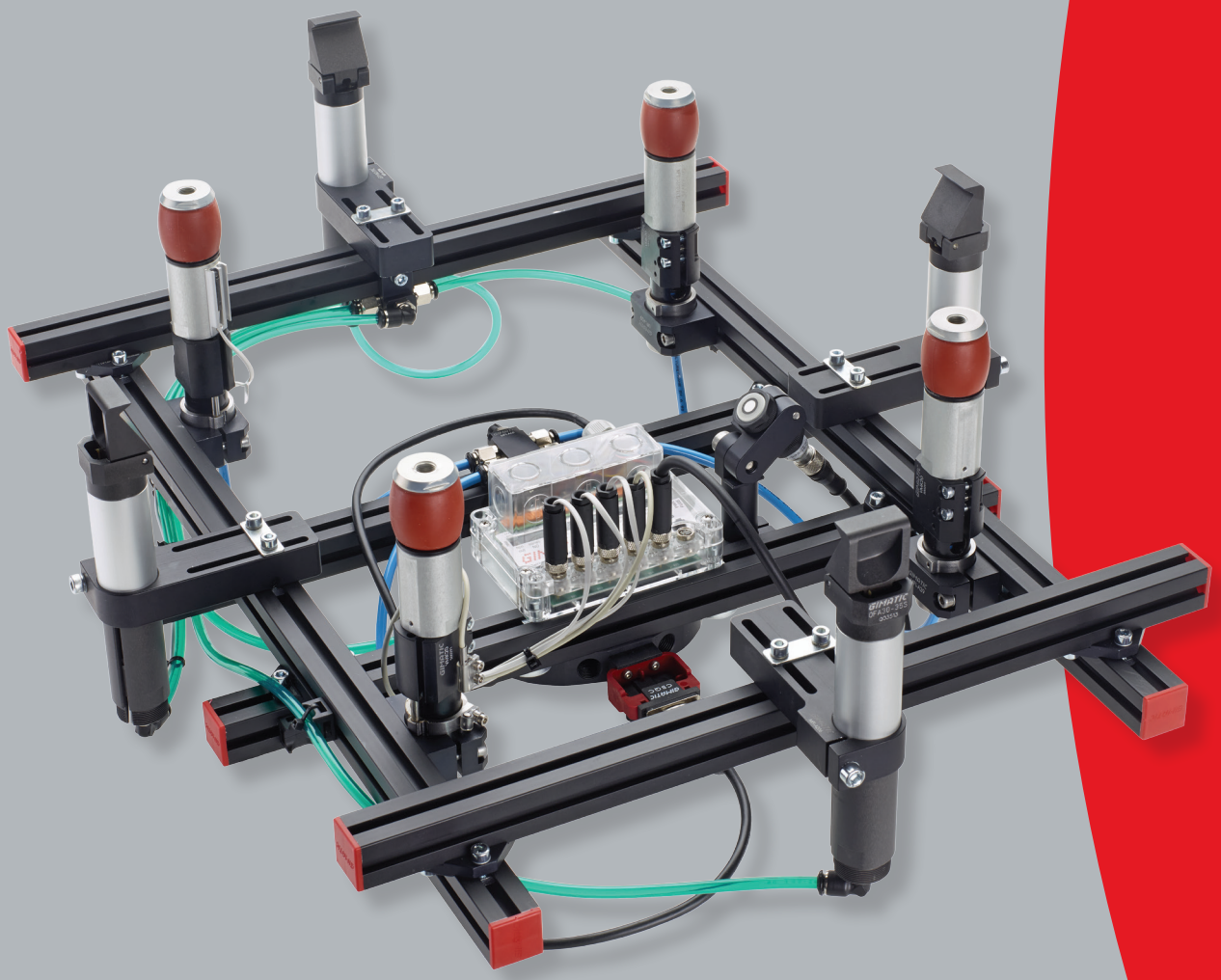
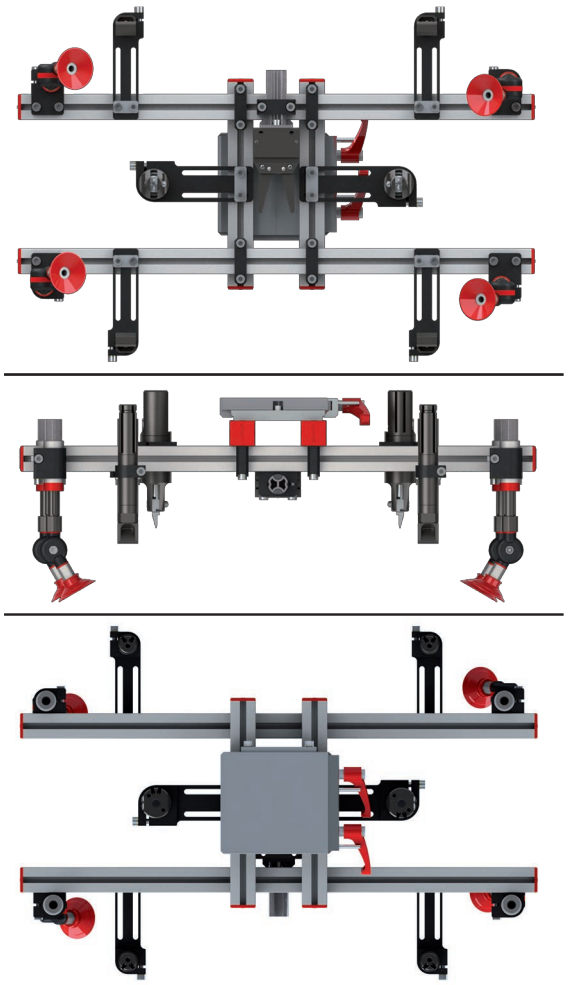
Gimatic Plastics



End of Arm Tooling (EOAT)

IT-EN 2015



End Of Arm Tooling

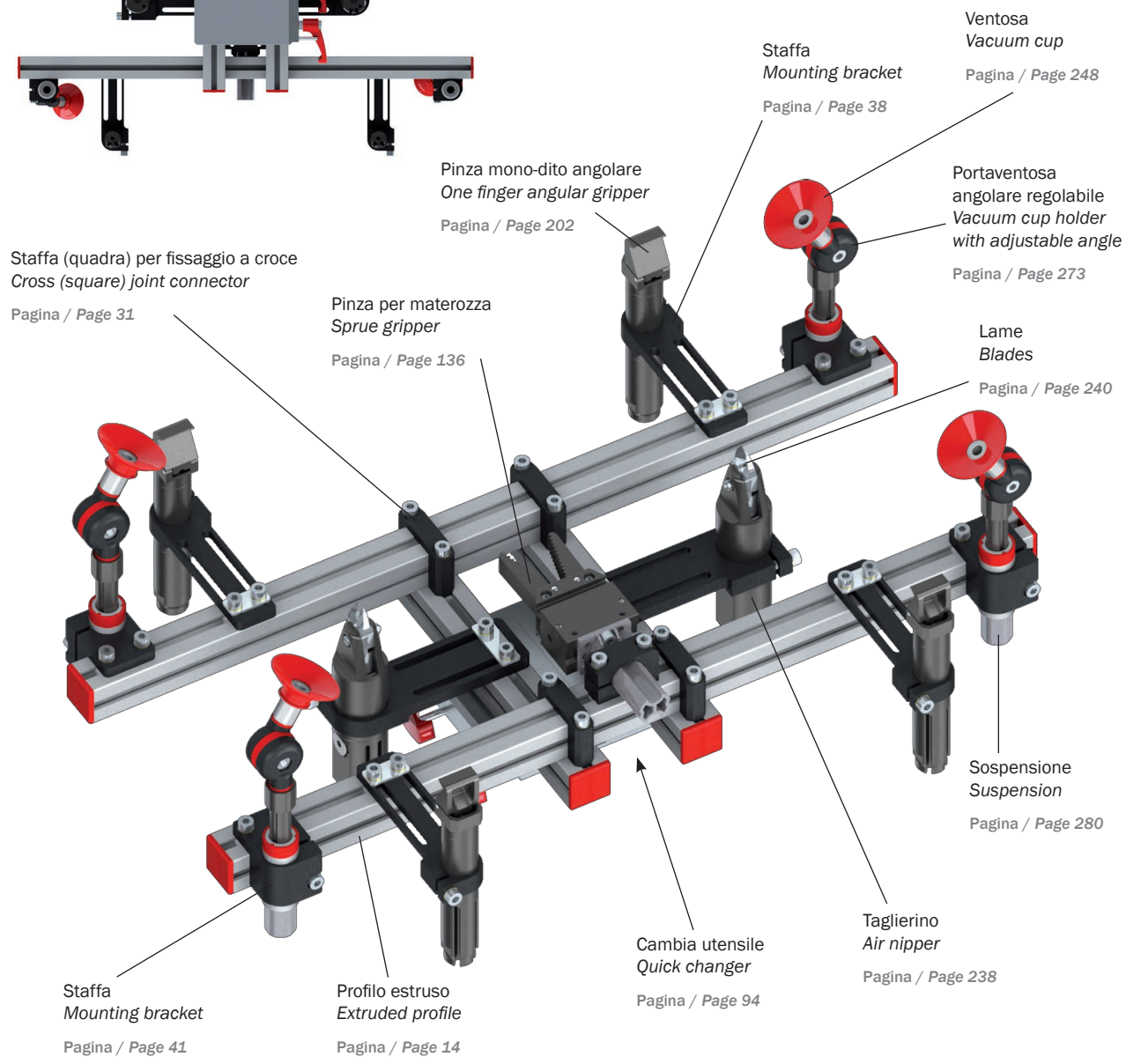
Che cosa è un EOAT?
E' il telaio (con tutti i componenti necessari) montato su un robot per lo scarico della pressa di stampaggio.
Le sue funzioni sono:

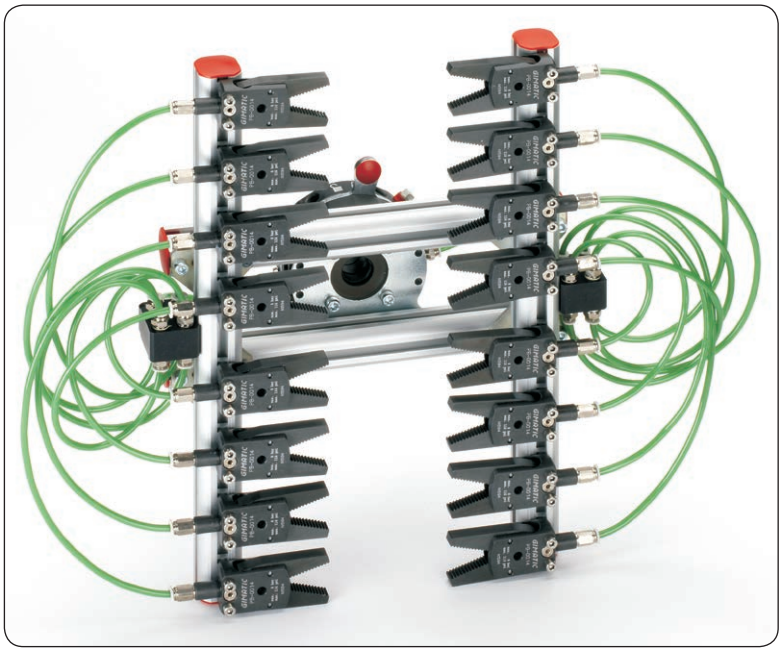
- estrarre il pezzo dallo stampo;
- afferrarlo saldamente;
- separarlo dalle materozze;
- afferrare le materozze dopo il taglio;
- scaricare le materozze nel riciclatore;
- depositare il pezzo smaterozzato su pallet o nastro trasportatore.

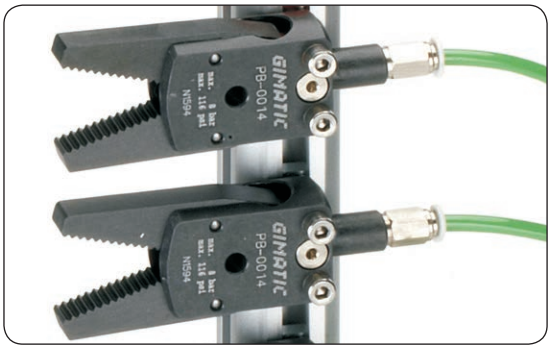
End Of Arm Tooling

What is the EAOT?
It is the frame (with all necessary tools) mounted on the robot used to unload the injection moulding machine.
Its jobs are:

- *to take the moulded part out of the mould;*
- *to grip it firmly;*
- *to separate the moulded part from the sprue;*
- *to grip the sprue after cutting;*
- *to drop the sprue in the recycling machine;*
- *to unload the moulded part onto a pallet or a conveyor.*

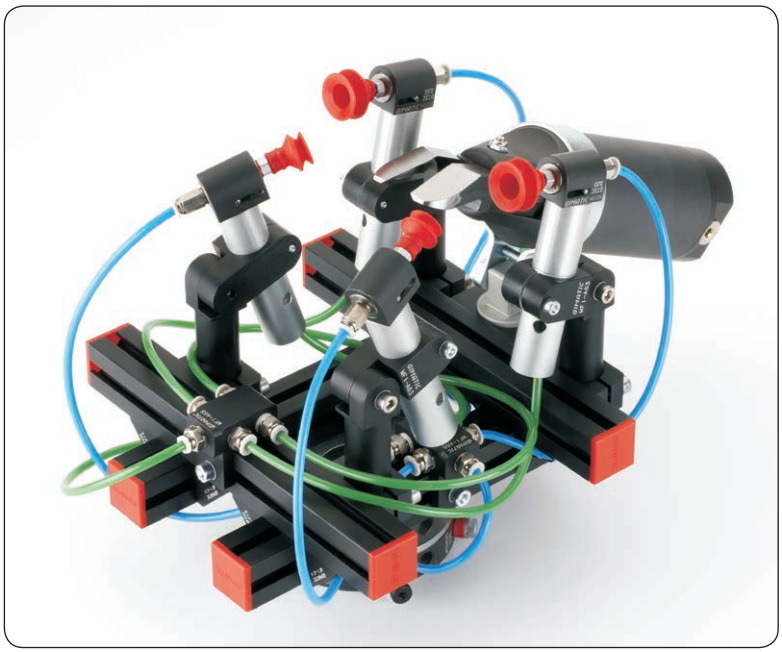


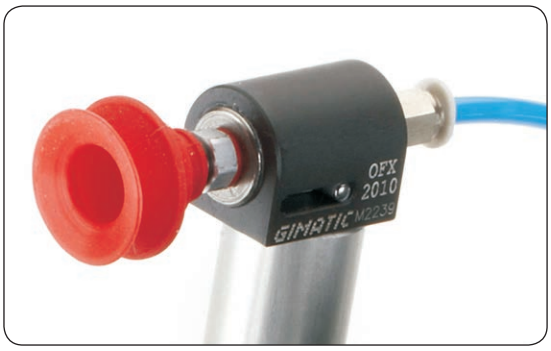




Pinze per materozze usate per la manipolazione di piccoli pezzi prelevati da stampo a 16 impronte

Sprue grippers used for the handling of small parts out of a 16-cavity mould

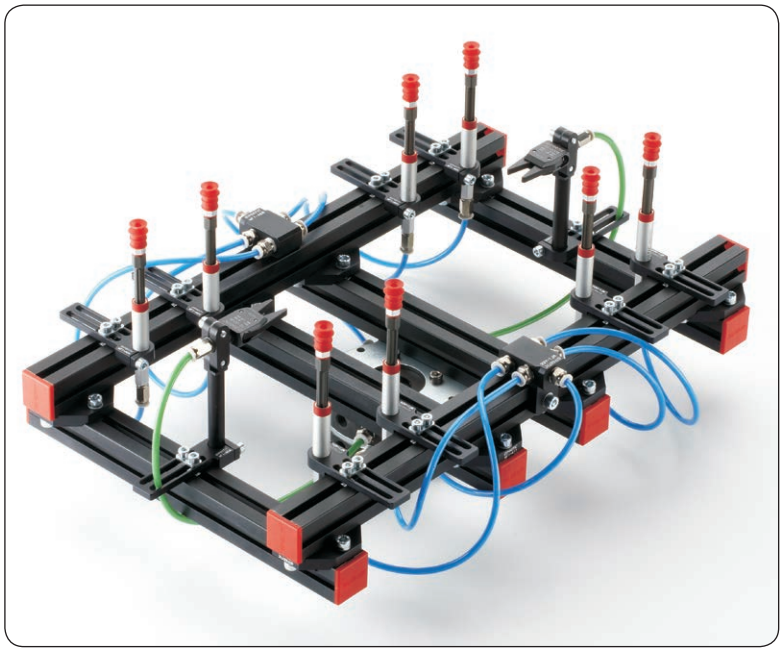


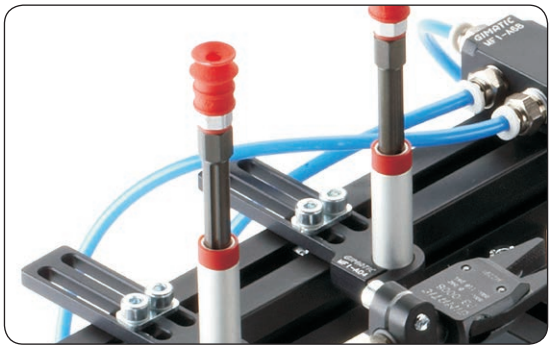


Pinze OFX usate per approcciare le ventose in uno spazio angusto

OFX grippers used for the vacuum cup approaching in a tight space

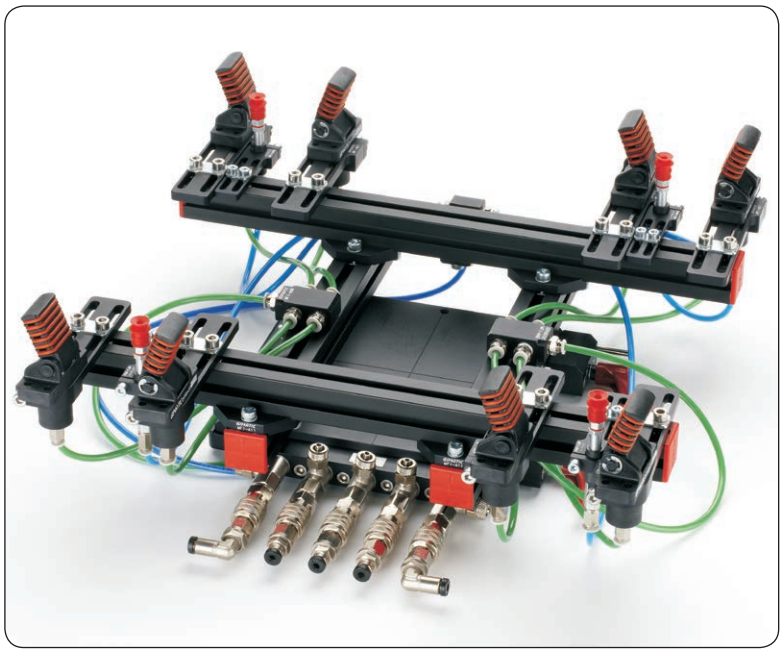
Esempi di applicazione / *Application examples*

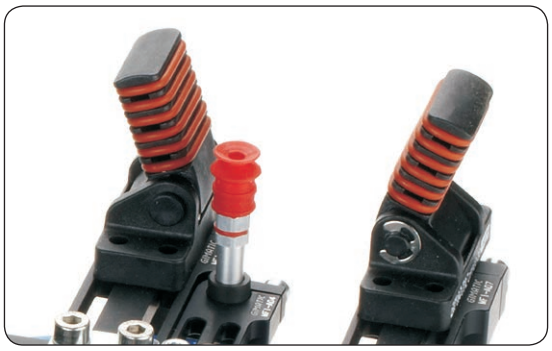




Ventose montate su sospensioni anti-rotazione

Vacuum cups mounted on non-rotative suspensions





Pinze mono-dito usate per tenere 4 pezzi per attrito

One-finger angular grippers used to hold 4 parts by friction

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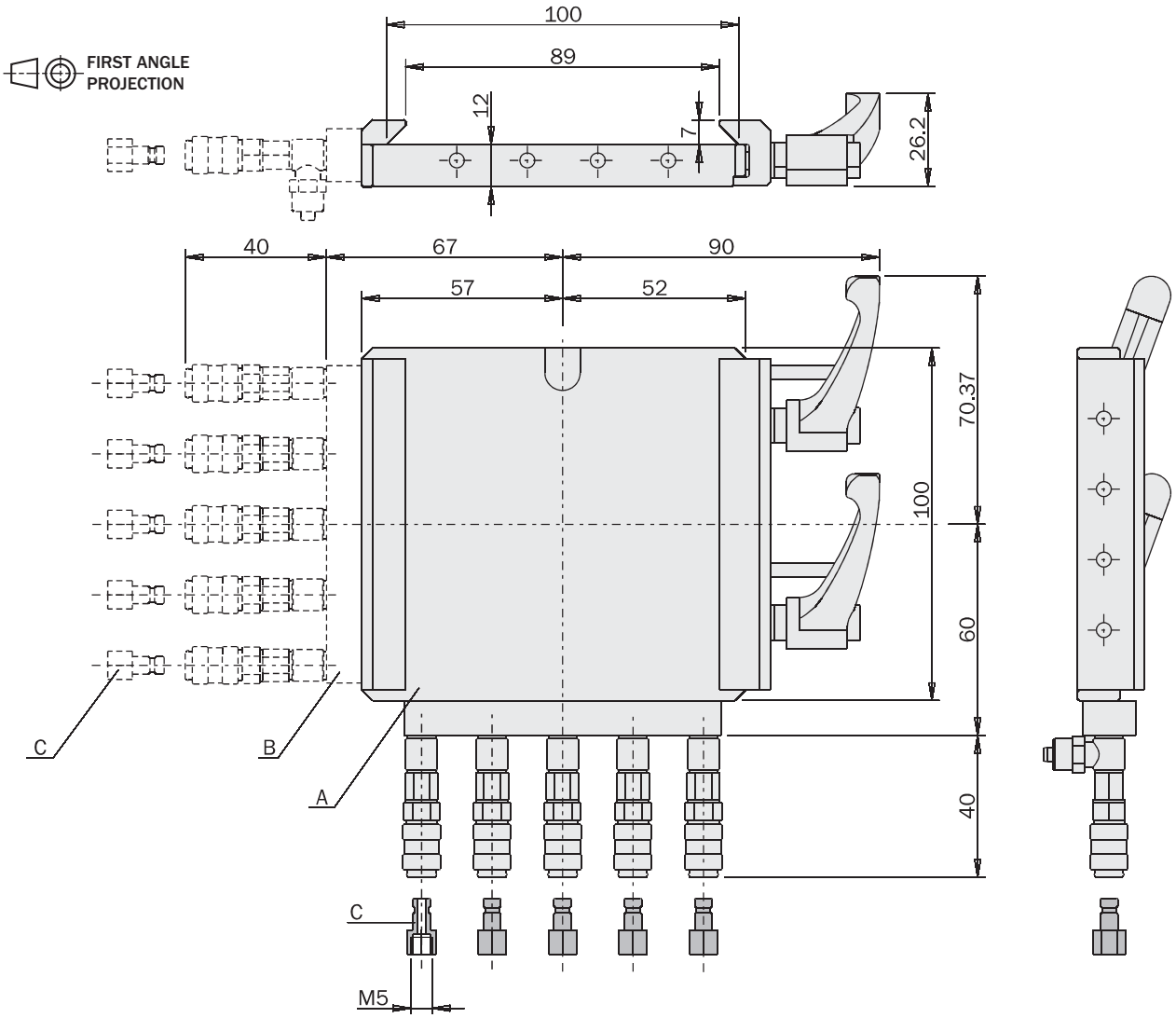
Cambia utensile (lato robot)

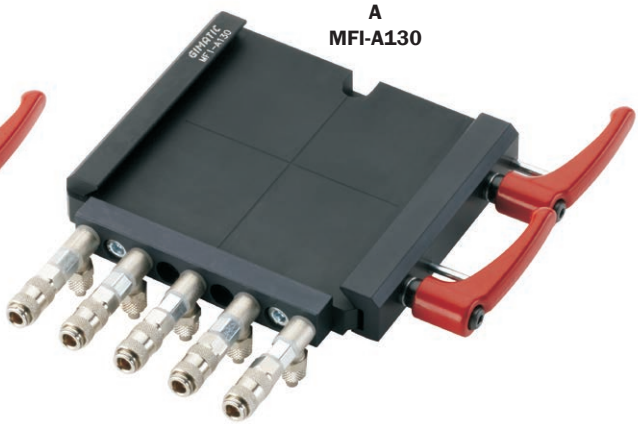
Quick changer (robot side)



	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)

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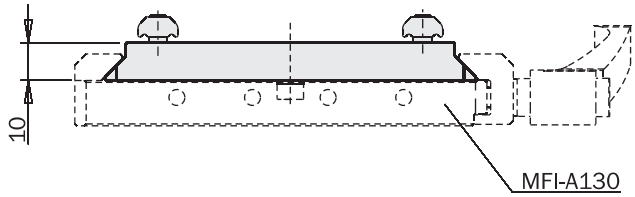
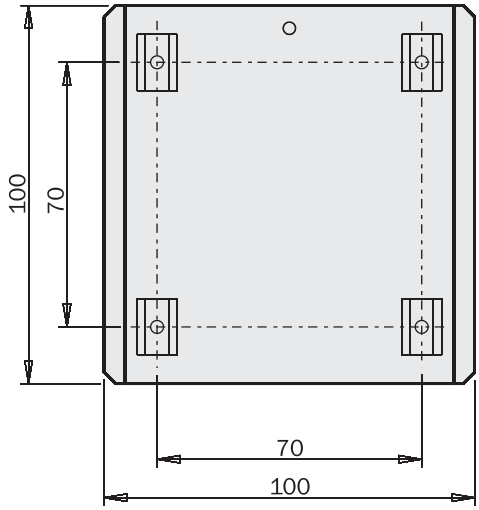
Cambia utensile (lato pinza)

Quick changer (gripper side)

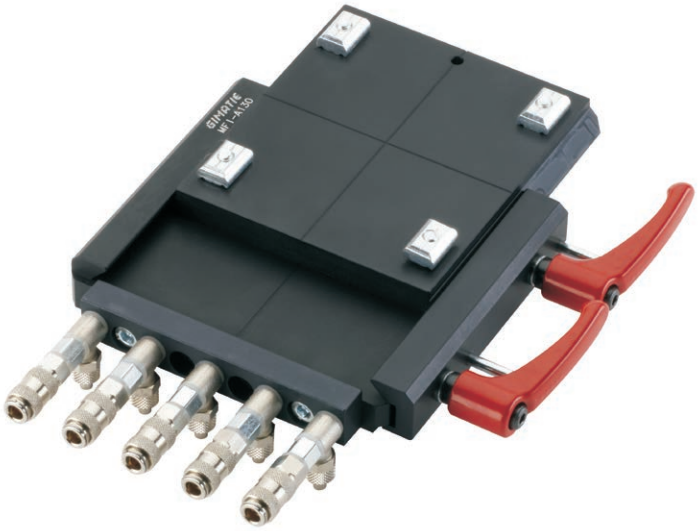
FIRST ANGLE PROJECTION

	MFI-A41
Peso / *Weight*	270 g



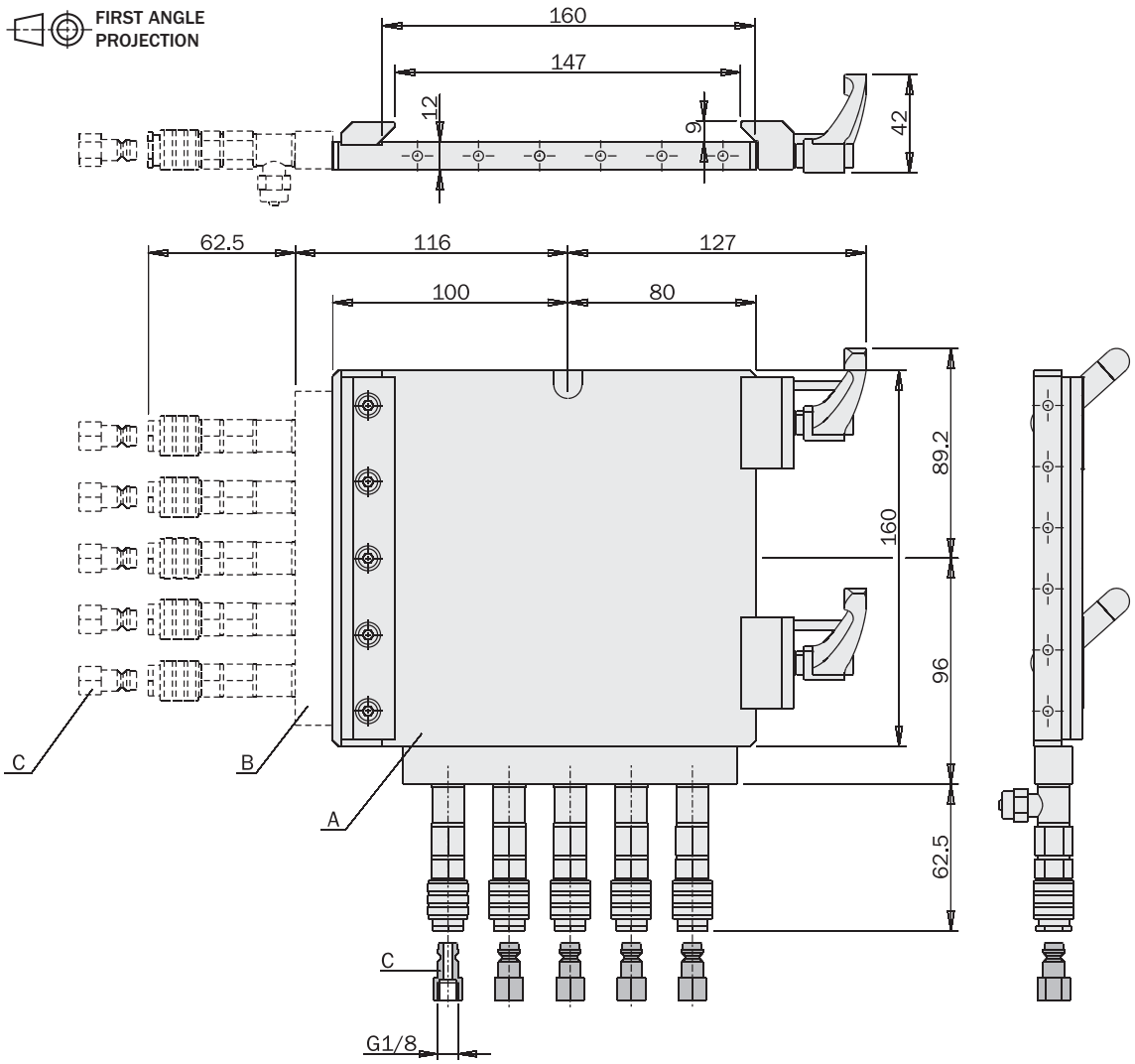


Esempio di utilizzo / *Application example*



Cambia utensile (lato robot)

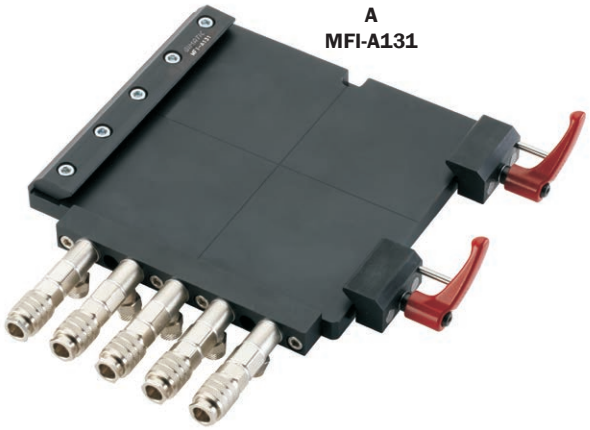
Quick changer (robot side)



	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)

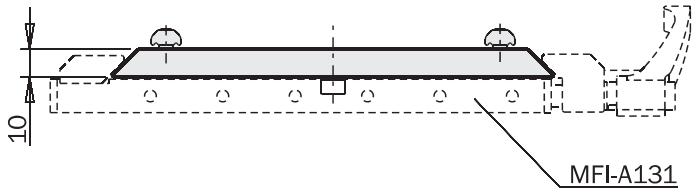
09/2015

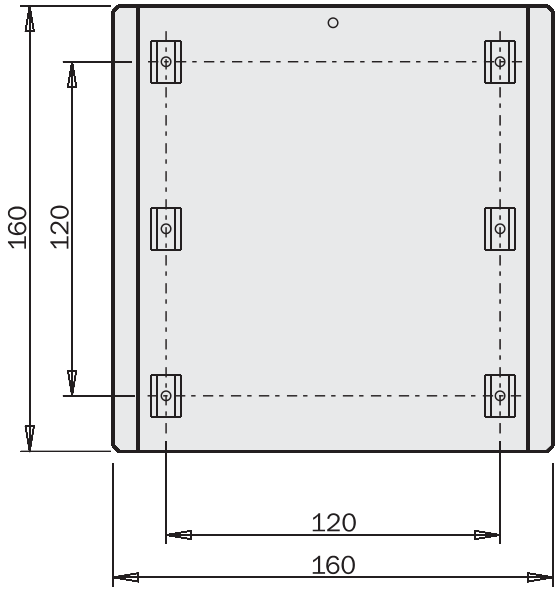
Cambia utensile (lato pinza)

Quick changer (gripper side)

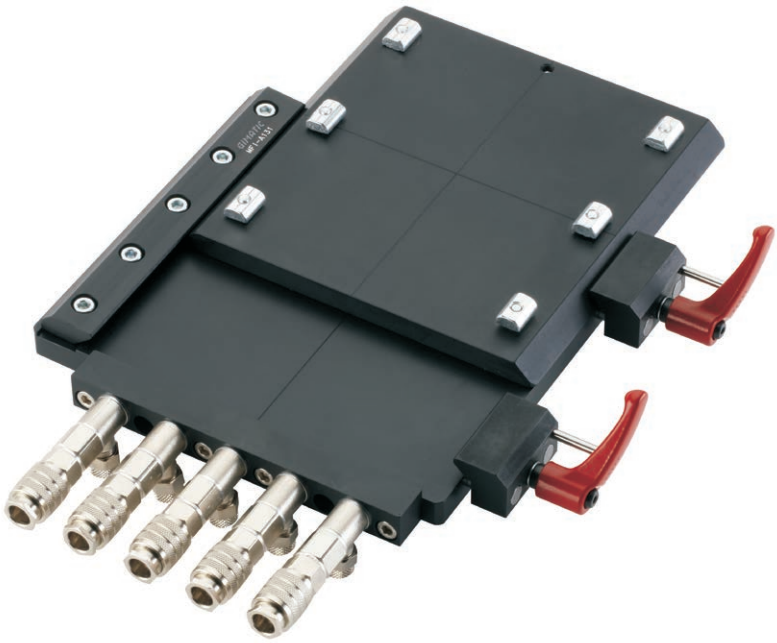
FIRST ANGLE PROJECTION

	MFI-A43
Peso / *Weight*	670 g



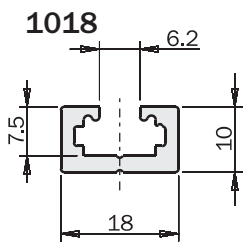


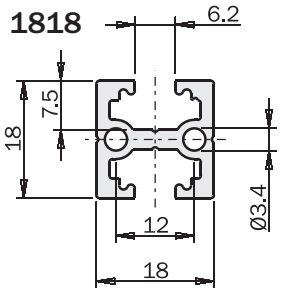
Esempio di utilizzo / *Application example*

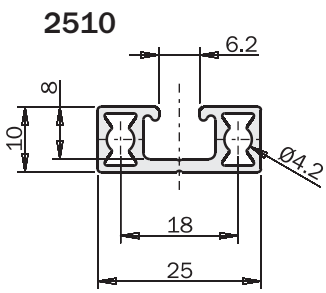


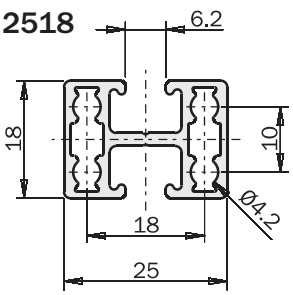
Travi quadre

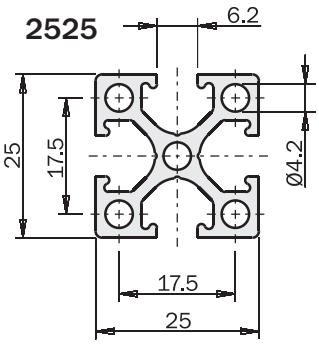
Square beams

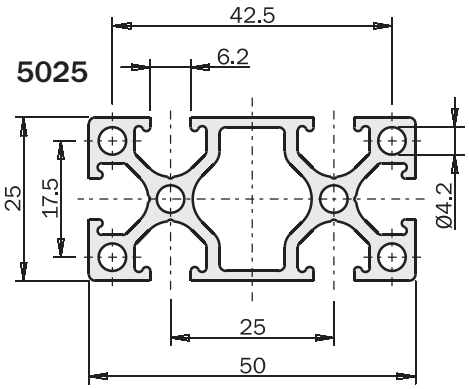






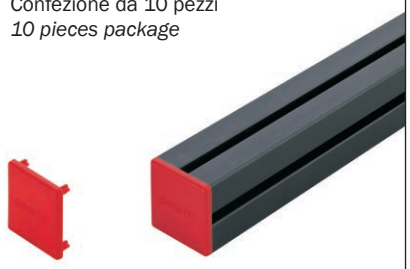


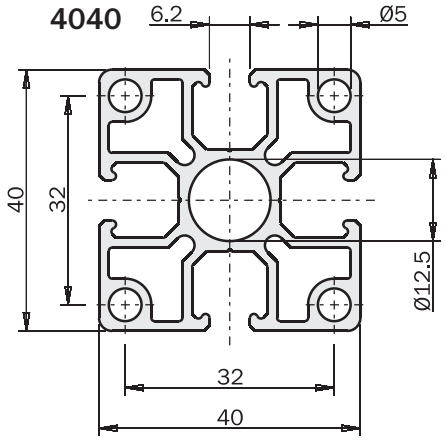


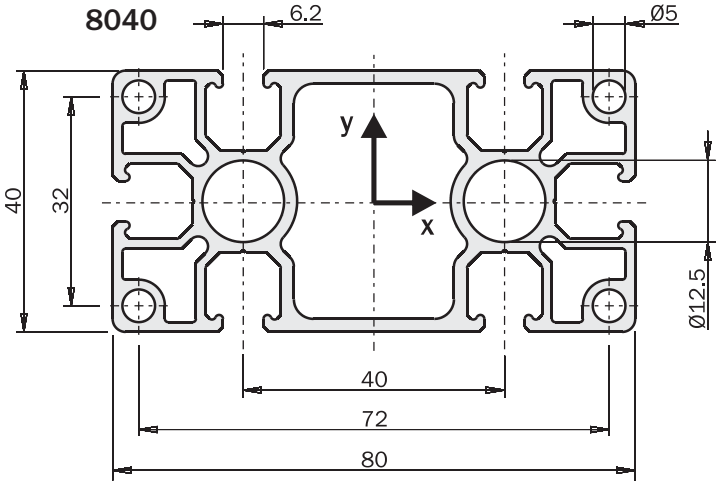


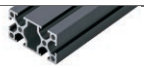
Tappi per estruso
Plugs for profile

Confezione da 10 pezzi
10 pieces package







			Lunghezza *Length*	Peso *Weight*	Ix [mm⁴]	Iy [mm⁴]	Tappi *Plugs*	
EMB-1018-1000	**EMF-1018-1000**		1 m	250 g	1084	3855	MFI-A24	
EMB-1018-2000	**EMF-1018-2000**		2 m	500 g	1084	3855	MFI-A24	
EMB-1818-1000	**EMF-1818-1000**		1 m	400 g	4381	6245	MFI-A23	
EMB-1818-2000	**EMF-1818-2000**		2 m	800 g	4381	6245	MFI-A23	
EMB-2510-1000	**EMF-2510-1000**		1 m	280 g	1305	7300	MFI-A27	
EMB-2510-2000	**EMF-2510-2000**		2 m	560 g	1305	7300	MFI-A27	
EMB-2518-1000	**EMF-2518-1000**		1 m	400 g	5647	11544	MFI-A28	
EMB-2518-2000	**EMF-2518-2000**		2 m	800 g	5647	11544	MFI-A28	
EMB-2525-1000	**EMF-2525-1000**		1 m	610 g	16298	16289	MFI-A21	
EMB-2525-2000	**EMF-2525-2000**		2 m	1220 g	16298	16289	MFI-A21	
EMB-5025-1000	**EMF-5025-1000**		1 m	1040 g	28882	111103	MFI-A22	
EMB-5025-2000	**EMF-5025-2000**		2 m	2080 g	28882	111103	MFI-A22	
EMB-4040-1000	**EMF-4040-1000**		1 m	1300 g	86387	86387	MFI-A25	
EMB-4040-2000	**EMF-4040-2000**		2 m	2600 g	86387	86387	MFI-A25	
EMB-8040-1000	**EMF-8040-1000**		1 m	2180 g	155462	587130	MFI-A26	
EMB-8040-2000	**EMF-8040-2000**		2 m	4360 g	155462	587130	MFI-A26	

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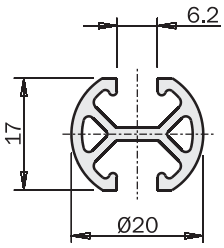
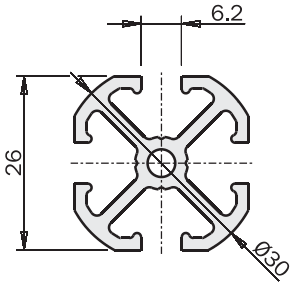
Travi tonde

Round beams

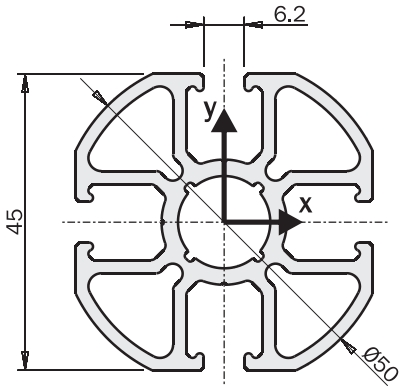
EMB-2017



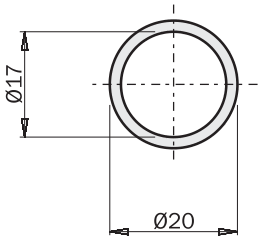
EMB-3026



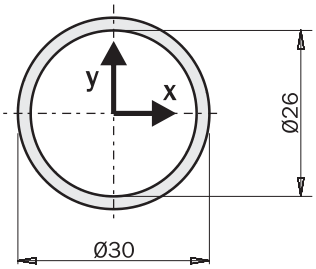
EMB-5045

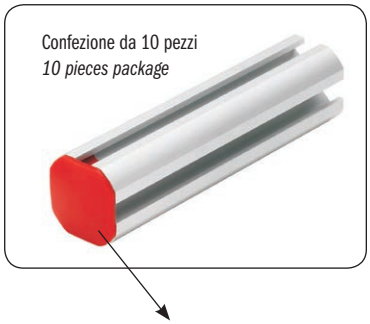


TFC-2017
MF-20



TFC-3026
MF-30

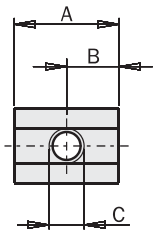




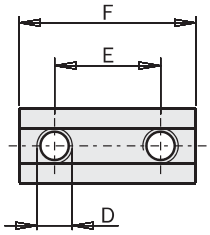
		Materiale *Material*	E [GPa]	Lunghezza *Length*	Peso *Weight*	Ix [mm⁴]	Iy [mm⁴]	Tappi *Plugs*	
EMB-2017-1000		Alluminio *Aluminum*	67	1 m	340 g	2534	5003	MFP-K29	
EMB-2017-2000		Alluminio *Aluminum*	67	2 m	680 g	2534	5003	MFP-K29	
EMB-3026-1000		Alluminio *Aluminum*	67	1 m	700 g	15842	15842	MFP-K28	
EMB-3026-2000		Alluminio *Aluminum*	67	2 m	1400 g	15842	15842	MFP-K28	
EMB-5045-1000		Alluminio *Aluminum*	67	1 m	1665 g	100773	100773	MFP-K50	
EMB-5045-2000		Alluminio *Aluminum*	67	2 m	3330 g	100773	100773	MFP-K50	
MF-20-1000		Alluminio *Aluminum*	67	1 m	230 g	3754	3754	MFP-K22	
MF-30-1000		Alluminio *Aluminum*	67	1 m	444 g	17329	17329	MFP-K21	
TFC-2017-1500 NEW		Carbonio *Carbon composite*	120	1.5 m	200 g	3754	3754	MFP-K22	
TFC-3026-1500 NEW		Carbonio *Carbon composite*	120	1.5 m	420 g	17329	17329	MFP-K21	

Dadi a T

T-Nuts



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

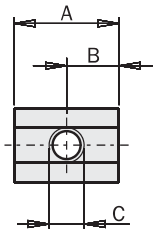


	D [mm]	E [mm]	F [mm]	Peso *Weight*	
MFI-003	M4	8	16	5 g	
MFI-006	M5	10	20	7 g	
MFI-009	M5	15	25	9 g	
MFI-148	M5	17	25	9 g	
MFI-016	M5	22	32	11 g	
MFI-027	M5	25	35	13 g	
MFI-055	M5	28	38	14 g	
MFI-050	M5	30	40	15 g	
MFI-029	M5	35	45	16 g	
MFI-020	M5	40	50	18 g	
MFI-043	M5	50	60	22 g	
MFI-022	M5	60	70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

Dadi a molla

Spring nuts

NEW



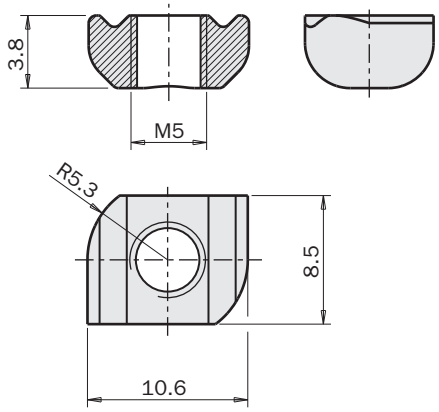
	A [mm]	B [mm]	C [mm]	Peso *Weight*	
MFI-A329	15	7.5	M4	5 g	
MFI-A331	15	7.5	M5	5 g	

Dado last-minute

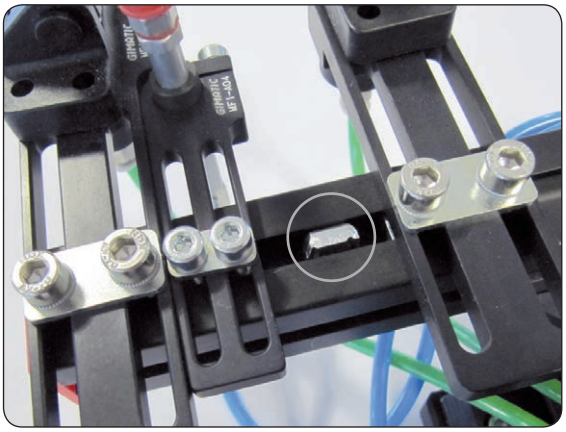
Da usare quando si deve aggiungere qualcosa ad un EOAT già assemblato.

Last-minute nut

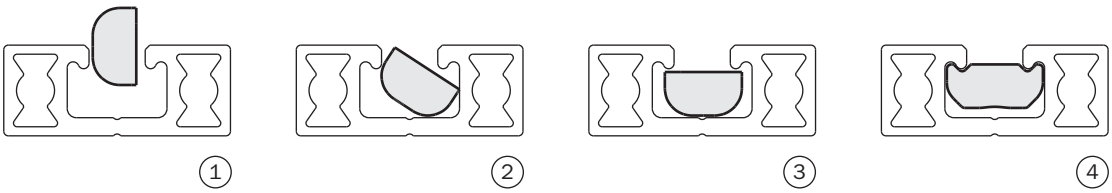
To be used when you need to add something to an already assembled EOAT.

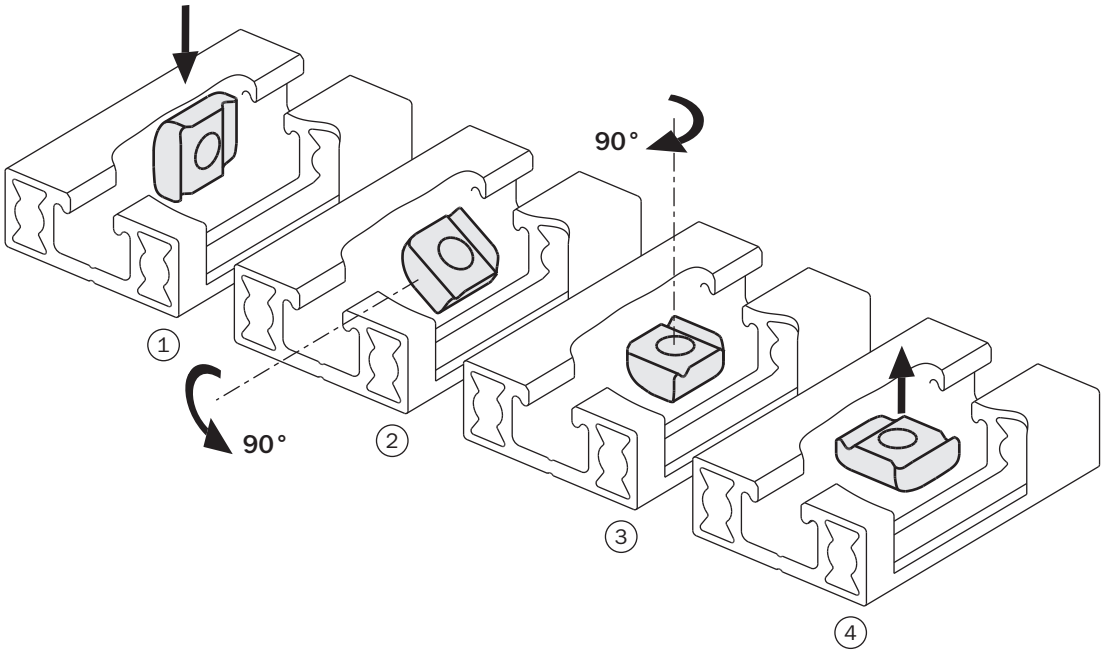


	MFI-243
Peso / *Weight*	2 g



FIRST ANGLE PROJECTION





Interfaccia tubi con QC...-B

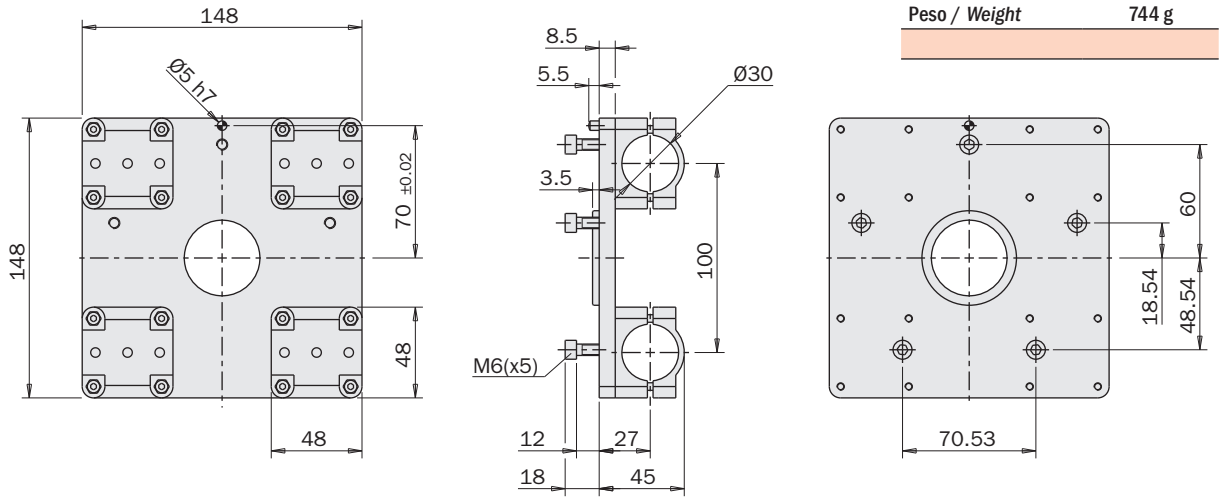
(kit completo di viti)

Interface between tubes and QC...-B

(kit with screws)

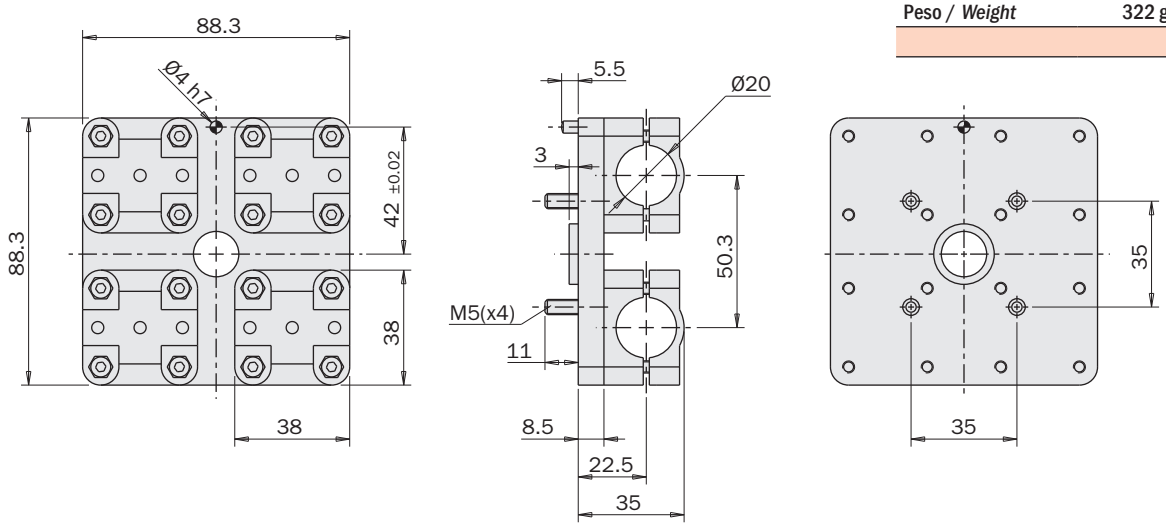
NEW

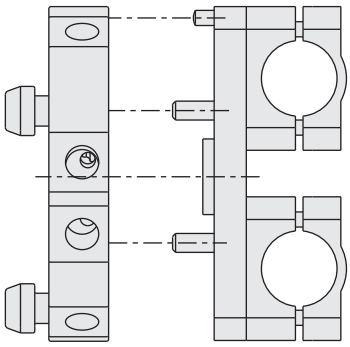
	MFI-A313
Peso / *Weight*	744 g



NEW

	MFI-A328
Peso / *Weight*	322 g





QC90-B	MFI-A328
QC150-B	MFI-A313
QC160-B	MFI-A313

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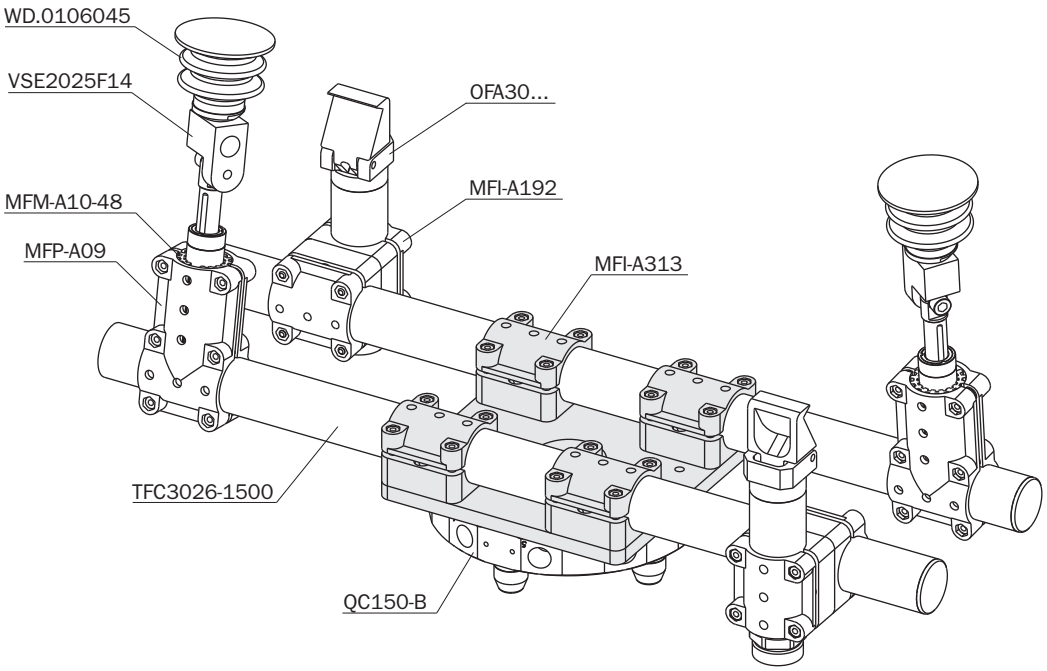
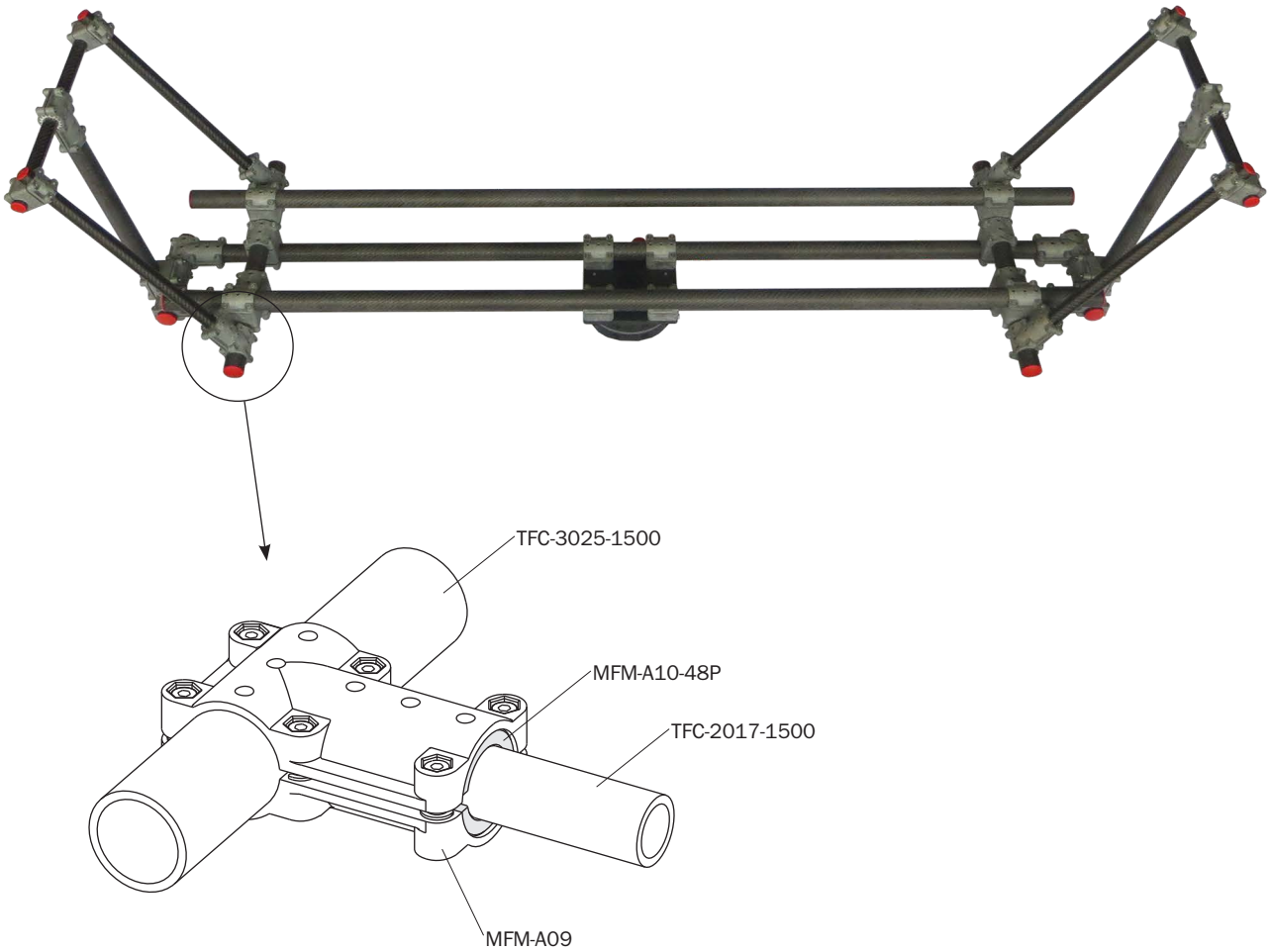
Esempio di applicazione con TFC ***Application example with TFC***



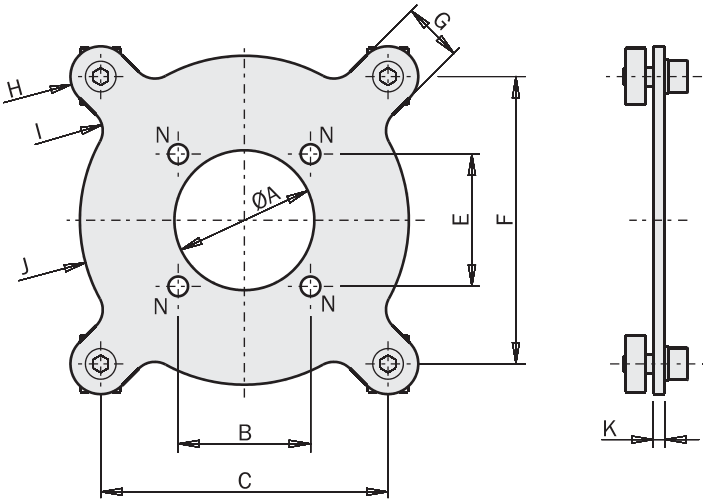


Interfaccia per cambia utensile QC

(kit completo di viti)

Interface for QC quick changer

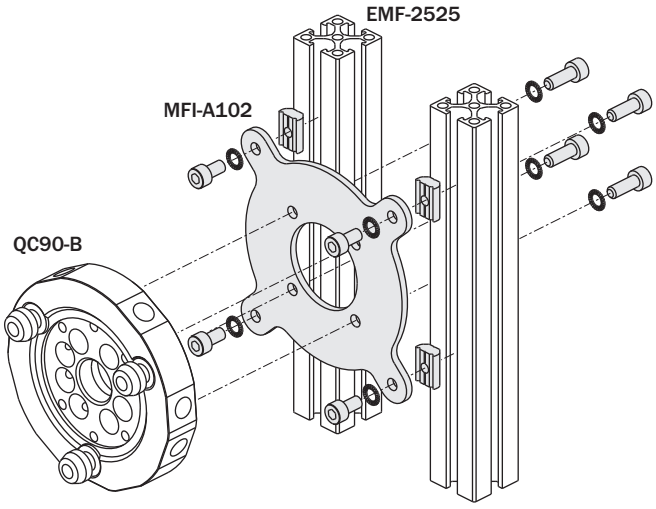
(kit with screws)



		MFI-A102	MFI-A103
A	[mm]	Ø37	Ø70
B	[mm]	35	74
C	[mm]	76	130
E	[mm]	35	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
O	[mm]	Ø37	Ø70
QC...-B		QC90-B	QC150-B QC160-B
Peso / *Weight*		190 g	540 g

FIRST ANGLE PROJECTION

Esempio di utilizzo / *Application example*

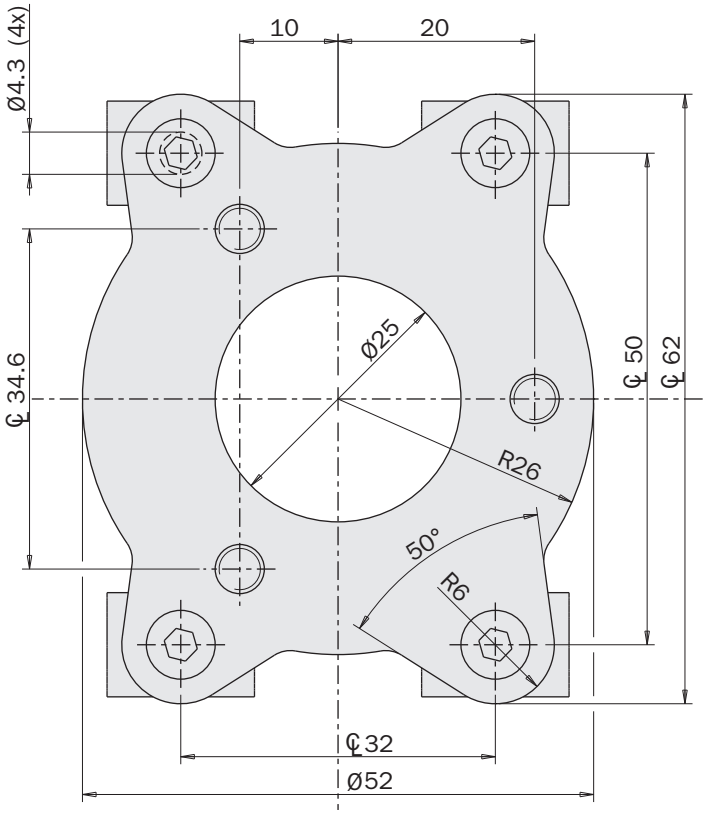


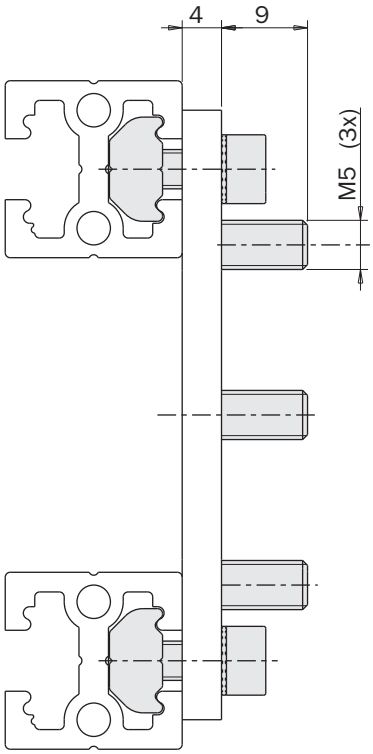
Interfaccia per cambia utensile QC

(kit completo di viti)

Interface for QC quick changer

(kit with screws)

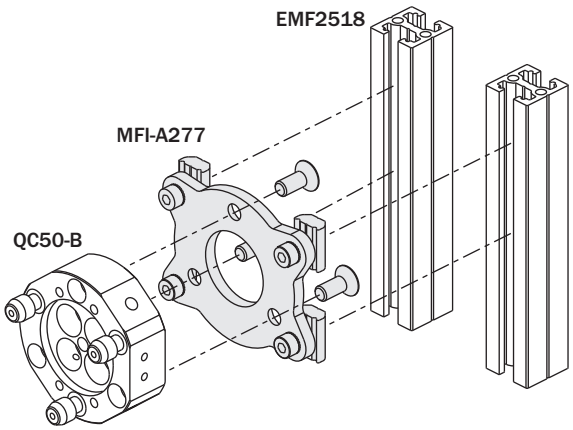




FIRST ANGLE PROJECTION

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

Esempio di utilizzo / *Application example*

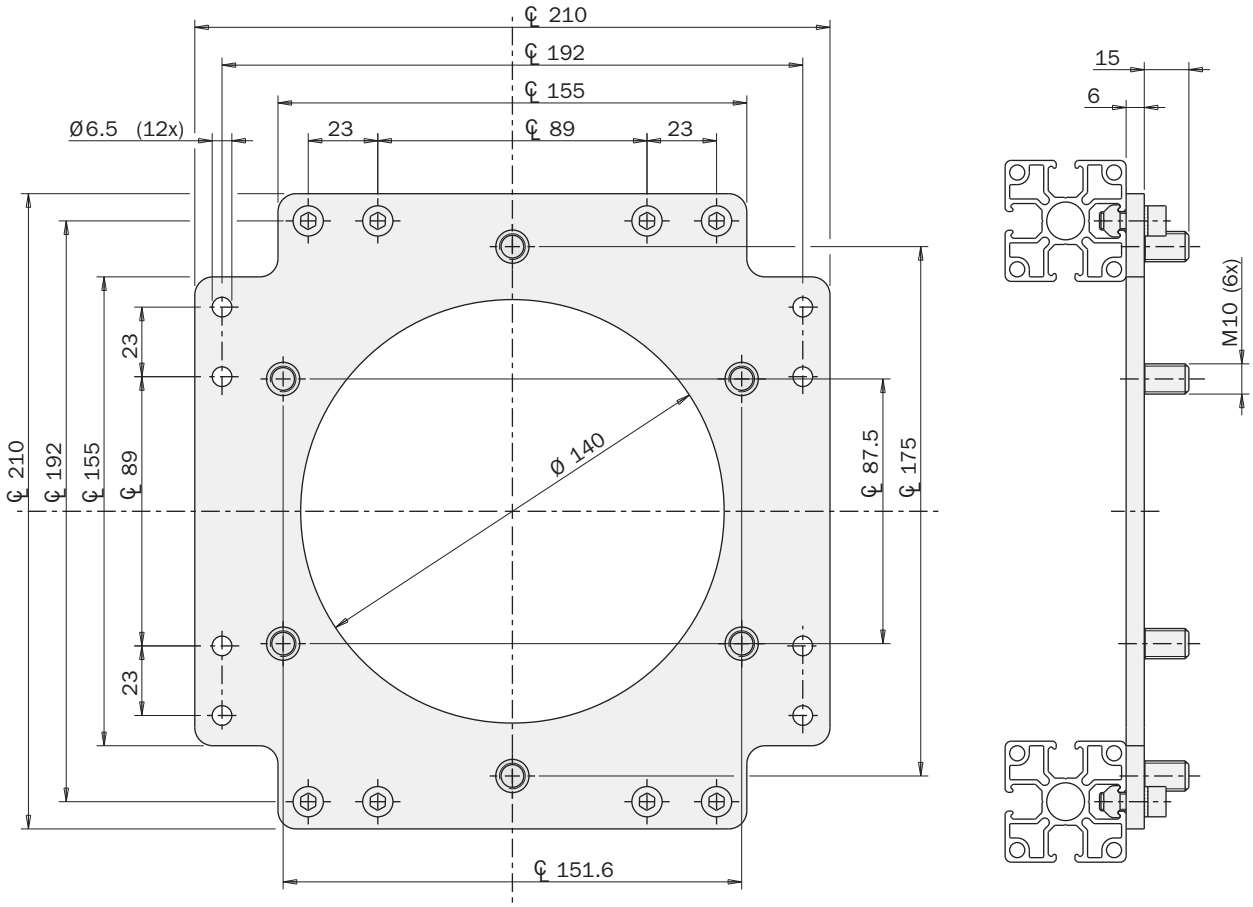


Interfaccia per cambia utensile QC

(kit completo di viti)

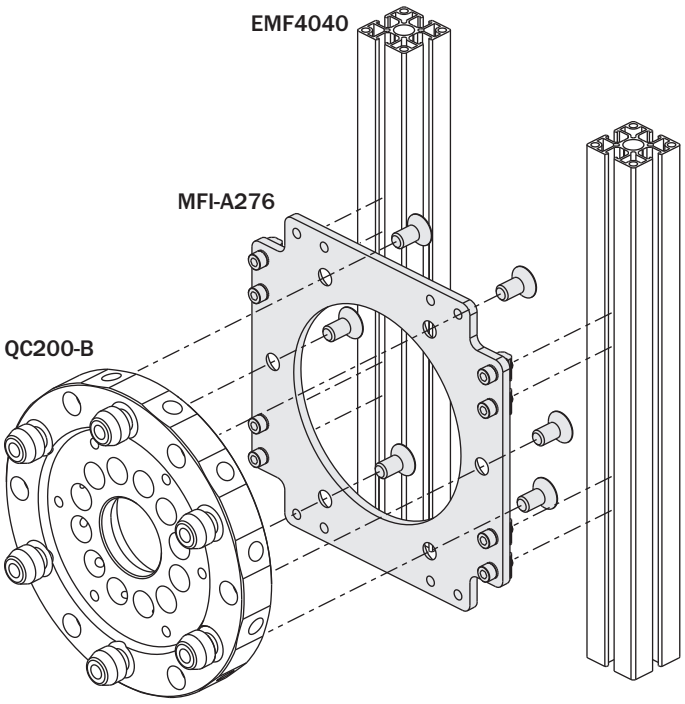
Interface for QC quick changer

(kit with screws)



	MFI-A276
QC...-B	QC200-B
Peso / *Weight*	1850 g

Esempio di utilizzo / *Application example*



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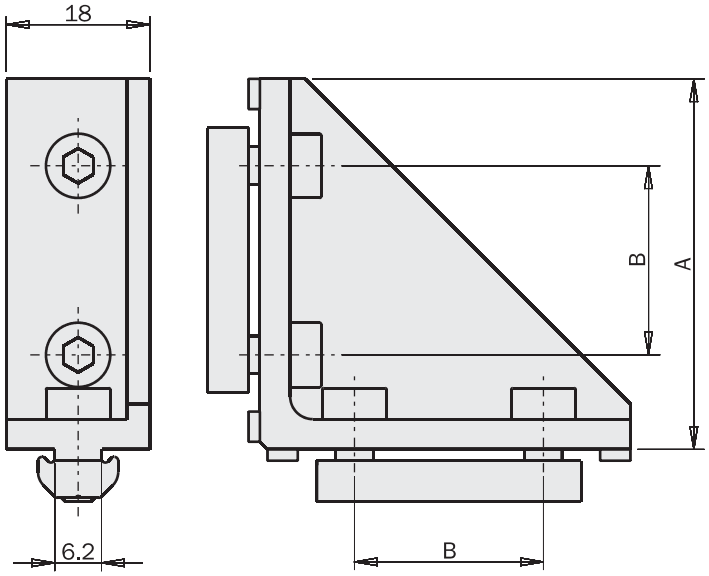
Staffa per fissaggio a 90° di profili

(kit completo di viti)

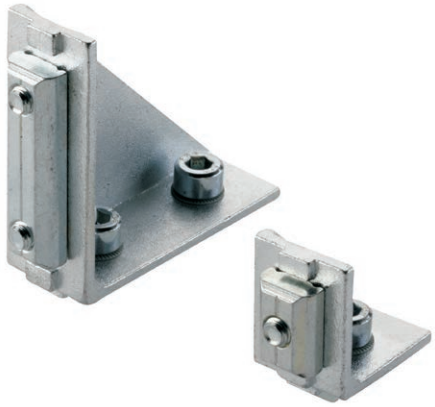
Angle bracket for profiles

(kit with screws)

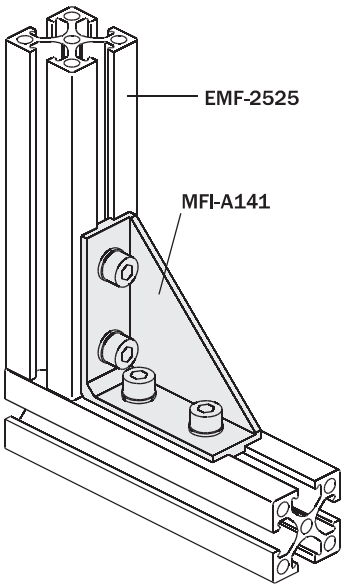


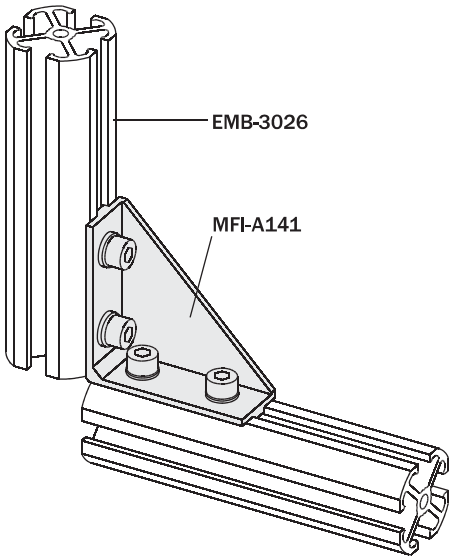
FIRST ANGLE PROJECTION

		MFI-A140	MFI-A141
A	[mm]	24	49
B	[mm]	-	25
Peso / *Weight*		33 g	82 g



Esempio di utilizzo / *Application example*



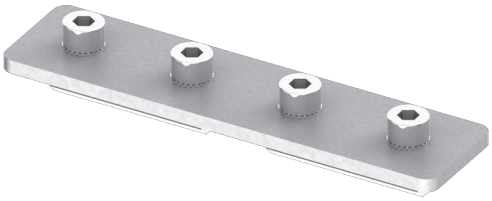


Piastra di fissaggio dritta

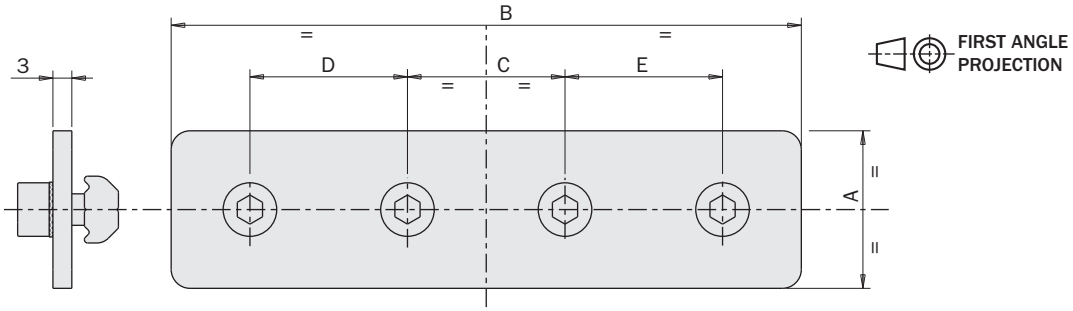
(kit completo di viti)

Straight fixing plate

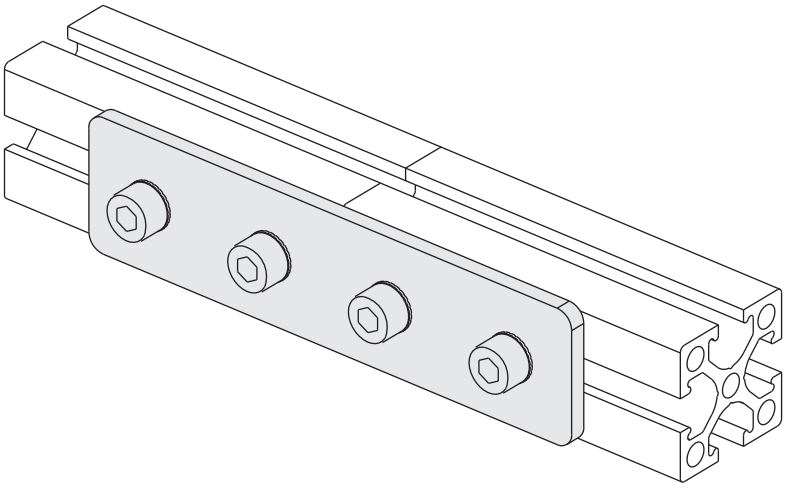
(kit with screws)



		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	-
EMB		2525	2525	-
EMF		5025	5025	-
		-	-	4040
		-	-	8040
Peso / *Weight*		45 g	95 g	195 g



Esempio di utilizzo / *Application example*



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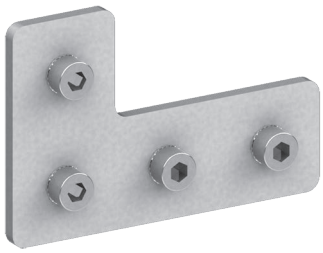
Piastra di fissaggio a L

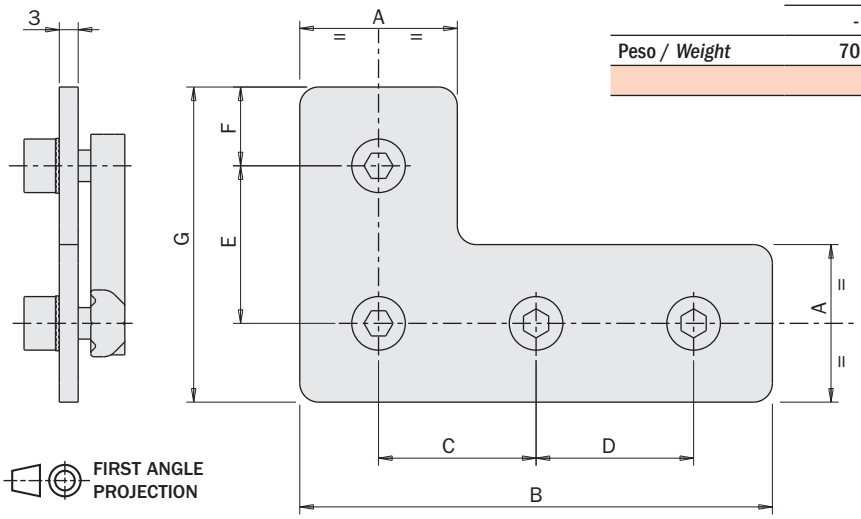
(kit completo di viti)

L-shaped fixing plate

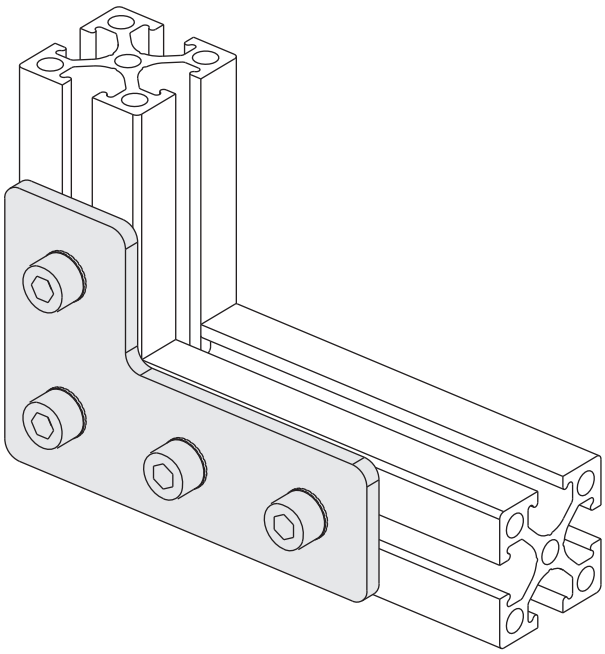
(kit with screws)



		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	-
EMB		2525	2525	-
EMF		5025	5025	-
		-	-	4040
		-	-	8040
Peso / *Weight*		70 g	95 g	200 g



Esempio di utilizzo / *Application example*

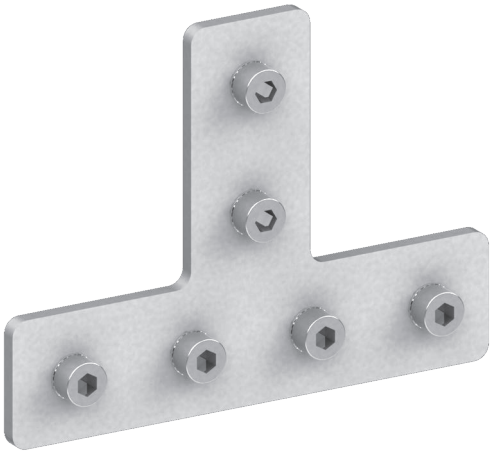


Piastra di fissaggio a T

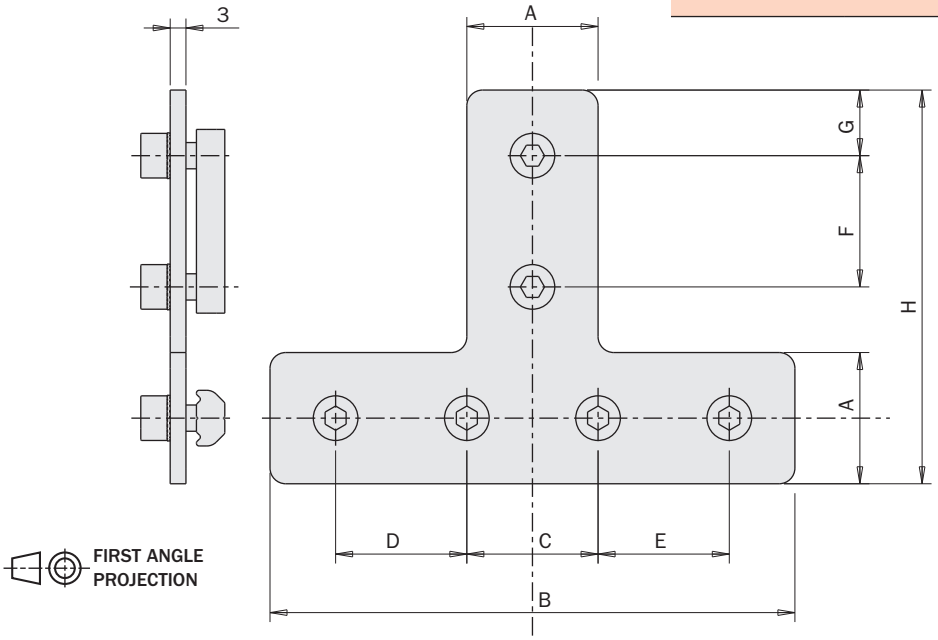
(kit completo di viti)

T-shaped fixing plate

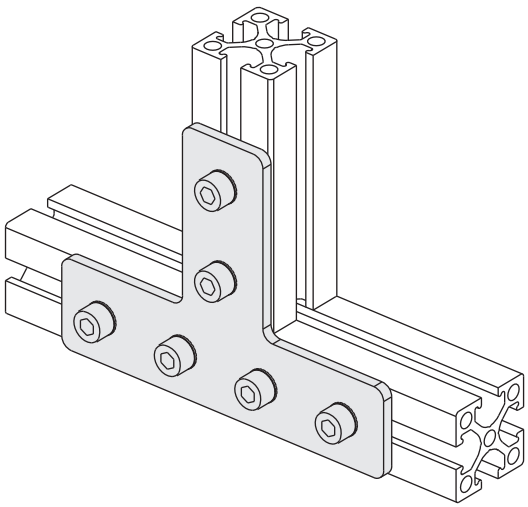
(kit with screws)



		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	-
EMB		2525	2525	-
EMF		5025	5025	-
		-	-	4040
		-	-	8040
Peso / *Weight*		95 g	145 g	250 g



Esempio di utilizzo / *Application example*



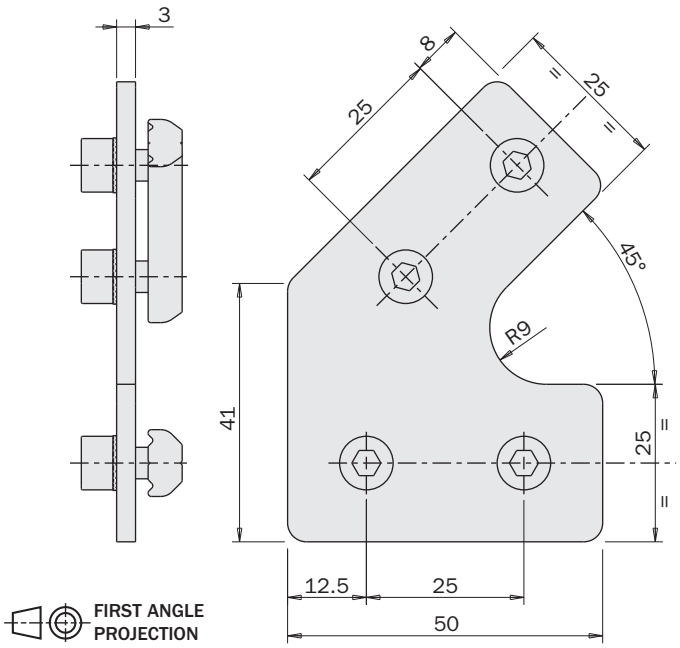
Piastra di fissaggio a 45°

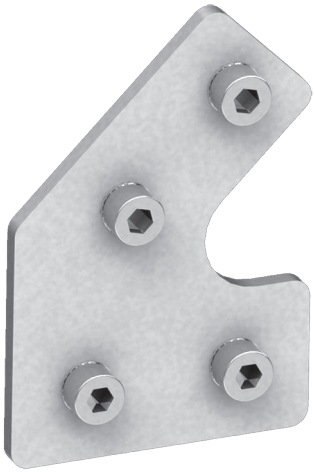
(kit completo di viti)

45° fixing plate

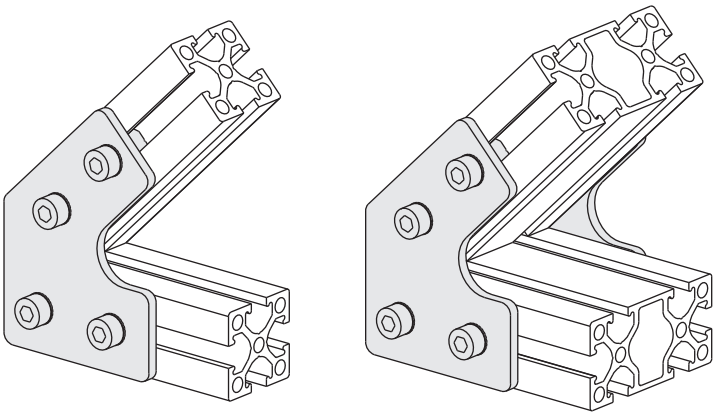
(kit with screws)

	MFI-A221
Peso / *Weight*	100 g





Esempio di utilizzo / *Application example*

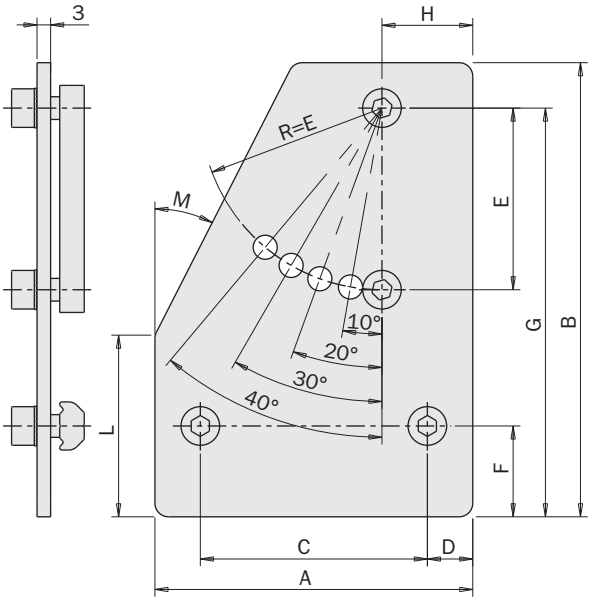


Piastra di fissaggio con angolo regolabile

(kit completo di viti)

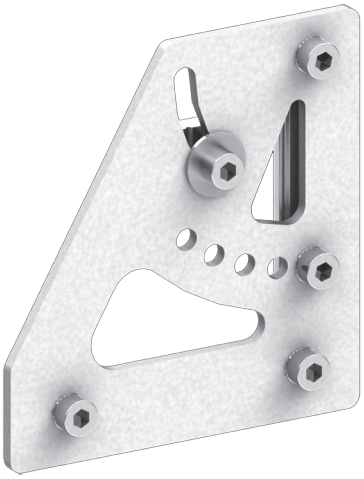
Fixing plate with adjustable angle

(kit with screws)

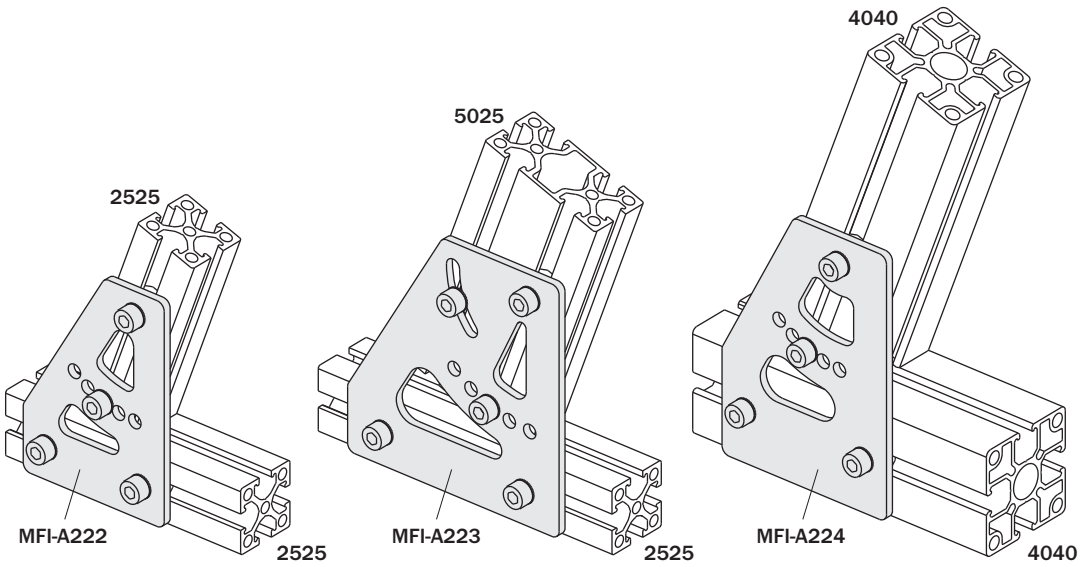


		MFI-A222	MFI-A223	MFI-A224
A	[mm]	60	90	70
B	[mm]	85	95	100
C	[mm]	40	60	50
D	[mm]	10	15	10
E	[mm]	40	50	40
F	[mm]	12.5	12.5	20
G	[mm]	76	86	90
H	[mm]	12.5	12.5	20
L	[mm]	25	25	40
M	[mm]	30°	30°	27°
		2510	2510	-
		2518	2518	-
EMB		2525	2525	-
EMF		5025	5025	-
		-	-	4040
		-	-	8040
Peso / *Weight*		130 g	215 g	175 g

FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*



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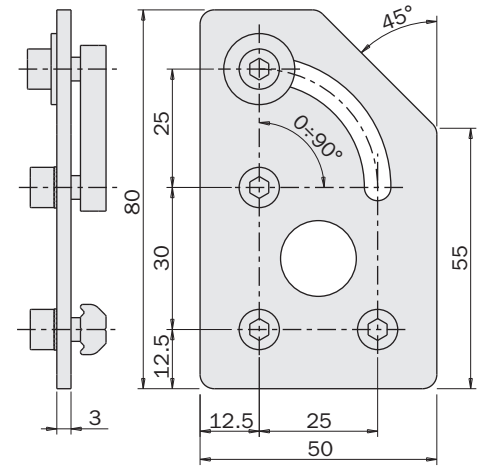
Piastra di fissaggio con angolo regolabile

(kit completo di viti)

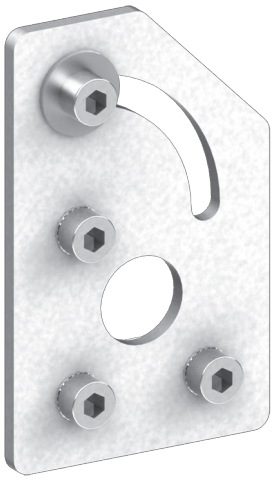
Fixing plate with adjustable angle

(kit with screws)

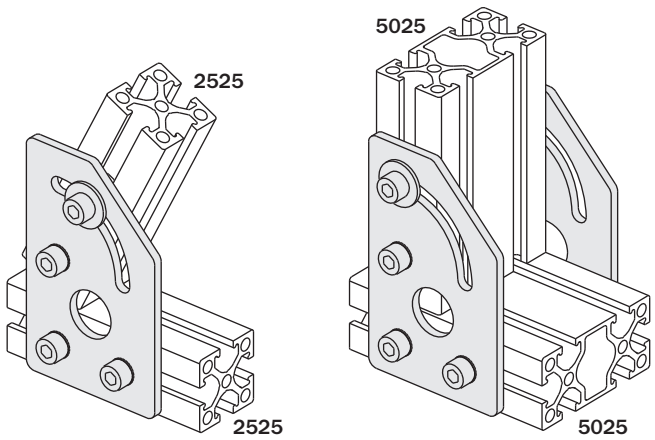


FIRST ANGLE PROJECTION

	MFI-A225
Peso / *Weight*	115 g



Esempio di utilizzo / *Application example*

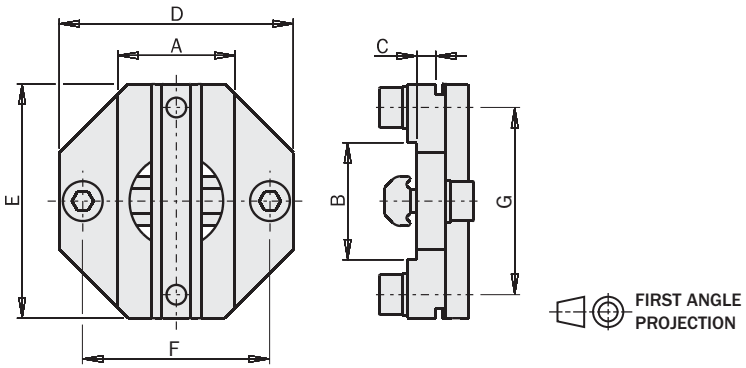


Staffa per fissaggio a croce di profili

(kit completo di viti)

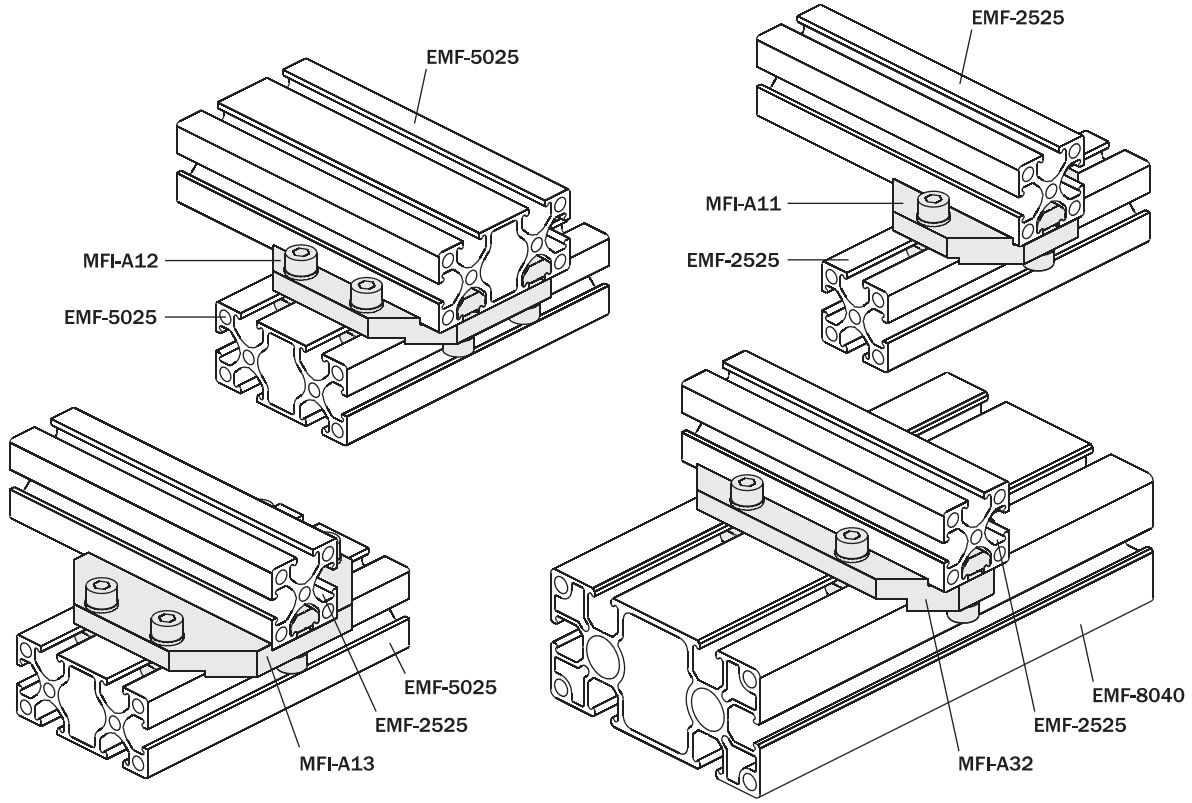
Cross mounting bracket for profiles

(kit with screws)



		MFI-A175	MFI-A265	MFI-A11	MFI-A12	MFI-A13	MFI-A29	MFI-A30	MFI-A31	MFI-A32	MFI-A33
A	[mm]	18	18	25	50	25	40	80	40	25	25
B	[mm]	18	25	25	50	50	40	80	80	80	40
C	[mm]	2	4	4	4	4	4	4	4	4	4
D	[mm]	38	38	45	70	45	60	100	60	45	45
E	[mm]	38	45	45	70	70	60	100	100	100	60
F	[mm]	28	35	35	60	35	50	90	50	35	35
G	[mm]	28	35	35	60	60	50	90	90	90	50
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	255 g	175 g	140 g	75 g

Esempio di utilizzo / *Application example*



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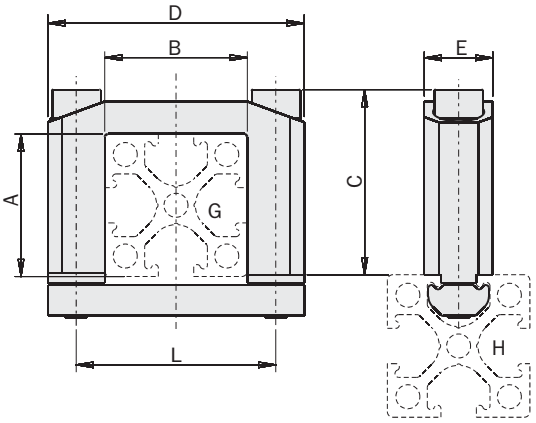
Staffa (quadra) per fissaggio a croce

(kit completo di viti)

Cross (square) joint connector

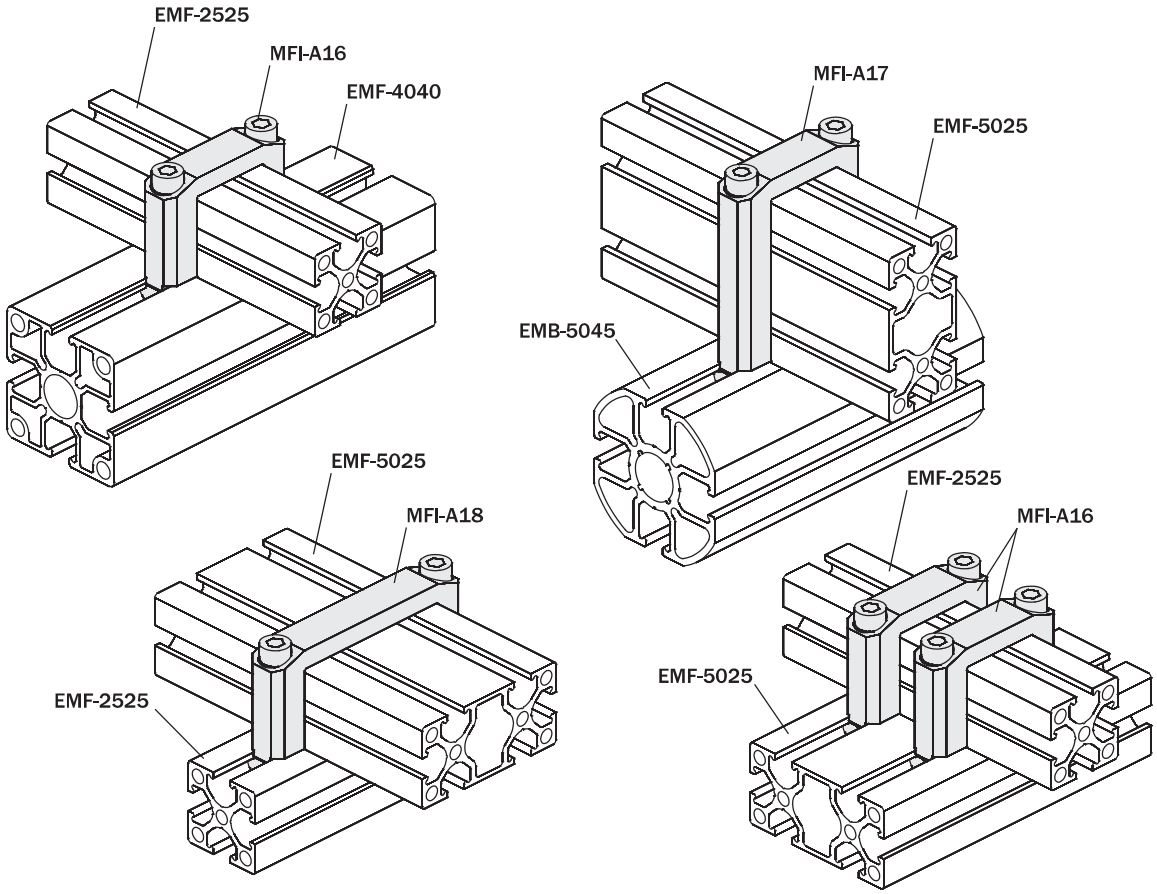
(kit with screws)



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
		EMB-3026	EMB-3026	EMB-3026	EMB-3026
		EMB-5045	EMB-5045	EMB-5045	EMB-5045
L	[mm]	28	35	35	60
Peso / *Weight*		41 g	45 g	65 g	50 g

Esempio di utilizzo / *Application example*



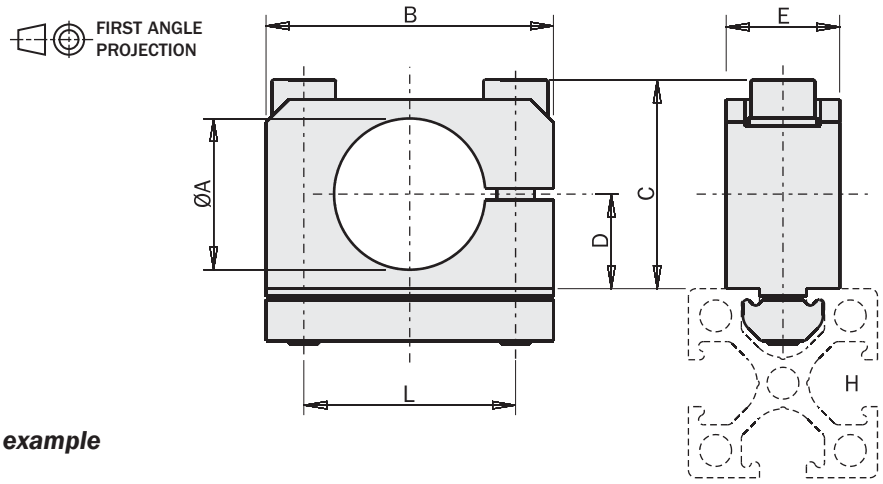
Staffa (tonda) per fissaggio a croce

(kit completo di viti)

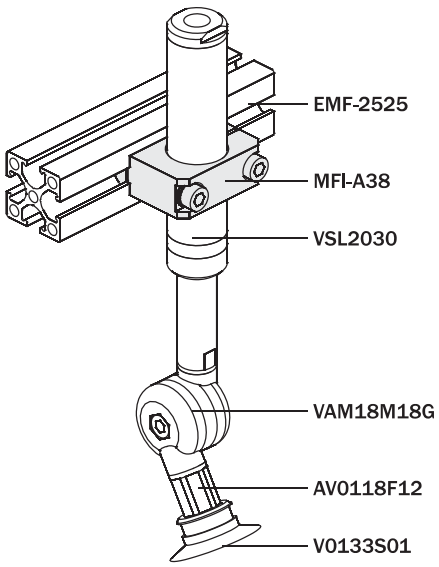
Cross (round) joint connector

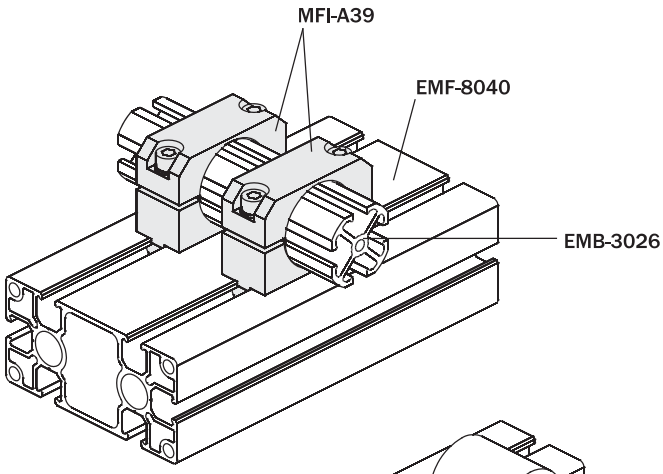
(kit with screws)

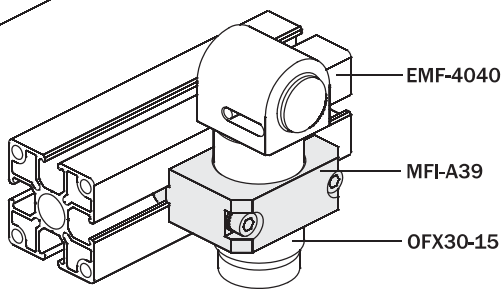
		MFI-A156	MFI-A37	MFI-A38	MFI-A39	MFI-A178
A	[mm]	Ø10	Ø14	Ø20	Ø30	Ø50
B	[mm]	25	32	38	50	70
C	[mm]	18.5	23	28	34	56
D	[mm]	7	9	12.5	17	28
E	[mm]	10	12	15	20	25
H		EMF-1018	-	-	-	-
		EMF-1818	-	-	-	-
		EMF-2510	EMF-2510	-	-	-
		EMF-2518	EMF-2518	-	-	-
		EMF-2525	EMF-2525	EMF-2525	EMF-2525	EMF-2525
		EMF-5025	EMF-5025	EMF-5025	EMF-5025	EMF-5025
		EMF-4040	EMF-4040	EMF-4040	EMF-4040	EMF-4040
		EMF-8040	EMF-8040	EMF-8040	EMF-8040	EMF-8040
		EMB-2017	-	-	-	-
		EMB-3026	EMB-3026	EMB-3026	EMB-3026	EMB-3026
		EMB-5045	EMB-5045	EMB-5045	EMB-5045	EMB-5045
L	[mm]	17	22	28	40	60
Peso / *Weight*		15 g	32 g	45 g	75 g	150 g



Esempio di utilizzo / *Application example*







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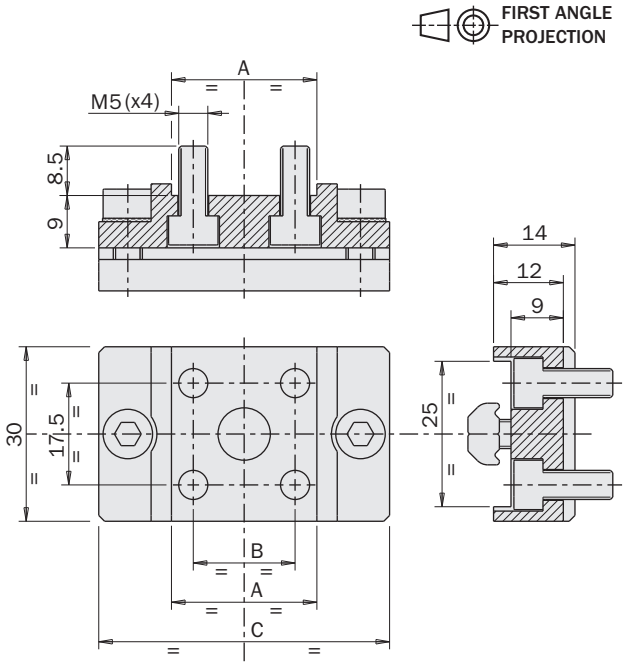
Fissaggio verticale profili

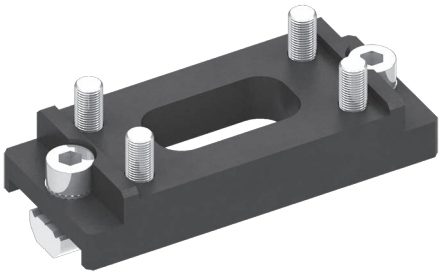
(kit completo di viti)

Vertical fastening of the profiles

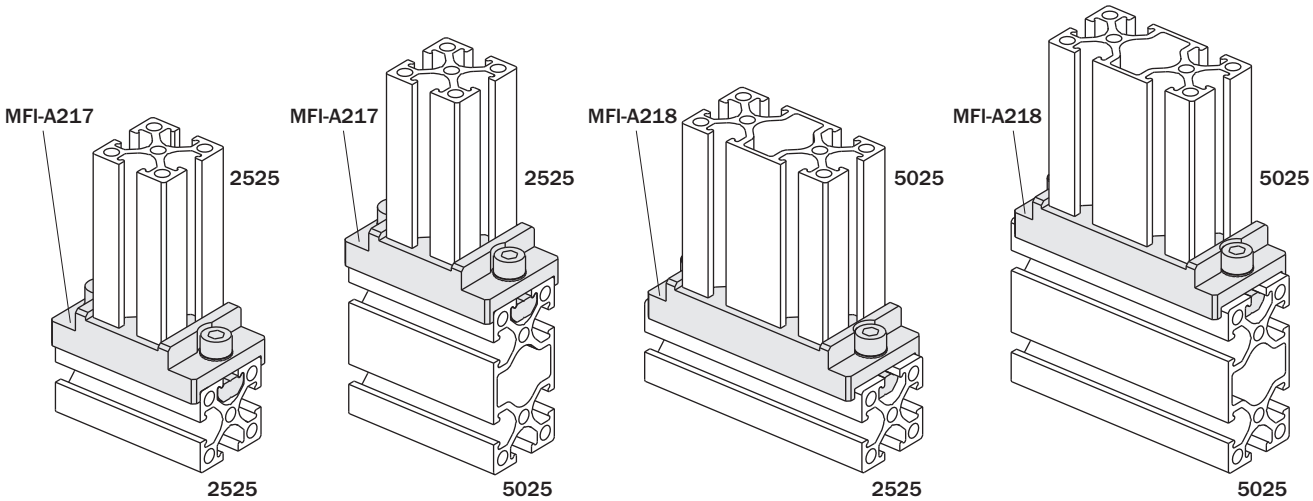
(kit with screws)

		MFI-A217	MFI-A218
A	[mm]	25	50
B	[mm]	17.5	42.5
C	[mm]	50	70
EMB		2525	2525
EMF		5025	5025
Peso / *Weight*		65 g	85 g





Esempio di utilizzo / *Application example*



Fissaggio verticale profili

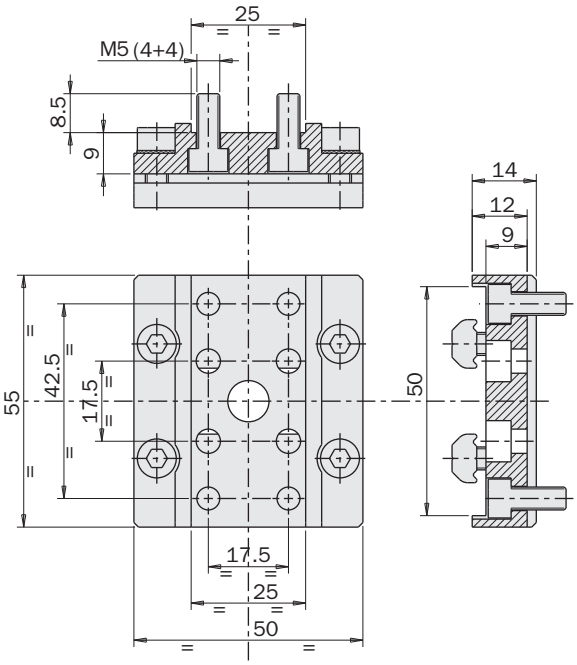
(kit completo di viti)

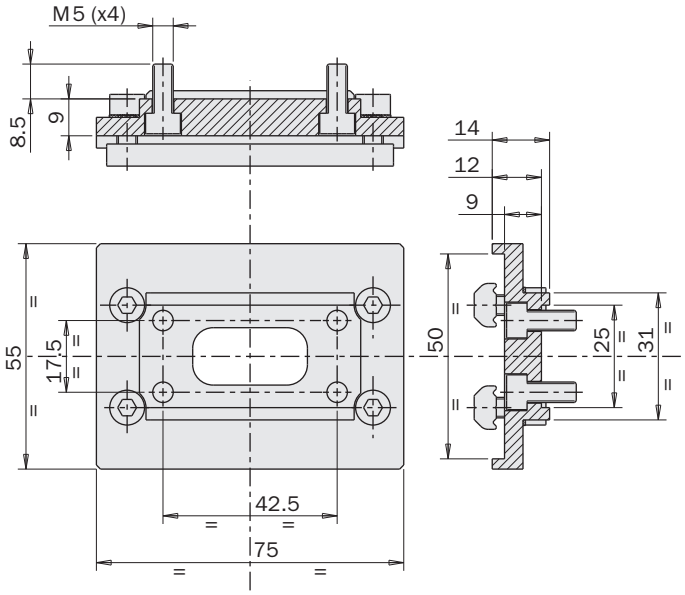
Vertical fastening of the profiles

(kit with screws)

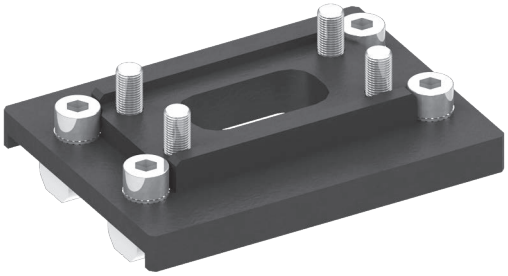
	MFI-A219
Peso / *Weight*	110 g

	MFI-A220
Peso / *Weight*	140 g

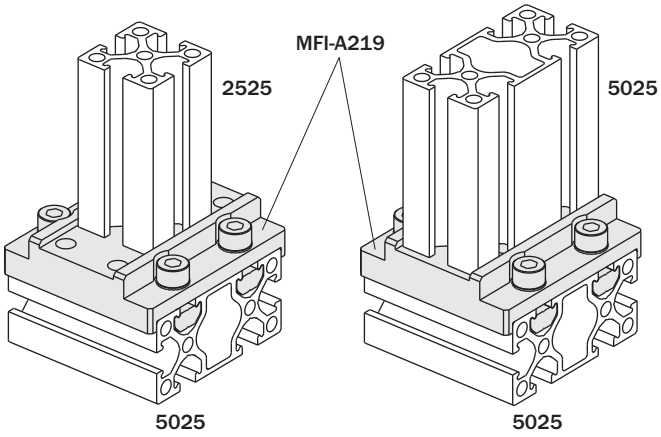


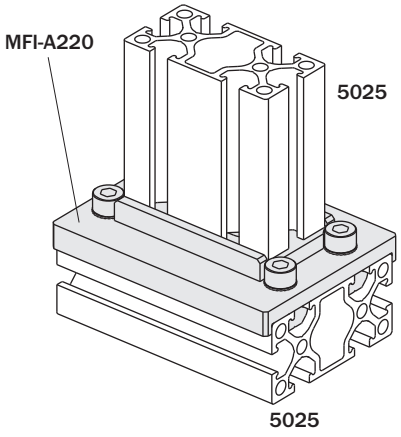


FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*





Interfaccia per braccio a sbalzo

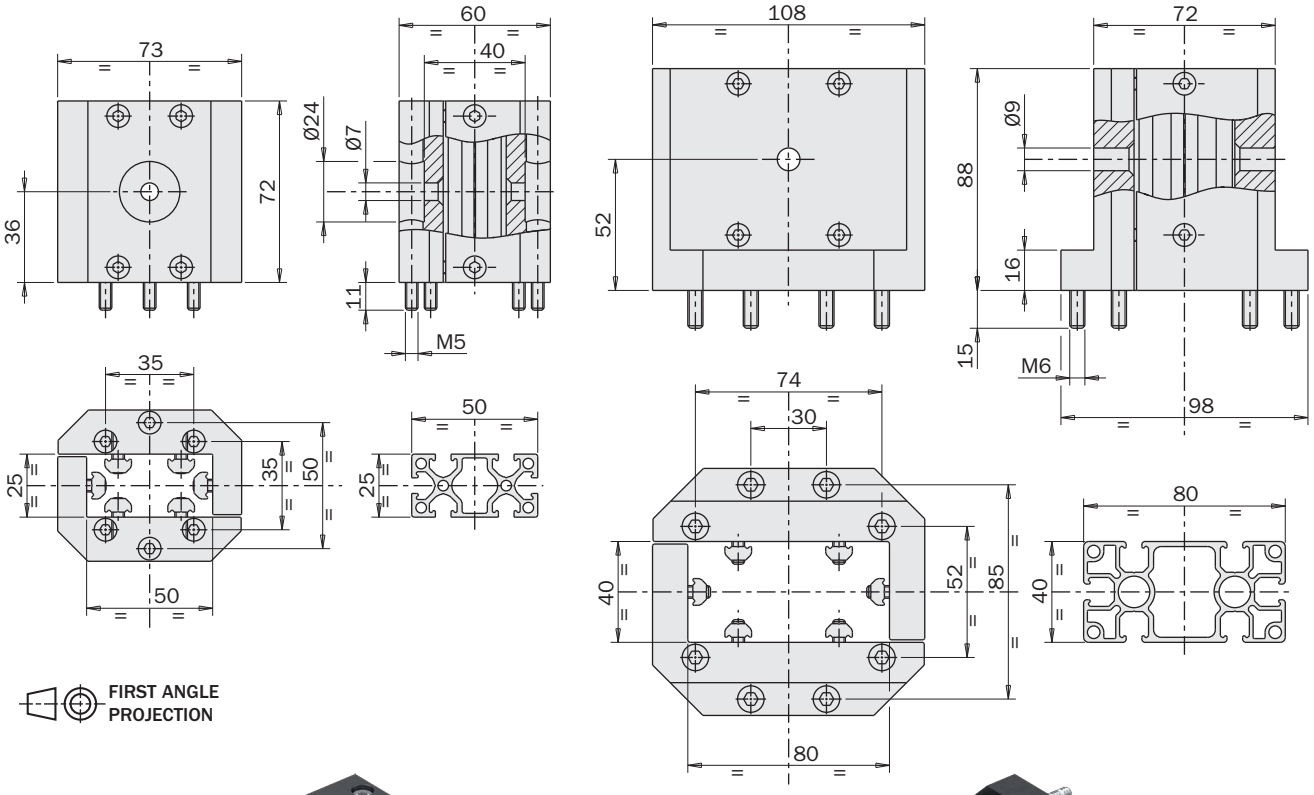
(kit completo di viti)

Interface for square profile/Quick Changer

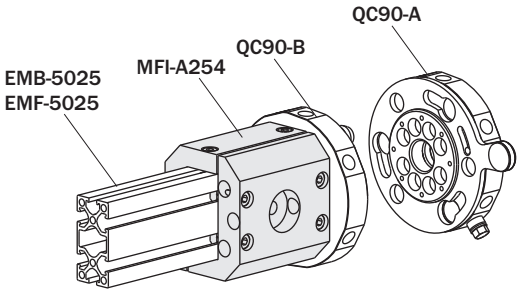
(kit with screws)

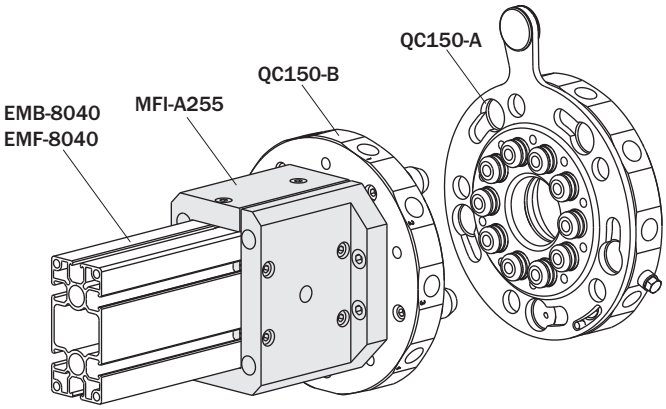
	MFI-A254
Peso / *Weight*	680 g

	MFI-A255
Peso / *Weight*	1300 g



Esempio di utilizzo / *Application example*

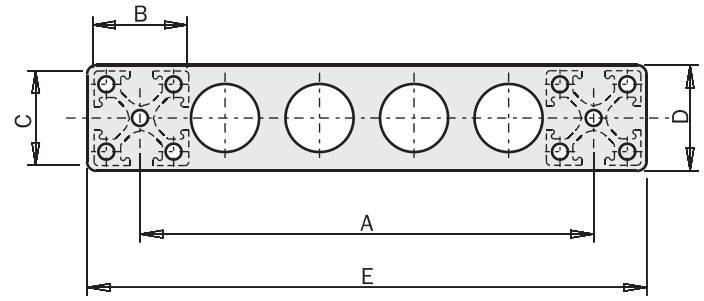


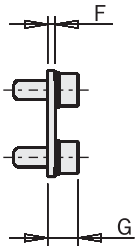


Connettore piatto dritto
(kit completo di viti)

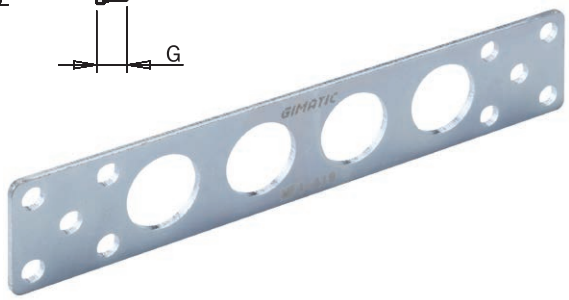
Flat straight connector
(kit with screws)

		MFI-A101	MFI-A19	MFI-A201	MFI-A100	MFI-A20	MFI-A202
A	[mm]	76	120	130	76	120	130
B	[mm]	25	25	25	25	25	25
C	[mm]	25	25	25	50	50	50
D	[mm]	28	28	28	53	53	53
E	[mm]	104	148	158	104	148	158
F	[mm]	2	2	2	2	2	2
G	[mm]	8	8	8	8	8	8
EMF-...		EMF-2525	EMF-2525	EMF-2525	EMF-5025	EMF-5025	EMF-5025
Peso / *Weight*		50 g	60 g	65 g	75 g	100 g	110 g

