mm
C	Foro filettato per fissaggio Threaded hole for fastening	M3x6 mm
D	Foro di riferimento Dowel pin hole	Ø2.5H8x5 mm
G	Foro filettato per fissaggio Threaded hole for fastening	M3x5 mm
H	Foro di riferimento Dowel pin hole	Ø2.5H8x6 mm
I	Foro passante per fissaggio Through hole for fastening	Ø3.3 mm
L	Foro filettato per fissaggio Threaded hole for fastening	M3x6 mm
N	Regolazione corsa in chiusura Retraction stroke adjustment	
P	Regolazione corsa in apertura Extension stroke adjustment	
R	Sede per sensori Gimatic Gimatic sensor slot	
T	Ingresso aria Air connection	M5

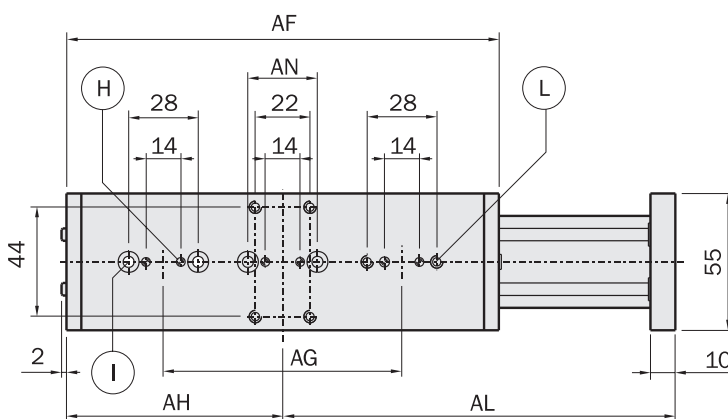


**Dimensioni (mm)**  
**Dimensions (mm)**

	AA	AB	AC	AD	AE	AF	AG	AH	AL	AM	AN	W	AS
Z-1650	68.5	50	82	135	185	124	62	62	123	-	-	21	135
Z-16100	103.5	100	144	205	305	194	100	97	208	120	-	25	205
Z-16150	138.5	150	204	275	425	264	160	132	293	140	28	30	275

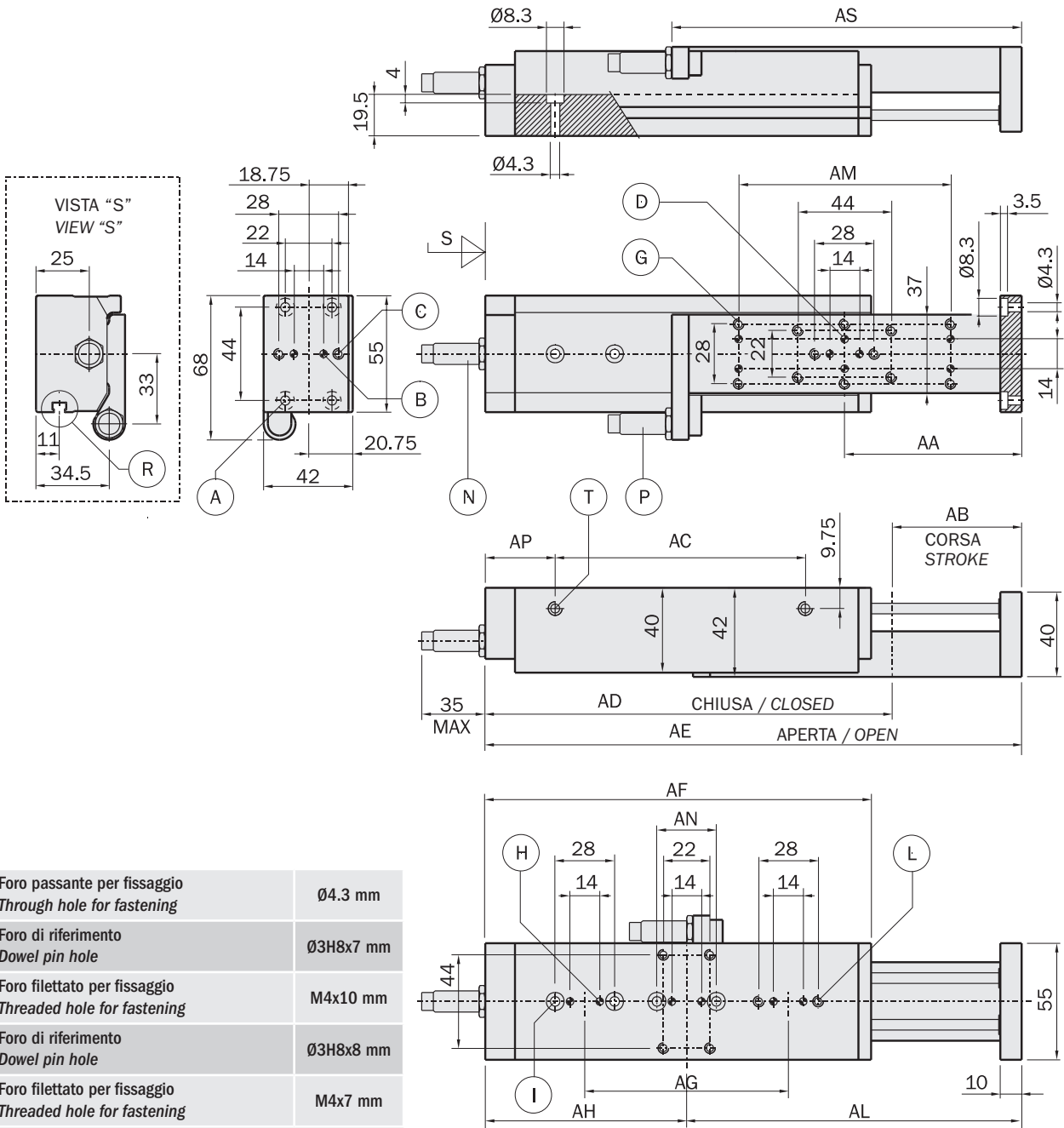


A	Foro passante per fissaggio Through hole for fastening	Ø4.3 mm
B	Foro di riferimento Dowel pin hole	Ø3H8x7 mm
C	Foro filettato per fissaggio Threaded hole for fastening	M4x10 mm
D	Foro di riferimento Dowel pin hole	Ø3H8x8 mm
G	Foro filettato per fissaggio Threaded hole for fastening	M4x7 mm
H	Foro di riferimento Dowel pin hole	Ø3H8x7 mm
I	Foro passante per fissaggio Through hole for fastening	Ø4.3 mm
L	Foro filettato per fissaggio Threaded hole for fastening	M4x6 mm
Q	Regolazione corsa in apertura Extension stroke adjustment	
R	Sede per sensori Gimatic Gimatic sensor slot	
T	Ingresso aria Air connection	M5


**FIRST ANGLE  
PROJECTION**

**Dimensioni (mm)**  
**Dimensions (mm)**

	AA	AB	AC	AD	AE	AF	AG	AH	AL	AM	AN	AP	AS
Z-1650-D	68.5	50	82	143	193	132	62	70	123	-	-	29	135
Z-16100-D	103.5	100	144	213	313	202	100	105	208	120	-	33	205
Z-16150-D	138.5	150	204	283	433	272	160	140	293	140	28	38	275

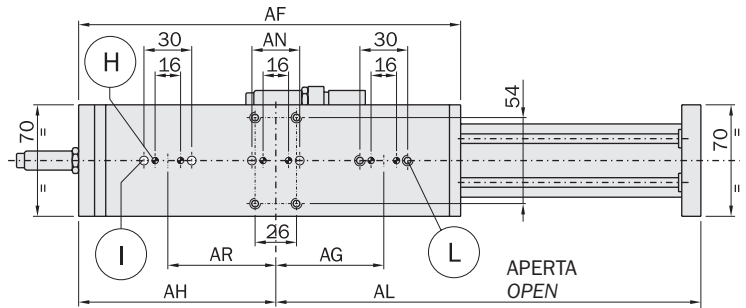
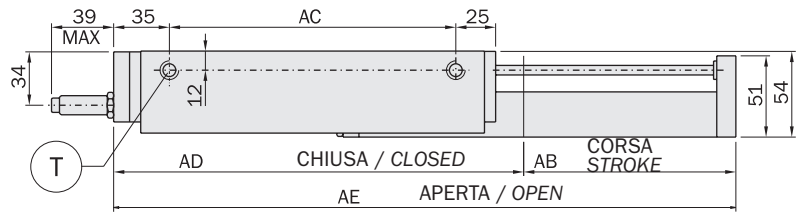
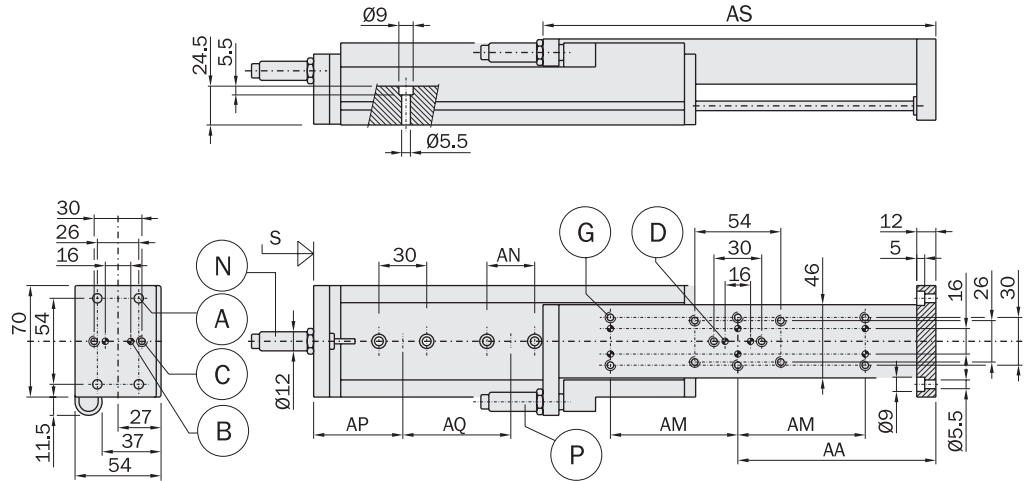
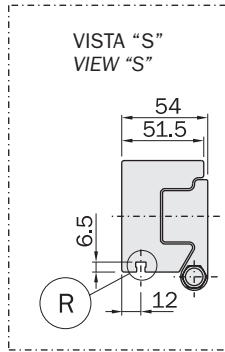


A	Foro passante per fissaggio Through hole for fastening	Ø4.3 mm
B	Foro di riferimento Dowel pin hole	Ø3H8x7 mm
C	Foro filettato per fissaggio Threaded hole for fastening	M4x10 mm
D	Foro di riferimento Dowel pin hole	Ø3H8x8 mm
G	Foro filettato per fissaggio Threaded hole for fastening	M4x7 mm
H	Foro di riferimento Dowel pin hole	Ø3H8x7 mm
I	Foro passante per fissaggio Through hole for fastening	Ø4.3 mm
L	Foro filettato per fissaggio Threaded hole for fastening	M4x6 mm
N	Regolazione corsa in chiusura Retraction stroke adjustment	
P	Regolazione corsa in apertura Extension stroke adjustment	
R	Sede per sensori Gimatic Gimatic sensor slot	
T	Ingresso aria Air connection	M5

FIRST ANGLE PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

	AA	AB	AC	AD	AE	AF	AG	AH	AL	AM	AN	AP	AQ	AR	AS
Z-2050-D	72	50	80	155	205	140	32	75	130	-	-	43	-	32	142
Z-20100-D	112	100	160	235	335	220	35	115	220	-	-	80	-	35	222
Z-20150-D	147	150	230	305	455	290	80	143	312	80	30	63	80	80	292
Z-20200-D	190	200	316	391	591	376	120	193	398	118	30	-	-	-	378



A	Foro passante per fissaggio Through hole for fastening	Ø5.5 mm
B	Foro di riferimento Dowel pin hole	Ø4H8x10 mm
C	Foro filettato per fissaggio Threaded hole for fastening	M5x12 mm
D	Foro di riferimento Dowel pin hole	Ø4H8x10 mm
G	Foro filettato per fissaggio Threaded hole for fastening	M5x8 mm
H	Foro di riferimento Dowel pin hole	Ø4H8x8 mm
I	Foro passante per fissaggio Through hole for fastening	Ø5.5 mm
L	Foro filettato per fissaggio Threaded hole for fastening	M5x10 mm
N	Regolazione corsa in chiusura Retraction stroke adjustment	
P	Regolazione corsa in apertura Extension stroke adjustment	
R	Sede per sensori Gimatic Gimatic sensor slot	
T	Ingresso aria Air connection	1/8" Gas





## Slitta a doppia corsa per grosse pinze per materozze

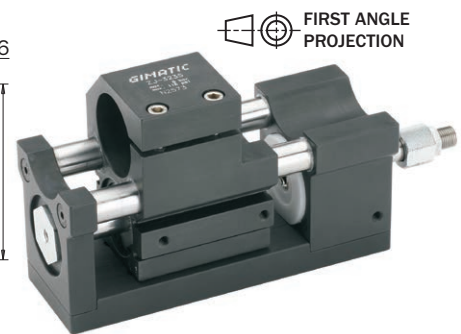
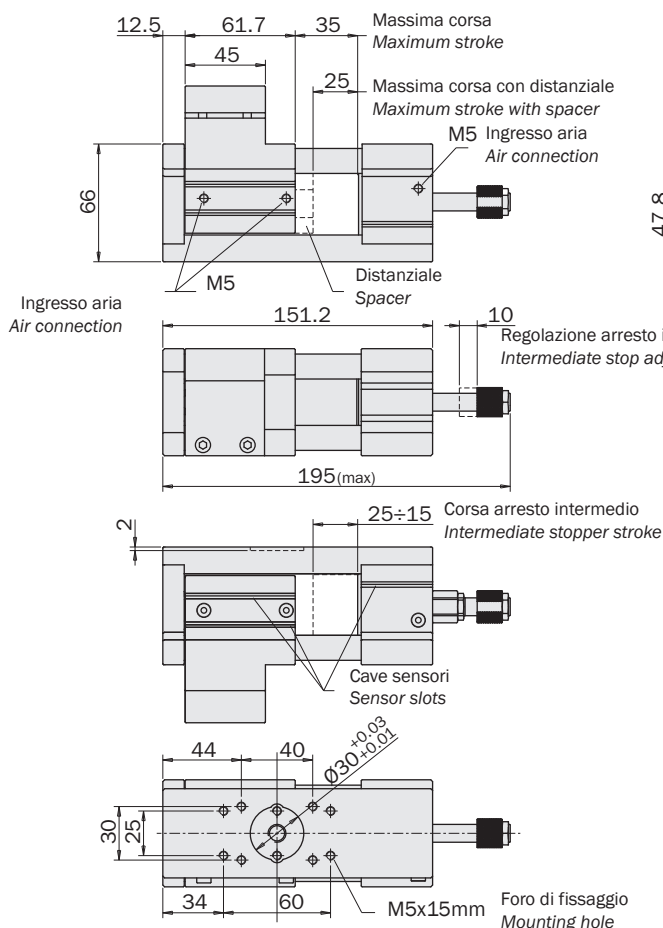
- Cilindro principale a doppio effetto con pistone da 32mm e corsa 35mm.
- Arresto intermedio a semplice effetto (1).
- Cravatta da 36mm per attuatore GN-10 (2).
- Usata per l'estrazione di paraurti.
- Sensori magnetici opzionali.
- Distanziale per riduzione corsa incluso.

## Double stroke slide for large sprue grippers

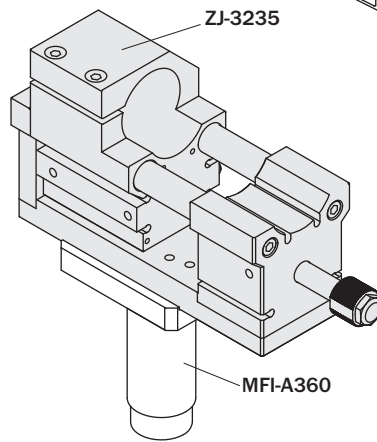
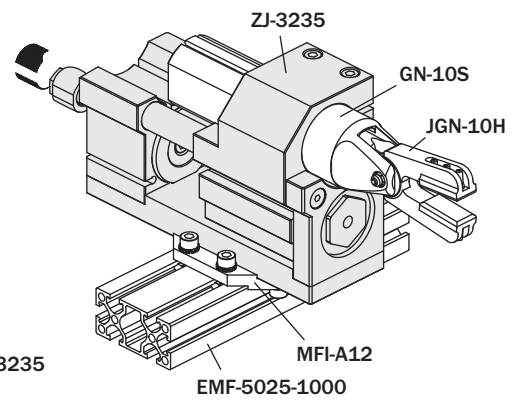
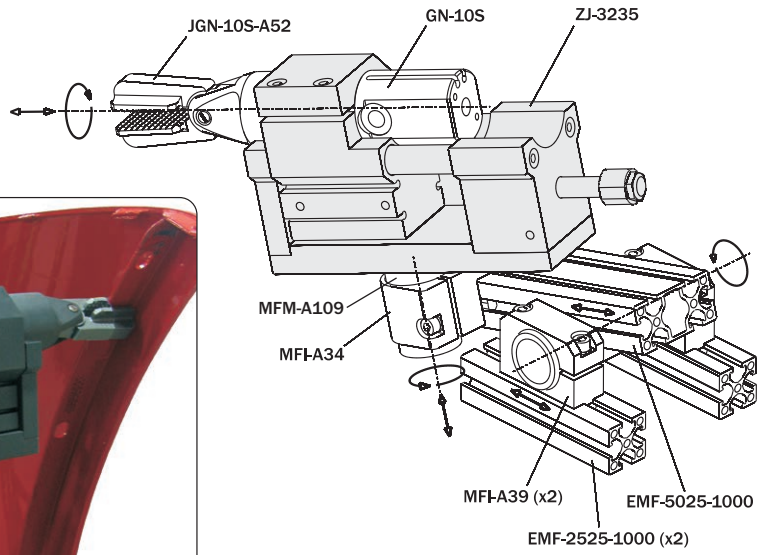
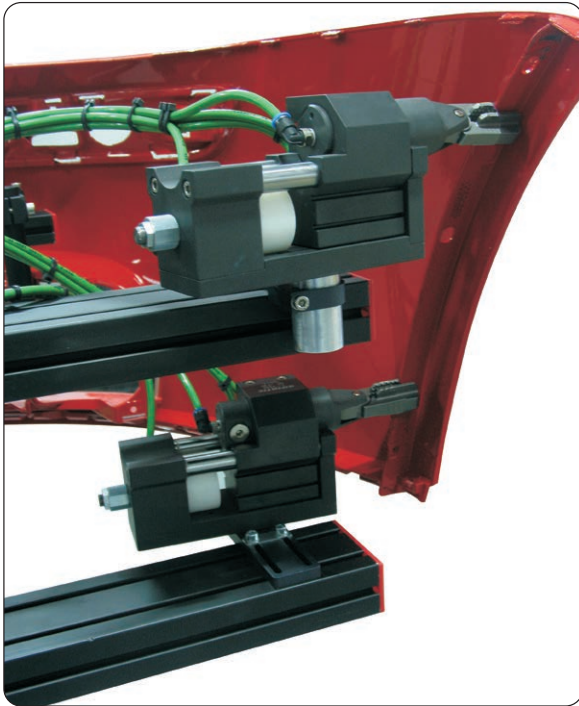
- Double-effect main cylinder with piston bore 32mm and stroke 35mm.
- Single-acting intermediate stopper (1).
- Dia. 36mm clamp for GN-10 actuator (2).
- Used for car bumpers extracting.
- Optional magnetic sensors.
- Stroke reduction spacer included.

	ZJ-3235
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]
Pressione di esercizio Pressure range	2 ÷ 8 bar
Temperatura di esercizio Temperature range	5° ÷ 60 °C
Corsa principale senza distanziale Main stroke without spacer	35 mm
Corsa intermedia senza distanziale Intermediate stroke without spacer	10 ÷ 20 mm
Corsa principale con distanziale Main stroke with spacer	25 mm
Corsa intermedia con distanziale Intermediate stroke with spacer	0 ÷ 10 mm
Forza di trazione a 6 bar Pulling force at 6 bar	450 N
Peso Weight	1330 g

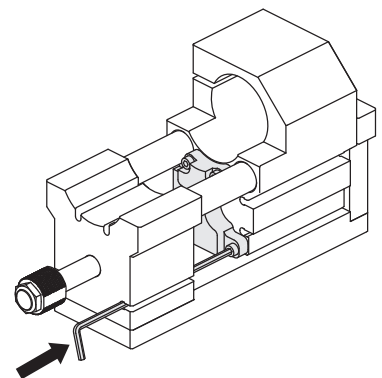
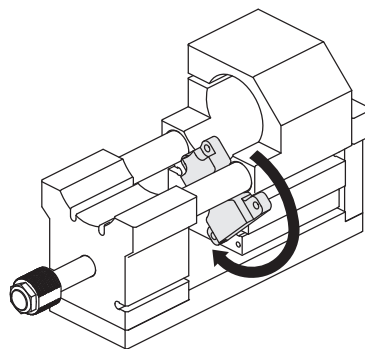
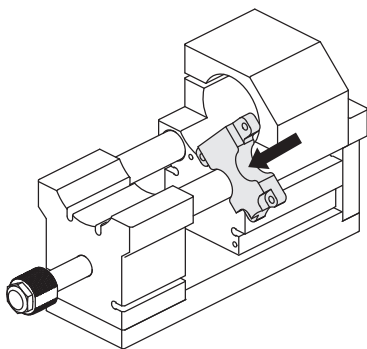
### Dimensioni (mm) Dimensions (mm)



**Esempi di utilizzo**  
**Application example**



**Montaggio del distanziale**  
**Spacer mounting**



## Slitte per taglierini pneumatici

- Per le materozze più difficili da tagliare è possibile avvicinare il taglierino con una slitta.
- Disponibili in due taglie: alesaggio 16 e 25 mm.
- Con molla in apertura (NO), o in chiusura (NC).
- Con (versione S), o senza predisposizione per i sensori.
- Sensori magnetici opzionali **1**.
- Corsa regolabile (fino a 10mm).

## Slides for air nippers actuators

- Sliding nippers (with multiple cut action for harder to cut sprues) can be assembled.
- Available in two sizes: bore 16 and 25 mm.
- Spring open (NO), or spring closed (NC).
- With (S versions), or without sensor slots.
- Optional magnetic sensors **1**.
- Adjustable stroke (maximum 10mm).



ZG-16-NO

ZG-16S-NO

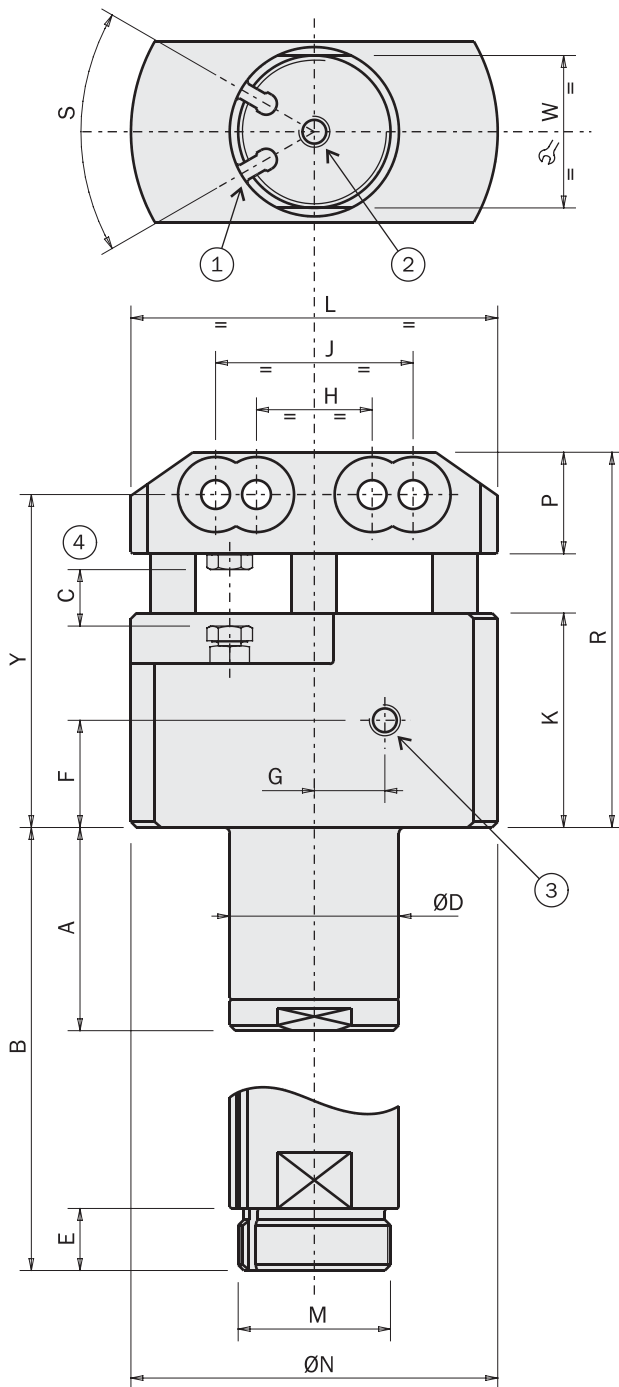
ZG-25-NO

ZG-25S-NO

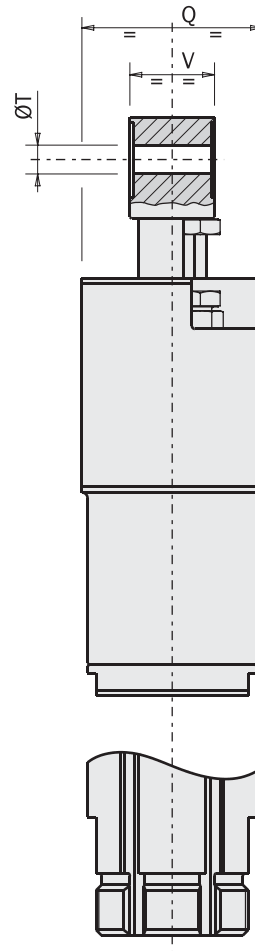
	ZG-16-NO ZG-16S-NO	ZG-16-NC ZG-16S-NC	ZG-25-NO ZG-25S-NO	ZG-25-NC ZG-25S-NC
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]			
Pressione di esercizio Pressure range	4 ÷ 8 bar			
Temperatura di esercizio Temperature range	5° ÷ 60 °C			
Corsa Stroke	10 mm	10 mm	10 mm	10 mm
Alesaggio Piston bore	Ø16 mm	Ø16 mm	Ø25 mm	Ø25 mm
Forza di chiusura a 6 bar Retraction force at 6 bar	65 N	120 N	210 N	275 N
Forza di apertura a 6 bar Extension force at 6 bar	135 N	80 N	300 N	240 N
Forza di chiusura a 0 bar Retraction force at 0 bar	0 N	25 N	0 N	30 N
Forza di apertura a 0 bar Extension force at 0 bar	25 N	0 N	30 N	0 N
Consumo d'aria per ciclo Cycle air consumption	5.6 cm <sup>3</sup>	5.6 cm <sup>3</sup>	21 cm <sup>3</sup>	21 cm <sup>3</sup>
Peso senza taglierino Weight without air nipper	ZG-... ZG-...S-...	180 g 200 g	180 g 200 g	360 g 425 g

**Dimensioni (mm)**  
**Dimensions (mm)**

- ① Sede per sensori  
Sensor groove
- ② Alimentazione aria compressa M5  
Air connection M5
- ③ Alimentazione aria compressa M5  
Air connection M5
- ④ Corsa regolabile 0+10 mm  
Adjustable stroke 0+10 mm



	ZG-16...	ZG-16S...	ZG-25...	ZG-25S...
A	29	-	36	-
B	-	63	-	78.5
C	10 max	10 max	10 max	10 max
D	Ø20	Ø20	Ø30	Ø30
E	-	8	-	11
F	17	17	19	19
G	6	6	12.5	12.5
H	20.5	20.5	20.5	20.5
J	-	-	35	35
K	31	31	38	38
L	50	50	65	65
M	-	M17x1	-	M27x1
N	Ø50	Ø50	Ø65	Ø65
P	18	18	18	18
Q	25	25	32	32
R	59.5	59.5	66.5	66.5
S	-	80°	-	60°
T	Ø5.1	Ø5.1	Ø5.1	Ø5.1
V	15	15	15	15
W	17	17	27	27
Y	52	52	59	59



FIRST ANGLE  
PROJECTION

## Attuatore a depressione serie VAQ

- Azionato solo con il vuoto.
- I movimenti di estensione e ritrazione sono attuati automaticamente.
- La corsa si autoregola.
- Opzione VAQN per stelo anti rotazione.
- La ventosa **1** è da ordinare a parte.

## Vacuum actuator series VAQ

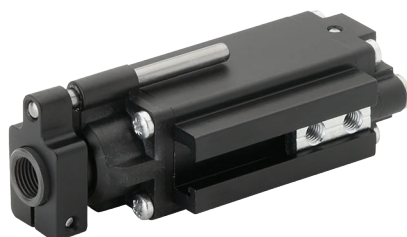
- Operated by vacuum only.
- The extension and the retraction movements are automatically actuated.
- The stroke is self-adjusting.
- Option VAQN for anti-rotation rod.
- The suction cup **1** must be ordered separately.



VAQ1820



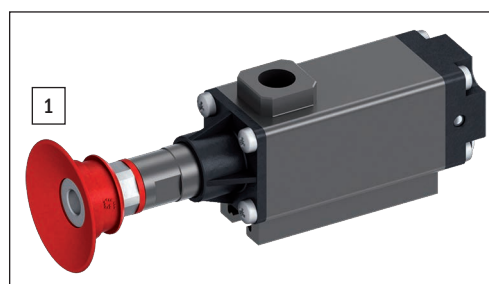
VAQ1840



VAQN1820



VAQN1840



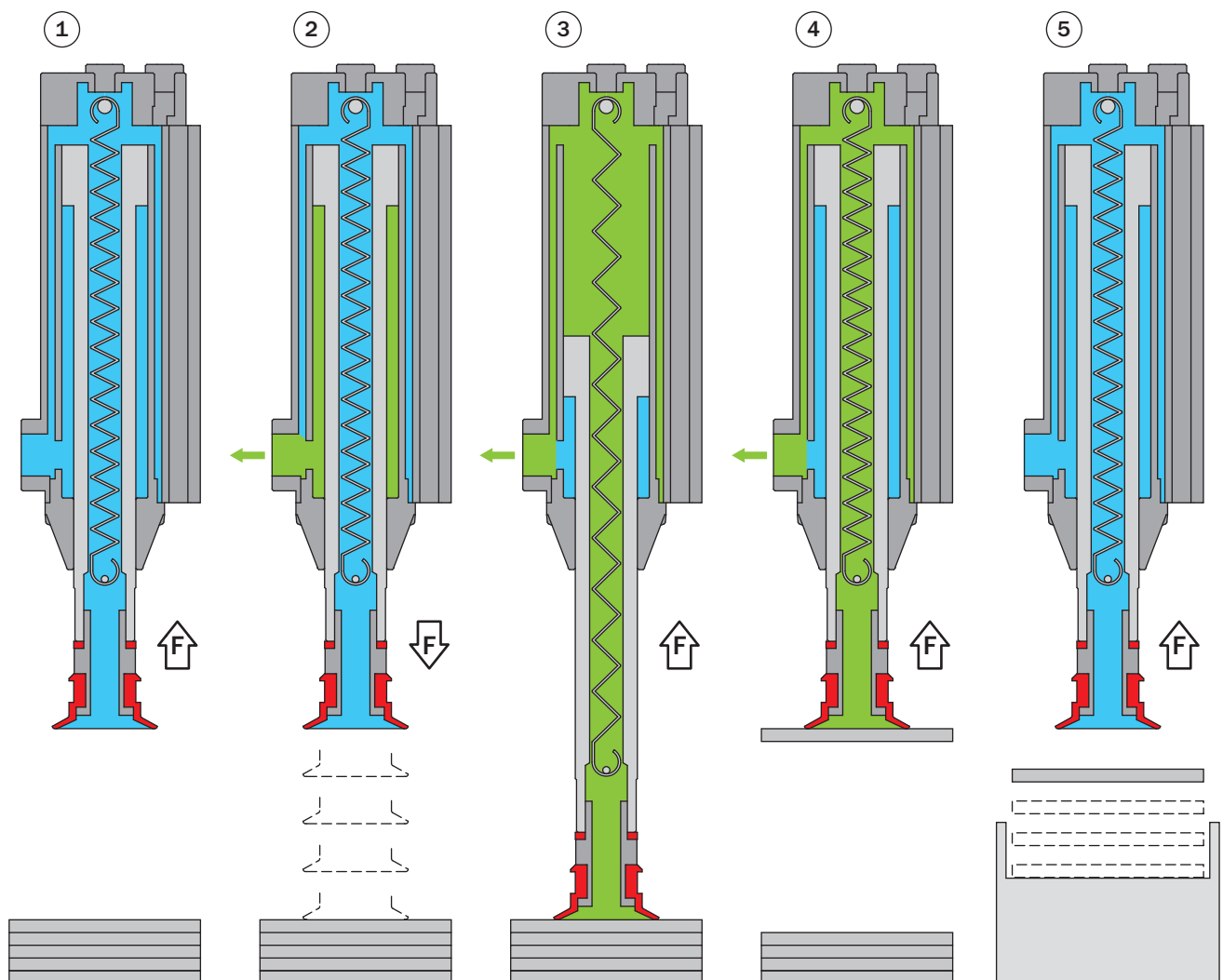
	VAQ1820 9900043	VAQ1840 9900044	VAQN1820 9900045	VAQN1840 9900046
Fluido Medium	Vuoto -0.3 ÷ -1 bar Vacuum -0.3 ÷ -1 bar			
Temperatura di esercizio Temperature range	10 ÷ 40 °C.			
Forza di ritrazione a -0.6 bar Retraction force at -0.6 bar	10 N			
Carico massimo raccomandato Maximum recommended load	5 N			
Corsa totale Total stroke	25 mm	55 mm	25 mm	55 mm
Corsa a piena forza Stroke with full force	20 mm	40 mm	20 mm	40 mm
Peso Weight	90 g	125 g	105 g	145 g

## Principio di funzionamento

- 1- Senza aspirazione, lo stelo viene ritratto dalla forza della molla.
  - 2- Quando si applica il vuoto, la pressione sotto il pistone è inferiore alla pressione sopra il pistone e lo stelo avanza.
  - 3- Le pressioni si invertono non appena la ventosa contatta un oggetto.
  - 4- Così lo stelo si ritrae immediatamente, sollevando l'oggetto.
  - 5- Quando l'aspirazione cessa, l'oggetto viene rilasciato, ma la molla mantiene lo stelo arretrato.
- (Invece di interrompere l'aspirazione, si può applicare un impulso di pressione attraverso il raccordo sopra il pistone).

## Working principle

- 1- Without vacuum, the rod is retracted by the spring force.
  - 2- When vacuum is applied, the pressure under the piston is lower than the pressure over the piston and the rod travels forward.
  - 3- The pressures invert as soon as the vacuum cup makes contact with an object.
  - 4- Thus the rod retracts immediately, lifting the object.
  - 5- When the vacuum is removed, the object is released, but the spring holds the rod retracted.
- (Acurately, instead of removing vacuum, a pressure impulse can be provided by the air port over the piston).

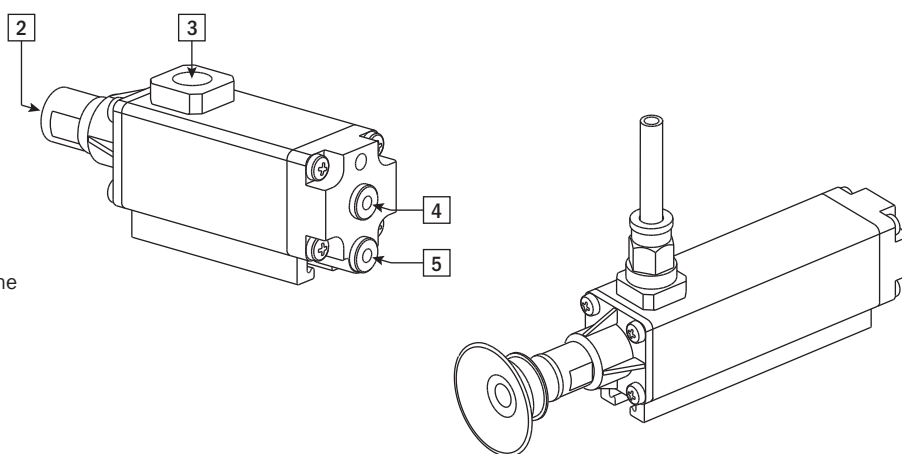


2 G1/8  
Filetto femmina per ventosa  
Female thread for suction cup

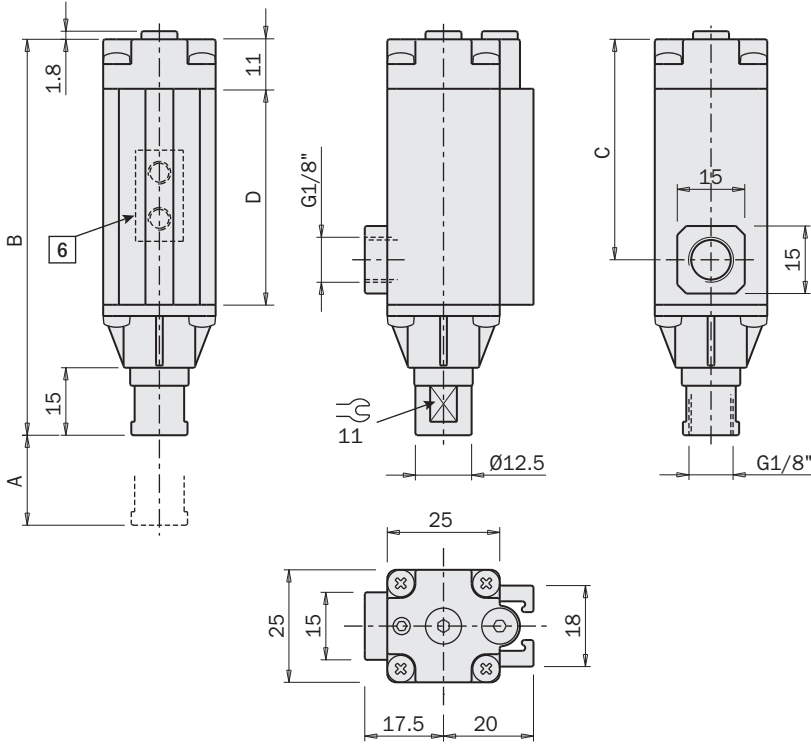
3 G1/8  
Connessione per aspirazione  
Vacuum supply port

4 M5  
Connessione per impulso di pressione  
Pressure impulse connection

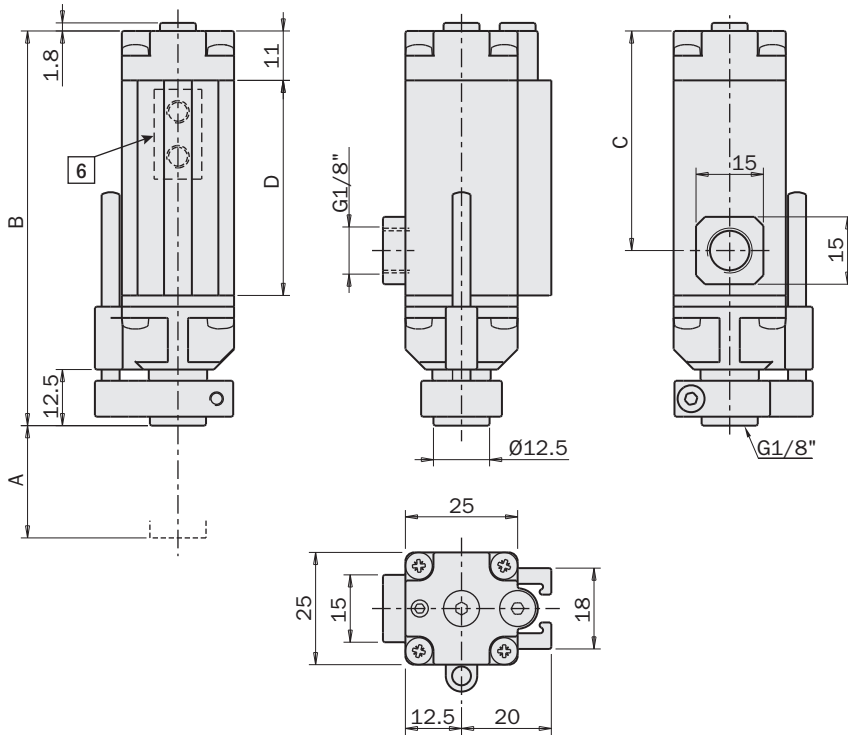
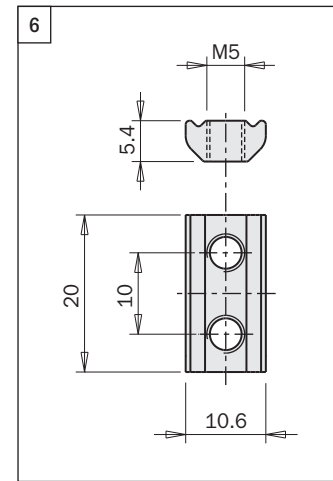
5 M5  
Connessione per sensore di vuoto  
Vacuum sensor connection



**Dimensioni (mm)**  
**Dimensions (mm)**



	VAQ1820 VAQN1820	VAQ1840 VAQN1840
A	20	40
B	88	119
C	49	80
D	48	79



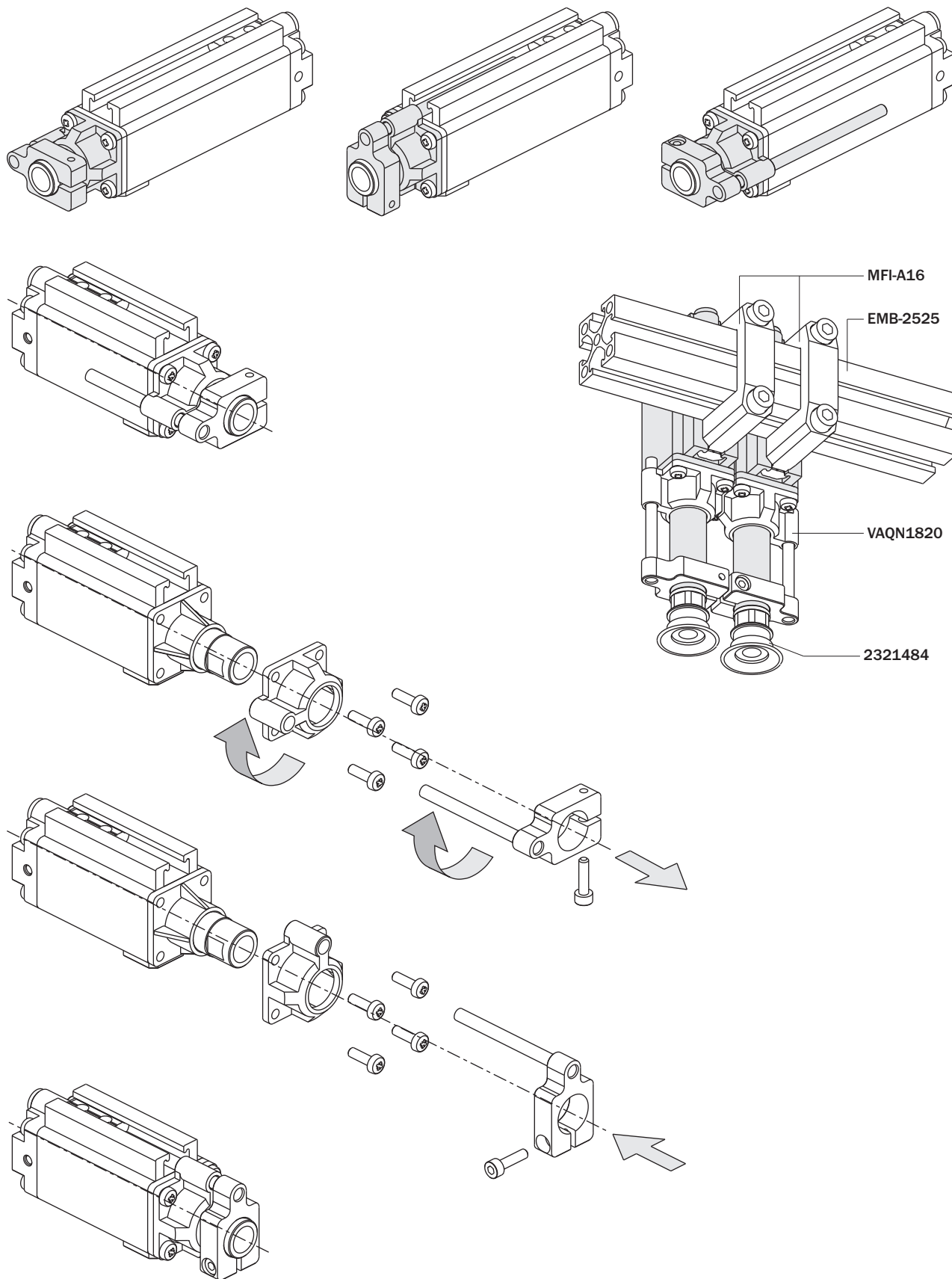
FIRST ANGLE  
PROJECTION

**Accessori**

Il dispositivo anti-giro dei VAQN può essere posizionato su 3 lati in base allo spazio disponibile.

**Accessories**

The anti-rotation device can be positioned on 3 sides, based on the space available.





**amzn**™

 A business of **BARNES**

**SOSPENSIONI**

*Suspensions*



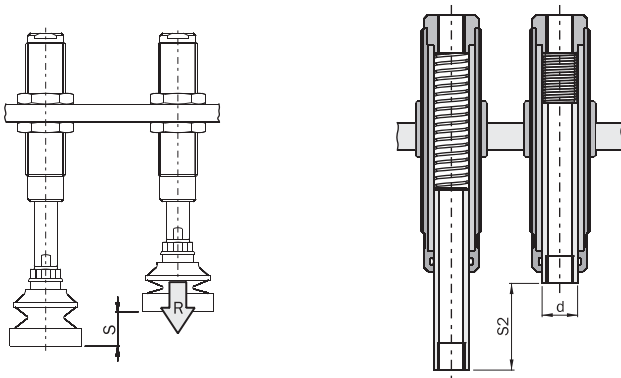
**Sospensioni per ventose**

- Le sospensioni (o buffer, o compensatori di livello) sono usate per tenere in posizione le ventose durante l'avvicinamento del robot.
- Gimatic offre una gamma specificamente progettata per le applicazioni Plastics.
- Tipicamente sono montate su EOAT (End Of Arm Tooling) con le staffe MFI.

**Forza di reazione**

La forza di reazione dipende dalla compressione (S) della molla interna. E anche dal diametro del pistone (d) e dalla pressione di utilizzo (p), nel caso delle sospensioni telescopiche. Usare la formula seguente per il calcolo.

$$R = R1 + K \cdot S + d^2 \cdot \frac{\pi}{40} \cdot p$$



**Vacuum cup suspensions**

- The suspensions (or buffers, or level compensators) are used to keep the suction cups in position as the robot approaches.
- Gimatic offers a range specifically designed for Plastics applications.
- They are typically mounted on EOATs (End Of Arm Toolings) with MFI brackets.

**Reaction force**

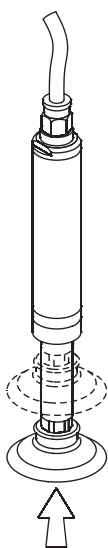
The reaction force depends on the compression (S) of the internal spring. And also on the piston diameter (d) and operation pressure (p), in the case of telescopic suspensions. Use the following formula for calculation.

- R [N] Forza di reazione  
Reaction force
- R1 [N] Forza della molla all'inizio della corsa  
Spring force at the beginning
- K [N/mm] Costante elastica della molla  
Spring rate
- S [mm] Corsa effettuata  
Compression stroke
- d [mm] Alesaggio  
Piston bore
- p [bar] Pressione  
Pressure
- R2 [N] Forza della molla alla fine della corsa  
Spring force at the end-stroke
- S2 [mm] Corsa massima  
Maximum stroke
- m [g] Peso  
Weight



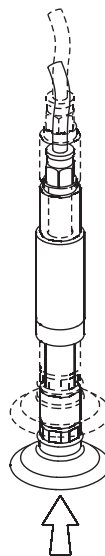
**Sospensioni telescopiche**  
*Telescopic suspensions*

- VSC
- VSL
- VSS



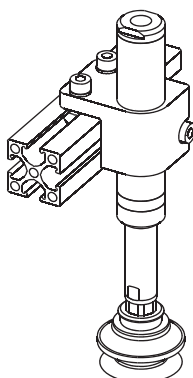
**Sospensioni con stelo passante**  
*Through rod suspensions*

- VSR
- VSRT
- VSN
- VSNT
- VSE
- VSET
- VWX
- VSRTG
- VSNG
- VSNTG
- VSD



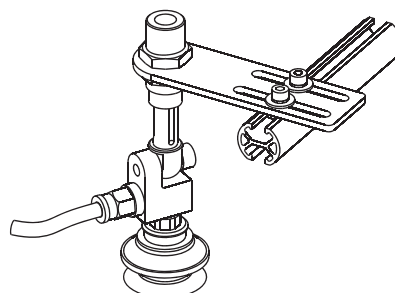
**Sospensioni con corpo liscio**  
*Suspensions with smooth body*

- VSL
- VSS
- VSR
- VSN
- VSE
- VWX
- VSNG
- VSD
- VSNF
- VSRF



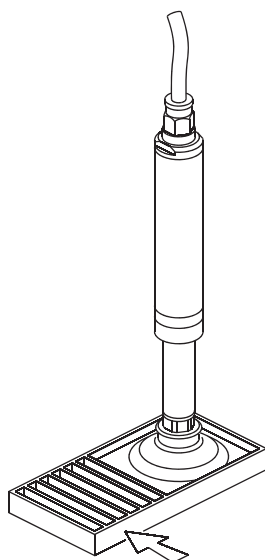
**Sospensioni con corpo filettato**  
*Suspensions with threaded body*

- VSC
- VSRT
- VSNT
- VSET
- VSRTG
- VSNTG
- VSNTF
- VSRTF



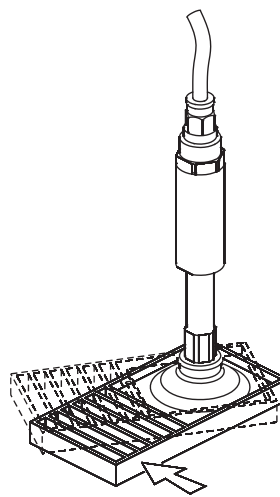
**Sospensioni anti-rotazione**  
*Non-rotative suspensions*

- VSC
- VSL
- VSN
- VSNT
- VSE
- VSET
- VWX
- VSNG
- VSNTG
- VSD
- VSNF
- VSNTF



**Sospensioni rotanti**  
*Rotative suspensions*

- VSS
- VSR
- VSRT
- VSRTG
- VSRF
- VSRTF



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

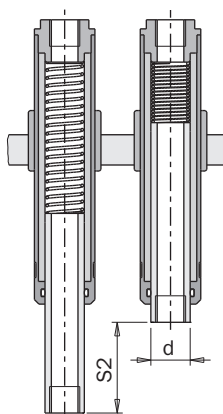
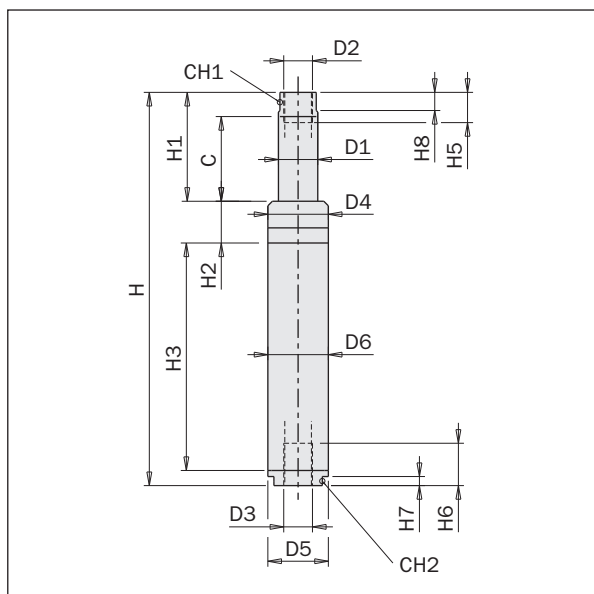
Sensori  
Sensors

### Sospensioni telescopiche anti-rotazione con corpo liscio

- Corpo e stelo in alluminio anodizzato.
- Trattamento anti-frizione sullo stelo.
- Cuscinetto in polimero per un movimento più omogeneo.
- Stelo anti-rotazione con gioco ridotto.
- Movimento telescopico: i raccordi ed i tubi non si muovono.
- Guarnizioni unidirezionali: usabile solo con il vuoto.
- Pressione di utilizzo:  $-1 \div 0$  bar.
- Grasso alimentare FDA-H1.

### Smooth-body non-rotative telescopic suspensions

- Body and rod in anodized aluminum.
- Anti-friction treatment on the rod.
- Smooth movement thanks to the plastic bearing.
- Non-rotative rod with reduced tolerance.
- Telescopic lay-out: fittings and hoses don't move.
- Unidirectional sealing: only for vacuum applications.
- Pressure range:  $-1 \div 0$  bar.
- FDA-H1 food-grade grease.



	VSL1620	VSL2030	VSL2430
H [mm]	100	130	130
H1 [mm]	26	36	36
H2 [mm]	12	14	14
H3 [mm]	57	75	75
H4 [mm]	5	5	5
H5 [mm]	10	10	10
H6 [mm]	14	14	14
H7 [mm]	3	3	3
H8 [mm]	5	6	6
D1 [mm]	Ø8	Ø13	Ø16
D2	M5	G1/8"	G1/4"
D3	M5	G1/8"	G1/4"
D4 [mm]	Ø14.5	Ø20	Ø23
D5 [mm]	Ø14.5	Ø20	Ø23
D6 [mm]	Ø16	Ø20	Ø24
CH1 [mm]	7	12	14
CH2 [mm]	13	16	20
C [mm]	20	30	30
S2 [mm]	20	30	30
d [mm]	8	13	16
K [N/mm]	0.311	0.239	0.334
R1 [N]	9.338	14.80	20.05
R2 [N]	16.04	22.37	30.42
m [g]	30	55	70

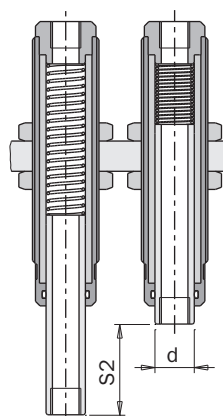
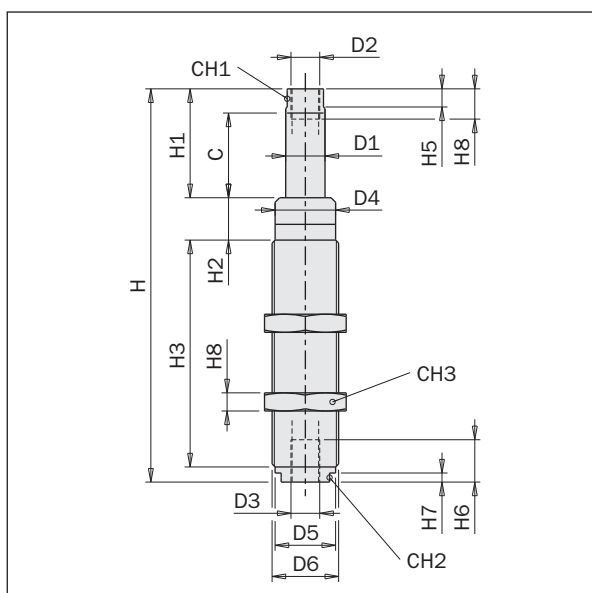
Unità Rotanti Rotary Units  
 Cambia Utensile Quick Changer  
 Profili e Staffe Profiles and Brackets  
 Pinze Grippers  
 Attuatori Lineari Linear Actuators  
 Sospensioni Suspensions  
 Taglierini Nippers  
 Kit-Robot Robot Kit  
 Accessori Opzionali Options  
 Sensori Sensors

## Sospensioni telescopiche anti-rotazione con corpo filettato

- Corpo e stelo in alluminio anodizzato.
- Trattamento anti-frizione sullo stelo.
- Cuscinetto in polimero per un movimento più omogeneo.
- Stelo anti-rotazione con gioco ridotto.
- Movimento telescopico: i raccordi ed i tubi non si muovono.
- Guarnizioni unidirezionali: usabile solo con il vuoto.
- Pressione di utilizzo:  $-1 \div 0$  bar.
- Grasso alimentare FDA-H1.

## Threaded-body non-rotative telescopic suspensions

- Body and rod in anodized aluminum.
- Anti-friction treatment on the rod.
- Smooth movement thanks to the plastic bearing.
- Non-rotative rod with reduced tolerance.
- Telescopic lay-out: fittings and hoses don't move.
- Unidirectional sealing: only for vacuum applications.
- Pressure range:  $-1 \div 0$  bar.
- FDA-H1 food-grade grease.



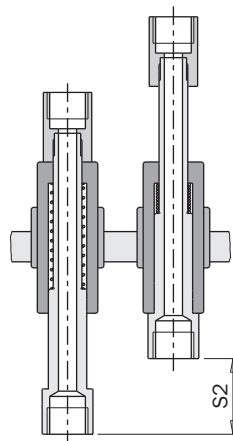
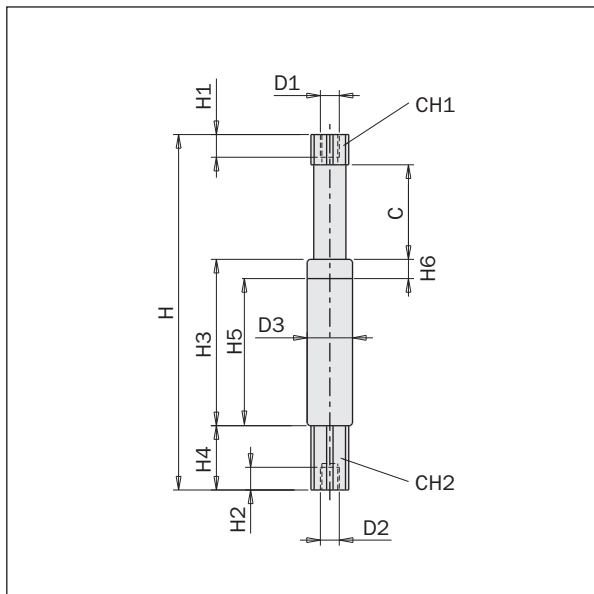
	VSC1620	VSC2230	VSC2530
H [mm]	100	130	130
H1 [mm]	26	36	36
H2 [mm]	12	14	14
H3 [mm]	57	75	75
H4 [mm]	5	5	5
H5 [mm]	10	10	10
H6 [mm]	14	14	14
H7 [mm]	3	3	3
H8 [mm]	5	6	6
D1 [mm]	Ø8	Ø13	Ø16
D2	M5	G1/8"	G1/4"
D3	M5	G1/8"	G1/4"
D4 [mm]	Ø14.5	Ø20	Ø23
D5 [mm]	Ø14.5	Ø20	Ø23
D6	M16x1	M22x1.5	M25x1.5
CH1 [mm]	7	12	14
CH2 [mm]	13	16	20
CH3 [mm]	19	27	32
C [mm]	20	30	30
S2 [mm]	20	30	30
d [mm]	8	13	16
K [N/mm]	0.311	0.239	0.334
R1 [N]	9.338	14.80	20.05
R2 [N]	16.04	22.37	30.42
m [g]	35	80	115

**Sospensioni rotanti con corpo liscio**

- Corpo e stelo in alluminio anodizzato.
- Stelo girevole.
- Pressione di utilizzo:  $-1 \div 8$  bar.
- Molla in acciaio inossidabile.

**Smooth-body rotative suspensions**

- Body and rod in anodized aluminum.
- Rotative rod.
- Pressure range:  $-1 \div 8$  bar.
- Spring in stainless steel.



NEW

NEW

	VSR1010	VSR1025	VSR1420	VSR1435	VSR2025F18	VSR2025F14	VSR2050F18	VSR2050F14
H [mm]	56	90.5	107	142	126	126	183.5	183.5
H1 [mm]	5	5	7	7	10	10	10	10
H2 [mm]	5	5	7	7	10	10	10	10
H3 [mm]	24.5	44	52	72	58	58	90.5	90.5
H4 [mm]	13.5	13.5	22	22	28	28	28	28
H5 [mm]	18.3	37.8	39.6	59.6	45.3	6	77.8	6
H6 [mm]	6.2*	6.2*	12.4*	12.4*	12.7*	58	12.7*	90.5
D1	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
D3 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20	Ø20	Ø20
CH1 [mm]	8	8	12	12	16	16	16	16
CH2 [mm]	8	8	12	12	16	16	16	16
CH3 [mm]						24		24
C [mm]	10	25	20	35	25	25	50	50
S2 [mm]	10	25	20	35	25	25	50	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.15	0.258	0.258	0.129	0.129
R1 [N]	1.49	1.575	3.617	4.267	4.388	4.31	4.452	4.4
R2 [N]	3.619	3.704	8.975	9.507	10.84	10.76	10.90	10.87
m [g]	7.6 g	12 g	30 g	38 g	64 g	60	93 g	90

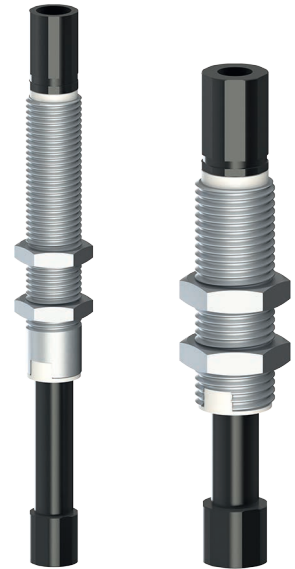
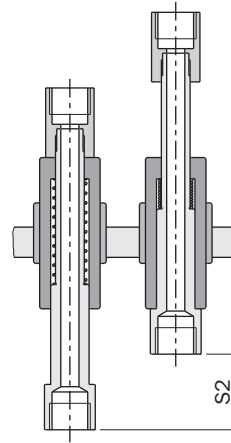
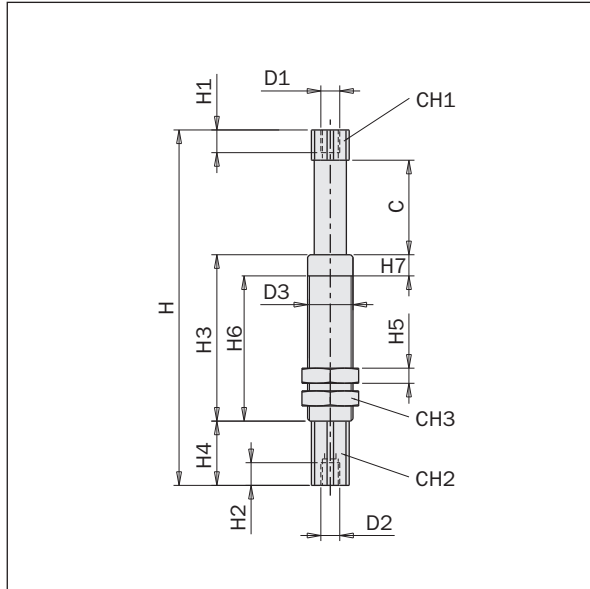
\*Non clampabile  
\*Non-clampable

**Sospensioni rotanti con corpo filettato**

- Corpo e stelo in alluminio anodizzato.
- Stelo girevole.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Molla in acciaio inossidabile.

**Threaded-body rotative suspensions**

- Body and rod in anodized aluminum.
- Rotative rod.
- Pressure range: -1 ÷ 8 bar.
- Spring in stainless steel.



	NEW	NEW							NEW	NEW	NEW	NEW	NEW	NEW
	VSRT1010 9900001	VSRT1025 9900002	VSRT1210 9900049	VSRT1225 9900050	VSRT1420 9900003	VSRT1435 9900004	VSRT1620 9900005	VSRT1635 9900006	VSRT2025F18 9900007	VSRT2025F14 9900051	VSRT2050F18 9900008	VSRT2050F14 9900052	VSRT2540 9900047	VSRT2580 9900048
H [mm]	56	90.5	65	99	107	142	107	142	126	126	183.5	183.5	173	263
H1 [mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	10.5	10.5
H2 [mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	10.5	10.5
H3 [mm]	24.5	44	30	49	52	72	52	72	58	58	90.5	90.5	90	140
H4 [mm]	13.5	13.5	17	17	22	22	22	22	28	28	28	28	28	28
H5 [mm]	3.5	3.5	7.2	7.2	4	4	5	5	6	6	6	6	8	8
H6 [mm]	17.5	37	30	49	39	59	52	72	58	58	90.5	90.5	90	140
H7 [mm]	*7	*7	\	\	*13	*13	/	/	\	\	\	\	\	\
D1	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D2	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D3	M10x1	M10x1	M12X1	M12X1	M14x1.5	M14x1.5	M16x1	M16x1	M20X1.5	M20X1.5	M20X1.5	M20X1.5	M25X1.5	M25X1.5
CH1 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH2 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH3 [mm]	13	13	15	15	17	17	19	19	24	24	24	24	32	32
C [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
S2 [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
d [mm]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.197	0.087	0.268	0.15	0.252	0.137	0.258	0.258	0.129	0.129	0.256	0.121
R1 [N]	1.49	1.575	1.578	1.523	3.617	4.267	3.650	4.325	4.31	4.31	4.4	4.4	5.5	6.253
R2 [N]	3.619	3.704	3.55	3.698	8.975	9.507	8.685	9.132	10.76	10.76	10.87	10.87	15.7	15.97
m [g]	12 g	16.5 g	19	25	37 g	47 g	46.5 g	58 g	85	82	110	111	200	271

\*Non filettato  
\*Not threaded

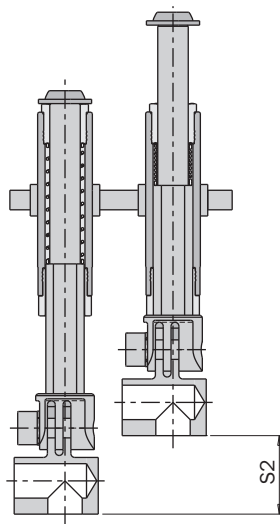
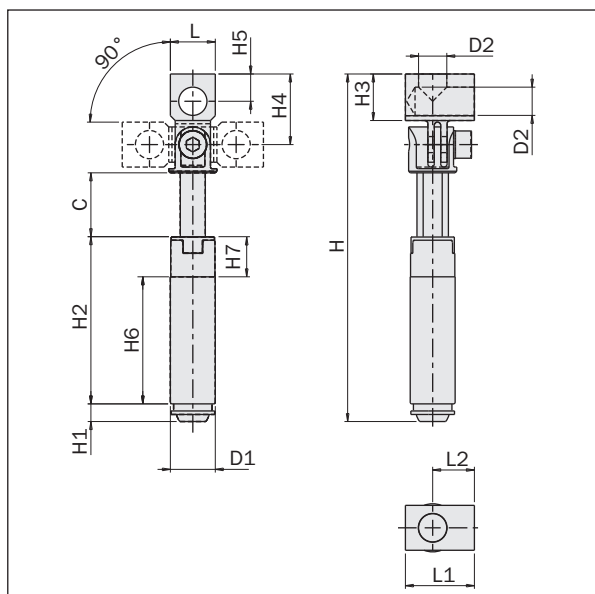


**Sospensioni anti-rotazione con giunto angolare integrato e corpo liscio**

- L'angolo è regolabile continuamente fra 0° e +/-90°.
- Alimentazione esterna.
- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.

**Smooth-body non-rotative suspensions with integral elbow arms**

- It is possible to set continuously the angle between 0° and +/-90°.
- External air feeding.
- Body and rod in anodized aluminum.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.



	VSE1010F05	VSE1025F05	VSE1420F18	VSE1435F18	VSE2025F18	VSE2025F14	VSE2050F18	VSE2050F14
H [mm]	61.8	96.3	108.3	143.3	121.3	127.5	178.8	184.8
H1 [mm]	3.5	3.5	5.5	5.5	6.5	6.5	6.5	6.5
H2 [mm]	24.6	44.1	52.1	72.1	58.1	58.1	90.6	90.6
H3 [mm]	9	9	14.5	14.5	14.5	20.5	14.5	20.5
H4 [mm]	15	15	22	22	22	28	22	28
H5 [mm]	5.5	5.5	8.5	8.5	8.5	12	8.5	12
H6 [mm]	18.4	37.9	38.6	38.6	44.4	44.4	76.9	76.9
H7 [mm]	6.2*	6.2*	13.5*	13.5*	13.7*	13.7*	13.7*	13.7*
D1 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20	Ø20	Ø20
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
L [mm]	10	10	14	14	14	17	14	17
L1 [mm]	16	16	21.5	21.5	21.5	26	21.5	26
L2 [mm]	10.5	10.5	13	13	13	15	13	15
C [mm]	10	25	20	35	25	25	50	50
S2 [mm]	10	25	20	35	25	25	50	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.106	0.138	0.268	0.150	0.275	0.275	0.141	0.141
R1 [N]	0.957	3.100	3.617	4.267	4.131	4.131	4.308	4.308
R2 [N]	2.020	6.545	8.975	9.507	11.02	11.02	11	11.37
m [g]	15	20	45	55	70	90	105	120

\*Non clampabile  
\*Non-clampable

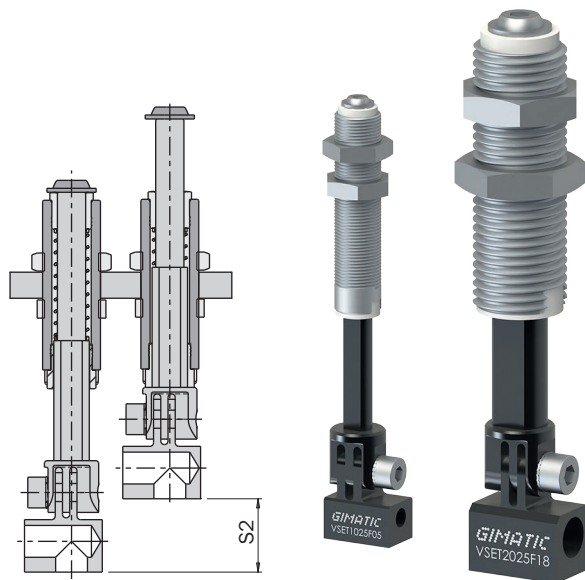
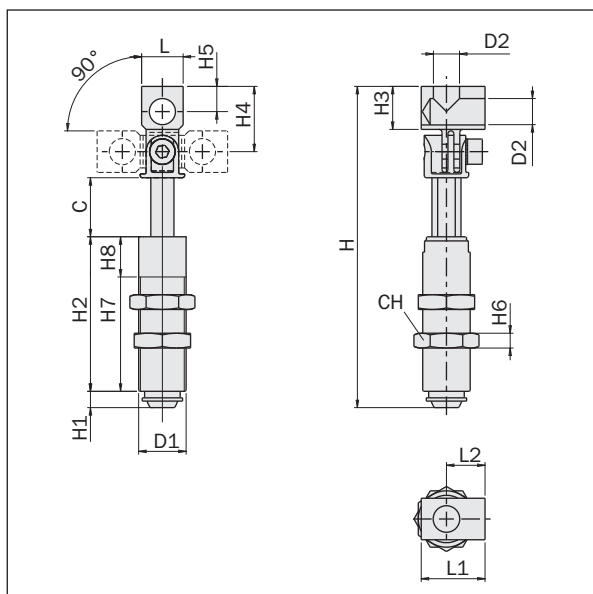
Unità Rotanti  
Rotary Units  
Cambia Utensile  
Quick Changer  
Profili e Staffe  
Profiles and Brackets  
Pinze  
Grippers  
Attuatori Lineari  
Linear Actuators  
Sospensioni  
Suspensions  
Taglierini  
Nippers  
Kit-Robot  
Robot Kit  
Accessori Opzionali  
Options  
Sensori  
Sensors

**Sospensioni anti-rotazione con giunto angolare integrato e corpo filettato**

- L'angolo è regolabile continuamente fra 0° e +/-90°.
- Alimentazione esterna.
- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.

**Threaded-body non-rotative suspensions with integral elbow arms**

- It is possible to set continuously the angle between 0° and +/-90°.
- External air feeding.
- Body and rod in anodized aluminum.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.



	VSET1010F05 9900009	VSET1025F05 9900010	VSET1620F18 9900011	VSET1635F18 9900012	VSET2025F18 9900013	VSET2025F14 9900014	VSET2050F18 9900015	VSET2050F14 9900016
H [mm]	61.8	96.3	108.3	143.3	121.3	127.3	178.8	184.4
H1 [mm]	3.5	3.5	5.5	5.5	6.5	6.5	6.5	6.5
H2 [mm]	24.6	44.1	52.1	72.1	58.1	58.1	90.6	90.6
H3 [mm]	9	9	14.5	14.5	14.5	20.5	14.5	20.5
H4 [mm]	15	15	22	22	22	28	22	28
H5 [mm]	5.5	5.5	8.5	8.5	8.5	12	8.5	12
H6 [mm]	3.5	3.5	5	5	6	6	6	6
H7 [mm]	17.5	37	52	72	58	58	90.5	90.5
H8 [mm]	*7.1	*7.1	/	/	/	/	/	/
D1	M10x1	M10x1	M16x1	M16x1	M20x1.5	M20x1.5	M20x1.5	M20x1.5
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
L [mm]	10	10	14	14	14	17	14	17
L1 [mm]	16	16	21.5	21.5	21.5	26	21.5	26
L2 [mm]	10.5	10.5	13	13	13	15	13	15
C [mm]	10	25	20	35	25	25	50	50
CH [mm]	13	13	19	19	24	24	24	24
S2 [mm]	10	25	20	35	25	25	50	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.150	0.275	0.275	0.141	0.142
R1 [N]	1.490	1.575	3.617	4.267	4.131	4.131	4.308	4.308
R2 [N]	3.619	3.704	8.975	9.507	11.02	11.02	11.37	11.37
m [g]	18	23	57	70	88	109	125	142

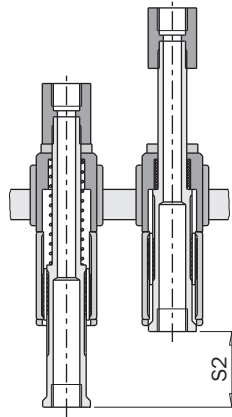
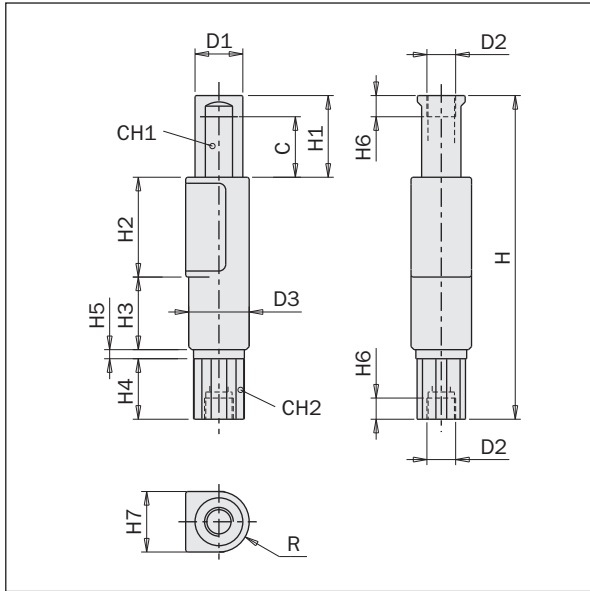
\*Non filettato  
\*Not threaded

**Sospensioni inox anti-rotazione per carichi elevati**

- Corpo, stelo, cuscinetto e molla in acciaio inossidabile.
- Guida a sfere per un'altissima capacità di carico.
- Gioco zero.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.

**Non-rotative heavy duty stainless suspensions**

- Body, rod, bearing and spring in stainless steel.
- Ball bearing for a very high load capability.
- Zero backlash.
- FDA-H1 food-grade grease.
- Pressure range: -1 ÷ 8 bar.



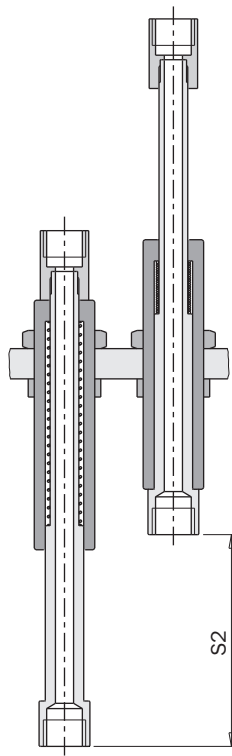
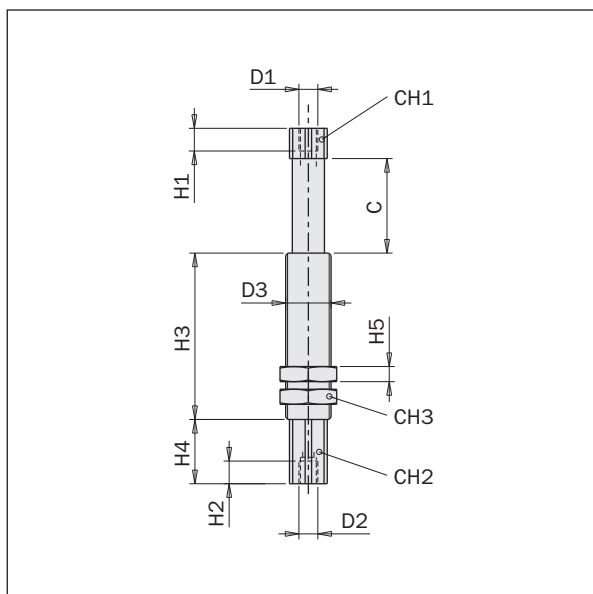
	WX1010F	WX1025F	WX1420F	WX1435F	WX2025F	WX2050F
H [mm]	63	100.5	99	137	107	169
H1 [mm]	11	26	25	40	27	52
H2 [mm]	23.5	35	31	43	33	50.5
H3 [mm]	12	23	21	32	24	43.5
H4 [mm]	15	15	20	20	20	20
H5 [mm]	10	10	14	14	20	20
H6 [mm]	6	6	7	7	7	7
H7 [mm]	8	8	10	10	11	11
D1 [mm]	Ø7.8	Ø7.8	Ø11.8	Ø11.8	Ø15.8	Ø15.8
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"
D3 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20
CH1 [mm]	6	6	10.5	10.5	13	13
CH2 [mm]	8	8	12	12	16	16
C [mm]	10	25	20	35	25	50
R [mm]	5	5	7	7	10	10
S2 [mm]	10	25	20	35	25	50
d [mm]	0	0	0	0	0	0
K [N/mm]	0.194	0.0786	0.252	0.137	0.258	0.129
R1 [N]	1.548	1.533	3.65	4.325	4.388	4.452
R2 [N]	3.483	3.498	8.685	9.132	10.84	10.9
m [g]	30	45	80	110	150	235

**Sospensioni inox rotanti con corpo filettato**

- Corpo, stelo e molla in acciaio inossidabile.
- Stelo girevole.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.

**Rotative stainless suspensions with threaded body**

- Body, rod and spring in stainless steel.
- Rotative rod.
- FDA-H1 food-grade grease.
- Pressure range: -1 ÷ 8 bar.



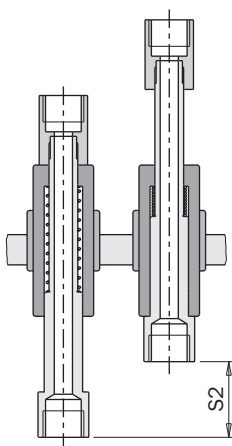
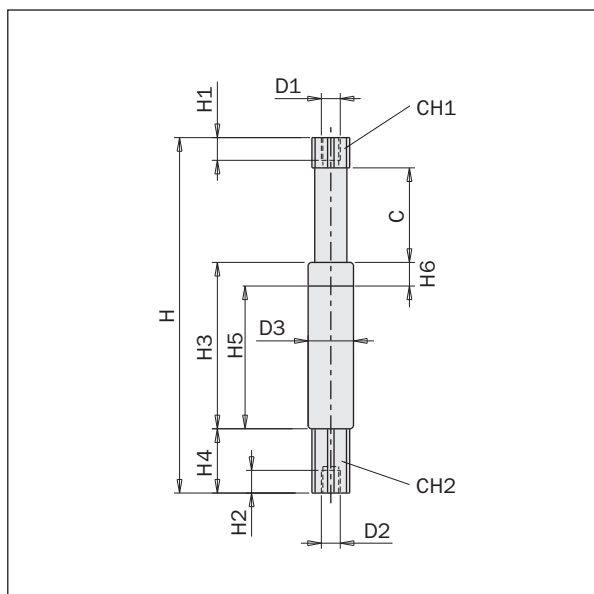
	VSRTG1225	VSRTG1635	VSRTG2050	VSRTG2580
H [mm]	94	127.5	170.5	249
H1 [mm]	5.5	9	10	11
H2 [mm]	5.5	7	10	11
H3 [mm]	44	58.5	82.5	121
H4 [mm]	17	20	23	33
H5 [mm]	4	5	6	8
D1	M5	G1/8"	G1/4"	G3/8"
D2	M5	G1/8"	G1/4"	G3/8"
D3	M12x1	M16x1	M20x1.5	M25x1.5
CH1 [mm]	10	12	16	23
CH2 [mm]	10	12	16	23
CH3 [mm]	15	19	24	32
C [mm]	25	35	50	80
S2 [mm]	25	35	50	80
d [mm]	0	0	0	0
K [N/mm]	0.108	0.137	0.129	0.119
R1 [N]	2.112	4.325	4.452	6.005
R2 [N]	4.820	9.132	10.90	15.52
m [g]	50	110	220	560

## Sospensioni anti-rotazione con corpo liscio

- Corpo e stelo in alluminio anodizzato.
- Molla in acciaio inossidabile.
- Stelo anti-rotazione con elevata capacità di carico.

## Smooth-body non-rotative telescopic suspensions

- Body and rod in anodized aluminum.
- Spring in stainless steel.
- Non-rotative rod with high load capability.
- Pressure range:  $-1 \div 8$  bar.



	VSNG1010	VSNG1025	VSNG1420	VSNG1435	VSNG2025F18	VSNG2025F14	VSNG2050F18	VSNG2050F14
H [mm]	56	90.5	107	142	126	126	183.5	183.5
H1 [mm]	5	5	7	7	10	10	10	10
H2 [mm]	5	5	7	7	10	10	10	10
H3 [mm]	24.5	44	52	72	58	58	90.5	90.5
H4 [mm]	13.5	13.5	22	22	28	28	28	28
H5 [mm]	18.3	36.8	38.4	58.6	44.3	44.3	76.8	76.8
H6 [mm]	6.2*	7.2	13.6	13.4	13.7	13.7	13.7	13.7
D1	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
D2	M5	M5	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"
D3 [mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20	Ø20	Ø20
CH1 [mm]	8	8	12	12	16	16	16	16
CH2 [mm]	8	8	12	12	16	16	16	16
C [mm]	10	25	20	35	25	25	50	50
S2 [mm]	10	25	20	35	25	25	50	50
d [mm]	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.268	0.15	0.275	0.258	0.141	0.129
R1 [N]	1.49	1.575	3.617	4.267	4.131	4.388	4.308	4.452
R2 [N]	3.619	3.704	8.975	9.507	11.02	10.84	11.37	10.90
m [g]	7.6 g	12 g	30 g	38 g	67.5 g	64 g	96 g	93 g

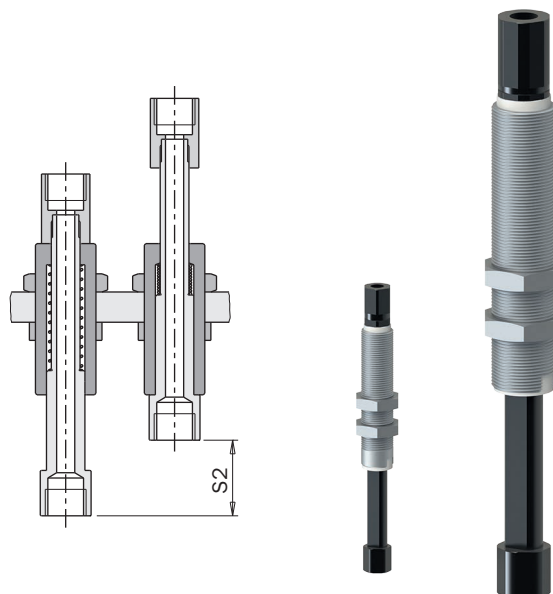
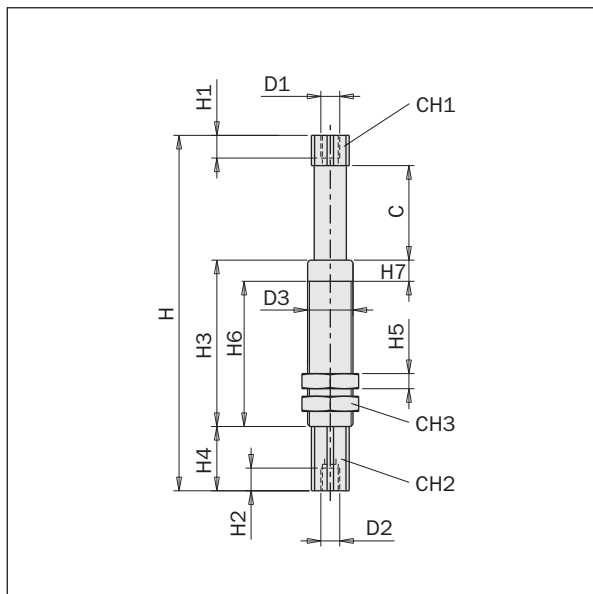
\*Non clampabile  
\*Non-clampable

**Sospensioni anti-rotazione con corpo filettato**

- Corpo e stelo in alluminio anodizzato.
- Molla in acciaio inossidabile.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.

**Threaded-body non-rotative suspensions**

- Body and rod in anodized aluminum.
- Spring in stainless steel.
- Non-rotative rod with high load capability.
- Pressure range: -1 ÷ 8 bar.



	VSNTG.1010 9900019	VSNTG.1025 9900020	VSNTG.1210 9900024	VSNTG.1225 9900025	VSNTG.1420 9900026	VSNTG.1435 9900021	VSNTG.1620 9900027	VSNTG.1635 9900028	VSNTG.2025F18 9900022	VSNTG.2025F14 9900018	VSNTG.2050F18 9900017	VSNTG.2050F14 9900023	VSNTG.2540 9900029	VSNTG.2580 9900030
H [mm]	56	90.5	64.5	98.5	107	142	107	142	126	126	183.5	183.5	173	263
H1 [mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	11	11
H2 [mm]	5	5	5.5	5.5	7	7	7	7	10	10	10	10	11	11
H3 [mm]	24.5	44	30	49	52	72	52	72	58	58	90.5	90.5	90	140
H4 [mm]	13.5	13.5	16.7	16.7	22	22	22	22	28	28	28	28	28	28
H5 [mm]	3.5	3.5	4	4	4	4	5	5	6	6	6	6	8	8
H6 [mm]	17.5	37	30	49	39	59	52	72	58	58	90.5	90.5	90	140
H7 [mm]	*7	*7	/	/	*13	*13	/	/	/	/	/	/	/	/
D1	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D2	M5	M5	M5	M5	G1/8"	G1/8"	G1/8"	G1/8"	G1/8"	G1/4"	G1/8"	G1/4"	G3/8"	G3/8"
D3	M10x1		M12x1		M14x1.5		M16x1		M20x1.5			M25x1.5		
CH1 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH2 [mm]	8	8	10	10	12	12	12	12	16	16	16	16	22	22
CH3 [mm]	13	13	15	15	17	17	19	19	24	24	24	24	32	32
C [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
S2 [mm]	10	25	10	25	20	35	20	35	25	25	50	50	40	80
d [mm]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K [N/mm]	0.213	0.085	0.277	0.108	0.268	0.15	0.252	0.137	0.275	0.258	0.141	0.129	0.230	0.119
R1 [N]	1.49	1.575	1.938	2.112	3.617	4.267	3.650	4.325	4.131	4.388	4.308	4.452	6.082	6.005
R2 [N]	3.619	3.704	4.706	4.820	8.975	9.507	8.685	9.132	11.02	10.84	11.37	10.90	15.26	15.52
m [g]	12 g	16.5 g	20 g	26.5 g	37 g	47 g	46.5 g	58 g	90 g	86 g	118 g	115 g	205 g	275 g

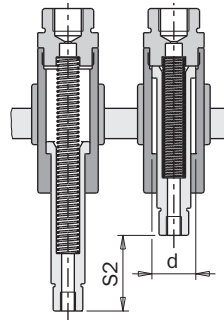
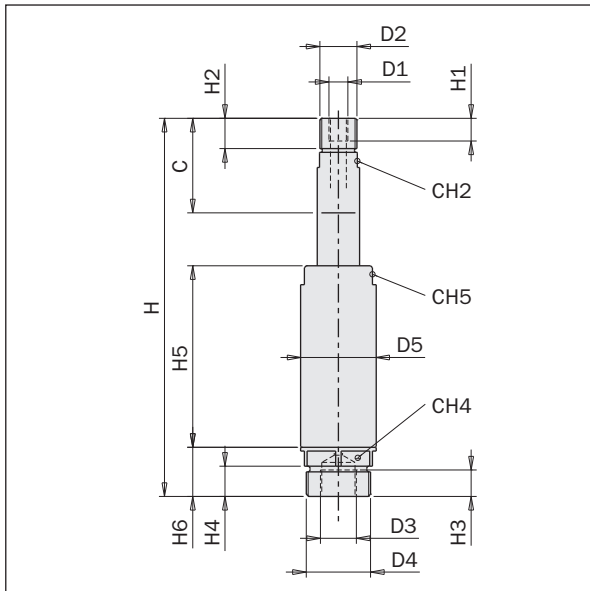
\*Non filettato  
\*Not threaded

**Sospensioni telescopiche auto-ritraenti**

- Corpo e stelo in alluminio anodizzato.
- Tenuta senza guarnizioni.
- Usabile solo con il vuoto.
- Quando la ventosa prende un pezzo, il vuoto che agisce sul pistone interno supera la forza della molla e muove lo stelo.
- La velocità del movimento di ritrazione può essere calibrata con un regolatore di flusso standard.
- Quando si rimuove il vuoto, il pezzo viene rilasciato e la molla interna riporta lo stelo a fondo corsa.
- Pressione di utilizzo:  $-1 \div 0$  bar.
- Grasso alimentare FDA-H1.