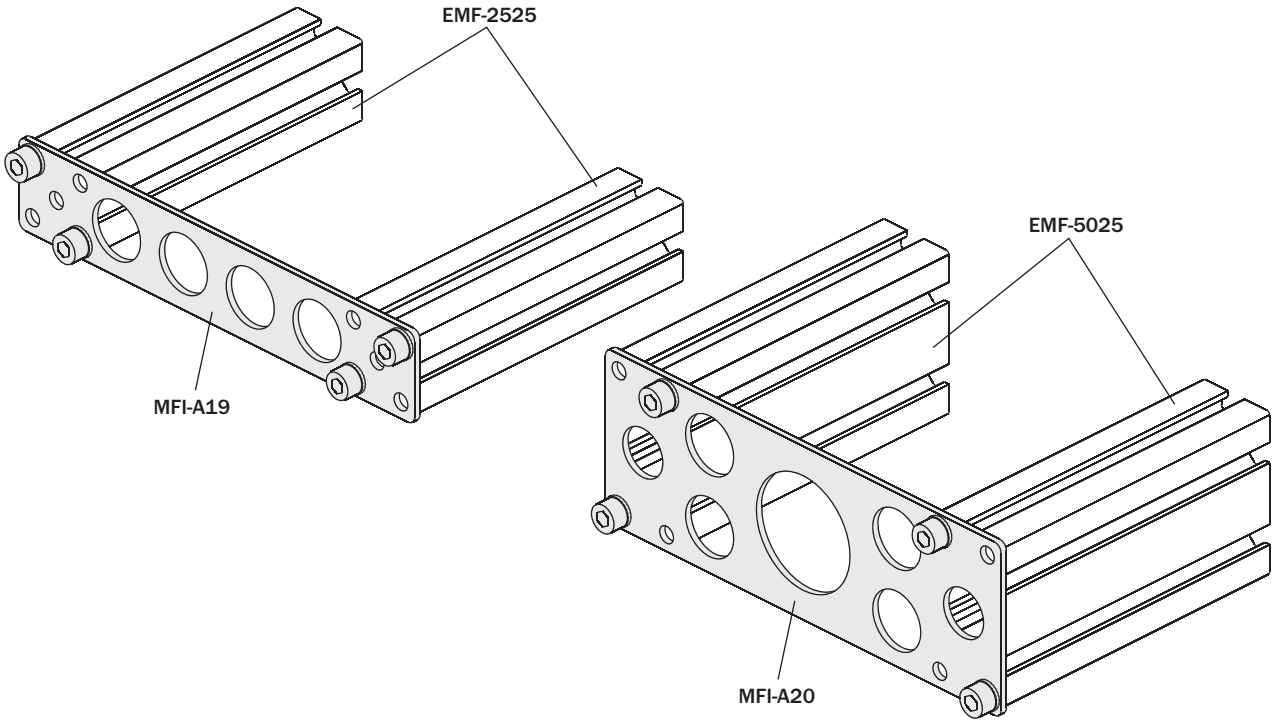




FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*



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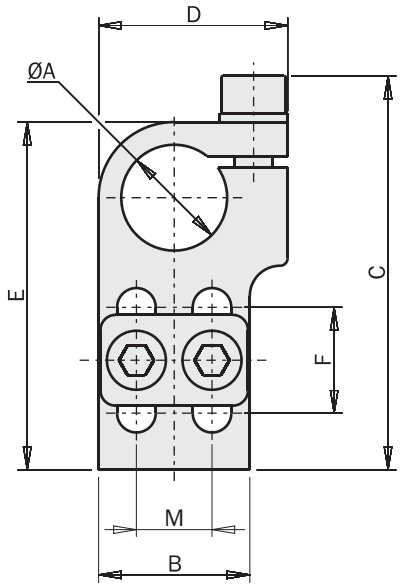
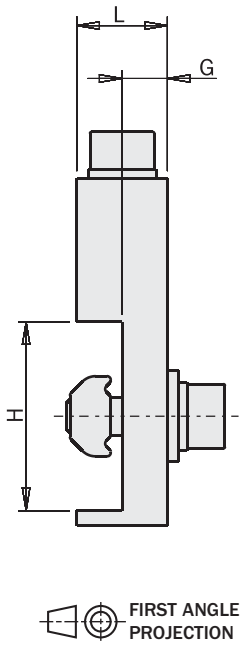
Staffa
(kit completo di viti)

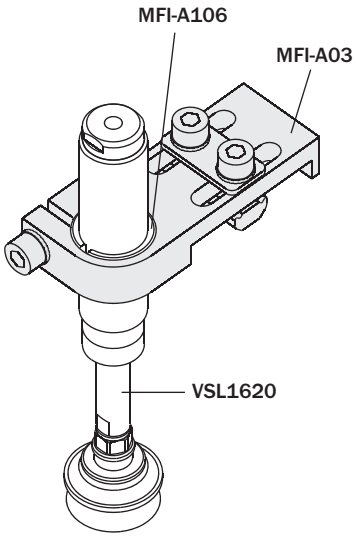
Mounting bracket
(kit with screws)

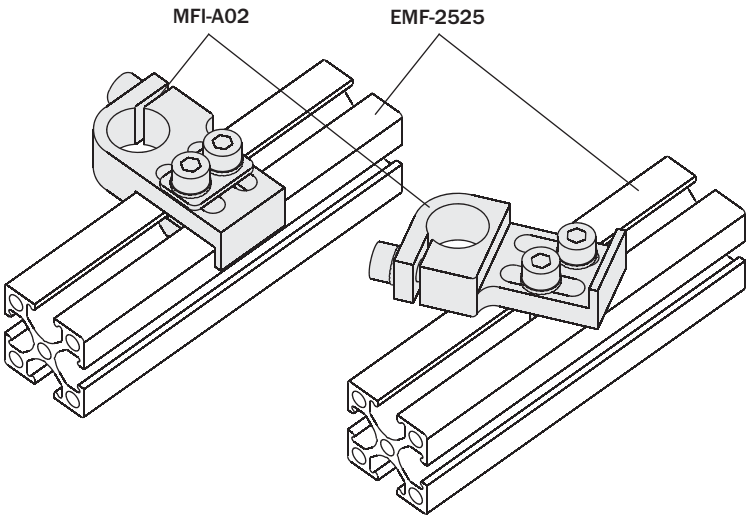
		MFI-A01	MFI-A270	MFI-A02	MFI-A204	MFI-A03
A	[mm]	Ø10	Ø10	Ø14	Ø20	Ø20
B	[mm]	16	16	20	25	25
C	[mm]	43	49	52.1	57.1	74.1
D	[mm]	20	20	25	30	30
E	[mm]	38	44	46	51.5	68
F	[mm]	10	14	14	14	22
G	[mm]	4.5	4.5	6	6.2	6
H	[mm]	18	25	25	25	40
L	[mm]	8	8	12	12	12
M	[mm]	8	8	10	15	15
EMF-...		EMF-1018 EMF-1818	EMF-2510 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





Esempio di utilizzo / *Application example*



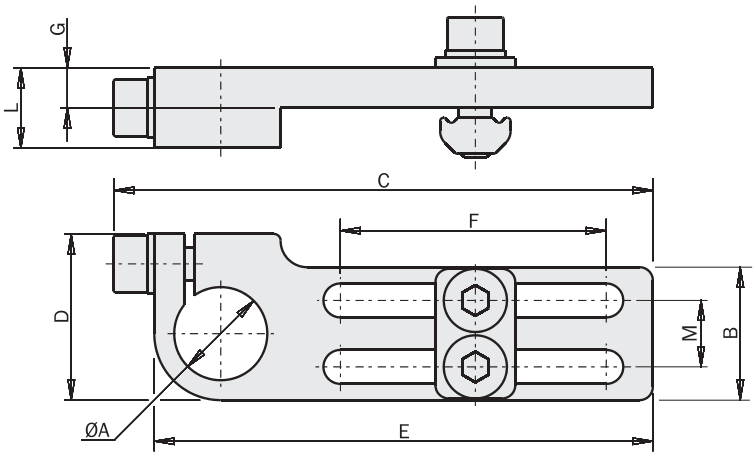


Staffa
(kit completo di viti)

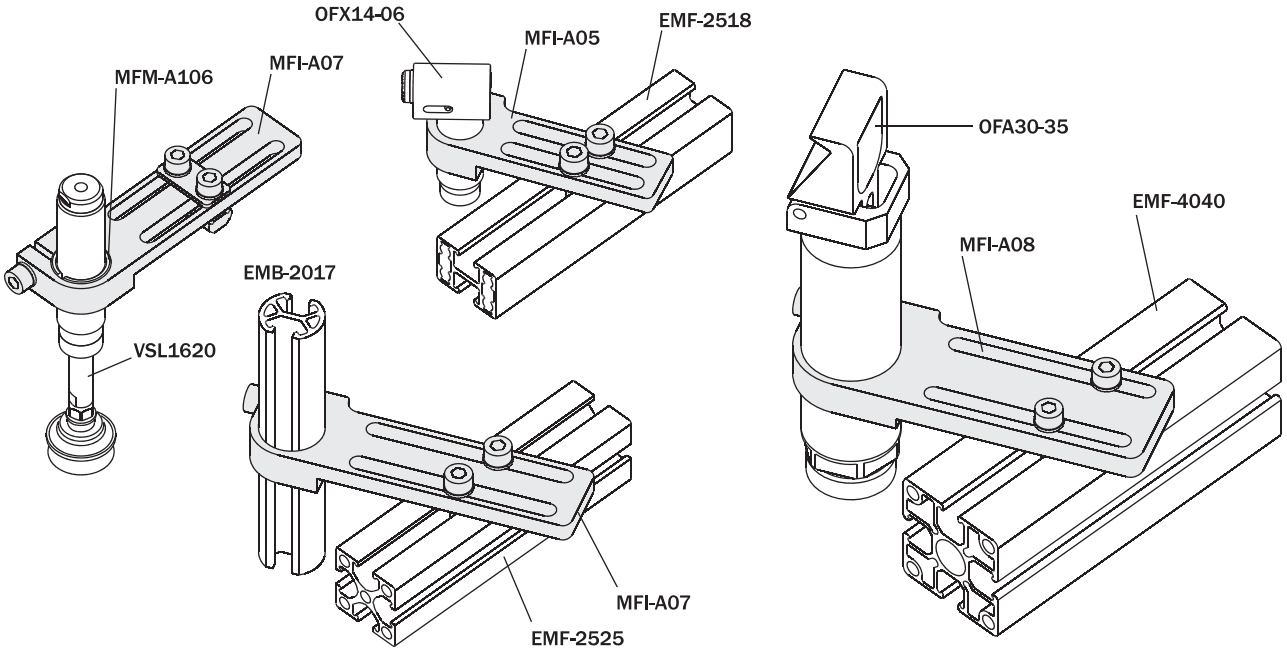
Mounting bracket
(kit with screws)

		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	40
E	[mm]	70	75	85	105	115
F	[mm]	40	40	50	60	60
G	[mm]	4.5	6	6	6	8
L	[mm]	8	12	12	12	12
M	[mm]	8	10	10	15	22
EMF / EMB		EMF-1018 EMF-1818 EMF-2510 EMF-2518 EMF-2525 EMF-5025 - - EMB-2017 EMB-3026 EMB-5045	EMF-1018 EMF-1818 EMF-2510 EMF-2518 EMF-2525 EMF-5025 EMF-4040 EMF-8040 EMB-2017 EMB-3026 EMB-5045	EMF-1018 EMF-1818 EMF-2510 EMF-2518 EMF-2525 EMF-5025 EMF-4040 EMF-8040 EMB-2017 EMB-3026 EMB-5045	- - EMF-2510 EMF-2518 EMF-2525 EMF-5025 EMF-4040 EMF-8040 - EMB-3026 EMB-5045	- - EMF-2510 EMF-2518 EMF-2525 EMF-5025 EMF-4040 EMF-8040 - EMB-3026 EMB-5045
Peso / *Weight*		23 g	38 g	40 g	55 g	95 g

FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*



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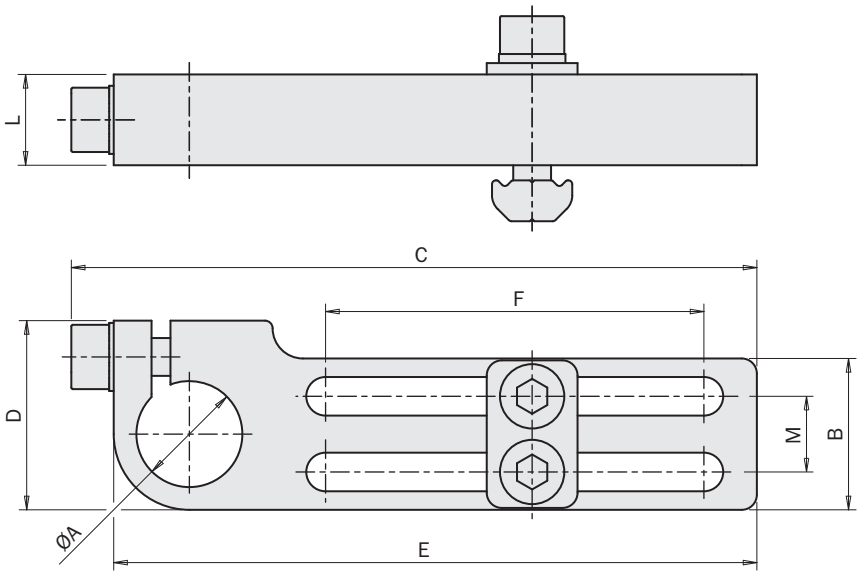
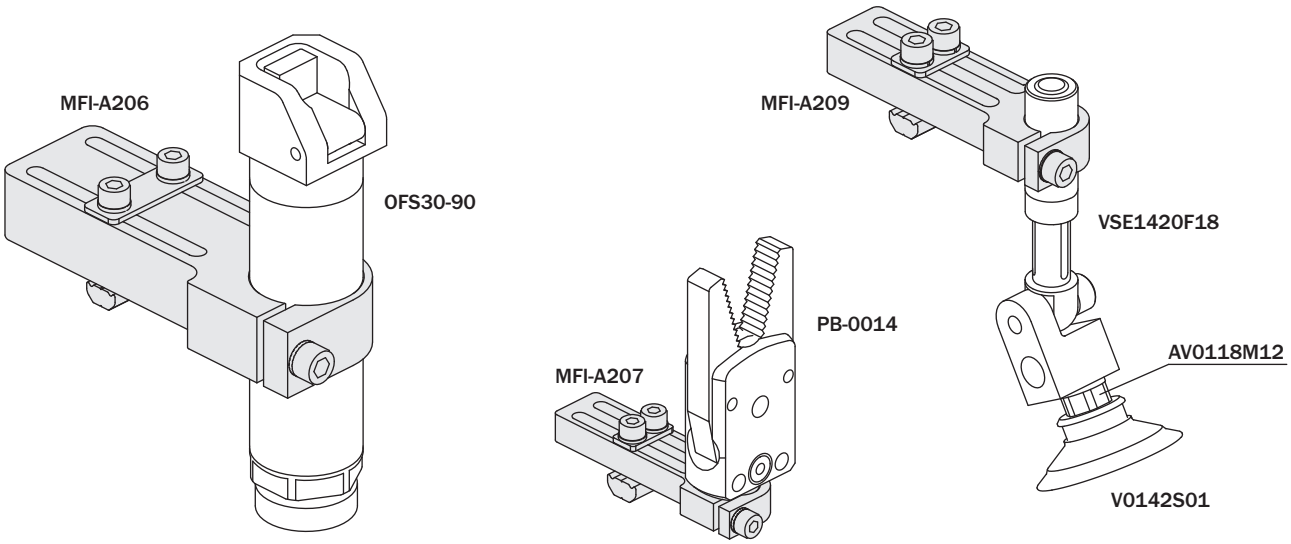
Staffa robusta
(kit completo di viti)

Heavy duty mounting bracket
(kit with screws)

		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]	40	50	60	60
L	[mm]	8.3	12	15	20
M	[mm]	8	10	15	22
Peso / *Weight*		30 g	60 g	85 g	175 g



Esempio di utilizzo / *Application example*

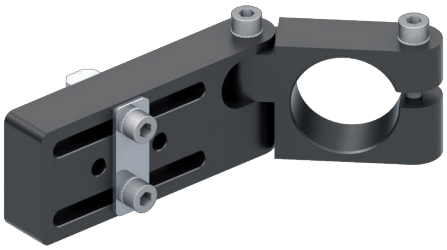


Staffa asolata angolare

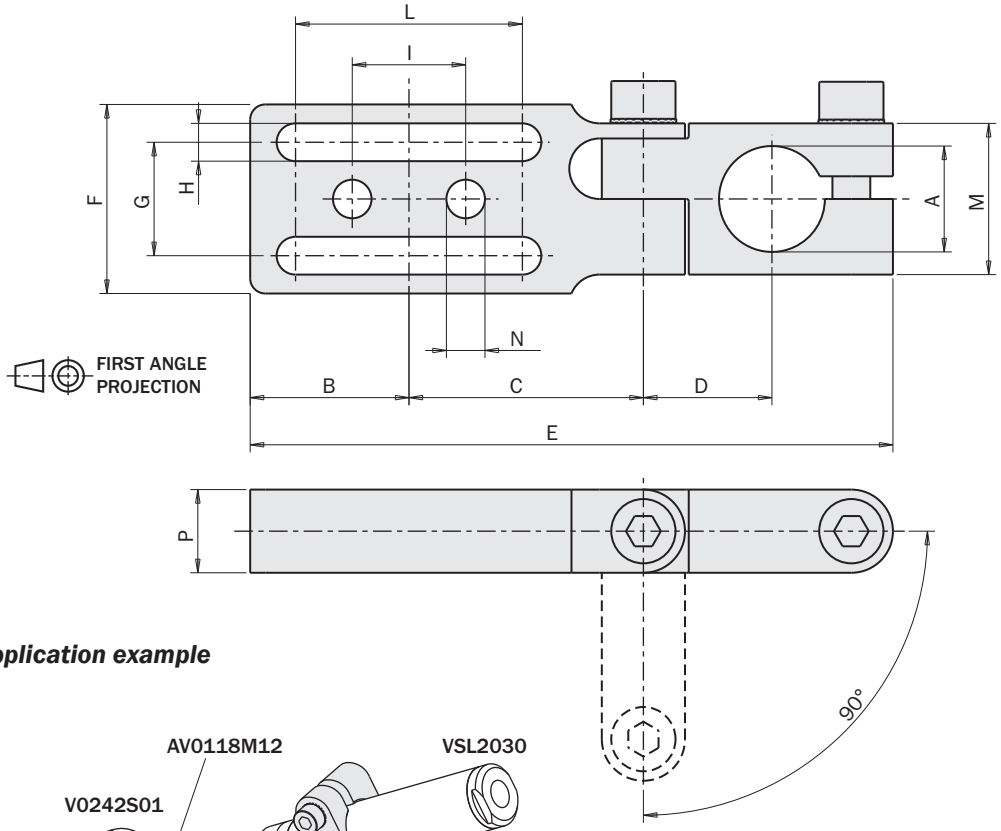
(kit completo di viti)

Slotted angular bracket

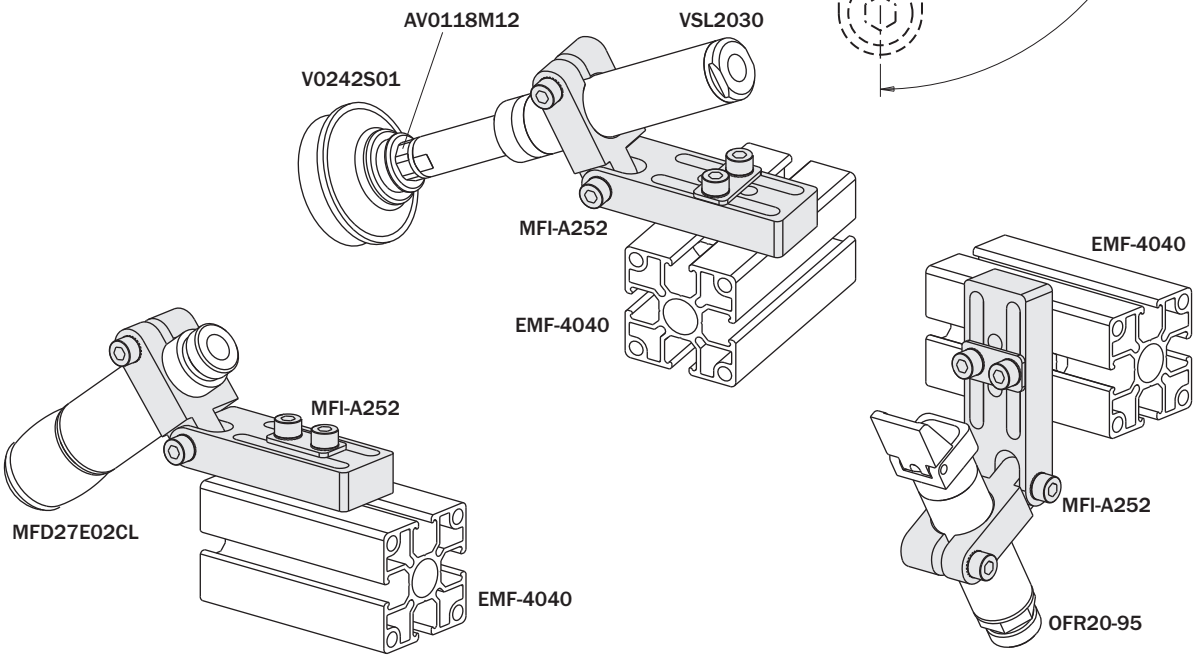
(kit with screws)



		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	22	28
E	[mm]	64.5	85	107	135.5
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*



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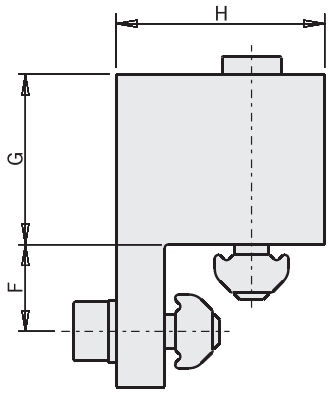
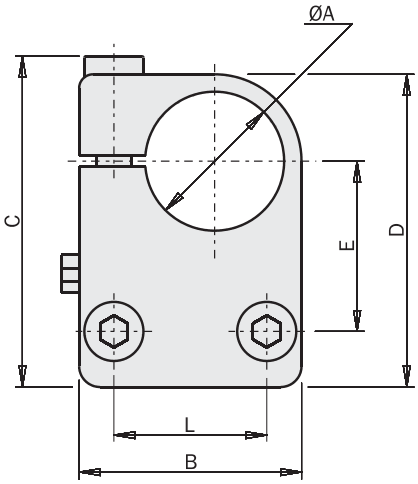
Staffa
(kit completo di viti)

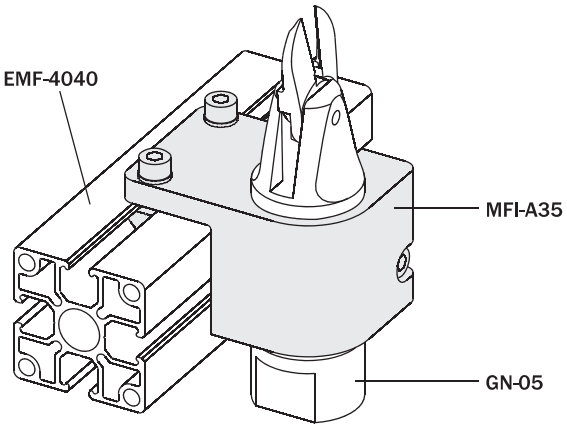
Mounting bracket
(kit with screws)

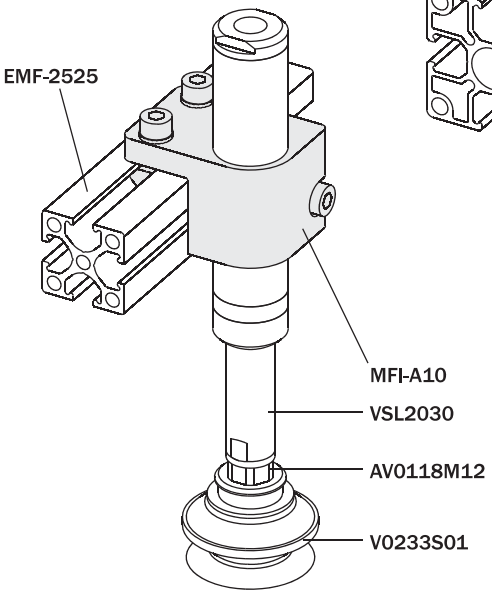
		MFI-A09	MFI-A10	MFI-A36	MFI-A34	MFI-A35
A	[mm]	Ø14	Ø20	Ø20	Ø30	Ø30
B	[mm]	25	32	35	40	45
C	[mm]	42.6	47.6	54.1	53.1	64.1
D	[mm]	40	45	54.5	55	65.5
E	[mm]	22	24.5	33	29.5	39
F	[mm]	12.5	12.5	20	12.5	20
G	[mm]	19.5	24.5	26.5	34.5	37.5
H	[mm]	25	30	35	30	40
L	[mm]	15	22	25	30	35
EMF-...		EMF-2525 EMF-5025	EMF-2525 EMF-5025	EMF-4040 EMF-8040	EMF-2525 EMF-5025	EMF-4040 EMF-8040
Peso / *Weight*		50 g	70 g	95 g	90 g	150 g

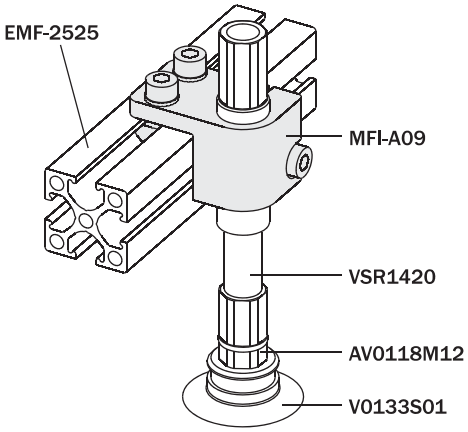




Esempio di utilizzo / *Application example*



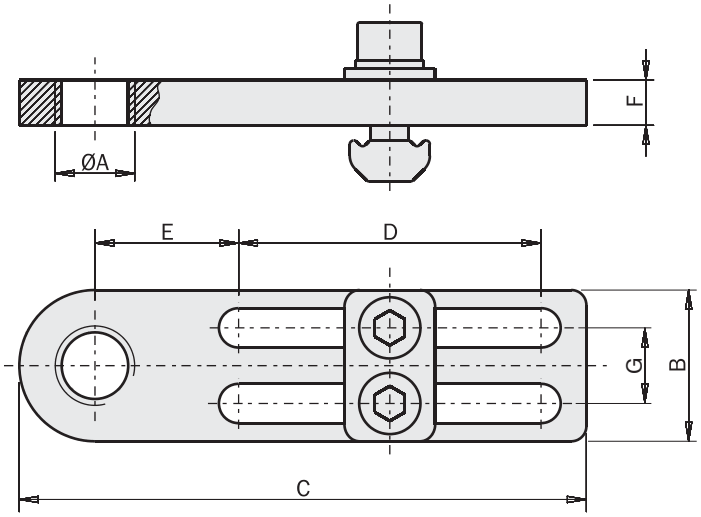




Staffa
(kit completo di viti)

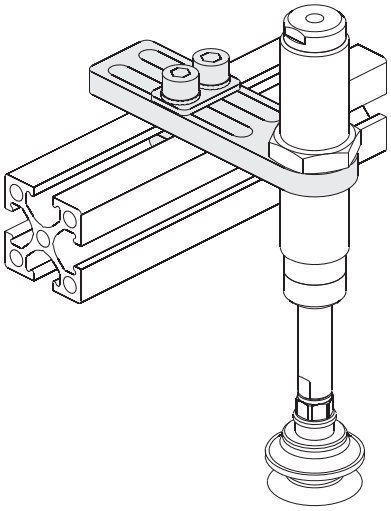
Mounting bracket
(kit with screws)

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Peso *Weight*
MFI-A104	G1/8"	20	75	40	19	6	10	25 g
MFI-A105	G1/8"	25	105	60	26.5	6	15	42 g
MFI-A106	M10x1	20	75	40	19	6	10	30 g
MFI-A107	M10x1	25	105	60	26.5	6	15	40 g
MFI-A266	M12x1	20	75	40	19	6	10	30 g
MFI-A267	M12x1	25	105	60	26.5	6	15	47 g
MFI-A108	M14x1	20	75	40	19	6	10	20 g
MFI-A109	M14x1	25	105	60	26.5	6	15	40 g
MFI-A210	M14x1.5	25	75	40	19	6	10	20 g
MFI-A211	M14x1.5	25	105	60	26.5	6	15	40 g
MFI-A110	M16x1	20	75	40	19	6	10	20 g
MFI-A111	M16x1	25	105	60	26.5	6	15	40 g
MFI-A112	M20x1.5	25	75	40	19	6	15	30 g
MFI-A113	M20x1.5	25	105	60	26.5	6	15	35 g
MFI-A268	M25x1.5	30	85	40	24	8	15	52 g
MFI-A269	M25x1.5	30	115	60	34	8	15	67 g
MFI-A114	-	20	75	40	19	6	10	25 g
MFI-A115	-	25	105	60	26.5	6	15	40 g



FIRST ANGLE PROJECTION

Esempio di utilizzo / *Application example*



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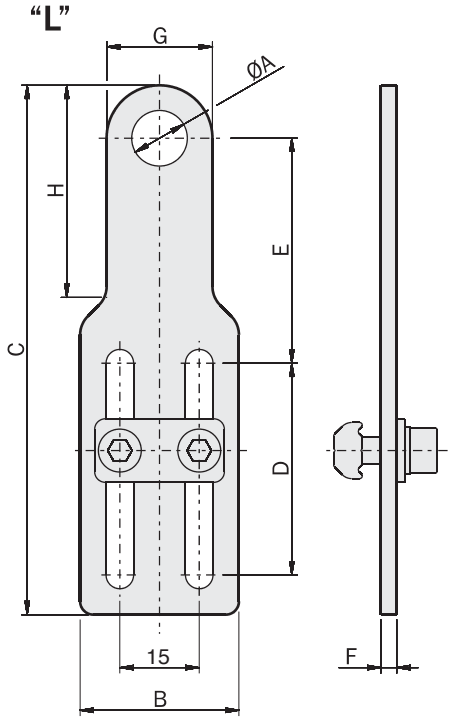
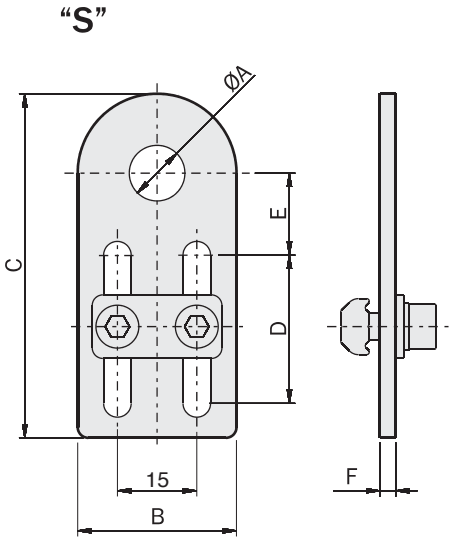
Staffa
(kit completo di viti)

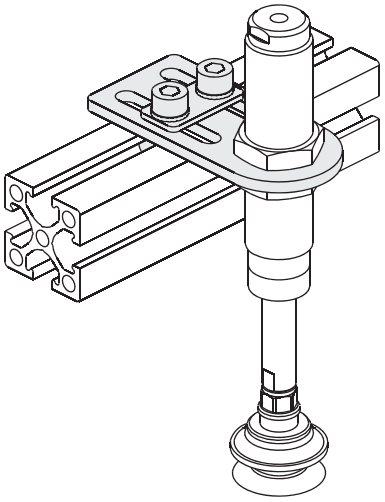
Mounting bracket
(kit with screws)

	Tipo *Type*	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	Peso *Weight*
MFI-A116	L	Ø10.5	30	100	40	42.5	3	20	38	60 g
MFI-A117	L	Ø12.5	30	100	40	42.5	3	20	38	60 g
MFI-A118	L	Ø14.5	30	100	40	42.5	3	24	38	60 g
MFI-A119	L	Ø16.5	30	100	40	42.5	3	30	-	65 g
MFI-A120	L	Ø20.5	30	100	40	42.5	3	30	-	60 g
MFI-A181	L	Ø22.5	30	100	40	42.5	5	35	26	105 g
MFI-A182	L	Ø25.5	30	100	40	42.5	5	35	26	100 g
MFI-A121	S	Ø10.5	30	65	28	15.5	3	-	-	45 g
MFI-A122	S	Ø12.5	30	65	28	15.5	3	-	-	45 g
MFI-A123	S	Ø14.5	30	65	28	15.5	3	-	-	45 g
MFI-A124	S	Ø16.5	30	65	28	15.5	3	-	-	45 g
MFI-A125	S	Ø20.5	30	65	28	15.5	3	-	-	40 g
MFI-A183	S	Ø22.5	30	70	28	17	5	35	26	75 g
MFI-A184	S	Ø25.5	30	70	28	17	5	35	26	70 g





Esempio di utilizzo / *Application example*



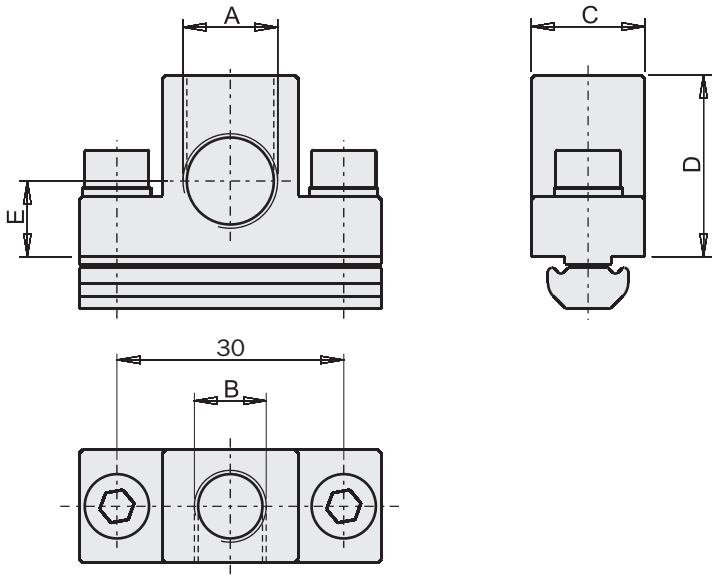
Staffa per attacco diretto ventosa

(kit completo di viti)

Direct connector for vacuum cup

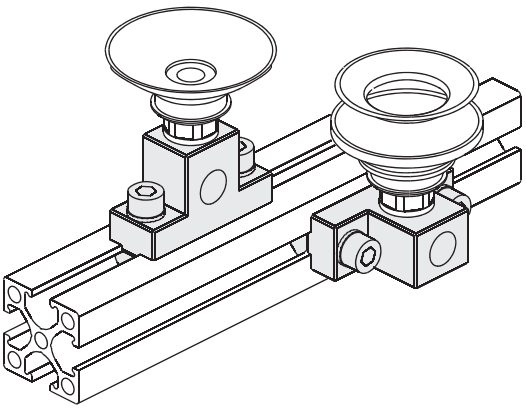
(kit with screws)

FIRST ANGLE PROJECTION



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

Esempio di utilizzo / *Application example*



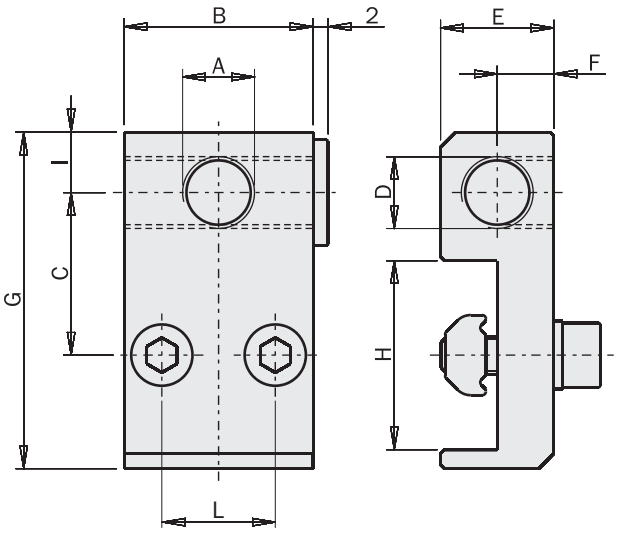
Staffa per ventosa

(kit completo di viti)

Mounting bracket for vacuum cup

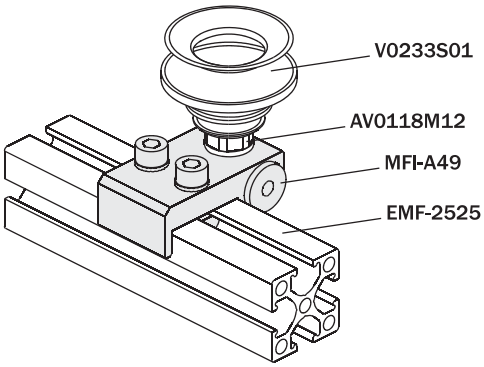
(kit with screws)

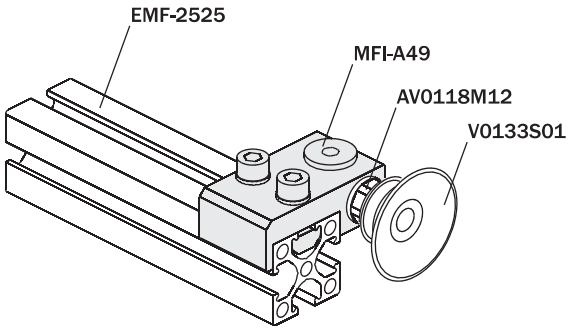
FIRST ANGLE PROJECTION



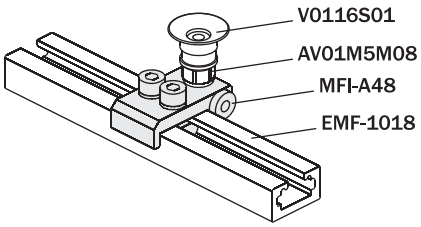
		MFI-A48	MFI-A49	MFI-A50
A	[mm]	M5	G1/8”	G1/4”
B	[mm]	16	25	25
C	[mm]	13.5	21.5	21.5
D	[mm]	M5	G1/8”	G1/8”
E	[mm]	8	15	15
F	[mm]	4	7.5	7.5
G	[mm]	29	44.5	46.5
H	[mm]	18	25	25
I	[mm]	4.3	8	10
L	[mm]	8	15	15
EMF - ...		EMF-1818	EMF-2510	EMF-2510
		EMF-1018	EMF-2518	EMF-2518
		-	EMF-2525	EMF-2525
		-	EMF-5025	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

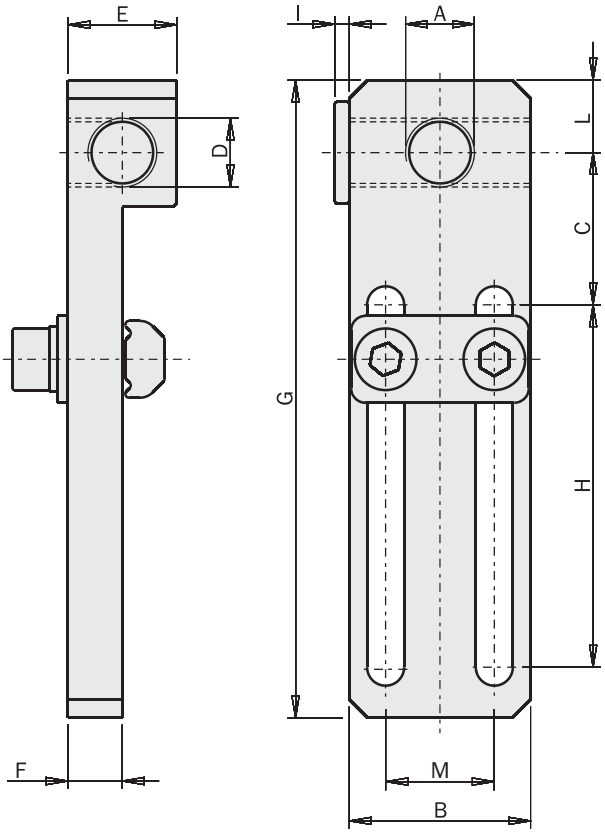


Staffa lunga per ventosa

(kit completo di viti)

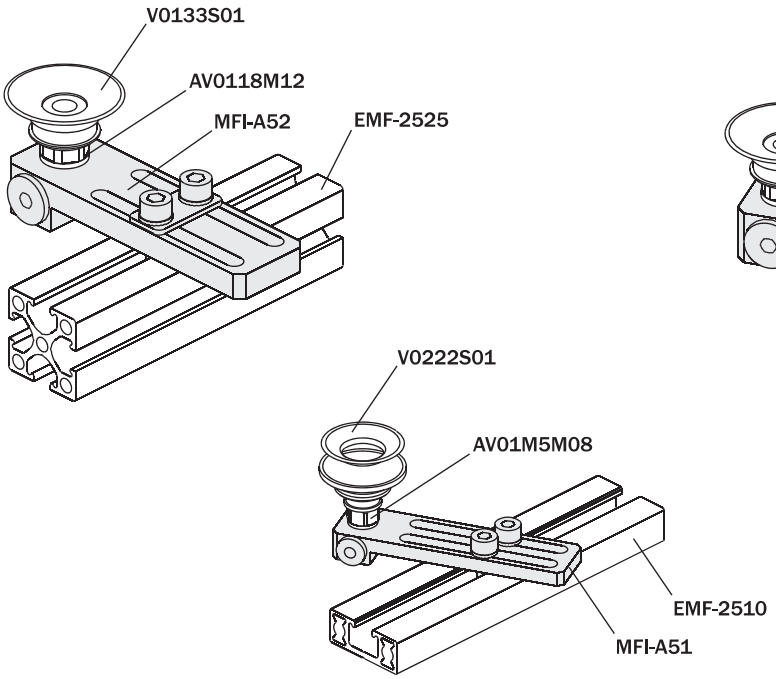
Long mounting bracket for vacuum cup

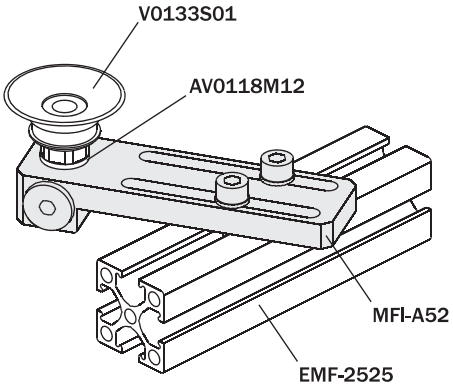
(kit with screws)



		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
EMF/EMB		EMF-1018	EMF-1018	EMF-1018
		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*





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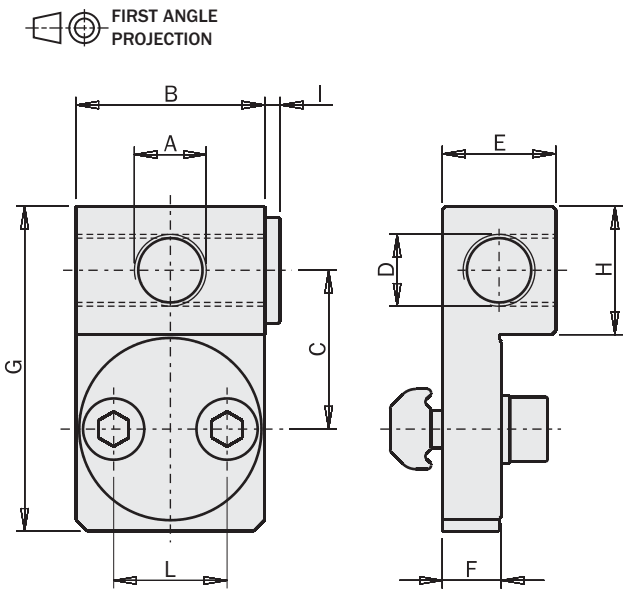
Staffa ad angolo regolabile per ventosa

(kit completo di viti)

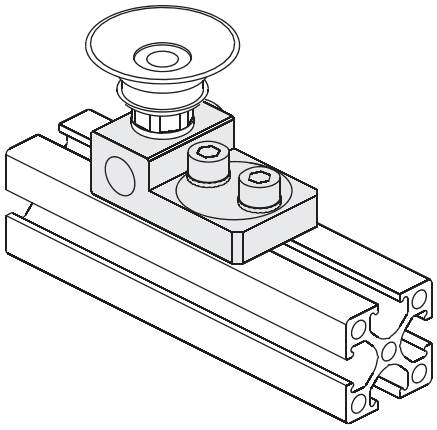
Adjustable angle connector for vacuum cup

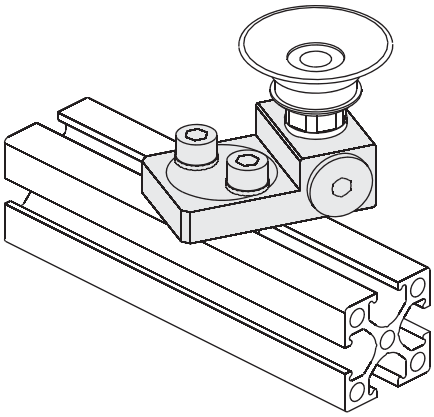
(kit with screws)



		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/EMB		EMF-1018	-	-
		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*		15 g	45 g	42 g

Esempio di utilizzo / *Application example*

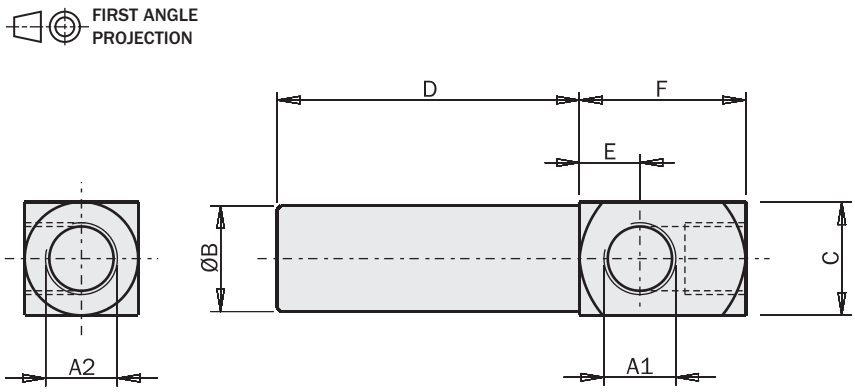




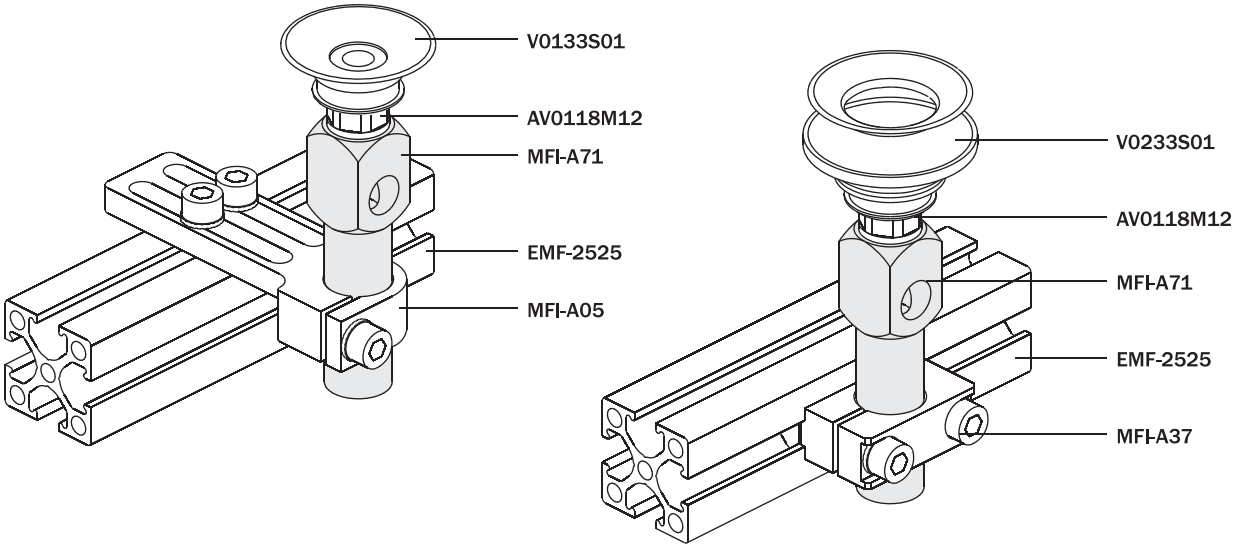
Gambo per ventosa

Leg for vacuum cup

		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*		10 g	13 g	17 g	17 g	25 g	32 g	40 g	60 g	75 g



Esempio di utilizzo / *Application example*



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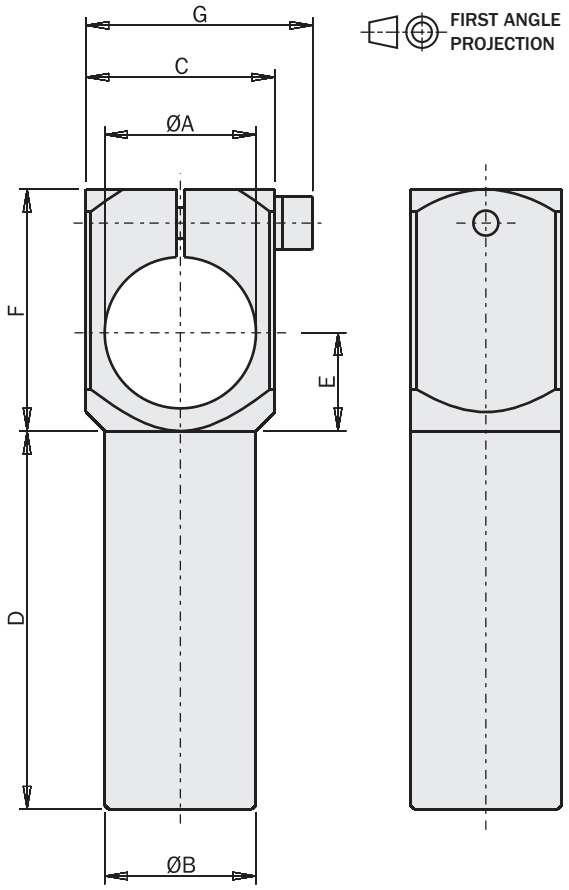
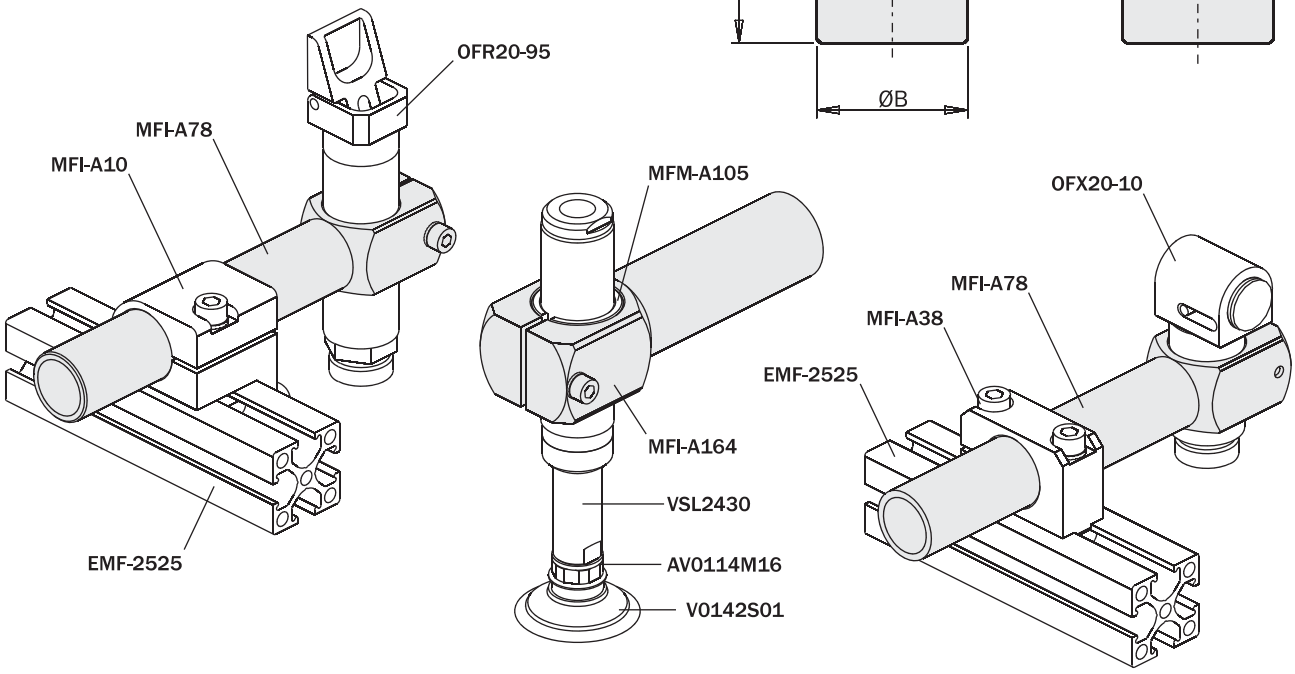
Gambo con cravatta
(kit completo di viti)

Clamp leg
(kit with screws)

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Peso *Weight*
MFI-A158	Ø10	Ø10	14	30	7	19	19	10 g
MFI-A159	Ø10	Ø10	14	60	7	19	19	15 g
MFI-A160	Ø10	Ø10	14	90	7	19	19	20 g
MFI-A161	Ø14	Ø14	18	40	10	25	24	20 g
MFI-A162	Ø14	Ø14	18	80	10	25	24	30 g
MFI-A163	Ø14	Ø14	18	120	10	25	24	40 g
MFI-A77	Ø20	Ø20	25	50	13	32	31	45 g
MFI-A78	Ø20	Ø20	25	100	13	32	31	70 g
MFI-A79	Ø20	Ø20	25	150	13	32	31	105 g
MFI-A164	Ø30	Ø30	40	80	19	44	46	170 g
MFI-A165	Ø30	Ø30	40	140	19	44	46	230 g
MFI-A166	Ø30	Ø30	40	200	19	44	46	300 g



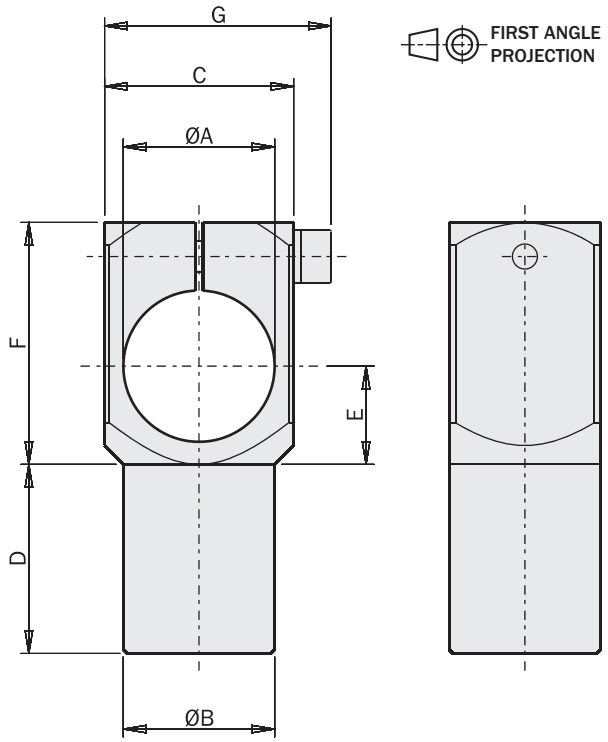
Esempio di utilizzo / *Application example*



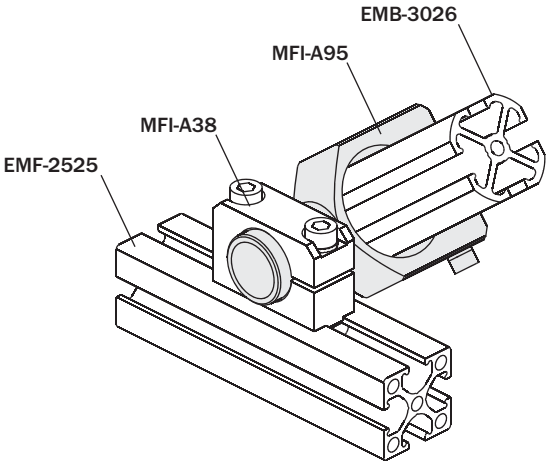
Gambo con cravatta
(kit completo di viti)

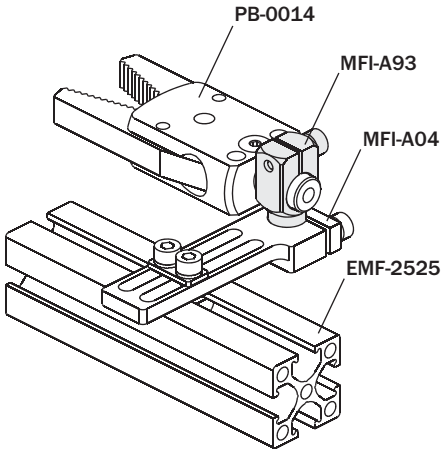
Clamp leg
(kit with screws)

		MFI-A93	MFI-A157	MFI-A94	MFI-A95	MFI-A203
A	[mm]	Ø10	Ø14	Ø20	Ø30	Ø30
B	[mm]	Ø10	Ø14	Ø20	Ø20	Ø30
C	[mm]	14x10	18x14	25x20	40x20	40x30
D	[mm]	15	20	25	25	40
E	[mm]	7	10	13	19	19
F	[mm]	25	25	25	25	44
G	[mm]	19	24	30	45	47
Peso / *Weight*		8 g	15 g	35 g	60 g	130 g



Esempio di utilizzo / *Application example*





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Blocco distributore laterale (1 canale)

(kit completo di viti)

Side manifold block (1 channel)

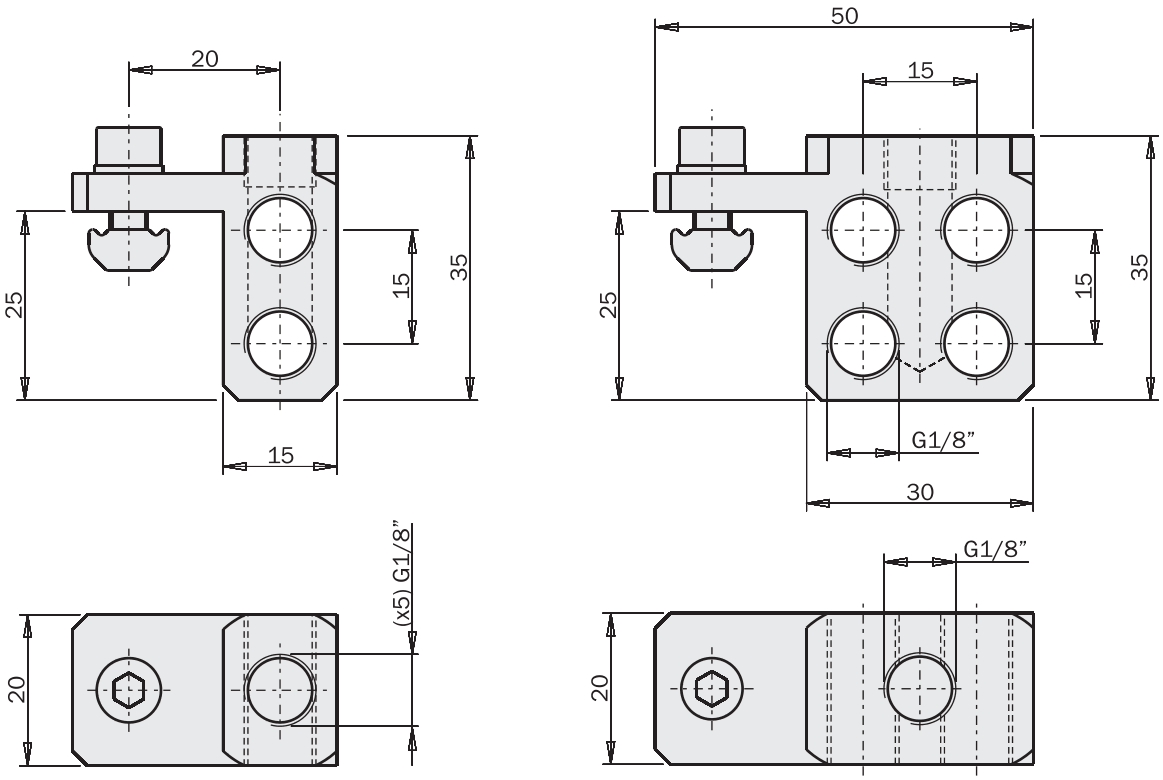
(kit with screws)

G1/8" (x5)

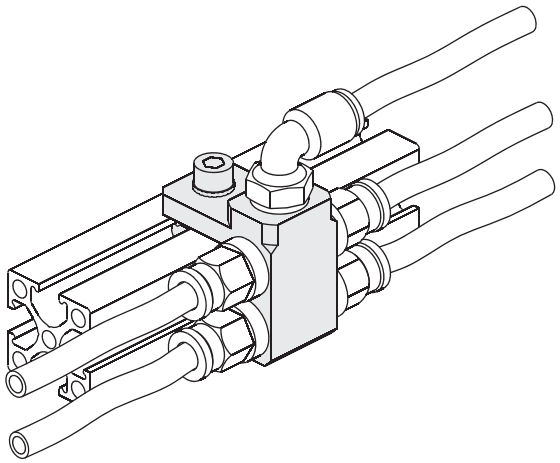
G1/8" (x9)

	MFI-A68	MFI-A69
EMF-....	EMF-2518	EMF-2518
	EMF-2525	EMF-2525
	EMF-5025	EMF-5025
Peso / *Weight*	30 g	50 g

FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*



Blocco distributore laterale (2 canali)

(kit completo di viti)

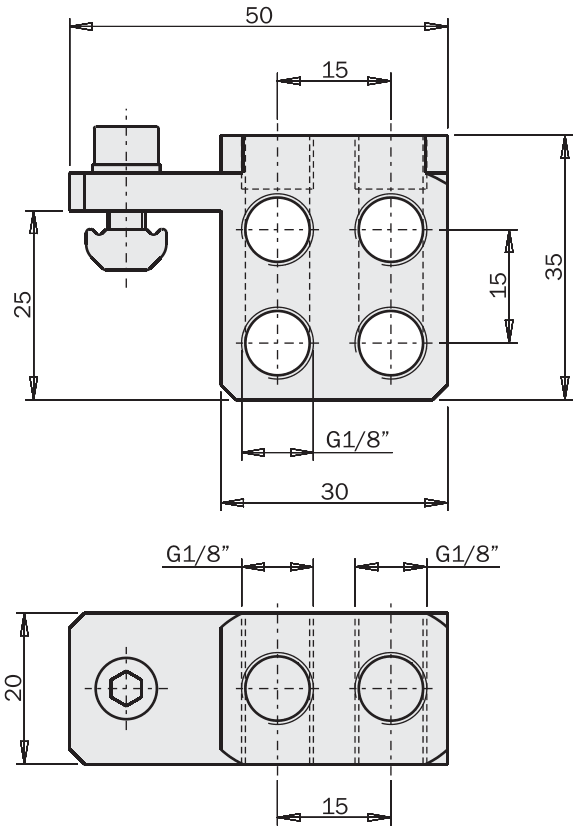
Side manifold block (2 channels)

(kit with screws)

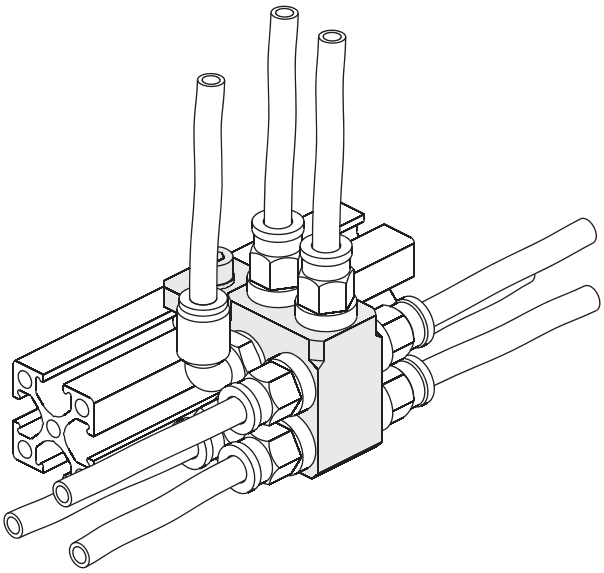
G1/8" (5+5)

	MFI-A70
EMF-....	EMF-2518
	EMF-2525
	EMF-5025
Peso / *Weight*	48 g

FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*



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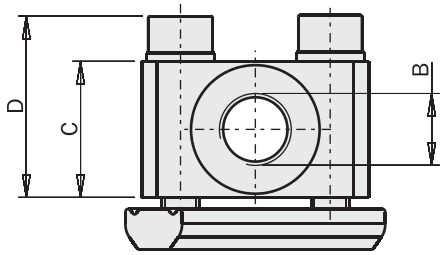
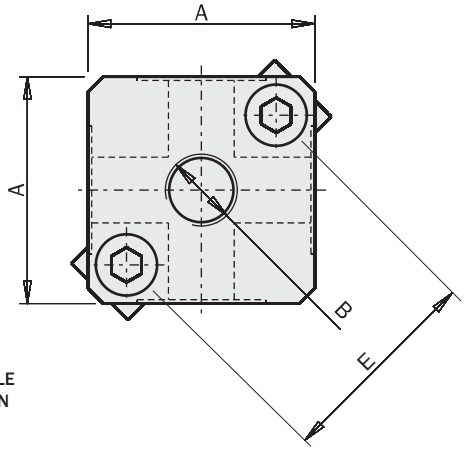
Blocco distributore
(kit completo di viti)

Manifold block
(kit with screws)

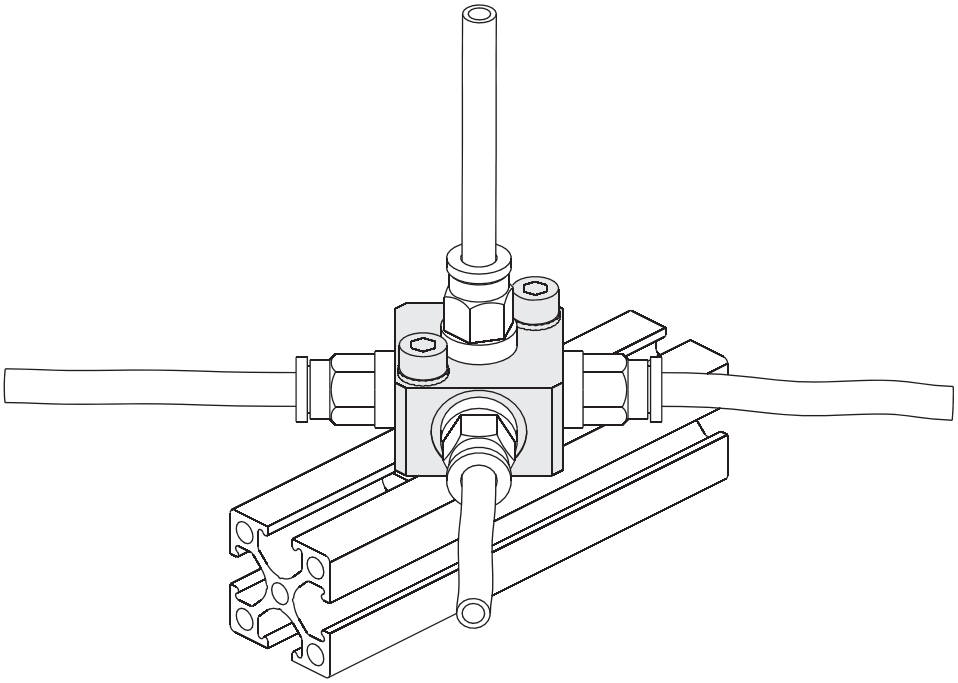




FIRST ANGLE PROJECTION

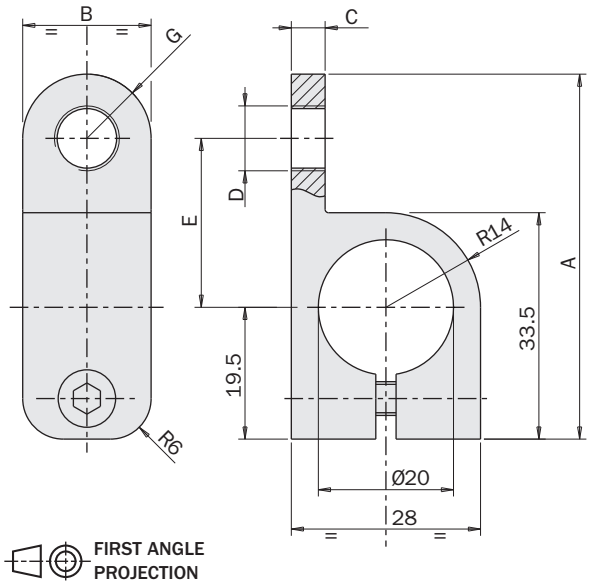
		MFI-A66	MFI-A67
A	[mm]	30	40
B	[mm]	(x5) G1/8”	(x5) G1/4”
C	[mm]	18	20
D	[mm]	24	23
E	[mm]	28	35
Peso / *Weight*		50 g	80 g

Esempio di utilizzo / *Application example*



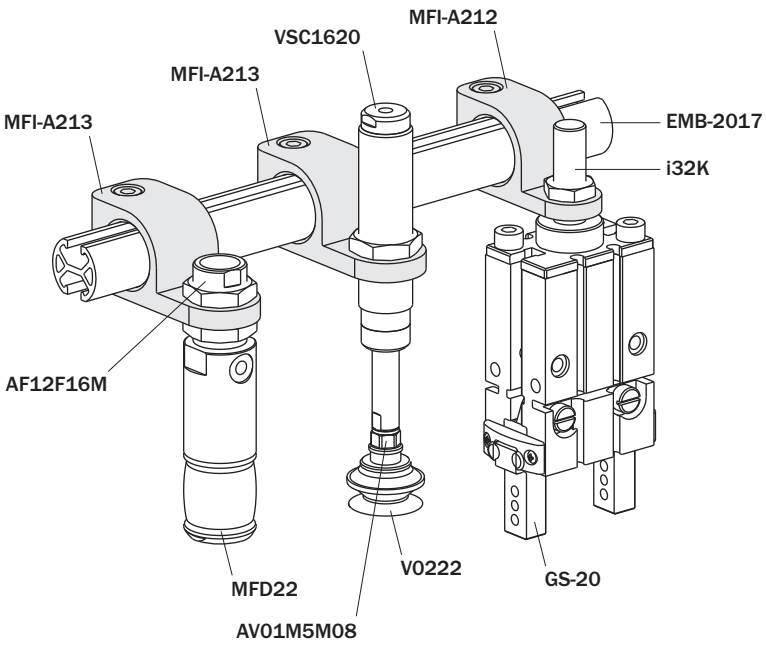
Supporto orientabile
(kit completo di viti)

Swivelling support
(kit with screws)



		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

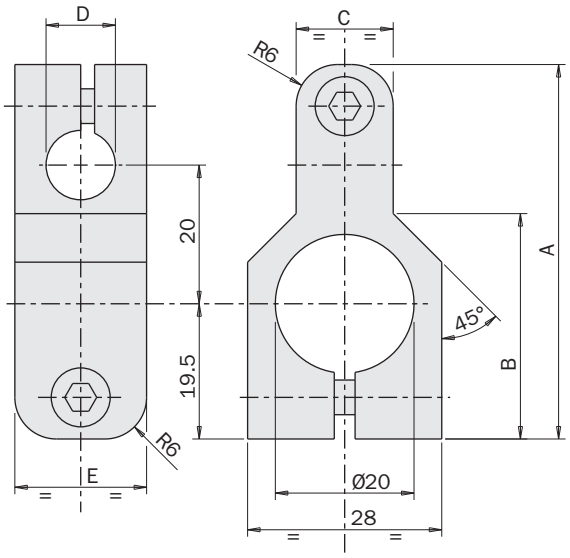
(kit completo di viti)

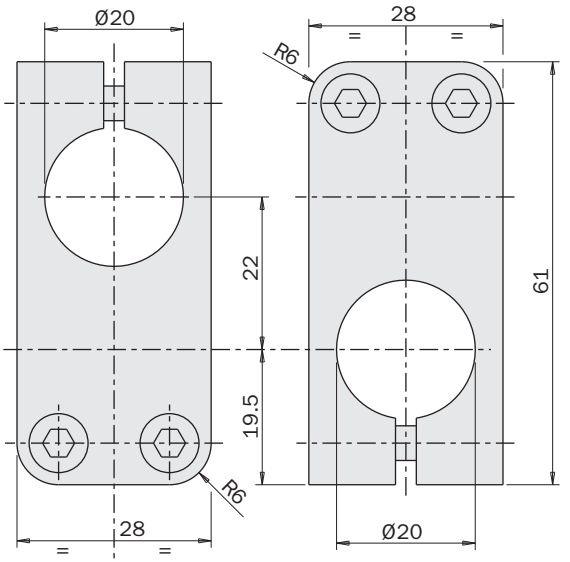
Cross connection block

(kit with screws)

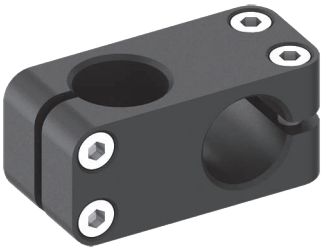
		MFI-A214	MFI-A215
A	[mm]	54	56
B	[mm]	32.5	30.5
C	[mm]	14	18
D	[mm]	Ø10	Ø14
E	[mm]	19	22
Peso / *Weight*		40 g	45 g

	MFI-A216
Peso / *Weight*	70 g

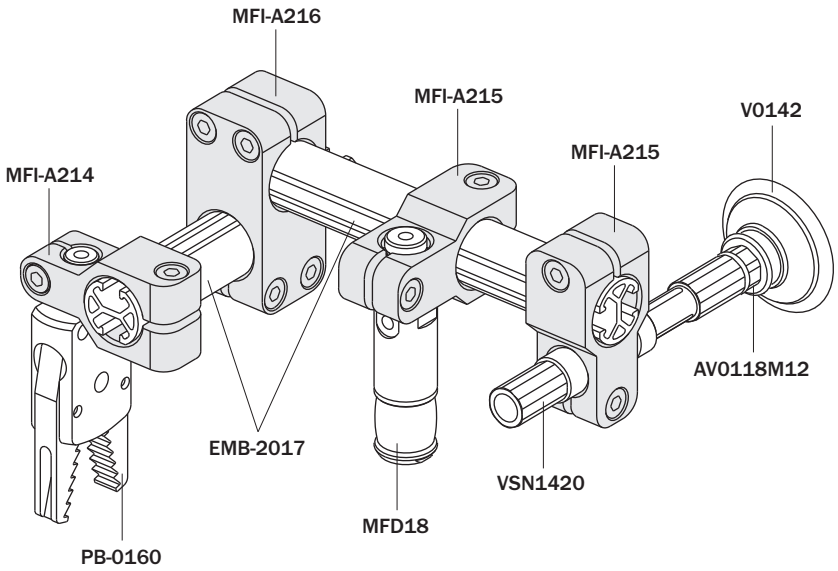




FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*

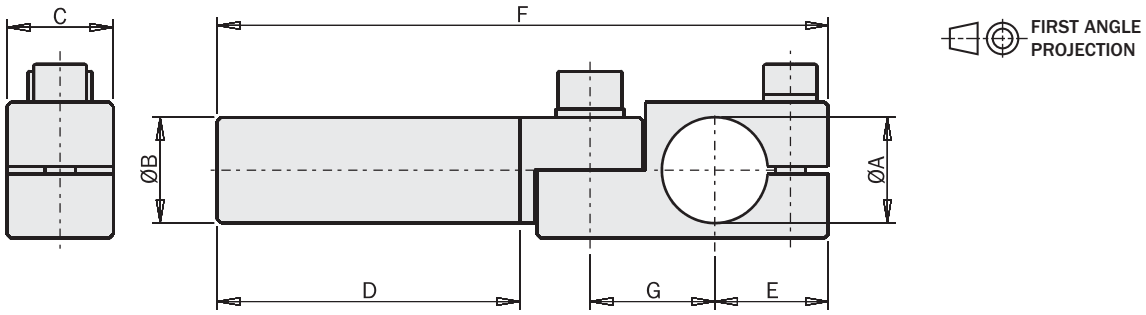


09/2015

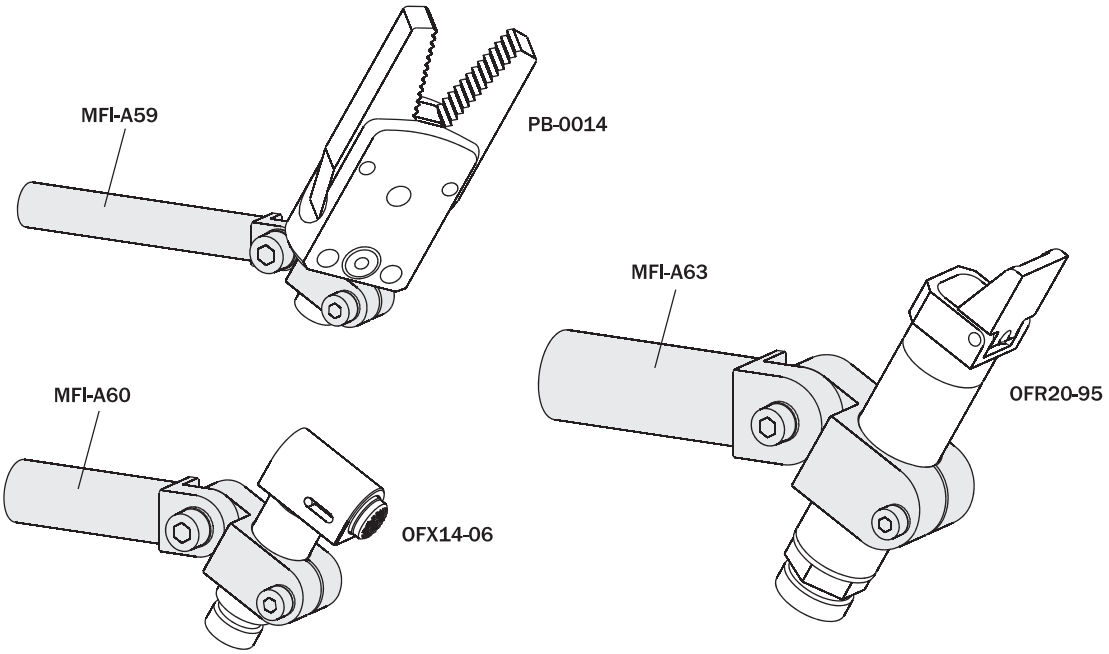
Gomito con cravatta
(kit completo di viti)

Elbow arm
(kit with screws)

		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]	10	14	14	14	20	20	20	30	30	30
D	[mm]	60	40	80	120	50	100	150	80	140	200
E	[mm]	13	16	16	16	19	19	19	27	27	27
F	[mm]	93	82	122	162	104	154	204	160	220	280
G	[mm]	12.5	16.5	16.5	16.5	22.5	22.5	22.5	34.8	34.8	34.8
Peso / *Weight*		20 g	32 g	42 g	50 g	70 g	90 g	120 g	235 g	300 g	360 g



Esempio di utilizzo / *Application example*



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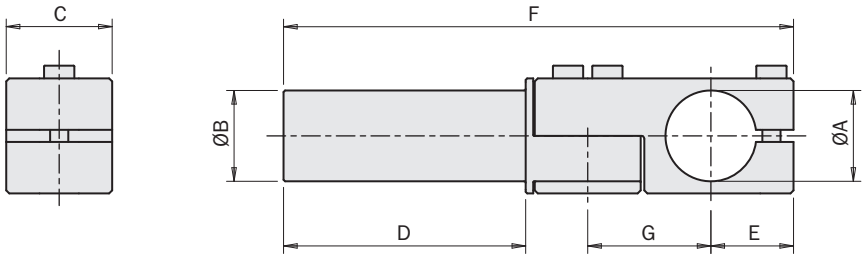
Snodo robusto con cravatta

(kit completo di viti)

Heavy duty elbow arm

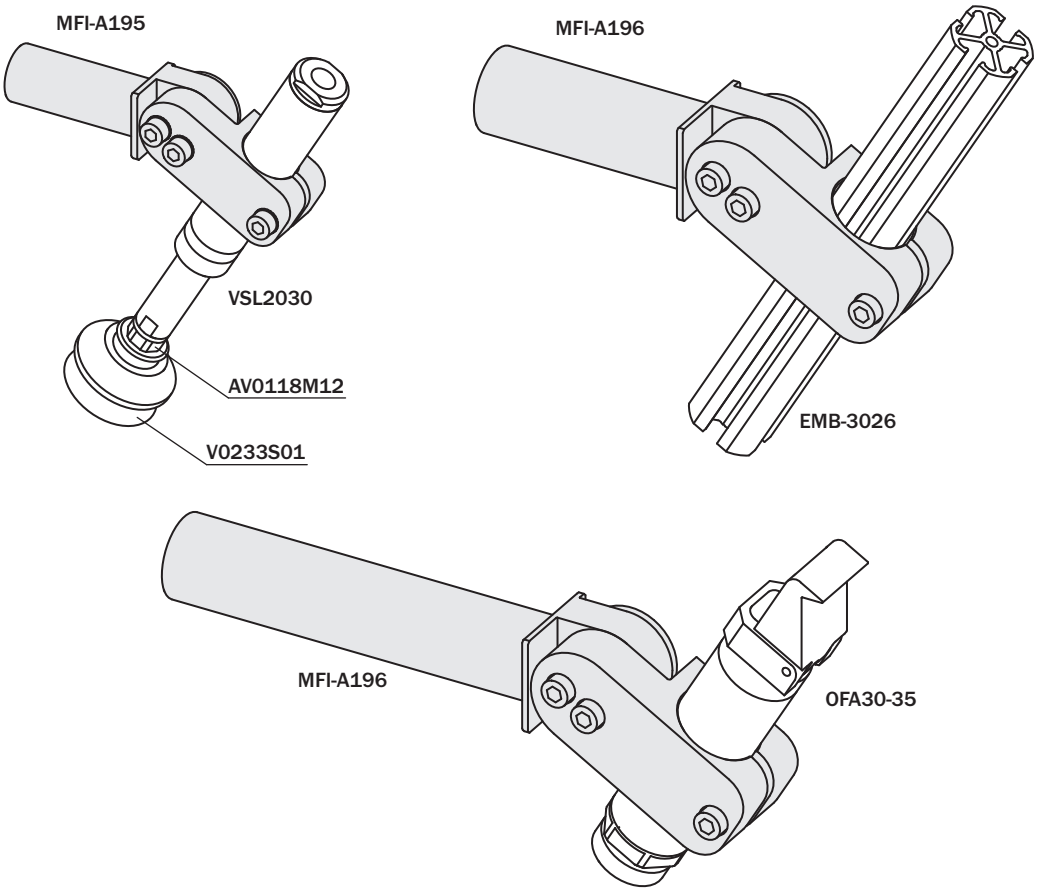
(kit with screws)

		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*		95 g	115 g	130 g	330 g	380 g	435 g



FIRST ANGLE PROJECTION

Esempio di utilizzo / *Application example*



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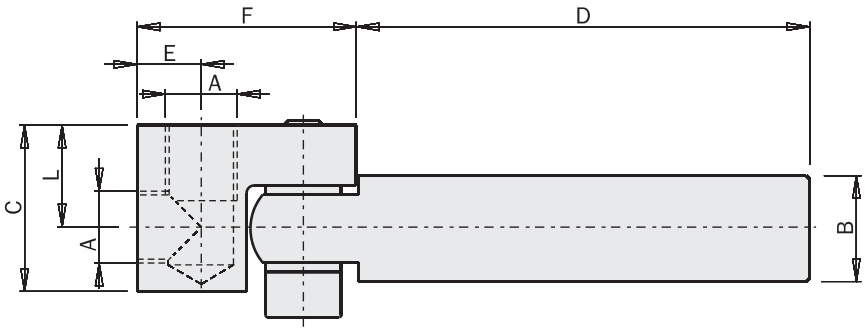
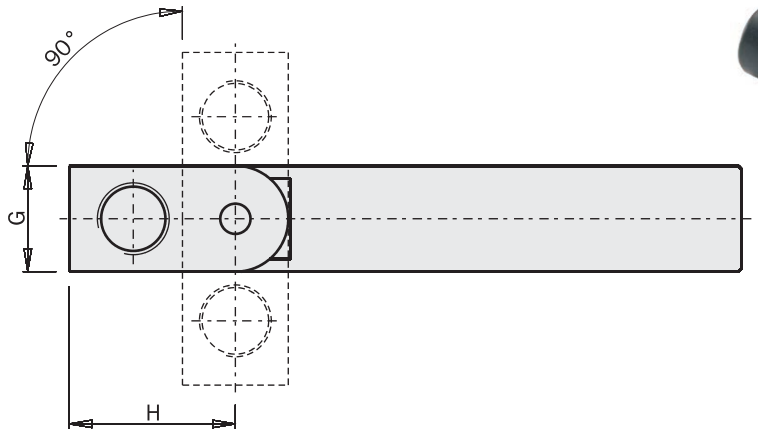
Gomito per ventosa
(kit completo di viti)

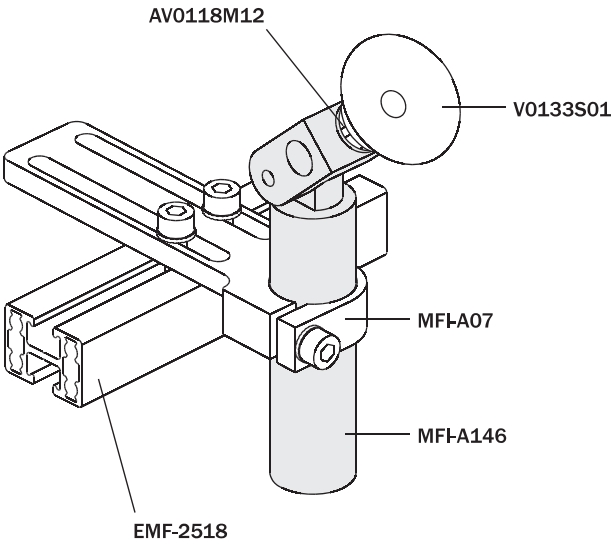
Elbow arm for vacuum cup
(kit with screws)

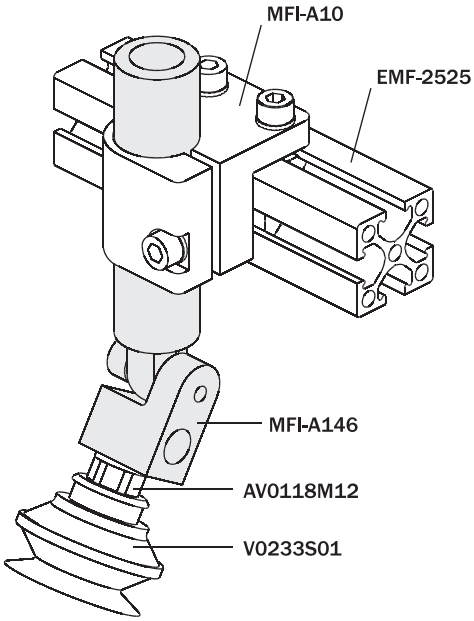
	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	L [mm]	Peso *Weight*
MFI-A142	M5	Ø10	16.5	45	5.5	19	14	22	11	18 g
MFI-A143	M5	Ø10	16.5	90	5.5	19	14	22	11	27 g
MFI-A144	G1/8”	Ø14	22	60	8.5	29	14	22	13.5	33 g
MFI-A145	G1/8”	Ø14	22	120	8.5	29	14	22	13.5	50 g
MFI-A146	G1/8”	Ø20	22	78	8.5	29	14	22	13.5	60 g
MFI-A147	G1/8”	Ø20	22	153	8.5	29	14	22	13.5	100 g
MFI-A148	G1/4”	Ø20	27	75	12	38	20	28	15	75 g
MFI-A149	G1/4”	Ø20	27	150	12	38	20	28	15	115 g





Esempio di utilizzo / *Application example*





09/2015

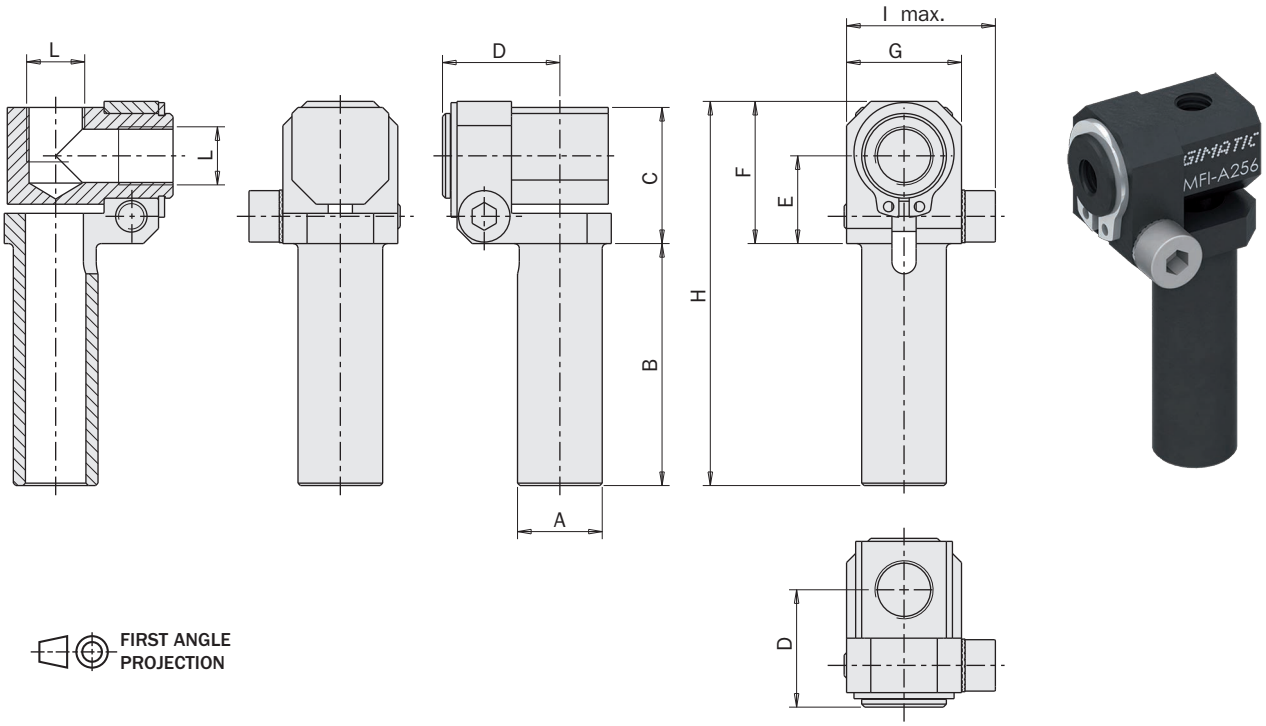
Gomito a cravatta per ventosa

(kit completo di viti)

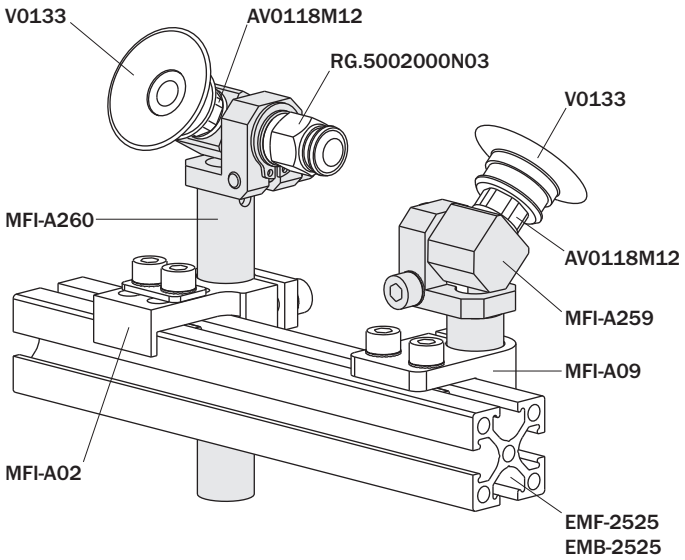
Elbow arm for vacuum cup clamping

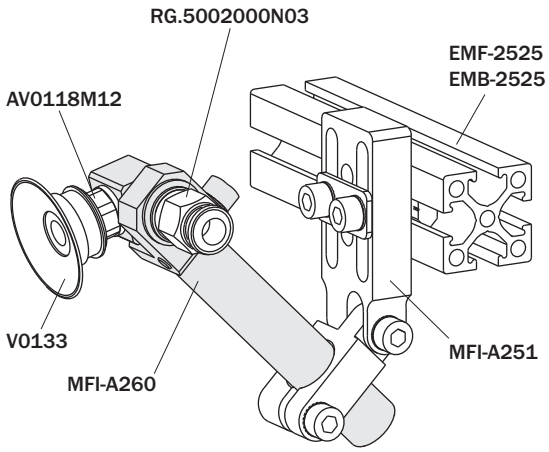
(kit with screws)

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	L [mm]	Peso *Weight*
MFI-A256	Ø10	30	17	14.5	11	18	14	48	18.5	M5	14 g
MFI-A257	Ø10	60	17	14.5	11	18	14	78	18.5	M5	17 g
MFI-A258	Ø10	90	17	14.5	11	18	14	108	18.5	M5	20 g
MFI-A259	Ø14	40	22.5	19.4	14.5	23.5	19	63.5	24.5	G1/8"	32 g
MFI-A260	Ø14	80	22.5	19.4	14.5	23.5	19	103.5	24.5	G1/8"	40 g
MFI-A261	Ø14	120	22.5	19.4	14.5	23.5	19	143.5	24.5	G1/8"	48 g
MFI-A290	Ø20	50	28	23.3	18	30	24	80	31	G1/8"	63 g
MFI-A291	Ø20	100	28	23.3	18	30	24	130	31	G1/8"	78 g
MFI-A292	Ø20	150	28	23.3	18	30	24	180	31	G1/8"	93 g
MFI-A262	Ø20	50	28	23.3	18	30	24	80	31	G1/4"	58 g
MFI-A263	Ø20	100	28	23.3	18	30	24	130	31	G1/4"	73 g
MFI-A264	Ø20	150	28	23.3	18	30	24	180	31	G1/4"	88 g



Esempio di utilizzo / *Application example*



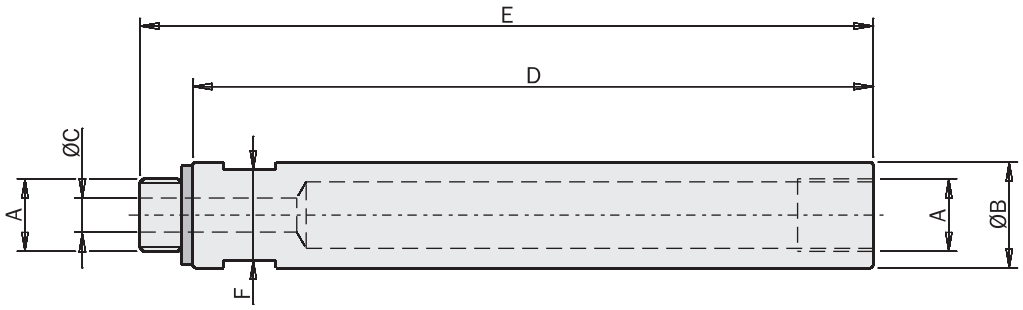


Prolunga con canale per l'aria

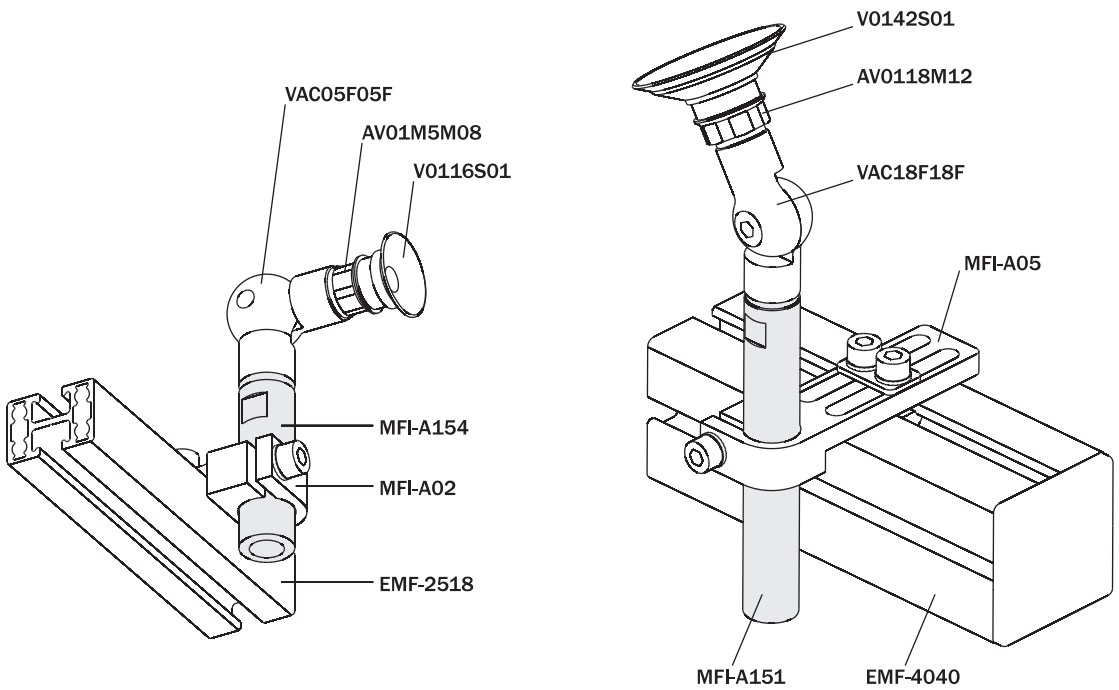
Extension tube with air lead

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

FIRST ANGLE PROJECTION



Esempio di utilizzo / *Application example*



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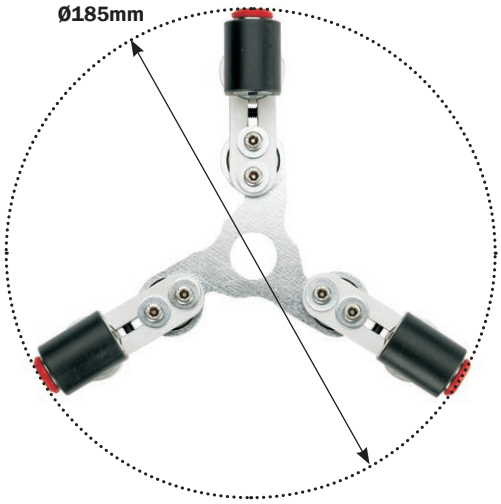
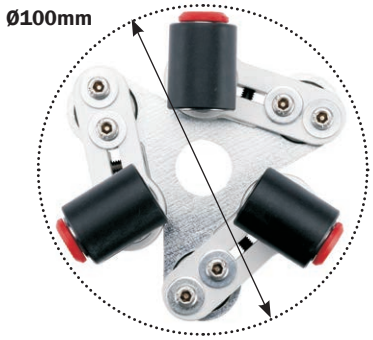
Staffa per il montaggio di tre unità

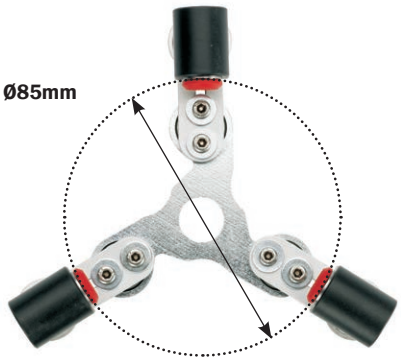
Mounting bracket for three units

	MFI-A194
Peso / *Weight*	200 g

0FX20-10







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Staffa per il montaggio della pinza OFP20 su profilo

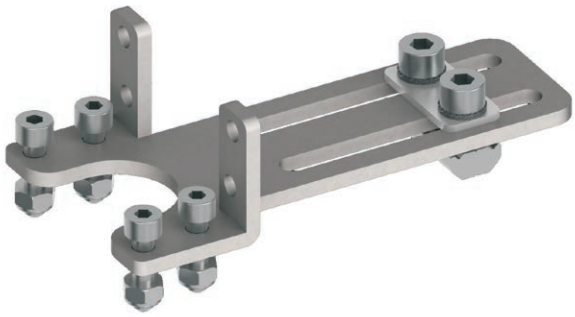
(kit completo di viti)

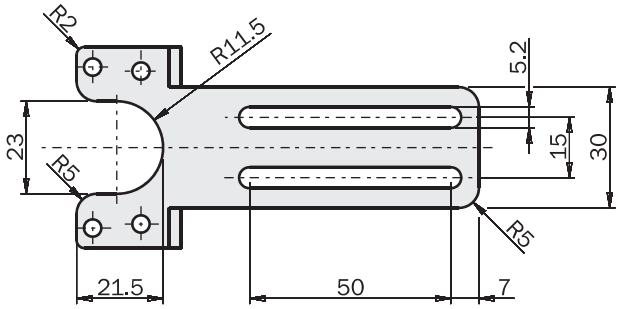
OFP20 gripper mounting bracket, to use with profile

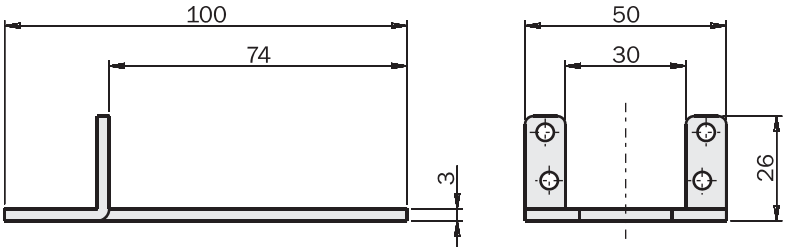
(kit with screws)

	MFI-A176
Peso / *Weight*	95 g

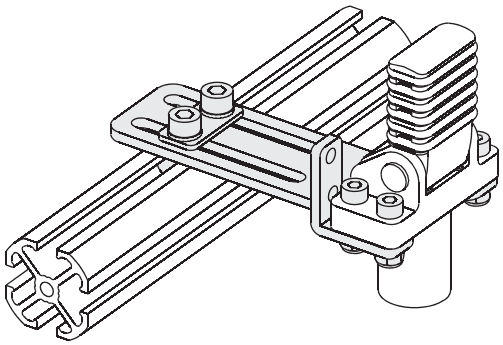
FIRST ANGLE PROJECTION

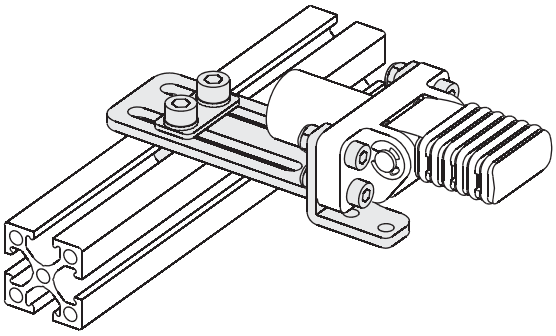






Esempio di utilizzo / *Application example*



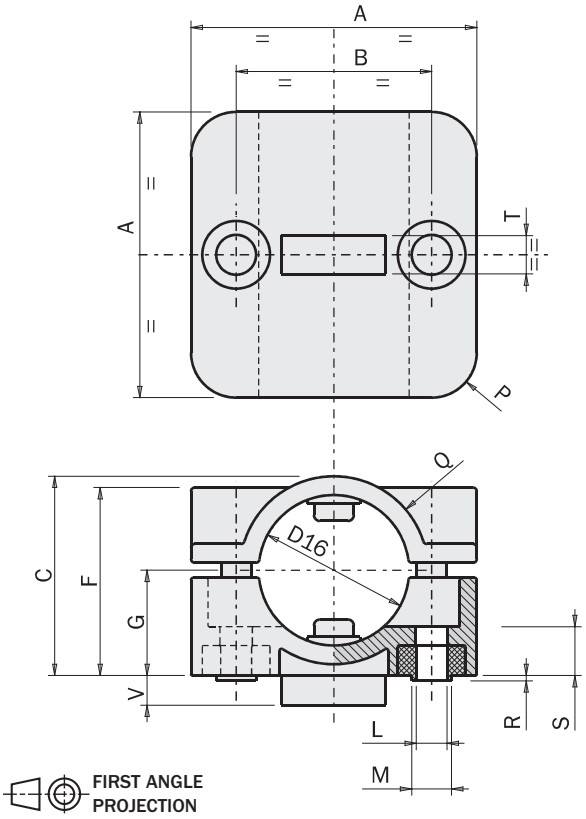


Kit di bloccaggio per estruso

(kit completo di viti)

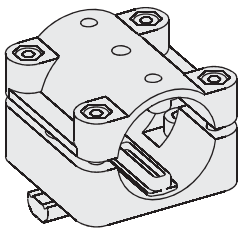
Single block assembly

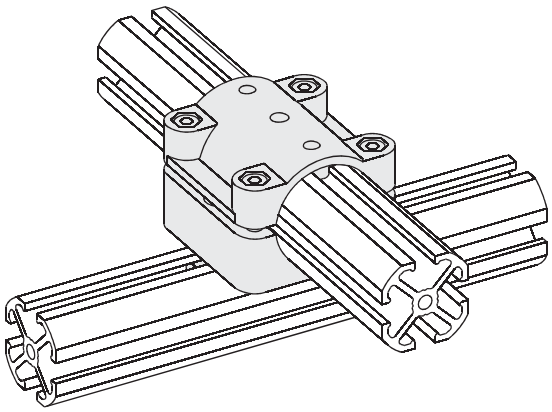
(kit with screws)



		MFI-A188	MFI-A189	MFI-A190
A	[mm]	38	48	73
B	[mm]	26	36	59
C	[mm]	26.5	36.5	56
D16	[mm]	Ø20	Ø30	Ø50
F	[mm]	25	32	45.5
G	[mm]	14	18.5	28
L	[mm]	Ø4.1	Ø5.1	6.3
M	[mm]	Ø5.3	Ø6.4	-
P	[mm]	6	6	7
Q	[mm]	12.5	12.5	28
R	[mm]	0.7	1	-
S	[mm]	6.5	6.5	16
T	[mm]	-	-	10.3
V	[mm]	-	-	3
Peso / *Weight*		48 g	77 g	510 g

Esempio di utilizzo / *Application example*



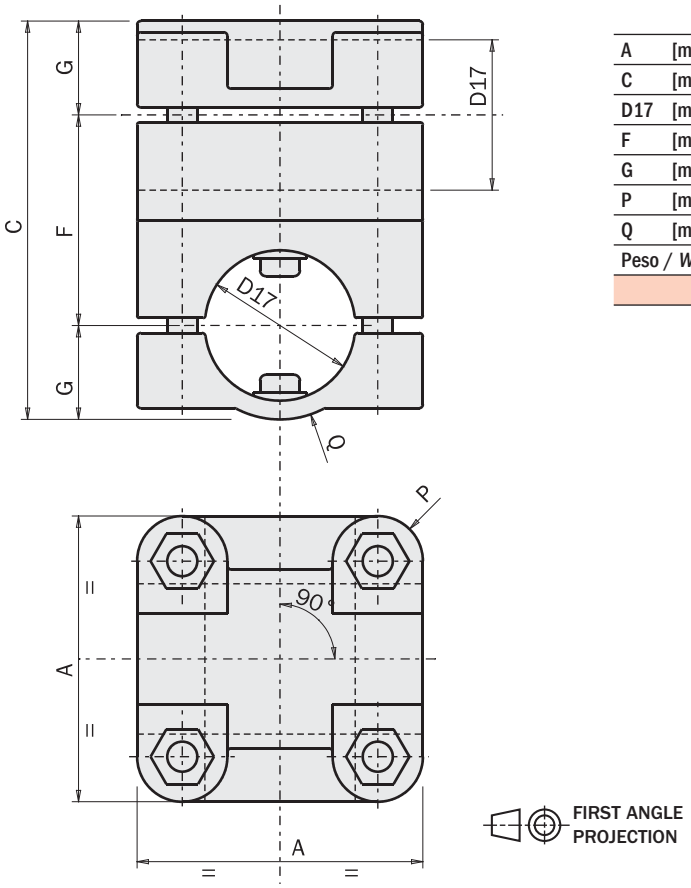


Kit di bloccaggio per doppio estruso

(kit completo di viti)

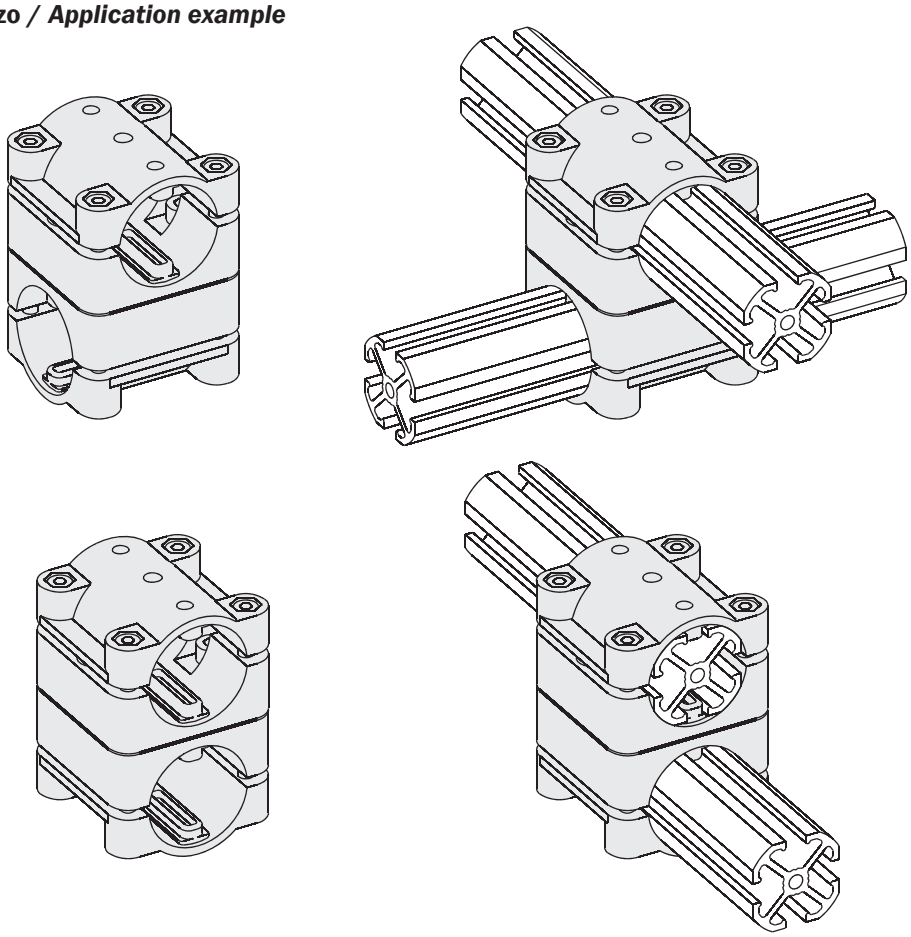
Double block assembly

(kit with screws)



		MFI-A191	MFI-A192	MFI-A193
A	[mm]	38	48	73
C	[mm]	53	73	112
D17	[mm]	Ø20	Ø30	Ø50
F	[mm]	28	37	56
G	[mm]	12.5	18	28
P	[mm]	6	6	7
Q	[mm]	12.5	18	28
Peso / *Weight*		77 g	122 g	930 g

Esempio di utilizzo / *Application example*

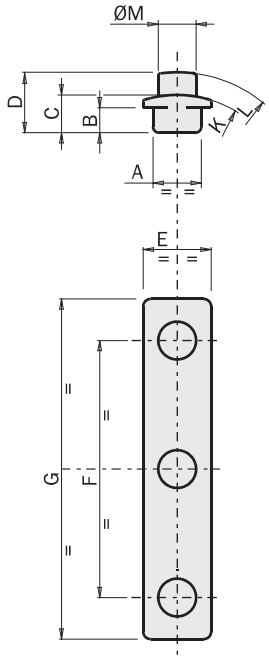


Linguette di centraggio tonde

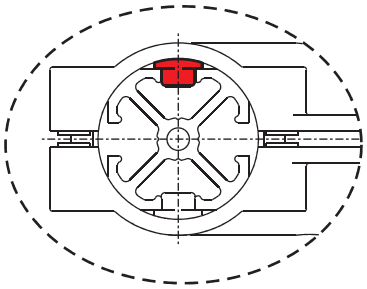
(Confezione da 10 pezzi)

Rounded centering feather keys

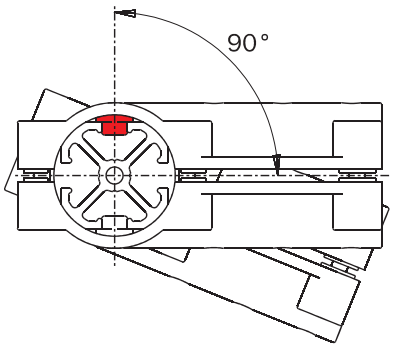
(10 pieces package)

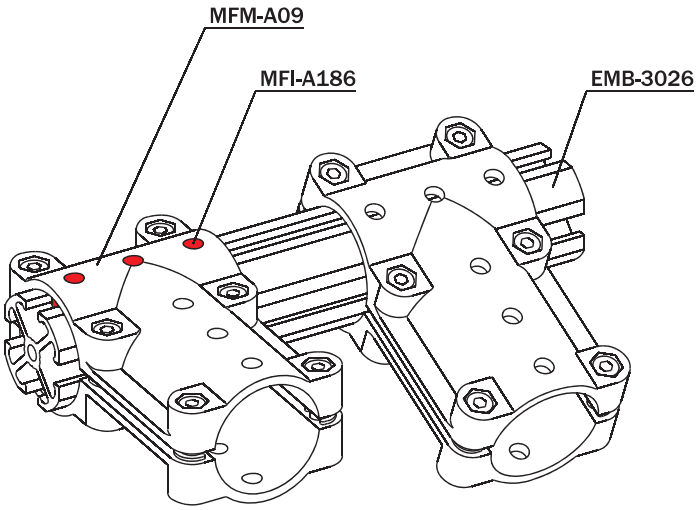


		MFI-A186	MFI-A185	MFI-A187
A	[mm]	6.4	6.4	6.4
B	[mm]	3.3	3	3
C	[mm]	5	4.5	5.5
D	[mm]	8	7	8.5
E	[mm]	9	8.5	15
F	[mm]	34	28	44
G	[mm]	45	36	60
K	[mm]	R15	R10	R25
L	[mm]	R18	R12.5	R28
M	[mm]	Ø5	Ø4	Ø8
EMB		EMB-3026	EMB-2017	EMB-5045
Peso / *Weight*		20 g	10 g	40 g



Esempio di utilizzo / *Application example*





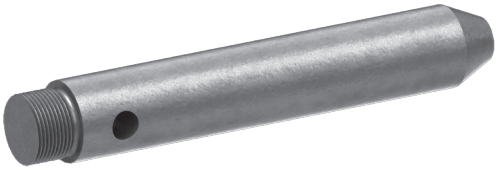
Spina di centraggio filettata

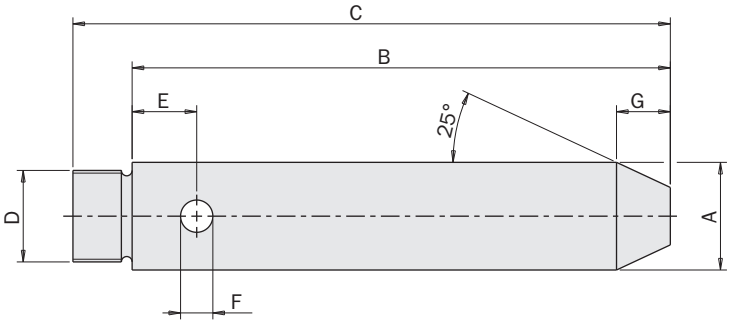
(Materiale: POM)

Threaded centering pin

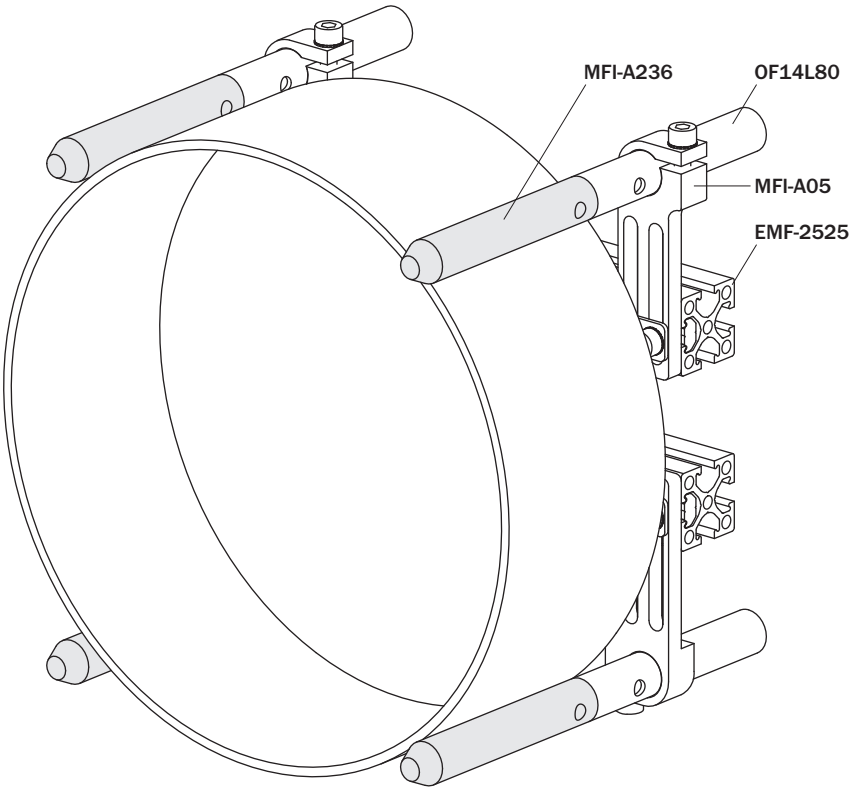
(Material: POM)

		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	45 g



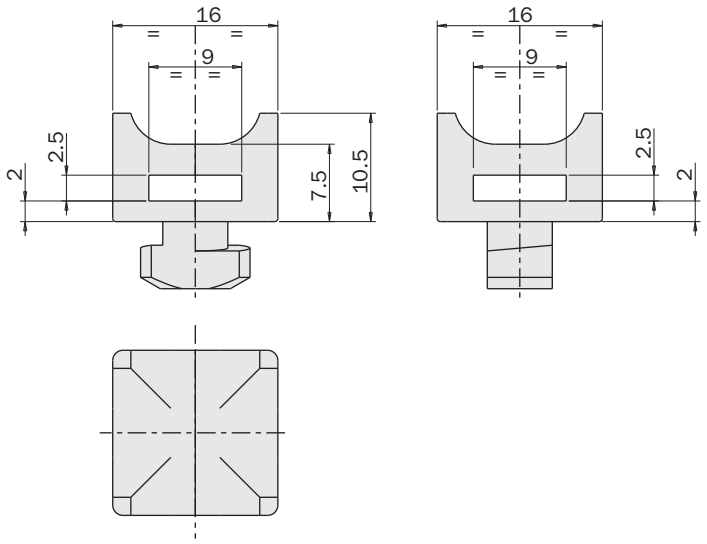


Esempio di utilizzo / *Application example*



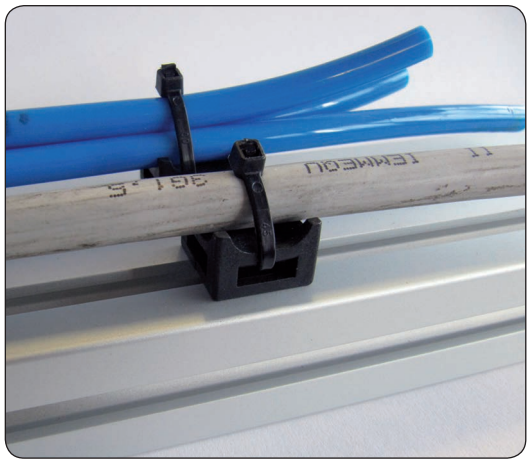
Staffa per fissaggio cavi
(Confezione da 10 pezzi)

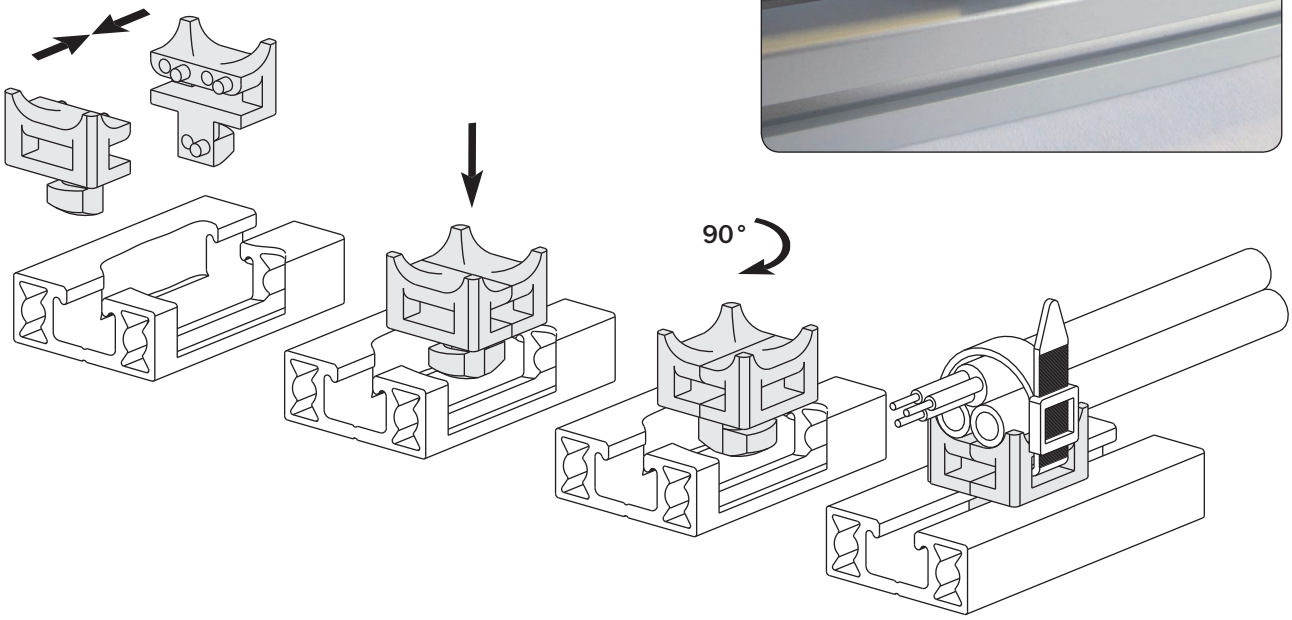
Hose mounting bracket
(10 pieces package)



	MFI-A239
Peso / *Weight*	20 g

Esempio di utilizzo / *Application example*





Portalama

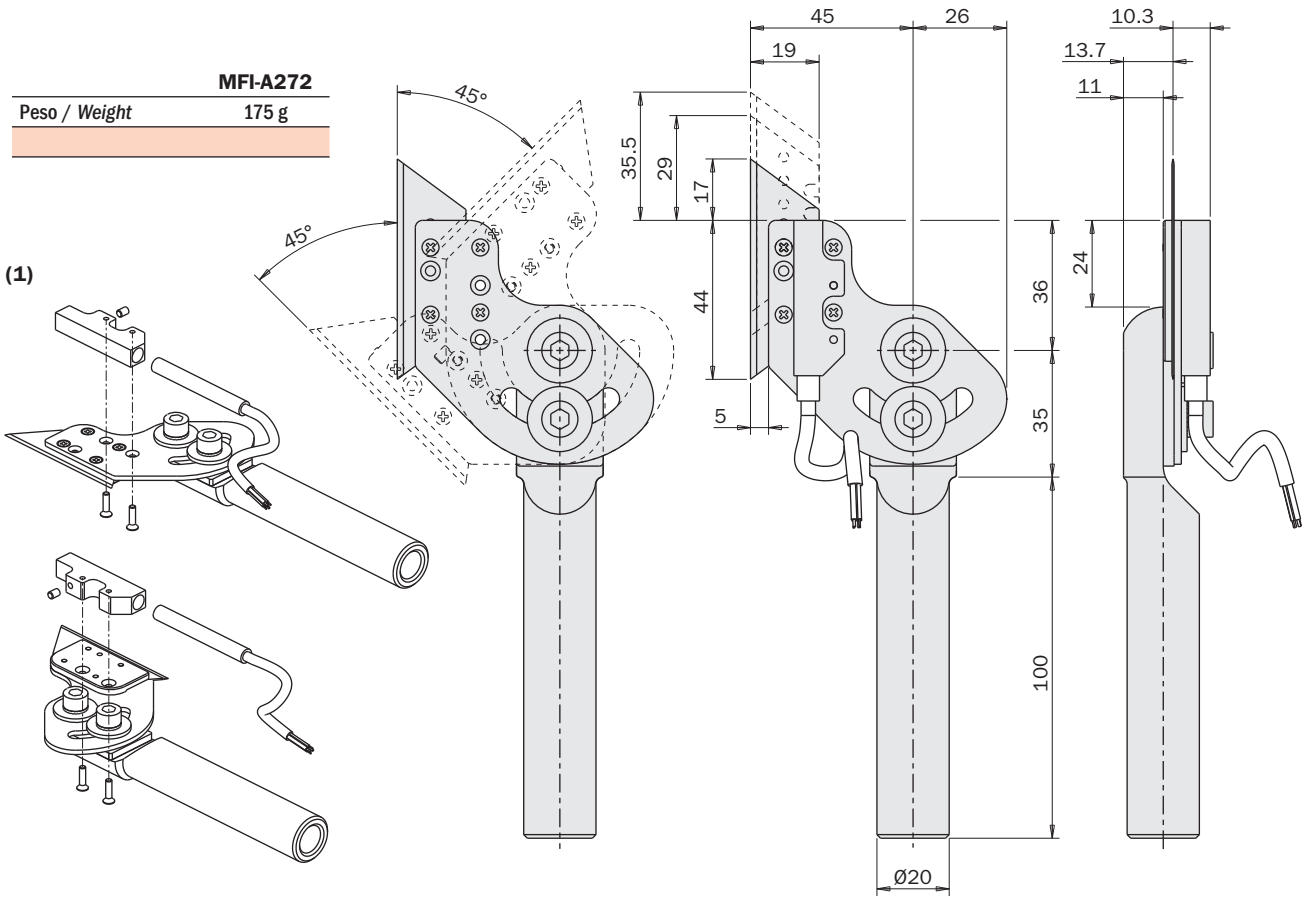
- Adatta per taglio, smaterozzamento e sbavatura.
- Angolo continuamente regolabile da -45° a +45°.
- Possibilità di montaggio su entrambi i lati (1).
- Sistema di riscaldamento opzionale (2).