**Telescopic self-retracting suspensions**

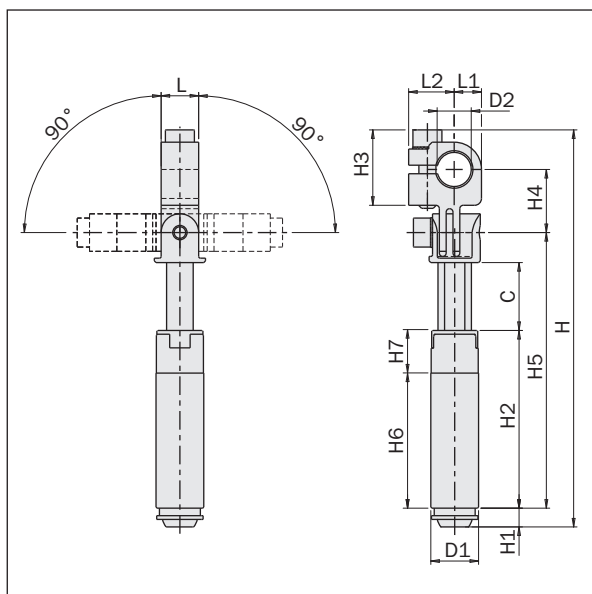
- Body and rod in anodized aluminum.
- Sealing with no seals.
- Only for vacuum applications.
- When the cup takes a part, the vacuum on the internal piston overtakes the spring force and moves the rod up.
- The speed of the retraction movement can be adjusted by a standard throttle valve.
- When the vacuum is removed the part is released and the internal spring resets the rod.
- Pressure range:  $-1 \div 0$  bar.
- FDA-H1 food-grade grease.



	VSS2025	VSS2050
H [mm]	100	150
H1 [mm]	6	6
H2 [mm]	8	8
H3 [mm]	8	8
H4 [mm]	8	8
H5 [mm]	48	73
H6 [mm]	13	13
D1	M5	M5
D2	G1/8"	G1/8"
D3	G1/8"	G1/8"
D4	M17x1	M17x1
D5 [mm]	Ø20	Ø20
CH2 [mm]	10	10
CH4 [mm]	18	18
CH5 [mm]	18	18
C [mm]	25	50
S2 [mm]	25	50
d [mm]	14.5	14.5
K [N/mm]	0.085	0.052
R1 [N]	1.525	1.606
R2 [N]	3.642	4.197
m [g]	40	55

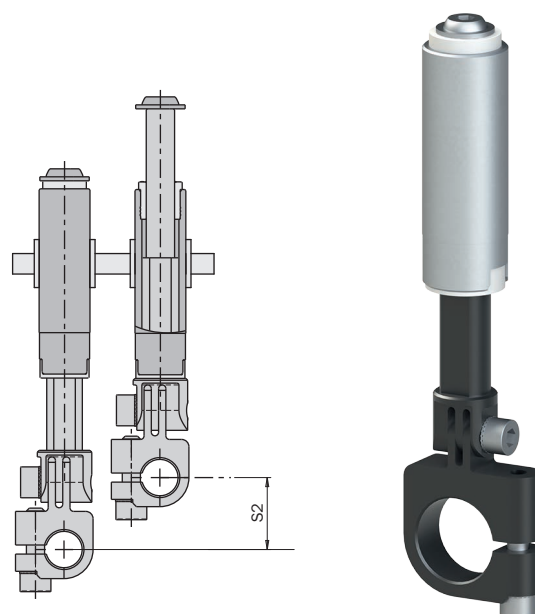
## Sospensioni anti-rotazione con cravatta regolabile e corpo liscio

- L'angolo è regolabile continuamente fra 0° e +/-90°.
- Alimentazione esterna.
- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione.



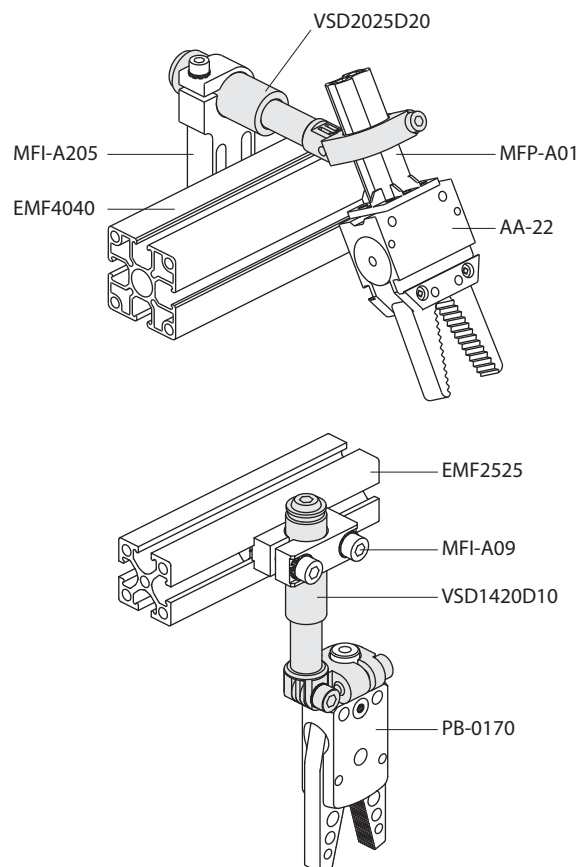
## Non-rotative suspensions with smooth-body and adjustable clamp

- It is possible to set continuously the angle between 0° and +/-90°.
- External air feeding.
- Body and rod in anodized aluminum.
- Non-rotative rod.



	VSD1420D10	VSD2025D10	VSD2025D20
H [mm]	116.4	129.4	141.4
H1 [mm]	5.5	6.5	6.5
H2 [mm]	52	58.1	58.1
H3 [mm]	22.1	22.1	34.1
H4 [mm]	18.5	18.5	25
H5 [mm]	80.8	92.8	92.8
H6 [mm]	39.6	44.4	44.4
H7 [mm]	12.4*	13.7*	13.7*
D1 [mm]	Ø14	Ø20	Ø20
D2 [mm]	Ø10	Ø10	Ø20
L [mm]	11	11	11
L1 [mm]	8	8	13.5
L2 [mm]	13.4	13.4	19.3
C [mm]	20	25	25
S2 [mm]	20	25	25
d [mm]	0	0	0
K [N/mm]	0.268	0.275	0.275
R1 [N]	3.617	4.131	4.131
R2 [N]	8.975	11.02	11.02
m [g]	43	70	80

\*Non clampabile  
\*Non-clampable





**Sospensioni e giunti sferici per ventose con freno**

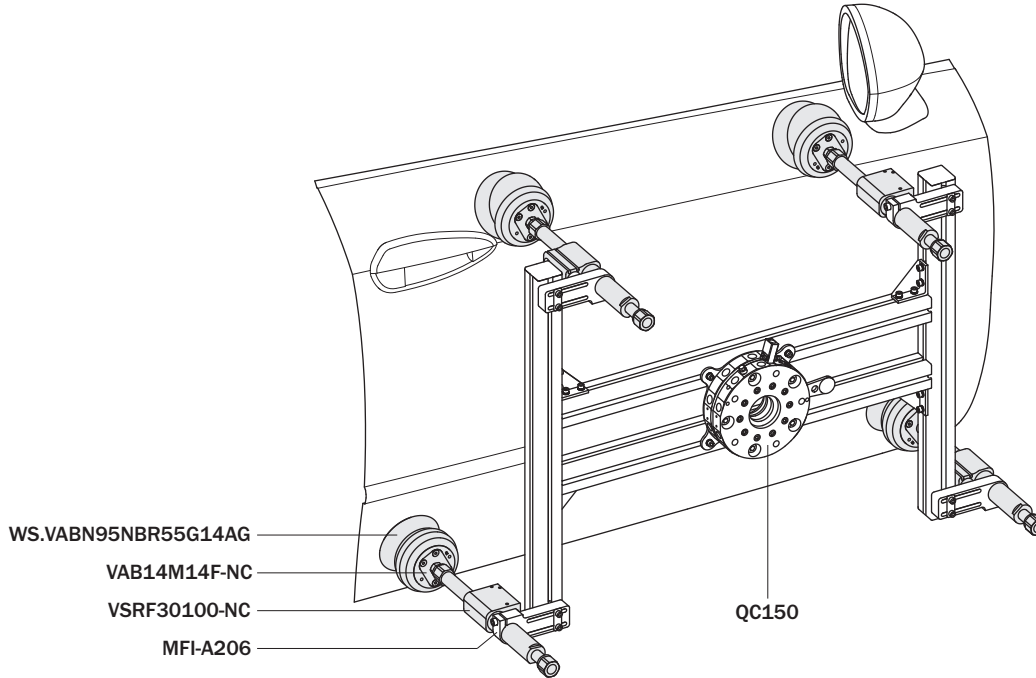
**Vacuum suspensions and ball joints with brake**

**Manipolazione di una porta di automobile**

La frenatura di sospensioni e giunto sferico consente accelerazioni elevate del manipolatore.

**Handling of a car door**

The braking of suspensions and ball joints allows high accelerations of the manipulator.

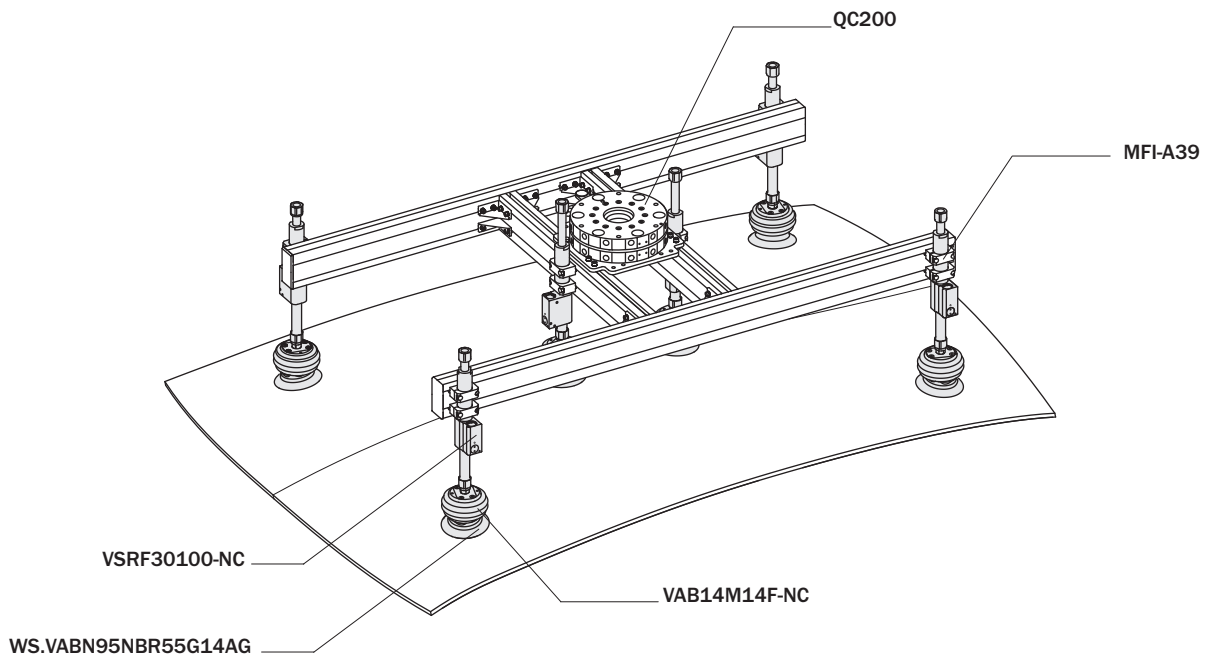


**Manipolazione di un tetto sottile di automobile**

La frenatura di sospensioni e giunto consente di non deformare il tetto durante la manipolazione.

**Handling of a car thin roof**

The braking of suspensions and ball joints avoids the roof deformations during the handling.



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Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

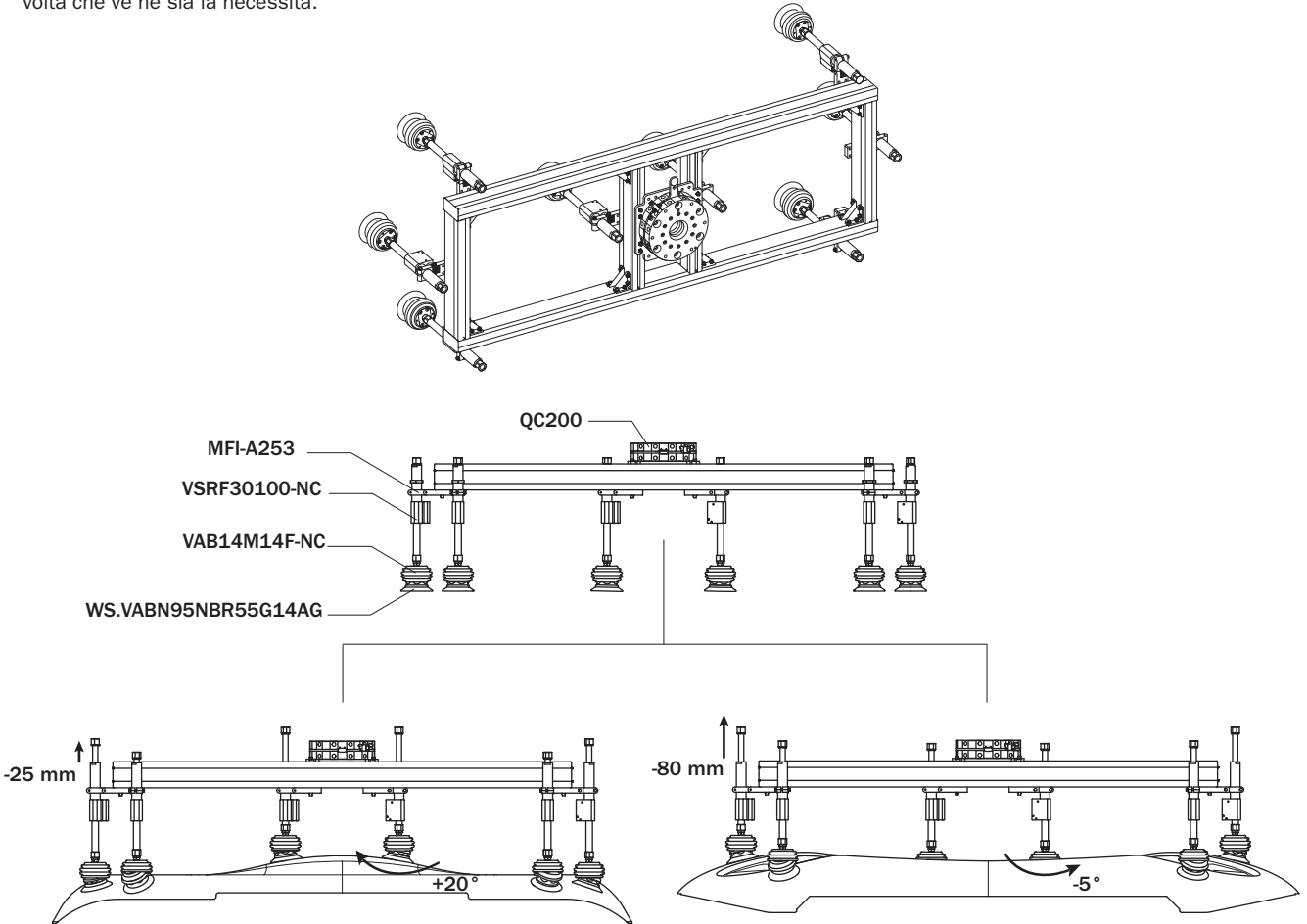
**Sospensioni e giunti sferici per ventose con freno**

**Vacuum suspensions and ball joints with brake**

**Manipolazione di parti diverse con uno stesso EOAT riconfigurabile**

L'EOAT può essere configurato per manipolare pezzi di dimensioni diverse. La configurazione avviene tramite i freni degli attuatori che vengono regolati al momento della presa del primo pezzo. Una volta eseguita la configurazione, l'EOAT opera in modo completamente rigido. L'EOAT può essere riconfigurato ogni volta che ve ne sia la necessità.

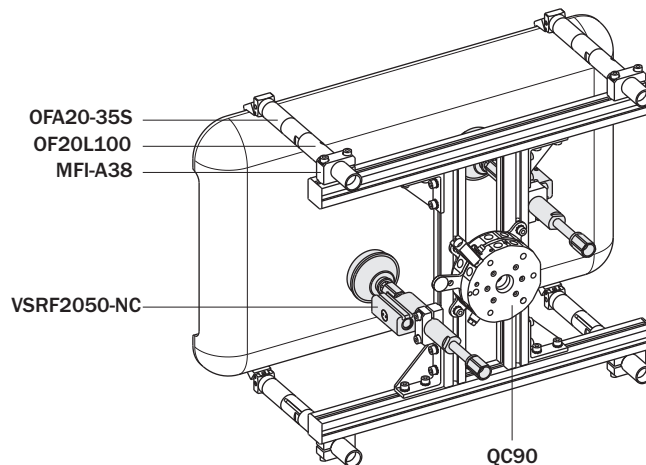
**Handling of different parts by the same reconfigurable EOAT**  
 The EOAT can be configured to handle pieces of different size. The configuration can be performed by adjusting the brakes of the actuators when gripping the first piece. After performing the configuration, the EOAT operates as a completely rigid device. The EOAT can be reconfigured whenever necessary.



**Manipolazione di parti delicate evitando il ritorno elastico delle molle**

La frenatura delle sospensioni dopo la compensazione elastica e la presa, evita i danneggiamenti dovuti ad un ritorno elastico incontrollato.

**Handling of fragile parts avoiding the elastic spring return**  
 The braking of the suspensions after the level compensation and the gripping, avoids damages due to an uncontrolled elastic return.

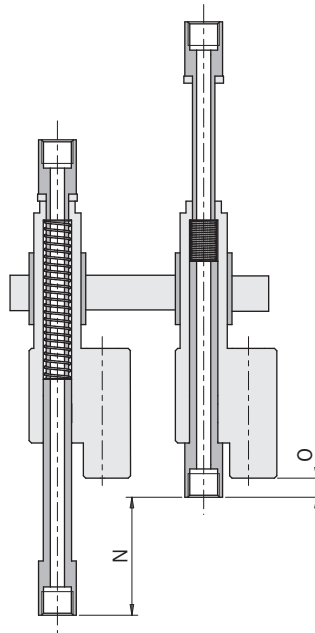
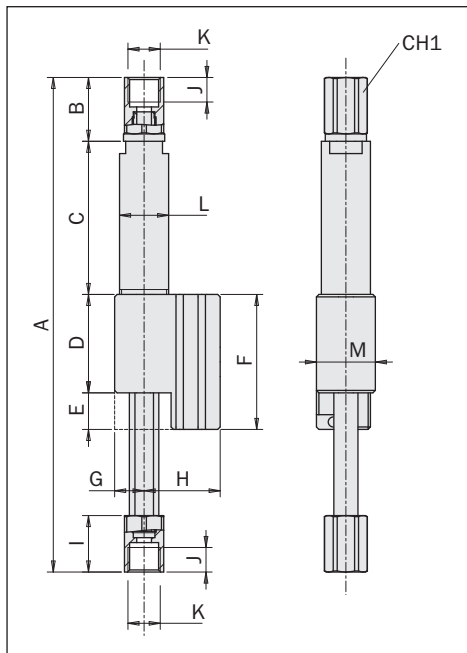


**Sospensioni anti-rotazione con corpo liscio e freno**

- Corpo in alluminio e stelo in acciaio.
- Dispositivo di blocco (-NO) o sblocco (-NC) dello stelo azionato pneumaticamente.
- Stelo anti-rotazione con elevata capacità di carico.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Sensori opzionali.

**Non-rotative suspensions, with smooth body and brake**

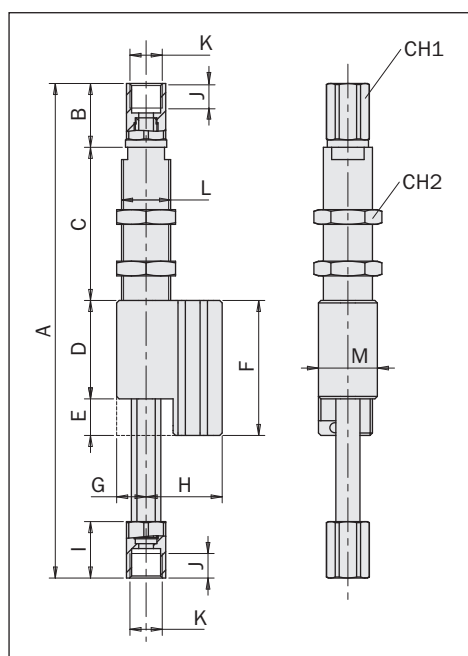
- Aluminium body and steel rod.
- Pneumatic rod lock (-NO) or unlock (-NC) device.
- Non-rotative rod with high load capability.
- FDA-H1 food-grade grease.
- Pressure range: -1 ÷ 8 bar.
- Optional sensors.



		VSNF2050-NC	VSNF2050-NO	VSNF30100-NC	VSNF30100-NO
A	[mm]	201.5		324.5	
B	[mm]	26		28	
C	[mm]	62.4		113	
D	[mm]	40.1		-	
E	[mm]	14.9		-	
F	[mm]	55		65.5	
G	[mm]	12		17	
H	[mm]	31		40	
I	[mm]	23		18	
J	[mm]	10		13	
K		G1/4"		G3/8"	
L	[mm]	20		30	
M	[mm]	24		35	
N	[mm]	50		100	
O	[mm]	8.1		18	
CH1	[mm]	16		24	
m	[g]	254		820	
Rilevamento con sensore magnetico <i>Magnetic sensor detection</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressione di esercizio per blocco <i>Operating pressure for locking</i>	P1	-	4÷8 bar	-	4÷8 bar
Pressione di esercizio per sblocco <i>Operating pressure for unlocking</i>	P2	4÷8 bar	-	4÷8 bar	-
Forza frenante <i>Braking force</i>		200 N	50N x P1 - 50N	600 N	150N x P1 - 150N

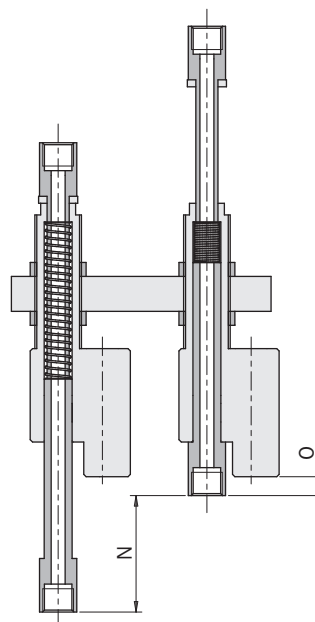
## Sospensioni anti-rotazione con corpo filettato e freno

- Corpo in alluminio e stelo in acciaio.
- Dispositivo di blocco (-NO) o sblocco (-NC) dello stelo azionato pneumaticamente.
- Stelo anti-rotazione con elevata capacità di carico.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Sensori opzionali.



## Non-rotative suspensions, with threaded body and brake

- Aluminium body and steel rod.
- Pneumatic rod lock (-NO) or unlock (-NC) device.
- Non-rotative rod with high load capability.
- FDA-H1 food-grade grease.
- Pressure range: -1 ÷ 8 bar.
- Optional sensors.



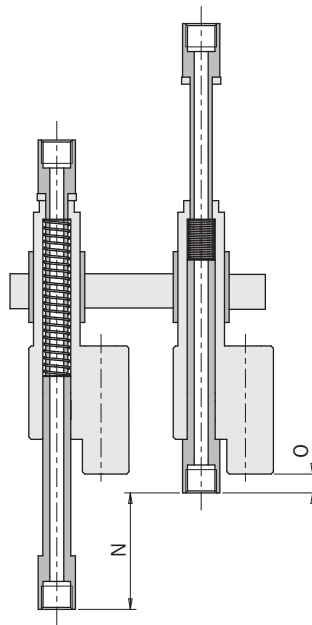
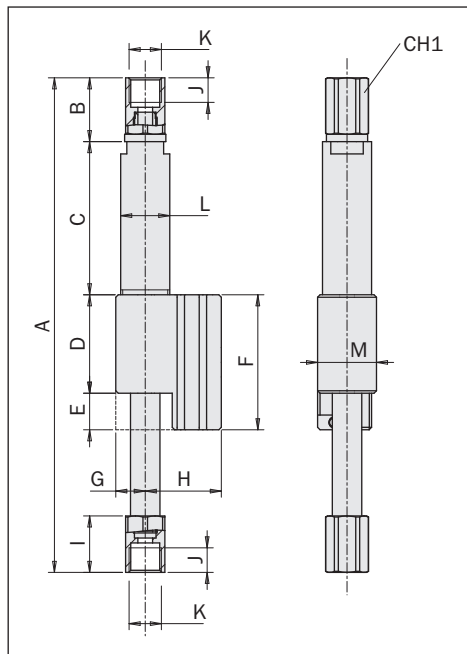
	VSNTF2050-NC 9900031	VSNTF2050-NO 9900032	VSNTF30100-NC 9900033	VSNTF30100-NO 9900034
A [mm]	201.5		324.5	
B [mm]	26		28	
C [mm]	62.4		113	
D [mm]	40.1		-	
E [mm]	14.9		-	
F [mm]	55		65.5	
G [mm]	12		17	
H [mm]	31		40	
I [mm]	23		18	
J [mm]	10		13	
K	G1/4"		G3/8"	
L	M20x1.5		M30x1.5	
M [mm]	24		35	
N [mm]	50		100	
O [mm]	8.1		18	
CH1 [mm]	16		24	
CH2 [mm]	24		36	
m [g]	270		890	
Rilevamento con sensore magnetico <i>Magnetic sensor detection</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressione di esercizio per blocco <i>Operating pressure for locking</i>	P1 -	4÷8 bar	-	4÷8 bar
Pressione di esercizio per sblocco <i>Operating pressure for unlocking</i>	P2 4÷8 bar	-	4÷8 bar	-
Forza frenante <i>Braking force</i>	200 N	50N x P1 - 50N	600 N	150N x P1 - 150N

## Sospensioni rotanti con corpo liscio e freno

- Corpo in alluminio e stelo in acciaio.
- Dispositivo di blocco (-NO) o sblocco (-NC) dello stelo azionato pneumaticamente.
- Stelo girevole.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Sensori opzionali.

## Rotative suspensions, with smooth body and brake

- Aluminium body and steel rod.
- Pneumatic rod lock (-NO) or unlock (-NC) device.
- Rotative rod.
- FDA-H1 food-grade grease.
- Pressure range: -1 ÷ 8 bar.
- Optional sensors



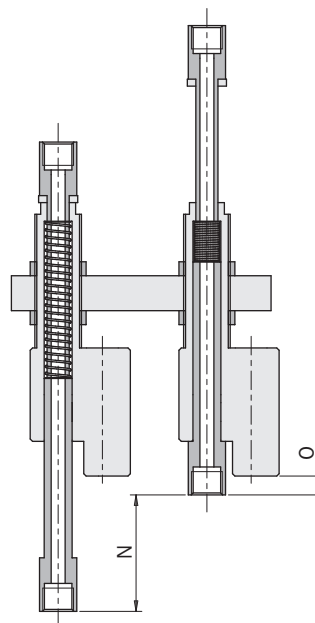
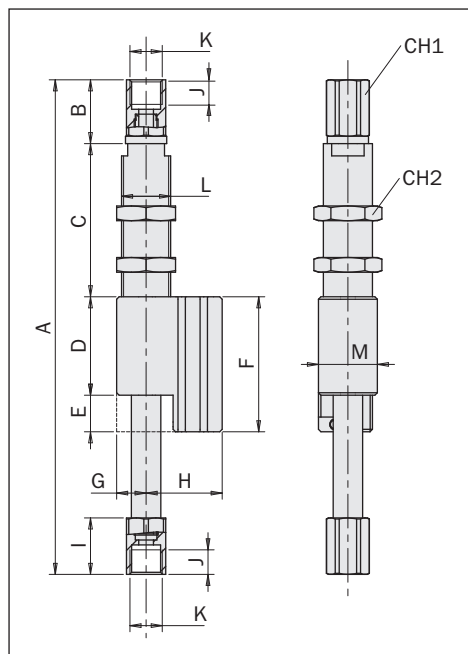
		VSRF2050-NC	VSRF2050-NO	VSRF30100-NC	VSRF30100-NO
A	[mm]	201.5		324.5	
B	[mm]	26		28	
C	[mm]	62.4		113	
D	[mm]	40.1		-	
E	[mm]	14.9		-	
F	[mm]	55		65.5	
G	[mm]	12		17	
H	[mm]	31		40	
I	[mm]	23		18	
J	[mm]	10		13	
K		G1/4"		G3/8"	
L	[mm]	20		30	
M	[mm]	24		35	
N	[mm]	50		100	
O	[mm]	8.1		18	
CH1	[mm]	16		24	
m	[g]	253		830	
Rilevamento con sensore magnetico <i>Magnetic sensor detection</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressione di esercizio per blocco <i>Operating pressure for locking</i>	P1	-	4÷8 bar	-	4÷8 bar
Pressione di esercizio per sblocco <i>Operating pressure for unlocking</i>	P2	4÷8 bar	-	4÷8 bar	-
Forza frenante <i>Braking force</i>		200 N	50N x P1 - 50N	600 N	150N x P1 - 150N

## Sospensioni rotanti con corpo filettato e freno

- Corpo in alluminio e stelo in acciaio.
- Dispositivo di blocco (-NO) o sblocco (-NC) dello stelo azionato pneumaticamente.
- Stelo girevole.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.
- Sensori opzionali.

## Rotative suspensions, with threaded body and brake

- Aluminium body and steel rod.
- Pneumatic rod lock (-NO) or unlock (-NC) device.
- Rotative rod.
- FDA-H1 food-grade grease.
- Pressure range: -1 ÷ 8 bar.
- Optional sensors.



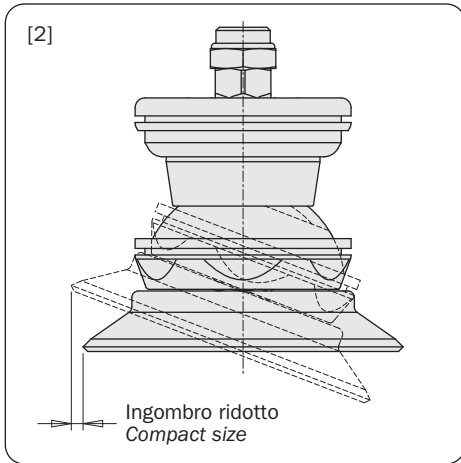
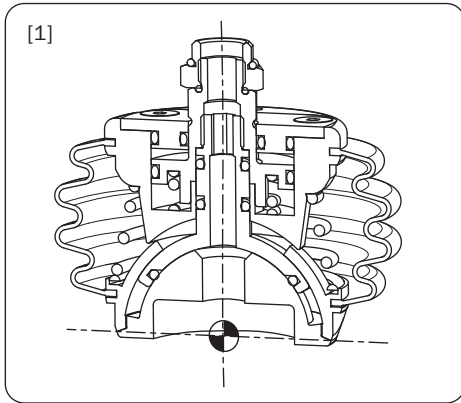
	VSRTF2050-NC 9900035	VSRTF2050-NO 9900036	VSRTF30100-NC 9900037	VSRTF30100-NO 9900038
A [mm]	201.5			324.5
B [mm]	26			28
C [mm]	62.4			113
D [mm]	40.1			-
E [mm]	14.9			-
F [mm]	55			65.5
G [mm]	12			17
H [mm]	31			40
I [mm]	23			18
J [mm]	10			13
K	G1/4"			G3/8"
L	M20x1.5			M30x1.5
M [mm]	24			35
N [mm]	50			100
O [mm]	8.1			18
CH1 [mm]	16			24
CH2 [mm]	24			36
m [g]	270			880
Rilevamento con sensore magnetico <i>Magnetic sensor detection</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pressione di esercizio per blocco <i>Operating pressure for locking</i>	P1 -	4+8 bar	-	4+8 bar
Pressione di esercizio per sblocco <i>Operating pressure for unlocking</i>	P2 4+8 bar	-	4+8 bar	-
Forza frenante <i>Braking force</i>	200 N	50N x P1 - 50N	600 N	150N x P1 - 150N

**Giunto sferico per ventose con freno**

- Dispositivo di blocco (-NO) o sblocco (-NC) del giunto azionato pneumaticamente.
- Fulcro di rotazione molto vicino al piano ventosa [1].
- Ingombro ridotto laterale in rotazione [2].
- Ridotto strisciamento della ventosa in presa.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1÷8 bar.
- Due taglie disponibili.

**Ball joint for vacuum cups, with brake**

- Pneumatically-driven device for joint lock (-NO) or unlock (-NC).
- Rotation fulcrum very close to the suction cup plane [1].
- Small side displacement on rotation [2].
- Minimal slide of the vacuum cup upon picking-up.
- FDA-H1 food-grade grease.
- Pressure range: -1÷8 bar.
- Two sizes available.



VAB18...

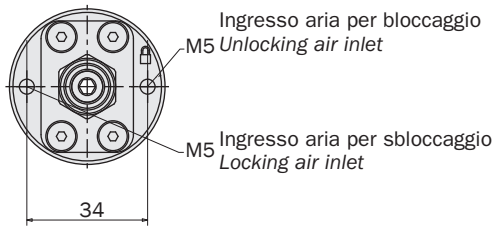
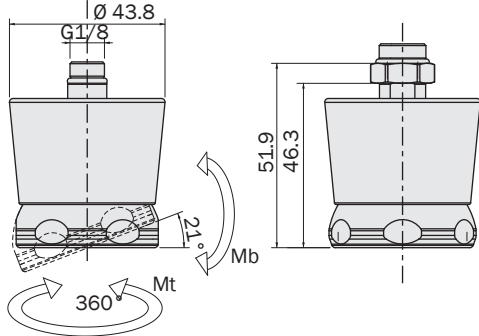
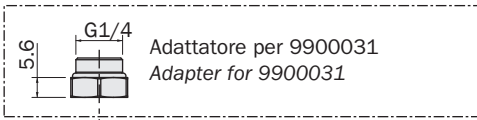
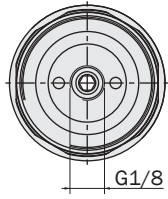


VAB14...

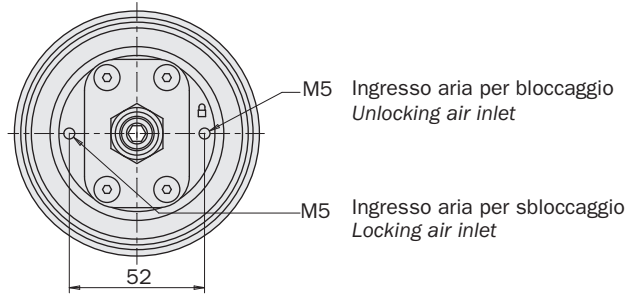
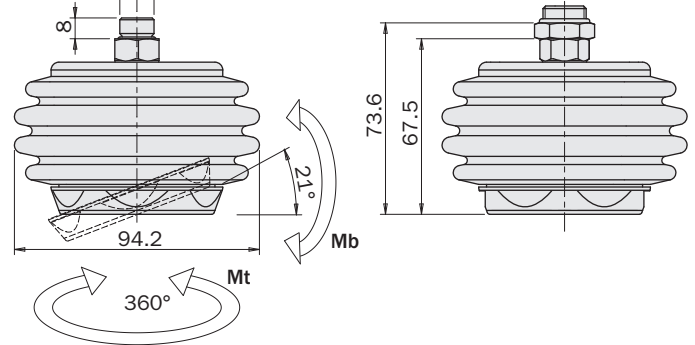
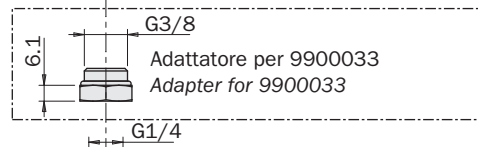
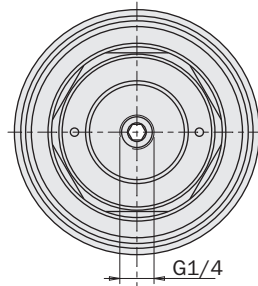
	VAB18M18F-NC 9900039	VAB14M14F-NC 9900040	VAB18M18F-NO 9900041	VAB14M14F-NO 9900042
Fluido per blocco / sblocco <i>Fluid for lock / unlock</i>	Aria compressa a norma ISO 8573-1:2010 [7:4:4] <i>Compressed air in compliance with ISO 8573-1:2010 [7:4:4]</i>			
Pressione di esercizio per blocco <i>Operating pressure range for lock</i>	P1	0 ÷ 8 bar	0 ÷ 8 bar	1 ÷ 8 bar
Pressione di esercizio per sblocco <i>Operating pressure range for unlock</i>	P2	4 ÷ 8 bar	3 ÷ 8 bar	0 ÷ 8 bar
Consumo d'aria per blocco <i>Air consumption to locking</i>		0 cm <sup>3</sup>	0 cm <sup>3</sup>	2.7 cm <sup>3</sup>
Consumo d'aria per sblocco <i>Air consumption to unlocking</i>		0.4 cm <sup>3</sup>	4.8 cm <sup>3</sup>	0 cm <sup>3</sup>
Pressione attraverso il canale di alimentazione <i>Pressure through the supply duct</i>	-1 ÷ 8 bar			
Temperatura di esercizio <i>Operating temperature range</i>	5° ÷ 60° C			
Corsa <i>Stroke</i>	± 21°			
Coppia frenante <i>Brake torque</i>	Mb	1 Nm + 0.25 Nm x P1	1.5Nm + 0.7Nm x P1	0.25 Nm x P1
Coppia frenante <i>Brake torque</i>	Mt	0.8 Nm + 0.2 Nm x P1	1.1Nm + 0.5Nm x P1	0.2 Nm x P1
Peso <i>Weight</i>		152 g	420 g	147 g

**Dimensioni (mm)**  
**Dimensions (mm)**

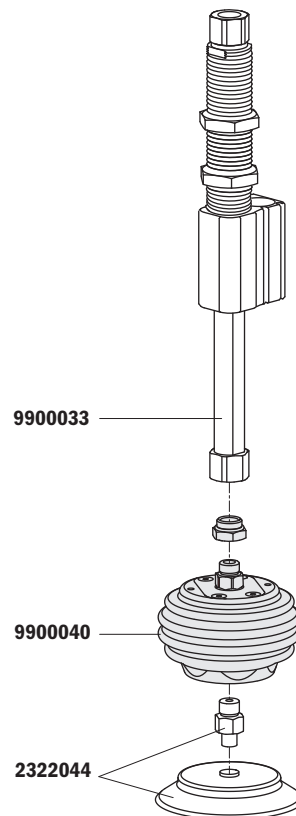
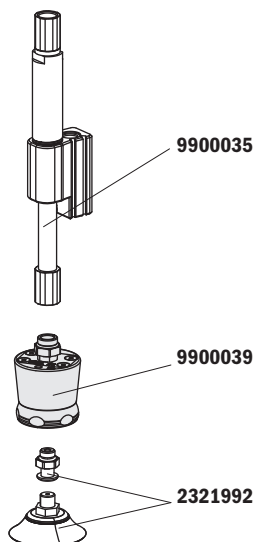
VAB18...



VAB14...



**Esempio di utilizzo**  
**Application example**

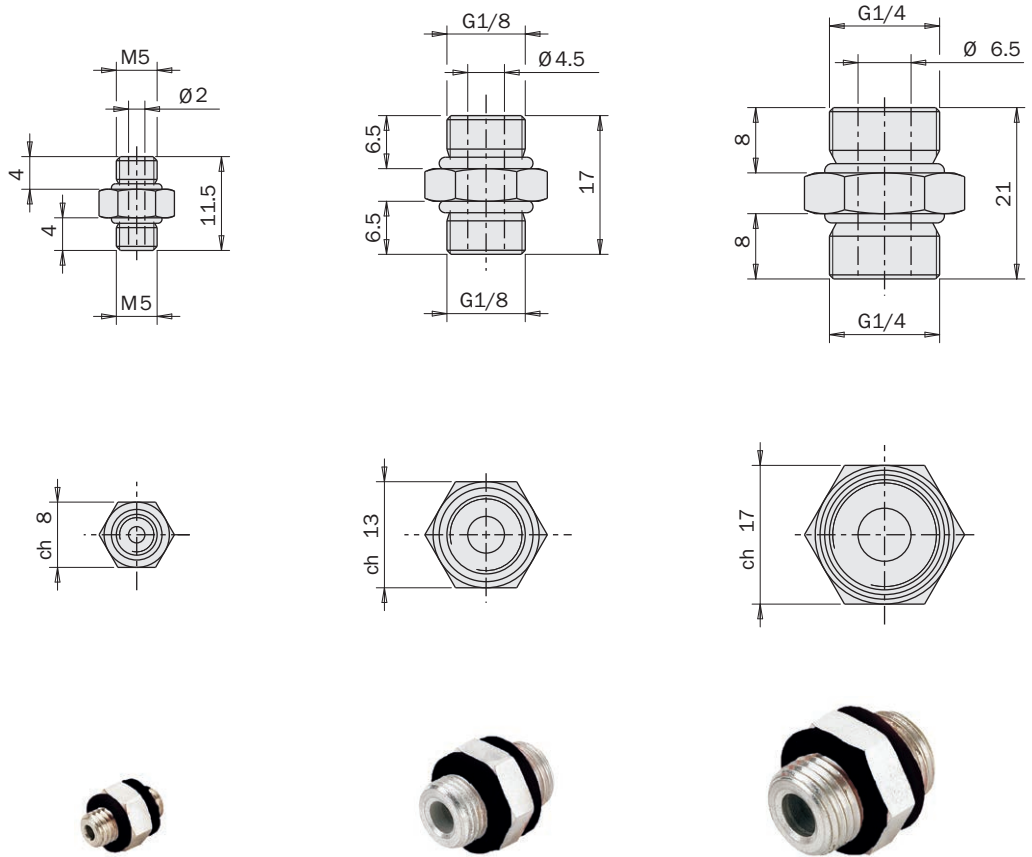




**Nippli filettati**

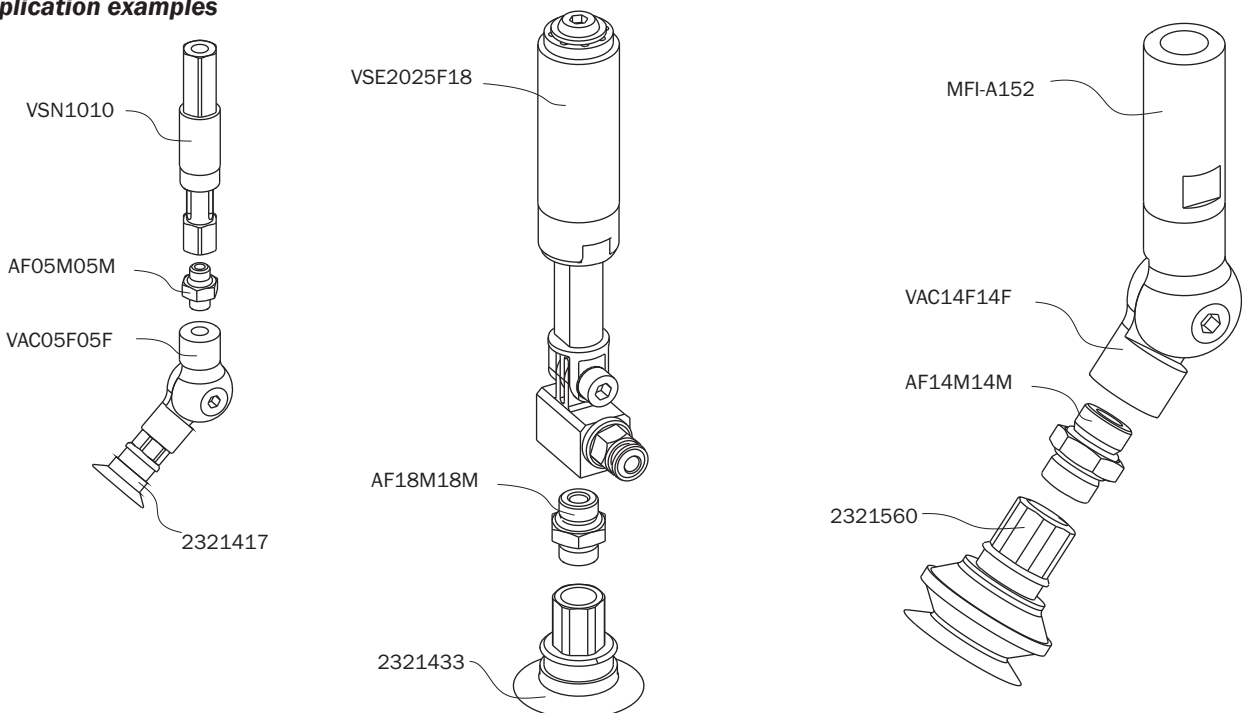
**Threaded nipples**

FIRST ANGLE PROJECTION



	AF05M05M	AF18M18M	AF14M14M
Peso Weight	3 g	4 g	8 g

**Esempi di utilizzo**  
**Application examples**



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Pinze  
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Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

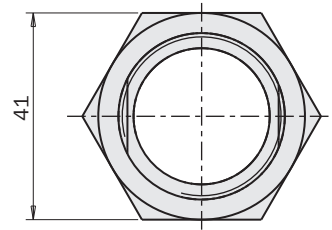
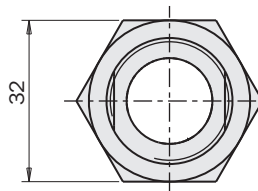
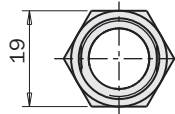
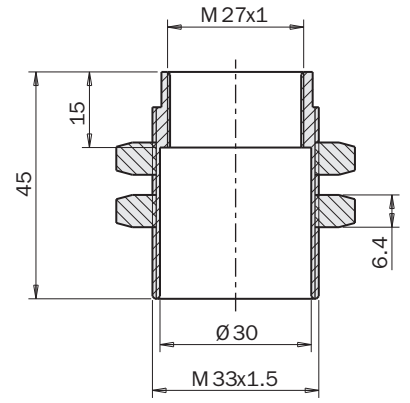
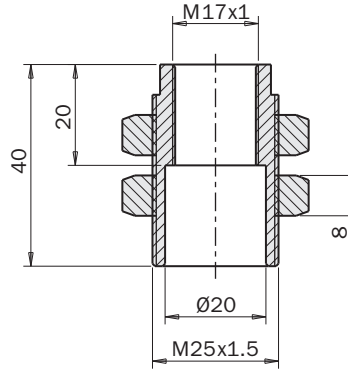
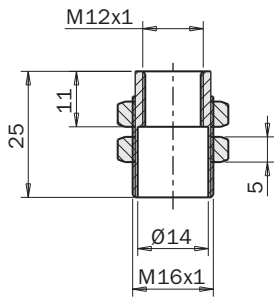
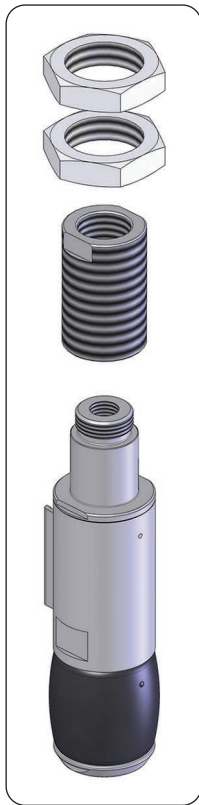
Accessori Opzionali  
Options

Sensori  
Sensors

**Nippli filettati**

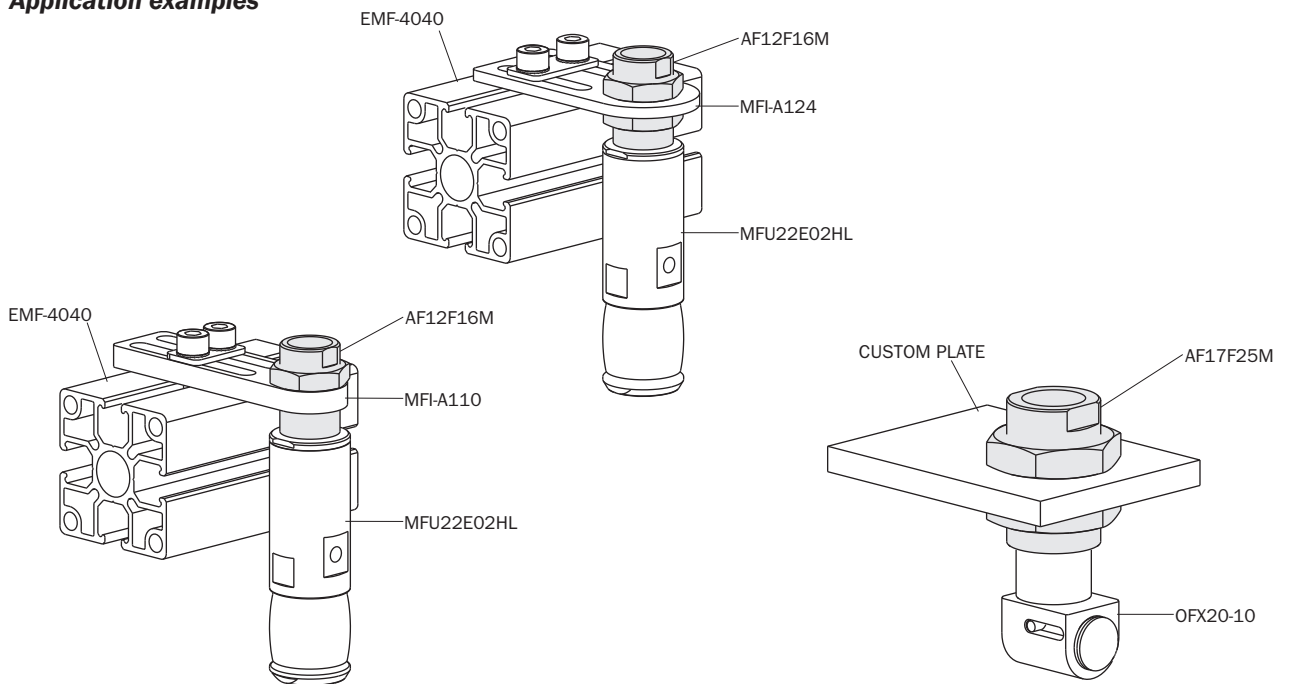
**Threaded nipples**

FIRST ANGLE PROJECTION



	AF12F16M	AF17F25M	AF27F33M
Peso Weight	25 g	130 g	140 g

**Esempi di utilizzo**  
**Application examples**

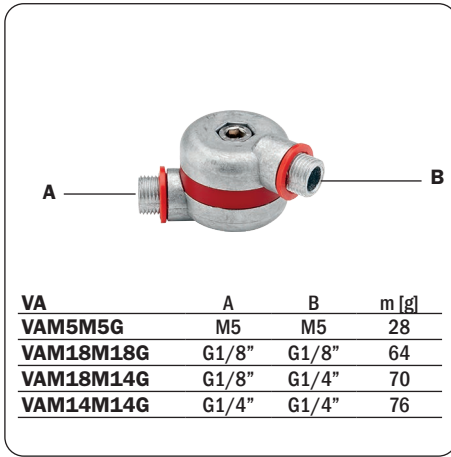


## Giunti angolari

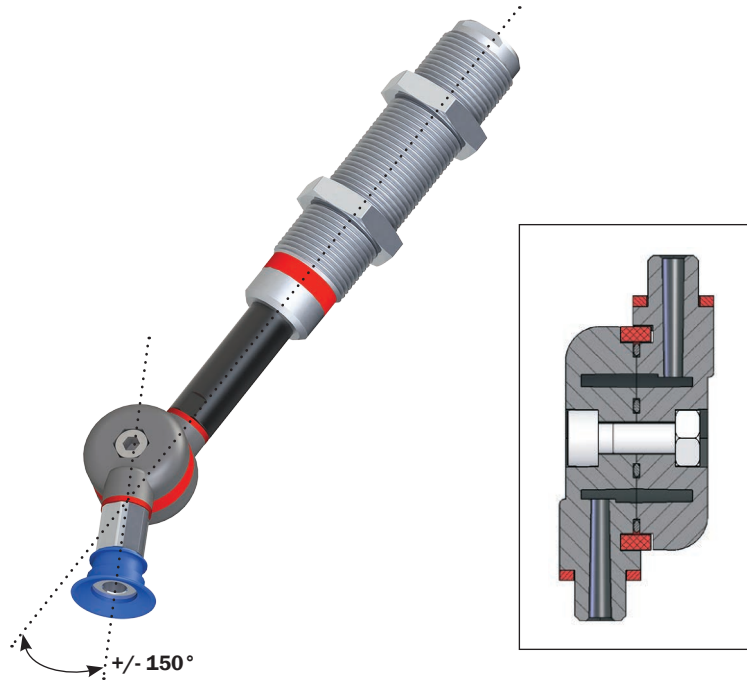
- Si montano fra la ventosa ed il suo supporto con due filetti maschi.
- Consentono di orientare la ventosa di un angolo predefinito rispetto al supporto.
- L'angolo è regolabile fra 0° e +/-150°.
- L'angolo è fissato stringendo una vite.
- Il condotto del vuoto è ricavato all'interno dei due semicorpi.

## Elbow arms

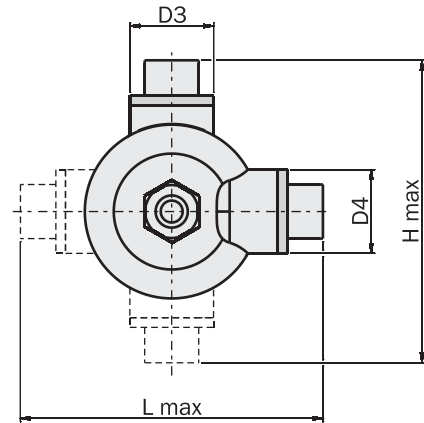
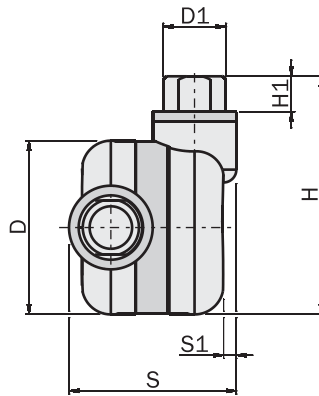
- They are mounted between the vacuum cup and its support by two male threads.
- They are used to tilt the vacuum cup with respect to the support under a predefined angle.
- It is possible to set the angle between 0° and +/-150°.
- By tightening a screw the angle is fixed.
- The vacuum lead is inside the two half-bodies.



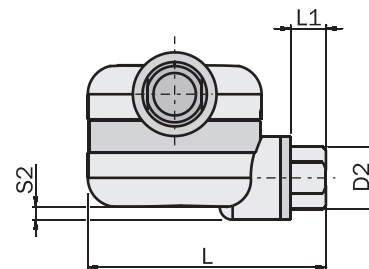
VA	A	B	m [g]
VAM5M5G	M5	M5	28
VAM18M18G	G1/8"	G1/8"	64
VAM18M14G	G1/8"	G1/4"	70
VAM14M14G	G1/4"	G1/4"	76



## Dimensioni (mm) Dimensions (mm)



	VAM5M5G	VAM18M18G	VAM18M14G	VAM14M14G
D	Ø22	Ø27	Ø27	Ø27
D1	M5	G1/8"	G1/8"	G1/4"
D2	M5	G1/8"	G1/4"	G1/4"
D3	Ø8	Ø13	Ø13	Ø16.8
D4	Ø8	Ø13	Ø16.8	Ø16.8
H	29	37	37	38
H1	4	5.5	5.5	6.5
H max	36	47	47	49
L	29	37	38	38
L1	4	5.5	6.5	6.5
L max	36	47	49	49
S	15.2	26	27.9	29.8
S1	0.6	2	2	3.9
S2	0.6	2	3.9	3.9



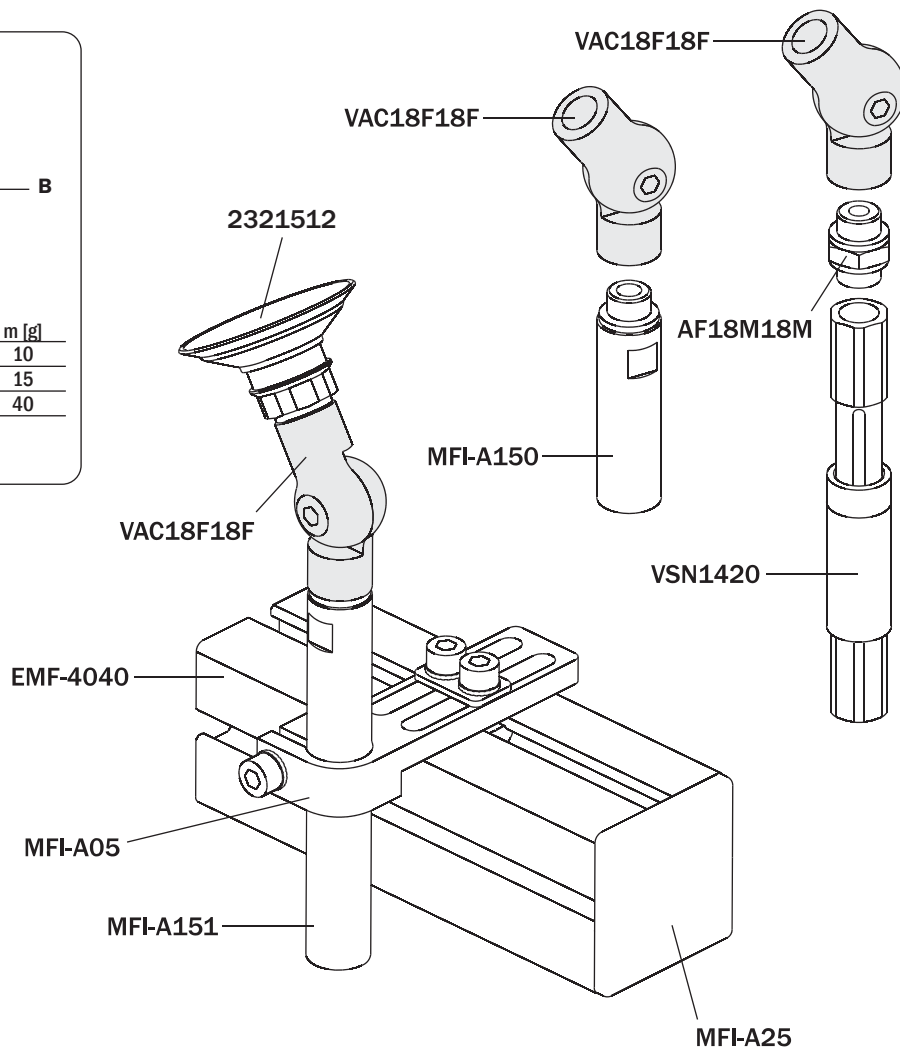
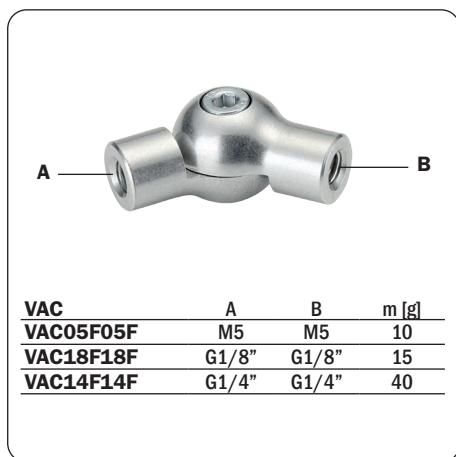
FIRST ANGLE PROJECTION

### Giunti angolari

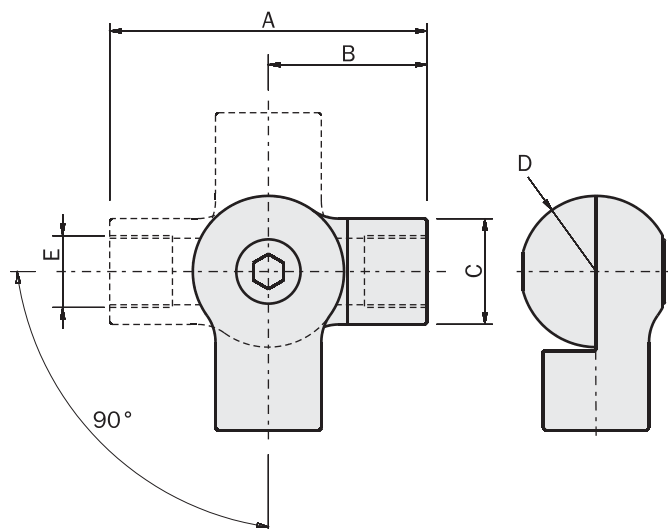
- Si montano fra la ventosa ed il suo supporto con due filetti femmina.
- Consentono di orientare la ventosa di un angolo predefinito rispetto al supporto.
- L'angolo è regolabile continuamente fra 0° e +/-90°.
- L'angolo è fissato stringendo una vite.
- Canale per il vuoto integrato.

### Elbow arms

- Not for compressed air (only vacuum).
- They are mounted between the vacuum cup and its support by two female threads.
- They are used to tilt the vacuum cup with respect to the support under a predefined angle.
- It is possible to set continuously the angle from 0° to +/-90°.
- By tightening one screw the angle is fixed.
- Integrated vacuum channel.



### Dimensioni (mm) Dimensions (mm)

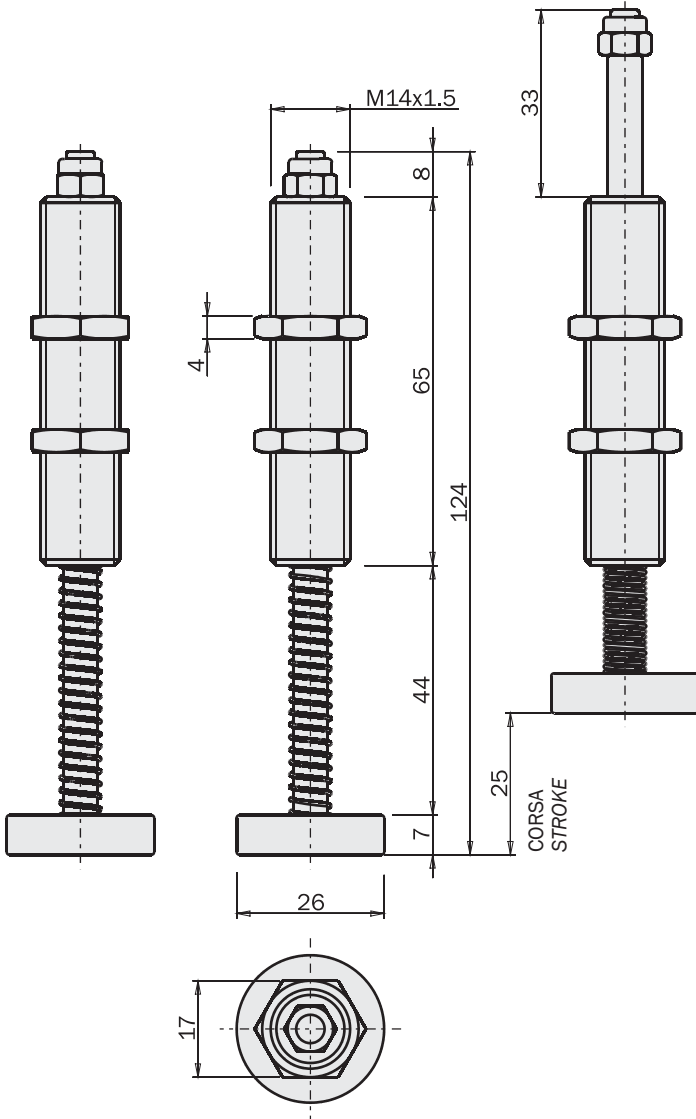


	VAC05F05F	VAC18F18F	VAC14F14F
A	33	42	56
B	16.5	21	28
C	Ø10	Ø14	Ø20
D	R8	R10	R14
E	M5	G1/8"	G1/4"

**Pressore a molla**

**Spring rod**

FIRST ANGLE PROJECTION

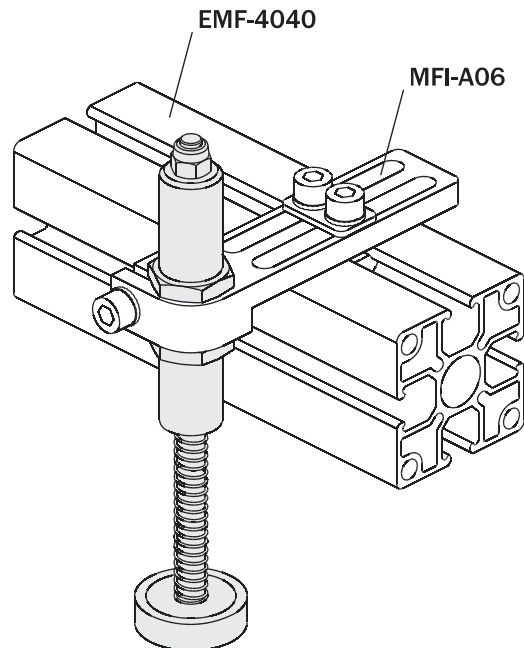
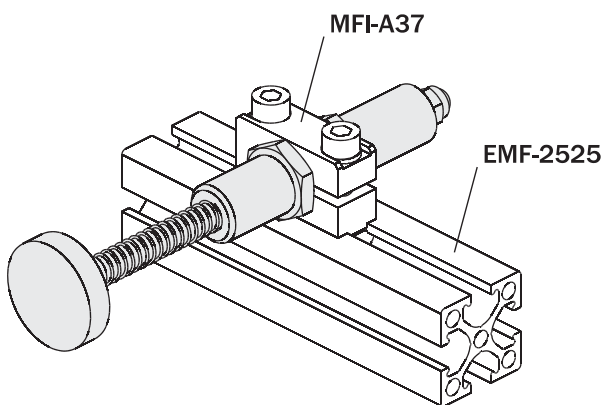


**VSX1425**

Peso	65 g
Weight	



Materiale: Gomma TPU  
Material: TPU Rubber



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

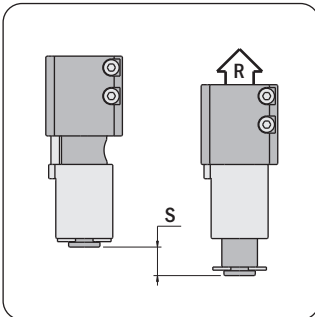
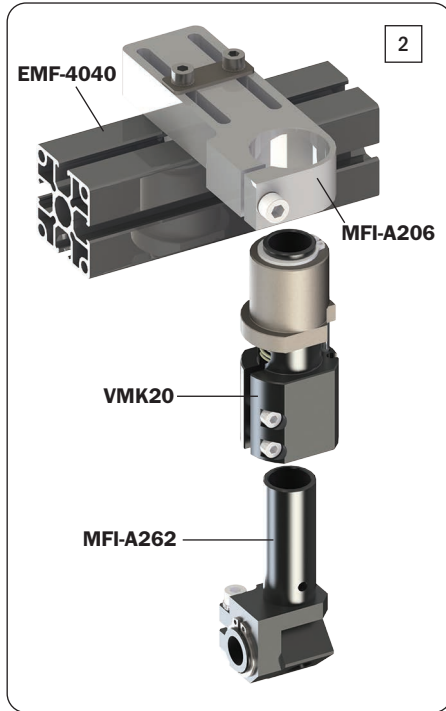
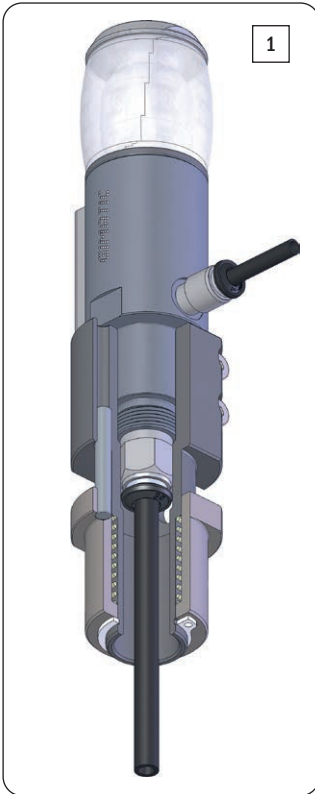


**Sospensioni universali anti-rotazione**

- Per tutti gli attuatori e le staffe con codolo da 14mm, 20mm e 30mm.
- Con foro passante per i tubi dell'aria [1].
- Fissaggio a cravatta [2].
- Sensore magnetico opzionale.
- Sensore induttivo opzionale (non per VMK14).
- Grasso alimentare FDA-H1.

**Non-rotative universal suspensions**

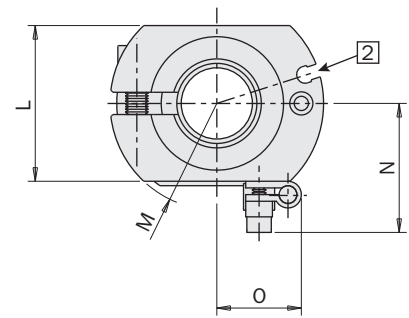
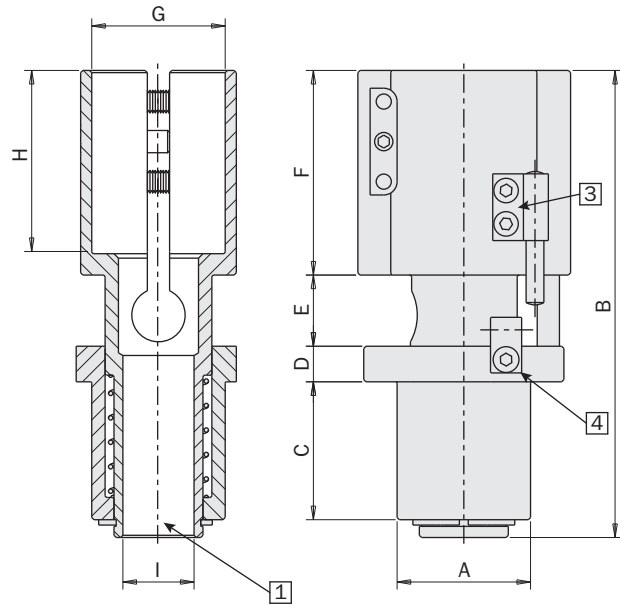
- For all actuators and brackets with 14mm, 20mm and 30mm tang.
- With through hole for air hoses [1].
- Clamp mounting [2].
- Optional magnetic sensor.
- Optional inductive sensor (not for VMK14).
- FDA-H1 food-grade grease.



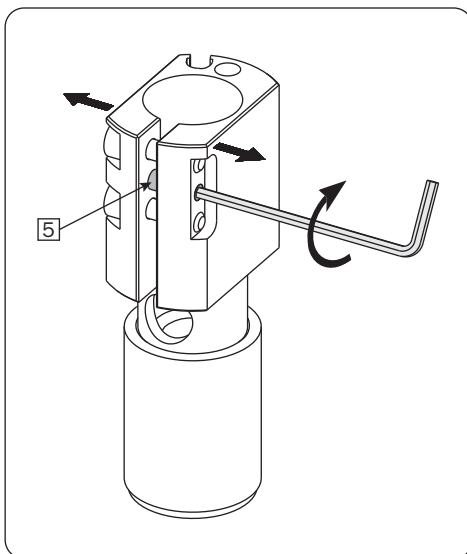
		VMK14	VMK20	VMK30
Forza di reazione della molla Spring reaction force	(R)	5 ÷ 6 N	7 ÷ 10 N	7 ÷ 10 N
Corsa della sospensione Suspension stroke	(S)	10 mm	13 mm	16 mm
Peso Weight		55 g	160 g	250 g

**Dimensioni (mm)**  
**Dimensions (mm)**

	VMK14	VMK20	VMK30
A	Ø20	Ø30	Ø30
B	67	86	105
C	21	27	31
D	5	7	8
E	10	13	16
F	28	35	46
G	Ø14	Ø20	Ø30
H	14	31.5	41.2
I	Ø6	Ø16	Ø16
L	22	30	35
M	Ø27	Ø37	Ø48
N	22	26.5	29
O	16	16.5	19



FIRST ANGLE PROJECTION



- E** Corsa della sospensione  
Suspension stroke
- 1** Foro passante per i tubi dell'aria  
Through hole for hoses
- 2** Cava per sensore magnetico  
Slot for magnetic sensor
- 3** Staffa per fissaggio sensore induttivo (non per VMK14)  
Inductive sensor fastening bracket (not for VMK14)
- 4** Staffa per spina metallica (non per VMK14)  
Bracket for metal pin (not for VMK14)
- 5** Grano per allargare la cravatta  
Grub screw for clamp opening



**Sensori (opzionali)**

Il rilevamento della posizione compressa della sospensione può essere effettuato con un sensore magnetico, oppure con un sensore induttivo (non per VMK14).

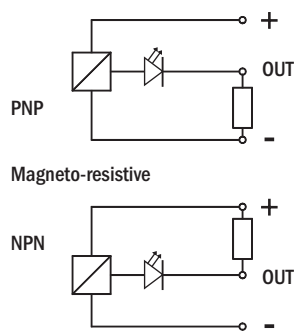
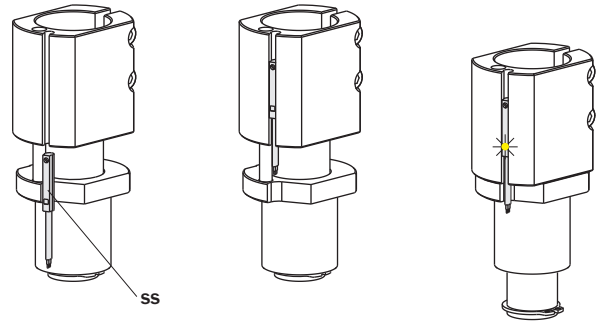
**Sensors (optional)**

The compressed position of the suspension can be detected by a magnetic sensor, or an inductive sensor (not for VMK14).

**Sensori magnetici**

**Magnetic sensors**

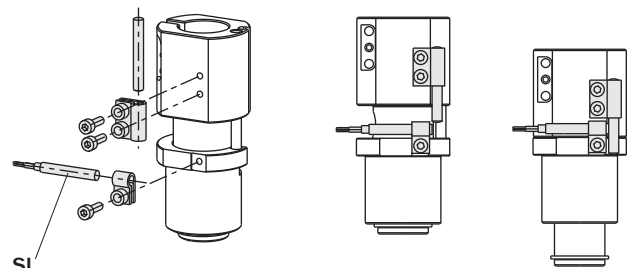
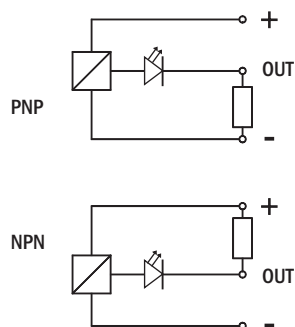
SN4N225-G	PNP	Cavo 2.5m 2.5m cable
SN4M225-G	NPN	
SN3N203-G	PNP	Connettore M8 M8 snap plug connector
SN3M203-G	NPN	
SS4N225-G	PNP	Cavo 2.5m 2.5m cable
SS4M225-G	NPN	
SS3N203-G	PNP	Connettore M8 M8 snap plug connector
SS3M203-G	NPN	



**Sensori induttivi**

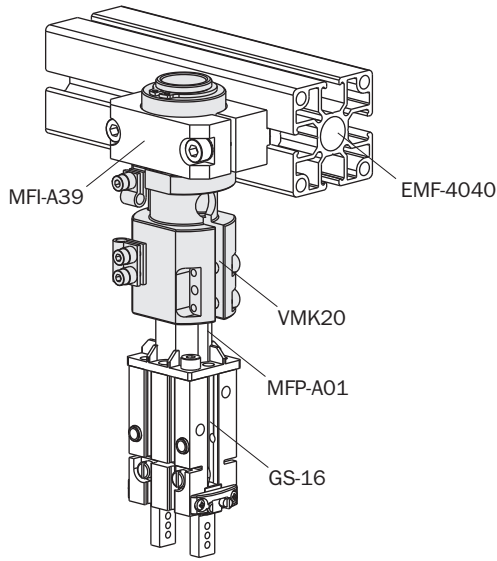
**Inductive sensors**

SI4M225-G	NPN	Cavo 2.5m 2.5m cable
SI4N225-G	PNP	

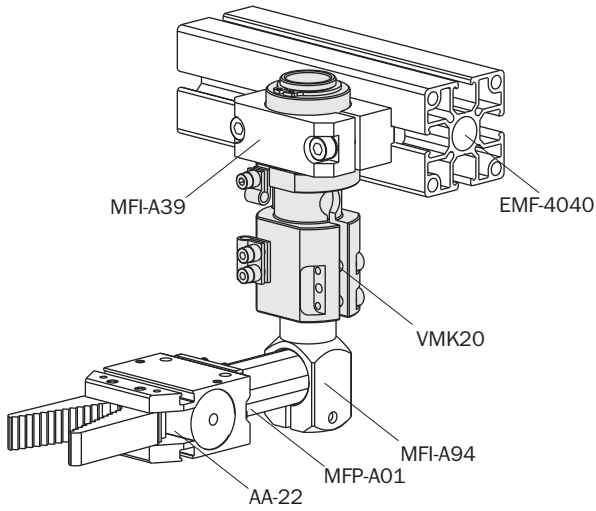


**Esempi di applicazione**

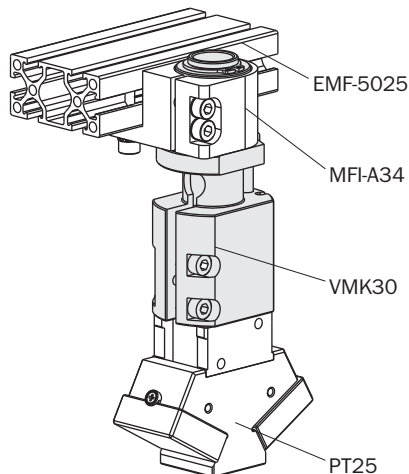
Sospensione di una pinza parallela GS.  
Buffering of a parallel gripper GS.



Sospensione di una pinza per materozze AA.  
Buffering of a sprue gripper AA.

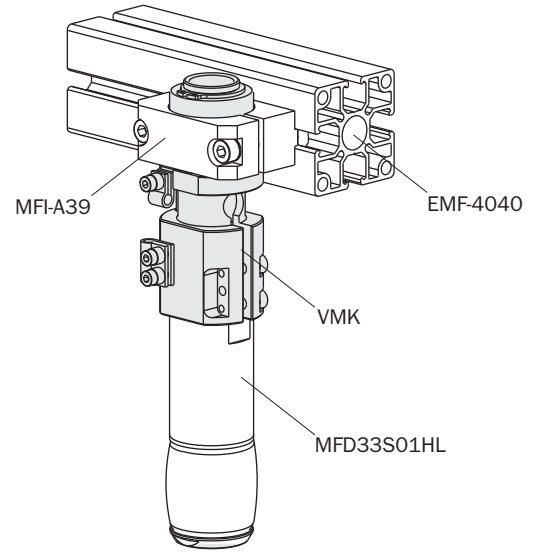


Sospensione di una pinza ad aghi PT.  
Buffering of a needle gripper PT.

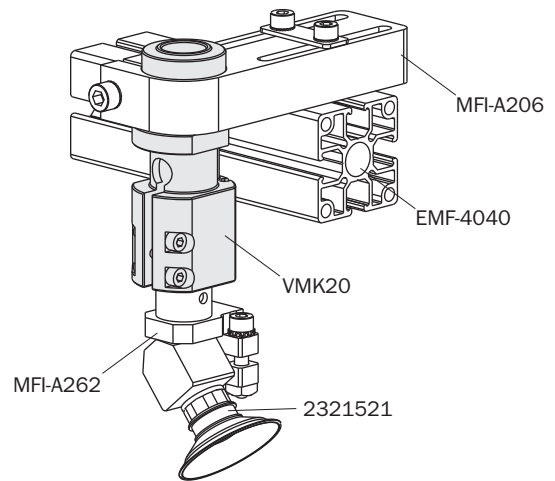


**Application examples**

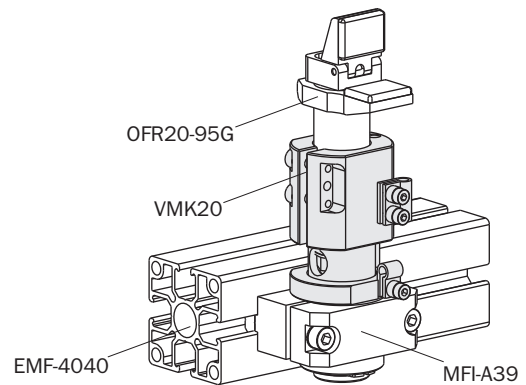
Sospensione di una pinza ad espansione MFD/MFU.  
Buffering of an expansion gripper MFD/MFU.



Sospensione di una ventosa V01.  
Buffering of a vacuum cup V01.



Sospensione di una pinza monodito OF.  
Buffering of an one finger gripper OF.

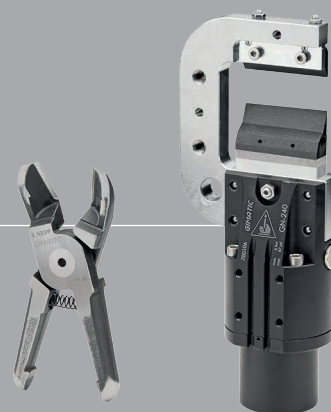


**gma7k**<sup>TM</sup>

 A business of **BARNES**

**TAGLIERINI**

*Nippers*

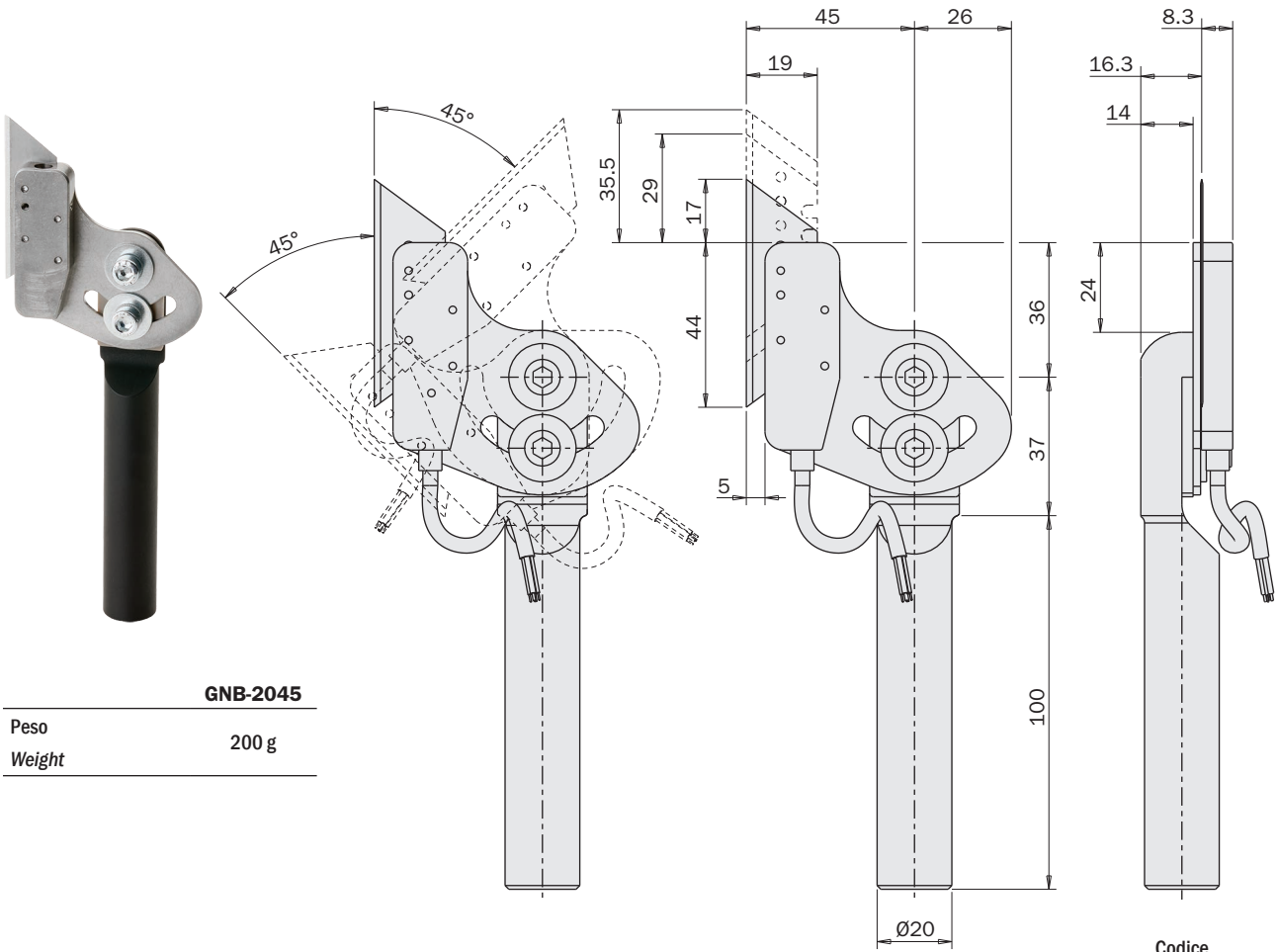


**Portalama**

- Adatta per taglio, smaterozzamento e sbavatura.
- Angolo continuamente regolabile da -45° a +45°.
- Sistema di riscaldamento opzionale.

**Blade holder**

- Suitable for trimming, degating and deburring.
- Continuously adjustable angle from -45° to +45°.
- Optional heating system.

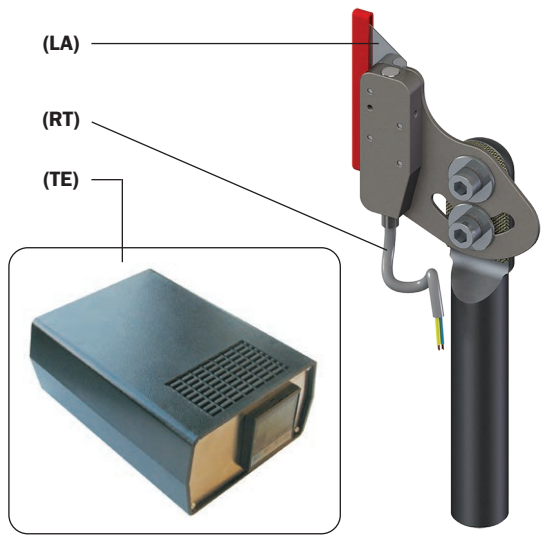
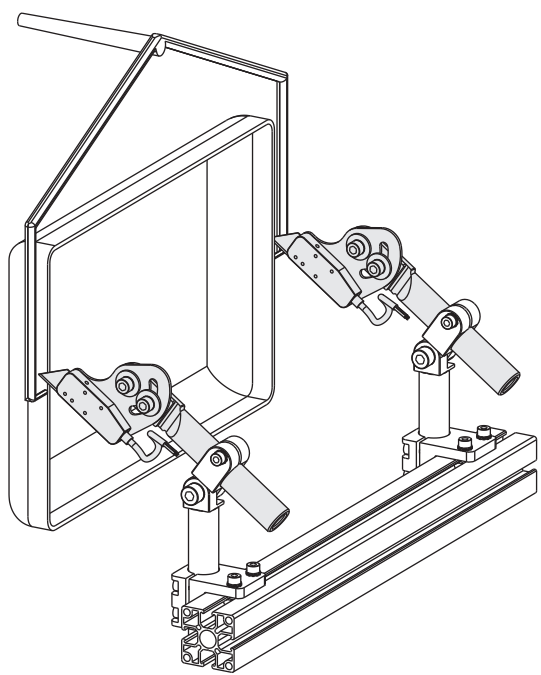


	<b>GNB-2045</b>
Peso	200 g
Weight	

Codice  
Code

**Esempio di utilizzo**  
**Application example**

Lame di ricambio (confezione da 10 pezzi) Spare blade (10 pieces package)	(LA)	376Y234-10
Resistenza + termocoppia Cartridge resistance + thermocouple	(RT)	R60K-G
Temperatura di esercizio Temperature range		200+400°C
Potenza Power		100W
Termoregolatore Heater control box	(TE)	CH102-G

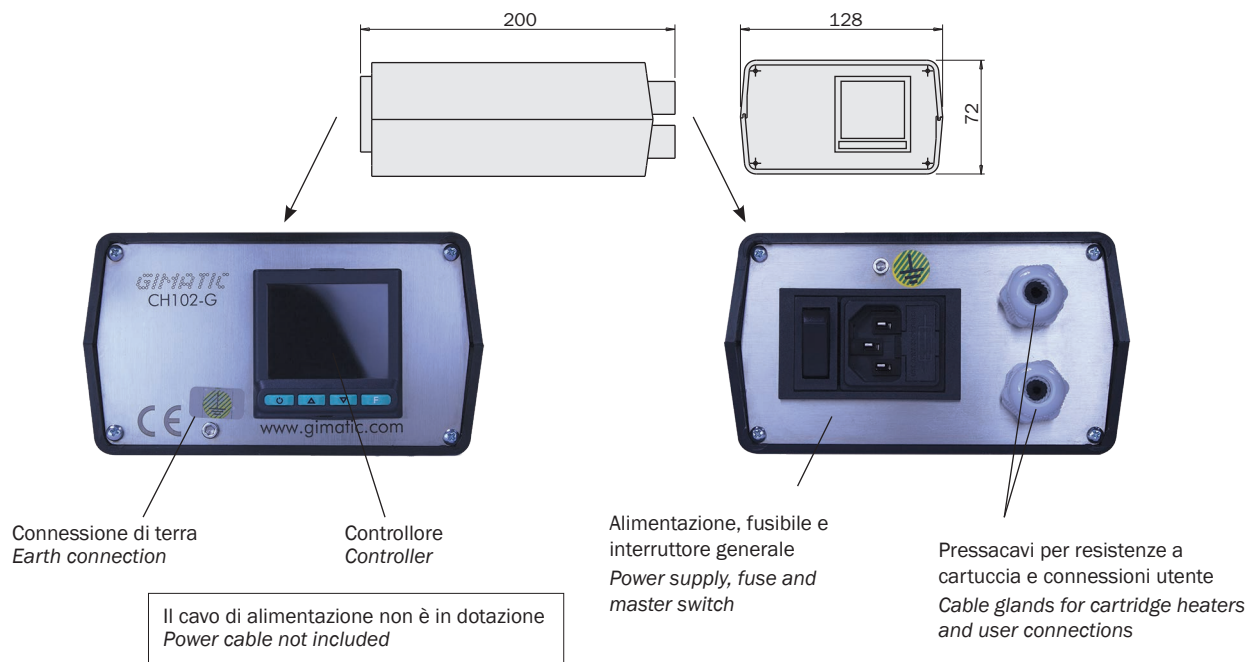


### Regolatore di temperatura

- Monitoraggio e controllo della temperatura di processo.
- Configurazione e programmazione semplificate.
- 1 uscita riscaldante e 2 uscite allarme configurabili.
- Consente il pilotaggio di molteplici resistenze a cartuccia collegate in serie.