Blade holder

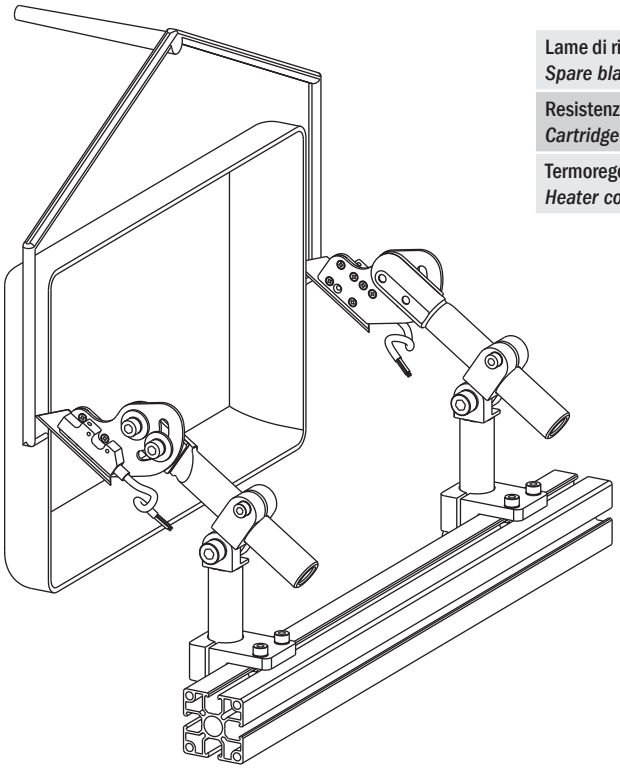
- *Suitable for trimming, degating and deburring.*
- *Continuously adjustable angle from -45° to +45°.*
- *It can be mounted on either side (1).*
- *Optional heating system (2).*

	MFI-A272
Peso / *Weight*	175 g

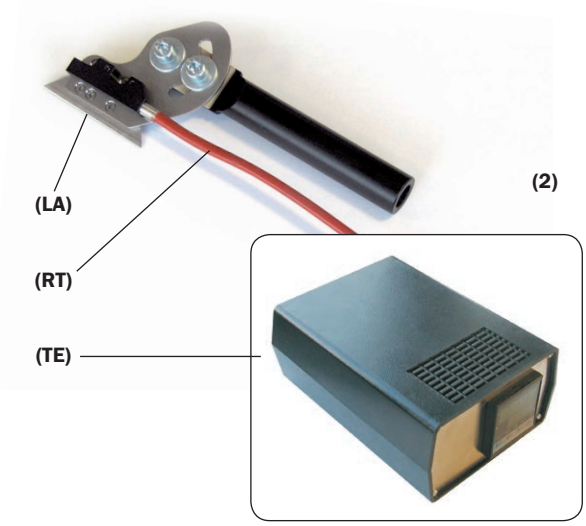
(1)



Esempio di utilizzo / *Application example*



		Codice *Code*	
Lame di ricambio (confezione da 10 pezzi) *Spare blade (10 pieces package)*	(LA)	376Y234-10	
Resistenza + termocoppia *Cartridge resistance + thermocouple*	(RT)	R50-G	
Termoregolatore *Heater control box*	(TE)	CH102-G	



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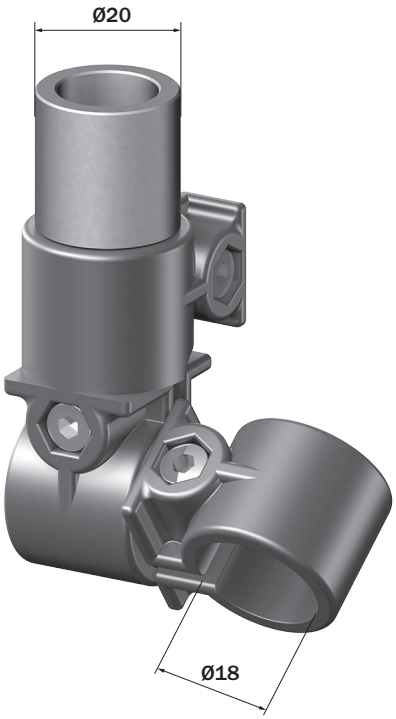
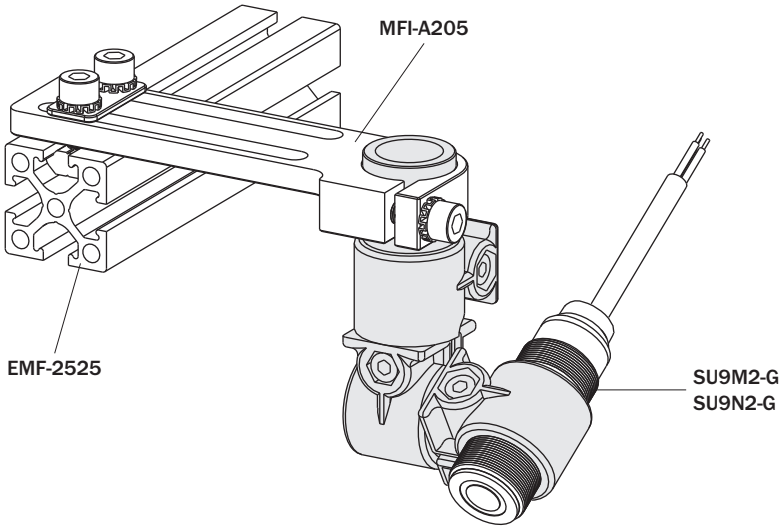
Porta sensore ultrasonico

Ultrasonic sensor holder



	NEW MFI-A310
Peso / *Weight*	47 g

Esempio di utilizzo / *Application example*



Staffa per fissaggio pinza

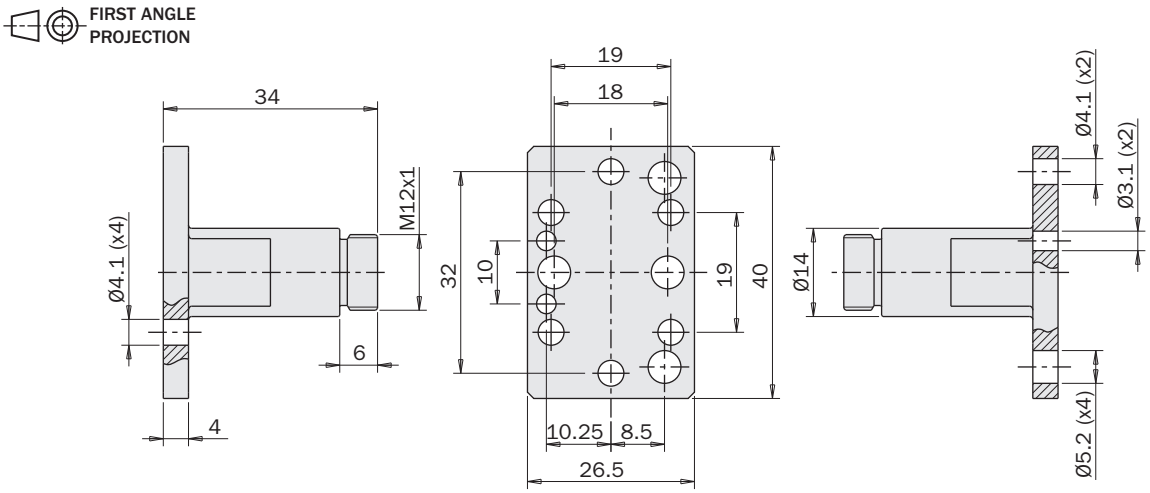
(kit completo di viti)

Gripper mounting bracket

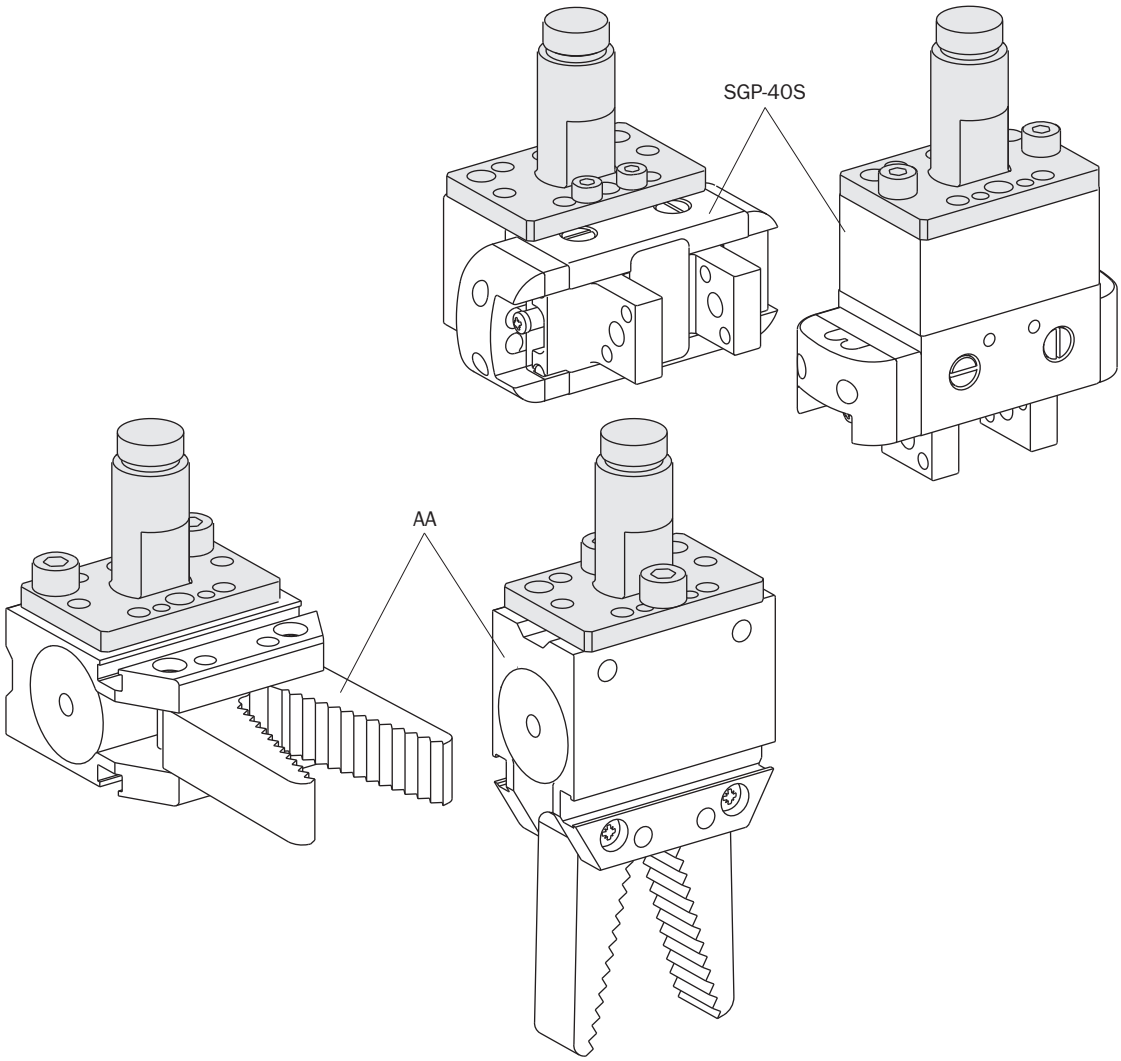
(kit with screws)

NEW

	MFI-A314
per / *for*	AA / SGP-40S
Peso / *Weight*	25 g



Esempio di utilizzo / *Application example*



Staffa per fissaggio pinza

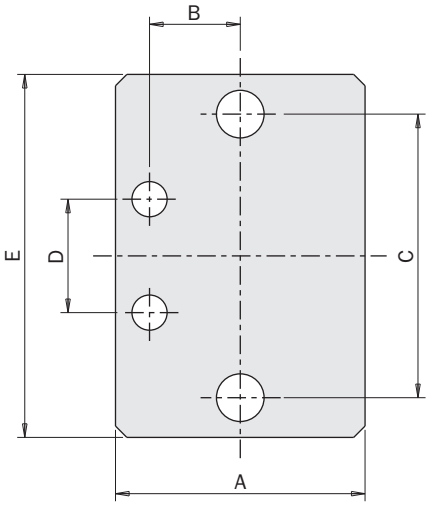
(kit completo di viti)

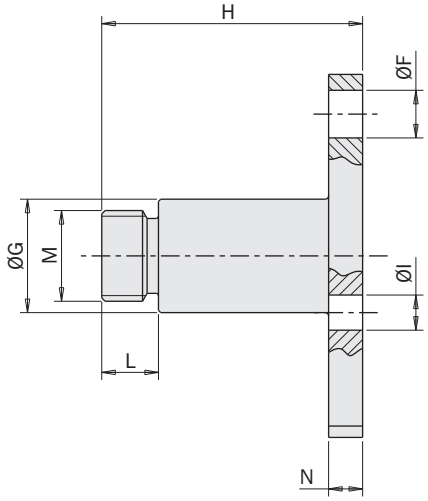
Gripper mounting bracket

(kit with screws)

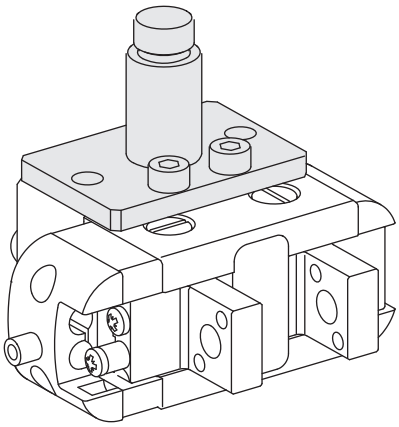
		NEW MFI-A315	NEW MFI-A316	NEW MFI-A317
per / *for*		SGP-32S	SGP-25S	SGP-20S
A	[mm]	22	18	16
B	[mm]	8	6	5.5
C	[mm]	25	20	15
D	[mm]	10	10	8
E	[mm]	32	26	20
F	[mm]	Ø4.2	Ø3.1	Ø2.6
G	[mm]	Ø10	Ø10	Ø10
H	[mm]	23	22	21
I	[mm]	Ø3.1	Ø3.1	Ø2.6
L	[mm]	5	5	5
M	[mm]	M8x1	M8x1	M8x1
N	[mm]	3	3	2
Peso / *Weight*		11 g	9 g	7 g

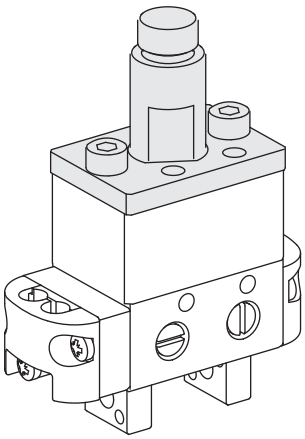
FIRST ANGLE PROJECTION





Esempio di utilizzo / *Application example*





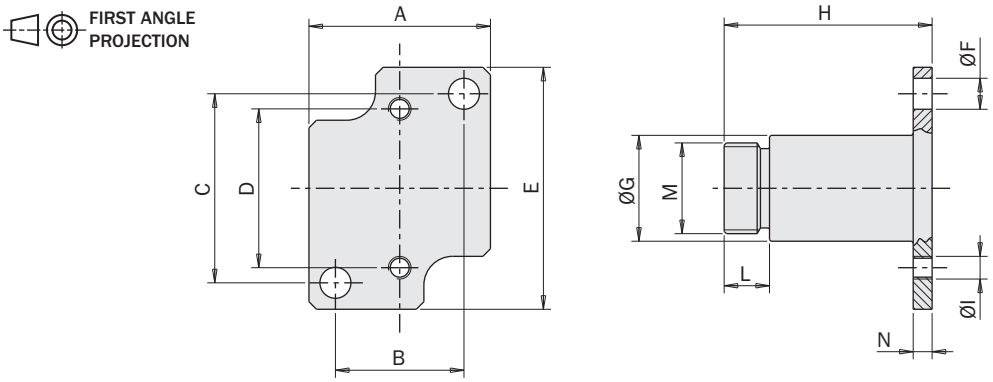
Staffa per fissaggio pinza

(kit completo di viti)

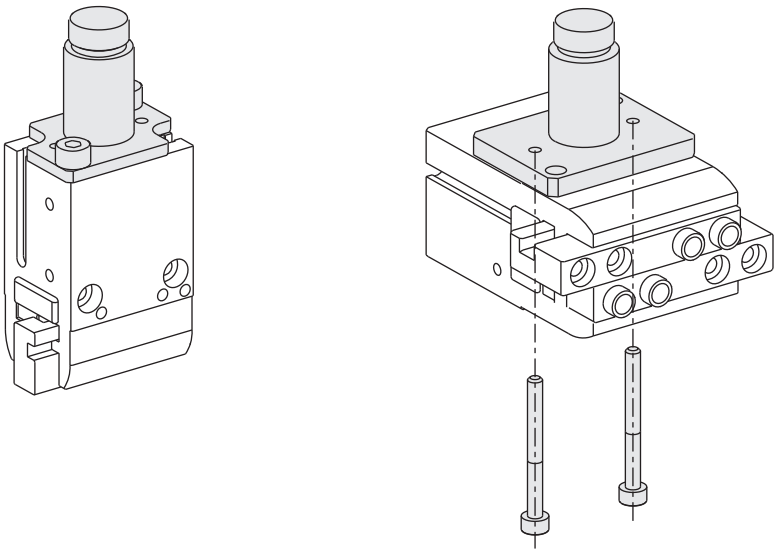
Gripper mounting bracket

(kit with screws)

		NEW MFI-A318	NEW MFI-A319	NEW 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



Esempio di utilizzo / *Application example*



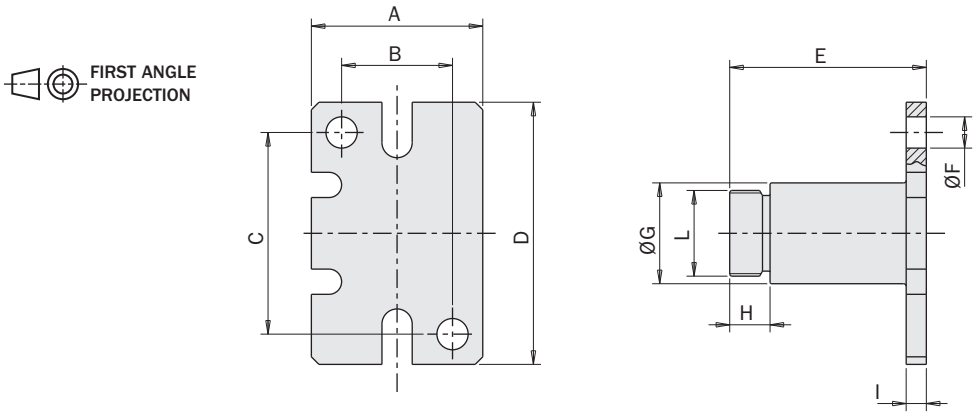
Staffa per fissaggio pinza

(kit completo di viti)

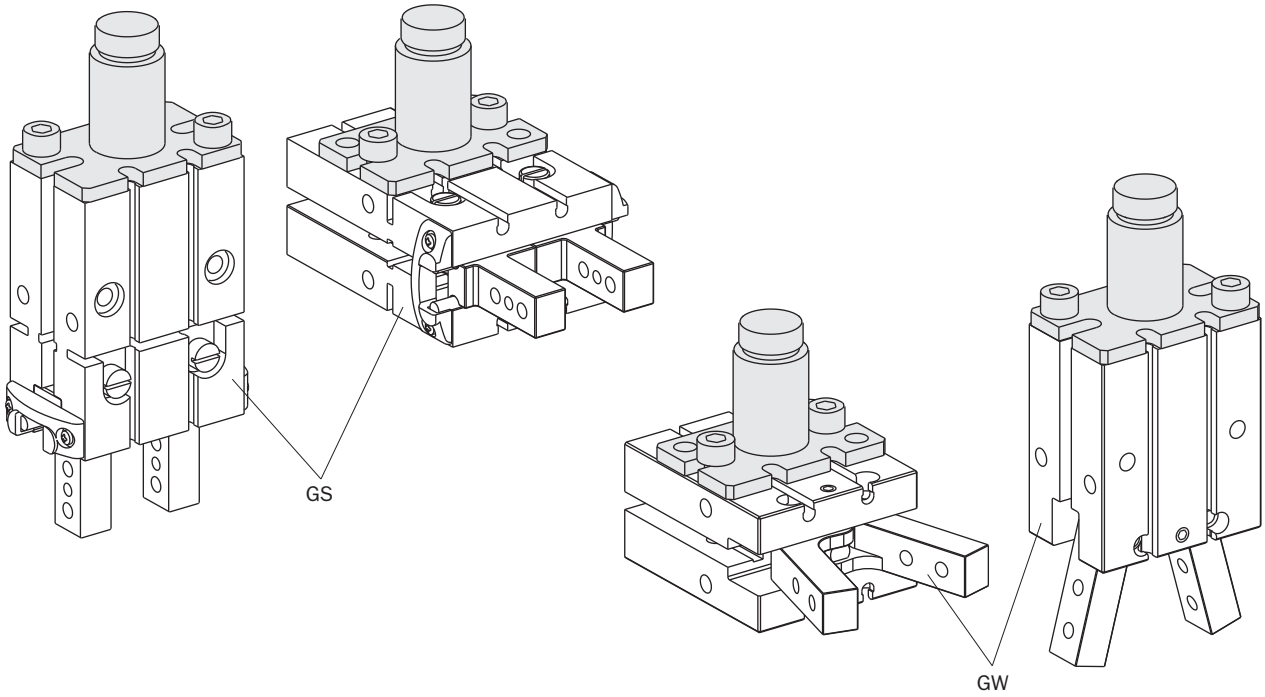
Gripper mounting bracket

(kit with screws)

		NEW MFI-A321	NEW MFI-A322	NEW MFI-A323	NEW 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



Esempio di utilizzo / *Application example*



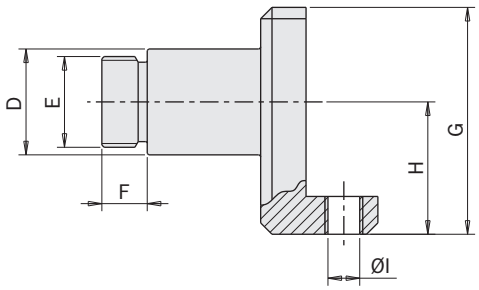
Staffa per fissaggio pinza

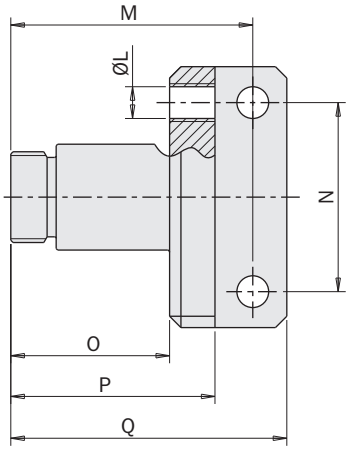
(kit completo di viti)

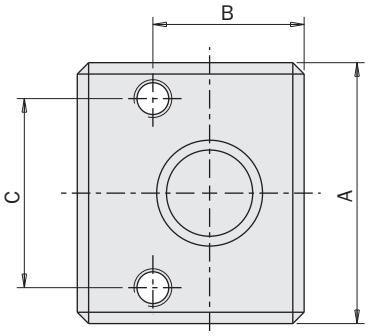
Gripper mounting bracket

(kit with screws)

		NEW MFI-A325	NEW MFI-A326	NEW MFI-A327
per / *for*		SZ12	SZ16	SZ25
A	[mm]	29	34.5	62
B	[mm]	17	20	30
C	[mm]	22	25	50
D	[mm]	Ø14	Ø14	Ø20
E	[mm]	M12x1	M12x1	M17x1
F	[mm]	6	6	8
G	[mm]	28	30	45
H	[mm]	17	17.5	26.5
I	[mm]	M4	M5	M6
L	[mm]	M4	M5	M6
M	[mm]	32	32	46
N	[mm]	22	25	50
O	[mm]	21	21	29
P	[mm]	27	27	39
Q	[mm]	35.5	36.5	52
Peso / *Weight*		33 g	41 g	140 g

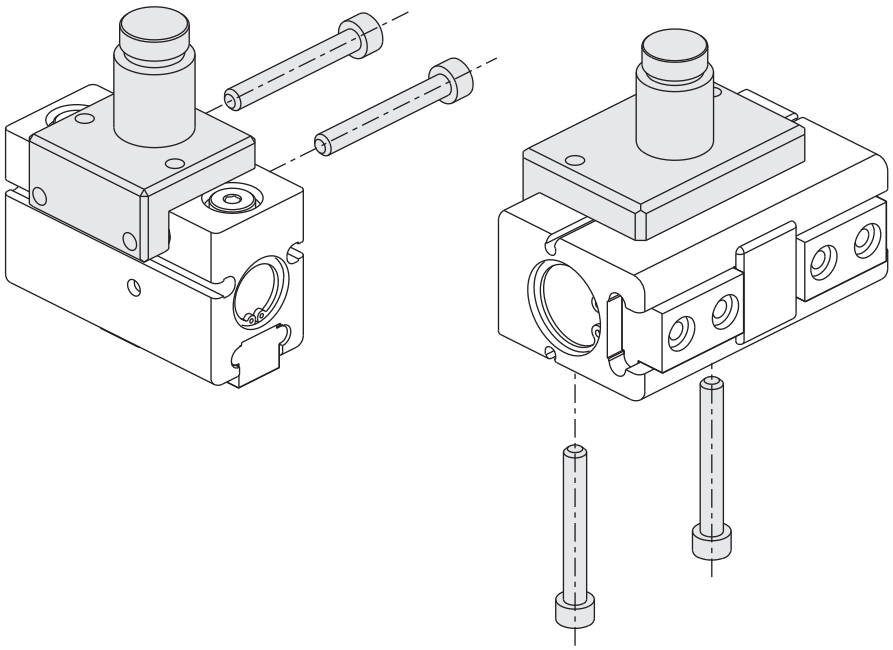






FIRST ANGLE PROJECTION

Esempio di utilizzo / *Application example*



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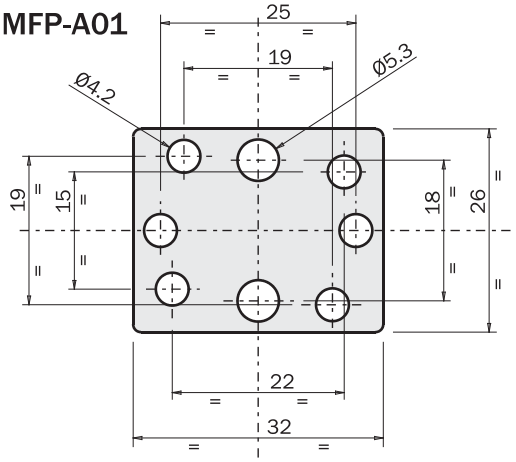
Basetta in plastica per fissaggio pinza

(kit completo di viti)

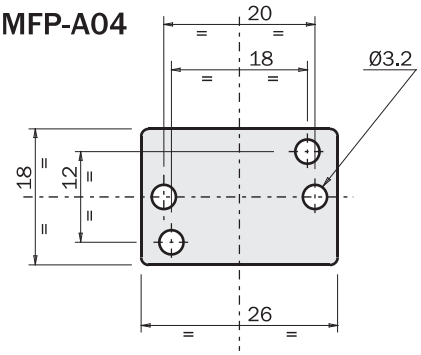
Polymer mounting bracket for gripper

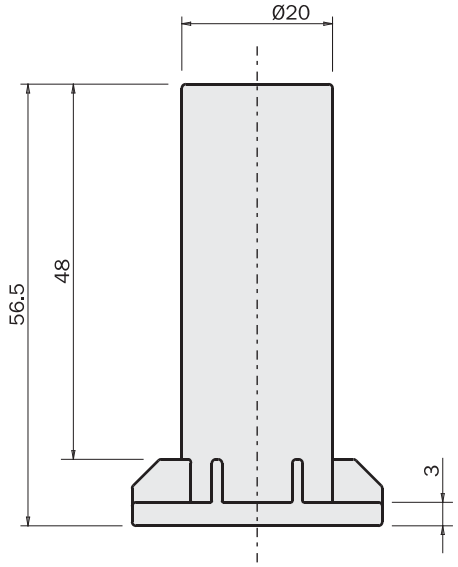
(kit with screws)

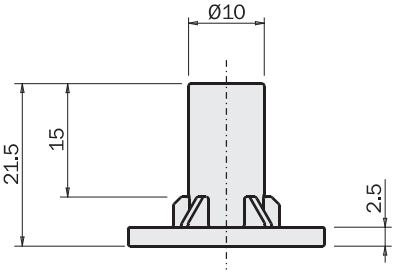
MFP-A01



MFP-A04

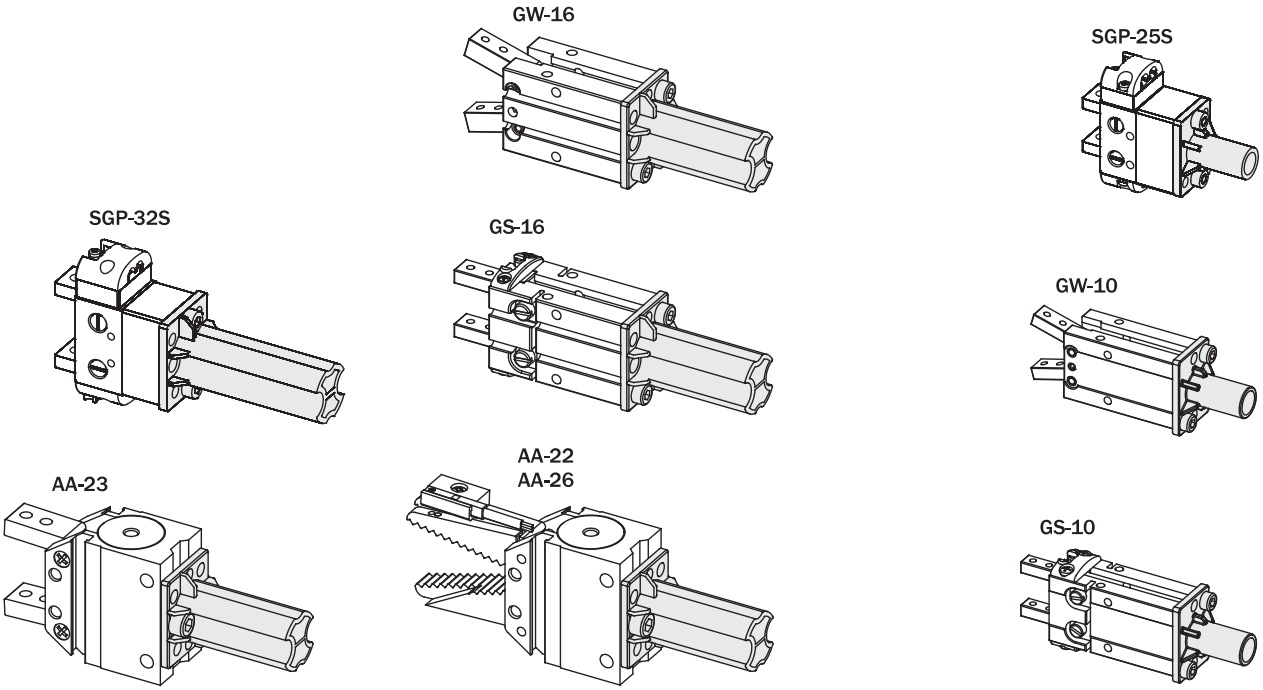






	MFP-A01	MFP-A04
Peso / *Weight*	26 g	5 g

Esempio di utilizzo / *Application example*



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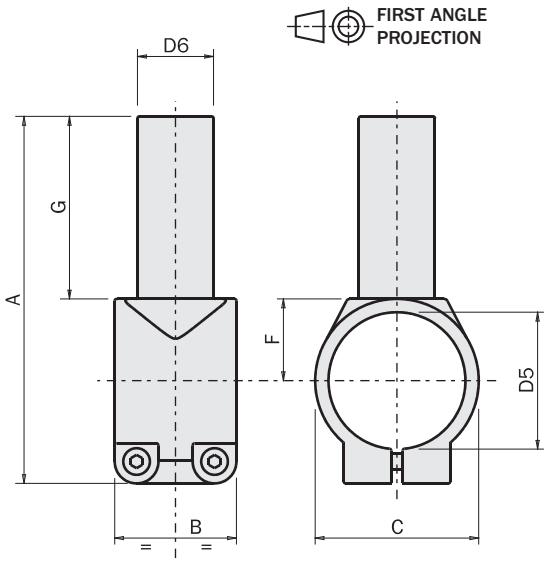
Staffa in plastica

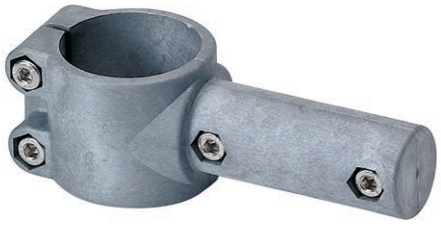
(kit con 2 semicorpi + viti)

Polymer mounting bracket

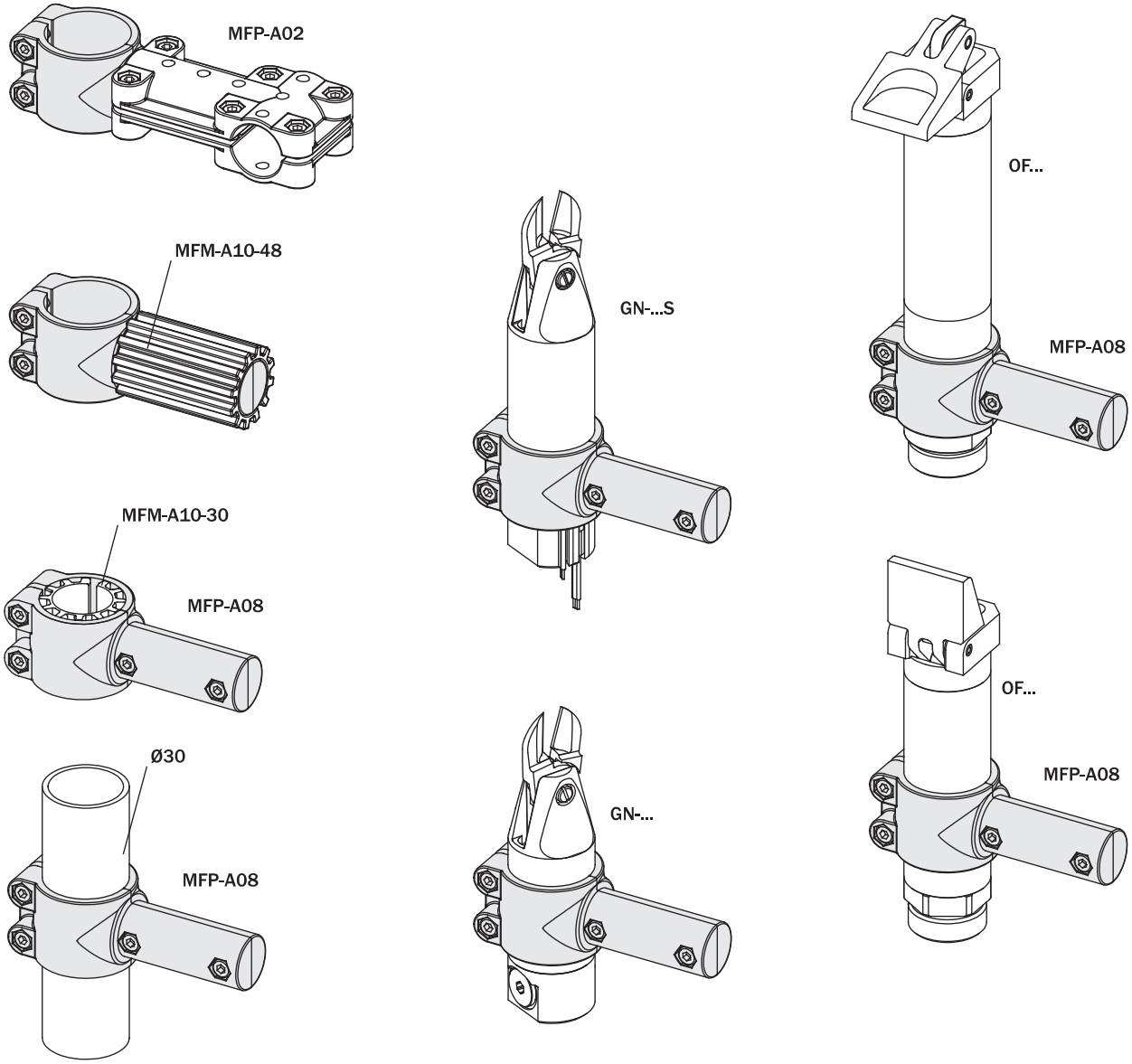
(2 half-pieces + screws)



		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*



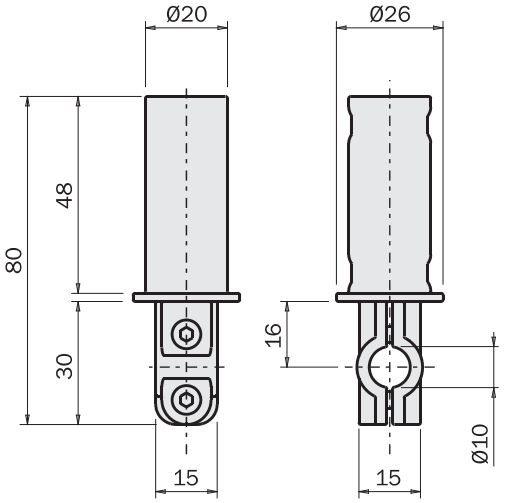
Staffa Ø20-10 in plastica

(kit con 2 semicorpi + viti)

Polymer mounting bracket Ø20-10

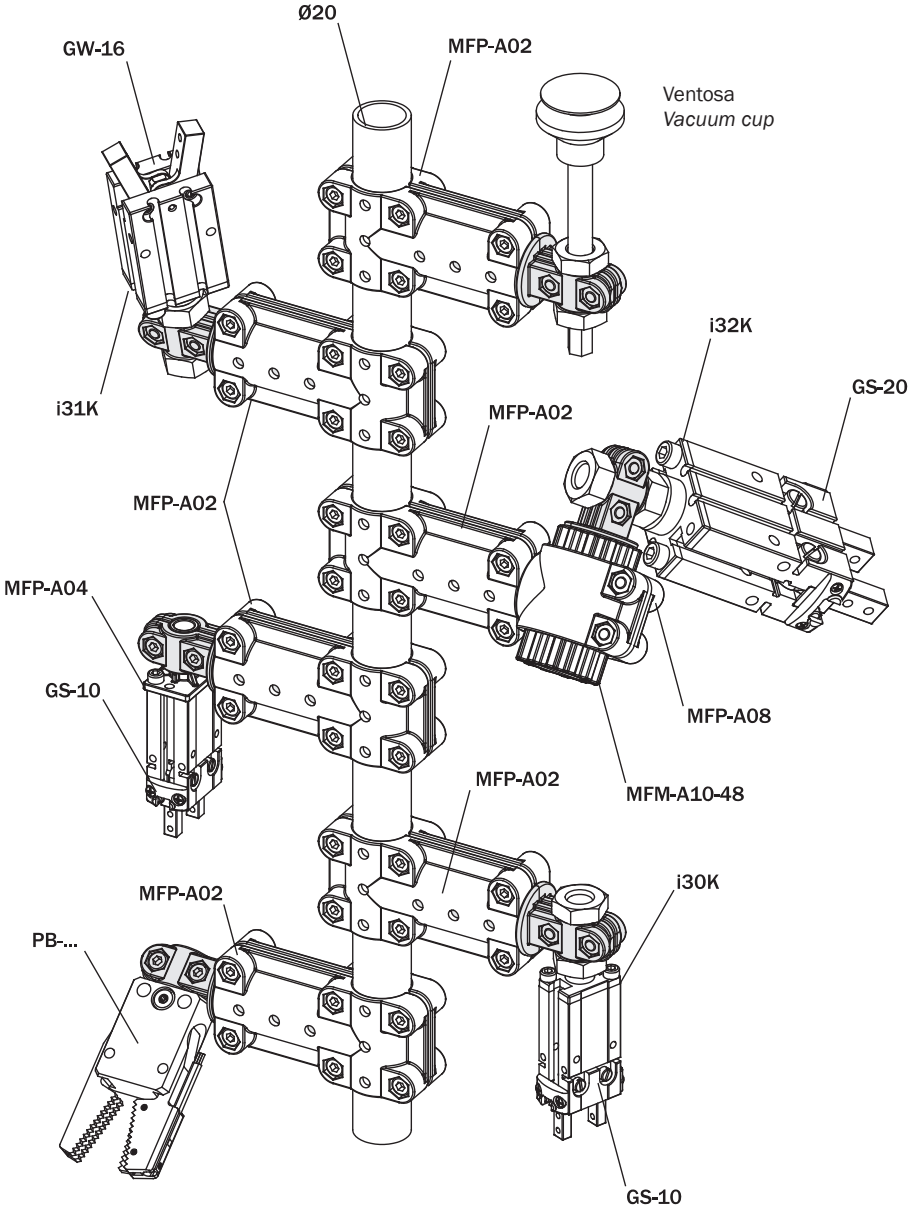
(2 half-pieces + screws)

FIRST ANGLE PROJECTION



	MFP-A03
Peso / *Weight*	35 g

Esempio di utilizzo / *Application example*

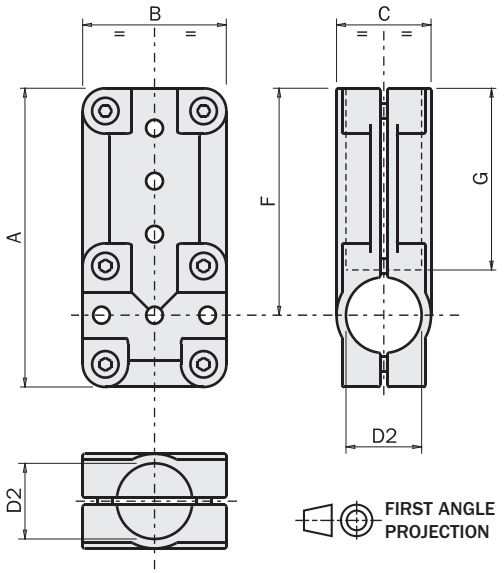


Giunto angolare in plastica

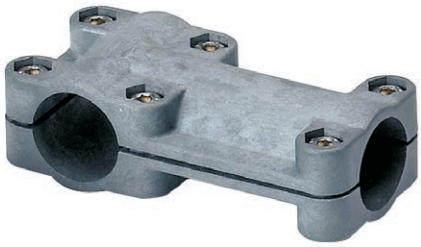
(kit con 2 semicorpi + viti)

Polymer T connector

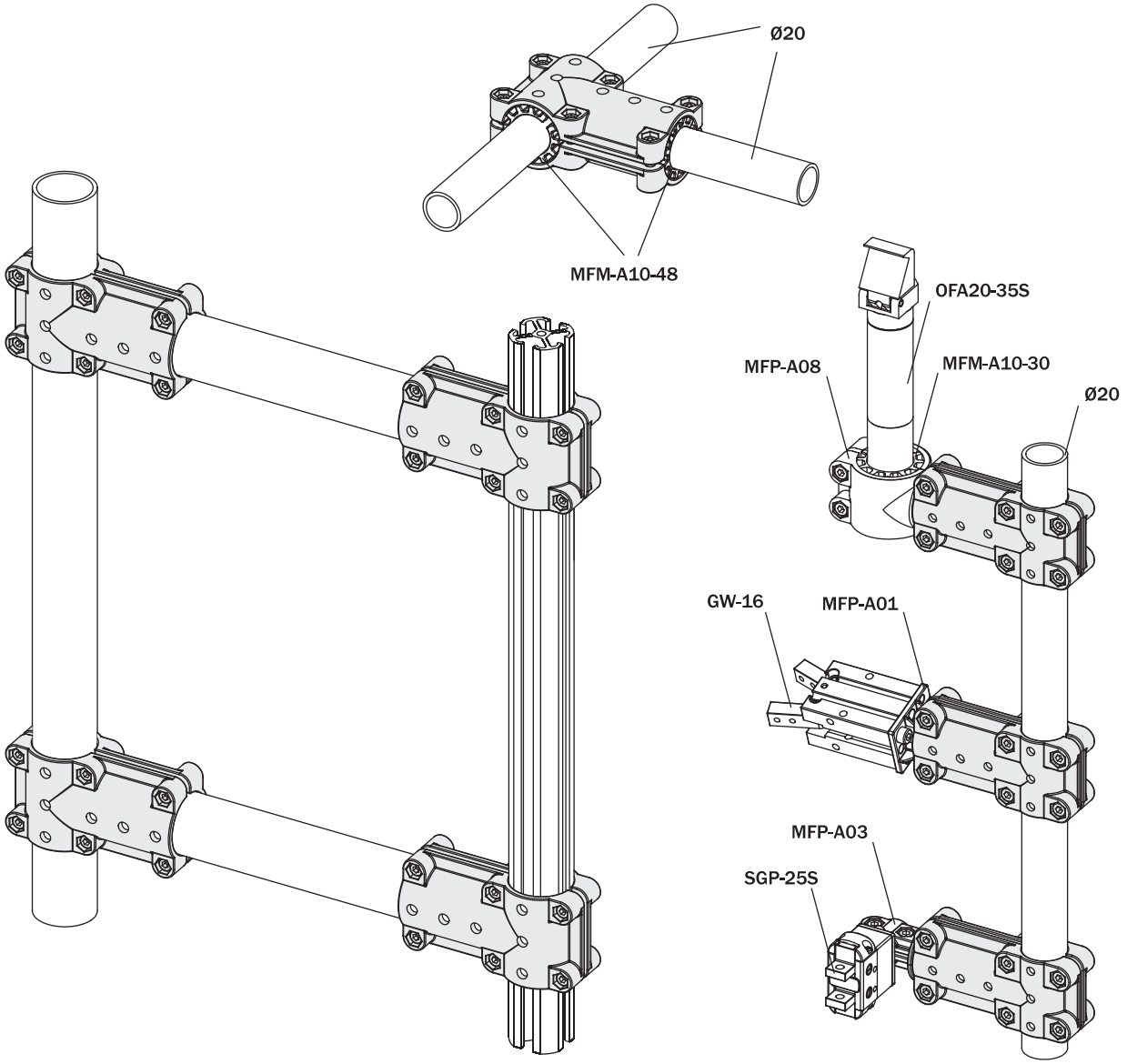
(2 half-pieces + screws)



		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*



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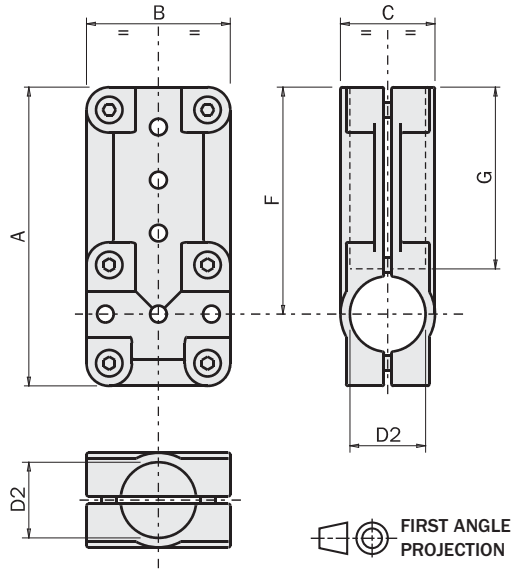
Giunto angolare in acciaio

(kit con 2 semicorpi + viti)

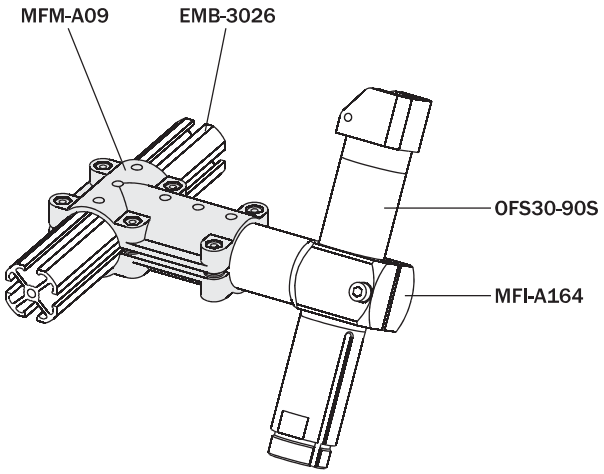
Steel T connector

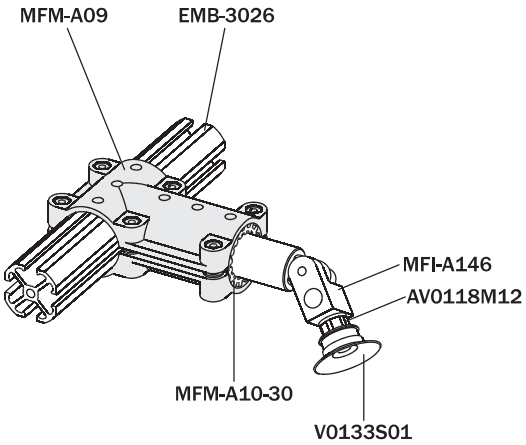
(2 half-pieces + screws)

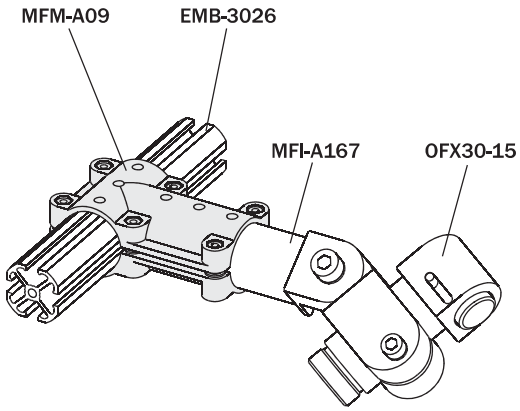


		MFM-A02	MFM-A09	MFM-A85
A	[mm]	79	90	133
B	[mm]	38	48	73
C	[mm]	25	36	56
D2	[mm]	Ø20	Ø30	Ø50
F	[mm]	60	66	97
G	[mm]	48	48	70
Peso / *Weight*		200 g	328 g	660 g

Esempio di utilizzo / *Application example*





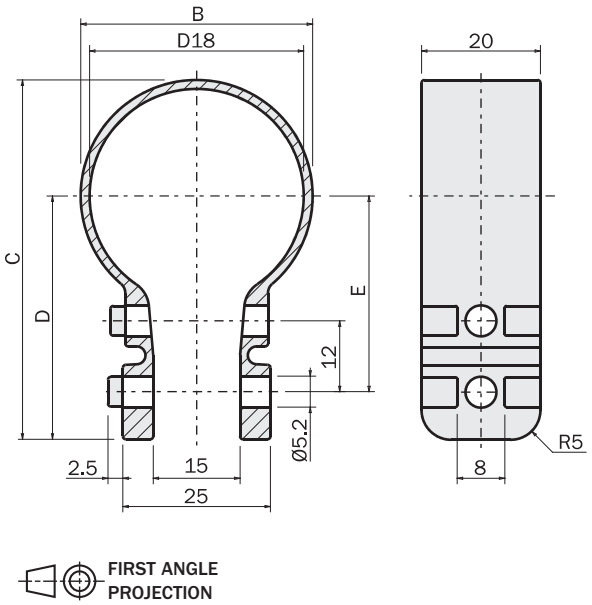


Staffa in acciaio

(kit completo di viti)

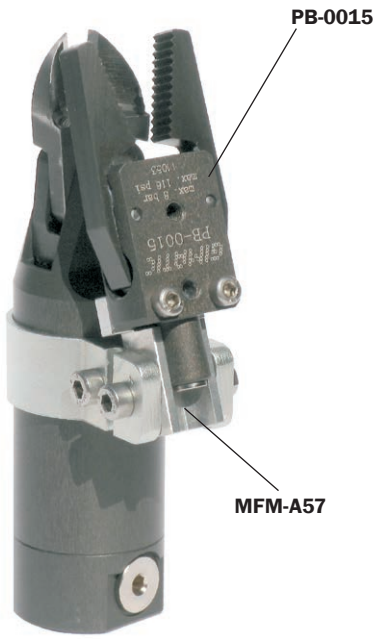
Steel mounting bracket

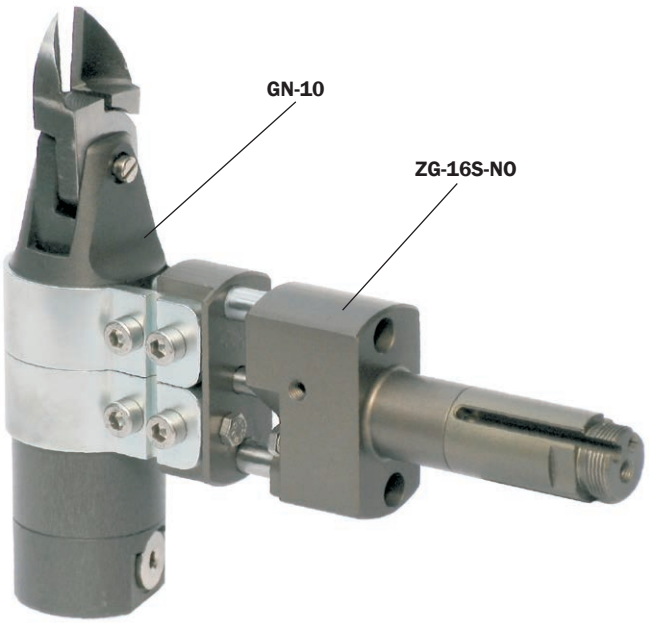
(kit with screws)



		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 / *Weight*		69 g	75 g	80 g	102 g

Esempio di utilizzo / *Application example*





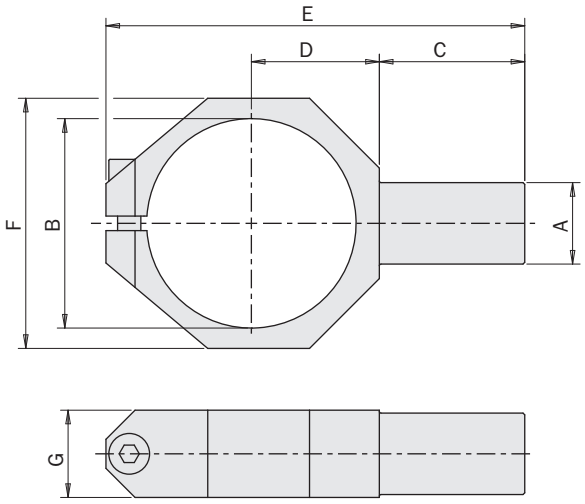
09/2015

Staffa in alluminio

(kit completo di viti)

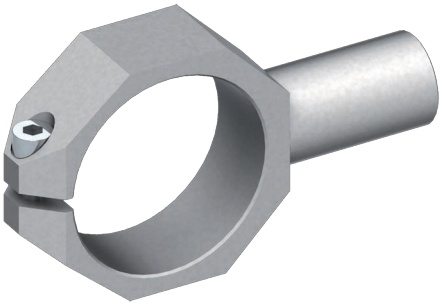
Aluminium mounting bracket

(kit with screws)

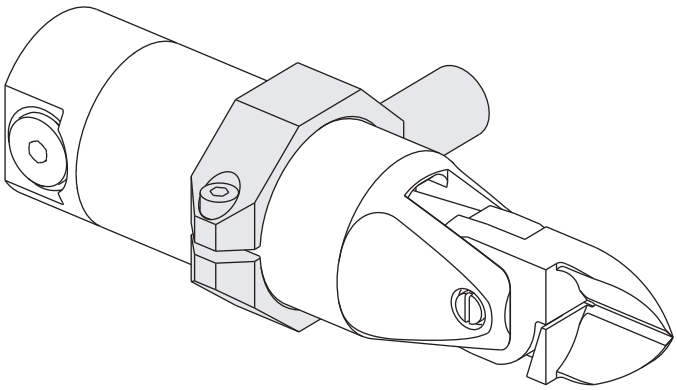


FIRST ANGLE PROJECTION

		MFM-A110	MFM-A111	MFM-A112	MFM-A11
A	[mm]	Ø14	Ø20	Ø20	Ø30
B	[mm]	Ø36	Ø45	Ø56	Ø75
C	[mm]	25	35	40	48
D	[mm]	22	28	33	41
E	[mm]	72	94.5	111	138
F	[mm]	43	53	65	83
G	[mm]	15	20	25	40
Peso / *Weight*		30 g	65 g	110 g	308 g

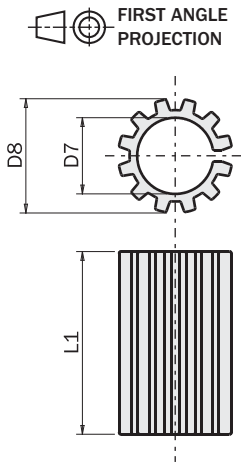


Esempio di utilizzo / *Application example*



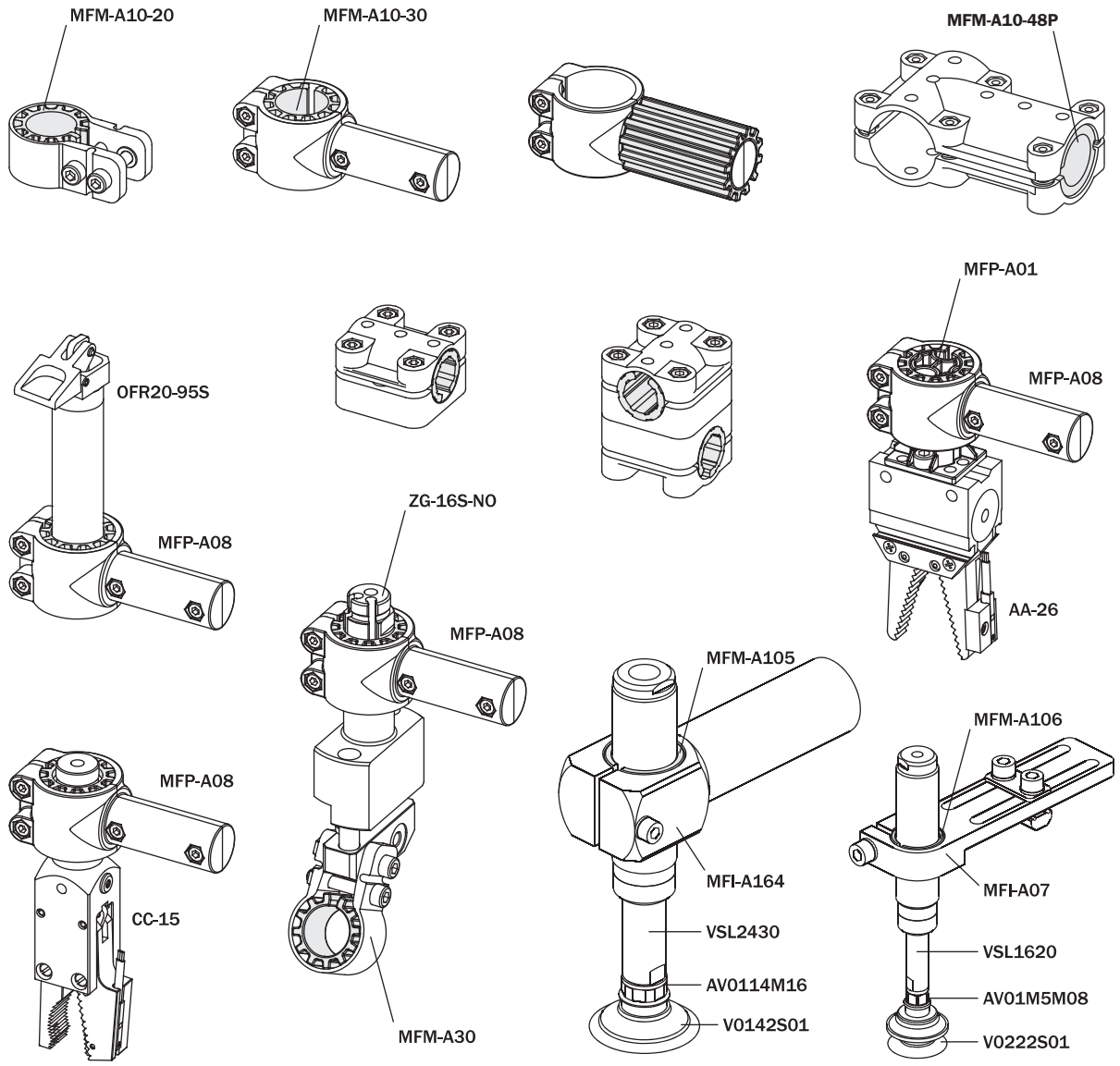
Riduzione

Adapter



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

Esempio di utilizzo / *Application example*



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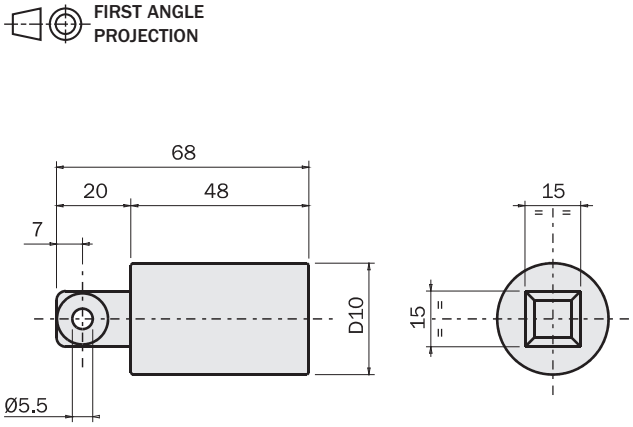
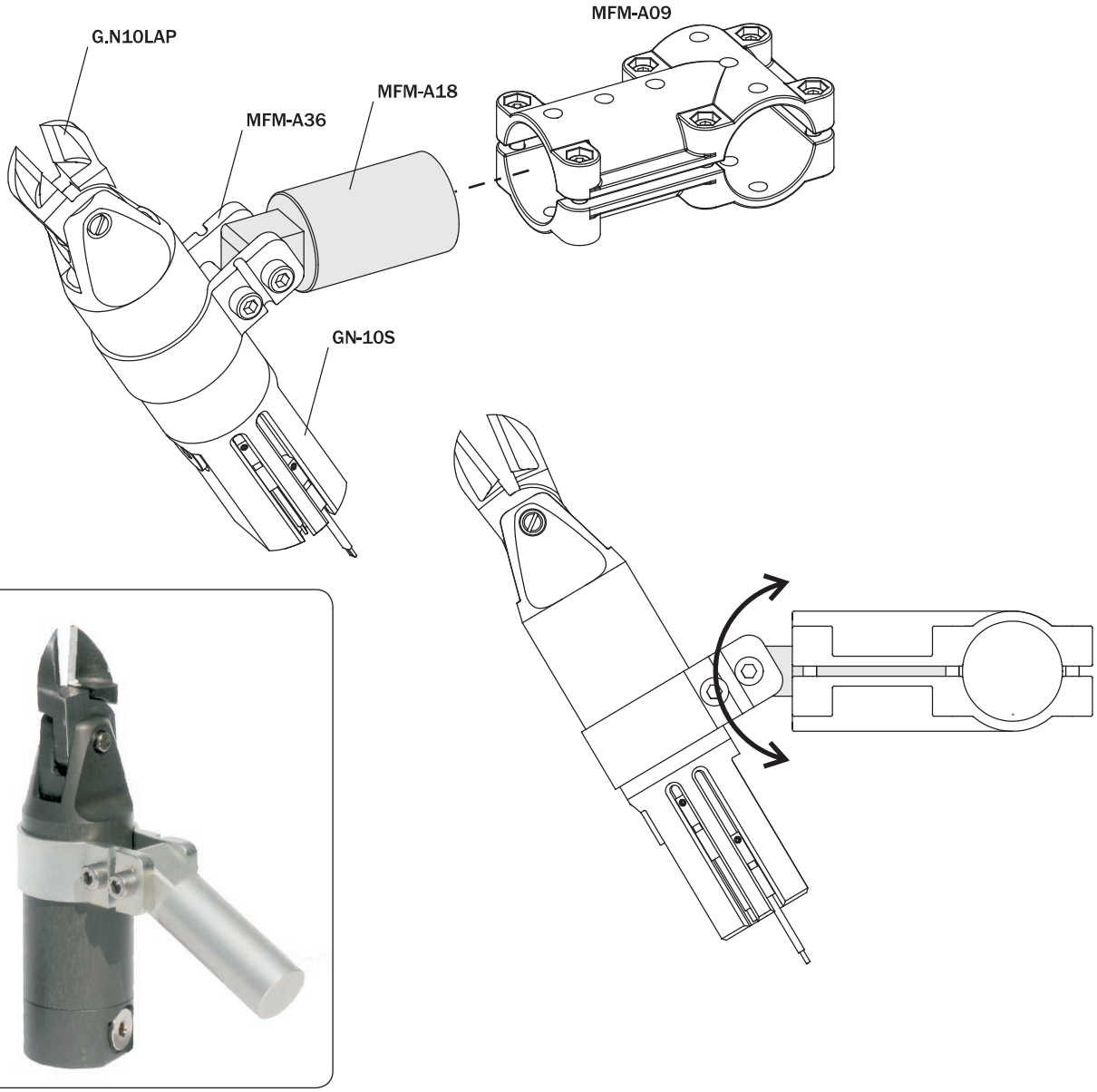
Supporto orientabile

Hinge with stud



	MFM-A17	MFM-A18
D10	Ø20 mm	Ø30 mm
Peso / *Weight*	56 g	82 g

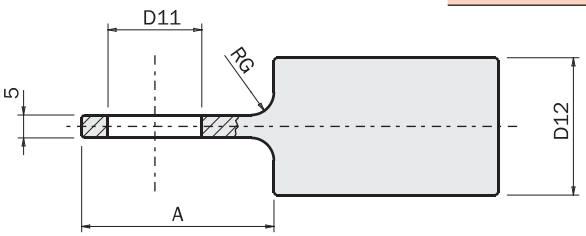
Esempio di utilizzo / *Application example*

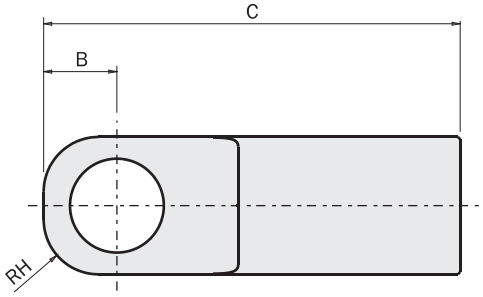


Supporto per sospensione

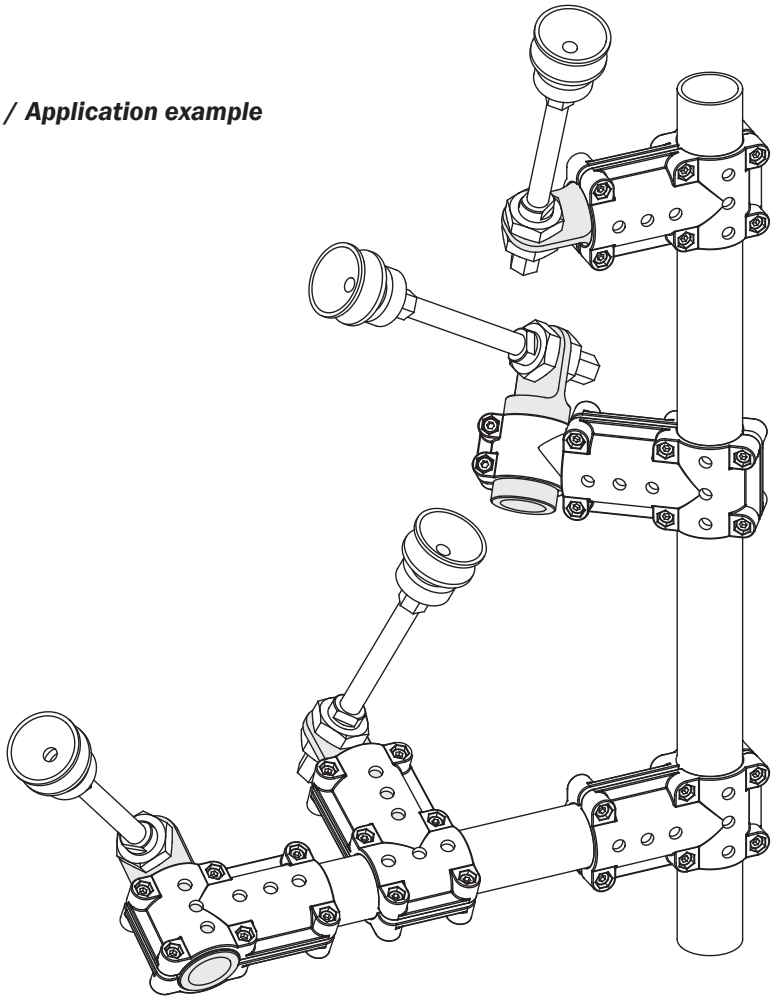
Holder for suspensions

		MFM-A19	MFM-A20	MFM-A21	MFM-A22	MFM-A23
A	[mm]	26	26	31	36	42
B	[mm]	10	10.5	12	13	16
C	[mm]	75	75	80	85	91
D12	[mm]	Ø20	Ø20	Ø20	Ø30	Ø30
D11	[mm]	Ø10.5	Ø12.5	Ø14.5	Ø16.5	Ø20.5
RG	[mm]	2.5	2.5	2.5	5	5
RH	[mm]	7	7	7	12	12
Peso / *Weight*		52 g	52 g	52 g	84 g	86 g





Esempio di utilizzo / *Application example*



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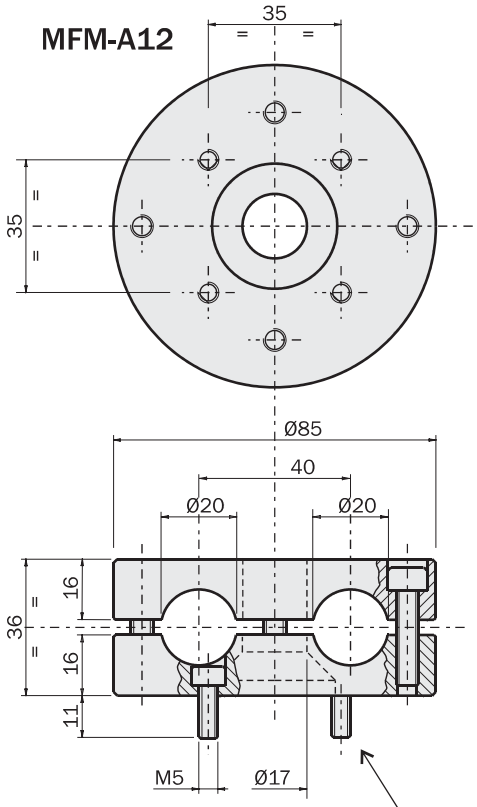
Interfaccia tubi con QC...-B
(kit completo di viti)

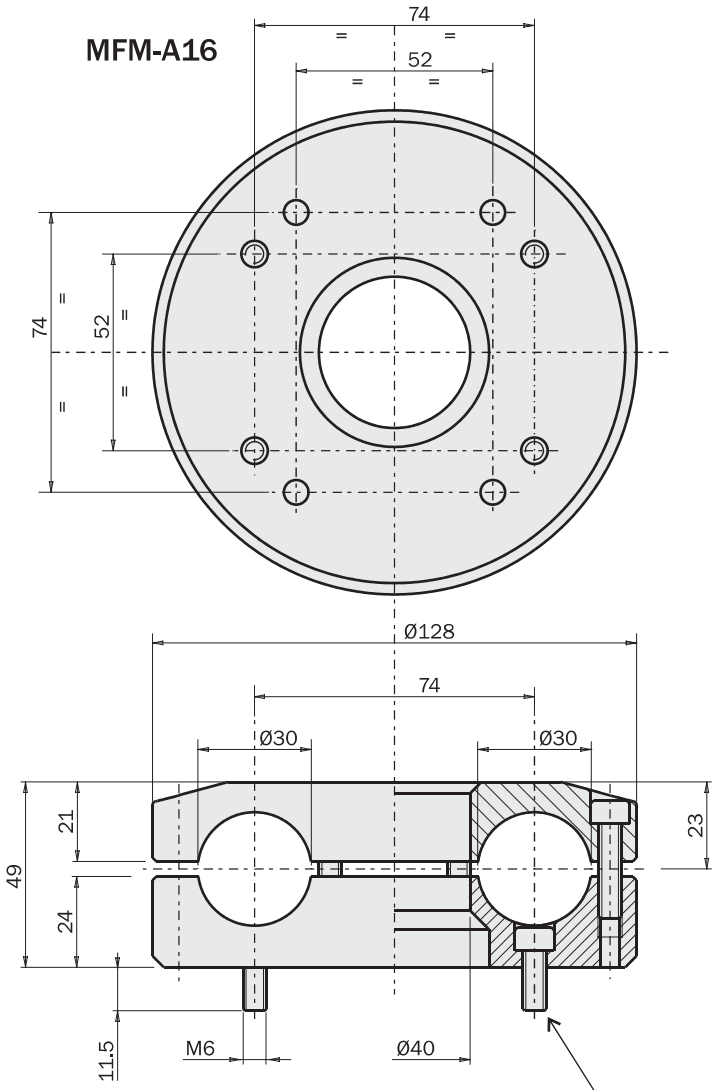
Interface between tubes and QC...-B
(kit with screws)

MFM-A12



Viti per il fissaggio del QC90-B
Fastening screw to QC90-B

MFM-A16

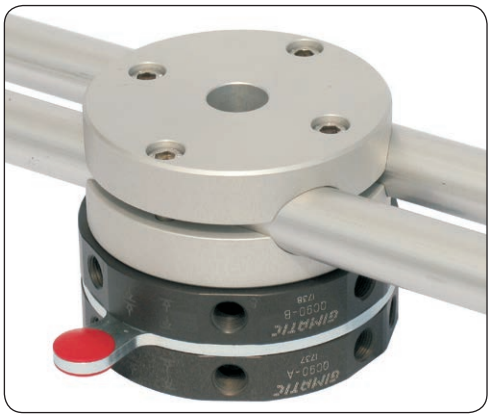


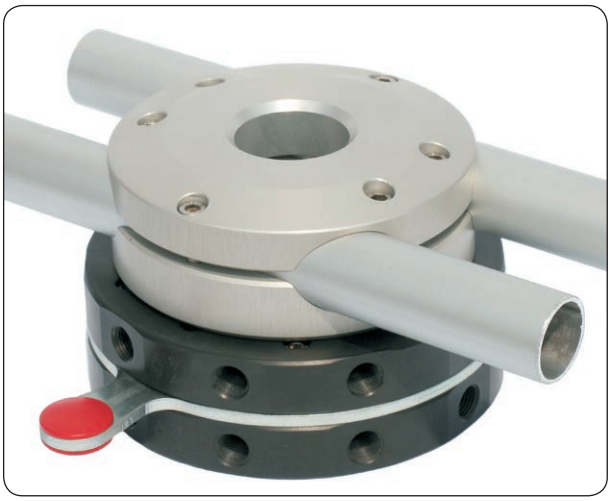
Viti per il fissaggio di QC150-B e QC160-B
Fastening screw to QC150-B and QC160-B

FIRST ANGLE PROJECTION

	MFM-A12	MFM-A16
Peso / *Weight*	395 g	1030 g

Esempio di utilizzo / *Application example*



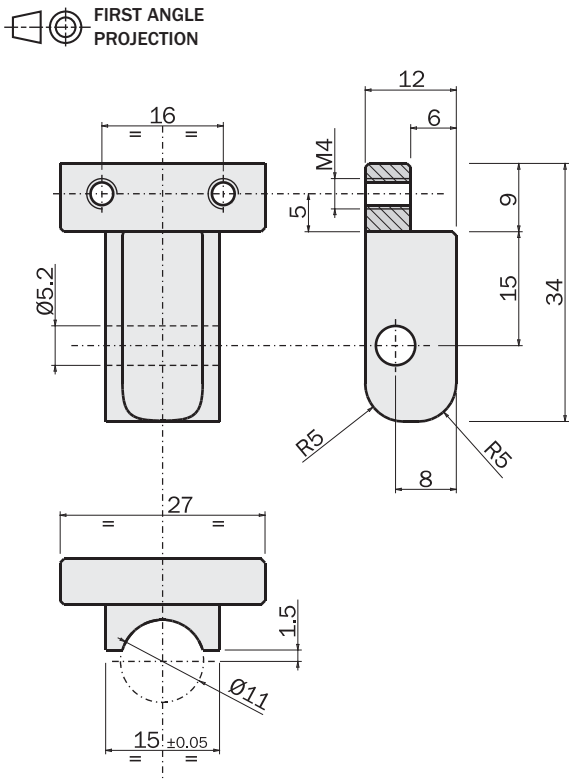


Blocchetto di fissaggio per PB

(kit completo di viti)

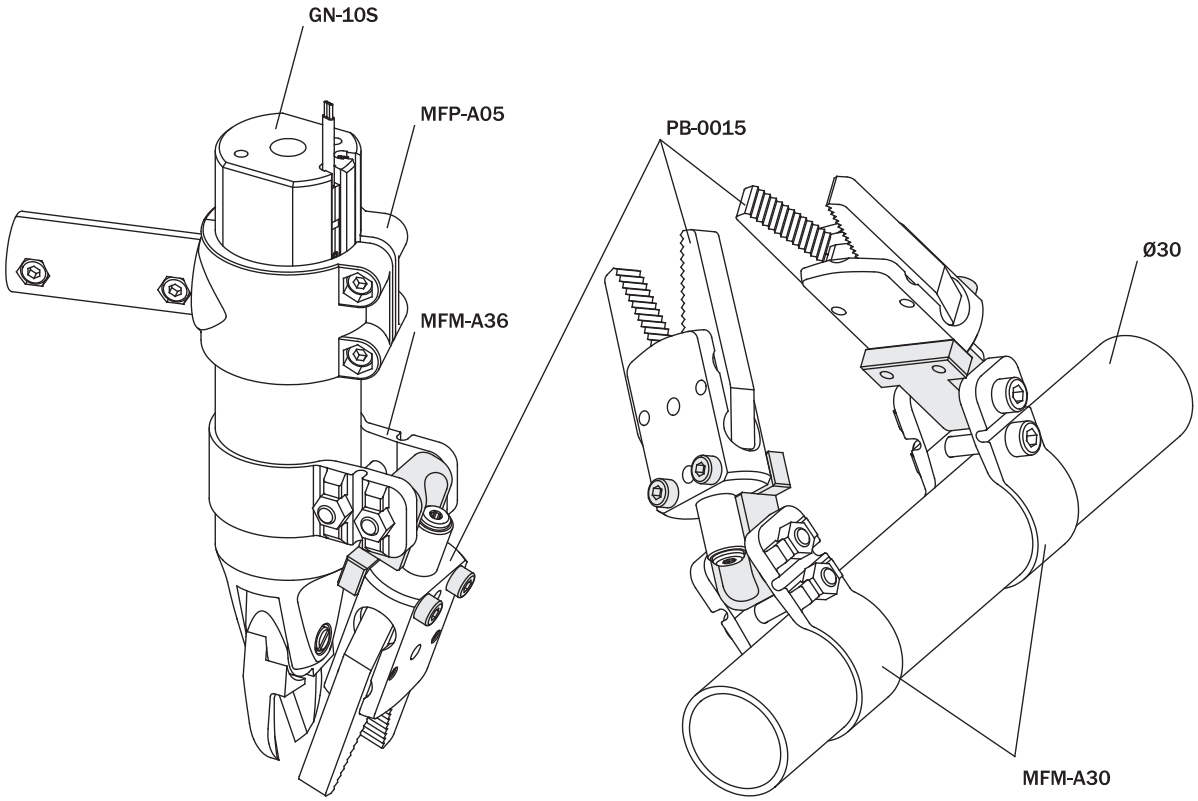
PB mounting connector

(kit with screws)



	MFM-A57
Peso / *Weight*	25 g

Esempio di utilizzo / *Application example*



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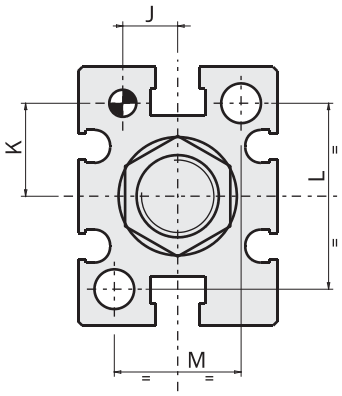
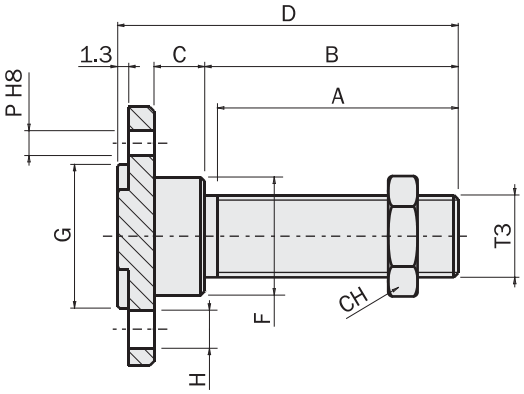
Interfaccia per pinze

(kit completo di viti)

Interface for grippers

(kit with screws)

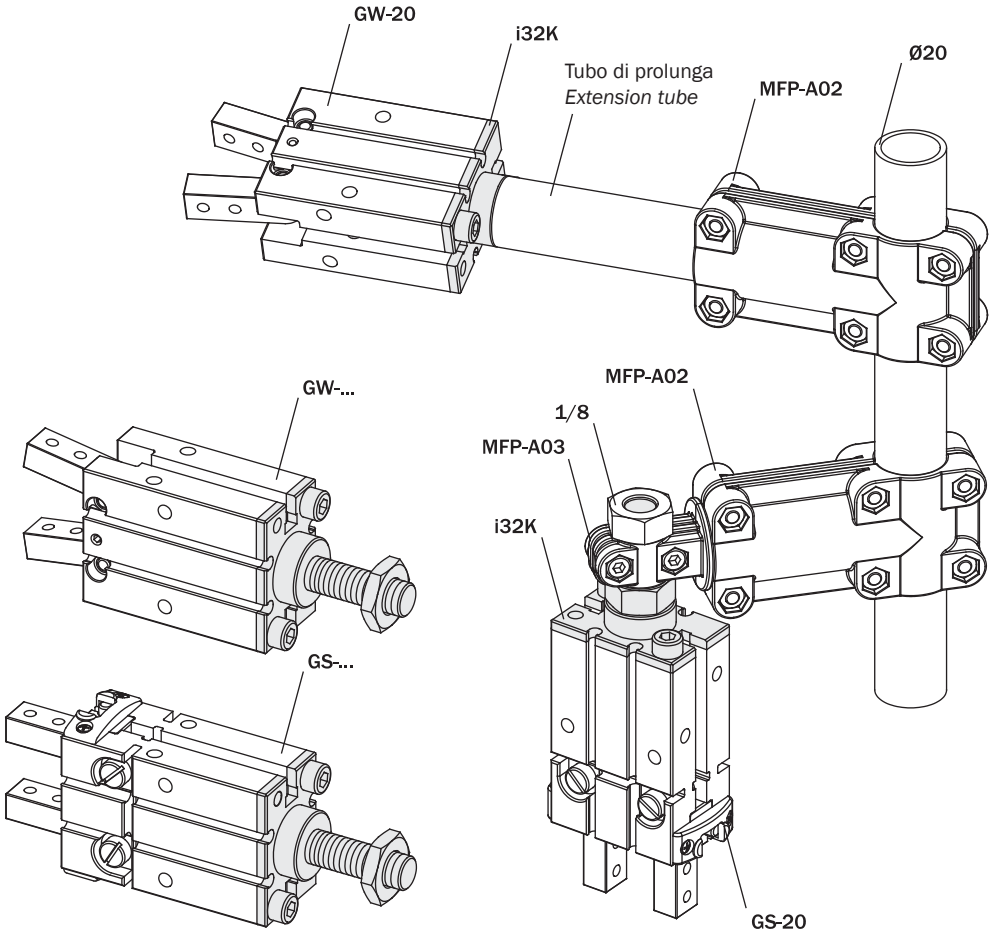




FIRST ANGLE PROJECTION

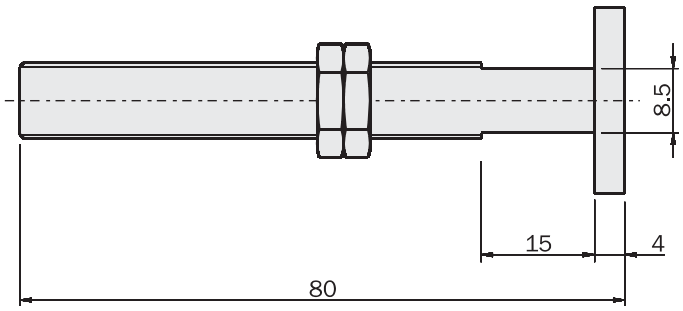
		i30K	i31K	i32K	i33K
A	[mm]	25	28.5	28.5	28.5
B	[mm]	25	30	30	30
C	[mm]	5	6	7	8
CH	[mm]	14	14	14	17
D	[mm]	34.3	40.3	41.3	44.3
T3	[mm]	G1/8”	G1/8”	G1/8”	M15x1
F	[mm]	Ø10	Ø14	Ø20	Ø20
G	[mm]	Ø11	Ø17	Ø21	Ø26
H	[mm]	Ø3.3	Ø4.5	Ø5.5	Ø6.5
J	[mm]	5.2	6.5	7.5	10
K	[mm]	7.6	11	16	21
L	[mm]	18	22	32	40
M	[mm]	12	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*

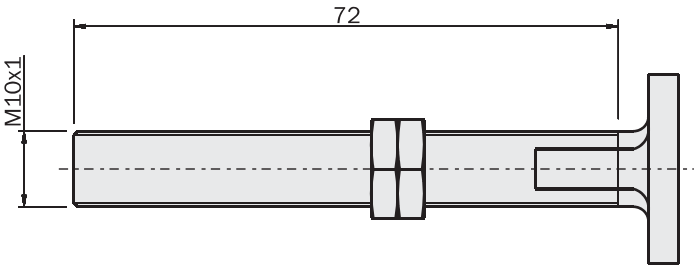


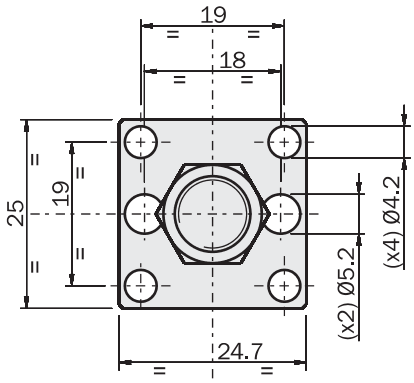
Interfaccia per pinze
(kit completo di viti)

Interface for grippers
(kit with screws)

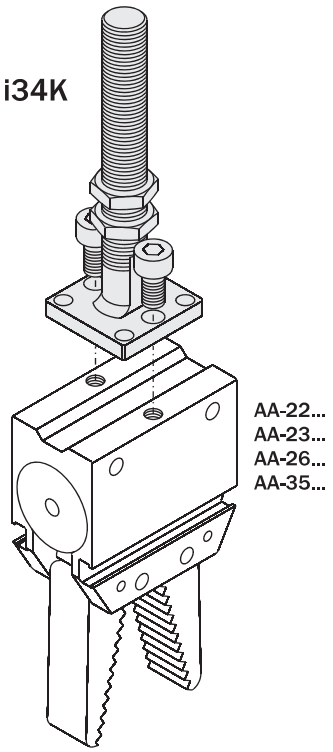


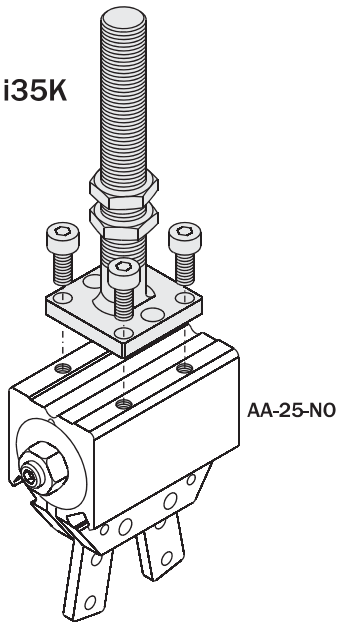
	i34K	i35K
Peso / *Weight*	65 g	65 g





Esempio di utilizzo / *Application example*

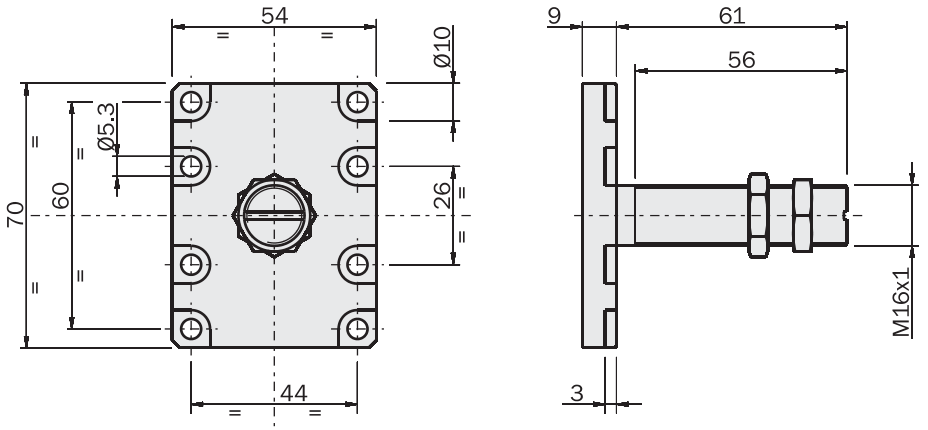




Interfaccia per pinze
(kit completo di viti)

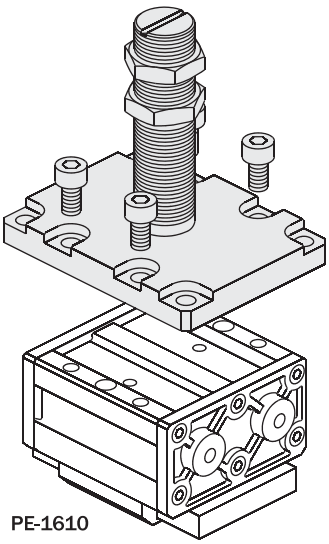
Interface for grippers
(kit with screws)

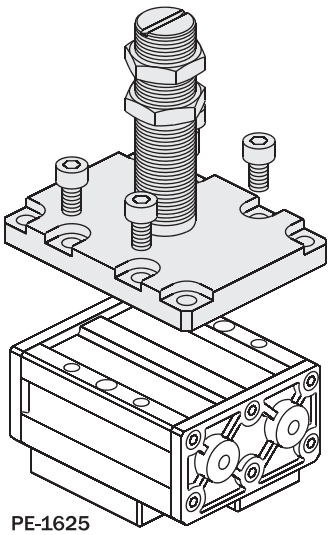
	i36K
Peso / *Weight*	190 g

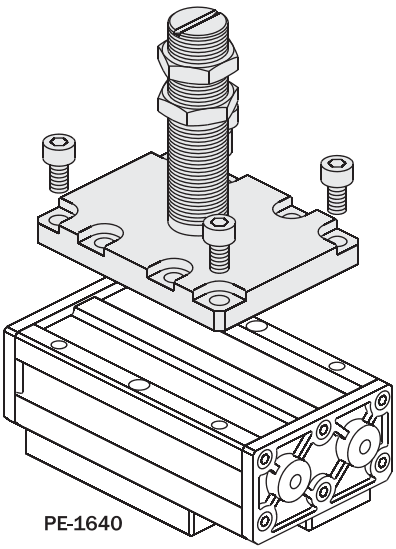


FIRST ANGLE PROJECTION

Esempio di utilizzo / *Application example*


PE-1610

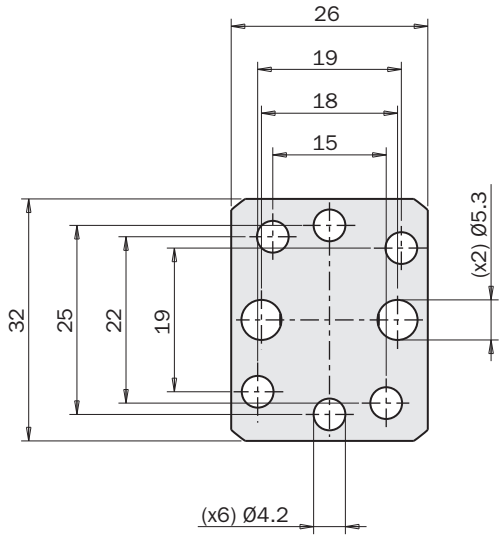

PE-1625

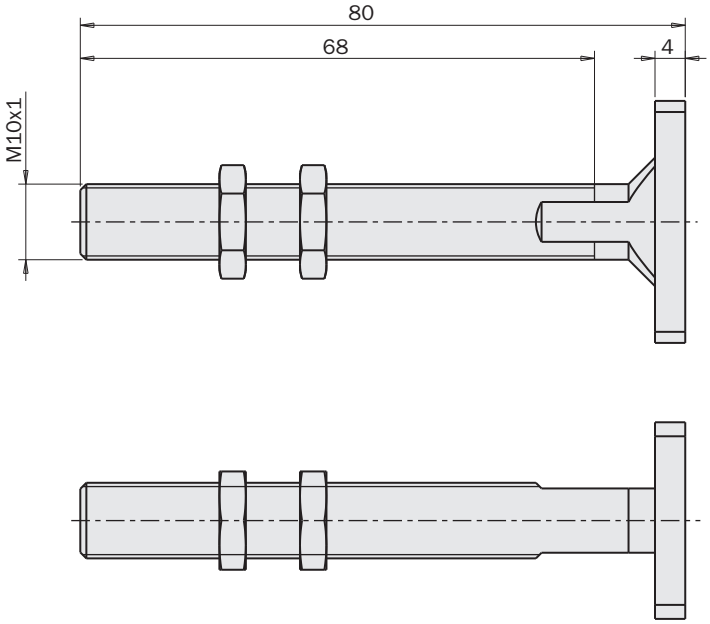

PE-1640

Interfaccia per pinze

Interface for grippers

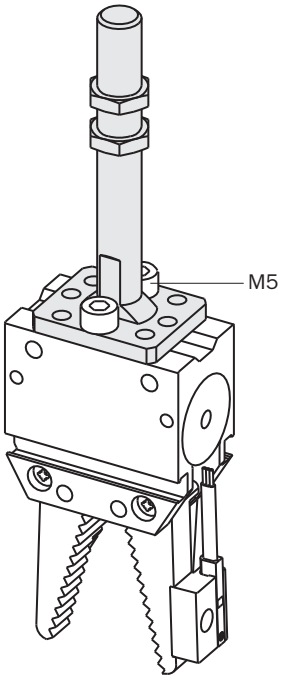
	i37K
Peso / *Weight*	85 g



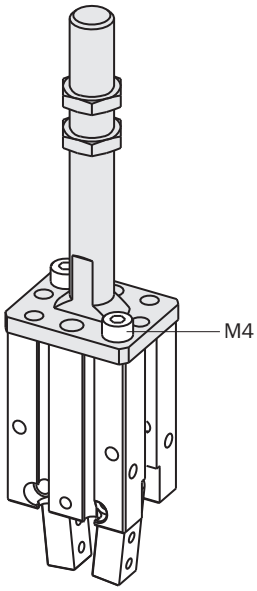


FIRST ANGLE PROJECTION

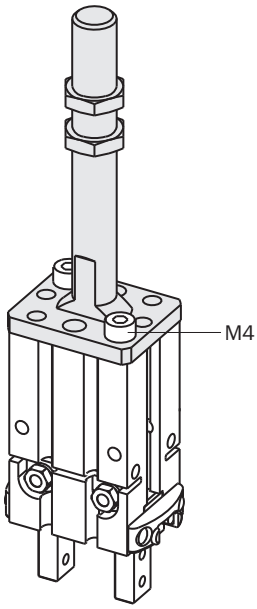
Esempio di utilizzo / *Application example*



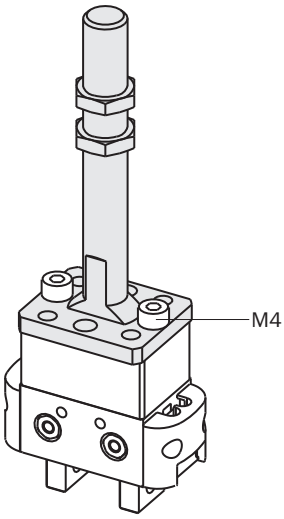
AA-22
AA-23
AA-26



GW-16



GS-16

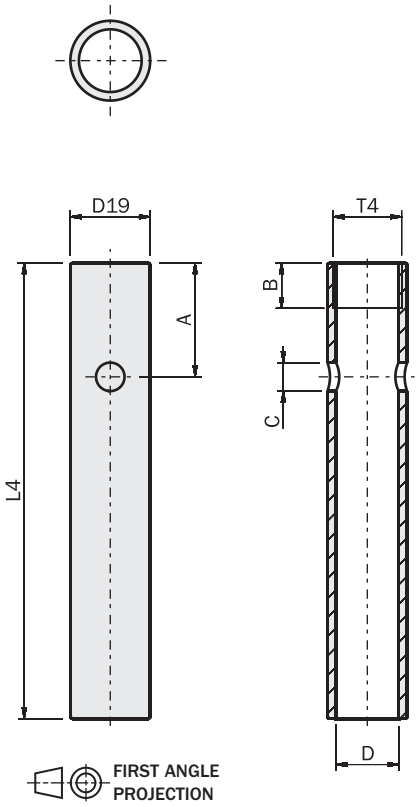


SGP-32S

09/2015

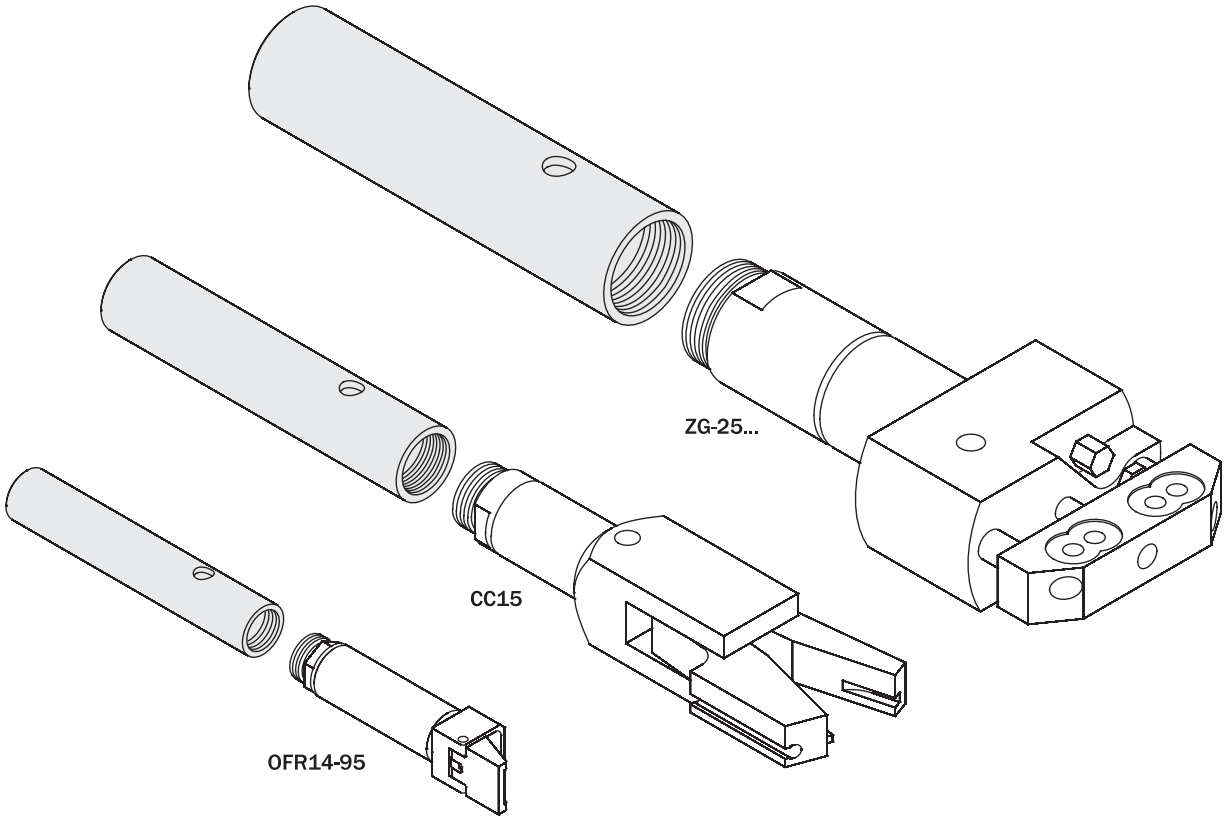
Tubo di prolunga
(in alluminio)

Extension tube
(in aluminum)



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

Esempio di utilizzo / *Application example*

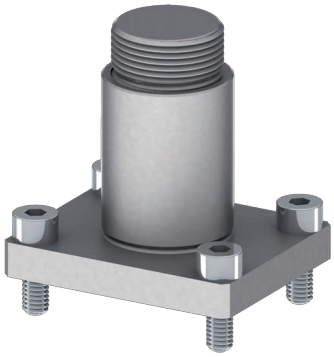


Interfaccia per taglierino GNS

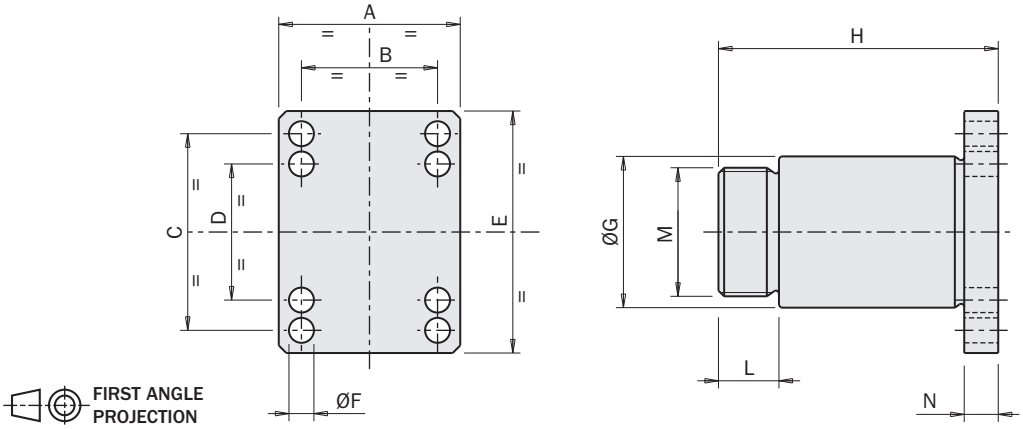
(kit completo di viti)

GNS nipper mounting bracket

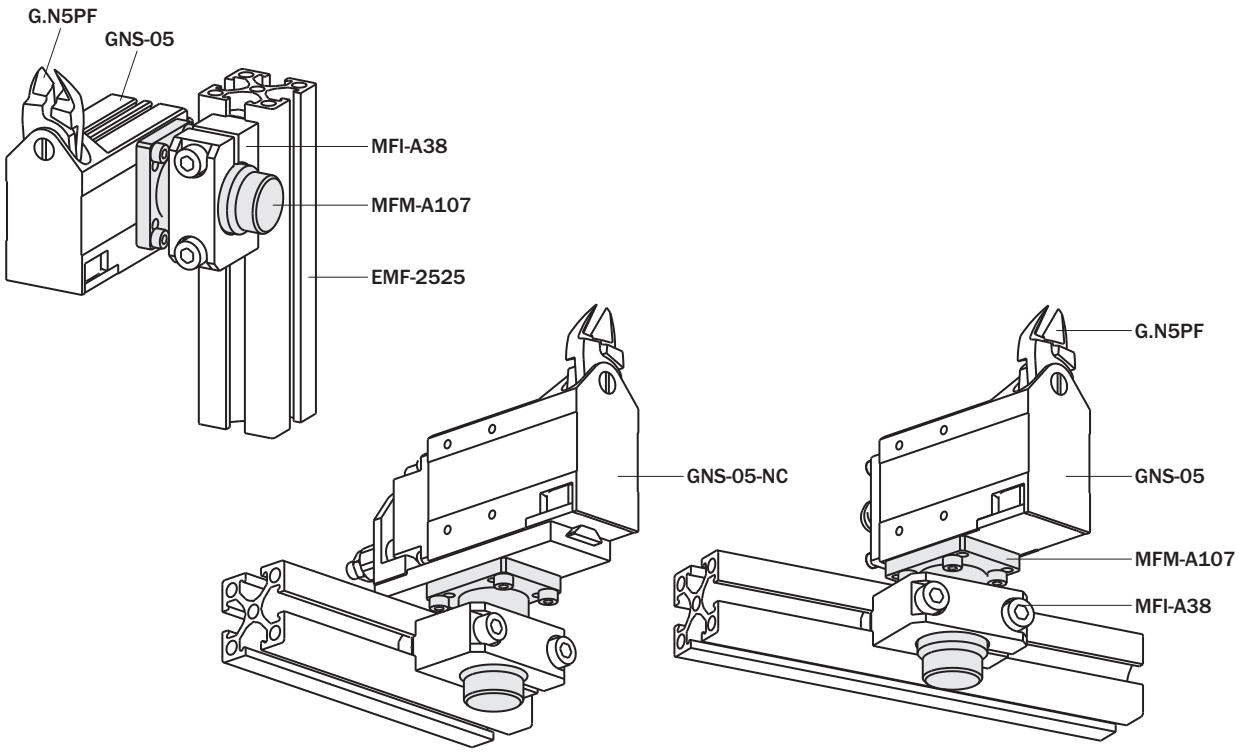
(kit with screws)



		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*



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Interfacce per cilindro guidato

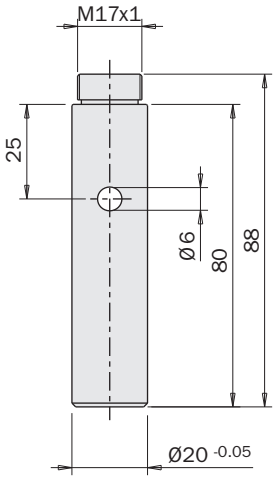
(kit completo di viti)

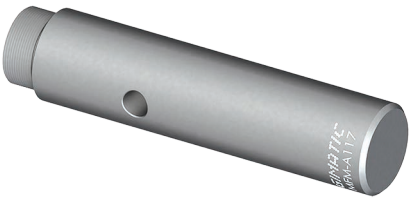
	MFM-A117
Peso / *Weight*	70 g

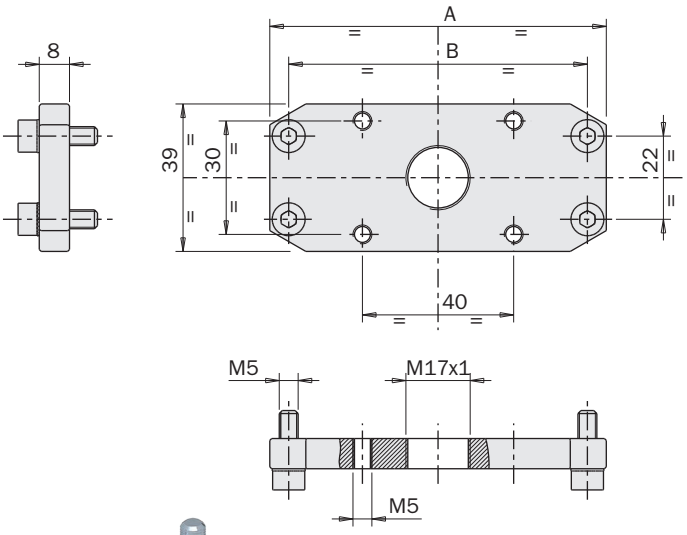
Interfaces for guided cylinder

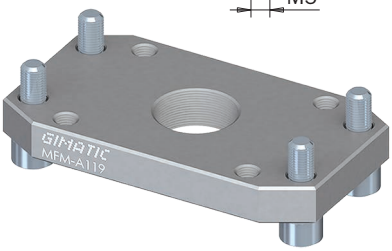
(kit with screws)

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

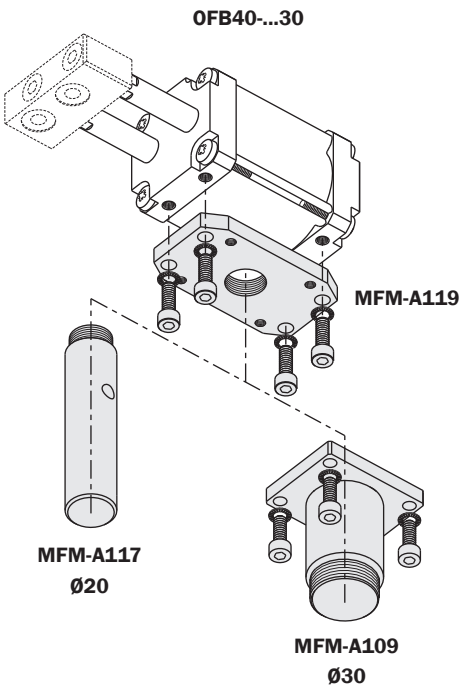


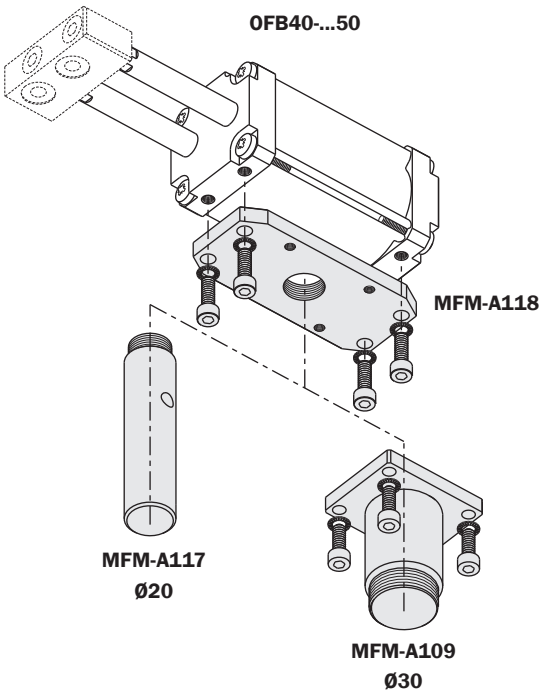






Esempio di utilizzo / *Application example*





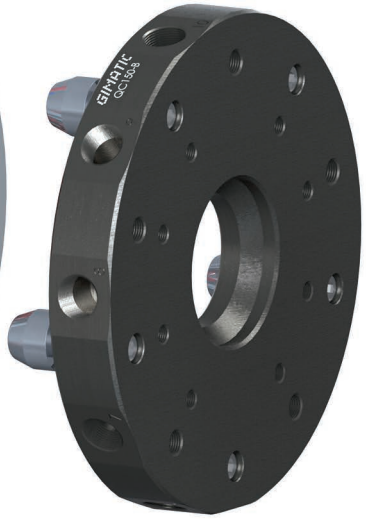
Cambia utensile

- 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.
- 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.*
- *Optional LOQC lock unit.*

QCX150-A



QC150-B

QC90-A

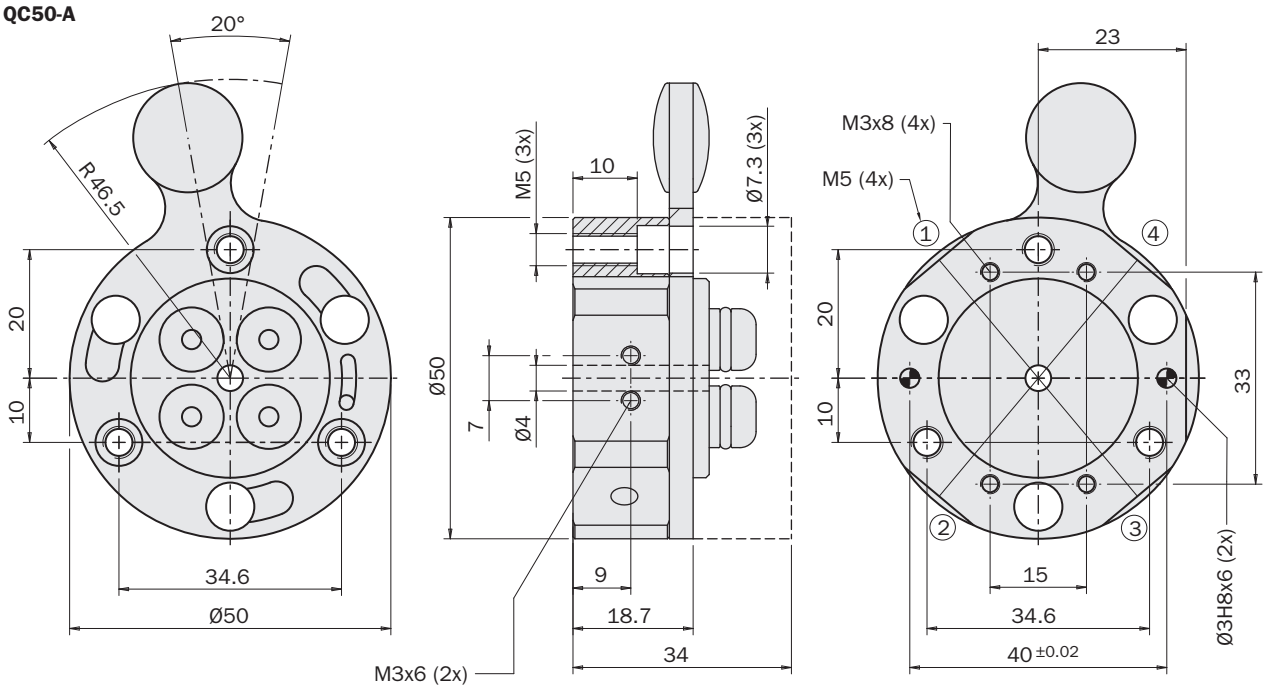
QC90-B

	QC50	QC90	QC150	QC160	QC200
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*				
Pressione di esercizio *Pressure range*	-1 ÷ 6 bar				
Temperatura di esercizio *Temperature range*	5 ÷ 60 °C				
Cambia utensile lato robot *Robot side quick changer*	103 g QC50-A	318 g QC90-A	1123 g QC150-A	1200 g QC160-A	2640 g QC200-A
Cambia utensile lato robot con valvola di sicurezza *Robot side quick changer with safety valve*	-	595 g QCX90-A	2200 g QCX150-A	2200 g QCX160-A	4900 g QCX200-A
Cambia utensile lato pinza *Gripper side quick changer*	65 g QC50-B	227 g QC90-B	827 g QC150-B	900 g QC160-B	1890 g QC200-B

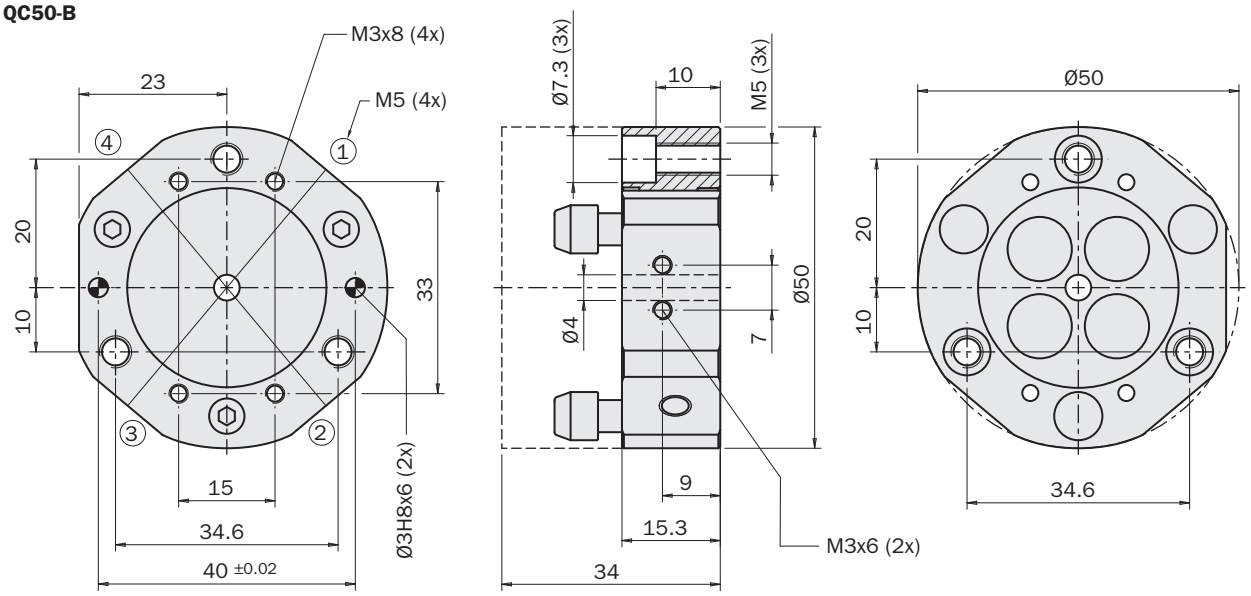
Dimensioni (mm) / *Dimensions (mm)*

QC50

QC50-A



QC50-B

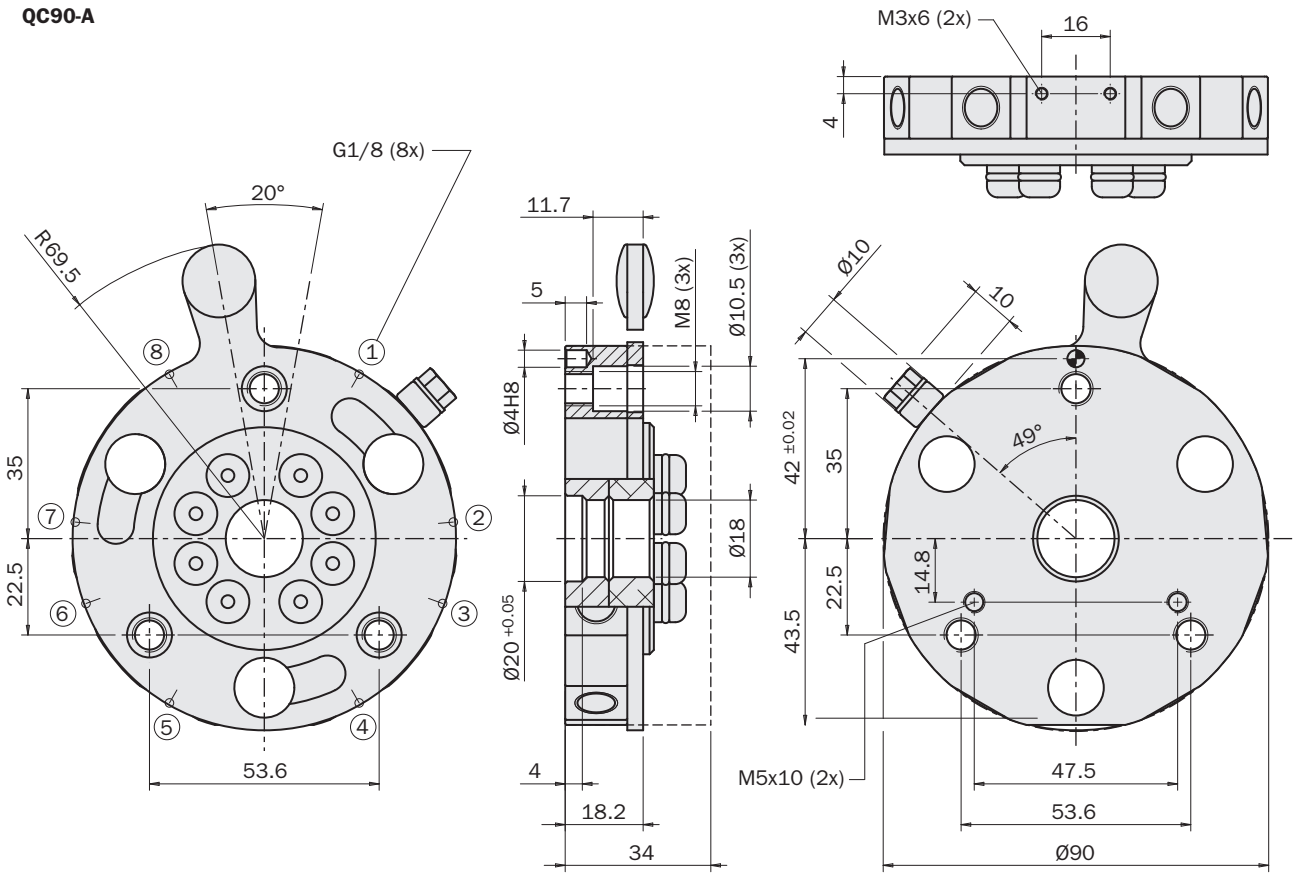


FIRST ANGLE PROJECTION

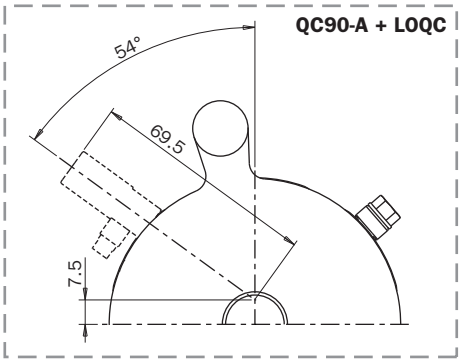
Dimensioni (mm) / *Dimensions (mm)*

QC90

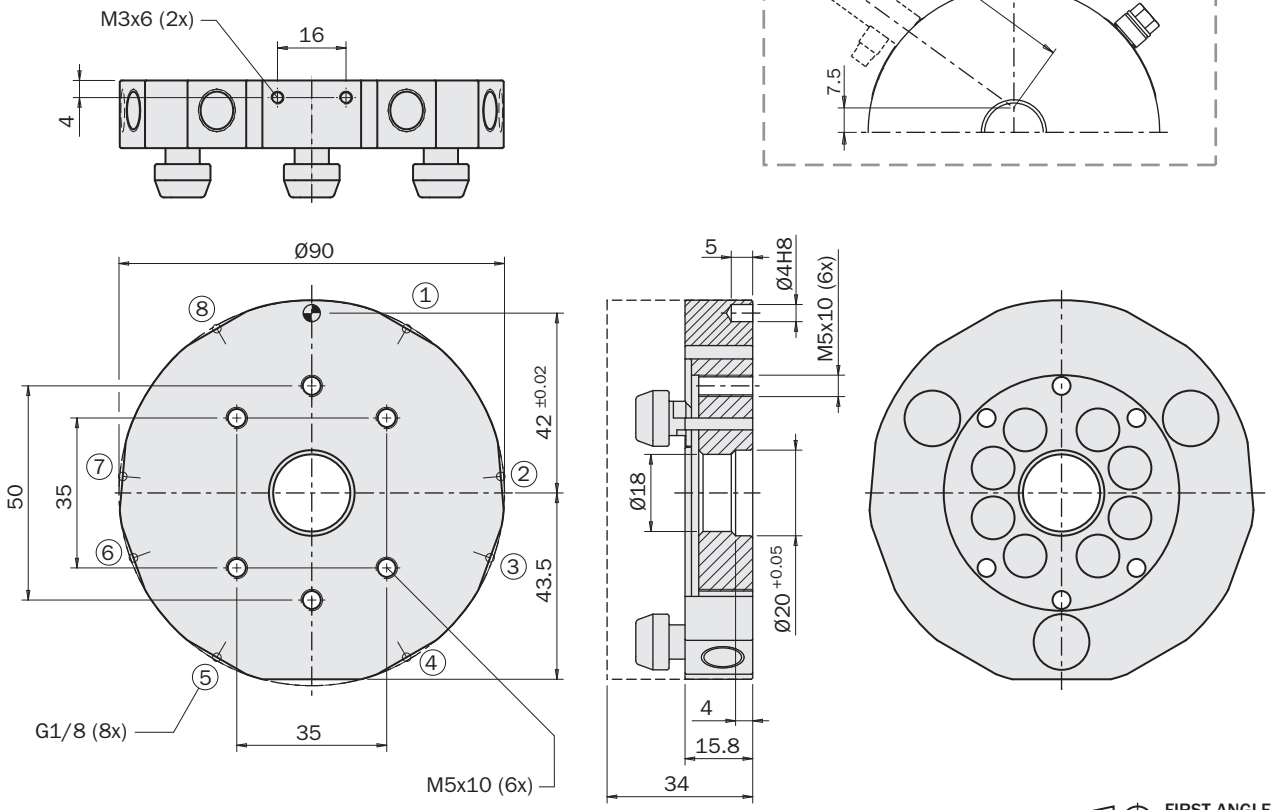
QC90-A



QC90-A + LOQC



QC90-B



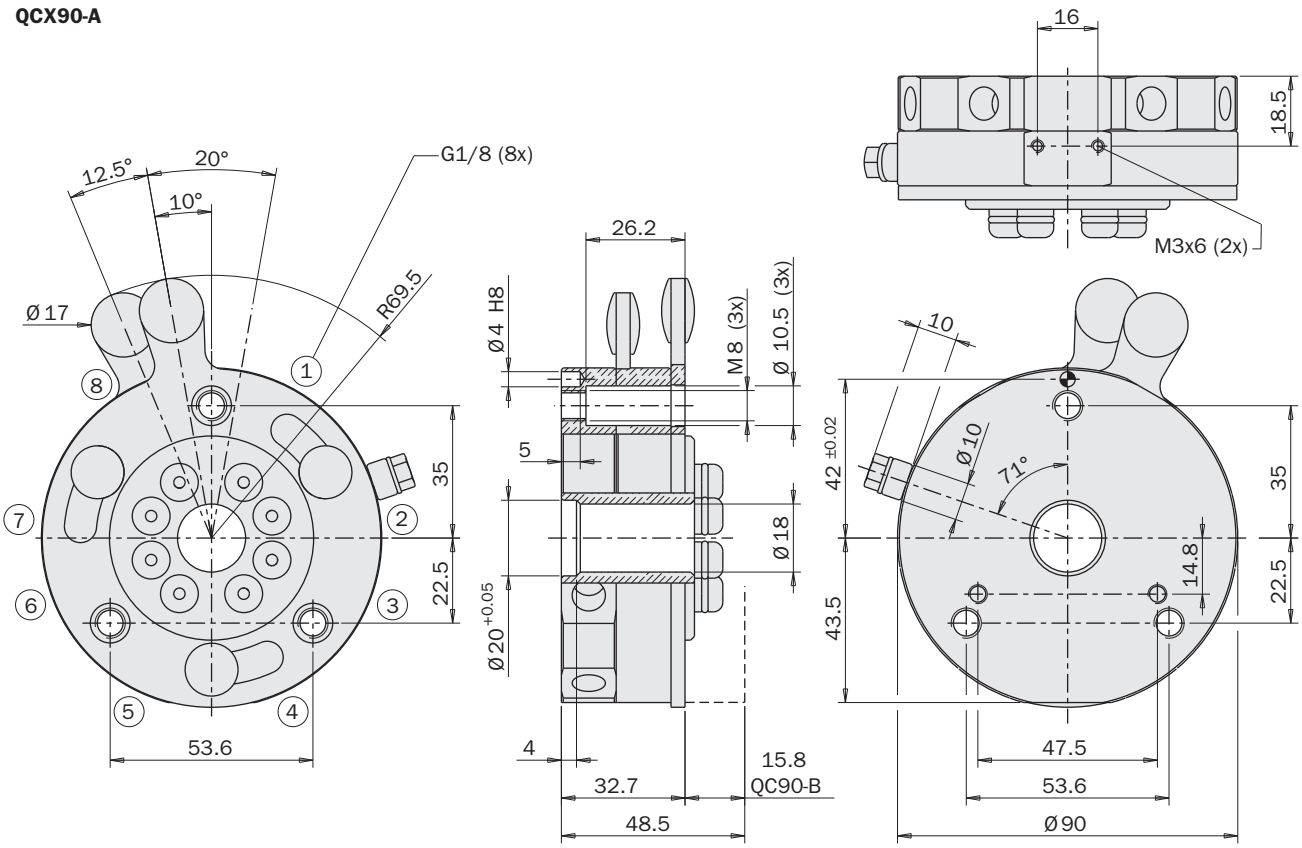
FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