### Temperature regulator

- Monitoring and controlling of process temperature.
- Simplified configuration and programming operations.
- 1 heating output and 2 configurable alarm outputs.
- Several cartridge resistances can be connected in series.

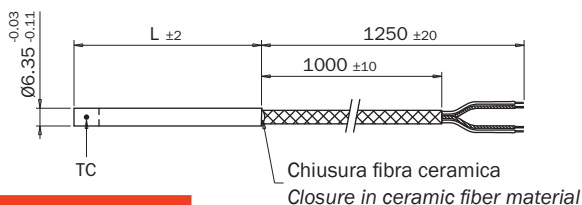


### Resistenze a cartuccia

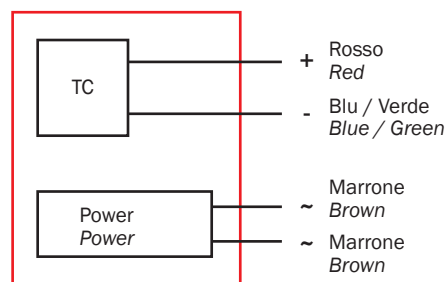
- Due tipi di potenza termica disponibili (100W - 120W).
- Termocoppia integrata tipo K.
- Diametro cartuccia 1/4".
- Chiusura della cartuccia in fibra ceramica.

### Cartridge resistances

- 2 thermal powers available (100W - 120W).
- Embedded thermocouple (TC) type K.
- Cartridge outer diameter 1/4".
- Cartridge closure in ceramic fiber material.



	R60K-G	R85K-G
Lunghezza (L) Cartridge length (L)	61 mm	86 mm
Potenza Power	100 W	120 W
Tipologia TC TC type	K	
Intervallo temperatura di utilizzo Operative temperature range	> 300 °C	
Temperatura massima cartuccia Cartridge maximum temperature	500 °C	
Materiale tubo resistenza Material of resistance tube	AISI 304	
Tipo guaina esterna External sheath type	VG - vetro grezzo VG - Rough Glass	
Composizione cavi alimentazione Power supply cables composition	Nichel - FibraVetro (NiVT) Nickel - GlassFiber (NiVT)	
Sezione cavi alimentazione Power supply cables section	0.35 mm <sup>2</sup>	
Composizione cavi TC TC cables composition	FibraVetro - Silicone GlassFiber - Silicon	
Sezione cavi TC TC cables section	0.22 mm <sup>2</sup>	
Massa Mass	50 g	



**Avvertenze**  
 Alimentare la resistenza a cartuccia solo se inserita nella massa da scaldare

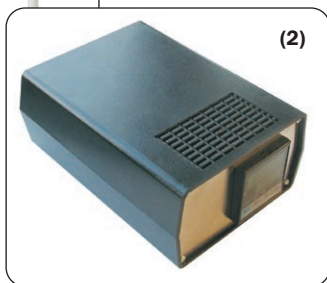
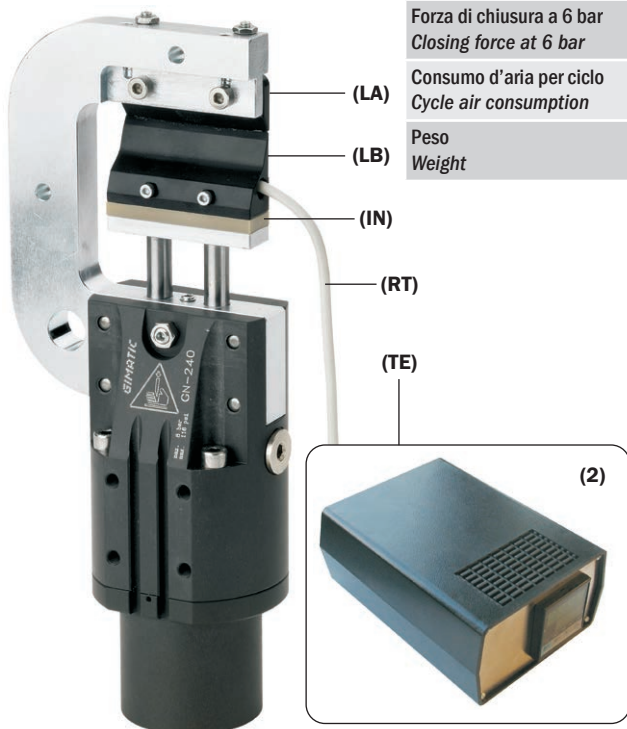
**Warning**  
 Operate the cartridge only if inserted in the mass

## Taglierini a ghigliottina

- Due taglie disponibili.
- Azionamento a doppio effetto con cilindri tandem.
- Sensori magnetici opzionali (1).
- Riscaldamento della lama opzionale (2).
- Le lame (LA e LB) e l'isolatore (IN) sono fornibili come parti di ricambio.

## Thrust Cut Nippers

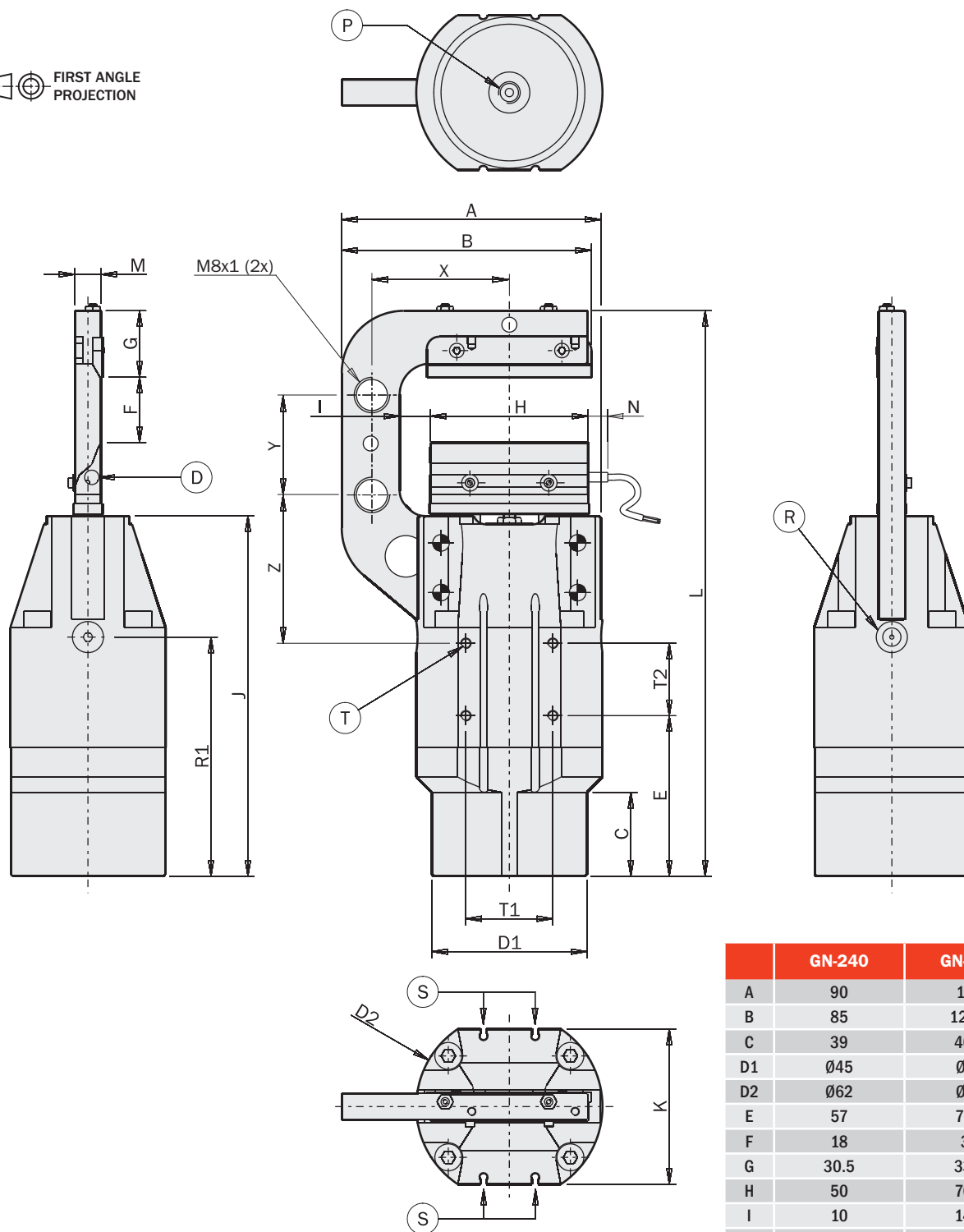
- Two sizes available.
- Double-acting operation with tandem cylinders.
- Optional magnetic sensors (1).
- Optional blade heating system (2).
- The blades (LA and LB) and the insulator (IN) are available as spare parts.



	GN-240	GN-263
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]	
Pressione di esercizio Pressure range	2 ÷ 6 bar	
Temperatura di esercizio Temperature range	5° ÷ 60 °C.	
Alesaggio Piston bore	Ø40 mm	Ø63 mm
Forza di chiusura a 6 bar Closing force at 6 bar	1470 N	3648 N
Consumo d'aria per ciclo Cycle air consumption	75 cm <sup>3</sup>	291 cm <sup>3</sup>
Peso Weight	1330 g	2900 g

	GN-240	GN-263
Lame di ricambio Spare blade	(LA) GN-340-14K (LB) GN-340-13K	GN-363-14K GN-363-13K
Isolatore di ricambio per alte temperature High temperature insulation	(IN) GN-340-18	GN-363-18
Resistenza + termocoppia Cartridge resistance + thermocouple	(RT) R60K-G	R85K-G
Temperatura di esercizio Temperature range	200÷400°C	200÷400°C
Potenza Power	100W	120W
Cavo Cable	1.2m	1.2m
Termoregolatore Heater control box	(TE) CH102-G	CH102-G
Tensione di alimentazione Operating voltage	100÷240Vac 50/60Hz	100÷240Vac 50/60Hz

**Dimensioni (mm)**  
**Dimensions (mm)**

**FIRST ANGLE  
PROJECTION**


- P** Ingresso aria compressa: CHIUSURA  
Compressed air connection: CLOSING
- R** Ingresso aria compressa: APERTURA  
Compressed air connection: OPENING
- S** Sede per sensori serie SS  
Slot for SS series sensors
- T** Foro filettato per fissaggio  
Threaded hole for fastening
- D** Alloggiamento per sistema di riscaldamento Ø6.35  
Heating system housing Ø6.35

	GN-240	GN-263
A	90	126
B	85	120.7
C	39	40.5
D1	Ø45	Ø75
D2	Ø62	Ø90
E	57	77.5
F	18	30
G	30.5	33.5
H	50	76.2
I	10	14.9
J	134.5	174
K	54	74.6
L	220	273
M	12.7	12.7
N	11 max	10 max
P	G1/8"	G1/8"
R	G1/8"	G1/8"
R1	90.25	115.5
T	M5x7mm	M5x9.5mm
T1	25	42
T2	25	35
Z	62.75	66.5
X	47.5	67
Y	40	60



## Attuatori pneumatici per taglierini GNS

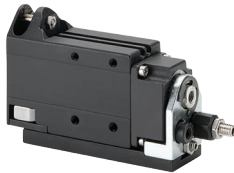
- Tre taglie disponibili.
- Ingombri ridotti.
- Compatibili con vari modelli di lame standard (1).
- Con o senza slitta integrata.
- La slitta è a doppio effetto con molla in chiusura o in apertura.
- Sensori magnetici opzionali.

## Air nipper actuators (series GNS)

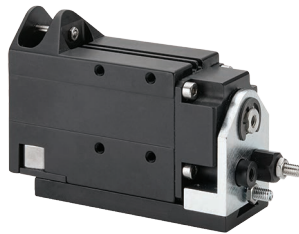
- Three sizes available.
- Small dimensions.
- Usable with several standard blades (1).
- With or without integrated slide.
- Double-acting slide, spring closed or spring open.
- Optional magnetic sensors.



GNS-05-NC  
GNS-05-NO



GNS-10-NC  
GNS-10-NO



GNS-20-NC  
GNS-20-NO



GNS-05



GNS-10



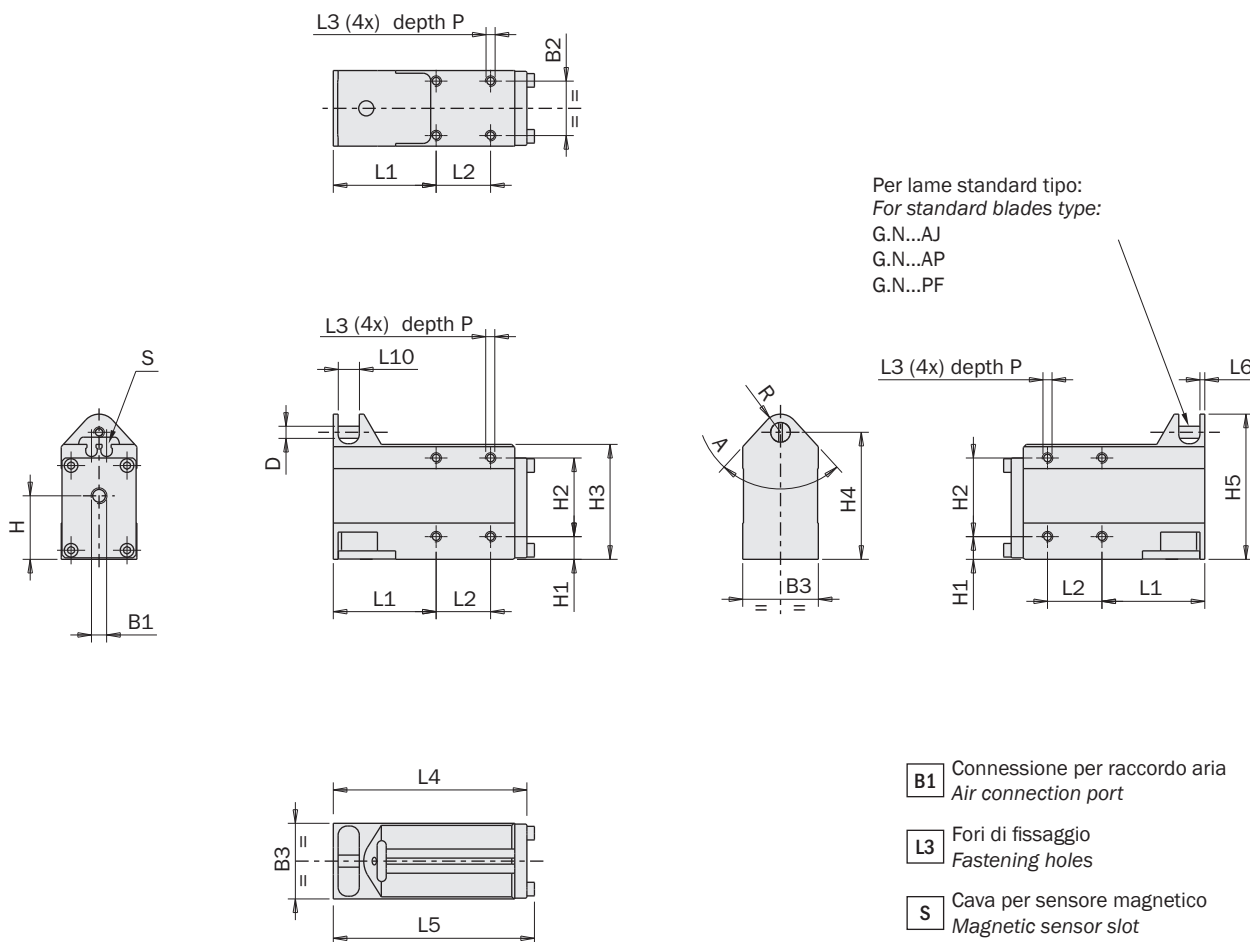
GNS-20

	GNS-05 GNS-05-NC GNS-05-NO	GNS-10 GNS-10-NC GNS-10-NO	GNS-20 GNS-20-NC GNS-20-NO
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]		
Pressione di esercizio Pressure range	4 ÷ 8 bar		
Temperatura di esercizio Temperature range	5° ÷ 60 °C		
Capacità di taglio Cutting capacity	Ø3 mm	Ø4 mm	Ø6 mm
Corsa angolare delle lame Blade angular stroke	2x5°	2x5°	2x9°
Alesaggio taglierino Nipper piston bore	Ø23 mm	Ø30 mm	Ø42 mm
Coppia di chiusura per ogni lama a 6 bar Closing torque at 6 bar each blade	14 Nm	34 Nm	42 Nm
Coppia di chiusura totale a 6 bar Total closing torque at 6 bar	28 Nm	68 Nm	84 Nm
Consumo d'aria per ciclo Cycle air consumption	6 cm <sup>3</sup>	14 cm <sup>3</sup>	30cm <sup>3</sup>
Peso senza lame Weight without blade	112 g 180 g 175 g	355 g 570 g 570 g	480 g 780 g 780 g

**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B1	B2	B3	H	H1	H2	H3	H4	H5	D	L1	L2	L3	L4
GNS-05	85°	M5	18	25	21	7.5	26	38	42	48	∅4	34	18	M3	64
GNS-10	93°	M5	32	39	32	17	32	53	57	67	∅4	45	24	M4	84
GNS-20	115°	G1/8	40	48	36	15	40	62	63	73	∅4	49	30	M5	90

	L5	L6	L10	P	R
GNS-05	66.5	1.6	7	7	6
GNS-10	88	2	12	9	10
GNS-20	94	2	12	9	10

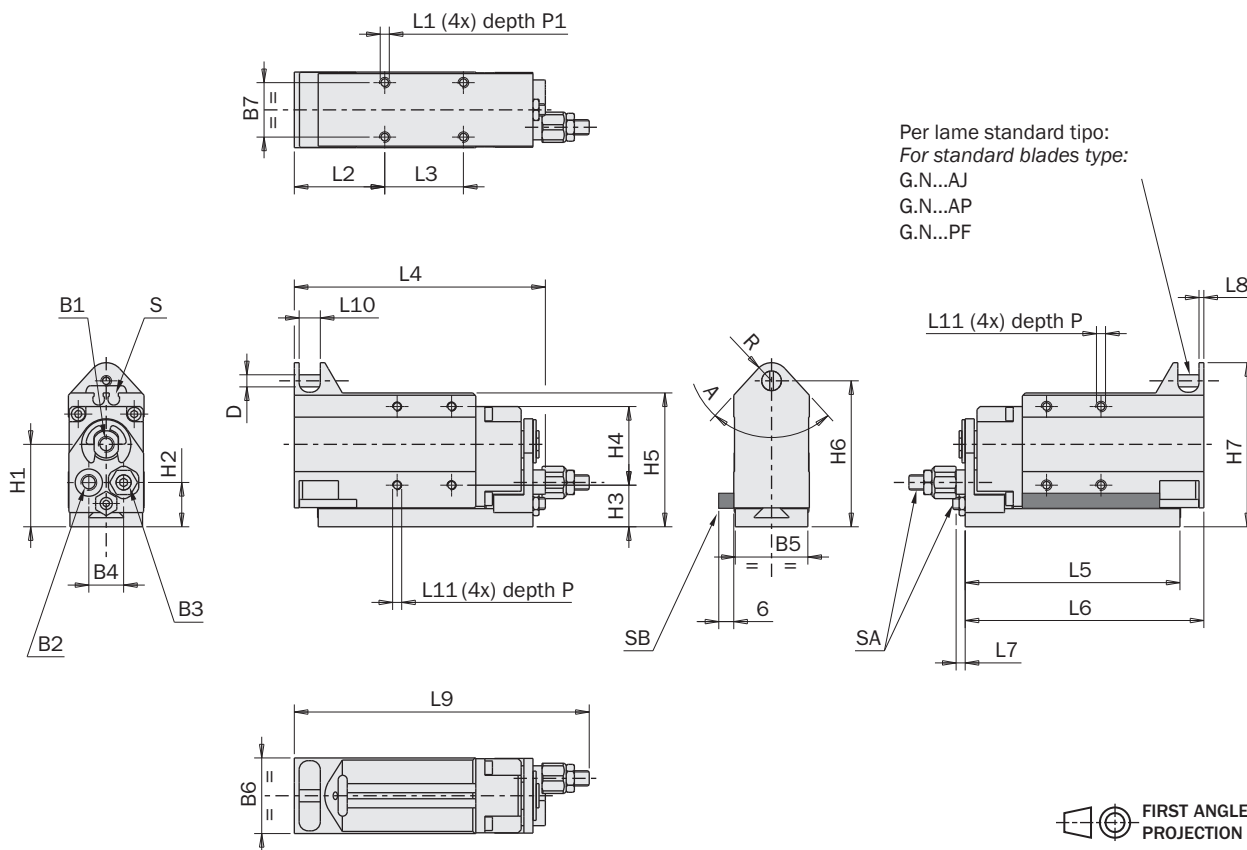


FIRST ANGLE PROJECTION

**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B1	B2	B3	B4	B5	B6	B7	D	H1	H2	H3	H4	H5	H6
GNS-05-NC	85°	M5	M5	M5	11.5	24	25	18	∅4	27.25	14.65	13.75	26	44.25	48.25
GNS-10-NC	93°	M5	M5	M5	13	38	39	24	∅4	40.3	20.8	25.3	32	61.3	65.3
GNS-20-NC	115°	M5	G1/8	M5	20.6	47	48	30	∅4	44.3	22.8	24.3	30	70.3	71.4

	H7	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	P	P1	R
GNS-05-NC	54.25	M3	29.9	26	83	71	78.9	3	1.6	97.5	7	M3	7	6	6
GNS-10-NC	75.3	M4	36.05	32	108	90	103	4	2	122	12	M4	9	8	10
GNS-20-NC	81.3	M5	45	40	121	102	115	5	2	135	12	M5	9	8	10



FIRST ANGLE PROJECTION

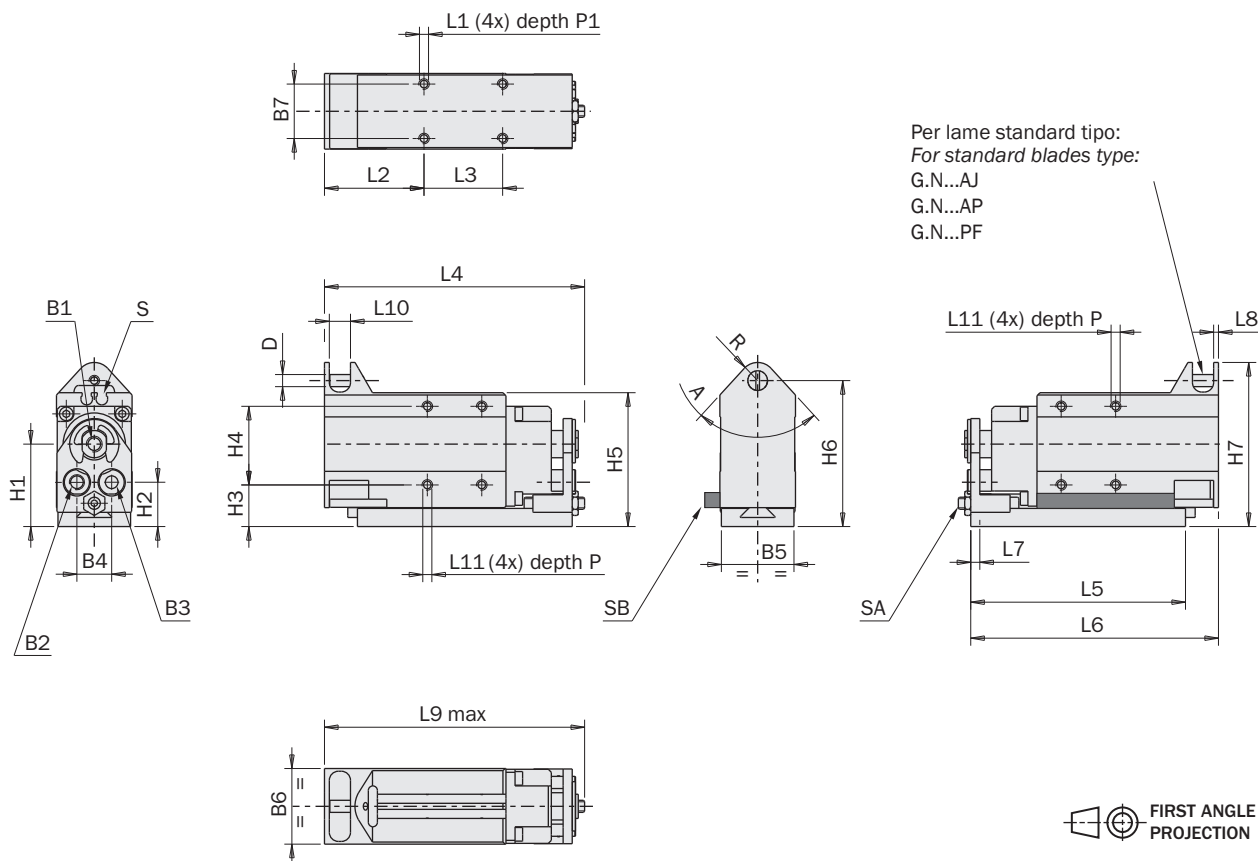
- B1** Connessione per apertura slitta  
Slide opening port
- B2** Connessione per chiusura lame  
Blades closing port
- B3** Connessione per chiusura slitta  
Slide closing port
- L1** Fori di fissaggio  
Fastening holes
- L7** Corsa massima slitta  
Maximum slide stroke
- S** Cava per sensore magnetico  
Magnetic sensor slot
- SA** Regolazione corsa slitta  
Slide stroke adjustment
- SB** Sensore slitta  
Slide sensor

	GNS-05-NC	GNS-10-NC	GNS-20-NC
Corsa slitta Slide stroke	3 mm	4 mm	5 mm
Alesaggio slitta Slide bore	18 mm	20 mm	25 mm
Forza di chiusura a 6 bar sulla slitta Closing force at 6 bar on the slide	140 N	185 N	290 N
Forza di apertura a 6 bar sulla slitta Opening force at 6 bar on the slide	115 N	130 N	240 N
Forza di chiusura a 0 bar sulla slitta Closing force at 0 bar on the slide	30 N	50 N	50 N
Forza di apertura a 0 bar sulla slitta Opening force at 0 bar on the slide	0 N	0 N	0 N

**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B1	B2	B3	B4	B5	B6	B7	D	H1	H2	H3	H4	H5	H6
GNS-05-NO	85°	M5	M5	M5	11.5	24	25	18	Ø4	27.25	14.65	13.75	26	44.25	48.25
GNS-10-NO	93°	M5	M5	M5	13	38	39	24	Ø4	40.3	20.8	25.3	32	61.3	65.3
GNS-20-NO	115°	M5	G1/8	M5	20.6	47	48	30	Ø4	44.3	22.8	24.3	30	70.3	71.4

	H7	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	P	P1	R
GNS-05-NO	54.25	M3	29.9	26	83	71	81.9	3	1.6	86	7	M3	7	6	6
GNS-10-NO	75.3	M4	36.05	32	108	90	107	4	2	117	12	M4	9	8	10
GNS-20-NO	81.3	M5	49	40	121	102	120	5	2	129	12	M5	9	8	10



- B1 Connessione per apertura slitta  
*Slide opening port*
- L1 Fori di fissaggio  
*Fastening holes*
- SA Regolazione corsa slitta  
*Slide stroke adjustment*
- B2 Connessione per chiusura lame  
*Blades closing port*
- L7 Corsa massima slitta  
*Maximum slide stroke*
- SB Sensore slitta  
*Slide sensor*
- B3 Connessione per chiusura slitta  
*Slide closing port*
- S Cava per sensore magnetico  
*Magnetic sensor slot*

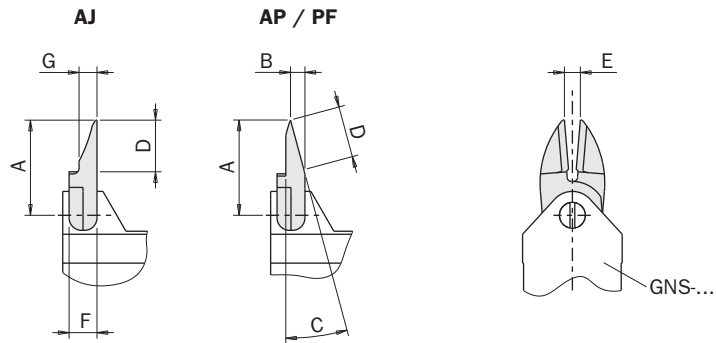
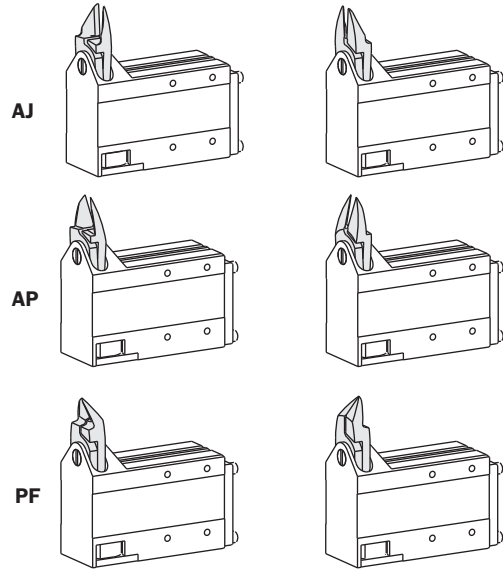
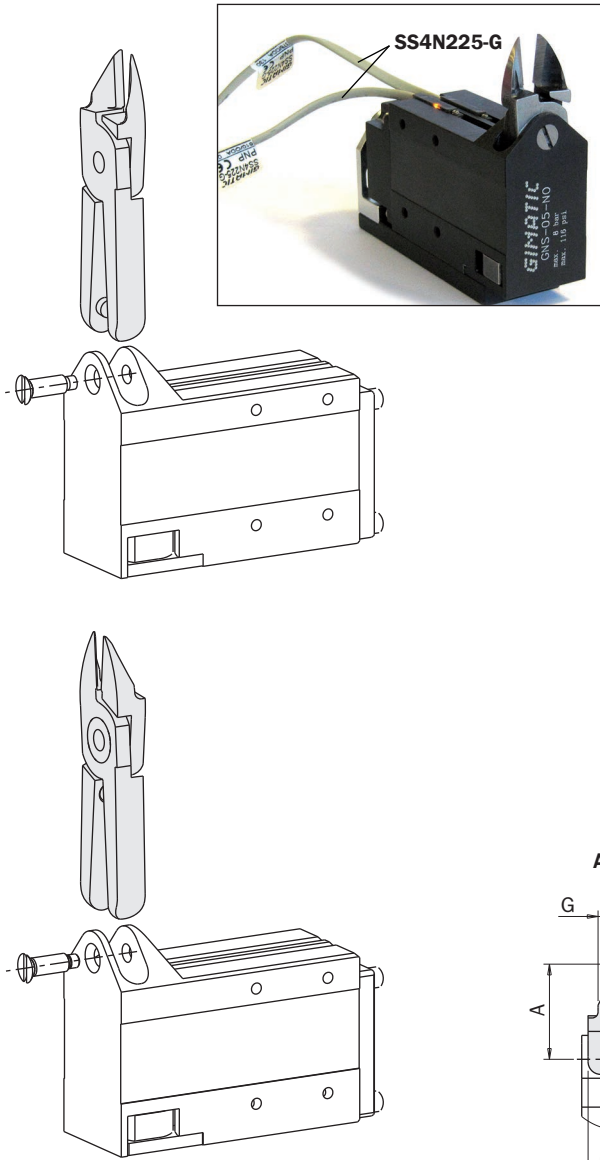
	GNS-05-NO	GNS-10-NO	GNS-20-NO
Corsa slitta <i>Slide stroke</i>	3 mm	4 mm	5 mm
Alesaggio slitta <i>Slide bore</i>	18 mm	20 mm	25 mm
Forza di chiusura a 6 bar sulla slitta <i>Closing force at 6 bar on the slide</i>	75 N	85 N	180 N
Forza di apertura a 6 bar sulla slitta <i>Opening force at 6 bar on the slide</i>	180 N	230 N	345 N
Forza di chiusura a 0 bar sulla slitta <i>Closing force at 0 bar on the slide</i>	0 N	0 N	0 N
Forza di apertura a 0 bar sulla slitta <i>Opening force at 0 bar on the slide</i>	35 N	50 N	60 N

**Lame**

Le lame possono essere montate in entrambi i sensi.

**Blades**

The blades can be mounted on either side.

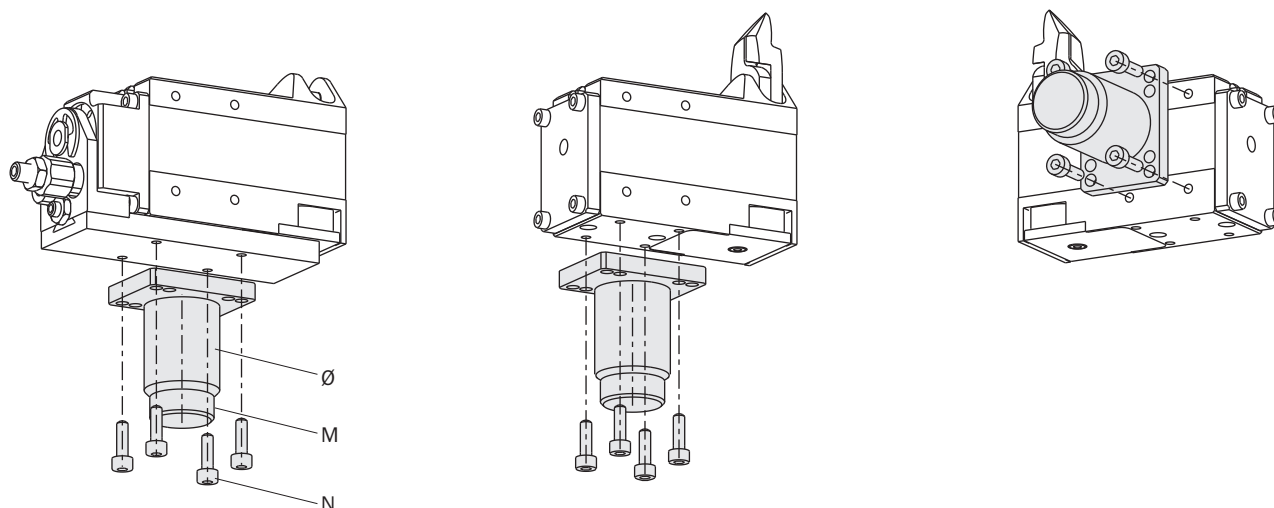


Lame Blades	Taglierino Nipper	Tipo di lama Blade style	A	B	C	D	E	F	G	Peso Weight
G.N5AJ	GNS-05-...	dritta inline	24	-	-	13	5	7	4.5	33 g
G.N5AP	GNS-05-...	standard standard	24	3.6	15°	11.5	4	7	-	34 g
G.N5PF	GNS-05-...	profonda deep angle	24	7	40°	9.7	4	7	-	35 g
G.N10LAJ	GNS-10-...	dritta lunga long inline	35	-	-	18	6.5	12	8	117 g
G.N10LAP	GNS-10-...	standard lunga long, standard	36	5.3	15°	16	6	12	-	115 g
G.N10LPF	GNS-10-...	profonda lunga long, deep angle	35	12	40°	13.5	5.5	12	-	112 g
G.N20AJ	GNS-20-...	dritta inline	34.5	-	-	18	11.5	12	8	121 g
G.N20AP	GNS-20-...	standard standard	35	3.5	15°	16	11	12	-	120 g
G.N20PF	GNS-20-...	profonda deep angle	35	12	40°	13.5	11	12	-	124 g
G.N20AJL	GNS-20-...	dritta lunga long inline	65	-	-	20	16	12	7.2	220 g

## Codolo di montaggio

## Assembly bracket

	GNS-05 GNS-05-NC GNS-05-NO	GNS-10 GNS-10-NC GNS-10-NO	GNS-20 GNS-20-NC GNS-20-NO	Ø	M	N
MFM-A107	☑			Ø20	M17x1	M3
MFM-A108		☑		Ø20	M17x1	M4
MFM-A109			☑	Ø30	M27x1	M5



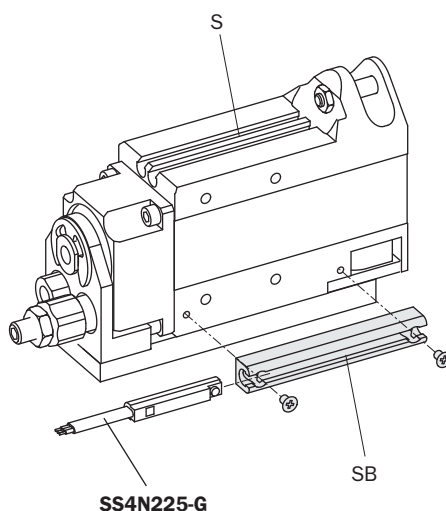
## Sensore slitta

Le due cave sensore integrate nel corpo (S) servono per il rilevamento della posizione della lama (aperta e chiusa). Una cava addizionale (SB) si può montare esternamente, per rilevare la posizione della slitta (aperta o chiusa), quando necessario.

È fornita nella confezione.

## Slide sensor

Two sensor slots (S) are machined in the housing, for the detection of the blade position (open and closed). One additional sensor slot (SB) can be mounted externally, to detect the slide position (open or closed), when necessary. It is supplied in the packaging.



## Attuatori pneumatici per taglierini serie GN

- Cinque taglie disponibili.
- Azionamento a semplice effetto.
- Autocentrante.
- Compatibili con vari modelli di lame.
- Pistoni magnetici e predisposizione per sensori (solo GN-...S).
- Sensori magnetici opzionali.

## Air nipper actuators series GN

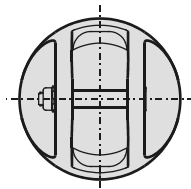
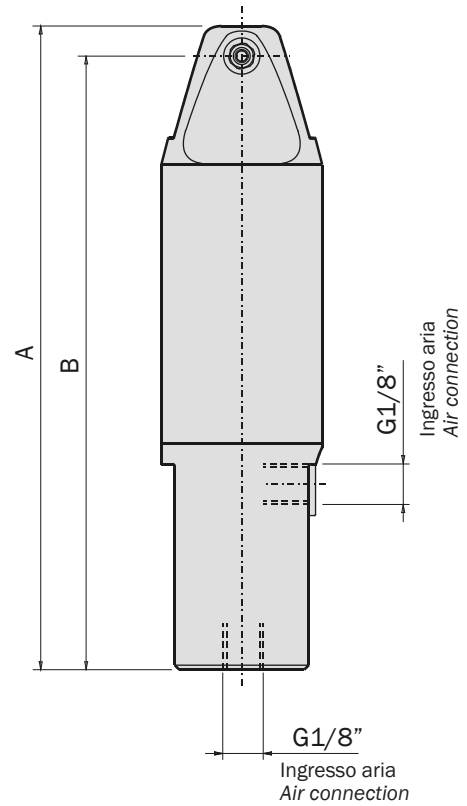
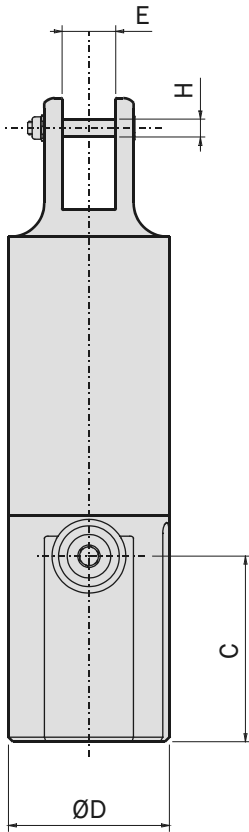
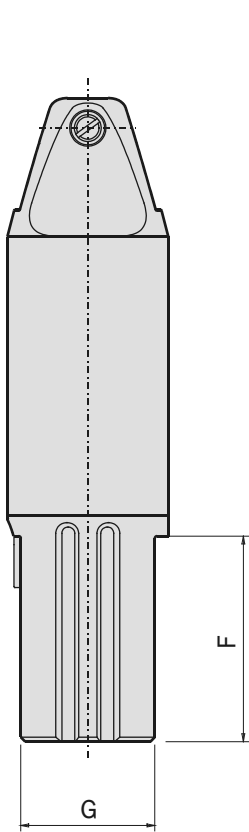
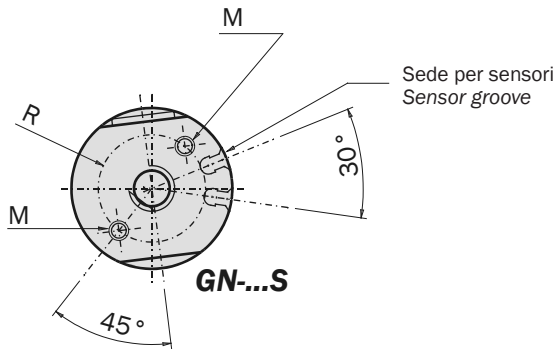
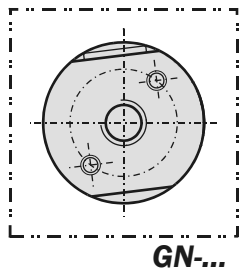
- Five sizes available.
- Single-acting.
- Self-centering.
- Usable with several standard blades.
- Magnetic pistons for sensor detection (GN-...S only).
- Optional magnetic sensors.



	GN-05 GN-05S	GN-10 GN-10S	GN-20 GN-20S	GN-30 GN-30S	GN-50 GN-50S	
Fluido Medium	Aria compressa a norma ISO 8573-1:2010 [7:4:4] Compressed air in compliance with ISO 8573-1:2010 [7:4:4]					
Pressione di esercizio Pressure range	2 ÷ 8 bar					
Temperatura di esercizio Temperature range	5° ÷ 60 °C					
Capacità di taglio Cutting capacity	Ø2 mm	Ø4 mm	Ø7 mm	Ø10 mm	Ø12 mm	
Corsa Stroke	2x7°	2x5°	2x7°	2x7.5°	2x12°	
Alesaggio Piston bore	Ø25 mm	Ø30 mm	Ø40 mm	Ø50 mm	Ø63 mm	
Coppia di chiusura per ogni lama a 6 bar Closing torque at 6 bar each blade	11 Nm	38 Nm	67 Nm	150 Nm	116 Nm	
Coppia di chiusura totale a 6 bar Total closing torque at 6 bar	22 Nm	76 Nm	134 Nm	300 Nm	232 Nm	
Consumo d'aria per ciclo Cycle air consumption	14 cm <sup>3</sup>	25 cm <sup>3</sup>	78 cm <sup>3</sup>	170 cm <sup>3</sup>	269 cm <sup>3</sup>	
Peso senza lame Weight without blade	GN-... GN-...S	102 g 125 g	157 g 208 g	263 g 370 g	480 g 715 g	1100 g 1440 g

**Dimensioni (mm)**  
**Dimensions (mm)**

	A	B	C	D	E	F	G	H	M	R
GN-05	94	87	10.5	Ø30	7	15	24	Ø4	M4x6.5	R 10
GN-05S	118	111	34.5	Ø30	7	40	24	Ø4	M4x6.5	R 10
GN-10	113	106.3	10.5	Ø36	12	15	30	Ø4	M4x7	R 12
GN-10S	144	137.3	41.5	Ø36	12	46	30	Ø4	M4x7	R 12
GN-20	129	119.8	10.5	Ø45	12	15	36	Ø4	M5x8	R 15
GN-20S	177	167.8	58.5	Ø45	12	63	36	Ø4	M5x8	R 15
GN-30	165	155	10.5	Ø56	17	15	46	Ø5	M6x12	R 20
GN-30S	230	220	75	Ø56	17	80	46	Ø5	M6x12	R 20
GN-50	178	169	10.5	Ø75	17	15	70	Ø5	M6x12	R 25
GN-50S	238	229	70	Ø75	17	75	70	Ø5	M6x12	R 25

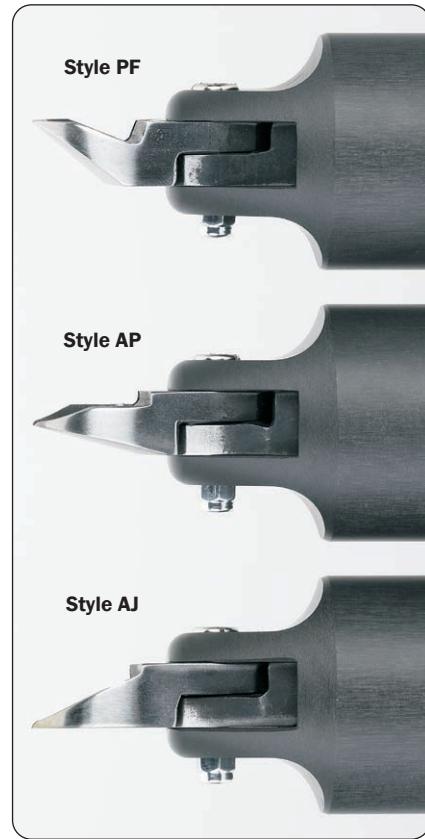
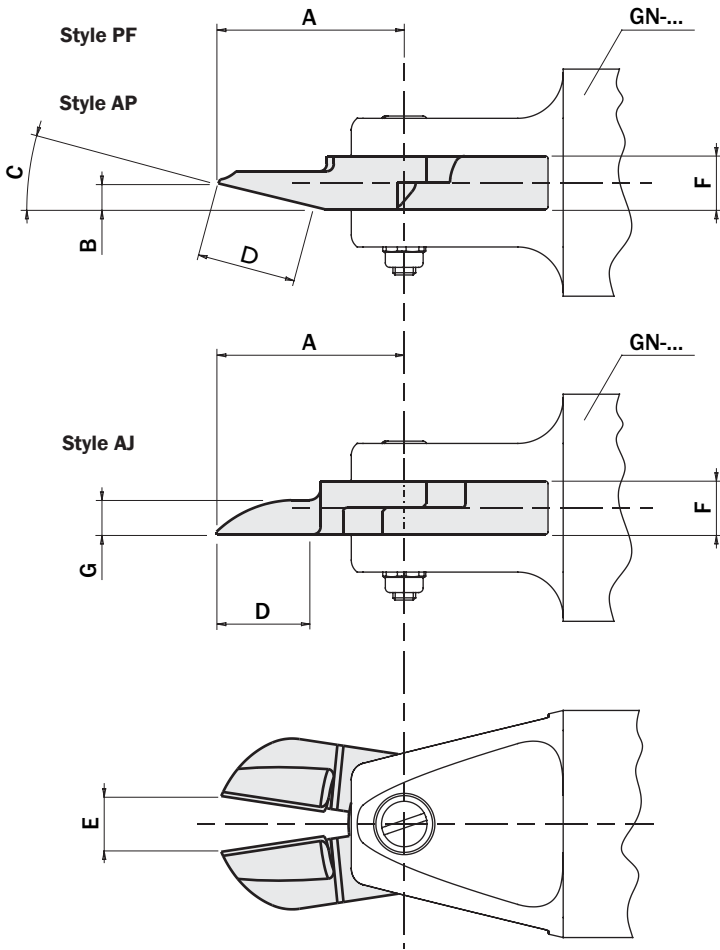


FIRST ANGLE PROJECTION



Lame standard

Standard blades

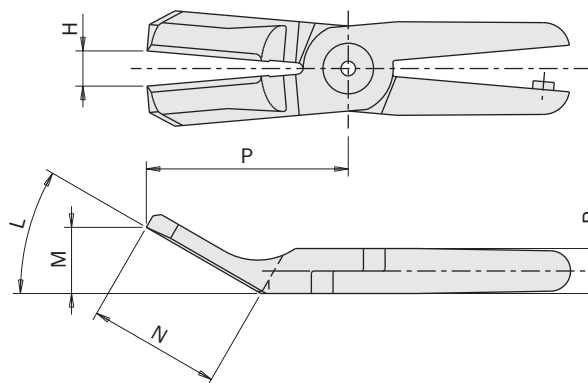


Lame Blades	Taglierino Nipper	Tipo di lama Blade style	A	B	C	D	E	F	G	Peso Weight
G.N5AJ	GN-05...	dritta inline	24	-	-	13	4	7	4.5	33 g
G.N5AP	GN-05...	standard standard	24	3.6	15°	11.5	4	7	-	34 g
G.N5PF	GN-05...	profonda deep angle	24	7	40°	9.7	4	7	-	35 g
G.N10LAJ	GN-10...	dritta lunga long inline	35	-	-	18	6	12	8	117 g
G.N10LAP	GN-10...	standard lunga long, standard	36	5.3	15°	16	6	12	-	115 g
G.N10LPF	GN-10...	profonda lunga long, deep angle	35	12	40°	13.5	6	12	-	112 g
G.N20AJ	GN-20...	dritta inline	34.5	-	-	18	12	12	8	121 g
G.N20AP	GN-20...	standard standard	35	3.5	15°	16	11.5	12	-	120 g
G.N20PF	GN-20...	profonda deep angle	35	12	40°	13.5	11.5	12	-	124 g
G.N20AJL	GN-20...	dritta lunga long inline	65	-	-	20	15	12	7.2	220 g
G.N30AJ	GN-30... GN-50...	dritta inline	52	-	-	30	12 22	17	8	365 g
G.N30AP	GN-30... GN-50...	standard standard	67	11	15°	38	18 30	17	-	380 g
G.N30PF	GN-30... GN-50...	profonda deep angle	58	17	30°	27	16 26.5	17	-	388 g

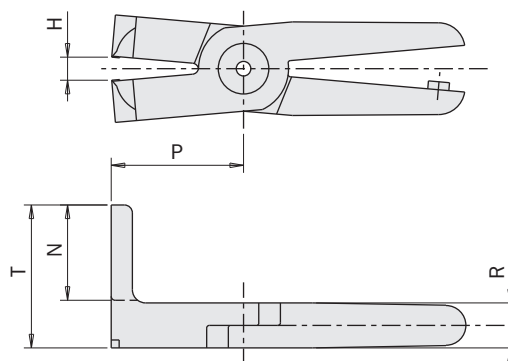
## Lame speciali

## Special blades

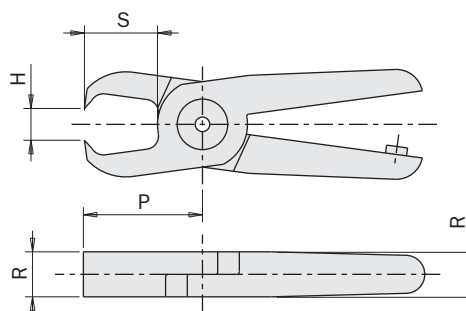
Style AA



Style AL



Style AE



Lame Blades	Taglierino Nipper	Tipo di lama Blade style	H	L	M	N	P	R	S	T	Peso Weight
G.N10LAB152	GN-10...	AA	10	15°	9	35	60.5	12	-	-	165 g
G.N20AB360	GN-20...	AA	15	15°	9	35	60.5	12	-	-	185 g
G.N30AA114	GN-30... GN-50...	AA	20 34	30°	25	50	76	17	-	-	385 g
G.N30AA	GN-30... GN-50...	AA	15 26	60°	27.7	32	55	17	-	-	390 g
G.N20ALLLL	GN-20...	AL	11	-	-	18	40	12	-	30	190 g
G.N30FAL	GN-30... GN-50...	AL	14 24	-	-	35	50	17	-	54	455 g
G.N10LAE269	GN-10...	AE	5	-	-	-	28	12	15.5	-	120 g
G.N20AE	GN-20...	AE	8.5	-	-	-	28	12	15.5	-	135 g
G.N30AE	GN-30... GN-50...	AE	12 20	-	-	-	45	17	28	-	395 g

Chiedere al fabbricante se è richiesto un tipo di lama diverso.

Consult manufacturer if a different kind of blade is needed.

## Coperchi di protezione per le lame

La maggior parte delle lame, quando non usate, possono essere protette con dei coperchi per evitare ferite. I coperchi sono forniti con le lame o in confezioni da 10 pezzi (\*). Quando rimossi dalle lame, i coperchi possono essere immagazzinati per mezzo del loro dado o di una catenella.

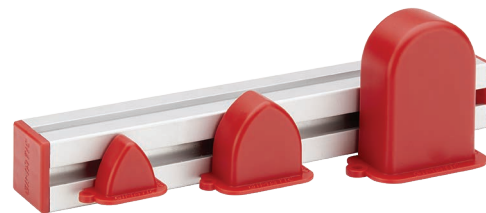
## Blade protection covers

Most blades, when not in use, can be protected with covers to prevent injury. Covers are supplied with blades or in packs of 10 pieces (\*). When removed from the blades, the covers can be stored by means of their nut or chain.

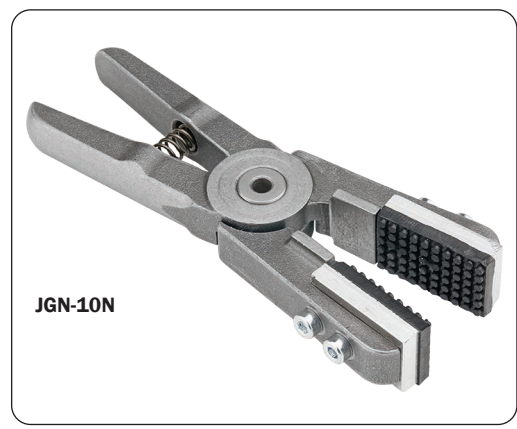
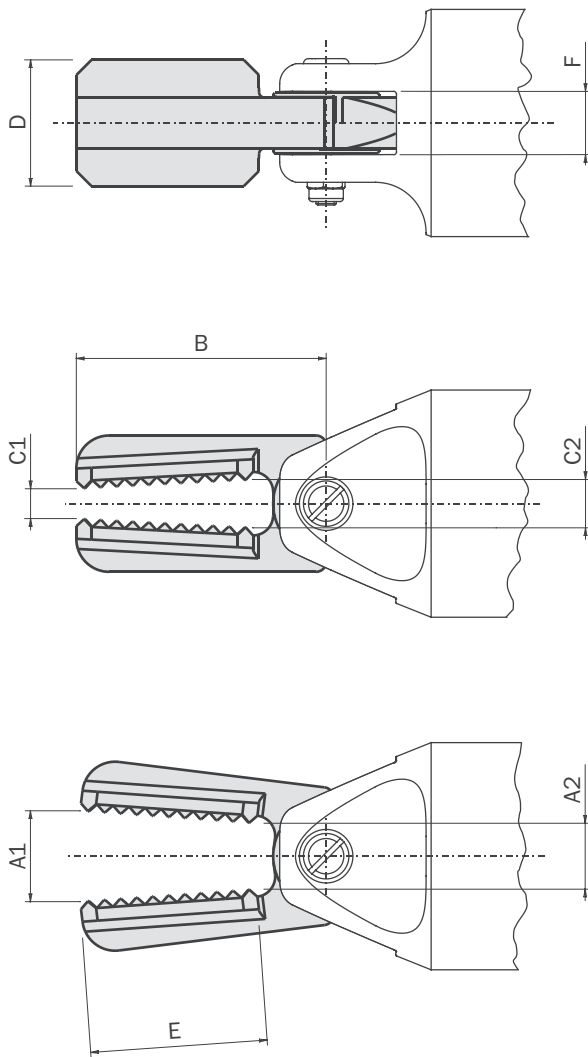


	COJ05-P10 (*)	COJ12-P10 (*)	COJ30-P10 (*)
Peso Weight	20 g	50 g	150 g

Lama Blade	Coperchio di protezione Protection cover
G.N5AJ	COJ05
G.N5AP	COJ05
G.N5PF	COJ05
G.N10LAB152	-
G.N10LAE269	COJ12
G.N10LAJ	COJ12
G.N10LAP	COJ12
G.N10LAPF	COJ12
G.N20AB360	-
G.N20AE	COJ12
G.N20AJ	COJ12
G.N20AJL	-
G.N20ALLL	-
G.N20AP	COJ12
G.N20PF	COJ12
G.N30AA	-
G.N30AA114	-
G.N30AE	COJ30
G.N30AJ	COJ30
G.N30AP	COJ30
G.N30FAL	-
G.N30PF	COJ30



**Griffe**  
**Fingers**



Griffe Fingers	Taglierino Nipper	Pressione di esercizio Pressure range	Tipo di griffa Finger style	A1 A2	B	C1 C2	D	E	F	Peso Weight
<b>JGW-10S-A50</b>	GN-10...	2 ÷ 5 bar	larga wide	16 13	49.5	6 10	25	35	12	175 g
<b>JGW-20S-A50</b>	GN-20...	2 ÷ 5 bar	larga wide	18 13	49.5	6 9	25	35	12	185 g
<b>JGN-10S-A52</b>	GN-10...	2 ÷ 5 bar	stretta narrow	10 8	49.5	0 3.5	25	35	12	190 g
<b>JGN-20S-A52</b>	GN-20...	2 ÷ 5 bar	stretta narrow	9 7	49.5	0 3.5	25	35	12	200 g
<b>JGN-10N</b>	GN-10...	2 ÷ 5 bar	stretta narrow	9 7	49.5	0 2	16	24	12	137 g

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# KIT-ROBOT

*Robot-kit*

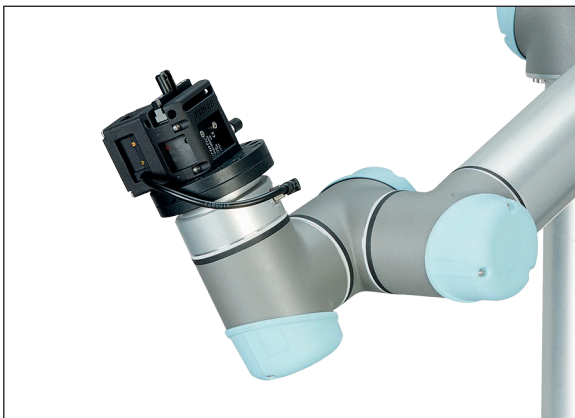


## KIT-UR-G

Pinza elettrica a 2 griffe con copertura in plastica e capacitor box. Il sistema può essere montato sui robot collaborativi UR3, UR5 e UR10. Il capacitor box in dotazione consente il collegamento diretto al polso del robot. Sono incluse anche griffe standard. Possibilità di utilizzare il plugin URcap sviluppato da Gimatic per gestire e comandare il dispositivo.

### Caratteristiche principali

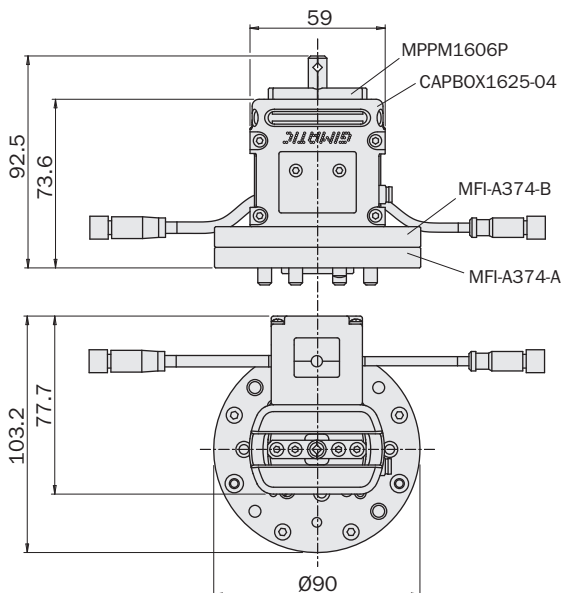
- Un unico design per i robot UR3, UR5 e UR10.
- Non ci sono più cavi elettrici lungo il braccio del robot: il collegamento viene effettuato direttamente al connettore M8 del robot.
- Facile da installare, non richiede alcuna configurazione (soluzione plug & play).
- Incorpora la funzionalità di un sensore di prossimità per la presa o per il rilevamento della posizione di fine corsa.
- Software plugin URcap dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.



### Come funziona?

Mediante la flangia meccanica in dotazione, montare la pinza sul polso del robot e installare la copertura di protezione e il capacitor box. Il sistema può essere collegato elettricamente direttamente al connettore M8 presente sul polso del robot (niente cavi lungo il braccio del robot). Il sistema può essere comandato mediante ingresso e uscita digitali da/verso l'interfaccia delle dita di presa del robot UR.

### Dimensioni assieme (mm) Assembly dimensions (mm)



## KIT-UR-G

Electric 2-finger parallel gripper with plastic cover and capacitor box. The system can be assembled on the UR3, UR5 or UR10 collaborative robots and the included capacitor box allows for a direct connection to the robot wrist. Standard fingers are also included. Possibility to use the URcap plugin developed by Gimatic to manage and control the device.

### Main features

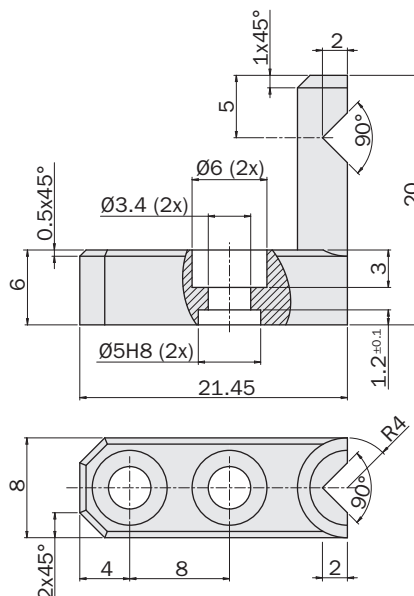
- A unique design for UR3, UR5 and UR10.
- No cables along the robot arm: direct connection to M8 plug connector of the robot.
- Easy to install and without any configuration (plug & play solution).
- Simulated proximity switch functionality embedded for gripping or end of the stroke detection.
- Dedicated URcap plugin software available to improve user experience.



### How does it work?

Mount the gripper with the included mechanical flange to the wrist of the robot and install the protective cover and the capacitor box. The system can be electrically connected directly to the M8 plug connector at the wrist of the robot (not cables along the robot arm). The system can be operated via digital input and output to/from the tool interface of the UR robot.

### Dimensioni dito di presa (mm) Gripping finger dimensions (mm)

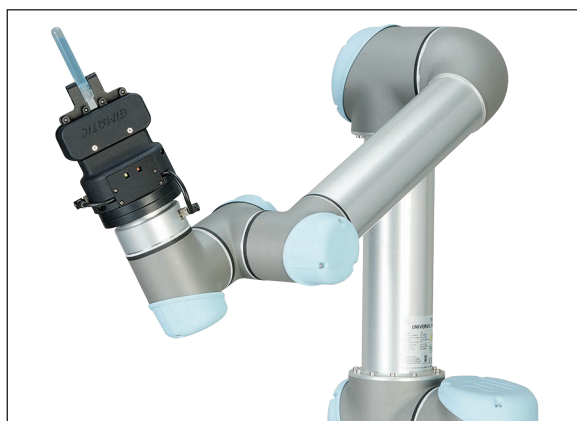


**KIT-UR-J**

Pinza elettrica a parallelogramma con capacitor box integrato. La pinza può essere installata su tutti i robot collaborativi Universal Robots (UR3, UR5, UR10) ed il capacitor box integrato permette una connessione diretta al polso del robot. La pinza è adatta a realizzare corse lunghe in tempi brevi di apertura e chiusura e la forza di presa è costante indipendentemente dalla lunghezza delle dita di presa personalizzate. Installando il plugin URCap sviluppato da Gimatic, l'utente può configurare una sola volta il dispositivo, una lista di parti da afferrare, definire il tipo di presa (interna o esterna) ed aggiornare automaticamente il carico applicato al robot e le coordinate nel punto di presa.

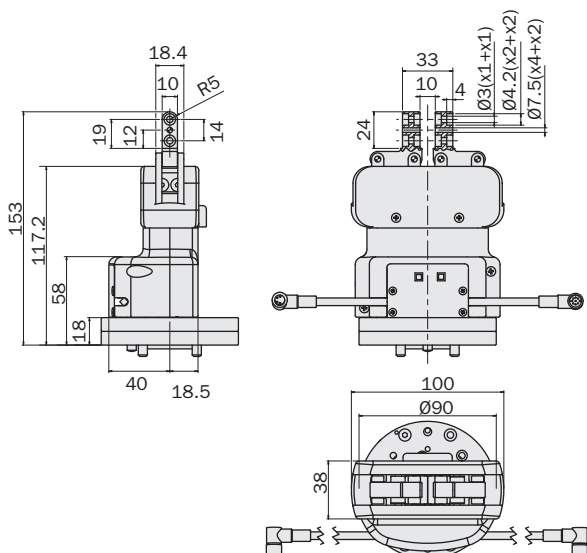
**Caratteristiche principali**

- Un unico prodotto per tutti i robot UR3, UR5 e UR10.
- Nessun cavo lungo il braccio del robot: collegamento diretto al connettore M8 del polso del robot.
- Semplice installazione senza necessità di configurazione (soluzione plug&play).
- Funzionalità integrata di simulazione dei sensori di finecorsa e di presa del pezzo.
- Software plugin URCap dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.



**Come funziona?**

Installare il sistema al polso del robot usando la flangia meccanica inclusa. Il sistema può essere direttamente collegato al connettore M8 presente al polso del robot (assenza di cavi lungo il braccio robotico). Il sistema può essere gestito usando i segnali di input/output digitali presenti al connettore M8 usando il plugin URCap dedicato.

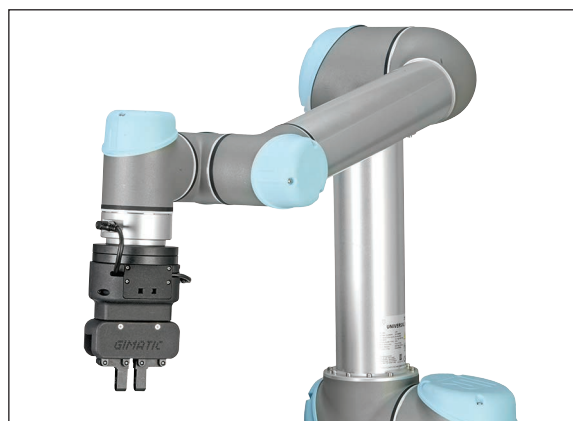


**KIT-UR-J**

Parallelogram electric gripper with integrated capacitor box. The gripper can be assembled on all the UR collaborative robots (UR3, UR5, UR10) and the included capacitor box allows for a direct connection to the robot wrist. The user can install his/her own fingers connecting to the existing ones. This gripper is suitable for long stroke and fast opening/closing motion and the gripping force is unaffected by the length of the custom fingers. By installing the associated Gimatic URCap the user can configure the device and a list of work pieces (WP) to be gripped just once and simply use a generic grip/release command independently on the internal/external gripping configuration. The plugin also automatically updates the mass distribution of the payload and the final tool center point (TCP) of the gripper.

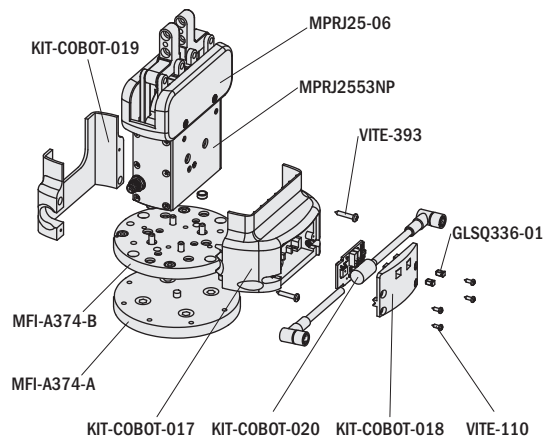
**Main features**

- A unique design for UR3, UR5 and UR10 and e-Series.
- No cables along the robot arm: direct connection to M8 plug connector of the robot.
- Easy to install and without any configuration (plug & play solution).
- Simulated proximity switch functionality embedded for gripping or end of the stroke detection.
- Dedicated URCap plugin software available to improve user experience.



**How does it work?**

Mount the gripper with the included mechanical flange to the wrist of the robot. The system can be electrically connected directly to the M8 plug connector at the wrist of the robot (not cables along the robot arm). The system can be operated via digital input and output to/from the tool interface of the UR robot of using the Gimatic's URCap.





## KIT-UR-V

End Of The Arm Tool (EOAT) per operazioni pick-and-place in depressione. Il sistema può essere montato sui robot collaborativi UR3, UR5 e UR10, e l'attuatore e i componenti pneumatici in dotazione consentono un collegamento al polso del robot e alla fonte di energia pneumatica. Possibilità di utilizzare il plugin URcap sviluppato da Gimatic per gestire e comandare il dispositivo.

### Caratteristiche principali

- Un unico design per i robot UR3, UR5 e UR10.
- Non ci sono più cavi elettrici lungo il braccio del robot: il collegamento viene effettuato direttamente al connettore M8 del robot.
- Facile da installare, non richiede alcuna configurazione (soluzione plug & play).
- Generatore di vuoto, valvola e solenoide incorporati.
- Software plugin URcap dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.

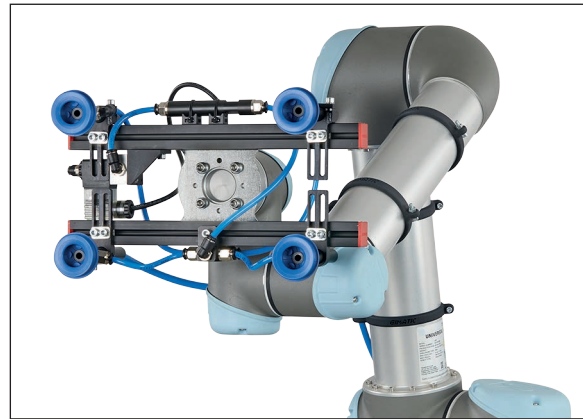


## KIT-UR-V

End Of The Arm Tool (EOAT) for vacuum based pick & place operations. The system can be assembled on the UR3, UR5 or UR10 collaborative robots and the included pneumatic actuator and components allow for a direct connection to the robot wrist and to the pneumatic power source. Possibility to use the URcap plugin developed by Gimatic to manage and control the device.

### Main features

- A unique design for UR3, UR5 and UR10.
- No electric cables along the robot arm: direct connection to M8 plug connector of the robot.
- Easy to install and without any configuration (plug & play solution).
- Embedded vacuum generator, valve and solenoid.
- Dedicated URcap plugin software available to improve user experience.



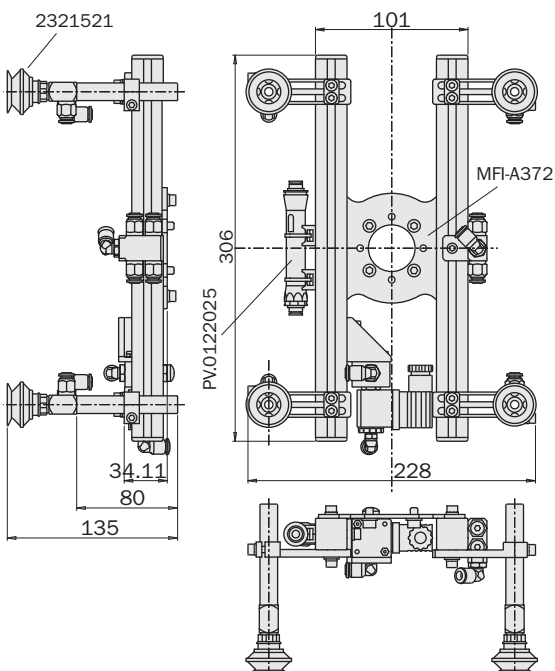
### Come funziona?

Mediante la flangia meccanica in dotazione, montare la pinza sul polso del robot e collegare l'entrata principale della valvola alla fonte di alimentazione pneumatica. Il sistema può essere collegato elettricamente direttamente al connettore M8 presente sul polso del robot (niente cavi lungo il braccio del robot). Il sistema può essere comandato dall'uscita digitale dell'interfaccia del robot UR.

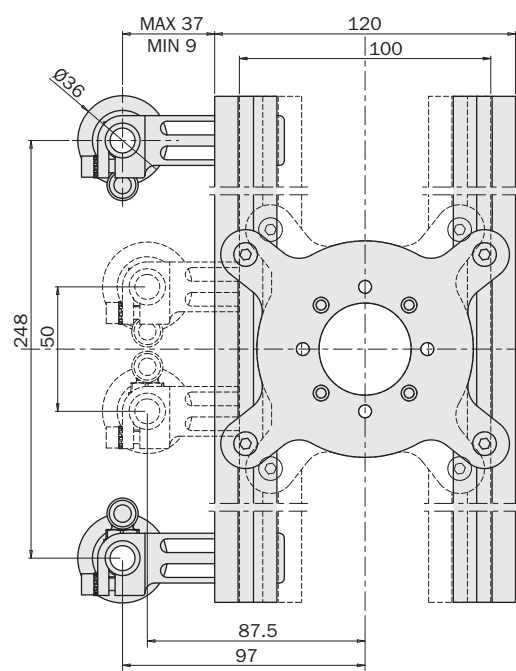
### How does it work?

Mount the system with the included mechanical flange to the wrist of the robot and connect the main valve inlet to the pneumatic power source. The system can be electrically connected directly to the M8 plug connector at the wrist of the robot (not cables along the robot arm). The system can be operated via digital output from the tool interface of the UR robot.

### Dimensioni (mm) Dimensions (mm)



### Regolazioni (mm) Adjustments (mm)



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

## KIT-UR-EQC20

Il KIT-UR-EQC20 è un "Cambia utensile elettrico veloce" che permette una facile sostituzione dell'EOAT (End Of Arms Tool) sul robot. E' appositamente progettato per i robot collaborativi della Universal Robot UR3/UR5/UR10 ed è completamente compatibile con i kits KIT-UR-G, KIT-UR-J e KIT-UR-V. Si compone di due parti: una fissata permanentemente sul robot (EQC20U-A) ed una collegata permanentemente all'utensile (EQC20-B). Comandando l'apposita uscita digitale è possibile accoppiare o disaccoppiare le due parti realizzando un cambio di utensile in modo semplice e rapido. L'intero sistema è un dispositivo plug&play che include tutti i componenti necessari a stabilire una connessione sia elettrica che pneumatica per trasferire potenza elettrica e aria compressa (o decompressa) dal robot all'utensile.

### Caratteristiche principali

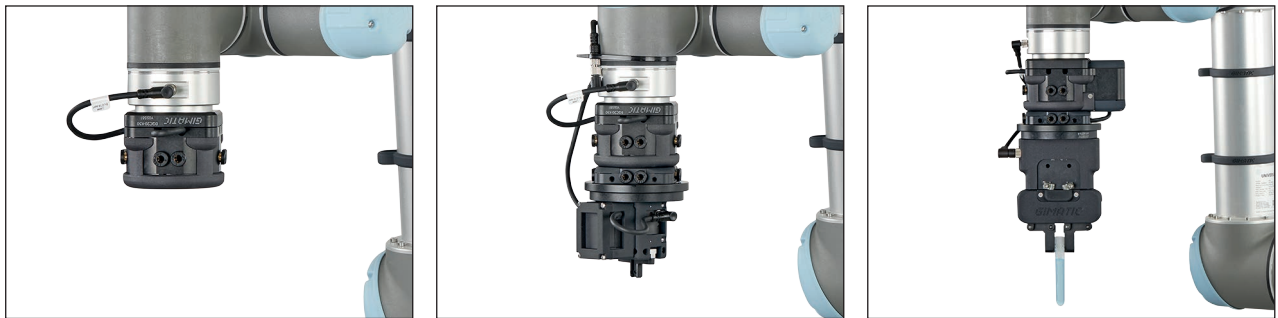
- Un unico design per i robot UR3, UR5 e UR10.
- Assenza di cavi elettrici lungo il braccio del robot: connessione diretta al connettore M8 al polso del robot.
- Facile da installare, non richiede alcuna configurazione (soluzione plug & play).
- Direttamente compatibile con altri Kits UR di Gimatic come il KIT-UR-G, KIT-UR-J ed il KIT-UR-V.
- 6 connessioni pneumatiche.
- Foro centrale per le connessioni elettriche.
- Leggero.
- Carico massimo 20 kg.
- Software plugin URcap dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.

## KIT-UR-EQC20

The KIT-UR-EQC20 is an "Electric Quick Tool Changer" that allows the EOAT (End of Arm Tooling) to be easily replaced on the robot. It is specially designed for Universal Robot UR3/UR5/UR10 collaborative robots and is fully compatible with KIT-UR-G, KIT-UR-J and KIT-UR-V kits. It consists of two parts: one permanently attached to the robot (EQC20U-A) and one permanently attached to the tool (EQC20-B). By controlling the appropriate digital output, the two parts can be coupled or uncoupled for quick and easy tool changes. The entire system is a plug&play device with all the components necessary to establish electrical and pneumatic connections to transfer electrical power and compressed (or decompressed) air from the robot to the tool.

### Main features

- A single design for UR3, UR5 and UR10 robots.
- No electrical cables along the robot arm: direct connection to the M8 connector at the robot wrist.
- Easy to install, no configuration required (plug & play solution).
- Directly compatible with other Gimatic UR Kits such as KIT-UR-G, KIT-UR-J and KIT-UR-V.
- 6 pneumatic connections.
- Central hole for electrical connections.
- Lightweight.
- Maximum load 20 kg.
- Dedicated URcap software plug-in available to enhance user experience.

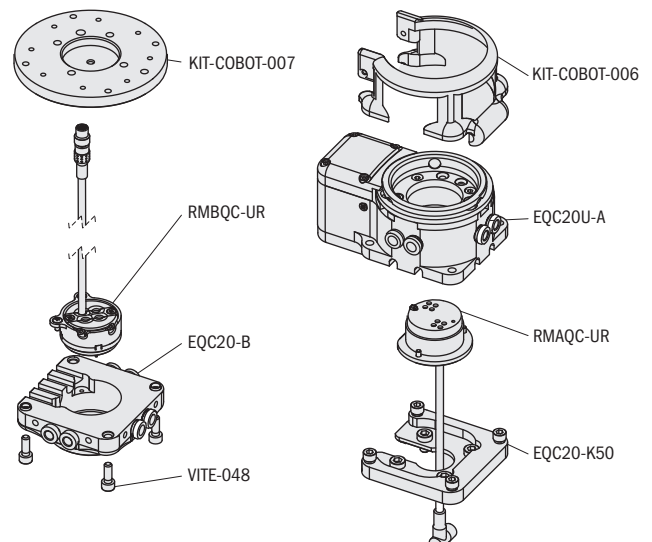
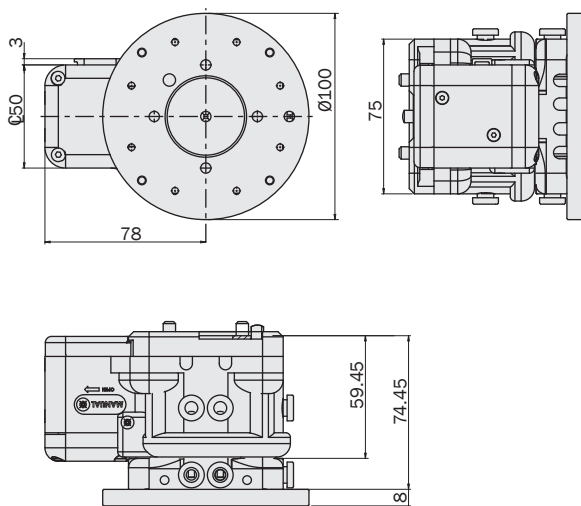


### Come funziona?

Installare il sistema al polso del robot usando la flangia meccanica inclusa e collegare i raccordi pneumatici ed i connettori elettrici in base alle necessità applicative. Il sistema può essere collegato elettricamente direttamente al connettore M8 del polso del robot e può pertanto essere comandato usando le uscite digitali standard disponibili e tramite l'URcap dedicato.

### How does it work?

Install the system on the robot's wrist using the included mechanical flange and connect the pneumatic fittings and the electrical connectors as required. The system can be electrically connected directly to the M8 connector on the robot wrist and can therefore be controlled using the available standard digital outputs and via the dedicated URcap.



## KIT-UR-QC

Il KIT-UR-QC è un kit dedicato ai robot collaborativi Universal Robots per il cambio manuale dell'utensile. Si compone di due parti principali: una fissata in modo permanente al polso del robot (QC90-A) ed una collegata permanentemente all'utensile (QC90-B). Movimentando manualmente una leva l'utente può collegare o scollegare le due parti realizzando un cambio utensile in modo semplice e rapido. Il sistema può essere assemblato sui robot UR3, UR5 ed UR10 ed include tutti i componenti necessari a stabilire una connessione sia elettrica che pneumatica per trasferire potenza dal robot all'utensile. L'intero sistema è un dispositivo plug&play che si connette direttamente al polso del robot e che può essere usato per trasferire sia aria in pressione che il vuoto. È possibile richiedere ulteriori QC90-B per creare sistemi più complessi in cui un singolo robot deve interagire con molteplici utensili.

### Caratteristiche principali

- Un unico prodotto per tutti i robot UR3, UR5 e UR10.
- Nessun cavo lungo il braccio del robot: collegamento diretto al connettore M8 del polso del robot.
- Semplice installazione senza necessità di configurazione (soluzione plug&play).
- Direttamente compatibile con altri prodotti Gimatic dedicati robot Universal Robots come il KIT-UR-G, KIT-UR-J ed il KIT-UR-V.
- Raccordi pneumatici e connettori elettrici inclusi.
- Software plugin URCap dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.

## KIT-UR-QC

The KIT-UR-QC is a manual tool changer kit for UR collaborative robots. It's mainly composed of two parts: one permanently connected to the robot wrist (QC90-A) and the other permanently connected to a tool (QC90-B). By operating a mechanical lever, the user can dis/connect the two parts allowing for an easy tool replacement. The system can be assembled on the UR3, UR5 or UR10 collaborative robots and it includes both pneumatic and electric connection components useful to connect power sources between robot and tool. The whole system is a plug & play device with direct connection to the robot wrist and it can be used to transfer either pneumatic pressure and vacuum to the tool. It is possible to request additional QC90-B to create a more complex system where a robot interacts with several tools.

### Main features

- A unique design for UR3, UR5 and UR10.
- No electric cables along the robot arm: direct connection to M8 plug connector of the robot.
- Easy to install and without any configuration (plug & play solution).
- Directly compatible with others Gimatic's UR kits like KIT-UR-G, KIT-UR-J and KIT-UR-V.
- Embedded pneumatic fittings and electric connectors.
- Dedicated URCap plugin software available to improve user experience.

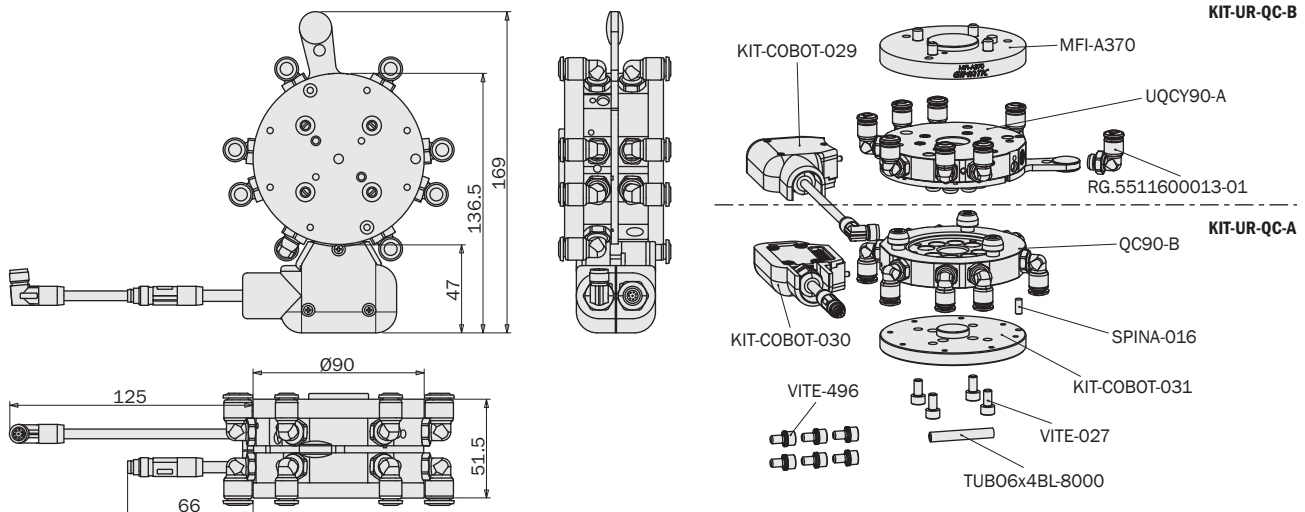


### Come funziona?

Installare il sistema al polso del robot usando la flangia meccanica inclusa e collegare i raccordi pneumatici ed i connettori elettrici in base alle necessità applicative. Il sistema può essere collegato direttamente al connettore M8 del polso del robot e può pertanto essere comandato usando le uscite digitali standard disponibili e tramite l'URCap dedicato.

### How does it work?

Install the system on the robot's wrist using the included mechanical flange and connect the pneumatic fittings and the electrical connectors as required. The system can be connected directly to the M8 connector on the robot's wrist and can therefore be controlled using the standard digital outputs available and through the dedicated URCap.



**KIT-UR-QC75**

Il KIT-UR-QC75 è un kit dedicato ai robot collaborativi Universal Robot per il cambio manuale dell'utensile. Può essere utilizzato su tutta la serie di cobot UR e si compone di due parti principali: una fissata in modo permanente al polso del robot (QC75-A) ed una collegata permanentemente all'utensile (QC75-B). Movimentando manualmente una leva l'utente può collegare o scollegare le due parti realizzando un cambio utensile in modo semplice e rapido. L'intero sistema è un dispositivo plug&play che presenta i componenti necessari a stabilire una connessione sia elettrica che pneumatica per trasferire potenza e aria compressa (o decompressa) dal robot all'utensile. È possibile richiedere ulteriori QC75-B per creare sistemi più complessi in cui un singolo robot deve interagire con molteplici utensili.

**Caratteristiche principali**

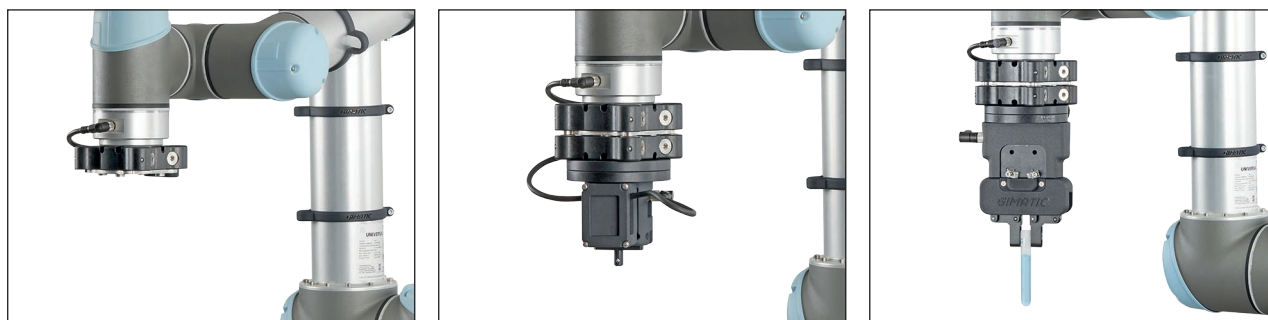
- Un unico design per i robot UR3, UR5 e UR10.
- Non ci sono più cavi elettrici lungo il braccio del robot: il collegamento può essere effettuato direttamente al connettore M8 del polso del robot.
- Semplice installazione senza necessità di configurazione (soluzione plug&play).
- Direttamente compatibile con altri Kits UR di Gimatic come il KIT-UR-G, KIT-UR-J ed il KIT-UR-V.
- Software plugin URcap dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.

**KIT-UR-QC75**

The KIT-UR-QC75 is a kit for manual tool change specifically designed for Universal Robots collaborative robots. It can be used on the entire range of UR cobots and consists of two main parts: one permanently attached to the robot wrist (QC75-A) and one permanently attached to the tool (QC75-B). By manually moving a lever, the user can connect or disconnect the two parts, performing a quick and easy tool change. The entire system is a plug&play device with all the components necessary to establish electrical and pneumatic connections to transfer electrical power and compressed (or decompressed) air from the robot to the tool. Additional QC75-B units can be ordered to create more complex systems where a single robot has to interact with multiple tools.

**Main features**

- A single design for UR3, UR5 and UR10 robots.
- No electrical cables along the robot arm: the connection can be made directly to the M8 connector on the robot wrist.
- Simple installation with no configuration required (plug&play solution).
- Directly compatible with other Gimatic UR Kits such as KIT-UR-G, KIT-UR-J and KIT-UR-V.
- Dedicated URcap software plug-in available to enhance user experience.

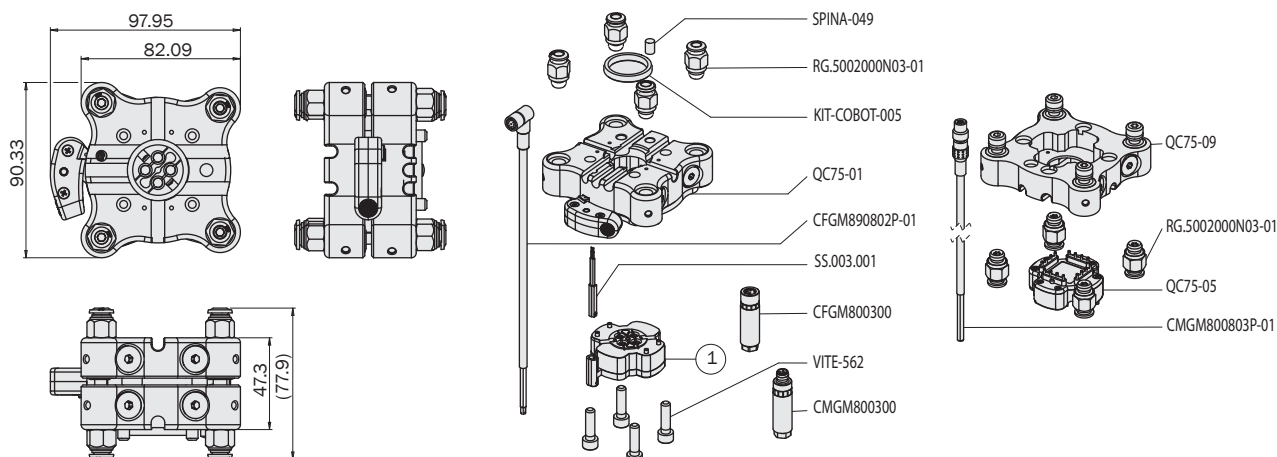


**Come funziona?**

Installare il sistema al polso del robot usando la flangia meccanica inclusa e collegare i raccordi pneumatici ed i connettori elettrici in base alle necessità applicative. Il sistema può essere collegato elettricamente direttamente al connettore M8 del polso del robot e può pertanto essere comandato usando le uscite digitali standard disponibili e tramite l'URcap dedicato.

**How does it work?**

Install the system on the robot's wrist using the included mechanical flange and connect the pneumatic fittings and the electrical connectors as required. The system can be electrically connected directly to the M8 connector on the robot wrist and can therefore be controlled using the available standard digital outputs and via the dedicated URcap.





**KIT-TM-V**

End Of The Arm Tool (EOAT) per operazioni pick-and-place in depressione. Il sistema può essere montato su tutta la serie di cobot Techman Robot (serie TM5, TM12 e TM14). L'attuatore e i componenti pneumatici in dotazione consentono un collegamento al polso del robot e alla fonte di energia pneumatica.

**KIT-TM-V**

*End of Arm Tooling (EOAT) for vacuum pick-and-place applications. The system can be mounted on the entire range of Techman Robot cobots (TM5, TM12 and TM14 series). The supplied actuator and pneumatic components allow the connection to the robot wrist and to the pneumatic power source.*

**Caratteristiche principali**

- Un unico prodotto per tutti i robot TM5/TM12/TM14.
- Assenza di cavi elettrici lungo il braccio del robot: il collegamento può essere effettuato direttamente al connettore M8 del polso del robot.
- Facile da installare, non richiede alcuna configurazione (soluzione plug & play).
- Generatore di vuoto, valvola e solenoide incorporati.
- Software plug-in dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.

**Main features**

- One product for all TM5/TM12/TM14 robots.
- No electrical cables along the robot arm: the connection can be made directly to the M8 connector on the robot wrist.
- Easy to install, no configuration required (plug & play solution).
- Built-in vacuum generator, valve and solenoid.
- Dedicated software plug-in available to enhance user experience.



**Come funziona?**

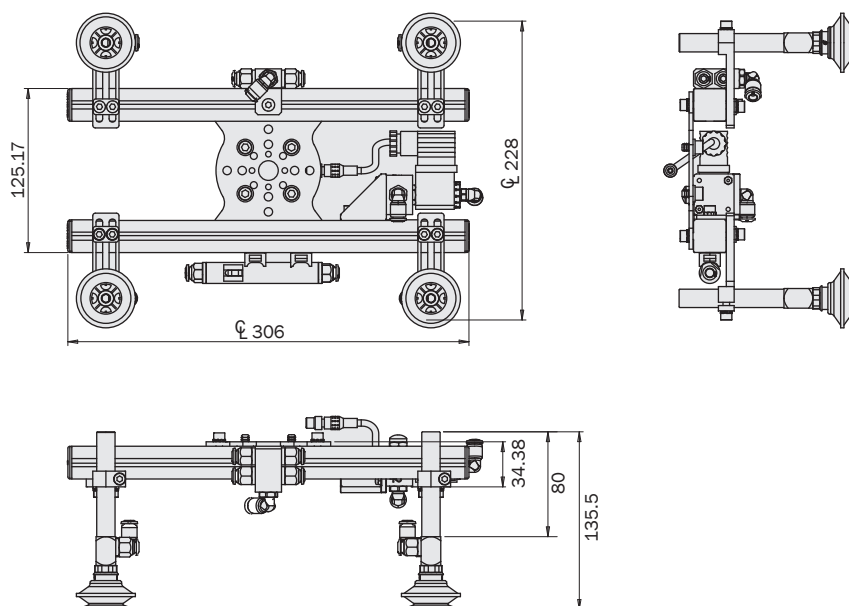
Mediante la flangia meccanica in dotazione, montare la pinza sul polso del robot e collegare l'entrata principale della valvola alla fonte di alimentazione pneumatica.

Il sistema può essere collegato elettricamente direttamente al connettore M8 presente sul polso del robot (niente cavi lungo il braccio del robot) oppure alla control box e pertanto può essere comandato usando le uscite digitali standard disponibili e tramite il software plug-in dedicato.

**How does it work?**

*Using the mechanical flange provided, mount the gripper on the robot wrist and connect the main inlet of the valve to the pneumatic supply line.*

*The system can be electrically connected either directly to the M8 connector on the robot wrist (no cables along the robot arm) or to the control box and can therefore be controlled using the available standard digital outputs and the dedicated software plug-in.*



## KIT-TM-QC75

Il KIT-TM-QC75 è un kit dedicato ai robot collaborativi TechMan Robot per il cambio manuale dell'utensile. Può essere utilizzato su tutta la serie di cobot TM (serie TM5, TM12 e TM14) e si compone di due parti principali: una fissata in modo permanente al polso del robot (QC75-A) ed una collegata permanentemente all'utensile (QC75-B). Movimentando manualmente una leva, l'utente può collegare o scollegare le due parti realizzando un cambio utensile in modo semplice e rapido. L'intero sistema è un dispositivo plug&play che presenta i componenti necessari a stabilire una connessione sia elettrica che pneumatica per trasferire potenza elettrica e aria compressa (o decompressa) dal robot all'utensile. È possibile richiedere ulteriori QC75-B per creare sistemi più complessi in cui un singolo robot deve interagire con molteplici utensili.

### Caratteristiche principali

- Un unico prodotto per tutti i robot TM5/TM12/TM14.
- Assenza di cavi elettrici lungo il braccio del robot: il collegamento può essere effettuato direttamente al connettore M8 del polso del robot.
- Semplice installazione senza necessità di configurazione (soluzione plug&play).
- Direttamente compatibile con altri Kits TM di Gimatic come il KIT-TM-J ed il KIT-TM-V.
- Software plug-in dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.



## KIT-TM-QC75

The KIT-TM-QC75 is a kit for manual tool change specifically designed for TechMan Robot collaborative robots. It can be used on the entire TM range of cobots (TM5, TM12 and TM14 series) and consists of two main parts: one permanently attached to the robot wrist (QC75-A) and one permanently attached to the tool (QC75-B). By manually moving a lever, the user can couple or uncouple the two parts, achieving a quick and easy tool change. The entire system is a plug&play device with all the components necessary to establish electrical and pneumatic connections to transfer electrical power and compressed (or decompressed) air from the robot to the tool. Additional QC75-B units can be ordered to create more complex systems where a single robot has to interact with multiple tools.

### Main features

- One product for all TM5/TM12/TM14 robots.
- No electrical cables along the robot arm: the connection can be made directly to the M8 connector on the robot wrist.
- Simple installation with no configuration required (plug&play solution).
- Directly compatible with other Gimatic TM Kits such as KIT-TM-J and KIT-TM-V.
- Dedicated software plug-in available to enhance user experience.

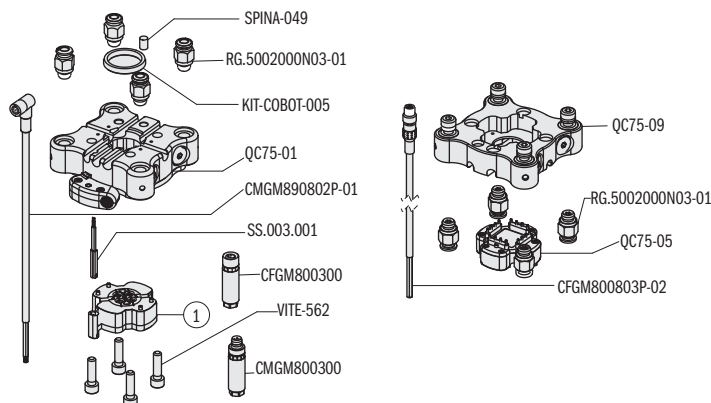
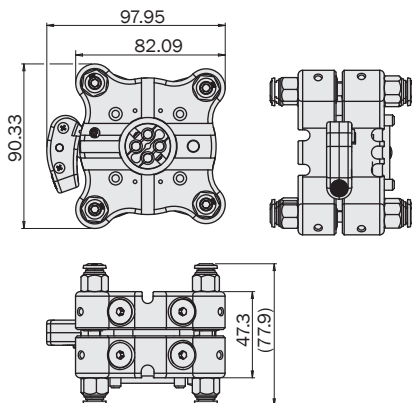


### Come funziona?

Installare il sistema al polso del robot usando la flangia meccanica inclusa e collegare i raccordi pneumatici ed i connettori elettrici in base alle necessità applicative. Il sistema può essere collegato elettricamente direttamente al connettore M8 del polso del robot o alla control box e può pertanto essere comandato usando le uscite digitali standard disponibili e tramite il software plug-in dedicato.

### How does it work?

Install the system on the robot's wrist using the included mechanical flange and connect the pneumatic fittings and the electrical connectors as required. The system can be electrically connected either directly to the M8 connector on the robot wrist or to the control box and can therefore be controlled using the available standard digital outputs and the dedicated software plug-in.



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

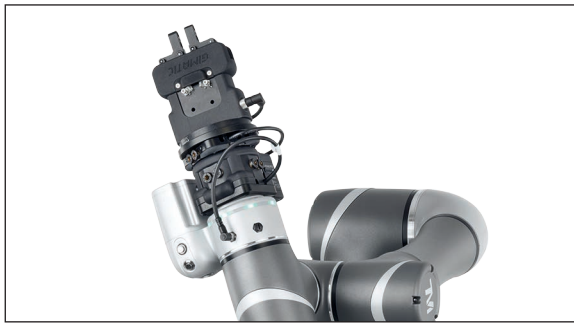
Sensori  
Sensors

**KIT-TM-EQC20**

Il KIT-TM-EQC20 è un "Cambia utensile elettrico veloce" che permette una facile sostituzione dell'EOAT (End Of Arms Tool) sul robot. È appositamente progettato per tutta la serie di cobot TechMan Robot ed è completamente compatibile con i kits KIT-TM-J e KIT-TM-V. Si compone di due parti: una fissata permanentemente sul robot (EQC20TM-A) ed una collegata permanentemente all'utensile (EQC20-B). Comandando l'apposita uscita digitale è possibile accoppiare o disaccoppiare le due parti realizzando un cambio di utensile in modo semplice e rapido. L'intero sistema è un dispositivo plug&play che include tutti i componenti necessari a fornire sia energia elettrica che pneumatica all'utensile.

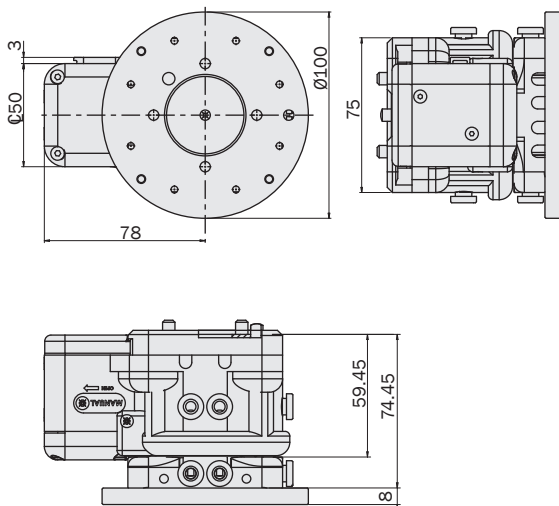
**Caratteristiche principali**

- Un unico prodotto per tutti i robot TM5/TM12/TM14.
- Assenza di cavi elettrici lungo il braccio del robot: il collegamento può essere effettuato direttamente al connettore M8 del polso del robot.
- Semplice installazione senza necessità di configurazione (soluzione plug&play).
- Direttamente compatibile con altri Kits TM di Gimatic come il KIT-TM-J ed il KIT-TM-V.
- 6 connessioni pneumatiche.
- Foro centrale per le connessioni elettriche.
- Leggero
- Carico massimo 20 kg.
- Software plug-in dedicato disponibile per migliorare l'esperienza di utilizzo dell'utente.



**Come funziona?**

Installare il sistema al polso del robot usando la flangia meccanica inclusa e collegare i raccordi pneumatici ed connettori elettrici in base alle necessità applicative. Il sistema può essere collegato elettricamente direttamente al connettore M8 del polso del robot e può pertanto essere comandato usando le uscite digitali standard disponibili e tramite il software plug-in dedicato.

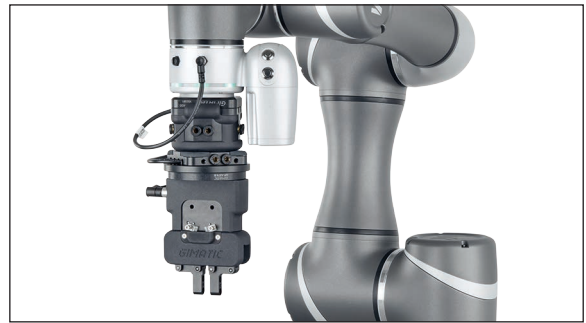


**KIT-TM-EQC20**

The KIT-TM-EQC20 is an "Electric Quick Tool Changer" that allows the EOAT (End of Arm Tooling) to be easily replaced on the robot. It is specially designed for the entire range of TechMan Robot cobots and is fully compatible with the KIT-TM-J and KIT-TM-V kits. It consists of two parts: one permanently attached to the robot (EQC20TM-A) and one permanently attached to the tool (EQC20-B). By controlling the appropriate digital output, the two parts can be coupled or uncoupled for quick and easy tool changes. The entire system is a plug-and-play device that includes all the components needed to supply both electrical and pneumatic power to the tool.

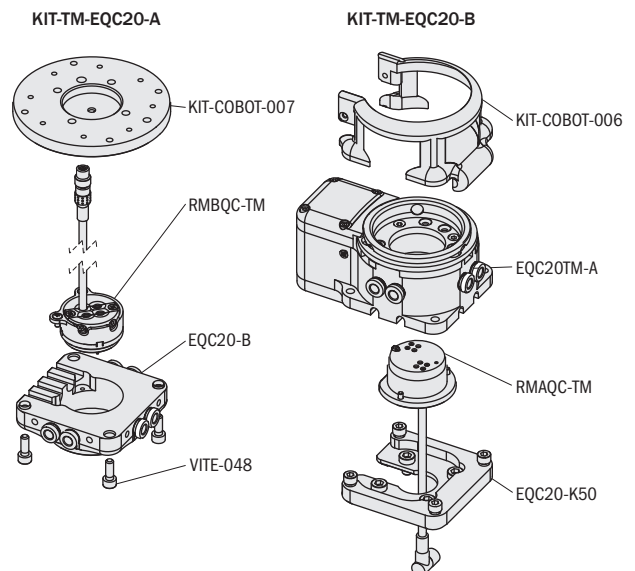
**Main features**

- One product for all TM5/TM12/TM14 robots.
- No electrical cables along the robot arm: the connection can be made directly to the M8 connector on the robot wrist.
- Simple installation with no configuration required (plug&play solution).
- Directly compatible with other Gimatic TM Kits such as KIT-TM-J and KIT-TM-V.
- 6 pneumatic connections.
- Central hole for electrical connections.
- Lightweight.
- Maximum load 20 kg.
- Dedicated software plug-in available to enhance user experience.



**How does it work?**

Install the system on the robot's wrist using the included mechanical flange and connect the pneumatic fittings and the electrical connectors based on the application requirements. The system can be electrically connected directly to the M8 connector on the robot wrist and can therefore be controlled using the available standard digital outputs and the dedicated software plug-in.



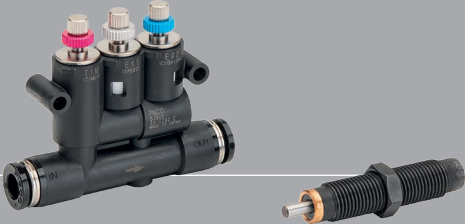


**gmk**<sup>TM</sup>

 A business of **BARNES**

**ACCESSORI OPZIONALI**

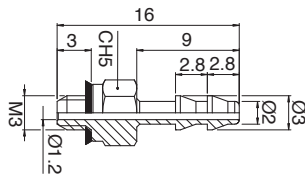
*Options*



**Raccordi**  
**Fittings**

**Raccordo diritto a calzamento**  
**Straight push-on fitting**

	∅	n°	m
<b>RG.RO-1376-AS1</b>	4	10	50

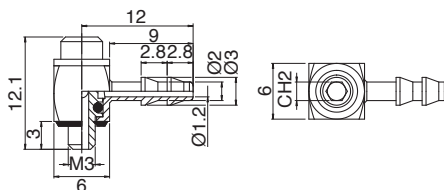


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo orientabile a "L" a calzamento**  
**Adjustable-position push-on elbow fitting**

	∅	n°	m
<b>RG.RO-1376-AS2</b>	4	10	50

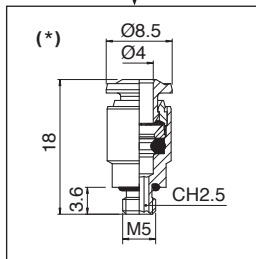
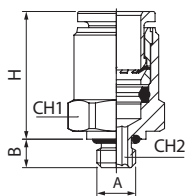


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo diritto maschio cilindrico "mini"**  
**"Mini" straight male adaptor (parallel)**

	∅	A	B	H	CH1	CH2	n°	m
<b>RG.50-020-00N01</b>	(*)	(*)	(*)	(*)	(*)	(*)	10	45
<b>RG.5602000003</b>	3	M3	3	11	6	1.5	10	41
<b>RG.5602000005</b>	4	M3	3	14.5	8	-	10	21
<b>RG.5602000006</b>	4	M5	3.6	14	9	2.5	10	39
<b>RG.5602000008</b>	4	1/8	5	11.5	13	3	10	77
<b>RG.5602000009</b>	6	M5	3.6	16	11	2.5	10	62
<b>RG.5602000011</b>	6	1/8	5	13.5	13	4	10	77

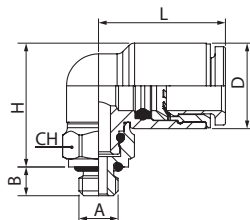


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo a L maschio cilindrico "mini"**  
**"Mini" elbow male adaptor (parallel)**

	∅	A	B	H	L	D	CH	n°	m
<b>RG.5611500005</b>	4	M5	3.6	13.5	14	8.5	8	10	25
<b>RG.5611500006</b>	4	1/8	5	13	14	8.5	13	10	59
<b>RG.5611500008</b>	6	M5	3.6	15.5	16	10.5	8	10	29
<b>RG.5611500009</b>	6	1/8	5	15	16	10.5	13	10	164



**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

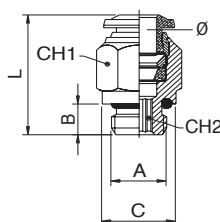
- ∅ [Diametro esterno tubo (mm)]
- n° [Quantità pezzi in confezione]
- m [Peso di una confezione da 10 pezzi (g)]
- P [Pressione di esercizio]
- T [Temperatura di esercizio]
- dB [Livello di rumore in dB a 6 bar]
- S [Soglia di filtrazione]

- ∅ [Hose outer diameter (mm)]
- n° [Number of pieces in the pack]
- m [Weight of a 10-piece pack (g)]
- P [Operating pressure range]
- T [Operating temperature range]
- dB [Noise level in dB at 6 bar]
- S [Filtration threshold]

**Raccordi**  
**Fittings**

**Raccordo diritto maschio cilindrico**  
**Straight male adaptor (parallel)**

	∅	A	B	C	L	CH1	CH2	n°	m
RG.5002000N02	4	1/8	6	13	20	10	3	10	71
RG.5002000N22	4	1/4	8	16	19.5	16	3	10	162
RG.5002000N20	6	M5	4	10	24.5	13	2	10	113
RG.5002000N03	6	1/8	6	13	23.5	13	4	10	129
RG.5002000N04	6	1/4	8	16	23.5	13	4	10	169
RG.5002000N05	8	1/8	6	13	25	14	5	10	134
RG.5002000N06	8	1/4	8	16	23	14	6	10	131
RG.5002000N07	8	3/8	9	20	24	14	6	10	219
RG.5002000N08	10	1/4	8	16	30.5	17	6	10	242
RG.5002000N09	10	3/8	9	20	27.5	17	8	10	236
RG.5002000N31	10	1/2	10	25	27	14	8	10	380
RG.5002000N23	12	1/2	10	25	31	22	10	10	434

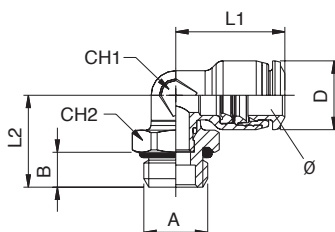


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo a L orientabile maschio cilindrico**  
**Swiveling elbow male adaptor**

	∅	A	B	L1	L2	CH1	CH2	D	n°	m
RG.5511600001	4	M3	3	16.5	12	7	9	10	10	36
RG.5511600002	4	M5	3.6	16.5	13.8	7	9	10	10	49
RG.5511600004	4	1/8	5.4	16.5	15	7	13	10	10	80
RG.5511600011	6	M5	3.6	20.5	14.7	9	9	12	10	61
RG.5511600013	6	1/8	5.4	20.5	15.8	9	13	12	10	91
RG.5511600014	6	1/4	7.1	20.5	17.5	9	16	12	10	140
RG.5511600017	8	1/8	5.4	22	19.4	10	13	14	10	118
RG.5511600018	8	1/4	7.1	22	18.7	10	16	14	10	149
RG.5511600019	8	3/8	8.1	22	20.1	10	20	14	10	240
RG.5511600021	10	1/4	7.1	26.5	22.8	13	16	17	10	189
RG.5511600022	10	3/8	8.1	26.5	22.3	13	20	17	10	255
RG.5511600023	10	1/2	9.6	26.5	23.8	13	25	17	10	406
RG.5511600026	12	1/2	9.6	30	25.1	16	25	20	10	445



**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

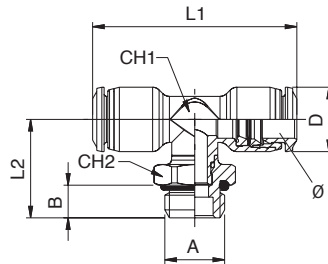
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n° [Quantità pezzi in confezione]  
m [Peso di una confezione da 10 pezzi (g)]  
P [Pressione di esercizio]  
T [Temperatura di esercizio]  
dB [Livello di rumore in dB a 6 bar]  
S [Soglia di filtrazione]

∅ [Hose outer diameter (mm)]  
n° [Number of pieces in the pack]  
m [Weight of a 10-piece pack (g)]  
P [Operating pressure range]  
T [Operating temperature range]  
dB [Noise level in dB at 6 bar]  
S [Filtration threshold]

**Raccordi**  
**Fittings**

**Raccordo a T orientabile maschio cilindrico**  
**Swiveling T male adaptor - centre leg**

	Ø	A	B	L1	L2	CH1	CH2	D	n°	m
<b>RG.5521600002</b>	4	M5	3.6	33	15.5	7	9	10	10	66
<b>RG.5521600011</b>	6	M5	3.6	41	14.7	9	9	12.5	10	83
<b>RG.5521600013</b>	6	1/8	5.4	41	18.4	9	13	12.5	10	116
<b>RG.5521600014</b>	6	1/4	7.1	41	20	9	16	12.5	10	165
<b>RG.5521600017</b>	8	1/8	5.4	44	22.1	10	13	14	10	148
<b>RG.5521600018</b>	8	1/4	7.1	44	21.4	10	16	14	10	179
<b>RG.5521600019</b>	8	3/8	8.1	44	22.8	10	20	14	10	270
<b>RG.5521600021</b>	10	1/4	7.1	53	26.7	13	16	17	10	249
<b>RG.5521600022</b>	10	3/8	8.1	53	26.2	13	20	17	10	314
<b>RG.5521600023</b>	10	1/2	9.6	53	27.7	13	25	17	10	466
<b>RG.5521600026</b>	12	1/2	9.6	61.5	29.1	16	25	20	10	527

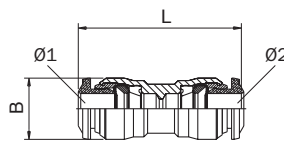


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo diritto intermedio**  
**Straight connector**

	Ø1	Ø2	B	L	n°	m
<b>RG.5504000002</b>	4	4	10	31	10	38
<b>RG.5504000004</b>	6	6	12.5	35	10	52
<b>RG.5504000009</b>	6	4	12.5	34	10	51
<b>RG.5504000005</b>	8	8	14	37	10	65
<b>RG.5504000010</b>	8	6	14	37.5	10	67
<b>RG.5504000011</b>	10	8	44	17	10	117
<b>RG.5504000006</b>	10	10	45	17	10	130
<b>RG.5504000012</b>	12	10	50	20	10	179
<b>RG.5504000007</b>	12	12	50	20	10	179



**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

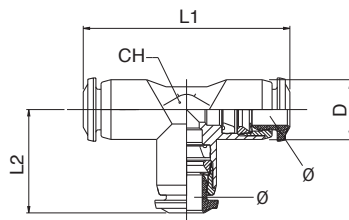
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n° [Quantità pezzi in confezione]  
m [Peso di una confezione da 10 pezzi (g)]  
P [Pressione di esercizio]  
T [Temperatura di esercizio]  
dB [Livello di rumore in dB a 6 bar]  
S [Soglia di filtrazione]

Ø [Hose outer diameter (mm)]  
n° [Number of pieces in the pack]  
m [Weight of a 10-piece pack (g)]  
P [Operating pressure range]  
T [Operating temperature range]  
dB [Noise level in dB at 6 bar]  
S [Filtration threshold]

**Raccordi  
Fittings**

**Raccordo a T intermedio  
T connector**

	∅	L1	L2	CH	D	n°	m
<b>RG.5523000002</b>	4	33	16.5	9	10	10	58
<b>RG.5523000004</b>	6	41	20.5	11	12	10	83
<b>RG.5523000005</b>	8	44	22	13	14	10	106

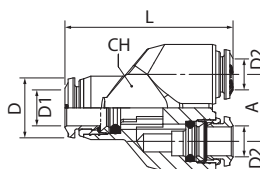


**Caratteristiche tecniche  
Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo a Y intermedio  
Y connector**

	∅	∅	A	L	CH	D	n°	m
<b>RG.5531000002</b>	4	4	11	31.5	10	10	10	58
<b>RG.5531000004</b>	6	6	13.5	37	12	12	10	58
<b>RG.5531000008</b>	6	4	13.5	36.5	12	12.5	10	90
<b>RG.5531000005</b>	8	8	15.5	40	14	14	10	69

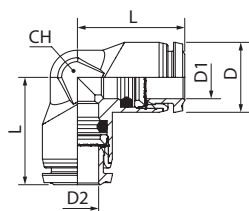


**Caratteristiche tecniche  
Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo a L intermedio  
Elbow connector**

	D1	D2	L	D	CH	n°	m
<b>RG.5513000002</b>	4	4	16.5	10	9	10	38
<b>RG.5513000004</b>	6	6	20.5	12	11	10	57
<b>RG.5513000005</b>	8	8	22	14	13	10	73

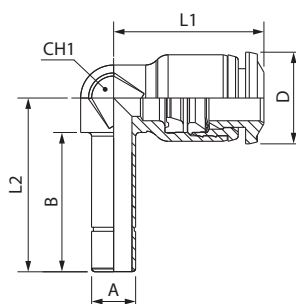


**Caratteristiche tecniche  
Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo a L con coda liscia  
Elbow adaptor with smooth tail**

	∅	A	B	L1	L2	CH1	D	n°	m
<b>RG.5514000001</b>	4	4	17	16.5	20.8	7	10	10	22
<b>RG.5514000002</b>	4	6	19	16.5	22.8	7	10	10	22



**Caratteristiche tecniche  
Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

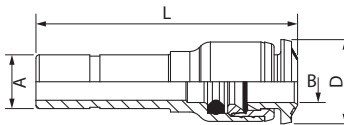
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n° [Quantità pezzi in confezione]  
m [Peso di una confezione da 10 pezzi (g)]  
P [Pressione di esercizio]  
T [Temperatura di esercizio]  
dB [Livello di rumore in dB a 6 bar]  
S [Soglia di filtrazione]

∅ [Hose outer diameter (mm)]  
n° [Number of pieces in the pack]  
m [Weight of a 10-piece pack (g)]  
P [Operating pressure range]  
T [Operating temperature range]  
dB [Noise level in dB at 6 bar]  
S [Filtration threshold]

**Raccordi**  
**Fittings**

**Riduzione a coda liscia**  
**Adaptor with smooth tail**

	A	B	L	D	n°	m
<b>RG.557000001</b>	6	4	34	10	10	24

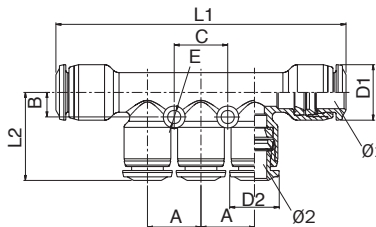


Caratteristiche tecniche  
Technical characteristics

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo multiplo di riduzione**  
**Reduction manifold**

	Ø1-Ø2	A	B	L1	L2	C	D1	D2	E	n°	m
<b>RG.553500001</b>	6-4	13.5	6	74	21.8	13.5	14	12	3.3	10	173
<b>RG.553500002</b>	8-4	13.5	6	73	21.8	13.5	14	12	3.3	10	161
<b>RG.553500003</b>	8-6	13.5	6	73	22.3	13.5	14	12.5	3.3	10	161

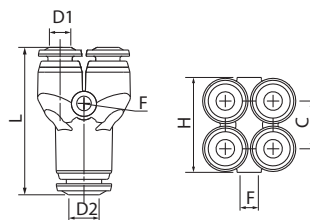


Caratteristiche tecniche  
Technical characteristics

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Raccordo multiplo a Y intermedio con fissaggio M3**  
**Intermediate Y-connector with M3 connection**

	D1	D2	C	L	F	H	n°	m
<b>RG.553300001</b>	4	4	10.8	33.5	3.3	21.5	10	122
<b>RG.553300002</b>	4	6	10.8	34.5	3.3	21.5	10	111
<b>RG.553300003</b>	6	6	13.3	39.5	3.3	26.8	10	177

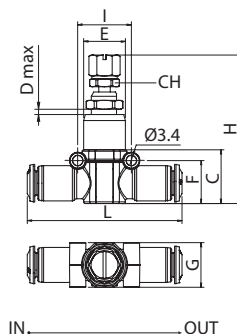


Caratteristiche tecniche  
Technical characteristics

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

**Regolatore di pressione in linea tubo-tubo**  
**Pipe-pipe inline pressure regulator**

	Ø	C	D	E	F	G	H	I	L	CH	n°	m
<b>RG.559700002</b>	6	18	5	14	14.5	15	48÷56.5	18	52	11	1	59
<b>RG.559700003</b>	8	20	5	17	16.5	17	55÷65	20	58	13	1	53



Caratteristiche tecniche  
Technical characteristics

T= -20° ÷ +80°C  
P= 1 ÷ 10bar

- Ø [Diametro esterno tubo (mm)]
- n° [Quantità pezzi in confezione]
- m [Peso di una confezione da 10 pezzi (g)]
- P [Pressione di esercizio]
- T [Temperatura di esercizio]
- dB [Livello di rumore in dB a 6 bar]
- S [Soglia di filtrazione]

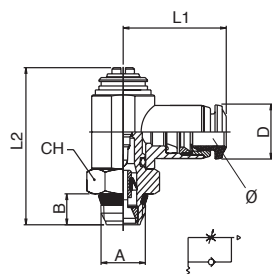
- Ø [Hose outer diameter (mm)]
- n° [Number of pieces in the pack]
- m [Weight of a 10-piece pack (g)]
- P [Operating pressure range]
- T [Operating temperature range]
- dB [Noise level in dB at 6 bar]
- S [Filtration threshold]

IN. \_\_\_\_\_ OUT

**Raccordi**  
**Fittings**

**Regolatore di flusso unidirezionale orientabile (regolazione a cacciavite)**  
**Swiveling unidirectional flow controller (adjustment by screwdriver)**

	∅	A	B	L1	L2	CH	D	n°	m
<b>RG.559000002</b>	4	M5	5.5	19.5	29.5	8	10	1	9.8
<b>RG.559000003</b>	4	1/8	5.5	21.5	31	14	10	1	20
<b>RG.559000007</b>	6	M5	5.5	21	29.5	8	12.5	1	7.7
<b>RG.559000008</b>	6	1/8	5.5	23	31	14	12.5	1	18
<b>RG.559000010</b>	8	1/8	5.5	23.5	31	14	14	1	21
<b>RG.559000011</b>	8	1/4	7	26	36.5	17	14	1	34

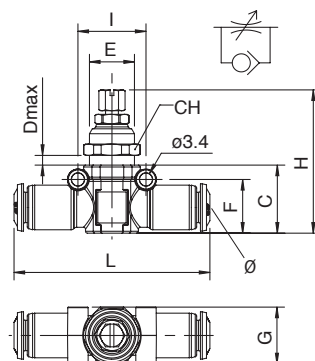


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= 1 ÷ 10bar

**Regolatore di flusso in linea unidirezionale tubo-tubo**  
**Pipe/pipe in-line unidirectional flow regulator**

	∅	C	D	E	F	G	H	I	L	CH	n°	m
<b>RG.559400004</b>	4	18	4	M12X1	14.5	15	37.5÷43.5	18	52	14	1	34
<b>RG.559400001</b>	6	18	6	M12x1	14.5	15	37.5÷43.5	18	52	14	1	29
<b>RG.559400002</b>	8	20	6.5	M14x1	16.5	17	39.5÷45.5	20	58	16	1	61

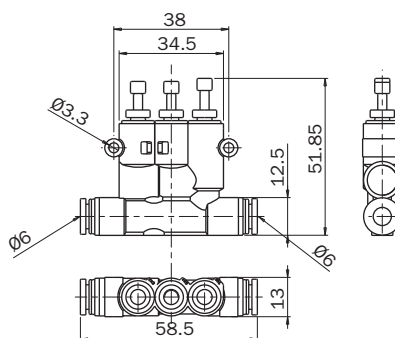


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= 1 ÷ 10bar

**Regolatore di flusso in linea unidirezionale tubo-tubo a 2 stadi**  
**Pipe-pipe unidirectional in-line flow regulator with 2 stages**

	∅	n°	m
<b>RG.BJSU6</b>	6	1	33



**Caratteristiche tecniche**  
**Technical characteristics**

T= 0° ÷ +60°C  
P= 2 ÷ 10bar

∅ [Diametro esterno tubo (mm)]  
n° [Quantità pezzi in confezione]  
m [Peso di una confezione da 10 pezzi (g)]  
P [Pressione di esercizio]  
T [Temperatura di esercizio]  
dB [Livello di rumore in dB a 6 bar]  
S [Soglia di filtrazione]

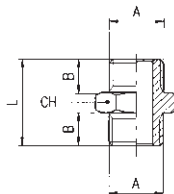
∅ [Hose outer diameter (mm)]  
n° [Number of pieces in the pack]  
m [Weight of a 10-piece pack (g)]  
P [Operating pressure range]  
T [Operating temperature range]  
dB [Noise level in dB at 6 bar]  
S [Filtration threshold]



**Raccordi**  
**Fittings**

**Nipplo cilindrico**  
**Nipple (parallel)**

	A	B	L	CH	n°	m
<b>RG.020100001B5NB</b>	M5	4	11.5	8	10	20
<b>RG.02010000102NB</b>	1/8	6	16.5	14	10	89
<b>RG.02010000103NB</b>	1/4	8	21	17	10	168
<b>RG.02010000104NB</b>	3/8	9	23	19	10	226
<b>RG.02010000105NB</b>	1/2	10	25.5	24	10	330
<b>RG.02010000107NB</b>	3/4	12	29.5	30	10	637

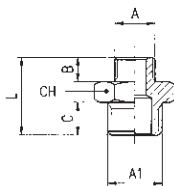


Caratteristiche tecniche  
Technical characteristics

T= 300°C max

**Nipplo di riduzione cilindrico**  
**Reducing nipple (parallel)**

	A	A1	B	C	L	CH	n°	m
<b>RG.0203000010WNB</b>	M5	1/8	4	6	14.5	14	10	84
<b>RG.020300001ATNB</b>	1/8	1/4	6	8	19	17	10	149
<b>RG.0203000017WNB</b>	1/4	3/8	8	9	22	19	10	212
<b>RG.020300001ACNB</b>	3/8	1/2	9	10	24.5	24	10	352

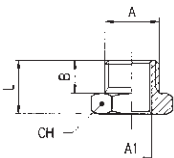


Caratteristiche tecniche  
Technical characteristics

T= 300°C max

**Nipplo di riduzione cilindrico**  
**Reducing nipple (parallel)**

	A	A1	B	L	CH	n°	m
<b>RG.020900001YPNB</b>	M5	M3	4	6.5	7	10	13



Caratteristiche tecniche  
Technical characteristics

T= 300°C max

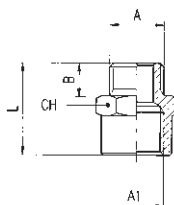
- Ø [Diametro esterno tubo (mm)]
- n° [Quantità pezzi in confezione]
- m [Peso di una confezione da 10 pezzi (g)]
- P [Pressione di esercizio]
- T [Temperatura di esercizio]
- dB [Livello di rumore in dB a 6 bar]
- S [Soglia di filtrazione]

- Ø [Hose outer diameter (mm)]
- n° [Number of pieces in the pack]
- m [Weight of a 10-piece pack (g)]
- P [Operating pressure range]
- T [Operating temperature range]
- dB [Noise level in dB at 6 bar]
- S [Filtration threshold]

**Raccordi**  
**Fittings**

**Riduzione cilindrica**  
**Reducer (parallel)**

	A	A1	B	L	CH	n°	m
<b>RG.0205000012WNB</b>	1/8	1/8	6	17	14	10	109
<b>RG.020500001ATNB</b>	1/8	1/4	6	20.5	17	10	175
<b>RG.0205000016WNB</b>	1/4	1/4	8	22.5	17	10	190

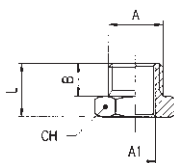


Caratteristiche tecniche  
Technical characteristics

T= 300°C max

**Riduzione cilindrica**  
**Reducer (parallel)**

	A	A1	B	L	CH	n°	m
<b>RG.0209000010WNT</b>	1/8	M5	6	10.5	14	10	80
<b>RG.0209000015WNT</b>	1/4	1/8	8	13	17	10	103
<b>RG.020900001AANT</b>	3/8	1/4	9	14	19	10	126
<b>RG.020900001AFNT</b>	1/2	3/8	10	15.5	24	10	213

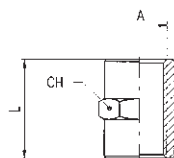


Caratteristiche tecniche  
Technical characteristics

T= 300°C max

**Manicotto**  
**Sleeve**

	A	L	CH	n°	m
<b>RG.030000001B5NB</b>	M5	11	8	10	30
<b>RG.03000000102NB</b>	1/8	15	14	10	103
<b>RG.03000000103NB</b>	1/4	22	17	10	182



Caratteristiche tecniche  
Technical characteristics

T= 300°C max

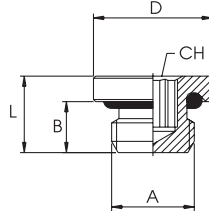
- Ø [Diametro esterno tubo (mm)]
- n° [Quantità pezzi in confezione]
- m [Peso di una confezione da 10 pezzi (g)]
- P [Pressione di esercizio]
- T [Temperatura di esercizio]
- dB [Livello di rumore in dB a 6 bar]
- S [Soglia di filtrazione]

- Ø [Hose outer diameter (mm)]
- n° [Number of pieces in the pack]
- m [Weight of a 10-piece pack (g)]
- P [Operating pressure range]
- T [Operating temperature range]
- dB [Noise level in dB at 6 bar]
- S [Filtration threshold]

**Raccordi**  
**Fittings**

**Tappo maschio cilindrico esagono incassato con O-Ring NBR**  
**Male plug (parallel) with exagon embedded and NBR O-Ring**

	A	B	L	D	CH	n°	m
<b>RG.0301500005</b>	M5	4	6	8	2	10	12
<b>RG.0301500001</b>	1/8	6	8.5	14	5	10	61
<b>RG.0301500002</b>	1/4	8	11	17	6	10	112
<b>RG.0301500003</b>	3/8	9	12.5	20	8	10	182
<b>RG.0301500004</b>	1/2	10	13.5	25	10	10	291

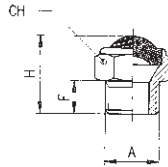


**Caratteristiche tecniche**  
**Technical characteristics**

T= -20 ÷ +80°C  
P= -0.99 ÷ +15bar

**Silenziatore**  
**Silencer**

	A	F	H	CH	dB	S	n°	m
<b>RG.0702000001</b>	M5	4	8	8	-	100µm	10	18
<b>RG.0702000002</b>	1/8	6	15	13	74	100µm	10	58
<b>RG.0702000003</b>	1/4	7	18	16	72	100µm	10	111

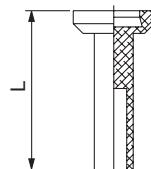


**Caratteristiche tecniche**  
**Technical characteristics**

T= -10 ÷ +80°C  
P= 12bar max

**Tappo in poliamide**  
**Plug polyamide**

	Ø	L	n°	m
<b>RG.086100031X1RO</b>	4	23.5	10	1
<b>RG.086100031X4RO</b>	6	24.5	10	1
<b>RG.086100031X7RO</b>	8	26	10	1



**Caratteristiche tecniche**  
**Technical characteristics**

T= -20° ÷ +80°C  
P= -0.99 ÷ +15bar

Ø [Diametro esterno tubo (mm)]  
n° [Quantità pezzi in confezione]  
m [Peso di una confezione da 10 pezzi (g)]  
P [Pressione di esercizio]  
T [Temperatura di esercizio]  
dB [Livello di rumore in dB a 6 bar]  
S [Soglia di filtrazione]

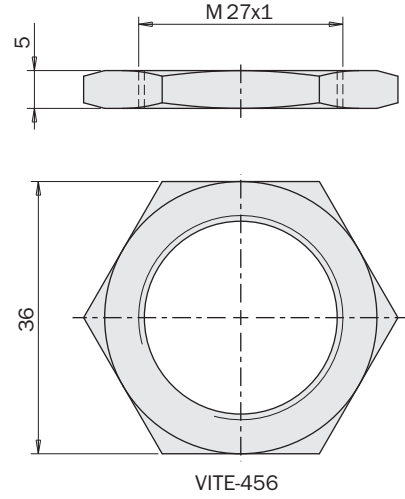
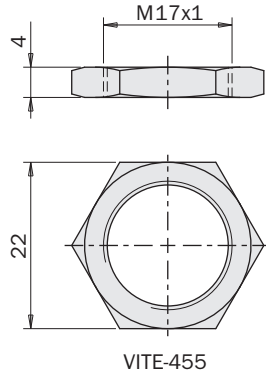
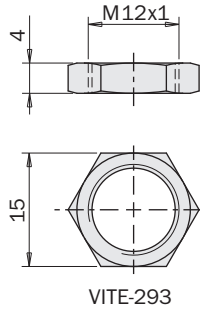
Ø [Hose outer diameter (mm)]  
n° [Number of pieces in the pack]  
m [Weight of a 10-piece pack (g)]  
P [Operating pressure range]  
T [Operating temperature range]  
dB [Noise level in dB at 6 bar]  
S [Filtration threshold]



## Dadi

## Nuts

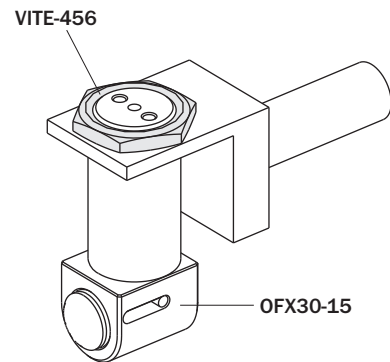
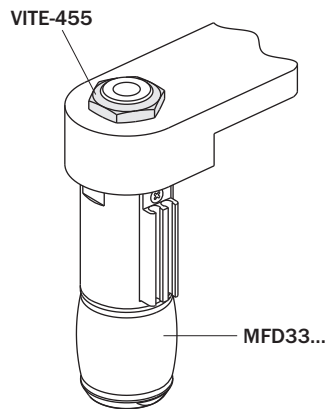
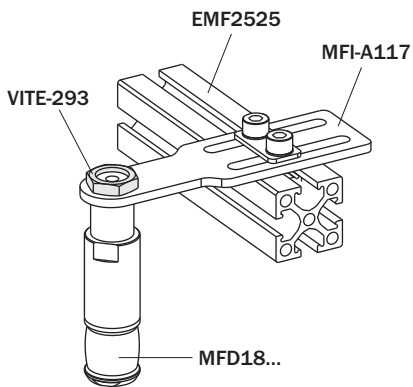
**Dimensioni (mm)**  
**Dimensions (mm)**



	VITE-293	VITE-455	VITE-456
Peso Weight	4 g	7 g	23 g

## Esempi di utilizzo

**Application examples**



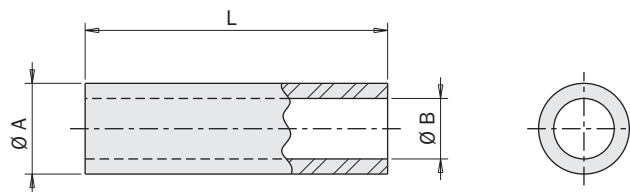
## Tubi flessibili

Tubo in poliuretano per aria compressa idoneo all'utilizzo con i raccordi rapidi.



## Hoses

Polyurethane hose for compressed air suitable for use with push-in fittings.



### Caratteristiche tecniche Technical characteristics

T= -40° ÷ +60°C

P= -0.99 ÷ +10bar

		ØA [mm]	ØB [mm]	R [mm]	L [m]	Lm [g/m]
<b>TUB04X2,5B</b>	Nero Black	4	2.5	20	25	9.49
<b>TUB04X2,5BL</b>	Blu Blue	4	2.5	20	25	9.49
<b>TUB04X2,5GR</b>	Verde Green	4	2.5	20	25	9.49
<b>TUB04X2,5RE</b>	Rosso Red	4	2.5	20	25	9.49
<b>TUB04X2,5SI</b>	Grigio Silver	4	2.5	20	25	9.49
<b>TUB04X2,5YE</b>	Giallo Yellow	4	2.5	20	25	9.49
<b>TUB06X4B</b>	Nero Black	6	4	30	25	19.47
<b>TUB06X4BL</b>	Blu Blue	6	4	30	25	19.47
<b>TUB06X4GR</b>	Verde Green	6	4	30	25	19.47
<b>TUB06X4RE</b>	Rosso Red	6	4	30	25	19.47
<b>TUB06X4SI</b>	Grigio Silver	6	4	30	25	19.47
<b>TUB06X4YE</b>	Giallo Yellow	6	4	30	25	19.47
<b>TUB08X6B</b>	Nero Black	8	6	40	25	30
<b>TUB08X6BL</b>	Blu Blue	8	6	40	25	30
<b>TUB08X6SI</b>	Grigio Silver	8	6	40	25	30
<b>TUB08X6YE</b>	Giallo Yellow	8	6	40	25	30
<b>TUB010x7.5B</b>	Nero Black	10	7.5	60	25	42.7
<b>TUB010x7.5BL</b>	Blu Blue	10	7.5	60	25	42.7
<b>TUB012x9B</b>	Nero Black	12	9	70	25	61.5
<b>TUB012x9BL</b>	Blu Blue	12	9	70	25	61.5

A Diametro esterno  
B Diametro interno  
R Raggio di curvatura minimo  
L Lunghezza  
Lm Peso lineare  
P Pressione di esercizio  
T Temperatura di esercizio

A Outer diameter  
B Inner diameter  
R Minimum bending radius  
L Length  
Lm Linear mass  
P Operating pressure range  
T Operating temperature range

## Capacitor Box

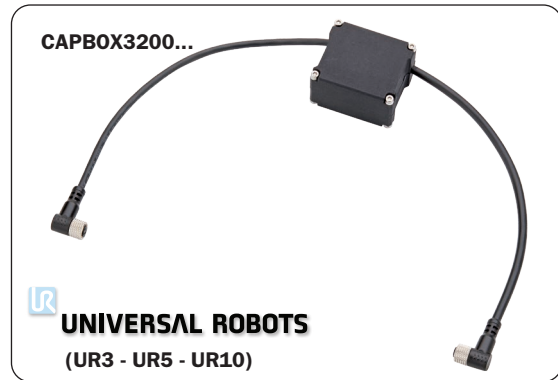
Il dispositivo Capacitor Box consente il corretto funzionamento delle pinze elettriche Gimatic nei casi in cui si disponga di un'alimentazione limitata in corrente.

- 2 modelli disponibili (un modello dedicato alle taglie 16 e 25, un modello dedicato alla taglia 32).
- Compatibili con tutte le pinze e gli attuatori elettrici Gimatic.
- Dimensioni compatte.
- Connessione integrata di alimentazione, segnale di comando e I/O aggiuntivi.
- Connessione Plug & Play con connettori standard M8 - 8 poli e M8 - 3 poli/4 poli (a seconda della versione) angolari.

## Capacitor Box

Capacitor Box allows a correct functionality of Gimatic's electric grippers in all the cases where power supply is limited in peak current (i.e. some collaborative robots).

- 2 models available (one for grippers size 16 and 25, one for grippers size 32).
- Compatible with all Gimatic electric actuators.
- Compact dimensions.
- Embedded connection of power supply, command signal and additional I/O.
- Plug & Play connection with standard M8 8-pin connectors and angular M8 3-pin/4-pin connectors (depending on the version).



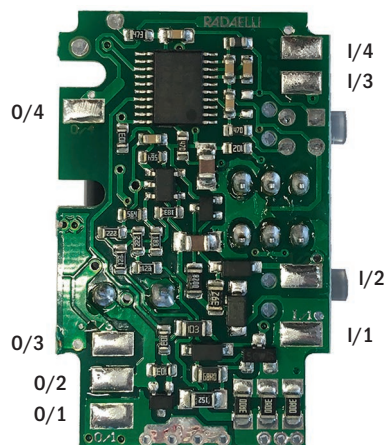
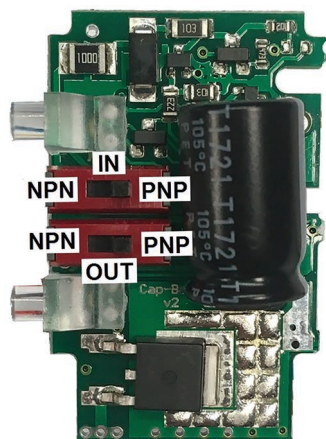
	CAPBOX1625-03 CAPBOX3200-03	CAPBOX1625-04 CAPBOX3200-04
Materiale corpo Body material	Nylon PA12 Nylon PA12	
Dimensioni massime Overall dimensions	42 mm x 48.5 mm x 28 mm	
Massa Mass	60 ÷ 70 g	
Intervallo di temperatura ammesso Allowed temperature range	5 ÷ 60° C	
Connessioni elettriche Electrical connection	Ingresso M8 - 8 poli femmina angolare Input: M8 8-pin angular female	
	Uscita M8 - 3 poli femmina angolare Output: M8 3-pin angular female	Uscita M8 - 4 poli femmina angolare Output: M8 4-pin angular female
Grado di protezione Environmental degree	IP66	
Alimentazione Power supply	24 Vdc ± 10%, 0.5 Arms	
Segnale di comando in ingresso (Connessione di default) Input command signal (Default connection)	Ingresso digitale NPN <ul style="list-style-type: none"> <li>• basso: segnale di chiusura</li> <li>• alto: segnale di apertura</li> </ul> NPN digital input <ul style="list-style-type: none"> <li>• low: closing command</li> <li>• high: opening command</li> </ul>	
Segnale di comando in uscita (Connessione di default) Output command signal (Default connection)	Uscita digitale NPN <ul style="list-style-type: none"> <li>• basso: segnale di chiusura</li> <li>• alto: segnale di apertura</li> </ul> NPN digital output <ul style="list-style-type: none"> <li>• low: closing command</li> <li>• high: opening command</li> </ul>	
I/O ausiliari Auxiliary I/O	no none	1 segnale (uscita picco o controllo forza in base al modello di pinza)  1 signal (peak output or force control depending on gripper model)
LED di stato Status LED	2 LED Verde: alimentazione presente Giallo: stato comando pinza 2 LED Green: power supply is present Yellow: gripper command status	

### Connessioni Elettriche

Il circuito Capbox rende disponibili delle connessioni sia lato ingresso che lato uscita. Le connessioni lato ingresso sono disponibili con un connettore M8-8 pin femmina (alimentazione, segnale di comando e I/O ausiliari). L'uscita è disponibile con un connettore M8-3 o 4 poli per la connessione diretta alle pinze elettroniche Plug & Play. La configurazione standard prevede segnali di tipo NPN sia per l'ingresso che per l'uscita. L'utente può comunque personalizzare la configurazione semplicemente modificando le connessioni elettriche come mostrato in tabella.

### Electrical Connections

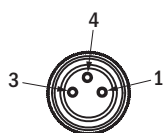
The Capacitor Box circuit has an input side and an output side. The input side allows for connection of power supply, command signal and auxiliary I/O by a M8-8pin female connector. The output side allows for direct connection of 3 or 4 pins Plug & Play grippers' models. Default configuration is with both input and output command signals in NPN version. The user can customize configuration by simply modifying electrical connections according to following table.



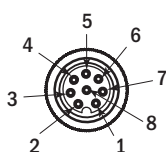
Cavo d'ingresso standard (*) Standard input cable (*)		
I/1	+24Vcc	Grigio Grey
I/2	GND	Rosso Red
I/3	Ingresso digitale Digital input	Blu Blue
I/4	I/O ausiliari Auxiliary I/O	Giallo Yellow

Cavo d'uscita standard (*) Standard output cable (*)		
O/1	+24Vcc	Marrone Brown
O/2	GND	Blu Blue
O/3	Uscita digitale Digital output	Nero Black
O/4	I/O ausiliari Auxiliary I/O	Bianco White

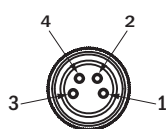
(\*) Connessione standard per pinze con ingresso a 3 pin  
Standard connection for 3 pins grippers' models



M8 3 pin femmina M8 3 pins female		
1	Marrone Brown	Brown
3	Blu Blue	Blue
4	Nero Black	Black



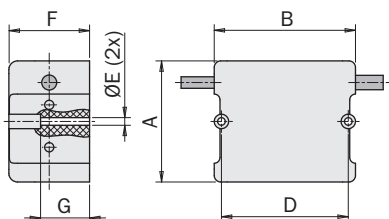
M8 8 pin femmina M8 8 pins female		
1	Bianco White	White
2	Marrone Brown	Brown
3	Verde Green	Green
4	Giallo Yellow	Yellow
5	Grigio Grey	Grey
6	Rosa Pink	Pink
7	Blu Blue	Blue
8	Rosso Red	Red



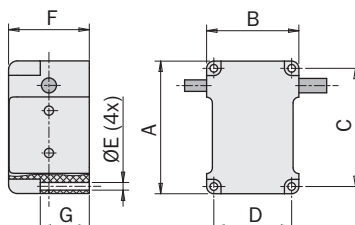
M8 4 pin femmina M8 4 pins female		
1	Marrone Brown	Brown
2	Bianco White	White
3	Blu Blue	Blue
4	Nero Black	Black

### Dimensioni (mm) Dimensions (mm)

CAPBOX1625



CAPBOX3200



	CAPBOX1625	CAPBOX3200
A	46	42
B	49	32
C	41	-
D	27	44
E	Ø2.65	
F	28	
G	17	

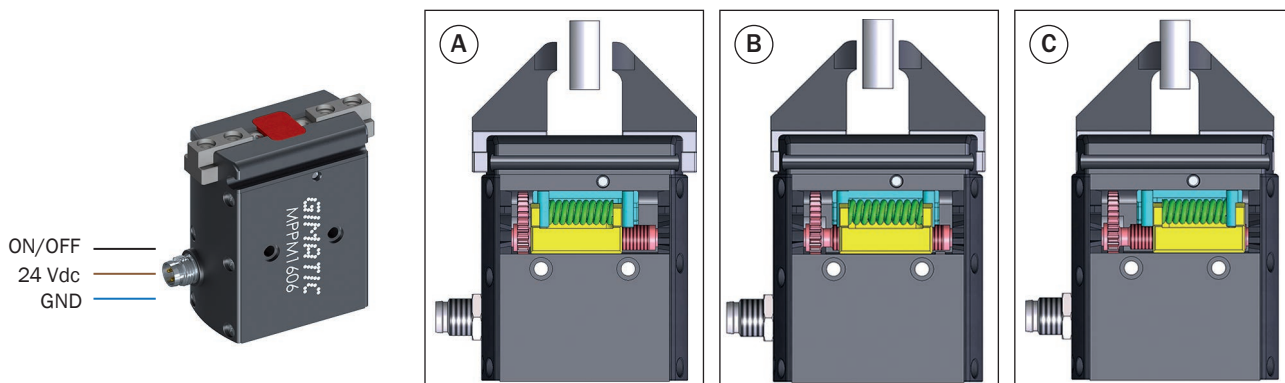


## Tecnologia mechatronica

Le immagini seguenti mostrano gli stati successivi di funzionamento del sistema di attuazione comune alle pinze, agli attuatori ed alle tavole rotanti elettriche.

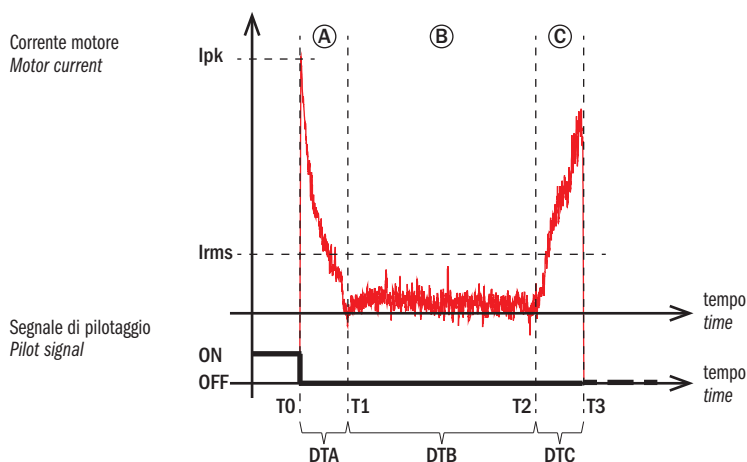
## Mechatronics technology

The images below illustrate the operating state sequence of the drive system shared by the grippers, the actuators and the electric indexing tables.



Gli stessi stati sono riconoscibili anche nel profilo di corrente di assorbimento del motore.

These states can also be identified in the motor's power absorption profile.



## Descrizione del funzionamento

Al tempo T0 il segnale di pilotaggio passa dallo stato di ON allo stato di OFF comandando la chiusura delle griffe.  
 Durante il periodo DTA il motore inizia la rotazione causando nella fase A l'estensione della molla inizialmente compressa.  
 Nella fase B la molla ha assunto la sua lunghezza libera e le griffe compiono un movimento a velocità costante fino al contatto con il pezzo al tempo T2.  
 Durante la fase 3 le griffe sono a contatto con il pezzo ed inizia la compressione della molla.  
 Al tempo T3 il motore termina la propria rotazione e grazie al sistema di trasmissione irreversibile la presa è mantenuta anche in assenza di tensione di alimentazione fino al prossimo comando di apertura delle griffe (stato ON).

## Operation description

At time T0, the pilot signal switches from ON to OFF status, closing the jaws.  
 During the DTA time, the motor starts to run; during phase A this causes the extension of the spring, which was initially compressed.  
 In phase B, the spring has reached its free length and the jaws move at constant speed until they come into contact with the workpiece at time T2.  
 During phase 3, the jaws are in contact with the workpiece, and compression of the spring starts.  
 At time T3, the motor stops running and the irreversible transmission system maintains the grip even when not powered up, until the next jaw opening command is given (ON status).

COMUNICAZIONE  
CON BUS DI CAMPO (\*)

FIELD BUS  
COMMUNICATION (\*)

USCITA PICCO  
PEAK OUTPUT

USCITA POSIZIONE (\*)  
POSITION OUTPUT (\*)

VERSIONE PNP/NPN  
VERSION PNP/NPN

CONTROLLO DI FORZA  
FORCE CONTROL

VERSIONE VELOCE 2Hz  
2Hz FAST VERSION

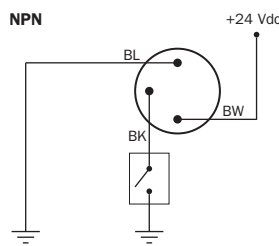
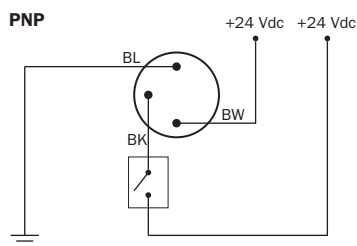
(\*)  
Articolo in preparazione  
Under construction

**Versioni PNP/NPN**

Le pinze sono disponibili nella versione standard con ingresso tipo PNP e nella versione N con ingresso tipo NPN.

**PNP/NPN versions**

Grippers are available in the standard version with PNP input and in the N version with NPN input.

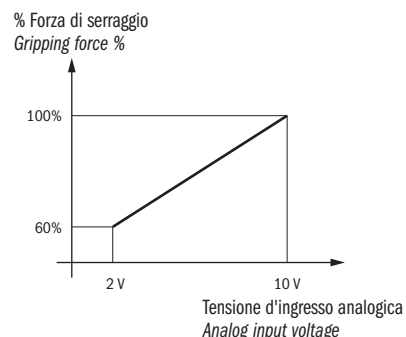
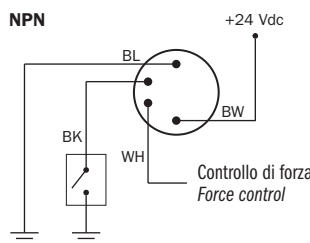
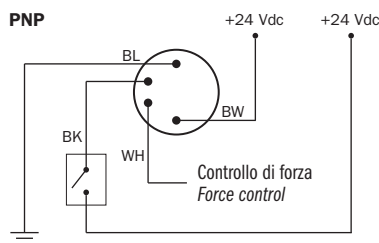


**Controllo di forza (versioni con 4 pin)**

Tra i modelli con connettore M8 a 4 pin sono disponibili versioni con un canale di ingresso analogico. Variando la tensione di riferimento nell'intervallo 2÷10 V è possibile regolare la forza di presa. Un valore di tensione inferiore ai 2 V inibisce il funzionamento del dispositivo consentendo la creazione di logiche di sicurezza di macchina.

**Force control (4-pin versions)**

In the range of models with 4-pin M8 connector, some versions are available with an analog input channel. By changing the reference voltage in the 2÷10 V range, the gripping force can be adjusted. A voltage value lower than 2 V will inhibit the device operation, allowing the creation of machine safety logics.

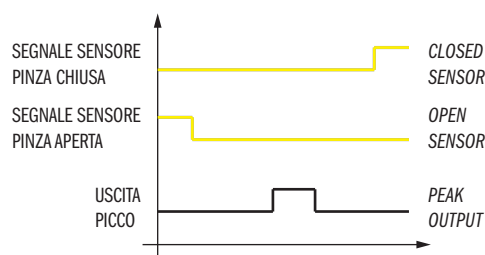
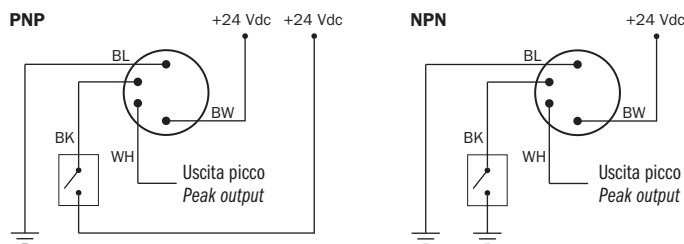


**Uscita picco**

Tra i modelli con connettore M8 a 4 pin sono disponibili versioni con un canale di uscita digitale che è attivato in automatico dal dispositivo una volta che le griffe esercitano la forza di presa. In questo modo si ottiene la funzionalità di un sensore di prossimità integrato che può operare indipendentemente dalla posizione finale delle griffe e pertanto senza alcuna regolazione.

**Peak output**

In the range of models with 4-pin M8 connector, some versions are available with a digital output channel which is automatically enabled by the device when the jaws exert the gripping force. This will work like an integrated proximity sensor which can operate independently of the final position of the jaws, and therefore with no adjustment.

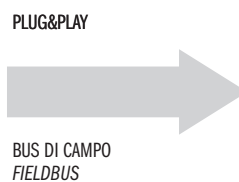
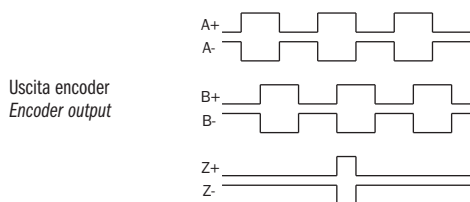


**Uscita di posizione e BUS di campo**

Saranno prossimamente disponibili versioni con un canale di uscita dedicato alla misura della posizione delle griffe (digitale e/o analogico) e versioni predisposte per la comunicazione basata su BUS di campo digitale.

**Position output and fieldbus**

Versions with an output channel (digital and/or analog) dedicated to jaw position measurement will soon be available, as well as versions set for communication based on digital fieldbus.



## RQCBOX

Il dispositivo RQCBOX permette la connessione e la comunicazione diretta di un lettore Gimatic RFID (sia RAQC che RAQCN) con un computer a scopo di test e di configurazione.

- Comunicazione seriale RS232 utilizzando eventualmente un convertitore USB/RS232 standard.
- Riconoscimento automatico di un lettore con uscite PNP (RAQC) o NPN (RAQCN).
- 8 LED integrati per la segnalazione diretta del TOOL ID memorizzato nel TAG di memoria.
- pulsante integrato per simulare il segnale di consenso normalmente generato da una sensor box per il test del conteggio del numero di cicli del sistema RFID.

## RQCBOX

The RQCBOX allows the direct connection and communication of a Gimatic's RFID reader (either RAQC or RAQCN) with a computer for configuration and testing purposes.

- RS232 communication, using a standard USB to RS232 converter, if necessary.
- Automatic recognition of readers with PNP (RAQC) or NPN (RAQCN) outputs.
- 8 built-in LEDs for direct signalling of the TOOL ID stored in the memory TAG.
- Push-button to simulate the acknowledgment signal normally provided by a sensor box for testing the cycle counter functionality of the RFID system.

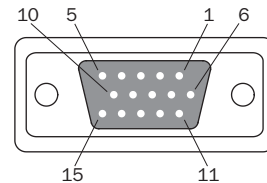
	RQCBOX	
Materiale del corpo	PA12	Body material
Intervallo di temperature di lavoro	-20 ÷ 65°C	Allowed temperature range
Dimensioni	45 mm x 42 mm x 15 mm	Dimensions
Massa	30 g	Weight
Connessioni elettriche	DB 15 pin femmina (HD) DB 15 pin female (HD)	Electrical connections
Grado di protezione	IP40	Environmental degree
Alimentazione	24 Vdc ± 10%, 0.15 Arms	Power supply
Interfaccia di comunicazione	RS232	Communication interface

### Connessioni elettriche

La connessione elettrica al lettore (sia RAQC che RAQCN) è disponibile tramite un connettore femmina DB standard a 15 pin (alta densità) coerentemente con lo schema seguente.

### Electrical connections

The electrical connection to the reader unit (RAQC or RAQCN) is available by means of a standard 15-pin (high density) DB female connector according to the following schema.



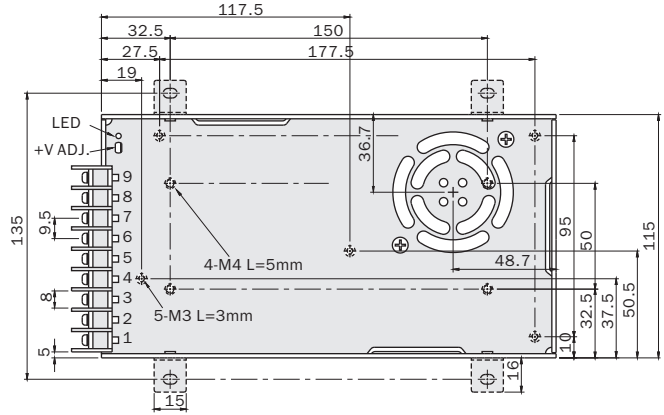
	Pin #		
Uscita digitale #1	1	DO_1	Digital output #1
Uscita digitale #2	2	DO_2	Digital output #2
Segnale RS232 Tx (uso opzionale)	3	RS_TX	RS232 Tx signal (optional use)
Massa alimentazione	4	GND	Power Supply GND
Segnale RS232 Rx (uso opzionale)	5	RS_RX	RS232 Rx signal (optional use)
Alimentazione 24 Vdc	6	24 Vdc	Power Supply 24 Vdc
Uscita digitale (allarme manutenzione)	7	DO_Count	Digital output (maintenance alarm)
Uscita digitale #3	8	DO_3	Digital output #3
Uscita digitale (condizione di errore)	9	DO_Fault	Digital output (fault condition)
Uscita digitale #4	10	DO_4	Digital output #4
Uscita digitale #5	11	DO_5	Digital output #5
Uscita digitale #6	12	DO_6	Digital output #6
Uscita digitale #7	13	DO_7	Digital output #7
Uscita digitale #8	14	DO_8	Digital output #8
Ingresso digitale (segnale esterno di fine ciclo)	15	DI_Count	Digital input (cycle end external signal)

**Alimentatori**

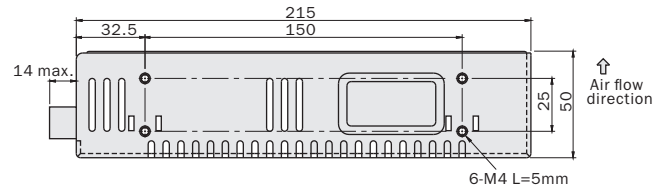
Alimentatori MEAN WELL serie SP con ingresso universale AC ed uscita a 24 V.

**Power supplies**

MEAN WELL power supplies (series SP) with universal AC input and 24 V output.



	MPS24-8.4	MPS24-13
Corrente nominale Rated current	8.4 A	13 A
Potenza nominale Rated power	200 W	320 W



**Switch**

Alimentatori a tensione variabile per usi generali configurati a 24 V ed equipaggiati con un pulsante per il comando diretto di apertura/chiusura delle pinze e degli attuatori elettrici della serie Mechatronics. Disponibili nelle due versioni con ingresso PNP o NPN.

**Switch**

Variable voltage power supplies for general use configured for 24 V and equipped with a button for direct open/close control of the Mechatronics series electric grippers and actuators. Available in two versions with PNP or NPN input.



	MPS24-1-S-PNP	MPS24-1-S-NPN
Ingresso Input	PNP	NPN
Corrente nominale Rated current	1 A	
Potenza nominale Rated power	25 W	

## Kit per il fissaggio delle pinze Mechatronics su robot con interfaccia ISO 9409-1-50-4-M6

## Kit for mounting Mechatronics grippers onto a robot with ISO 9409-1-50-4-M6 interface

### MFI-A374-A

- Massa: 50g

### MFI-A374-A

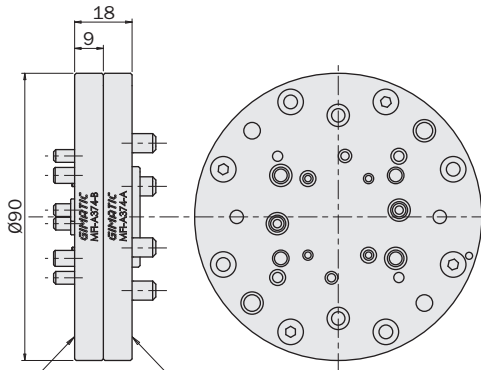
- Mass: 50g

### MFI-A374-B

- Massa: 55g

### MFI-A374-B

- Mass: 55g

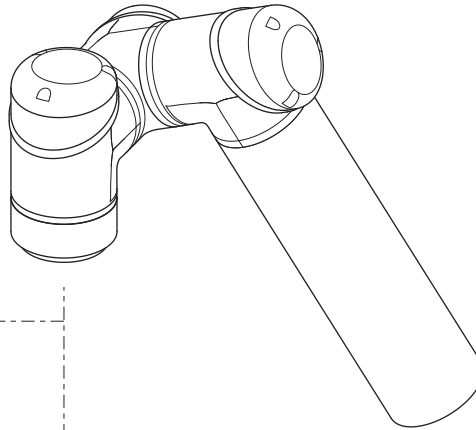


### MFI-A374-B

Lato PINZA  
GRIPPER side

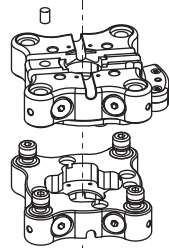
### MFI-A374-A

Lato ISO 9409-1-50-4-M6  
ISO 9409-1-50-4-M6 side



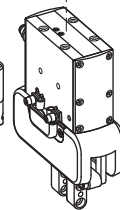
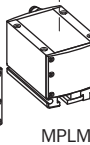
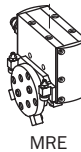
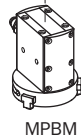
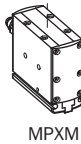
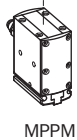
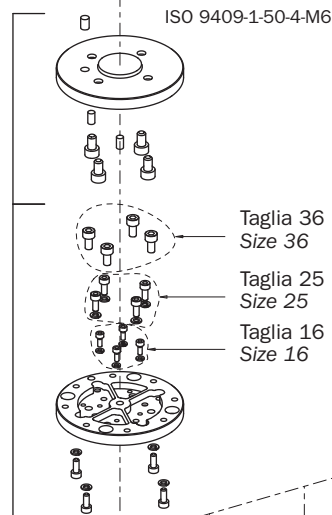
### QC75-A

### QC75-B



### MFI-A374-A

### MFI-A374-B



## Glossario

### Forza di serraggio totale

Valore medio di forza erogata dalle griffe.

### Coppia di serraggio totale

Valore medio di coppia erogata dalle griffe.

### Coppia di rotazione

Valore medio di coppia erogata dal piattello rotante.

### Corsa

Valore medio della corsa totale delle griffe.

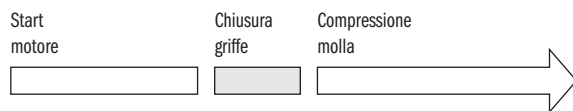
### Frequenza

Valore medio di frequenza ciclo composto da apertura, chiusura e tempo di raffreddamento per evitare sovratemperature del motore. Questo valore è determinato senza carico collegato all'attuatore.

$$F_{\text{ciclo}} \text{ (Hz)} = \frac{1}{(t_{\text{lavoro pinza}} + t_{\text{raffreddamento}}) \times 2}$$

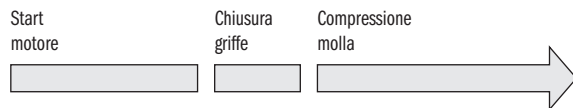
### Tempo chiusura griffe

Tempo del solo movimento meccanico di chiusura griffe dopo lo start motore e prima della compressione molla.



### Tempo di lavoro pinza

Tempo totale di start motore, movimentazione griffe e compressione molla.



### Ciclo di lavoro

Rapporto tra il tempo operativo dell'attuatore ed il tempo totale di ciclo che comprende anche il tempo di raffreddamento.

$$D \text{ (%) } = \frac{t_{\text{lavoro pinza}}}{(t_{\text{lavoro pinza}} + t_{\text{raffreddamento}})}$$

$$t_{\text{raffreddamento}} \text{ (s)} = \left( \frac{t_{\text{lavoro pinza}}}{D \text{ (%)}} \right) - t_{\text{lavoro pinza}}$$

### Tensione di alimentazione

Tensione continuativa necessaria per alimentare l'attuatore.

### Corrente di picco

Corrente massima di alimentazione del motore limitata dalla tensione di BUS, dalla resistenza elettrica del motore (a temperatura prefissata) e da fattori costruttivi. Per i motori lineari, gli attuatori lineari elettrici e le guide lineari elettriche rappresenta il valore massimo rms.

### Potenza motore Brushless

Massima potenza meccanica del motore brushless.

### Connessione

Connettore circolare metallico standard M8x1, 3 poli.

## Glossary

### Total gripping force

Average jaws gripping force.

### Total gripping force

Average jaws gripping torque.

### Swivelling torque

Average provided torque on the rotary plate.

### Stroke

Average value of the total jaws stroke.

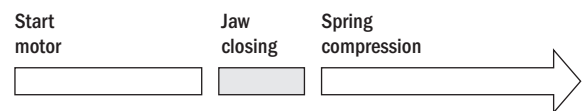
### Frequency

Mean frequency value for a cycle comprising opening, closure and cooling time to prevent the motor from overheating. This value is calculated with no load connected to the actuator.

$$F_{\text{cycle}} \text{ (Hz)} = \frac{1}{(t_{\text{working gripper}} + t_{\text{cooling}}) \times 2}$$

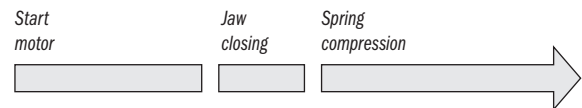
### Closing jaws time

Mechanical moving jaws time after motor starts running and before spring compression.



### Working gripper time

Start motor, jaws movement and spring compression total time.



### Duty cycle

Ratio of time that actuator spends in an active state to the time spent to make the total cycle with cooling time included.

$$D \text{ (%) } = \frac{t_{\text{working gripper}}}{(t_{\text{working gripper}} + t_{\text{cooling}})}$$

$$t_{\text{cooling}} \text{ (s)} = \left( \frac{t_{\text{working gripper}}}{D \text{ (%)}} \right) - t_{\text{working gripper}}$$

### Power supply

Necessary continuous voltage to power supply actuator.

### Peak current

Maximum motor supply current, limited by the BUS voltage, the motor's electrical resistance (at a set temperature) and constructive factors. For linear motors, electrical linear actuators and electric linear guideways, it is the maximum rms value.

### Brushless motor power

Maximum mechanical brushless motor power.

### Connection

Standard metal round M8x1, 3 pole connector.

## Glossario

### Segnale d'ingresso apertura/chiusura

Logica a collettore aperto pilotabile con +24Vdc e GND.

### Temperatura di esercizio

Temperatura ambiente rappresentante le condizioni nominali di funzionamento, limitata dalle caratteristiche dei materiali e dalla viscosità del lubrificante.

### Grado di protezione

Codice che riassume il livello di protezione dell'apparecchiatura elettrica contro l'ingresso di parti solide e liquide.

### Rumorosità

Valore fondamentale di rumorosità espresso in decibel per area prevalentemente industriale.

### Massa

Massa totale dell'attuatore compreso di motore brushless.

### Certificazione Camera Bianca IPA

Certificazione ISO14644-1 per l'utilizzo dell'attuatore in camera bianca eseguita presso Fraunhofer Institute.

### Certificazione CE

Compatibilità elettromagnetica (EMC) in accordo alla EN61000-06-2:2005; EN61000-6-3:2007; EN61000-6-4:2007.

### Tensione di BUS

Tensione di picco erogata dall'azionamento del motore.

### Forza di picco

Forza erogata dal motore con la corrente di picco.

### Costante di forza

Costante di proporzionalità diretta tra la corrente di alimentazione e la forza erogata del motore.

### Impuntamento

Interazione tra i magneti permanenti e lo statore che genera una forza periodica resistente ad ogni polo.

### Forza continuativa

Forza erogabile dal motore con la corrente continuativa.

### Corrente continuativa

Corrente con cui il motore può essere alimentato per tempo indefinito e che comporta il raggiungimento della temperatura interna al valore limite prefissato (senza sovratemperatura).

### Resistenza di fase

Valore di resistenza elettrica equivalente misurata ai capi di una fase ad una temperatura prefissata.

### Induttanza di fase

Induttanza elettrica equivalente misurata ai capi di una fase.

### Costante BEMF

Contro-tensione generata da ogni fase quando il motore si muove a 1m/s.

## Glossary

### Open/closed input signal

Open collector logic system drivable with 24Vdc and GND.

### Operating temperature

Room temperature refers to the nominal operating conditions. It is limited by the characteristics of the materials and the viscosity of the lubricant.

### Environmental Degree

Degree of protection provided against intrusion of solid objects and water in mechanical casings with electrical enclosures.

### Noise level

Industrial area noise level expressed in decibel.

### Mass

Total actuator mass with brushless motor included.

### IPA Clean Room Certification

ISO 14644-1 clean room certification made by Fraunhofer Institute.

### CE certification

Electromagnetic compatibility (EMC) accordingly with EN61000-06-2:2005; EN61000-6-3:2007; EN61000-6-4:2007.

### BUS voltage

Peak voltage supplied at motor start-up.

### Peak force

Peak current force.

### Force coefficient

Constant of direct proportionality between the feed current and the motor force output.

### Cogging

Interaction between permanent magnets and stator that causes a periodic detent force at every pole.

### Continuous force

Motor force output capacity with continuous current.

### Continuous current

Current which can be supplied to the motor indefinitely, at which it reaches the maximum rated internal temperature (without overheating).

### Phase resistance

Value of equivalent electric resistance measured across the terminals of a phase at a predetermined temperature.

### Phase inductance

Equivalent electric inductance measured across the terminals of a phase.

### BEMF constant

Back voltage generated when the motor is 1 m/s moved.

## Glossario

### Resistenza termica

Valore di surriscaldamento per ogni Watt di potenza prodotto dal motore.

### Costante termica

Tempo impiegato dal motore per raggiungere la temperatura a regime.

### Massima temperatura di fase

Temperatura massima raggiungibile dagli avvolgimenti.

### Valore PTC

Valore della resistenza del sensore di temperatura.

### Tensione massima PTC

Tensione di alimentazione massima applicabile ai capi della termoresistenza PTC.

### Trasduttore di retroazione

Dispositivo per rilevare e misurare la posizione reciproca motore-slider.

### Uscita circuito

Tipologia di segnale generato dal trasduttore di retroazione verso il controllore.

ABZ: segnale d'uscita a onda quadra.

SIN/COS: segnale d'uscita sinusoidale.

HALL: uscita a bassa risoluzione per fasatura motore.

### Segnale d'uscita

Standard di comunicazione utilizzato.

### Consumo di corrente

Assorbimento massimo del sensore dall'alimentazione.

### Velocità di lavoro

Massima velocità alla quale il sensore riesce a fornire una corretta informazione della posizione.

### Risoluzione

Parametro che indica la precisione della rilevazione degli spostamenti meccanici.

$$\text{Risoluzione } (\mu\text{m}) = \frac{\text{Passo polare}}{\text{Impulsi}}$$

### Ripetibilità

Esprime la concordanza tra una serie di misure in condizione immutata di misura.

### Passo Polare

Distanza lineare tra due poli magnetici uguali consecutivi (Nord > Nord; Sud > Sud).

### Impulsi / Sinusoidi

Numero di impulsi oppure onde sinusoidali all'interno di un passo polare.

## Glossary

### Thermal resistance

Overheating for every Watt power dissipate from the motor.

### Thermal constant

Time taken from the motor to reach the maximum temperature.

### Max phase temperature

Maximum permissible winding temperature.

### PTC value

Resistance value of the temperature sensors (PTC).

### PTC max voltage

Maximum feed voltage applicable to the terminals of the PTC thermistor.

### Feedback transducer

Electronic device to check and measure the motor/slider respective positions.

### Circuit output

Type of signal generated by the feedback transducer toward the controller.

ABZ: square wave incremental output.

SIN/COS: sinusoidal wave encoder output.

HALL: low resolution feedback for motor phasing.

### Output signal

Communication standard used.

### Current consumption

Maximum sensor current consumption provided from power supply.

### Working speed

Maximum sensor speed to get correct position information.

### Resolution

Smallest incremental pitch that system can perform.

$$\text{Resolution } (\mu\text{m}) = \frac{\text{Pole pitch}}{\text{pulses}}$$

### Repeatability

Ability of a system to perform and maintain same measure in routine circumstances.

### Pole Pitch

Linear distance between the consecutive same poles (North > North; South > South).

### Impulses / Sinusoid

Incremental impulses or sinusoidal waveforms included in a single pole pitch.