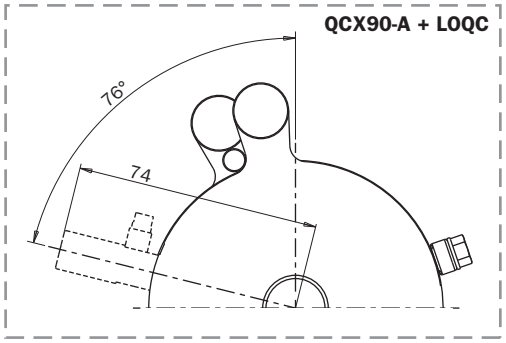
QCX90

QCX90-A

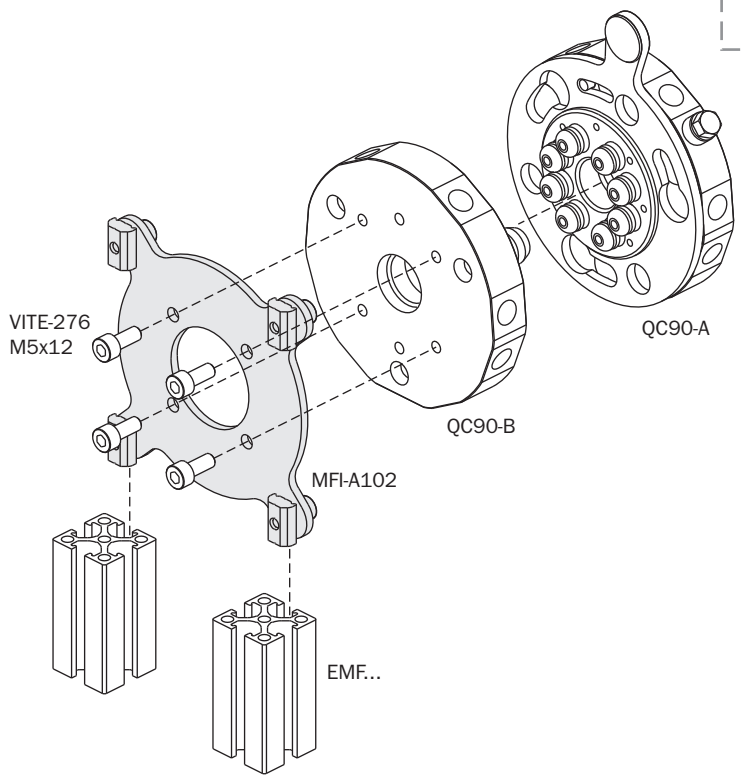


FIRST ANGLE PROJECTION

QCX90-A + LOQC



Esempio di utilizzo / *Application example*

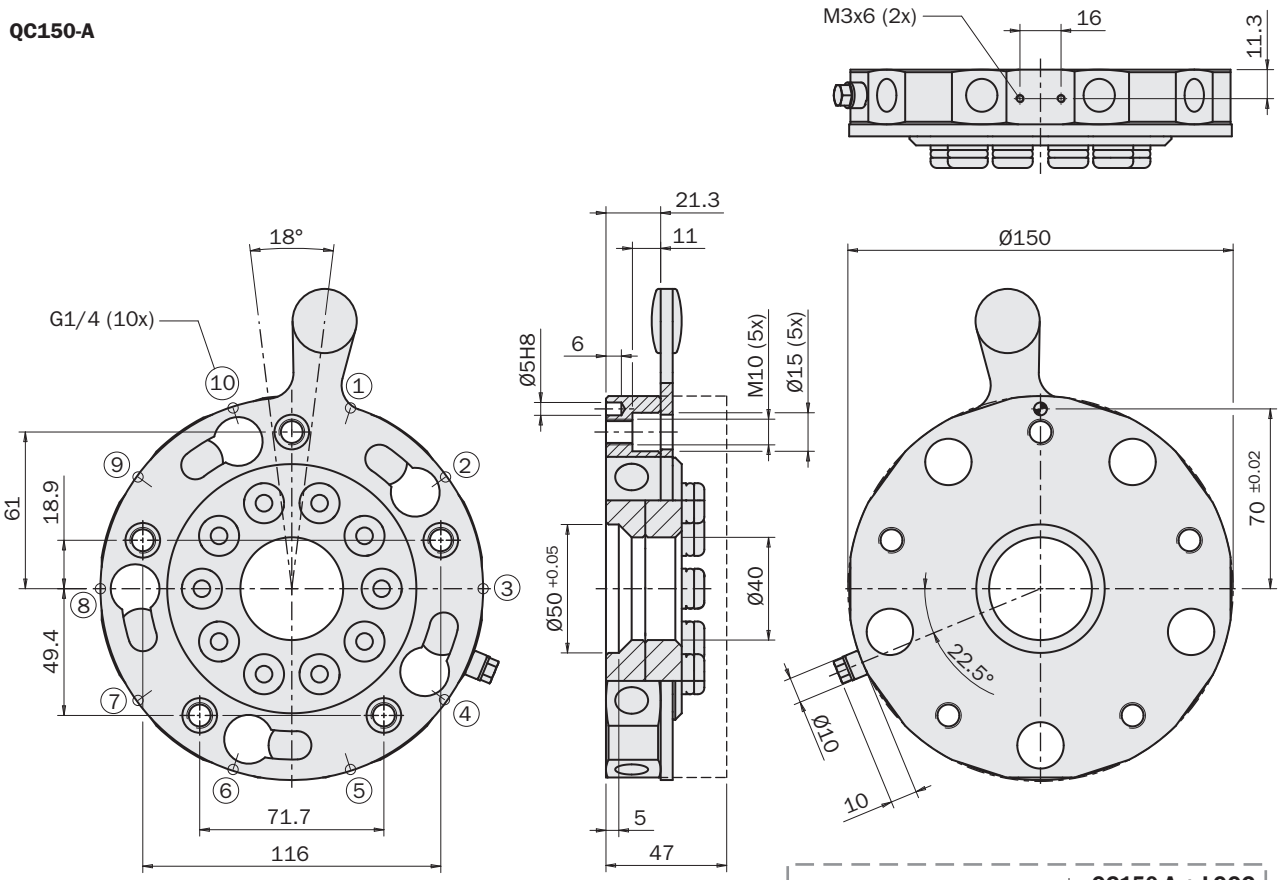


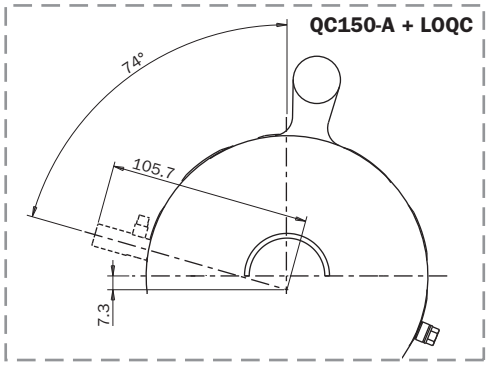
09/2015

Dimensioni (mm) / *Dimensions (mm)*

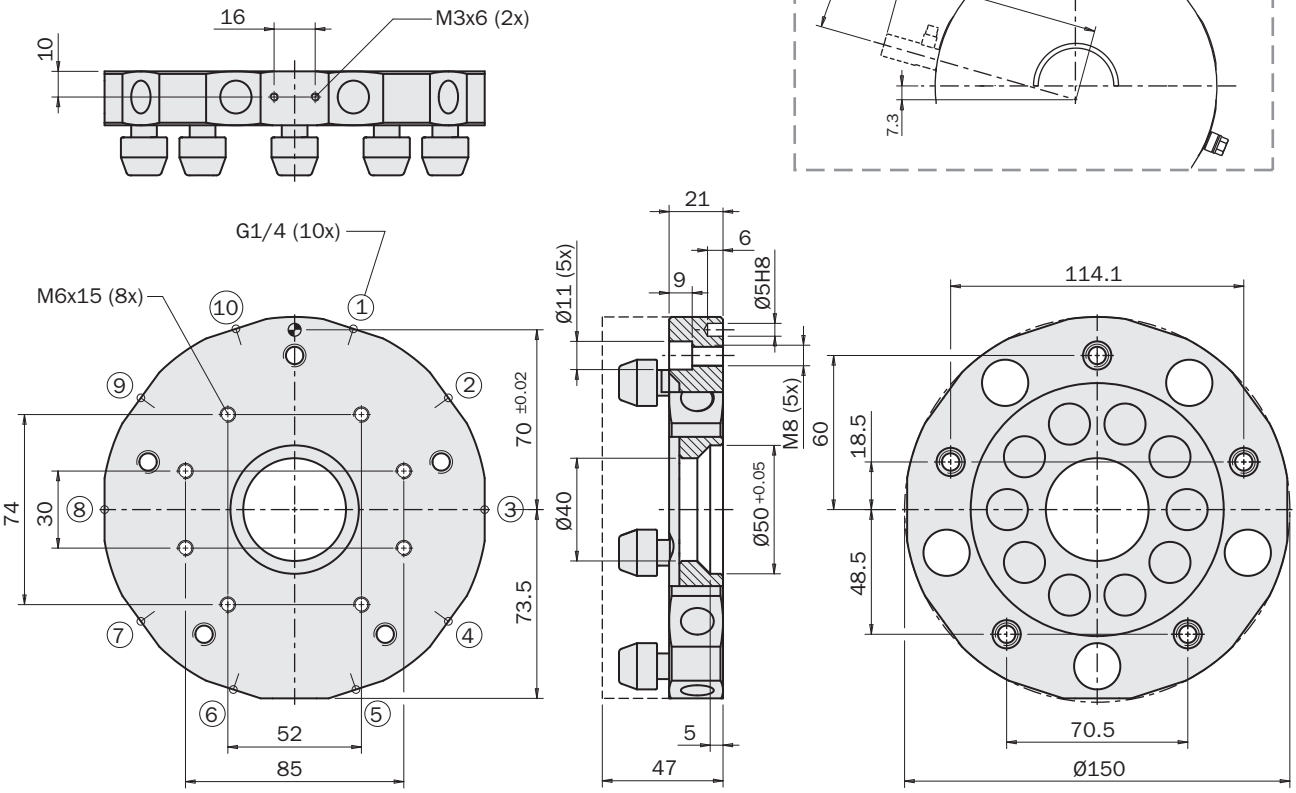
QC150

QC150-A





QC150-B



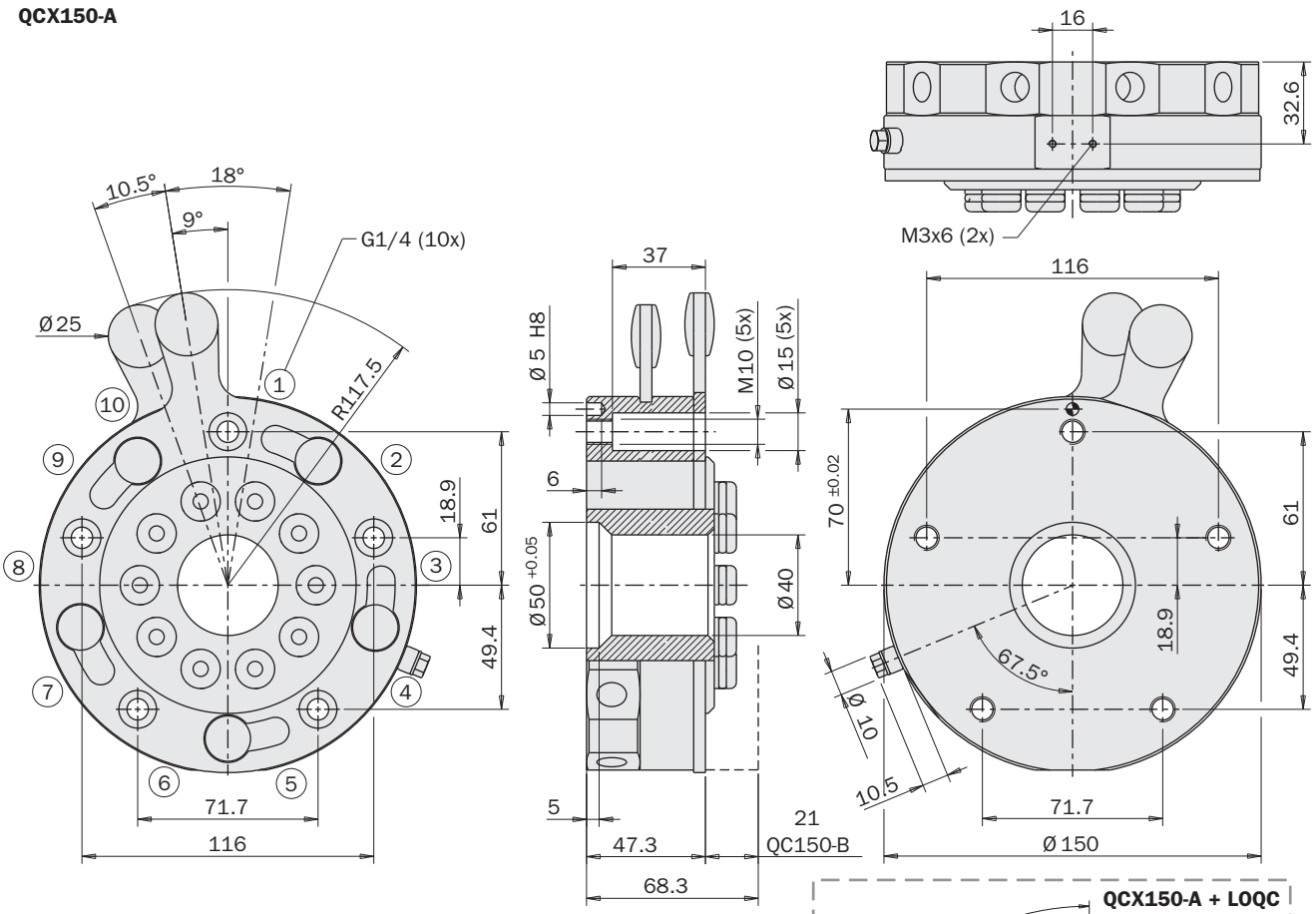
FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

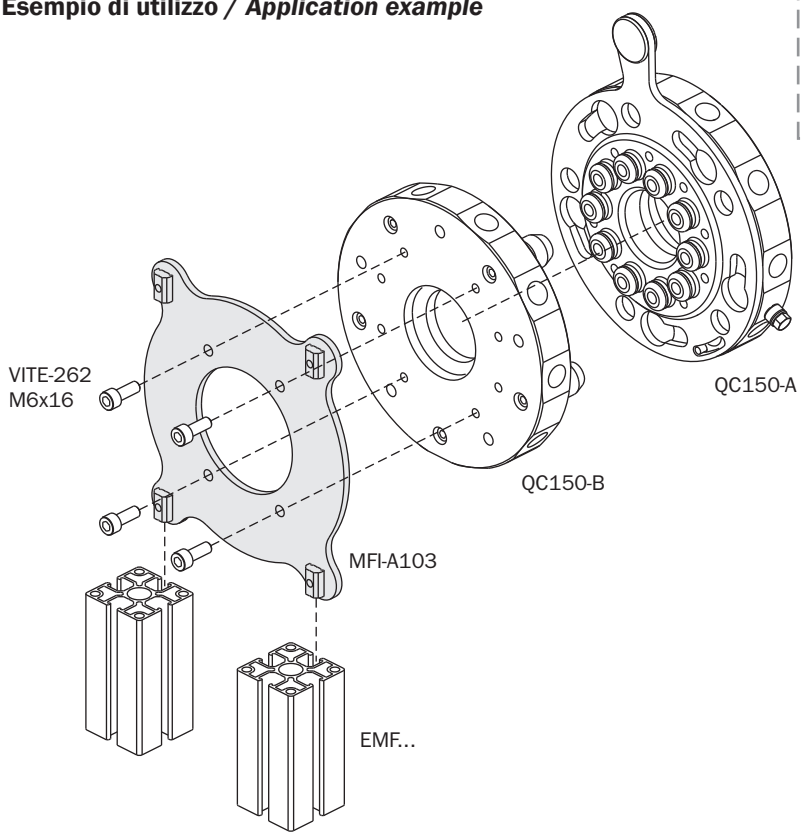
QCX150

QCX150-A



FIRST ANGLE PROJECTION

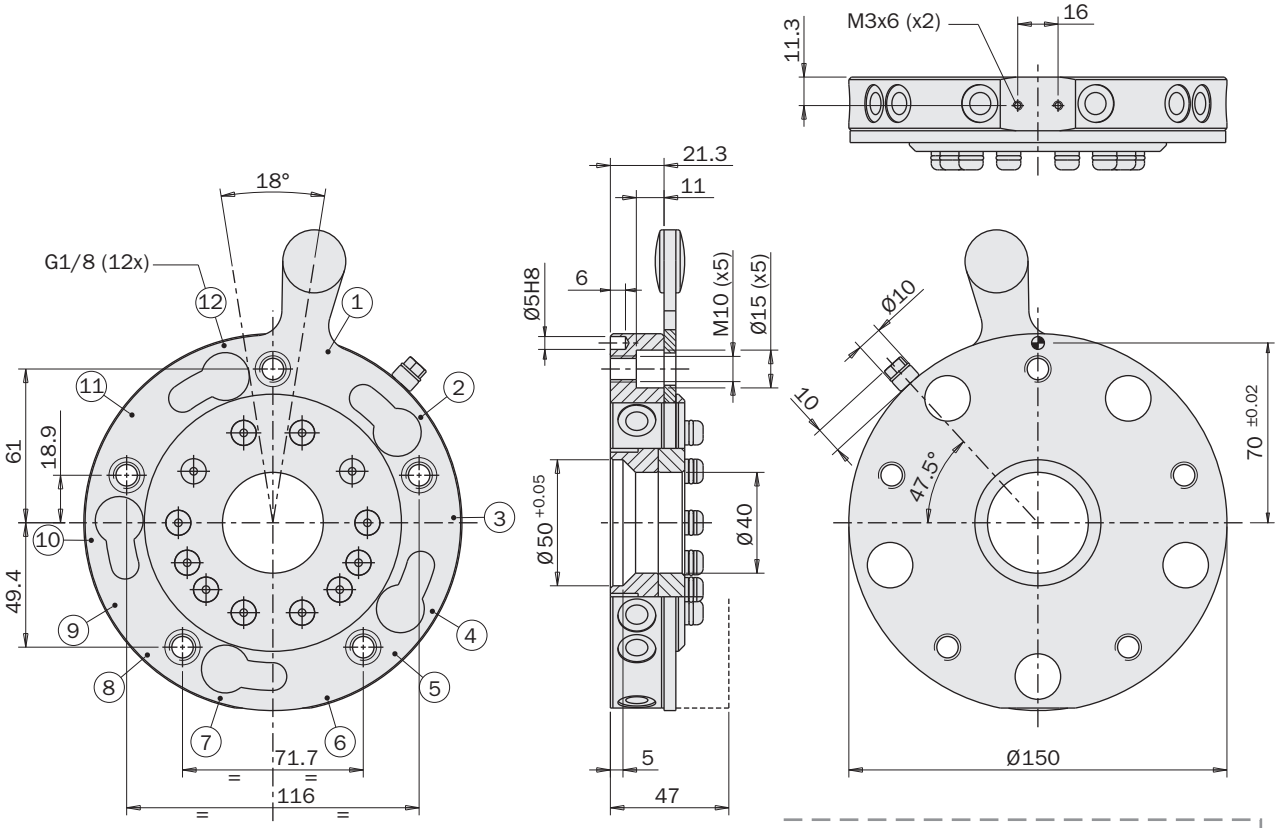
Esempio di utilizzo / *Application example*

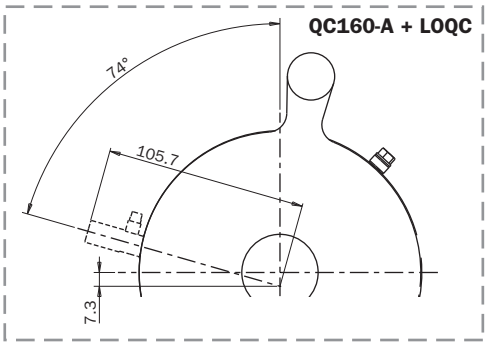


Dimensioni (mm) / *Dimensions (mm)*

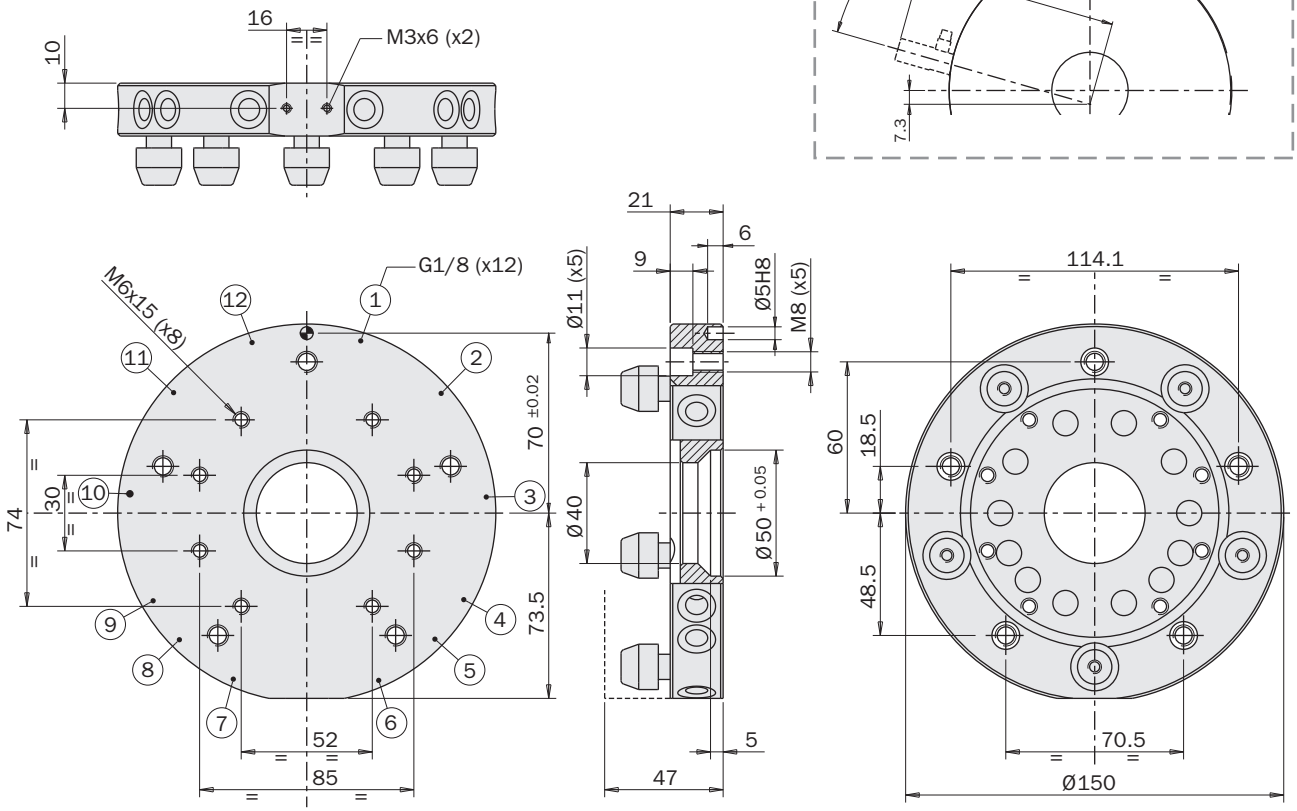
QC160

QC160-A





QC160-B



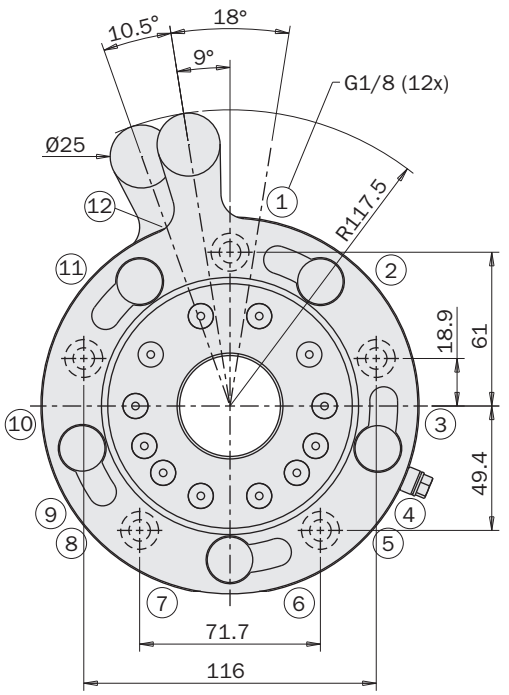
FIRST ANGLE PROJECTION

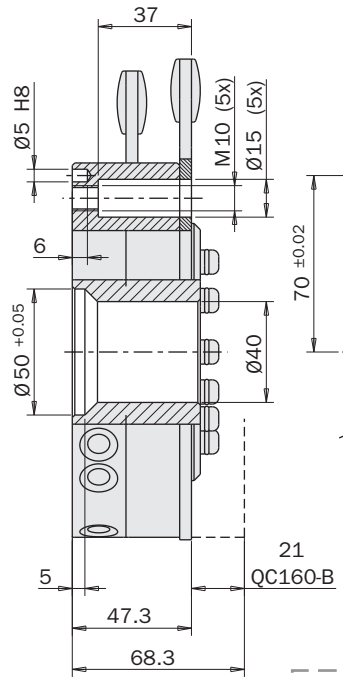
09/2015

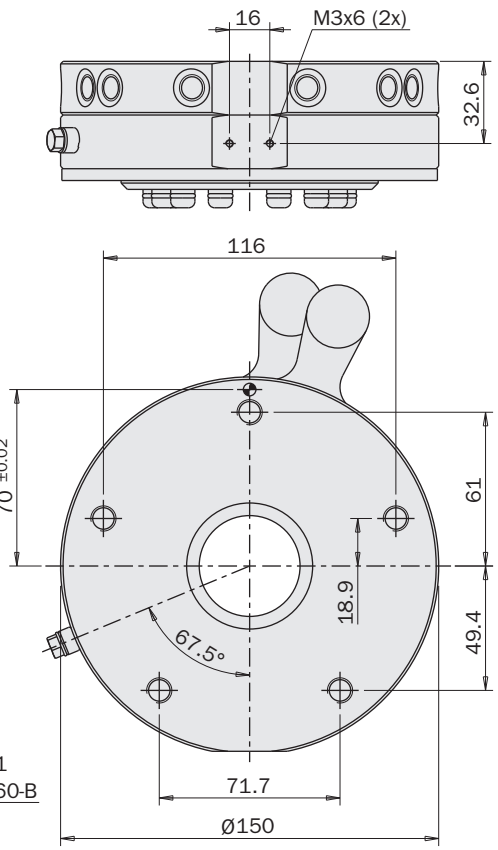
Dimensioni (mm) / *Dimensions (mm)*

QCX160

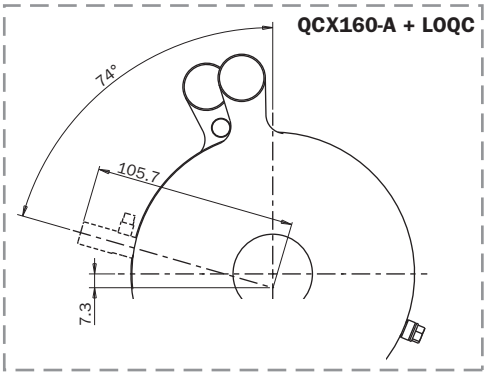
QCX160-A



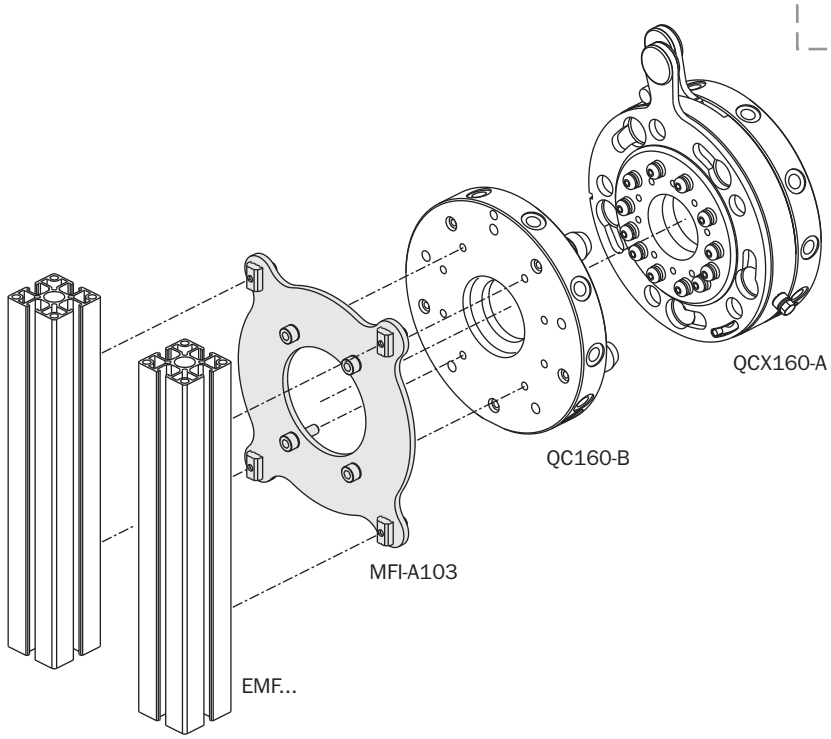




QCX160-A + LOQC



Esempio di utilizzo / *Application example*

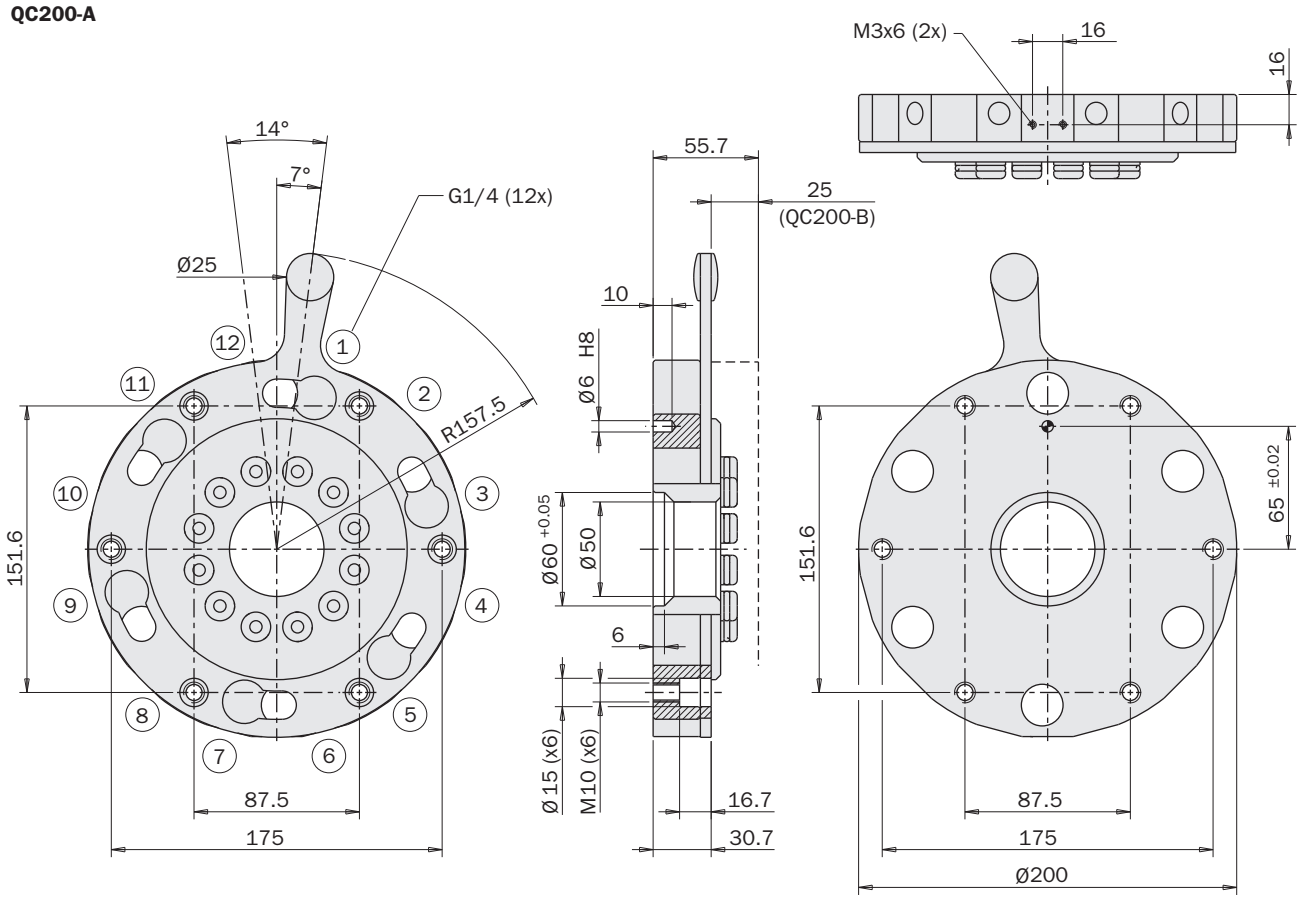


09/2015

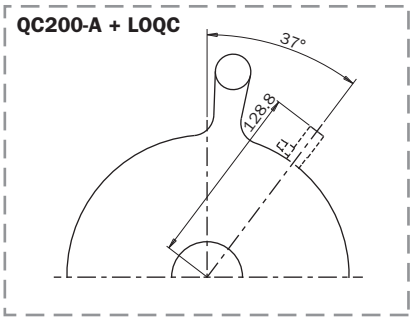
Dimensioni (mm) / *Dimensions (mm)*

QC200

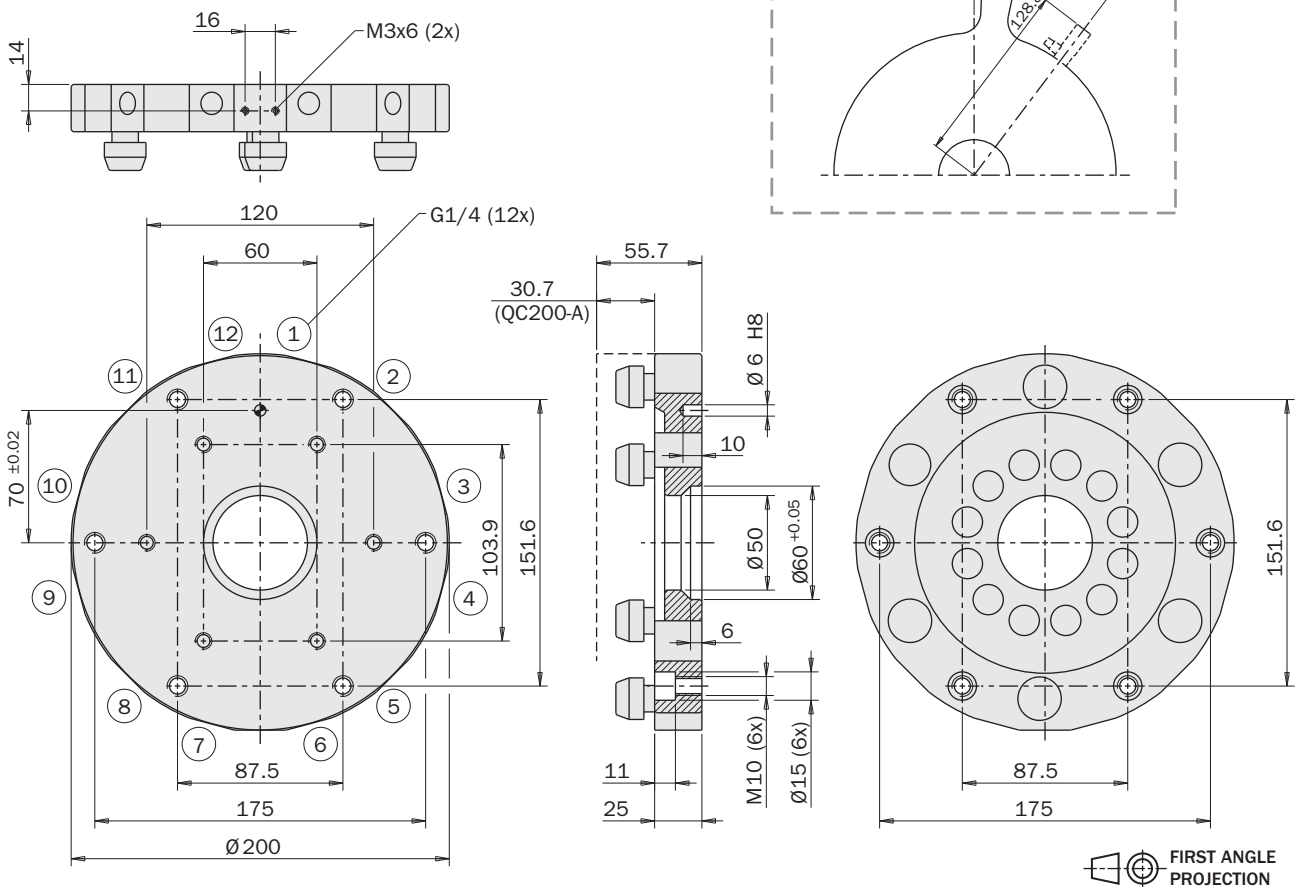
QC200-A



QC200-A + LOQC



QC200-B



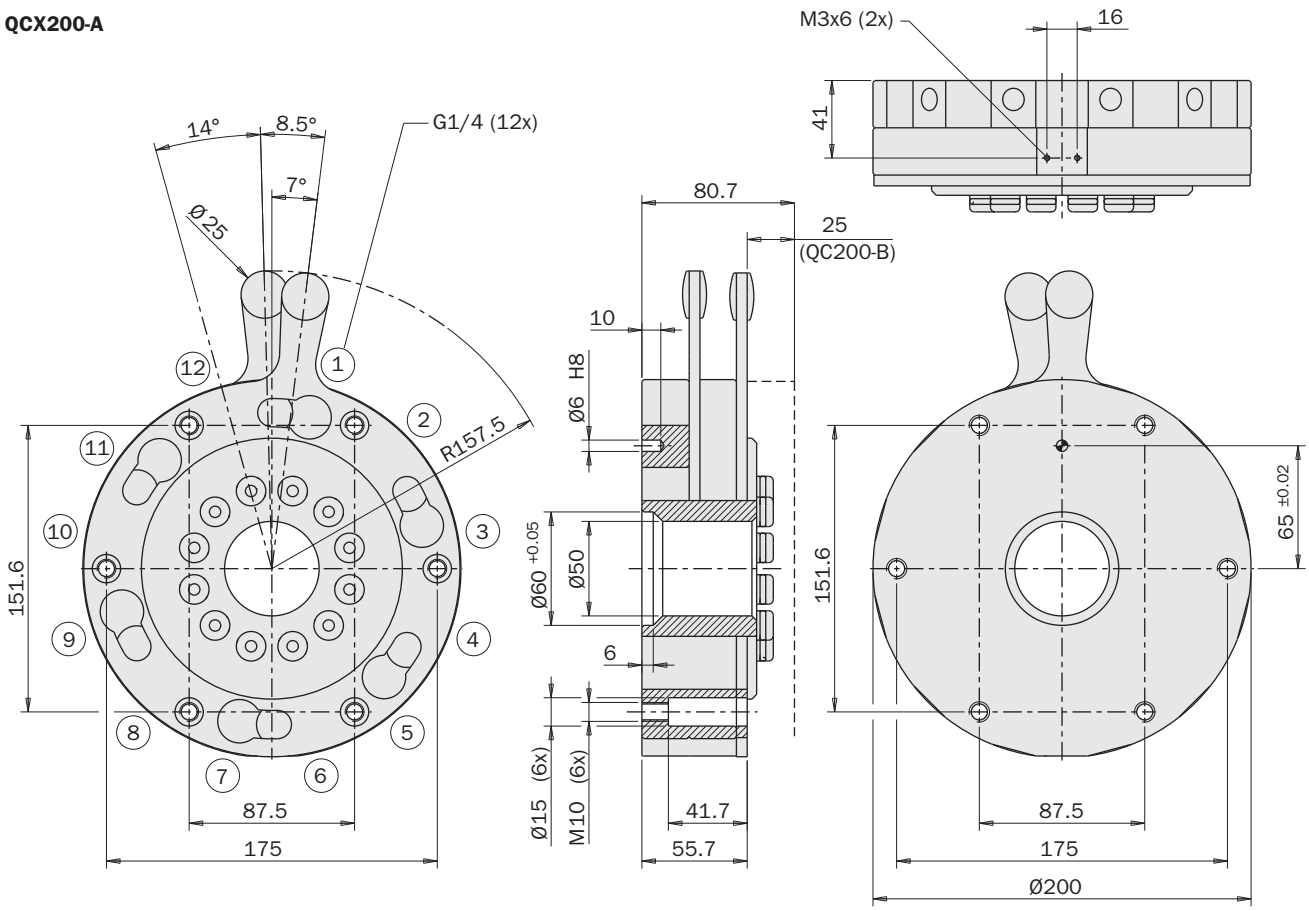
FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

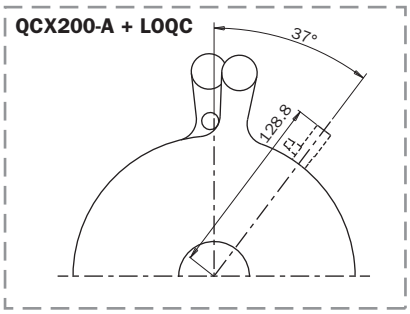
QCX200

QCX200-A

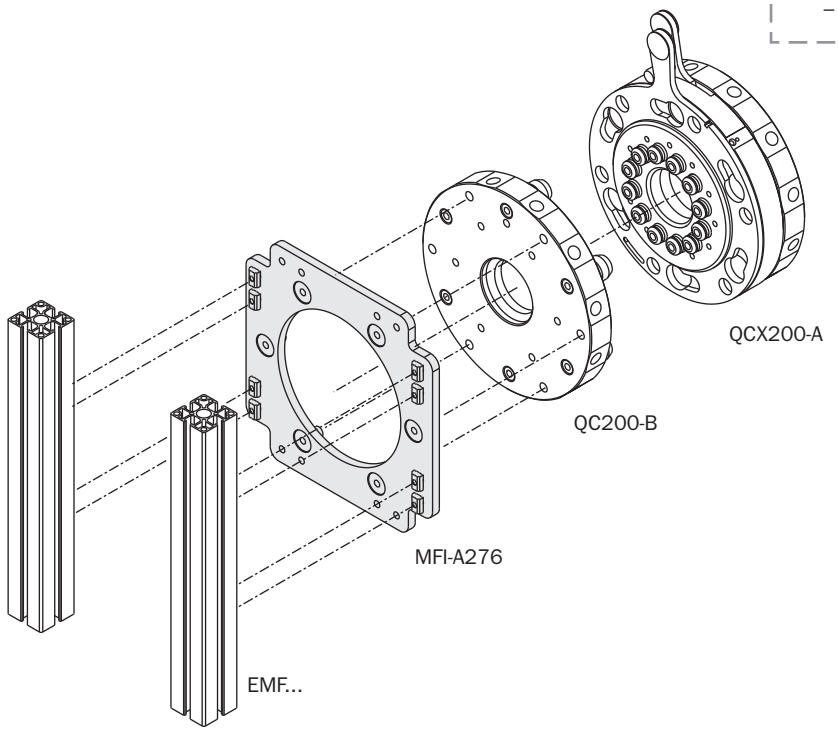


FIRST ANGLE PROJECTION

QCX200-A + LOQC



Esempio di utilizzo / *Application example*

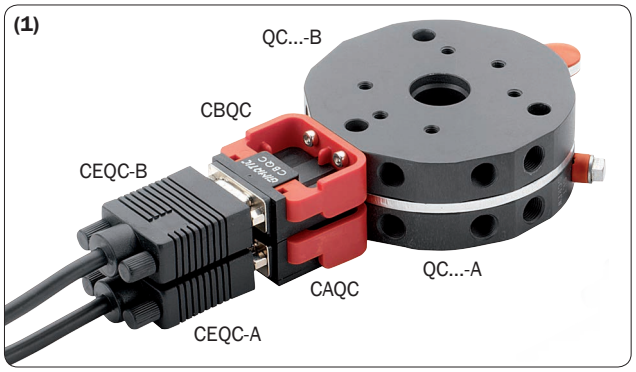


Accessori

Per la connessione elettrica sono disponibili gli accessori opzionali CAQC e CBQC (1).
L'apertura e la chiusura manuale sono rapide e intuitive (2).

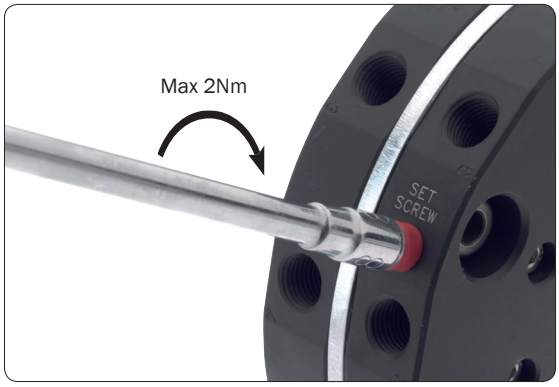
Accessories

The optional accessories CAQC and CBQC are available for the electrical connection (1).
Detachment and joining of the two parts are quick and easy (2).



Dopo la chiusura si può agire sulla vite di bloccaggio conica (SET SCREW), per azzerare completamente il gioco fra le due parti (solo per QC90, QCX90, QC160, QCX160, QC150 e QCX150).

After joining it is possible to engage a conical set screw, to eliminate any play between the two sides, for "zero tolerance" applications (only for QC90, QCX90, QC160, QCX160, QC150 and QCX150).

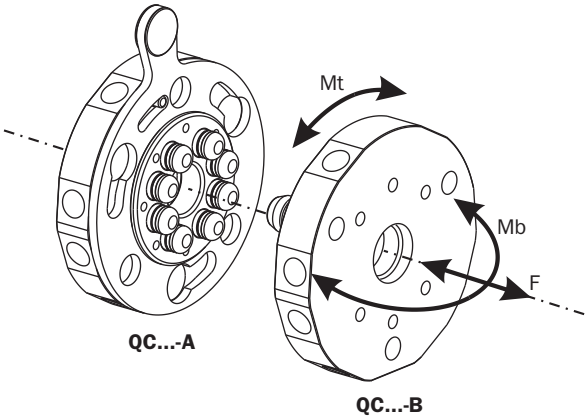


Carichi di sicurezza

Safety loads

	QC50	QC90 QCX90	QC150 QCX150	QC160 QCX160	QC200 QCX200
F	150 N	400 N	1000 N	1000 N	2000 N
Mt	20 Nm	100 Nm	250 Nm	250 Nm	600 Nm
Mb	10 Nm	60 Nm	150 Nm	150 Nm	450 Nm
m (*)	3 kg	10 kg	30 kg	30 kg	75 kg

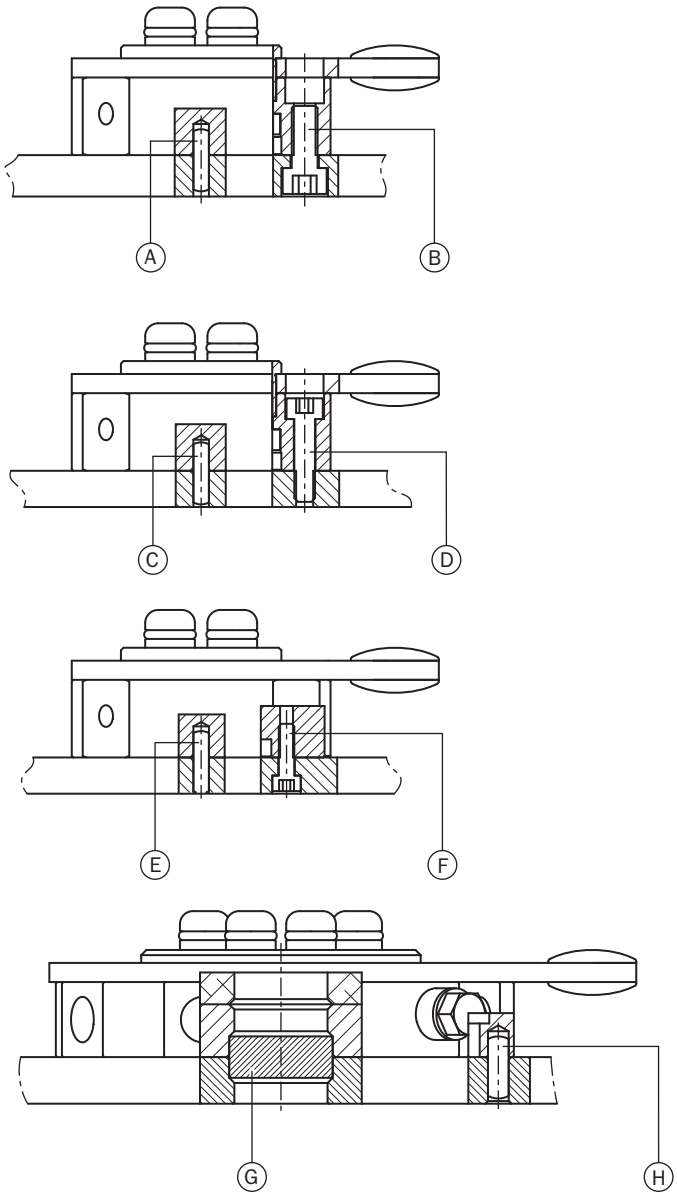
(*)
Peso massimo ammesso
Maximum payload



09/2015

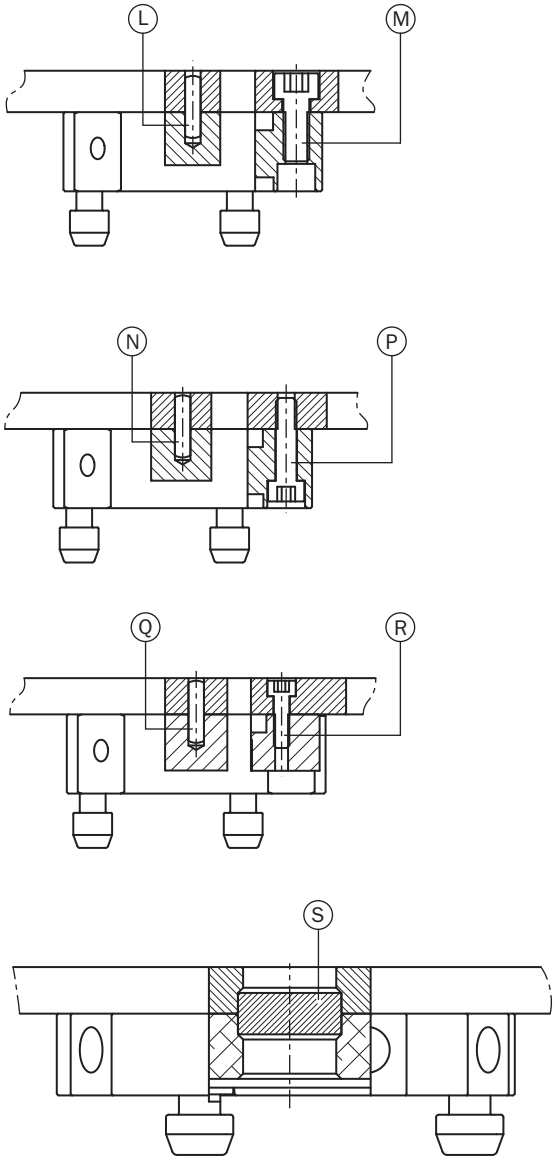
Fissaggio

Lato robot
Robot side



Fastening

Lato pinza
Gripper side



	QC50-A	QC90-A QCX90-A	QC150-A QCX150-A	QC160-A QCX160-A	QC200-A QCX200-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	QC160-B	QC200-B
L	Ø3 (2x)	-	-	-	Ø6 (1x)
M	M5 (3x)	-	M10 (5x)	M10 (5x)	M10 (6x)
N	Ø3 (2x)	-	-	-	-
P	M4 (3x)	-	M8 (5x)	M8 (5x)	M8 (6x)
Q	Ø3 (2x)	-	-	-	-
R	M3 (4x)	M5 (6x)	M6 (8x)	M6 (8x)	-
S	-	Ø20	Ø50	Ø50	Ø60

QCX

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

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).

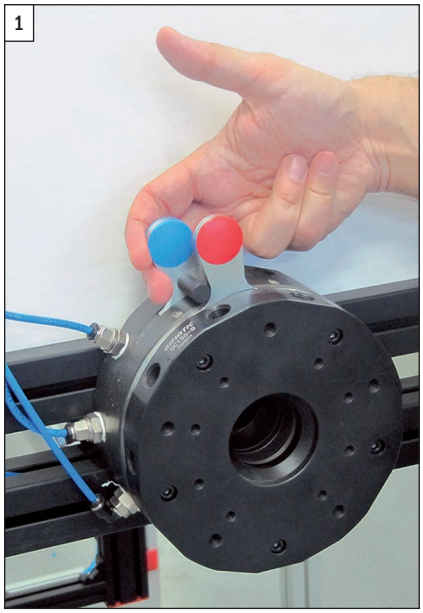
The red handle disengages the flange, but also move the blue handle by the black pin which closes the air (2).

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

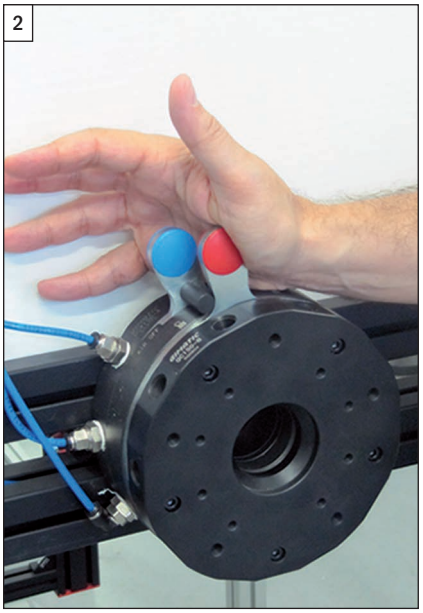
This rotating tap valve solves all the problems of ball valve systems: the high pushing force necessary for engaging and the uncontrolled movements of the actuators when disengaging.

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

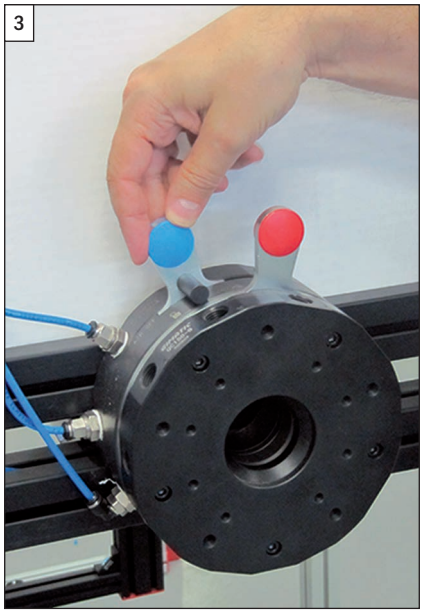
1



2



3



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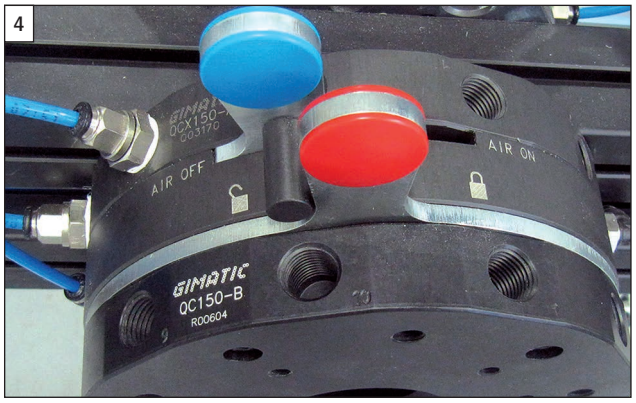


Unità di blocco per cambia utensili QC

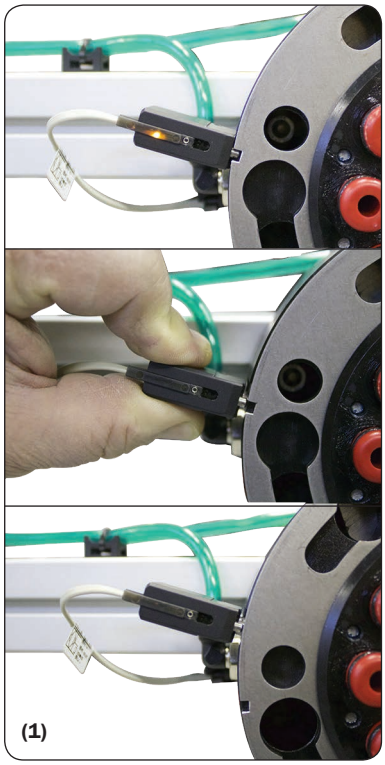
- Accessorio adatto per QC90-A, QC150-A, QC160-A, QC200-A, QCX90-A, QCX150-A, QCX160-A, QCX200-A.
- Evita la caduta accidentale dell'EOAT.
- Sicurezza meccanica: blocca la maniglia del cambia utensile, solo se correttamente agganciata (1).
- Sicurezza elettrica: emette un segnale elettrico, solo quando 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.

Lock unit for QC quick changers

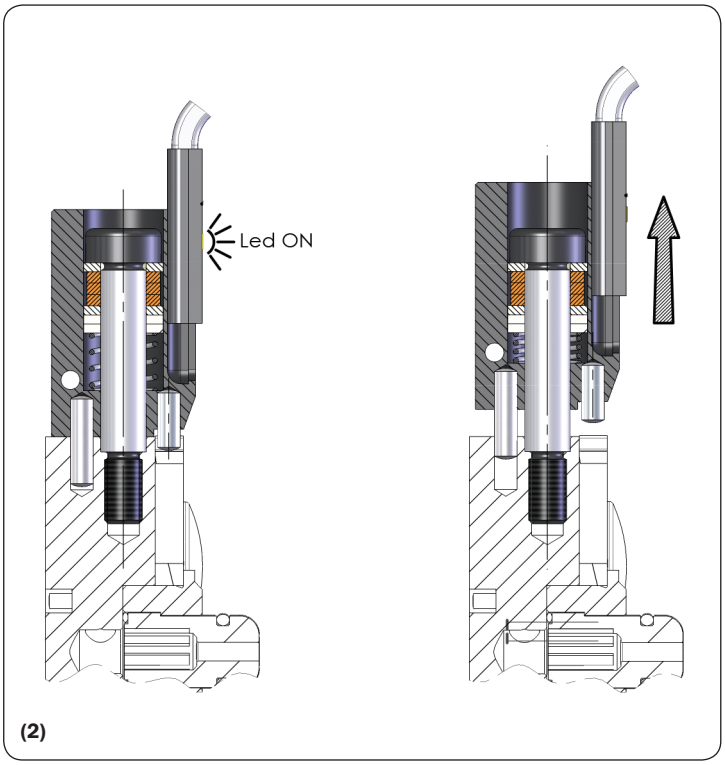
- *Option suitable for QC90-A, QC150-A, QC160-A, QC200-A, QCX90-A, QCX150-A, QCX160-A, QCX200-A.*
- *It prevents accidental falling of the EOAT.*
- *Mechanical safety: it locks the handle of the quick changer, only when correctly engaged (1).*
- *Electrical safety: it emits an electric signal, only when 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.*

NEW

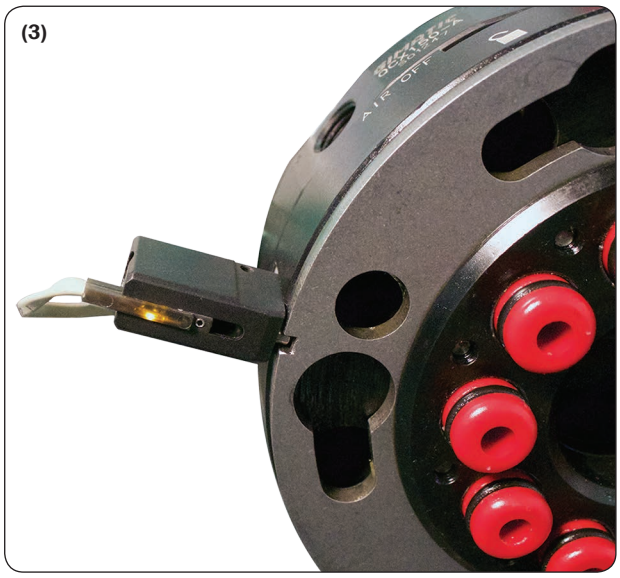
	LOQC
Peso / *Weight*	20 g



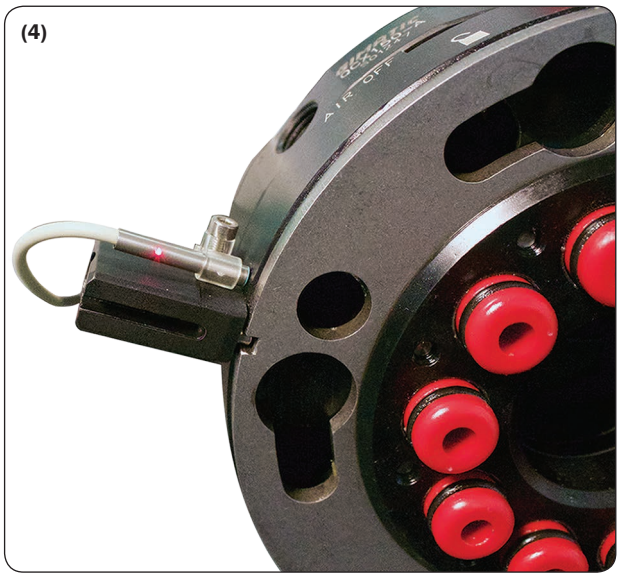
(1)



(2)



(3)



(4)

Modulo di connessione elettrica

- 15 connessioni elettriche Ø1 mm.
- Attacco rapido I/O attraverso connettore VGA.
- Connessione a sfregamento autopulente.
- Le due parti sono fornite separatamente:
  CAQC - lato robot
  CBQC - lato pinza.

Electrical connection module

- *15 pins Ø1 mm.*
- *I/O quick change by VGA connector.*
- *Self-cleaning sliding contacts.*
- *The two parts are supplied separately:*
  CAQC - robot side
  CBQC - gripper side.

CAQC

CBQC

	CAQC	CBQC
Tipo di connessione I/O *I/O connection type*	15 pin D-SUB - Connettore alta densità ad angolo retto - Tipo VGA *15 pins D-SUB - High density elbow type - VGA type*	
Resistenza di contatto massima *Maximum contact resistance*	30 mW @ 100 mA DC	
Resistenza d'isolamento minima *Minimum insulation resistance*	500 MW @ 500 V DC	
Corrente d'esercizio *Working Current*	3 A	
Tensione di scarica *Break down voltage*	1000 V AC (1 minuto) *1000 V AC (1 minute)*	
Temperatura di esercizio *Temperature range*	-55°C ÷ +105°C	
Contatti *Contact*	Dorati *Gold plated*	

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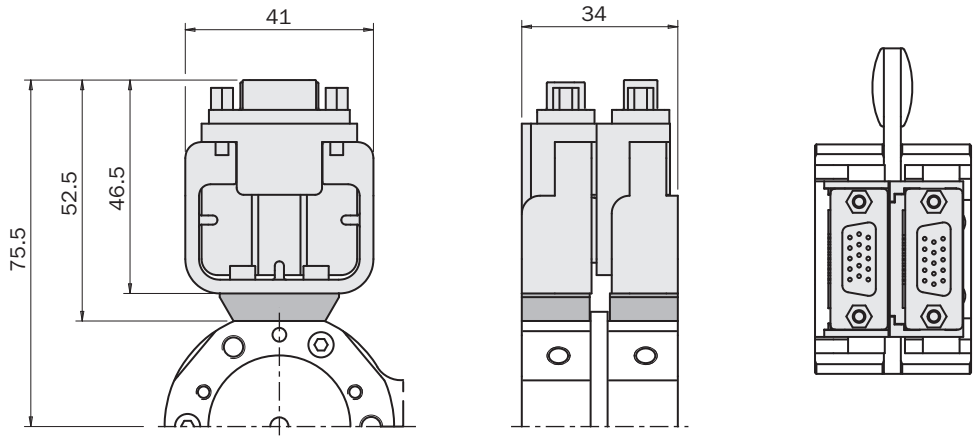
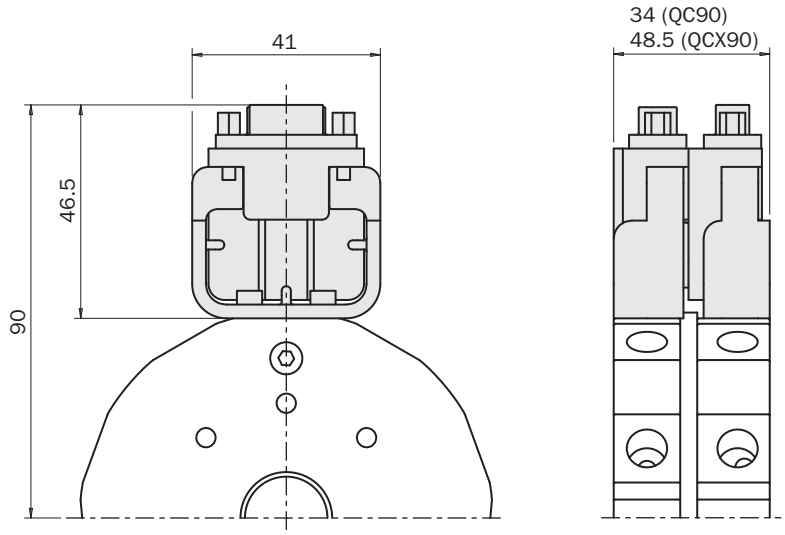
Dimensioni (mm) / *Dimensions (mm)*

FIRST ANGLE PROJECTION

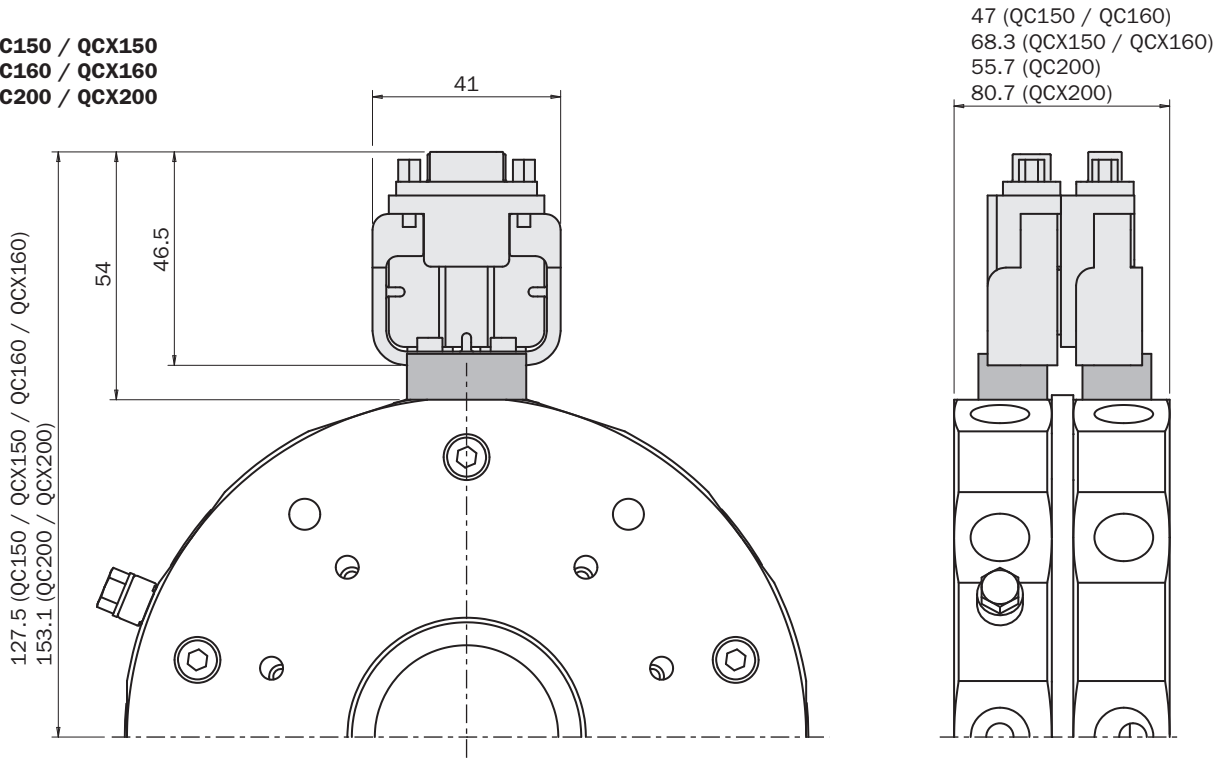
QC50



QC90
QCX90



QC150 / QCX150
QC160 / QCX160
QC200 / QCX200



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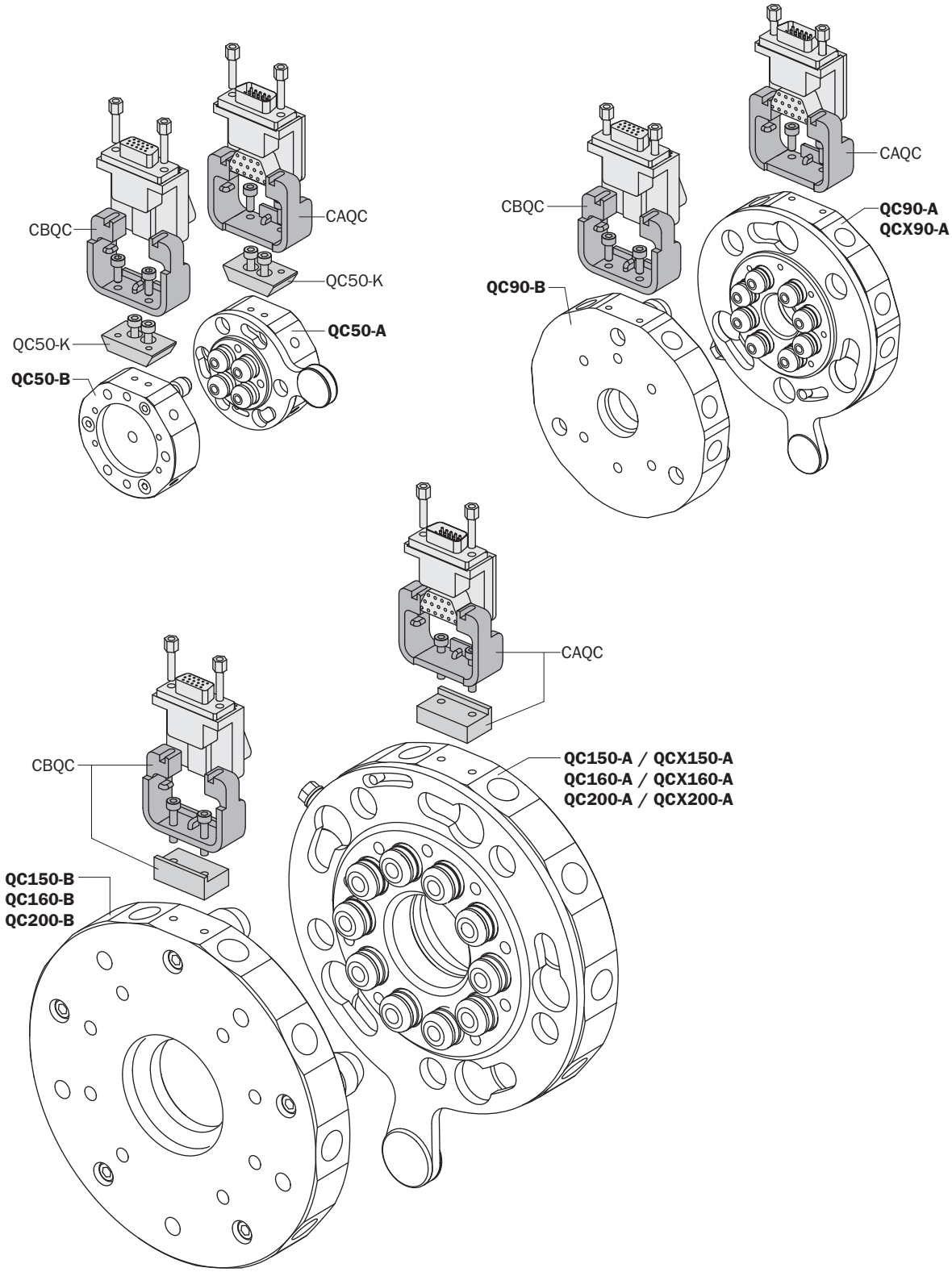
Fissaggio / *Fastening*



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Note / *Notes*

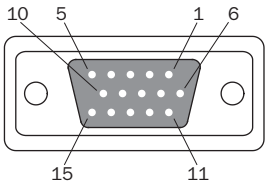
Cavo

A parte sono forniti i cavi maschio e femmina.

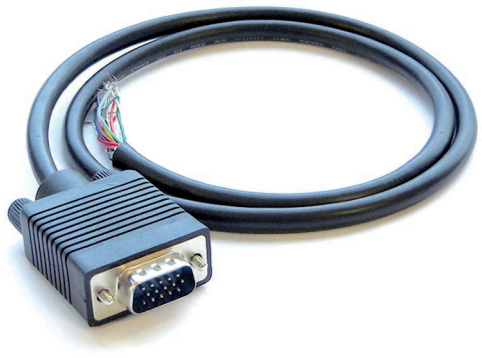
Cable

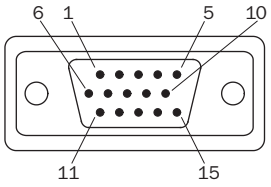
The male and female cables are supplied separately.

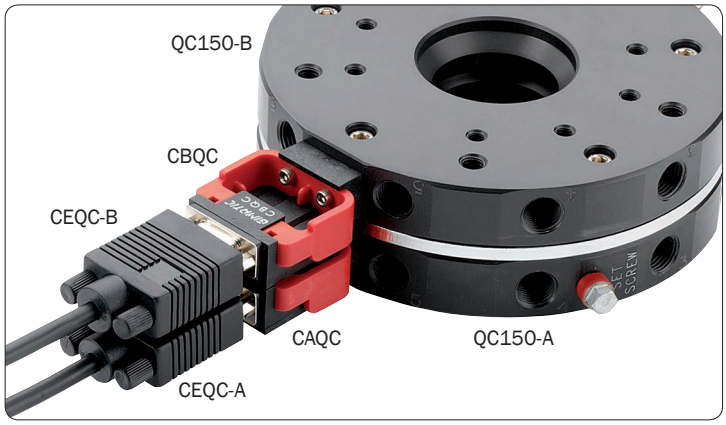
CEQC-A

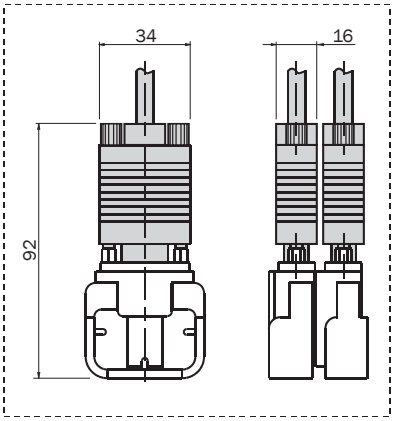


CEQC-B









	CEQC-A	CEQC-B
Tipo di connessione I/O *I/O connection type*	15 pin D-SUB - Tipo VGA *15 pins D-SUB - VGA type*	
Lunghezza cavo *Cable length*	1500 mm	
Conduttori *Conductor*	500 MW @ 500 V DC	
Isolamento *Insulation*	PVC codifica colori standard *PVC premium grade color coded*	
Schermatura *Shied*	100% alluminio - Pellicola di mylar - 28÷26 AWG *100% aluminum - Mylar foil - 28÷26 AWG*	
Guaina *Jacket*	PVC nero *Black PVC*	
Temperatura di esercizio *Temperature range*	-55°C ÷ +105°C	
Gamma di tensione *Voltage range*	0 ÷ 300 V	

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Connettori a cablare

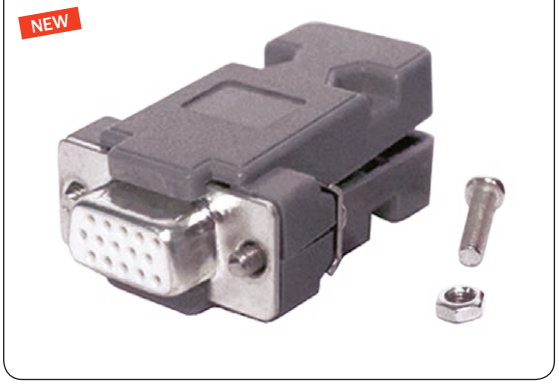
A parte sono forniti i connettori a cablare maschio e femmina.

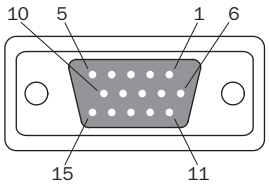
Cabling connectors

Male and female cabling connectors are supplied separately.

CEQC-AC

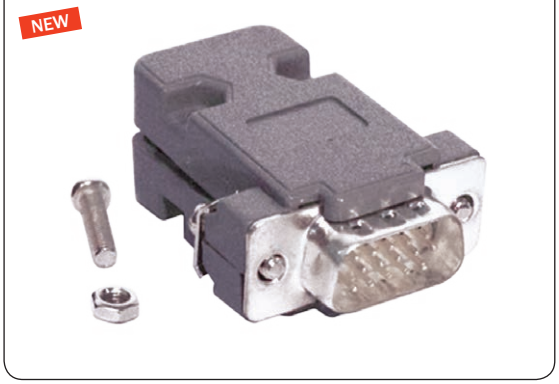
NEW

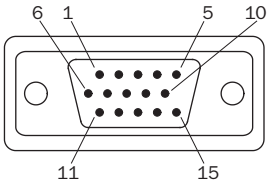


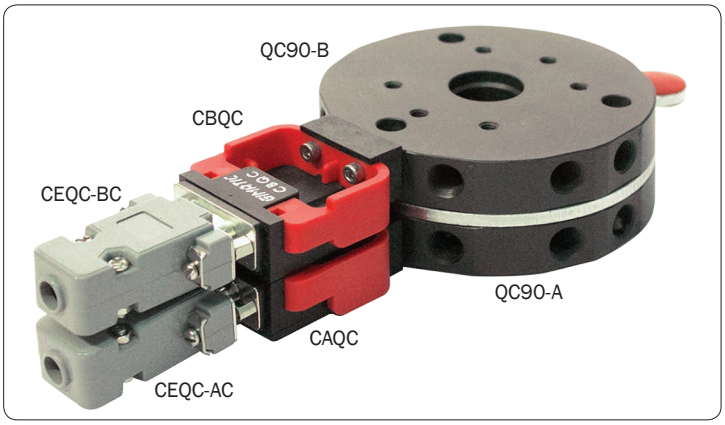


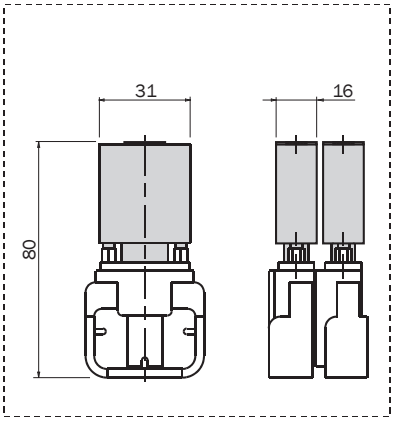
CEQC-BC

NEW









	CEQC-AC	CEQC-BC
Tipo di connessione I/O *I/O connection type*	15 pin D-SUB - Tipo VGA *15 pins 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 V	
Corrente massima *Max current*	3A	

Attuatore pneumatico per cambia utensile QC

- Sensori opzionali per la posizione del pistone (1) e per la prossimità del lato pinza QC...-B (2).
- Perfettamente compatibile con QC90-A e QC150-A esistenti (3), non con QCX90-A e QCX150-A.

Pneumatic actuator for quick changer QC

- *Optional sensors to detect piston position (1) and proximity of the QC...-B gripper side (2).*
- *Perfectly compatible with the existing QC90-A and QC150-A units (3). Not compatible with the QCX90-A and QCX150-A units.*

	AQC90	AQC150
Peso / *Weight*	560 g	1480 g

(1)

AQC90

AQC150

(2)

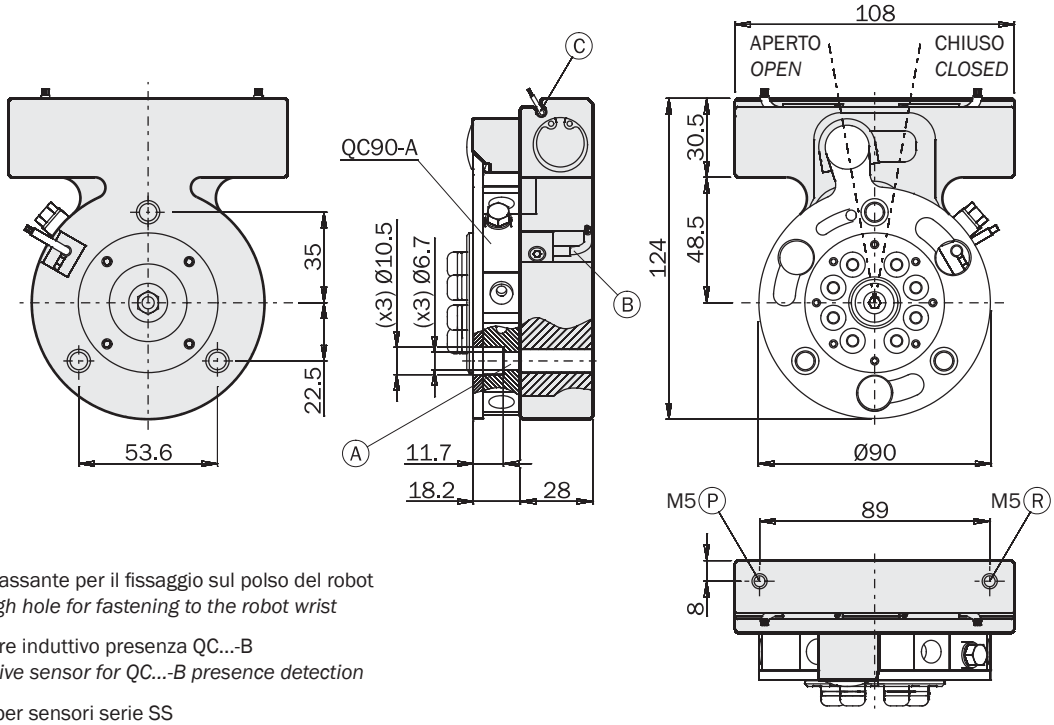
(3)

AQC150+QC150

AQC90+QC90

Dimensioni (mm) / *Dimensions (mm)*

AQC90

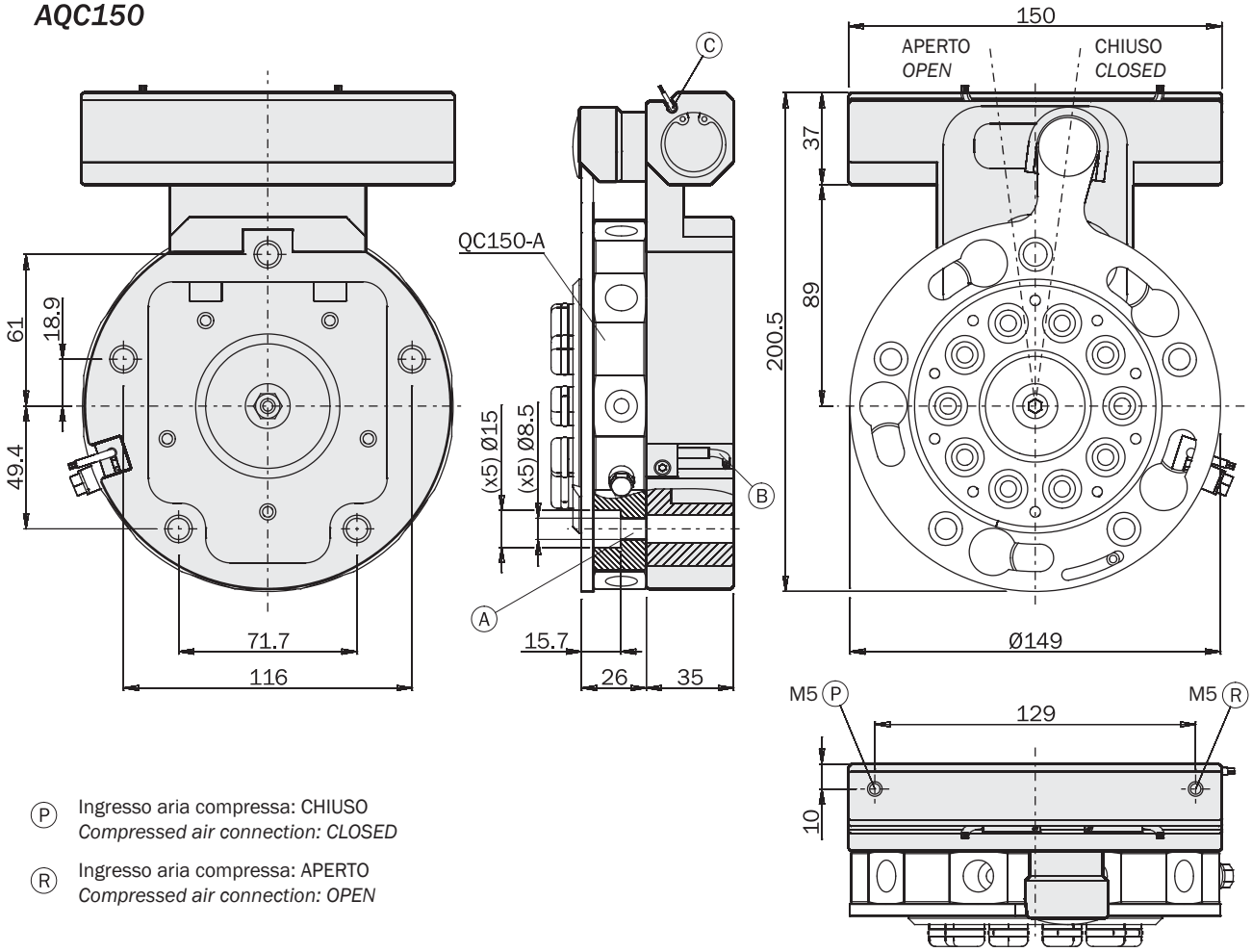


Ⓐ Foro passante per il fissaggio sul polso del robot
Through hole for fastening to the robot wrist

Ⓑ Sensore induttivo presenza QC...-B
Inductive sensor for QC...-B presence detection

Ⓒ Sede per sensori serie SS
Slot for SS series sensors

AQC150



Ⓟ Ingresso aria compressa: CHIUSO
Compressed air connection: CLOSED

Ⓡ Ingresso aria compressa: APERTO
Compressed air connection: OPEN

FIRST ANGLE PROJECTION

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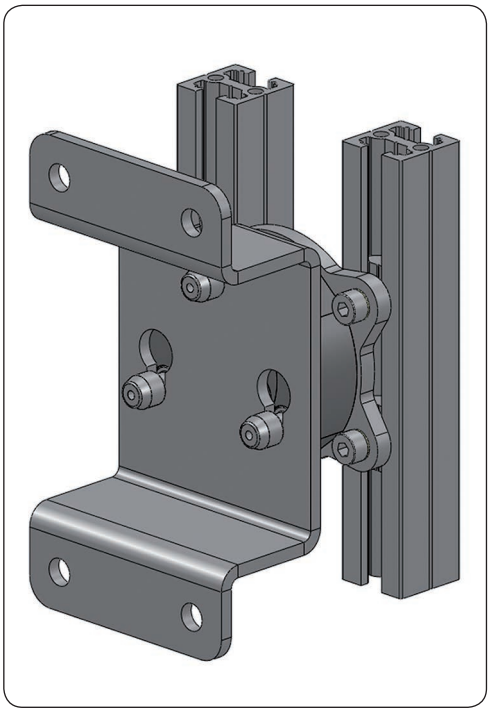
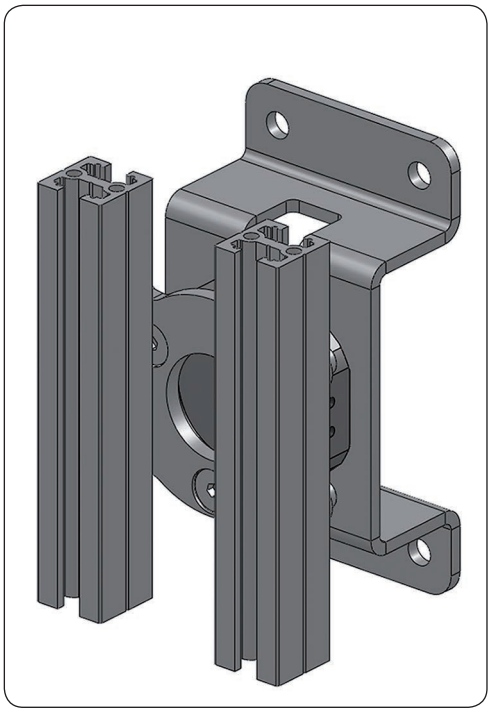
Magazzino per EOAT QC50-H
(da usare con QC50-B)

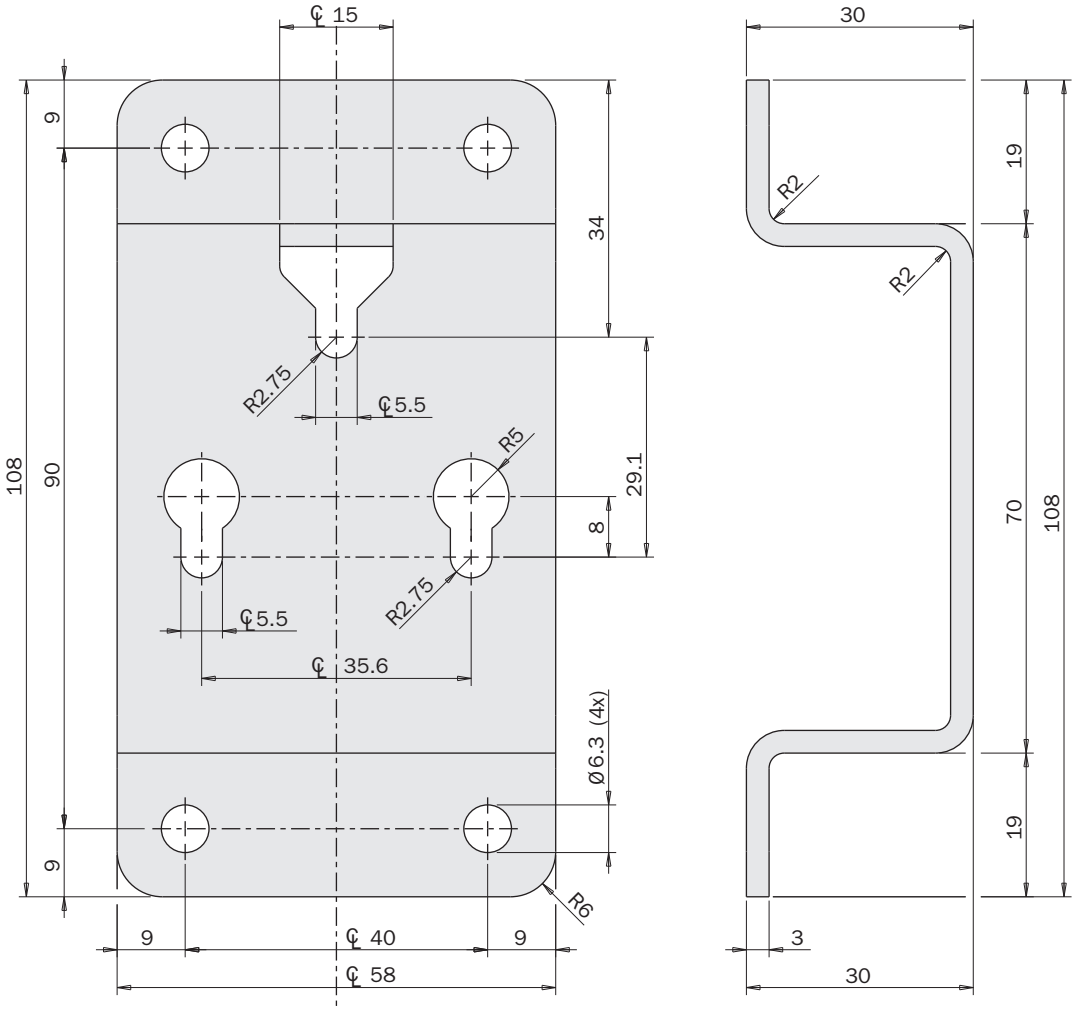
EOAT Storage QC50-H
(to be used with QC50-B)





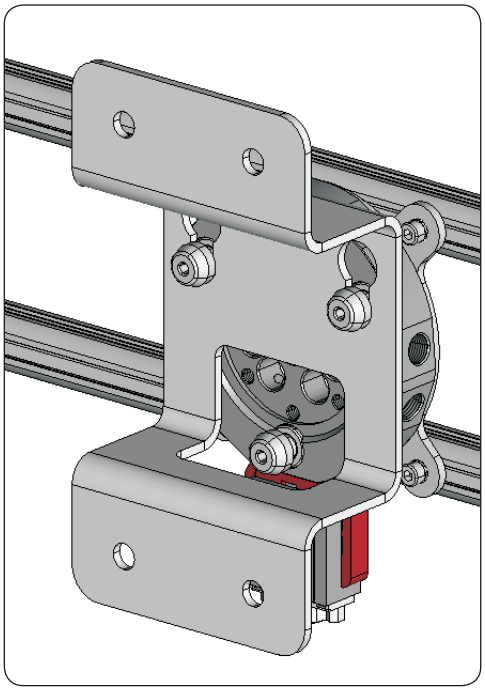
Dimensioni (mm) / *Dimensions (mm)*

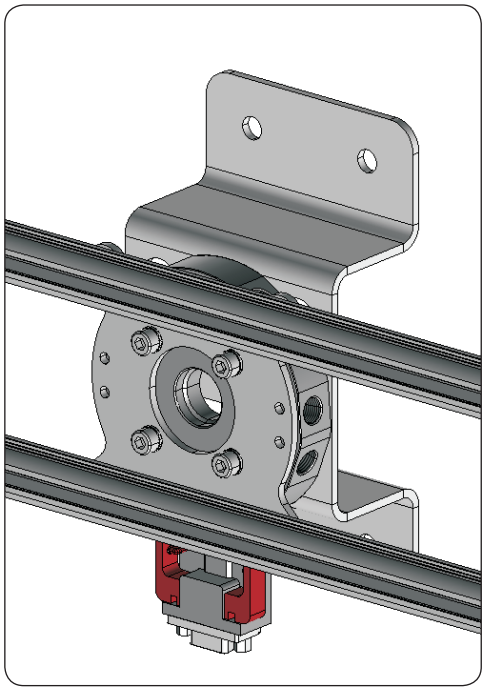
FIRST ANGLE PROJECTION



Magazzino per EOAT QC90-H
(da usare con QC90-B)

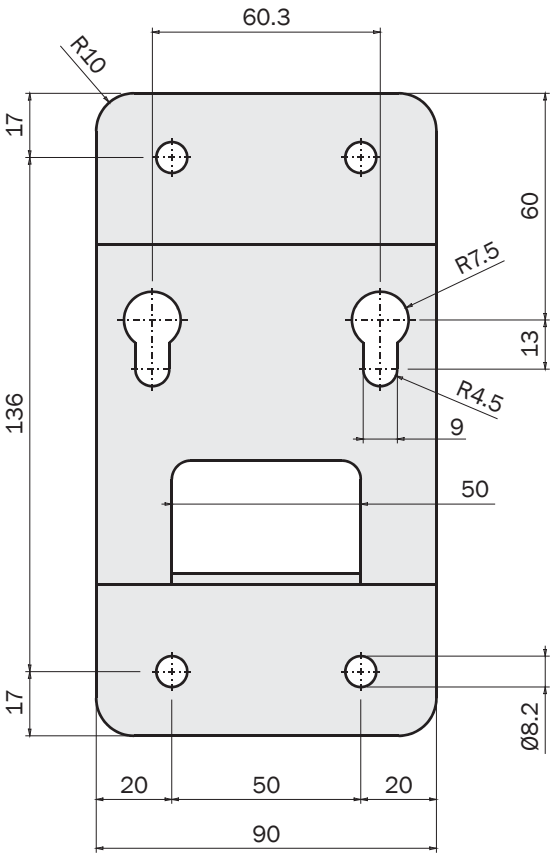
EOAT Storage QC90-H
(to be used with QC90-B)

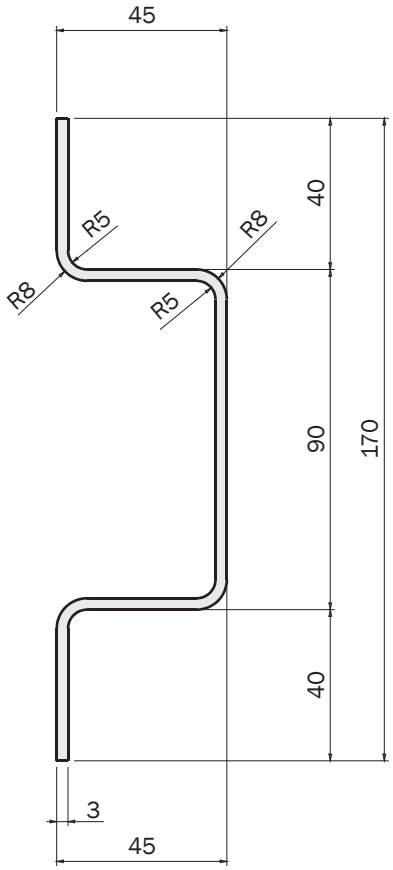




Dimensioni (mm) / *Dimensions (mm)*

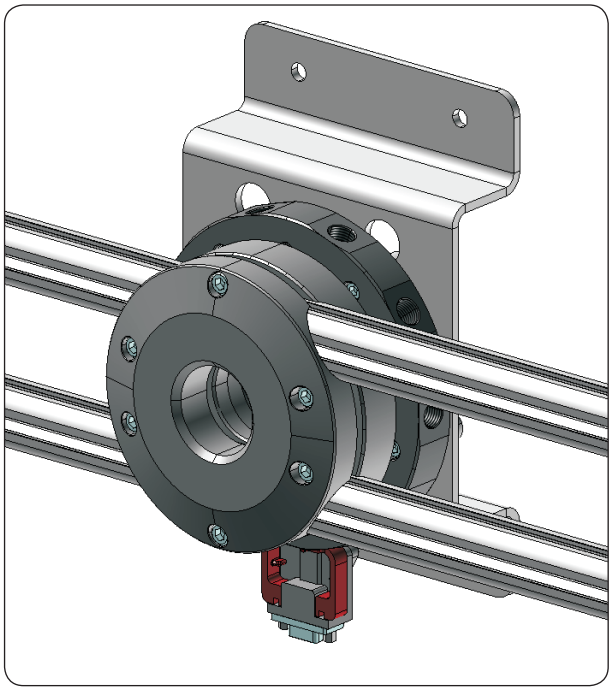
FIRST ANGLE PROJECTION

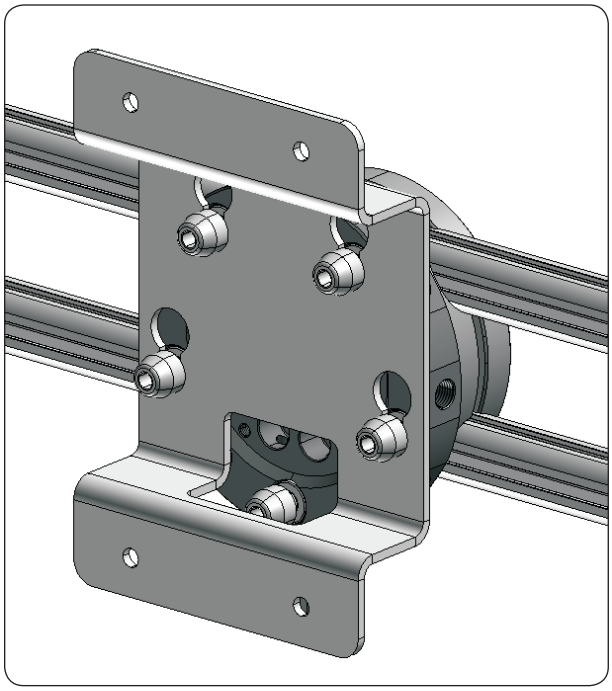




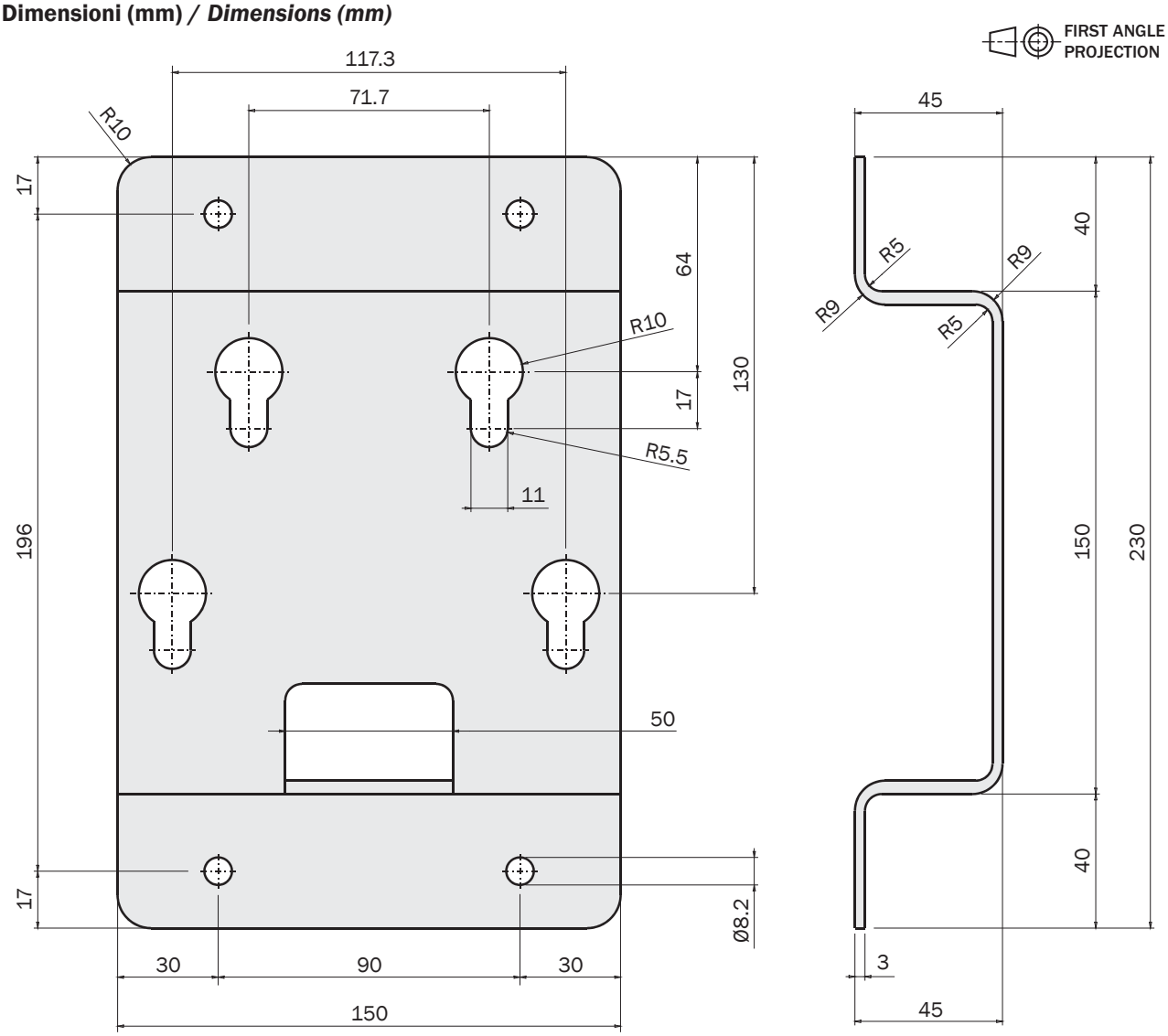
Magazzino per EOAT QC150-H
(da usare con QC150-B / QC160-B)

EOAT Storage QC150-H
(to be used with QC150-B / QC160-B)



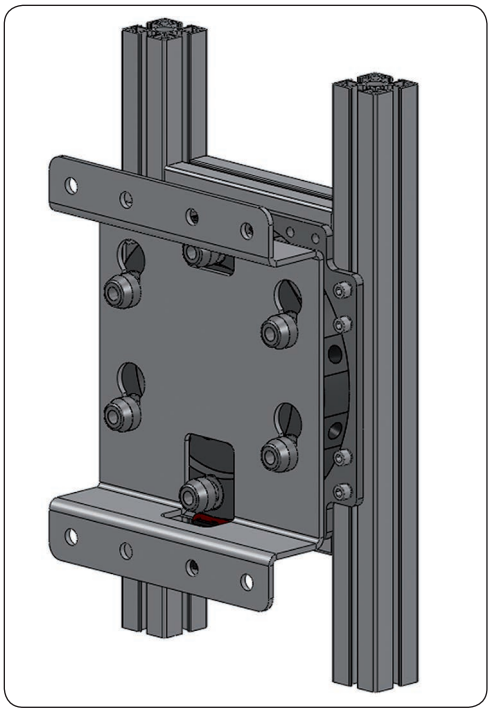


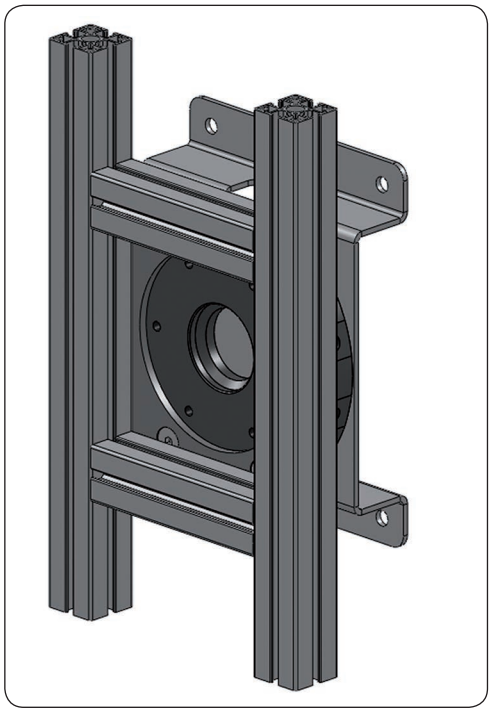
Dimensioni (mm) / *Dimensions (mm)*



Magazzino per EOAT QC200-H
(da usare con QC200-B)

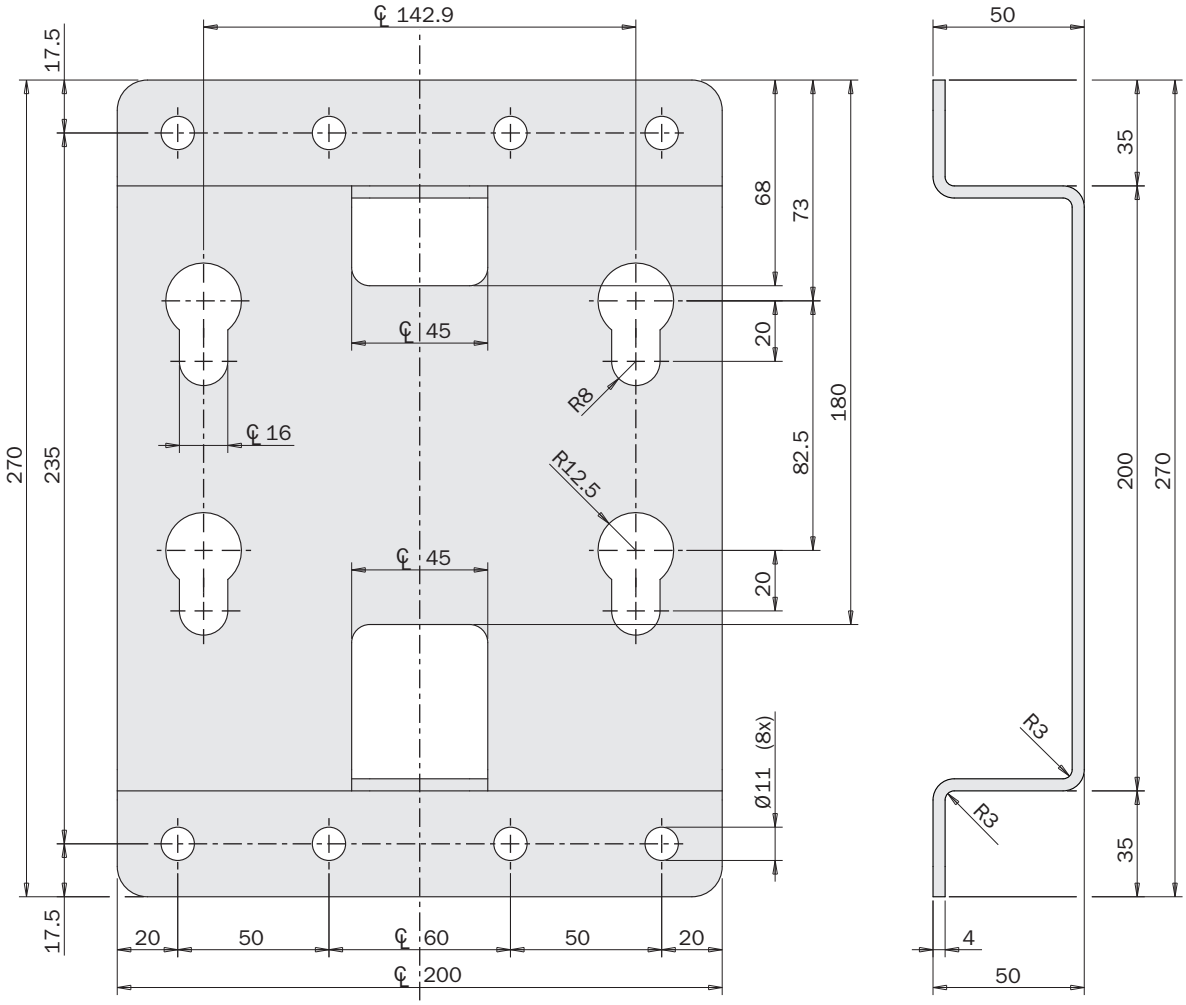
EOAT Storage QC200-H
(to be used with QC200-B)





Dimensioni (mm) / *Dimensions (mm)*

FIRST ANGLE PROJECTION

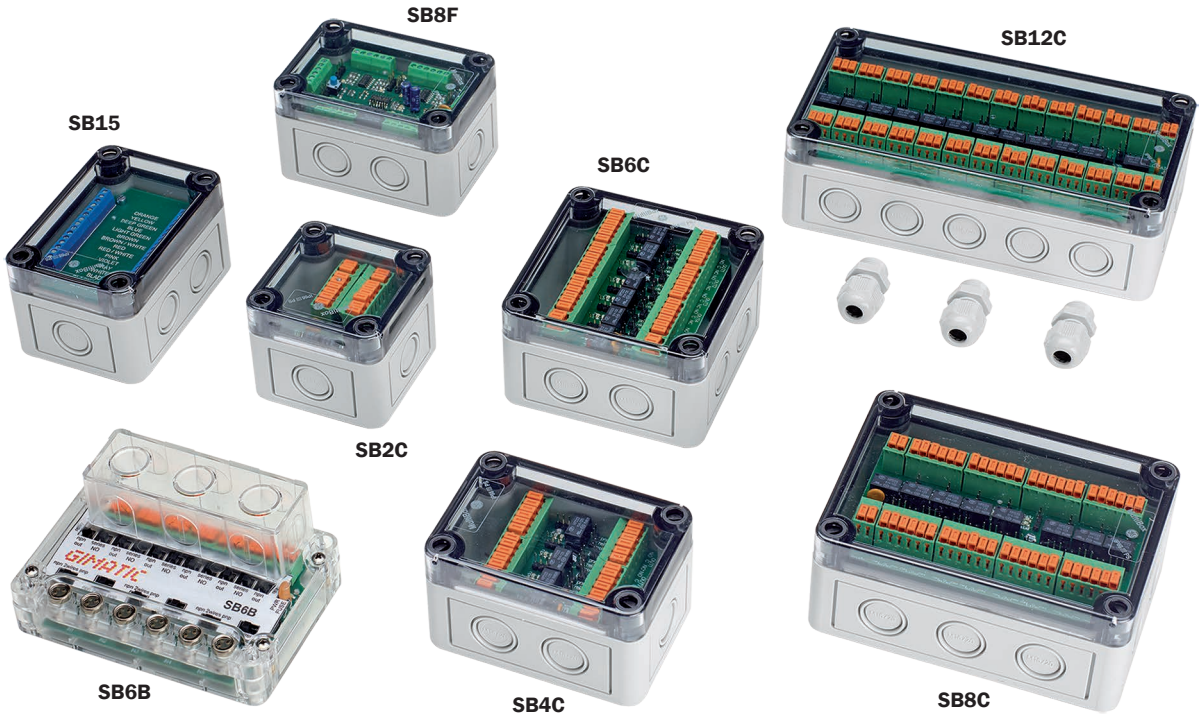


Scatole di derivazione per sensori serie SB

- 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.

Sensor boxes series SB

- *Used for sensor wiring on the EOATs.*
- *PNP and NPN signals can be converted.*
- *I/O can be current sourcing (PNP), sinking (NPN) or dry contact.*
- *Several boxes can be connected in a series to manage more sensors.*
- *Input LED indications for easy trouble-shooting (not for SB15).*
- *Provided with strain reliefs and kit for fastening to the profile.*



La scatola di connessione sensori è un'interfaccia realizzata per condizionare i segnali dei sensori al fine di renderli idonei all'elettronica di comando tipo PLC (Programmable Logic Controller).
Incorpora diverse funzionalità tra cui la possibilità di mettere in SERIE sensori anche diversi tra loro, convertirne i segnali, eseguire ricerche guasti, preservare i circuiti di comando, rigenerare i segnali in caso di lunghi cablaggi e preservare i contatti.
Ogni ingresso della scatola di connessione è infatti dotato di selettore a scorrimento o jumper per definire il tipo di sensore (PNP, NPN, 2 fili NO/NC).
Tali segnali sono poi condizionati a mezzo relè o micro-processore per fornire una o più uscite a seconda delle necessità.
A loro volta le uscite sono selezionabili a mezzo di selettore a scorrimento o jumper dandoci la possibilità di avere segnali PNP, NPN o tipo relè, tutti in modalità Normalmente Aperto (NA) oppure Normalmente Chiuso (NC).
Ogni cablaggio è reso veloce e agevole dall'adozione di particolari morsettiere.
Il tutto è protetto da un sistema a fusibile Auto-Ripristinante utile a preservare l'integrità dell'elettronica di comando da eventuali situazioni di corto circuito.
La scheda è dotata di LED di segnalazione visibili dal coperchio trasparente utili per la ricerca di guasti (trouble shooting): talvolta non è agevole vedere se un fine-corsa montato in macchina lavora in maniera corretta.
Il tutto è fornito in una scatola industriale dotata di pressa cavi PG9 che garantisce un grado di protezione della scheda fino all'IP65.

The sensor junction box is an interface designed to condition the sensor signals, in order to make them suitable for the PLC (Programmable Logic Controller) control electronics.
This box integrates several functions, including the possibility to connect sensors – even of different type – in SERIES, convert their signals, perform troubleshooting, protect control circuits, regenerate signals in the case of long wiring and protect contacts.
In fact, each input of the junction box is equipped with a jumper or sliding selector to set the sensor type (PNP, NPN, 2 wire NO/NC).
The signals are then conditioned by relay or microprocessor in order to supply one or more outputs according to needs.
Outputs can also be selected by a jumper or sliding selector to have PNP, NPN or relay signals, all of them in Normally Open (NO) or Normally Closed (NC) mode.
Each wiring is made quicker and easier by using special terminal blocks.
Everything is protected by a self-restoring fuse system which protects the control electronics from possible short-circuits.
The card is equipped with signalling LEDs, visible from the transparent lid, which are very useful for troubleshooting, as it is not generally easy to see if a limit switch fitted to the machine works properly.
Everything is supplied in a box with PG9 cable glands with a protection degree of up to IP65.

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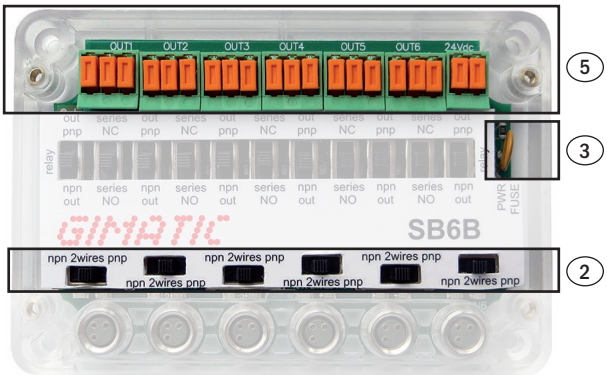
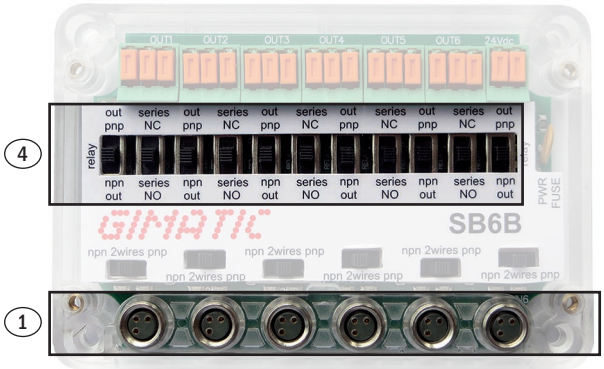
Scatola di derivazione a connessione diretta

- Usate per la connessione dei sensori presenti sulle strutture di presa EOAT.
- Possibilità di collegare sensori Magnetici, Induttivi, meccanici, Fotoelettrici, Capacitivi, Ultrasuoni, ecc...
- Connessione diretta con connettori M8x1 (1).
- Ingressi PNP/NPN/2 fili selezionabili tramite interruttore a scorrimento (2).
- Corpo PA trasparente per la visione dei LED ingressi.
- Protezione corto circuito ripristinabile visibile a mezzo LED rosso (3).
- Uscite PNP/NPN/relè selezionabili tramite interruttore a scorrimento (4).
- Semplici terminali a pressione per le uscite che evitano l'utilizzo di utensili (5).
- Possibilità di convertire segnali ingresso da PNP/NPN/2fili ad uscita PNP/NPN/relè.
- Possibilità di avere uscite singole o serie Normalmente aperte o Normalmente chiuse.
- Profilo basso per integrarsi perfettamente nelle strutture di presa EOAT.
- Peso ridotto per alleggerire la struttura.
- Kit di fissaggio per profili Gimatic incluso.
- Semplice ed intuitivo sistema di settaggio con serigrafia Gimatic.
- O-Ring di tenuta viti coperchio.
- Serracavi PG9 di cablaggio uscite inclusi.
- Connettori M8 maschi a cablare opzionali.

Terminal box with direct connection

- *Used to connect the sensors located on the End-of-Arm Tooling (EOAT).*
- *Various types of sensors can be connected, magnetic, inductive, mechanical, photoelectric, capacitive, ultrasonic, etc...*
- *Direct connection with M8x1 connectors (1).*
- *PNP/NPN/2-wire inputs selectable by sliding switches (2).*
- *Transparent PA body to increase inputs LED visibility.*
- *Short circuit protection with auto-fuse and RED led indicator (3).*
- *PNP/NPN/relay outputs selectable by sliding switches (4).*
- *Easy push terminals for outputs, no tools required (5).*
- *Inputs signals from PNP/NPN/2-wire can be converted to PNP/NPN/relay output.*
- *Single or in series outputs can be set as Normally Open or Normally Closed.*
- *Low profile for perfect integration into EOAT's structures.*
- *Low weight to reduce the structure's weight.*
- *Fastening kit for Gimatic profiles included.*
- *Easy setting system with Gimatic silkscreen.*
- *O-Ring for cover screws.*
- *Output wiring PG9 strain relief included.*
- *Optional M8 male wiring connectors.*





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Scatola di derivazione a connessione diretta

Funzionamento
Una volta cablati gli ingressi (AREA GRIGIA) come specificato sulla scheda selezionare a mezzo interuttore a scorrimento o jumper il tipo di segnale d'ingresso (AREA MARRONE). Poi selezionare a mezzo interuttore a scorrimento o jumper il tipo di uscita (PNP, NPN, relay) necessaria (AREA ROSSA) e se le uscite devono essere messe in serie (NA oppure NC senza caduta di tensione) o in parallelo (AREA BLU). Terminata la selezione andiamo a cablare le uscite (AREA GIALLA).

Alimentazione
24 V dc (±10%)

Ingressi
Fino a 6 sensori PNP, NPN o contatto pulito (NA o NC) (AREA GRIGIA) selezionabili tramite jumper (AREA MARRONE).

Uscite
Da 1 a 6 uscite PNP, NPN o contatto pulito (NA) (AREA GIALLA) selezionabili tramite jumper (AREA ROSSA).

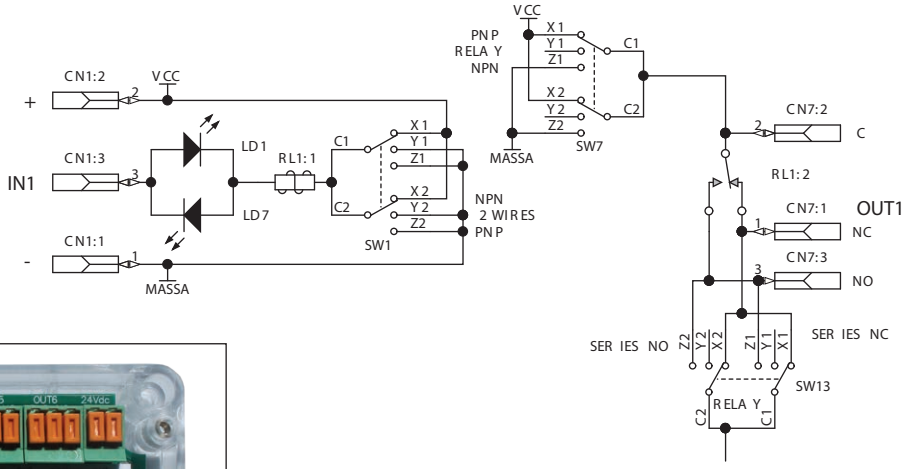
Terminal box with direct connection

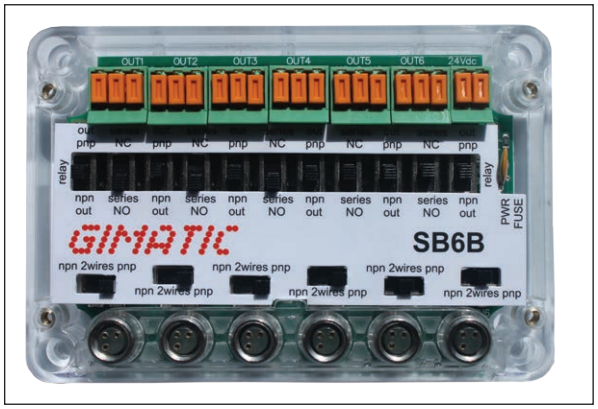
Functioning
After the inputs have been cabled (Grey Area) as shown on the circuit board you must use "Jumper" to select the Inputs signal type (Brown Area). Then use "Jumper" to define if you want to convert the input signals in NO/NC series or parallel outputs (Blue area). Use "Jumper" also to select the Output signal (PNP; NPN; relay) (Red Area) through a relay circuit so as to avoid the voltage drop. When the selection is completed, the Outputs (Yellow Area) are to be cabled.

Power supply
24 V dc (±10%)

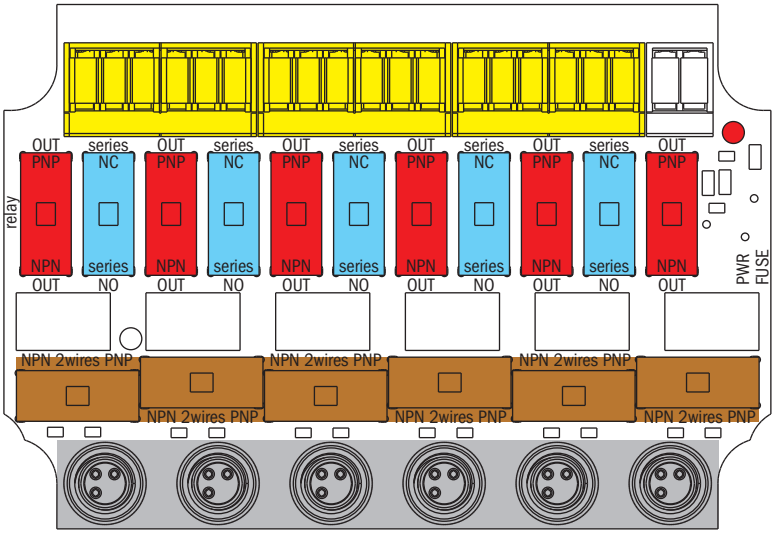
Inputs
Maximum 6 PNP, NPN or dry contact (NO or NC) (GREY AREA) sensors switched by jumpers (BROWN AREA).

Outputs
1 up to 6 PNP, NPN or dry contact (NO) outputs (YELLOW AREA) switched by jumpers (RED AREA).





Schema circuito
Layout circuit



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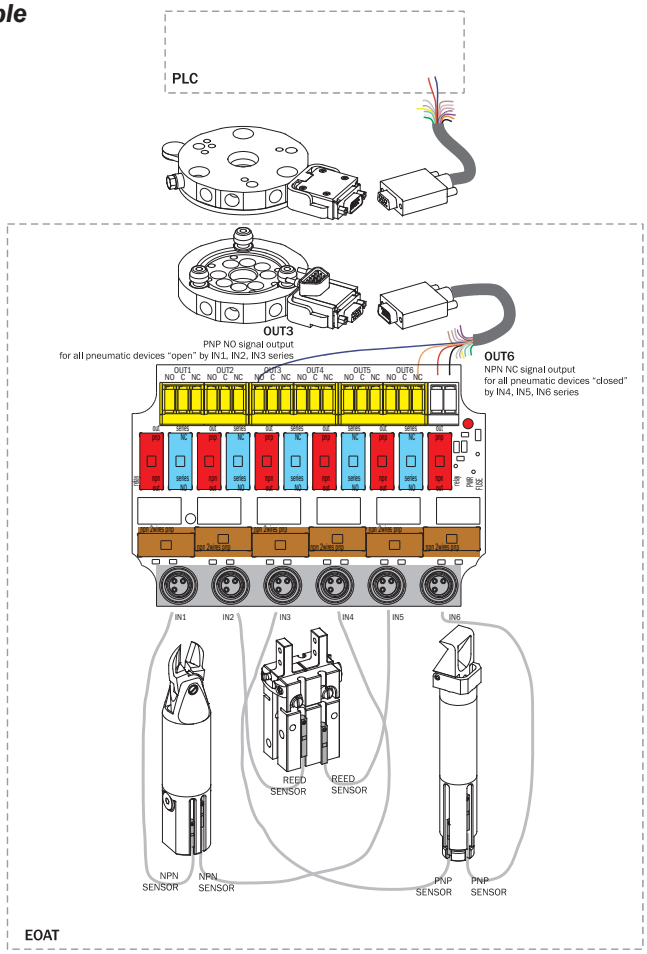
Esempio di utilizzo / *Application example*

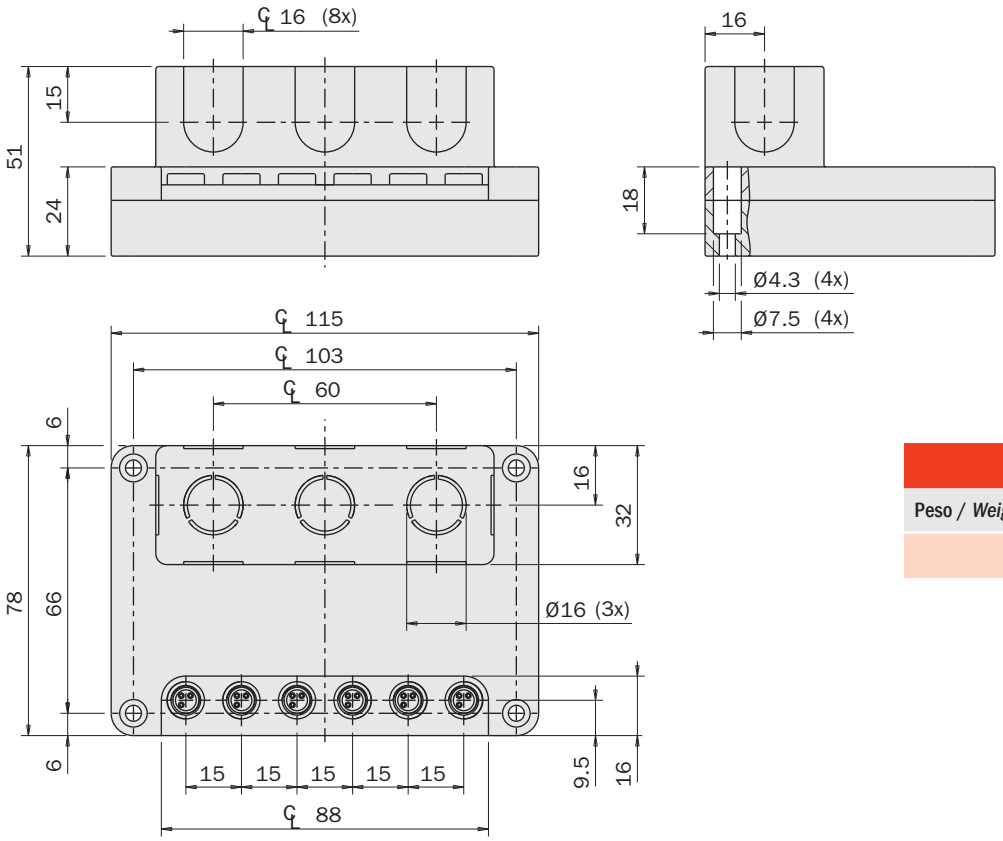
Alimentazione
Power supply
24 V dc (±10%)

Ingressi
Inputs
2 PNP INPUTS (IN3/IN6)
2 NPN INPUTS (IN1/IN4)
2 DRY CONTACT (IN2/IN5)

Uscite
Outputs
1 PNP OUTPUT SERIES (OUT3)
1 NPN OUTPUT SERIES (OUT6)



Dimensioni (mm) / *Dimensions (mm)*



	SB6B
Peso / *Weight*	193 g

FIRST ANGLE PROJECTION

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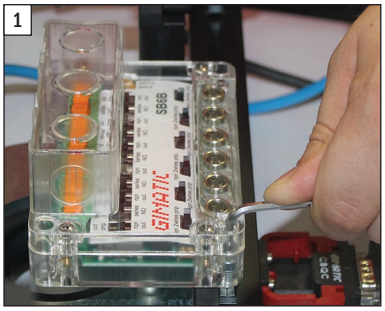
Procedura applicativa

- Posizionare e fissare la scatola al profilo Gimatic [1].
- Svolgere i cavi sensori fino alla zona ingressi [2].
- Collegare connettore M8 oppure applicare connettori a cablare opzionali (CMGM800300) [3].
- Aprire il coperchio, forare e applicare il PG9 [4].
- Cablare alimentazione +24Vdc [5].
- Definire tipo d'ingresso tramite gli interruttori a scorrimento, alimentare le scatola e verificare se il sensore funziona [6].
- Cablare uscita e selezionare il tipo PNP/NPN/relè tramite interruttore a scorrimento alla prima uscita della serie [7].
- In caso di uscite PNP/NPN è possibile fare riferimento al morsetto dell'alimentazione per +24Vdc e massa [8].
- Selezionare tramite interruttori a scorrimento la logica della serie Normalmente Aperta oppure Normalmente Chiusa [9].
- Chiudere il coperchio e serrare il PG9 [10].

Fitting procedure

- *Position and fix the box to the Gimatic profile* [1].
- *Unroll the sensor cables to the input area* [2].
- *Connect the M8 connector or use the optional wiring connectors (CMGM800300)* [3].
- *Open the transparent cover, drill the holes and fit the PG9 strain relief* [4].
- *Wire the 24Vdc power supply* [5].
- *Set the input type by means of the sliding switches, power the box and check if the sensor is working* [6].
- *Wire the output and select the PNP/NPN/relay type by means of the sliding sliding switch at the first output of the series* [7].
- *In case of PNP/NPN outputs, reference can be made to the 24Vdc power supply terminal or to the ground* [8].
- *Select the Normally Open or Normally Closed series logic by means of the sliding switches* [9].
- *Close the transparent cover and fasten the PG9 strain relief* [10].

1


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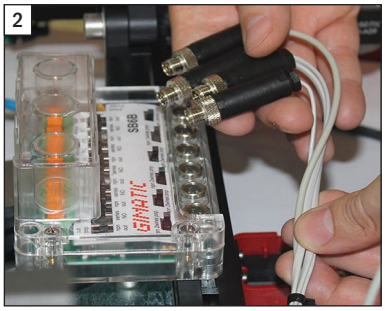

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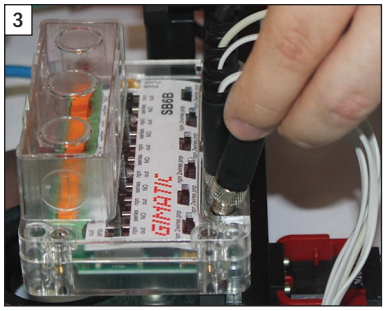

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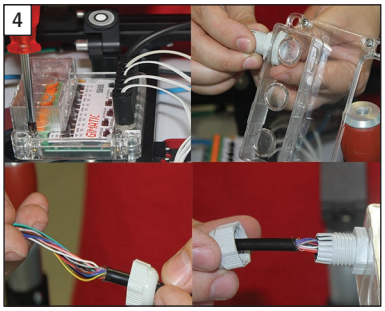

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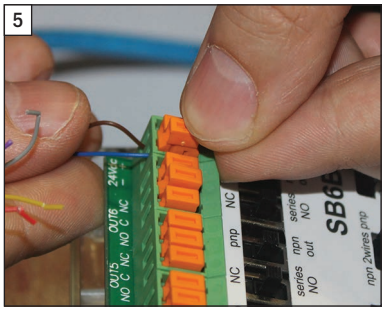

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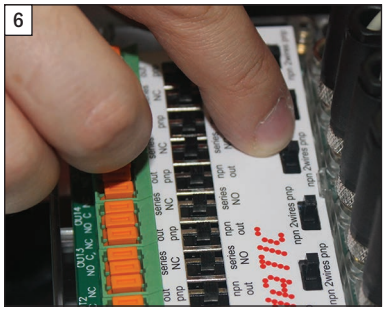

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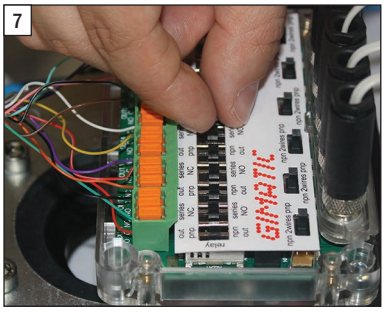

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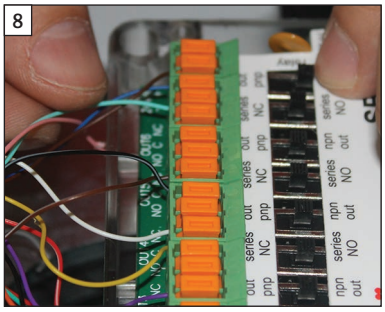

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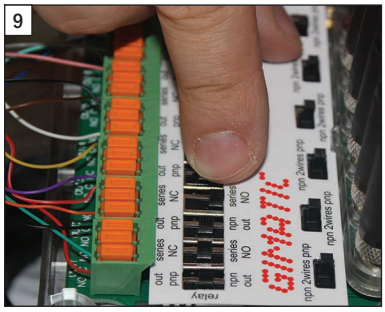

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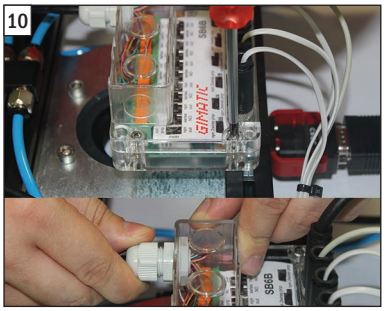


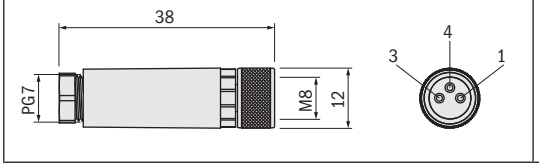
Connettori M8 a cablare opzionali

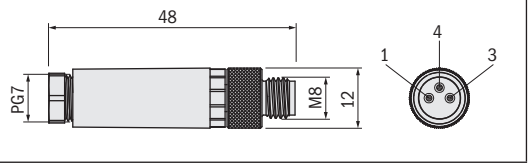
Nel caso di sensori con uscita cavo è possibile tagliare il cavo a misura e connettere un connettore M8 a cablare con terminali a vite.

Optional M8 male wiring connectors

In case of sensors with cable output, the cable can be cut to size and a M8 male wiring connector can be fitted with screw terminals.

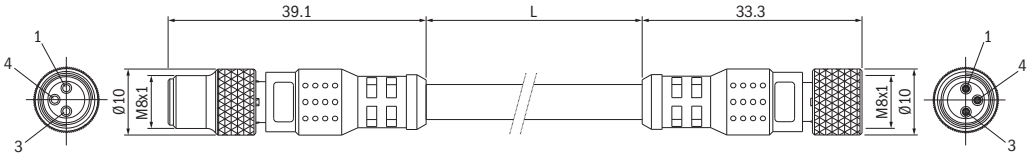
	CFGM800300	CMGM800300
Tipo / *Type*	M8 3 poli 0° femmina *M8 3-pole 0° female*	M8 3 poli 0° maschio *M8 3-pole 0° male*
Peso / *Weight*	11 g	11 g





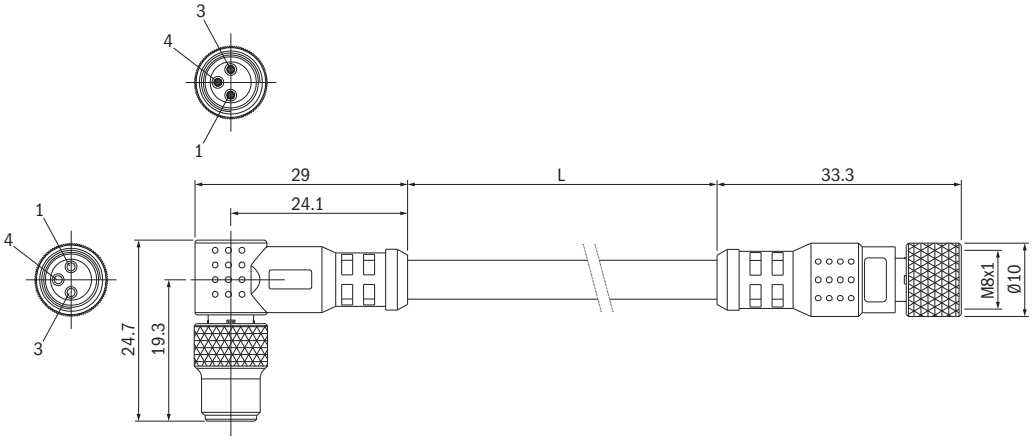
NEW NEW

	CMGM800310CFGM8003	CMGM800320CFGM8003
Tipo / *Type*	M8 3 poli 0° maschio - M8 3 poli 0° femmina *M8 3-pole 0° male - M8 3-pole 0° female*	
Cavo / *Cable*	L= 1m	L= 2m
Peso / *Weight*	37 g	64 g



NEW NEW

	CMGM890310CFGM8003	CMGM890320CFGM8003
Tipo / *Type*	M8 3 poli 90° maschio - M8 3 poli 0° femmina *M8 3-pole 90° male - M8 3-pole 0° female*	
Cavo / *Cable*	L= 1m	L= 2m
Peso / *Weight*	38 g	65 g



Scatola di comando a microprocessore

Funzionamento
Quando si preme il pulsante AUTOSET, il microprocessore memorizza lo stato degli ingressi (AREA GRIGIA). Dopodichè l'uscita (AREA GIALLA) verrà abilitata ogni volta che si ripresenta la medesima configurazione degli ingressi.

Alimentazione
24 V dc (±10%)

Ingressi
Fino a 8 sensori PNP, NPN o contatto pulito (NA o NC) selezionabili tramite jumper (AREA MARRONE).

Uscite
1 uscita PNP, NPN o contatto pulito (NA o NC) (AREA GIALLA).

Microprocessor sensor box

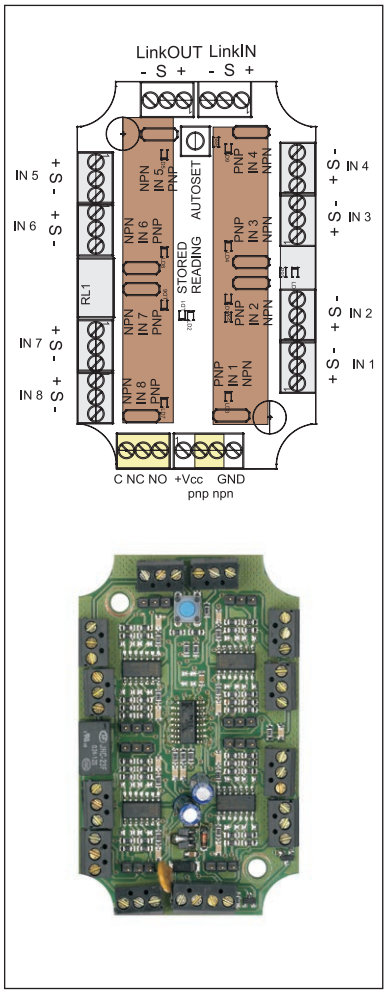
Functioning
When the autoset button is pressed, the microprocessor memorizes the status of the inputs (GREY AREA). Afterwards the output (YELLOW AREA) will be activated every time the same input configuration happens again.

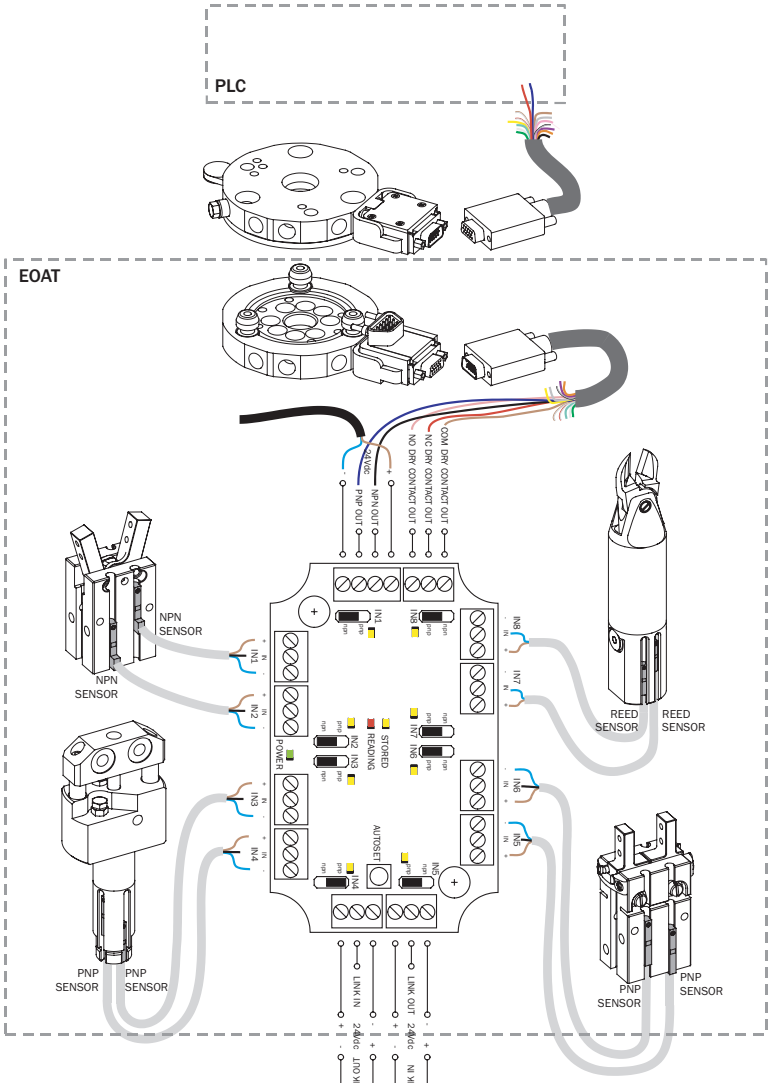
Power supply
24 V dc (±10%)

Inputs
Maximum 8 PNP, NPN or dry contact (NO or NC) sensors switched by jumpers (BROWN AREA).

Outputs
1 PNP, NPN or dry contact (NO or NC) (YELLOW AREA) output.

Schema circuito
Layout circuit



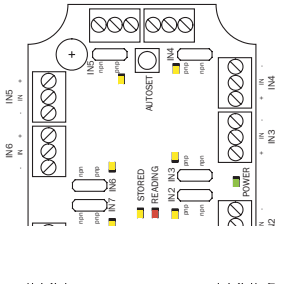


Esempio di utilizzo / *Application example*

Alimentazione
Power supply
24 V dc (±10%)

Ingressi
Inputs
2 NPN INPUTS (IN1/IN2)
4 PNP INPUTS (IN3/IN4/IN5/IN6)
2 DRY CONTACT (IN7/IN8)

Uscite
Outputs
1 PNP OUTPUT
1 NPN OUTPUT
1 DRY CONTACT NC OUTPUT
1 DRY CONTACT NO OUTPUT



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Scatola di derivazione con logica a relè NA/NC

Funzionamento

Una volta cablati gli ingressi (AREA GRIGIA) come specificato sulla scheda selezionare a mezzo "Jumper" il tipo di segnale d'ingresso (AREA MARRONE). Poi selezionare a mezzo "Jumper" il tipo di uscita (PNP, NPN, relay) necessaria (AREA ROSSA) e se le uscite devono essere messe in serie (NA oppure NC senza caduta di tensione) o in parallelo (AREA BLU). Terminata la selezione andiamo a cablare le uscite (AREA GIALLA).

Alimentazione:

24 V dc (±10%)

Ingressi

SB2C	Fino a 2 sensori PNP, NPN o contatto pulito (NA o NC) (AREA GRIGIA) selezionabili tramite jumper (AREA MARRONE).
SB4C	Fino a 4 ...
SB6C	Fino a 6 ...
SB8C	Fino a 8 ...
SB12C	Fino a 12 ...

Uscite

SB2C	Da 1 a 2 uscite PNP, NPN o contatto pulito (NA) (AREA GIALLA) selezionabili tramite jumper (AREA ROSSA).
SB4C	Da 1 a 4 uscite ...
SB6C	Da 1 a 6 uscite ...
SB8C	Da 1 a 8 uscite ...
SB12C	Da 1 a 12 uscite ...

NO/NC relay logic board

Functioning

After the inputs have been cabled (Grey Area) as shown on the circuit board you must use "Jumper" to select the Inputs signal type (Brown Area). Then use "Jumper" to define if you want to convert the input signals in NO/NC series or parallel outputs (Blue area). Use "Jumper" also to select the Output signal (PNP; NPN; relay) (Red Area) through a relay circuit so as to avoid the voltage drop. When the selection is completed, the Outputs (Yellow Area) are to be cabled.

Power supply:

24 V dc (±10%)

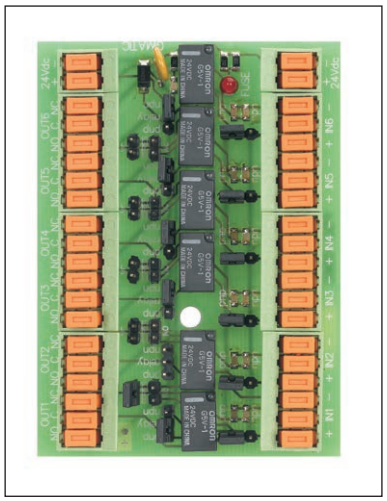
Inputs

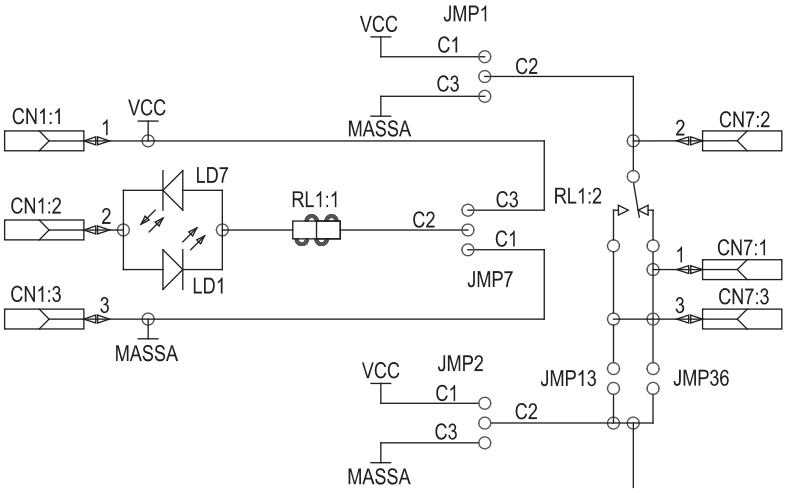
SB2C	*Maximum 2 PNP, NPN or dry contact (NO or NC) (GREY AREA) sensors switched by jumpers (BROWN AREA).*
SB4C	*Maximum 4 ...*
SB6C	*Maximum 6 ...*
SB8C	*Maximum 8 ...*
SB12C	*Maximum 12 ...*

Outputs

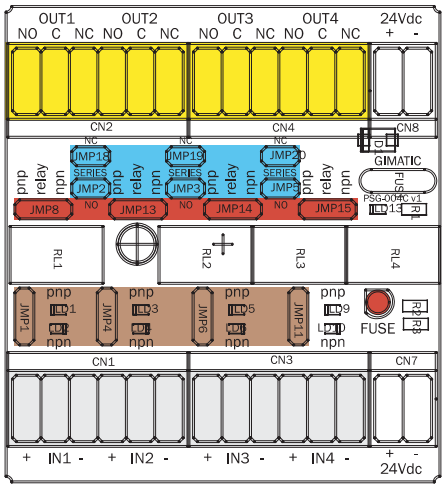
SB2C	*1 up to 2 PNP, NPN or dry contact (NO) outputs (YELLOW AREA) switched by jumpers (RED AREA).*
SB4C	*1 up to 4 ...*
SB6C	*1 up to 6 ...*
SB8C	*1 up to 8 ...*
SB12C	*1 up to 12 ...*

Schema circuito
Layout circuit

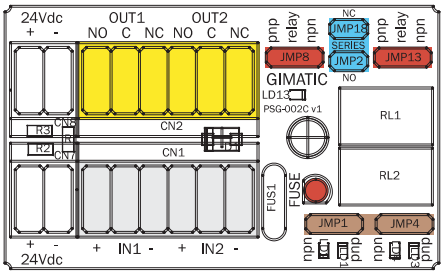




SB4C



SB2C



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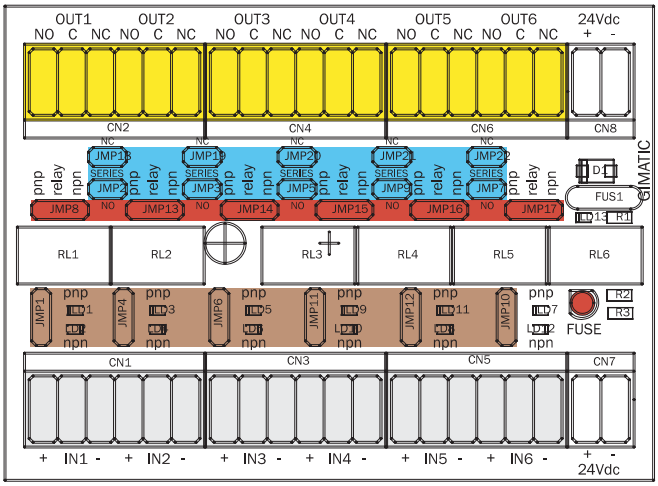
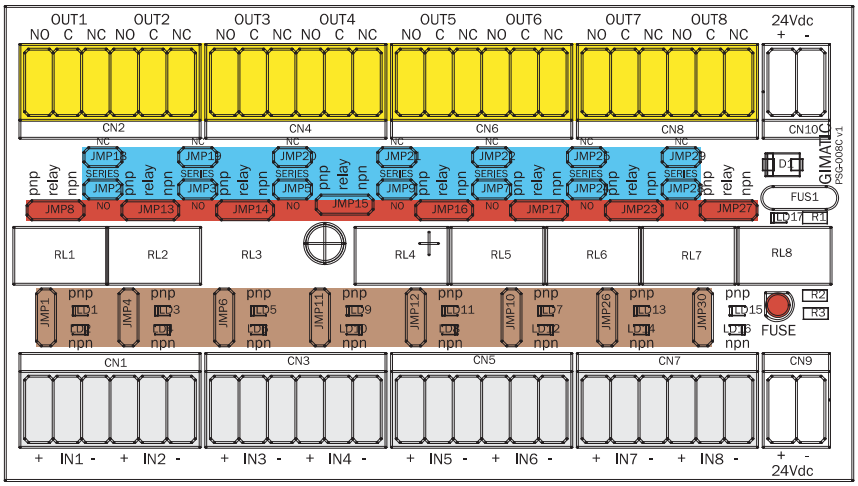
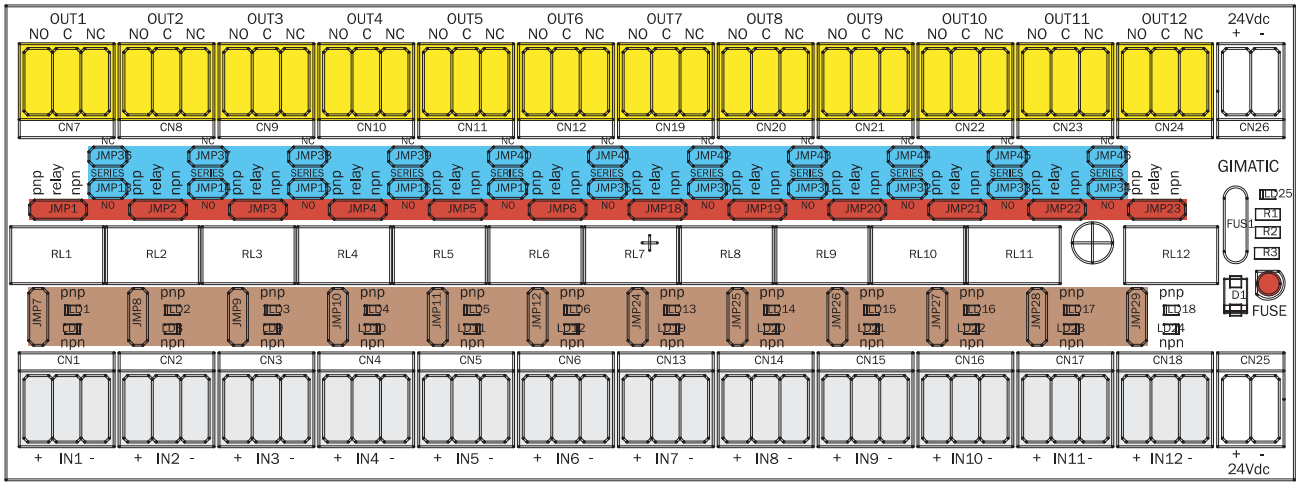
SB6C



SB8C



SB12C



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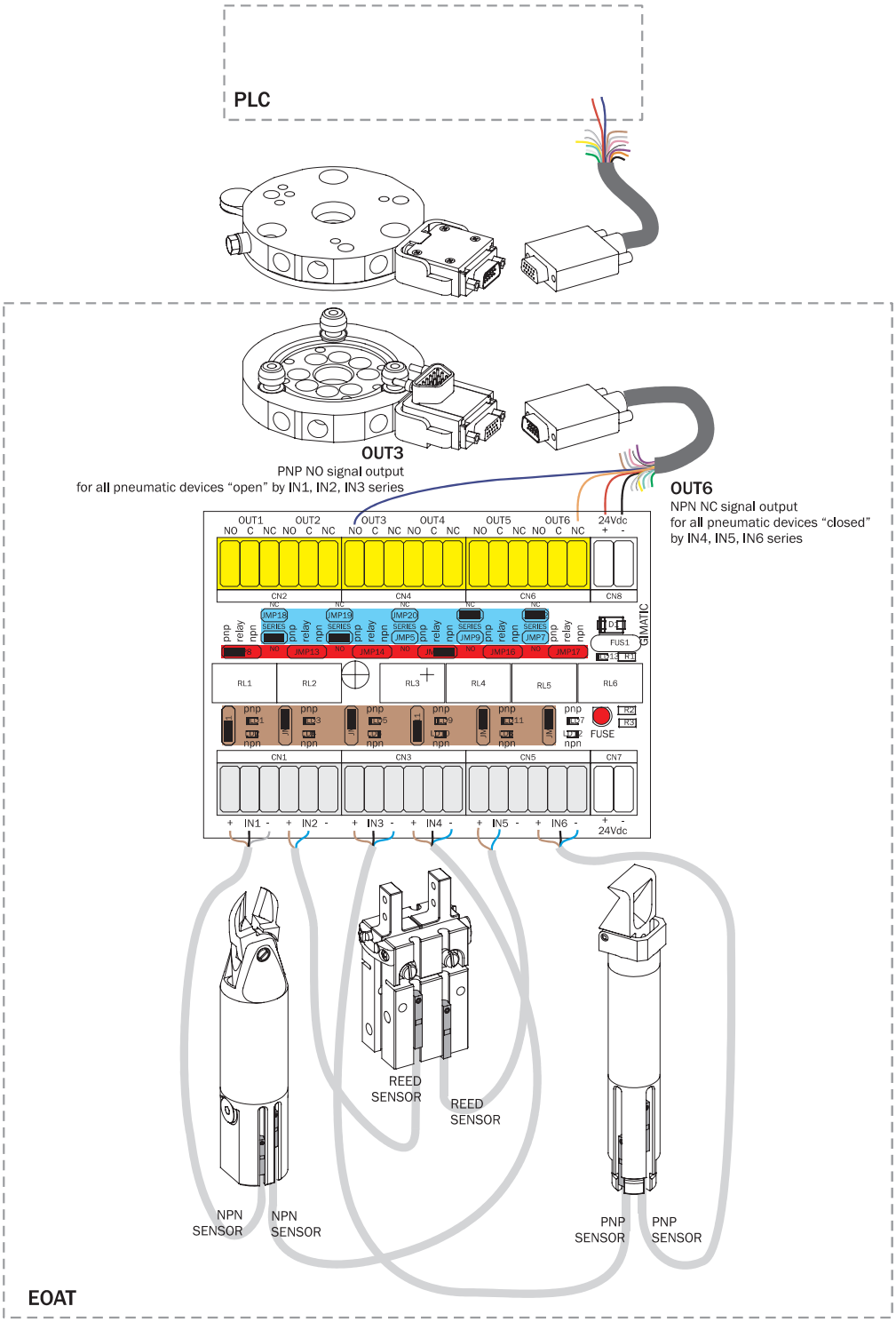
Esempio di utilizzo / *Application example*

Alimentazione
Power supply
24 V dc (±10%)

Ingressi
Inputs
2 PNP INPUTS (IN3/IN6)
2 NPN INPUTS (IN1/IN4)
2 DRY CONTACT (IN2/IN5)

Uscite
Outputs
1 PNP OUTPUT SERIES (OUT3)
1 NPN OUTPUT SERIES (OUT6)



Scatola di cablaggio con terminali

Funzionamento
Il circuito con terminali a vite è usato per collegare i moduli CAQC e CBQC ai sensori ed alle scatole SB2C, SB4C, SB6C, SB8C, SB12C e SB8F.

Alimentazione
24 V dc (±10%)

Ingressi
15 ingressi (diretti all'uscita)

Uscite
15 uscite (dirette dall'ingresso)

Terminal cabling box

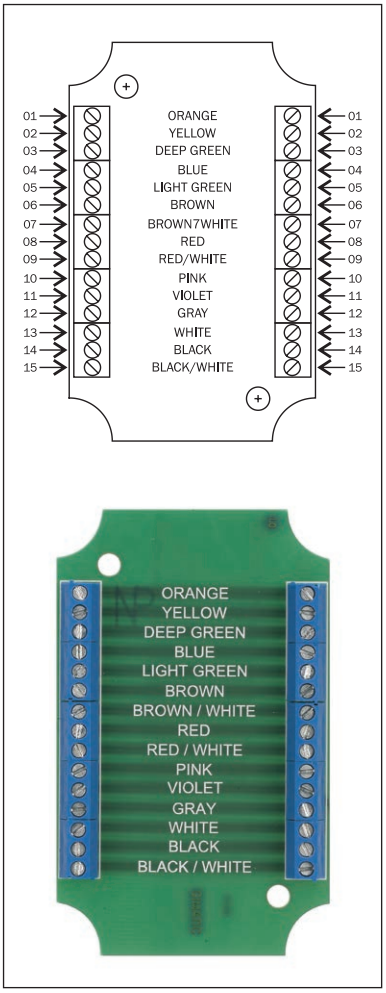
Functioning
The terminal circuit board is used to link CAQC and CBQC modules to sensors SB2C, SB4C, SB6C, SB8C, SB12C and SB8F sensor box.

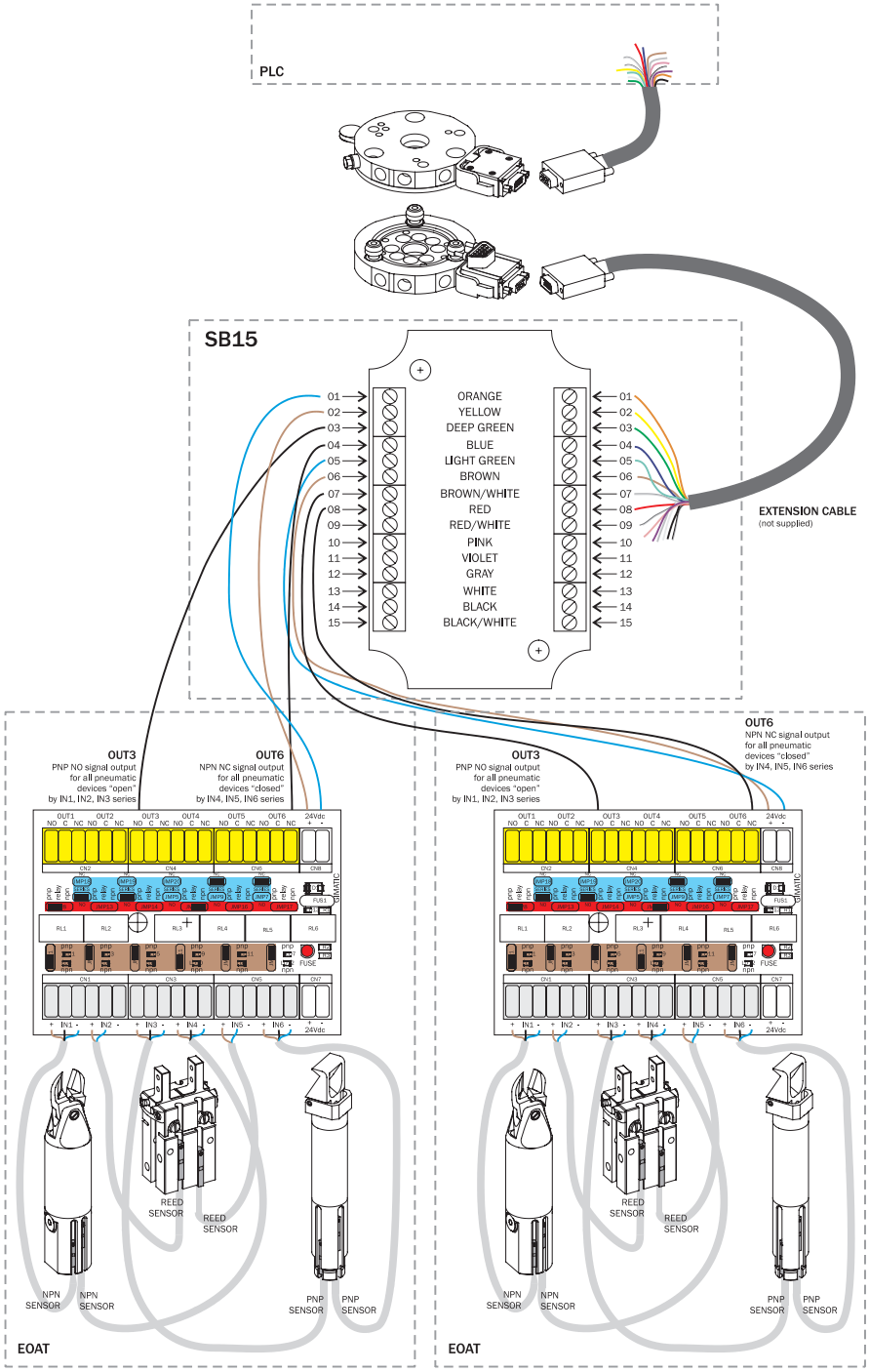
Power supply
24 V dc (±10%)

Inputs
15 inputs (to outputs)

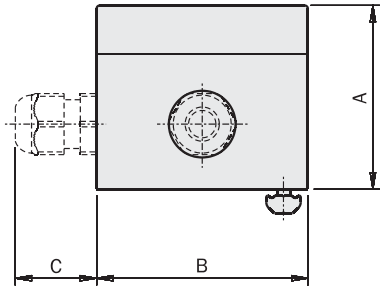
Outputs
15 outputs (from inputs)

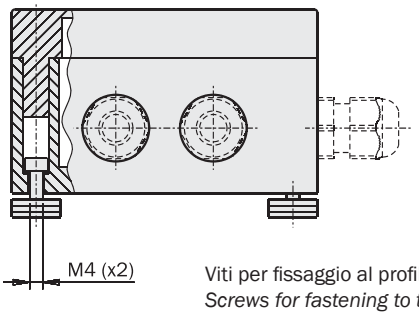
Schema circuito
Layout circuit





Dimensioni (mm) / *Dimensions (mm)*

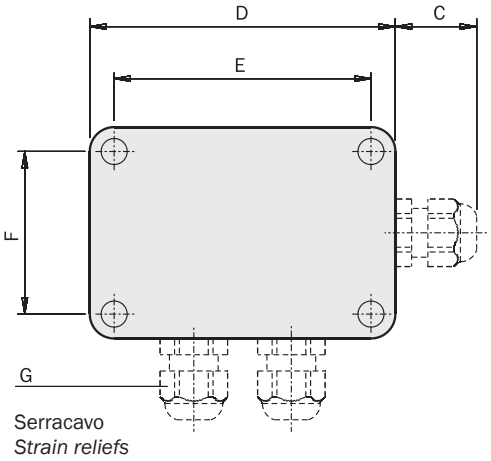




Viti per fissaggio al profilo estruso
Screws for fastening to the extruded profile

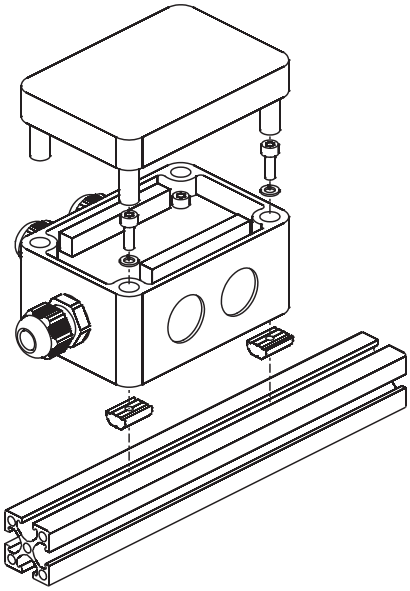
Serracavo (G) e viti per fissaggio forniti in confezione

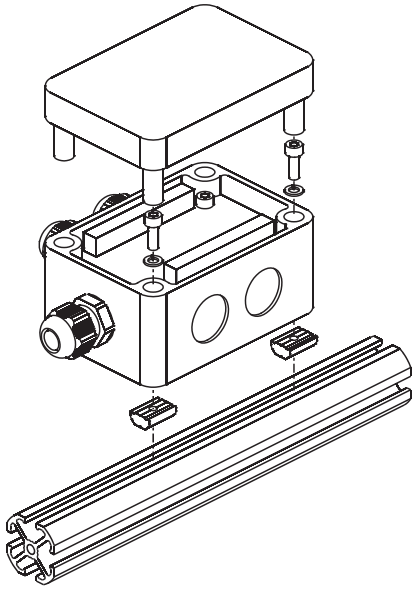
Strain reliefs (G) and fixing screws included in the packaging



FIRST ANGLE PROJECTION

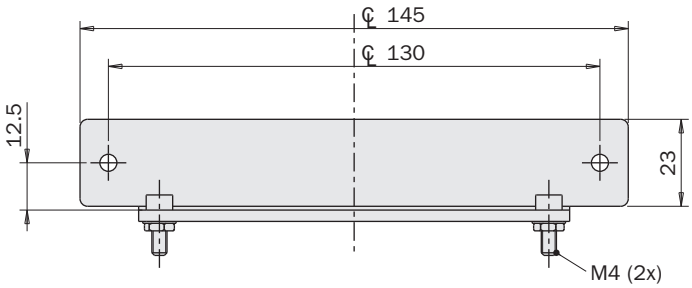
	SB8F	SB2C	SB4C	SB6C	SB8C	SB12C	SB15
A	57	57	57	57	57	57	57
B	65	65	65	94	94	94	65
C	25	25	25	25	25	25	25
D	94	65	94	94	130	180	94
E	79	50	79	79	115	165	79
F	50	50	50	79	79	79	50
G	n°3	n°2	n°3	n°4	n°6	n°8	n°3
Peso / *Weight*	165 g	120 g	160 g	190 g	235 g	325 g	150 g

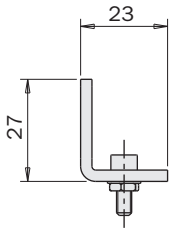


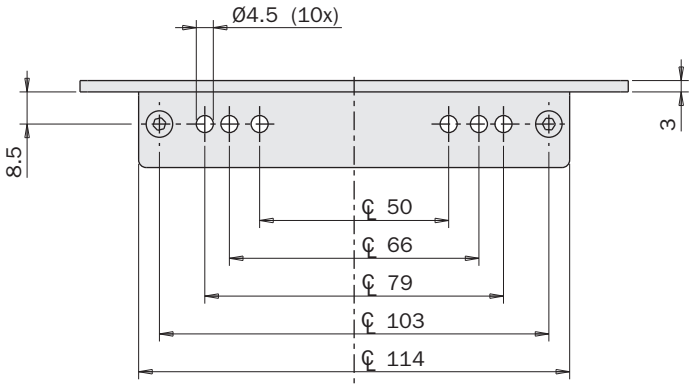


Staffa di fissaggio

Mounting bracket

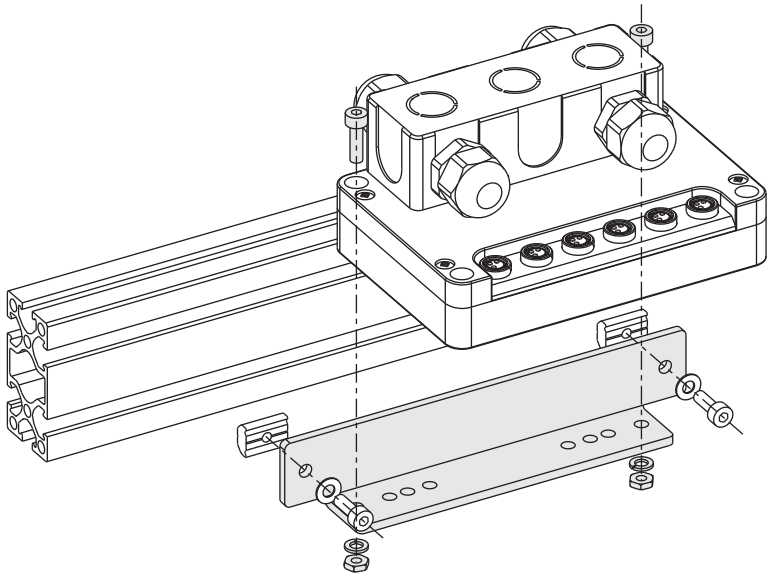


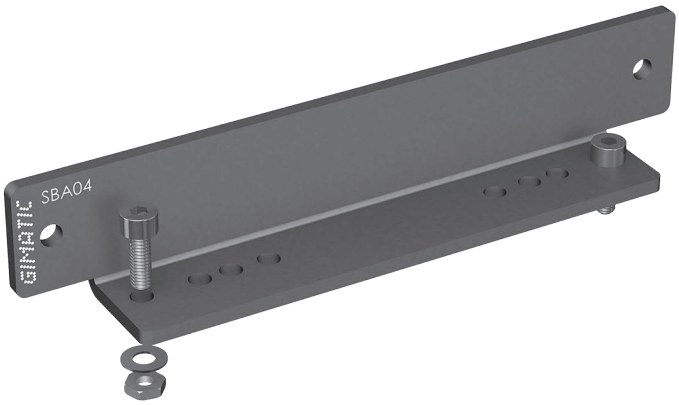




NEW

	SBA04
Peso / *Weight*	140 g





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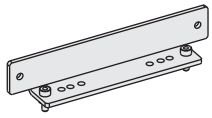
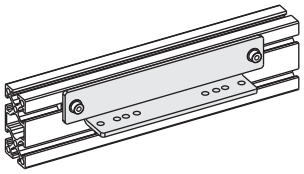
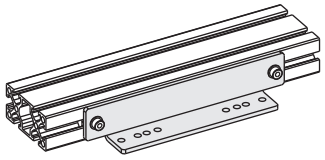
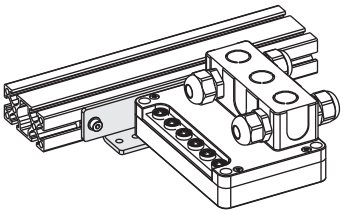
Esempio di utilizzo / *Application example*

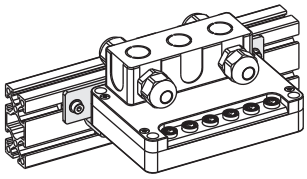








SB6B



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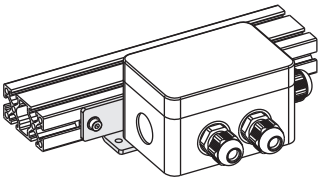
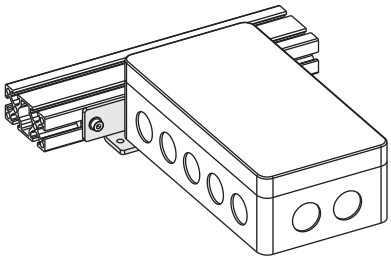
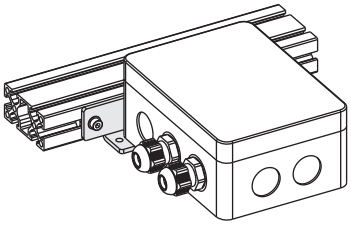


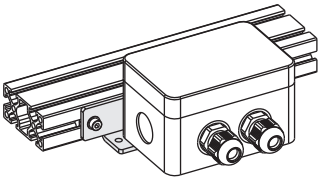
SB15



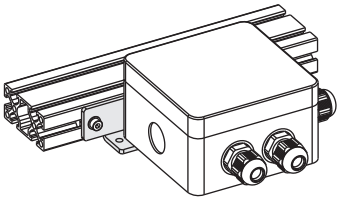
SB12C



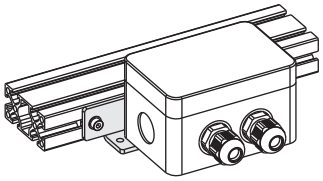
SB8C



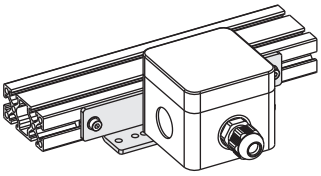
SB8F



SB6C



SB4C



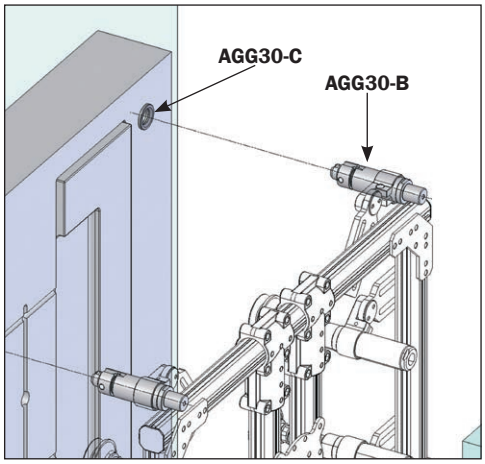
SB2C

Pinza per agganciamento

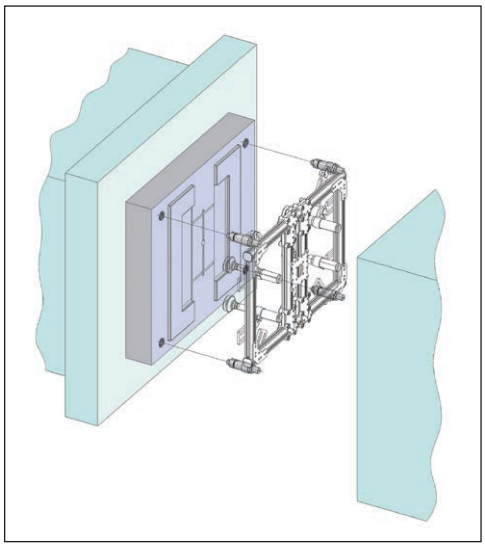
La AGG é usata per centrare in modo preciso il robot sullo stampo. Questo é necessario quando si devono posizionare degli inserti metallici nello stampo, prima di iniettare la plastica.
La pinza AGG...-B è montata sull'EOAT e la bussola AGG...-C in acciaio sullo stampo.
Dopo che il robot si é avvicinato 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).

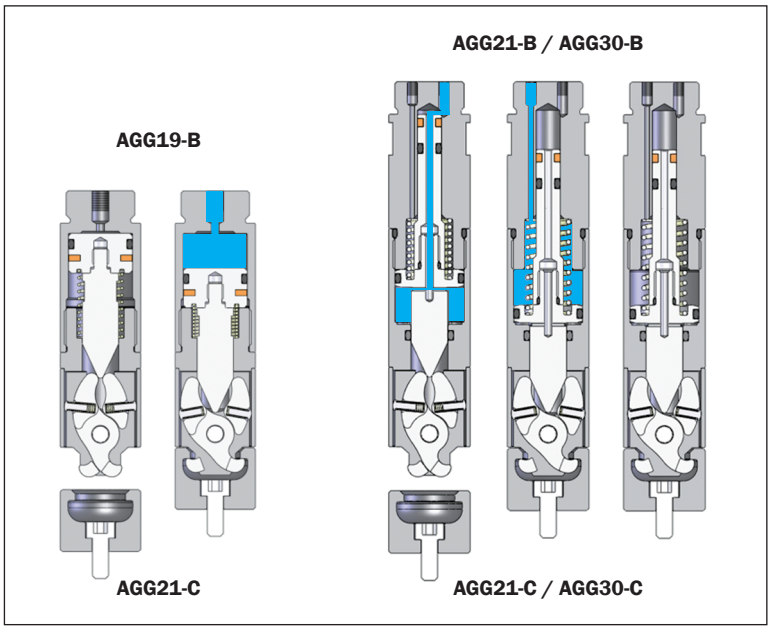
Gripper for engagement

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 *Maximum axial load without compressed air before releasing*	0 N	600 N	1400 N
Massimo carico assiale con aria compressa prima della rottura *Maximum axial load with compressed air before breakage*	2000 N	2000 N	5000 N
Pressione di esercizio *Pressure range*	2 ÷ 8 bar (NO)	4 ÷ 8 bar (NC)	4 ÷ 8 bar (NC)
Temperatura di esercizio *Temperature range*	5 ÷ 60 °C.		





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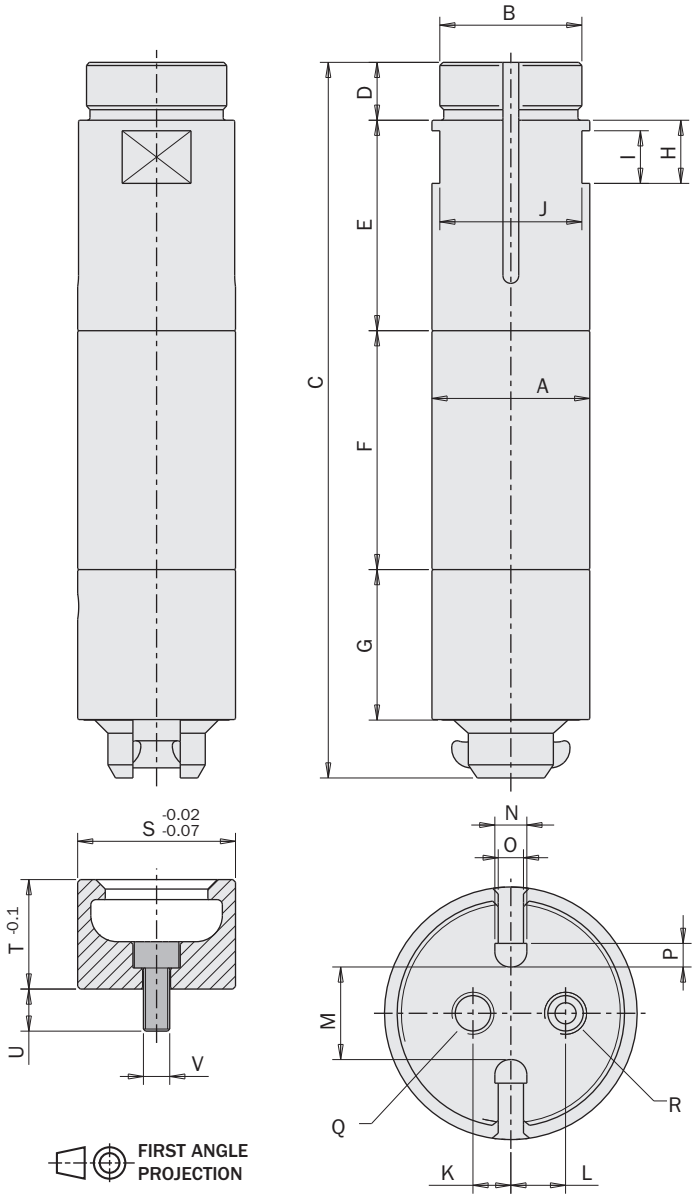
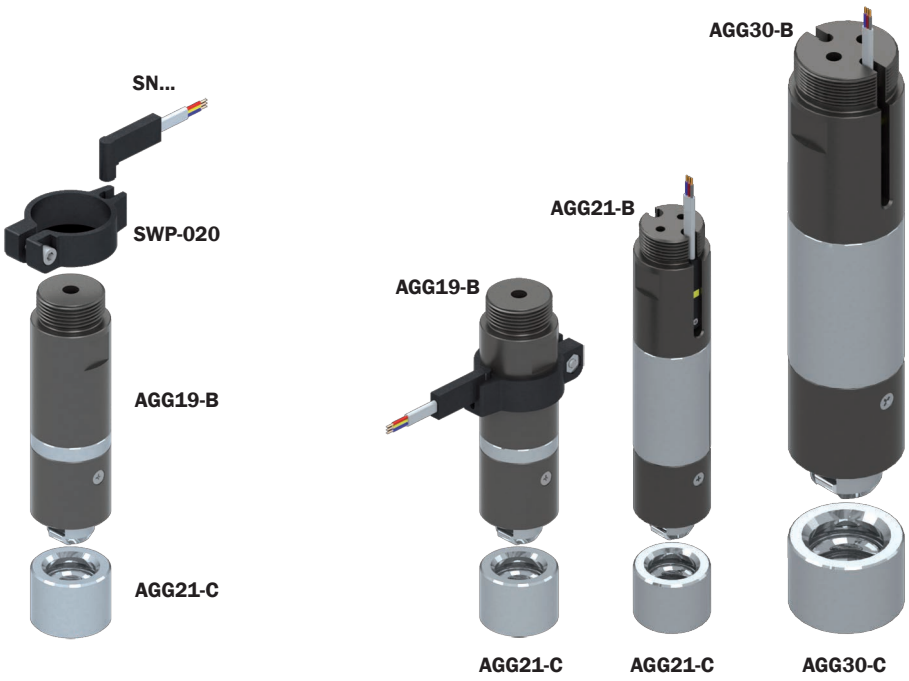
Dimensioni (mm) / *Dimensions (mm)*

	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	4.2	4.5
L	-	3.5	6.5
M	-	8	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





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.

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.*

AA-23-NO

AA-22-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-26	AA-26-NO	AA-35	AA-35-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 (±1°) *Stroke*	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^3	2 cm^3	5 cm^3	2 cm^3	5 cm^3	2 cm^3	5 cm^3	2 cm^3
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

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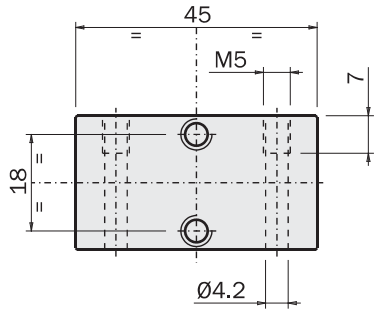
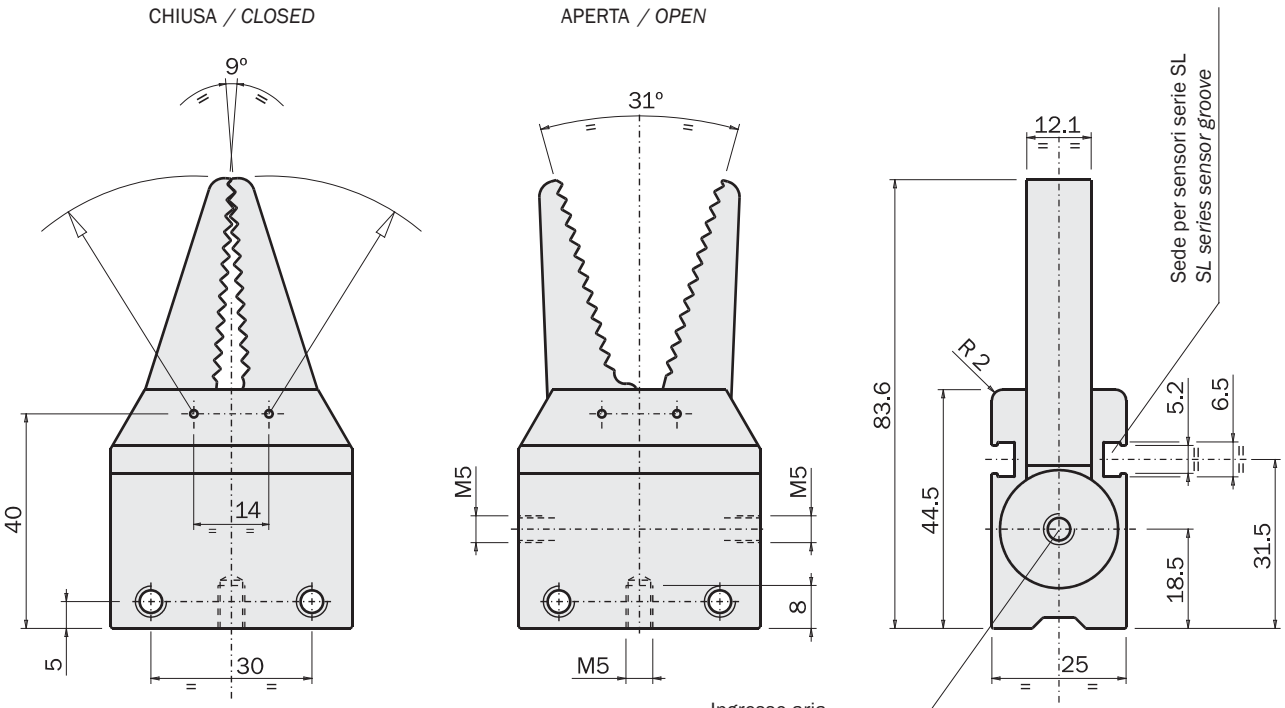
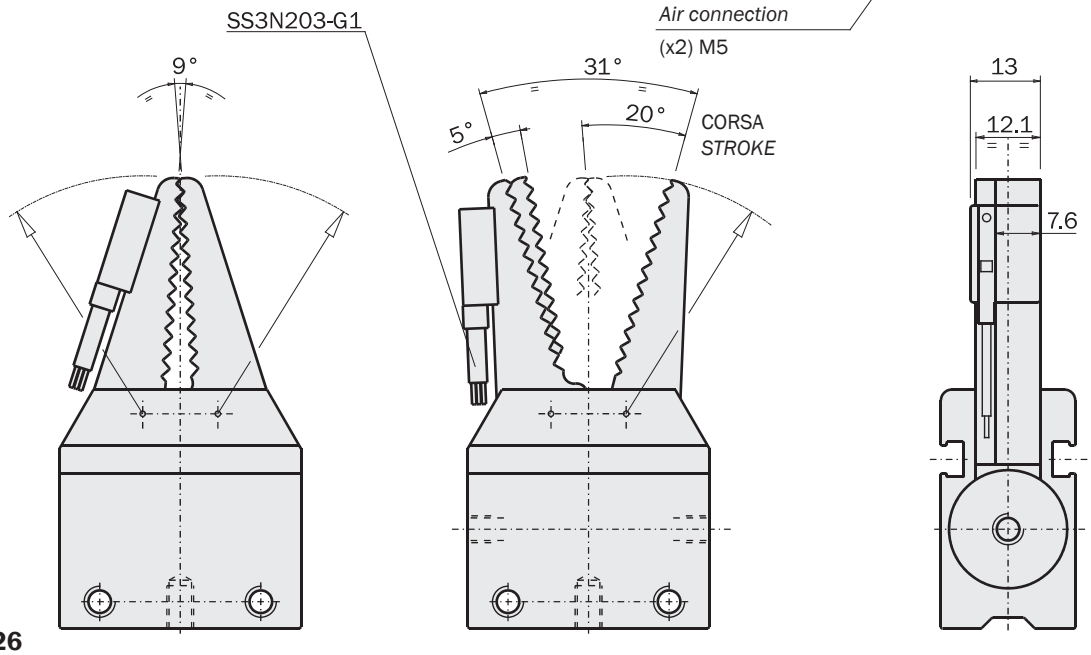
Dimensioni (mm) / *Dimensions (mm)*

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



AA-22





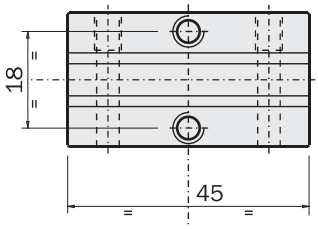
AA-26

FIRST ANGLE PROJECTION

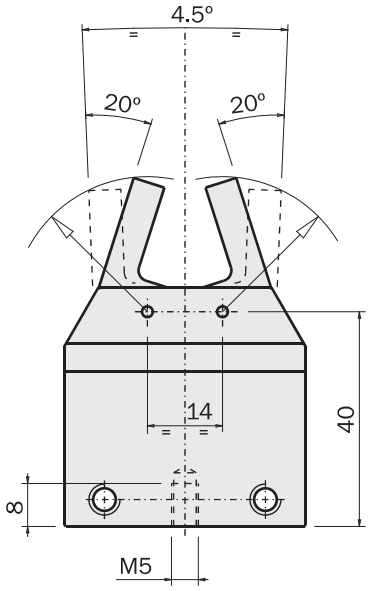
09/2015

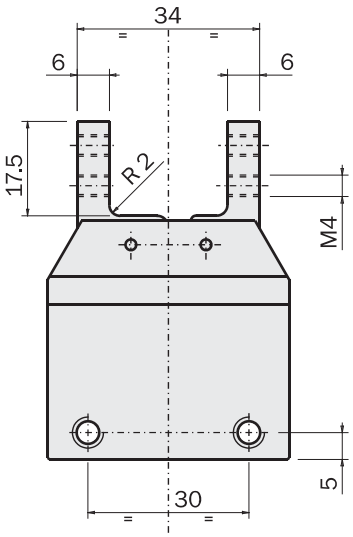
Dimensioni (mm) / *Dimensions (mm)*

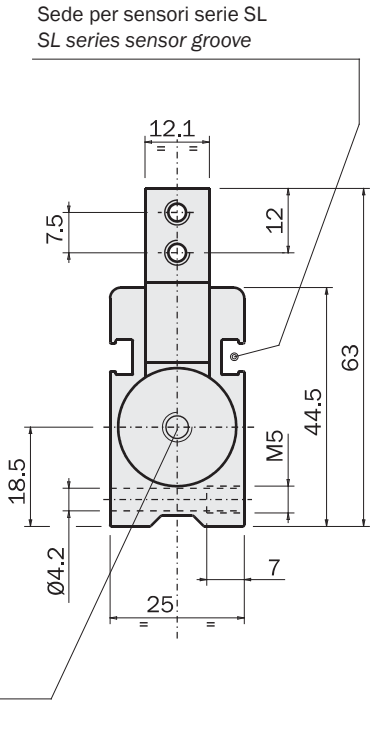
AA-23
AA-23-NO

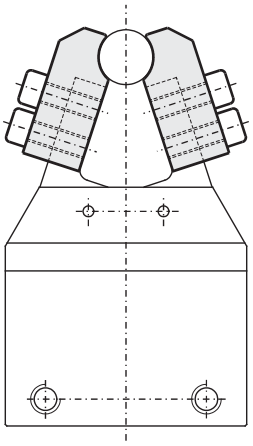


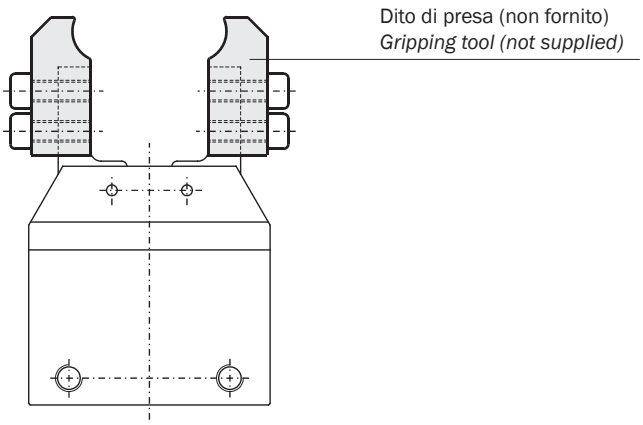
APERTA / *OPEN*











FIRST ANGLE PROJECTION

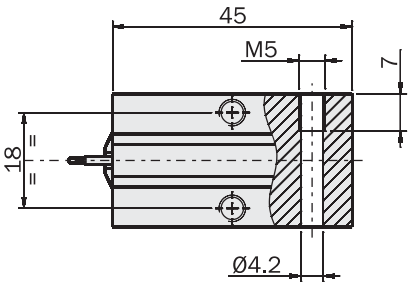
09/2015

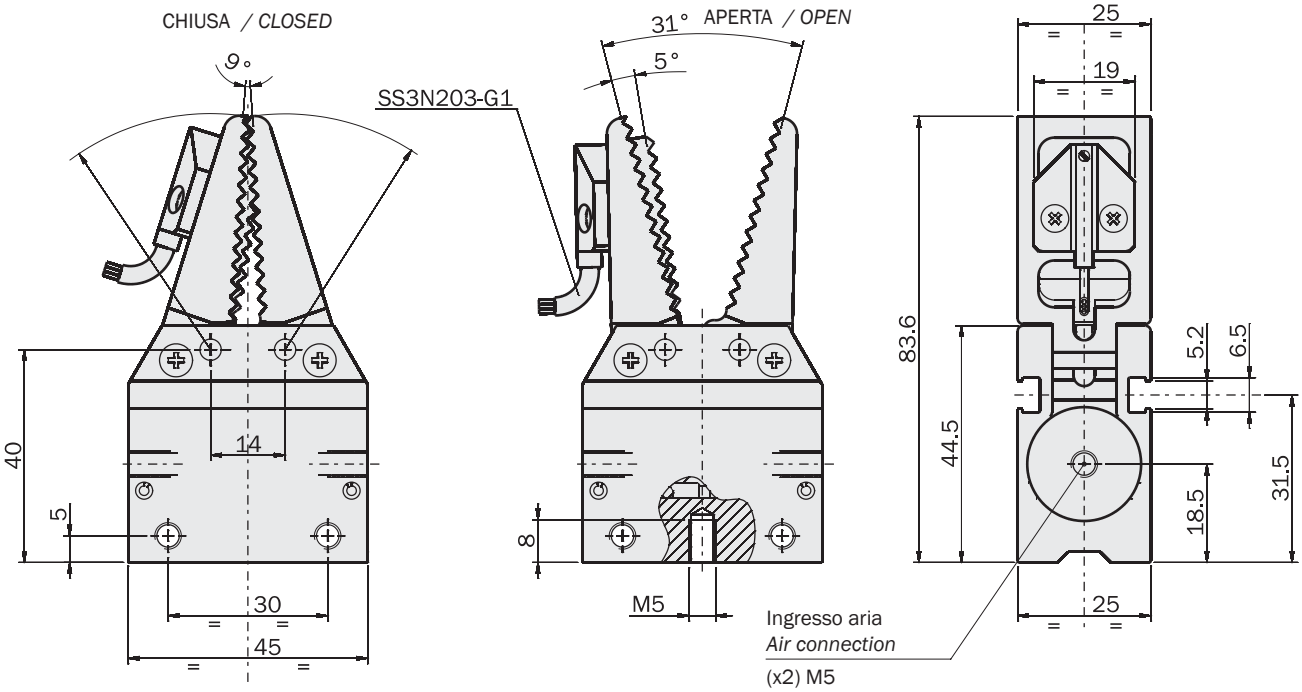
Dimensioni (mm) / Dimensions (mm)

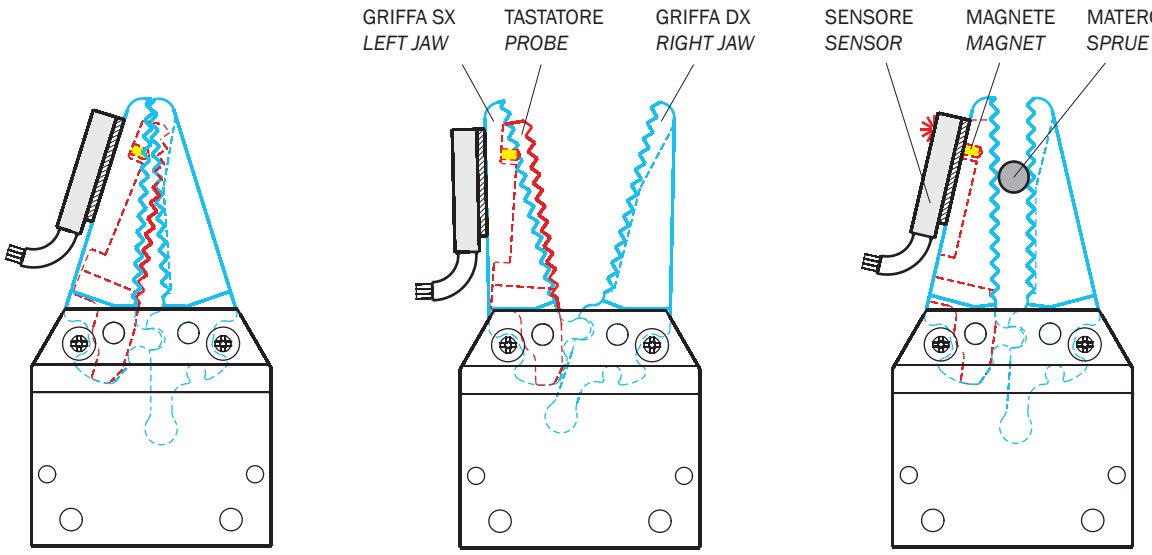
Dita più larghe e scanalate per una presa migliore
Wider, grooved fingers for a better gripping

AA-35
AA-35-NO

FIRST ANGLE PROJECTION



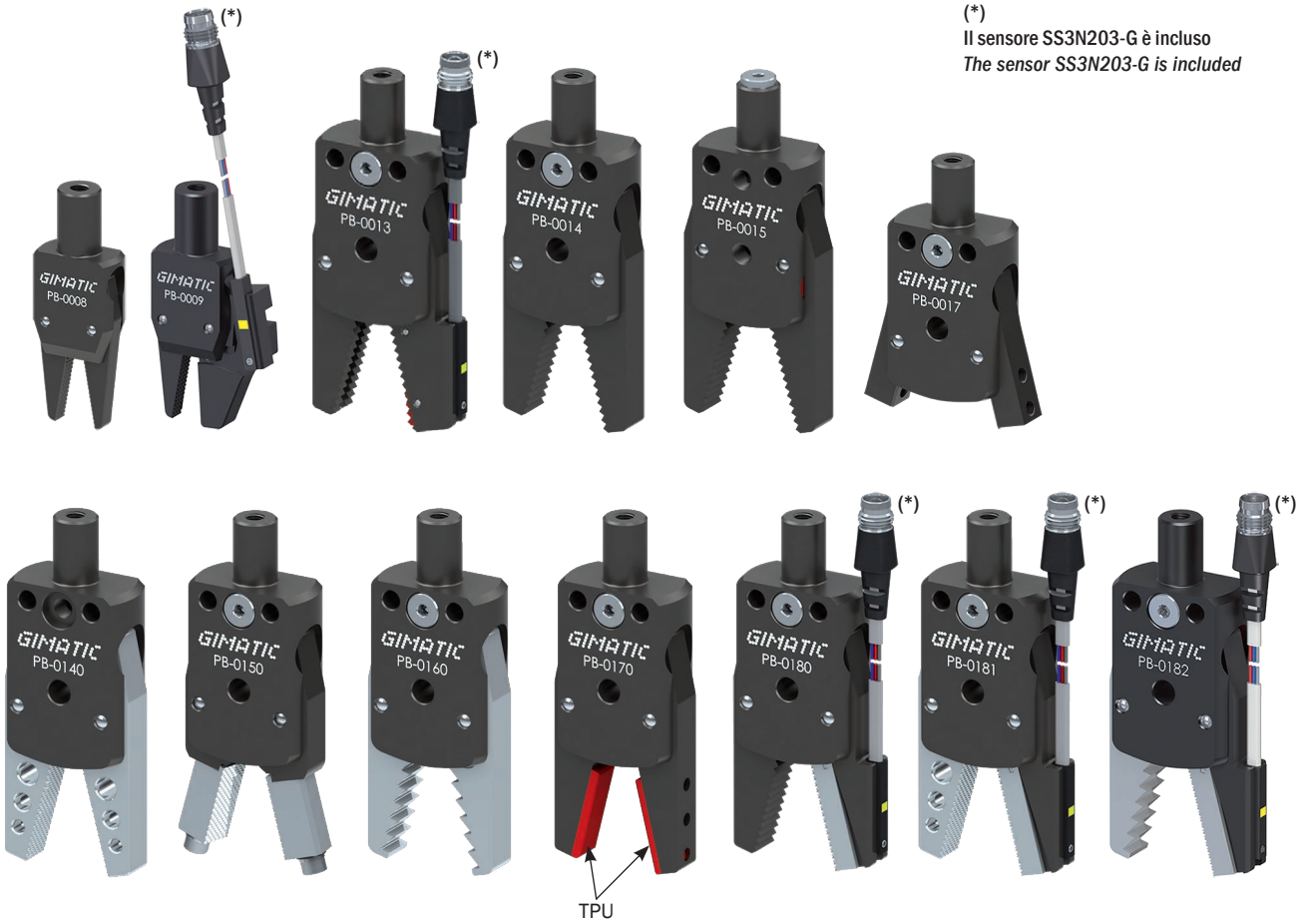




Pinza pneumatica per materozze, angolare non autocentrante a due griffe serie PB

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

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



	PB-0008	PB-0009	PB-0013	PB-0014	PB-0015	PB-0017	PB-0140	PB-0150	PB-0160	PB-0170	PB-0180	PB-0181	PB-0182
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 (±2°) *Stroke*	2x10°	2x10°	2x15°	2x15°	2x16°	2x15°	2x15°	2x15°	2x15°	2x15°	2x15°	2x15°	2x15°
Coppia di serraggio per griffa in chiusura a 6 bar *Closing gripping torque at 6 bar each jaw*	24 Ncm	24 Ncm	80 Ncm	80 Ncm	60 Ncm	80 Ncm	80 Ncm	80 Ncm	80 Ncm	80 Ncm	80 Ncm	80 Ncm	80 Ncm
Coppia per griffa in apertura (a 6 bar) *Opening gripping torque (at 6 bar) each jaw*	2 Ncm	2 Ncm	5 Ncm	5 Ncm	5 Ncm (25 Ncm)	5 Ncm	5 Ncm	5 Ncm	5 Ncm	5 Ncm	5 Ncm	5 Ncm	5 Ncm
Frequenza max funzionamento continuativo *Maximum working frequency*	3 Hz												
Consumo d'aria per ciclo *Cycle air consumption*	0.3 cm^3	0.3 cm^3	1.2 cm^3	1.2 cm^3	1.5 cm^3	1.2 cm^3	1.2 cm^3	1.2 cm^3	1.2 cm^3	1.2 cm^3	1.2 cm^3	1.2 cm^3	1.2 cm^3
Tempo di chiusura senza carico *Closing time without load*	0.01 s												
Peso *Weight*	15 g	25 g	55 g	50 g	50 g	45 g	75 g	75 g	75 g	50 g	60 g	75 g	75 g

09/2015

PB-0008

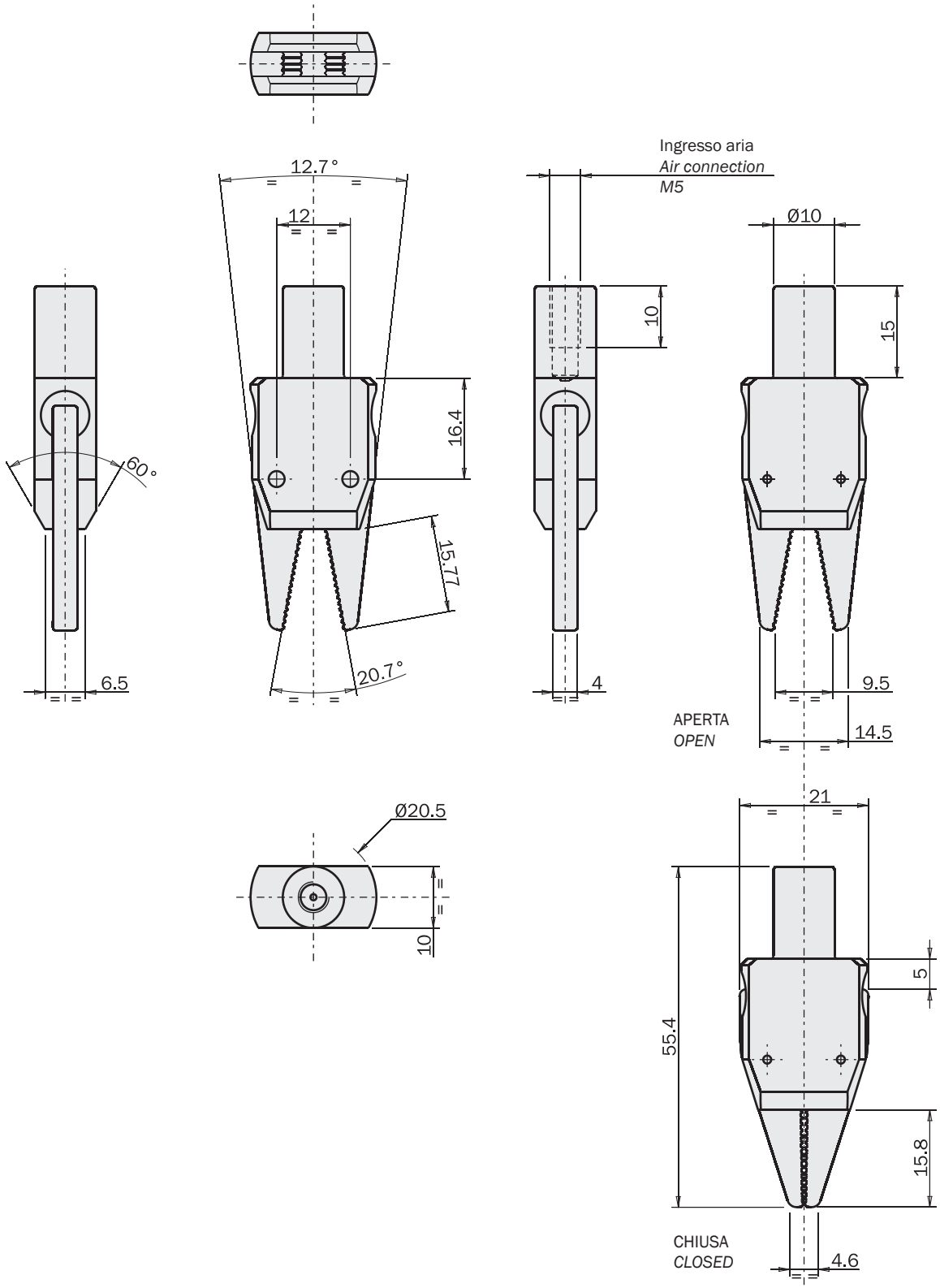
- Alesaggio: 8mm.
- A semplice effetto con molla in apertura.

PB-0008

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

Dimensioni (mm)

Dimensions (mm)



FIRST ANGLE PROJECTION

09/2015

PB-0009

- Alesaggio: 8mm.
- A semplice effetto con molla in apertura.
- Sensore sulla griffa.

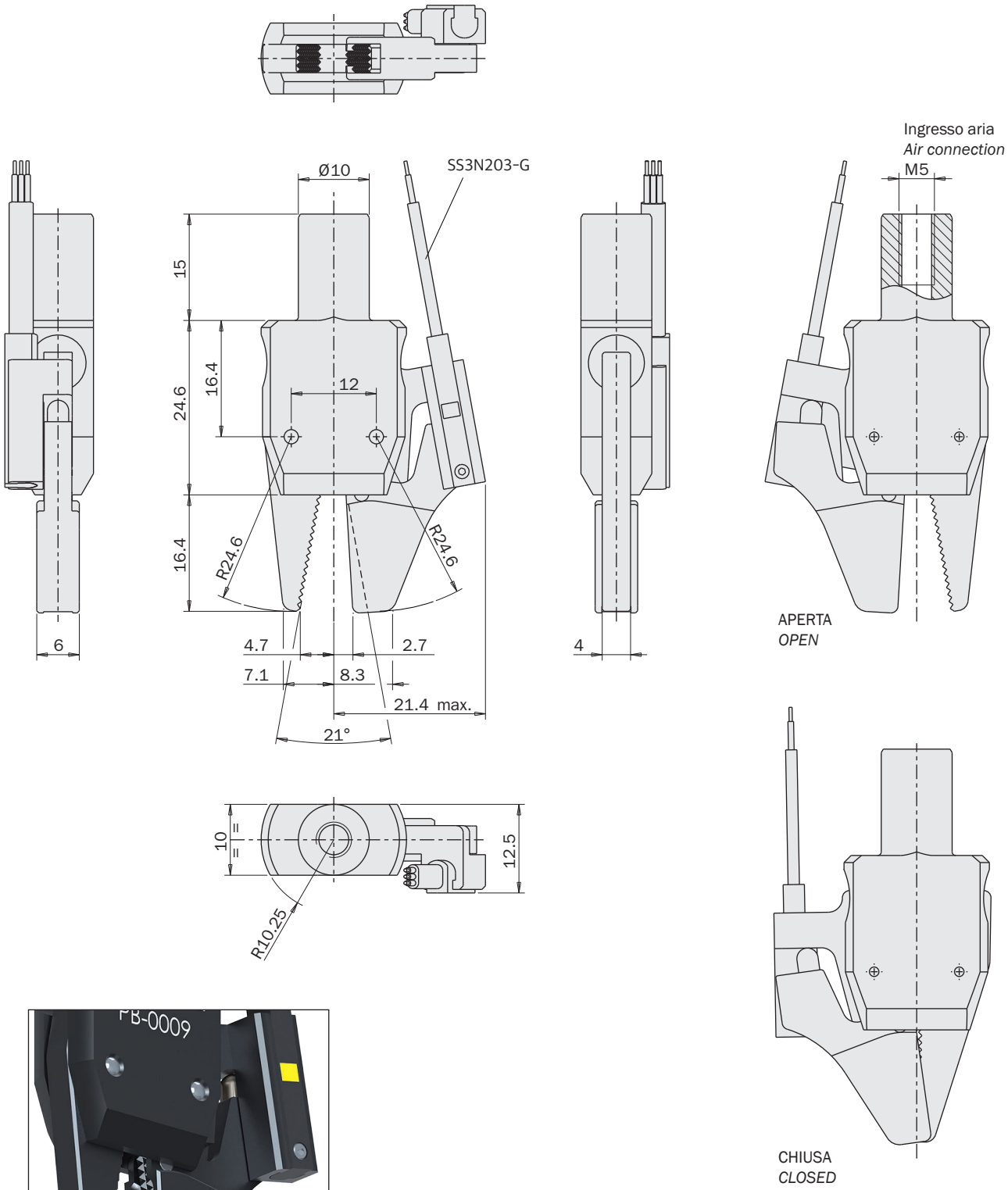
PB-0009

- *Piston bore: 8mm.*
- *Single-acting with opening spring.*
- *Sensor on the jaw.*

Dimensioni (mm)

Dimensions (mm)

FIRST ANGLE PROJECTION



09/2015

PB-0013

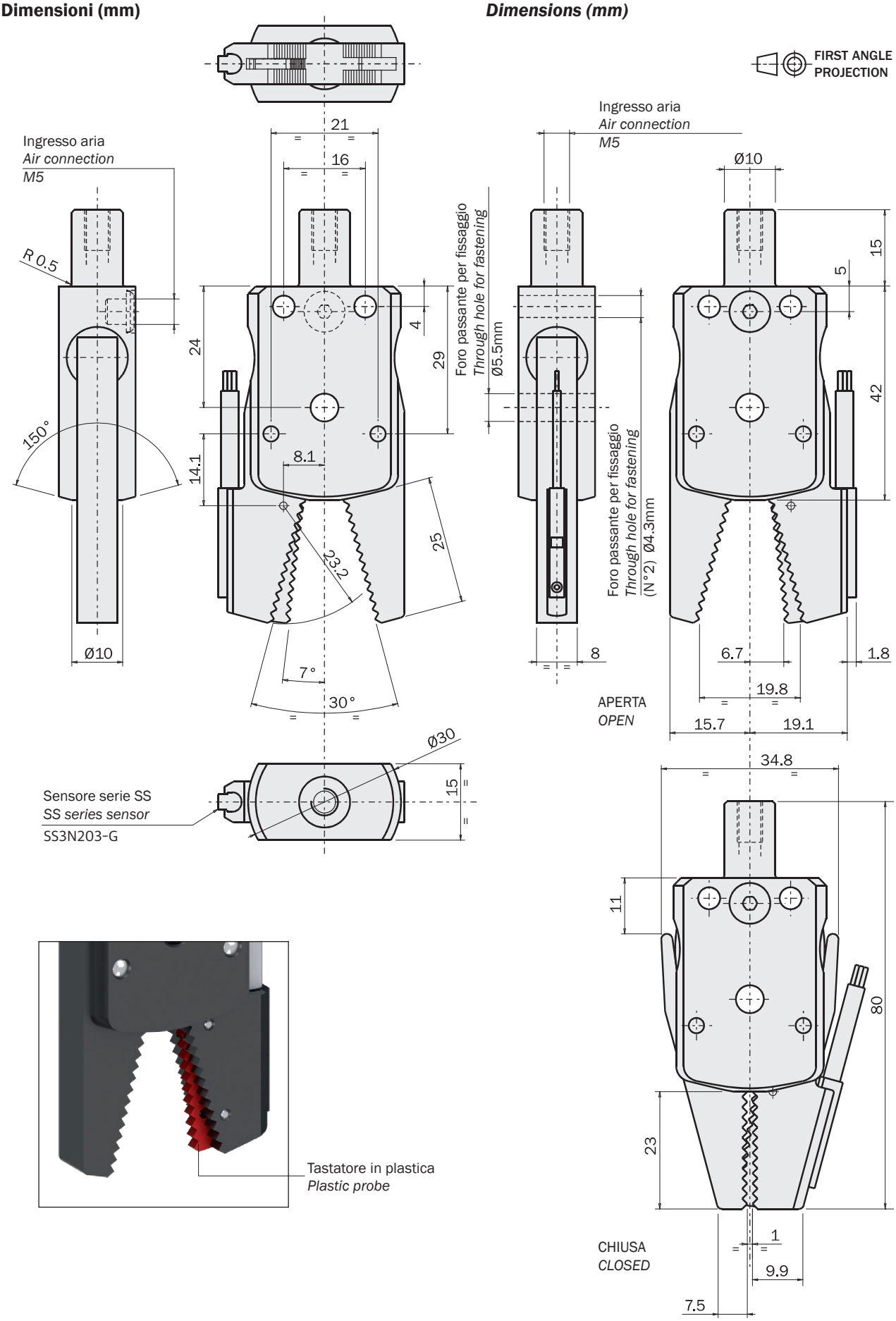
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore sulla griffa.

PB-0013

- *Piston bore: 12mm.*
- *Single-acting with opening spring.*
- *Sensor on the jaw.*

Dimensioni (mm)

Dimensions (mm)



09/2015

PB-0014

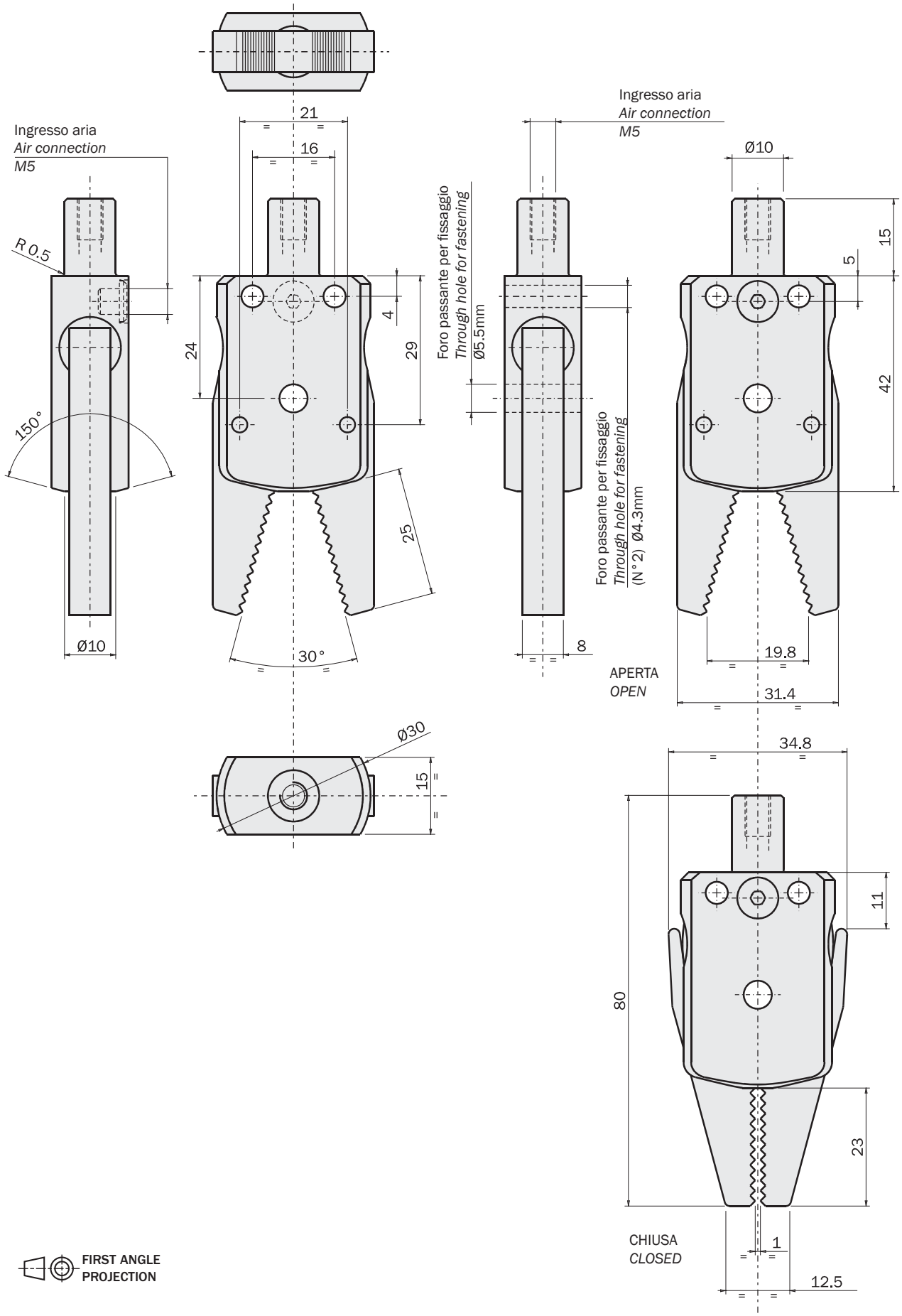
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.

PB-0014

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

Dimensioni (mm)

Dimensions (mm)



FIRST ANGLE PROJECTION

09/2015

PB-0015

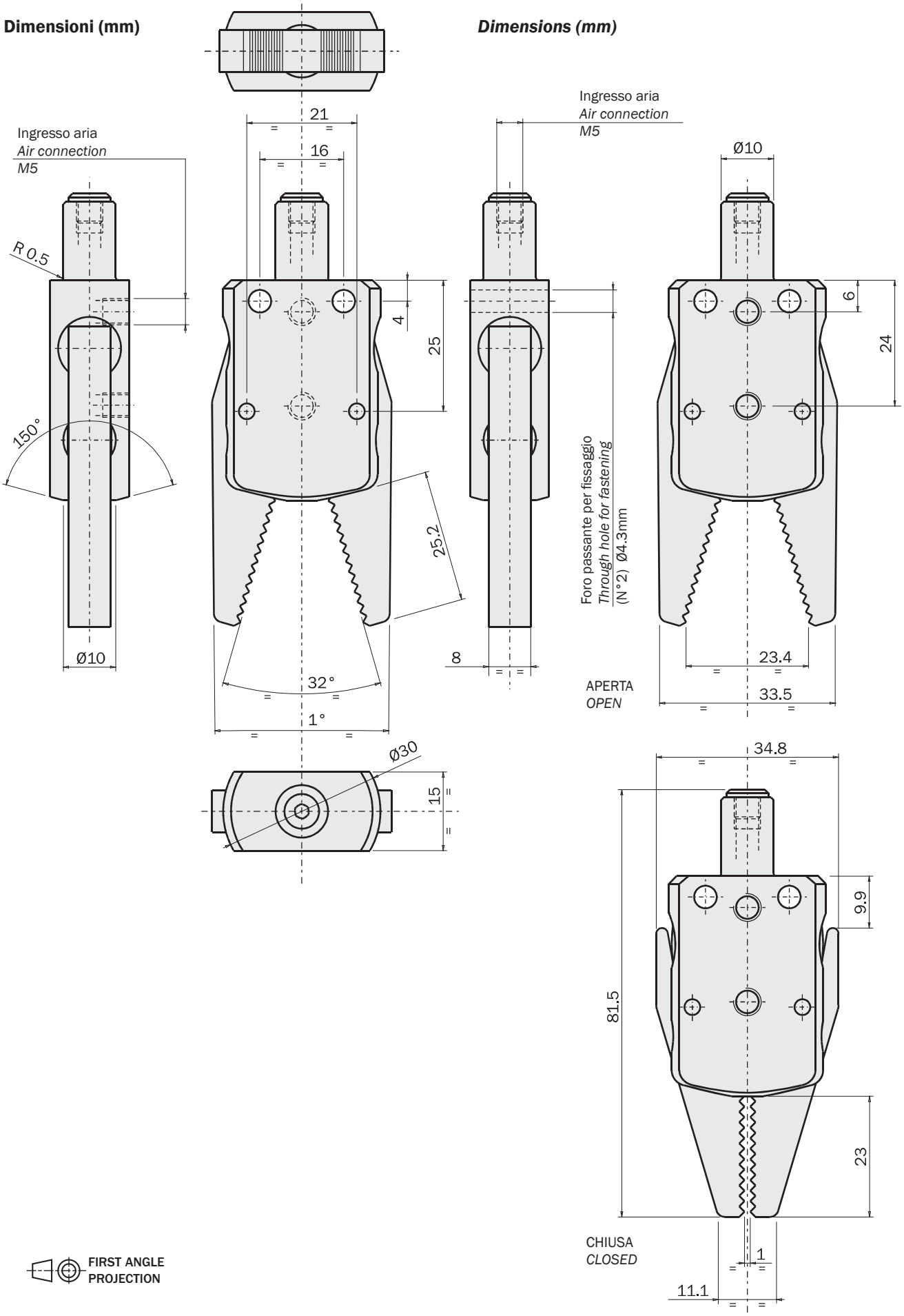
- Alesaggio: 12mm.
- A doppio effetto con molla in apertura.

PB-0015

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

Dimensioni (mm)

Dimensions (mm)



FIRST ANGLE PROJECTION

09/2015

PB-0017

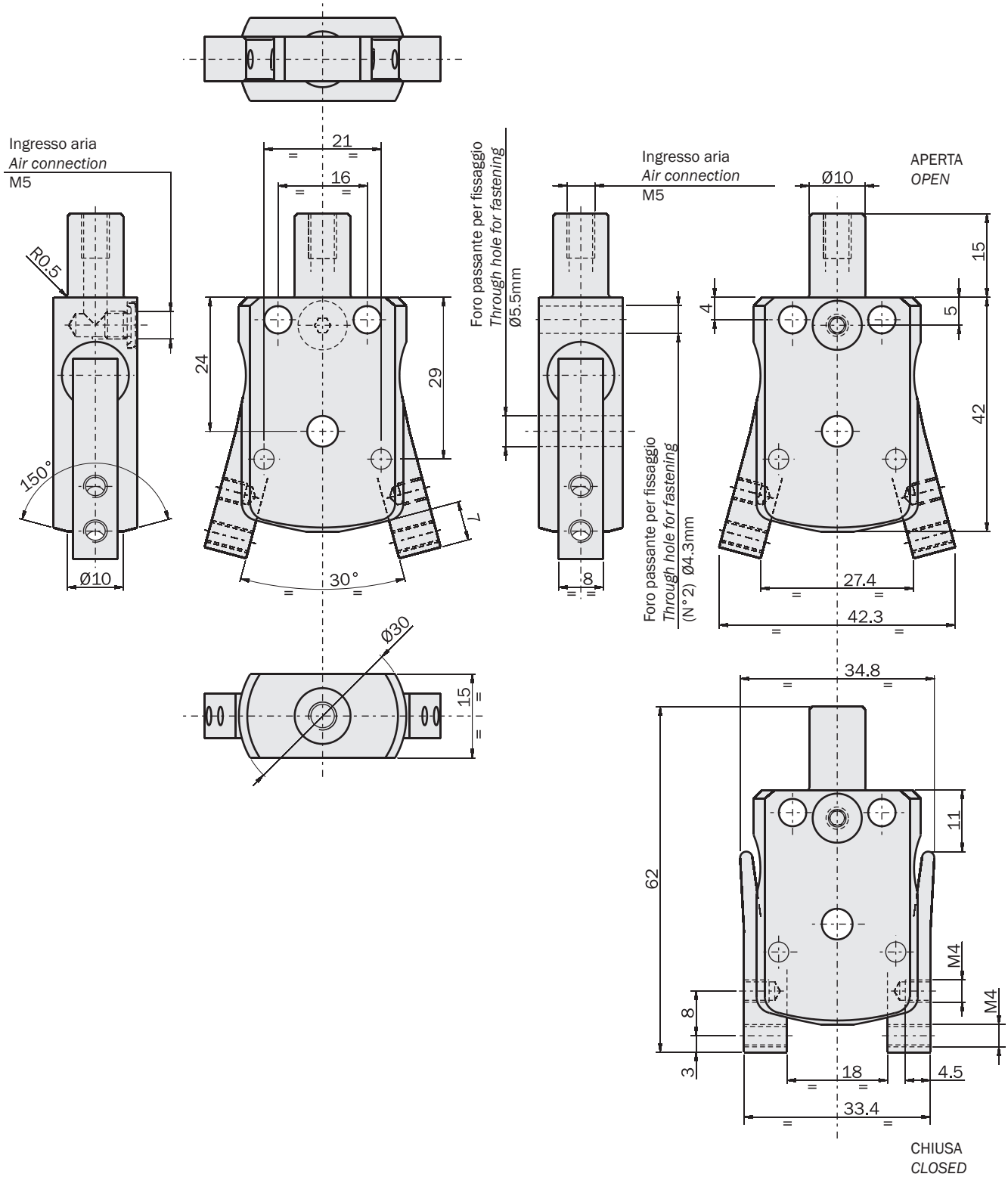
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffe personalizzabili.

PB-0017

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

Dimensioni (mm)

Dimensions (mm)



FIRST ANGLE PROJECTION

09/2015

PB-0140

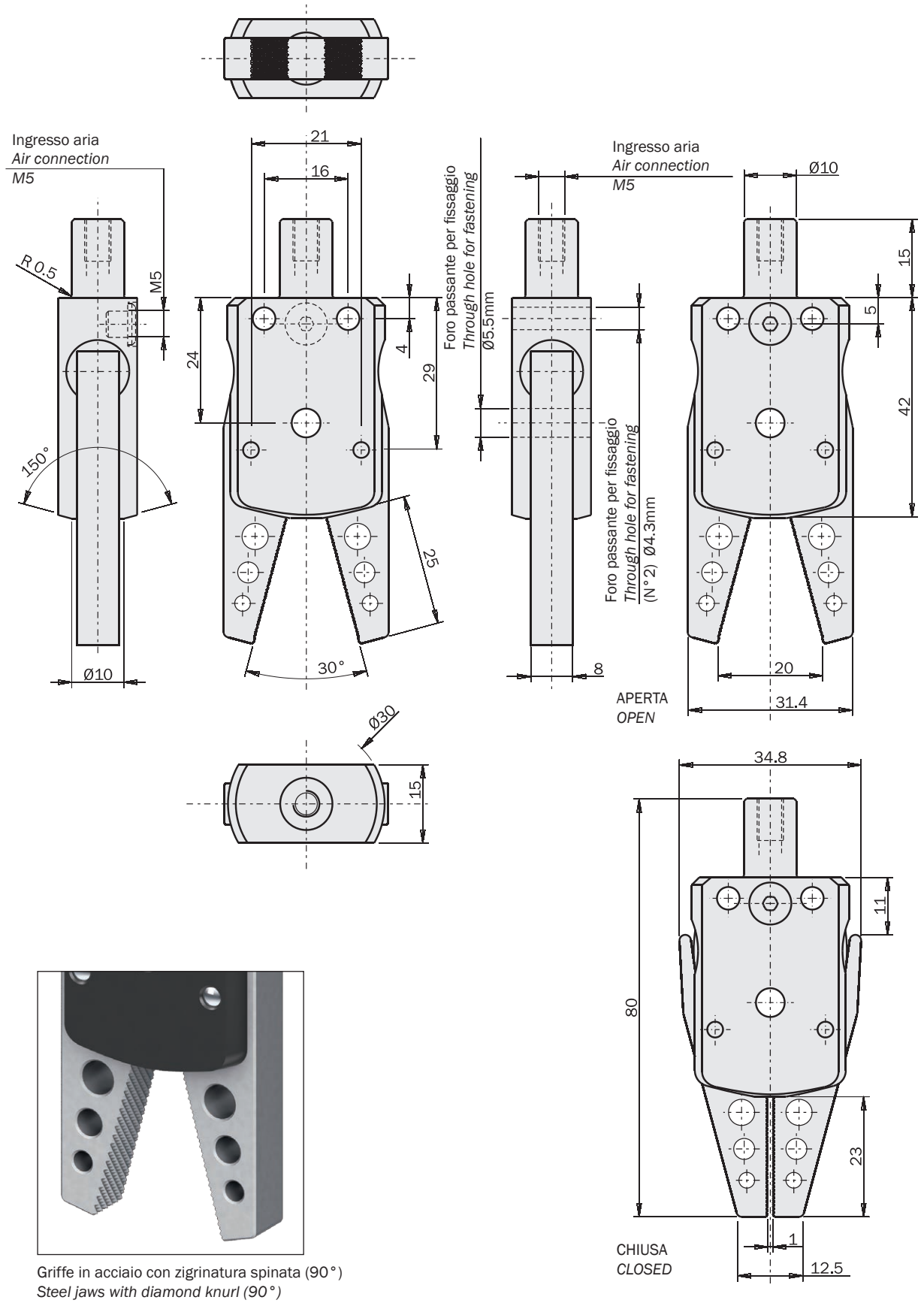
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffe in acciaio.

PB-0140

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

Dimensioni (mm)

Dimensions (mm)



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

FIRST ANGLE PROJECTION

09/2015

PB-0150

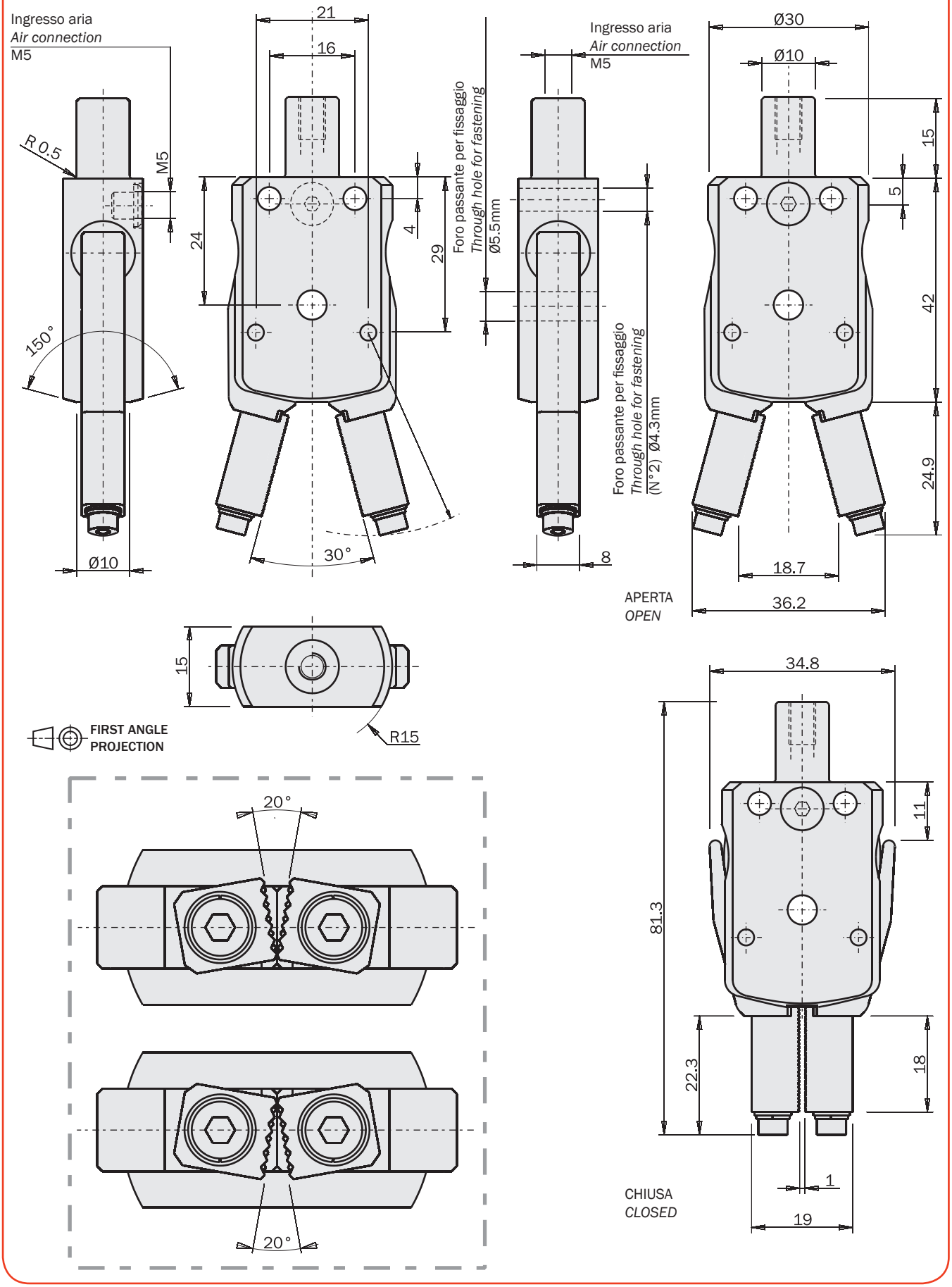
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffe oscillanti per materozze coniche.

PB-0150

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

Dimensioni (mm)

Dimensions (mm)



09/2015

PB-0160

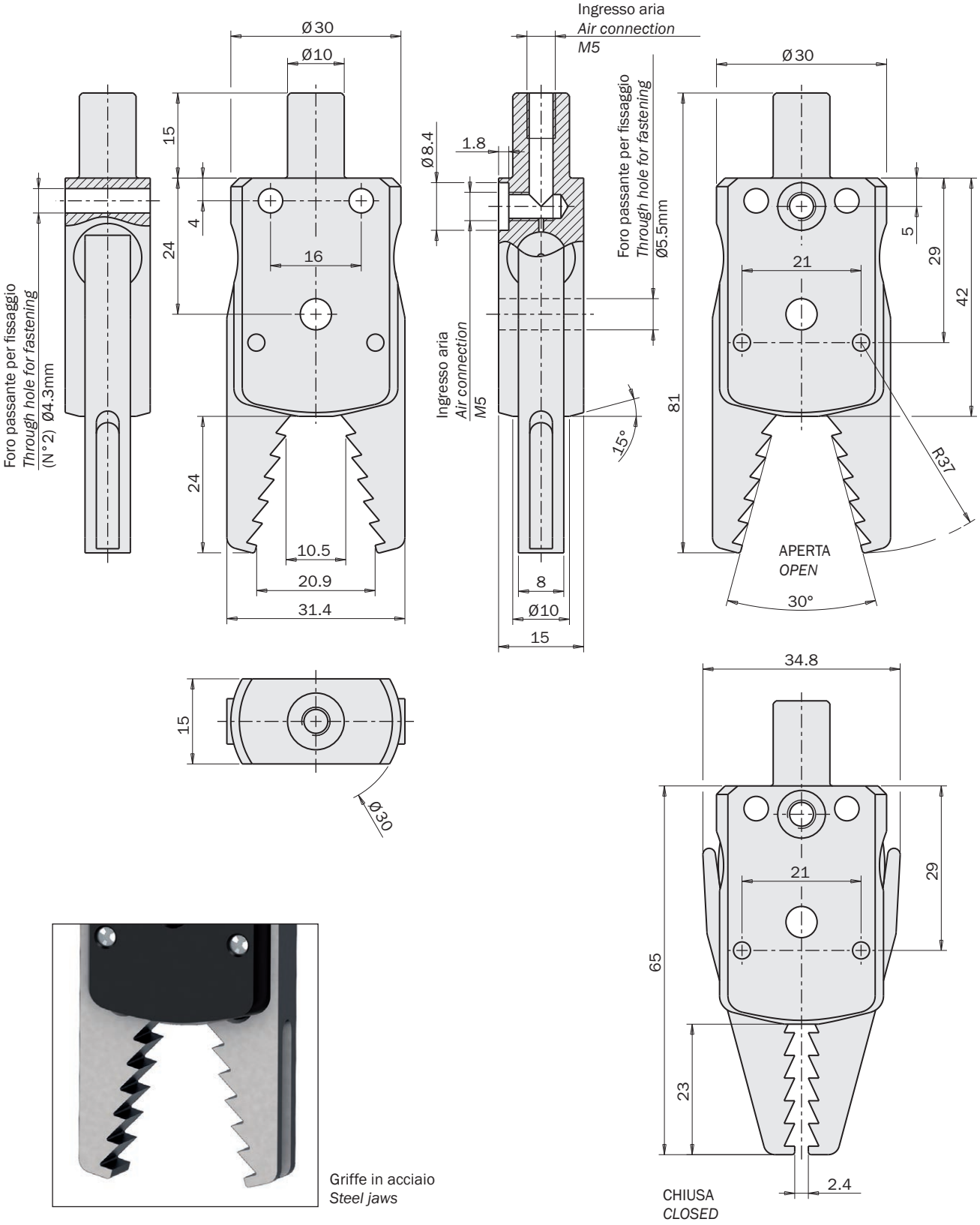
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Griffe in acciaio.

PB-0160

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

Dimensioni (mm)

Dimensions (mm)



Griffe in acciaio
Steel jaws

FIRST ANGLE PROJECTION

09/2015

PB-0170

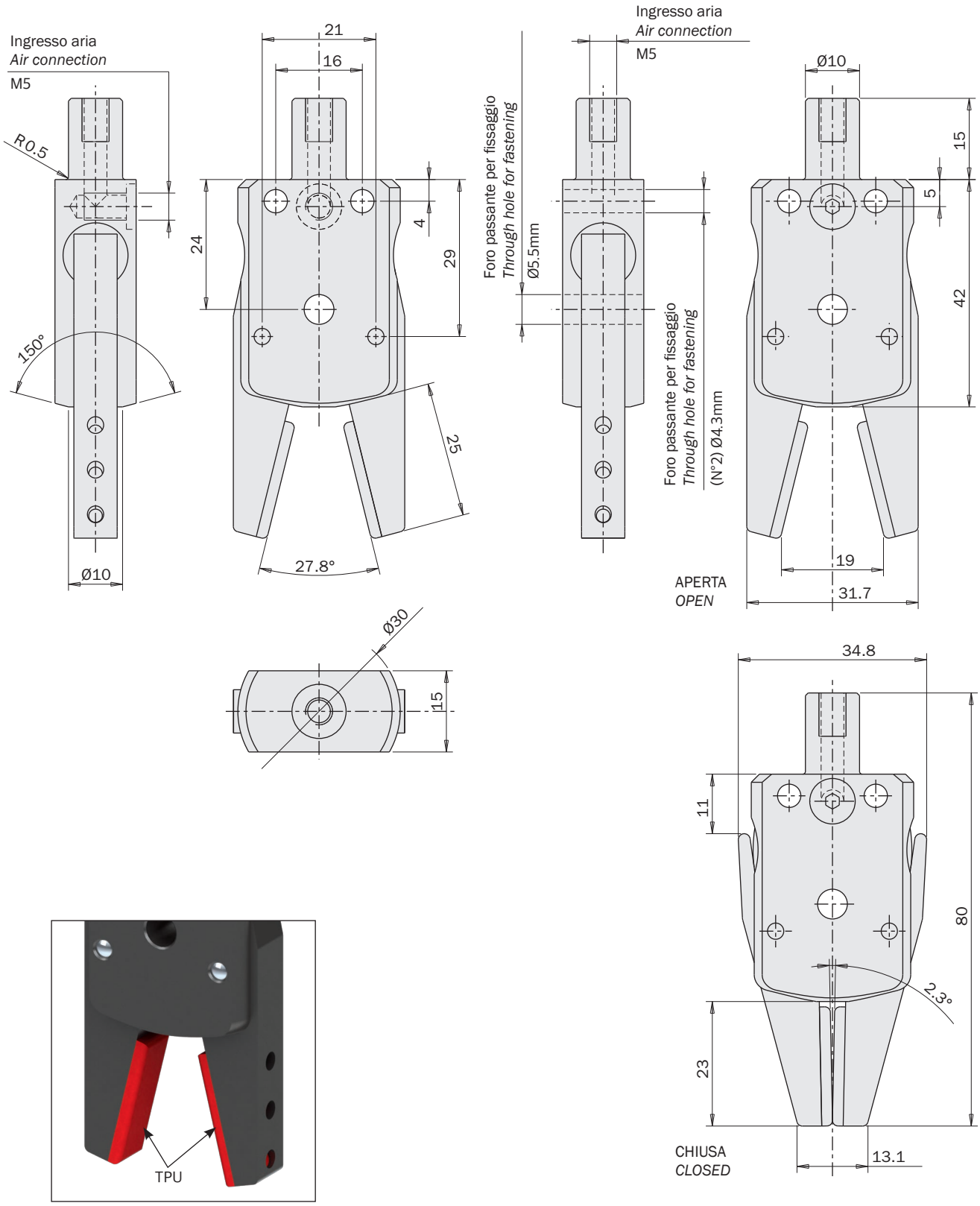
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Pastiglia in gomma (TPU) per contatto morbido.

PB-0170

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

Dimensioni (mm)

Dimensions (mm)



FIRST ANGLE PROJECTION

09/2015

PB-0180

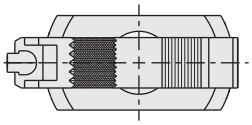
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore sulla griffa.
- Tastatore in acciaio.

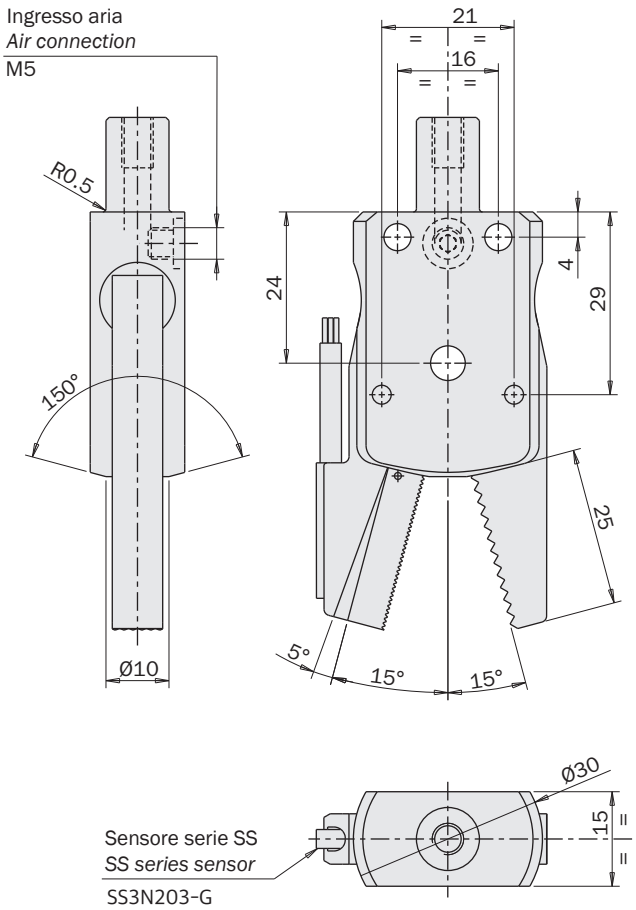
PB-0180

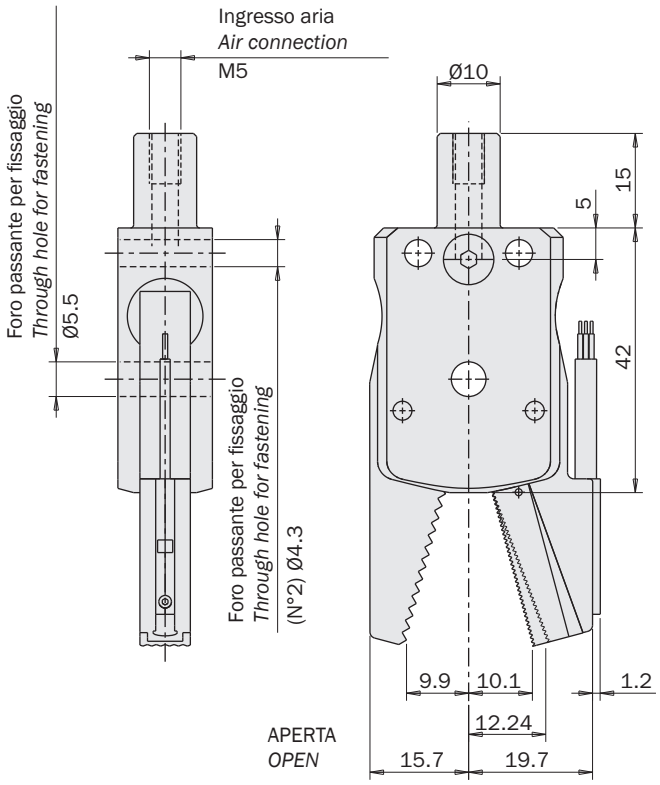
- *Piston bore: 12mm.*
- *Single-acting with opening spring.*
- *Sensor on the jaw.*
- *Steel probe.*

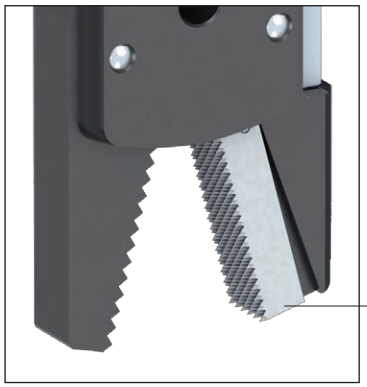
Dimensioni (mm)

Dimensions (mm)

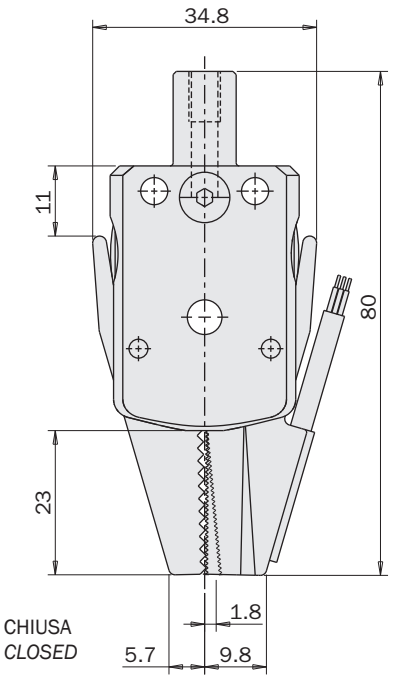








Tastatore in acciaio
Steel probe



FIRST ANGLE PROJECTION

09/2015

PB-0181

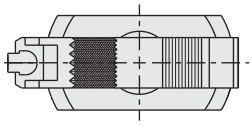
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore sulla griffa.
- Griffa e tastatore in acciaio.

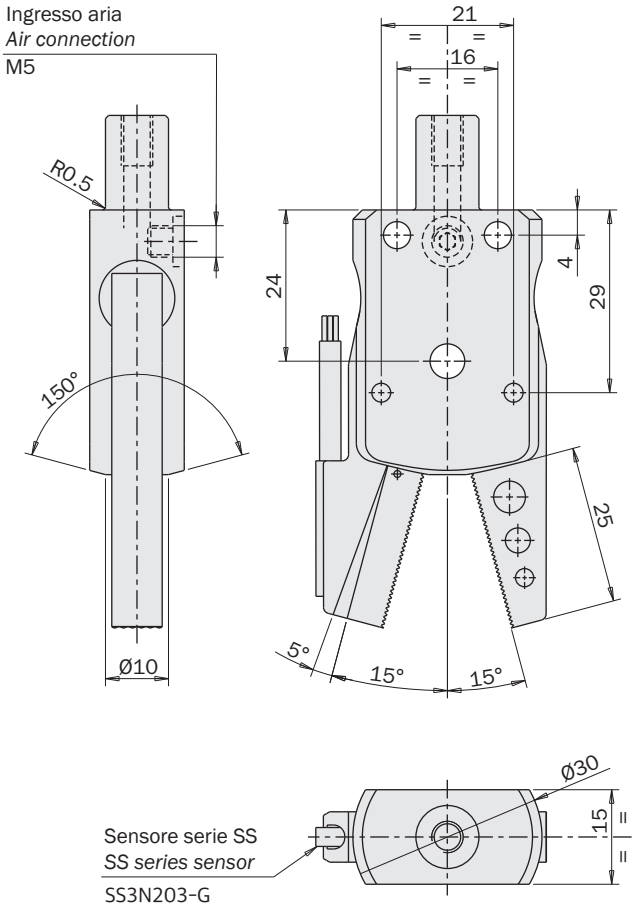
PB-0181

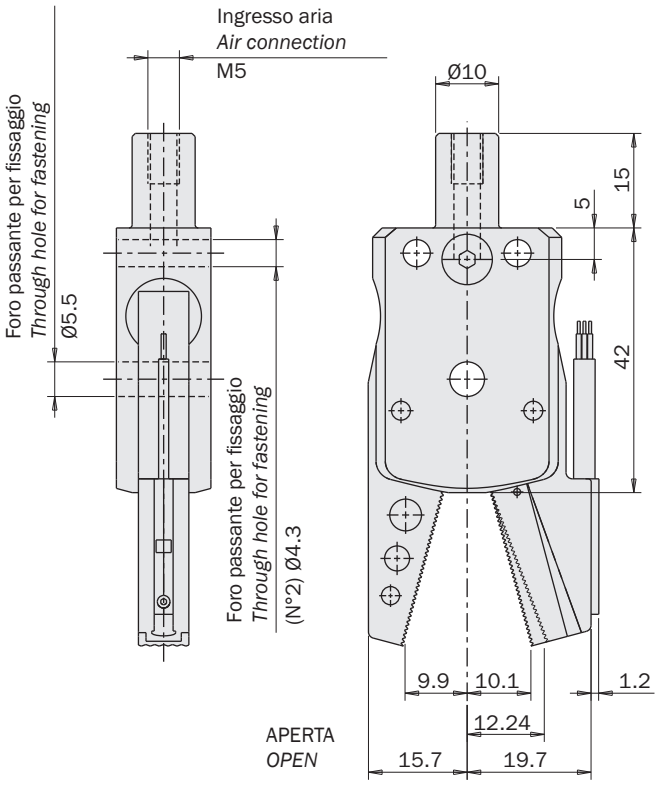
- *Piston bore: 12mm.*
- *Single-acting with opening spring.*
- *Sensor on the jaw.*
- *Steel jaw and probe.*

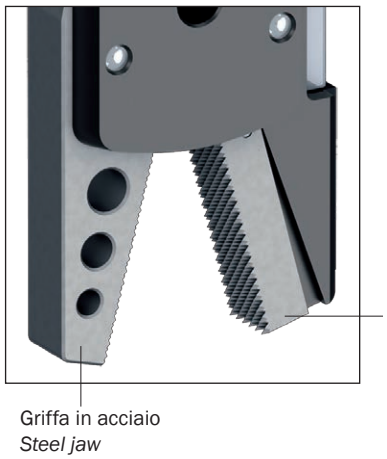
Dimensioni (mm)

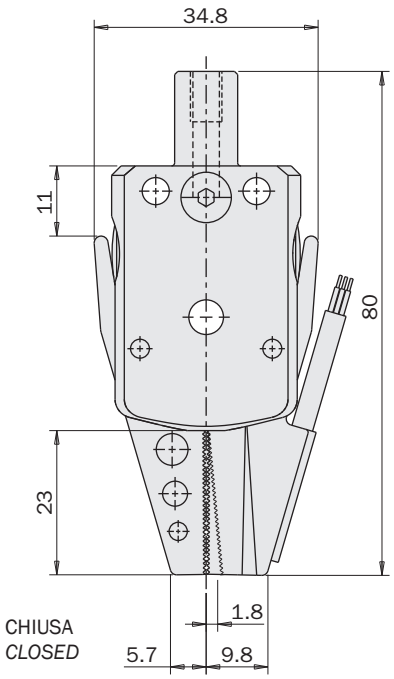
Dimensions (mm)











FIRST ANGLE PROJECTION

09/2015

PB-0182

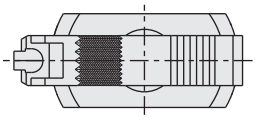
- Alesaggio: 12mm.
- A semplice effetto con molla in apertura.
- Sensore sulla griffa.
- Griffa e tastatore in acciaio.