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**SENSORI**

*Sensors*



## Codice sensori magnetici

## Magnetic sensor encoding

### Serie Series

SL \_\_\_\_\_  
SC/SS /SN/SA/SM/CB/PRO-SS/PRO-SN/SSY

### Connessione

- 1 Cavo 2 poli
- 2 Connettore M8 2 poli
- 3 Connettore M8 3 poli
- 4 Cavo 3 fili
- 5 Connettore M12 2 poli
- 6 Connettore M12 3 poli
- 7 Cavo 3 fili derivazione M12
- 8 Connettore AU M8 3 poli
- 9 Connettore AU M12 3 poli

### Tipo circuito

- A Reed 2 fili NO LED
- B Reed 2 fili NO LED + VDR
- C Reed 2 fili
- D Reed PNP 3 fili
- E 2 fili magnetoresistivo (PNP-NPN)
- F Reed NC 2 fili NO LED
- G Reed NC 2 fili NO LED + VDR
- H Reed NC 2 fili
- L NPN magnetoresistivo NC
- M NPN magnetoresistivo NA
- N PNP magnetoresistivo NA
- P PNP magnetoresistivo NC
- S Reed scambio
- V Analogico 0-10 V

### Tensione di alimentazione nominale

- 1 5V dc
- 2 24 V ac/dc
- 4 110 V ac/dc
- 5 250 V ac/dc

### Lunghezza cavo

- ... 0 m
- 03 0.3 m
- 25 2.5 m

### Personalizzazione

-G Gimatic S.r.l. \_\_\_\_\_

### Connection

- 2-pole cable
- 2-pole M8 connector
- 3-pole M8 connector
- 3-pole cable
- 2-pole M12 connector
- 3-pole M12 connector
- 3-pole M12 connector
- 3-pole AU M8 connector
- 3-pole AU M12 connector

### Circuit type

- NO LED 2-wire reed
- NO LED + VDR 2-wire reed
- 2-wire reed
- 3-wire PNP reed
- 2-wire magnetoresistive (PNP-NPN)
- NO LED 2-wire NC reed
- NO LED + VDR 2-wire NC reed
- 2-wire NC reed
- Magnetoresistive NPN NC
- Magnetoresistive NPN NO
- Magnetoresistive PNP NO
- Magnetoresistive PNP NC
- Changeover reed
- 0-10V analog

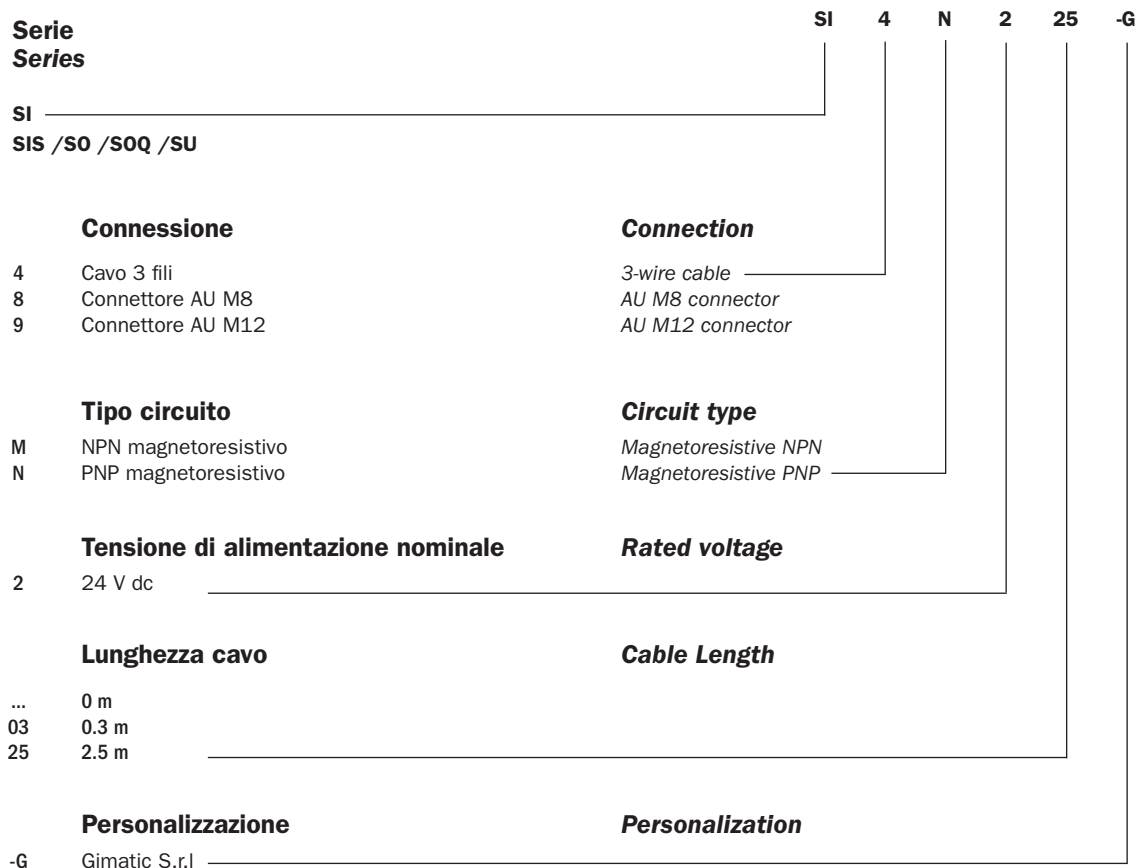
### Power supply voltage

### Standard cable length

### Personalization

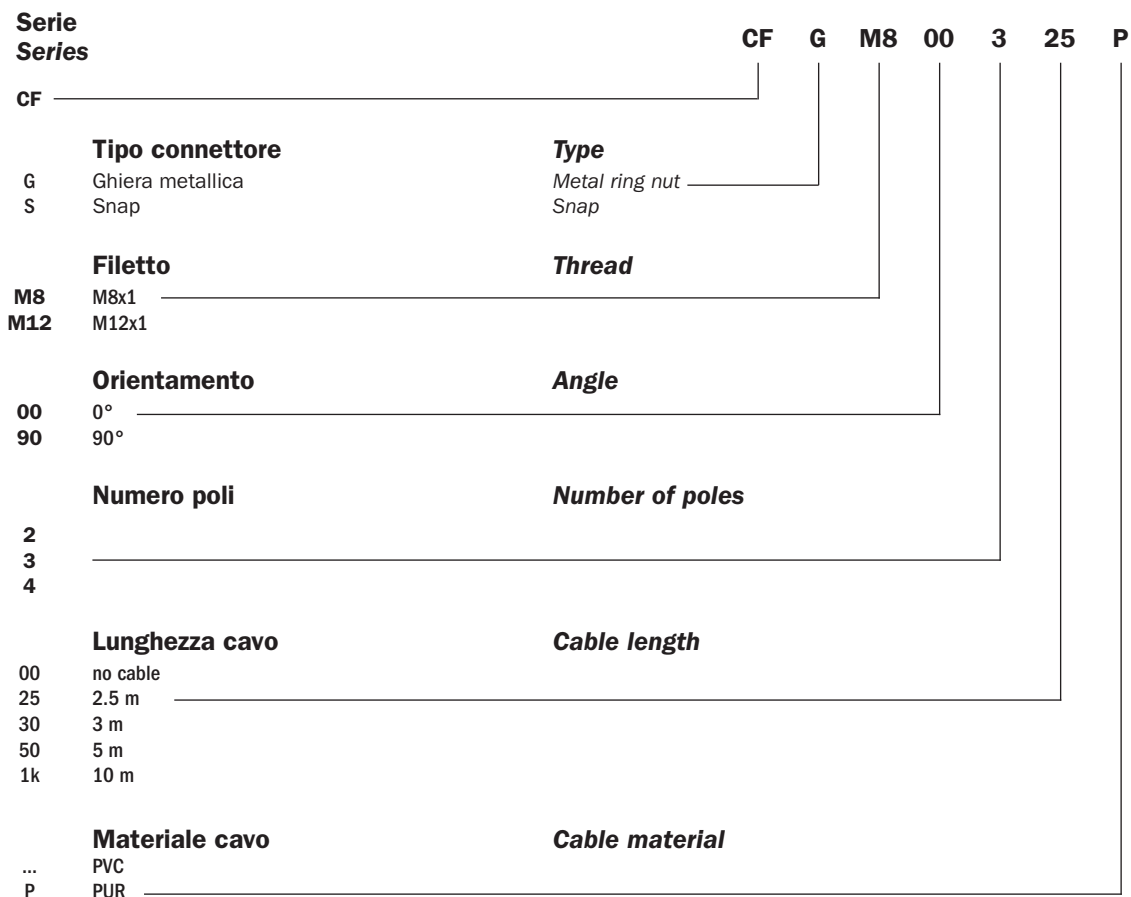
**Codice tutti gli altri sensori**

**All other sensor encoding**



**Codice connettori**

**Connector encoding**



## Generalità

I sensori magnetici sono dispositivi che, in presenza di campi magnetici, cambiano lo stato dell'uscita del circuito. Vengono normalmente utilizzati come finecorsa di prossimità su cilindri con magnete permanente nel pistone. Applicando il sensore nell'apposita sede sul corpo esterno del cilindro, si può rilevare la posizione del pistone tramite un contatto elettrico o un segnale in tensione. A seconda del tipo di sensore, l'elemento sensibile può essere rispettivamente un relè REED oppure un chip magneto-resistivo (GMR). I sensori sono disponibili nella versione con uscita cavo oppure con connettore. Il nostro "custom service" è a disposizione dei clienti qualora i nostri prodotti di serie non soddisfacessero le esigenze.

## General features

Magnetic sensors are devices that change circuit output status in the presence of magnetic fields. They are normally used as proximity sensors on cylinders with a permanent magnet in the piston. By positioning the sensor in a special housing on the outside of the cylinder body, the position of the piston can be detected via an electric contact or voltage signal. The sensing element may be a reed switch or magneto resistive chip (GMR sensor) depending on the type of sensor. Sensors are available with a cable outlet or connector. A bespoke service is available if our standard products do not meet customer requirements.



## Scelta del sensore

Il sensore è un interruttore che solitamente è connesso in serie ad un cavo: è importante quindi che sia installato rispettando le caratteristiche elettriche dichiarate.

I principi di funzionamento sono due:

- **RELE' REED** dove l'elemento sensibile consiste in un' ampolla di vetro che contiene due lamelle metalliche polarizzate. Queste lamelle si attraggono in presenza di campo magnetico. Può funzionare con alimentazione Vdc o Vac. L'elemento sensibile potrebbe avere malfunzionamenti in presenza di forti vibrazioni.
- **ELETTRONICO** dove l'elemento sensibile è un chip magneto-resistivo (GMR) che, in presenza di campi magnetici, cambia lo stato di un'uscita. Funziona esclusivamente con alimentazione Vdc ed ha una vita, teoricamente, infinita. L'elemento sensibile è immune alle forti vibrazioni.

La scelta del tipo di uscita tra PNP e NPN è generalmente guidata dall'integrazione nel sistema di automazione pre-esistente: per un corretto funzionamento del sistema, il tipo di uscita del sensore deve corrispondere al tipo di ingresso del controllore (o PLC) utilizzato. In generale la soluzione PNP è più diffusa in Nord America ed in Europa mentre la soluzione NPN è più diffusa in Asia. I sensori di tipo PNP sono vulnerabili ai corti circuiti mentre i sensori di tipo NPN possono generare falsi segnali al controllore in caso di contatto indesiderato verso massa. Infine un'ultima distinzione riguarda la selezione dello stato del sensore in condizione non attiva, ovvero tra sensore normalmente aperto (NA) o normalmente chiuso (NC). Nel primo caso il sensore si comporta secondo una logica di rilevamento positiva, non genera segnale in caso di interruzione di un conduttore ma può generare falsi segnali in caso di corto circuito. Nel secondo caso il sensore si comporta secondo una logica di rilevamento negativa ed un eventuale conduttore interrotto genererebbe un falso segnale. In entrambi i casi la logica può essere invertita facilmente dal controllore (o PLC).

## Choosing a sensor

A sensor is a switch that is usually connected in series to a cable, therefore it must be installed in line with specified electrical characteristics.

There are two principles of operation:

- a **REED SWITCH** where the sensing element consists of a glass bulb containing two polarised metal strips. There is an attraction between these strips in the presence of a magnetic field. It can operate with a DC or AC voltage supply. The sensing element could malfunction in the presence of strong vibrations.
- **ELECTRONICALLY** where the sensing element is a magnetoresistive chip (GMR sensor), which changes the status of an output in the presence of magnetic fields. It only operates with a DC voltage supply and has a theoretically infinite lifetime. The sensing element is immune to strong vibrations.

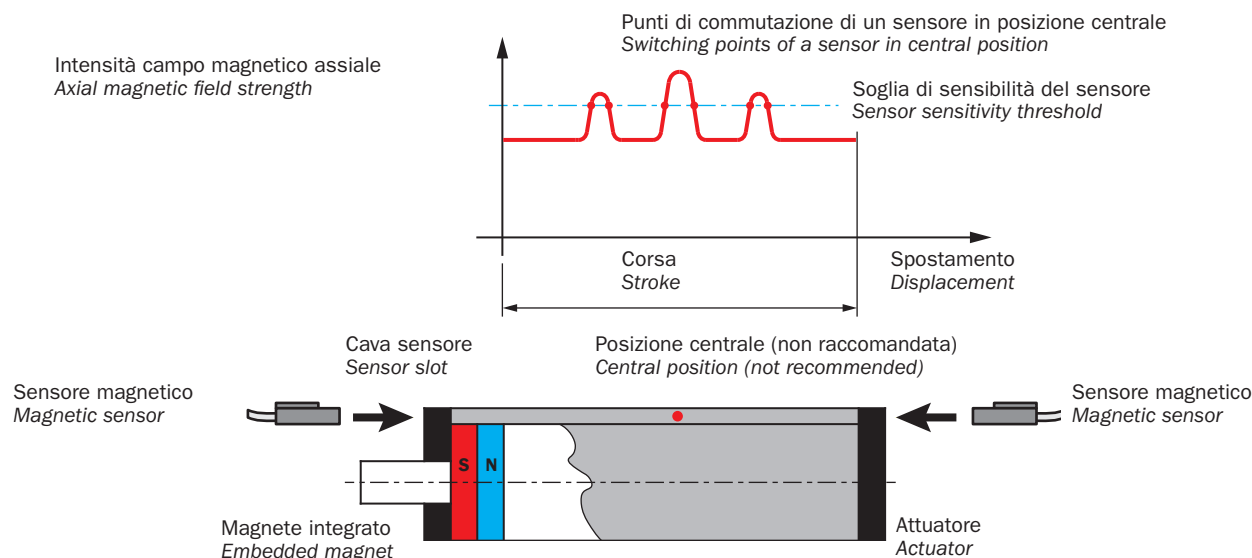
The decision to choose a PNP or NPN output is usually determined by the method of integration in the existing automation system: for correct system operation, the type of sensor output must correspond to the type of controller (or PLC) output used. The PNP solution is generally more widespread in North America and Europe, whereas the NPN solution is more common in Asia. PNP sensors are vulnerable to short circuits, whereas NPN sensors can produce false signals in the controller in the event of an unwanted earth contact. A final consideration is the status of the sensor under active conditions, i.e. between a normally open (NO) or normally closed (NC) sensor. In the first case the sensor behaves according to positive sensing logic, a signal is not generated if a wire is interrupted but false signals may be produced in the event of a short circuit. In the second case the sensor behaves according to negative sensing logic, and an interrupted wire would produce a false signal. The logic can easily be inverted in both cases by the controller (or PLC).

### Avvertenze nell'uso dei sensori magnetici

I sensori magnetici sono spesso utilizzati in abbinamento a magneti che ne generano l'attuazione e che sono tipicamente integrati all'interno degli attuatori. La caratteristica principale di un qualsiasi sensore magnetico digitale è la sensibilità che rappresenta il valore di intensità del campo magnetico alla quale il sensore commuta l'uscita. Riferendosi allo schema riportato sotto, il grafico mostra la tipica forma d'onda dell'intensità di campo magnetico assiale misurabile da un gaussmetro in posizione centrale (PC). In base alla sensibilità del sensore e alle caratteristiche del campo magnetico, un sensore posizionato centralmente può commutare l'uscita più volte durante la corsa dell'attuatore. Se non diversamente indicato, in generale una buona pratica di installazione consiste pertanto nel non posizionare il sensore centralmente, bensì di inserire il sensore lateralmente dal fondo della cava del dispositivo e regolare manualmente la posizione di commutazione realizzando più corse dell'attuatore. Normalmente i sensori sono infatti utilizzati per identificare esclusivamente le condizioni di fine corsa. Per altre condizioni operative si prega di contattare il supporto tecnico.

### Instructions on using magnetic sensors

Magnetic sensors are often used in combination with magnets to produce magnetic actuation, and are typically embedded in actuators. The main characteristic of any digital magnetic sensor is the sensitivity level representing the magnetic field strength value at which the sensor switches the output. The graph below shows the typical waveform of axial magnetic field strength measured by a Gauss meter in the central position (PC). Depending on the sensitivity level of the sensor and magnetic field characteristics, a sensor placed centrally may switch output several times during the actuator stroke. Unless stated otherwise, it is generally good practice not to install the sensor centrally, but to insert it laterally into the groove and manually adjust the position of the sensor while performing several actuator strokes. In practice, sensors are normally only used to identify end-of-stroke conditions. For any other operating conditions, please contact the technical support department.



### Circuito di protezione per sensori

La commutazione di carichi induttivi da parte dei contatti REED produce un elevato picco di tensione al momento della disinserzione. Per tale motivo, al fine di prevenire eventuali scariche dielettriche oppure un arco voltaico, è necessario introdurre un circuito di protezione. Questo può essere:

- Un circuito R-C in parallelo al finecorsa se alimentato in V dc (Figura 1).
- Un diodo in parallelo al carico se alimentato in V dc (Figura 2).
- N°2 diodi Zener in parallelo al carico se alimentato in V ac/dc (Figura 3).
- Un varistore (VDR) in parallelo al carico se alimentato in V ac/dc (Figura 4).

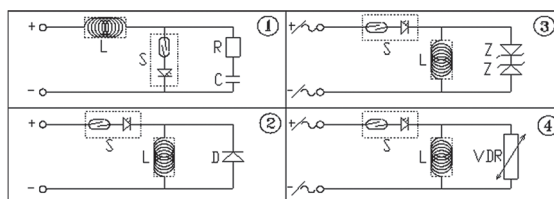
### Sensor safety circuit

The switching of inductive loads with reed switches produces a high voltage peak during disconnection. As a result, a safety circuit is required to prevent dielectric discharges or voltaic arcs. This can be:

- A R-C circuit in parallel with the load in the case of a DC voltage supply (figure 1).
- A diode in parallel with the load in the case of a DC voltage supply (figure 2).
- 2 Zener diodes in parallel with the load with an AC/DC voltage supply (figure 3).
- A varistor (VDR) in parallel with the load with an AC/DC voltage supply (figure 4).

La commutazione di carichi capacitivi o l'impiego di cavi con lunghezza maggiore a metri 10 produce picchi di corrente al momento dell'inserzione. Perciò è necessario introdurre una resistenza di protezione vicino al finecorsa sul filo marrone. In questa fase è necessario mettere attenzione garantendo la minima corrente necessaria per pilotare il sensore (10÷20 mA).

The switching of capacitive loads or the use of cables longer than 10 metres produces current peaks during connection. As a result, protective resistance is required near the switch on the brown wire. In this phase ensure the minimum current required for the sensor is guaranteed (10÷20 mA).

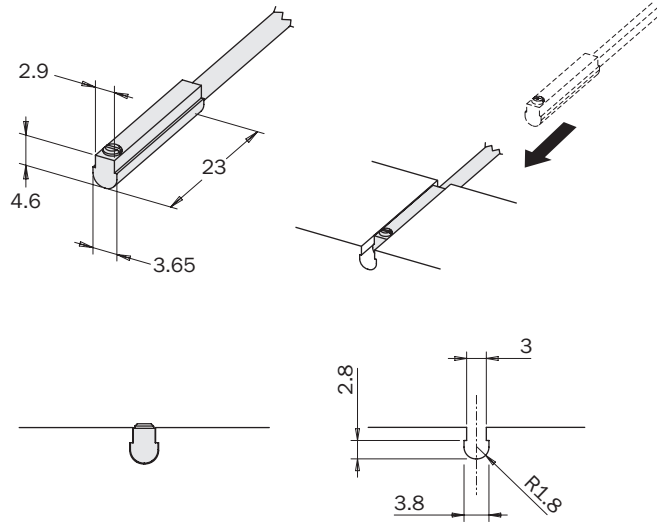


**Sensori magnetici per cave a C**

- Sensori reed o magnetoresistivi GMR.
- Uscita in logica PNP o NPN per i sensori magnetoresistivi.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cave K-SENS opzionali.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

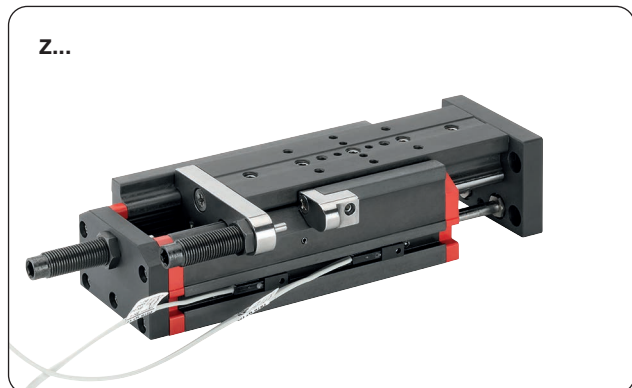
**Magnetic sensors for C-slots**

- Reed or magnetoresistive GMR sensors.
- PNP or NPN logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot or inline mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.



Dimensions (mm)

**Esempi di utilizzo**  
**Application examples**



Sensore con cavo Sensor with cable	<b>SS1C225-G</b>	<b>SS4D225-G</b>	<b>SS4N225-G</b>	<b>SS4M225-G</b>
Sensore con conn. M8 maschio Sensor with M8 male connector	<b>SS2C203-G</b>	<b>SS3D203-G</b>	<b>SS3N203-G</b>	<b>SS3M203-G</b>
Tipo sensore Sensor type	REED 2 fili normalmente Aperto  2-wire REED Normally Open	REED PNP 3 fili normalmente Aperto  3-wire PNP REED Normally Open	PNP Magnetoresistivo normalmente Aperto  Magnetoresistive PNP Normally Open	NPN Magnetoresistivo normalmente Aperto  Magnetoresistive NPN Normally Open
Tensione di alimentazione Power supply	3+30 Vac/dc		6+30 Vdc	
Corrente di commutazione Switching current	0.2 A			
Potenza (carico ohmico) Power rating (Ohmic load)	6 W			
Punto di lavoro nominale Nominal switching point	15+20 AT		28±5 Gauss	
Differenza ON-OFF ON-OFF differential	5+10 AT		5+15 Gauss	
Tempo commutazione "ON" ON switching time	0.5 ms	2 µs		
Tempo commutazione "OFF" OFF switching time	0.1 ms	20 µs		
Temperatura di lavoro Operating temperature	-10+70°C			
Frequenza di lavoro Switching frequency	500 kHz		200 kHz	
Vita elettrica Electric service life	10 <sup>7</sup> imp.		10 <sup>9</sup> imp.	
Velocità di passaggio pistone Piston speed	10 m/s			
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes			
Grado di protezione Protection rating	IP 67			
Materiali corpo Sensor body material	PA; AISI 303			
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)			
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II 0.R.			
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>			
Materiali connettore M8 M8 connector material	PUR / ottone dorato PUR / gold-plated brass			
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11			
Configurazioni circuitali Wiring diagrams				
Connessione Connection	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT); Non connesso N.C. Brown (BN +); Blue (BU -); Black (BK OUT); Not Connected N.C.</p>			

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Grippers

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Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

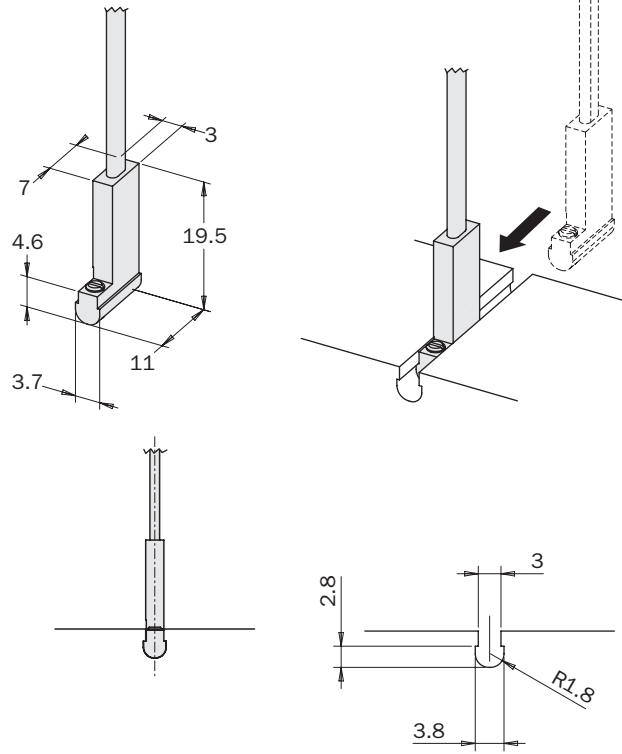


**Sensori magnetici per cave a C**

- Sensori magnetoresistivi GMR.
- Uscita in logica PNP o NPN.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cave su richiesta.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

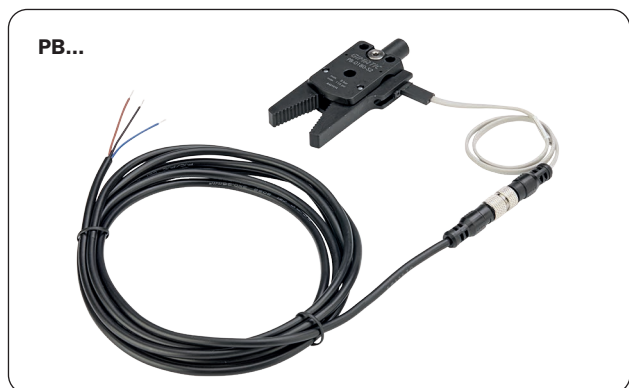
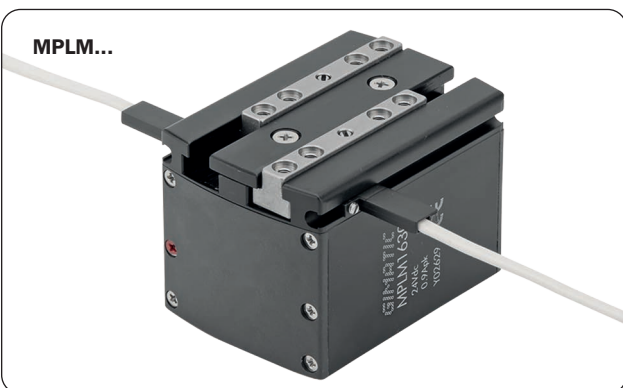
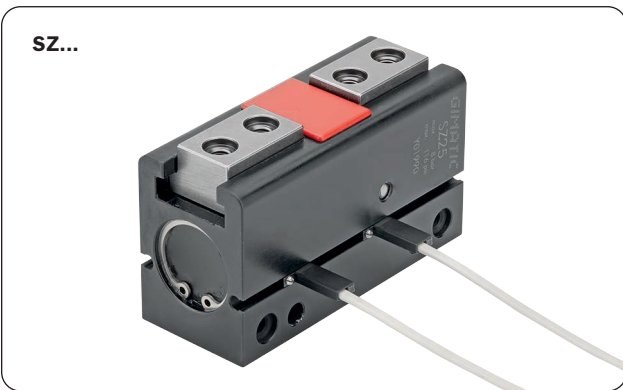
**Magnetic sensors for C-slots**

- GMR sensors.
- PNP or NPN logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot inline mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.



Dimensions (mm)

**Esempi di utilizzo**  
**Application examples**



Sensore con cavo Sensor with cable	SN4N225-G	SN4M225-G
Sensore con conn. M8 maschio Sensor with M8 male connector	SN3N203-G	SN3M203-G
Tipo sensore Sensor type	PNP Magnetroresistivo normalmente Aperto Magnetroresistive PNP Normally Open	NPN Magnetroresistivo normalmente Aperto Magnetroresistive NPN Normally Open
Tensione di alimentazione Power supply	6±30 Vdc	
Corrente di commutazione Switching current	0.2 A	
Potenza (carico ohmico) Power rating (Ohmic load)	6 W	
Punto di lavoro nominale Nominal switching point	28±5 Gauss	
Differenza ON-OFF ON-OFF differential	5±15 Gauss	
Tempo commutazione "ON" ON switching time	2 µs	
Tempo commutazione "OFF" OFF switching time	20 µs	
Temperatura di lavoro Operating temperature	-10÷70°C	
Frequenza di lavoro Switching frequency	200 kHz	
Vita elettrica Electric service life	10 <sup>7</sup> imp.	
Velocità di passaggio pistone Piston speed	10 m/s	
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes	
Grado di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA; AISI 303	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II 0.R.	
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>	
Materiali connettore M8 M8 connector material	PUR / ottone dorato PUR / gold-plated brass	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 61000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connection	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)</p>	

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Suspensions

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Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

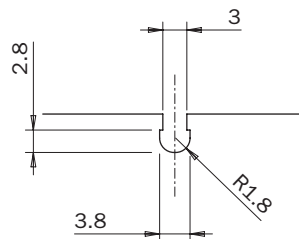
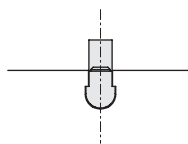
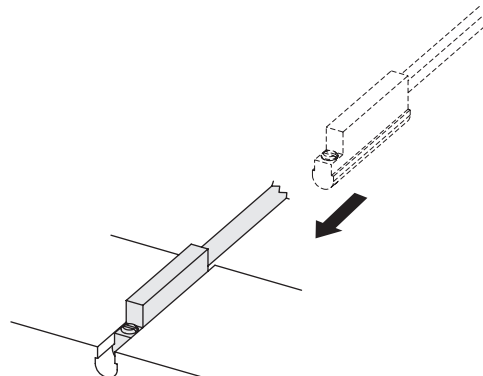
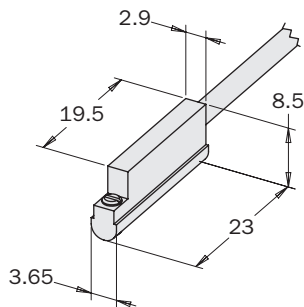
Sensori  
Sensors

**Sensori magnetici analogici**

- Sensori magnetoresistivi GMR.
- Uscita analogica 0-10 Vdc.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8.
- Applicazione diretta in cava "C".
- Adattatori per cave su richiesta.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

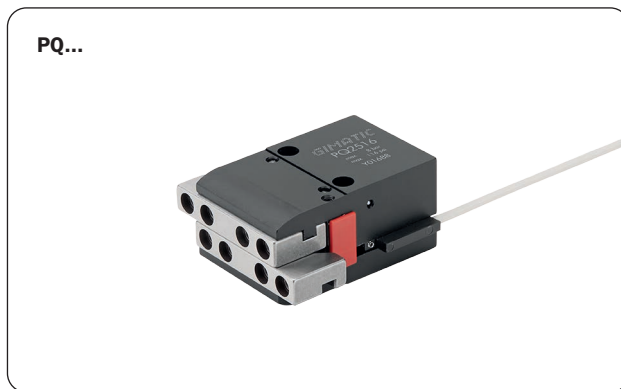
**Analog magnetic sensors**

- GMR sensors.
- 0-10Vdc analog output.
- No problems in case of vibration.
- Cable or M8 connector output.
- Standard C-slot or T-slot direct mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extension.
- Axial mounting.



**Esempi di utilizzo**  
**Application examples**

Dimensions (mm)



Sensore con cavo Sensor with cable	<b>SS4V225-G</b>	<b>SS4V225HS-G</b>
Sensore con conn. M8 maschio Sensor with M8 connector	<b>SS3V203-G</b>	<b>SS3V203HS-G</b>
Tipo sensore Sensor type	Sensore magnetico con uscita analogica Analog output magnetic sensor	
Tensione di alimentazione Power supply	12+24 Vdc	
Intervallo tensione di uscita Output voltage interval	0+10 Vdc	
Intervallo operativo lineare Nominal operating range	5+35 Gauss	1.5+7.5 Gauss
Livello di saturazione Saturation level	50 Gauss	15 Gauss
Frequenza operativa Switching frequency	100 kHz	
Temperatura di lavoro Operating temperature	-10+60 °C	
Protezione contro inversione polarità Reverse polarity protection	Sì Yes	
Gradi di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA; AISI 303	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	PVC CEI2022II O.R.	
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 61000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connection	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)</p>	

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Robot Kit

Accessori Opzionali  
Options

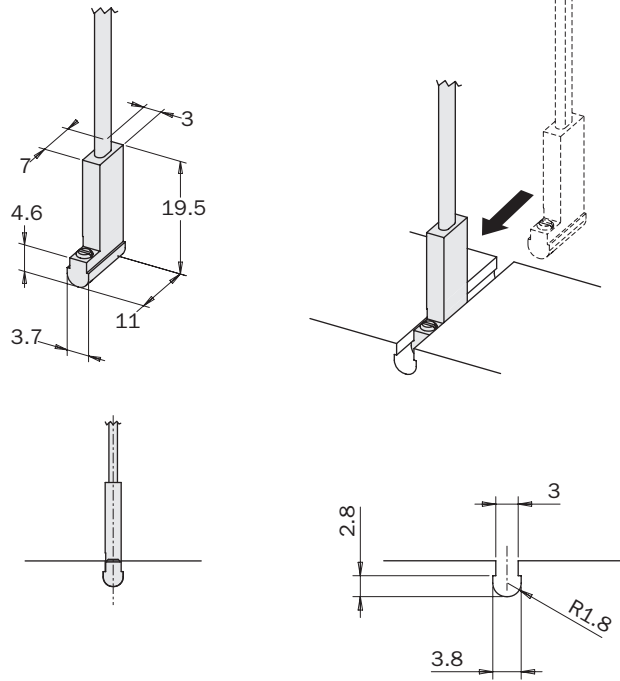
Sensori  
Sensors

## Sensori magnetici analogici

- Sensori magnetoresistivi GMR.
- Uscita analogica 0-10 Vdc.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8.
- Applicazione diretta in cava "C".
- Adattatori per cave su richiesta.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

## Analog magnetic sensors

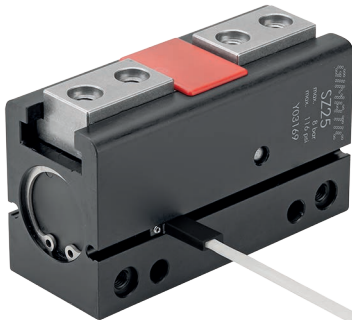
- GMR sensors.
- 0-10Vdc analog output.
- No problems in case of vibration.
- Cable or M8 connector output.
- Standard C-slot or T-slot direct mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extension.
- Axial mounting.



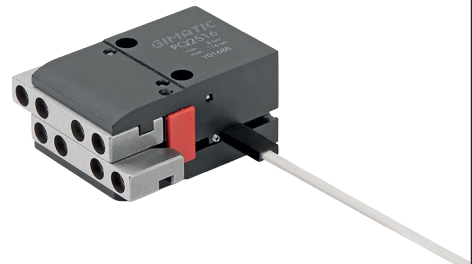
## Esempi di utilizzo Application examples

Dimensions (mm)

SZ...



PQ...

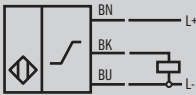
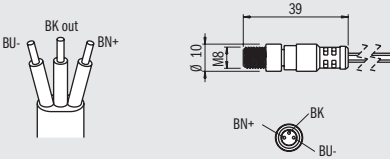


MPLM...



PB...



Sensore con cavo Sensor with cable	<b>SN4V225-G</b>	<b>SN4V225HS-G</b>
Sensore con conn. M8 maschio Sensor with M8 connector	<b>SN3V203-G</b>	<b>SN3V203HS-G</b>
Tipo sensore Sensor type	Sensore magnetico con uscita analogica Analog output magnetic sensor	
Tensione di alimentazione Power supply	12+24 Vdc	
Intervallo tensione di uscita Output voltage interval	0+10 Vdc	
Intervallo operativo lineare Nominal operating range	5+35 Gauss	1.5+7.5 Gauss
Livello di saturazione Saturation level	50 Gauss	15 Gauss
Frequenza operativa Switching frequency	100 kHz	
Temperatura di lavoro Operating temperature	-10+60 °C	
Protezione contro inversione polarità Reverse polarity protection	Sì Yes	
Gradi di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA; AISI 303	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	PVC CEI2022II O.R.	
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connection	 <p>Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)</p>	

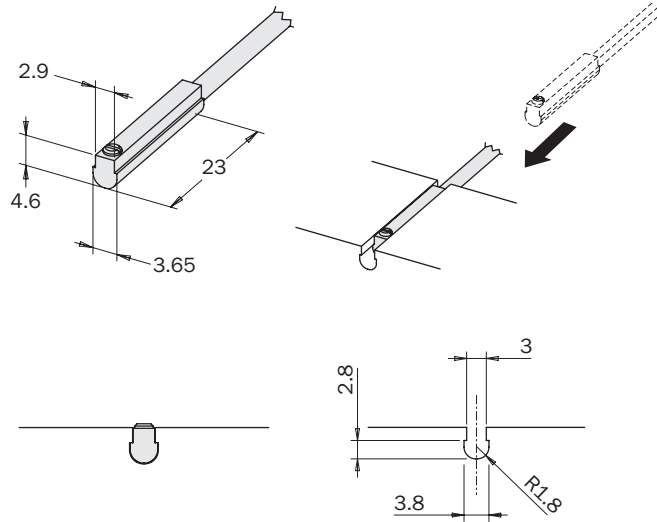
Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

## Sensori magnetici per cave a C a isteresi ridotta

- Sensori magnetoresistivi GMR.
- Uscita in logica PNP o NPN.
- Nessun problema in caso di vibrazioni.
- Uscita con cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cave su richiesta.
- Prolunghe da 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

## Magnetic sensors for C-slots with reduced hysteresis

- GMR sensors.
- PNP or NPN logic output.
- No problems in case of vibration.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot inline mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extension.
- Axial mounting.



Dimensions (mm)

## Esempi di utilizzo Application examples



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

Sensore con cavo Sensor with cable	SSY4N225-G	SSY4M225-G
Sensore con conn. M8 maschio Sensor with M8 connector	SSY3N203-G	SSY3M203-G
Tipo sensore Sensor type	PNP Magnetoresistivo normalmente Aperto Magnetoresistive PNP Normally Open	NPN Magnetoresistivo normalmente Aperto Magnetoresistive NPN Normally Open
Tensione di alimentazione Power supply	6±30 Vdc	
Corrente di commutazione Switching current	0.2 A	
Potenza (carico ohmico) Power rating (Ohmic load)	6 W	
Intervallo di attivazione Switching interval	21±48 Gauss	
Differenza ON-OFF ON-OFF differential	3 Gauss	
Tempo commutazione "ON" ON switching time	2 µs	
Tempo commutazione "OFF" OFF switching time	1 ms	
Temperatura di lavoro Operating temperature	-10÷70°C	
Frequenza di lavoro Switching frequency	200 kHz	
Vita elettrica Electric service life	10 <sup>7</sup> imp.	
Velocità di passaggio pistone Piston speed	10 m/s	
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes	
Grado di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA; AISI 303	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II O.R.	
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>	
Materiali connettore M8 M8 connector material	PUR / ottone dorato PUR / Gold-plated brass	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 61000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connections		
	Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)	

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

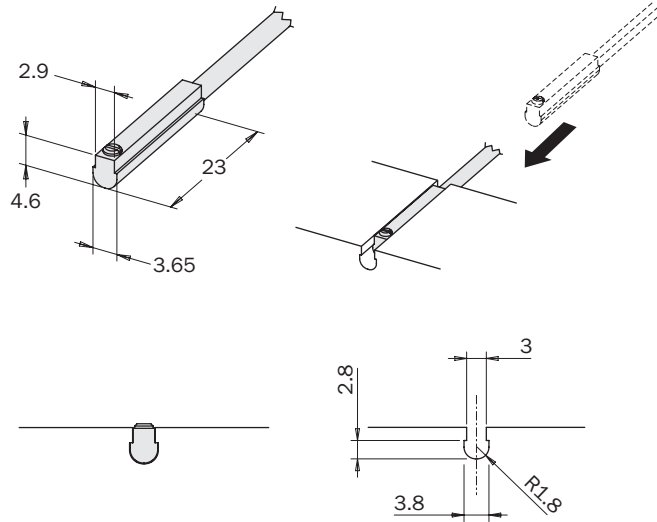


## Sensori magnetici per cave a C a isteresi ultra bassa

- Sensori magnetoresistivi GMR.
- Uscita in logica PNP o NPN.
- Nessun problema in caso di vibrazioni.
- Uscita con cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cave su richiesta.
- Prolunghe da 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

## Magnetic sensors for C-slots with very low hysteresis

- GMR sensors.
- PNP or NPN logic output.
- No problems in case of vibration.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot inline mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extension.
- Axial mounting.



Dimensions (mm)

## Esempi di utilizzo Application examples

SZ...



PQ...



MPLM...



GS...



Sensore con cavo Sensor with cable	SSQ4N225-G	SSQ4M225-G
Sensore con conn. M8 maschio Sensor with M8 connector	SSQ3N203-G	SSQ3M203-G
Tipo sensore Sensor type	PNP Magnetoresistivo normalmente Aperto <i>Magnetoresistive PNP Normally Open</i>	NPN Magnetoresistivo normalmente Aperto <i>Magnetoresistive NPN Normally Open</i>
Tensione di alimentazione Power supply	6÷30 Vdc	
Corrente di commutazione Switching current	0.2 A	
Potenza (carico ohmico) Power rating (Ohmic load)	6 W	
Intervallo di attivazione Switching interval	12±15 Gauss	
Differenza ON-OFF ON-OFF differential	3 Gauss	
Tempo commutazione "ON" ON switching time	2 µs	
Tempo commutazione "OFF" OFF switching time	1 ms	
Temperatura di lavoro Operating temperature	-10÷70°C	
Frequenza di lavoro Switching frequency	200 kHz	
Vita elettrica Electric service life	10 <sup>7</sup> imp.	
Velocità di passaggio pistone Piston speed	10 m/s	
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes	
Grado di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA; AISI 303	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II O.R.	
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>	
Materiali connettore M8 M8 connector material	PUR / ottone dorato PUR / Gold-plated brass	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connections	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)</p>	

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

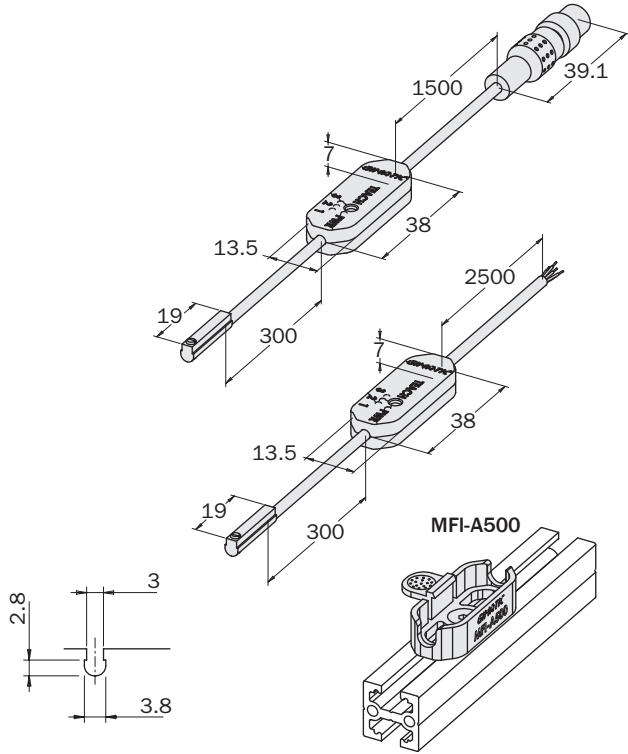
Sensori  
Sensors

## Sensori magnetici programmabili Pro SS

- Sensori magnetoresistivi GMR programmabili.
- 3 uscite digitali indipendenti.
- Ciascuna uscita programmabile in logica NO o NC.
- Versioni disponibili con uscite di tipo PNP o NPN.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cave K-SENS opzionali.
- Prolunghe 2.5m, 5m, 10m opzionali.
- Inserimento assiale.
- Supporto opzionale MFI-A500 per la scatola di programmazione remota.

## Programmable Pro SS magnetic sensors

- Programmable GMR sensors.
- 3 independent digital outputs.
- Each programmable output in NO or NC logic.
- Versions available with PNP or NPN outputs.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot inline mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extension.
- Axial mounting.
- MFI-A500 optional bracket for remote programming box.



Dimensions (mm)

## Esempi di utilizzo Application examples

SZ...



PB...

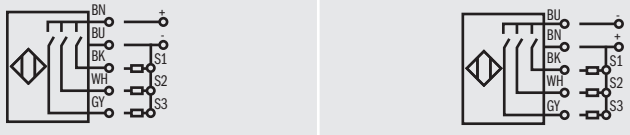
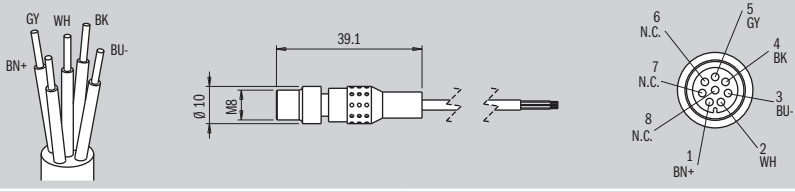


MPPM...



GS...



Sensore con cavo Sensor with cable	<b>PRO-SS4N225-G</b>	<b>PRO-SS4M225-G</b>
Sensore con conn. M8 maschio Sensor with M8 connector	<b>PRO-SS3N215-G</b>	<b>PRO-SS3M215-G</b>
Tipo sensore Sensor type	PNP magnetoresistivo Magnetoresistive PNP	
Numero di uscite No. of outputs	3 uscite ( ad esempio: pinza aperta, chiusa, pezzo preso ) 3 outputs ( e.g. gripper open, closed, workpiece gripped )	
Tipo uscite Outputs type	NO/NC configurabili indipendentemente NO/NC independently configurable	
Ritardo massimo di attivazione Maximum switching delay	50 ms	
Tensione di alimentazione Power supply	24 Vdc	
Intervallo operativo Operating range	10÷1300 Gauss	
Max frequenza di lavoro Max. switching frequency	300 kHz	
Temperatura di lavoro Operating temperature	-10÷60 °C	
Protezione contro inversione polarità Reverse polarity protection	Sì Yes	
Gradi di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 1.5 m (cavo con connettore M8) 2.5 m (flying cable) - 1.5 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	POLIURETANO FLAME RETARDANT UL 92 V2 POLYURETHANE FLAME-RETARDANT UL 92 V2	
Conduttori Leads	0.08 mm <sup>2</sup> / AWG 28	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connections	 <p>Marrone (BN +); Blu (BU -); Nero (BK OUT 1); Bianco (WH OUT 2); Grigio (GY OUT 3); Non connesso N.C. Brown (BN +); Blue (BU -); Black (BK OUT 1); White (WH OUT 2); Grey (GY OUT 3); Not connected N.C.</p>	

Il circuito di programmazione remota del sensore presenta un pulsante per la configurazione e la programmazione delle uscite. Seguendo una semplice procedura l'utente può configurare ogni singola uscita come normalmente aperta (N.O., colore giallo del led) oppure normalmente chiusa (N.C., colore verde del led) e memorizzare il punto di funzionamento (indipendente per ciascuna uscita). Per questo tipo di sensori la posizione ideale della testa sensibile è a metà della corsa dell'attuatore.

The sensor's remote programming circuit has a button for the configuration and programming of outputs. Following a simple procedure, the user can configure each output as normally open (NO - yellow LED) or normally closed (NC - green LED) and store the switching point (separate for each output). With this type of sensor the ideal position for the sensitive head is halfway along the actuator stroke.

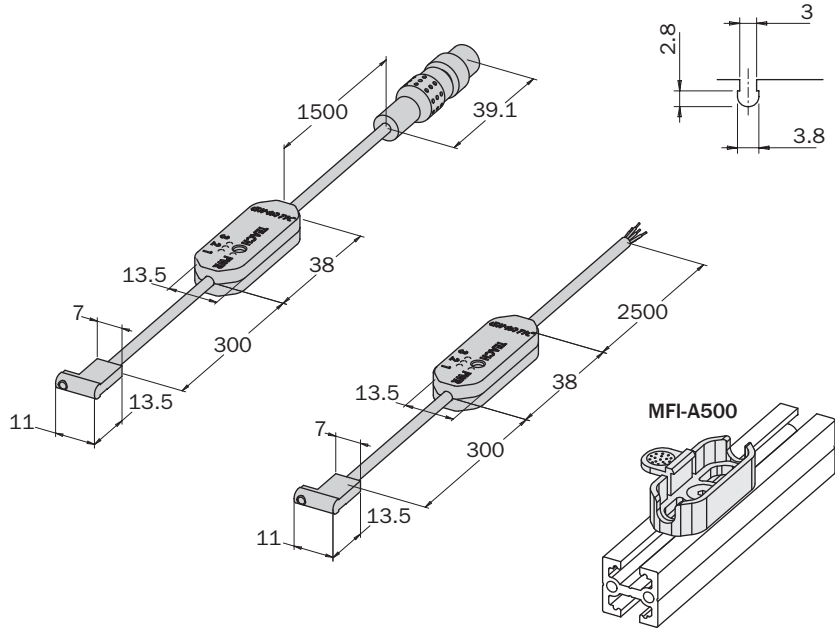


## Sensori magnetici programmabili Pro SN

- Sensori magnetoresistivi GMP programmabili.
- 3 uscite digitali indipendenti.
- Ciascuna uscita programmabile in logica NO o NC.
- Versioni disponibili con uscite di tipo PNP o NPN.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cave su richiesta.
- Prolunghe 2.5m, 5m, 10m opzionali.
- Inserimento assiale.
- Supporto opzionale MFI-A500 per la scatola di programmazione remota.

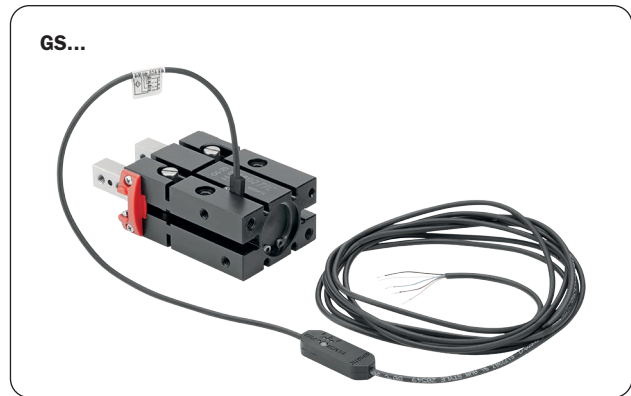
## Programmable Pro SN magnetic sensors

- Programmable GMP magnetoresistive sensors.
- 3 independent digital outputs.
- Each programmable output in NO or NC logic.
- Versions available with PNP or NPN outputs.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot inline mounting.
- Slot adaptors on request.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.
- MFI-A500 optional bracket for remote programming box.



Dimensions (mm)

## Esempi di utilizzo Application examples



Sensore con cavo Sensor with cable	<b>PRO-SN4N225-G</b>	<b>PRO-SN4M225-G</b>
Sensore con conn. M8 maschio Sensor with male M8 connector	<b>PRO-SN3N215-G</b>	<b>PRO-SN3M215-G</b>
Tipo sensore Sensor type	PNP magnetoresistivo Magnetoresistive PNP	
Numero di uscite No. of outputs	3 uscite ( ad esempio: pinza aperta, chiusa, pezzo preso ) 3 outputs ( e.g. gripper open, closed, workpiece gripped )	
Tipo uscite Outputs type	NO/NC configurabili indipendentemente NO/NC independently configurable	
Ritardo massimo di attivazione Maximum switching delay	50 ms	
Tensione di alimentazione Power supply	24 Vdc	
Intervallo operativo Nominal operating range	10÷1300 Gauss	
Max frequenza di lavoro Max. switching frequency	300 kHz	
Temperatura di lavoro Operating temperature	-10÷60 °C	
Protezione contro inversione polarità Reverse polarity protection	Sì Yes	
Gradi di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA; AISI 303	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 1.5 m (cavo con connettore M8) 2.5 m (flying cable) - 1.5 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	POLIURETANO FLAME RETARDANT UL 92 V2 POLYURETHANE FLAME-RETARDANT UL 92 V2	
Conduttori Leads	0,08 mm <sup>2</sup> / AWG 28	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connections	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT 1); Bianco (WH OUT 2); Grigio (GY OUT 3); Non connesso N.C. Brown (BN +); Blue (BU -); Black (BK OUT1); White (WH OUT 2); Grey (GY OUT 3); Not connected N.C.</p>	

Il circuito di programmazione remota del sensore presenta un pulsante per la configurazione e la programmazione delle uscite. Seguendo una semplice procedura l'utente può configurare ogni singola uscita come normalmente aperta (N.O., colore giallo del led) oppure normalmente chiusa (N.C., colore verde del led) e memorizzare il punto di funzionamento (indipendente per ciascuna uscita). Per questo tipo di sensori la posizione ideale della testa sensibile è a metà della corsa dell'attuatore.

The sensor's remote programming circuit has a button for the configuration and programming of outputs. Following a simple procedure, the user can configure each output as normally open (NO – yellow LED) or normally closed (NC – green LED) and store the switching point (separate for each output). With this type of sensor the ideal position for the sensitive head is halfway along the actuator stroke.

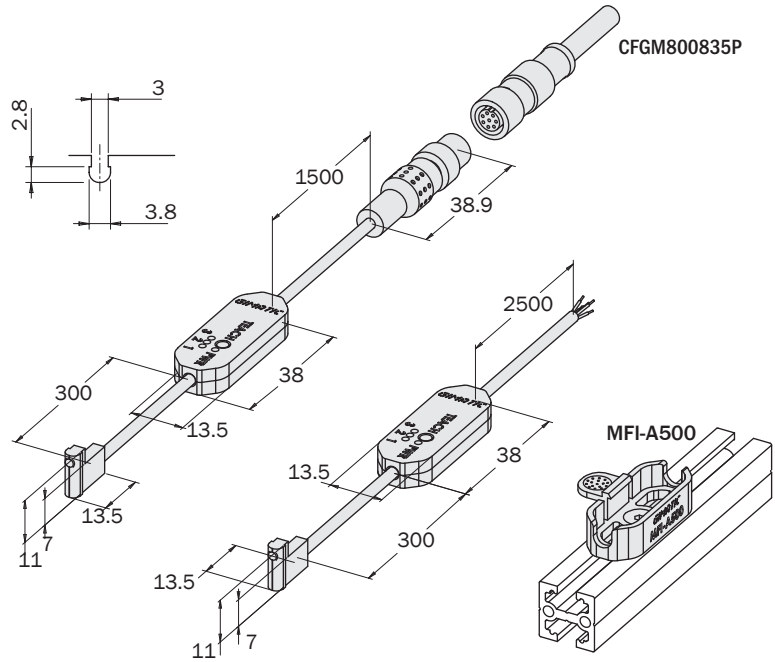


## Sensori magnetici programmabili PRO-SN\_HS

- Sensori magnetoresistivi GMR programmabili.
- 3 uscite digitali indipendenti.
- Ciascuna uscita programmabile in logica NO o NC.
- Versioni disponibili con uscite di tipo PNP o NPN.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cava su richiesta.
- Prolunghe 2.5m, 5m, 10m opzionali.
- Inserimento assiale.
- Supporto opzionale MFI-A500 per la scatola di programmazione remota.

## Programmable PRO-SN\_HS magnetic sensors

- Programmable GMR magnetoresistive sensors.
- 3 independent digital outputs.
- Each programmable output in NO or NC logic.
- Versions available with PNP or NPN outputs.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot inline mounting.
- Slot adaptors on request.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.
- MFI-A500 optional bracket for remote programming box.

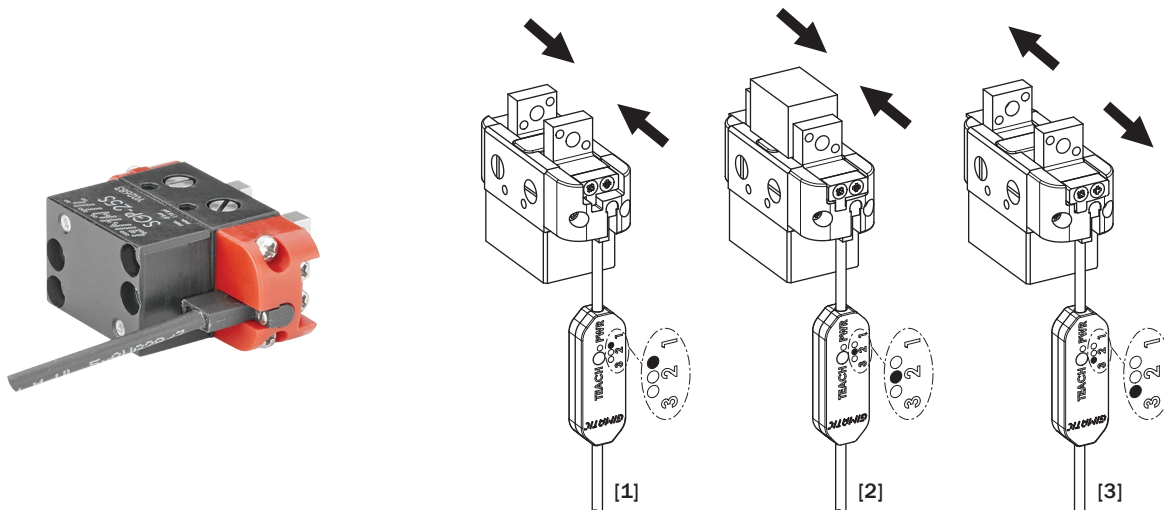


Dimensions (mm)

### Esempi di utilizzo Application examples

Il sensore è stato appositamente progettato in abbinamento alle pinze pneumatiche della serie SGP. La posizioni rilevate possono essere regolate tramite la procedura di configurazione, in questo modo le 3 uscite digitali possono essere:  
Uscita 1 – griffe completamente chiuse [1];  
Uscita 2 – griffe in presa dell'oggetto (posizione intermedia) [2];  
Uscita 3 – griffe completamente aperte [3].

This sensor has been designed to work in combination with SGP pneumatic grippers only. The detected positions can be adjusted by a teaching procedure, so that 3 digital outputs can be:  
Output 1 - totally closed jaws [1];  
Output 2 - gripped part (intermediate position) [2];  
Output 3 - totally open jaws [3].



Sensore con cavo Sensor with cable	<b>PRO-SN4N225HS-G</b>	<b>PRO-SN4M225HS-G</b>
Sensore con conn. M8 maschio Sensor with male M8 connector	<b>PRO-SN3N215HS-G</b>	<b>PRO-SN3M215HS-G</b>
Tipo sensore Sensor type	PNP magnetoresistivo Magnetoresistive PNP	
Numero di uscite No. of outputs	3 uscite ( ad esempio: pinza aperta, chiusa, pezzo preso ) 3 outputs ( e.g. gripper open, closed, workpiece gripped )	
Tipo uscite Outputs type	NO/NC configurabili indipendentemente NO/NC independently configurable	
Ritardo massimo di attivazione Maximum switching delay	50 ms	
Tensione di alimentazione Power supply	24 Vdc	
Intervallo operativo Nominal operating range	10÷1300 Gauss	
Max frequenza di lavoro Max. switching frequency	300 kHz	
Temperatura di lavoro Operating temperature	-10÷60 °C	
Protezione contro inversione polarità Reverse polarity protection	Sì Yes	
Gradi di protezione Protection rating	IP 67	
Materiali corpo Sensor body material	PA; AISI 303	
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 1.5 m (cavo con connettore M8) 2.5 m (flying cable) - 1.5 m (cable with M8 connector)	
Guaina - isolamento Sheathing - insulation	POLIURETANO FLAME RETARDANT UL 92 V2 POLYURETHANE FLAME-RETARDANT UL 92 V2	
Conduttori Leads	0,08 mm <sup>2</sup> / AWG 28	
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams		
Connessione Connections	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT 1); Bianco (WH OUT 2); Grigio (GY OUT 3); Non connesso N.C. Brown (BN +); Blue (BU -); Black (BK OUT1); White (WH OUT 2); Grey (GY OUT 3); Not connected N.C.</p>	

Il circuito di programmazione remota del sensore presenta un pulsante per la configurazione e la programmazione delle uscite. Seguendo una semplice procedura l'utente può configurare ogni singola uscita come normalmente aperta (N.O., colore giallo del led) oppure normalmente chiusa (N.C., colore verde del led) e memorizzare il punto di funzionamento (indipendente per ciascuna uscita).

The sensor's remote programming circuit has a button for the configuration and programming of outputs. Following a simple procedure, the user can configure each output as normally open (NO - yellow LED) or normally closed (NC - green LED) and store the switching point (separate for each output).



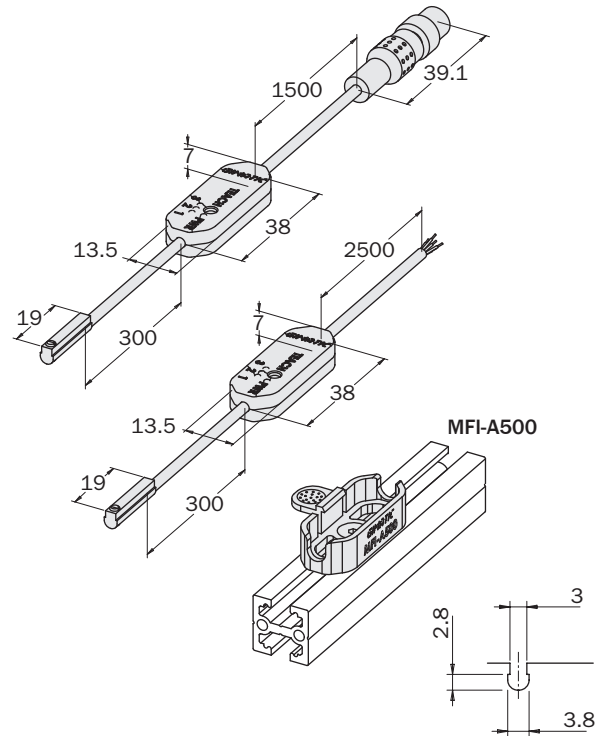


## Sensori magnetici programmabili Pro SSR

- Sensori magnetoresistivi GMR programmabili.
- 3 uscite digitali, 2 delle quali programmabili.
- Ciascuna uscita programmabile in logica NO o NC.
- Versioni disponibili con uscite di tipo PNP o NPN.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "C".
- Adattatori per cave K-SENS opzionali.
- Prolunghe 2.5m, 5m, 10m opzionali.
- Inserimento assiale.
- Supporto opzionale MFI-A500 per la scatola di programmazione remota.

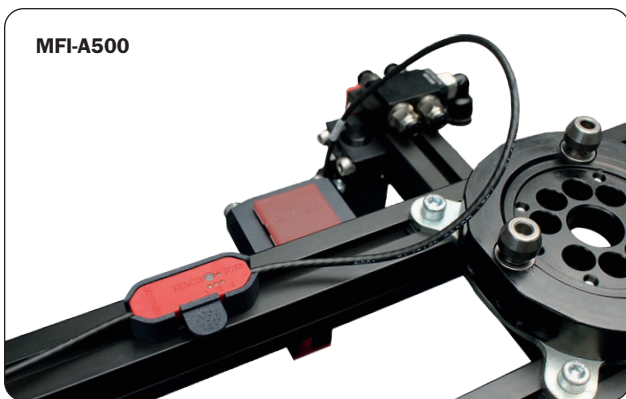
## Programmable Pro SSR magnetic sensors

- Programmable GMR sensors.
- 3 digital outputs, 2 of which are programmable.
- Each programmable output in NO or NC logic.
- Versions available with PNP or NPN outputs.
- Cable or M8 connector output.
- 100% traceability.
- Standard C-slot inline mounting.
- Optional K-SENS slot adaptors.
- Optional 2.5m, 5m and 10m cable extension.
- Axial mounting.
- MFI-A500 optional bracket for remote programming box.



Dimensions (mm)

## Esempi di utilizzo Application examples



MFI-A500



GW...



OFR...

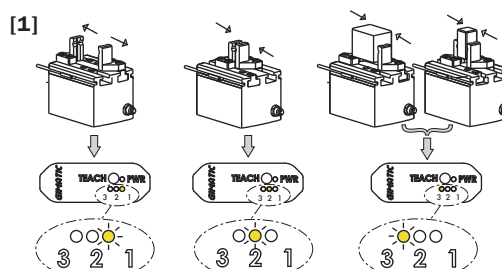


PB..

Uscita cavo Sensor with cable	<b>PRO-SSR4N225-G</b>	<b>PRO-SSR4M225-G</b>
Uscita connettore Sensor with M8 connector	<b>PRO-SSR3N215-G</b>	<b>PRO-SSR3M215-G</b>
Tipo di uscita Output type	PNP	NPN
Materiale testina di rilevamento Sensing head material	Nylon rinforzato con fibra di vetro Glass fibre-reinforced nylon	
Alimentazione Power supply	6-30 Vdc	
Corrente di commutazione (per uscita) Switching current (per output)	0.2 A	
Potenza nominale (carico ohmico) Power rating (ohmic load)	6 W	
Massima induzione magnetica Maximum magnetic induction	150 G	
Minima induzione magnetica Minimum magnetic induction	10G	
Isteresi magnetica Magnetic hysteresis	±5 G	
Corsa massima Maximum stroke	± 30 mm	
Massima frequenza di lavoro Maximum operating frequency	3 Hz	
Intervallo di temperatura ammissibile Permitted temperature range	-20-60°C	
Massa Mass	35 g	
Connessione elettrica Electrical connection	Cavi liberi AWG 5x28 o connettore maschio M8 a 8 poli Free cables 5x28 AWG or M8 8-pole male connector	
Protezione da inversione di polarità Polarity reversal protection	Sì Yes	
Grado di protezione IP IP rating	IP54	
Segnali d'uscita Output signals	3 digitali PNP o NPN a seconda del codice di ordinazione 3 digital PNP or NPN depending on the order code	
Norma di riferimento CE CE reference standard	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Lunghezza cavo standard Standard cable length	Cavo libero AWG 5x28, 2,5 m o 1,5 m cavo lungo con connettore maschio M8 a 8 poli Free cable 5x28 AWG, 2.5 m or 1.5 m long cable with M8 8-pole male connector	
Schema cablaggio Wiring diagram		
Connessioni Connections		

Il circuito di programmazione remota del sensore presenta un pulsante per la configurazione e la programmazione delle uscite. Seguendo una semplice procedura l'utente può configurare ogni singola uscita come normalmente aperta (N.O., colore giallo del led) oppure normalmente chiusa (N.C., colore verde del led) e memorizzare il punto di funzionamento delle prime due uscite. La terza uscita non programmabile si attiva quando rileva una posizione che è diversa dalle due precedentemente impostate [1]. Per questo tipo di sensori la posizione ideale della testa sensibile è a metà della corsa dell'attuatore.

The sensor's remote programming circuit features a button for the configuration and programming of outputs. Following a simple procedure the user can configure each individual output as normally open (N.O., yellow colour of the led) or normally closed (N.C., green colour of the led) and store the operating point of the first two outputs. The third non-programmable output is activated when it detects a position that is different from the two previously set outputs [1]. For this type of sensors, the ideal position of the sensing head is halfway of the actuator stroke.

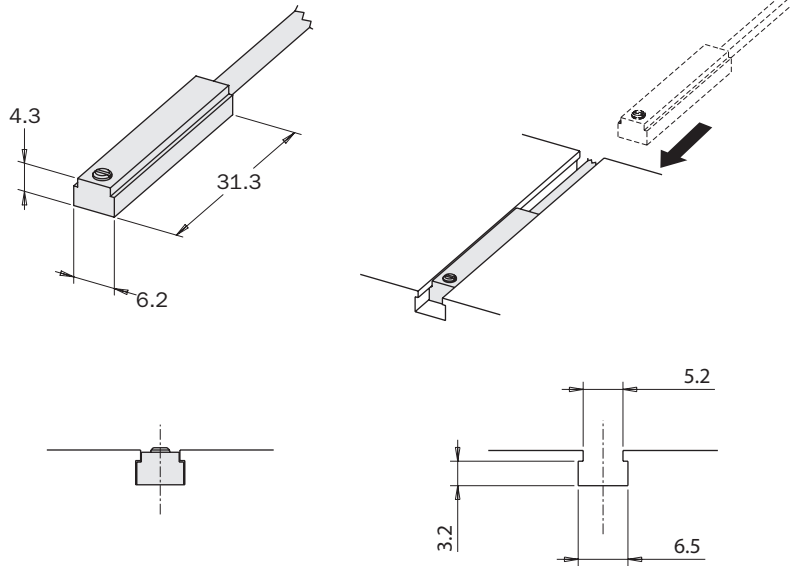


**Sensori magnetici per cave a T**

- Sensori reed o magnetoresistivi GMR.
- Uscita in logica PNP o NPN per i sensori magnetoresistivi.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "T" standard.
- Adattatori per cave K-SL opzionali.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

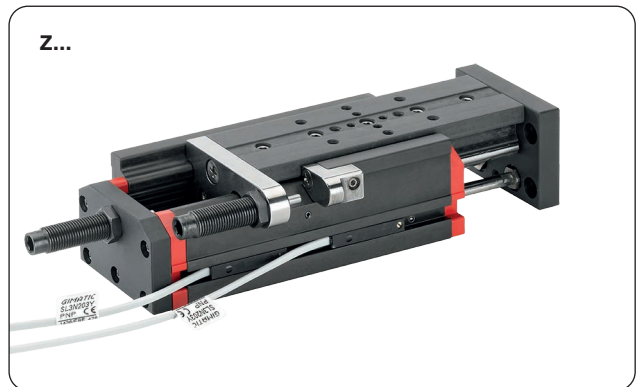
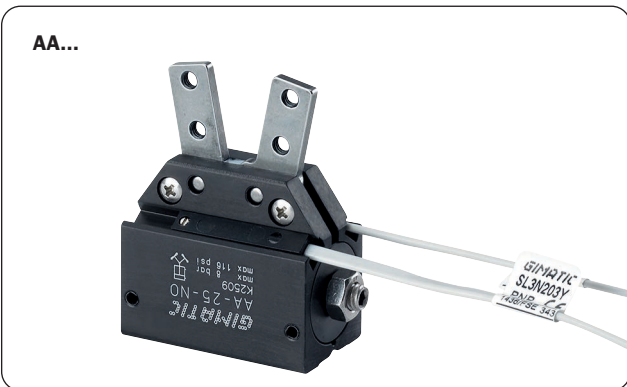
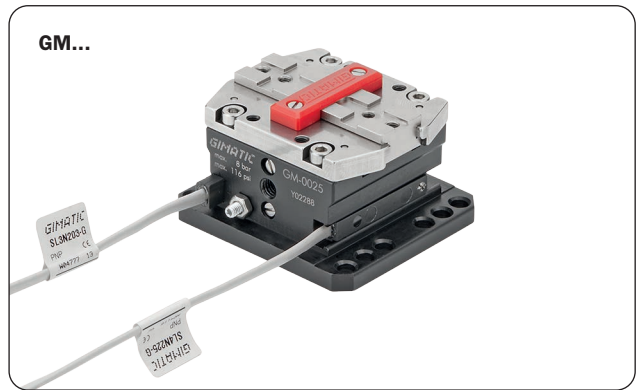
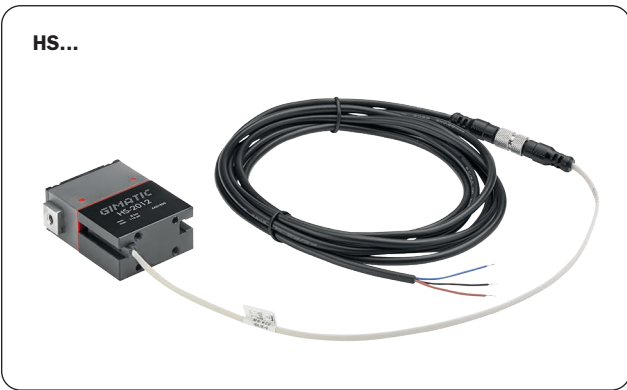
**Magnetic sensors for T-slots**

- Reed or GMR sensors.
- PNP or NPN logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable or M8 connector output.
- 100% traceability.
- Standard T-slot inline mounting.
- Optional K-SL slot adaptors.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.



Dimensions (mm)

**Esempi di utilizzo**  
*Application examples*



Sensore con cavo Sensor with cable	<b>SL1C225-G</b>	<b>SL4D225-G</b>	<b>SL4N225-G</b>	<b>SL4M225-G</b>
Sensore con conn. M8 maschio Sensor with M8 connector	<b>SL2C203-G</b>	<b>SL3D203-G</b>	<b>SL3N203-G</b>	<b>SL3M203-G</b>
Tipo sensore Sensor type	REED 2 fili normalmente Aperto  2-wire reed Normally Open	REED PNP 3 fili normalmente Aperto  3-wire PNP reed Normally Open	PNP Magnetoresistivo normalmente Aperto  Magnetoresistive PNP Normally Open	NPN Magnetoresistivo normalmente Aperto  Magnetoresistive NPN Normally Open
Tensione di alimentazione Power supply	3+30 Vac/dc		6+30 Vdc	
Corrente di commutazione Switching current	0.2 A			
Potenza (carico ohmico) Power rating (Ohmic load)	6 W			
Punto di lavoro nominale Nominal switching point	20+25 AT		40±10 Gauss	
Differenza ON-OFF ON-OFF differential	5+10 AT		5+25 Gauss	
Tempo commutazione "ON" ON switching time	0.5 ms			
Tempo commutazione "OFF" OFF switching time	0.5 ms			
Temperatura di lavoro Operating temperature	-10+70°C			
Frequenza di lavoro Switching frequency	500 kHz		200 kHz	
Vita elettrica Electric service life	10 <sup>7</sup> imp.		10 <sup>9</sup> imp.	
Velocità di passaggio pistone Piston speed	10 m/s			
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes			
Grado di protezione Protection rating	IP 67			
Materiali corpo Sensor body material	PA; AISI 303			
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)			
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II O.R.			
Conduttori Conductors	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>			
Materiali connettore M8 M8 connector material	PUR / ottone dorato PUR / gold-plated brass			
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 61000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11			
Configurazioni circuitali Wiring diagrams				
Connessione Connections				
		Marrone (BN +); Blu (BU -); Nero (BK OUT); Non connesso N.C. Brown (BN +); Blue (BU -); Black (BK OUT); Not connected N.C.		

Unità Rotanti  
Rotary Units

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Profiles and Brackets

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Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

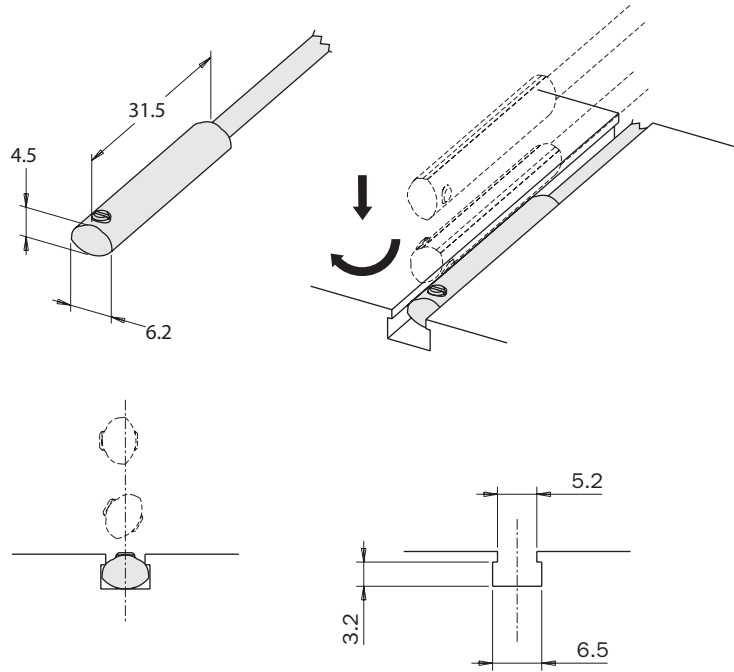
Sensori  
Sensors

**Sensori magnetici per cave a T**

- Sensori reed o magnetoresistivi GMR.
- Uscita in logica PNP o NPN per i sensori magnetoresistivi.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8.
- Tracciabilità 100%.
- Applicazione diretta in cava "T" standard.
- Adattatori per cave K-SL opzionali.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento sia assiale sia verticale.

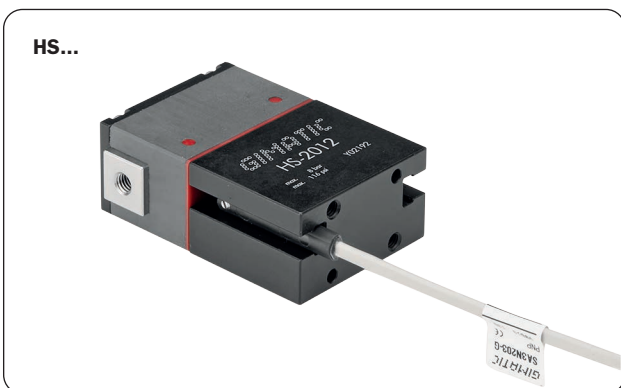
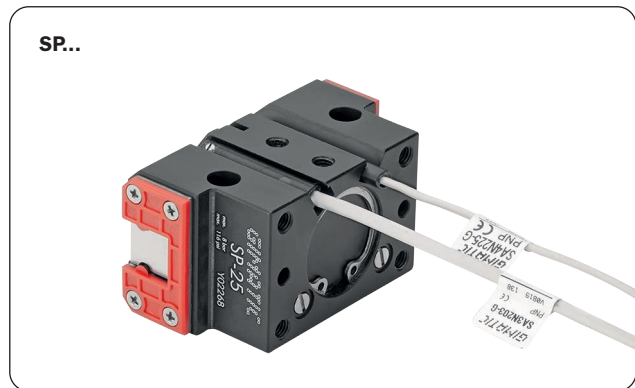
**Magnetic sensors for T-slots**

- Reed or GMR sensors.
- PNP or NPN logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable or M8 connector output.
- 100% traceability.
- Standard T-slot inline mounting.
- Optional K-SL slot adaptors.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial or vertical mounting.



Dimensions (mm)

**Esempi di utilizzo**  
**Application examples**



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Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

Sensore con cavo Sensor with cable	<b>SA1C225-G</b>	<b>SA4D225-G</b>	<b>SA4N225-G</b>	<b>SA4M225-G</b>
Sensore con conn. M8 maschio Sensor with M8 connector	<b>SA2C203-G</b>	<b>SA3D203-G</b>	<b>SA3N203-G</b>	<b>SA3M203-G</b>
Tipo sensore Sensor type	REED 2 fili normalmente Aperto 2-wire reed Normally Open	REED PNP 3 fili normalmente Aperto 3-wire PNP reed Normally Open	PNP Magnetoresistivo normalmente Aperto Magnetoresistive PNP Normally Open	NPN Magnetoresistivo normalmente Aperto Magnetoresistive NPN Normally Open
Tensione di alimentazione Power supply	3+30 Vac/dc		6+30 Vdc	
Corrente di commutazione Switching current	0.2 A			
Potenza (carico ohmico) Power rating (Ohmic load)	6 W			
Punto di lavoro nominale Nominal switching point	20+25 AT		40±10 Gauss	
Differenza ON-OFF ON-OFF differential	5+10 AT		5+25 Gauss	
Tempo commutazione "ON" ON switching time	0.5 ms			
Tempo commutazione "OFF" OFF switching time	0.5 ms			
Temperatura di lavoro Operating temperature	-10+70°C			
Frequenza di lavoro Switching frequency	500 kHz		200 kHz	
Vita elettrica Electric service life	10 <sup>7</sup> imp.		10 <sup>9</sup> imp.	
Velocità di passaggio pistone Piston speed	10 m/s			
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes			
Grado di protezione Protection rating	IP 67			
Materiali corpo Sensor body material	PA; AISI 303			
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) 2.5 m (flying cable) - 0.3 m (cable with M8 connector)			
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II O.R.			
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>			
Materiali connettore M8 M8 connector material	PUR / ottone dorato PUR / gold-plated brass			
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11			
Configurazioni circuitali Wiring diagrams				
Connessione Connections	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT); Non connesso N.C. Brown (BN +); Blue (BU -); Black (BK OUT); Not connected N.C.</p>			

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Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

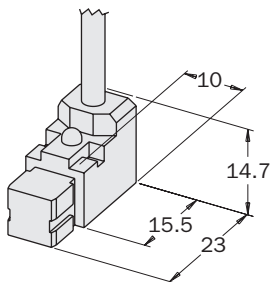
Sensori  
Sensors

## Sensori magnetici a coda di rondine

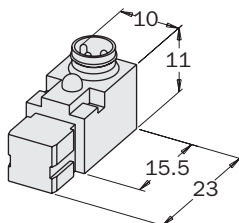
- Sensori reed o magnetoresistivi GMR.
- Uscita in logica PNP o NPN per i sensori magnetoresistivi.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore SNAP
- Tracciabilità 100%.
- Applicazione in molteplici cave a coda di rondine mediante appositi adattatori inclusi nella confezione.
- Adattatori per cave K-CB opzionali.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

## Magnetic sensors for dovetail slots

- Reed or GMR magnetoresistive sensors.
- PNP or NPN logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable or SNAP connector output.
- 100% traceability.
- Application in multiple dovetail-slots using special adapter included in the supply.
- Optional K-CB slot adapters.
- Optional 2.5m, 5m and 10m extensions.
- Axial mounting.



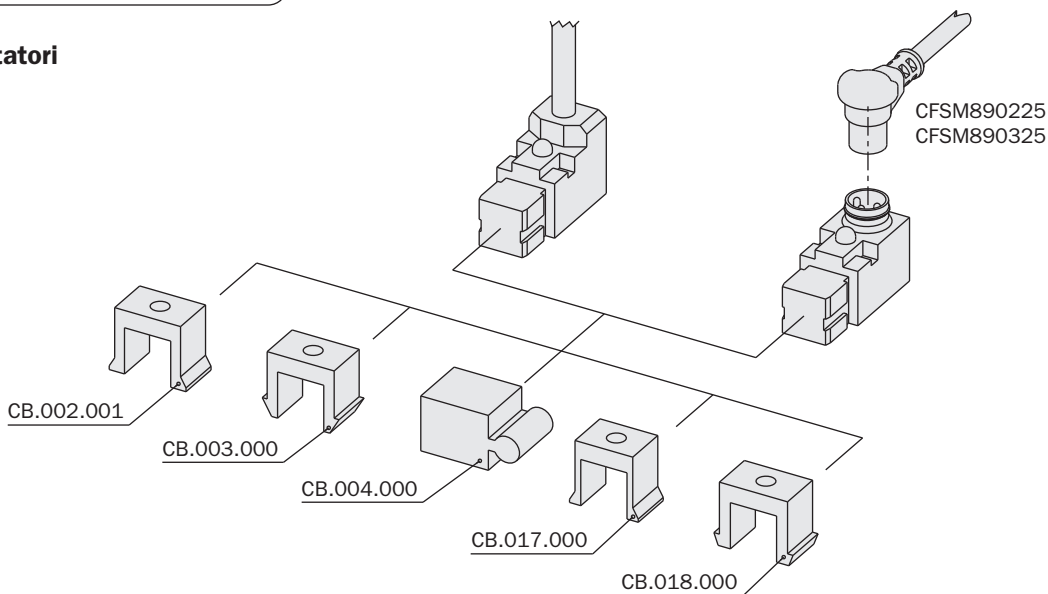
Sensore con cavo (1)  
Sensor with cable (1)



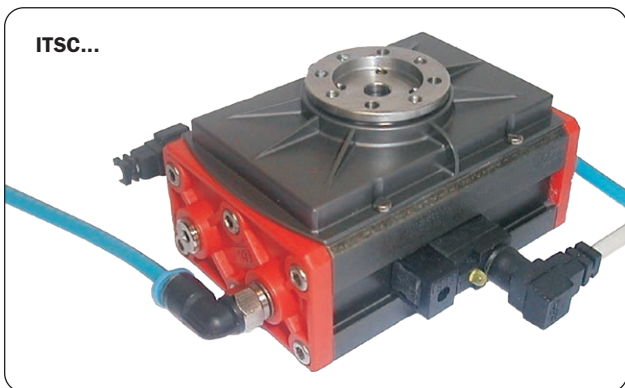
Sensore con connettore SNAP (2)  
Sensor with SNAP connector (2)

Dimensions (mm)

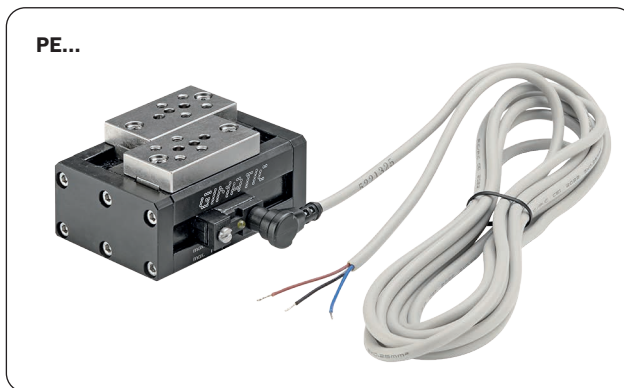
## Fissaggio con adattatori Fixing with adapter



## Esempi di utilizzo Application examples



ITSC...



PE...

Sensore con cavo Sensor with cable (1)	<b>CB1C425-G</b>	<b>CB4D225-G</b>	<b>CB4N225-G</b>	<b>CB4M225-G</b>
Sensore con conn. SNAP Sensor with SNAP connector (2)	<b>CB2C4-G</b>	<b>CB3D2-G</b>	<b>CB3N2-G</b>	<b>CB3M2-G</b>
Tipo sensore Sensor type	REED 2 fili normalmente Aperto 2-wire reed Normally Open	REED PNP 3 fili normalmente Aperto 3-wire reed Normally Open	PNP Magnetroresistivo normalmente Aperto Magnetroresistive PNP Normally Open	NPN Magnetroresistivo normalmente Aperto Magnetroresistive NPN Normally Open
Tensione di alimentazione Power supply	3÷110 Vac/dc	3÷30 Vac/dc	6÷30 Vdc	
Corrente di commutazione Switching current	0.3 A	1 A	0.25 A	
Potenza (carico ohmico) Power rating (Ohmic load)	10 W		6 W	
Punto di lavoro nominale Nominal switching point	20÷25 AT		15±5 Gauss	
Differenza ON-OFF ON-OFF differential	5÷10 AT		4÷7 Gauss	
Tempo commutazione "ON" ON switching time	0.5 ms			
Tempo commutazione "OFF" OFF switching time	0.5 ms			
Temperatura di lavoro Operating temperature	-10÷70°C			
Frequenza di lavoro Switching frequency	500 kHz		200 kHz	
Vita elettrica Electric service life	10 <sup>7</sup> imp.		10 <sup>9</sup> imp.	
Velocità di passaggio pistone Piston speed	10 m/s			
Protezione contro inversione di polarità Reverse polarity protection	Sì YES			
Grado di protezione Protection rating	IP 67			
Materiali corpo Sensor body material	PA + AISI 303			
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - Connettore SNAP 2.5 m (flying cable) - SNAP connector			
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II O.R.			
Conduttori Leads	0.25 mm <sup>2</sup> / AWG 24 / 32 x 0.10 mm <sup>2</sup>			
Materiali connettore MS MS connector material	PA / ottone dorato PA / gold-plated brass			
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11			
Configurazioni circuitali Wiring diagrams				
Connessioni Connections	<p>Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)</p>			

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Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors



**Sensori magnetici a tiranti**

- Sensori reed o magnetoresistivi GMR.
- Uscita in logica PNP o NPN per i sensori magnetoresistivi.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore SNAP o M12.
- Tracciabilità 100%.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

**Magnetic sensors for tie-rod cylinders**

- Reed or GMR sensors.
- PNP or NPN logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable, SNAP or M12 connector output.
- 100% traceability.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.



(1)

Sensore con cavo  
Sensor with cable



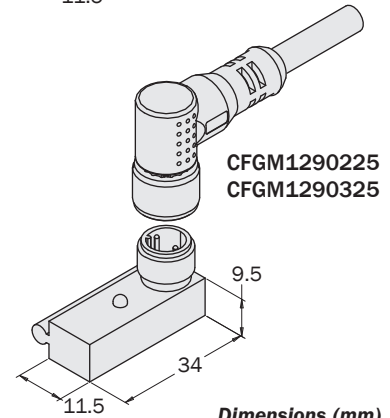
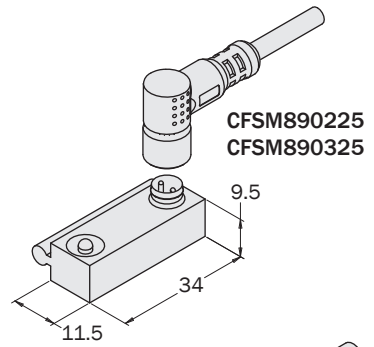
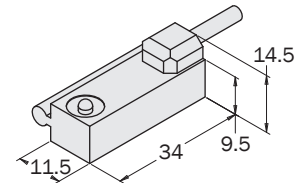
(2)

Sensore con connettore SNAP  
Sensor with SNAP connector



(3)

Sensore con conn. M12 maschio  
Sensor with M12 male connector



Dimensions (mm)

**Esempi di utilizzo**  
**Application examples**



Sensore con cavo <i>Sensor with cable</i>	(1)	SM1C525-G	SM4D225-G	SM4N225-G	SM4M225-G
Sensore con conn. SNAP <i>Sensor with SNAP connector</i>	(2)	SM2C5-G	SM3D2-G	SM3N2-G	SM3M2-G
Sensore con conn. M12 maschio <i>Sensor with M12 male connector</i>	(3)	SM5C5-G	SM6D2-G	SM6N2-G	SM6M2-G
Tipo sensore <i>Sensor type</i>		REED 2 fili normalmente Aperto <i>2-wire reed Normally Open</i>	REED PNP 3 fili normalmente Aperto <i>3-wire reed Normally Open</i>	PNP Magnetoresistivo normalmente Aperto <i>Magnetoresistive PNP Normally Open</i>	NPN Magnetoresistivo normalmente Aperto <i>Magnetoresistive NPN Normally Open</i>
Tensione di alimentazione <i>Power supply</i>		3+250 Vac/dc	3+30 Vac/dc	6+30 Vdc	
Corrente di commutazione <i>Switching current</i>		0.5 A	1 A	0.25 A	
Potenza (carico ohmico) <i>Power rating (Ohmic load)</i>		10 W		6 W	
Punto di lavoro nominale <i>Nominal switching point</i>		25±30 AT		15±5 Gauss	
Differenza ON-OFF <i>ON-OFF differential</i>		5+10 AT		4+7 Gauss	
Tempo commutazione "ON" <i>ON switching time</i>		0.5 ms			
Tempo commutazione "OFF" <i>OFF switching time</i>		0.5 ms			
Temperatura di lavoro <i>Operating temperature</i>		-10÷70 °C			
Frequenza di lavoro <i>Switching frequency</i>		500 kHz		200 kHz	
Vita elettrica <i>Electric service life</i>		10 <sup>7</sup> imp.		10 <sup>9</sup> imp.	
Velocità di passaggio pistone <i>Piston speed</i>		10 m/s			
Protezione contro inversione di polarità <i>Reverse polarity protection</i>		Sì Yes			
Grado di protezione <i>Protection rating</i>		IP 67			
Materiali corpo <i>Sensor body material</i>		PA; AISI 303; OT63			
Lunghezza cavo standard <i>Standard cable length</i>		2.5 m (cavo diretto) - Connettore SNAP/M12 2.5 m (flying cable) -SNAP/12 connector			
Guaina - isolamento <i>Sheathing - insulation</i>		PVC CEI 20-22II O.R.			
Conduttori <i>Leads</i>		0.25 mm <sup>2</sup> / AWG 24 / 32 x 0.10 mm <sup>2</sup>			
Materiali connettore M8 <i>M8 connector material</i>		PUR / ottone dorato PUR / gold-plated brass			
Normative di riferimento CE <i>CE reference standards</i>		CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11			
Configurazioni circuitali <i>Wiring diagrams</i>					
Connessioni <i>Connections</i>					
		Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)			

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Rotary Units

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Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

## Sensori magnetici a tiranti IP68

- Sensori reed o magnetoresistivi GMR.
- Uscita in logica PNP per i sensori magnetoresistivi.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8 o connettore M12.
- Tracciabilità 100%.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.
- Elevato grado di protezione (IP68).

## Magnetic sensors for IP68 tie-rod cylinders

- Reed or GMR sensors.
- PNP logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable, M8 or M12 connector output.
- 100% traceability.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.
- High protection rating (IP68).