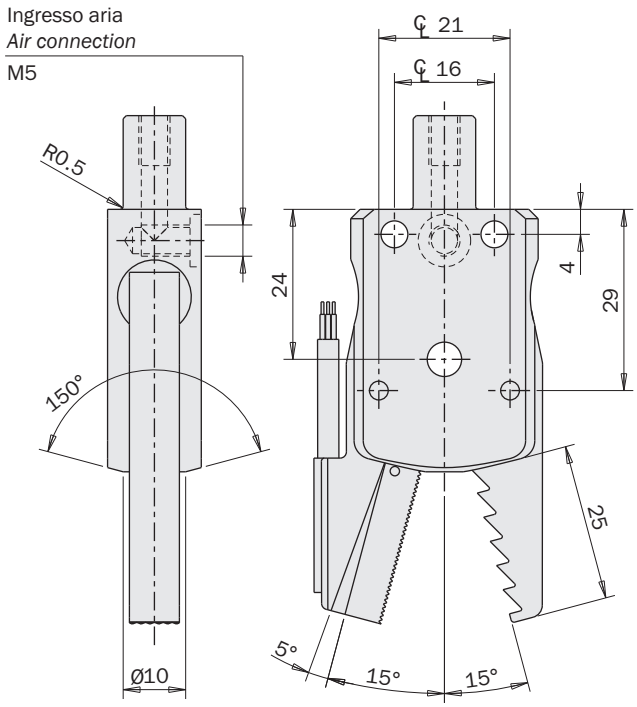
PB-0182

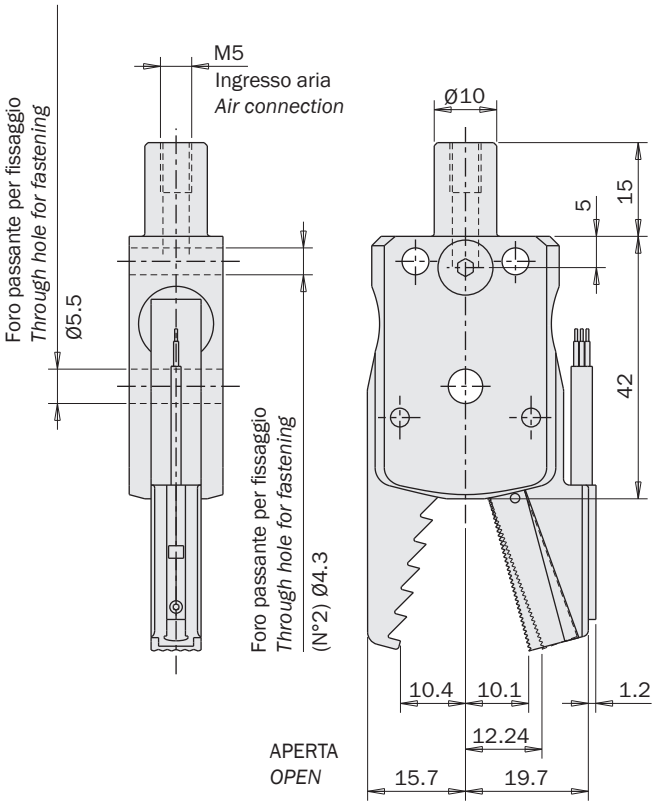
- *Piston bore: 12mm.*
- *Single-acting with opening spring.*
- *Sensor on the jaw.*
- *Steel jaw and probe.*

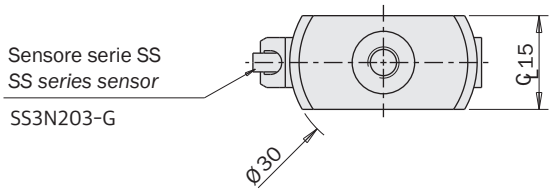
Dimensioni (mm)

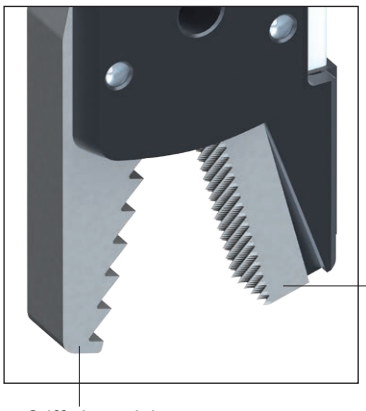
Dimensions (mm)





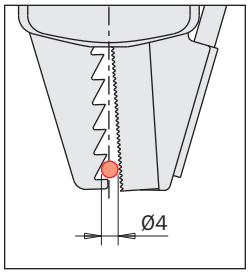


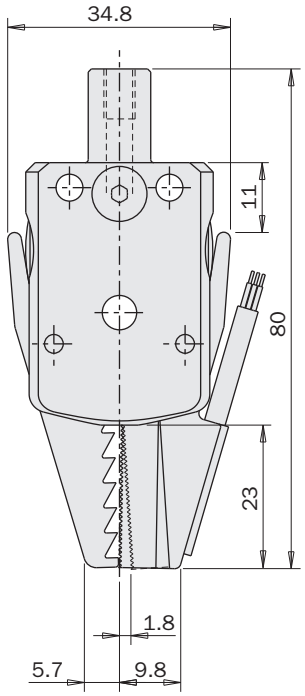




Tastatore in acciaio
Steel probe

Griffa in acciaio
Steel jaw





FIRST ANGLE PROJECTION

09/2015

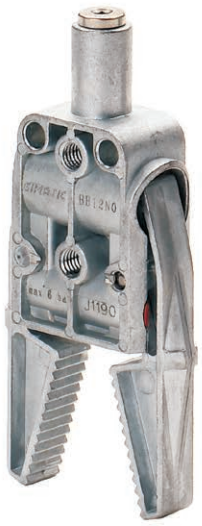
Pinza pneumatica per materozze, angolare non autocentrante a due griffe serie BB

- 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.

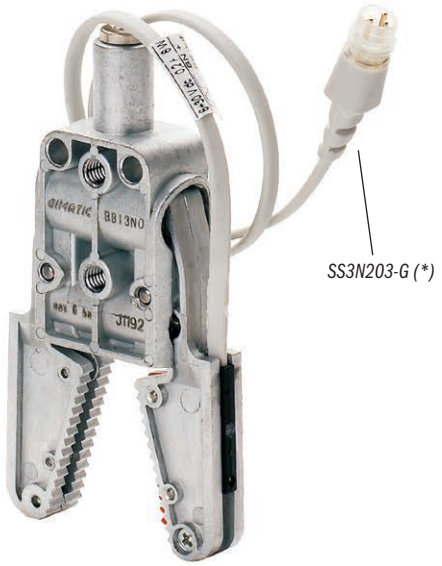
2-jaw non-selfcentering angular pneumatic sprue gripper series BB

- *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.*

BB-12-00



BB-12-NO



BB-13-NO

(*)
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 (±2°) *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^3	1.1 cm^3	1.1 cm^3
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

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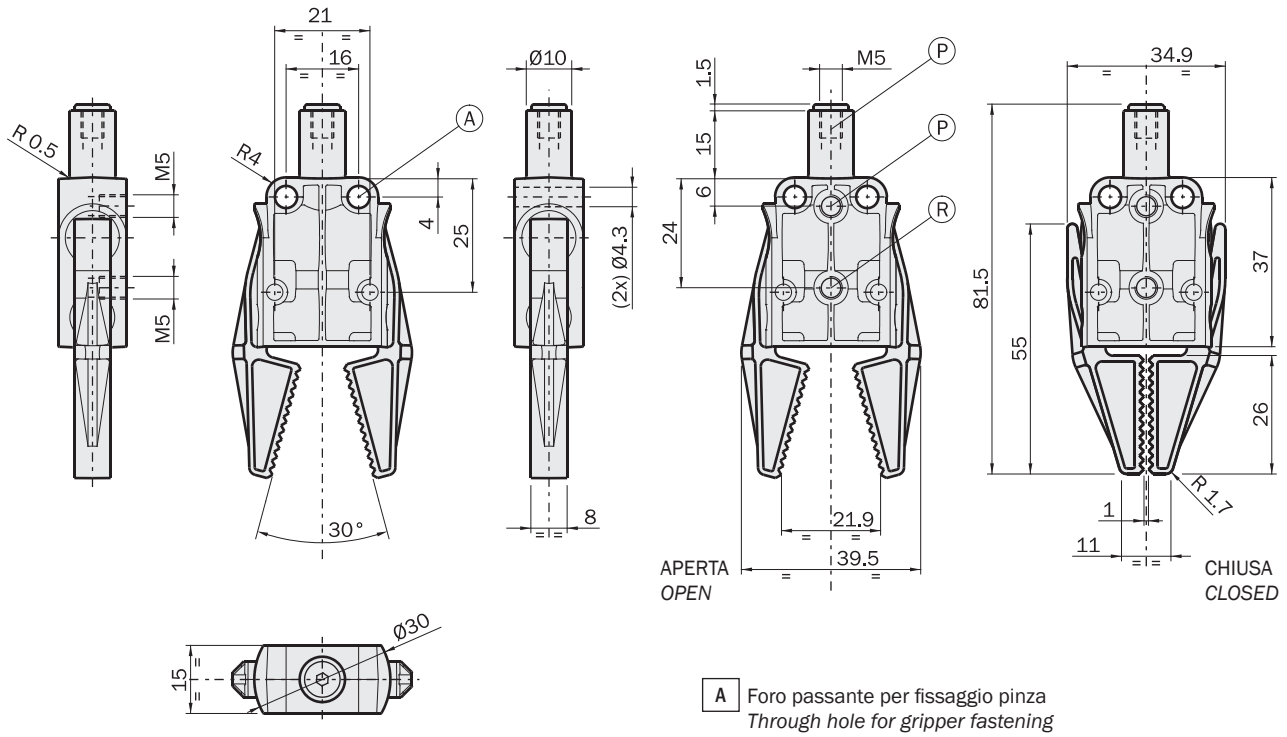
Dimensioni (mm) / *Dimensions (mm)*

BB-12-00
BB-12-N0



A Foro passante per fissaggio pinza
Through hole for gripper fastening

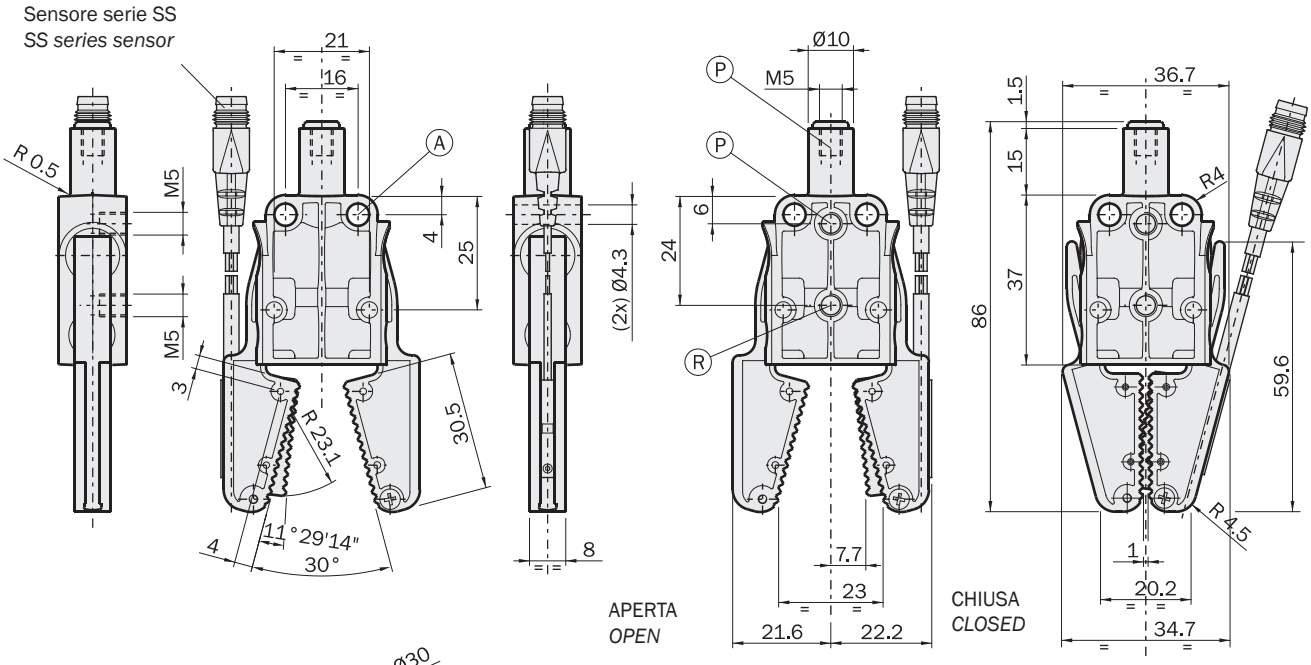
P Aria compressa in P: chiusura della pinza
Compressed air in P: gripper closing

R Aria compressa in R: apertura della pinza
Compressed air in R: gripper opening

FIRST ANGLE PROJECTION

Dimensioni (mm) / *Dimensions (mm)*

BB-13-N0



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

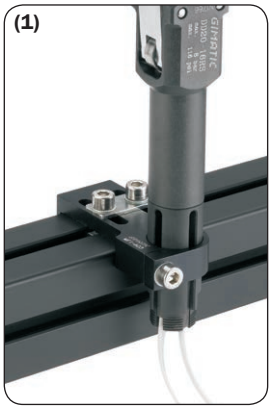
FIRST ANGLE PROJECTION

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

- Azionamento a semplice effetto con apertura a molla.
- Elevata forza di serraggio.
- Vari accessori disponibili per il fissaggio (1).
- Sensori magnetici opzionali (2).
- Griffe in acciaio.

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

- *Single acting with spring opening.*
- *Very high closing force.*
- *Several mounting accessories (1).*
- *Optional magnetic sensors (2).*
- *Steel jaws.*



DD20-16K DD20-16E DD20-16A DD20-16R DD20-16P DD20-16M DD20-16W

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

	DD20-16R DD20-16RS	DD20-16P DD20-16PS	DD20-16E DD20-16ES	DD20-16K DD20-16KS	DD20-16A DD20-16AS	DD20-16M	DD20-16W
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 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^3						
Tempo di chiusura senza carico *Closing time without load*	0.01 s						
Peso *Weight*	165 g 190 g	160 g 195 g	165 g 200 g	170 g 200 g	135 g 175 g	165 g	170 g

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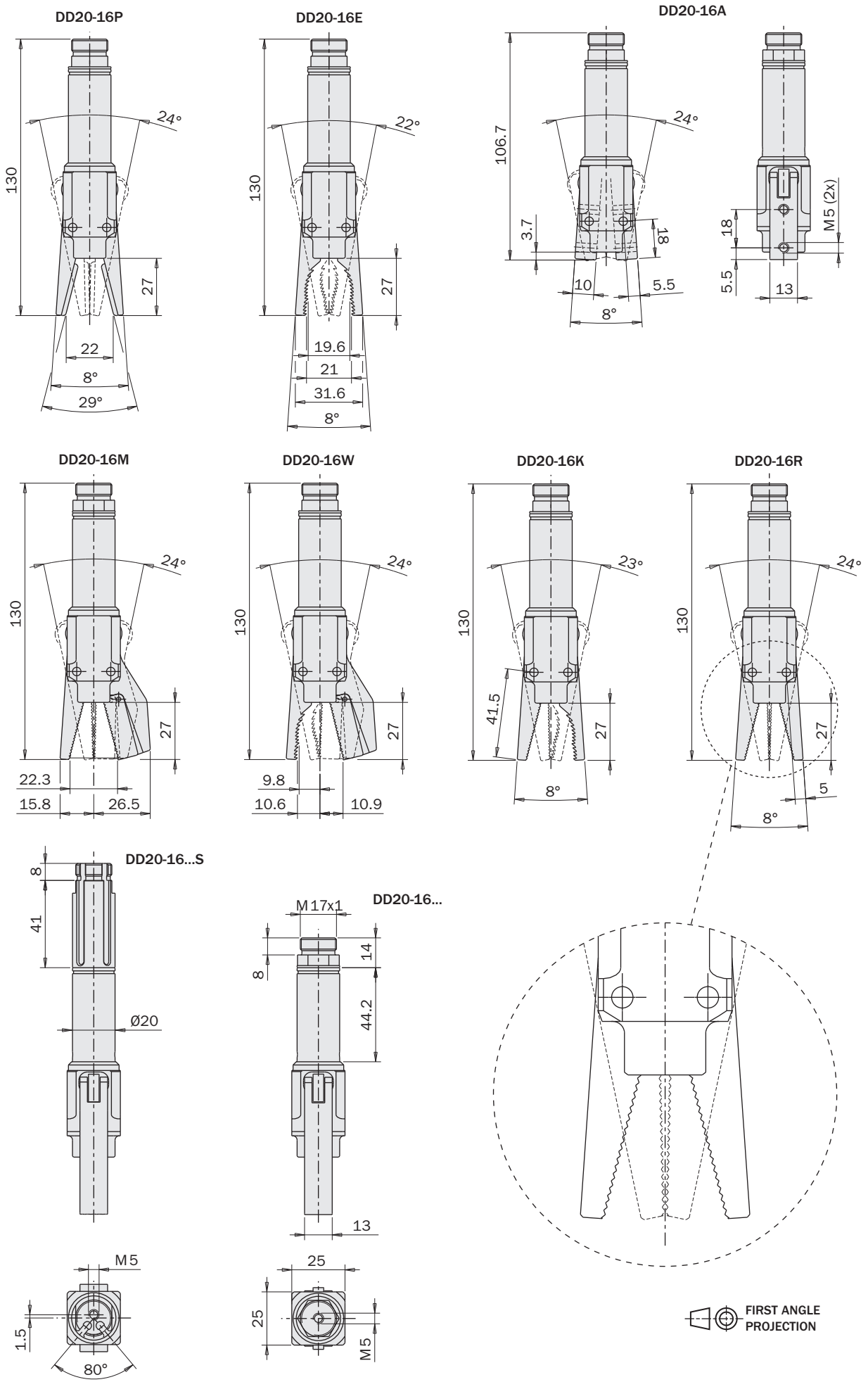
Dimensioni (mm) / *Dimensions (mm)*



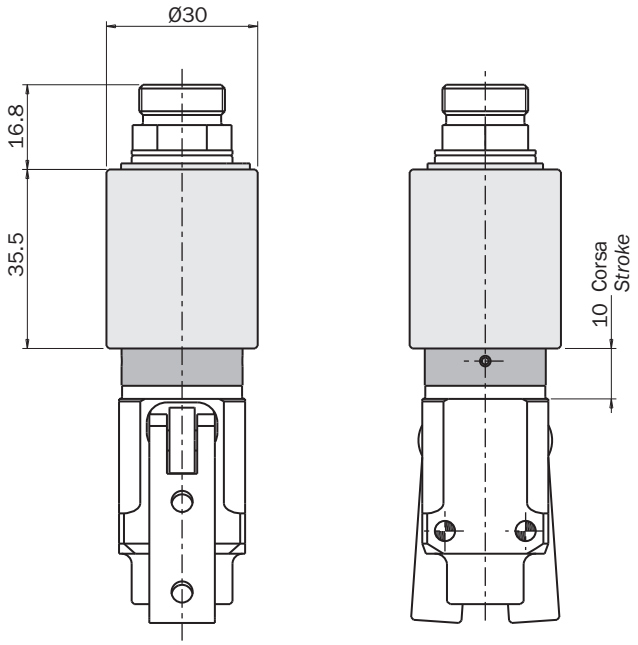
09/2015

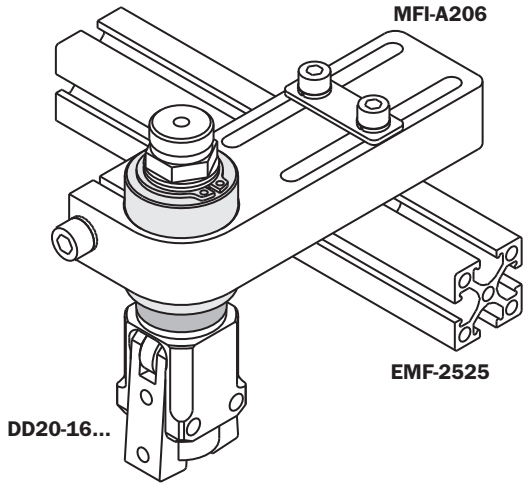
Sospensione

Con gli accessori DD20-K1 e TFA20SP10, è possibile montare la pinza su una sospensione di corsa 10mm.

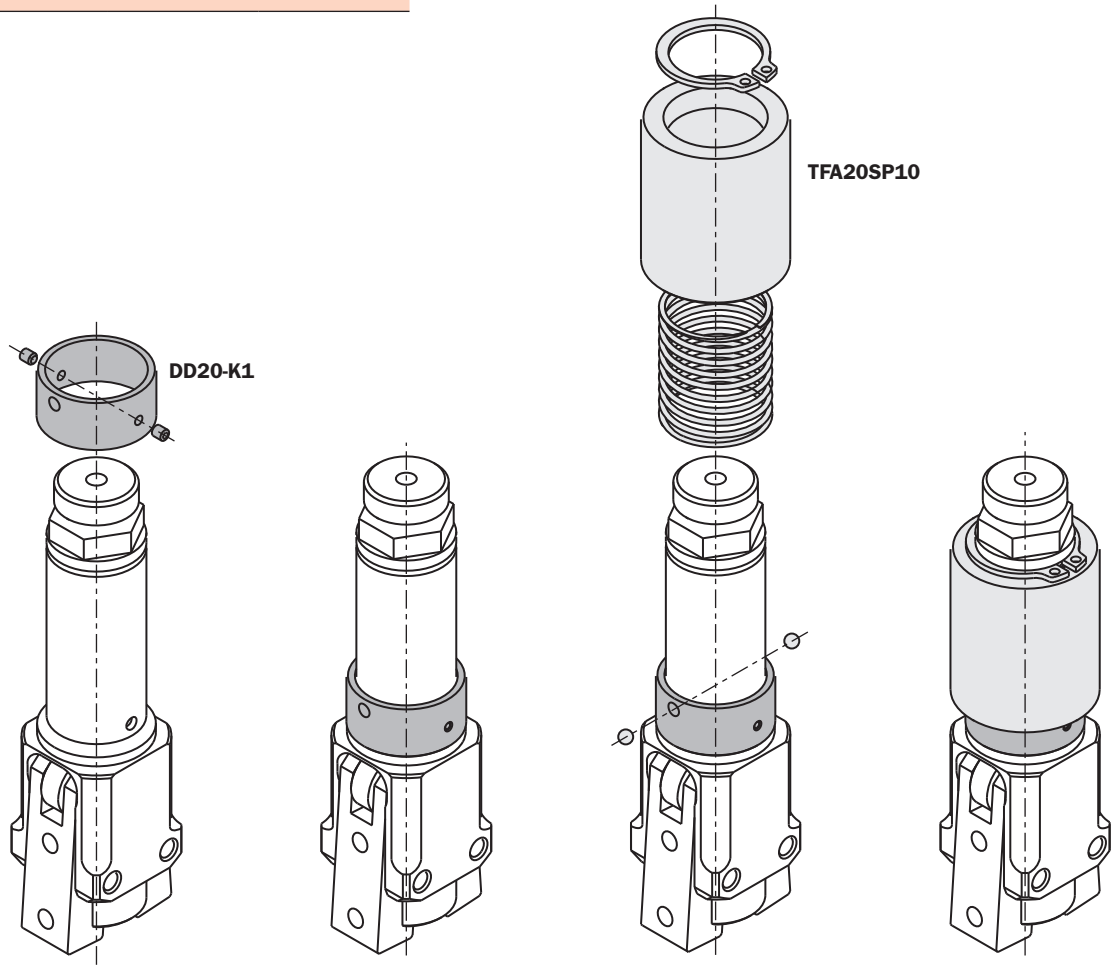
Suspension

By the accessories DD20-K1 and TFA20SP10, it is possible to mount the gripper on a 10mm stroke suspension.





	DD20-K1	TFA20SP10
Peso / *Weight*	5 g	85 g



Note / *Notes*

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).

2-jaw parallel-acting self-centering pneumatic gripper series GS

- *Double acting.*
- *Exclusive backlash adjusting system.*
- *Long life and reliability, maintenance free.*
- *Different options for fastening.*
- *Optional proximity magnetic sensors.*
- *Spring closed (-NC) or spring open (-NO) option.*

GS-10 GS-16 GS-20 GS-25 GS-32 GS-40

	GS-10	GS-16	GS-20	GS-25	GS-32	GS-40
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*					
Pressione di esercizio *Pressure range*	2.5 ÷ 8 bar	1.5 ÷ 8 bar			1 ÷ 8 bar	
Temperatura di esercizio *Temperature range*	5° ÷ 60°C.					
Forza di serraggio per griffa in apertura a 6 bar *Opening gripping force at 6 bar 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 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 (±0.3 mm) *Total stroke*	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^3	3 cm^3	7 cm^3	14 cm^3	28 cm^3	61 cm^3
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

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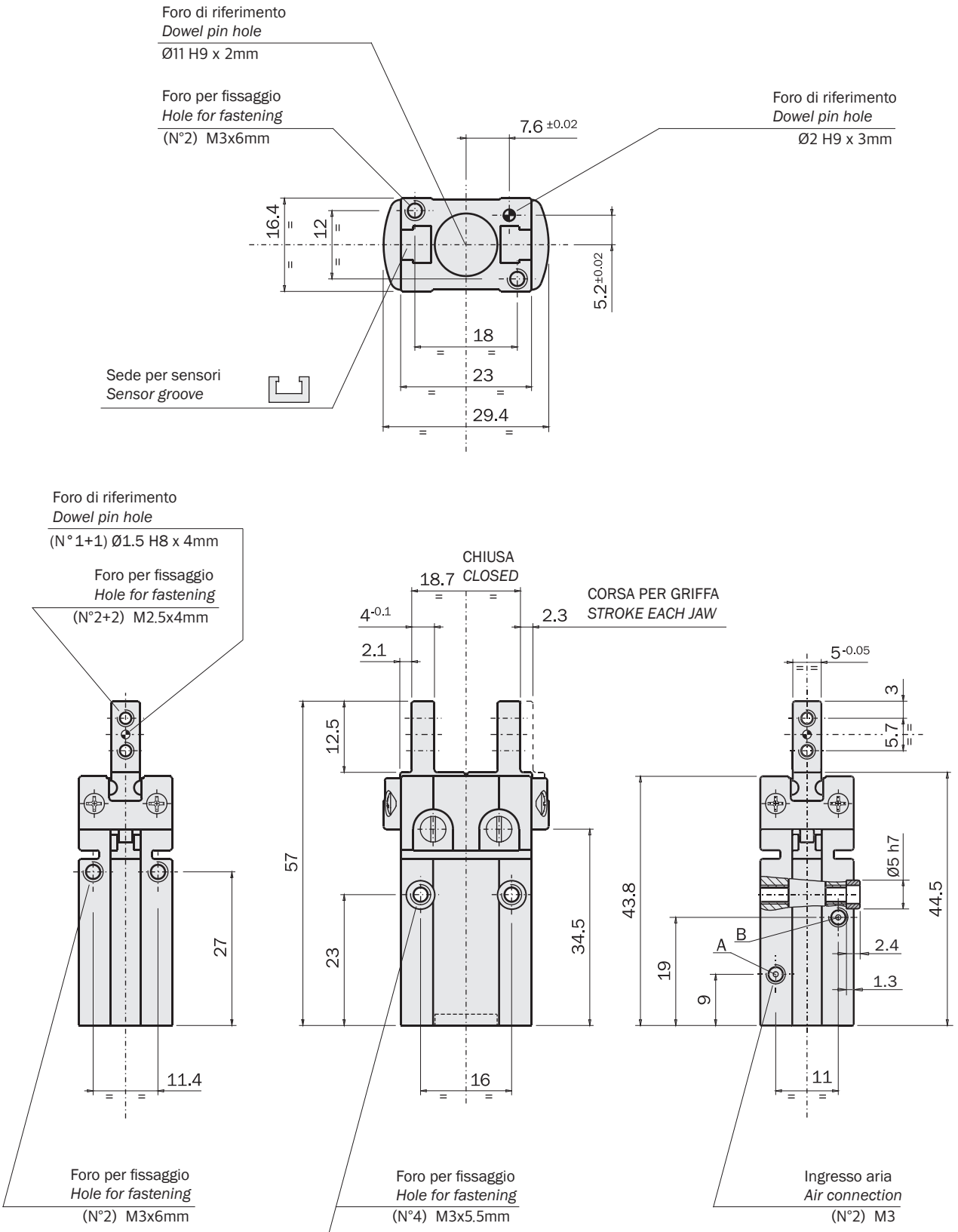
Dimensioni (mm) / *Dimensions (mm)*

GS-10



Aria compressa in A: apertura della pinza.
Aria compressa in B: chiusura della pinza.

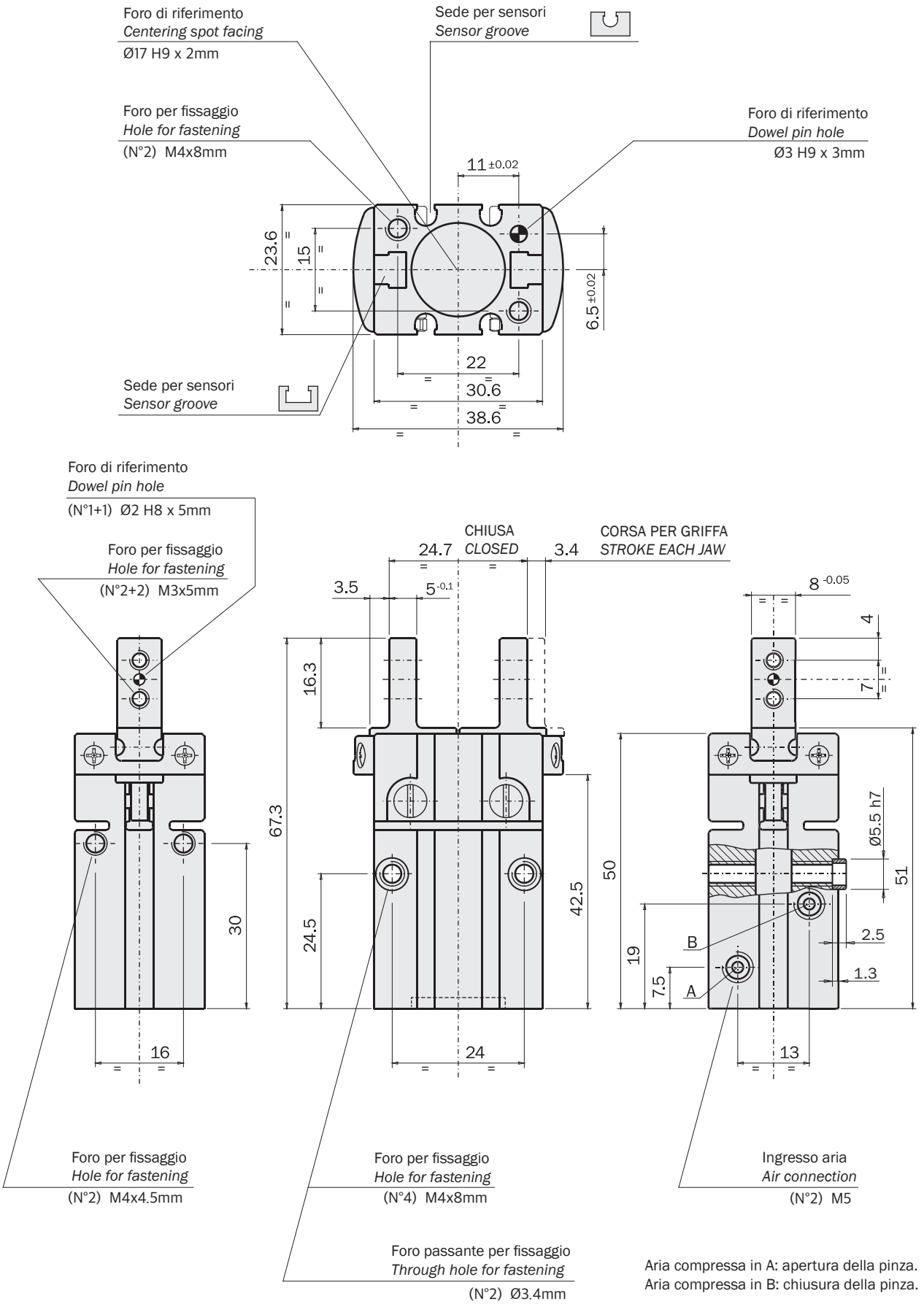
Compressed air in A: gripper opening.
Compressed air in B: gripper closing.

FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

GS-16



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.

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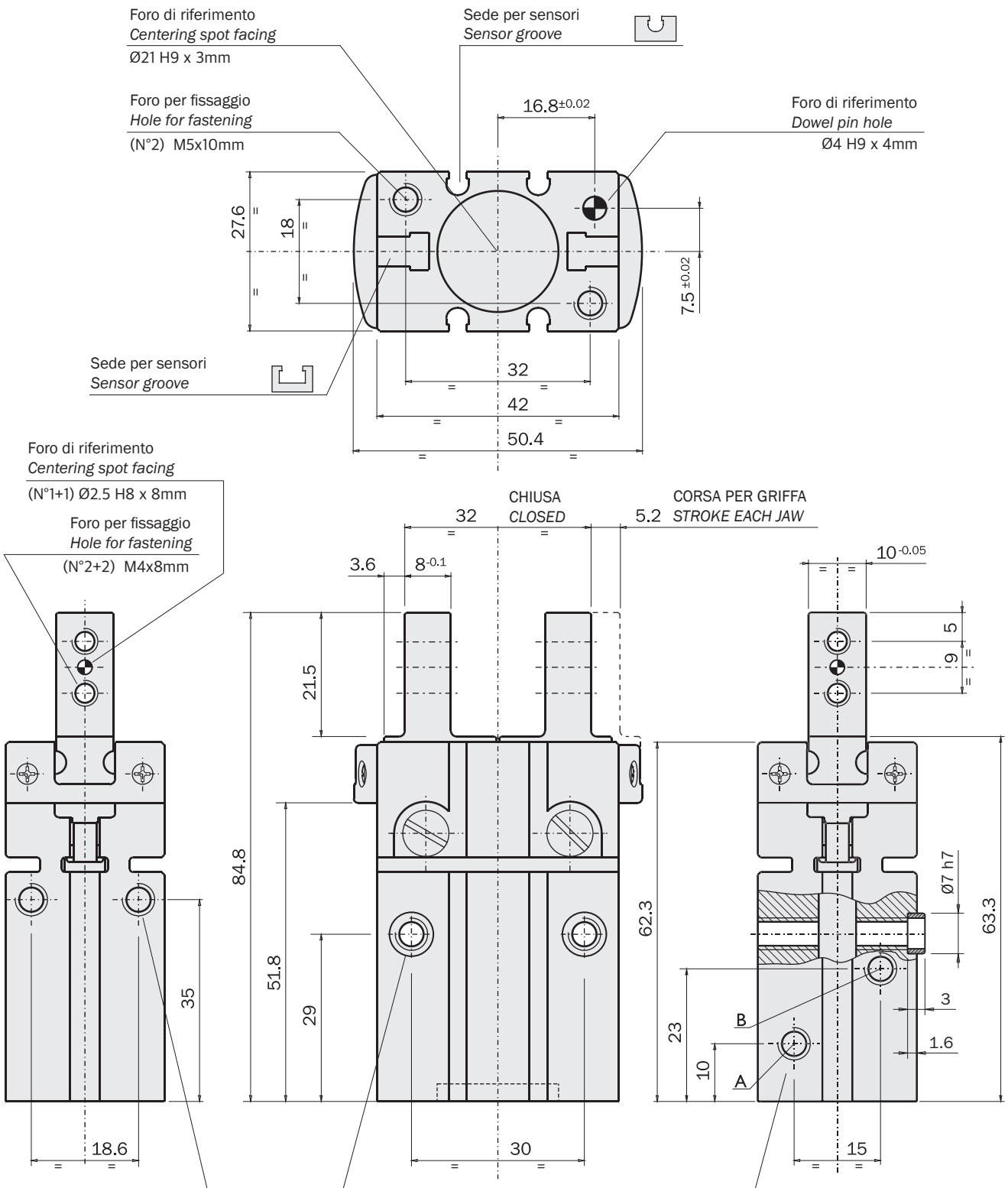
Dimensioni (mm) / *Dimensions (mm)*

GS-20



Aria compressa in A: apertura della pinza.
Aria compressa in B: chiusura della pinza.

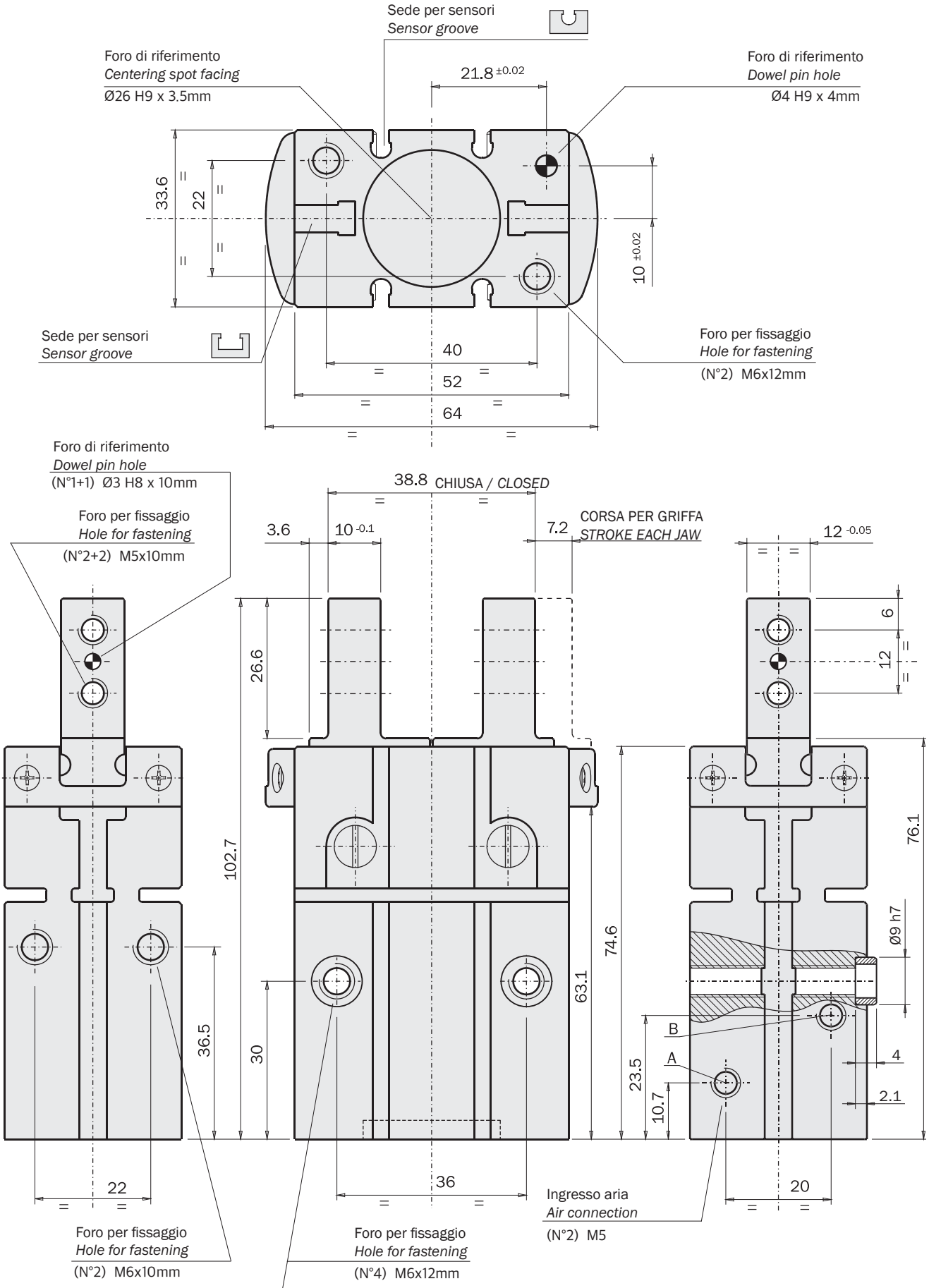
Compressed air in A: gripper opening.
Compressed air in B: gripper closing.

FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

GS-25



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.

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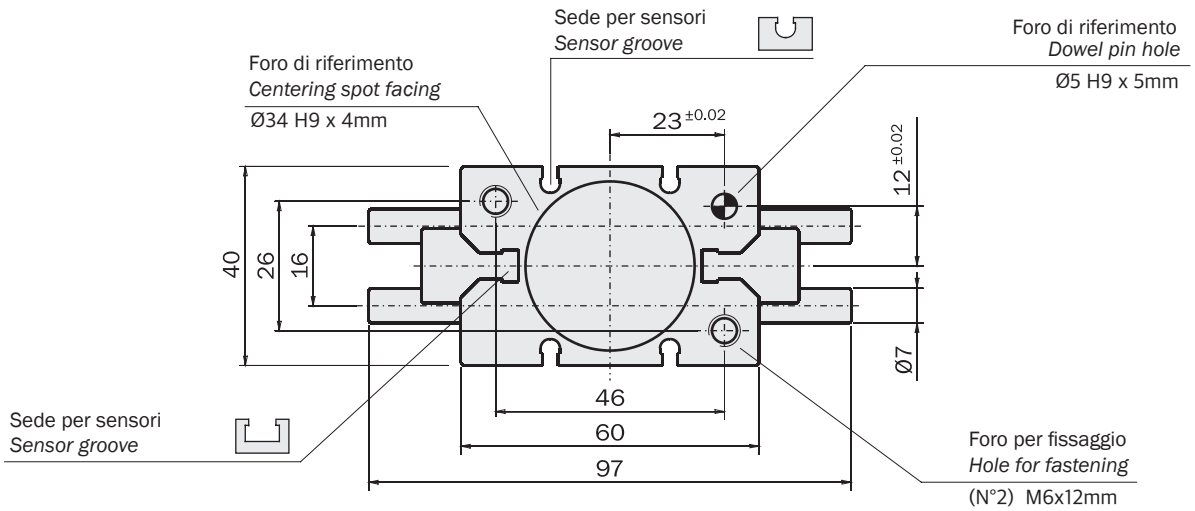
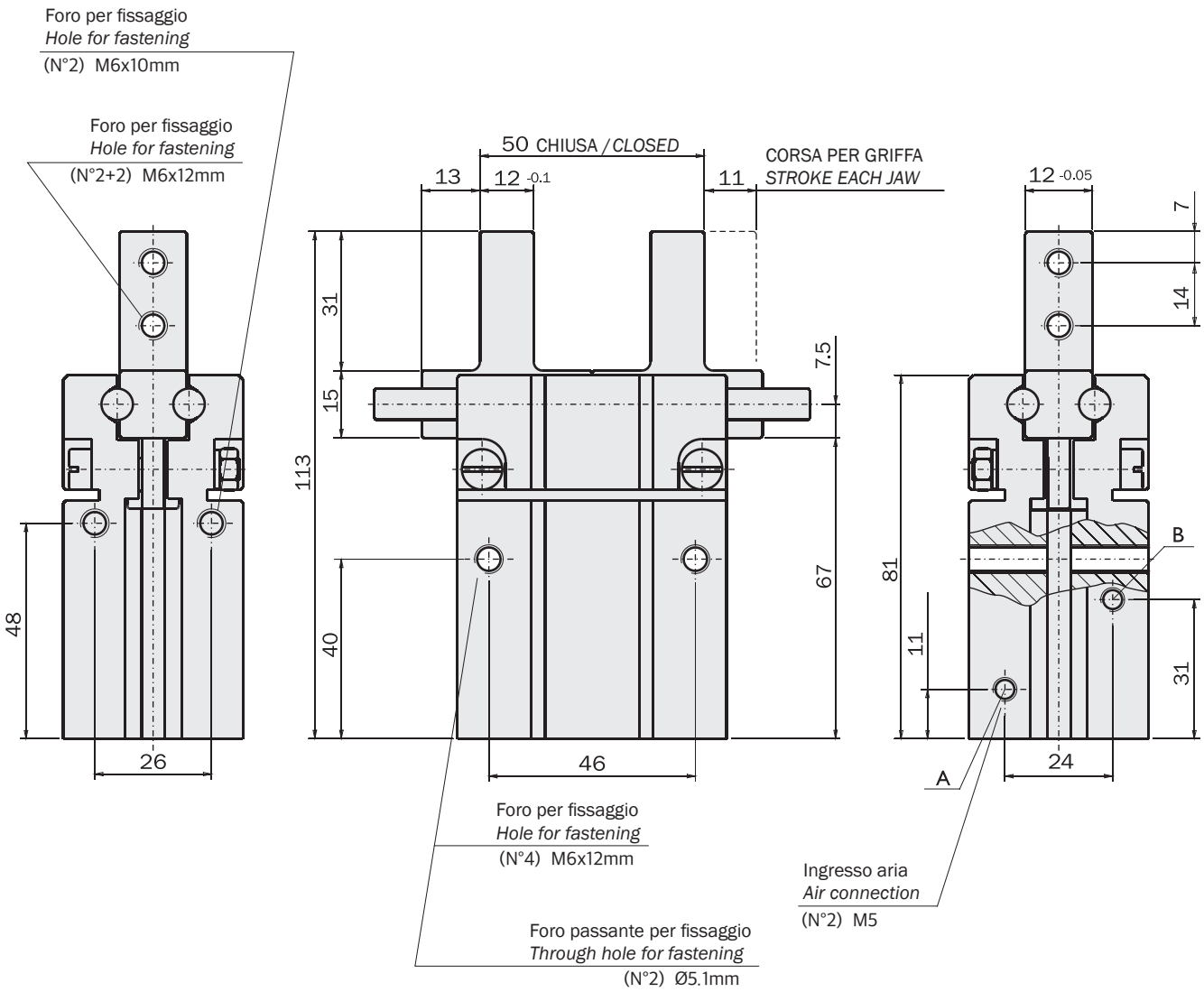
Dimensioni (mm) / *Dimensions (mm)*

GS-32





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.

FIRST ANGLE PROJECTION

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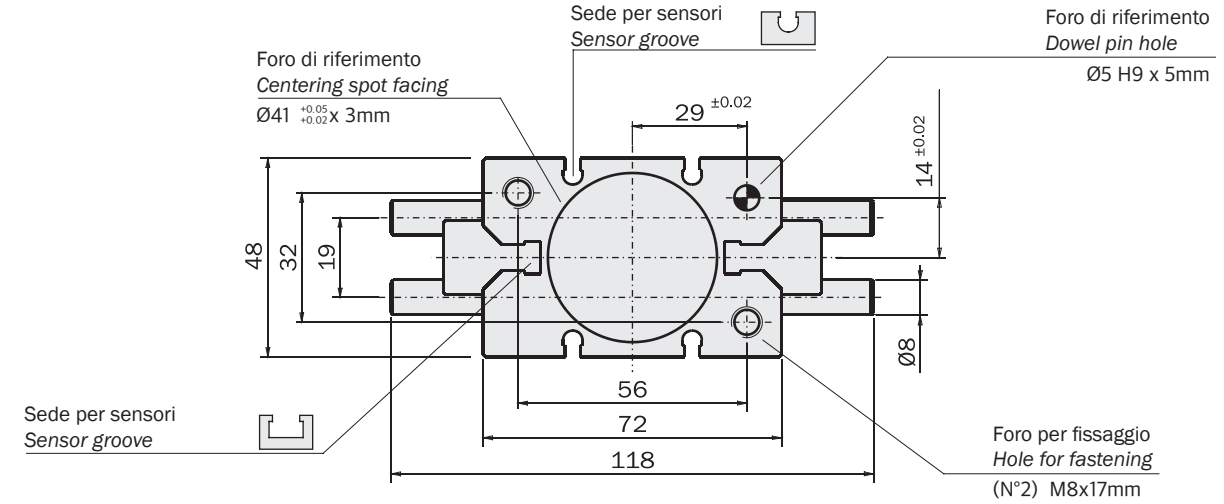
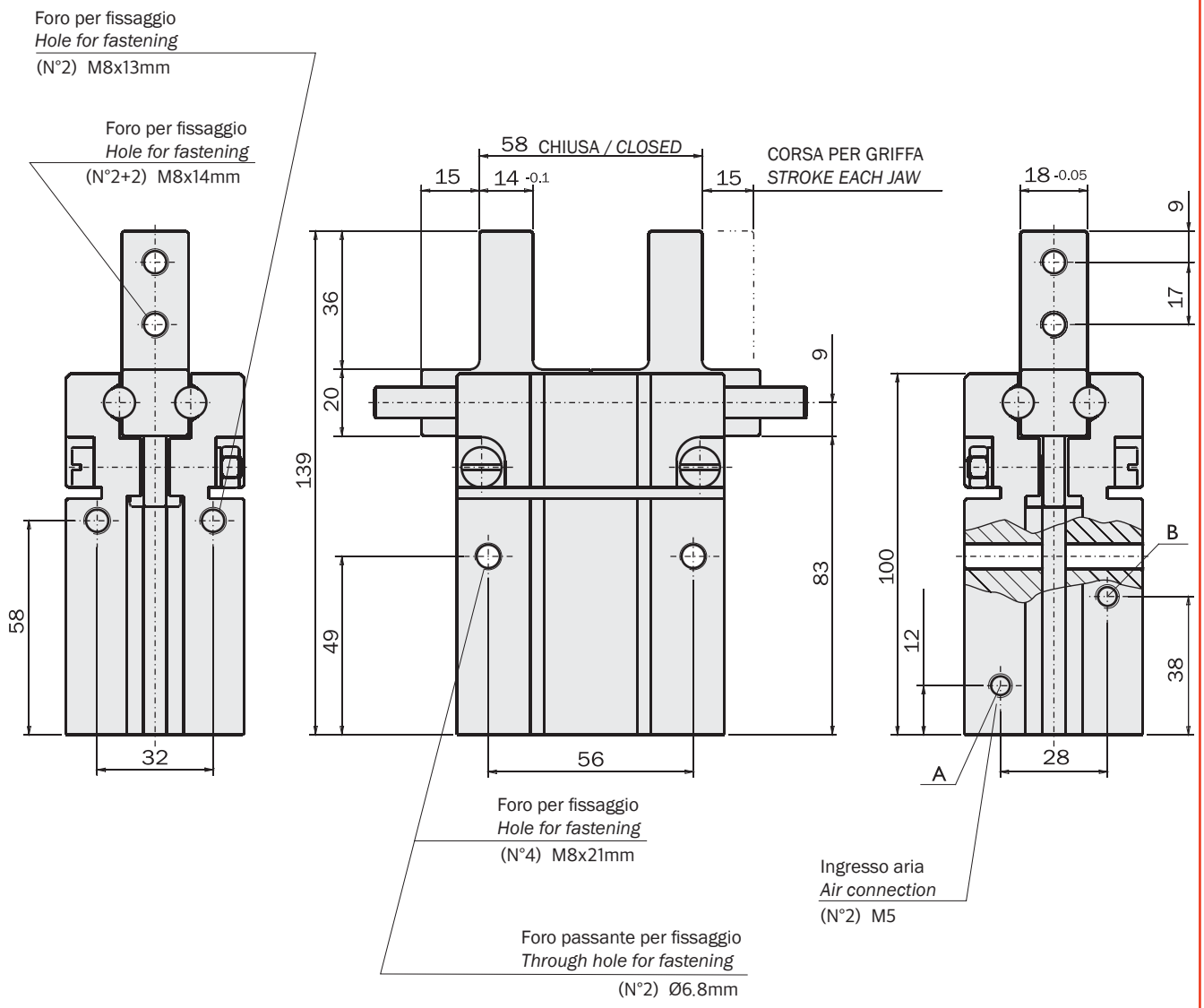
Dimensioni (mm) / *Dimensions (mm)*

GS-40





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.

FIRST ANGLE PROJECTION

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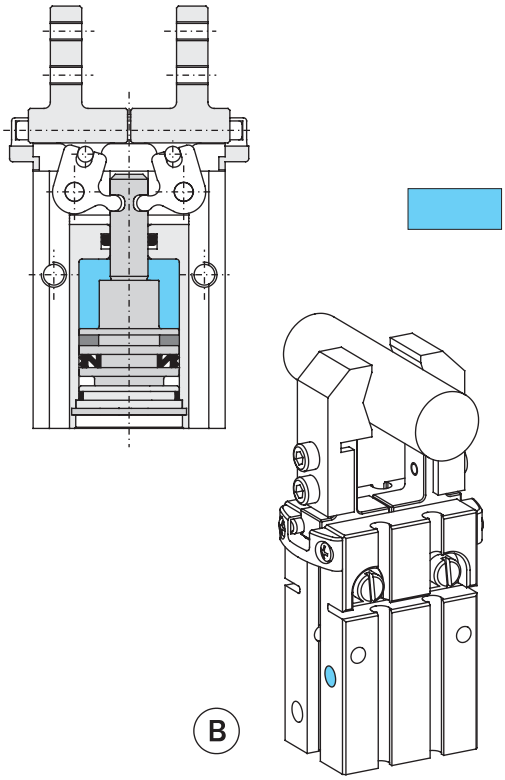
Serraggio

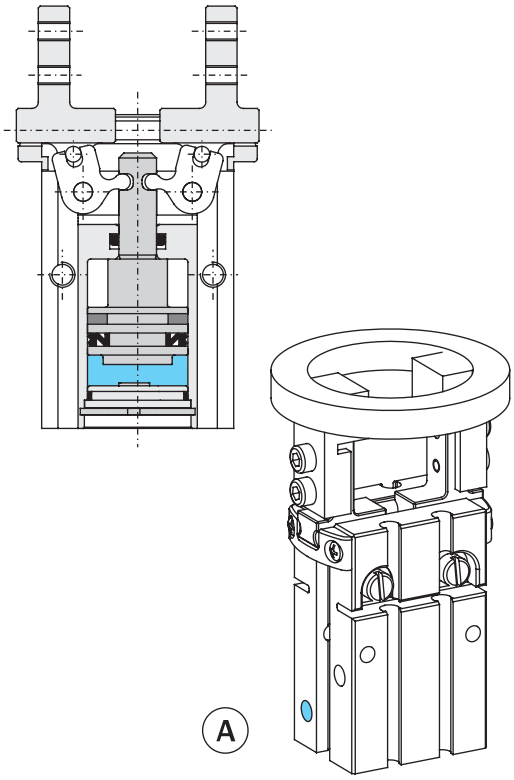
La pinza è a doppio effetto e può quindi essere usata per serrare il carico sia dall'esterno (B) che dall'interno (A).
La forza di serraggio è maggiore in apertura.

Gripping

The gripper is double-acting for either internal (A) or external (B) gripping applications.
The opening force is higher.

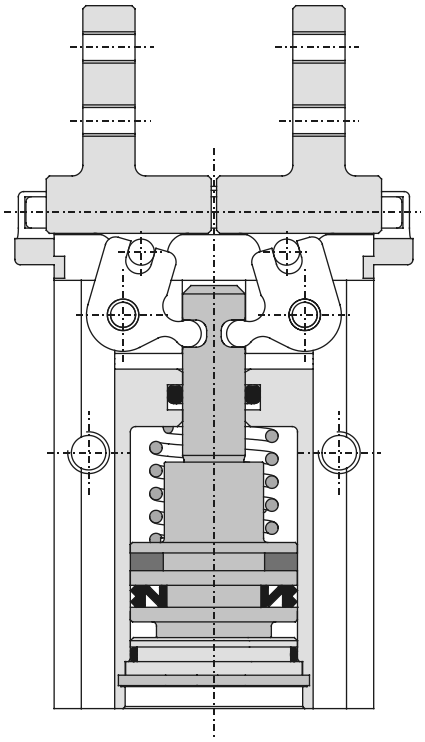


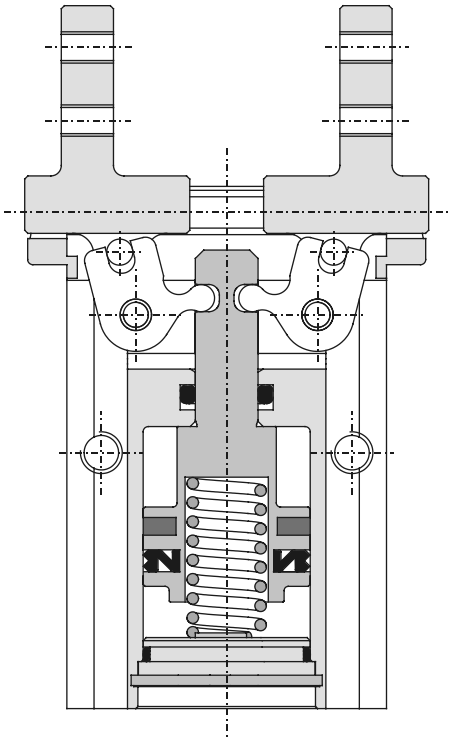
Camera in pressione
Pressurized chamber



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.





Pinza pneumatica a 2 griffe ad azione parallela autocentrante serie SGP-S

- Azionamento a doppio effetto.
- Meccanismo di regolazione del gioco esclusivo.
- Prestazioni elevate in dimensioni ridotte.
- Costruzione robusta: grande durata e affidabilità senza manutenzione.
- Diverse possibilità di fissaggio e alimentazione.
- Predisposta per sensori induttivi regolabili.

2-jaw parallel-acting self-centering pneumatic gripper series SGP-S

- *Double acting.*
- *Exclusive 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.*
- *Different options for fastening and feeding.*
- *Prepared for adjustable inductive sensors.*

SGP-20S

SGP-25S

SGP-32S

SGP-40S

	SGP-20S	SGP-25S	SGP-32S	SGP-40S
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*			
Pressione di esercizio *Pressure range*	2 ÷ 8 bar			
Temperatura di esercizio *Temperature range*	5° ÷ 60°C.			
Forza di serraggio per griffa in apertura a 6 bar *Opening gripping force at 6 bar each jaw*	23 N	52 N	67 N	80 N
Forza di serraggio totale in apertura a 6 bar *Opening total gripping force at 6 bar*	46 N	104 N	134 N	160 N
Forza di serraggio per griffa in chiusura a 6 bar *Closing gripping force at 6 bar each jaw*	20 N	47 N	60 N	73 N
Forza di serraggio totale in chiusura a 6 bar *Closing total gripping force at 6 bar*	40 N	94 N	120 N	146 N
Corsa totale (±0.3 mm) *Total stroke*	4 mm	6 mm	8 mm	12 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	3 Hz	3 Hz	3 Hz	3 Hz
Consumo d'aria per ciclo *Cycle air consumption*	0.5 cm^3	1.4 cm^3	2.4 cm^3	4.5 cm^3
Tempo di chiusura senza carico *Closing time without load*	0.01 s	0.01 s	0.02 s	0.05 s
Ripetibilità *Repetition accuracy*	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Peso *Weight*	33 g	43 g	86 g	170 g

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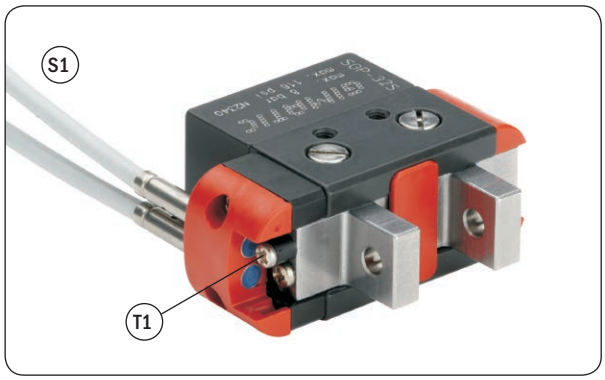
Sensori

Il rilevamento della posizione di lavoro é affidato a due sensori induttivi S1 e S2 (non forniti), che rilevano la posizione delle teste delle viti T1 e T2, situate sulla griffa destra.

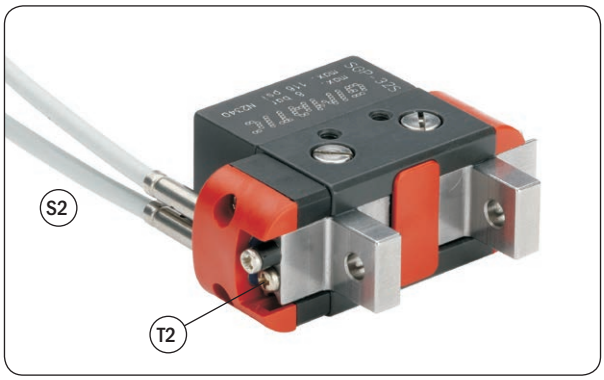
Sensors

The operating position can be checked by two inductive sensors S1 and S2 (not supplied), detecting the position of the screw heads T1 and T2 placed on the right jaw.

Pinza totalmente chiusa
Fully closed gripper

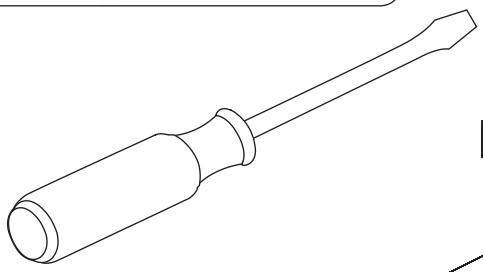


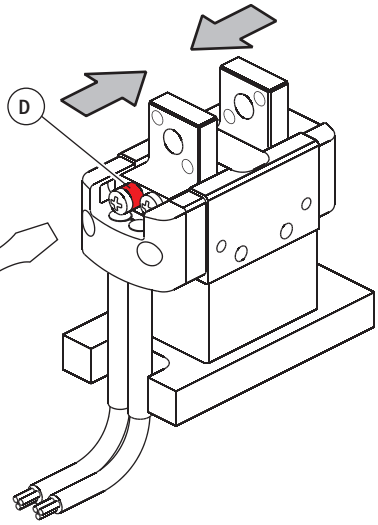
Pinza totalmente aperta
Fully open gripper

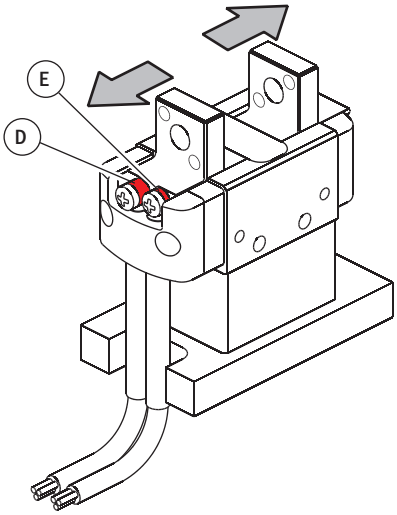


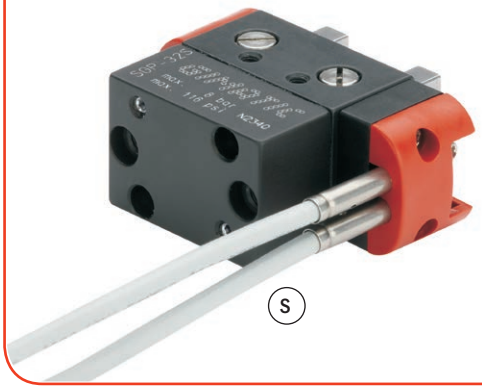
Agendo sulle viti si regola la posizione di lettura dei sensori.
Il distanziale di plastica (D) è da accorciare in base alla regolazione.
Il secondo distanziale (E) é da installare, se la pinza è usata per serrare un carico dall'interno.

The detected position can be adjusted by the screws.
The plastic spacer (D) has to be shortened according to the adjustment.
The second spacer (E) is to be installed, when the gripper is used for internal gripping applications.







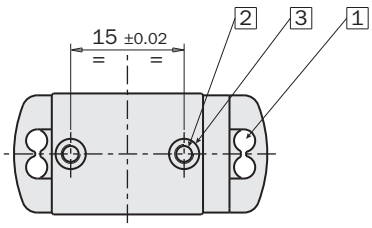


Usare sensori induttivi di diametro 3mm sulla SGP-20S e di diametro 4mm sulle altre taglie.
Use 3mm diameter inductive sensors, on the SGP-20S and 4mm diameter, on the other sizes.

	SGP-20S	SGP-25S	SGP-32S	SGP-40S
S	Ø3mm	Ø4mm	Ø4mm	Ø4mm

Dimensioni (mm) / *Dimensions (mm)*

SGP-20S

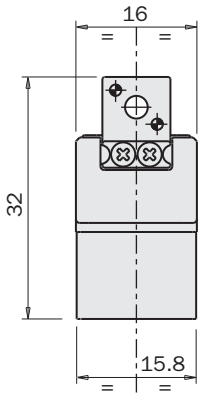


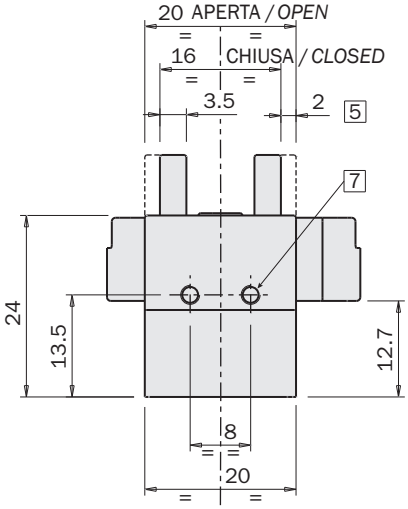
1 Foro per sensore induttivo Ø3
Hole for inductive sensor Ø3

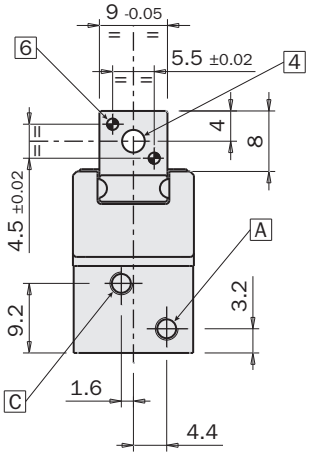
2 (N°2) M2.5x6mm
Foro per fissaggio
Hole for fastening

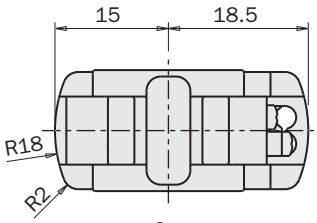
3 (N°2) Ø4H8x2mm
Sede per boccole di centraggio
Centering sleeve hole

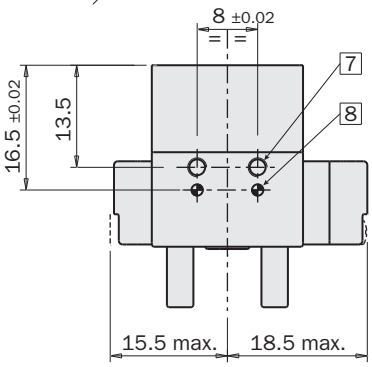
4 Ø3H11x3.5mm
Foro passante per fissaggio
Through hole for fastening



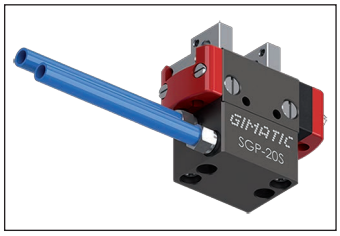




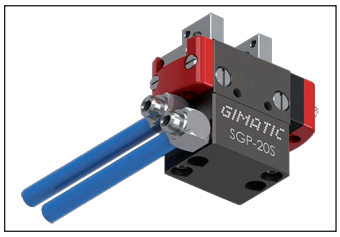




RG.RO-1376-AS1
Raccordo M3 diritto
Straight M3 fitting



RG.RO-1376-AS2
Raccordo M3 orientabile a "L"
Adjustable 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

A M3
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

FIRST ANGLE PROJECTION

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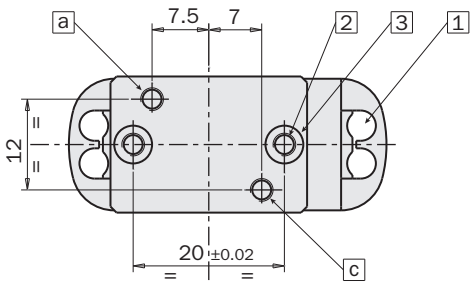
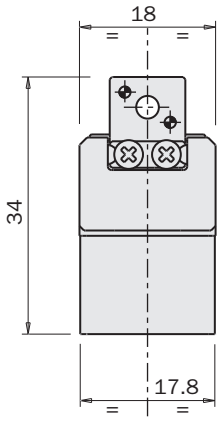
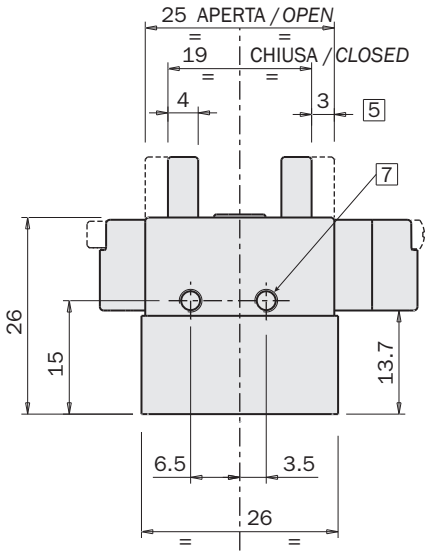
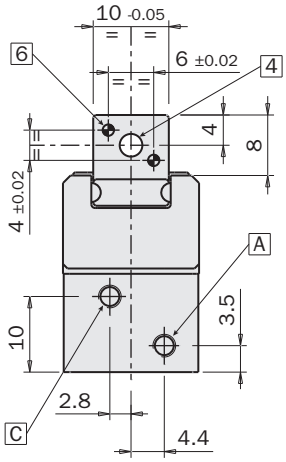
Dimensioni (mm) / *Dimensions (mm)*

SGP-25S

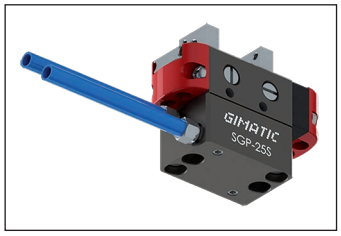


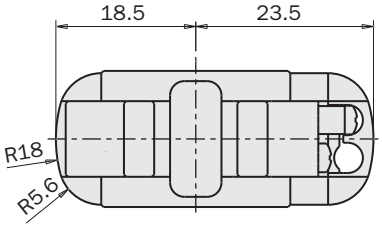




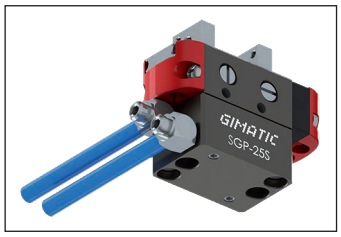


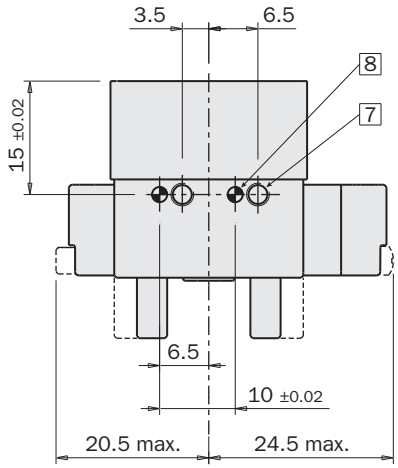
RG.RO-1376-AS1
Raccordo M3 diritto
Straight M3 fitting





RG.RO-1376-AS2
Raccordo M3 orientabile a "L"
Adjustable M3 fitting





FIRST ANGLE PROJECTION

1 Foro per sensore induttivo Ø4
Hole for inductive sensor Ø4

2 (N°2) M3x7mm
Foro per fissaggio
Hole for fastening

3 (N°2) Ø5H8x2.4mm
Sede per boccole di centraggio
Centering sleeve hole

4 Ø3H11x4mm
Foro passante per fissaggio
Through hole for fastening

5 Corsa per griffa
Stroke each jaw

6 Ø1.5H8x4mm
Foro di riferimento
Dowel pin hole

7 (N°2) M3x5mm
Foro per fissaggio
Hole for fastening

8 Ø2H8x4mm
Foro di riferimento
Dowel pin hole

a M3
Aria compressa in a: apertura della pinza
Compressed air in a: gripper opening

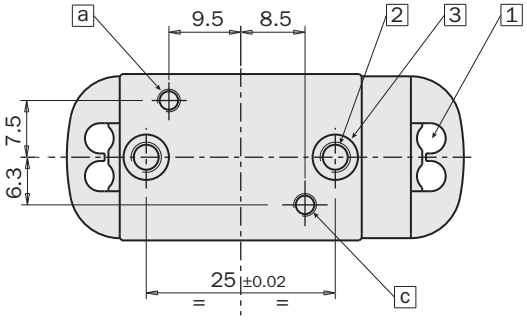
A M3
Aria compressa in A: apertura della pinza
Compressed air in A: gripper opening

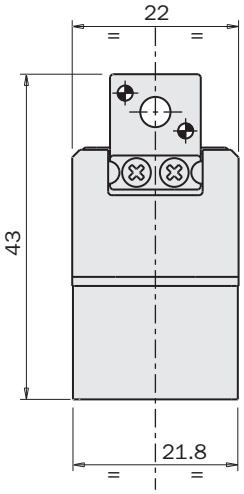
c M3
Aria compressa in c: chiusura della pinza
Compressed air in c: gripper closing

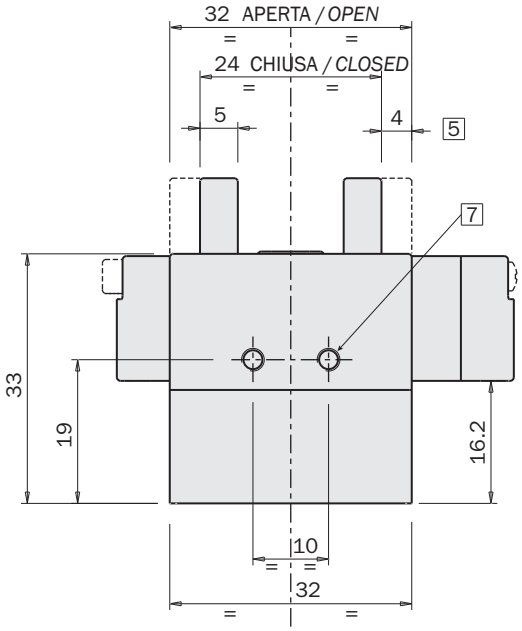
C M3
Aria compressa in C: chiusura della pinza
Compressed air in C: gripper closing

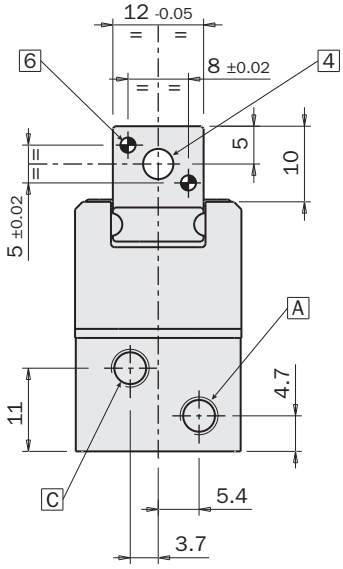
Dimensioni (mm) / *Dimensions (mm)*

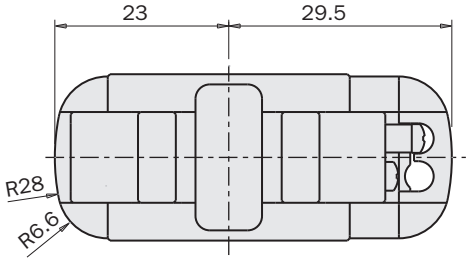
SGP-32S

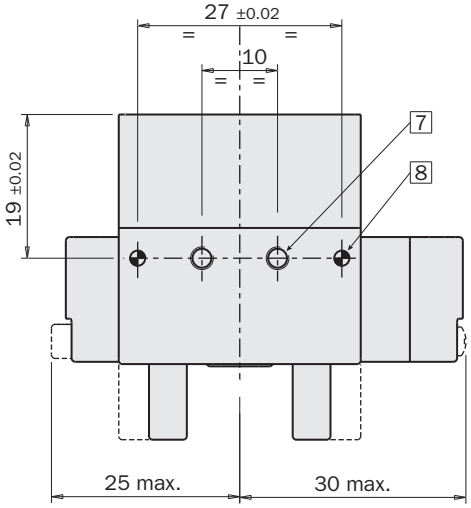












FIRST ANGLE PROJECTION

1	Foro per sensore induttivo Ø4 *Hole for inductive sensor Ø4*
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	Ø4H11x5mm 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*

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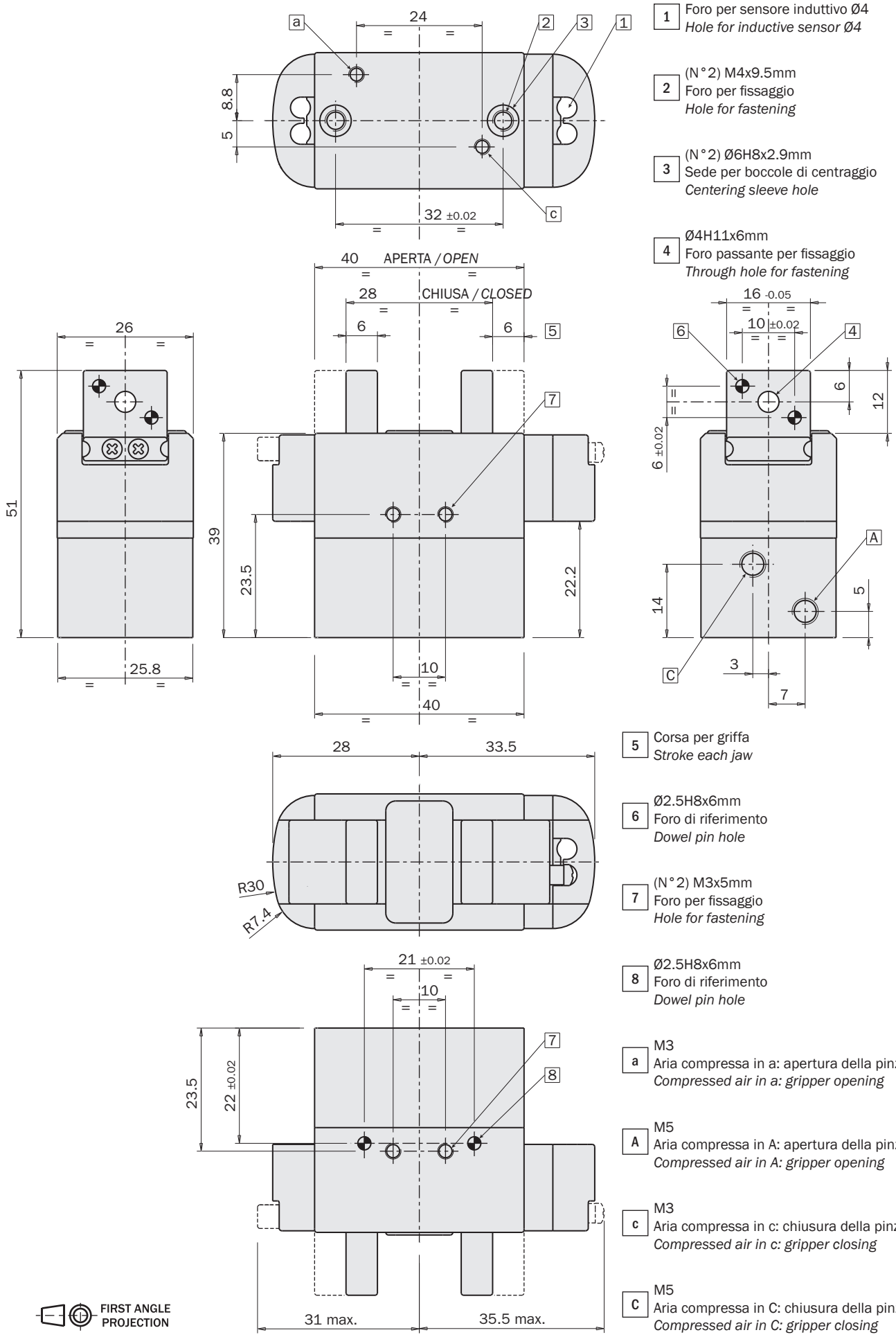
Dimensioni (mm) / *Dimensions (mm)*

SGP-40S



1 Foro per sensore induttivo Ø4
Hole for inductive sensor Ø4

2 (N°2) M4x9.5mm
Foro per fissaggio
Hole for fastening

3 (N°2) Ø6H8x2.9mm
Sede per boccole di centraggio
Centering sleeve hole

4 Ø4H11x6mm
Foro passante per fissaggio
Through hole for fastening

5 Corsa per griffa
Stroke each jaw

6 Ø2.5H8x6mm
Foro di riferimento
Dowel pin hole

7 (N°2) M3x5mm
Foro per fissaggio
Hole for fastening

8 Ø2.5H8x6mm
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

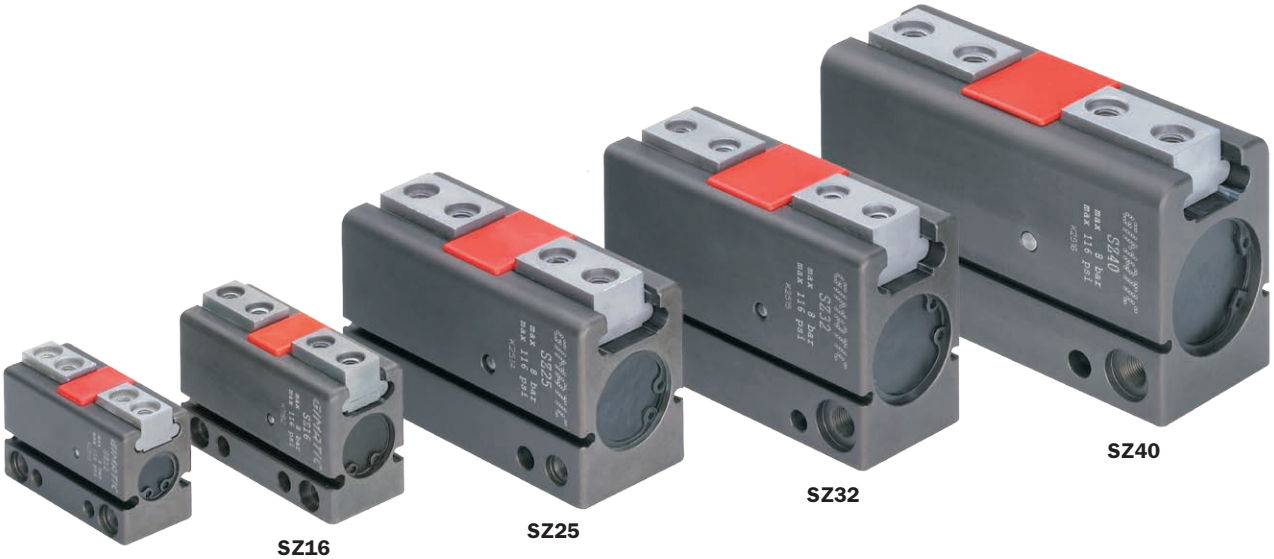
C M5
Aria compressa in C: chiusura della pinza
Compressed air in C: gripper closing

Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie SZ)

- Azionamento a doppio effetto.
- Su richiesta con molla in chiusura.
- Meccanismo di autocentraggio esclusivo.
- Diverse possibilità di fissaggio e alimentazione.
- Sensori magnetici opzionali.

2-jaw parallel self-centering pneumatic gripper (series SZ)

- *Double acting.*
- *Spring closed, upon request.*
- *Exclusive self-centering system.*
- *Various options for fastening and feeding.*
- *Optional magnetic sensors.*



	SZ12	SZ16	SZ25	SZ32	SZ40
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*				
Pressione di esercizio *Operating pressure range*	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*	25 N	45 N	115 N	190 N	310 N
Forza di serraggio totale in apertura a 6 bar *Opening total gripping force at 6 bar*	50 N	90 N	230 N	380 N	620 N
Forza di serraggio per griffa in chiusura a 6 bar *Closing gripping force at 6 bar on each jaw*	25 N	45 N	115 N	190 N	310 N
Forza di serraggio totale in chiusura a 6 bar *Closing total gripping force at 6 bar*	50 N	90 N	230 N	380 N	620 N
Corsa totale (±0.4 mm) *Total stroke*	8 mm	12 mm	20 mm	25 mm	30 mm
Frequenza max funzionamento continuativo *Maximum working frequency*	3 Hz	3 Hz	2 Hz	2 Hz	2 Hz
Consumo d'aria per ciclo *Cycle air consumption*	1 cm^3	3 cm^3	12 cm^3	24 cm^3	48 cm^3
Tempo di apertura / chiusura senza carico *Opening / Closing time without load*	0.02 s	0.04 s	0.05 s	0.07 s	0.12 s
Peso *Weight*	94 g	153 g	446 g	722 g	1135 g

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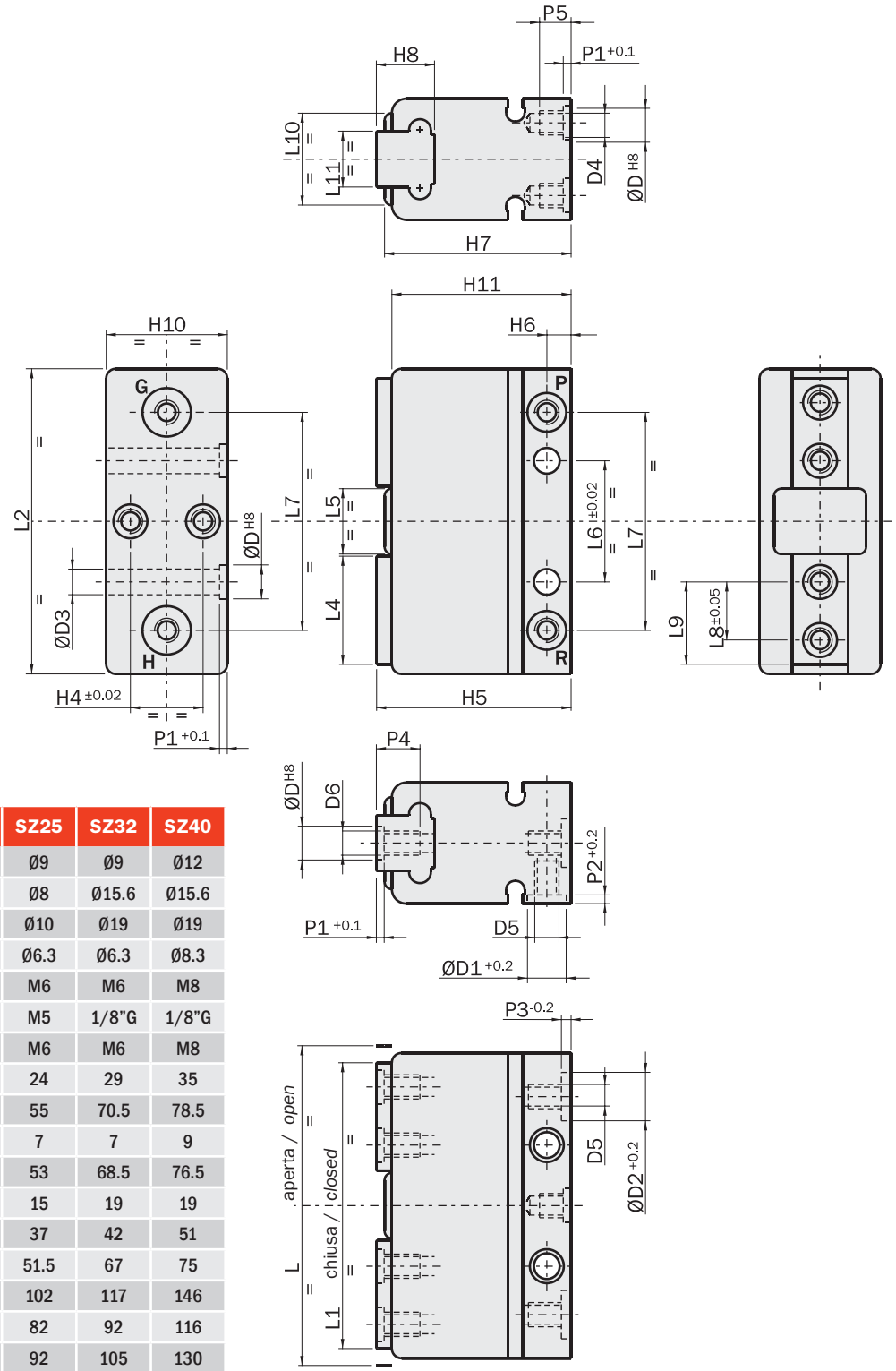
Dimensioni (mm) / *Dimensions (mm)*

FIRST ANGLE PROJECTION



	SZ12	SZ16	SZ25	SZ32	SZ40
D H8	Ø7	Ø7	Ø9	Ø9	Ø12
D1 +0.2	Ø8	Ø8	Ø8	Ø15.6	Ø15.6
D2 +0.2	Ø10	Ø10	Ø10	Ø19	Ø19
D3	Ø4.3	Ø5.3	Ø6.3	Ø6.3	Ø8.3
D4	M5	M5	M6	M6	M8
D5	M5	M5	M5	1/8"G	1/8"G
D6	M4	M5	M6	M6	M8
H4 +0.02	13	15	24	29	35
H5	33.2	40.2	55	70.5	78.5
H6	5	5	7	7	9
H7	32.5	38.5	53	68.5	76.5
H8	9	12	15	19	19
H10	22	25	37	42	51
H11	31	37	51.5	67	75
L	59	71	102	117	146
L1	51	59	82	92	116
L2	52	63	92	105	130
L4	19.3	22.3	29.8	32.3	41.8
L5	11.4	13.5	21.4	26.4	31.4
L6 ±0.02	22	25	50	55	70
L7	38	45	73	84	104
L8 ±0.05	9	12	16	18	24
L9	14	17	23	25	33
L10	18	19	29	34	37
L11	10	11.5	18	20	22
P1 +0.1	1.6	1.6	2.1	2.1	2.6
P2 +0.2	1.8	1.8	1.8	3	3
P3 -0.2	2	2	2	1.3	1.3
P4	6.5	9	14	15	16
P5	6.5	6.5	11	11	15

(D5) Ingresso aria
Air connection

(G) (P) Aria compressa in G/P: apertura della pinza
Compressed air in G/P: gripper opening

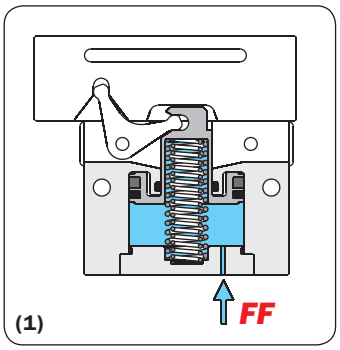
(H) (R) Aria compressa in H/R: chiusura della pinza
Compressed air in H/R: gripper closing

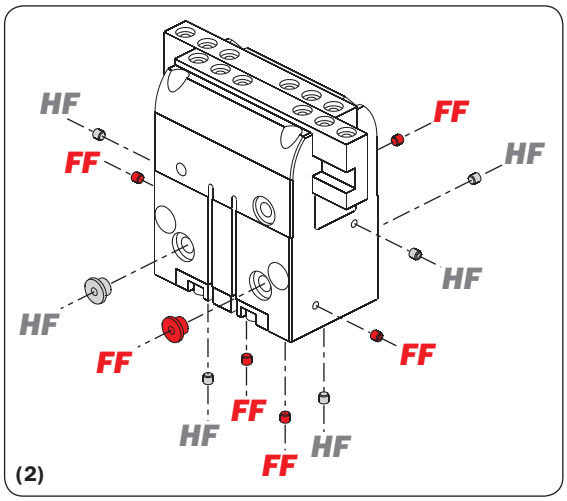
Pinza pneumatica a 2 griffe ad azione parallela autocentrante (serie PQ)

- Guida robusta.
- Corsa lunga.
- Molle integrate (1).
- Diverse possibilità di fissaggio ed alimentazione (2).
- Disponibili su richiesta con grasso alimentare FDA-H1 e guarnizioni per alte temperature (fino a 100°C.).

2-jaw self-centering pneumatic parallel gripper (series PQ)

- *Robust guide.*
- *Long stroke.*
- *Integrated springs (1).*
- *Various fastening and air feeding options (2).*
- *Available upon request with food grease FDA-H1 and with high temperature (up to 100°C.) seals.*





	PQ1608	PQ2012	PQ2516	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*							
Pressione di esercizio *Operating pressure range*	3.5 ÷ 8 bar							
Temperatura di esercizio *Operating temperature range*	5 ÷ 60 °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^3	4 cm^3	8 cm^3	12 cm^3	23 cm^3	55 cm^3	114 cm^3	210 cm^3
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

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Molle

Questa pinza è dotata di molle sotto il pistone.
Per questo motivo e anche per via dello stelo, la massima forza di serraggio si ha con l'aria compressa in FF.
Può essere usata sia a doppio effetto che a semplice effetto.
Le molle possono essere rimosse, seguendo la procedura mostrata nelle foto.
Senza molle la forza di serraggio indicata si riduce:

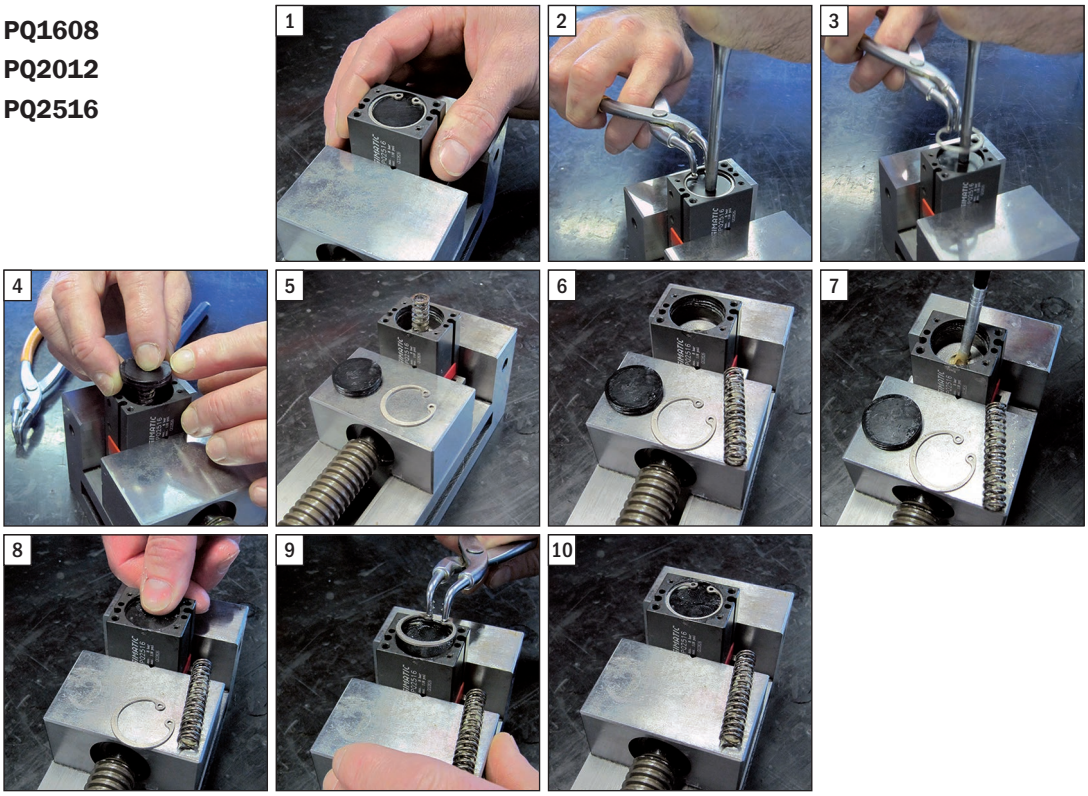
- del 18% con aria in FF;
- del 37% con aria in HF.

Springs

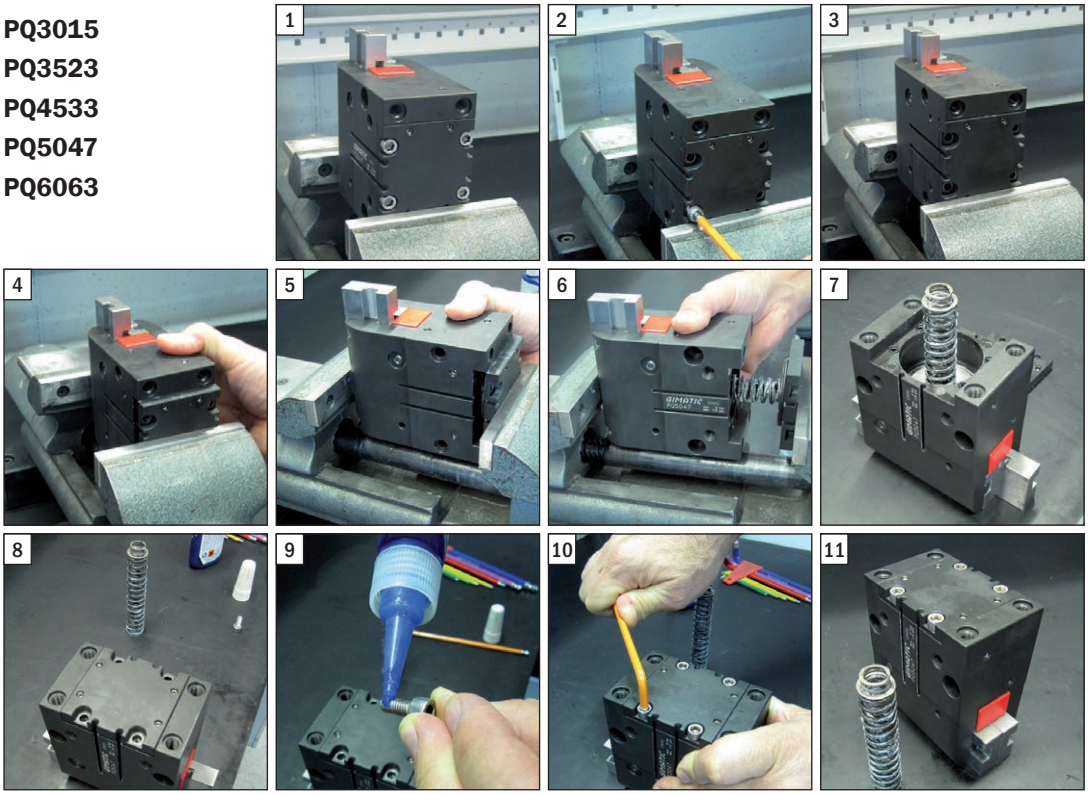
This gripper is provided with springs under the piston. For this reason and because of the piston rod, its maximum gripping force is achieved with compressed air in FF. The gripper can operate either in single-effect mode or double-effect mode. The springs can be removed, following the procedure illustrated in the photos. Without springs the resulting gripping force is:

- *18% lower with compressed air in FF;*
- *37% lower with compressed air in HF.*

PQ1608
PQ2012
PQ2516



PQ3015
PQ3523
PQ4533
PQ5047
PQ6063



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

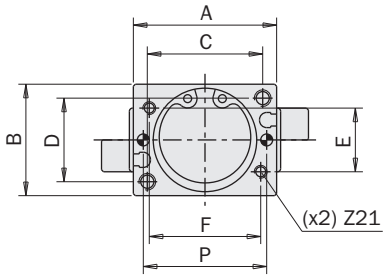
Z21 Fori per alimentazione diretta dal fondo
Ports for direct air supply from the bottom

Z22 Fori per alimentazione
Air supply ports

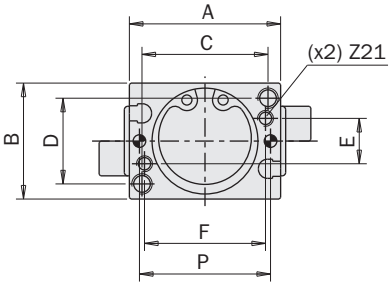
Z23 Fori per alimentazione
Air supply ports

Z24 Cave per sensori magnetici
Magnetic sensor slots

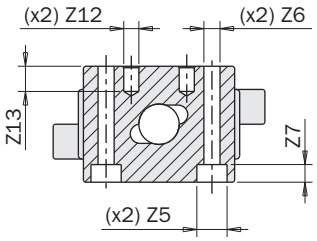
	PQ1608	PQ2012	PQ2516
A	24	30	36
B	18	23	28
C ±0.02	20	25	29
D ±0.02	14	17	21
E	7	9	16
F	19.4	24	28
G	11	13.8	16
H	44	46.5	57
I	32.5	32.5	37.5
J	43.5	46	56
K	17.5	22.4	27
L	32	42	52
M	4	6	8
N	11	13.5	18
O ±0.02	26	26.5	28.5
P	21	26	31
Q	7.5	8.5	11
R ±0.02	17	21	24
S	13.5	15.3	16
T	7	7.5	8
U	3.7	4	8
V	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	Ø2.5 H7	Ø3 H7	Ø3 H7
Z13	3	5	5
Z21	M2.5	M3	M3
Z22	M3	M3	M5
Z23	M2.5	M3	M3

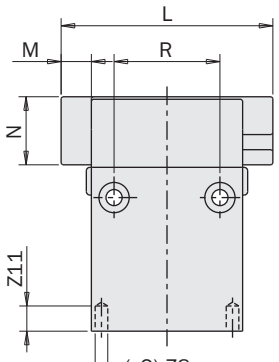


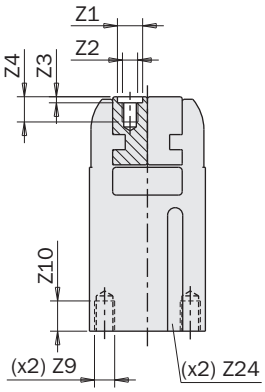
PQ2516

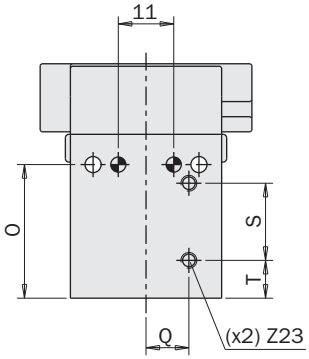


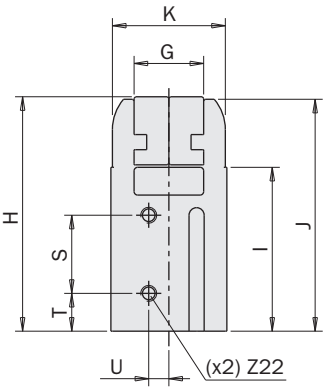
PQ1608
PQ2012

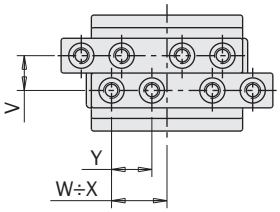












FIRST ANGLE PROJECTION

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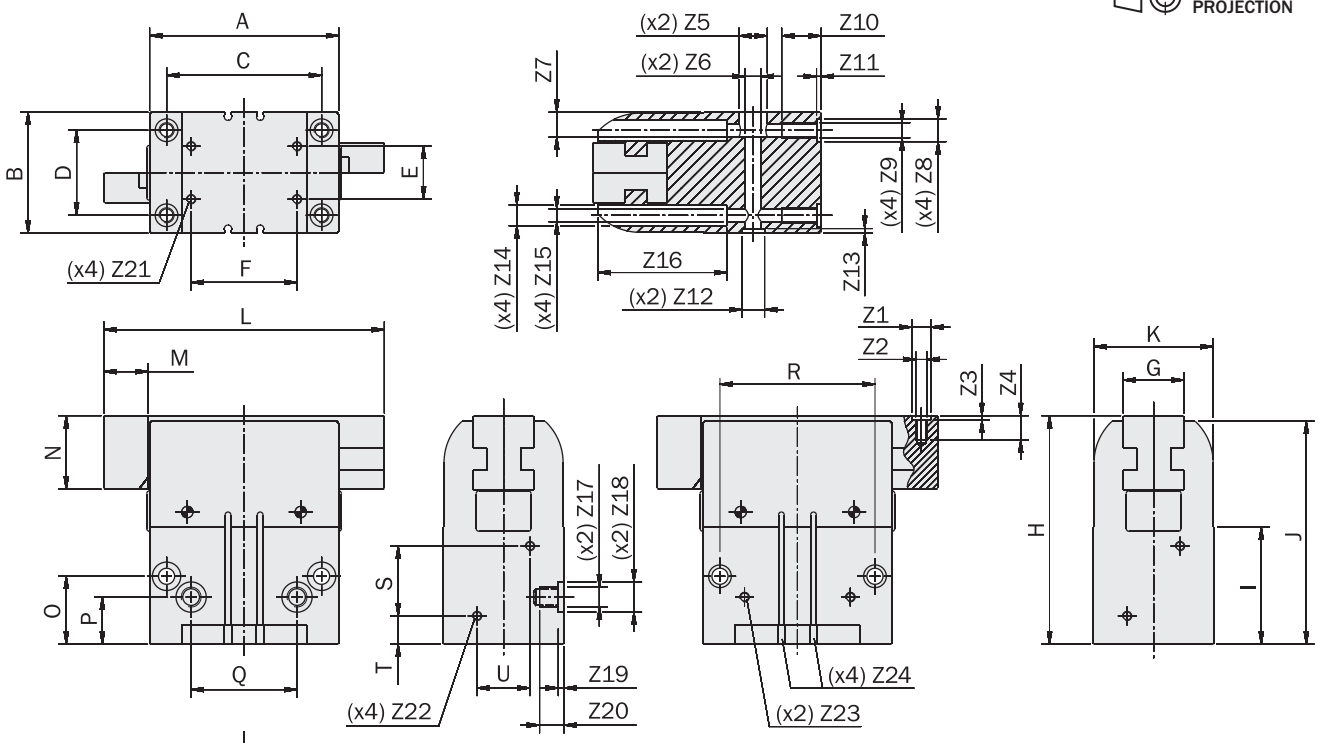
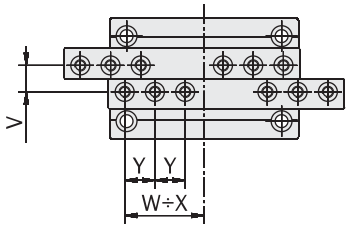
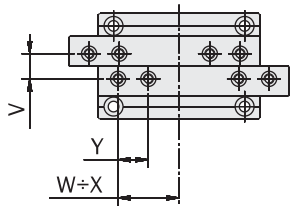
Dimensioni (mm) / *Dimensions (mm)*

FIRST ANGLE PROJECTION





PQ4533
PQ5047
PQ6063



PQ3015
PQ3523

	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

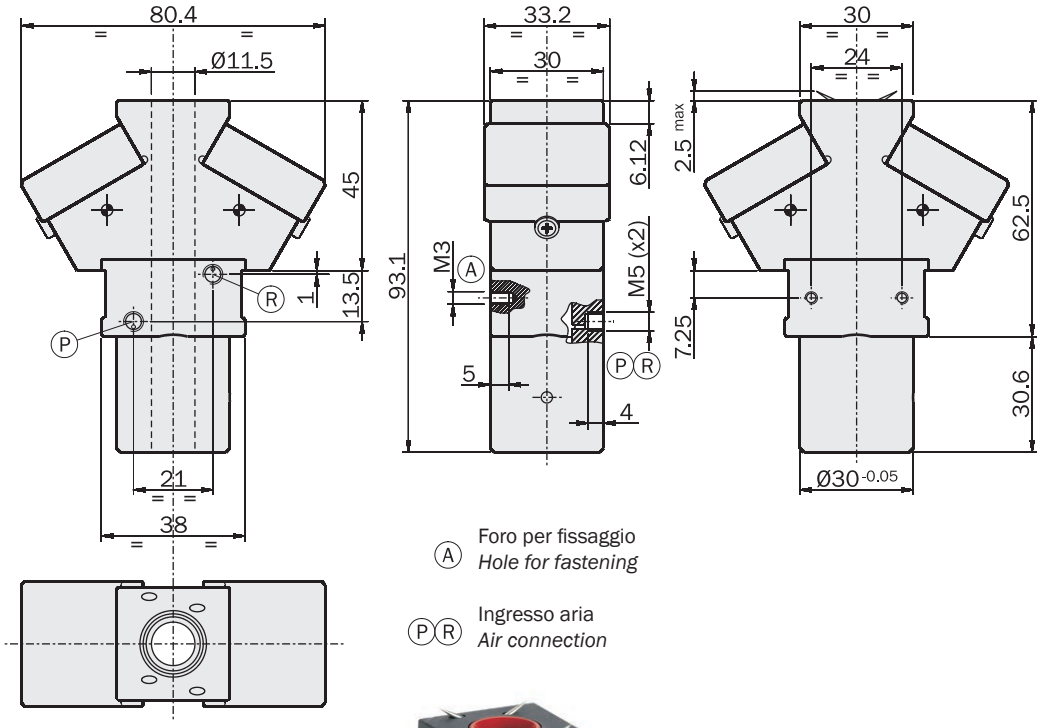
Z24 Cave per sensori magnetici
Magnetic sensor slots

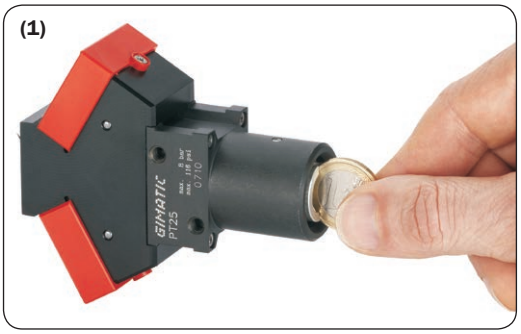
Pinza ad aghi pneumatica autocentrante PT25

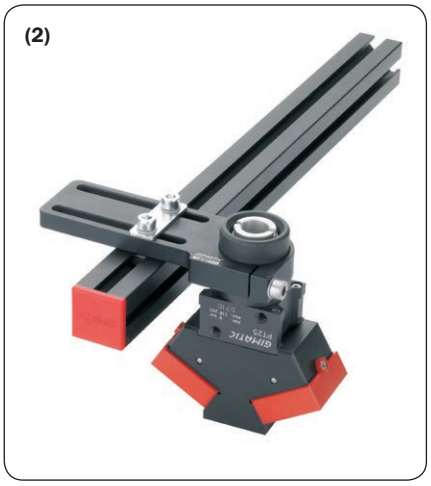
- Adatta per l'industria tessile e alimentare.
- Azionamento a doppio effetto.
- Regolazione simultanea della corsa dei 4 aghi (1).
- Vari accessori disponibili per il fissaggio (2).
- Ampio foro passante (3).

Self-centering pneumatic needle gripper PT25

- *Suitable for textile and food industry.*
- *Double acting.*
- *4 needles simultaneous stroke adjustment (1).*
- *Several mounting accessories (2).*
- *Large through hole (3).*







	PT25
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*
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^3
Peso *Weight*	165 g

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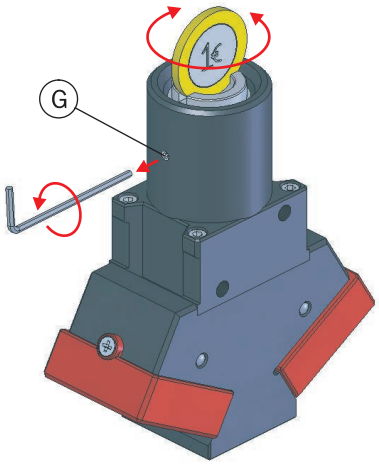
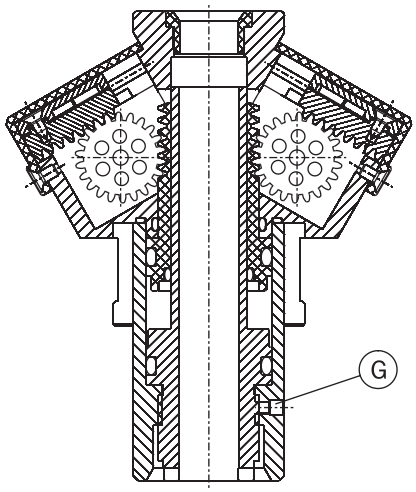
Regolazione della corsa

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 an 1-euro coin, after the grub screw (G) has been loosened.



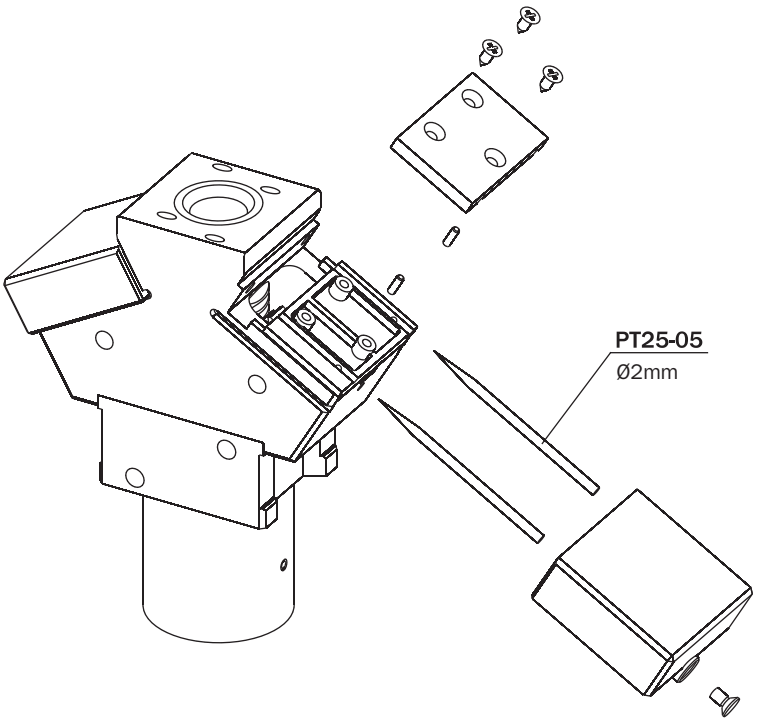


Manutenzione

Quando necessario, gli aghi possono essere facilmente rimpiazzati.
Il codice di ordinazione di un ago é PT25-05.
Dopo un milione di cicli la pinza deve essere re-ingrassata.
Grasso suggerito: Interflon Food Grease LT 2.

Maintenance

The needles can be easily replaced, when necessary.
The ordering code of one needle is PT25-05.
After one million cycles re-lubricate the gripper.
Suggested grease: Interflon Food Grease LT 2.



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).

2-jaw self centering rocking pneumatic gripper series GW

- *Double acting.*
- *Long life and reliability, maintenance free.*
- *Different options for fastening.*
- *Optional proximity magnetic sensors.*
- *Spring closed (-NC) or spring open (-NO) option.*

GW-10

GW-16

GW-20

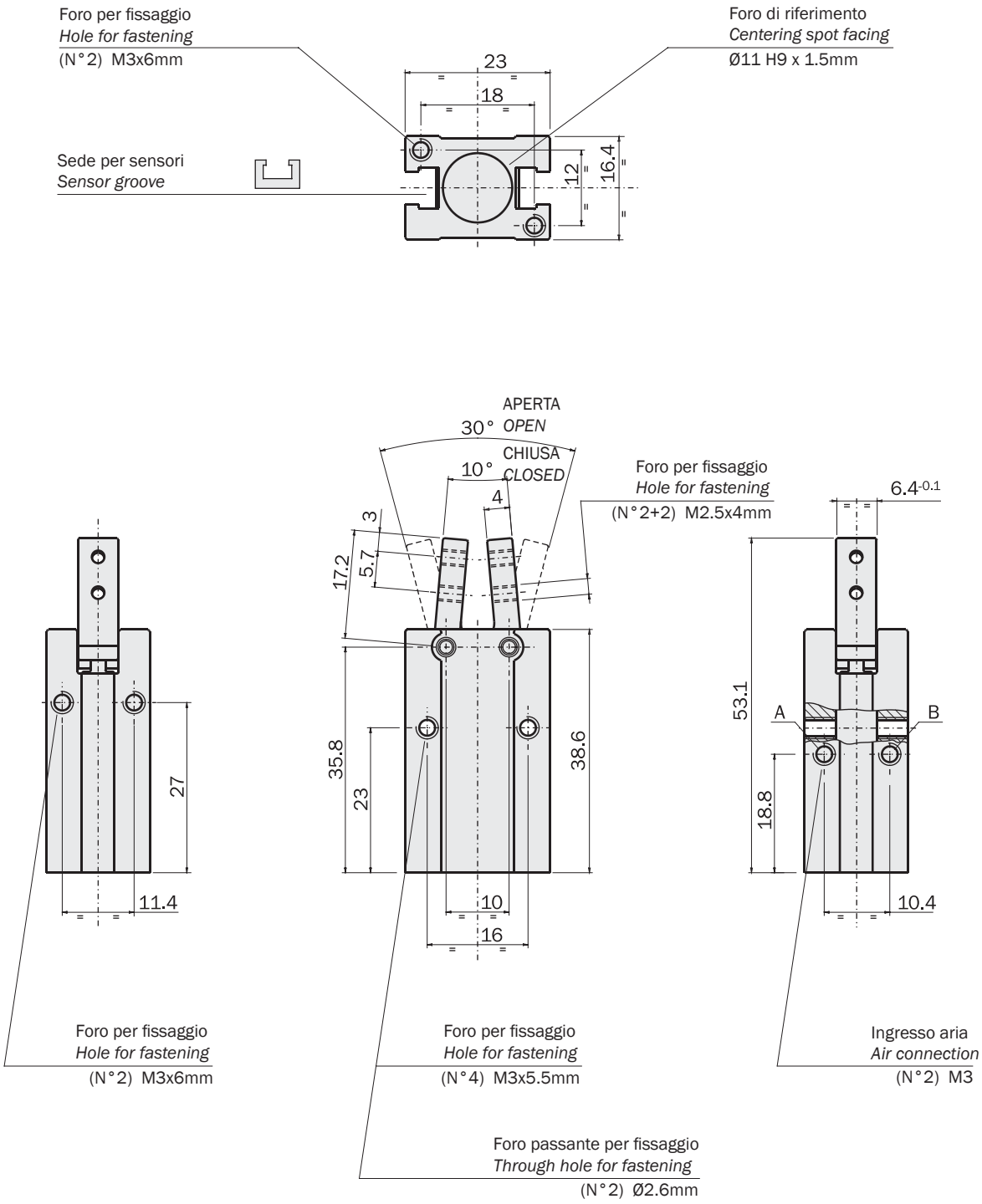
GW-25

	GW-10	GW-16	GW-20	GW-25
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*			
Pressione di esercizio *Pressure range*	2 ÷ 8 bar			
Temperatura di esercizio *Temperature range*	5° ÷ 60°C.			
Coppia di serraggio per griffa in apertura a 6 bar *Opening torque at 6 bar 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 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 (±1°) *Stroke*	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^3	3 cm^3	6 cm^3	11 cm^3
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	171 g	300 g

09/2015

Dimensioni (mm) / *Dimensions (mm)*

GW-10



FIRST ANGLE PROJECTION

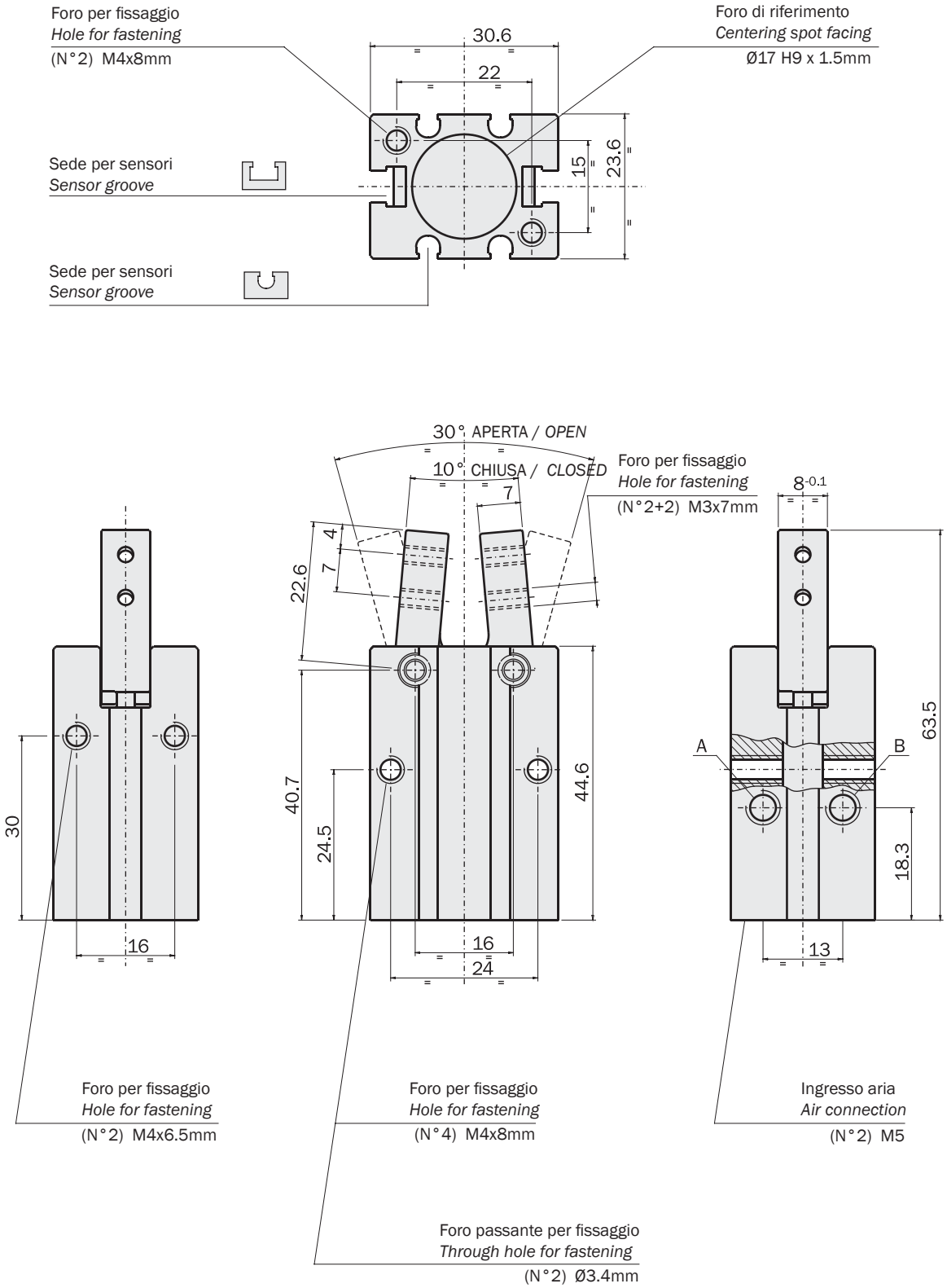
Aria compressa in A: apertura della pinza.
Aria compressa in B: chiusura della pinza.

Compressed air in A: gripper opening.
Compressed air in B: gripper closing.

09/2015

Dimensioni (mm) / *Dimensions (mm)*

GW-16



Aria compressa in A: apertura della pinza.
Aria compressa in B: chiusura della pinza.

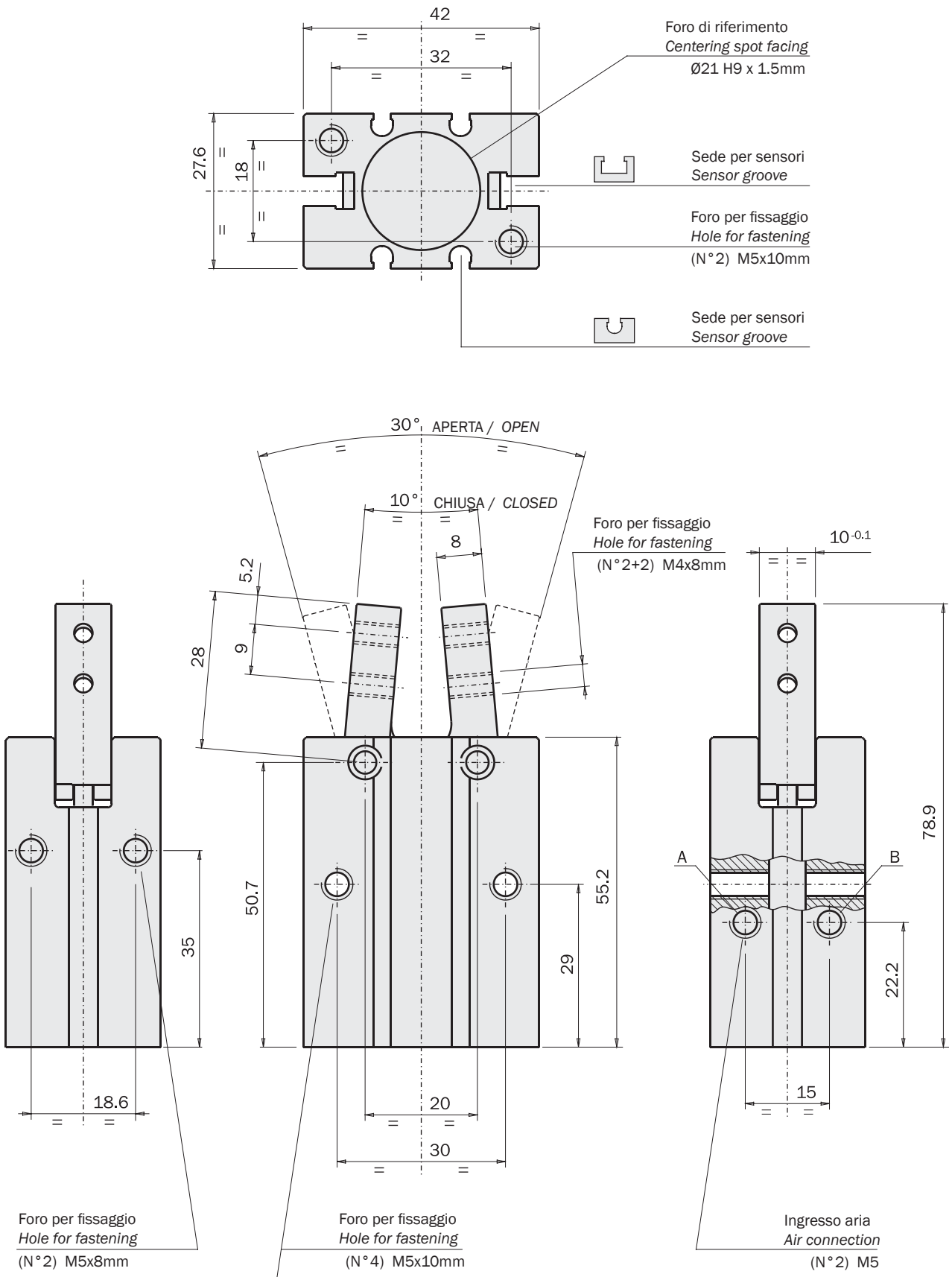
Compressed air in A: gripper opening.
Compressed air in B: gripper closing.

FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

GW-20



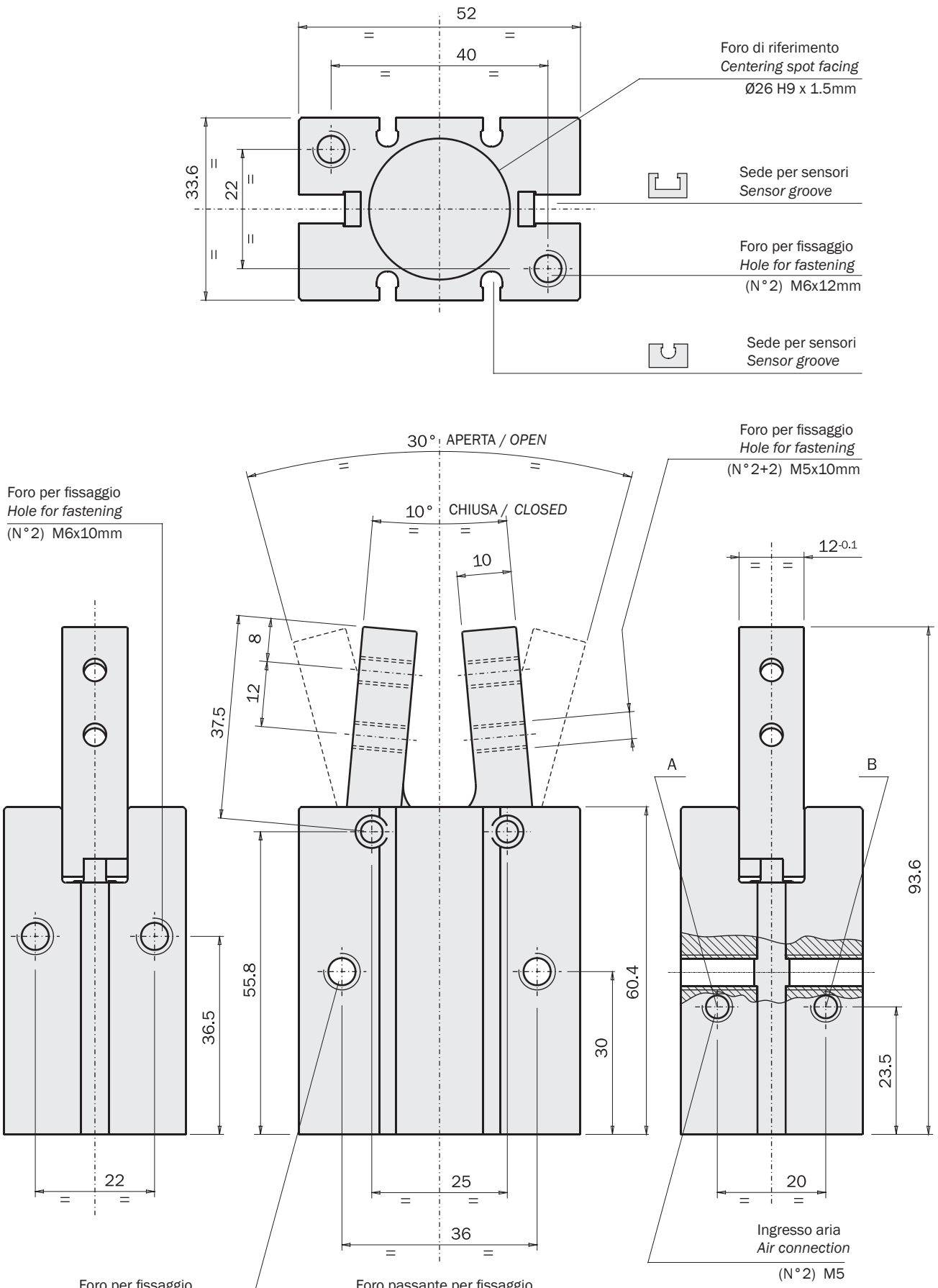
Aria compressa in A: apertura della pinza.
Aria compressa in B: chiusura della pinza.

Compressed air in A: gripper opening.
Compressed air in B: gripper closing.

09/2015

Dimensioni (mm) / *Dimensions (mm)*

GW-25



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.

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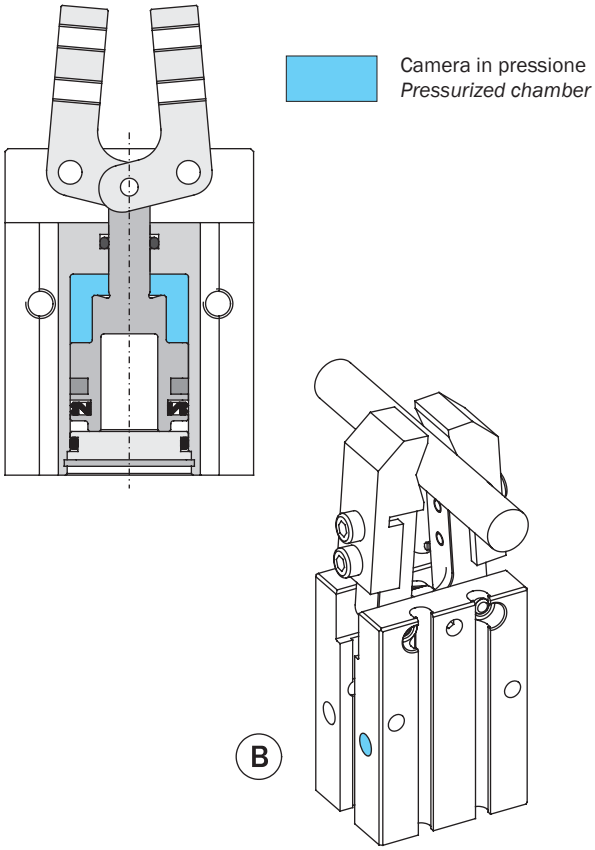
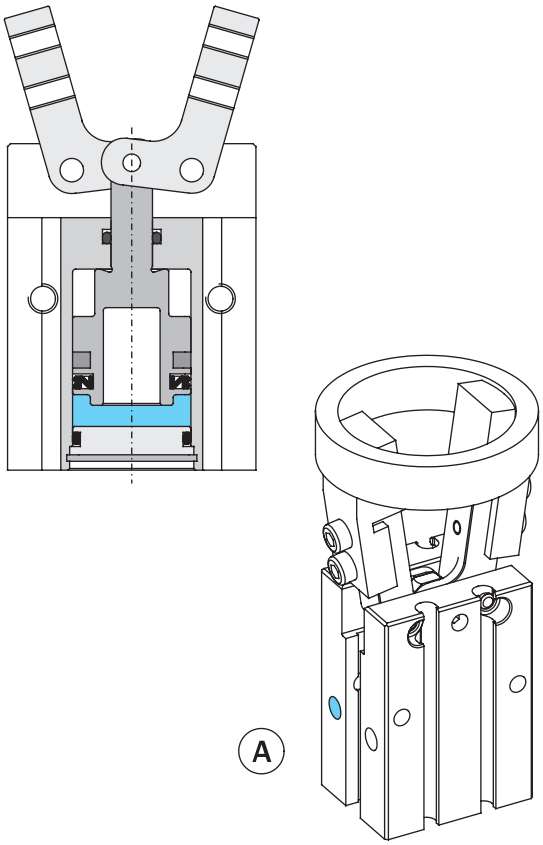
Serraggio

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

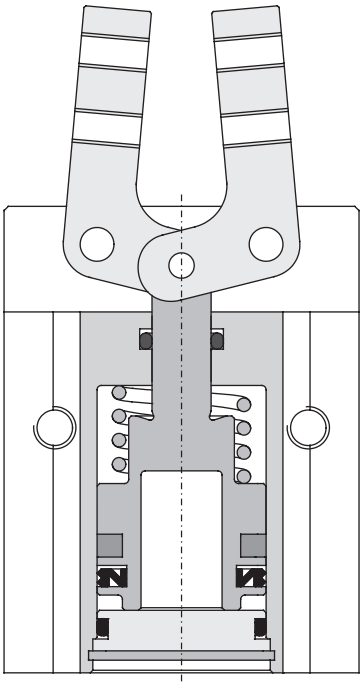
The gripper is double-acting for either internal (A) or external (B) gripping applications.
The opening force is higher.

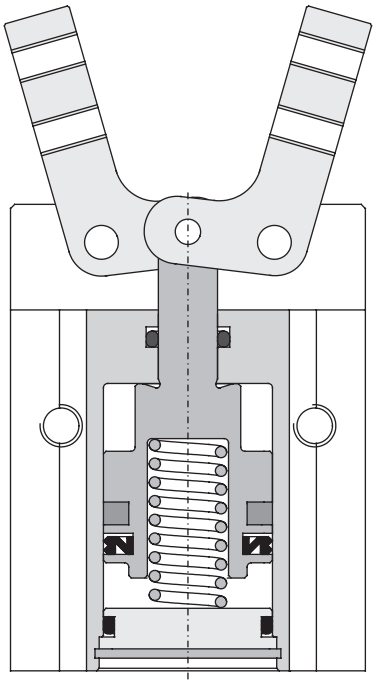




A richiesta è disponibile la versione con la molla in chiusura (-NC) o in apertura (-NO), che in assenza d'aria garantisce circa un quarto della forza disponibile a 6 bar.

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.





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).

2-jaw self-centering angular mini gripper, series TFA

- *Single acting with spring opening.*
- *Several mounting accessories.*
- *Optional suspension kit (1).*

(1)

	TFA10-25	TFA14-25	TFA20-25 TFA20-25S
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 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^3	0.5 cm^3	2 cm^3
Peso *Weight*	12 g	30 g	95 g (TFA20-25) 120 g (TFA20-25S)

(1)

Codice sospensione *Suspension code*	TFA10SP05	TFA14SP05	TFA20SP10
Peso *Weight*	10 g	35 g	85 g

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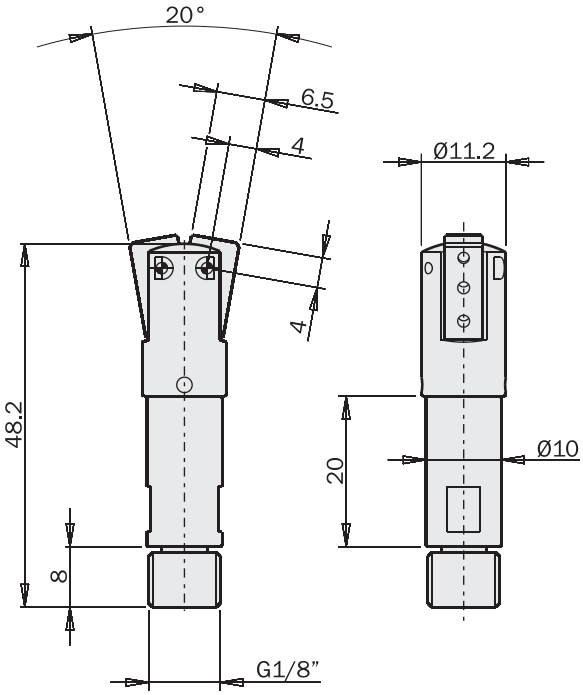
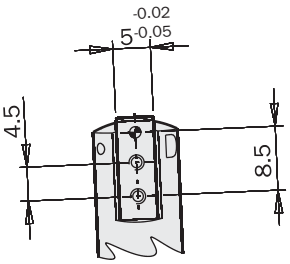
Dimensioni (mm) / *Dimensions (mm)*

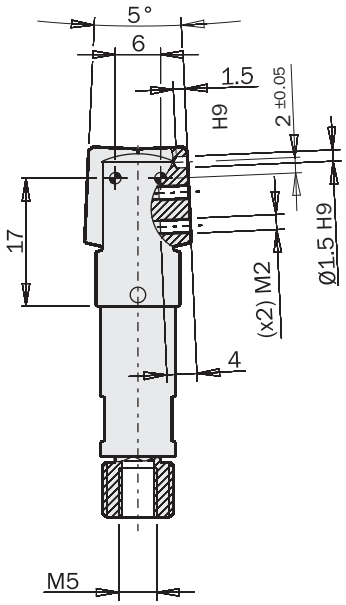
TFA10-25

APERTA
OPEN



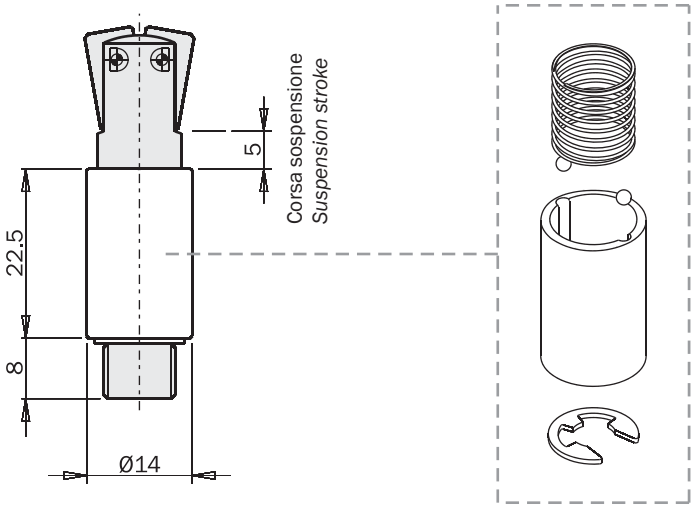


CHIUSA
CLOSED



Ingresso aria
Air connection

Pinza + Sospensione
Gripper + Suspension



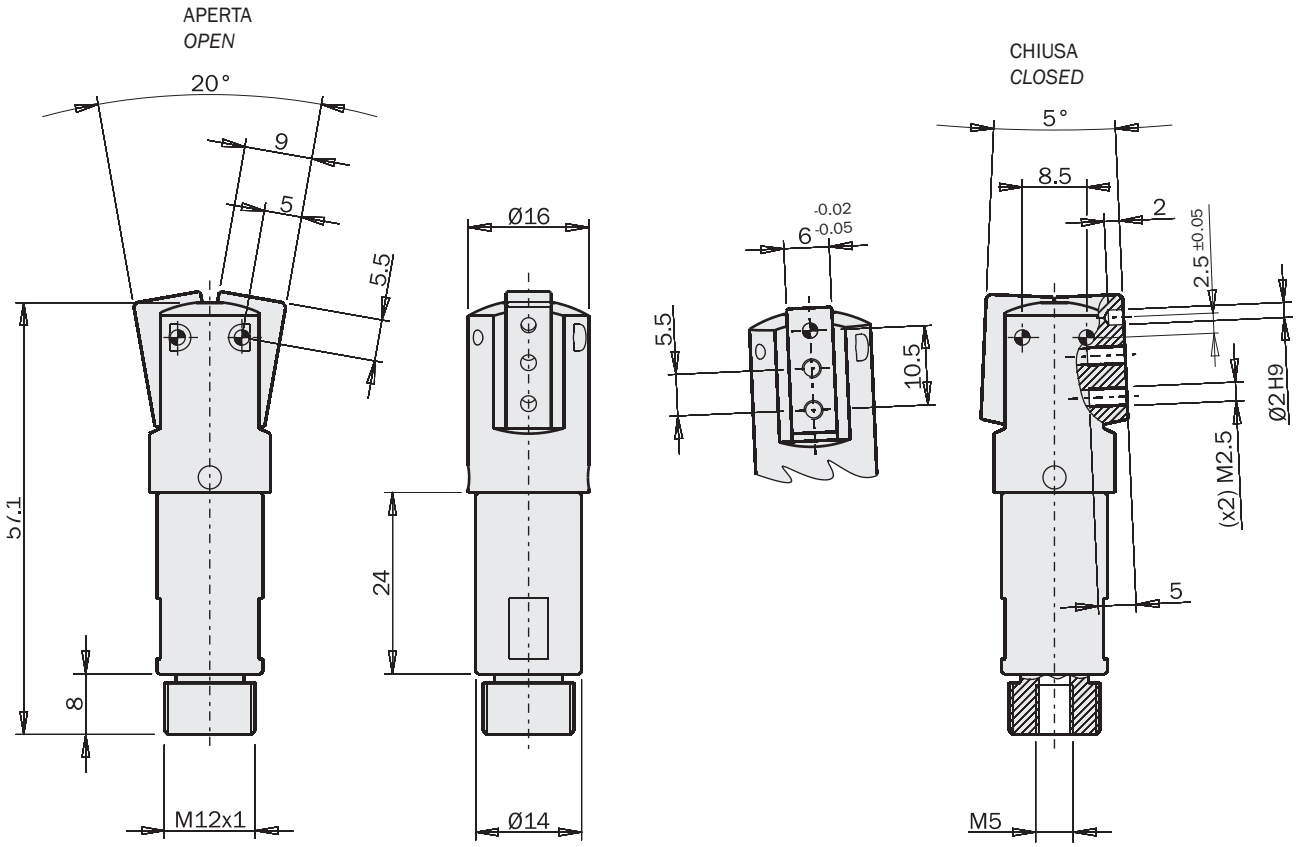
TFA10SP05

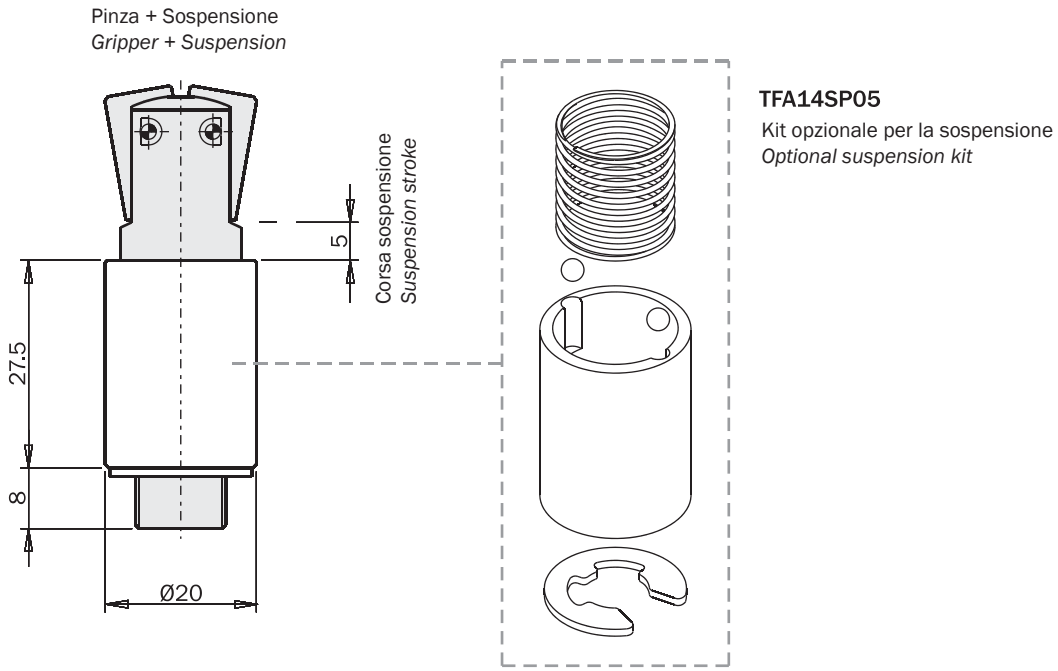
Kit opzionale per la sospensione
Optional suspension kit

FIRST ANGLE PROJECTION

Dimensioni (mm) / *Dimensions (mm)*

TFA14-25





TFA14SP05

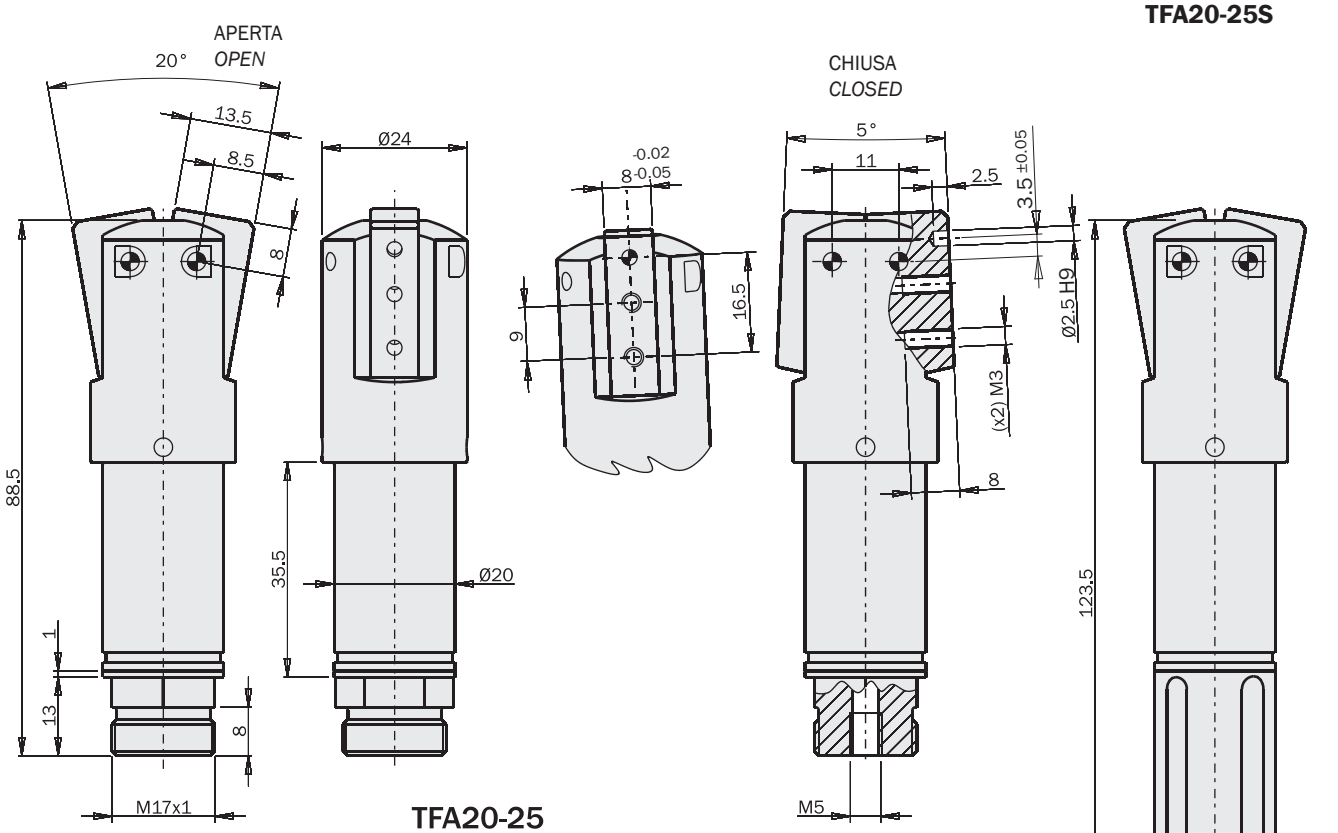
Kit opzionale per la sospensione
Optional suspension kit

FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

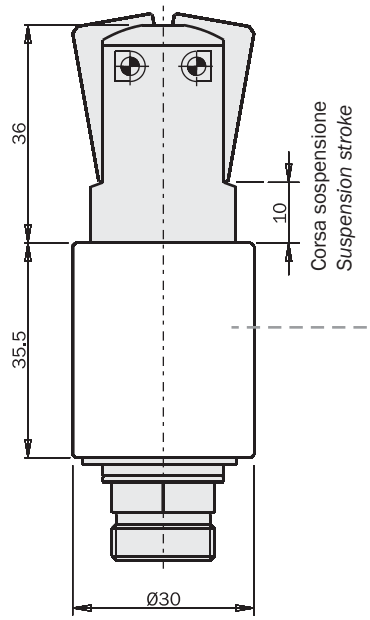
TFA20-25
TFA20-25S

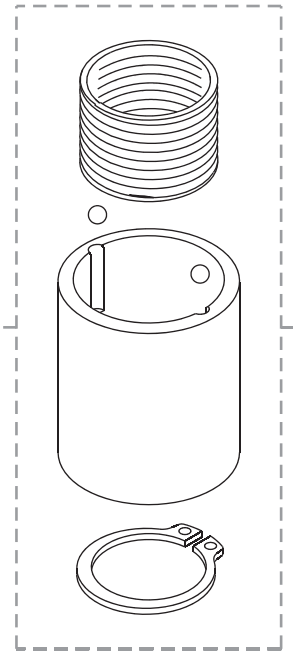


TFA20-25

TFA20-25S

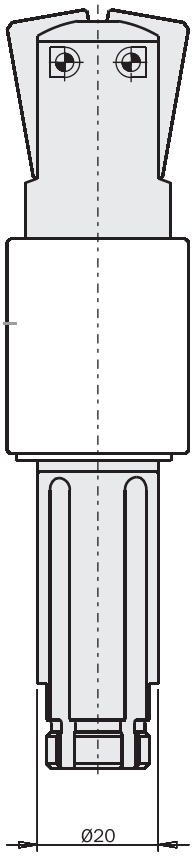
Pinza + Sospensione
Gripper + Suspension





TFA20SP10

Kit opzionale per la sospensione
Optional suspension kit



Pinza + Sospensione
Gripper + Suspension

FIRST ANGLE PROJECTION

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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.*

M F D 1 6 E 0 2 C L

Direzione del movimento

Actuation direction

D - Verso il basso
D - *Downward*
U - Verso l'alto
U - *Upward*

Diametro nominale

Base diameter

08 - 10 - 12 - 14 - 16 - 18 - 22
27 - 33 - 41 - 47 - 51 - 63

Alimentazione

Air feeding

C - Con raccordo coassiale
C - By coaxial air fitting
H - Con raccordo laterale e foro passante
H - By side air fitting and through hole

Parte elastica

Elastic part

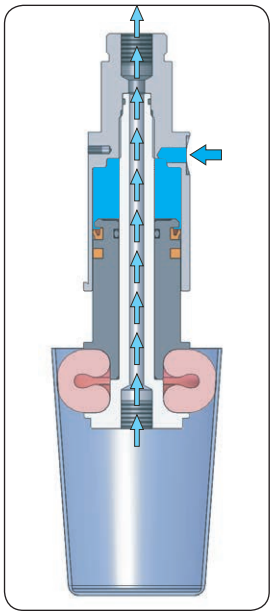
S01 - in Silicone rosso
in red Silicone
E02 - in EPDM nero
in black EPDM

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 leakage.



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Silicone o EPDM?

La parte elastica può essere in Silicone rosso 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 alcun 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 red 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


Silicone


EPDM

T	MFD / MFU												
	Ø8	Ø10	Ø12	Ø14	Ø16	Ø18	Ø22	Ø27	Ø33	Ø41	Ø47	Ø51	Ø63
-70°C +200°C	IF08S01	IF10S01	IF12S01U	IF14S01U	IF16S01U	IF18S01	IF22S01	IF27S01	IF33S01	IF41S01	IF47S01	IF51S01	IF63S01
-50°C +140°C	IF08E02	IF10E02	IF12E02U	IF14E02U	IF16E02U	IF18E02	IF22E02	IF27E02	IF33E02	IF41E02	IF47E02	IF51E02	IF63E02

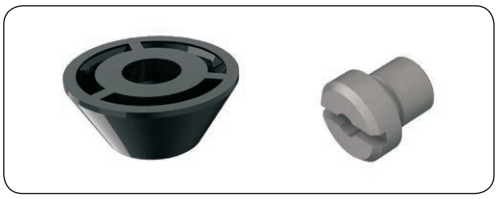
T - Temperatura d'esercizio della parte elastica (5÷60°C per il corpo pinza)
T - Operating temperature of the elastic part (5÷60°C for the gripper body)

Coni di centraggio

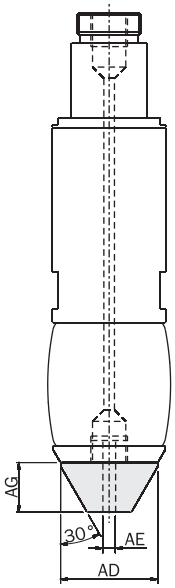
Sono disponibili come accessori dei coni di centraggio in nylon, con la vite inox.
Per le taglie maggiori di 33, sono anche dotati del foro passante.

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.



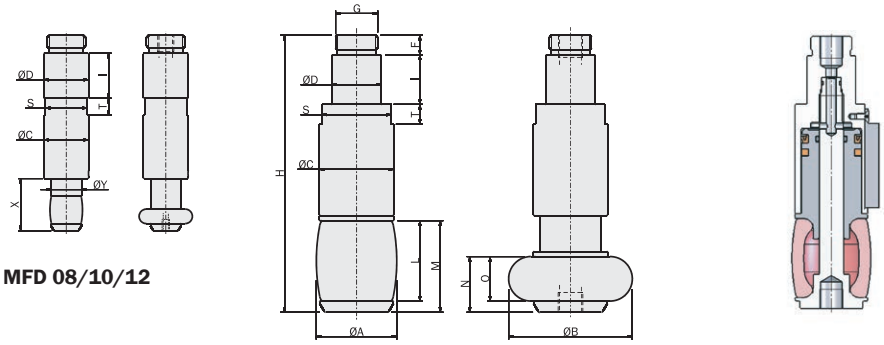
MFD / MFU



	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	Ø22	Ø27	Ø33	Ø41 Ø47	Ø51	Ø63

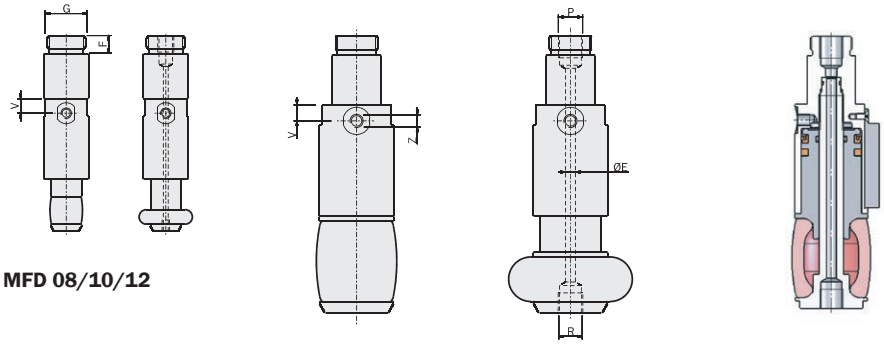
Dimensioni (mm) / *Dimensions (mm)*

...CL



MFD 08/10/12

...HL



MFD 08/10/12

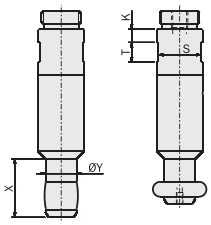
m [Peso - Weight]

	m	ØA	ØB	ØC	ØD	ØE	F	G	H	I	L	M	N	O	P	R	S	T	V	Z	X	ØY
MFD08E02CL MFD08S01CL MFD08E02HL MFD08S01HL	15g 15g 15g 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
MFD10E02CL MFD10S01CL MFD10E02HL MFD10S01HL	16g 16g 16g 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
MFD12E02CL MFD12S01CL MFD12E02HL MFD12S01HL	17g 17g 17g 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
MFD14E02CL MFD14S01CL MFD14E02HL MFD14S01HL	17g 17g 17g 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	-	-
MFD16E02CL MFD16S01CL MFD16E02HL MFD16S01HL	17g 17g 17g 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	-	-
MFD18E02CL MFD18S01CL MFD18E02HL MFD18S01HL	28g 28g 28g 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	-	-
MFD22E02CL MFD22S01CL MFD22E02HL MFD22S01HL	43g 43g 43g 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	-	-
MFD27E02CL MFD27S01CL MFD27E02HL MFD27S01HL	79g 79g 79g 79g	28	37	25	20	- 3	8	M17x1	98	20	26	30	18	14	G1/8	M5	22	8	- 7	- M5	-	-
MFD33E02CL MFD33S01CL MFD33E02HL MFD33S01HL	118g 118g 118g 118g	34	45	30	20	- 4	8	M17x1	112	20	32.5	37	22.5	18	G1/8	G1/8	28	8	- 6.5	- M5	-	-
MFD41E02CL MFD41S01CL MFD41E02HL MFD41S01HL	280g 280g 280g 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	-	-
MFD47E02CL MFD47S01CL MFD47E02HL MFD47S01HL	280g 280g 280g 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	-	-
MFD51E02CL MFD51S01CL MFD51E02HL MFD51S01HL	490g 490g 490g 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	-	-
MFD63E02CL MFD63S01CL MFD63E02HL MFD63S01HL	800g 800g 800g 800g	66	85	60	30	- 6	11	M27x1	198	30	61	70	45	36	G1/8	G1/8	54	16	- 14	- G1/8	-	-

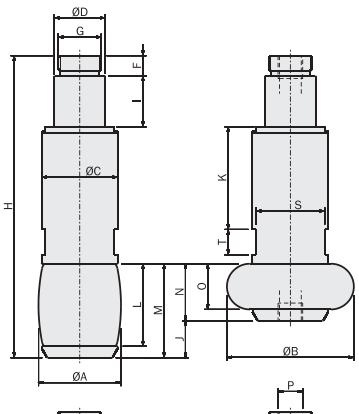
09/2015

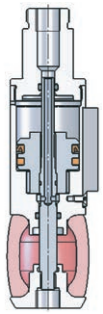
Dimensioni (mm) / *Dimensions (mm)*

...CL

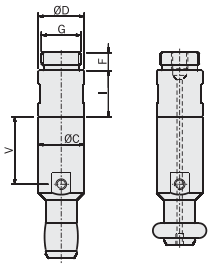


MFU 08/10/12

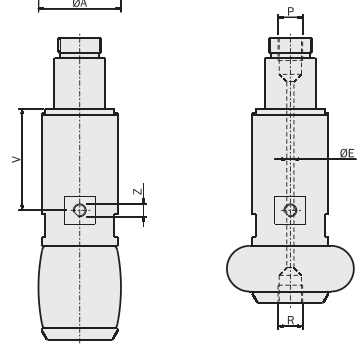


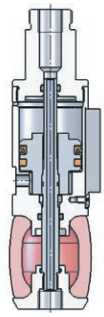


...HL



MFU 08/10/12





m [Peso - Weight]

	m	ØA	ØB	ØC	ØD	ØE	F	G	H	I	J	K	L	M	N	O	P	R	S	T	V	Z	X	ØY
MFU08E02CL MFU08S01CL MFU08E02HL MFU08S01HL	16g 16g 16g 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	- 20	- M3	16.3	7.6
MFU10E02CL MFU10S01CL MFU10E02HL MFU10S01HL	17g 17g 17g 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	- M3	17.7	9.5
MFU12E02CL MFU12S01CL MFU12E02HL MFU12S01HL	18g 18g 18g 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	- M3	20	11.8
MFU14E02CL MFU14S01CL MFU14E02HL MFU14S01HL	20g 20g 20g 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	- M3	-	-
MFU16E02CL MFU16S01CL MFU16E02HL MFU16S01HL	20g 20g 20g 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	- M3	-	-
MFU18E02CL MFU18S01CL MFU18E02HL MFU18S01HL	35g 35g 35g 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	- M5	-	-
MFU22E02CL MFU22S01CL MFU22E02HL MFU22S01HL	50g 50g 50g 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	- M5	-	-
MFU27E02CL MFU27S01CL MFU27E02HL MFU27S01HL	100g 100g 100g 100g	28	37	25	20	- 2.5	8	M17x1	108	20	12	37.5	26	30	18	14	G1/8	M5	22	9	- 37	- M5	-	-
MFU33E02CL MFU33S01CL MFU33E02HL MFU33S01HL	130g 130g 130g 130g	34	45	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	- M5	-	-
MFU41E02CL MFU41S01CL MFU41E02HL MFU41S01HL	300g 300g 300g 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	- M5	-	-
MFU47E02CL MFU47S01CL MFU47E02HL MFU47S01HL	300g 300g 300g 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	- M5	-	-
MFU51E02CL MFU51S01CL MFU51E02HL MFU51S01HL	500g 500g 500g 500g	54	68	50	30	- 5	11	M27x1	169	30	18	54	48	55	37	30	G1/8	G1/8	45	14	- 56.5	- G1/8	-	-
MFU63E02CL MFU63S01CL MFU63E02HL MFU63S01HL	785g 785g 785g 785g	66	85	60	30	- 5	11	M27x1	194	30	25	62	61	70	45	36	G1/8	G1/8	54	16	- 64.5	- G1/8	-	-

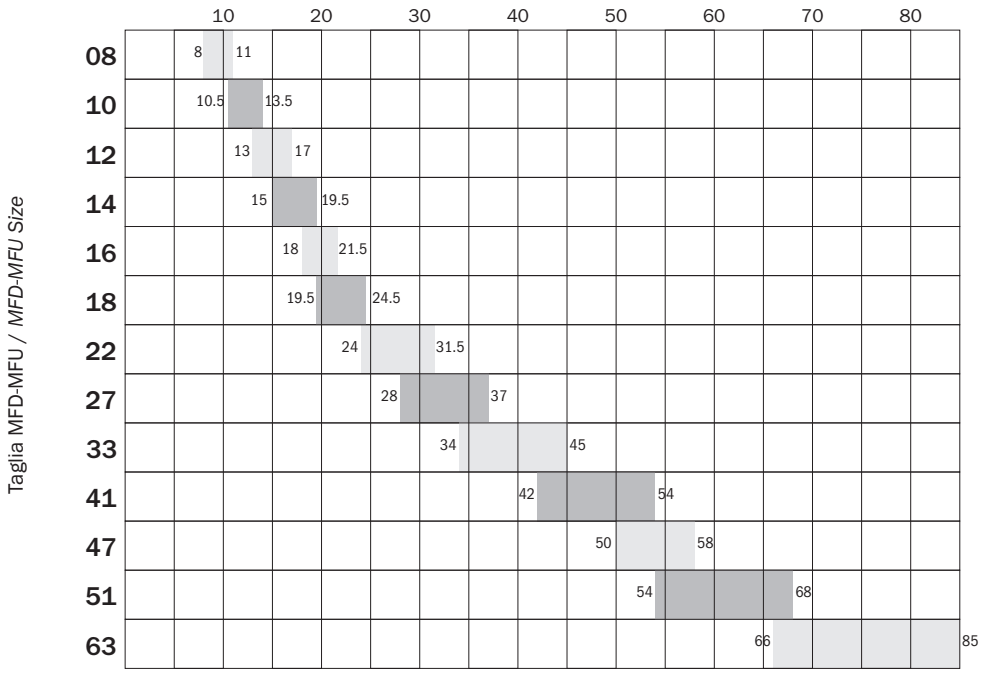
Diametri di presa

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.

Diametro (mm) / *Diameter (mm)*

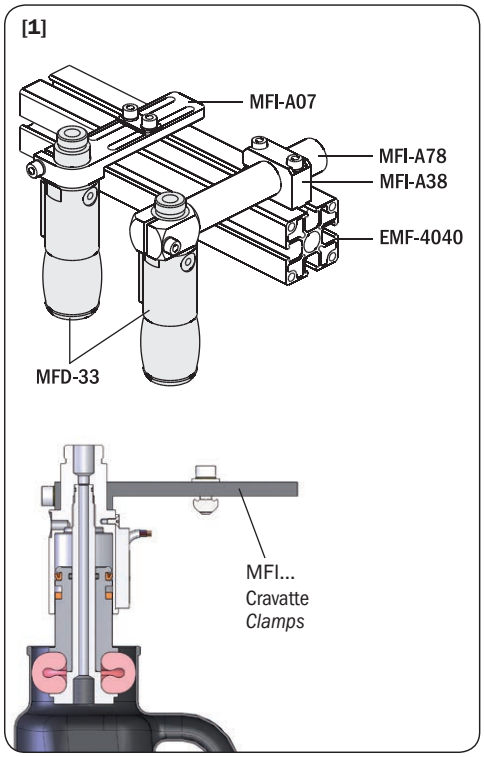


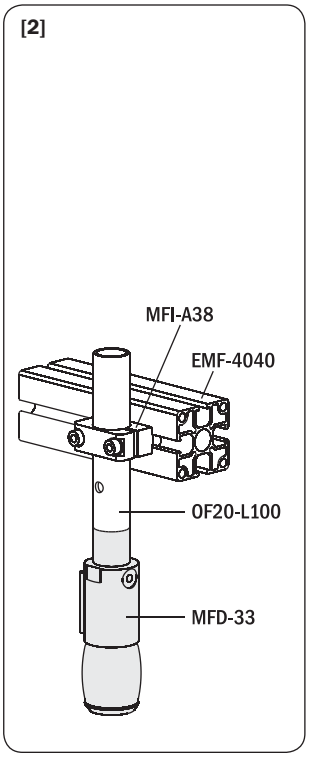
Fissaggio

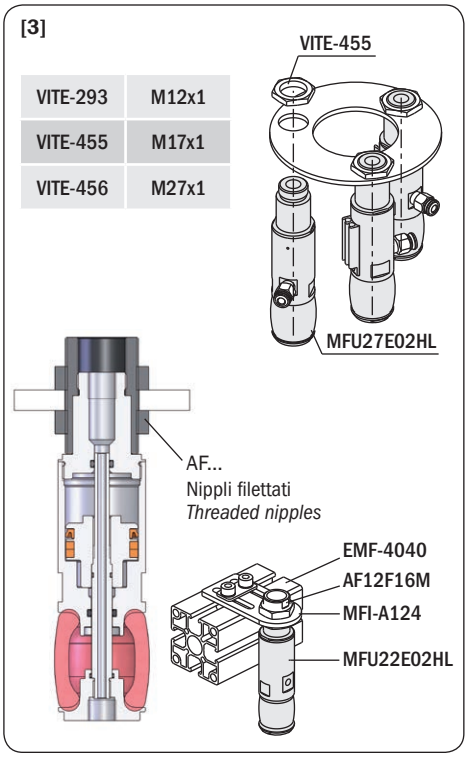
La pinza può essere montata, con una staffa a cravatta, direttamente sul suo codolo [1].
Con una staffa a cravatta, sulla prolunga opzionale [2].
Oppure attraverso i nippli filettati opzionali [3].

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].







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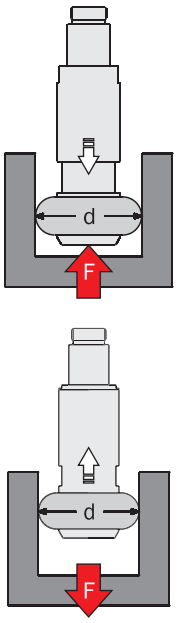
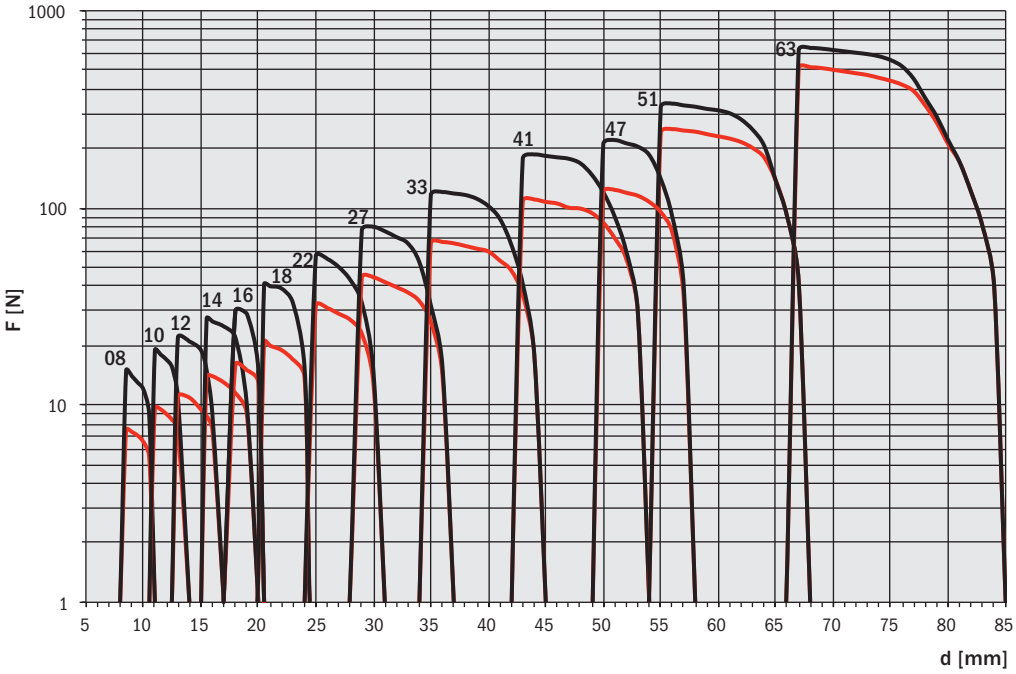
Forza di serraggio

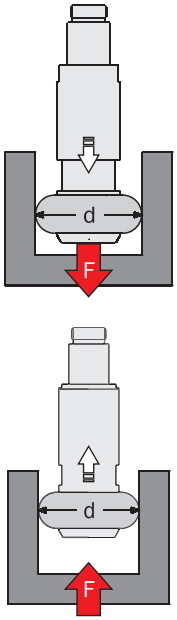
La forza esercitata da una pinza MFD/MFU dipende da molteplici fattori.
Principalmente il diametro dell'oggetto, ma anche la sua finitura superficiale, il coefficiente di attrito e la pressione di alimentazione.
I grafici mostrano la forza di sfilamento (F) di un carico preso con la pinza a espansione, 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.

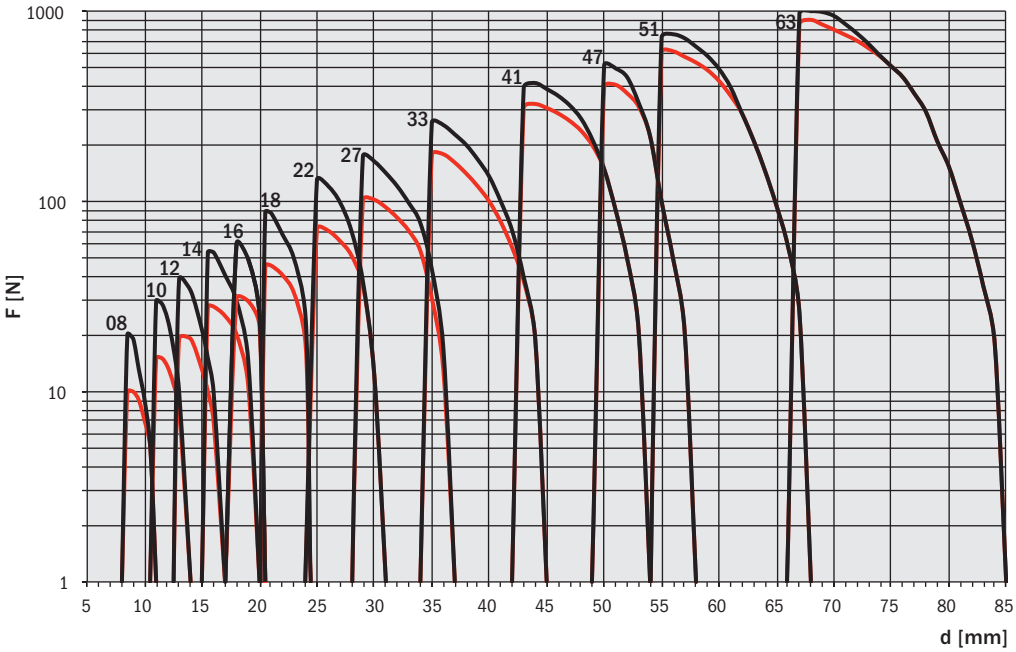
Gripping force

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.









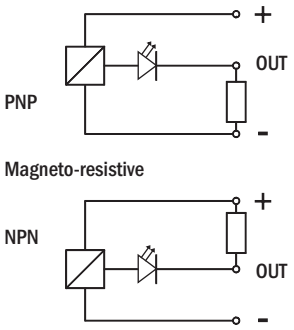
Sensori

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.

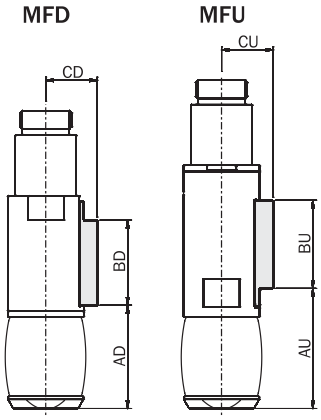
Sensors

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.

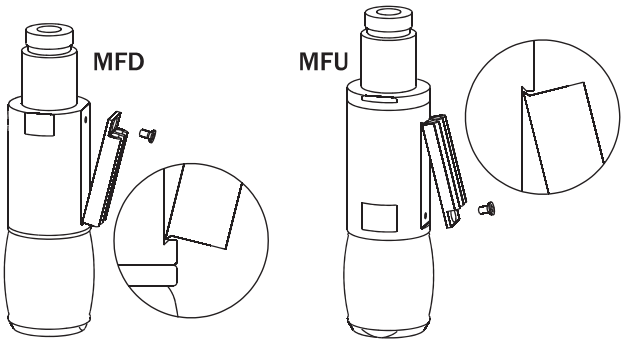
SN		
SN4N225-G	PNP	Cavo 2.5m / 2.5m cable
SN4M225-G	NPN	Cavo 2.5m / 2.5m cable
SN3N203-G	PNP	Connettore M8 / M8 snap plug connector
SN3M203-G	NPN	Connettore M8 / M8 snap plug connector



	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

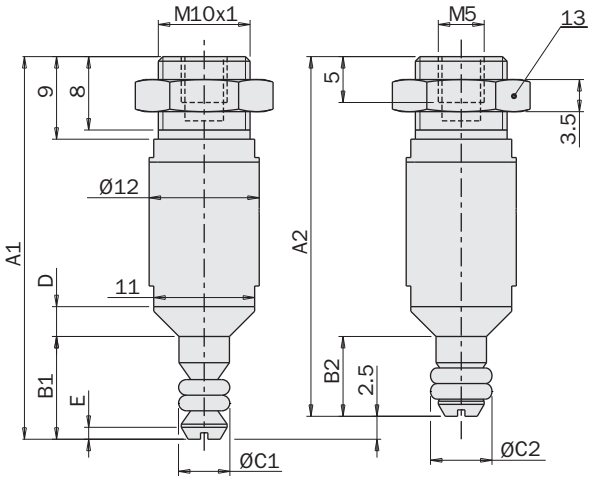


Micro pinze ad espansione per interni serie IFU

- 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.

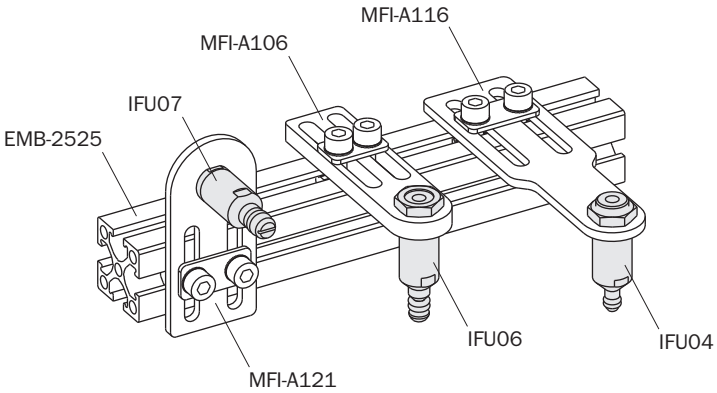
ID expansion micro grippers series IFU

- *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*

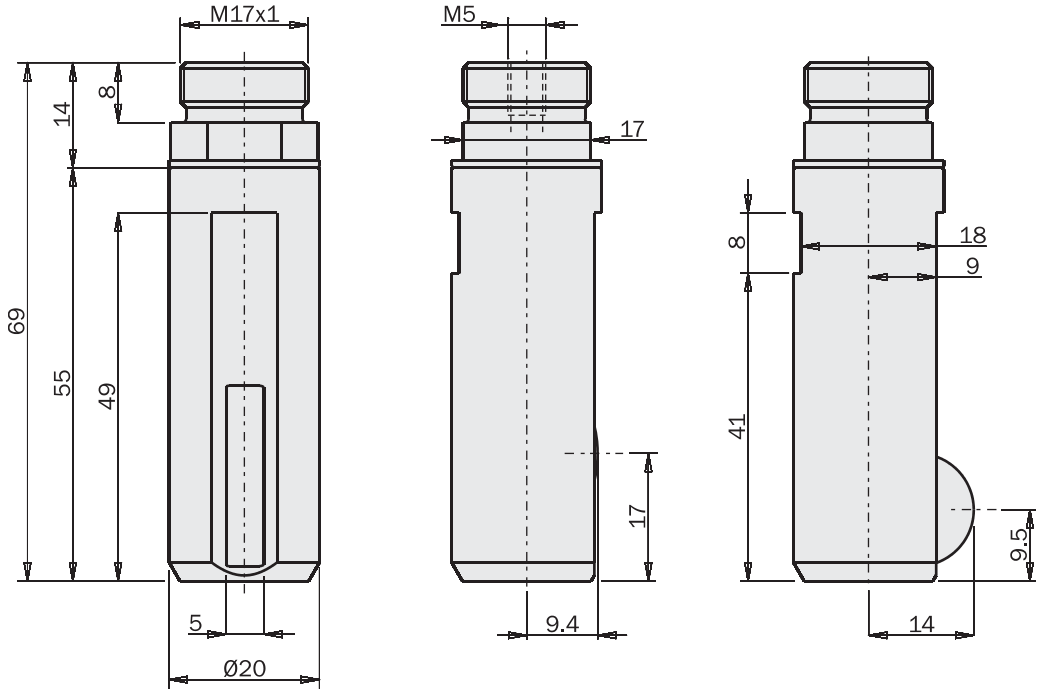


Pinza elastica mono-dito

- Azionamento a semplice effetto con ritorno elastico.
- Corpo da 20mm 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 filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*
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^3
Peso *Weight*	40 g

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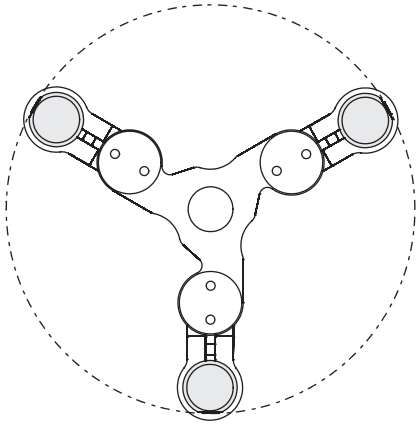
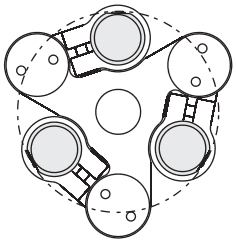
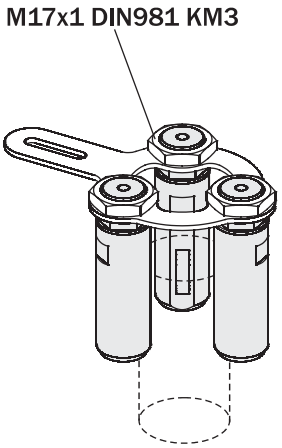
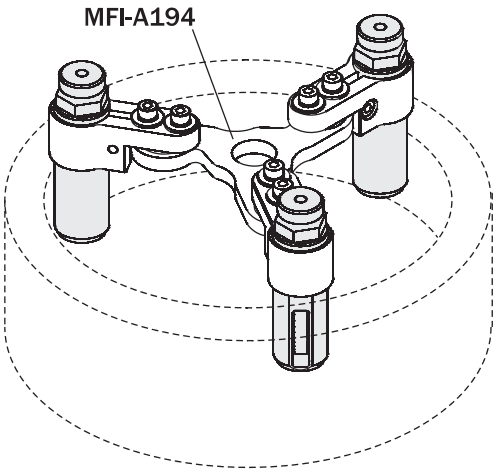
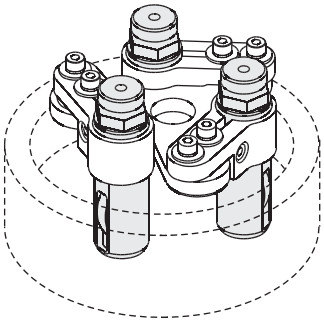
Esempi di utilizzo / *Application examples*

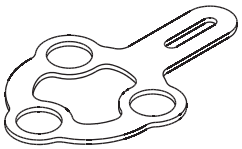


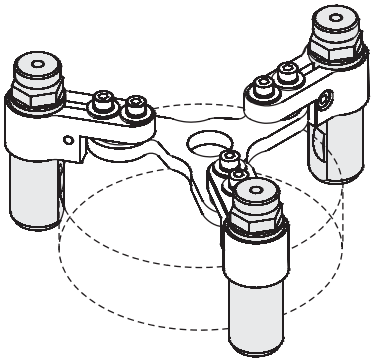


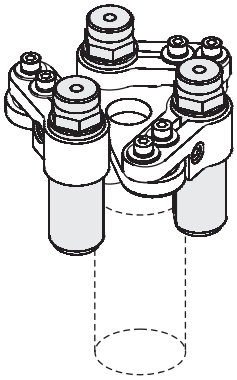


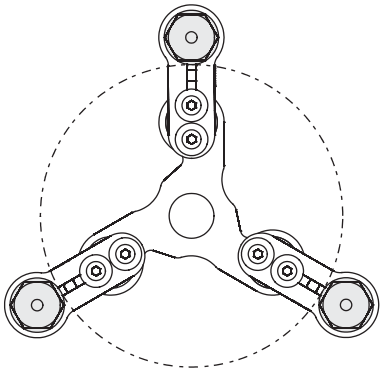


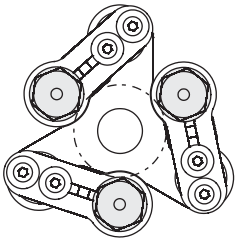


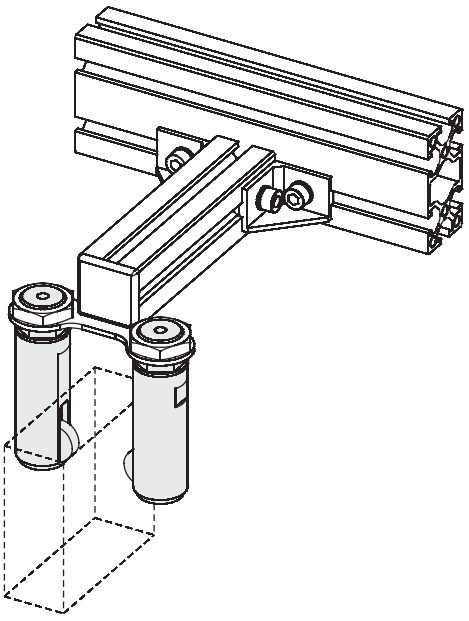


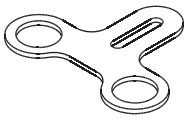












Pinze pneumatiche mono-dito angolari per staffaggio, serie OF

- Azionamento a semplice effetto.
- Sensori magnetici opzionali.

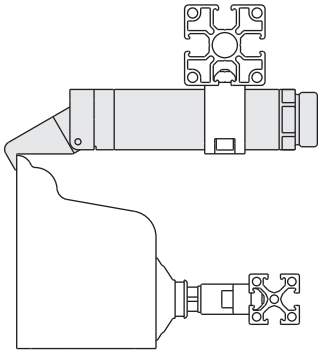
One finger angular pneumatic grippers for clamping, series OF

- *Single acting.*
- *Optional magnetic sensors.*

	OFA14-35	OFA20-35 OFA20-35S	OFA30-35 OFA30-35S	OFA50-35 OFA50-35S
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*			
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 chiusur 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^3	1.24 cm^3	4.56 cm^3	43 cm^3
Peso *Weight*	25 g	65 g 86 g	206 g 272 g	860 g 1060 g

OFA...-35S

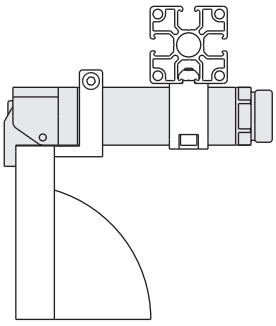
OFA...-35



	OFS14-90	OFS20-90 OFS20-90S	OFS30-90 OFS30-90S
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
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 chiusur a 6 bar *Closing torque at 6 bar*	19 Ncm	70 Ncm	300 Ncm
Consumo d'aria per ciclo *Cycle air consumption*	1 cm^3	3.52 cm^3	12.9 cm^3
Peso *Weight*	23 g	60 g 80 g	185 g 245 g

OFS...-90S

OFS...-90



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Pinze pneumatiche mono-dito angolari per staffaggio, serie OF

- Azionamento a semplice effetto.
- Sensori magnetici opzionali.

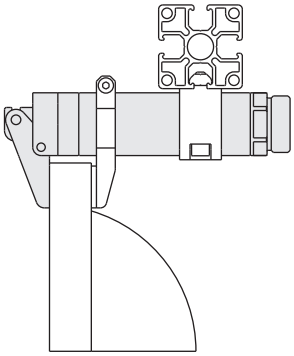
One finger angular pneumatic grippers for clamping, series OF

- *Single acting.*
- *Optional magnetic sensors.*

	OFR14-95	OFR20-95 OFR20-95S	OFR30-95 OFR30-95S	OFR50-95 OFR50-95S
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*			
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 chiusur 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^3	3.52 cm^3	12.9 cm^3	80 cm^3
Peso *Weight*	25 g	60 g 81 g	193 g 257 g	790 g 990 g

OFR...-95S

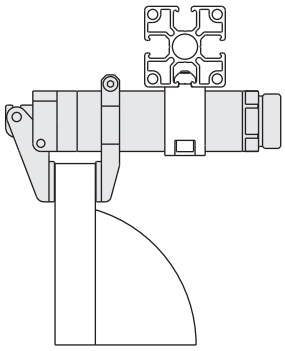
OFR...-95



	OFR14-95G	OFR20-95G OFR20-95SG	OFR30-95G OFR30-95SG
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
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 chiusur a 6 bar *Closing torque at 6 bar*	19 Ncm	70 Ncm	300 Ncm
Consumo d'aria per ciclo *Cycle air consumption*	1 cm^3	3.52 cm^3	12.9 cm^3
Peso *Weight*	30 g	80 g 100 g	230 g 300 g

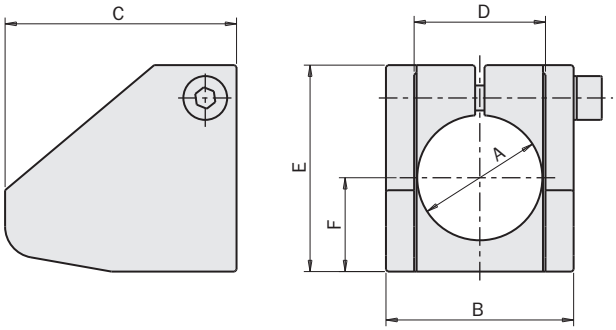
OFR...-95SG

OFR...-95G



Guida pinza

(kit completo di viti)



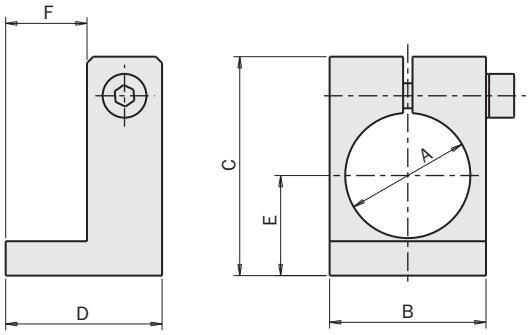
Gripper guide

(kit with screws)

	MFI-A96	MFI-A97
A [mm]	Ø20	Ø30
B [mm]	30	45
C [mm]	37	65
D [mm]	21	32
E [mm]	33	44
F [mm]	15	20
Peso / *Weight*	20 g	60 g

Riscontro per pinze OFS

(kit completo di viti)



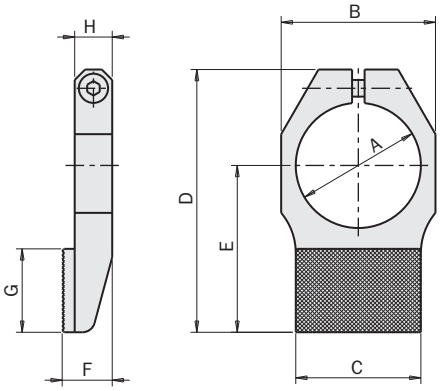
Stopper for OFS grippers

(kit with screws)

	MFI-A271	MFI-A98	MFI-A99
A [mm]	Ø14	Ø20	Ø30
B [mm]	19	25	35
C [mm]	24	40	45
D [mm]	12	25	25
E [mm]	11	16	21
F [mm]	6	13	13
Peso / *Weight*	5 g	14 g	23 g

Riscontro per pinze OFR

(kit completo di viti)

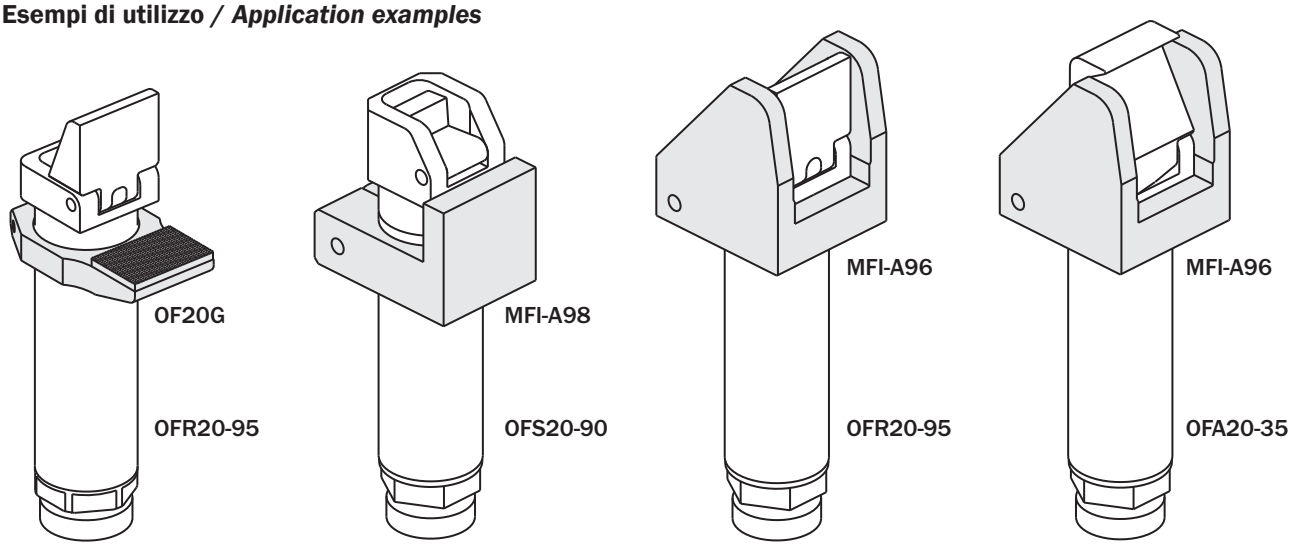


Stopper for OFR grippers

(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*	6 g	12 g	30 g

Esempi di utilizzo / *Application examples*



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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.

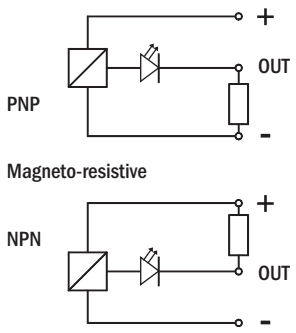
Optional magnetic sensors

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.

I sensori utilizzabili sono:

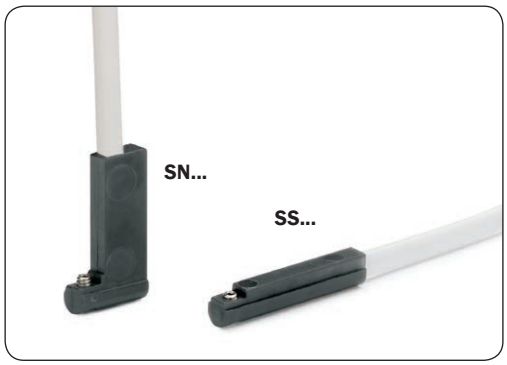
The sensors that can be used are:

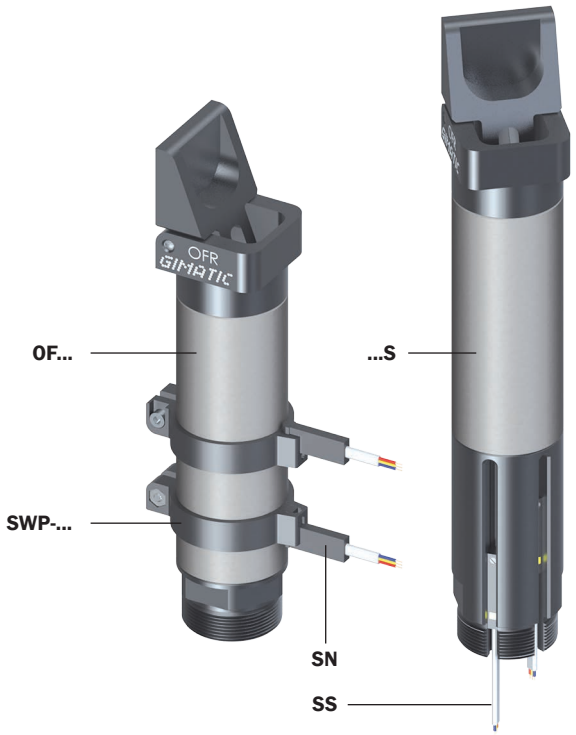
SN4N225-G	PNP	cavo 2.5m / 2.5m cable
SN4M225-G	NPN	cavo 2.5m / 2.5m cable
SN3N203-G	PNP	Connettore M8 / Snap M8 plug connector
SN3M203-G	NPN	Connettore M8 / Snap M8 plug connector
SS4N225-G	PNP	cavo 2.5m / 2.5m cable
SS4M225-G	NPN	cavo 2.5m / 2.5m cable
SS3N203-G	PNP	Connettore M8 / Snap M8 plug connector
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.





OF...	SWP-...
OF14...	SWP-014
OF20...	SWP-020
OF30...	SWP-030

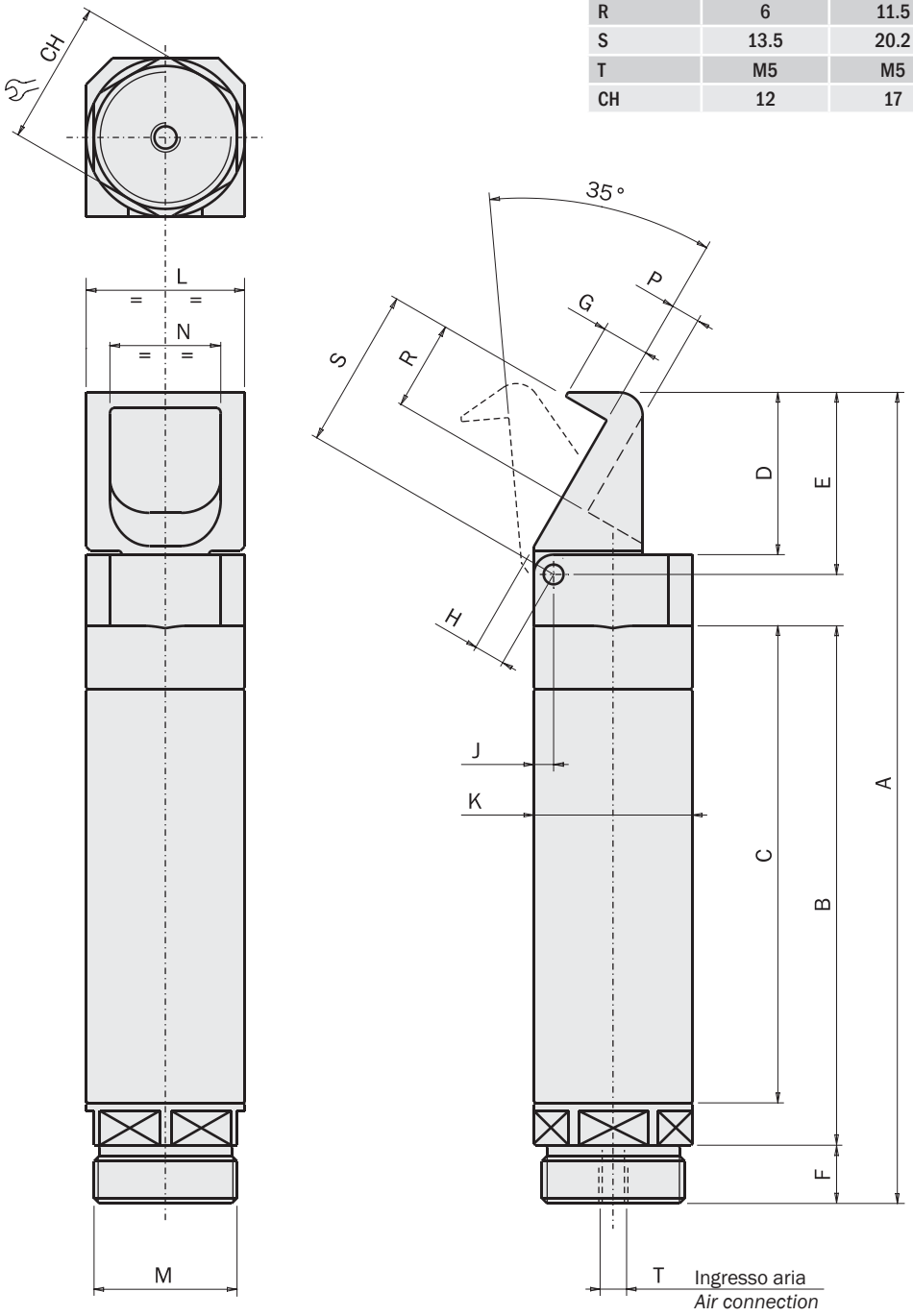
Nelle versioni ...S i sensori sono annegati nelle apposite cave.
Nelle altre versioni è necessaria una fascetta esterna (SWP-...).

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	44	68.5	100	139
C	40	63.5	92	127
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	M45x1.5
N	10	14	22	38
P	2	3	5	7
R	6	11.5	17	26
S	13.5	20.2	30.5	50
T	M5	M5	M5	G1/8”
CH	12	17	27	46



FIRST ANGLE PROJECTION

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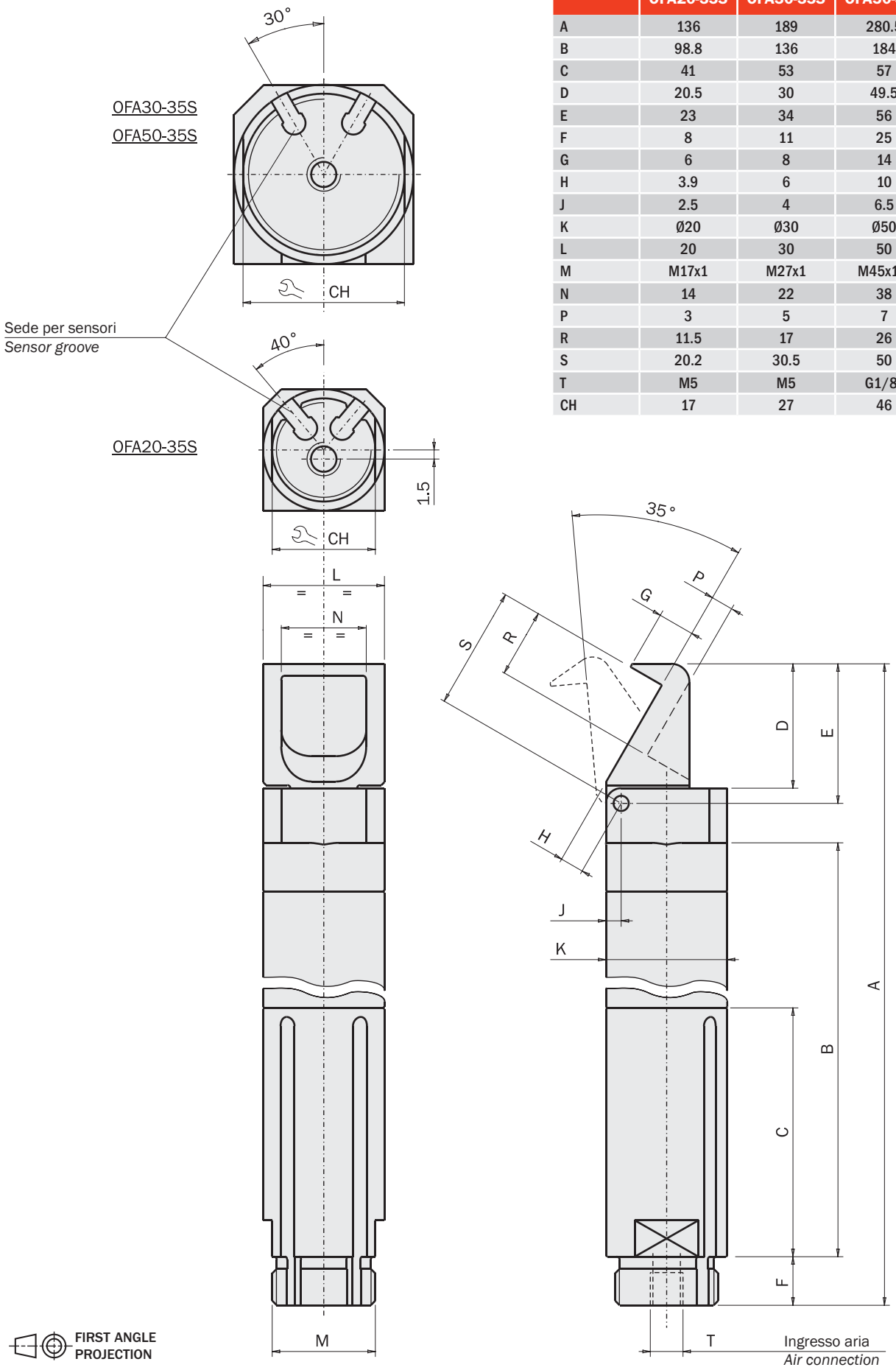
Dimensioni (mm) / *Dimensions (mm)*

OFA...S

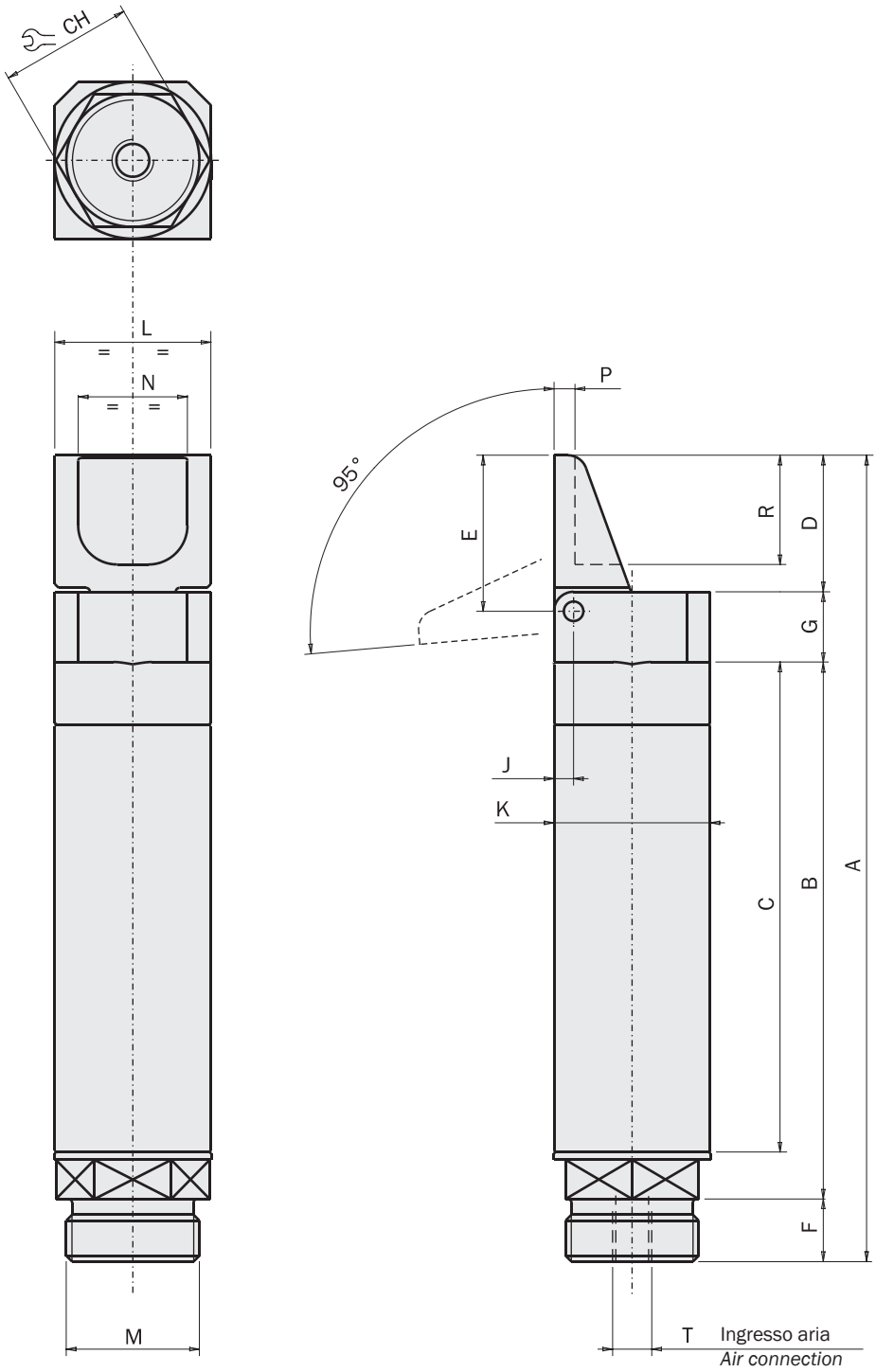


	OFA20-35S	OFA30-35S	OFA50-35S
A	136	189	280.5
B	98.8	136	184
C	41	53	57
D	20.5	30	49.5
E	23	34	56
F	8	11	25
G	6	8	14
H	3.9	6	10
J	2.5	4	6.5
K	Ø20	Ø30	Ø50
L	20	30	50
M	M17x1	M27x1	M45x1.5
N	14	22	38
P	3	5	7
R	11.5	17	26
S	20.2	30.5	50
T	M5	M5	G1/8"
CH	17	27	46

Dimensioni (mm) / *Dimensions (mm)*

OFR...

	A	B	C	D	E	F	G	J	K	L	M	N	P	R	CH	T
OFR14-95	72	41	40	12	14	5.5	10.5	2	Ø14	14	M12x1	10	2	9	12	M5
OFR20-95	103	68.5	62.5	17.5	20	8	9	2.5	Ø20	20	M17x1	14	3	14	17	M5
OFR30-95	148	100	92	25	29	11	12	4	Ø30	30	M27x1	22	5	21	27	M5
OFR50-95	227.5	139	114	41.5	48	25	12	6.5	Ø50	50	M45x1.5	38	7	34	46	G1/8”



FIRST ANGLE PROJECTION

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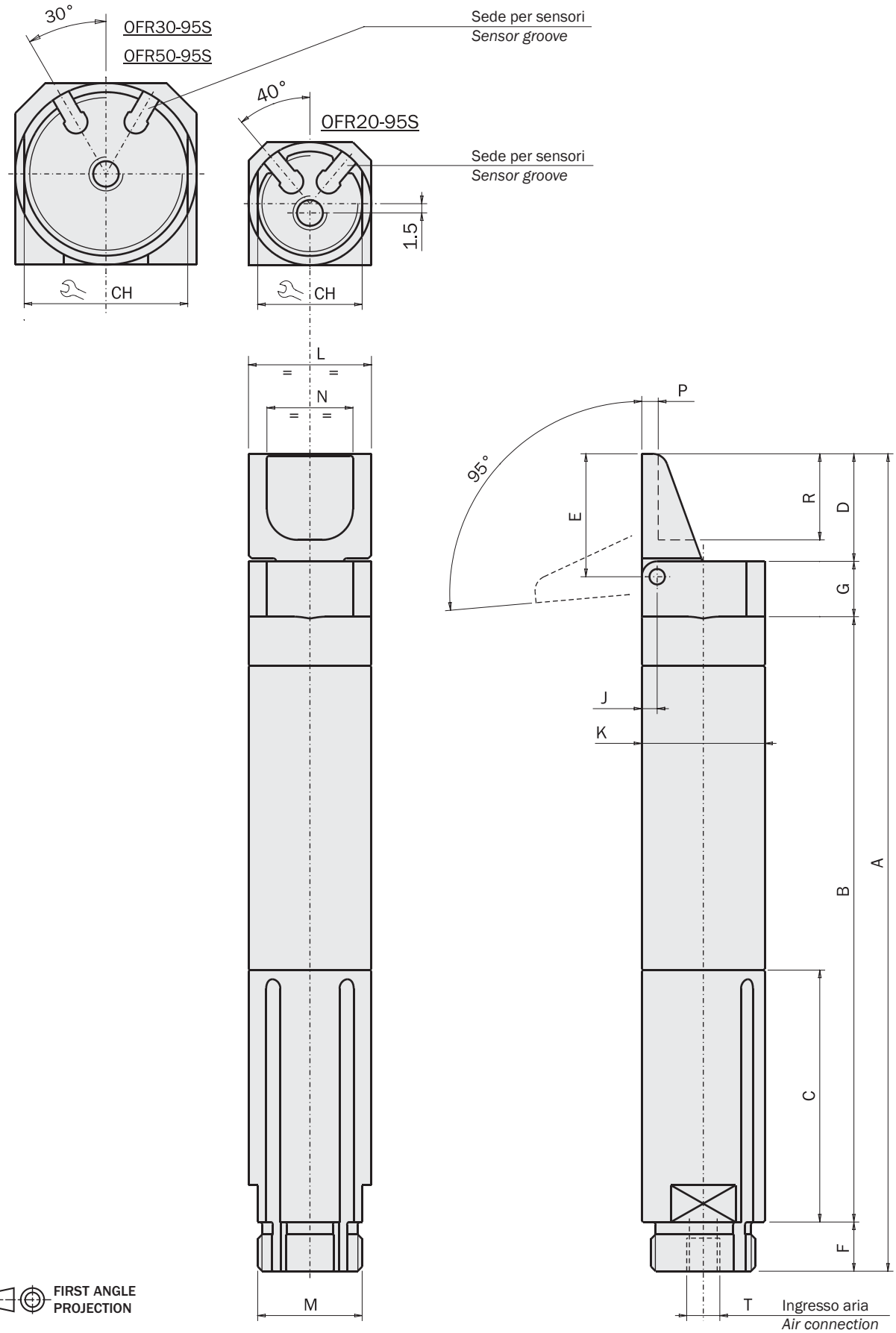
Dimensioni (mm) / *Dimensions (mm)*

OFR...S

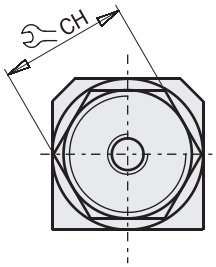
	A	B	C	D	E	F	G	J	K	L	M	N	P	R	T	CH
OFR20-95S	133	98.5	41	17.5	20	8	9	2.5	Ø20	20	M17x1	14	3	14	M5	17
OFR30-95S	184	136	53	25	29	11	12	4	Ø30	30	M27x1	22	5	21	M5	27
OFR50-95S	272.5	184	57	41.5	48	25	22	6.5	Ø50	50	M45x1.5	38	7	34	G1/8”	46

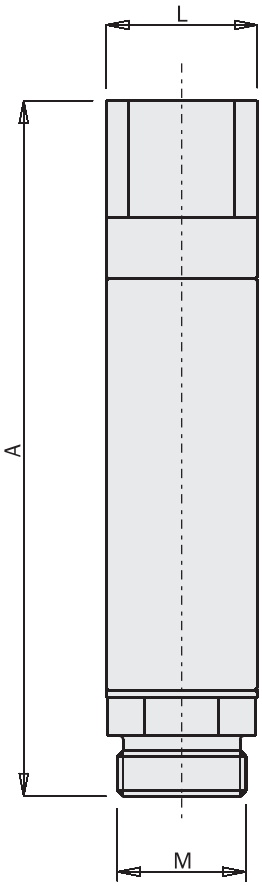


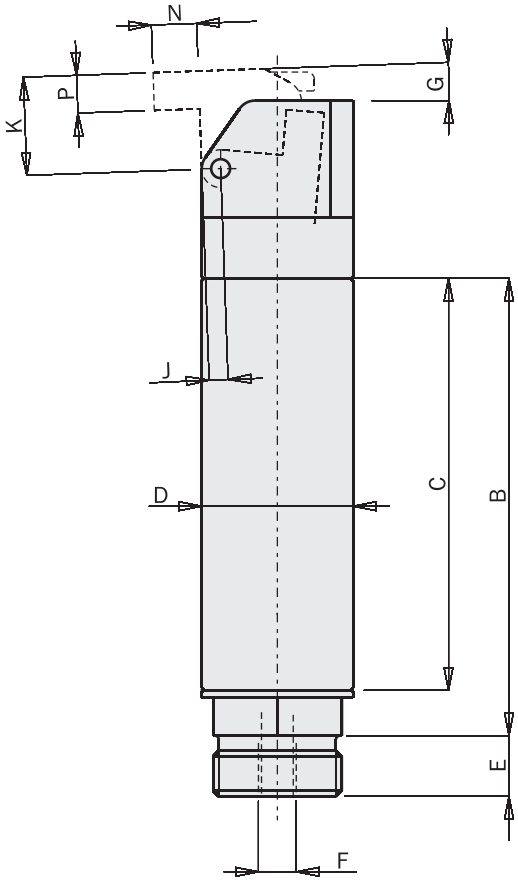
Dimensioni (mm) / *Dimensions (mm)*

OFS...

	A	B	C	D	E	F	G	J	K	L	M	N	P	CH
OFS14-90	63	42	38	Ø14	5.5	M5	2°	2	9	14	M12x1	4	4	12
OFS20-90	92	60.5	54.5	Ø20	8	M5	2°	2.5	13	20	M17x1	6	5	17
OFS30-90	134.5	90	82	Ø30	11	M5	2°	4	20	30	M27x1	11	6	27







Ingresso aria
Air connection

FIRST ANGLE PROJECTION

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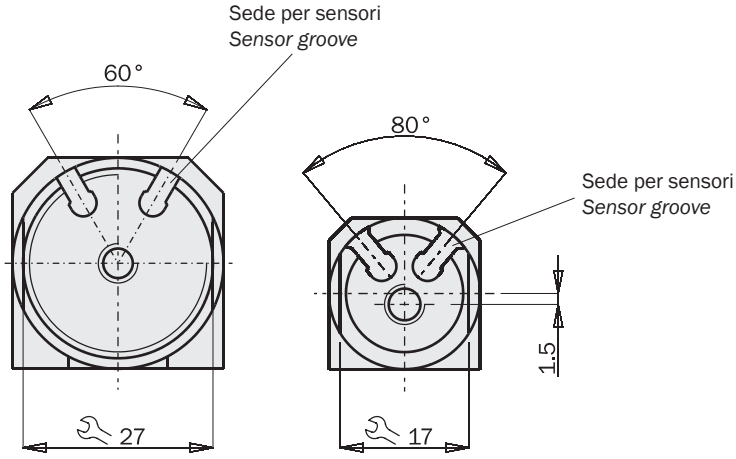
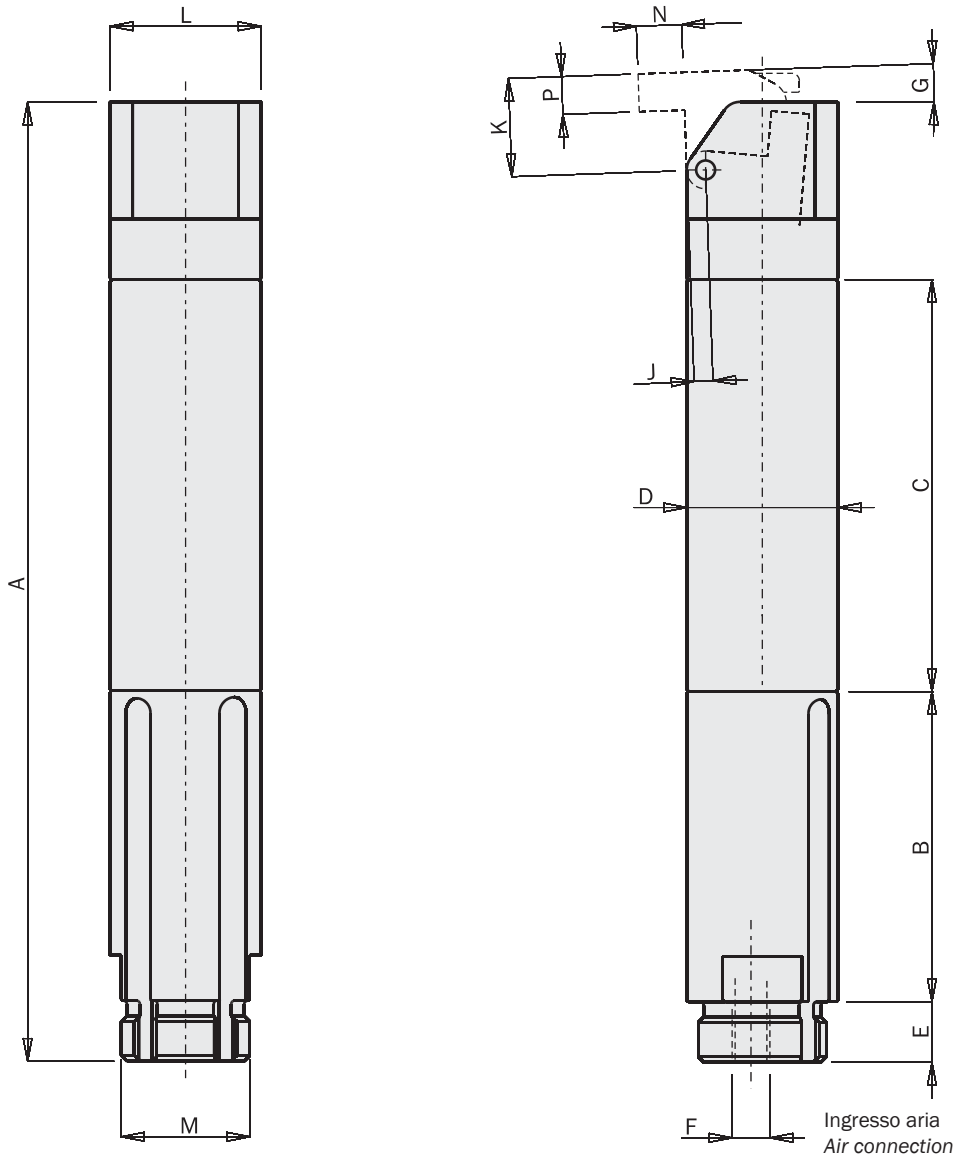
Dimensioni (mm) / *Dimensions (mm)*

OFS...S

	A	B	C	D	E	F	G	J	K	L	M	N	P
OFS20-90S	122	41	49.5	Ø20	8	M5	2°	2.5	13	20	M17x1	6	5
OFS30-90S	170.5	53	73	Ø30	11	M5	2°	4	20	30	M27x1	11	6



OFS30-90S OFS20-90S

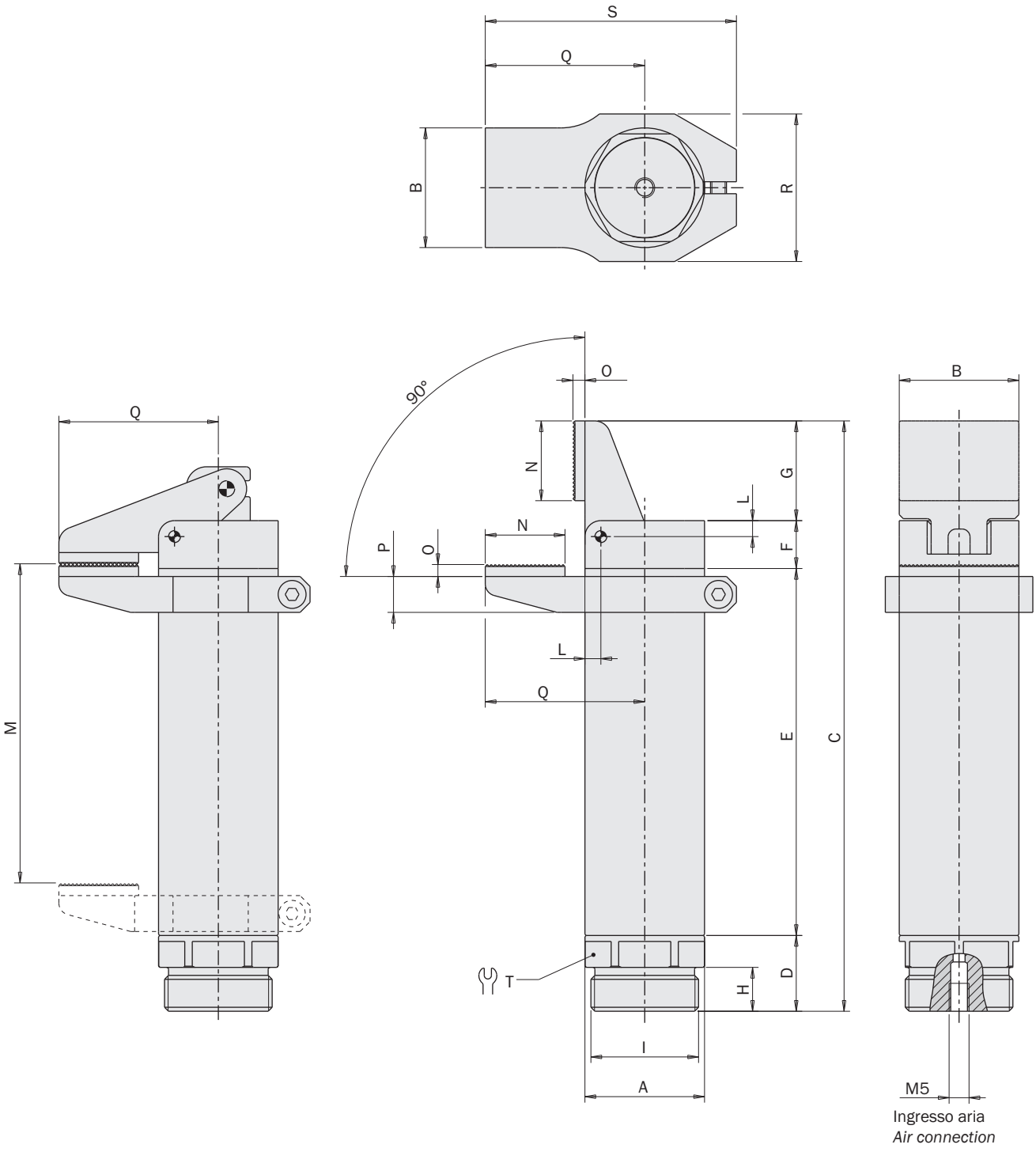


FIRST ANGLE PROJECTION

Dimensioni (mm) / *Dimensions (mm)*

OFR...-95G

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T
OFR14-95G	Ø14	14	72	9.5	40	10.5	12	5.5	M12x1	2	34	11	2.5	7.5	19	19	32	12
OFR20-95G	Ø20	20	103	13	63.5	9	17.5	8	M17x1	2.5	53	15	2.5	7	27.5	25	43.5	17
OFR30-95G	Ø30	30	148	19	92	12	25	11	M27x1	4	80	20	3	9	40	37	63	27



FIRST ANGLE PROJECTION

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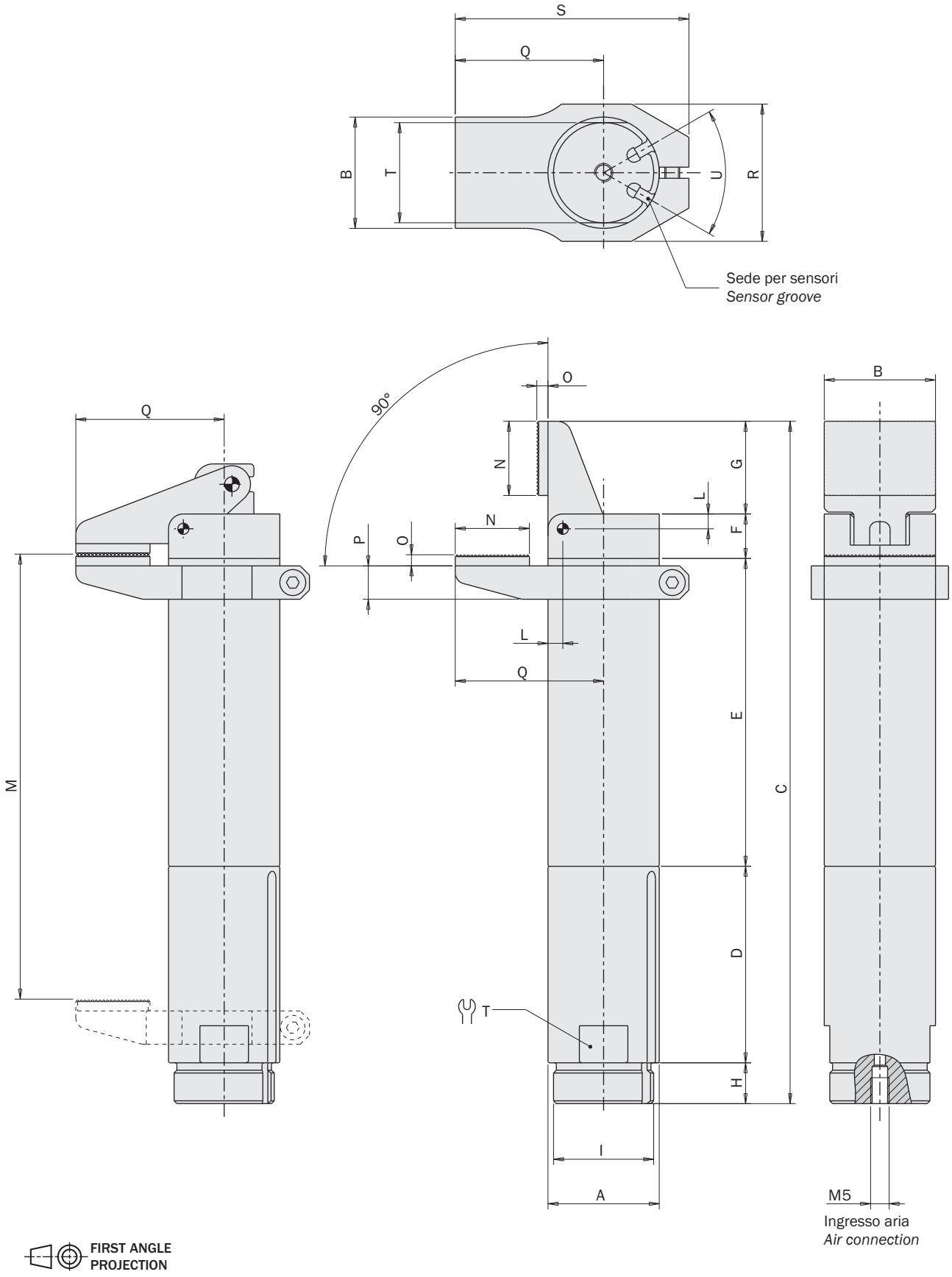
Dimensioni (mm) / *Dimensions (mm)*

OFR...-95SG

	A	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	U
OFR20-95SG	Ø20	20	133	41	57.5	9	17.5	8	M17x1	2.5	88	15	2.5	7	27.5	25	43.5	17	60°
OFR30-95SG	Ø30	30	184	53	83	12	25	11	M27x1	4	121	20	3	9	40	37	63	27	80°



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Pinze pneumatiche mono-dito angolari per staffaggio, serie OFP

- Azionamento a semplice effetto.
- Dito in plastica (nylon).
- Contatto morbido con pastiglie in TPU oppure con O-Ring in NBR, Silicone, Viton.
- Corpo in polimero (OFP20) o in alluminio (OFP21 e OFP14).
- Vari accessori per il fissaggio.
- Sensori magnetici e relative staffe in opzione.

One finger angular pneumatic grippers for clamping, series OFP

- *Single acting.*
- *Plastic (nylon) finger.*
- *Soft contact by TPU pads or O-Rings in NBR, Silicone or Viton.*
- *Body in polymer (OFP20) or in aluminum (OFP21 and OFP14).*
- *Several mounting accessories.*
- *Magnetic sensors and relevant mounting brackets as option.*

OFP20

OFP20P-20

OFP20V-20

OFP20N-20

OFP20S-20

OFP21

OFP21P-20

OFP21V-20

OFP21N-20

OFP21S-20

OFP14

OFP14P-25

TPU	OFP20P-20	OFP21P-20	OFP14P-25
NBR	OFP20N-20	OFP21N-20	
Silicone	OFP20S-20	OFP21S-20	
Viton	OFP20V-20	OFP21V-20	
Materiale del corpo *Body construction*	plastica (nylon) *plastic (nylon)*	alluminio *aluminium*	
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
Pressione di esercizio *Pressure range*	2 ÷ 8 bar		
Temperatura di esercizio *Temperature range*	5° ÷ 60 °C.		
Corsa *Stroke*	21°	21°	25°
Alesaggio *Piston bore*	16 mm	16 mm	11 mm
Coppia di chiusura a 6 bar *Closing torque at 6 bar*	100 Ncm	100 Ncm	40 Ncm
Consumo d'aria per ciclo *Cycle air consumption*	1.08 cm^3	1.08 cm^3	0.4 cm^3
Peso *Weight*	35 g	45 g	17 g

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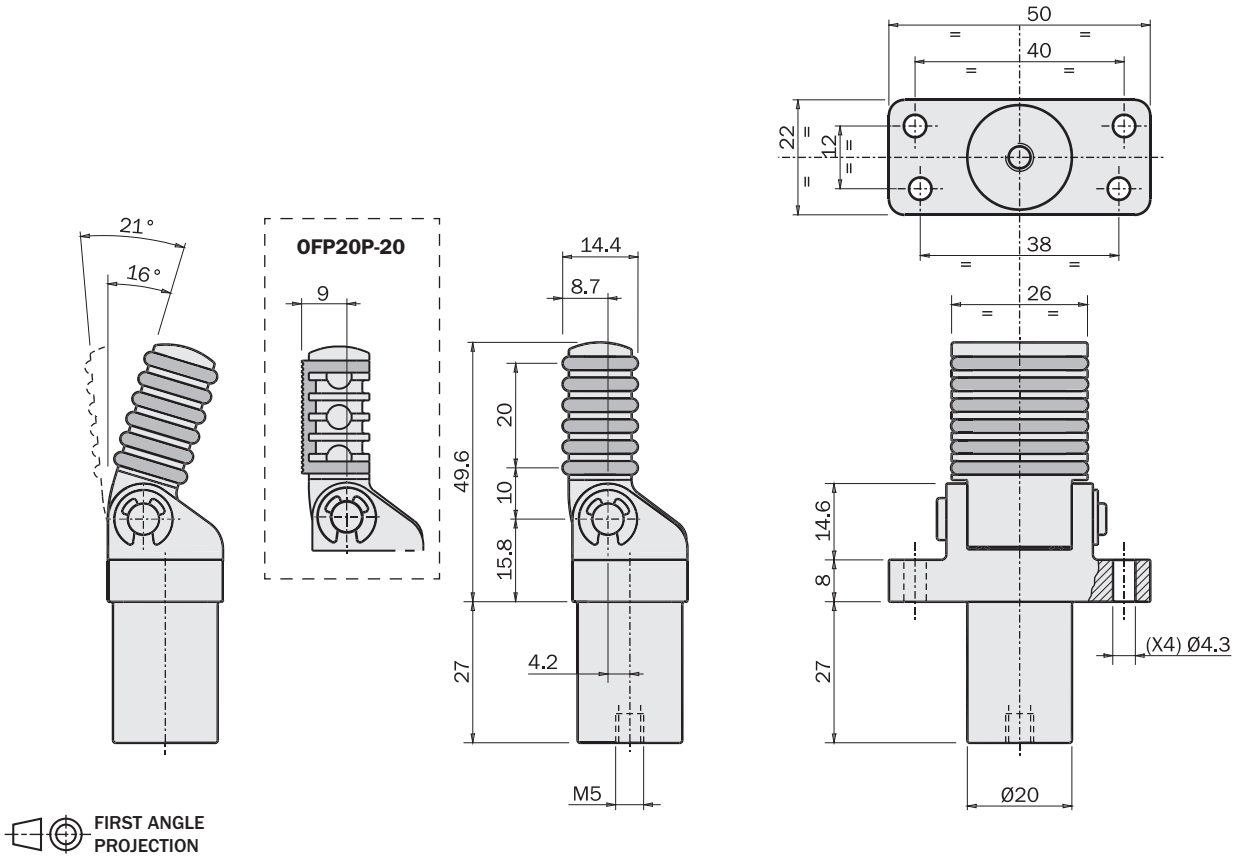
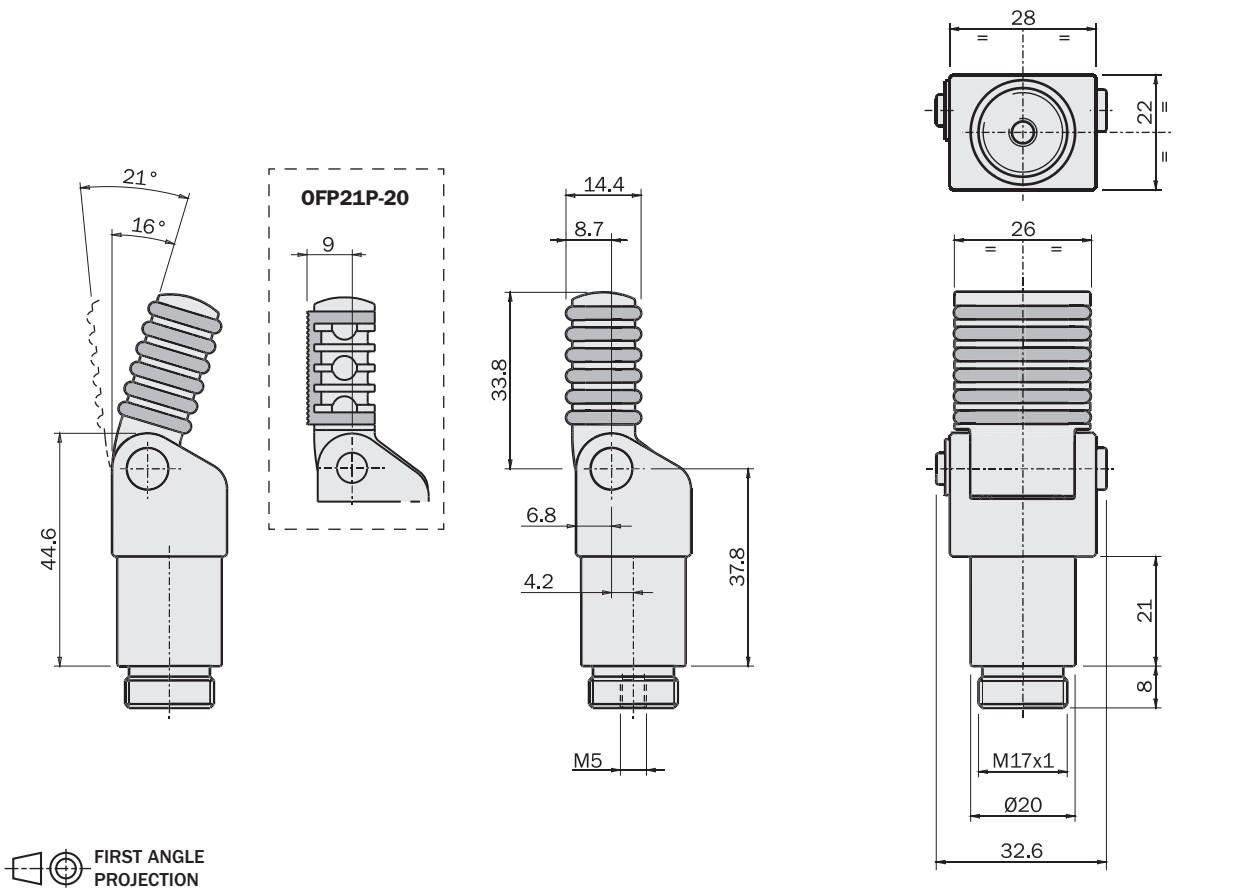
Dimensioni (mm) / *Dimensions (mm)* — OFP20

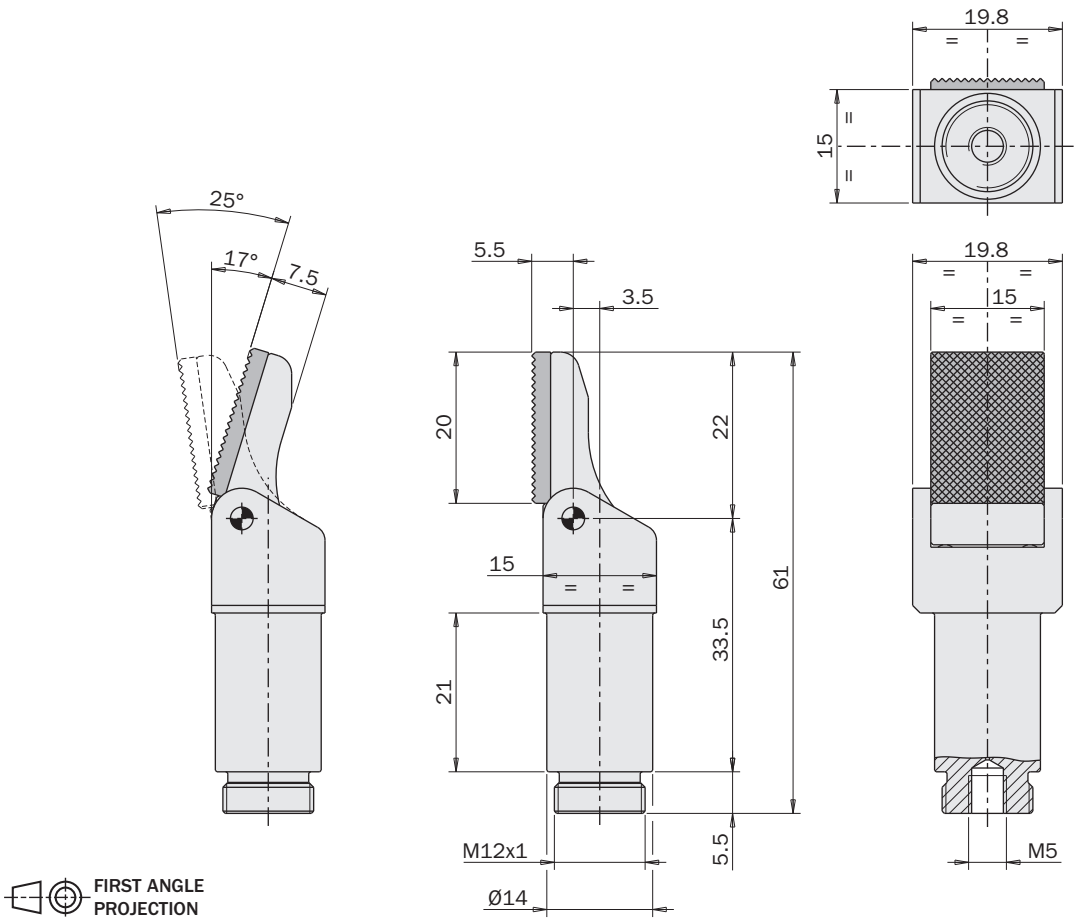


Dimensioni (mm) / *Dimensions (mm)* — OFP21

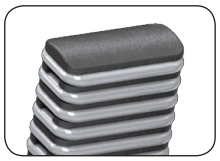


Dimensioni (mm) / *Dimensions (mm)*

OFP14

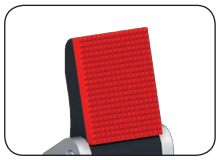
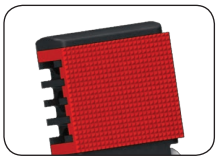


O-Ring di ricambio
Spare O-Ring



	KIT3-OFP20N	KIT3-OFP20S	KIT3-OFP20V
Materiale *Material*	NBR	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.

Pastiglia di ricambio
Spare pad

	KIT3-OFP14P	KIT3-OFP20P
Materiale *Material*	TPU	TPU
Pinza *Gripper*	OFP14P-25	OFP20P-20 OFP21P-20
Temperatura di esercizio *Temperature range*	5° ÷ 80 °C.	5° ÷ 80 °C.

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Fissaggio

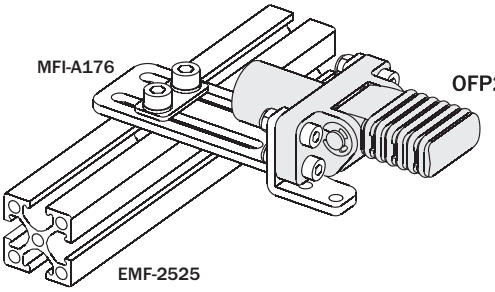
Le pinze OFP14 e OFP21 hanno il corpo in alluminio e possono essere incravattate con tutti gli accessori MFI con diametro di 14mm e 20mm.

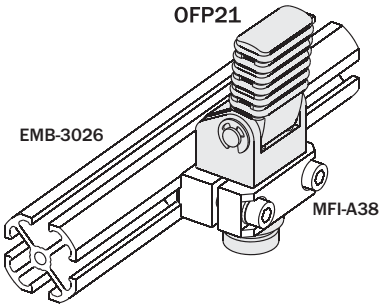
Le pinze OFP20 hanno il corpo in plastica e non devono essere incravattate; usare staffe di fissaggio come MFI-A176.

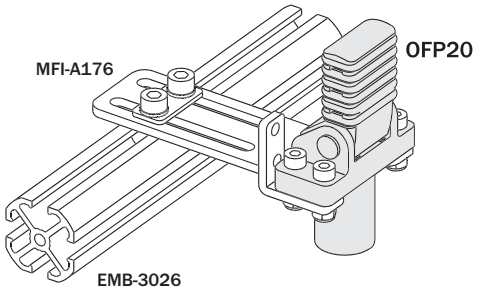
Fastening

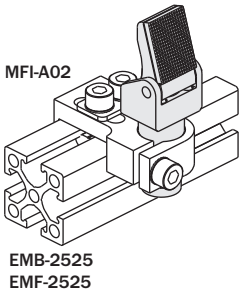
The OFP14 and OFP21 grippers have an aluminum body and can be clamped with all MFI accessories with 14mm and 20mm diameter.

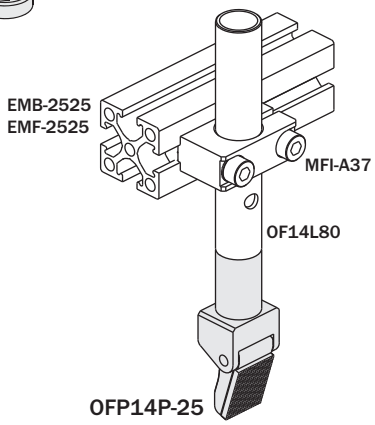
The OFP20 grippers have a plastic body and must not be clamped. Use mounting brackets like the MFI-A176.











Sensori

Sulle pinze con corpo in alluminio (OFP21 e OFP14) è possibile il montaggio di 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.

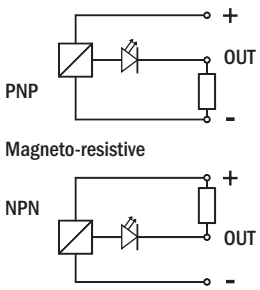
I sensori utilizzabili sono:

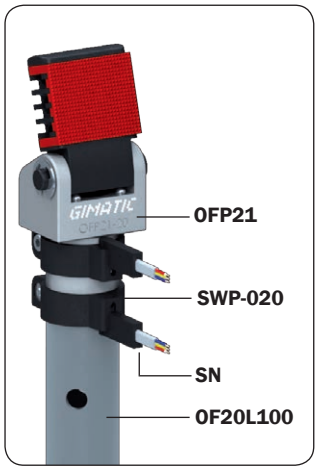
Sensors

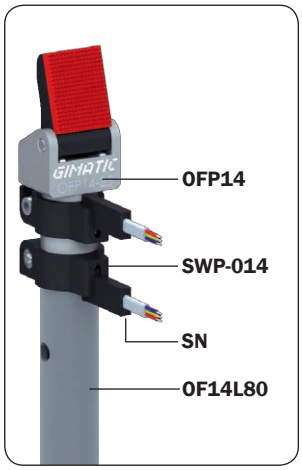
On the grippers with aluminum body (OFP21 and OFP14) sensors can be mounted.
The operating position is detected by magnetic proximity sensors (optional) through a magnet placed on the piston.
The use of magnetic proximity sensors is to be avoided in the vicinity of large masses of ferromagnetic material or intense magnetic fields as this may cause detection problems.

The sensors that can be used are:

SN4N225-G	PNP	Cavo 2.5m / 2.5m cable
SN4M225-G	NPN	Cavo 2.5m / 2.5m cable
SN3N203-G	PNP	Connettore M8 / Snap M8 plug connector
SN3M203-G	NPN	Connettore M8 / Snap M8 plug connector







Pinze pneumatiche perpendicolari per staffaggio mono-dito, serie OFX

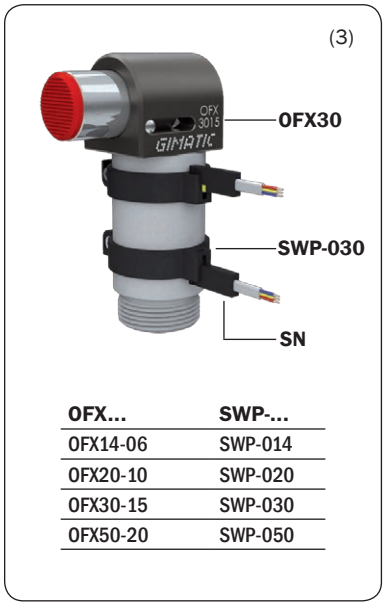
- Azionamento con pistone pneumatico a semplice effetto.
- Movimento lineare del dito perpendicolare al pistone.
- Dito con foro passante, per alimentare una ventosa (1).
- Pastiglia rimovibile (2) in gomma (TPU) sul dito, per contatto morbido.
- Sensori e fascette opzionali (3).

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 TPU rubber pad (2) on the finger, for a soft touch.*
- *Optional sensors and clamps (3).*

(2)

(1)



(3)

OFX...	SWP-...
OFX14-06	SWP-014
OFX20-10	SWP-020
OFX30-15	SWP-030
OFX50-20	SWP-050

	OFX14-06	OFX20-10	OFX30-15	OFX50-20
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.			
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 (±0.2 mm) *Total stroke*	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^3	3.5 cm^3	15 cm^3	50 cm^3
Peso *Weight*	30 g	65 g	190 g	740 g

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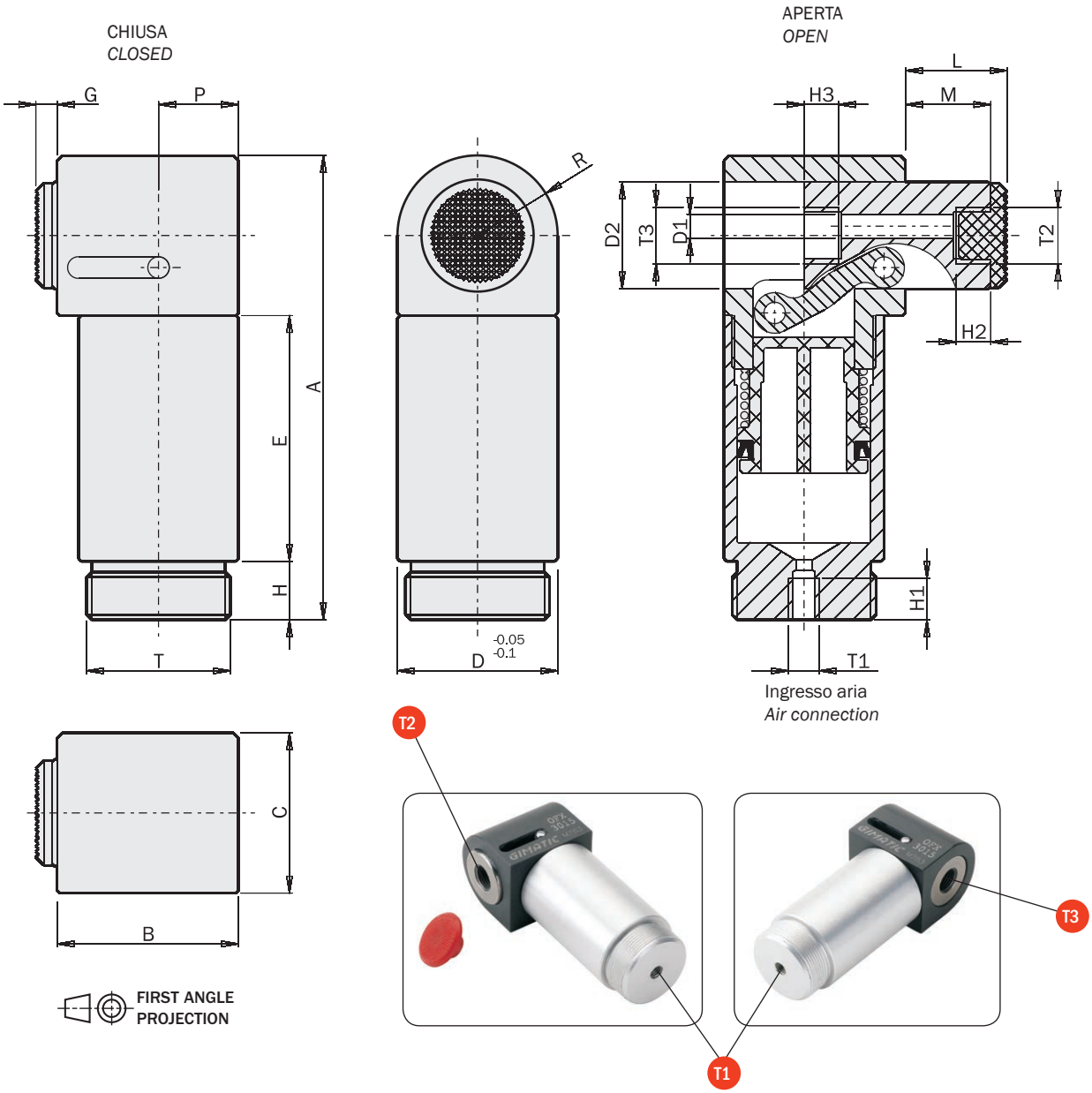
Dimensioni (mm) / *Dimensions (mm)*



FIRST ANGLE PROJECTION

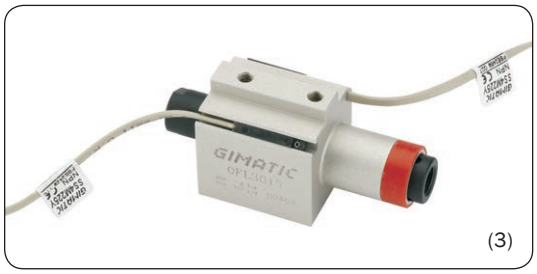
	OFX14-06	OFX20-10	OFX30-15	OFX50-20
A	52	62.5	87	143
B	23	25	34	60
C	14	20	30	50
D	Ø14	Ø20	Ø30	Ø50
D1	Ø1.5	Ø2.4	Ø4.5	Ø9
D2	Ø10	Ø14	Ø20	Ø35
E	30	34.5	46	68
G	3.5	3.5	4	4
H	8	8	11	25
H1	7	7	7	10
H2	5	5	6	9
H3	5	5	6	9
L	9.5	13.5	19	24
M	7	11	16	21
P	9	10	15	25
R	R7	R10	R15	R25
T	M12x1	M17x1	M27x1	M45x1.5
T1	M5	M5	M5	G1/8"
T2	M5	M5	G1/8"	G1/4"
T3	M5	M5	G1/8"	G1/4"

Cilindro pneumatico a corsa breve, con stelo antirotazione, foro passante e codolo

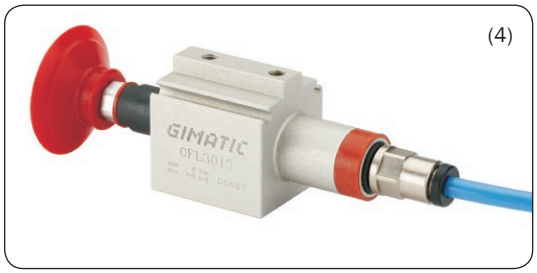
- Azionamento a doppio effetto.
- Due taglie disponibili.
- Foro passante per l'alimentazione di ventose (4).
- Tre cave con sfere per l'anti-rotazione dello stelo (1).
- Codolo standard per il montaggio con i prodotti MFI (2).
- Sensori magnetici opzionali (3).