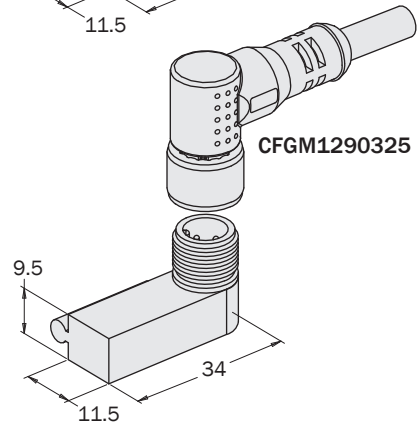
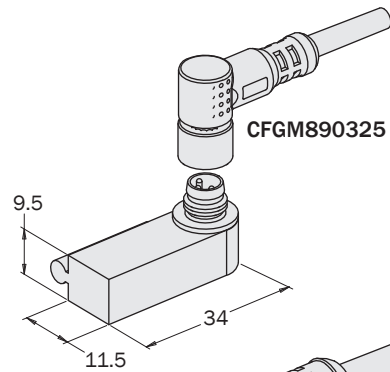
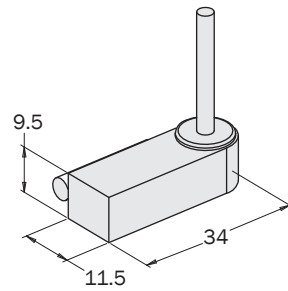
Sensore con cavo  
Sensor with cable



Sensore con connettore M8  
Sensor with M8 male connector



Sensore con connettore M12  
Sensor with M12 male connector



Dimensions (mm)

## Esempi di utilizzo Application examples



Sensore con cavo Sensor with cable	(1)	<b>SM7D225-G</b>	<b>SM7N225-G</b>
Sensore con conn. M8 maschio Sensor with M8 male connector	(2)	<b>SM8D2-G</b>	<b>SM8N2-G</b>
Sensore con conn. M12 maschio Sensor with M12 male connector	(3)	<b>SM9D2-G</b>	<b>SM9N2-G</b>
Tipo sensore Sensor type		REED PNP 3 fili normalmente Aperto 3-wire PNP reed Normally Open	PNP Magnetoresistivo normalmente Aperto Magnetoresistive PNP Normally Open
Tensione di alimentazione Power supply		3+30 Vac/dc	6+30 Vdc
Corrente di commutazione Switching current		0.2 A	
Potenza (carico ohmico) Power rating (Ohmic load)		6 W	
Punto di lavoro nominale Nominal switching point		20±25 AT	40±10 Gauss
Differenza ON-OFF ON-OFF differential		5±10 AT	5±25 Gauss
Tempo commutazione "ON" ON switching time		0.5 ms	
Tempo commutazione "OFF" OFF switching time		0.5 ms	
Temperatura di lavoro Operating temperature		-10÷70°C	
Frequenza di lavoro Switching frequency		500 kHz	200 kHz
Vita elettrica Electric service life		10 <sup>7</sup> imp.	10 <sup>9</sup> imp
Velocità di passaggio pistone Piston speed		10 m/s	
Protezione contro inversione di polarità Reverse polarity protection		Sì Yes	
Grado di protezione Protection rating		IP 68 - Se connesso con connettore IP68 IP 68 - If connected with IP68 connector	
Materiali corpo Sensor body material		PA; AISI 303; OT63	
Lunghezza cavo standard Standard cable length		2.5 m (cavo diretto) - Connettore M8/M12 2.5 m (flying cable) - M8/M12 connector	
Guaina - isolamento Sheathing - insulation		PVC CEI 20-22II O.R.	
Conduttori Leads		0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>	
Materiali connettore M8 M8 connector material		ottone dorato + AU gold-plated brass	
Normative di riferimento CE CE reference standards		CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11	
Configurazioni circuitali Wiring diagrams			
Connessioni Connections			
		Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)	

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

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Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

09/2022

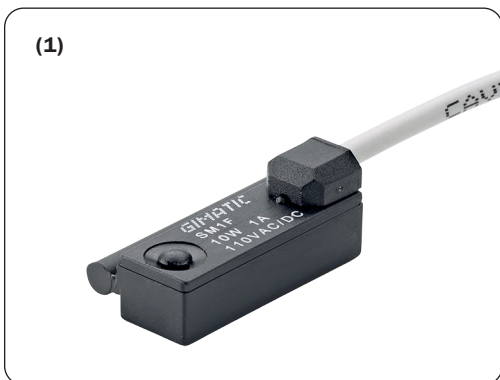
## Sensori magnetici a tiranti normalmente chiusi

- Sensori reed o magnetoresistivi GMR.
- Uscita in logica PNP o NPN per i sensori magnetoresistivi.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore SNAP
- Tracciabilità 100%.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale.

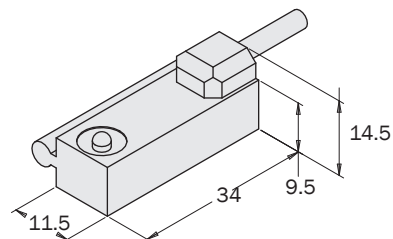
## Magnetic sensors with normally-closed tie-rods

- Reed or GMR sensors.
- PNP or NPN logic output for magnetoresistive sensors.
- No problems in case of vibrations.
- Cable or SNAP connector output.
- 100% traceability.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial mounting.

(1)



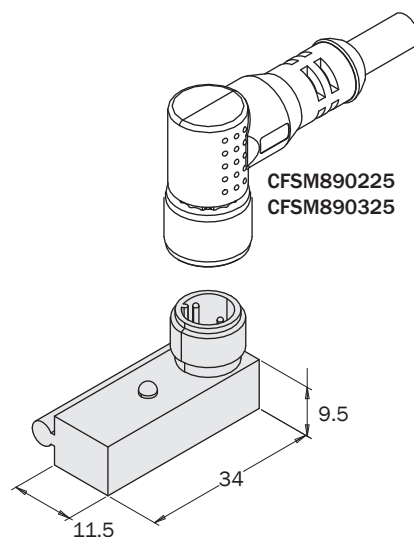
Sensore con cavo  
Sensor with cable



(2)



Sensore con connettore SNAP  
Sensor with SNAP connector



Dimensions (mm)

## Esempi di utilizzo Application examples



Sensore con cavo <i>Sensor with cable</i>	(1)	<b>SM1F425-G</b>	<b>SM1G425-G</b>	<b>SM1H425-G</b>	<b>SM4S425-G</b>	<b>SM4P225-G</b>	<b>SM4L225-G</b>
Sensore con conn. SNAP <i>Sensor with SNAP connector</i>	(2)	<b>SM2F4-G</b>	<b>SM2G4-G</b>	<b>SM2H4-G</b>	<b>SM3S4-G</b>	<b>SM3P2-G</b>	<b>SM3L2-G</b>
Tipo sensore <i>Sensor type</i>		REED 2 fili <i>2-wire reed</i>	REED 2 fili + VDR <i>2-wire reed + VDR</i>	REED 2 fili + VDR + LED <i>2-wire reed + VDR</i>	REED Scambio <i>Changeover reed</i>	PNP Magnetoresistivo <i>Magnetoresistive PNP</i>	NPN Magnetoresistivo <i>Magnetoresistive NPN</i>
Tensione di alimentazione <i>Power supply</i>		0÷110 Vac/dc		3÷110 Vac/dc		6÷30 Vdc	
Corrente di commutazione <i>Switching current</i>		1 A		0.5 A		0.25 A	
Potenza (carico ohmico) <i>Power rating (Ohmic load)</i>		10 W				6 W	
Punto di lavoro nominale <i>Nominal switching point</i>		15÷30 AT				15±5 Gauss	
Differenza ON-OFF <i>ON-OFF differential</i>		5÷10 AT				4÷7 Gauss	
Tempo commutazione "ON" <i>ON switching time</i>		0.5 ms					
Tempo commutazione "OFF" <i>OFF switching time</i>		0.5 ms					
Temperatura di lavoro <i>Operating temperature</i>		-10÷70 °C					
Frequenza di lavoro <i>Switching frequency</i>		500 kHz				200 kHz	
Vita elettrica <i>Electric service life</i>		10 <sup>7</sup> imp.				10 <sup>9</sup> imp.	
Velocità di passaggio pistone <i>Piston speed</i>		10 m/s					
Protezione contro inversione di polarità <i>Reverse polarity protection</i>		Sì Yes					
Grado di protezione <i>Protection rating</i>		IP 68 - Se connesso con connettore IP68 <i>IP 68 - If connected with IP68 connector</i>					
Materiali corpo <i>Sensor body material</i>		PA; AISI 303; OT63					
Lunghezza cavo standard <i>Standard cable length</i>		2.5 m (cavo diretto) - Connettore SNAP <i>2.5 m (flying cable) - SNAP connector</i>					
Guaina - isolamento <i>Sheathing - insulation</i>		PVC CEI 20-22II O.R.					
Conduttori <i>Leads</i>		0.25 mm <sup>2</sup> / AWG 24 / 32 x 0.10 mm <sup>2</sup>					
Materiali connettore M8 <i>M8 connector material</i>		PA / ottone dorato <i>PA / gold-plated brass</i>					
Normative di riferimento CE <i>CE reference standards</i>		CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11					
Configurazioni circuitali <i>Wiring diagrams</i>							
Connessioni <i>Connections</i>							
		Marrone (BN +); Blu (BU -); Nero (BK OUT) <i>Brown (BN +); Blue (BU -); Black (BK OUT)</i>					

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*Linear Actuators*

Sospensioni  
*Suspensions*

Taglierini  
*Nippers*

Kit-Robot  
*Robot Kit*

Accessori Opzionali  
*Options*

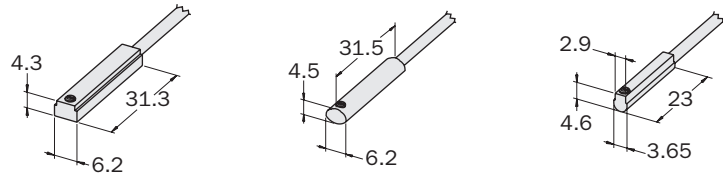
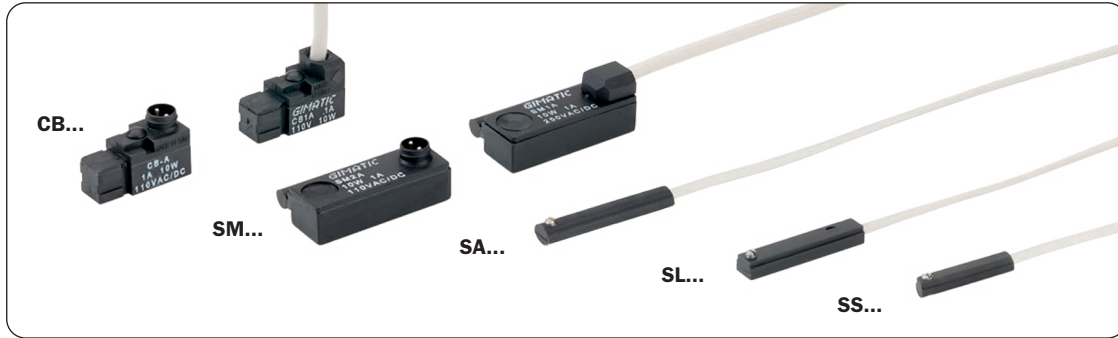
Sensori  
*Sensors*

## Sensori magnetici senza led

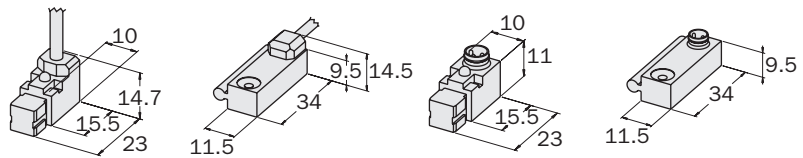
- Sensori Reed senza indicatore luminoso di attivazione uscita.
- Nessun problema in caso di vibrazioni.
- Uscita cavo o connettore M8 o SNAP.
- Tracciabilità 100%.
- Applicazione diretta in cava "C" o "T" standard.
- Adattatori per cave opzionali.
- Prolunghe 2.5m, 5m e 10m opzionali.
- Inserimento assiale o verticale.

## NO LED sensors

- Reed sensors without output-enabled indicator light.
- No problems in case of vibrations.
- Cable, M8 or SNAP connector output.
- 100% traceability.
- Standard C-slot or T-slot inline mounting.
- Optional slot adaptors.
- Optional 2.5m, 5m and 10m cable extensions.
- Axial or vertical mounting.



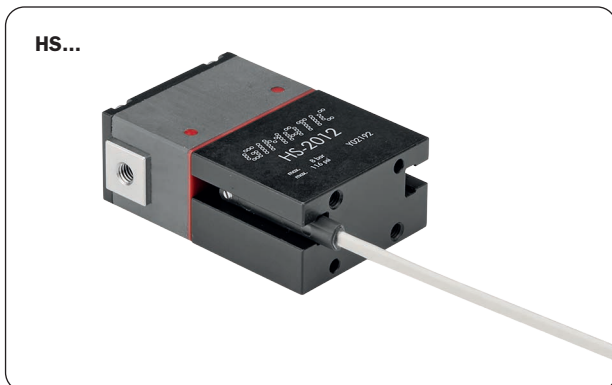
Sensore con cavo Sensor with cable	<b>SL1A525-G</b>	<b>SA1A525-G</b>	<b>SS1A425-G</b>
Sensore con conn. M8/SNAP Sensor with M8/SNAP connector	<b>SL2A503-G</b>	<b>SA2A525-G</b>	<b>SS2A403-G</b>



Sensore con cavo Sensor with cable	<b>CB1A425-G</b>	<b>SM1A525-G</b>	<b>CB1B425-G</b>	<b>SM1B525-G</b>
Sensore con conn. M8/SNAP Sensor with M8/SNAP connector	<b>CB2A4-G</b>	<b>SM2A5-G</b>	<b>CB2B4-G</b>	<b>SM2B5-G</b>

Dimensions (mm)

## Esempi di utilizzo Application examples



Sensore con cavo Sensor with cable	SL1A525-G	SA1A525-G	SS1A425-G	CB1A425-G	SM1A525-G	CB1B425-G	SM1B525-G
Sensore con conn. M8/SNAP Sensor with M8/SNAP connector	SL2A503-G	SA2A525-G	SS2A403-G	CB2A4-G	SM2A5-G	CB2B4-G	SM2B5-G
Tipo sensore Sensor type	REED 2 fili normalmente Aperto 2-wire reed - Normally Open				REED 2 fili + VDR normalmente Aperto 2-wire reed + VDR - Normally Open		
Tensione di alimentazione Power supply	0÷220 Vac/dc		0÷110 Vac/dc		0÷220 Vac/dc	0÷110 Vac/dc	0÷220 Vac/dc
Corrente di commutazione Switching current	1 A		0.5 A		1 A		
Potenza (carico ohmico) Power rating (Ohmic load)	6 W				10 W		
Punto di lavoro nominale Nominal switching point	15÷20 AT			20÷25 AT			
Differenza ON-OFF ON-OFF differential	5÷10 AT						
Tempo commutazione "ON" ON switching time	0.5 ms						
Tempo commutazione "OFF" OFF switching time	0.1 ms						
Temperatura di lavoro Operating temperature	-10÷70°C						
Frequenza di lavoro Switching frequency	500 kHz						
Vita elettrica Electric service life	10 <sup>7</sup> imp.						
Velocità di passaggio pistone Piston speed	10 m/s						
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes						
Grado di protezione Protection rating	IP 67						
Materiali corpo Sensor body material	PA; AISI 303; OT63						
Lunghezza cavo standard Standard cable length	2.5 m (cavo diretto) - 0.3 m (cavo con connettore M8) - connettore SNAP 2.5 m (flying cable) - 0.3 m (cable with M8 connector) - SNAP connector						
Guaina - isolamento Sheathing - insulation	PVC CEI 20-22II O.R.						
Conduttori Leads	0.14 mm <sup>2</sup> / AWG 26 / 36 x 0.07 mm <sup>2</sup>			0.25 mm <sup>2</sup> / AWG 24 / 32 x 0.10 mm <sup>2</sup>			
Materiali connettore M8 M8 connector material	PUR / ottone dorato PUR / gold-plated brass						
Normative di riferimento CE CE reference standards	CEI EN 60529; CEI EN 60947-5-2; CEI EN 61000-6-2; CEI EN 61000-6-3; CEI EN 55022; CEI EN 61000-4-2; CEI EN 61000-4-3; CEI EN 61000-4-4; CEI EN 65000-4-5; CEI EN 61000-4-6; CEI EN 61000-4-8; CEI EN 61000-4-11						
Configurazioni circuitali Wiring diagrams							
Connessioni Connections							
	<p>Marrone (BN +); Blu (BU -); Non connesso N.C. Brown (BN +); Blue (BU -); Not connected N.C.</p>						

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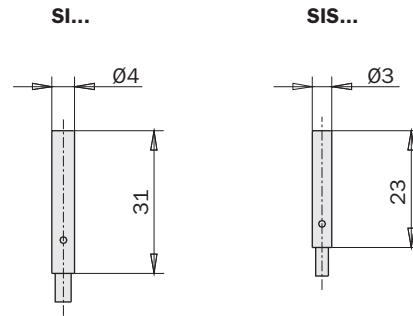


## Sensori induttivi

- Sensori induttivi con funzione di anti-interferenza.
- Materiale del corpo in acciaio inox e superficie sensibile in PBT.
- Indicatore LED integrato.
- Uscite in logica PNP o NPN.

## Inductive sensors

- Inductive sensors with anti-interference function.
- Stainless steel sensor body and PBT sensitive surface.
- Embedded LED indicator.
- PNP or NPN logic outputs.



Dimensions (mm)

## Esempi di utilizzo Application examples



	SI4M225-G	SI4N225-G	SIS4M225-G	SIS4N225-G
Tipo sensore Sensor type	NPN Magnetoresistivo normalmente Aperto <i>Magnetoresistive NPN Normally Open</i>	PNP Magnetoresistivo normalmente Aperto <i>Magnetoresistive PNP Normally Open</i>	NPN Magnetoresistivo normalmente Aperto <i>Magnetoresistive NPN Normally Open</i>	PNP Magnetoresistivo normalmente Aperto <i>Magnetoresistive PNP Normally Open</i>
Distanza di rilevazione nominale Nominal sensing distance	0.8 mm		0.7 mm	
Isteresi Hysteresis	2...20% of Sn			
Indicatore Uscita Output indicator	LED rosso red LED			
Frequenza di lavoro Switching frequency	< 5 kHz			
Tensione di alimentazione Voltage supply range +Vs	10 ... 30 VDC			
Corrente massima assorbibile (senza carico) Current consumption max. (no load)	12 mA			
Tensione in uscita Vd Output voltage Vd	< 2 VDC			
Corrente di commutazione Switching current	< 100 mA			
Protezione controllo cortocircuito Short-circuit protection	Sì Yes			
Protezione contro inversione di polarità Reverse polarity protection	Sì Yes			
Forma corpo Type	cilindrico e liscio cylindrical smooth			
Materiale componente sensibile Material (sensing face)	LCP			
Materiale corpo Housing material	acciaio inox stainless steel			
Dimensioni Dimensions	4 mm		3 mm	
Lunghezza corpo Case length	31 mm		23 mm	
Lunghezza cavo standard Standard cable length	2.5 m			
Temperatura di lavoro Operating temperature	-25 ... +75°C			
Grado di protezione Protection rating	IP 67			
Configurazioni circuitali Wiring diagrams				
Connettore Connections	<p>Marrone BN (+); Blu BU (-); Nero BK (OUT) Brown BN(+); Blue BU(-); Black BK (OUT)</p>			

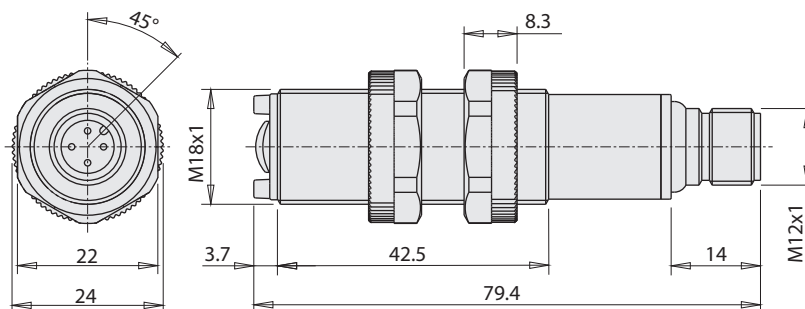
Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
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SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
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Sensors

## Sensori ottici

- Sensori fotoelettrici M18x1 mm.
- Soppressione di sfondo 100 mm senza regolazione.
- Uscita digitale PNP/NPN programmabile in logica impulso di luce LO oppure impulso di buio DO.
- Indicatore LED integrato.
- Uscita connettore M12, 4 pin.
- Corpo plastico corto e leggero.
- Ghiere e rondelle incluse.

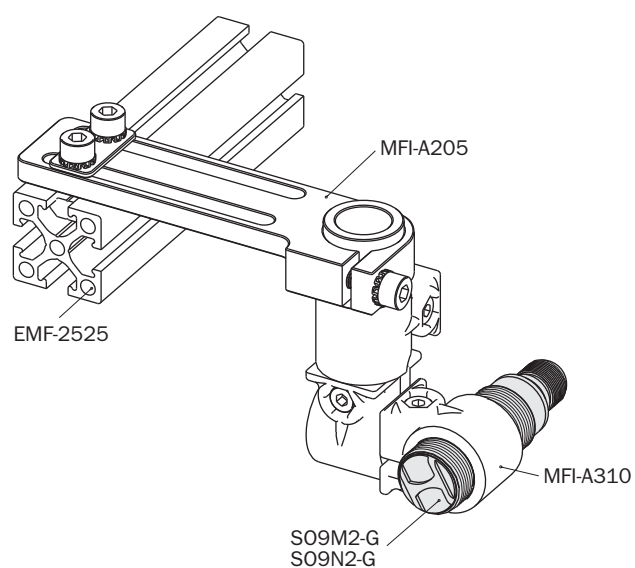
## Optical sensors

- M18x1 mm optical sensors.
- 100 mm background suppression without adjustment.
- PNP/NPN digital output, with programmable LO or DO pulse logic.
- Embedded LED indicator.
- 4-pin M12 connector output.
- Short and lightweight plastic body.
- Lock nuts and washers included.

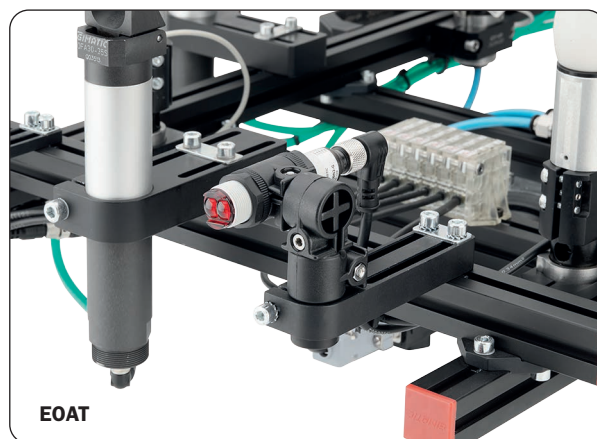


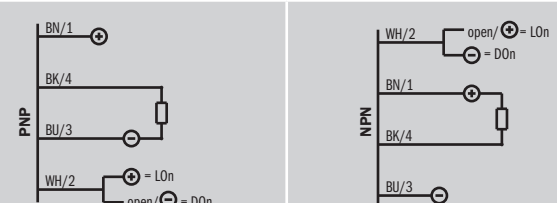
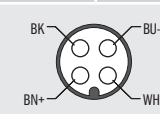
Dimensions (mm)

## Esempi di fissaggio Fixing examples

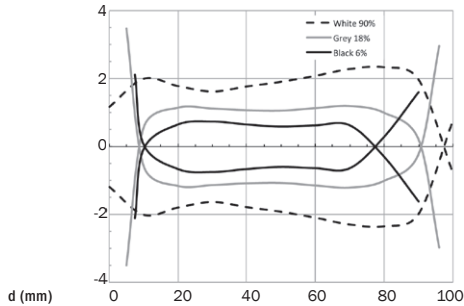


## Esempi di utilizzo Application examples

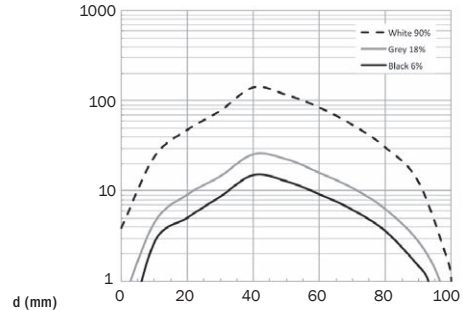


	S09N2-G	S09M2-G
Tipo di uscita Output type	PNP	NPN
Distanza di rilevazione nominale Nominal sensing distance	100 mm	
Campo di misura Measurement range	bianco (90%): 0 + 50 mm - grigio (18%): 5 + 50 mm - nero (6%): 8 + 50 mm white (90%): 0 + 50 mm - grey (18%): 5 + 50 mm - black (6%): 8 + 50 mm	
Oggetto minimo rilevabile Minimum detectable object	3.5 mm	
Isteresi Hysteresis	≤ 10 %	
Ripetibilità Repeat accuracy	5%	
Tensione di alimentazione Operating voltage	+10 ÷ 30 Vcc	
Corrente di uscita Output current	100 mA	
Frequenza di lavoro Operating frequency	1 kHz	
Ritardo alla disponibilità Time delay before availability	200 ms	
Temperatura di esercizio Temperature range	-25°C + 70°C (senza condensa) (without condensation)	
Grado di protezione Protection rating	IP67 (EN60529)	
Coppia di serraggio Tightening torque	1 Nm	
Peso Weight	30 g	
Configurazioni circuitali Wiring schematics		
Connettore Connection	 <p>Marrone (BN +); Blu (BU -); Nero (BK OUT); Bianco (WH OUT) Brown (BN +); Blue (BU -); Black (BK OUT); White (WH OUT)</p>	

disassamento parallelo (mm)  
parallel misalignment (mm)

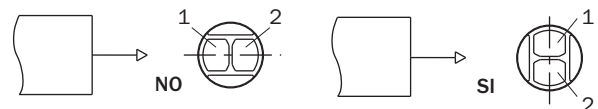


eccesso di guadagno  
excess of gain



Per un corretto funzionamento del sensore l'oggetto in movimento deve attraversare contemporaneamente l'emettitore (1) ed il ricevitore (2).

For proper sensor operation, the moving object must cross the emitter (1) and the receiver (2) simultaneously.

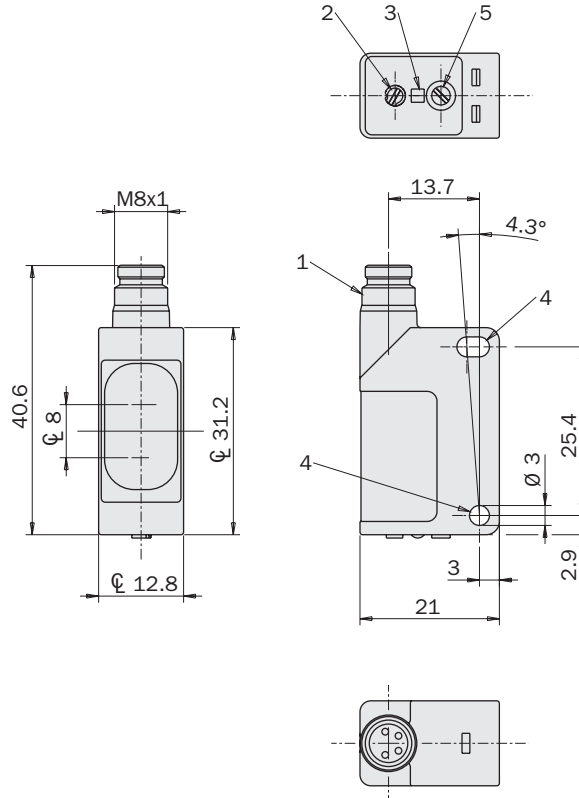


**Sensori ottici cubici**

- Sensori fotoelettrici cubici miniaturizzati a soppressione di sfondo.
- Emissione rossa ad alta intensità.
- Regolazione della sensibilità meccanica tramite trimmer.
- Uscita in logica PNP o NPN.
- Uscita selezionabile N.O./N.C.
- Uscita con connettore M8 4 pin.

**Optical cubic sensors**

- Miniaturized photo-electric cubic sensors with background suppression.
- High-intensity red emission.
- Mechanical sensitivity adjustment via a trimmer.
- PNP or NPN logic output.
- NO/NC selectable output.
- Output with M8 4-pin connector.

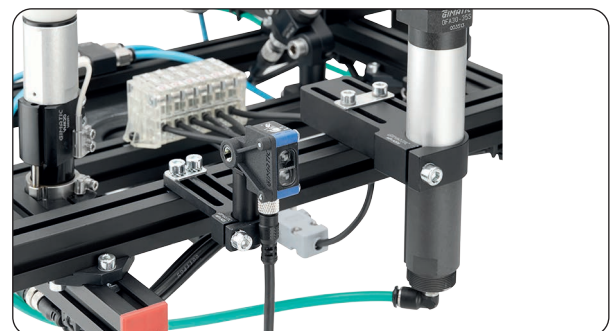
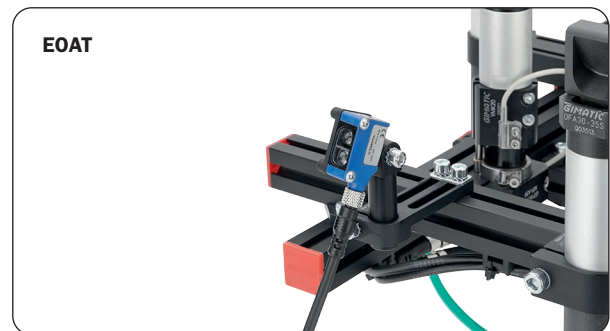
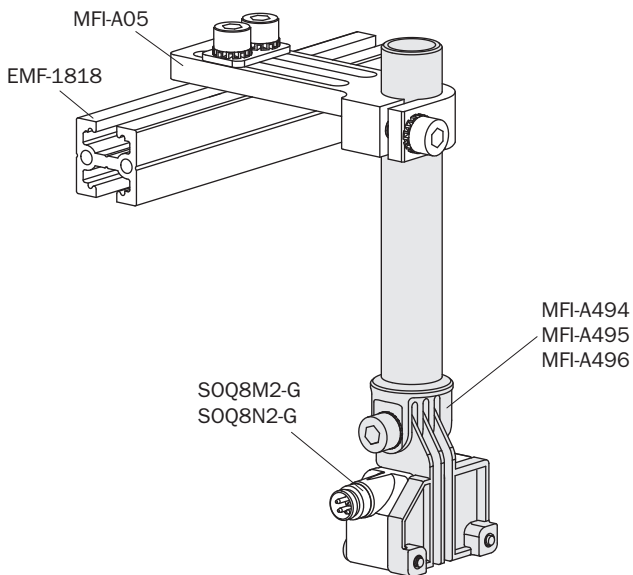


Dimensions (mm)

- 1 Uscita connettore M8x1  
M8x1 connector output
- 2 Trimmer NO/NC  
NO/NC trimmer
- 3 Led  
LED
- 4 Fori di fissaggio  
Fixing holes
- 5 Trimmer regolazione di sensibilità  
Sensitivity-adjusting trimmer

**Esempi di fissaggio**  
*Fixing examples*

**Esempi di utilizzo**  
*Application examples*



	SOQ8N2-G	SOQ8M2-G
Distanza min. di rilevazione <i>Minimum sensing distance</i>	5 mm	
Distanza di rilevazione nominale <i>Nominal sensing distance</i>	30...200 mm(1)	
Regolazione della sensibilità <i>Sensitivity adjustment</i>	Sì (4 giri) Yes (4 rounds)	
Emissione <i>Emission</i>	Rossa (630 nm) Red (630 nm)	
Ripetibilità <i>Repeatability</i>	5%	
Selezione buio o luce <i>Dark or Light selection</i>	Sì Yes	
Tensione di alimentazione Ue <i>EU Power supply voltage</i>	10...30 Vdc	
Ondulazione residua <i>Ripple</i>	≤ 10 %	
Corrente di carico <i>Load current</i>	≤ 100 mA	
Corrente assorbita a vuoto <i>No-load input current</i>	≤ 30 mA	
Corrente max. commutabile in uscita <i>Maximum output switching current</i>	≤ 100 mA	
Tipo di uscita <i>Output type</i>	PNP NO o NC	NPN NO o NC
Frequenza di commutazione <i>Switching frequency</i>	1 kHz	
Tempo di risposta <i>Response time</i>	≤ 100 ms	
Protezione elettrica alimentazione <i>Supply electrical protection</i>	Inversione di polarità, sovratensione impulsiva <i>Polarity reversal, overvoltage pulses</i>	
Protezione elettrica di uscita <i>Output electrical protection</i>	Cortocircuito (autoripristinante), sovratensioni <i>Short-circuiting (auto-reset), overvoltage pulses</i>	
Temperatura operativa <i>Operating temperature range</i>	-25°...+70° C (senza condensazione) (no condensation)	
Temperatura di immagazzinamento <i>Storage temperature</i>	-30°...+80° C	
Immunità alla luce ambiente <i>Ambient light immunity</i>	10.000 lux luce solare - 3.000 lux lampada alta frequenza <i>10,000 lux sunlight - 3,000 lux high-frequency bulb</i>	
Grado di protezione <i>Protection rating</i>	IP67 (EN60529)	
Materiale del contenitore <i>Case material</i>	PA66	
Materiale ottica <i>Optics material</i>	PMMA	
Coppia serraggio <i>Tightening torque</i>	1Nm	
Peso approssimativo <i>Approx. weight</i>	10g	
Configurazioni circuitali <i>Wiring diagrams</i>		
Connettore <i>Connector</i>	<p>Marrone BN (+); Blu BU (-); Nero BK (OUT); Non connesso N.C. Brown BN (+); Blue BU (-); Black BK (OUT); Not connected N.C.</p>	

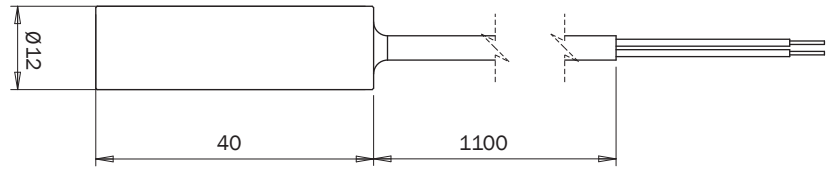
Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors

**Modulo laser**

- Fascio a croce rossa.
- Alimentazione 24Vdc , 45 mA.
- Lunghezza d'onda 635 nm.
- Spessore linea minore di 1.5 mm @ 3 m.

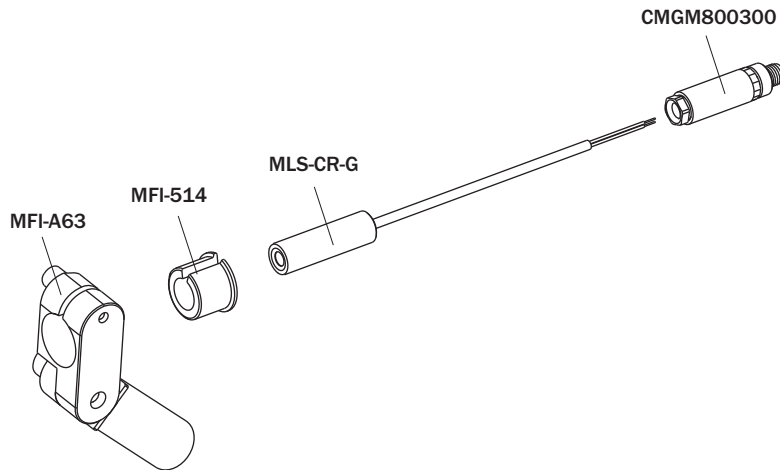
**Laser module**

- Red cross beam.
- 24Vdc - 45 mA power supply.
- Wave length 635 nm.
- Line thickness less than 1.5 mm @ 3m.

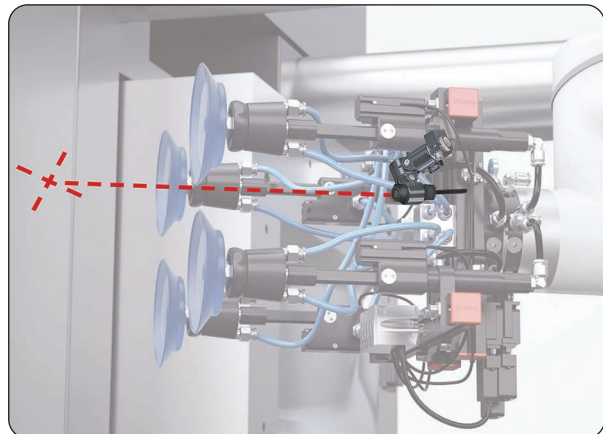
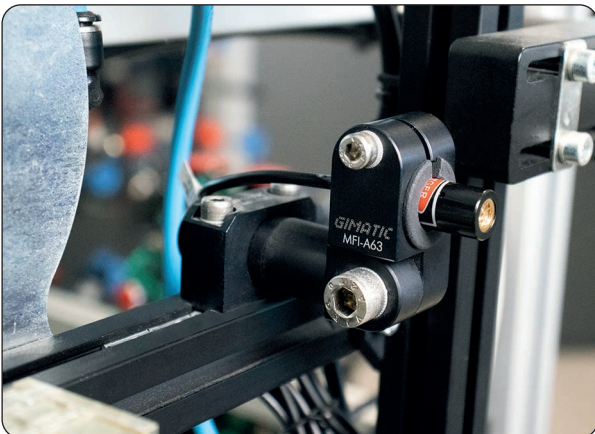


**Esempi di fissaggio**  
**Fixing examples**

Dimensions (mm)



**Esempi di utilizzo**  
**Application examples**



**Avvertenze**

- Radiazioni laser.
- Prodotto laser di classe 3A.
- Non fissare direttamente il fascio.
- Non fissare il fascio con strumenti ottici.
  
- Si consiglia l'utilizzo di occhiali di protezione.

**Warnings**

- Laser radiations.
- Class 3A laser device.
- Do not stare into the laser beam directly.
- Do not stare into the laser beam with optical instruments.
  
- We recommend using safety glasses.



MLS-CR-G	
Lunghezza onda Wave length	635 nm
Potenza Power	< 5mw
Dimensioni Dimensions	12 x 40 mm
Forma fascio Beam shape	Red Cross
Spessore linea Line thickness	< 1.5 mm @3 m
Tipo connessione Type of connection	Cable
Lunghezza cavo Cable length	1.1 m
Isolamento cavo Cable insulation	PVC
Corrente assorbita Absorbed current	< 45 mA
Tensione alimentazione Operating voltage	12-24 V
Temperatura di utilizzo Operating temperature	-10 ÷ 40 °C
Temperatura stoccaggio Storage temperature	-40 ÷ 80 °C
Tempo di vita Life time	> 10'000 h
Classe del laser Laser class	3A
Massa Mass	50 g
Grado di protezione IP rating	IP50

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

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Profiles and Brackets

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Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

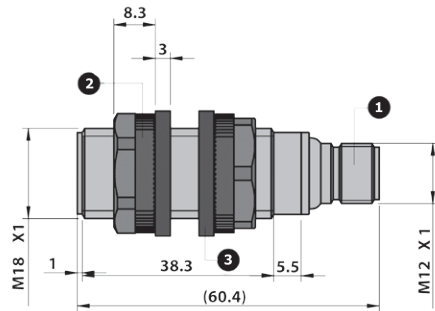


**Sensori ultrasonici**

- Sensori ultrasuoni M18x1 mm.
- Uscita digitale PNP/NPN programmabile in logica NA o NC.
- Campo di lettura 40-300 mm con punto programmabile a mezzo Teach esterno.
- Uscita connettore M12, 4 pin.
- Corpo plastico corto e leggero.
- Ghiera e rondelle incluse.

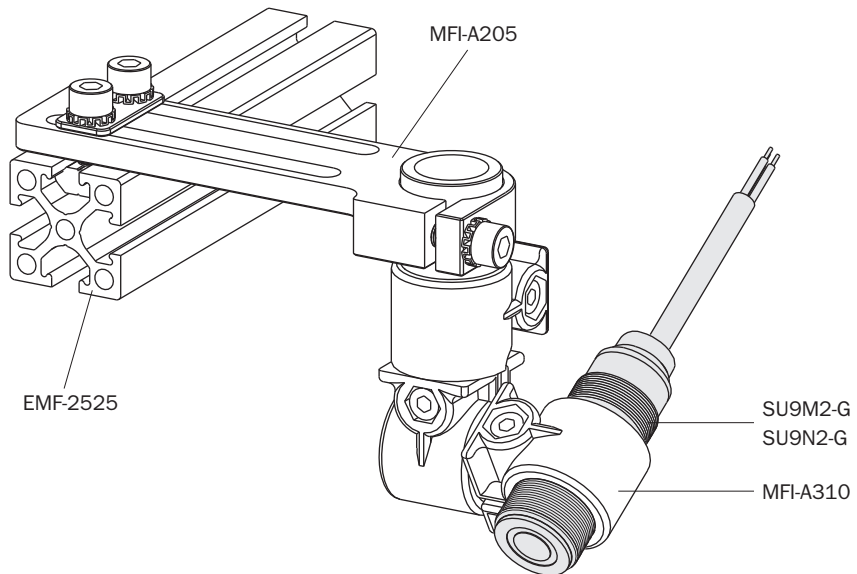
**Ultrasonic sensors**

- M18x1 mm ultrasonic sensors.
- PNP/NPN digital output with NO or NC programmable logic.
- 40-300 mm sensing range with programmable point via External Teach.
- 4-pin M12 output connector.
- Short and lightweight plastic body.
- Lock nuts and washers included in the supply.

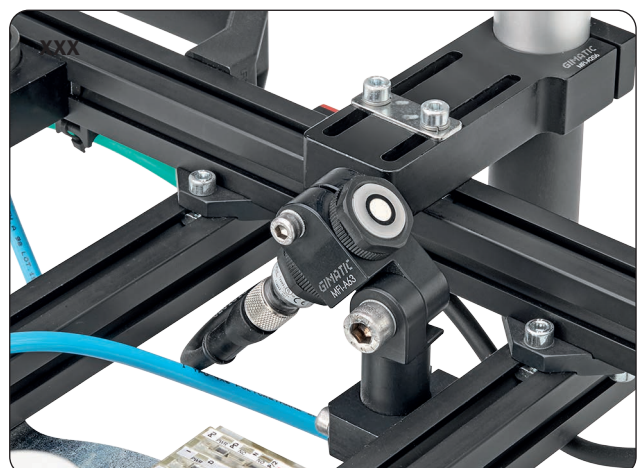
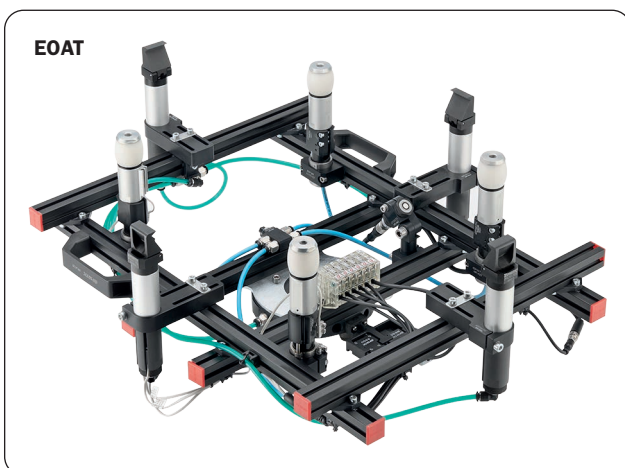


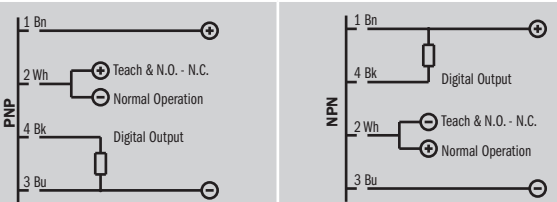
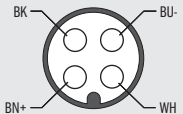
Dimensions (mm)

**Esempi di fissaggio**  
**Fixing examples**



**Esempi di utilizzo**  
**Application examples**



	SU9N2-G	SU9M2-G
Tipo di uscita Output type	PNP	NPN
Massima distanza di rilevamento Maximum sensing distance	300 mm	
Minima distanza di rilevamento (zona morta) Minimum sensing distance (blind zone)	40 mm	
Range di regolazione Sensing range	40-300 mm	
Apertura fascio angolare Beam angle	±10°	
Frequenza di lavoro Switching frequency	40 Hz	
Tempo di risposta (uscita digitale) Response time (digital output)	13 ms	
Isteresi Hysteresis	2%	
Ripetibilità Repeatability	2% del valore di fondo scala 2% of full-scale value	
Errore di linearità Linearity error	≤ 3 del valore di fondo scala ≤ 3 of full-scale value	
Range di temperatura Temperature range	-20°+60°C	
Compensazione in temperatura Temperature compensation	Sì Yes	
Deriva termica Thermal drift	≤ 7%	
Tensione di alimentazione Power supply voltage	+15±30 Vcc	
Ondulazione residua Ripple	± 5%	
Corrente di perdita Leakage current	≤ 10 µA @ 30 Vcc	
Caduta di tensione in uscita Output voltage drop	2.2 V max. @ (IL=100 mA)	
Corrente assorbita Input current	≤ 40 mA	
Corrente di uscita (uscita digitale) Output current (digital output)	100 mA	
Minima resistenza di carico Minimum load resistance	500 Ω (uscita analogica in tensione) 500 Ω (energized analog output)	
Regolazione punto di lavoro Adjustment set point	Teach-in esterno External Teach-in	
Ritardo alla disponibilità (uscita digitale) Time delay before availability (digital output)	≤ 300 ms	
Compatibilità elettromagnetica Electromagnetic compatibility	Conforme ai requisiti della normativa CE 2004/108/CE in accordo a EN 60947-5-2 Complies with Directive 2004/108/EC in accordance with EN 60947-5-2	
Grado di protezione Protection rating	IP67(3)	
Coppia di serraggio Tightening torque	1 Nm	
Peso (uscita connettore) Weight (connector output)	15 g (uscita connettore) 15 g (output connector)	
Configurazioni circuitali Wiring diagrams		
Connettore Connector		
Marrone BN (+); Blu BU (-); Nero BK (OUT); Bianco WH (OUT) Brown BN (+); Blue BU (-); Black BK (OUT); White WH (OUT)		

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

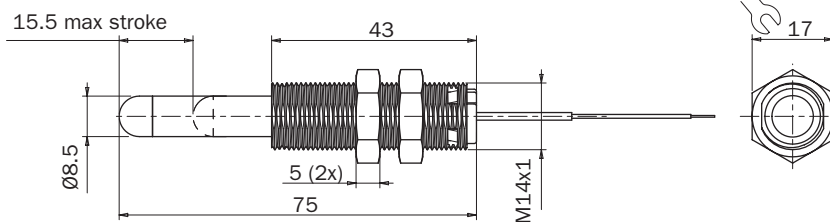
Sensori  
Sensors

## Sensori tattili

- Sensori di tipo reed.
- Uscita digitale attiva una volta superato il punto di commutazione.
- Punta in silicone per evitare danni ai prodotti.
- Tracciabilità 100%.

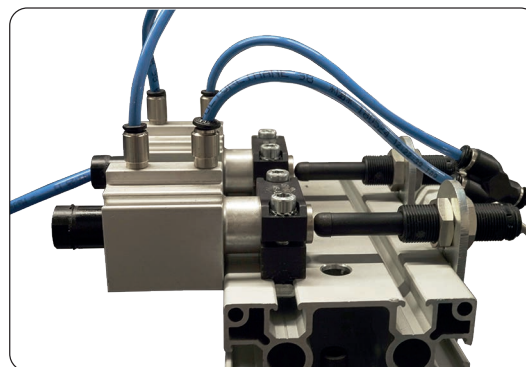
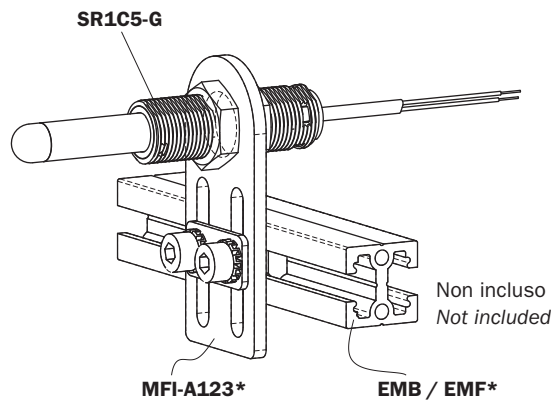
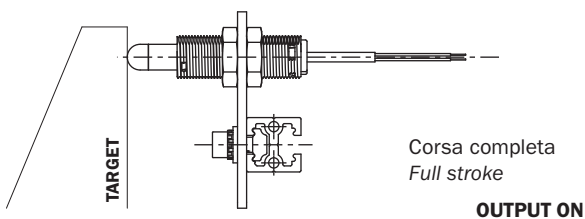
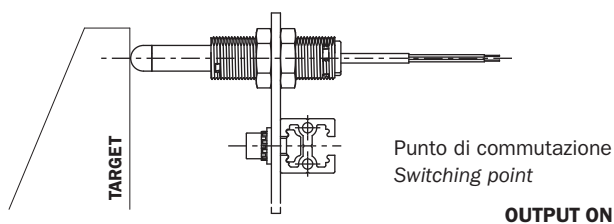
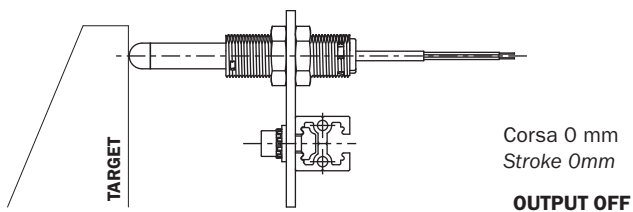
## Touch sensors

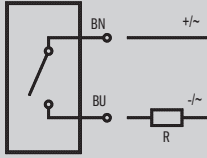
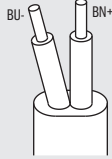
- Reed sensors.
- Digital output activated after passing the switching point.
- Tip made in silicone material to avoid any damage to products in contact.
- 100% traceability.



Dimensions (mm)

## Esempi di utilizzo Application examples



	SR1C5-G
Tipo connessione <i>Connection type</i>	Cavo <i>Cable</i>
Lunghezza cavo <i>Cable length</i>	2.5 m
Isolamento cavo <i>Cable insulation</i>	PVC
Massima tensione <i>Maximum voltage</i>	230 V AC/DC
Corrente massima <i>Maximum electric current</i>	0.5 A
Massima capacità di contatto <i>Maximum contact capacity</i>	10 W
Corsa <i>Stroke</i>	15 mm
Punto di commutazione <i>Switching point</i>	3+4 mm
Temperatura di utilizzo <i>Operating temperature</i>	-10 ÷ 70 °C
Temperatura di stoccaggio <i>Storage temperature</i>	-10 ÷ 70 °C
Tempo di vita <i>Lifetime</i>	2.50 x 10 <sup>6</sup> times (12 V@ 0.5 A)
Massa <i>Weight</i>	40 g
Grado di protezione <i>IP rating</i>	IP67
Materiale corpo principale <i>Main body material</i>	PA
Materiale punta <i>Tip material</i>	Silicone <i>Silicone</i>
Materiale ghiera <i>Ring material</i>	Ottone Nichelato <i>Nickel Plated Brass</i>
Dimensioni ghiera <i>Ring dimensions</i>	M14X1
Configurazioni circuitali <i>Wiring diagrams</i>	
Connessioni <i>Connections</i>	 <p>Marrone BN (+); Blu BU (-) <i>Brown BN(+); Blue BU(-)</i></p>

Unità Rotanti  
*Rotary Units*Cambia Utensile  
*Quick Changer*Profili e Staffe  
*Profiles and Brackets*Pinze  
*Grippers*Attuatori Lineari  
*Linear Actuators*Sospensioni  
*Suspensions*Taglierini  
*Nippers*Kit-Robot  
*Robot Kit*Accessori Opzionali  
*Options*Sensori  
*Sensors*

## Scatole di derivazione per sensori serie SB

La scatola di connessione sensori è un'interfaccia realizzata per condizionare i segnali dei sensori al fine di condensare l'informazione e renderla idonea all'elettronica di comando tipo PLC (Programmable Logic Controller).

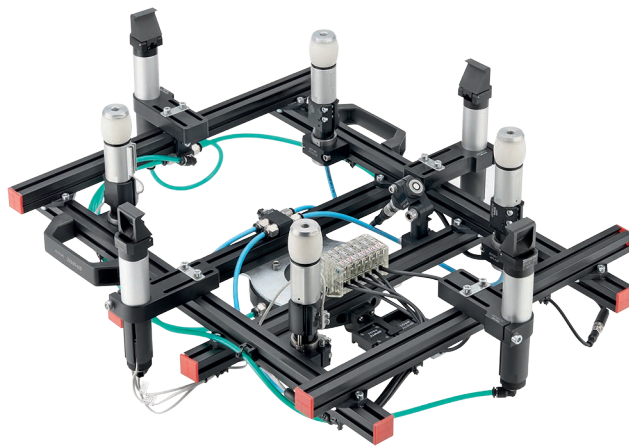
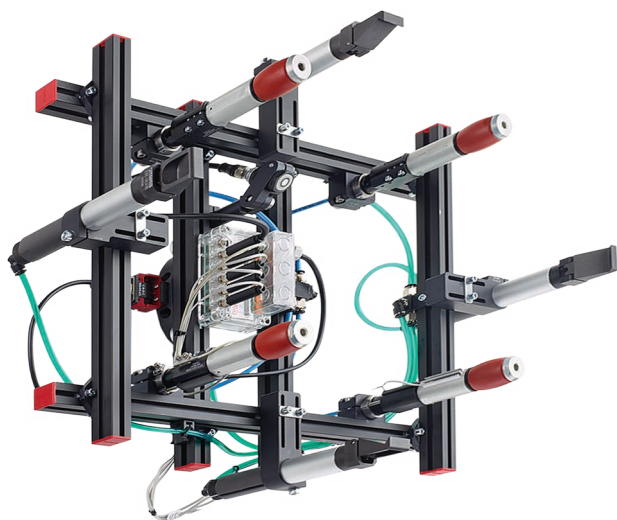
Una scatola di connessione (o sensor box) incorpora diverse funzionalità tra cui la possibilità di connettere in serie sensori anche di tipo diverso, convertirne il tipo di segnale, eseguire ricerche guasti, preservare i circuiti di comando, rigenerare i segnali in caso di lunghi cablaggi e preservare i contatti. Ogni scatola di comando si compone di più aree: un'area dedicata all'alimentazione, un'area di ingresso per la connessione fisica dei sensori, una di configurazione degli ingressi (utilizzata per impostare il tipo di sensore collegato), una di configurazione delle uscite (utilizzata per impostare il tipo di uscita e la logica di elaborazione richiesta) ed un'area di uscita per il prelievo dei segnali generati. Ogni ingresso fisico può essere configurato in base al tipo di sensore connesso (PNP, NPN, 2 fili NO/NC) mediante l'uso di jumper o selettori. I segnali provenienti dai sensori sono condizionati tramite l'uso di relè o microprocessori (in base al modello della scatola di comando) per fornire una o più uscite in base alle necessità di utilizzo. Anche la singola uscita può essere configurata utilizzando un jumper o un selettore allo scopo di definirne il tipo (PNP o NPN) e la modalità di funzionamento normalmente aperta (NO) oppure normalmente chiusa (NC).

Le sensor box sono dotate di una struttura, di fissaggi e di morsettiere che semplificano e agevolano sia l'installazione che il cablaggio dei sensori e delle uscite. La presenza inoltre di un fusibile auto-ripristinante protegge e preserva l'integrità dell'intero apparato elettronico da eventuali situazioni di corto circuito. Le scatole di connessione sono tutte dotate di led di segnalazione visibili attraverso i contenitori in materiale plastico trasparente, utili sia per la ricerca di guasti (troubleshooting) che per riconoscere lo stato di attivazione degli ingressi e delle uscite. In base al modello, le scatole di connessione sono dotate di pressa cavi PG9 che garantiscono un grado di protezione IP65 della scheda elettronica integrata (SBxC, SB6B, SBF) piuttosto che di una struttura modulare (SBM) che permette di limitare al massimo gli ingombri e di fissare la scatola stessa direttamente sugli estrusi di alluminio di cui solitamente si compone il telaio di una mano di presa.

## Connection boxes for SB series sensors

The sensor connection box is an interface made to condition sensor signals to condense information and make it suitable for control electronics, such as a programmable logic controller (PLC).

A connection box (or sensor box) has various functions, such as the possibility of connecting different types of sensors in series, converting their signals, troubleshooting, maintaining control circuits, regenerating signals in the case of extensive cabling and maintaining the contacts. Each control box has several areas - a power supply area, an input area for physical sensor connection, an input configuration area (used to set the type of sensor connected), an output configuration area (used to set the type of output and processing logic required), and an output area for collecting the signals generated. Each physical input can be configured on the basis of the type of sensor connected (PNP, NPN, 2-wire NO/NC) using jump wires or selectors. Signals coming from the sensors are conditioned using relay switches or microprocessors (on the basis of the type of control box), to provide one or more outputs depending on operational requirements. Even an individual output can be configured using a jump wire or selector to define the type (PNP or NPN), and normally open (NO) or normally closed (NC) mode of operation. Sensor boxes consist of a frame, clamps and terminal boards to make installation and wiring the sensors and outputs straightforward and easy. Furthermore, the presence of a resettable fuse protects and safeguards the integrity of the electronic equipment from short circuits. All connection boxes have LED warning lights that are visible through transparent plastic containers, which is convenient for troubleshooting and viewing input/output status. The connection boxes have PG9 cable glands depending on the model, which guarantee an IP65 protection grade for integrated electronic boards (SBxC, SB6B, SBF) rather than a modular structure (SBM). This makes it possible to limit size as much as possible, and secure the box directly to the aluminium profiles that usually form gripper frames.

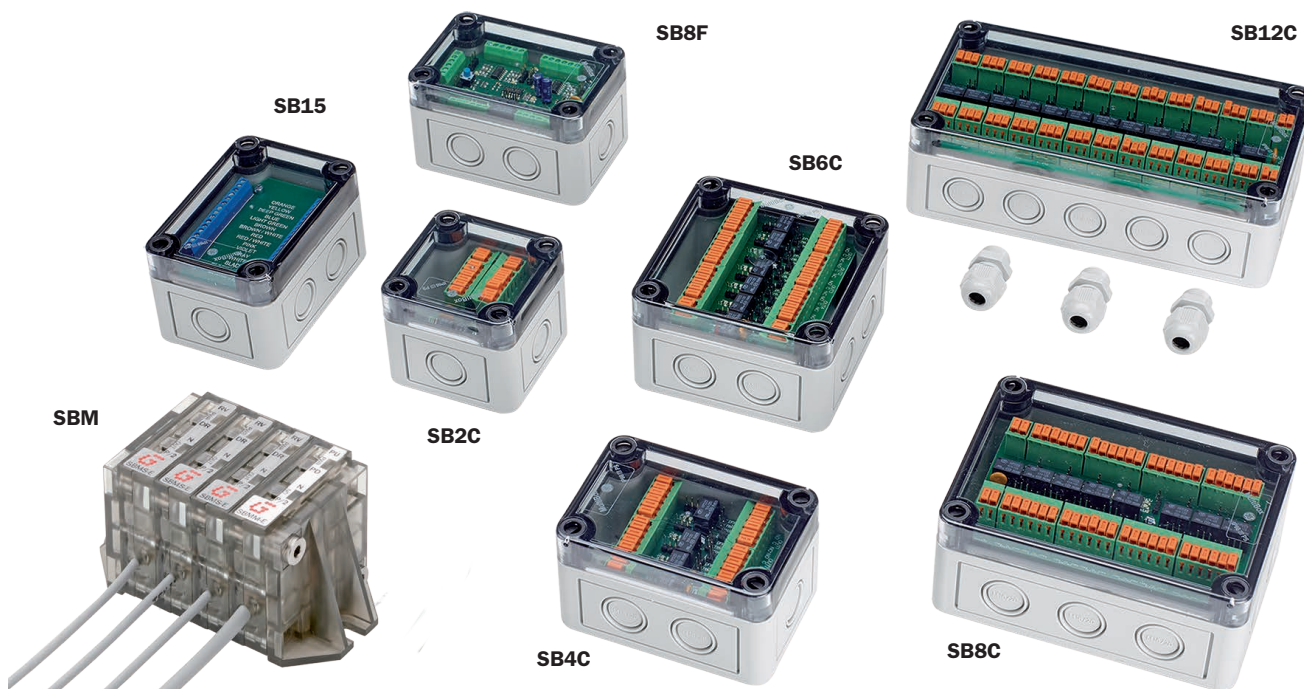


### Scatole di derivazione per sensori serie SB

- Usate per il cablaggio dei sensori degli EOAT.
- Segnali PNP ed NPN possono essere convertiti.
- Ingressi ed uscite possono essere di tipo source (PNP), sink (NPN) o contatto pulito.
- Parecchie scatole possono essere connesse in serie per ampliare il numero di sensori gestibili.
- LED di ripetizione del segnale in ingresso per semplificare la ricerca dei guasti (non per SB15).
- Fornite con serracavo e kit per il fissaggio al profilo.

### Connection boxes for series SB sensors

- Used for sensor wiring on EOATs.
- PNP and NPN signals can be converted.
- Is/Os can be current sourcing (PNP), sinking (NPN) or dry contact.
- Several boxes can be connected in series to control more sensors.
- Input signal repetition LED for easy troubleshooting (not for SB15).
- Provided with strain reliefs and kit for fastening to profiles.



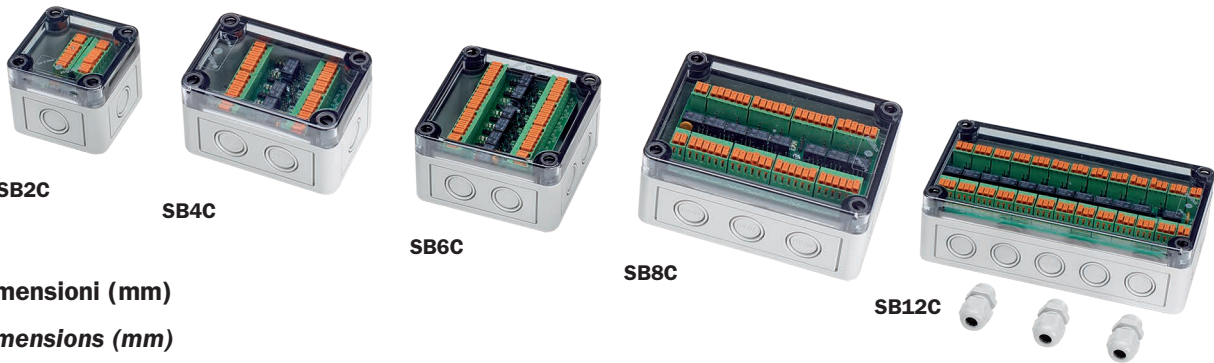
	SB2C.. ..SB12C	SB8F	SBMM	SBMS	SBMM-E	SBMS-E
Tensione di alimentazione (Vdc) Power supply unit (Vdc)	24 (± 10%)		12 + 24 (± 10%)			
Corrente massima uscita (A) Maximum output current (A)	1	0.2	0.35			
Metodo di programmazione Programming method	jumper jump wire	microprocessore e push button microprocessor and pushbutton panel	selettori selectors			
Struttura Structure	rigida (numero fisso di ingressi/uscite) rigid (fixed number of inputs/outputs)			modulare modular		
Numero di ingressi Number of inputs	2+12	8	-	1	-	1
Numero di uscite Number of outputs	2+12	1	2 (1NO, 1NC)	-	1 (NO)	-
Grado di protezione Protection rating	IP65		IP40			
Ingombri (mm) Overall dimensions (mm)	65x180x94x57	94x65x57	10x36x34 (singolo modulo) 10x36x34 (single module)			

## Scatole di derivazione con logica a relè NO/NC e connessione a morsetti

- Scatole di connessione sensori in polistirene IP66.
- Ingresso e uscita cavi personalizzabili tramite pressa cavi standard.
- Molteplici modelli disponibili da 2 a 12 sensori in ingresso con led di segnalazione e morsetti di connessione.
- Semplice configurazione tramite jumper del tipo di sensore collegato, del tipo di uscita desiderata e della serie logica di elaborazione dei segnali (singoli o raggruppati).
- Protezione da corto circuito con led rosso di segnalazione e fusibile auto ripristinabile.
- Molteplici scatole possono essere connesse in serie per estendere il numero di sensori collegabili.
- Fino a 1 A come massima corrente di commutazione per la singola uscita.
- Fornita con viti di fissaggio diretto per gli estrusi in alluminio.

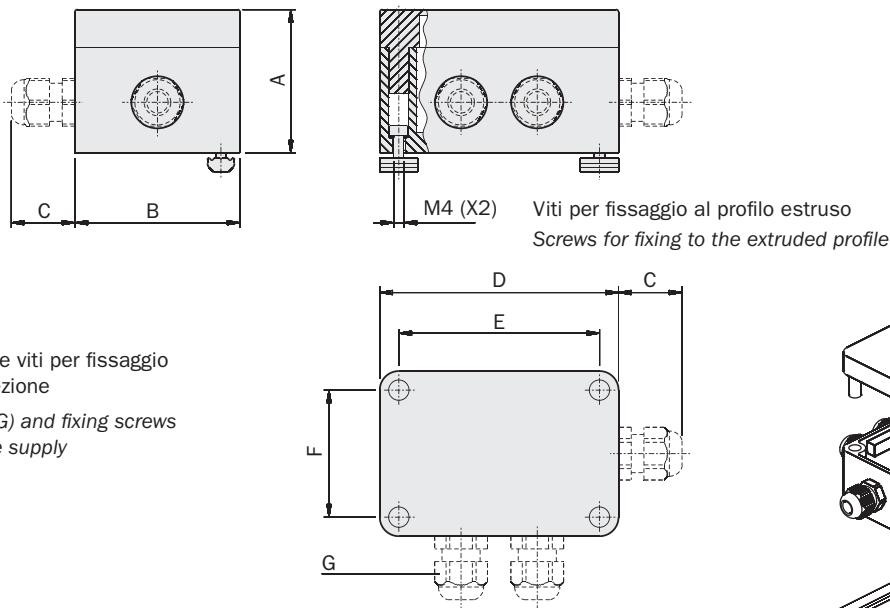
## Connection boxes with NO/NC relay logic and clamp connection

- IP66 polystyrene sensor junction boxes.
- Cable inputs/outputs which can be customised using standard cable glands.
- Multiple models available with 2 to 12 input sensors, warning LEDs and connection clamps.
- Simple configuration of the type of sensor connected, type of output required, and the signal processing logic (individual or grouped) using jump wires.
- Protection from short circuits with red LED warning light and resettable fuse.
- Multiple boxes can be connected in series to increase the number of sensors that can be connected.
- Up to 1A as maximum switching current for individual outputs.
- Provided with screws for securing directly to aluminium profiles.



### Dimensioni (mm)

### Dimensions (mm)

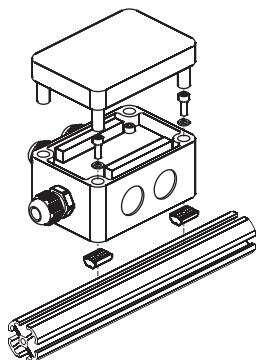
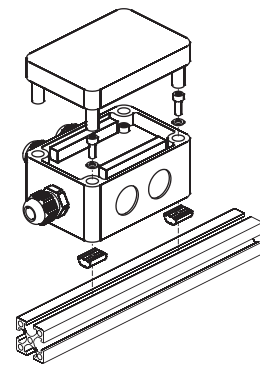


Serracavo (G) e viti per fissaggio  
forniti in confezione

Strain reliefs (G) and fixing screws  
included in the supply

FIRST ANGLE  
PROJECTION

Serracavo  
Strain reliefs

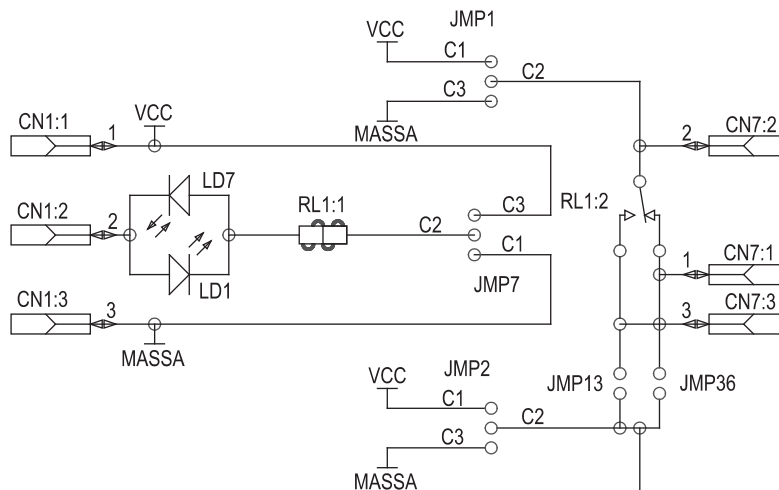


	SB2C	SB4C	SB6C	SB8C	SB12C
A	57	57	57	57	57
B	65	65	94	94	94
C	25	25	25	25	25
D	65	94	94	130	180
E	50	79	79	115	165
F	50	50	79	79	79
G	n°2	n°3	n°4	n°6	n°8
Massa Mass	120 g	160 g	190 g	235 g	325 g

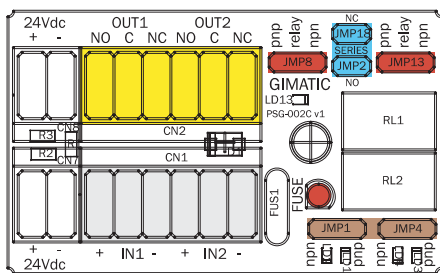
Unità Rotanti  
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Profili e Staffe  
Profiles and Brackets  
Pinze  
Grippers  
Attuatori Lineari  
Linear Actuators  
Sospensioni  
Suspensions  
Taglierini  
Nippers  
Kit-Robot  
Robot Kit  
Accessori Opzionali  
Options  
Sensori  
Sensors

Schema circuito singolo ingresso - uscita

Input/output single-circuit diagram

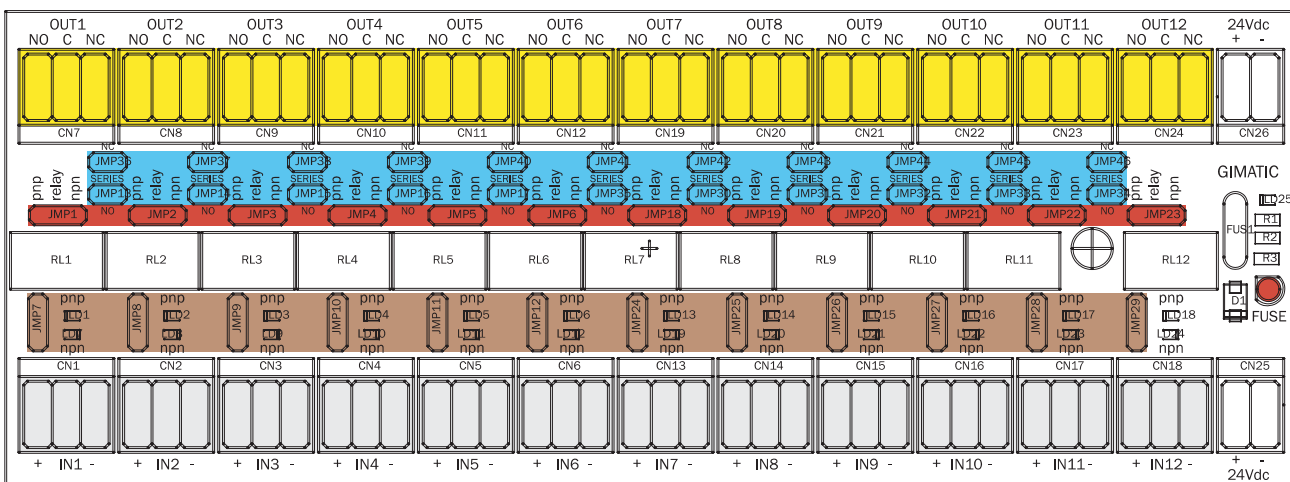
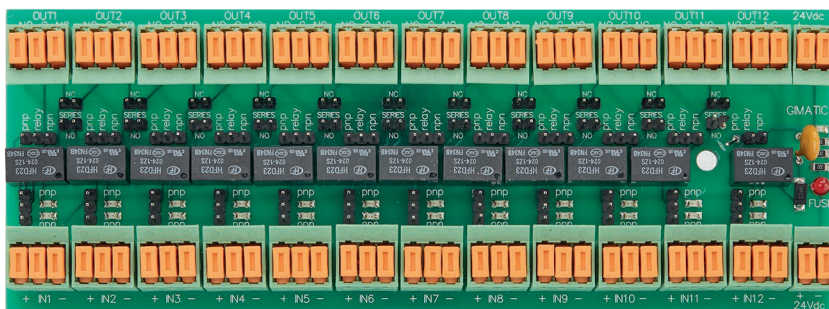


SB2C



- Morsetti di alimentazione  
Power terminals
- Morsetti di connessione sensori di ingresso  
Input sensor connection clamps
- Selettore di configurazione tipo di ingresso (PNP, NPN)  
Input type configuration selector (PNP, NPN)
- Selettore di configurazione tipo di uscita (PNP, NPN)  
Output type configuration selector (PNP, NPN)
- Selettore di configurazione per la logica di elaborazione (serie NO, serie NC)  
Processing logic configuration selector (NO series, NC series)
- Morsetti di connessione uscite  
Output connection clamps

SB12C





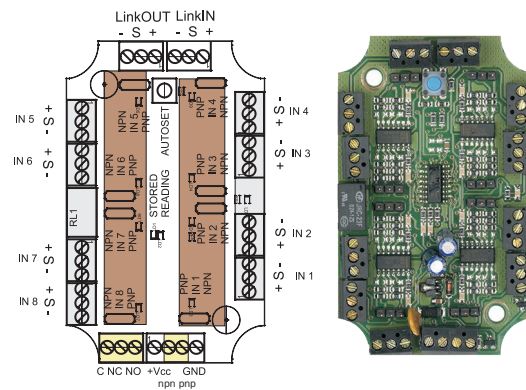
## Scatole di derivazione con logica a microprocessore e connessione a morsetti

- Scatole di connessione sensori in polistirene IP66.
- Ingresso e uscita cavi personalizzabili tramite pressa cavi standard.
- Fino a 8 sensori collegabili tramite morsetti e con led di segnalazione, configurazione impostabile mediante jumper.
- Semplice configurazione tramite pressione di un tasto di programmazione.
- Alla pressione del tasto il microprocessore memorizza lo stato di tutti gli ingressi collegati. L'uscita si attiva ogni qual volta si ripresenta lo stesso stato degli ingressi.
- Protezione da corto circuito con fusibile auto ripristinabile.
- Molteplici scatole possono essere connesse in serie per estendere il numero di sensori collegabili (è sufficiente la pressione di un unico tasto per memorizzare lo stato di tutti i sensori).
- Fino a 1 A come massima corrente di commutazione per la singola uscita di tipo relè e 30 mA per la singola uscita di tipo transistor.
- Fornita con viti di fissaggio diretto per gli estrusi in alluminio.

## Connection boxes with microprocessor logic and clamp connection

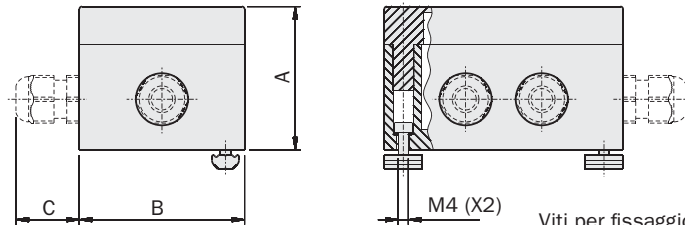
- IP66 polystyrene sensor junction boxes.
- Cable inputs/outputs which can be customised using standard cable glands.
- Up to 8 sensors with warning LEDs can be connected using clamps, configuration can be set using jump wires.
- Simple configuration by pressing a programming button.
- On pressing the button the microprocessor stores the status of all connected inputs. The output is activated every time the same input status is returned.
- Short circuit protection with resettable fuse.
- Multiple boxes can be connected in series to increase the number of sensors that can be connected (pressing just one button stores the status of all sensors).
- Up to 1A as maximum switching current for individual relay outputs and 30 mA for individual transistor outputs.
- Provided with screws for securing directly to aluminium profiles.

Schema circuito  
Circuit diagram



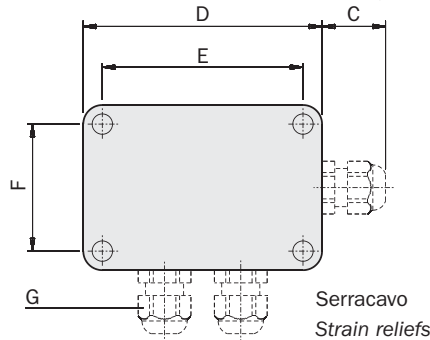
### Dimensioni (mm)

### Dimensions (mm)

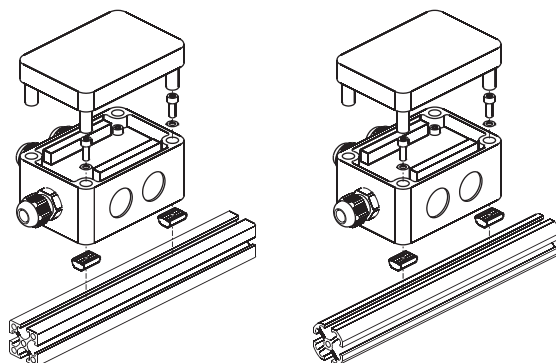


Viti per fissaggio al profilo estruso  
Screws for fixing to the extruded profile

Serracavo (G) e viti per fissaggio  
forniti in confezione  
Strain reliefs (G) and fixing screws  
included in the supply



	SB8F
A	57
B	65
C	25
D	94
E	79
F	50
G	n°3
Peso Weight	165 g



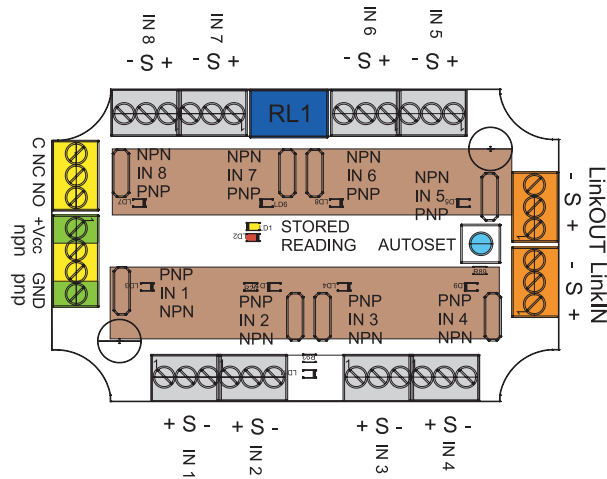
FIRST ANGLE  
PROJECTION

**Funzionamento**

Alimentare la scatola alla tensione di 24Vdc (+/- 10 %) (AREA VERDE).  
 Quando si preme il pulsante AUTOSET, il microprocessore memorizza lo stato degli ingressi (AREA GRIGIA) opportunamente settati mediante i jumper (AREA MARRONE). L'uscita (AREA GIALLA) verrà abilitata ogni volta che si presenterà la medesima configurazione degli ingressi. La singola uscita può essere gestita nelle 4 tipologie PNP, NPN, CONTATTO PULITO NC, CONTATTO PULITO NO.  
 Mediante i canali LINK IN e LINK OUT (AREA ARANCIO) è possibile collegare in serie molteplici scatole. Il numero massimo di scatole collegate sarà in funzione della corrente massima fornibile dall'alimentazione.

**Operation**

Supply the sensor box with 24Vdc (+10%) (GREEN AREA).  
 When the AUTOSET button is pressed, the microprocessor stores the state of inputs (GREY AREA) that are properly set using jump wires (BROWN AREA).  
 The output (YELLOW AREA) is enabled whenever the same input configuration occurs. Each output can be controlled in 4 modes: PNP, NPN, CLEAN NC-CONTACT, CLEAN NO-CONTACT.  
 Using the LinkIN and LinkOUT (ORANGE AREA) channels, you can connect several blocks in series. The maximum number of connected blocks depends on the maximum current supplied.

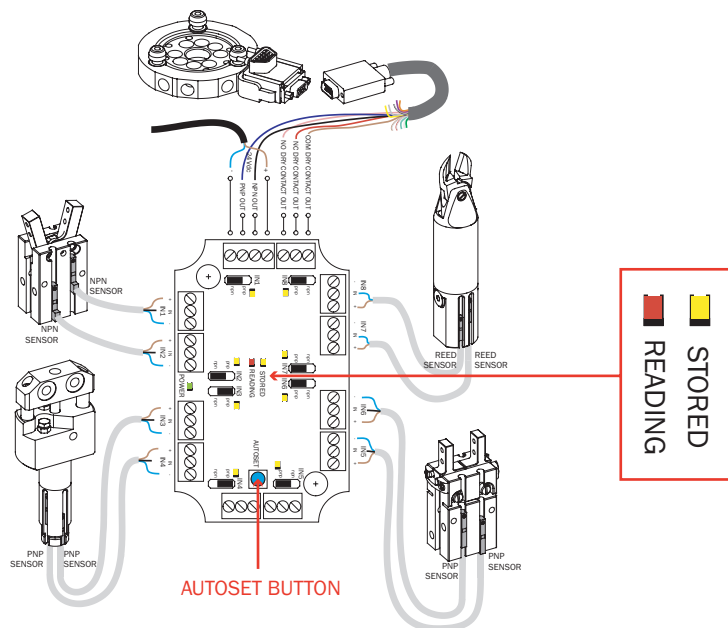


**Procedura di programmazione di una singola SB8F**

Prima di procedere con la programmazione della scatola, assicurarsi che gli ingressi cablati siano nella configurazione desiderata (ON oppure OFF) per l'attivazione dell'uscita. Premere il pulsante AUTOSET per almeno 3 secondi fino a quando il led rosso READING inizia a lampeggiare, dopodichè rilasciare il pulsante.  
 Il lampeggio del led rosso (READING) indica che il microprocessore sta leggendo e memorizzando lo stato di tutti gli ingressi. Terminata la memorizzazione il led rosso si spegne e l'uscita di attiva. L'attivazione dell'uscita è segnalata dall'accensione del led giallo STORED.

**Programming a single SB8F**

Before programming the sensor box, make sure that the wired inputs are in the configuration (ON/OFF) desired to enable the output.  
 Press the AUTOSET button and hold it down for 3 seconds until the READING red light starts flashing, then release it.  
 The red light (READING) flashing indicates that the microprocessor is reading and storing the state of all the inputs. Then the red light goes off and the output is enabled. Output enabling is indicated by the yellow light (STORED).

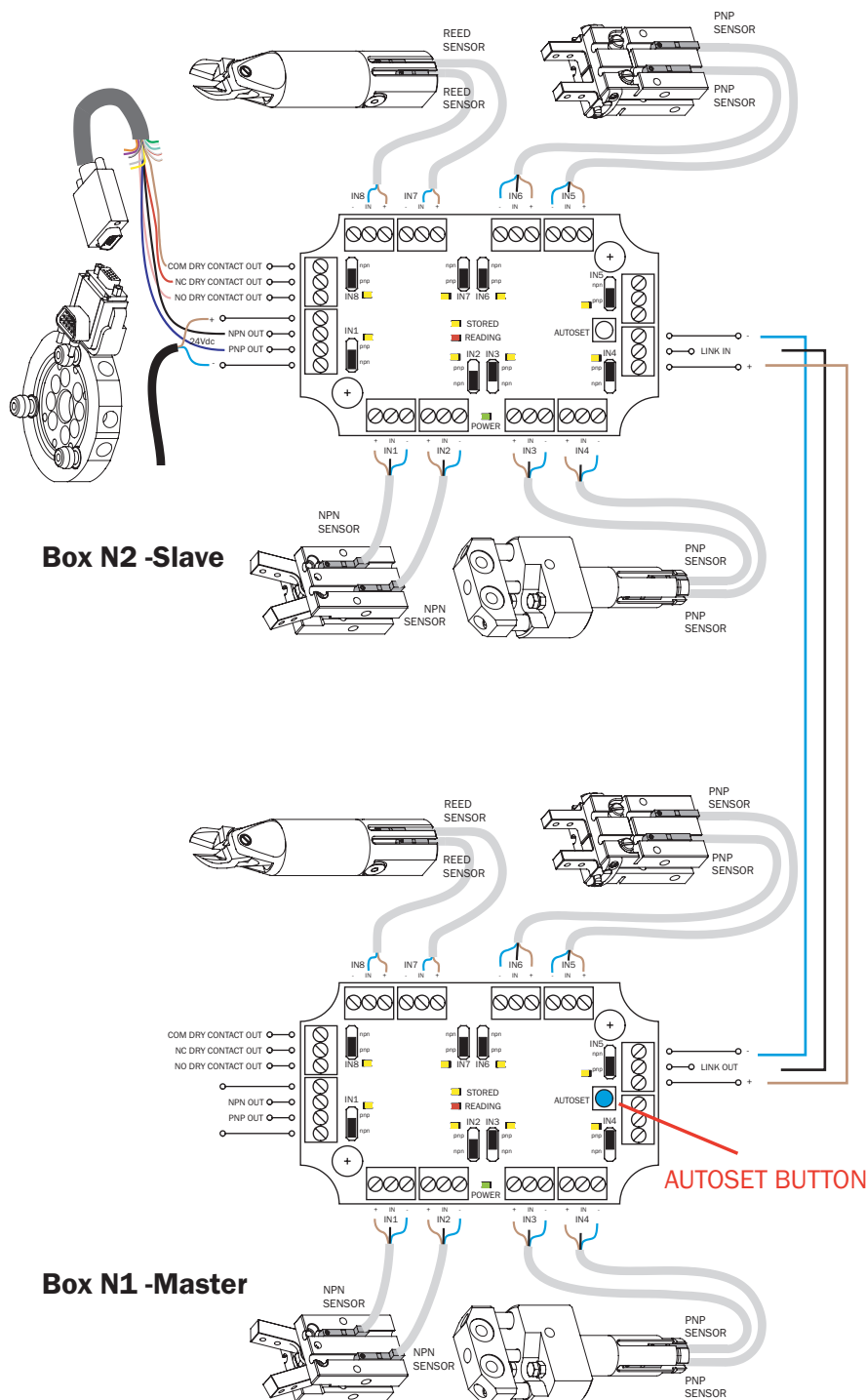


## Procedura di programmazione di 2 SB8F collegate in serie

Per collegare in serie 2 (o più) SB8F è sufficiente connettere i canali LINK come indicato nello schema. La scatola con LINK-OUT cablato (BOX N1) risulterà essere la MASTER box, mentre quella con LINK-IN cablato (BOX N2) sarà la SLAVE box. Per la corretta memorizzazione di tutti gli ingressi cablati a sistema è sufficiente premere il solo pulsante AUTASET della MASTER box. In fase di lettura e memorizzazione degli ingressi, tutti i led rossi (READING) delle SB8F collegate inizieranno a lampeggiare. Terminata la programmazione, tutti i led gialli (STORED) delle SB8F saranno attivi (così come le singole uscite) e resteranno attivi anche i led rossi (READING) (ad indicare lo stato attivo dell'uscita della SB8F collegata in ingresso per ciascuna SB8F sul canale LINK-IN).

## Programming 2 SB8F connected in series

To connect two or more SB8Fs in series, you only need to connect the LINK channels as indicated in the diagram. The box with wired LINK-OUT (Box N1) is the MASTER box, while the box with wired LINK-IN (Box N2) is the SLAVE box. For a correct storage of all the system wired inputs you only need to press the AUTASET button on the MASTER box. During input reading and storing, all the red lights (READING) of the connected SB8Fs will start flashing. At the end of programming, all the SB8F yellow lights (STORED) (and the individual outputs) will be enabled, and also the red lights (READING) will be enabled (indicating that the output of the SB8F connected at the entrance of each SB8F on channel LINK-IN is enabled).



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

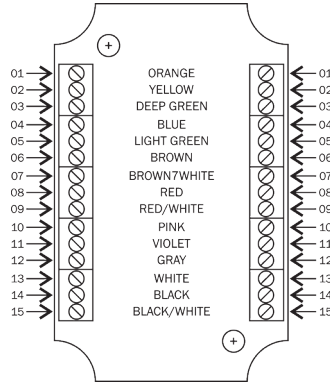
Sensori  
Sensors

**Scatola con morsettiera di connessione**

- Scatola di connessione polistirene IP66.
- Ingresso e uscita cavi personalizzabili tramite pressa cavi standard.
- 2 morsetti a vite con connessione diretta di 15 ingressi/uscite.
- Fornita con viti di fissaggio diretto per gli estrusi in alluminio.
- Fino a 1 A come corrente massima per singola linea di connessione.

**Sensor box with terminal board**

- IP66 polystyrene sensor box.
- Customizable cable input and output with standard cable gland.
- 2 screw terminals with direct connection of 15 inputs/outputs.
- Supplied complete with direct fixing screws for aluminum extruded profiles.
- Maximum switching current up to 1A for each connection line.

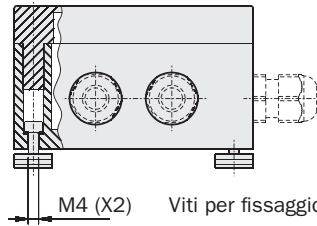
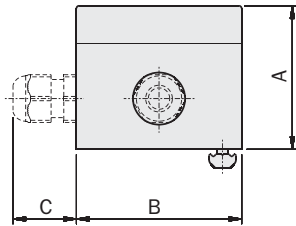


Schema circuito  
Circuit diagram



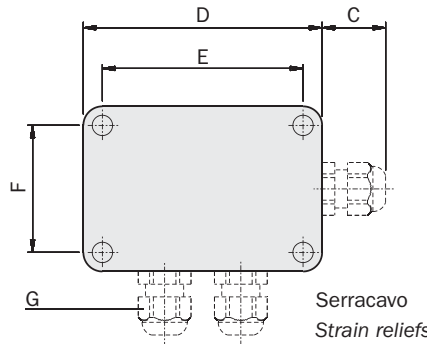
**Dimensioni (mm)**

**Dimensions (mm)**



M4 (X2) Viti per fissaggio al profilo estruso  
Screws for fixing to the extruded profile

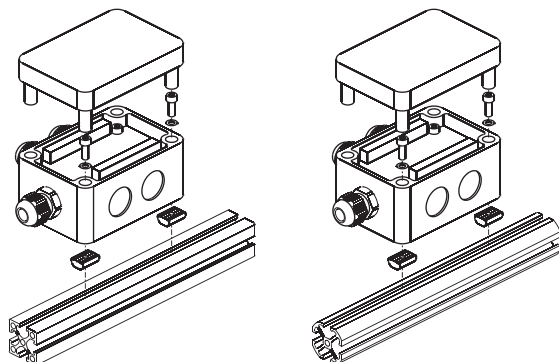
Serracavo (G) e viti per fissaggio  
forniti in confezione  
Strain reliefs (G) and fixing screws  
included in the package



FIRST ANGLE  
PROJECTION

Serracavo  
Strain reliefs

	<b>SB15</b>
A	57
B	65
C	25
D	94
E	79
F	50
G	n°3
Peso Weight	150 g



**Sensor box modulare**

La sensor box modulare SBM è un sistema composto da uno o più moduli master (SBMM), uno o più moduli slave (SBMS) ed una unità di terminazione e fissaggio (SBMK).

Master e slave possono essere connessi in serie creando applicazioni specifiche ed un sistema completamente personalizzabile.

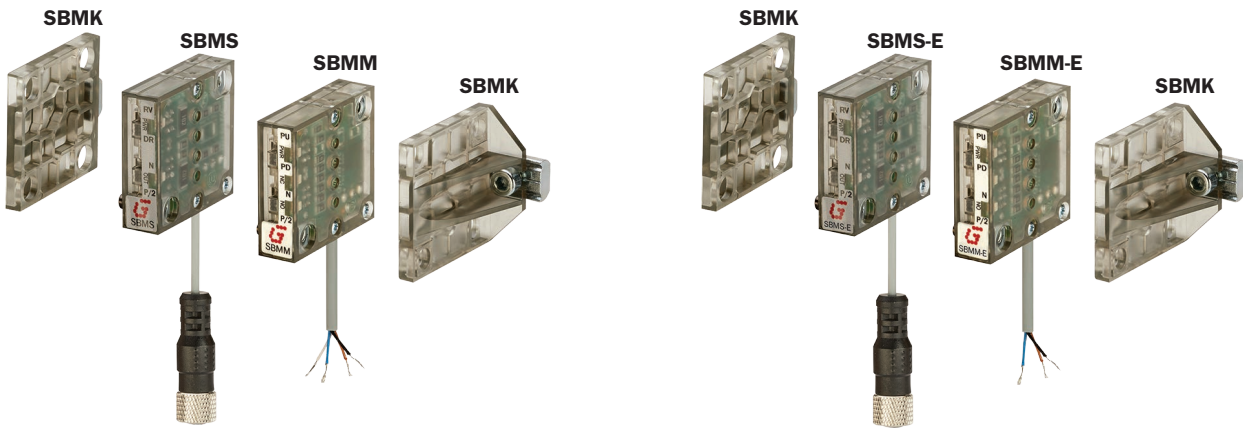
- Modulare, extra compatta e scalabile.
- Rapida configurazione manuale grazie ai selettori.
- Ogni sensore può essere configurato come NO oppure NC.
- Nella versione SBMM-E il modulo master aggiorna un'unica uscita digitale (la serie dei contatti NO).
- Nella versione SBMM, il modulo master aggiorna contemporaneamente due uscite digitali (ovvero la serie dei contatti NO e la serie dei contatti NC).
- Ampio intervallo di tensioni di alimentazione.
- Connessione in serie di massimo 20 moduli slave (sensori).
- Uscita cavi orientabile e cavi flessibili.
- Disponibili cavi/prolunghe per connessioni a sensori (cod. CM800303CF8003P; CM800305CF8003P; CM800312CF8003P; CFGM800325PSB...).
- Fissaggio diretto su profili di alluminio standard.

**Modular sensor box**

The SBM modular sensor box consists of one or more master modules (SBMM), one or more slave modules (SBMS) and one termination and fixing unit (SBMK).

Master and slave modules can be connected in series by creating specific applications and a fully customizable system.

- Modular, extra compact and scalable.
- Easy manual configuration using selectors.
- Each sensor can be configured as NO or NC.
- In the SBMM-E version, the master module updates a single digital output (NO contact series).
- In the SBMM version, the master module simultaneously updates two digital outputs (i.e. NO contact series and NC contact series).
- Wide power supply range.
- Series connection of up to 20 slave modules (sensors).
- Orientable cable output and flexible cables.
- Cable/extensions are available for connections to sensors (codes CM800303CF8003P; CM800305CF8003P; CM800312CF8003P; CFGM800325PSB...).
- Direct fixing on standard aluminum profiles.



	SBMM	SBMM-E	SBMS	SBMS-E
Materiale Case material	Durethan T 40			
Dimensione moduli Module case dimensions	36 mm x 34 mm x 10 mm			
Peso Weight	50 g			
Grado di protezione Protection rating	IP40			
Tensione di alimentazione Power supply voltage	Vcc da 12 Vdc fino a 24 Vdc (± 10%) from 12 Vdc to 24 Vdc (+10%)			
Absorbimento di corrente per modulo Current input per module	30 mA			
Temperatura di funzionamento Operating temperature	-30 °C + +80°C			
Connessioni elettriche Electrical connections	4 fili senza connettore 4 wires without connector	3 fili senza connettore 3 wires without connector	1 connettore femmina M8 3 poli 1 M8 3-pole female connector	
Lunghezza cavi Cable length	1 m		150 mm	
Ingressi Inputs	2 fili di alimentazione (Blu: GND, Marrone: Vcc) 2 power wires (Blue: GND, Brown: Vdc)		1 ingresso del tipo PNP/NPN/REED 1 input type PNP/NPN/REED	
Uscite Outputs	2 configurabili PNP oppure NPN 2 PNP or NPN configurable	1 configurabile PNP oppure NPN 1 PNP or NPN configurable	nessuna none	

### SBMM / SBMM-E - Modulo master

È sempre il primo modulo di una generica SBM e si comporta da fonte di alimentazione per tutti gli altri moduli connessi in serie.

La versione SBMM genera due uscite simultanee aggiornate secondo lo stato delle uscite dei successivi moduli slave (una come serie NO delle uscite degli slave e l'altra come serie NC delle uscite degli slave).

In questo modo con un'unica sensor box è possibile riconoscere contemporaneamente sia lo stato di tutti gli attuatori attivi sia lo stato di tutti gli attuatori non attivi (con le normali sensor box servirebbero due unità).

La versione SBMM-E genera invece un'unica uscita (come serie NO delle uscite degli slave).

Le uscite del master possono essere impostate come PNP oppure NPN tramite un selettore dedicato e le rispettive resistenze di PULL-UP e PULL-DOWN possono essere impostate usando un selettore separato.

Il modulo ha anche due led che permettono una rapida diagnostica.

Esso può essere anche usato come un modulo intermedio di una generica SBM, quando è necessaria una separazione logica (od un raggruppamento logico) dei segnali degli slave. Lo stato delle uscite del modulo master è comunque sempre legato agli stati dei segnali di tutti i successivi slave fino alla fine della SBM oppure fino al successivo modulo master (riferirsi agli esempi di applicazioni riportati più avanti per ulteriori informazioni).

### SBMM / SBMM-E - Master module

This is always the first module of a generic SBM and acts as a power supply for other modules connected in series.

The SBMM version generates two simultaneous outputs that are updated with the output status of the successive slave modules (one as NO series of slave outputs and the other as NC series of slave outputs).

Consequently, one sensor box can simultaneously recognise the status of all active and non-active actuators (with standard sensor, boxes 2 would be required).

The SBMM-E version generates a single output (as NO series of slave outputs).

The master module outputs can be set as PNP or NPN by means of a dedicated selector, and the corresponding PULL-UP and PULL-DOWN resistors can be set with a separate selector.

The module features two LED indicators for rapid diagnostics. It can also be used as an intermediate module of a generic SBM when the logical separation (or logical grouping) of slave signals is required.

The status of the master module outputs is however always related to the signal status of all successive slave modules, up to the end of the SBM or the next master module (for further information, see application examples below).

Connessioni Connections	SBMM	SBMM-E
Tipo Type	4 fili senza connettore 4 wires without connector	3 fili senza connettore 3 wires without connector
Formazione Formation	4x0.14 mm <sup>2</sup>	3x0.14 mm <sup>2</sup>
Materiale Material	PUR	
Lunghezza Length	1 m	
Blu Blue	GND	
Marrone Brown	Vcc	
Nero Black	USCITA 1: serie dei contatti NO (dipendente dalla configurazione) OUT1: series of NO contracts (depending on configuration)	
Bianco White	USCITA 2: serie dei contatti NC (dipendente dalla configurazione) OUT2: series of NC contacts (depending on configuration)	/

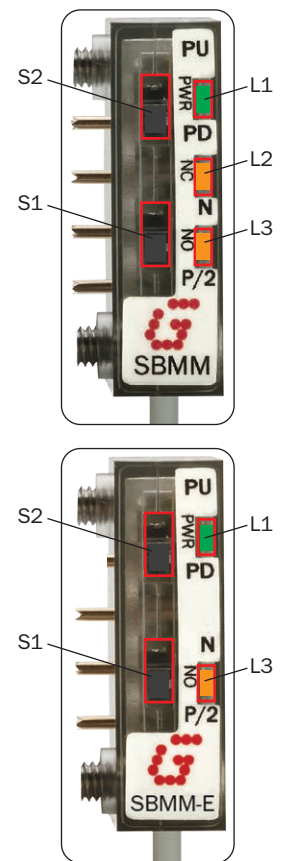
Limitazioni di corrente Current limitations	SBMM	SBMM-E
Massima corrente per l'uscita NO Maximum current for NO output	1 A	
Massima corrente per l'uscita NC Maximum current for NC output	150 mA	/
Massima corrente di alimentazione Maximum power supply current	2 A	

#### Configurazioni ed indicatori

- S1: permette la selezione del tipo di segnale di uscita, PNP (P/2) oppure NPN (N).
- S2: permette la selezione delle resistenze interne di PULL-UP (PU) o PULL-DOWN (PD) a seconda della selezione NPN o PNP (tramite S1), rispettivamente.
- L1: verde quando è alimentato.
- L2: ambrata quando l'uscita della serie NC è commutata (ad esempio in caso di tutti contatti aperti).
- L3: ambrata quando l'uscita della serie NO è commutata (ad esempio in caso di tutti contatti chiusi).

#### Configurations and indicators

- S1: enables the selection of the type of output signal, PNP (P/2) or NPN (N).
- S2: enables the selection of internal PULL-UP (PU) or PULL-DOWN (PD) resistors depending on the NPN or PNP selection (via S1), respectively.
- L1: green when powered.
- L2: amber when the NC series output is switched (e.g. all contacts open).
- L3: amber when the NO series is switched (e.g. all contacts closed).



**SBMS / SBMS-E - Modulo slave**

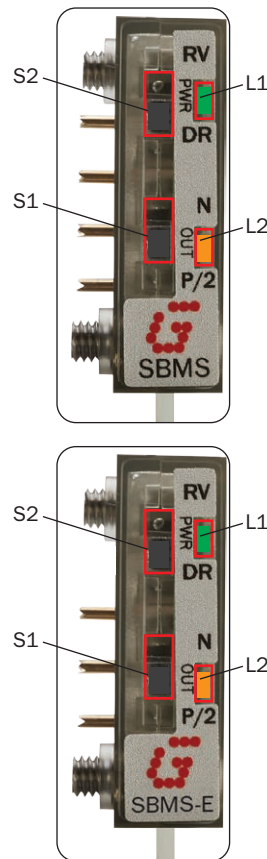
Ciascun singolo modulo slave permette la connessione di un singolo sensore.  
Prende l'alimentazione dalla connessione del bus interno (fornita dal modulo master) e attiva la commutazione di due relè a stato solido: un contatto NO ed un contatto NC a seconda dell'uscita del sensore.  
Due selettori permettono di configurare il tipo di uscita del segnale del sensore (PNP/2 fili oppure NPN) e la logica di funzionamento (diretta oppure inversa).  
Il modulo ha anche due LED di diagnostica.

**SBMS / SBMS-E - Slave module**

Each individual slave module enables the connection of a single sensor.  
It is powered from the internal bus connection (provided by the master module) and triggers the commutation of two solid state relays: a NO contact and a NC contact based on sensor output.  
Two selectors are available to configure sensor signal output (PNP/2 wires or NPN) and logic (direct or reverse).  
The module also has two LED indicators for diagnostics.

Connessioni Connections	SBMS / SBMS-E
Tipo Type	connettore M8 3 poli femmina M8 3-pole female connector
Formazione Formation	3x0.096 mm <sup>2</sup>
Materiale Material	PUR
Lunghezza Length	150 mm
Blu Blue	GND
Marrone Brown	Vcc
Nero Black	Segnale di uscita del sensore (ingresso per il modulo slave) Sensor output signal (input for the slave module)

Limitazioni di corrente Current limitations	SBMS / SBMS-E
Massima corrente di alimentazione del sensore Maximum power supply to sensor	200 mA



**Configurazioni ed indicatori**

- S1: permette la selezione del tipo di segnale di uscita PNP/2 fili (P/2) oppure NPN (N).
- S2: permette la selezione della logica di uscita del sensore come DIRETTA (DR) oppure INVERSA (RV).
- L1: verde quando è alimentato (fornita dal BUS interno).
- L2: ambra quando l'uscita dello slave è commutata (il fatto che l'uscita sia attivata o non attivata dipende sia dal tipo di uscita del sensore che dalla configurazione del modulo).

**Configurations and indicators**

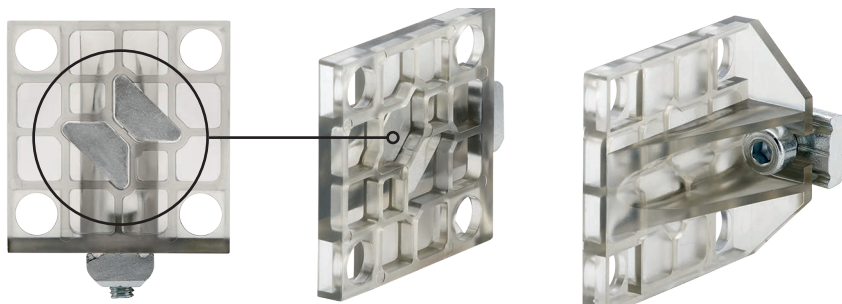
- S1: enables the selection of the type of output signal, PNP (P/2), NPN (N) or NPN (N).
- S2: enables the selection of sensor output logic as DIRECT (DR) or REVERSE (RV), respectively.
- L1: green when powered (from internal bus).
- L2: amber when the NC series output is switched (output enabling or disabling depends on both the type of sensor output and module configuration).

**SBMK - Modulo di terminazione e di fissaggio**

Questo modulo funge da unità di terminazione sia meccanica che elettrica (grazie alla presenza di due contatti) per la connessione in serie degli altri moduli. Consente il fissaggio a profili in alluminio standard e l'orientazione dell'uscita del cavo (diretta oppure ruotata di 90°).

**SBMK - Termination and fastening module**

This module acts as a mechanical and electrical termination unit for connecting other modules in series (thanks to two contacts). It enables fastening to standard aluminium profiles and output cable orientation (straight or rotated by 90°).



**Principio di funzionamento**

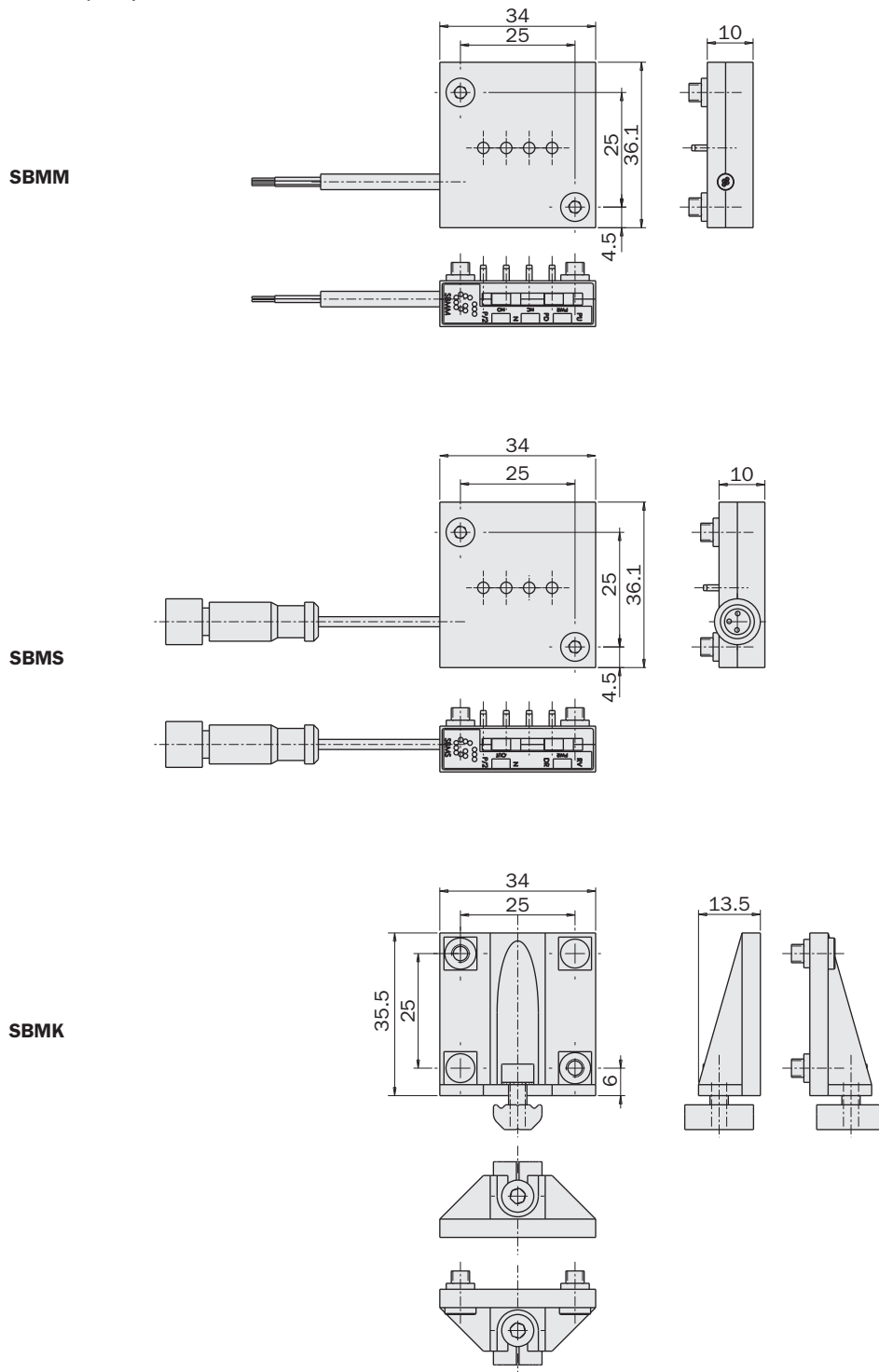
Il contesto principale di applicazione del sistema è la gestione automatica industriale dei componenti.  
 Solitamente per questo scopo viene utilizzato un robot in combinazione con diversi EOAT (End Of The Arm Tools) dotati di diversi sensori e attuatori.  
 Molto spesso il robot non ha bisogno di conoscere lo stato di ogni uscita dei sensori ma solo un segnale di riconoscimento (ACK) ottenuto come elaborazione logica di tutte le uscite dei sensori (di solito è richiesta una semplice elaborazione logica AND).  
 In una configurazione minima è possibile assemblare un'unità SBM con diversi moduli slave (uno per ciascun sensore) ed un singolo modulo master le cui uscite (o anche solo una di esse) possono essere utilizzate come segnali ACK dal robot.

**Operating principle**

The main system application is industrial component automation. For this purpose a robot is normally used with several EOATs (End Of Arm Tools) equipped with sensors and actuators. It is often not necessary for the robot to know the status of all sensor outputs, one acknowledgement (ACK) signal obtained as the logical processing of all sensor outputs is sufficient (simple logical AND processing is usually required). In a minimum configuration, one SBM unit can be assembled with several slave modules (1 per sensor) and a single master module whose outputs (or even just one) can be used as ACK signals from the robot.

**Dimensioni (mm)**

**Dimensions (mm)**





# SB - APPLICATION EXAMPLE

## Esempio di utilizzo

Modello SB6C

### Ingressi

6 INPUTS PNP

### Numero di uscite

1

### Tipo di uscita

PNP NO (SERIE 6 INGRESSI)

## Application example

SB6C model

### Inputs

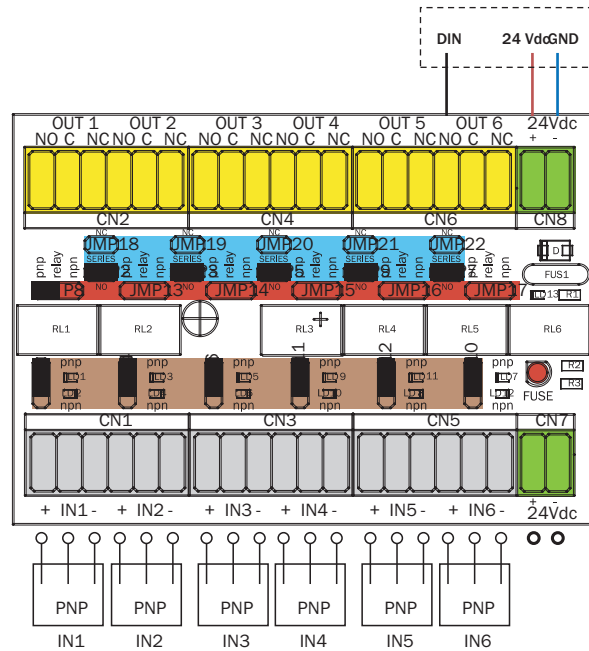
6 PNP INPUTS

### Number of outputs

1

### Output type

NO PNP (6-INPUT SERIES)



## Esempio di utilizzo

Modello SB6C

### Ingressi

6 INPUTS PNP

### Numero di uscite

2

### Tipo di uscita

1 PNP NO (SERIE PRIMI 4 INGRESSI)  
1 PNP NO (SERIE ULTIMI 2 INGRESSI)

## Application example

SB6C model

### Inputs

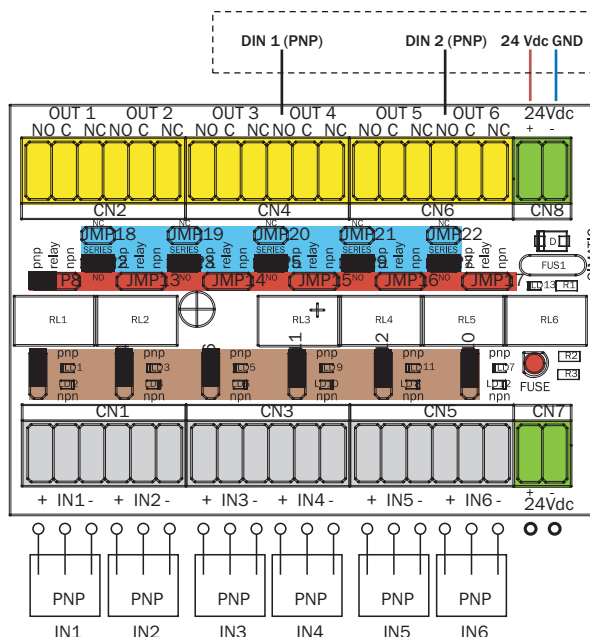
6 PNP INPUTS

### Number of outputs

2

### Output type

1 NO PNP (4-INPUT SERIES)  
1 NO PNP (LAST 2 INPUTS)



## Esempio di utilizzo

**Modello SB6B**

### Alimentazione

24 V dc ( $\pm 10\%$ )

### Ingressi

2 PNP INPUTS (IN3/IN6)  
2 NPN INPUTS (IN1/IN4)  
2 DRY CONTACT (IN2/IN5)

### Numero di uscite

2

### Tipo di uscita

1 PNP NO (SERIE PRIMI 3 INGRESSI)  
1 PNP NO (SERIE ULTIMI 3 INGRESSI)

## Application example

**SB6B model**

### Power supply

24 Vdc ( $\pm 10\%$ )

### Inputs

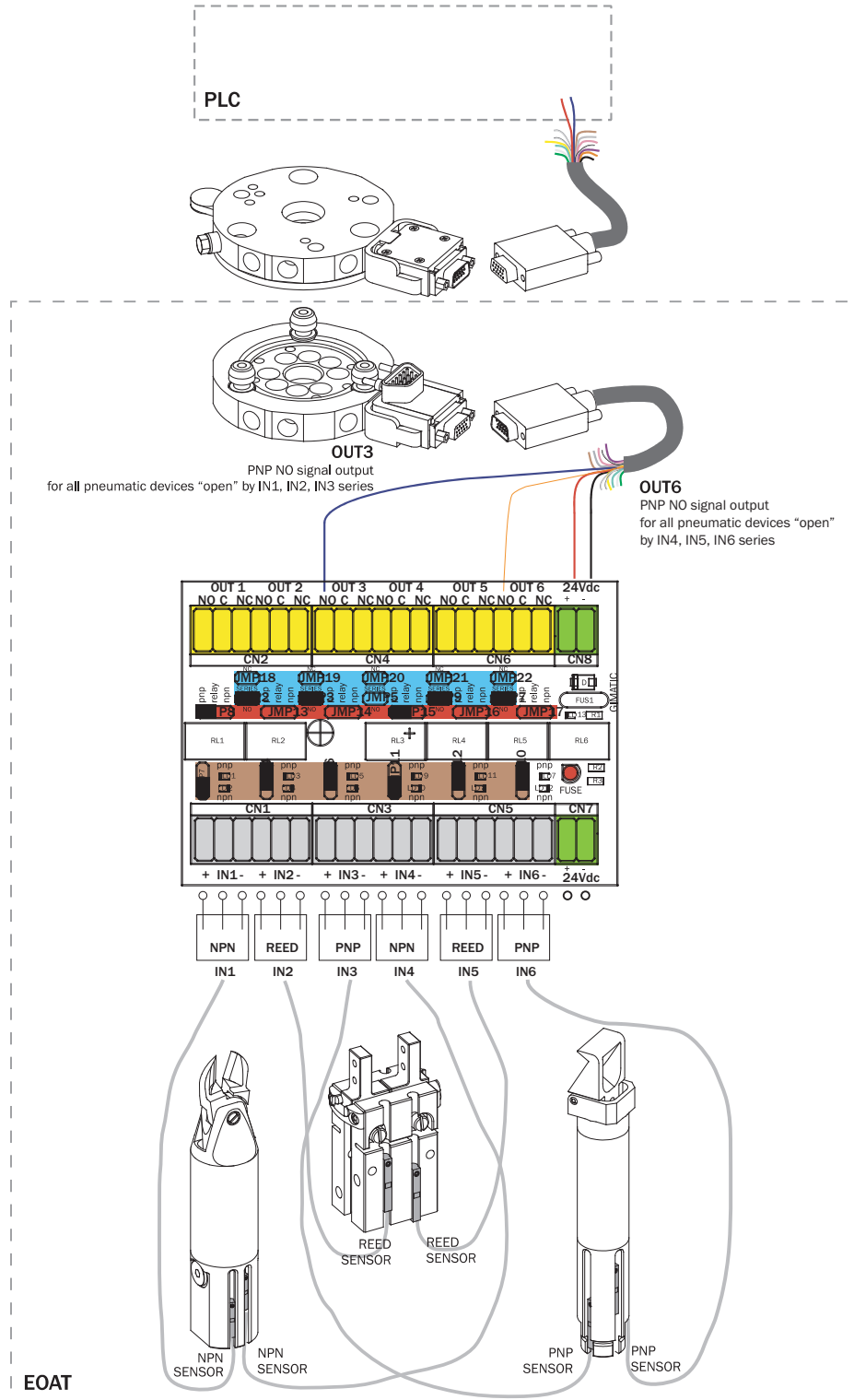
2 PNP INPUTS (IN3/IN6)  
2 NPN INPUTS (IN1/IN4)  
2 DRY CONTACT (IN2/IN5)

### Number of outputs

2

### Output type

1 PNP NO (4-INPUT SERIES)  
1 PNP NO (LAST 2 INPUTS)



# SB - APPLICATION EXAMPLE

## Esempio di utilizzo

Modello 2 SB6C IN SERIE

### Ingressi

10 INPUTS PNP

### Numero di uscite

1

### Tipo di uscita

1 PNP NO (SERIE 10 INGRESSI)

## Application example

2 SB6B IN-SERIES model

### Inputs

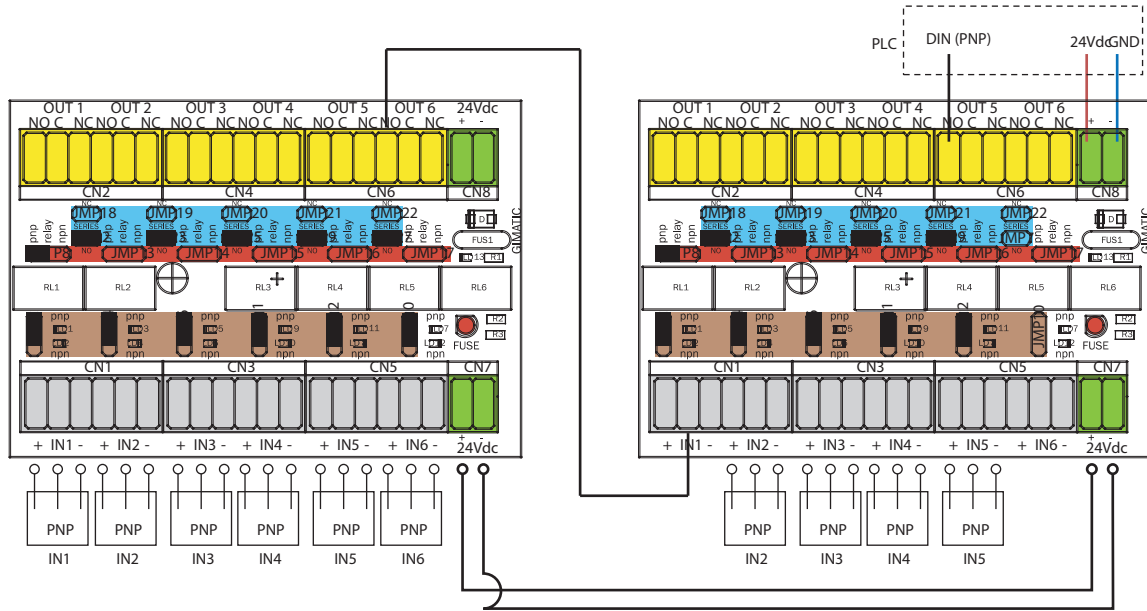
10 PNP INPUTS

### Number of outputs

1

### Output type

1 PNP NO (10-INPUT SERIES)



## Esempio di utilizzo

Modello SB6C

### Ingressi

4 INPUTS REED

### Numero di uscite

1

### Tipo di uscita

NPN NO (SERIE 4 INGRESSI)

## Application example

SB6B model

### Inputs

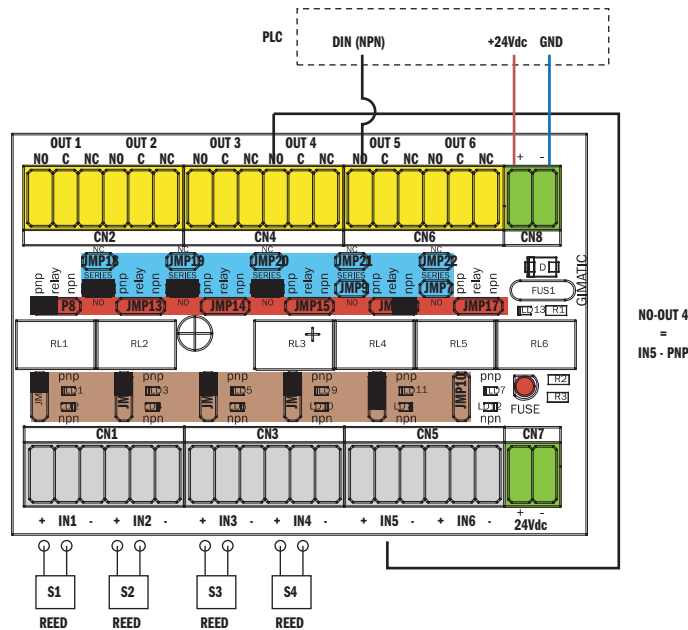
4 REED INPUTS

### Number of outputs

1

### Output type

1 PNP NO (4-INPUT SERIES)



## Esempio di utilizzo

Modello SB12C

### Ingressi

12 PNP INPUTS

### Numero di uscite

4

### Tipo di uscita

- 1 PNP (SERIE PRIMI 6 INGRESSI)
- 1 PNP (SERIE 3 INGRESSI)
- 1 PNP (SERIE ULTIMI 2 INGRESSI)
- 1 PNP (1:1 CON ULTIMO INGRESSO)

## Application example

SB12C model

### Inputs

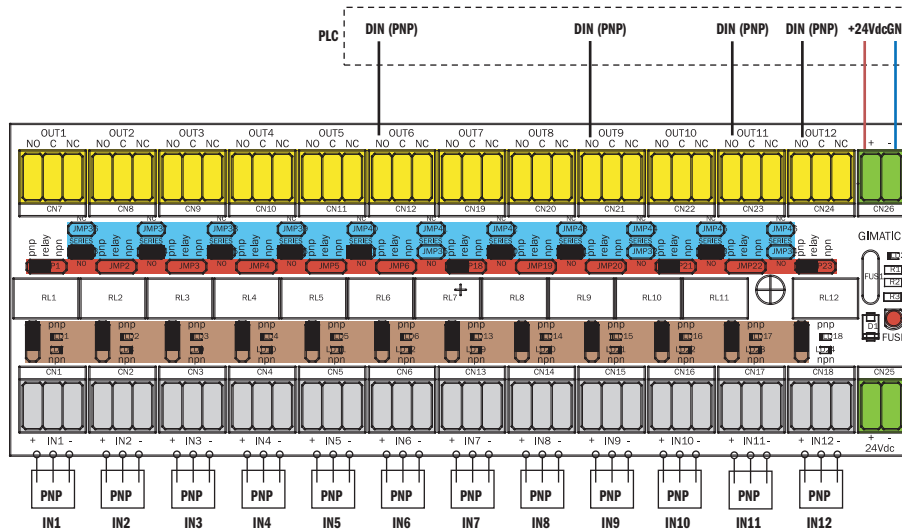
12 PNP INPUTS

### Number of outputs

1

### Output type

- 1 PNP (FIRST 6-INPUT SERIES)
- 1 PNP (2-INPUT SERIES)
- 1 PNP (LAST 2-INPUT SERIES)
- 1 PNP (1:1 WITH LAST INPUT)



## Esempio di utilizzo

Modello 3 SB8F

### Ingressi

6 NPN INPUTS  
12 PNP INPUTS  
6 DRY CONTACTS

### Numero di uscite

1

### Tipo di uscita

- 1 PNP OUTPUT
- 1 NPN OUTPUT
- 1 DRY CONTACT NC
- 1 DRY CONTACT NO

## Application example

3 SB8F model

### Inputs

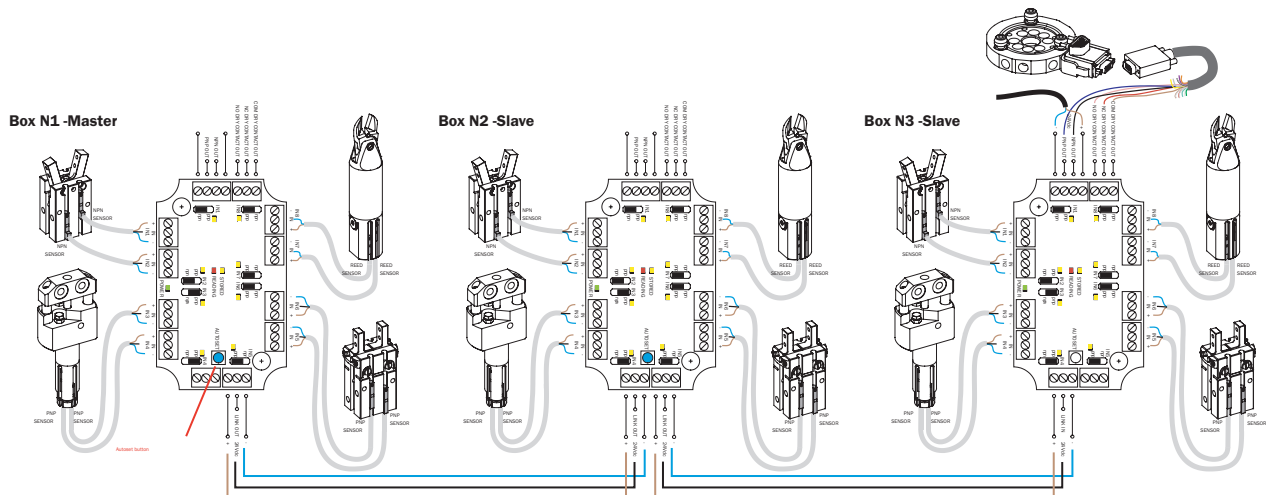
6 NPN INPUTS  
12 PNP INPUTS  
6 DRY CONTACTS

### Number of outputs

1

### Output type

- 1 PNP OUTPUT
- 1 NPN OUTPUT
- 1 DRY CONTACT NC
- 1 DRY CONTACT NO



# SB - APPLICATION EXAMPLE

## Esempio di utilizzo

Modello SB15 + 2 SB6B

### Ingressi

- 4 PNP
- 4 NPN
- 4 DRY CONTACT

### Numero di uscite

4

### Tipo di uscita

4 PNP NO

### Funzionamento

La scatola SB15 è usata per collegare i moduli CAQC/CBQC alle scatole SB con sensori cablati.

## Application example

SB15 + 2 SB6B model

### Inputs

- 4 PNP
- 4 NPN
- 4 DRY CONTACT

### Number of outputs

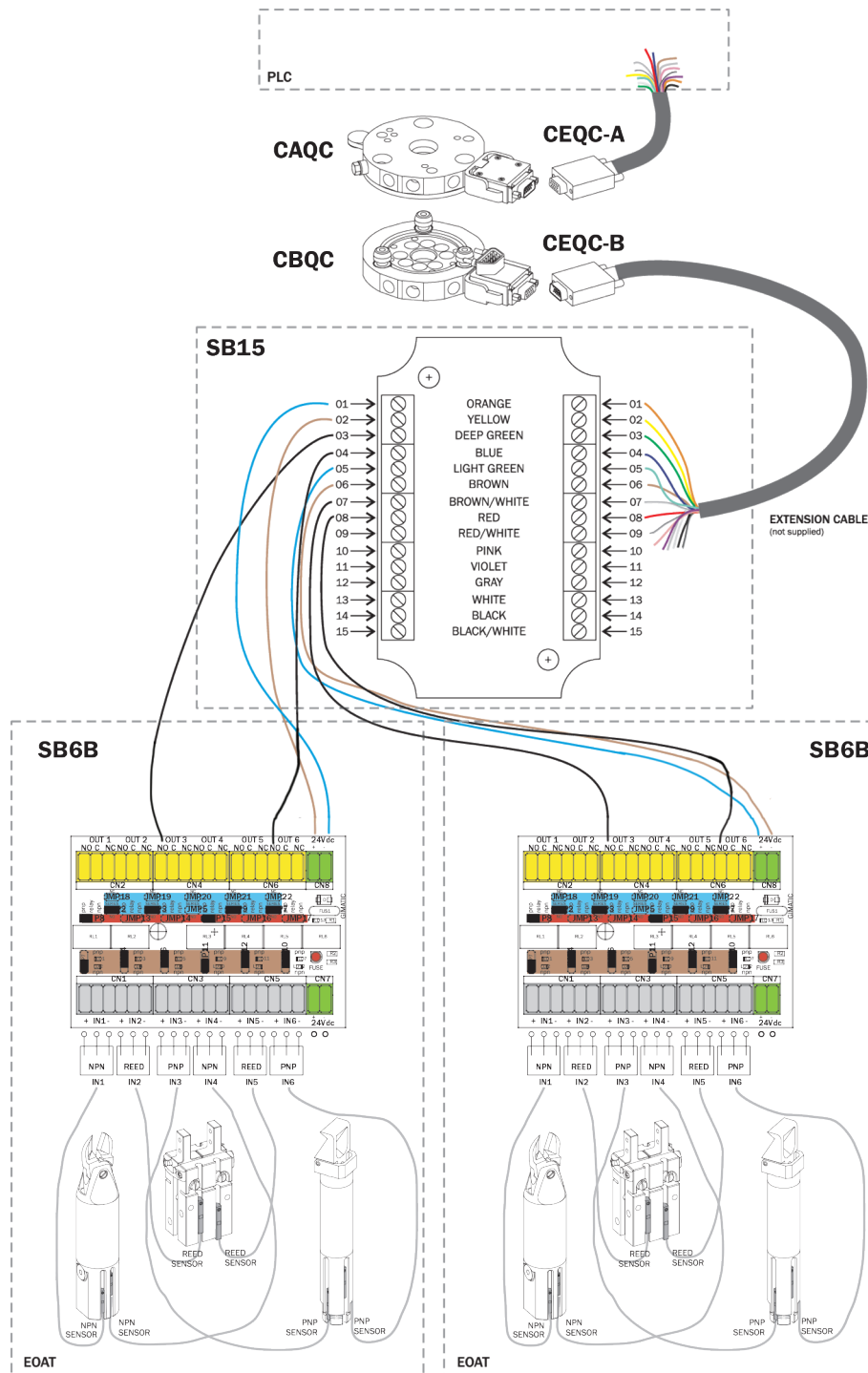
1

### Output type

4 PNP NO

### Operation

The SB15 is used to connect CAQC/CBQC modules to SB blocks with wired sensors.



## Esempi di utilizzo SBM

Le immagini (1) e (2) mostrano una tipica applicazione in cui solo 1 modulo master (SBMM) è usato in combinazione a 6 moduli slave (SBMS) ed 1 kit di fissaggio (SBMK). La forma quadrata di ciascun modulo permette di personalizzare l'uscita cavi mantenendo lo stesso fissaggio su una struttura esterna.



## SBM application examples

Figures 1 and 2 show a typical application where only 1 master module (SBMM) is used in combination with 6 slave modules (SBMS) and 1 termination module (SBMK). The square shape of the modules allows the user to customise cable outputs while keeping the same fastening on an external structure.



L'immagine (3) mostra la minima configurazione di una SBM, composta da 1 modulo master (SBMM) e 2 moduli slave (SBMS) connessi a due differenti tipi di sensori magnetici.

Figure (3) shows the minimum configuration of an SBM, consisting of 1 master module (SBMM) and 2 slave modules (SBMS) connected to two different types of magnetic sensors.

L'immagine (4) mostra una configurazione estesa con 4 moduli slave aggiuntivi ed 1 modulo master aggiuntivo inseriti nel mezzo generando il segnale di uscita relativo solo agli ultimi 4 moduli slave.

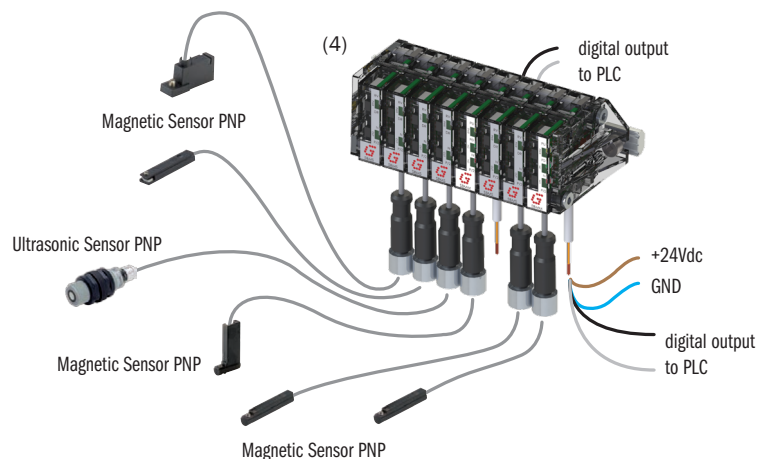
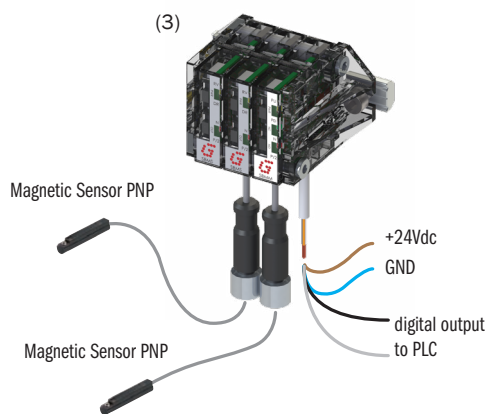
Figure (4) shows an extended configuration with 4 additional slave modules and 1 additional master module inserted in-between, thus generating an output signal relating to the last 4 slave modules only.

Il primo modulo master elabora solo i segnali dei 2 primi moduli slave.

The first master module processes the signals of the 2 first slave modules only.

Da notare che i fili di alimentazione del master centrale non sono utilizzati in questo esempio (le connessioni di alimentazione del primo master forniscono alimentazione all'intero sistema utilizzando un BUS interno).

It is worth noticing that the power wires of the central master are not used in this example (the power connections of the first master supply power to the entire system using an internal BUS).



# SB - APPLICATION EXAMPLE

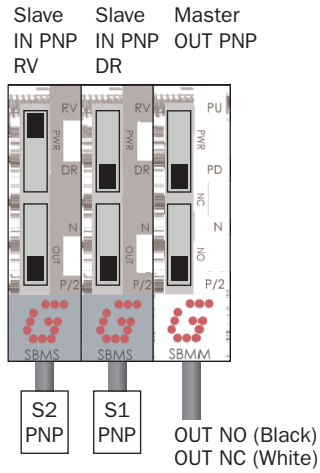
## Esempio di utilizzo

**Modello SBMM + 2 SBMS**

**Ingressi**  
1 PNP (DR)  
1 PNP (RV)

**Numero di uscite**  
2

**Tipo di uscita**  
1 PNP NO (S1\*S2 (RV))  
1 PNP NC (S1+S2 (RV))(RV)



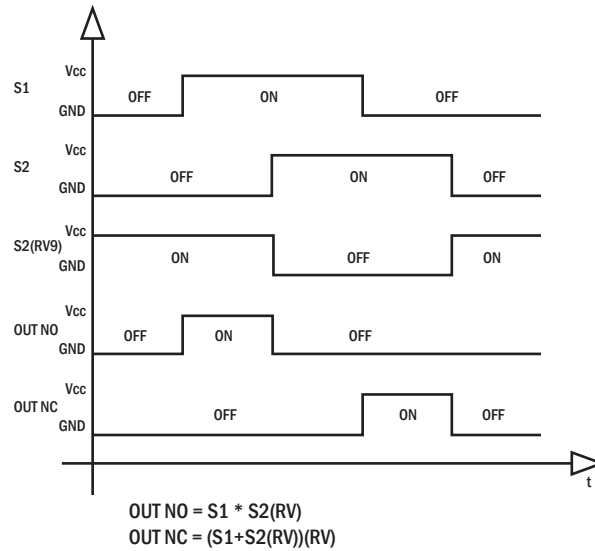
## Application example

**SBMM + 2 SBMS model**

**Inputs**  
1 PNP (DR)  
1 PNP (RV)

**Number of outputs**  
2

**Output type**  
1 PNP NO (S1\*S2 (RV))  
1 PNP NC (S1+S2 (RV))(RV)



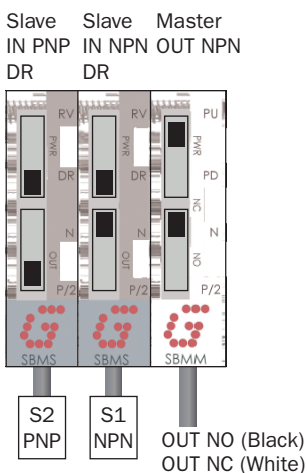
## Esempio di utilizzo

**Modello SBMM + 2 SBMS**

**Ingressi**  
1 NPN (DR)  
1 PNP (DR)

**Numero di uscite**  
2

**Tipo di uscita**  
1 NPN NO (S1\*S2)  
1 NPN NC (S1+S2)(RV)



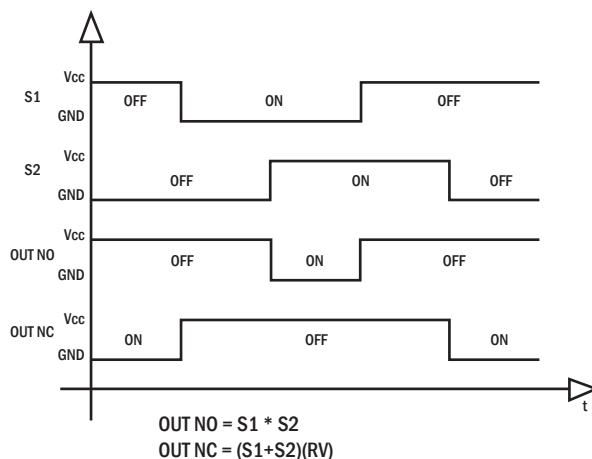
## Application example

**SBMM + 2 SBMS model**

**Inputs**  
1 PNP (DR)  
1 PNP (RV)

**Number of Outputs**  
2

**Output type**  
1 NPN NO (S1\*S2)  
1 NPN NC (S1+S2)(RV)

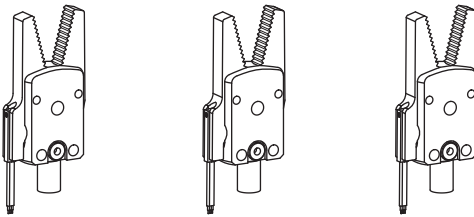
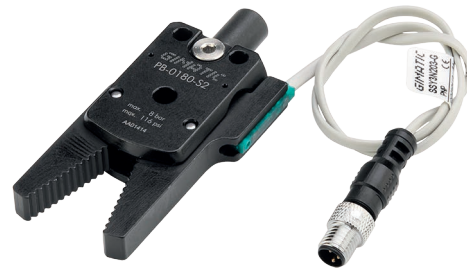
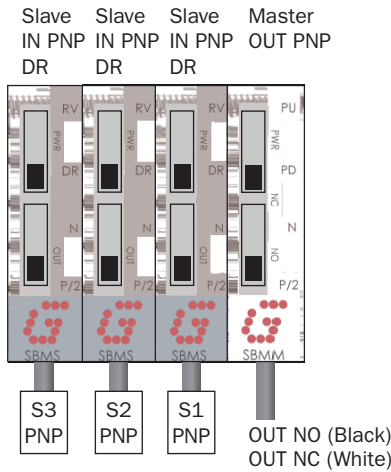


## Esempi di utilizzo SBM

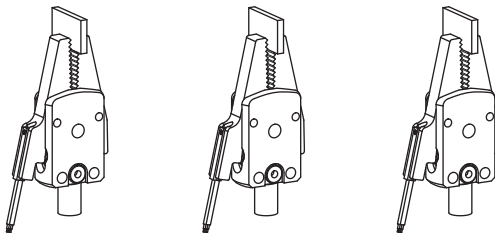
Nel seguente esempio viene dimostrato come in un sistema composto da tre pinze PB, utilizzate per afferrare simultaneamente dei pezzi materozza, ad esempio, è possibile individuare una situazione anomala come il mancato rilascio del pezzo. I sensori utilizzati sono tre SSS con uscita PNP e settati in modo tale da attivarsi quando viene afferrato il pezzo. L'uscita NO del master è attiva quando tutti e tre i sensori sono attivi (presa del pezzo), l'uscita NC è attiva quando tutti e tre i sensori sono disattivi (pinze aperte o chiuse senza presa). In caso di corretto funzionamento del sistema, quindi, le due uscite NO e NC del master saranno sempre attive in maniera alternata. Se tutte e due le uscite sono non attive simultaneamente vi è un'anomalia del sistema, come una mancata presa o mancato rilascio del pezzo.

## SBM application examples

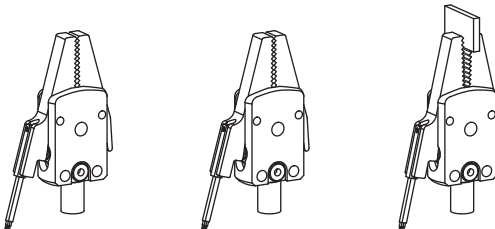
The following example demonstrates how in a system consisting of three PB grippers, used to simultaneously grip sprue pieces, an abnormal situation - such as failure to release a piece - can be detected. Three SSS sensors with PNP output are used, set to activate when the piece is gripped. The NO output of the master is active when all three sensors are active (piece gripped), the NC output is active when all three sensors are inactive (grippers open or closed with no grip). If, therefore, the system is operating correctly, the two NO and NC outputs of the master will always be active alternately. If both outputs are simultaneously inactive there is a system fault, such as a failure to grip or release the piece.



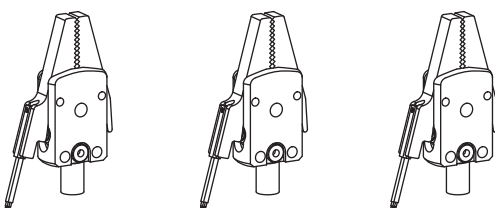
S1	OFF
S2	OFF
S3	OFF
OUT NO (PNP)	OFF
OUT NC (PNP)	ON



S1	ON
S2	ON
S3	ON
OUT NO (PNP)	ON
OUT NC (PNP)	OFF



S1	OFF
S2	OFF
S3	ON
OUT NO (PNP)	OFF
OUT NC (PNP)	OFF



S1	OFF
S2	OFF
S3	OFF
OUT NO (PNP)	OFF
OUT NC (PNP)	ON



## Generalità

Il Multi-Sensor Tester è uno strumento realizzato per la messa a punto ed il controllo degli attuatori in genere.

Esso infatti ingloba in un unico dispositivo un cronometro, un tester per sensori analogici e digitali, un rilevatore di picco, un conta cicli e un conta impulsi. Tali funzionalità sono state inserite al fine di monitorare il tempo ciclo e le vibrazioni dell'attuatore. Difatti collegando alle morsettiere A e B due sensori di prossimità è possibile, oltre che testarli, monitorare i tempi caratteristici (istantaneo, medio, max, min, ecc...) ed il numero di cicli del sistema.

A mezzo della funzione rilevazioni di picco possiamo inoltre far lavorare in condizioni ottimali di moto l'attuatore monitorandone i livelli di vibrazione istantanei.

Ottimizzato il ciclo possiamo eseguire test di durata con la funzione conta impulsi. Ogni valore è visualizzato sullo schermo LCD retro-illuminato dotato di funzione Zoom, Power Safe e Auto Spegnimento.

Il tutto è fornito in una valigetta comprensiva dello strumento, due sensori di prossimità magnetici con adattatori, un sensore di vibrazioni analogico, l'alimentatore per i test di vita e due batterie per le messe a punto sul campo.

## General features

The Multi-Sensor Tester is a tool for regulating and checking actuators.

It is a single device incorporating a chronometer, a tester for analog and digital sensors, a peak detector, a cycle counter and a pulse counter. These functions have been included to monitor cycle time and actuator vibrations. In practice, by connecting two proximity sensors to the terminal blocks A and B, it is possible to test them and monitor characteristic times (instantaneous, average, max, min, etc.), as well as the number of system cycles. Furthermore, with the peak detection function it is possible to operate the actuator in optimum motion conditions, and monitor instantaneous vibration levels.

Once the cycle has been optimized, endurance tests can be carried out with the pulse counter function. Each value is displayed on the back-lit LCD screen equipped with Zoom, Power Safe and Auto Power-Off functions.

Everything is supplied in a box including the tool, two magnetic proximity sensors with adapters, an analog sensor for vibrations, the power supply unit for endurance tests and two batteries for field adjustments.



## Descrizione

- Display LCD 128X64 retroilluminato.
- Tasto ON accensione (5 sec) e conferma selezione.
- Tasto ESC spegnimento (5 sec) e uscita selezione.
- Tasti scorrimento menù.
- Zona per test sensori magnetici.
- Spina alimentazione 12 Vdc.
- Morsettiere per sensore A, 18Vdc (PNP; NPN; 2 fili; Analogico).
- Morsettiere per sensore B, 18Vdc (PNP; NPN; 2 fili; Analogico).
- 2 stilo 1.5 Vc (NON RICARICABILI).
- Lo strumento è dotato di 2 batterie stilo da 1.5 Vcc della durata di circa 8 ore per le messe a punto in campo. Nel caso la messa a punto richieda tempi più lunghi si consiglia di collegare l'alimentatore 12 Vdc fornito nella valigetta.

## Description

- Backlit 128X64 LCD display.
- Switch ON button (5 sec) and confirmation selector.
- Switch OFF button (5 sec) and exit selector.
- Menu scroll keys.
- Magnetic sensor testing area.
- 12 Vdc power plug.
- Terminal board for sensor A, 18 Vdc (PNP; NPN; 2 wires; Analog).
- Terminal board for sensor B, 18 Vdc (PNP; NPN; 2 wires; Analog).
- 2x1.5 Vdc batteries (NON-RECHARGEABLE).
- The SB2T comes with 2x1.5 Vdc AA batteries, autonomy about 8 hours, for field settings. If setup operations take longer, it is advisable to connect up to the 12Vdc power pack provided in the carrying case.

**Collegamento**

**Connection**



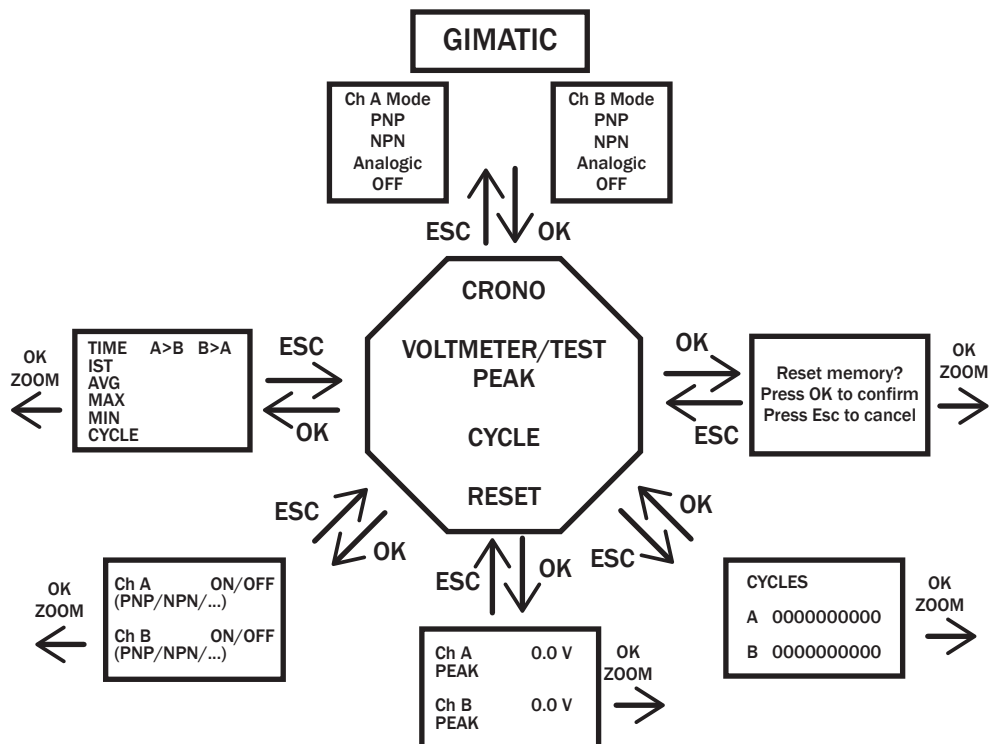
E' possibile testare sensori tipo PNP; NPN; 2 fili a contatto pulito e Analogici collegandoli opportunamente alle morsettiere.

PNP, NPN, 2-wire dry contact and analog sensors can be tested by connecting them suitably to the terminal boards.

PNP	NPN	DRY CONTACT	ANALOG

**Diagramma di flusso software**

**Software flow chart**

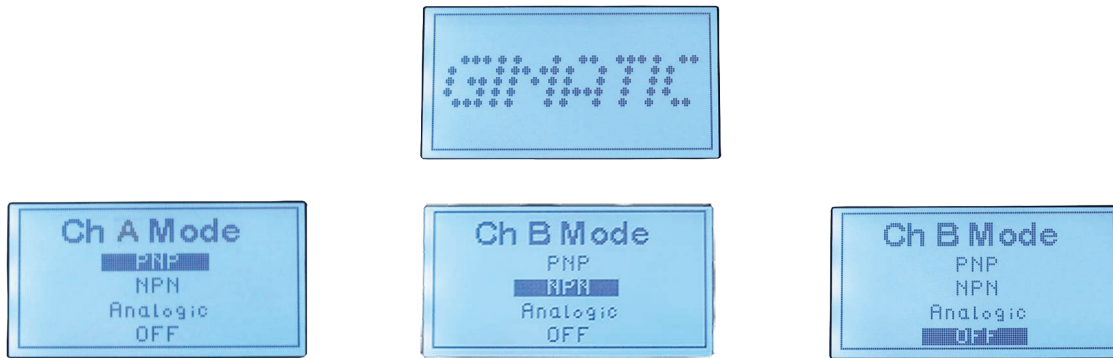


## Avvio

Per accendere lo strumento tenere premuto il tasto OK (5 sec) e apparirà il logo GIMATIC. Selezionare il tipo di sensore collegato ad ogni morsettiera ed entrare nel menù funzioni. Se si lavora solamente con un sensore mettere in OFF la morsettiera che non si utilizza.

## Start

Press OK (5 sec) to switch ON the tool and the Gimatic logo will be displayed on the screen. Select the type of sensor connected to each terminal board and enter the functions menu. If only working with one sensor, switch the unused terminal board OFF.

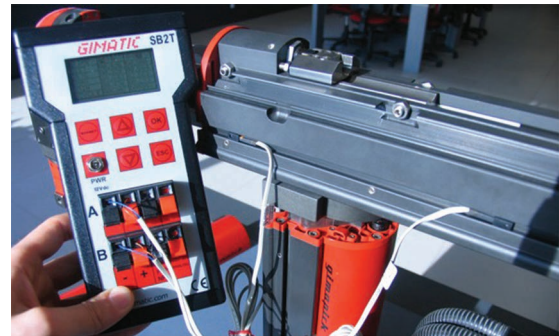
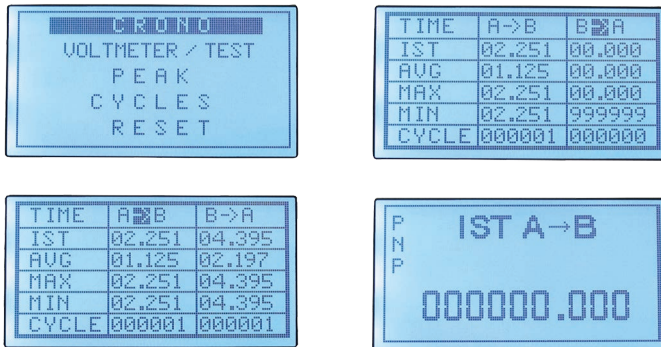


## Cronometro

La funzione cronometro permette di misurare il tempo che intercorre tra lo spegnimento del sensore A e l'accensione del sensore B e viceversa. Il tempo è poi calcolato come istantaneo (IST), medio (AVG), massimo (MAX), minimo (MIN) e contacicli (CYCLE). Tramite lo ZOOM è possibile visualizzare a schermo intero ogni singola funzione.

## Chronometer

The Chronometer function measures the time that lapses between switching off sensor A and switching on sensor B, and vice versa. The time is shown as instantaneous time (IST), average time (AVG), maximum time (MAX), minimum time (MIN) and cycle counter (CYCLE). Every function can be displayed full screen using the zoom function.

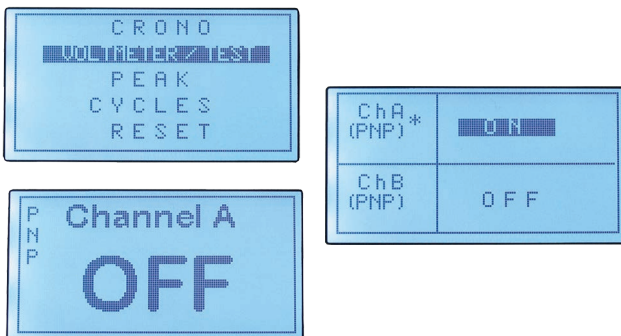


## Tester sensori

La funzione voltmetro/test permette di collaudare sensori tipo PNP, NPN, 2 fili contato pulito e analogici.

## Sensor tester

The voltmeter/test function can be used to test PNP, NPN, 2 dry contact and analog sensors.

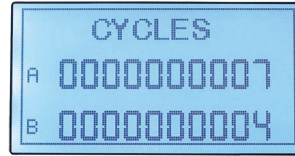


**Conta impulsi**

La funzione Conta-Impulsi ci permette di contare il numero di impulsi sensore per ogni morsettiera in maniera distinta.

**Pulse counter**

The pulse counter is used to count the number of sensor pulses for each terminal board.

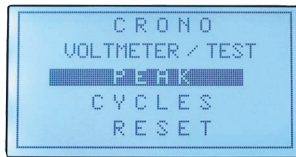


**Rilevatore di picco**

La funzione di rilevatore di PICCO permette di visualizzare l'uscita analogica dei sensori d'URTO al fine di valutare l'intensità della vibrazione.

**Peak detector**

The PEAK function is used to display the analog output of Shock sensors in order to measure the vibration intensity.

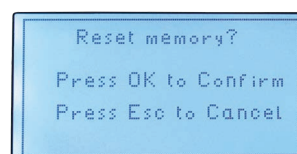
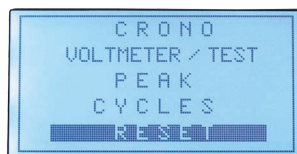


**Reset**

La funzione RESET permette di cancellare tutti i dati in memoria al fine di poter fare una nuova messa a punto.

**Reset**

The RESET function is used to delete all the data stored in the memory and make a new setup.



**Adattatori per cave**

- Kit di adattatori per cave in nylon rinforzato con fibra di vetro.
- Modelli per cave a C, a T e a coda di rondine.

**Slot adapters**

- Kit of fiberglass-reinforced nylon slot adapters.
- Models for C-, T- and dovetail slots.



K-SENS

Dimensioni Dimensions	Materiale Materials	Applicazione Application	Cava Slot
<p><b>SS.004.000</b></p>	PA		
<p><b>SS.007.000</b></p>	PA		
<p><b>SL.004.001</b></p>	PA		
<p><b>SS.005.000</b></p>	PA		

K-SL



Dimensioni Dimensions	Materiale Materials	Applicazione Application	Cava Slot
<p><b>SL.005.000</b></p>	PA		
<p><b>SL.002.000</b></p>	PA		
<p><b>SL.004.000</b></p>	PA		
<p><b>SL.002.001</b></p>	PA		
<p><b>SL.003.000</b></p>	PA		

K-CB



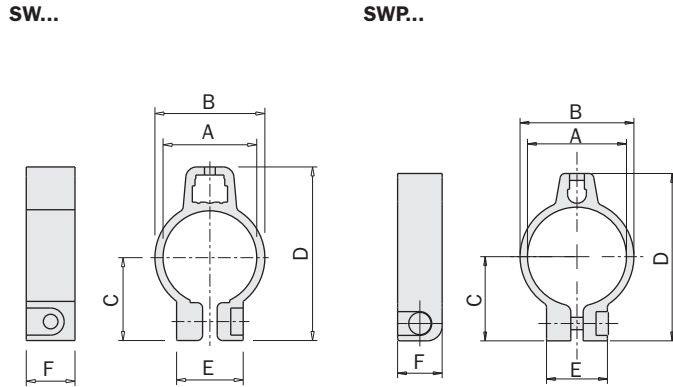
Dimensioni Dimensions	Materiale Materials	Applicazione Application	Cava Slot
<p><b>S.06</b></p>	PA 6005 A AISI 303		

**Fascette per micro-cilindri**

- Fascette in nylon per fissaggio sensori su micro-cilindri.
- Molteplici dimensioni disponibili.
- Dado e vite di fissaggio in acciaio inclusi nella confezione.

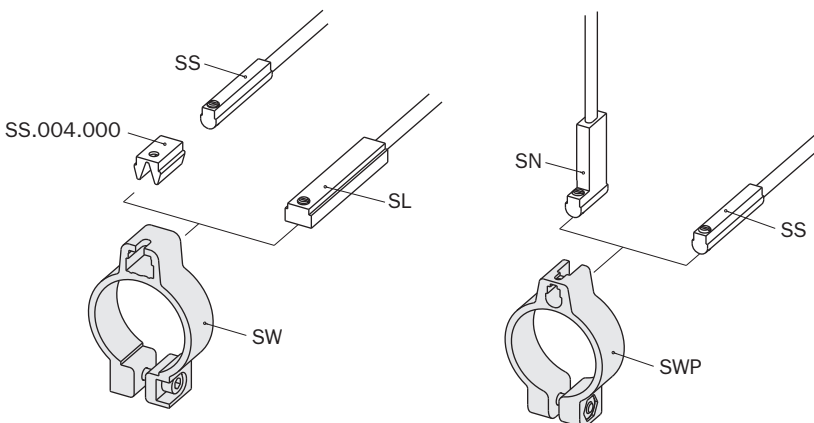
**Micro-cylinder fastening clamps**

- Nylon clamps for fastening sensors on micro-cylinders.
- Available in various dimensions.
- Steel bolts and fixing screws included in the supply.



	SW-08	SW-10	SW-12	SW-16	SW-20	SW-25	SWP-14	SWP-20	SWP-30	SWP-50
Per cilindri For cylinders	Ø 8	Ø 10	Ø 12	Ø 16	Ø 20	Ø 25	Ø 14	Ø 20	Ø 30	Ø 50
A mm	Ø 9.3	Ø 11.3	Ø 13.3	Ø 17.3	Ø 21.3	Ø 26.5	Ø 14	Ø 20	Ø 30	Ø 50
B mm	12.3	14.3	16.3	20.3	24.3	29.5	16.8	23	33.2	53.6
C mm	11.1	12.2	13.2	15.3	17.4	20	13.5	17	23	33
D mm	23.9	25.9	28	32.1	36.2	41.4	27.3	33.8	44.8	64.8
E mm	12.3			14			12.3			
F mm	9									
Materiale corpo Material	PA; AISI 303									

**Esempi di utilizzo**  
**Application examples**

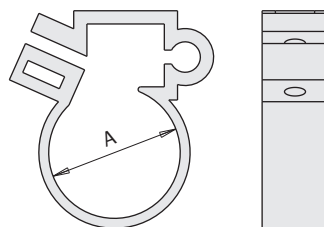


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- Dado e vite di fissaggio in acciaio inclusi nella confezione.

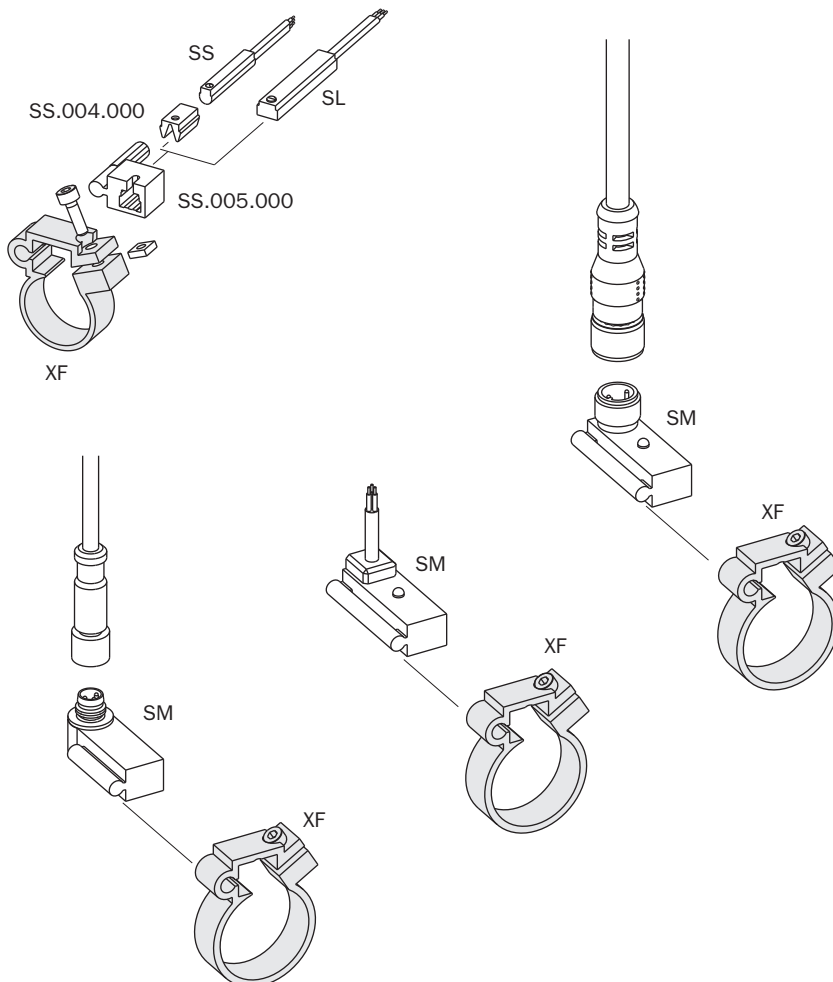
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- Available in various dimensions.
- Steel bolts and fixing screws included in the supply.



	XF-09	XF-11	XF-12	XF-13	XF-14	XF-16	XF-17	XF-18	XF-20	XF-21	XF-22	XF-24	XF-26	XF-27	XF-29	XF-30	XF-33	XF-36	XF-41	XF-45	XF-52	XF-65
A mm	Ø 9.3	Ø 11.3	Ø 12	Ø 13.3	Ø 14	Ø 16	Ø 17.3	Ø 18	Ø 20	Ø 21.3	Ø 22	Ø 24	Ø 26.3	Ø 27	Ø 29	Ø 30	Ø 33.6	Ø 36	Ø 41.6	Ø 45	Ø 52.4	Ø 65.4
Materiale corpo Material	PA; AISI 303																					

### Esempi di utilizzo Application examples



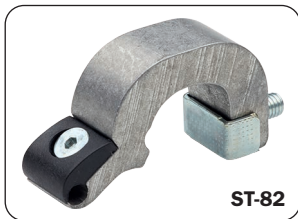
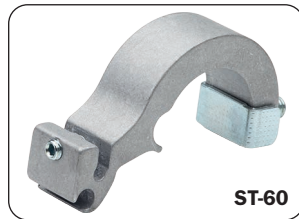
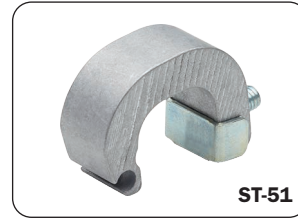
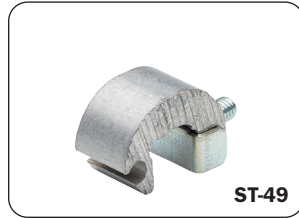


**Staffe per cilindri**

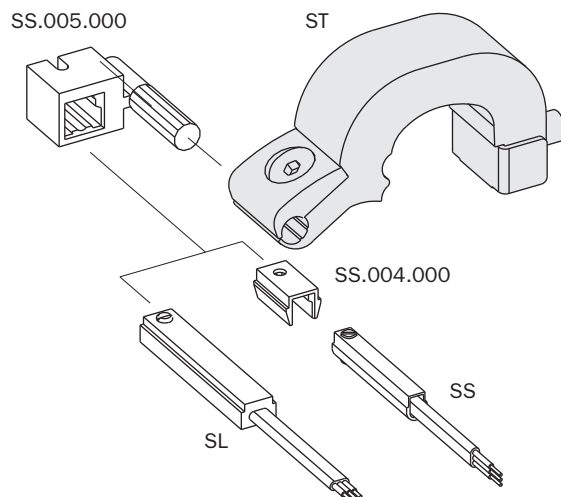
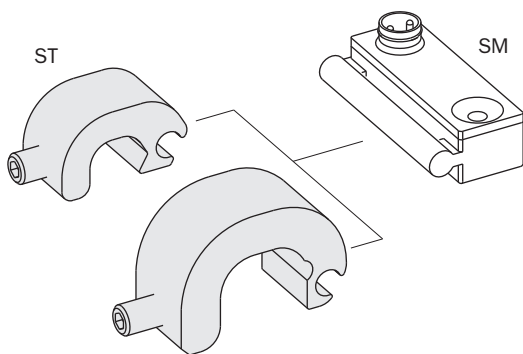
- Staffe in alluminio per cilindri lobati o a tirante.
- Molteplici dimensioni disponibili.
- Vite di fissaggio in acciaio e piastrina di bloccaggio incluse nella confezione.

**Cylinder-fastening clamps**

- Aluminum clamps for lobed or tie-rod cylinders.
- Available in various dimensions.
- Bolts and fixing screws made of steel, and locking plate included in the supply.



**Esempi di utilizzo**  
**Application examples**



	Materiali corpo Material	Per cilindri For cylinders	Dimensioni Dimensions
ST-10	AISI 303; 6005 A	Ø5 ÷ 9 mm	
ST-49	ACC. Z/B; 6060A	Ø 40 mm	
ST-50	ACC. Z/B; 6060A	Ø 50 mm	
ST-51	ACC. Z/B; 6060A	Ø 63 mm	
ST-52	ACC. Z/B; 6060A	Ø 80 mm	
ST-60	ACC. Z/B; 6060A	Ø 125 mm	
ST-80	PA; ACC. Z/B; 6060A	Ø32 ÷ 40 mm	
ST-81	PA; ACC. Z/B; 6060A	Ø50 ÷ 63 mm	
ST-82	PA; ACC. Z/B; 6060A	Ø82 ÷ 100 mm	
ST-83	PA; ACC. Z/B; 6060A	Ø125 mm	

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## Connettori elettrici

- Connettori costampati o a cablare per la connessione di sensori e trasduttori.
- Molteplici soluzioni disponibili con uscita cavo sia dritta che angolare.
- Soluzioni con cavo in PVC e PUR.

## Electrical connectors

- Co-molded or wired connectors for the connection of sensors and transducers.
- Available in various solutions with straight or angled cable output.
- Solutions with PVC and PUR cable.

**CFGM800225**



**3030146  
(CFGM800325)**



**3030148  
(CFGM800325P)**



**3030149  
(CFGM890325P)**



**CFGM800425P**



**CFGM890425P**



**CFGM890425PR**



**CMGM800310CFGM8003  
3030156  
(CMGM800320CFGM8003)**



**CMGM890310CFGM8003  
CMGM890320CFGM8003**



**CFGM1290225**



**CFGM1290325**



**CFGM1200430  
CFGM120041K**



**CFGM1290430**



**CFGM1200525P**



**3031158  
(CFGM1200825SP)**



**3031159  
(CFGM1290825SP)**



**CFGM1200825P**



**CFGM800300**



**CMGM800300**



**CFGM800400**





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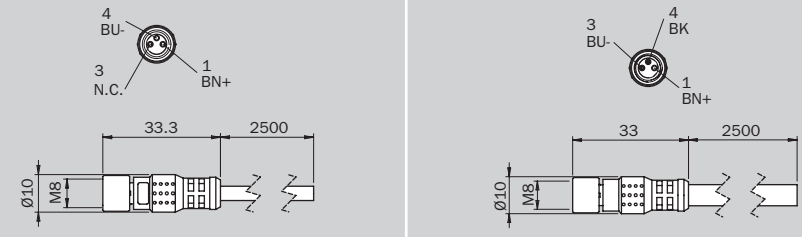
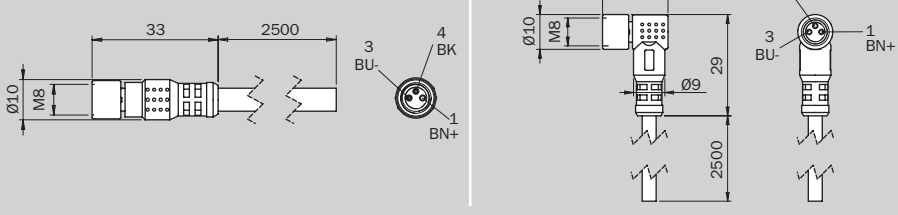
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Tipo connettore Connector type	<b>CFGM800225</b> <span style="float: right;"><b>3030146</b> <b>(CFGM800325)</b></span>	
Descrizione Description	Connettore M8 , femmina con cavo in PVC costampato M8 female connector with molded PVC cable	
Orientamento connettore Connector angle	dritto 180° straight 180°	
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration	Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)	
Diametro cavo (mm) Cable diameter (mm)	3	4
Materiale cavo Cable material	PVC ( CEI2022 )	
Sezione conduttori Lead cross section	0.25 mm <sup>2</sup> (AWG 24)	
Numero conduttori Number of leads	2	3
Lunghezza cavo (m) Cable length (m)	2.5	
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	
Tipo connettore Connector type	<b>3030148</b> <b>(CFGM800325P)</b> <span style="float: right;"><b>3030149</b> <b>(CFGM890325P)</b></span>	
Descrizione Description	Connettore M8 , femmina con cavo in PVC costampato M8 female connector with molded PVC cable	
Orientamento connettore Connector angle	dritto 180° straight 180°	angolare 90° angled 90°
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration	Marrone (BN +); Blu (BU -); Nero (BK OUT) Brown (BN +); Blue (BU -); Black (BK OUT)	
Diametro cavo (mm) Cable diameter (mm)	4.3	
Materiale cavo Cable material	PUR UL STYLE 21576	
Sezione conduttori Lead cross section	0.25 mm <sup>2</sup> (AWG 24)	
Numero conduttori Number of leads	3	
Lunghezza cavo (m) Cable length (m)	2.5	
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	

Tipo connettore Connector type	CFGM800425P	CFGM890425P	CFGM890425PR
Descrizione Description	Connettore M8, femmina con cavo in PUR costampato M8 female connector with molded PVC cable		
Orientamento connettore Connector angle	diritto 180° straight 180°	angolare 90° angled 90°	angolare 90° non standard angled 90° not standard
Grado di protezione Protection rating	IP69K		
Dimensioni (mm) Dimensions (mm)			
Configurazione PIN PIN configuration	Marrone (BN +); Blu (BU -); Nero (BK OUT); Bianco (WH OUT) Brown (BN +); Blue (BU -); Black (BK OUT)		
Diametro cavo (mm) Cable diameter (mm)	5.3		
Materiale cavo Cable material	PUR UL style 21576		
Sezione conduttori Lead cross section	0.34 mm <sup>2</sup> (AWG 22)		
Numero conduttori Number of leads	4		
Lunghezza cavo (m) Cable length (m)	2.5		
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75		
Tipo connettore Connector type	CFGM800825P	CFGM800850P	CMGM800803P
Descrizione Description	Connettore M8 , femmina con cavo in PUR costampato M8 female connector with molded PUR cable		Connettore M8 , maschio con cavo in PUR costampato M8 male connector with molded PUR cable
Orientamento connettore Connector angle	diritto 180° straight 180°		
Grado di protezione Protection rating	IP69K		
Dimensioni (mm) Dimensions (mm)			
Configurazione PIN PIN configuration	Marrone (BN +); Blu (BU -); Nero (BK OUT); Bianco WH; Verde GN; Giallo YE; Grigio GY; Rosa PK; Rosso RD Brown (BN +); Blue (BU -); Black (BK OUT); White (WH OUT); Green GN; Yellow YE; Grey GY; Pink PK; Red RD		
Diametro cavo (mm) Cable diameter (mm)	5.2		
Materiale cavo Cable material	PUR (CEI2022)		
Sezione conduttori Lead cross section	0.14 mm <sup>2</sup> (AWG 26)		
Numero conduttori Number of leads	8		
Lunghezza cavo (m) Cable length (m)	2.5	5	0.3
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75		

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Tipo connettore Connector type	CMGM800310CFG8003	3030156 (CMGM800320CFG8003)
Descrizione Description	Prolunga con connettori M8 maschio-femmina con cavo costampato Extension with M8 male-female connectors with molded cable	
Orientamento connettore Connector angle	Maschio dritto 180° / Femmina dritto 180° male straight 180° / female straight 180°	
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
Diametro cavo (mm) Cable diameter (mm)	4	
Materiale cavo Cable material	PVC ( CEI2022 )	
Sezione conduttori Lead cross section	0.25 mm <sup>2</sup> (AWG 24)	
Numero conduttori Number of leads	3	
Lunghezza cavo (m) Cable length (m)	1	2
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	

Tipo connettore Connector type	CMGM890310CFG8003	CMGM890320CFG8003
Descrizione Description	Prolunga con connettori M8 maschio-femmina con cavo costampato Extension with M8 male-female connectors with molded cable	
Orientamento connettore Connector angle	Maschio dritto 90° / Femmina dritto 90° male straight 90° / female straight 90°	
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
Diametro cavo (mm) Cable diameter (mm)	4	
Materiale cavo Cable material	PVC ( CEI2022 )	
Sezione conduttori Lead cross section	0.25 mm <sup>2</sup> (AWG 24)	
Numero conduttori Number of leads	3	
Lunghezza cavo (m) Cable length (m)	1	2
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	

Tipo connettore Connector type	CFGM1290225		CFGM1290325
Descrizione Description	Connettore M12, femmina con cavo in PVC costampato M12 female connector with molded PVC cable		
Orientamento connettore Connector angle	angolare 90° angled 90°		
Grado di protezione Protection rating	IP69K		
Dimensioni (mm) Dimensions (mm)			
Configurazione PIN PIN configuration	Marrone BN (+); Blu BU (-); Nero BK; Non connesso N.C. Brown BN (+); Blue BU (-); Black BK (OUT) NC not connected		
Diametro cavo (mm) Cable diameter (mm)	3		4
Materiale cavo Cable material	PVC ( CEI2022 )		
Sezione conduttori Lead cross section	0.25 mm <sup>2</sup> (AWG 24)		
Numero conduttori Number of leads	2		3
Lunghezza cavo (m) Cable length (m)	2.5		
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75		
Tipo connettore Connector type	CFGM120041K	CFGM1200430	CFGM1290430
Descrizione Description	Connettore M12, femmina con cavo in PVC costampato M12 female connector with molded PVC cable		
Orientamento connettore Connector angle	dritto 180° straight 180°		angolare 90° angled 90°
Grado di protezione Protection rating	IP69K		
Dimensioni (mm) Dimensions (mm)			
Configurazione PIN PIN configuration	Marrone BN (+); Blu BU (-); Nero BK (OUT); Bianco WH (OUT) Brown BN (+); Blue BU (-); Black BK (OUT); White WH (OUT)		
Diametro cavo (mm) Cable diameter (mm)	5.1		
Materiale cavo Cable material	PVC ( CEI2022 )		
Sezione conduttori Lead cross section	0.34 mm <sup>2</sup> (AWG 22)		
Numero conduttori Number of leads	4		
Lunghezza cavo (m) Cable length (m)	10		3
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75		



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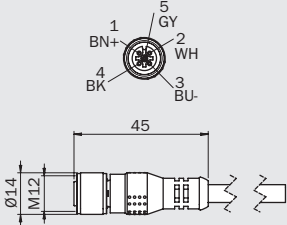
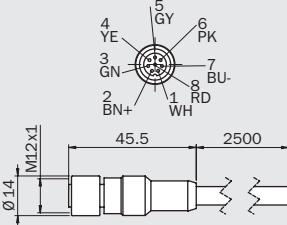
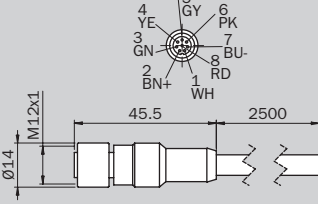
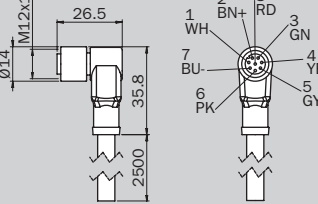
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Tipo connettore Connector type	CFGM1200525P		3031157 (CFGM1200825P)	
Descrizione Description	Connettore M12, femmina con cavo in PUR costampato M12 female connector with molded PUR cable			
Orientamento connettore Connector angle	dritto 180° straight 180°			
Grado di protezione Protection rating	IP69K			
Dimensioni (mm) Dimensions (mm)				
Configurazione PIN PIN configuration	Marrone BN (+); Blu BU (-); Nero BK (OUT); Bianco WH; Verde GN; Giallo YE; Grigio GY; Rosa PK; Rosso RD Brown BN (+); Blue BU (-); Black BK (OUT); White WH (OUT); Green GN; Yellow YE; Grey GY; Pink PK; Red RD			
Diametro cavo (mm) Cable diameter (mm)	6.4		6.5	
Materiale cavo Cable material	PUR UL STYLE		PUR	
Sezione conduttori Lead cross section	-		0.25 mm <sup>2</sup> (AWG 24)	
Numero conduttori Number of leads	5		8	
Lunghezza cavo (m) Cable length (m)	2.5			
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75			
Tipo connettore Connector type	3031158 (CFGM1200825SP)		3031159 (CFGM1290825SP)	
Descrizione Description	Connettore M12, femmina con cavo in PUR schermato costampato M12 female connector with shielded molded PUR cable			
Orientamento connettore Connector angle	dritto 180° straight 180°		angolare 90° angled 90°	
Grado di protezione Protection rating	IP69K			
Dimensioni (mm) Dimensions (mm)				
Configurazione PIN PIN configuration	Marrone BN (+); Blu BU (-); Nero BK (OUT); Bianco WH; Verde GN; Giallo YE; Grigio GY; Rosa PK; Rosso RD Brown BN (+); Blue BU (-); Black BK (OUT); White WH (OUT); Green GN; Yellow YE; Grey GY; Pink PK; Red RD			
Diametro cavo (mm) Cable diameter (mm)	7			
Materiale cavo Cable material	PUR			
Sezione conduttori Lead cross section	0.25 mm <sup>2</sup> (AWG 24)			
Numero conduttori Number of leads	8			
Lunghezza cavo (m) Cable length (m)	2.5			
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75			

Tipo connettore Connector type	CFGM800300	CMGM800300
Descrizione Description	Connettore M8 Femmina a cablare M8 female connector to be wired	Connettore M8 Maschio a cablare M8 male connector to be wired
Numero di poli Number of poles	3	
Modo di cablaggio Wiring method	Connessione a vite Screw connector	
Grado di protezione Protection rating	IP67	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
Diametro massimo cavo (mm) Maximum cable diameter (mm)	5.5	
Tipo connettore Connector type	CFGM800400	CMGM800400
Descrizione Description	Connettore M8 Femmina a cablare M8 Female connector to cable	Connettore M8 Maschio a cablare M8 Male connector to cable
Numero di poli Number of poles	4	
Modo di cablaggio Wiring method	Connessione a vite Screw connection	
Grado di protezione Protection rating	IP67	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
Diametro massimo cavo (mm) Maximum cable diameter (mm)	5.5	
Tipo connettore Connector type	CFGM800800	CMGM800800
Descrizione Description	Connettore M8 Femmina a saldare M8 female connector to be soldered	Connettore M8 Maschio a saldare M8 male connector to be soldered
Numero di poli Number of contacts	8	
Modo di cablaggio Wiring mode	Connessione a saldare Solder connection	
Grado di protezione Protection class	IP67	
Dimensioni (mm) Dimension (mm)		
Configurazione PIN PIN configuration		
Diametro massimo cavo (mm) Max cable diameter (mm)	5.5	

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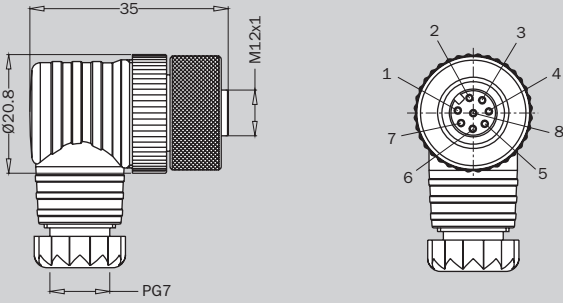
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Tipo connettore Connector type	CFSM890225	CFSM890325
Descrizione Description	Connettore M8 ,SNAP, femmina con cavo in PVC costampato M18 SNAP female connector with molded PVC cable	
Orientamento connettore Connector angle	angolare 90° angled 90°	
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
	Marrone BN (+); Blu BU (-); Nero BK (OUT); Non connesso N.C. Brown BN (+); Blue BU (-); Black BK (OUT); Not connected NC	
Diametro cavo (mm) Cable diameter (mm)	3.6	4.3
Materiale cavo Cable material	PVC ( CEI2022 )	
Sezione conduttori Lead cross section	0.25 mm <sup>2</sup> (AWG 24)	
Numero conduttori Number of leads	2	3
Lunghezza cavo (m) Cable length (m)	2.5	
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	

Tipo connettore Connector type	CFGM800425PC	CFGM890425PC
Descrizione Description	Connettore M8 , femmina con cavo in PUR costampato M8 female connector with molded PUR cable	
Orientamento connettore Connector angle	diritto 180° straight 180°	angolare 90° angled 90°
Grado di protezione Protection rating		
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
	Marrone BN (+); Blu BU (-); Nero BK (OUT); Bianco WH (OUT) Brown BN (+); Blue BU (-); Black BK (OUT); White WH (OUT)	
Diametro cavo (mm) Cable diameter (mm)	2.5	
Materiale cavo Cable material	PUR	
Sezione conduttori Lead cross section	0.096 mm <sup>2</sup>	
Numero conduttori Number of leads	4	
Lunghezza cavo (m) Cable length (m)	2.5	
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	

Tipo connettore Connector type	CM800303CF8003P	CM800305CF8003P	CM800312CF8003P
Descrizione Description	Prolunga con connettore M8 maschio-femmina con cavo costampato Extension with M8 male-female connectors with molded cable		
Orientamento connettore Connector angle	Maschio dritto 180° / femmina dritto 180° Male straight 180° / Female straight 180°		
Grado di protezione Protection rating	IP69K		
Dimensioni (mm) Dimensions (mm)			
Configurazione PIN PIN configuration	Marrone BN (+); Blu BU (-); Nero BK (OUT) Brown BN (+); Blue BU (-); Black BK (OUT)		
Diametro cavo (mm) Cable diameter (mm)	2.2		
Materiale cavo Cable material	PUR		
Sezione conduttori Lead cross section	0.096 mm <sup>2</sup>		
Numero conduttori Number of leads	3		
Lunghezza cavo (m) Cable length (m)	L*	0.3	1.2
Temperatura di lavoro (°C) Operating temperature (°C)	-25 +75		

Tipo connettore Connector type	CFGM800325PSB	CFGM890325PSB
Descrizione Description	Connettore M8 , femmina con cavo in PUR costampato M8 female connector with molded PUR cable	
Orientamento connettore Connector angle	dritto 180° straight 180°	angolare 90° angled 90°
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration	Marrone BN (+); Blu BU (-); Nero BK (OUT) Brown BN (+); Blue BU (-); Black BK (OUT)	
Diametro cavo (mm) Cable diameter (mm)	2.2	
Materiale cavo Cable material	PUR	
Sezione conduttori Lead cross section	0.096 mm <sup>2</sup>	
Numero conduttori Number of leads	3	
Lunghezza cavo (m) Cable length (m)	2.5	
Temperatura di lavoro (°C) Operating temperature (°C)	-25 + 75	

Tipo connettore Connector type	CFGM1290800C
Tipo di contatto Contact type	Femmina Female
Numero contatti Number of contacts	8
Materiale del corpo Case material	PA66 +30% fibra di vetro PA66 +30% fiberglass
Orientamento Angle	90°
Colore del corpo Case color	Nero Black
Dimensioni (mm) Dimensions (mm)  Configurazione PIN PIN configuration	
Pressacavo Cable gland	PG7
Tensione nominale Rated voltage	30V AC/DC
Corrente nominale Rated current	2A
Materiale dei contatti Contact material	bronzo fosforoso phosphor bronze
Trattamento contatti Contact treatment	Dorato Nickel +0.45 µm Gold-plated nickel +0.45 µm
Materiale ghiera Contact treatment	Zn Al/Ni
O-ring O-ring	NBR
Grado di protezione Protection rating	IP67
Temperatura di esercizio Operating temperature	-25°C ÷ +90°C

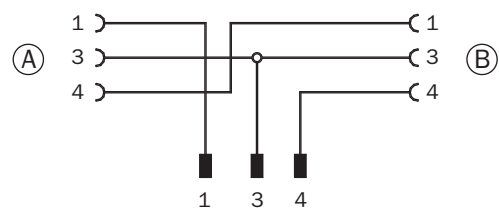
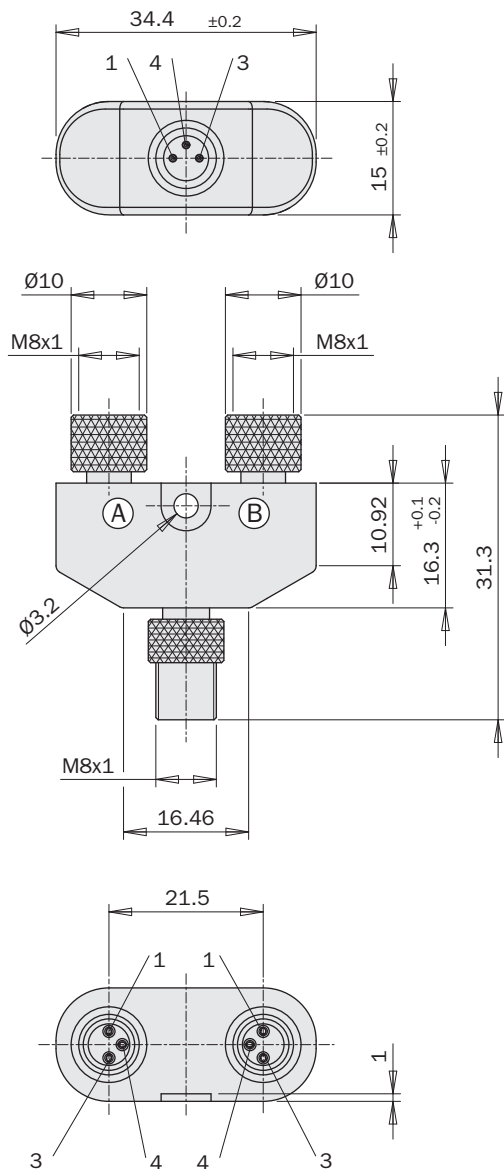
### Accoppiatore a T M8, 3 poli

Accoppiatore a T utilizzabile per realizzare la serie logica delle uscite di 2 sensori normalmente aperti (NO) di tipo PNP oppure REED.

### M8, 3-pole T-coupler

This coupler can be used to create the logic series of the outputs of two normally-open (NO) PNP or REED sensors.

	CMGM8CFGM8X2Y
Materiale del corpo Case material	Polipropilene Polypropylene
Materiale dei contatti Contacts material	Doratura Gold-plated
Materiale ghiera Lock nut material	Ottone Brass
Tipo circuito Circuit type	Serie logica di 2 sensori PNP / Reed PNP/Reed 2-sensor logic series
Tensione nominale Rated voltage	60 V AC/DC
Corrente nominale Rated current	4 A
Grado di protezione Protection rating	IP67 (EN60529)
Caduta di tensione Voltage drop	max 3 V



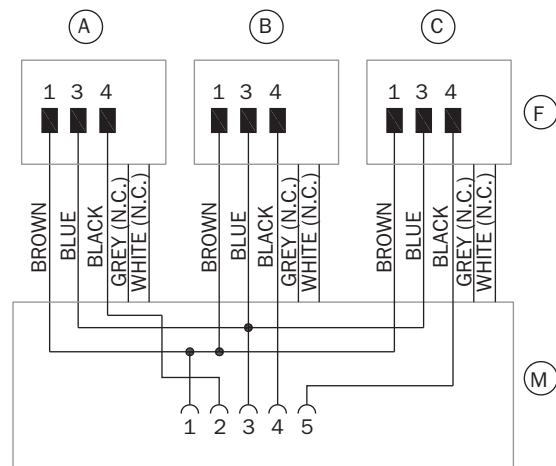
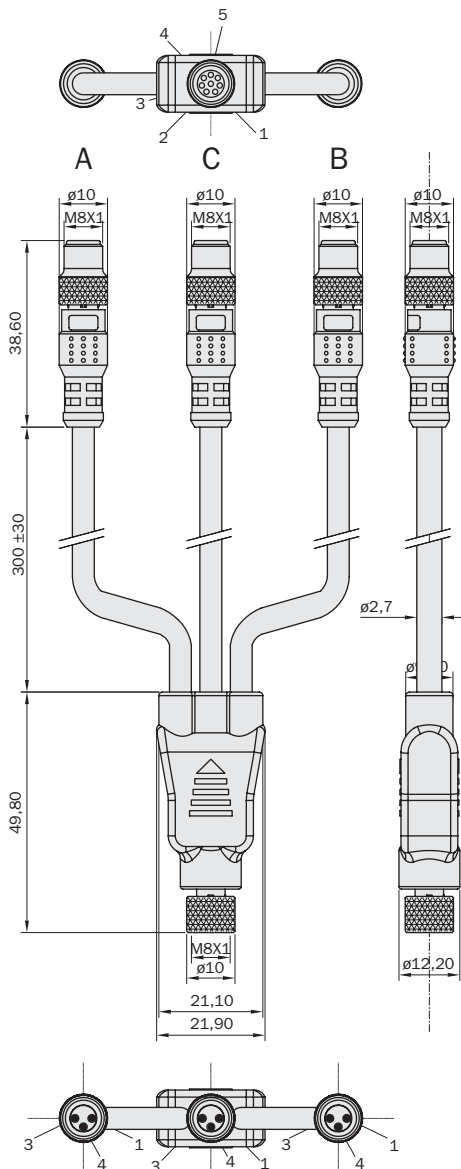
## Accoppiatore a Y M8, 8 poli

Accoppiatore a Y utilizzabile in combinazione ai sensori PRO-SS/PRO-SN (con uscita M8) per avere la corretta connessione in applicazione con la versione modulare SENSOR BOX (SBM).

## 8-pole M8 Y-coupler

This coupler can be used combined with PRO-SS/PRO-SN sensors (with M8 output) for precise connection, jointly with the SENSOR BOX (SBM) modular version.

	CFG8M8CMGM8X3Y
Materiale del corpo Case material	Polipropilene Polypropylene
Materiale dei contatti Contacts material	Doratura Gold-plated
Materiale ghiera Lock nut material	Ottone Brass
Tipo circuito Circuit type	1M8 - 8 poli Femmina / 3xM8 - 3 poli Maschio 1xM8: 8 poles female / 3xM8: 3 poles male
Tensione nominale Rated voltage	30 V AC/DC
Corrente nominale Rated current	1.5 A
Grado di protezione Protection rating	IP69K



Tipo connettore Connector type	CFGM1200500	CMGM1200500
Descrizione Description	Connettore M12 Femmina a cablare M12 female connector to be wired	Connettore M12 Maschio a cablare M12 male connector to be wired
Numero di poli Number of poles	5	
Modo di cablaggio Wiring method	Connessione a vite Screw connector	
Grado di protezione Protection rating	IP67	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
Diametro massimo cavo (mm) Maximum cable diameter (mm)	8.6	

Tipo connettore Connector type	CFGM1200800	CMGM1200800
Descrizione Description	Connettore M12 Femmina a cablare M12 Female connector to cable	Connettore M12 Maschio a cablare M12 Male connector to cable
Numero di poli Number of poles	8	
Modo di cablaggio Wiring method	Connessione a vite Screw connection	
Grado di protezione Protection rating	IP67	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration		
Diametro massimo cavo (mm) Maximum cable diameter (mm)	6	

Unità Rotanti  
Rotary UnitsCambia Utensile  
Quick ChangerProfili e Staffe  
Profiles and BracketsPinze  
GrippersAttuatori Lineari  
Linear ActuatorsSospensioni  
SuspensionsTaglierini  
NippersKit-Robot  
Robot KitAccessori Opzionali  
OptionsSensori  
Sensors



Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

Sensori  
Sensors

Tipo connettore Connector type	CM12CF12-4-15	
Descrizione Description	Prolunga con connettori M12 maschio-femmina con cavo costampato Extension with M12 male-female connectors with molded cable	
Orientamento connettore Connector angle	dritto 180° straight 180°	
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration	<p>Blu BU (-); Bianco WH; Giallo YE; Arancio OG Blue BU (-); White WH; Yellow YE; Orange OG</p>	
Diametro cavo (mm) Cable diameter (mm)	6.6	
Materiale cavo Cable material	PUR UL style 21576 BUS CAT.5E	
Sezione conduttori Lead cross section	0.34 mm <sup>2</sup> (AWG 22)	
Numero conduttori Number of leads	4	
Lunghezza cavo (m) Cable length (m)	1.5	
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	

Tipo connettore Connector type	CM12CF12CF8T4	CM1200400TERM
Descrizione Description	Raccordo elettrico M12 con cavo costampato M8 4poli M12 electric connector with M8-4 poles molded cable	Connettore M12 terminale M12 terminal connector
Orientamento connettore Connector angle	dritto 180° straight 180	
Grado di protezione Protection rating	IP69K	
Dimensioni (mm) Dimensions (mm)		
Configurazione PIN PIN configuration	<p>Marrone BN (+); Blu BU (-); Nero BK (OUT); Bianco WH (OUT) Brown BN (+); Blue BU (-); Black BK (OUT); White WH (OUT)</p>	
Diametro cavo (mm) Cable diameter (mm)	5	-
Materiale cavo Cable material	PUR	-
Sezione conduttori Lead cross section	0.34 mm	-
Numero conduttori Number of leads	4	-
Lunghezza cavo (m) Cable length (m)	2.5	-
Temperatura di lavoro (°C) Operating temperature (°C)	-25 ÷ 75	

## Mold Monitoring System - Generalità

L'innovativo sistema di Mold monitoring sviluppato da Gimatic consente di raccogliere, trasmettere, immagazzinare, visualizzare ed analizzare dati di processo. Il sistema si compone di tre elementi principali: sensori smart, gateway di raccolta dati dai sensori ed una piattaforma software per la memorizzazione, l'analisi e la consultazione dei dati. In un generico processo di stampaggio plastico è quindi possibile installare un sensore su ogni stampo, un gateway per una o più presse ed utilizzare il sistema software per consultare i dati in tempo reale. E' inoltre possibile configurare un sistema automatico di messaggistica in base ad un piano predefinito di manutenzione preventiva.

Caratteristiche principali del sistema:

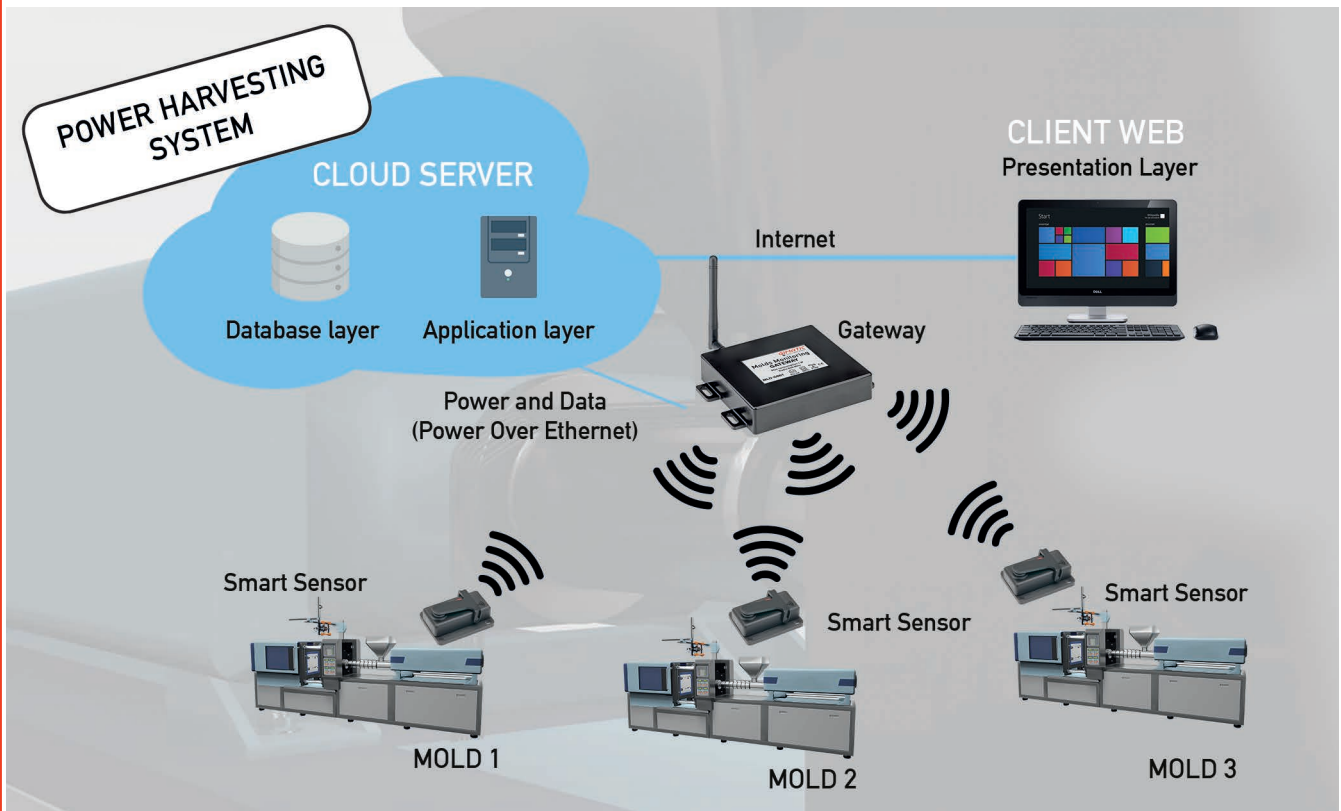
- Semplice, economico e modulare: ideale per il monitoraggio di qualsiasi tipo di stampo/macchina o di un qualsiasi processo automatico generico.
- Trasmissione radio efficiente e robusta a 868 MHz.
- Monitoraggio in tempo reale del processo produttivo.
- Possibilità di analisi statistiche dei dati raccolti.
- Soluzione plug&play: l'accesso ai dati può essere immediato mediante l'uso di una piattaforma CLOUD riservata e centralizzata.
- Generazione di notifiche in caso di necessaria manutenzione.
- Installazione rapida ed intuitiva con riduzione dei cablaggi grazie all'uso di una connessione POE (Power Over Ethernet) per i gateway.
- Sensori basati su tecnologia energy harvesting (non necessitano di alimentazione).

## Mold Monitoring System - Overview

The innovative Mold Monitoring System developed by Gimatic allows to collect, transmit, store, display and analyse process data. The system consists of three main elements: smart sensors, sensor data collection gateway and a software platform for data storage, analysis and consultation. In a generic plastic Molding process it is therefore possible to install a sensor on each Mold, a gateway for one or more Molding machines and use the software system to consult the data in real time. Moreover, an automatic messaging system can be set up, based on a predefined preventive maintenance plan.

Main features of the system:

- Simple, inexpensive and modular: ideal for monitoring any type of Mold/Molding machine or any generic automated process.
- Efficient and robust 868 MHz radio transmission.
- Real-time monitoring of the production process.
- Possible statistical analysis of the collected data.
- Plug & Play solution: access to data can be immediate through the use of a reserved and centralised cloud-based platform.
- Notifications are automatically generated in the case of necessary maintenance.
- Quick and intuitive installation with reduced wiring through the use of a POE (Power Over Ethernet) connection for gateways.
- Sensors based on Energy Harvesting Technology (no power supply required).



## Mold Monitoring - Sensori smart

I sensori MLD-S sono interruttori intelligenti basati sulla tecnologia energy harvesting e che pertanto non necessitano di alcuna forma di alimentazione attiva (senza batterie). Ad ogni cambiamento di stato l'interruttore trasmette un pacchetto dati univoco che può essere ricevuto da uno o più gateway in ascolto all'interno del raggio di azione. Il cambio di stato del sensore può essere ad esempio derivato dal moto di avvicinamento di uno stampo (versione meccanica) oppure generato esternamente (versione pneumatica) ponendo il sensore in derivazione ad un circuito pneumatico esistente. I dati così raccolti permettono il monitoraggio in tempo reale di parametri di processo quali il tempo ciclo e l'efficienza produttiva.

## Mold Monitoring - Smart Sensors

The MLD-S sensors are intelligent switches based on energy harvesting technology and therefore do not require any form of active power supply (without batteries). At each change of status the switch transmits a unique data packet that can be received by one or more listening gateways within range. The change in sensor status can, for example, be gathered from the approach motion of a Mold (mechanical version) or generated externally (pneumatic version) by shunt-connecting the sensor to an existing pneumatic circuit.

The data collected in this way allow real-time monitoring of process parameters such as cycle time and production efficiency.

	MLD-S001	MLD-S002
Elemento d'azionamento <i>Actuation element</i>	Leva <i>Lever</i>	Pistone pneumatico (incorporato) <i>Pneumatic piston (built-in)</i>
Forza minima d'azionamento / pressione <i>Minimum actuation force / pressure</i>	12 N (sul pulsante) <i>12 N (on the button)</i>	2 bar
Massa <i>Mass</i>	45 g	
Materiale del corpo <i>Body material</i>	PA66 caricata con fibra di vetro <i>PA66 reinforced with glass fibre (PA66-GF30)</i>	
Dimensioni della scatola <i>Box dimensions</i>	58 x 45 x 27 mm	58 x 45 x 31.4 mm
Grado di protezione <i>IP rating</i>	IP40	
Alimentazione <i>Power supply</i>	Non necessaria <i>Not necessary</i>	
Range di temperatura <i>Temperature range</i>	-10°C/ +60°C	
Frequenza di connessione <i>Connection frequency</i>	868 MHz	
Copertura segnale <i>Signal coverage</i>	Da 10 a 80 m (dipende dal layout dell'impianto) <i>10-80 m (depending on the system layout)</i>	
Certificazioni <i>Certifications</i>	EN60950-1, ETSI 301 489-1 V.2.1., ETSI 301 489-3 V.2.2.2, ETSI EN302802	

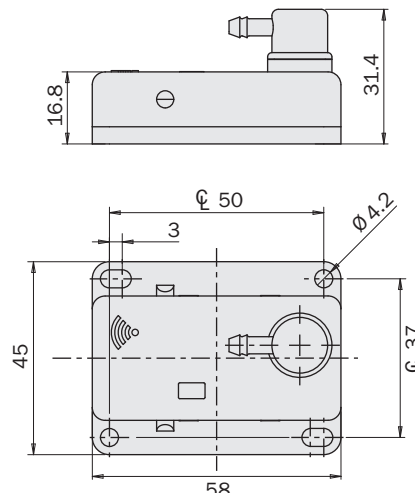
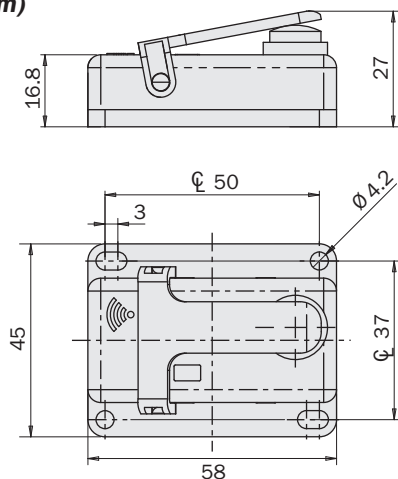


MLD-S001



MLD-S002

### Dimensioni (mm) Dimensions (mm)



## Mold Monitoring System - Gateway

Il gateway è il dispositivo che riceve i dati dai sensori e si occupa di trasferirli alla piattaforma software (tipicamente basata su CLOUD). Il collegamento del gateway avviene tramite un solo cavo di tipo POE (Power Over Ethernet) utile sia per l'alimentazione sia per il trasferimento dei dati. Il gateway è dotato di webserver integrato necessario per la configurazione del dispositivo e la diagnostica. In configurazione standard il gateway trasmette i dati raccolti ad un server CLOUD centralizzato per la consultazione diretta e riservata da parte dell'utente senza la necessità di altri strumenti. Il sistema può tuttavia anche essere personalizzato per la trasmissione diretta dei dati ad un piattaforma esistente dell'utente laddove disponibile.

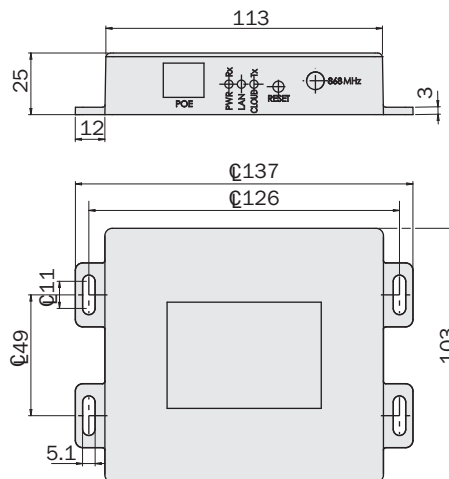
## Mold Monitoring System - Gateway

The gateway is the device that receives the data from the sensors and transfers them to the software platform (typically a cloud-based platform). The gateway is connected via a single POE (Power Over Ethernet) cable, which is useful for both power supply and data transfer. The gateway is equipped with integrated web server, which is necessary for the device configuration and diagnostics. In its standard configuration, the gateway transmits the collected data to a centralised cloud-based server for direct and confidential consultation by the user without the need for other tools. However, the system can also be customised for direct data transmission to an existing user platform where available.

	MLD-G001
Materiale del corpo <i>Body material</i>	LATAMID VØ
Dimensioni della scatola <i>Box dimensions</i>	137 x 103 x 25 mm
Massa <i>Mass</i>	135 g
Grado di protezione <i>IP rating</i>	IP40
Alimentazione <i>Power supply</i>	Cavo POE (Power Over Ethernet)* <i>POE (Power Over Ethernet)* cable</i>
Potenza assorbita <i>Power absorption</i>	< 1 W
Range di temperatura <i>Temperature range</i>	-10°C / +50°C
Connessioni elettriche <i>Electrical connections</i>	POE + antenna a 868 MHz <i>POE + 868 MHz antenna</i>
Connessione Internet <i>Internet connection</i>	Banda larga (standard HTTP) <i>Broadband (HTTP standard)</i>
Connessione locale <i>Local connection</i>	IP dinamico (DHCP) <i>Dynamic IP (DHCP)</i>
Interfaccia fisica <i>Physical interface</i>	3 LED + tasto di reset <i>3 LEDs + reset key</i>
Metodo di configurazione <i>Configuration method</i>	Webserver integrato <i>Integrated web server</i>
Copertura segnale <i>Signal coverage</i>	Da 10 a 80 m (dipende dal layout dell'impianto) <i>10-80 m (depending on the system layout)</i>
Certificazioni <i>Certifications</i>	EN60950-1, ETSI 301 489-1 V.2.1, ETSI 301 489-3 V.2.1.1, ETSI EN302802

\*Non incluso

\*Not included



Dimensioni (mm)  
Dimensions (mm)

FIRST ANGLE  
PROJECTION

## IO-Link Gateway Unit

Le pinze plug&play standard Gimatic sono disponibili anche nella versione "IOL" con connettore M8 4 poli e comunicazione digitale MODBUS RTU su seriale RS-485.

Il componente IOLBOX è un gateway IO-Link-MODBUS che può essere utilizzato per collegare le versioni digitali delle pinze a un dispositivo master IO-Link esterno.

- Scambio di parametri ciclici: apertura/chiusura, forza di presa e corsa delle griffe.
- Lettura parametri e dati di processo fino a un massimo di 5 dispositivi.
- Semplicità nell'installazione e configurazione del dispositivo.
- Monitoraggio dello stato del dispositivo.
- Permette avanzate funzionalità di diagnosi.
- Rapida sostituzione di un dispositivo con un altro dello stesso tipo.

## IO-Link Gateway Unit

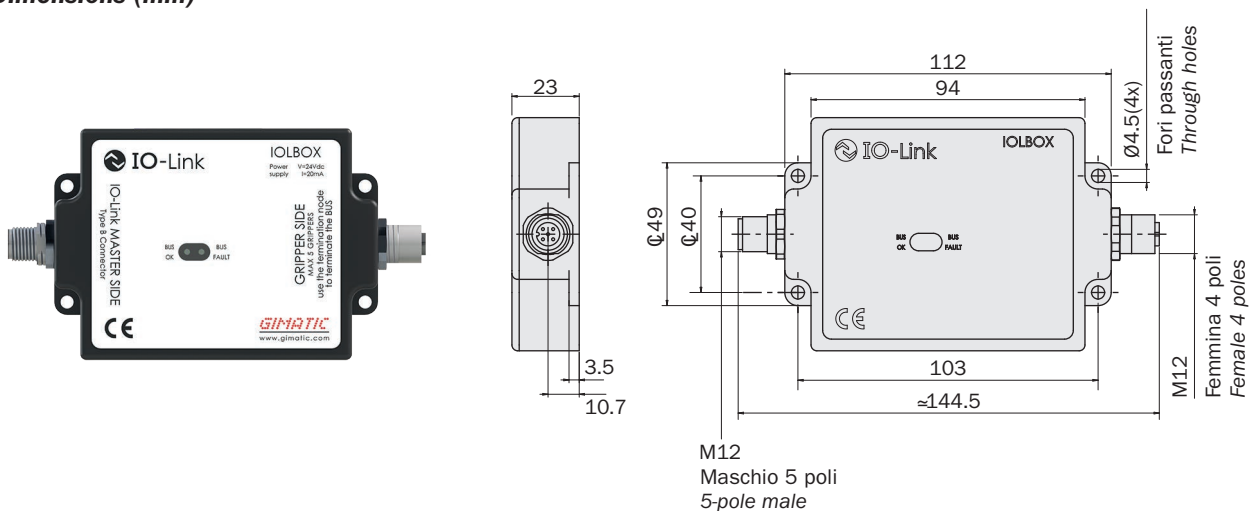
Gimatic standard plug & play grippers are also available in the "IOL" version with M8 4-pole connector and MODBUS RTU digital communication on RS-485 serial line.

The IOLBOX component is an IO-Link-MODBUS gateway that can be used to connect the digital versions of the grippers to an external IO-Link master device.

- Exchange of cyclic parameters: opening / closing, gripping force and stroke of the jaws.
- Reading of parameters and process data of up to 5 devices.
- Easy device installation and configuration.
- Monitoring of device status.
- Enables advanced diagnostic features.
- Quick replacement of one device with another of the same type.

### Dimensioni (mm)

### Dimensions (mm)



FIRST ANGLE PROJECTION

### Caratteristiche meccaniche ed elettriche

### Electrical and Mechanical Characteristics

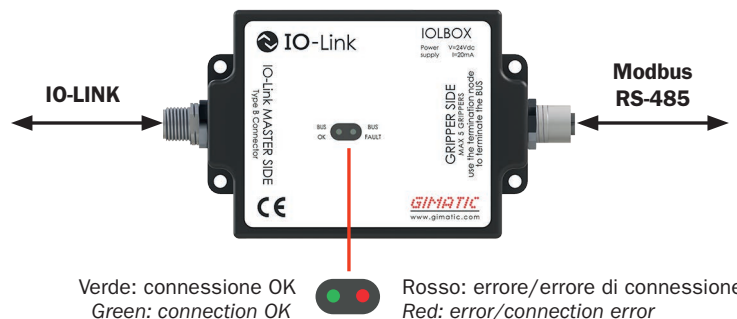
IOLBOX	
Alimentazione Power supply	24 [Vdc]
Assorbimento di corrente Current consumption	20 [mA]
Temperatura di utilizzo Operating temperature	5° ÷ 60°C
Massa Mass	120 g
Specifica IO-Link IO-Link version	V1.1

### Connessione elettrica principale

L'unità è dotata di un connettore femmina M12-5 poli per comunicare con il IO-LINK Master e di un connettore maschio M12-4 poli per comunicare in protocollo Modbus RS-485 con i dispositivi (slave) collegati.

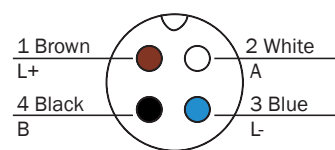
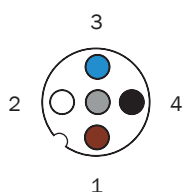
### Main electrical connection

The unit features an M12 5-pole female connector to allow communication with the IO-LINK Master and an M12 4-pole male connector to communicate with the connected devices (slave) using the Modbus RS-485 protocol.



IO-LINK PINOUT
Tipologia di connessione: Connettore M12 tipo A, 5 poli (maschio) Type of connection: M12 5-pole type-A connector (male)
Pin 1 = +24 Vdc alimentazione del IOLBOX Pin 1 = +24 Vdc IOLBOX power supply
Pin 3 = 0 Vdc GND per l'alimentazione IOLBOX Pin 3 = GND for IOLBOX power supply
Pin 4 = comunicazione IO-Link Pin 4 = IO-Link communication
Pin 2 = +24 Vdc alimentazione delle pinze Pin 2 = +24 Vdc grippers power supply
Pin 5 = 0 Vdc GND per l'alimentazione delle pinze (isolato) Pin 5 = GND for grippers power supply (isolated)

MODBUS RS-485 PINOUT
Tipologia di connessione: Connettore M12 tipo A, 4 poli (femmina) Type of connection: M12 4-pole type-A connector (female)
Pin 1 = +24 Vdc alimentazione del dispositivo Pin 1 = +24 Vdc device power supply
Pin 3 = 0 Vdc GND per l'alimentazione del dispositivo Pin 3 = GND for device power supply
Pin 4 = canale B differenziale Pin 4 = Differential channel B
Pin 2 = canale A differenziale Pin 2 = Differential channel A



L'interfaccia di controllo dell'IOLBOX e delle pinze è definita dal relativo file IODD (scaricabile dal sito Gimatic) che contiene tutte le descrizioni dei dispositivi ed i dati necessari per il funzionamento.

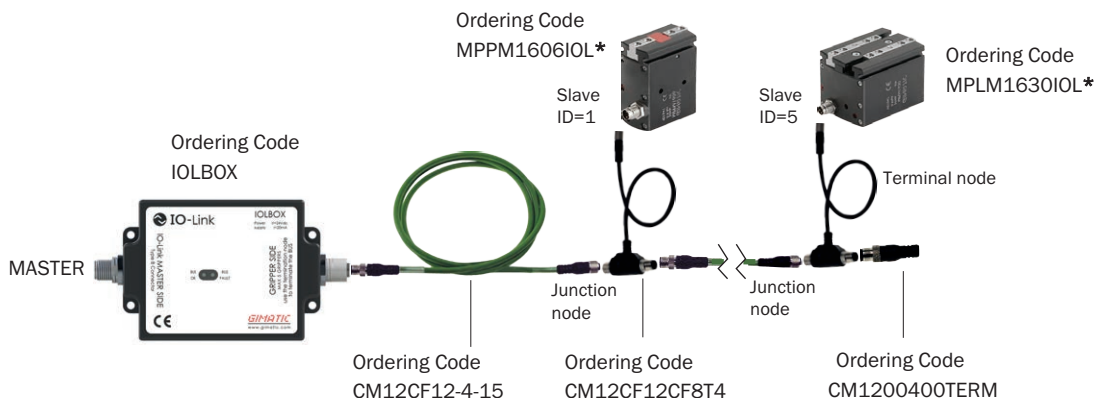
The control interface of IOLBOX and grippers is defined by the relevant IODD file (downloadable from the Gimatic website) which contains all the descriptions of the devices and the data required for operation.

## Esempio di collegamento di due pinze

L'utente può creare una rete di pinze in cui l'IOLBOX è l'unico dispositivo IO-Link che utilizza quindi solo un nodo del master IO-Link all'esterno.

## Example of connection of two grippers

The user can create a network of grippers in which the IOLBOX is the only IO-Link device which, therefore, uses only one node of the IO-Link master externally.



\*Si prega di verificare con la rete commerciale la disponibilità dei dispositivi standard plug&play in versione IOL.

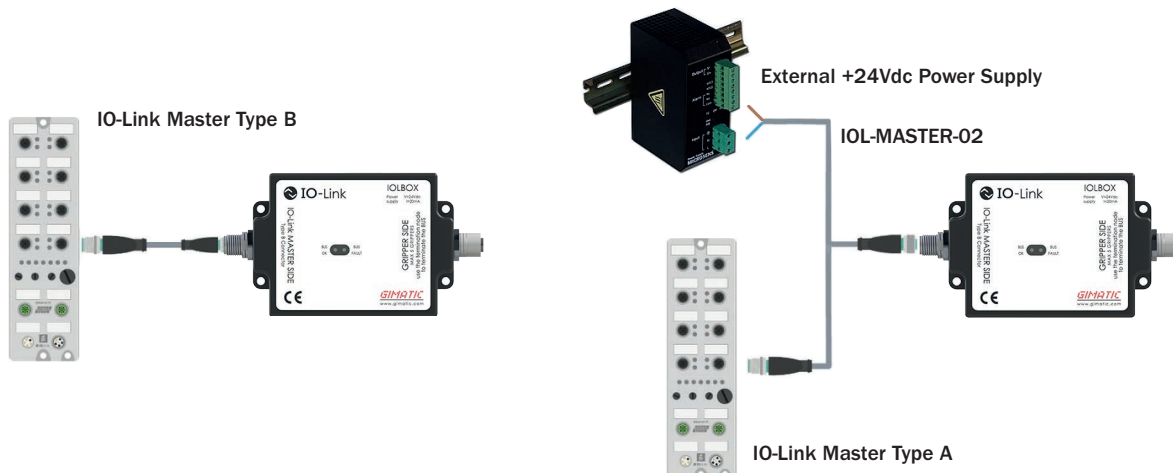
\*Please inquire with the sales network about the availability of the IOL version of standard plug & play devices.

## Tipi di Master IO-Link

I master type A (o class A) potrebbero non fornire la corrente sufficiente al funzionamento delle pinze. In tal caso è necessario collegare un'alimentazione esterna al pin 2(+) e 5(-) del connettore. I master type B (o class B) invece possono essere collegati direttamente all'IOLBOX tramite il pinout indicato in precedenza. Di seguito gli schemi di collegamento di entrambi i tipi di master.

## Types of IO-Link Masters

Type A (or class A) masters may not provide sufficient current for the operation of grippers. In this case, an external power supply must be connected to pins 2(+) and 5(-) of the connector. Type B (or class B) masters can be connected directly to the IOLBOX using the above-mentioned pinout. The following figures show the connections of both types of master."



## IO-Link Master

Il master IO-Link wireless è utilizzato per la comunicazione con i dispositivi IO-Link. Il suo scopo è quello di collegare tali dispositivi ad un cellulare o tablet. Grazie all'utilizzo di una semplice app, i dispositivi IO-Link collegati possono essere facilmente configurati e parametrizzati. È anche possibile eseguire la diagnostica. In fase iniziale di test e verifica del sistema, l'alimentazione può essere fornita direttamente dal master USB. Altrimenti, in fase di lavoro, è necessario fornire un'alimentazione esterna.

## IO-Link Master

The wireless IO-Link master is used to communicate with IO-Link devices. Its purpose is to connect IO-Link devices to a mobile device, phone or tablet. Thanks to the use of a simple app, the connected IO-Link devices can be easily configured and parameterised. Diagnostics can also be performed. In the initial system test and verification phase, power can be supplied directly from the USB master. During the work phase, an external power supply must be provided.



Baumer app  
SensControl



IO-Link Master-01



IO-Link Master-02

IO-Link Master

IOL-MASTER	
Dimensioni <i>Dimensions</i>	70 × 20 × 95 mm (B×H×D)
Massa <i>Weight</i>	154 g
Materiale del componente <i>Material of the component</i>	Alluminio <i>Aluminium</i>
Interfacce <i>Interfaces</i>	1 x connettore M12-5 poli per dispositivi IO-Link (Class A) 1 x connettore M12-4 poli per master IO-Link (Class A) 1 x Micro SD card, 1 × Mini USB, Bluetooth Smart, WLAN 1 × M12 5-pin connector for IO-Link device (Class A) 1 × M12 4-pin connector for IO-Link master (Class A) 1 × Micro SD card, 1 × Mini USB, Bluetooth Smart, WLAN
Standards supportati <i>Supported standards</i>	Versione IO-Link: 1.0 e 1.1 Versione IO-Link: 1.0 e 1.1 IO-Link versions: 1.0 and 1.1 IO-Link versions: 1.0 and 1.1
Alimentazione <i>Power supply</i>	Tramite la porta USB integrata, il master IO-Link o la batteria integrata. In modalità batteria: corrente max. del dispositivo IO-Link: 350 mA, tempo di funzionamento > 3 h a 2 W, tensione del dispositivo IO-Link: 24 V 20% <i>By USB port, IO-Link master or built-in battery. In battery mode: max. current of IO-Link device: 350 mA, operation time &gt; 3 h at 2 W, voltage of the IO-Link device: 24V 20%</i>
Potenza massima di trasmissione <i>Maximum transmission power</i>	WLAN: 18 dBm Bluetooth Smart: 2 dBm
Standards <i>Standards</i>	EN 55022 /2010 Class A EN 55024 /2010 + A1 /2015 Contains FCC ID: W70MRF24WG0MAMB Contains FCC ID: PVH0950 IC: 5325A-0950
Classe di protezione <i>IP rating</i>	IP20
Temperatura di esercizio <i>Operating temperature</i>	0÷40°C



## Connessione elettrica

## Electrical connection

### IO-LINK MASTER PINOUT (TYPE B MODEL)

Tipologia di connessione: Connettore M12 tipo A, 5 poli (femmina)  
 Type of connection: M12 5-pole type-A connector (female)

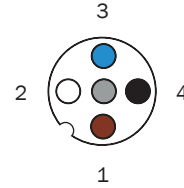
Pin 1 = +24 Vdc alimentazione del IOLBOX  
 Pin 1 = +24 Vdc IOLBOX power supply

Pin 3 = 0 Vdc GND per l'alimentazione IOLBOX  
 Pin 3 = GND for IOLBOX power supply

Pin 4 = comunicazione IO-Link  
 Pin 4 = IO-Link communication

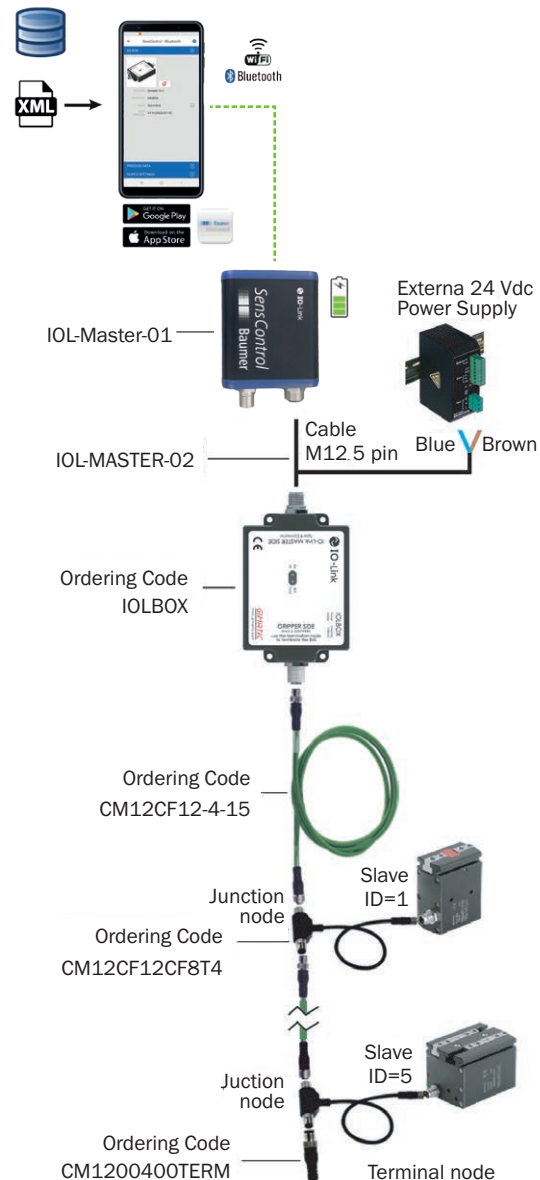
Pin 2 = +24 Vdc alimentazione delle pinze  
 Pin 2 = +24 Vdc grippers power supply

Pin 5 = 0 Vdc GND per l'alimentazione delle pinze (isolato)  
 Pin 5 = GND for grippers power supply (isolated)



## Esempi di utilizzo

### Example of using





## Sensori Custom

Attiva nel settore dell'automazione e della tecnologia dei sensori da oltre trent'anni, Gimatic S.r.l. è oggi in grado di fornire un servizio di progettazione di sensori personalizzati avvalendosi di varie tecnologie.

- Realizzati in base alle specifiche del cliente.
- Tecnologie disponibili per sensori magnetici, induttivi, ottici e d'impatto.
- Tracciabilità 100%.
- Produzione su larga scala.

## Custom sensors

Active in the fields of automation and sensor technology for over thirty years, today Gimatic S.r.l. can provide a service for the design of customized sensors, using various technologies.

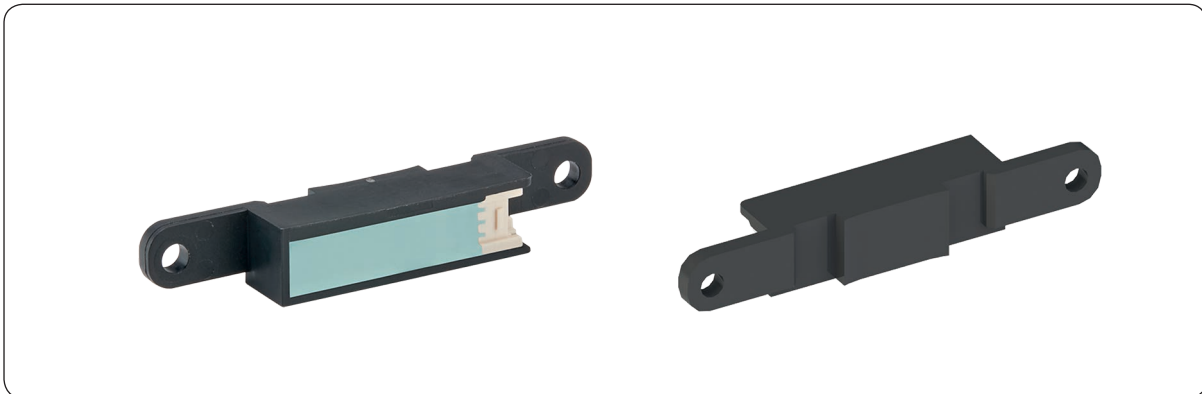
- Made to customer specifications.
- Magnetic, inductive, optical and shock/vibration technologies available.
- 100% traceability.
- Large scale production based.

## Esempio

Sensore di prossimità personalizzato, progettato secondo il principio induttivo per il rilevamento affidabile di presenza in una macchina per il caffè. Questo sensore supera i limiti dei sensori induttivi standard, assicurando il corretto funzionamento in condizioni ambientali difficili con ingombri ottimizzati.

## Example

Custom proximity sensor designed according to the inductive principle for a reliable presence detection in a coffee machine appliance. This sensor overcomes the limitations of standard inductive sensors, in that it guarantees correct operation under harsh environmental conditions, with optimized overall dimensions.



**Sensori automotive**

Gimatic S.r.l. fornisce soluzioni con sensori magnetici per applicazioni nel settore automotive (quali ad esempio i sensori di avvio e arresto ed i sensori angolo di sterzo). I sensori vengono programmati singolarmente per compensare le differenze di magnete sia nella dimensione che nella magnetizzazione. Le caratteristiche di uscita del segnale possono essere personalizzate nella forma (lineare, lineare a tratti, ecc.) e nel tipo (analogico, corrente, PWM, SENT, ecc.).

**Automotive sensors**

Gimatic S.r.l. provides magnetic sensor solutions for automotive applications (such as start and stop sensors and active power steering sensors). Sensors are programmed individually to compensate for magnet differences in both dimension and magnetization. The signal output characteristics can be customized in shape (linear, piecewise linear, etc.) and type (analog, current, PWM, SENT, etc.).

**Esempio**

Sensori Start&Stop realizzati in base alle specifiche per il settore Automotive.  
Basati su tecnologia magnetica, permettono il rilevamento progressivo della posizione.  
Tracciabilità del prodotto al 100% in quanto in fase di produzione ciascun sensore è programmato singolarmente in base all'applicazione cliente.

**Example**

Start&Stop sensors made according to the Automotive sector's specifications.  
Based on magnetic technology, this sensors allow the progressive detection of position.  
Product traceability is 100% guaranteed because each sensor is programmed individually according to the customer's application.

**START & STOP SENSOR**

					
Tensione di alimentazione Power Supply	+5 Vdc				
Tipo di uscita Output Type	PWM				
Output Range Output Range	0÷100%				
Output Freq. Output Freq.	1KHz				
Corsa Stroke	±60°				±30 mm
Linearity Err. Linearity Err.	±2%FS0				
IP rating IP rating	IP55				IP67

**START & STOP SENSOR**

	
Tensione di alimentazione Power Supply	+5 Vdc
Tipo di uscita Output Type	PWM
Output Range Output Range	0÷100%
Output Freq. Output Freq.	1KHz
Corsa Stroke	±30 mm
Linearity Err. Linearity Err.	±2%FS0
IP rating IP rating	IP67

**ACTIVE POWER STEERING**

	
Tensione di alimentazione Power Supply	+5 Vdc
Tipo di uscita Output Type	Analog
Output Range Output Range	0÷5V
Output Freq. Output Freq.	1KHz
Corsa Stroke	0÷8 mm
Linearity Err. Linearity Err.	±2%FS0
IP rating IP rating	IP67

09/2022

Unità Rotanti  
Rotary Units

Cambia Utensile  
Quick Changer

Profili e Staffe  
Profiles and Brackets

Pinze  
Grippers

Attuatori Lineari  
Linear Actuators

Sospensioni  
Suspensions

Taglierini  
Nippers

Kit-Robot  
Robot Kit

Accessori Opzionali  
Options

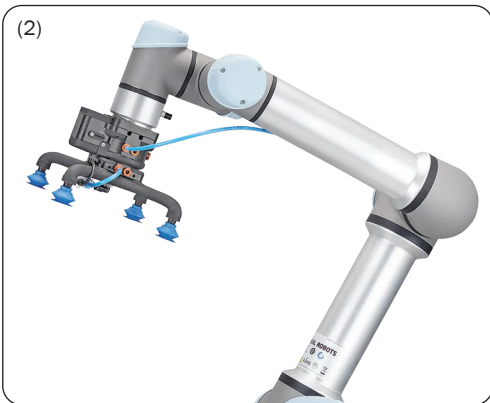
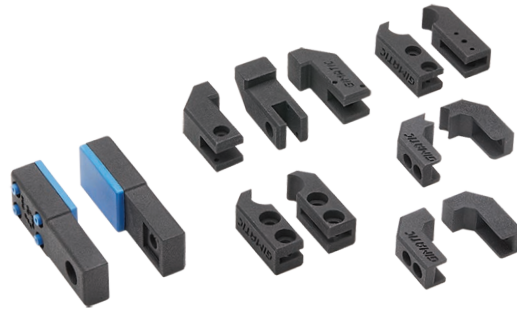
Sensori  
Sensors

**Servizio stampa 3D**

Servizio di prototipazione rapida di componenti su disegno cliente: dita di presa (1), posaggi, EOAT (2), etc. con HP Multi Jet Fusion (4) in nylon caricato vetro.

**3D printing service**

Rapid 3D prototyping service based on customer's design: gripping fingers (1), jigs, EOATs (2) etc. with our HP Multi Jet Fusion 3D printer (4) using glass-fibre-reinforced nylon.



Abbinato al servizio di stampa 3D è possibile richiedere la floccatura dei componenti e il montaggio di inserti metallici filettati (3).

On request, the 3D printing service can be combined with the installation of metal inserts (3).



Specifiche tecniche materiale Material technical specifications		Metodo Method
Materiale Material	PA12 Glass Beads	-
Densità del materiale Density of parts	1.3 g/cm <sup>3</sup>	ASTM D792
Resistenza a trazione, massimo carico Tensile strength, max load	30 MPa	ASTM D638
Temperatura di distorsione termica (@ 1.82 MPa) Heat deflection temperature (@ 1.82 MPa)	114 °C	ASTM D648 Test Method A

- Massime dimensioni stampabili 284x380x380 mm.
- Spedizione in 48 ore.

- Maximum printable dimensions 284x380x380 mm.
- Shipping in 48 hours.

Rivolgersi al rivenditore Gimatic locale per maggiori informazioni.

Ask your local Gimatic dealer for further information.

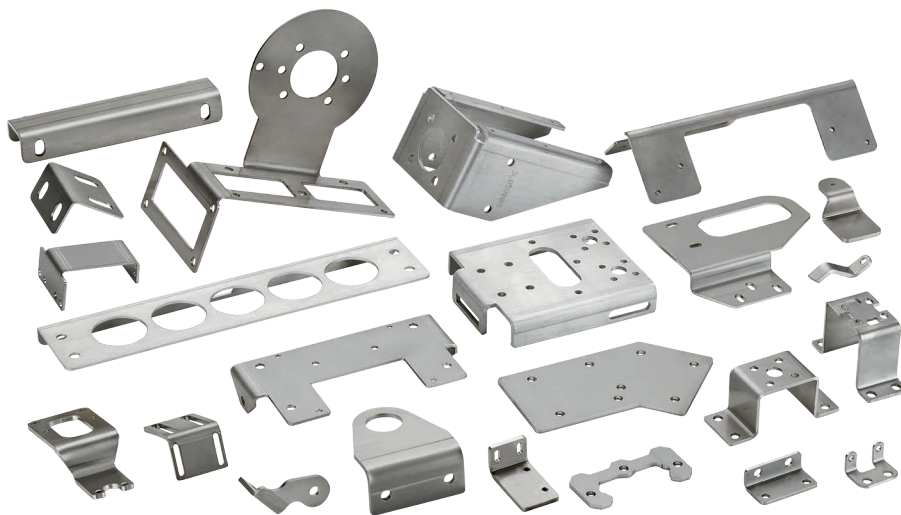
**3L****Servizio laser**

Servizio di taglio laser e piegatura su disegno cliente anche per singole parti (senza lotti minimi).

Tempo di realizzazione: 3 giorni lavorativi.

Materiali:

- Acciaio inox AISI 304 (spessore 1, 2 e 3 mm);
- Lega di Alluminio 5754 (spessore 2, 3, 4 e 5 mm).



Rivolgersi al rivenditore Gimatic locale per maggiori informazioni.

**3L****Laser service**

Laser cutting and bending service according to customer's drawing also for individual parts (without minimum quantities).

Lead time: 3 working days.

Materials:

- AISI 304 stainless steel (thickness: 1, 2 and 3 mm);
- Aluminium alloy 5754 (thickness 2, 3, 4 and 5 mm).

Ask your local Gimatic dealer for further information.

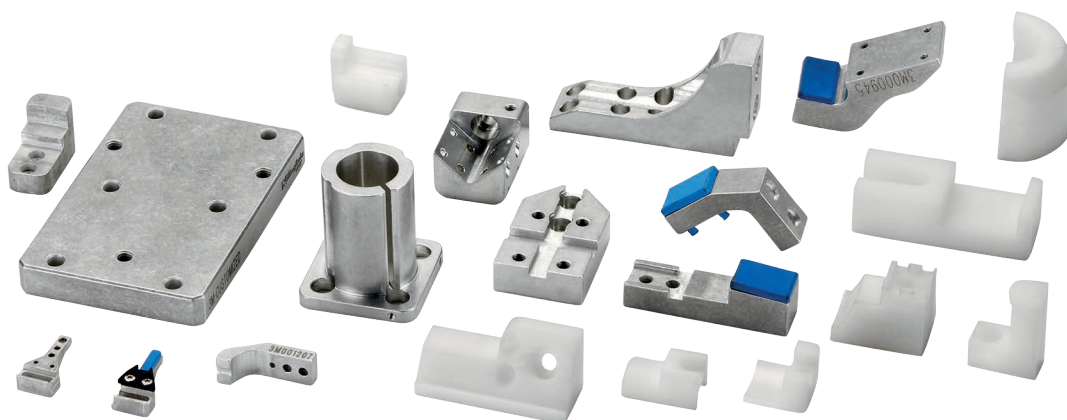
**3M****Servizio lavorazione metallica**

Servizio di lavorazione CNC a 5 assi su disegno cliente anche per singole parti.

Tempo di realizzazione: 5 giorni lavorativi.

Materiali:

- Resina acetalica POM;
- Lega di Alluminio serie 6000.



Rivolgersi al rivenditore Gimatic locale per maggiori informazioni.

**3M****Metal processing service**

5-axis CNC machining service according to customer's drawing, also for individual parts.

Lead time: 5 working days.

Materials:

- Acetal resin (POM);
- Aluminium alloy (6000 series).

Ask your local Gimatic dealer for further information.

## **Condizioni generali di fornitura (le Condizioni) praticate alla clientela (i Clienti) da GIMATIC (la Società)**

- 1) Ambito di applicazione delle presenti Condizioni generali di fornitura.
  - 1.1) Per Condizioni si intendono, ai fini della loro applicabilità, le seguenti condizioni generali di fornitura, mentre per Società si intende GIMATIC S.r.l., con sede in Via Enzo Ferrari 2/4, (25030) Roncadelle (BS) ITALIA, ed ogni altra società partecipata o controllata da GIMATIC S.r.l. e infine per Cliente, si intende il soggetto giuridico che entra in rapporto con la Società, per acquistarne prodotti, in caso di acquisto effettuato a favore di terzi, o comunque con consegna in luogo diverso dal destinatario indicato in fattura, entrambi i soggetti, destinatario dei prodotti e destinatario della fatturazione, saranno da considerarsi Clienti ai fini dell'applicazione delle presenti Condizioni.
  - 1.2) Le presenti Condizioni disciplinano il rapporto di fornitura di prodotti di volta in volta instaurato tra la Società e il Cliente, da qualificarsi, come per legge, quale contratto di compravendita di beni mobili da piazza a piazza, anche in difetto di accordo scritto; eventuali ulteriori o diverse condizioni, anche se riportate, o richiamate, in scritture o comunicazioni del Cliente, non potranno essere fatte valere nei confronti della Società, a meno che non siano state con essa espressamente concordate e risultino da apposito accordo scritto e sottoscritto da entrambe le parti.
  - 1.3) Le presenti Condizioni non si applicano qualora tra il Cliente e la Società ricorrano accordi specifici, validamente sottoscritti da entrambe le parti; la Società riconosce validità agli accordi sottoscritti per adesione, specie laddove formalmente richiesti come requisito all'idoneità di contrarre, limitatamente alle sole disposizioni conformi al diritto vigente in Italia, in materia di compravendita di cose mobili da piazza a piazza, se ed in quanto applicabili.
- 2) Formazione del contratto.
  - 2.1) In difetto di apposita previsione scritta ai sensi di quanto sopra indicato il contratto di fornitura si perfeziona presso la sede della Società con la consegna della merce al vettore; in difetto si deve ritenere il contratto come non concluso, senza che alla società possano essere richiesti addebiti per qualsiasi ragione, aspettativa, pretesa, o diritto.
  - 2.2) In caso di modifica, o mancata accettazione solo parziale, sarà cura della Società comunicare tempestivamente le intervenute variazioni in ordine a quantità, qualità, modalità e date di consegna, e sarà onere del Cliente indicare il proprio diverso avviso, compresa la facoltà di rinuncia, al più tardi il giorno successivo all'invio della comunicazione della Società, e, comunque entro l'eventuale ulteriore termine in essa stabilito; in difetto di ricezione di commenti o altre istruzioni da parte del Cliente le modifiche all'ordine si riterranno pacificamente accettate.
- 3) Luogo e data di consegna.
  - 3.1) La Società si libera di ogni e qualsiasi obbligo di adempimento mediante consegna dei prodotti al vettore presso la sede del proprio stabilimento sito in Via Enzo Ferrari 2/4, (25030) Roncadelle (BS) ITALIA, di conseguenza è escluso qualsiasi tipo di dazio o altro onere accessorio, anche se specificatamente riconducibile al trasporto, all'esportazione, all'imbarco o a qualsiasi altra modalità di consegna al Cliente.
  - 3.2) Analogamente non possono considerarsi compresi nel prezzo l'eventuale progetto del sistema, l'installazione e/o il collaudo di apparecchiature, corsi di addestramento, assistenza all'installazione e ogni qualsiasi altro onere non espressamente e formalmente concordato, che, comunque, potranno essere quotati separatamente; i prodotti saranno consegnati al vettore nel loro imballaggio originale, eventuali ulteriori richieste o esigenze del Cliente, se concordate e accettate, saranno poste a suo carico direttamente in fattura.
- 4) Dati tecnici, disegni, documenti e obblighi di riservatezza, origine delle merci.
  - 4.1) I dati riportati nel catalogo ufficiale della Società sono gli unici da intendersi come vincolanti per la valutazione della conformità del prodotto; la Società si riserva la facoltà di apportare ai propri prodotti, in qualunque momento, senza preavviso, modifiche suggerite dal continuo miglioramento tecnico e costruttivo; le modifiche risulteranno dalla scheda prodotto verranno periodicamente pubblicate sul catalogo ufficiale della Società.

## **General conditions of sale (the Conditions) applied to its customers (the Customers) by GIMATIC (the Company)**

- 1) Context of application of these General Conditions of Sale.
  - 1.1) For the purposes of their applicability, the Conditions are the following general conditions of sale, while the Company is GIMATIC S.r.l., with registered office at Via Enzo Ferrari 2/4, (25030) Roncadelle (Brescia) ITALY, and any other investee company or subsidiary company of GIMATIC S.r.l., while the Customer is the legal entity which establishes a business relationship with the Company for the purchase of its products. In the case of purchases made on behalf of third parties, or in any case with delivery to locations other than the consignee specified in the invoice, both parties, the consignee of the products and the billed party, shall be considered Customers for the purposes of the application of these Conditions.
  - 1.2) These Conditions govern the supplier-customer relationship established on each occasion between the Company and the Customer, which may be legally defined as a contract for the distance sale of movable goods, even in the absence of a written agreement; any additional or other conditions, even if referred to or included in the Customer's documents or communications, shall not be valid in relation to the Company unless specifically agreed with the same and confirmed by a written agreement signed by both parties.
  - 1.3) These Conditions shall not apply if there are specific agreements, validly signed by both parties, between the Customer and the Company; the Company also accepts the validity of agreements signed for acceptance, especially where they are formally required as authorisation to finalise the contract, with regard only to provisions which conform to the law in force in Italy with regard to the distance sale of movable goods, if and to the extent that they are applicable.
- 2) Formation of the contract.
  - 2.1) In the absence of specific written provisions as referred to above, the sales contract shall be considered finalised at the Company's premises at the time of consignment of the goods to the carrier; failing this, the contract shall be considered not finalised, without any liability on the part of the Company for any reason or with regard to any expectation, claim or right.
  - 2.2) In the event of changes or even partial non-acceptance, the Company shall provide rapid notification of the changes made with regard to quantity, quality and delivery method and dates, and the Customer shall state its disagreement, or exercise the right to withdraw, by no later than the day after the date of dispatch of the Company's notification, or by any later term stated therein; in the event that no comments or other instructions are received from the Customer, the changes to the order shall be considered tacitly accepted.
- 3) Place and date of delivery.
  - 3.1) The Company fulfils each and every obligation through the consignment of the products to the carrier at its plant located at Via Enzo Ferrari 2/4, (25030) Roncadelle (Brescia) ITALY; it shall therefore not be liable for any kind of customs duty or any other related charges, even if specifically linked to transport, exportation, embarkation or any other method of delivery to the Customer.
  - 3.2) Similarly, the price shall not include any system design, or installation and/or testing of equipment, training courses, assistance for installation and any other cost not specifically and formally agreed which, however, may be quoted for separately; the products shall be consigned to the carrier in their original packaging, and any other requirements or demands on the part of the Customer, if agreed and accepted, shall be charged to the latter directly in the invoice.
- 4) Technical data, drawings, documents and non-disclosure obligation, origin of the goods.
  - 4.1) The data in the Company's official catalogue are the only binding data for assessment of the product's conformity; the Company reserves the right to make changes to its products in response to continuous improvements in technology and construction, at any time and without notice; the changes shall be recorded in the product datasheet published periodically in the Company's official catalogue.

- 4.2) Anche qualora i prodotti non siano oggetto di brevetto da parte della Società, la loro configurazione e le loro caratteristiche peculiari sono parte integrante del patrimonio immateriale della Società e non possono essere copiati, replicati, adattati o, comunque utilizzati, nemmeno in modalità "dual use" o con "reverse engineering".
- 4.3) Eventuali peculiarità, modi d'uso o altre specifiche tecniche contenute nella documentazione trasmessa al Cliente, se non espressamente pubblicate sul sito ufficiale della Società, sono da considerarsi soggette alla tutela prevista dalle leggi vigenti per il know-how e il segreto industriale.
- 4.4) Salvo diversa esplicita indicazione i prodotti finiti della Società si presuppongono di origine italiana; resta inteso che la richiesta di certificato d'origine comporta, comunque, l'attesa dei tempi necessari ad un'attenta disamina del caso, con il coinvolgimento di tutti i soggetti coinvolti nella filiera specifica del prodotto, in specie qualora trattasi di ricambi, o materiale di consumo, accessori rispetto al prodotto finito.
- 5) Pagamenti e riserva di proprietà.
- 5.1) Salvo diverso accordo i pagamenti devono essere effettuati dal Cliente entro i termini indicati in fattura presso l'istituto di credito pattuito; eventuali contestazioni che dovessero insorgere tra le parti non dispensano il Cliente dall'obbligo di osservare le condizioni e i termini di pagamento.
- 5.2) In caso di ritardato pagamento il Cliente sarà tenuto al pagamento degli interessi moratori che verranno conteggiati di pieno diritto e senza necessità di costituzione in mora, fino alla misura massima prevista dalla legge, con anatocismo bancario come praticato dall'Istituto di credito pattuito; la Società si riserva comunque la facoltà di chiedere il risarcimento del maggior danno, e di risolvere, di diritto, ogni rapporto contrattuale.
- 5.3) I prodotti restano di proprietà della Società fino a che il Cliente non abbia pagato integralmente il prezzo pattuito alla Società, o alla partecipata, tramite la quale si è instaurato il rapporto di fornitura.
- 5.4) Nel caso il Cliente venga meno all'obbligo di pagamento, la Società si riserva il diritto di richiedere la restituzione dei prodotti già consegnati al Cliente, il quale, perderà, con effetto retroattivo il diritto di acquisirne la proprietà.
- 6) Cessazione del rapporto ed eventuale rifiuto di contrarre.
- 6.1) Nel caso in cui il Cliente non sia in regola con i pagamenti scaduti, diminuisca le garanzie che aveva dato, o non fornisca le garanzie che aveva promesso, la Società si riserva la facoltà di sospendere il rapporto di fornitura senza necessità di preavviso.
- 6.2) Salvo diversa ed espressa previsione scritta e validamente sottoscritta da entrambe le parti ogni e qualsiasi rapporto di fornitura, anche derivante da accordi verbali, non sottoscritti, o comunque, risultante da fatti concludenti, si intenderà risolto di diritto senza alcuna necessità di comunicazione qualora il Cliente venga posto in liquidazione o sia assoggettato a una qualsiasi procedura concorsuale.
- 6.3) In ogni caso la Società si riserva il diritto di rifiutare di adempiere agli ordini del Cliente, anche se già accettati, qualora il Cliente i) abbia omesso i pagamenti dovuti alla Società, a una sua partecipata, o a un suo distributore; ii) sia in lite, o comunque avanzi pretese o contestazioni nei confronti della alla Società, di una sua partecipata, o di un distributore; iii) non osservi gli obblighi di riservatezza previsti dal precedente §4;
- 7) Legge Applicabile e Foro competente.
- 7.1) I rapporti di fornitura tra le parti, compresi quelli di forniture rese all'estero, sono regolati dalla legge italiana; per qualsiasi controversia inerente all'esecuzione, interpretazione validità, risoluzione, cessazione di rapporti, e/o contratti, di fornitura intervenuti tra le parti è esclusivamente competente il Foro di Brescia.
- 4.2) *Even if products are not patented by the Company, their distinctive configuration and characteristics form an integral part of the Company's intangible assets and may not be copied, replicated, adapted or used in any way, even in dual use mode or by reverse engineering.*
- 4.3) *Unless specifically published on the Company's official site, any specific features, procedures for use or other technical specifications in the documentation provided to the Customer shall be considered protected by the safeguards envisaged by current legislation for know-how and intellectual property.*
- 4.4) *Unless otherwise stated, the Company's finished products are assumed to be of Italian origin; however, it is understood that any requests for a certificate of origin shall imply a delay of the times required and a careful analysis on a case-by-case basis, involving all those included in the product's specific supply chain, especially in the case of spare parts, consumables or accessories to the finished product.*
- 5) *Payments and retention of ownership.*
- 5.1) *Unless otherwise agreed, Customers shall make payments within the terms stated in the invoice, to the agreed bank; any disputes arising between the parties shall not relieve the Customer of the obligation to comply with the payment conditions and terms.*
- 5.2) *In the event of late payment, the Customer shall be obliged to pay interest on the arrears, to be calculated as of right and with no need for a formal notice, up to the maximum amount permitted by the law, with the rate of interest applied by the agreed bank; however, the company reserves the right to claim any additional damages and to terminate all contract relationships as of right.*
- 5.3) *The Company shall retain ownership of the products until the Customer has made full payment of the agreed price to the Company, or to the investee company through which the sale was made.*
- 5.4) *In the event that the Customer defaults on its payment obligation, the Company reserves the right to demand return of the products already delivered to the Customer, which shall forfeit the right to acquire ownership of the same, with retroactive effect.*
- 6) *Termination of relationship and refusal to trade.*
- 6.1) *In the event that the Customer is in arrears with the payments due, reduces the guarantees it had provided, or fails to provide the guarantees it had promised, the Company reserves the right to suspend the sales relationship without notice.*
- 6.2) *Unless otherwise specifically agreed through a written document validly signed by both parties, all supply relationships, including those arising from verbal or unsigned agreements, or any other form of accord, shall be considered terminated as of right, with no need for formal notification, if the Customer is put into liquidation or is the subject of any form of bankruptcy proceedings.*
- 6.3) *In all cases, the Company reserves the right to refuse to fulfil the Customer's orders, even those already accepted, if the Customer i) has failed to make payments due to the Company or one of its investee companies or distributors; ii) is in dispute with or has lodged any claims or complaints against the Company or one of its investee companies or distributors; iii) breaches the non-disclosure obligations contained in point 4 above.*
- 7) *Applicable Law and Legal Jurisdiction.*
- 7.1) *The sales relationships between the parties, including those concerning sales with delivery abroad, are governed by Italian law; Brescia Law Court shall have sole jurisdiction over any dispute relating to the execution, interpretation, validity, termination, and cessation of trading and/or contract relations between the parties.*



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EQC100-K80	110
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EQC20-B	108
EQC20-K1	111
EQC20-K50	110
EQC20-K63	110
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G.N10LAB152	539
G.N10LAE269	539
G.N10LAJ	538
G.N10LAP	538
G.N10LPF	538
G.N20AB360	539
G.N20AE	539
G.N20AJ	538
G.N20AJL	538
G.N20ALLL	539
G.N20AP	538
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G.N30AA114	539
G.N30AE	539
G.N30AJ	538
G.N30AP	538
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G.N5AJ	538	i33K	192	KIT-TM-J	NEW	550	MFD63-K	422
G.N5AP	538	i34K	193	KIT-TM-QC75	NEW	552	MFD63...CL	418
G.N5PF	538	i37K	194	KIT-TM-V	NEW	551	MFD63...HL	418
GM-0010	319	IF08E02	417	KIT-UR-EQC20		547	MFI-003	120
GM-0011	319	IF08S01	417	KIT-UR-G		544	MFI-006	120
GM-0012	319	IF10E02	417	KIT-UR-J		545	MFI-009	120
GM-0025	320	IF10S01	417	KIT-UR-QC		548	MFI-016	120
GM-0026	320	IF12E02U	417	KIT-UR-QC75		549	MFI-020	120
GM-0027	320	IF12S01U	417	KIT-UR-V		546	MFI-022	120
GM-0050	321	IF14E02U	417	KIT3-0FP20N		440	MFI-025	120
GM-0051	321	IF14S01U	417	KIT3-0FP20S		440	MFI-027	120
GM-0052	321	IF16E02U	417	KIT3-0FP20V		440	MFI-029	120
GM-0075	322	IF16S01U	417	<b>L</b>			MFI-043	120
GM-0076	322	IF18E02	417	LOQC		70	MFI-045	120
GM-0077	322	IF18S01	417	<b>M</b>			MFI-050	120
GM-0100	323	IF20E02	417	MAG-20		444	MFI-055	120
GM-0101	323	IF20S01	417	MAG-35	NEW	444	MFI-148	120
GM-0102	323	IF22E02	417	MAQC		80	MFI-177	120
GM-0103	323	IF22S01	417	MBQC		80	MFI-178	120
GN-05	536	IF27E02	417	MCD124		203	MFI-477	121
GN-05S	536	IF27S01	417	MF-20-1000		119	MFI-489	121
GN-10	536	IF33E02	417	MF-20-2000		119	MFI-490	121
GN-10S	536	IF33S01	417	MF-30-1000		119	MFI-523	120
GN-20	536	IF41E02	417	MF-30-2000		119	MFI-555	NEW 120
GN-20S	536	IF41S01	417	MFC10		417	MFI-A01	142
GN-240	528	IF47E02	417	MFC12		417	MFI-A02	142
GN-263	528	IF47S01	417	MFC14		417	MFI-A03	142
GN-30	536	IF51E02	417	MFC18		417	MFI-A04	143
GN-30S	536	IF51S01	417	MFC22		417	MFI-A05	143
GN-340-18	528	IF63E02	417	MFC27		417	MFI-A06	143
GN-363-18	528	IF63S01	417	MFC33		417	MFI-A07	143
GN-50	536	IFU04N03RT	423	MFC41		417	MFI-A08	143
GN-50S	536	IFU04S01RT	423	MFC51		417	MFI-A09	147
GNB-2045	526	IFU05S01RT	423	MFC63		417	MFI-A10	147
GNS-05	531	IFU06N03RT	423	MFD08...CL		418	MFI-A101	141
GNS-05-NC	532	IFU06S01RT	423	MFD08...HL		418	MFI-A102	124
GNS-05-NO	533	IFU07N03RT	423	MFD10...CL		418	MFI-A103	124
GNS-10	531	IFU07S01RT	423	MFD10...HL		418	MFI-A104	148
GNS-10-NC	532	IOL-MASTER	681	MFD12...CL		418	MFI-A105	148
GNS-10-NO	533	IOLBOX	678	MFD12...HL		418	MFI-A106	148
GNS-20	531	ITSC-164	48	MFD14...CL		418	MFI-A107	148
GNS-20-NC	532	ITSC-164A	48	MFD14...HL		418	MFI-A108	148
GNS-20-NO	533	ITSC-166	48	MFD16...CL		418	MFI-A109	148
GS-10	292	ITSC-166A	48	MFD16...HL		418	MFI-A11	134
GS-16	292	ITSC-168	48	MFD18...CL		418	MFI-A110	148
GS-20	292	ITSC-168A	48	MFD18...HL		418	MFI-A111	148
GS-25	292	ITSC-454	48	MFD20...CL		418	MFI-A112	148
GS-32	292	ITSC-454A	48	MFD20...HL		418	MFI-A113	148
GS-40	292	ITSC-456	48	MFD22...CL		418	MFI-A116	149
GW-10	248	ITSC-456A	48	MFD22...HL		418	MFI-A117	149
GW-16	248	ITSC-458	48	MFD27-K		422	MFI-A118	149
GW-20	248	<b>J</b>		MFD27...CL		418	MFI-A119	149
GW-25	248	JGN-10N	541	MFD27...HL		418	MFI-A12	134
GX-10S	274	JGW-10S-A50	541	MFD33-K		422	MFI-A120	149
GX-16S	274	JGW-10S-A52	541	MFD33...CL		418	MFI-A121	149
GX-20S	274	JGW-20S-A50	541	MFD33...HL		418	MFI-A122	149
GX-25S	274	JGW-20S-A52	541	MFD41-K		422	MFI-A123	149
<b>H</b>		JP-25	350	MFD41...CL		418	MFI-A124	149
HS-2012	352	JP-32	350	MFD41...HL		418	MFI-A125	149
HS-2518	352	JP-45	350	MFD47...CL		418	MFI-A13	134
<b>I</b>		<b>K</b>		MFD47...HL		418	MFI-A130	98
i30K	192	KIT-GMP-G	366	MFD51-K		422	MFI-A131	100
i31K	192	KIT-GMPLM3240	378	MFD51...CL		418	MFI-A132	100
i32K	192	KIT-TM-EQC20	NEW 553	MFD51...HL		418	MFI-A133	98

MFI-A134	100	MFI-A214	164	MFI-A321	180	MFI-A55	153
MFI-A135	98	MFI-A215	164	MFI-A322	180	MFI-A56	153
MFI-A140	126	MFI-A216	164	MFI-A323	180	MFI-A59	165
MFI-A141	126	MFI-A217	138	MFI-A324	180	MFI-A60	165
MFI-A142	167	MFI-A218	138	MFI-A325	181	MFI-A61	165
MFI-A143	167	MFI-A219	139	MFI-A326	181	MFI-A62	165
MFI-A144	167	MFI-A220	139	MFI-A327	181	MFI-A63	165
MFI-A145	167	MFI-A221	131	MFI-A33	134	MFI-A64	165
MFI-A146	167	MFI-A222	132	MFI-A332	158	MFI-A65	165
MFI-A147	167	MFI-A224	132	MFI-A34	147	MFI-A66	161
MFI-A148	167	MFI-A225	133	MFI-A343	96	MFI-A67	161
MFI-A149	167	MFI-A226	127	MFI-A344	97	MFI-A68	159
MFI-A150	169	MFI-A227	127	MFI-A344-H	102	MFI-A69	159
MFI-A151	169	MFI-A228	127	MFI-A348	145	MFI-A70	160
MFI-A152	169	MFI-A229	130	MFI-A349	145	MFI-A71	154
MFI-A153	169	MFI-A230	130	MFI-A35	147	MFI-A72	154
MFI-A154	169	MFI-A231	130	MFI-A35-H	147	MFI-A73	154
MFI-A155	169	MFI-A232	128	MFI-A350	145	MFI-A74	154
MFI-A156	137	MFI-A233	128	MFI-A353	129	MFI-A75	154
MFI-A157	157	MFI-A234	128	MFI-A356	135	MFI-A76	154
MFI-A158	156	MFI-A235	173	MFI-A36	147	MFI-A77	156
MFI-A159	156	MFI-A236	173	MFI-A36-H	147	MFI-A78	156
MFI-A16	136	MFI-A237	173	MFI-A360	182	MFI-A79	156
MFI-A160	156	MFI-A238	173	MFI-A361	155	MFI-A93	157
MFI-A161	156	MFI-A239	174	MFI-A362	155	MFI-A94	157
MFI-A162	156	MFI-A244	136	MFI-A363	101	MFI-A95	157
MFI-A163	156	MFI-A250	146	MFI-A364	155	MFM-A10-20	189
MFI-A164	156	MFI-A251	146	MFI-A365	155	MFM-A10-30	189
MFI-A165	156	MFI-A252	146	MFI-A37	137	MFM-A10-48	189
MFI-A165-H	156	MFI-A253	146	MFI-A372	123	MFM-A10-48P	189
MFI-A166	156	MFI-A254	140	MFI-A374-A	574	MFM-A105	189
MFI-A166-H	156	MFI-A255	140	MFI-A374-B	574	MFM-A106	189
MFI-A167	165	MFI-A256	168	MFI-A379	162	MFM-A107	196
MFI-A168	165	MFI-A257	168	MFI-A38	137	MFM-A108	196
MFI-A169	165	MFI-A258	168	MFI-A380	162	MFM-A109	196
MFI-A17	136	MFI-A259	168	MFI-A381	162	MFM-A11	188
MFI-A170	154	MFI-A260	168	MFI-A384	162	MFM-A110	188
MFI-A171	154	MFI-A261	168	MFI-A39	137	MFM-A110-H	188
MFI-A172	154	MFI-A262	168	MFI-A40	98	MFM-A111	188
MFI-A175	134	MFI-A263	168	MFI-A41	99	MFM-A112	188
MFI-A176	170	MFI-A264	168	MFI-A41-H	103	MFM-A114	189
MFI-A18	136	MFI-A265	134	MFI-A42	101	MFM-A115	189
MFI-A188	171	MFI-A266	148	MFI-A43	101	MFM-A116	189
MFI-A189	171	MFI-A267	148	MFI-A43-H	104	MFM-A117	197
MFI-A19	141	MFI-A269	148	MFI-A46	150	MFM-A118	197
MFI-A191	172	MFI-A270	142	MFI-A47	150	MFM-A119	197
MFI-A192	172	MFI-A277	125	MFI-A48	151	MFM-A120	189
MFI-A195	166	MFI-A29	134	MFI-A49	151	MFM-A122	188
MFI-A196	166	MFI-A29-H	134	MFI-A494	176	MFM-A17	190
MFI-A197	166	MFI-A290	168	MFI-A495	176	MFM-A18	190
MFI-A198	166	MFI-A291	168	MFI-A496	176	MFM-A30	187
MFI-A199	166	MFI-A292	168	MFI-A497	181	MFM-A36	187
MFI-A20	141	MFI-A30	134	MFI-A499	181	MFM-A45	187
MFI-A200	166	MFI-A31	134	MFI-A50	151	MFM-A55-38	189
MFI-A201	141	MFI-A310	175	MFI-A502	178	MFM-A55-48	189
MFI-A204	142	MFI-A313	122	MFI-A503	178	MFM-A56	187
MFI-A205	144	MFI-A314	177	MFI-A504	183	MFM-A57	191
MFI-A206	144	MFI-A315	178	MFI-A506	NEW 169	MFM-A96	189
MFI-A207	144	MFI-A316	178	MFI-A507	NEW 167	MFP-A01	184
MFI-A209	144	MFI-A317	178	MFI-A508	NEW 150	MFP-A02	186
MFI-A210	148	MFI-A318	179	MFI-A51	152	MFP-A04	184
MFI-A211	148	MFI-A319	179	MFI-A52	152	MFP-A05	185
MFI-A212	163	MFI-A32	134	MFI-A53	152	MFP-A06	185
MFI-A213	163	MFI-A320	179	MFI-A54	153	MFP-A07	185

MFP-A08	185	MGX2508-NO	311	OFB40-A30	452	PAQC	80
MFP-A09	186	MGX3210	308	OFB40-A50	452	PB-0002	214
MFT-A001	199	MGX3210-NC	311	OFB40-B30	452	PB-0007-S3	214
MFT-A002	199	MGX3210-NO	311	OFB40-B50	452	PB-0008-S3	214
MFT-A003	199	MGX3214	308	OFB40-C30	452	PB-0013	214
MFT-A004	199	MGX3214-NC	311	OFB40-C50	452	PB-0013-S2	214
MFT-A006	200	MGX3214-NO	311	OFC-A001	458	PB-0014	214
MFT-A007	200	MGX4015	308	OFC-A002	458	PB-0015	214
MFT-A008	200	MGX4015-NC	311	OFC-A003	458	PB-0017	214
MFT-A009	201	MGX4015-NO	311	OFC-A004	458	PB-0140	214
MFT-A010	201	MGX5020	308	OFC-A005	459	PB-0150	214
MFU08...CL	419	MGX5020-NC	311	OFC-A006	459	PB-0160	214
MFU08...HL	419	MGX5020-NO	311	OFC-A007	459	PB-0170	214
MFU10...CL	419	MGX6030	308	OFC14-10	456	PB-0180	214
MFU10...HL	419	MGX6030-NC	311	OFC20-20	456	PB-0180-S2	214
MFU12...CL	419	MGX6030-NO	311	OFC30-30	456	PB-0180-SV	214
MFU12...HL	419	MLD-G001	677	OFC5	459	PB-0181	214
MFU14...CL	419	MLS-CR-G	625	OFD20	424	PB-0182	214
MFU14...HL	419	MPBM1640	265	OFG3012	425	PB-0187	214
MFU16...CL	419	MPBM2540	265	OFL2010	450	PB-0187-S2	214
MFU16...HL	419	MPBM3240	265	OFL3015	450	PB-0187-SV	214
MFU18...CL	419	MPLF1630	383	OFL3030	450	PBQC	80
MFU18...HL	419	MPLF2550	383	OFN20-90	28	PE-1610	327
MFU20...CL	419	MPLF3270	383	OFN20-90SD	28	PE-16150	327
MFU20...HL	419	MPLM1630	374	OFN30-90	28	PE-16200	327
MFU22...CL	419	MPLM2535	374	OFN30-90SD	28	PE-1625	327
MFU22...HL	419	MPLM3240	374	OFFP14A-25	438	PE-1640	327
MFU27-K	422	MPPM1606	363	OFFP14P-25	438	PE-1680	327
MFU27...CL	419	MPPM2508	363	OFFP20N-20	438	PE-25100	328
MFU27...HL	419	MPPM3210	363	OFFP20P-20	438	PE-2520	328
MFU33-K	422	MPS24-1-S-NPN	573	OFFP20S-20	438	PE-25200	328
MFU33...CL	419	MPS24-1-S-PNP	573	OFFP20V-20	438	PE-2540	328
MFU33...HL	419	MPS24-13	573	OFFP21A-20	438	PE-2560	328
MFU41-K	422	MPS24-8.4	573	OFFP21N-20	438	PE-4520	329
MFU41...CL	419	MPTM1606	412	OFFP21P-20	438	PE-45200	329
MFU41...HL	419	MPTM2508	412	OFFP21S-20	438	PE-4540	329
MFU47...CL	419	MPTM3210	412	OFFP21V-20	438	PE-4560	329
MFU47...HL	419	MPXM1612	370	OFR14-95	427	PE-4580	329
MFU51-K	422	MPXM2516	370	OFR14-95G	427	PLA2525	202
MFU51...CL	419	MPXM3220	370	OFR14-95M	427	PMAQC	80
MFU51...HL	419	MRE16180	43	OFR20-95	427	PMBQC	80
MFU63-K	422	MRE25180	43	OFR20-95-43	440	PN010-2	254
MFU63...CL	419	MRE32180	43	OFR20-95G	427	PN010-3	254
MG-0010	313	<b>O</b>		OFR20-95M	427	PN016-2	254
MG-0011	313	OF10L60	195	OFR20-95S	427	PN016-3	254
MG-0012	313	OF14G	428	OFR20-95SS	427	PN025-2	254
MG-0025	314	OF14H	428	OFR20-95SSM	427	PN025-3	254
MG-0026	314	OF14L80	195	OFR30-95	427	PN040-2	254
MG-0027	314	OF14V <b>NEW</b>	428	OFR30-95-42	440	PN040-3	254
MG-0050	315	OF20G	428	OFR30-95G	427	PQ1608	304
MG-0051	315	OF20H	428	OFR30-95M	427	PQ2012	304
MG-0052	315	OF20L100	195	OFR30-95S	427	PQ2516	304
MG-0075	316	OF20L250	195	OFR30-95SS	427	PQ3015	304
MG-0076	316	OF20V <b>NEW</b>	428	OFR30-95SSM	427	PQ3523	304
MG-0077	316	OF30G	428	OFS14-90	426	PQ4533	304
MG-0100	317	OF30H	428	OFS20-90	426	PQ5047	304
MG-0101	317	OF30L120	195	OFS20-90S	426	PQ6063	304
MG-0102	317	OF30L250	195	OFS30-90	426	PRO-SN3M215-G	599
MG-0103	317	OF30V <b>NEW</b>	428	OFS30-90S	426	PRO-SN3M215HS-G	601
MGX2005	308	OFA14-35	426	OFX14-06	442	PRO-SN3N215-G	599
MGX2005-NC	311	OFA20-35	426	OFX20-10	442	PRO-SN3N215HS-G	601
MGX2005-NO	311	OFA20-35S	426	OFX30-15	442	PRO-SN4M225-G	599
MGX2508	308	OFA30-35	426	OFX50-20	442	PRO-SN4M225HS-G	601
MGX2508-NC	311	OFA30-35S	426	<b>P</b>		PRO-SN4N225-G	599

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