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).*



(3)



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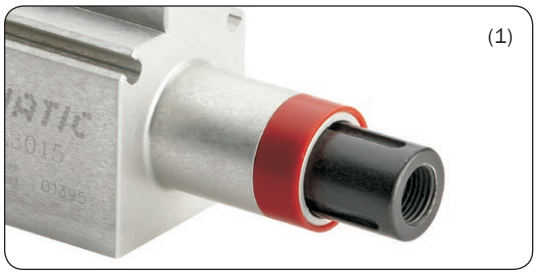
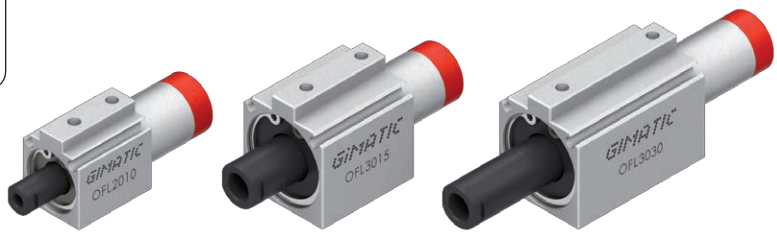

(1)

(2)



	OFL2010	OFL3015	OFL3030
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
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^3	16 cm^3	32 cm^3
Tempo di azionamento minimo *Minimum actuating time*	0.02 s	0.06 s	0.15 s
Peso *Weight*	60 g	110 g	140 g

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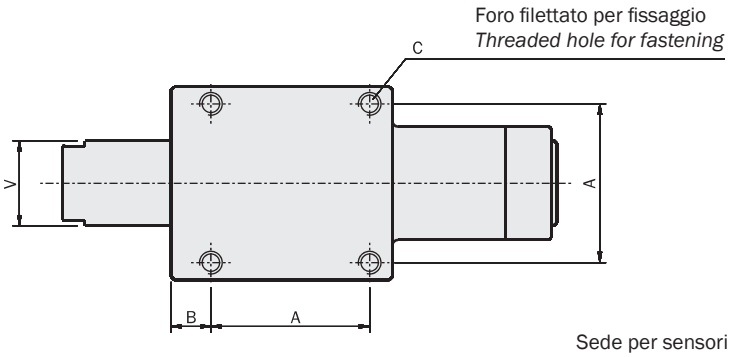
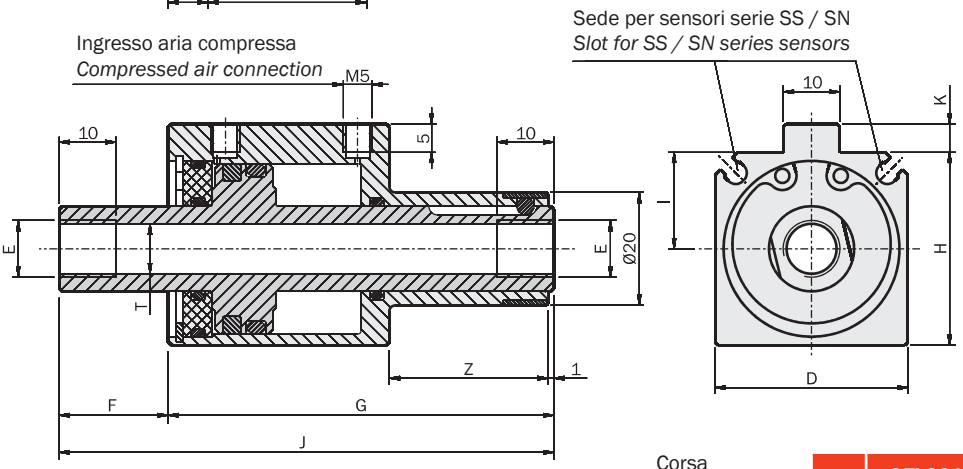
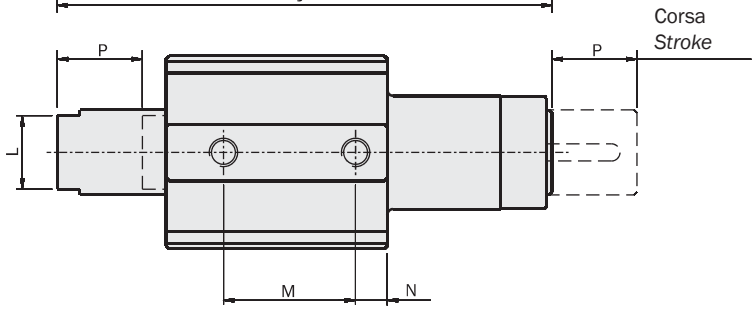
Dimensioni (mm) / *Dimensions (mm)*

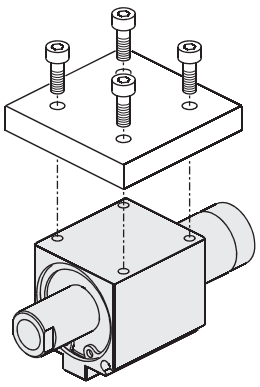


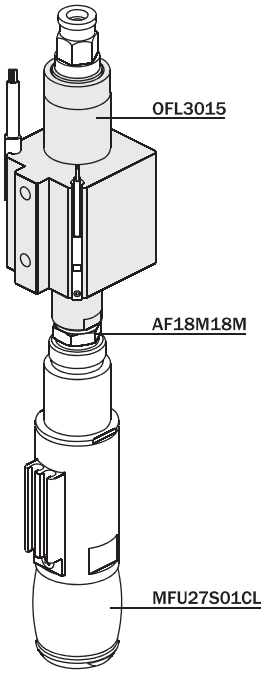


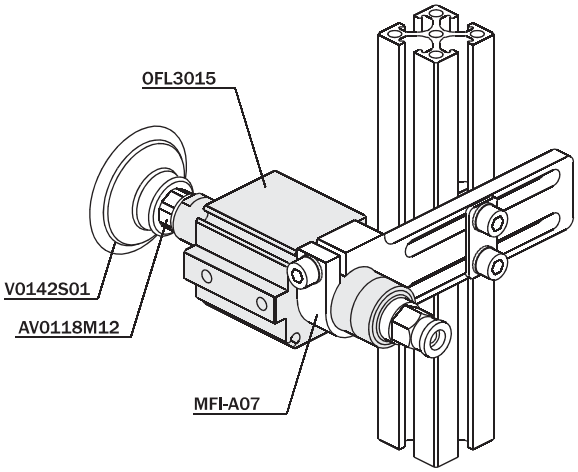


	OFL2010	OFL3015	OFL3030
A	19	28	28
B	9	7	7
C	M3x4	M4x6	M4x6
D	24	34	34
E	M5	G1/8”	G1/8”
F	14.2	19.2	34.2
G	59	68	91
H	25	34	34
I	13	17	17
J	74.2	87.2	125.2
K	4	5	5
L	8	13	13
M	16	23.3	38.3
N	5	5.6	5.6
P	10	15	30
T	Ø4.2	Ø8.8	Ø8.8
V	Ø10	Ø15	Ø15
Z	28	28	36

Esempi di utilizzo / *Application examples*





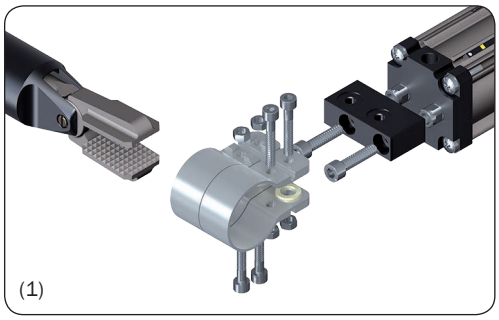


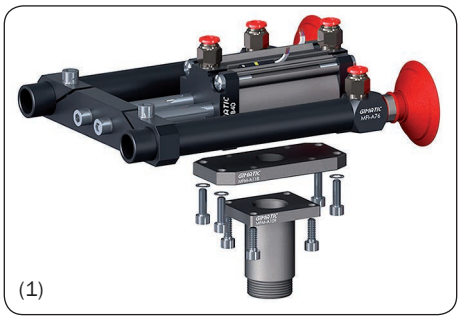
Cilindro guidato con steli gemellati

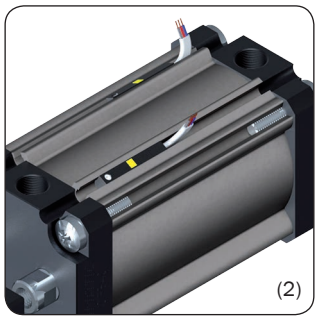
- Doppio effetto.
- Alesaggio: 40mm.
- Corsa: 30mm oppure 50mm.
- Vari accessori per il fissaggio (1).
- Sensori magnetici opzionali (2).

Guided cylinder with twin rods

- *Double acting.*
- *Piston bore: 40mm.*
- *Stroke: 30mm or 50mm.*
- *Several mounting accessories (1).*
- *Optional magnetic sensors (2).*


(1)


(1)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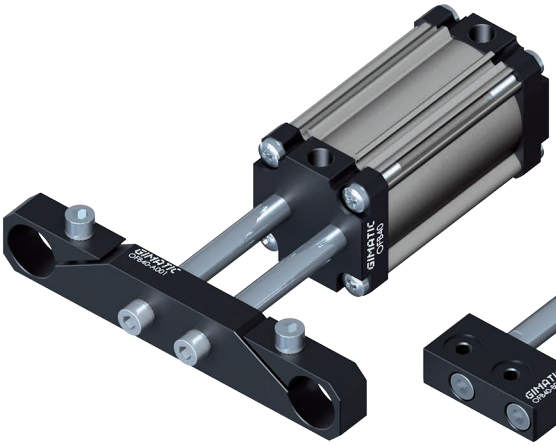
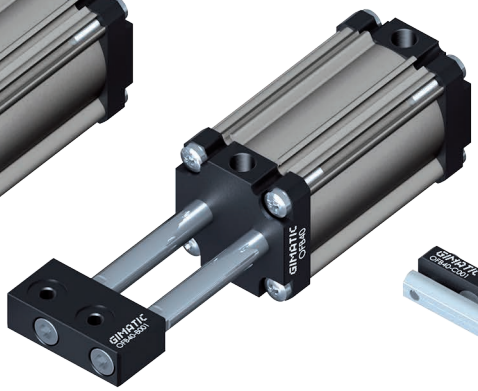
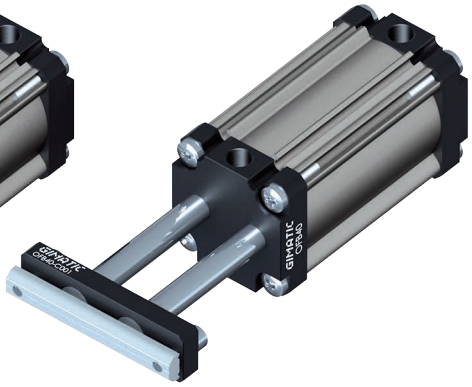


OFB40-A30
OFB40-A50



OFB40-B30
OFB40-B50



OFB40-C30
OFB40-C50

	OFB40-A30	OFB40-A50	OFB40-B30	OFB40-B50	OFB40-C30	OFB40-C50
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*					
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^3	118 cm^3	71 cm^3	118 cm^3	71 cm^3	118 cm^3
Peso *Weight*	475 g	520 g	395 g	445 g	405 g	455 g

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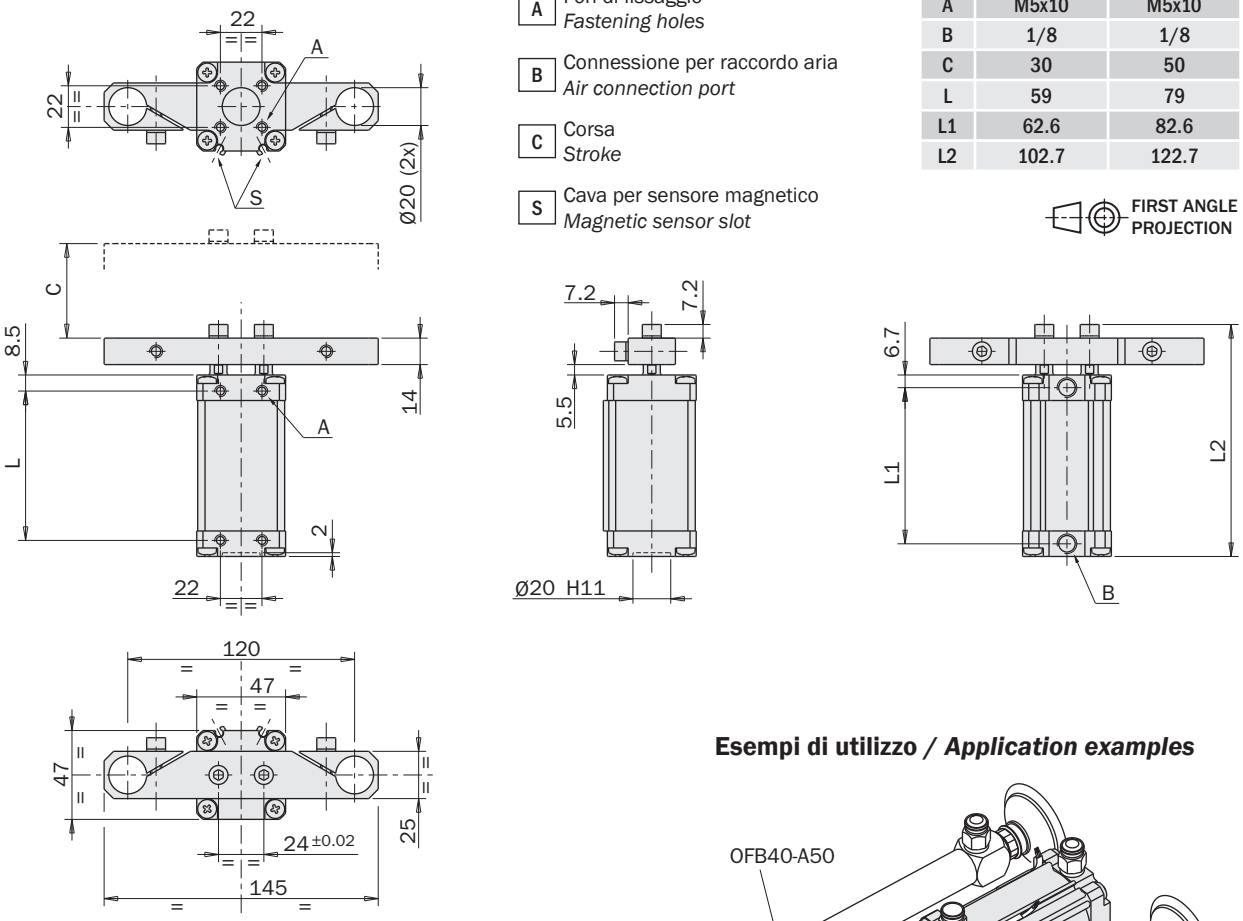
Dimensioni (mm) / *Dimensions (mm)*



A Fori di fissaggio
Fastening holes

B Connessione per raccordo aria
Air connection port

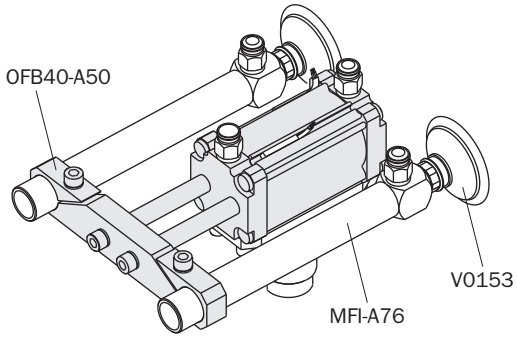
C Corsa
Stroke

S Cava per sensore magnetico
Magnetic sensor slot

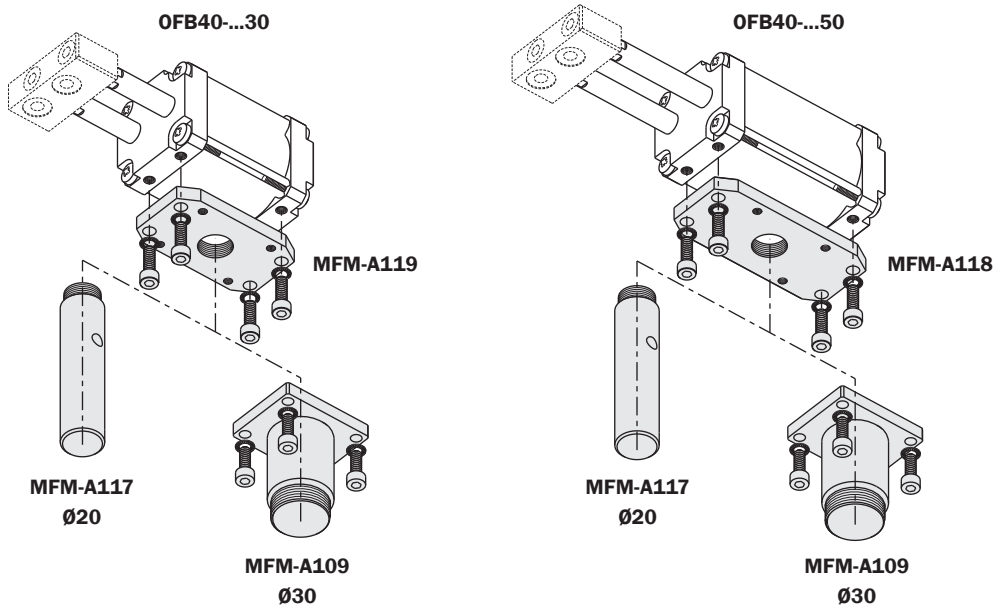
	OFB40-A30	OFB40-A50
A	M5x10	M5x10
B	1/8	1/8
C	30	50
L	59	79
L1	62.6	82.6
L2	102.7	122.7

FIRST ANGLE PROJECTION

Esempi di utilizzo / *Application examples*

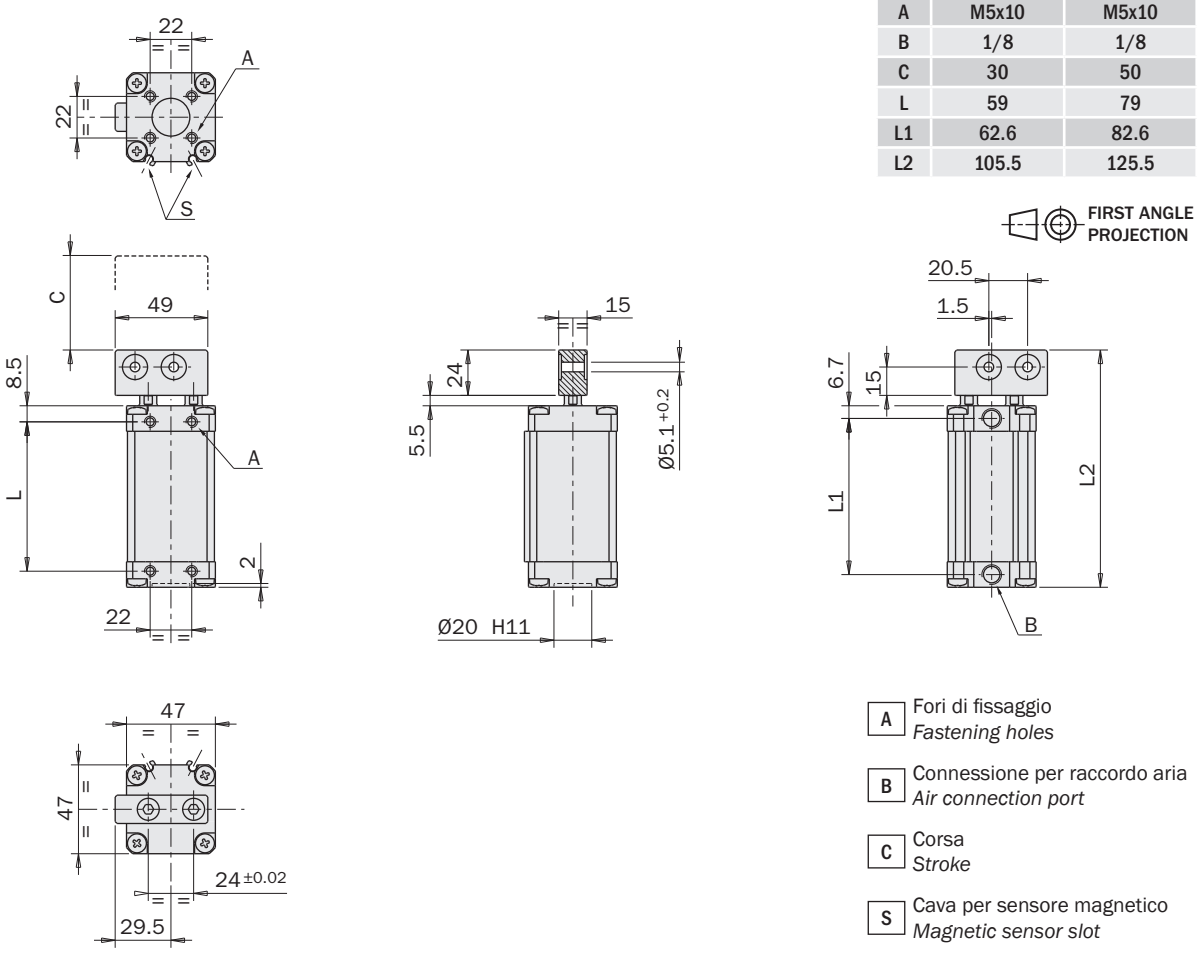


Fissaggio del cilindro / *Cylinder mounting*



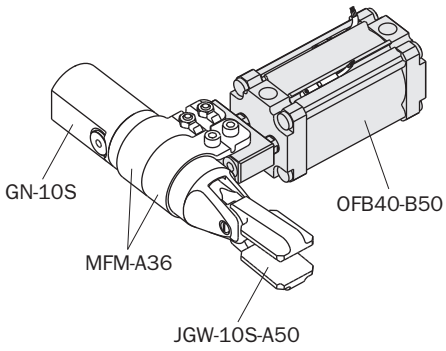
Dimensioni (mm) / *Dimensions (mm)*

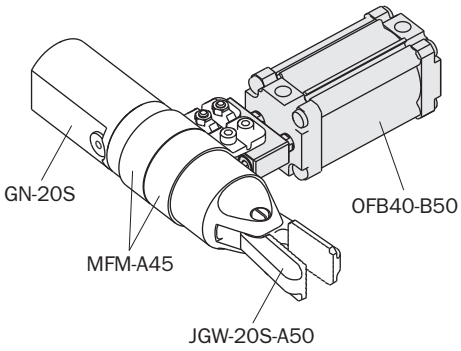
	OFB40-B30	OFB40-B50
A	M5x10	M5x10
B	1/8	1/8
C	30	50
L	59	79
L1	62.6	82.6
L2	105.5	125.5

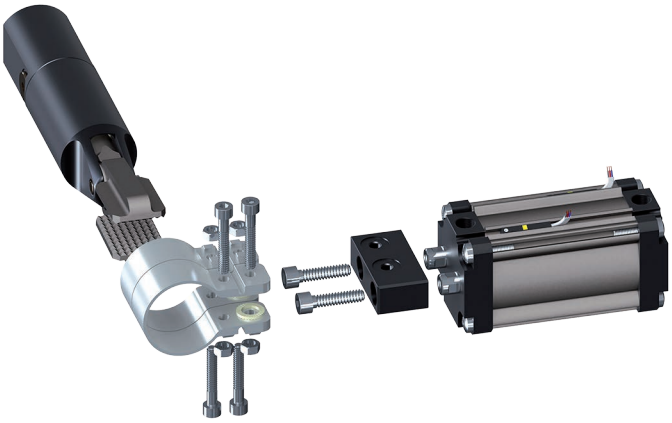


- **A** Fori di fissaggio / *Fastening holes*
- **B** Connessione per raccordo aria / *Air connection port*
- **C** Corsa / *Stroke*
- **S** Cava per sensore magnetico / *Magnetic sensor slot*

Esempi di utilizzo / *Application examples*



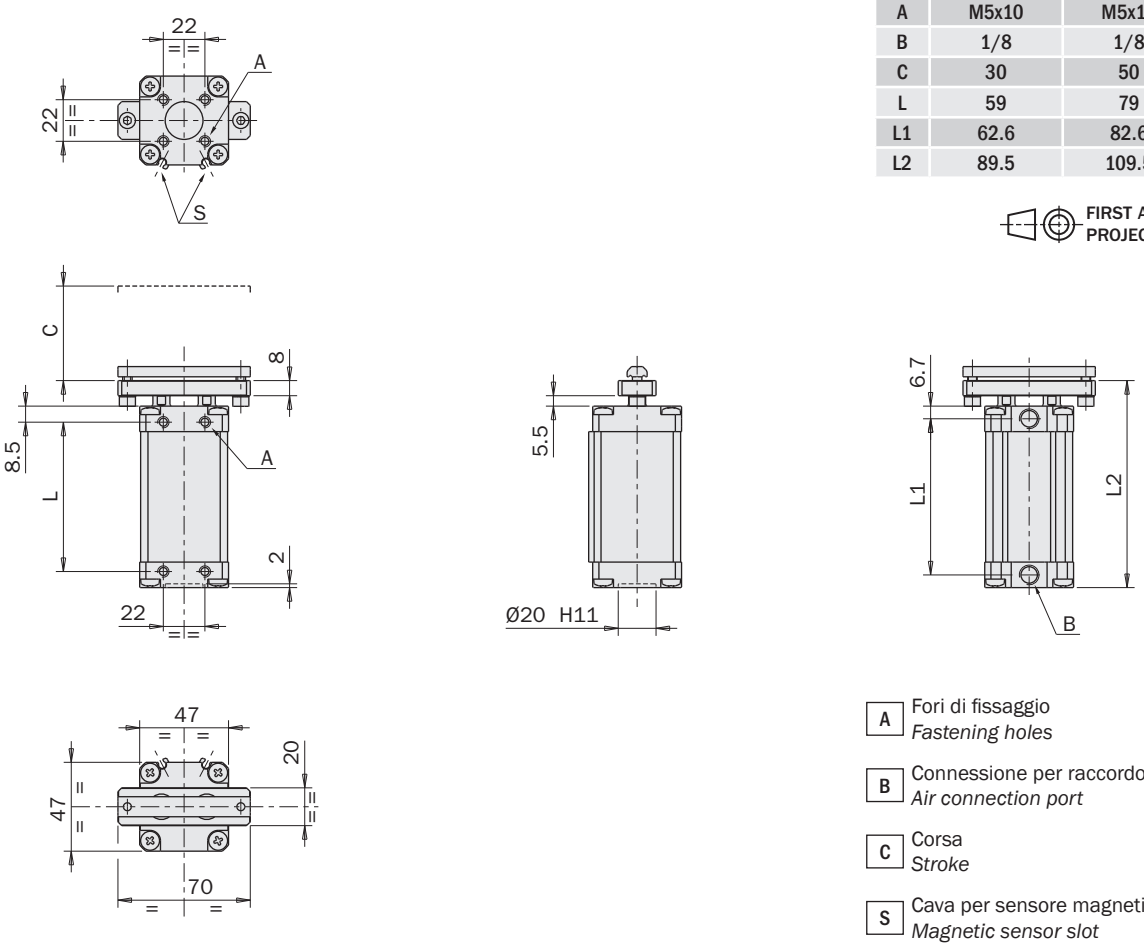




Dimensioni (mm) / *Dimensions (mm)*

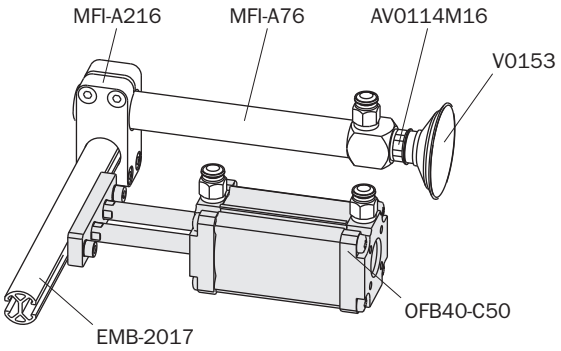
	OFB40-C30	OFB40-C50
A	M5x10	M5x10
B	1/8	1/8
C	30	50
L	59	79
L1	62.6	82.6
L2	89.5	109.5

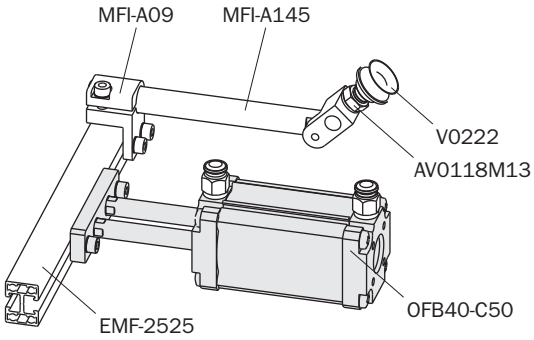
FIRST ANGLE PROJECTION

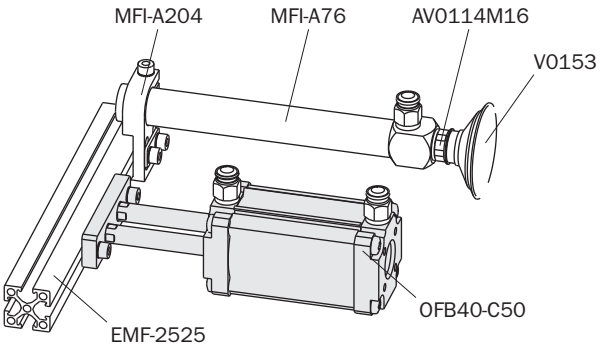


- **A** Fori di fissaggio *Fastening holes*
- **B** Connessione per raccordo aria *Air connection port*
- **C** Corsa *Stroke*
- **S** Cava per sensore magnetico *Magnetic sensor slot*

Esempi di utilizzo / *Application examples*





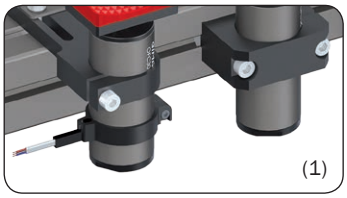


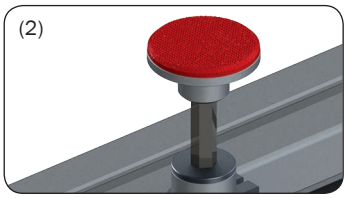
Mini cilindri universali a semplice effetto, antirotazione

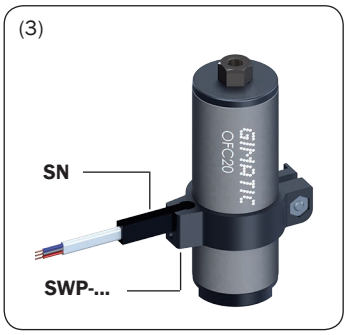
- Alesaggio: 10mm, 16mm, 25mm.
- Corsa: 10mm, 20mm, 30mm.
- Vari accessori MFI... per il fissaggio a cravatta sul diametro esterno (1).
- Vari accessori da montare sullo stelo (2).
- Sensori e fascette opzionali (3).

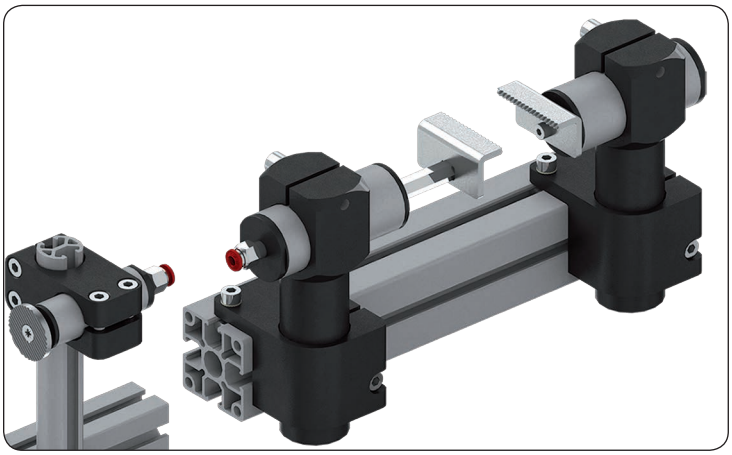
General purpose, single-acting, anti-rotation mini cylinders

- *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).*









	OFC14-10	OFC20-20	OFC30-30
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
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^3	4 cm^3	15 cm^3
Peso *Weight*	20 g	40 g	85 g

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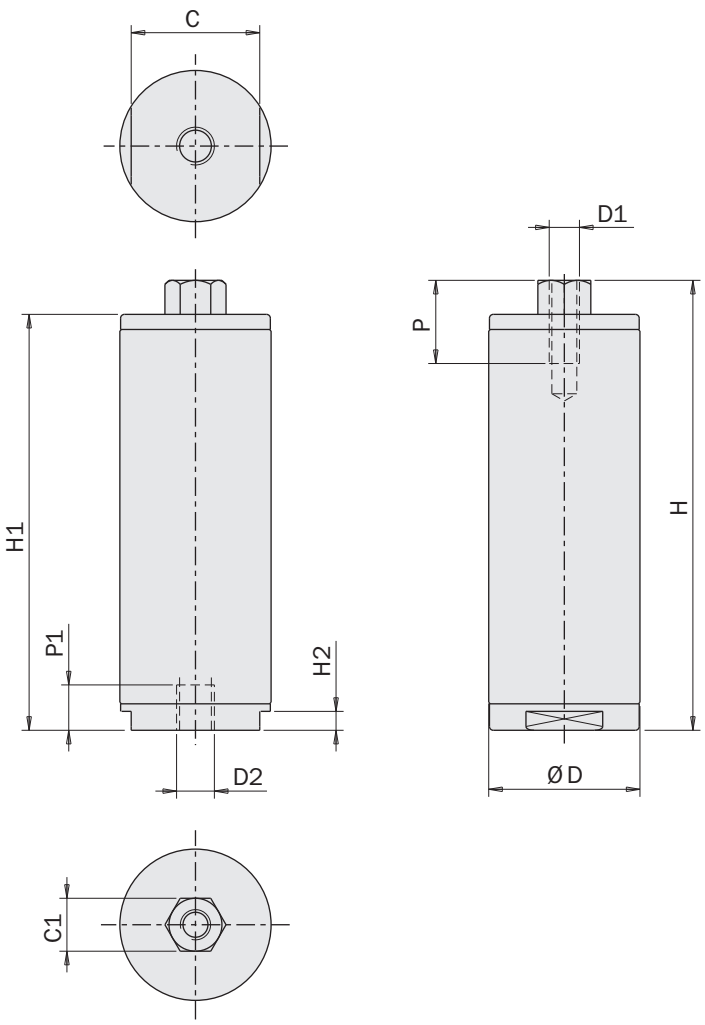
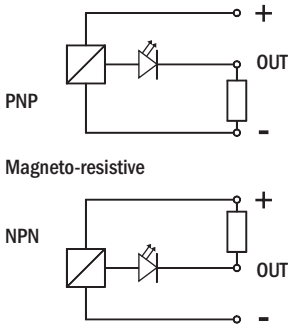
Dimensioni (mm) / *Dimensions (mm)*



	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



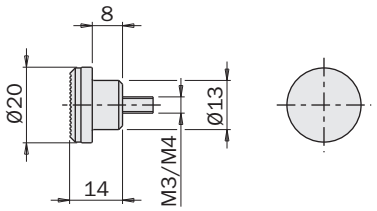
SN...		
SN4N225-G	PNP	cavo 2.5m / 2.5m cable
SN4M225-G	NPN	cavo 2.5m / 2.5m cable
SN3N203-G	PNP	Connettore M8 / Snap M8 plug connector
SN3M203-G	NPN	Connettore M8 / Snap M8 plug connector

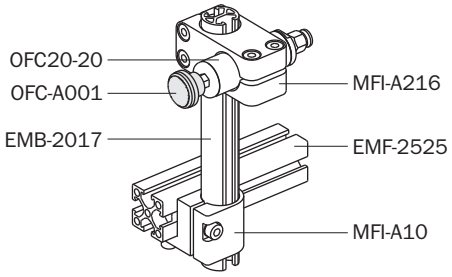
Kit opzionali / *Optional kits*

	OFC-A001	OFC-A002	OFC-A003	OFC-A004	OFC-A005	OFC5
OFC14-10	☑	☐	☑	☐	☑	☐
OFC20-20	☑	☑	☑	☑	☑	☑
OFC30-30	☑	☑	☑	☑	☑	☑
Peso / *Weight*	15 g	25 g	15 g	25 g	35 g	40 g

OFC-A001

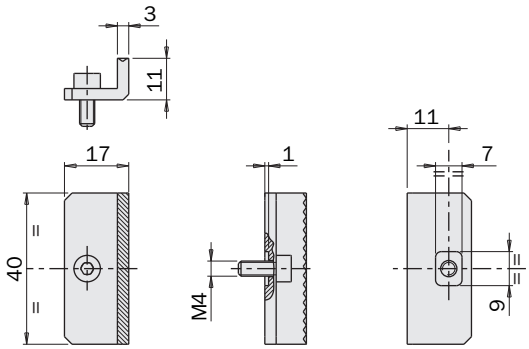
Bottone con gommino in TPU
Button with TPU rubber pad

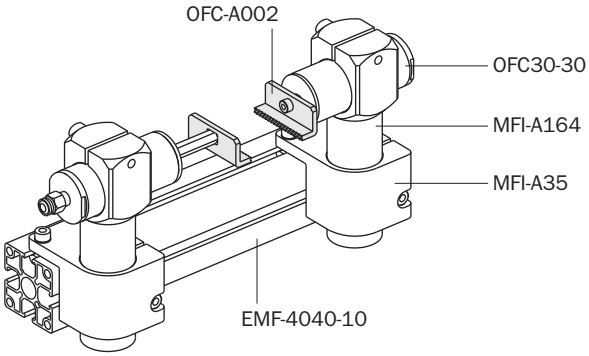




OFC-A002

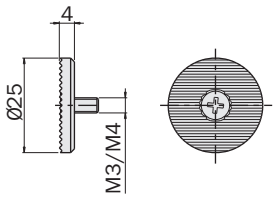
Artiglio in acciaio
Steel claw

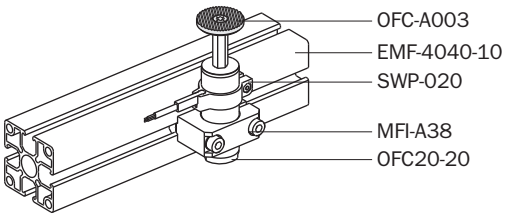




OFC-A003

Bottone in acciao
Steel button

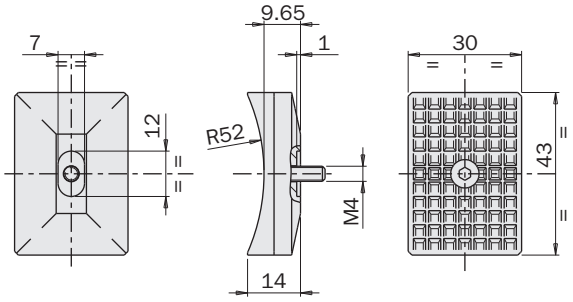


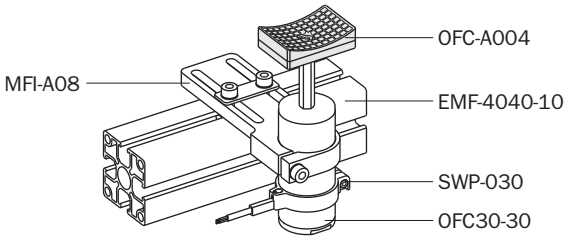


Kit opzionali / *Optional kits*

OFC-A004

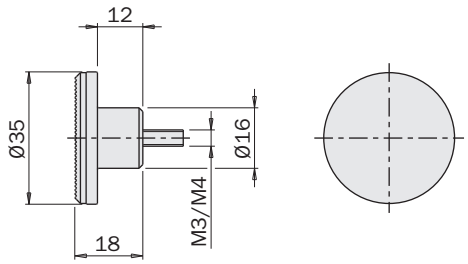
Spintore concavo con gommino in TPU
Concave pusher with TPU rubber pad

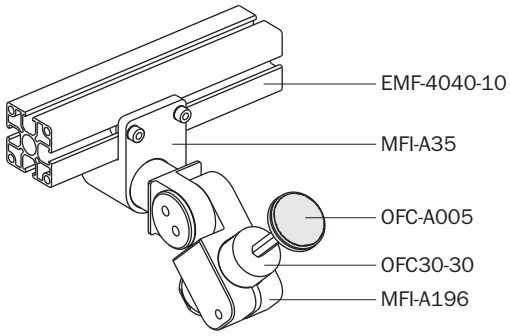




OFC-A005

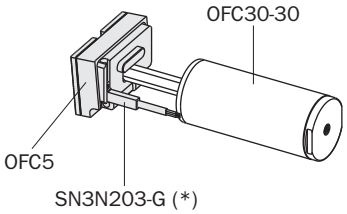
Bottone con gommino in TPU
Button with TPU rubber pad



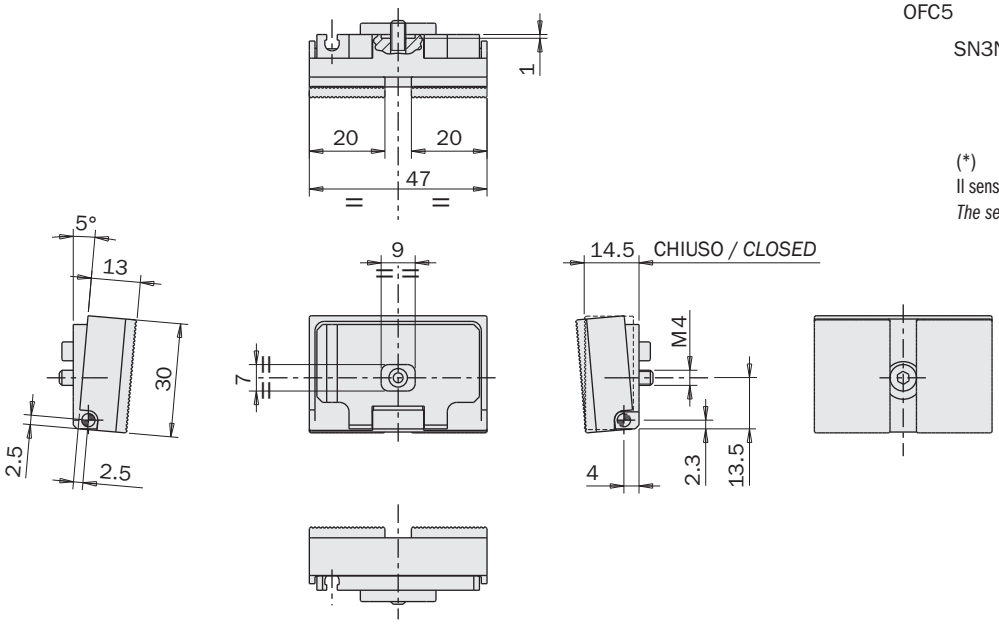


OFC5

Spintore a interruttore con gommino in TPU e sensore
Switch pusher with TPU rubber pad and sensor



(*)
Il sensore SN3N203-G è incluso
The sensor SN3N203-G is included



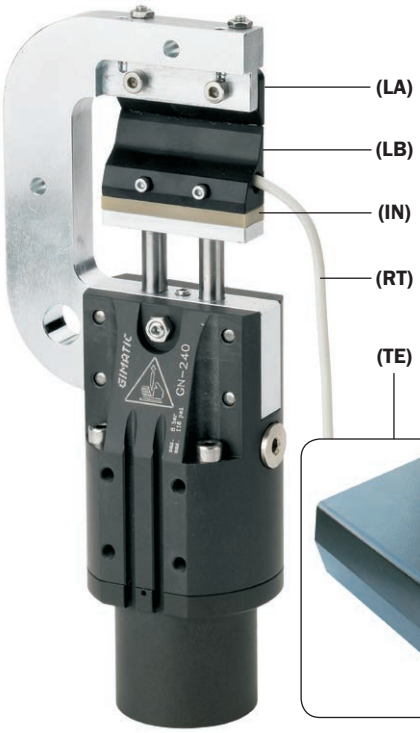
Taglierini a ghigliottina

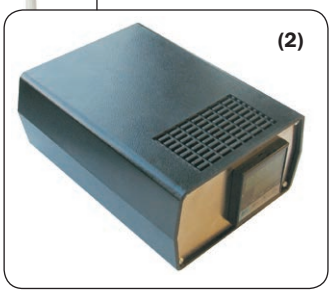
- Due taglie disponibili.
- Azionamento a doppio effetto con cilindri tandem.
- Sensori magnetici opzionali (1).
- Riscaldamento della lama opzionale (2).
- Le lame (LA e LB) sono fornibili come parti di ricambio.

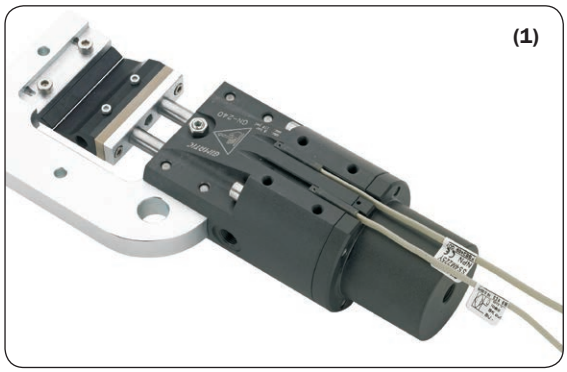
Thrust Cut Nippers

- *Two sizes available.*
- *Double-acting operation with tandem cylinders.*
- *Optional magnetic sensors (1).*
- *Optional blade heating system (2).*
- *The blades (LA and LB) are available as spare parts.*

	GN-240	GN-263
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*	
Pressione di esercizio *Pressure range*	2 ÷ 6 bar	
Temperatura di esercizio *Temperature range*	5° ÷ 60 °C.	
Corsa max *Maximum troke*	20 mm	32 mm
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^3	291 cm^3
Peso *Weight*	1330 g	2900 g







		GN-240 Codice *Code*		GN-263 Codice *Code*	
Lame di ricambio *Spare blade*	(LA) (LB)	5620 5619		5617 5616	
Isolatore per alte temperature *High temperature insulation*	(IN)	GN-340-18		GN-363-18	
Resistenza + termocoppia (J) *Cartridge resistance + thermocouple (J)*	(RT)	R50-G		R75-G	
Temperatura di esercizio *Temperature range*		250°C		250°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	
Cavo *Cable*		Non fornito *Not supplied*		Non fornito *Not supplied*	

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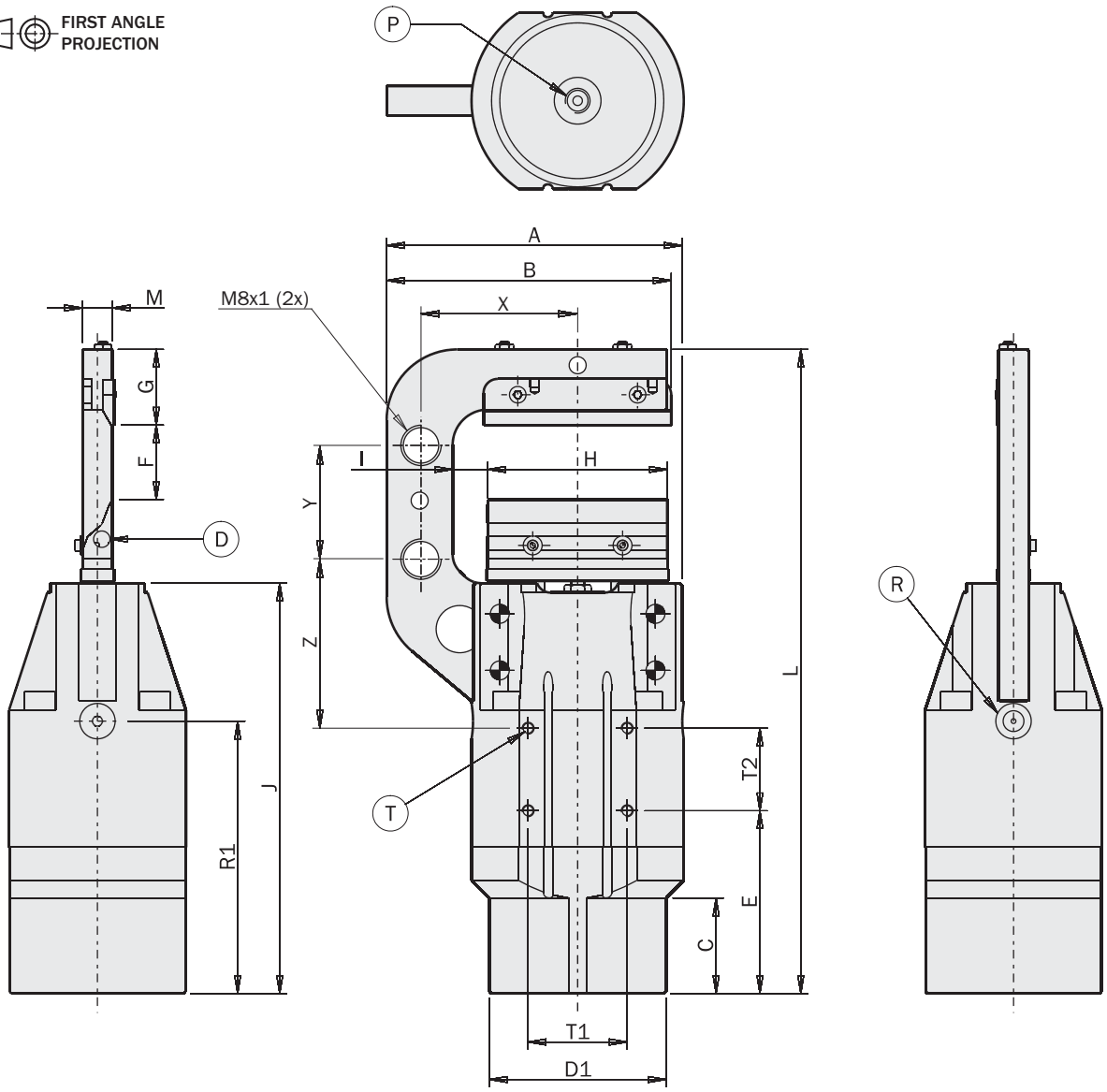
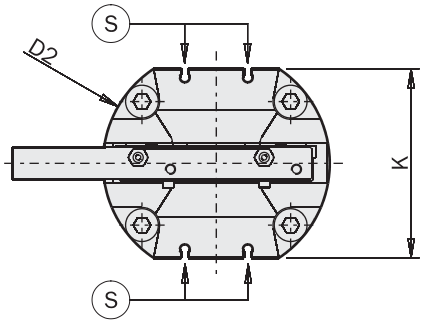
Dimensioni (mm) / *Dimensions (mm)*

FIRST ANGLE PROJECTION





	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
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

(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

Attuatori pneumatici per taglierini GNS

- Tre taglie disponibili.
- Ingombri ridotti.
- Compatibili con vari modelli di lame standard.
- 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.*
- *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-20

GNS-10

GNS-05

	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 filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
Pressione di esercizio *Pressure range*	2 ÷ 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^3	14 cm^3	30cm^3
Peso senza lame *Weight without blade*	112 g 180 g 175 g	355 g 570 g 570 g	480 g 780 g 780 g

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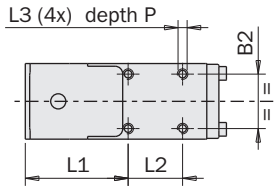
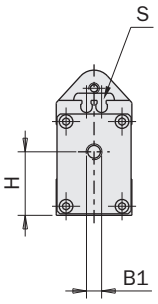
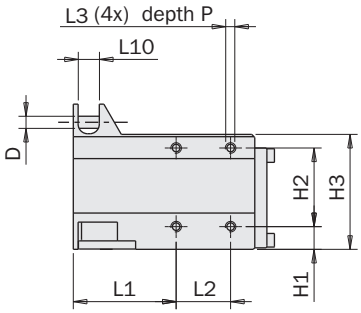
Dimensioni (mm) / *Dimensions (mm)*

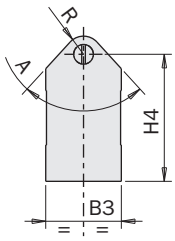
	A	B1	B2	B3	H	H1	H2	H3	H4	H5	D	L1	L2	L3	L4
GNS-05	85°	M5	18	25	21	7.5	26	38	42	48	Ø4	34	18	M3	64
GNS-10	93°	M5	32	39	32	17	32	53	57	67	Ø4	45	24	M4	84
GNS-20	115°	G1/8	40	48	36	15	40	62	63	73	Ø4	49	30	M5	90

	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

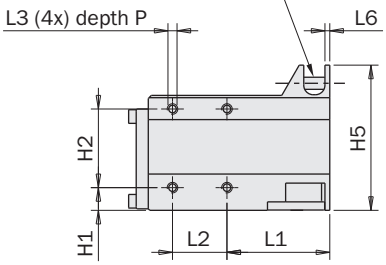


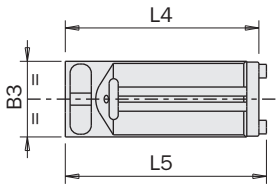






Per lame standard tipo:
For standard blades type:
G.N...AJ
G.N...AP
G.N...PF





B1 Connessione per raccordo aria
Air connection port

L3 Fori di fissaggio
Fastening holes

S Cava per sensore magnetico
Magnetic sensor slot

FIRST ANGLE PROJECTION

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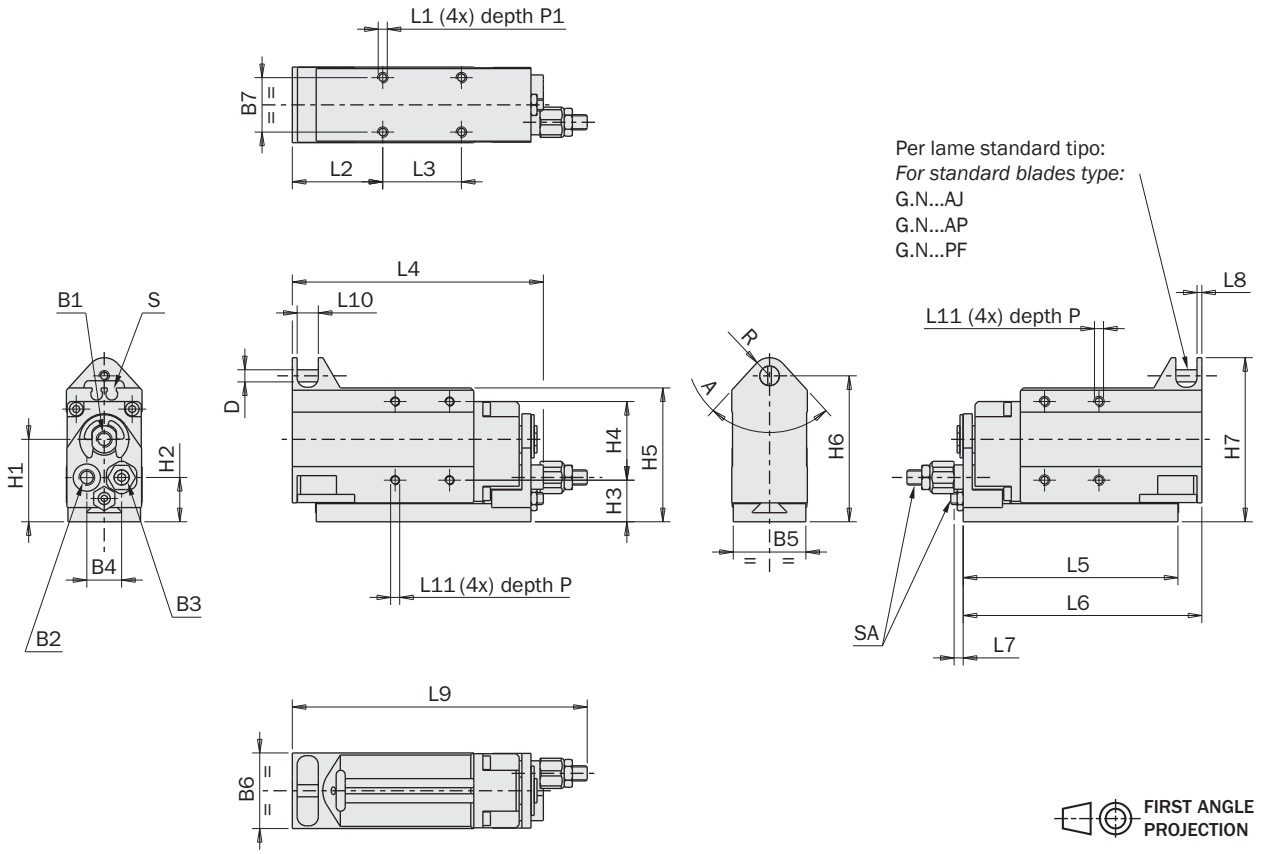
Dimensioni (mm) / *Dimensions (mm)*

	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	Ø4	27.25	14.65	13.75	26	44.25	48.25
GNS-10-NC	93°	M5	M5	M5	13	38	39	24	Ø4	40.3	20.8	25.3	32	61.3	65.3
GNS-20-NC	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-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



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 *Maximun slide stroke*		
B3	Connessione per chiusura slitta *Slide closing port*	S	Cava per sensore magnetico *Magnetic sensor slot*		

	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

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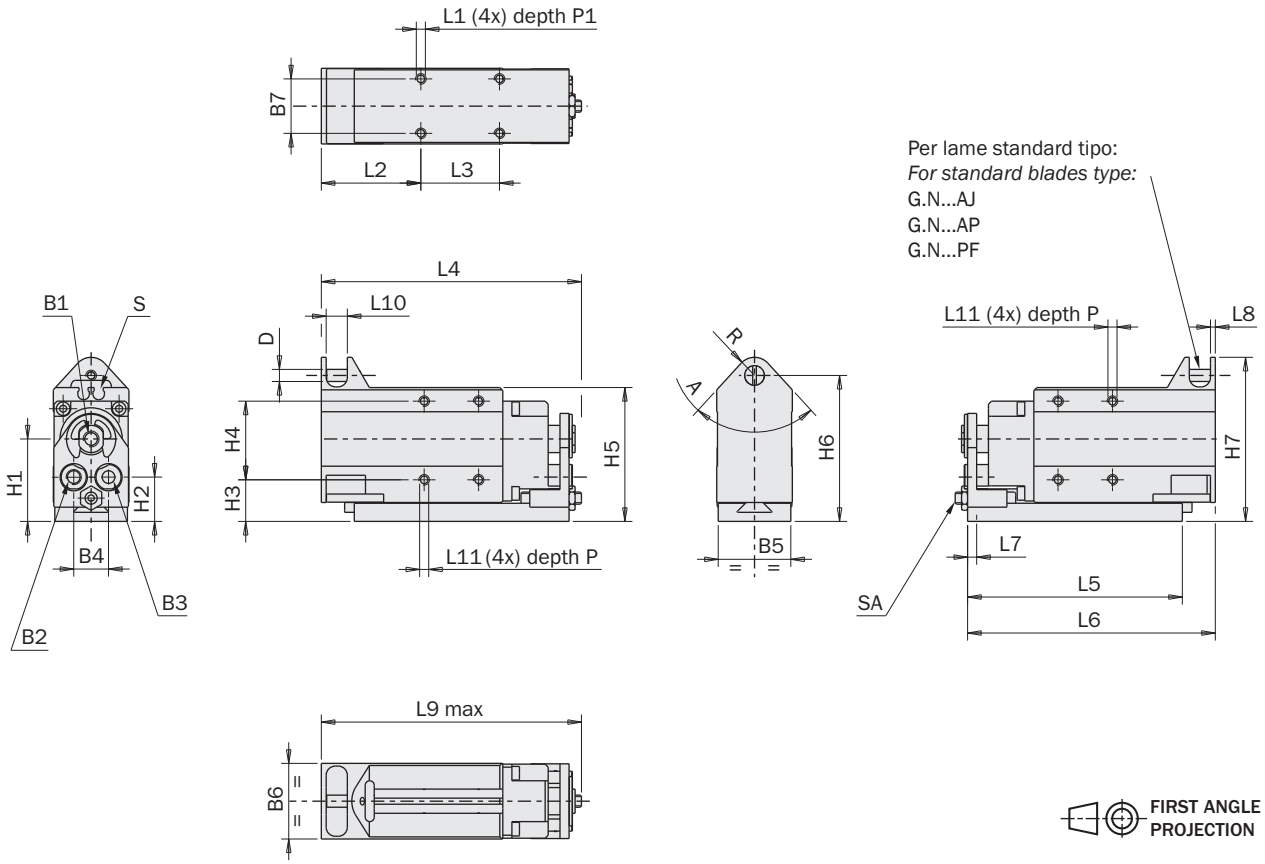
Dimensioni (mm) / *Dimensions (mm)*

	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 *Maximun slide stroke*		
B3	Connessione per chiusura slitta *Slide closing port*	S	Cava per sensore magnetico *Magnetic sensor slot*		

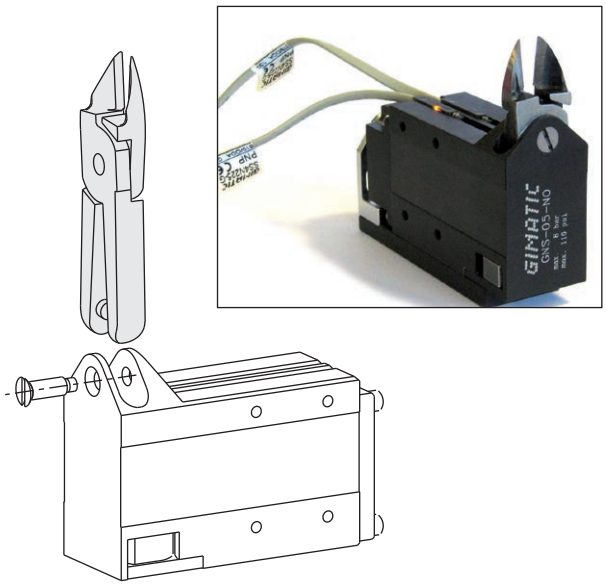
	GNS-05-NO	GNS-10-NO	GNS-20-NO
Corsa slitta *Slide stroke*	3 mm	4 mm	5 mm
Alesaggio slitta *Slide bore*	18 mm	20 mm	25 mm
Forza di chiusura a 6 bar sulla slitta *Closing force at 6 bar on the slide*	75 N	85 N	180 N
Forza di apertura a 6 bar sulla slitta *Opening force at 6 bar on the slide*	180 N	230 N	345 N
Forza di chiusura a 0 bar sulla slitta *Closing force at 0 bar on the slide*	0 N	0 N	0 N
Forza di apertura a 0 bar sulla slitta *Opening force at 0 bar on the slide*	35 N	50 N	60 N

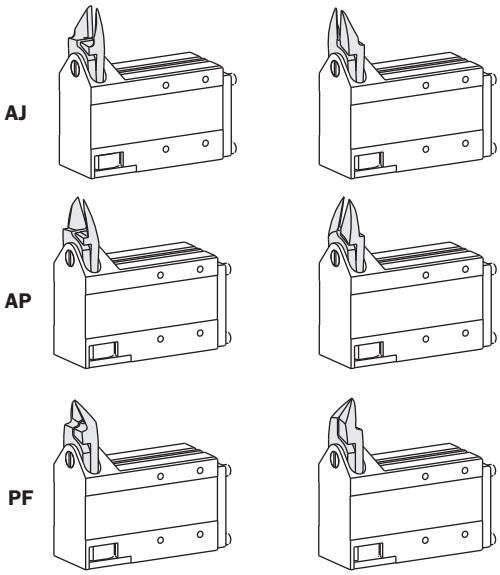
Lame

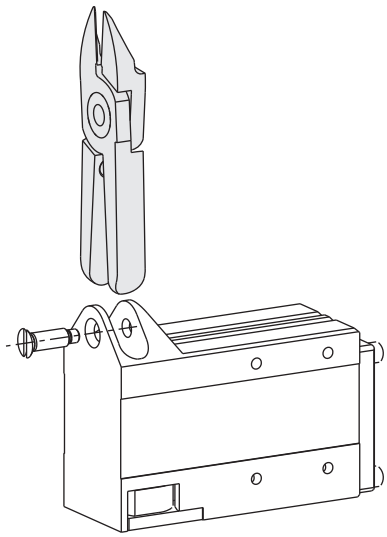
Le lame possono essere montate in entrambi i sensi.

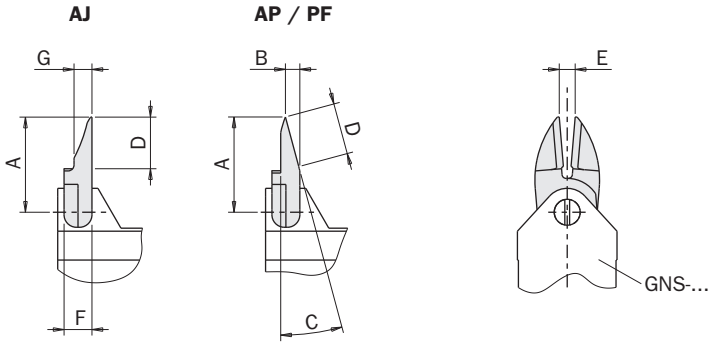
Blades

The blades can be mounted on either side.





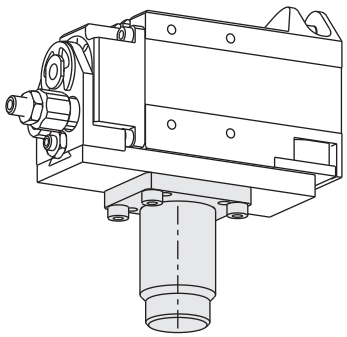


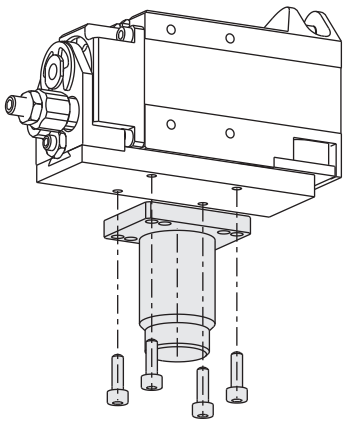


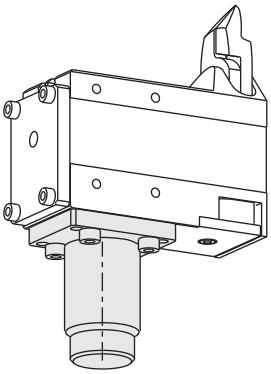
Lame *Blades*	Taglierino *Nipper*	Tipo di lama *Blade style*	A	B	C	D	E	F	G	Peso *Weight*
G.N5AJ	GNS-05-...	dritta *inline*	24	-	-	13	5	7	4.5	33 g
G.N5AP	GNS-05-...	standard	24	3.6	15°	11.5	4	7	-	34 g
G.N5PF	GNS-05-...	profonda *deep angle*	24	7	40°	9.7	4	7	-	35 g
G.N10LAJ	GNS-10-...	dritta lunga *long 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	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

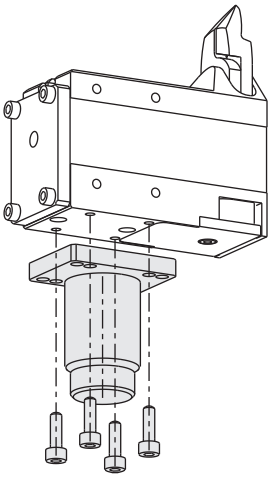
Codolo di montaggio

Assembly bracket

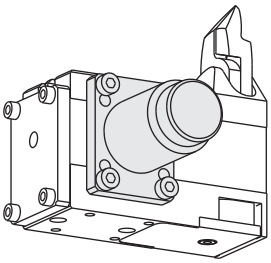


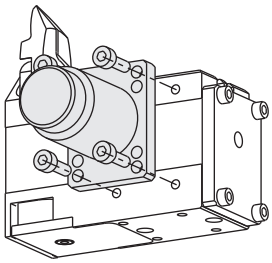






	GNS-05 GNS-05-NC GNS-05-NO	GNS-10 GNS-10-NC GNS-10-NO	GNS-20 GNS-20-NC GNS-20-NO
MFM-A107	☑		
MFM-A108		☑	
MFM-A109			☑





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 filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*				
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^3	25 cm^3	78 cm^3	170 cm^3	269 cm^3
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

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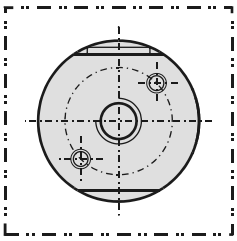
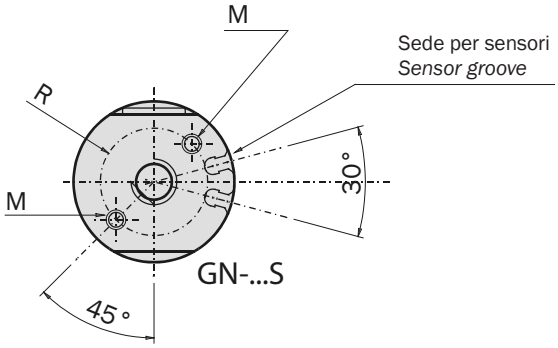
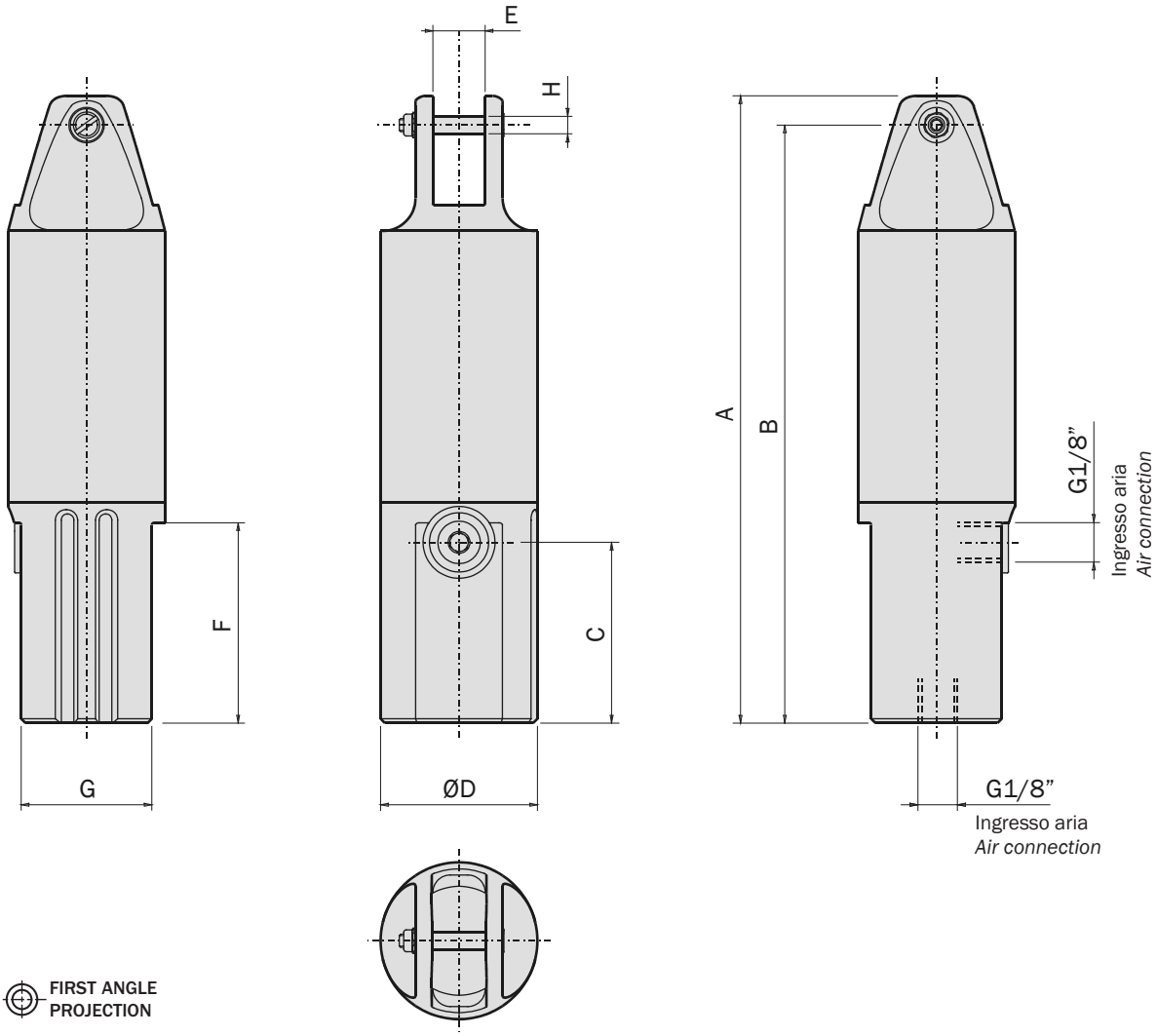
Dimensioni (mm) / *Dimensions (mm)*

	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







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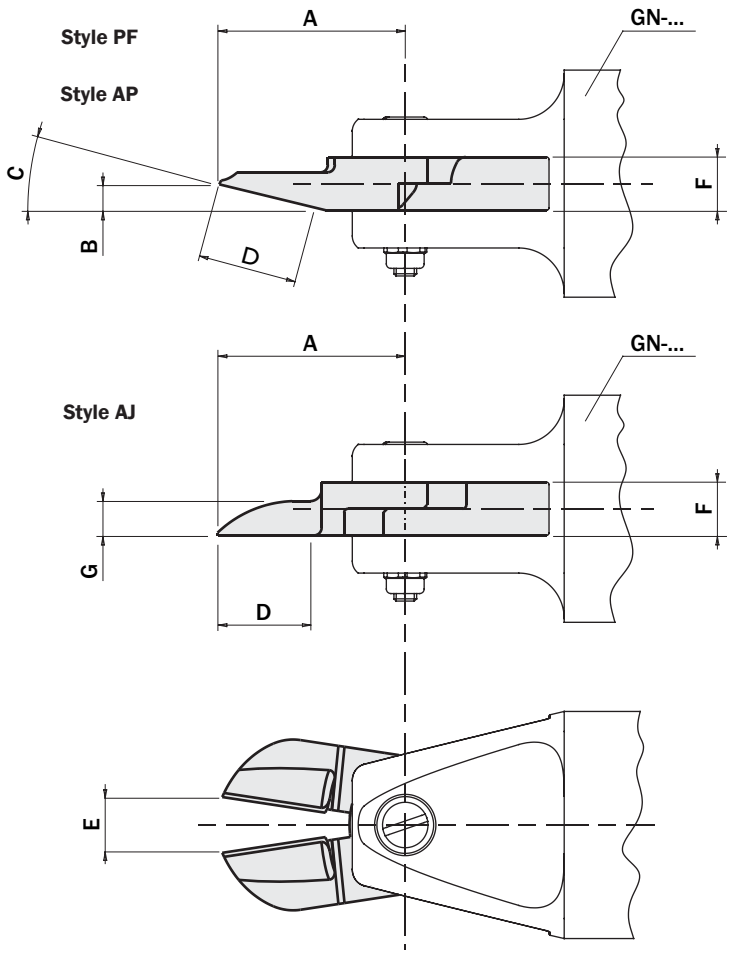
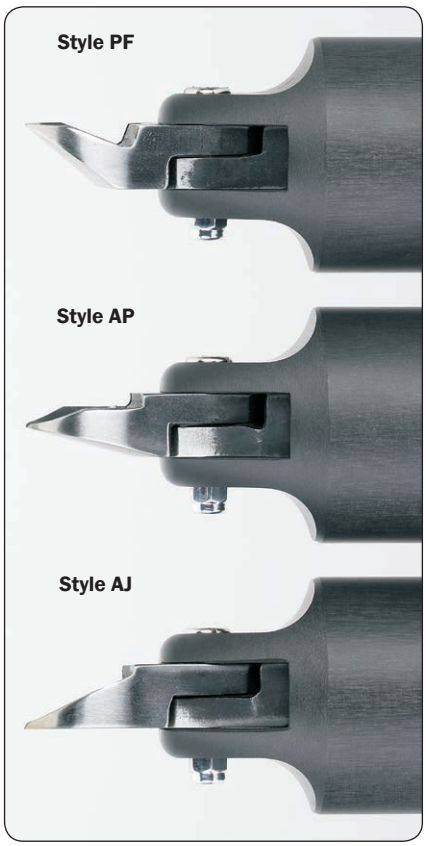
Lame standard

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	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	5.5	12	8	117 g	
G.N10LAP	GN-10...	standard lunga *long, standard*	36	5.3	15°	16	6.5	12	-	115 g	
G.N10LPF	GN-10...	profonda lunga *long, deep angle*	35	12	40°	13.5	6.5	12	-	112 g	
G.N20AJ	GN-20...	dritta *inline*	34.5	-	-	18	12	12	8	121 g	
G.N20AP	GN-20...	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	15.4	12	7.2	220 g	
G.N30AJ	GN-30... GN-50...	dritta *inline*	52	-	-	30	10.5 22	17	8	365 g	
G.N30AP	GN-30... GN-50...	standard	67	11	15°	38	17.5 29.5	17	-	380 g	
G.N30PF	GN-30... GN-50...	profonda *deep angle*	58	17	30°	27	16 26.5	17	-	388 g	

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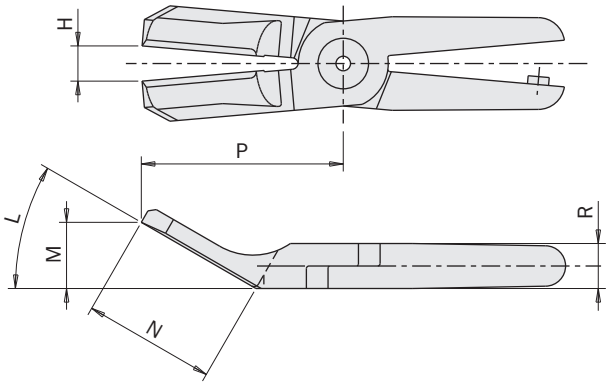
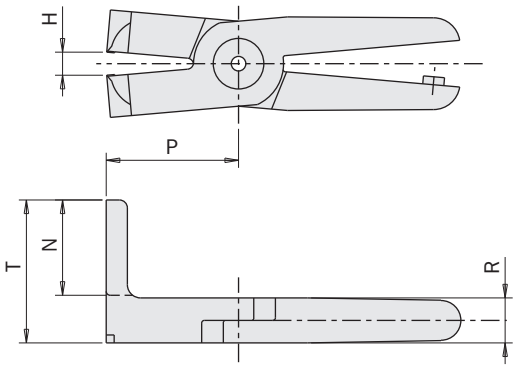
Lame speciali

Special blades

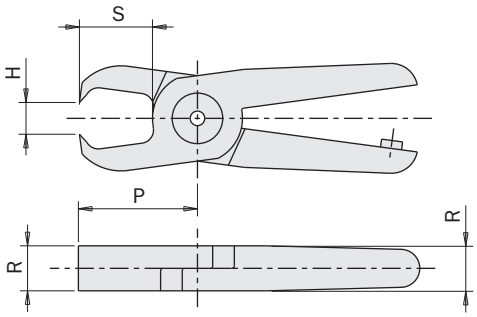
Style AA



Style AL



Style AE

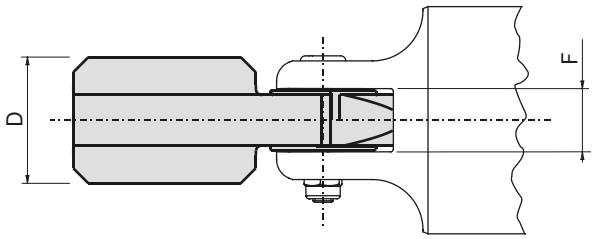


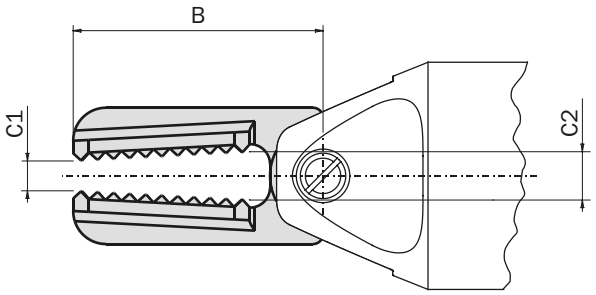
Lame *Blades*	Taglierino *Nipper*	Tipo di lama *Blade style*	H	L	M	N	P	R	S	T	Peso *Weight*	
G.N10LAB152	GN-10...	AA	10	15°	9	35	60.5	12	-	-	165 g	
G.N20AB360	GN-20...	AA	15	15°	9	35	60.5	12	-	-	185 g	
G.N30AA114	GN-30... GN-50...	AA	20 34	30°	25	50	76	17	-	-	385 g	
G.N30AA	GN-30... GN-50...	AA	15 26	60°	27.7	32	55	17	-	-	390 g	
G.N20ALLLL	GN-20...	AL	11	-	-	17	40	12	-	30	190 g	
G.N30FAL	GN-30... GN-50...	AL	13 22	-	-	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	12.5 20	-	-	-	45	17	28	-	395 g	

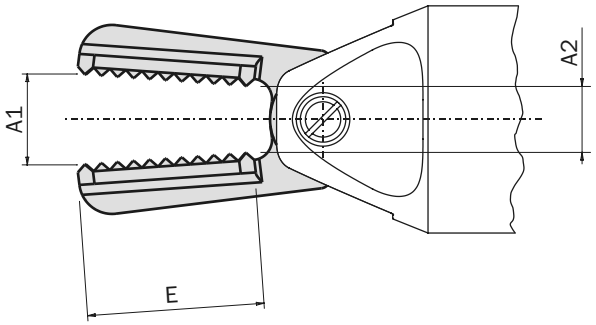
Chiedere al fabbricante se è richiesto un tipo di lama diverso.

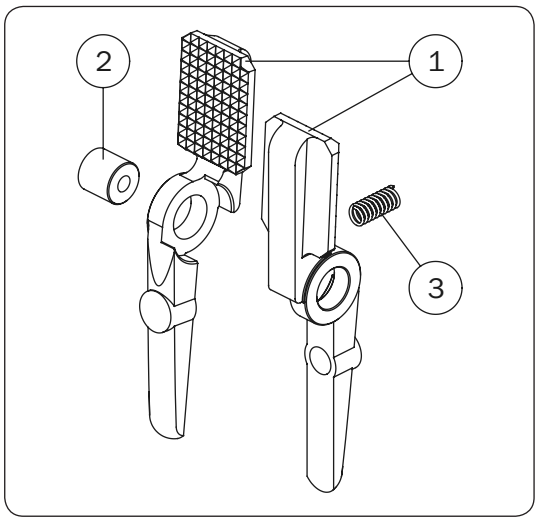
Consult manufacturer if a different kind of blade is needed.

Griffe / *Fingers*









Griffe *Fingers*	Taglierino *Nipper*	Tipo di griffa *Finger style*	A1 A2	B	C1 C2	D	E	F	1	2	3	Peso *Weight*
JGW-10S-A50	GN-10...	larga *wide*	14.5 12	49.5	5 9	25	35	12	GN-10S-50	GN-20S-51	K-012-12	175 g
JGW-20S-A50	GN-20...	larga *wide*	18 13	49.5	6 9	25	35	12	GN-20S-50	GN-20S-51	K-012-12	185 g
JGN-10S-A52	GN-10...	stretta *narrow*	9 6.5	49.5	0 3.5	25	35	12	GN-20S-53	GN-20S-51	K-012-12	190 g
JGN-20S-A52	GN-20...	stretta *narrow*	11 7.5	49.5	0 3.5	25	35	12	GN-20S-52	GN-20S-51	K-012-12	200 g

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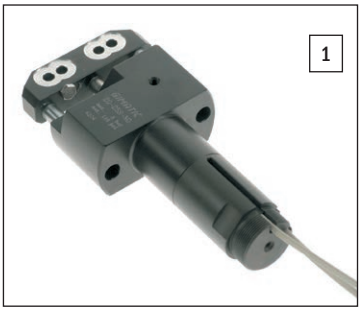
Note / *Notes*

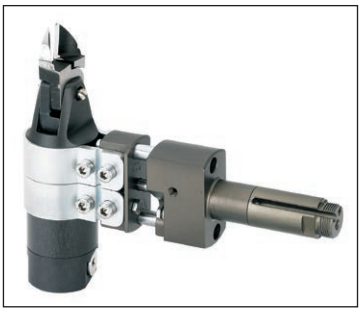
Slitte per taglierini pneumatici

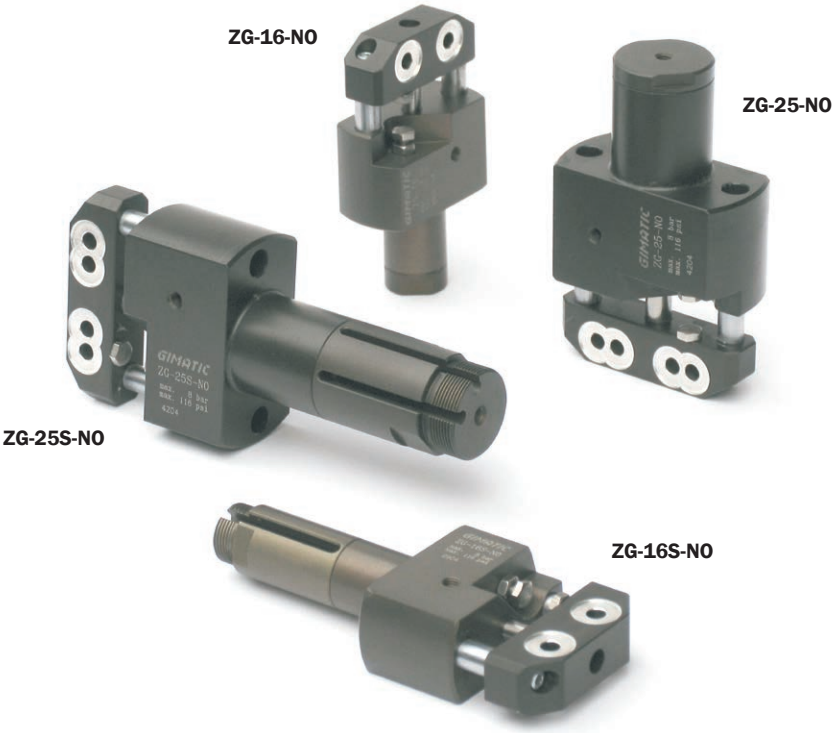
- Per le materozze più difficili da tagliare è possibile avvicinare il taglierino con una slitta.
- Disponibili in due taglie: alesaggio 16 e 25 mm.
- Con molla in apertura (NO), o in chiusura (NC).
- Con (versione S), o senza predisposizione per i sensori.
- Sensori magnetici opzionali 1 .
- Corsa regolabile (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-16-NC ZG-16S-NC	ZG-25-NO ZG-25S-NO	ZG-25-NC ZG-25S-NC
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*			
Pressione di esercizio *Pressure range*	3 ÷ 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^3	5.6 cm^3	21 cm^3	21 cm^3
Peso senza taglierino ZG-... *Weight without air nipper* *ZG-...S-...*	180 g 200 g	180 g 200 g	360 g 425 g	360 g 425 g

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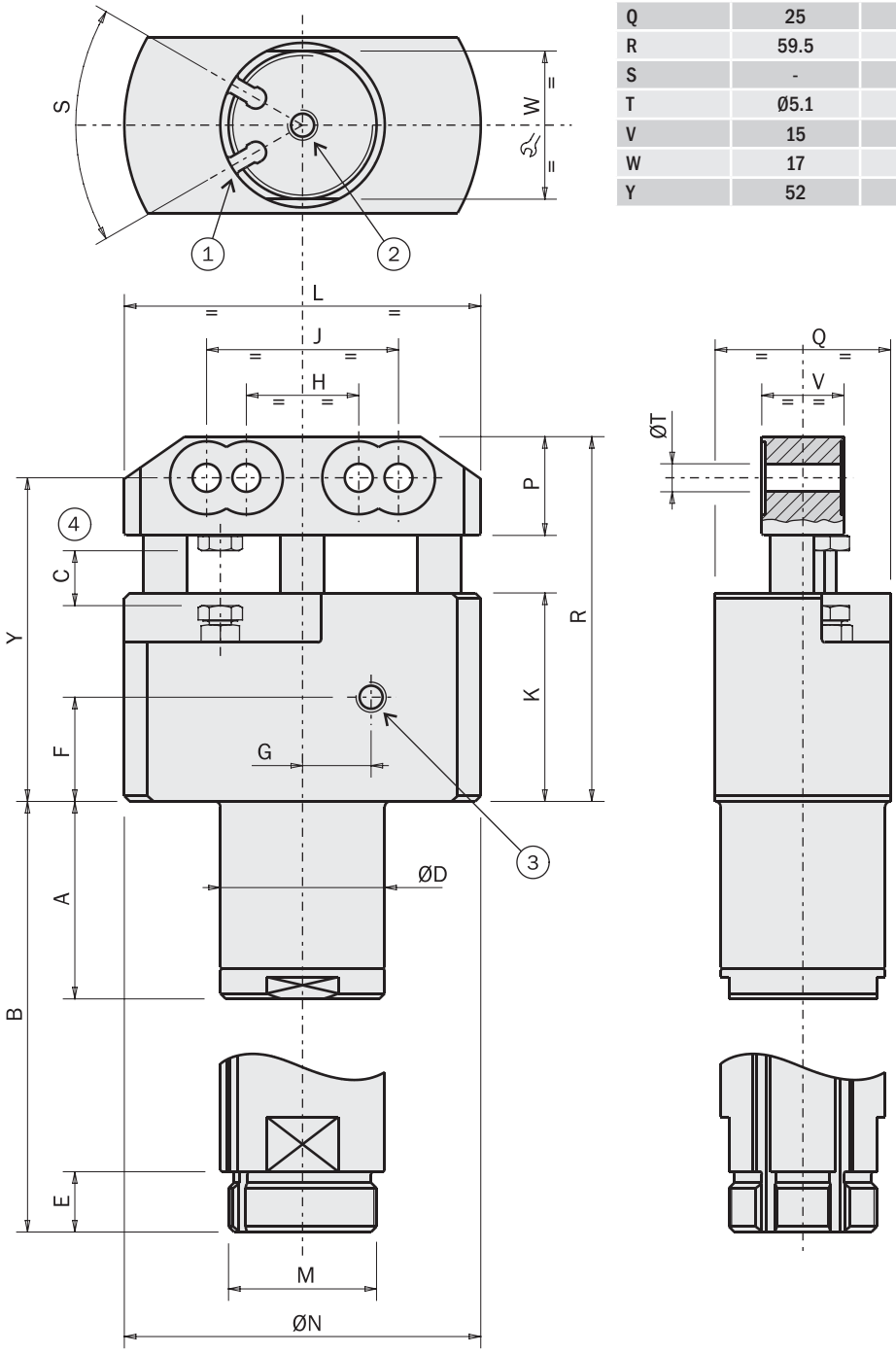
Dimensioni (mm) / *Dimensions (mm)*

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

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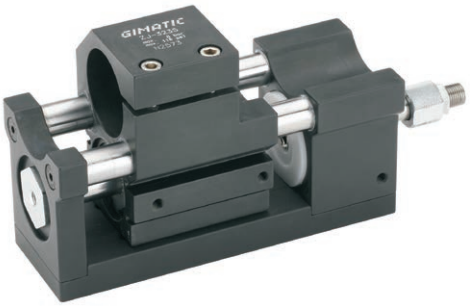
Slitta a doppia corsa per grosse pinze per materozze

- 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.

Double stroke slide for large sprue grippers

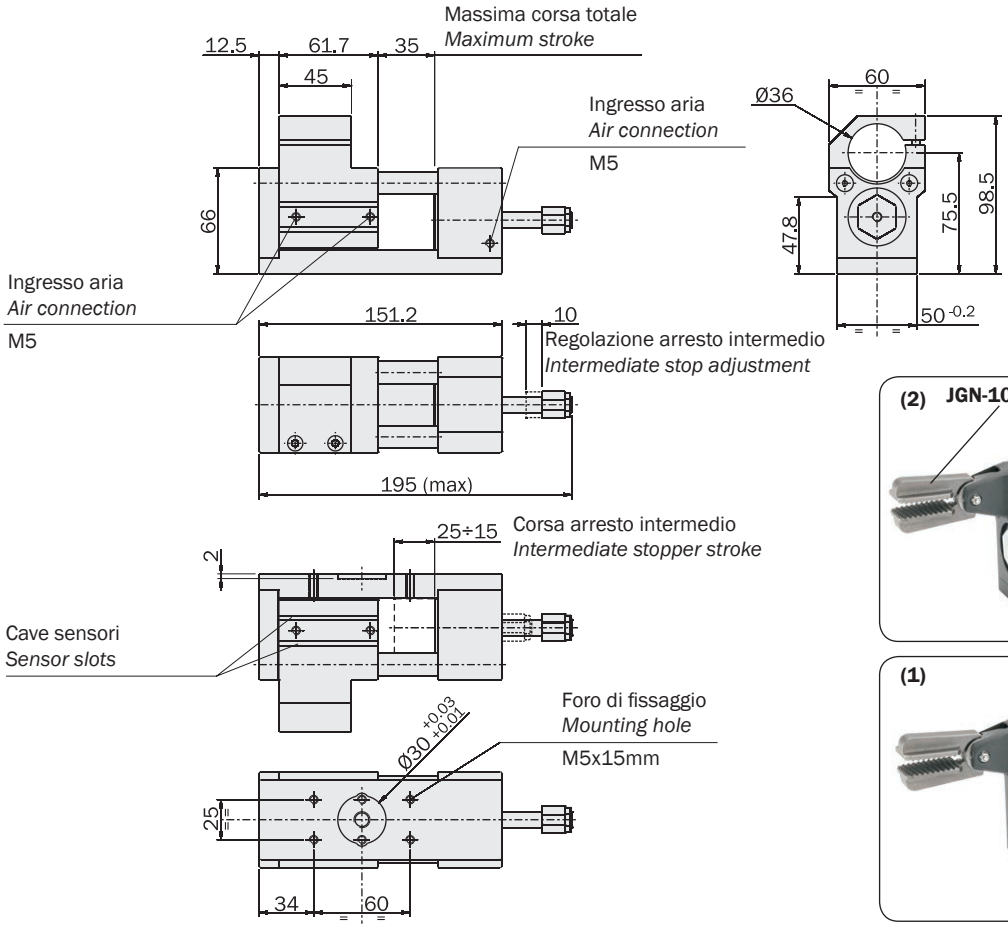
- *Double-effect main cylinder with piston bore 32mm and stroke 35mm.*
- *Single-acting intermediate stopper (1).*
- *Dia. 36mm clamp for GN-10 actuator (2).*
- *Used for car bumpers extracting.*
- *Optional magnetic sensors.*

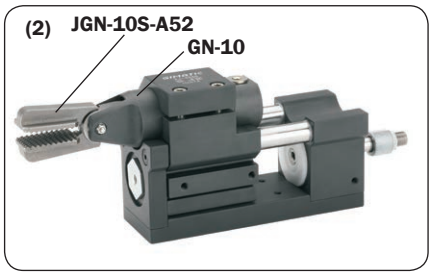
	ZJ-3235
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*
Pressione di esercizio *Pressure range*	2 ÷ 8 bar
Temperatura di esercizio *Temperature range*	5° ÷ 60 °C
Corsa principale *Main troke*	35 mm
Corsa intermedia *Intermediate troke*	10 ÷ 20 mm
Forza di trazione a 6 bar *Pulling force at 6 bar*	450 N
Peso *Weight*	1330 g



Dimensioni (mm) / *Dimensions (mm)*

FIRST ANGLE PROJECTION





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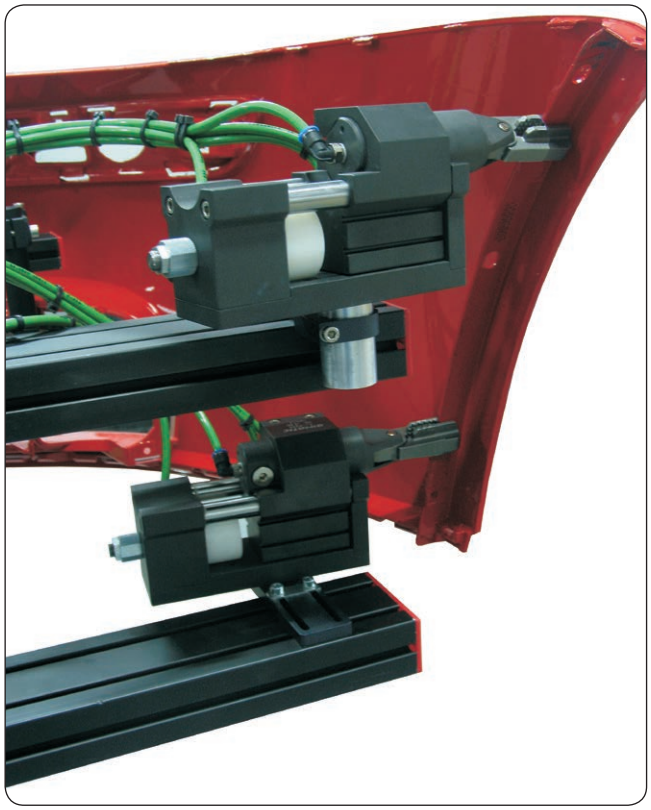
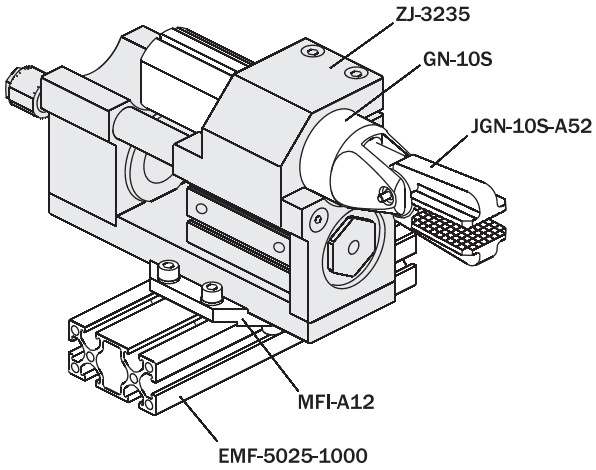
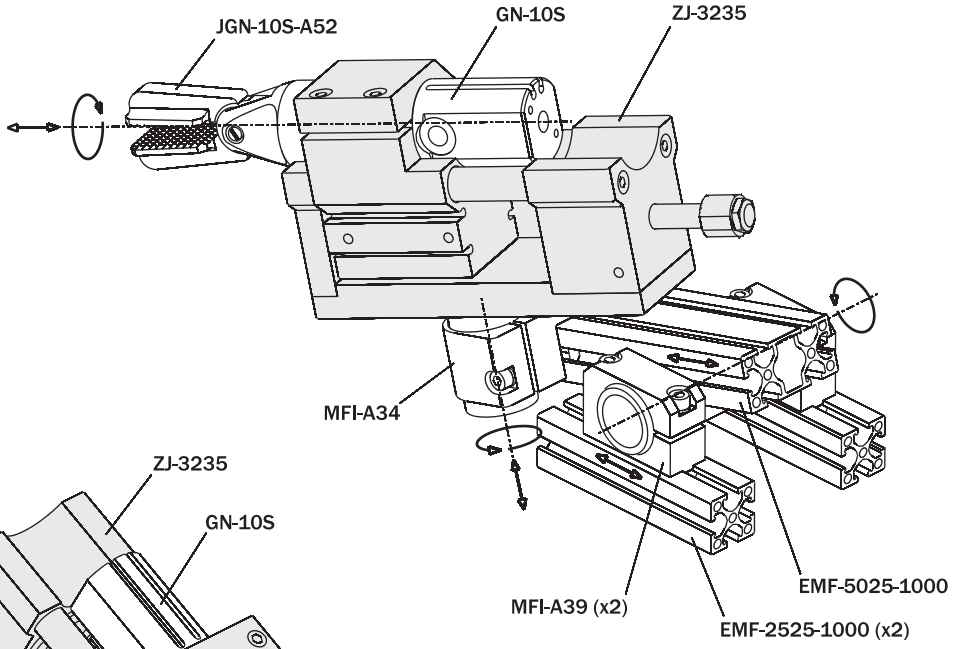
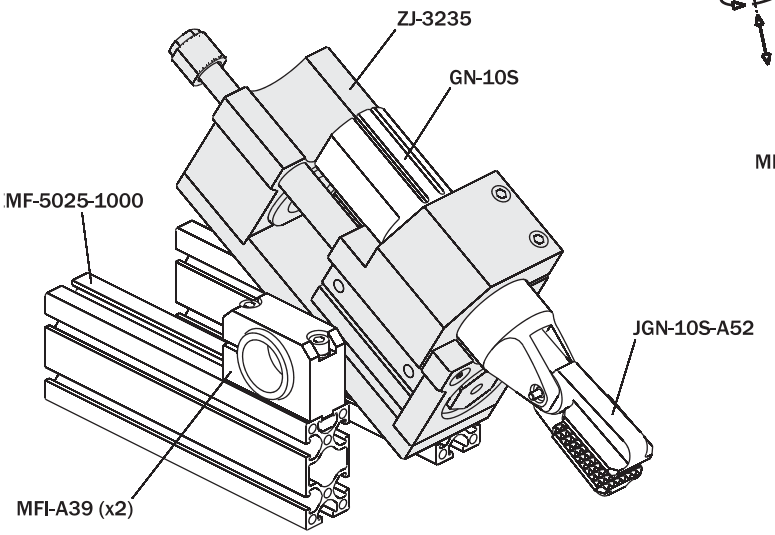
Esempi di utilizzo / *Application example*









Ventose

- Due tipologie: piane o con 1.5 soffietti.
- Quattro materiali: Silicone, EPDM, gomma naturale, HNBR.
- Diametri da 11mm a 53mm.

Vacuum cups

- *Two styles: flat or with 1.5 bellows.*
- *Four materials: Silicone, EPDM, natural rubber, HNBR.*
- *Diameters from 11mm to 53mm.*

Scelta del materiale

Le ultime tre cifre del codice identificano il materiale ed il colore.

Material choice

The three final characters in the code identify the material and the color.

Codice/*Code*

S 0 1	E 0 2	R 0 3	H 0 4
Silicone *Silicone*	EPDM	Gomma naturale *Natural rubber*	HNBR NEW




Colore *Color*	Rosso *Red*	Nero *Black*	Verde *Green*	Blu *Blue*
Durezza (Sh.A) *Hardness*	55	48	53	60
Temperatura di esercizio *Temperature range*	-70° ÷ +200°	-40° ÷ +100°	-40° ÷ +80°	-25° ÷ +150°
Applicazioni tipiche *Typical applications*	Alimentare *Food*	Automobile *Automotive*	Carta *Paper*	Plastica *Plastics*

P/G In base al diametro esistono due tipi di attacco: tipo P e tipo G
According to the cup diameter there are two connections: P type and G type

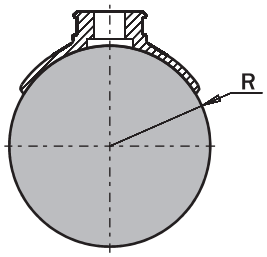
R Il raggio della più piccola sfera prendibile
Radius of the smallest grippable ball

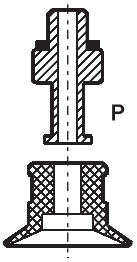
V Il volume interno
The inner volume

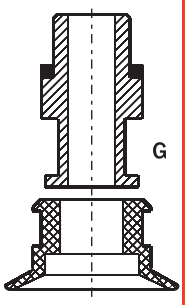
s Corsa verticale
Vertical stroke

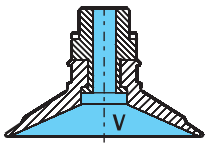
m Peso
Weight

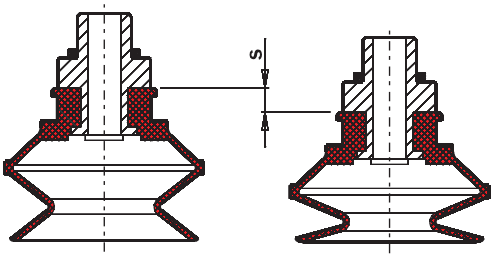
F Forza di sollevamento a -0.6bar
Suction force at -0.6bar











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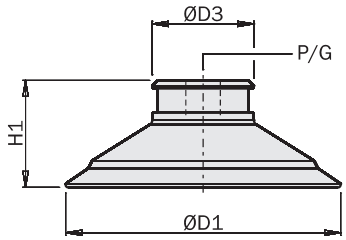
Ventose piane / *Flat vacuum cups*

Codice/*Code*

V	0	1					

1 1 | 1 6 | 2 2 | 3 3 | 4 2 | 5 3



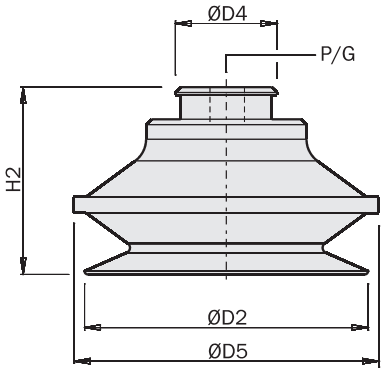
V01	P/G	D1 [mm]	D3 [mm]	H1 [mm]	R [mm]	s [mm]	V [cm³]	m [g]	F [N]
V0111S01	P	Ø11	Ø10	10	8	0.5	0.2	0.6	4
V0111E02									
V0111R03									
V0111H04									
V0116S01	P	Ø16.2	Ø10	10.5	8	1.5	0.3	0.6	8
V0116E02									
V0116R03									
V0116H04									
V0122S01	G	Ø22	Ø15	11.5	13	2.5	1.1	1.3	12
V0122E02									
V0122R03									
V0122H04									
V0133S01	G	Ø32	Ø19	12.5	20	3.5	1.7	2.7	25
V0133E02									
V0133R03									
V0133H04									
V0142S01	G	Ø41	Ø19	15.5	30	4.5	3.5	4.6	40
V0142E02									
V0142R03									
V0142H04									
V0153S01	G	Ø51.4	Ø19	20	35	6	8	8.6	64
V0153E02									
V0153R03									
V0153H04									

Ventose a soffietto / *Bellow vacuum cups*

Codice/*Code*

V	0	2					

1 1 | 1 6 | 2 2 | 3 3 | 4 2 | 5 3



V02	P/G	D2 [mm]	D4 [mm]	D5 [mm]	H2 [mm]	R [mm]	s [mm]	V [cm³]	m [g]	F [N]
V0211S01	P	Ø11	Ø10	Ø12	15.4	4	4.5	0.4	0.8	3
V0211E02										
V0211R03										
V0211H04										
V0216S01	P	Ø15.7	Ø10	Ø17.5	18.8	5	6.5	1	1.3	6
V0216E02										
V0216R03										
V0216H04										
V0222S01	P	Ø22	Ø10	Ø23	19	10	10	2	1.6	11
V0222E02										
V0222R03										
V0222H04										
V0233S01	G	Ø34	Ø19	Ø36	26	15	15	10	5.2	27
V0233E02										
V0233R03										
V0233H04										
V0242S01	G	Ø42	Ø19	Ø45	28	20	15	14	8.4	39
V0242E02										
V0242R03										
V0242H04										
V0253S01	G	Ø53	Ø19	Ø57	35	30	15	30	14.4	64
V0253E02										
V0253R03										
V0253H04										

Nippli (per ventose serie V)

Scegliere il nipplo in accordo alla ventosa (tipo P o tipo G) e in accordo alla filettatura richiesta dal supporto.

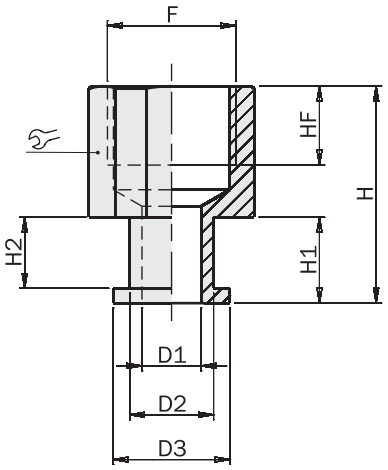
Nipples (for vacuum cups series V)

Select the proper nipple according to the vacuum cup (P type or G type) and according to the thread of the cup support.

AV	P/G	F	M	[mm]	m [g]
AV01M5F08	P	M5	-	8	1.2
AV01M5M08	P	-	M5	8	0.8
AV0118F13	P	G1/8”	-	13	4
AV0118M13	P	-	G1/8”	13	4
AV0118F12	G	G1/8”	-	12	3
AV0118M12	G	-	G1/8”	12	2.6
AV0118F16	G	G1/8”	-	16	6.2
AV0118M16	G	-	G1/8”	16	4
AV0114F16	G	G1/4”	-	16	4.6
AV0114M16	G	-	G1/4”	16	5.4

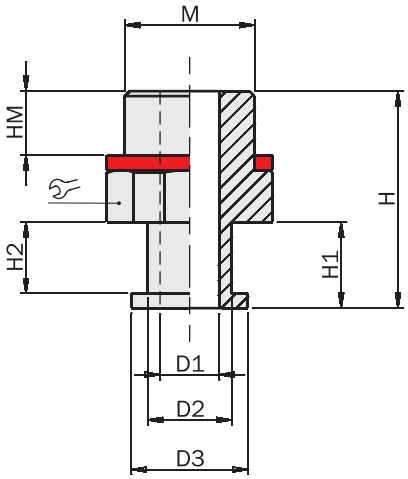
Dimensioni (mm) / *Dimensions (mm)*

	AV01M5F08	AV0118F12	AV0118F13	AV0118F16	AV0114F16
F	M5	G1/8”	G1/8”	G1/8”	G1/4”
D1	Ø2.5	Ø6	Ø2.5	Ø6	Ø6
D2	Ø4	Ø8.5	Ø4	Ø8.5	Ø8.5
D3	Ø6	Ø11.8	Ø6	Ø11.8	Ø11.8
H	17	22	21	22	22
H1	7.7	8.7	7.7	8.7	8.7
H2	6.7	7.2	6.7	7.2	7.2
HF	5	7	7	8	8
	8	12	13	16	16



FIRST ANGLE PROJECTION

	AV01M5M08	AV0118M12	AV0118M13	AV0118M16	AV0114M16
M	M5	G1/8”	G1/8”	G1/8”	G1/4”
D1	Ø2.5	Ø6	Ø2.5	Ø6	Ø6
D2	Ø4	Ø8.5	Ø4	Ø8.5	Ø8.5
D3	Ø6	Ø11.8	Ø6	Ø11.8	Ø11.8
H	17	22	21	22	22
H1	7.7	8.7	7.7	8.7	8.7
H2	6.7	7.2	6.7	7.2	7.2
HM	4	6.5	6.5	6.5	6.5
	8	12	13	16	16



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Note / *Notes*

Ventose

- Due tipologie: piane o con 1.5 soffietti.
- Due materiali: Silicone (SIL) o Cloroprene (CR).
- Diametri da 5mm a 11mm.
- Due nippli (AVP).

Vacuum cups

- *Two styles: flat or with 1.5 bellows.*
- *Two materials: Silicone (SIL) or Chloroprene (CR).*
- *Diameters from 5mm to 11mm.*
- *Two nipples (AVP).*

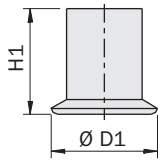
Materiali / *Materials*		Colore *Color*	Durezza *Hardness*	Temperatura di esercizio *Temperature range*
Silicone *Silicone*	SIL	Rosso *Red*	50 Sh.A	-40 ÷ +200°C.
Cloroprene *Chloroprene*	CR	Nero *Black*	50 Sh.A	-40 ÷ +110°C.

Ventose piane

- Adatte per oggetti con superfici piane o leggermente curve.
- Consentono la presa su superfici concave.

Flat vacuum cups

- *Suitable for objects with flat or slightly curved surfaces.*
- *Also able to pick up concave objects.*



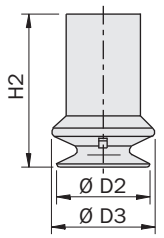
	Materiale *Material*	Nipplo *Nipple*	D1 [mm]	H1 [mm]	R [mm]	s [mm]	V [cm³]	m [g]	F [N]
VP.3150114	CR	AVP.3107031	Ø5	6.1	3	0.2	0.03	0.08	0.9
VP.3150114S	SIL	AVP.3107031	Ø5	6.1	3	0.2	0.03	0.08	0.9
VP.3150115	CR	AVP.3107031	Ø7	7	5	0.3	0.05	0.14	1.7
VP.3150115S	SIL	AVP.3107031	Ø7	7	5	0.3	0.05	0.14	1.7
VP.3150116	CR	AVP.3107031	Ø9	7	6	0.5	0.1	0.16	2.9
VP.3150116S	SIL	AVP.3107031	Ø9	7	6	0.5	0.1	0.16	2.9
VP.3150117	CR	AVP.3107030	Ø11	10.5	8	0.5	0.18	0.65	4.4
VP.3150117S	SIL	AVP.3107030	Ø11	10.5	8	0.5	0.18	0.65	4.4

Ventose a soffietto

- Creano spostamenti verso l'alto per la separazione di particolari sottili.
- Poco adatte a manipolare oggetti con forza di sollevamento parallela alla superficie.
- Consentono di compensare differenze di altezza.

Bellow vacuum cups

- *Lifting movements to separate thin objects.*
- *Not recommended for handling objects with the lifting force parallel to the surface.*
- *Suitable for level adjustment.*



	Materiale *Material*	Nipplo *Nipple*	D2 [mm]	D3 [mm]	H2 [mm]	R [mm]	s [mm]	V [cm³]	m [g]	F [N]
VP.3150286	CR	AVP.3107031	Ø5.6	Ø6.2	9.2	1.5	1.5	0.05	0.11	0.8
VP.3150286S	SIL	AVP.3107031	Ø5.6	Ø6.2	9.2	1.5	1.5	0.05	0.11	0.8
VP.3150287	CR	AVP.3107031	Ø8.8	Ø9.6	11.9	1.9	3.5	0.15	0.3	1.6
VP.3150287S	SIL	AVP.3107031	Ø8.8	Ø9.6	11.9	1.9	3.5	0.15	0.3	1.6
VP.3150101	CR	AVP.3107030	Ø11	Ø12	16.4	4	4.5	0.48	1	3.4
VP.3150101S	SIL	AVP.3107030	Ø11	Ø12	16.4	4	4.5	0.48	1	3.4

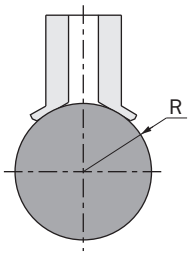
R Il raggio della più piccola sfera prendibile
Radius of the smallest grippable ball

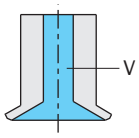
V Il volume interno
The inner volume

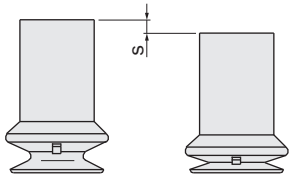
s Corsa verticale
Vertical stroke

m Peso
Weight

F Forza di sollevamento a -0.6bar
Suction force at -0.6bar





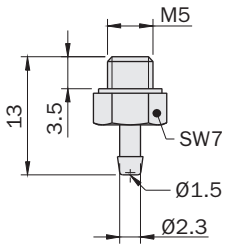


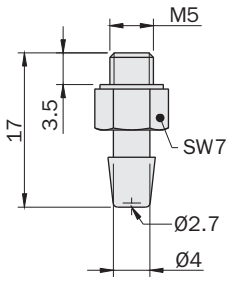
Nippli

- Adatti alle ventose tipo VP.
- Filetto M5 maschio.

Nipples

- *Suit VP suction cups.*
- *M5 male thread.*





	AVP.3107031	AVP.3107030
Peso *Weight*	3 g	4 g

Esempio / *Example*

AVP.3107031

VP.3150114S

AVP.3107030

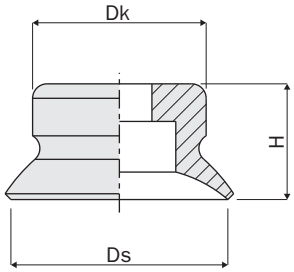
VP.3150117S

AVP.3107030

VP.3150101

Ventose piane

Flat vacuum cups



	Materiale *Material*	Nipplo *Nipple*	Ds [mm]	Dk [mm]	H [mm]	R [mm]	V [cm³]	m [g]	F [N]
VS.PFG2NBR55N003	NBR	AVS.N003M3AG	2	4	4	2	0.001	0.1	0.12
VS.PFG2SI55N003	SIL	AVS.N003M3AG	2	4	4	2	0.001	0.1	0.12
VS.PFG3.5NBR55N003	NBR	AVS.N003M3AG	3.5	4	4	8	0.002	0.3	0.42
VS.PFG3.5SI55N003	SIL	AVS.N003M3AG	3.5	4	4	8	0.002	0.4	0.42
VS.PFG5HT160N004	HT1	AVS.N004M5AG200	5	7.5	6.5	8	0.005	0.2	0.75
VS.PFG5NBR55N004	NBR	AVS.N004M5AG200	5	7.5	6.5	8	0.005	0.2	0.75
VS.PFG5SI55N004	SIL	AVS.N004M5AG200	5	7.5	6.5	8	0.005	0.2	0.75
VS.PFG8HT160N004	HT1	AVS.N004M5AG200	8	8	7	10	0.03	0.2	2.3
VS.PFG8NBR55N004	NBR	AVS.N004M5AG200	8	8	7	10	0.03	0.2	2.3
VS.PFG8SI55N004	SIL	AVS.N004M5AG200	8	8	7	10	0.03	0.2	2.3
VS.PFG10HT160N004	HT1	AVS.N004M5AG200 AVS.N004G18AG200	10	8.5	7.5	13	0.07	0.2	4
VS.PFG10NBR55N004	NBR	AVS.N004M5AG200 AVS.N004G18AG200	10	8.5	7.5	13	0.07	0.31	4
VS.PFG10SI55N004	SIL	AVS.N004M5AG200 AVS.N004G18AG200	10	8.5	7.5	13	0.07	0.3	4
VS.PFG15HT160N005	HT1	AVS.N005G18AG200	15	12	8	13	0.4	0.7	9
VS.PFG15NBR55N005	NBR	AVS.N005G18AG200	15	12	8	13	0.4	0.7	9
VS.PFG15SI55N005	SIL	AVS.N005G18AG200	15	12	8	13	0.4	0.7	9
VS.PFG20HT160N006	HT1	AVS.N006G18AG200	20	15	10	20	0.8	1.4	15.5
VS.PFG20NBR55N006	NBR	AVS.N006G18AG200	20	15	10	20	0.8	1.5	15.5
VS.PFG20SI55N006	SIL	AVS.N006G18AG200	20	15	10	20	0.8	1.4	15.5
VS.PFG25HT160N007	HT1	AVS.N007G18AG240	25	16	14	25	1.3	2.4	26.5
VS.PFG25NBR55N007	NBR	AVS.N007G18AG240	25	16	14	25	1.3	2.2	26.5
VS.PFG25SI55N007	SIL	AVS.N007G18AG240	25	16	14	25	1.3	2.4	26.5
VS.PFG30HT160N007	HT1	AVS.N007G18AG240	28.8	14.5	12	40	1.3	3.5	34
VS.PFG30NBR55N007	NBR	AVS.N007G18AG240	28.8	14.5	12	40	1.3	3.3	34
VS.PFG30SI55N007	SIL	AVS.N007G18AG240	28.8	14.5	12	40	1.3	3.4	34
VS.PFG40HT160N007	HT1	AVS.N007G18AG240	40	24	14	50	3.8	7.6	57.7
VS.PFG40NBR55N007	NBR	AVS.N007G18AG240	40	24	14	50	3.8	7.6	57.7
VS.PFG40SI55N007	SIL	AVS.N007G18AG240	40	24	14	50	3.8	7.4	57.7
VS.PFG50HT160N008	HT1	AVS.N008G18AG240	50	28.5	15	75	7	10.6	91
VS.PFG50NBR55N008	NBR	AVS.N008G18AG240	50	28.5	15	75	7	10.2	91
VS.PFG50SI55N008	SIL	AVS.N008G18AG240	50	28.5	15	75	7	10.5	91
VS.PFG60HT160N009	HT1	AVS.N009G14AG	60	38.5	18	100	10	24.2	125
VS.PFG60NBR55N009	NBR	AVS.N009G14AG	60	38.5	18	100	10	24.7	125
VS.PFG60SI55N009	SIL	AVS.N009G14AG	60	38.5	18	100	10	23.6	125
VS.PFG80HT160N009	HT1	AVS.N009G14AG	80	52	18	150	25	51.2	260
VS.PFG80NBR55N009	NBR	AVS.N009G14AG	80	52	18	150	25	52.8	260
VS.PFG80SI55N009	SIL	AVS.N009G14AG	80	52	18	150	25	50.5	260
VS.PFG95NBR55N009	NBR	AVS.N009G14AG	95	68	19	200	35	92.4	350
VS.PFG95SI55N009	SIL	AVS.N009G14AG	95	68	19	200	35	87.9	350

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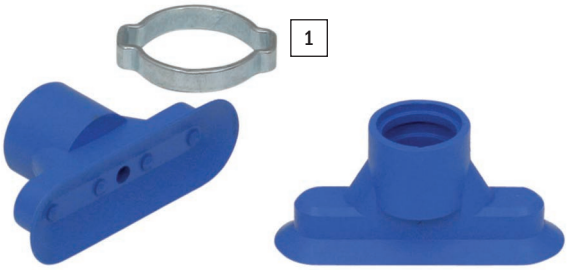
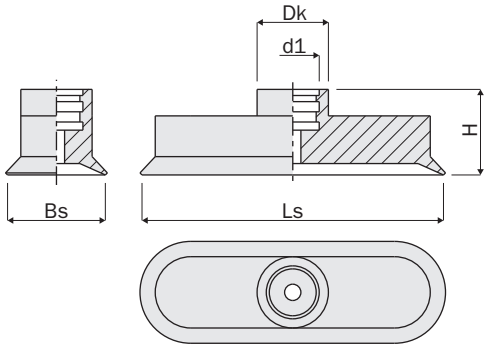
Ventose piane ovali

Oval flat vacuum cups





	Materiale *Material*	Nipplo *Nipple*	Dk [mm]	d1 [mm]	Bs [mm]	Ls [mm]	H [mm]	R [mm]	V [cm³]	m [g]	F [N]
VS.SG04X2HT160N003	HT1	AVS.N003M3AG100	6	3	2	4	6	1	0.004	0.1	0.42
VS.SG04X2NBR60N003	NBR	AVS.N003M3AG100	6	3	2	4	6	1	0.004	0.1	0.42
VS.SG07X3.5HT160N003	HT1	AVS.N003M3AG100	6	3	3.5	7	6	3	0.019	0.1	1
VS.SG07X3.5NBR60N003	NBR	AVS.N003M3AG100	6	3	3.5	7	6	3	0.019	0.14	1
VS.SG015X5HT160N021	HT1	AVS.N021M5AG200	8.5	6	5	15	12	4	0.036	0.5	3.1
VS.SG015X5NBR60N021	NBR	AVS.N021M5AG200	8.5	6	5	15	12	4	0.036	0.5	3.1
VS.SG018X6HT160N021	HT1	AVS.N021M5AG200	8.5	6	6	18	12	4	0.058	0.5	4.5
VS.SG018X6NBR60N021	NBR	AVS.N021M5AG200	8.5	6	6	18	12	4	0.058	0.5	4.5
VS.SG024X8HT160N022	HT1	AVS.N022G18AG350	11.5	7	8	24	12	8	0.138	2.6	8
VS.SG024X8NBR60N022	NBR	AVS.N022G18AG350	11.5	7	8	24	12	8	0.138	2.6	8
VS.SG030X10HT160N022	HT1	AVS.N022G18AG350	11.5	7	10	30	12	8	0.28	2.8	12.2
VS.SG030X10NBR60N022	NBR	AVS.N022G18AG350	11.5	7	10	30	12	8	0.28	2.7	12.2
VS.SG045X15HT160N023	HT1	AVS.N023G14AG350	15.5	13	15	45	21	10	0.98	6.3	28.2
VS.SG045X15NBR60N023	NBR	AVS.N023G14AG350	15.5	13	15	45	21	10	0.98	6.3	28.2
VS.SG060X20HT160N023	HT1	AVS.N023G14AG350	15.5	13	20	60	21	20	2.3	9.7	50.1
VS.SG060X20NBR60N023	NBR	AVS.N023G14AG350	15.5	13	20	60	21	20	2.3	9.6	50.1
VS.SG075X25HT160N023	HT1	AVS.N023G14AG350	17.5	13	25	75	21	30	4.7	17.8	78.3
VS.SG075X25NBR60N023	NBR	AVS.N023G14AG350	17.5	13	25	75	21	30	4.7	17.8	78.3
VS.SG090X30NBR70N023	NBR	AVS.N023G14AG350	17.5	13	30	90	21	35	8.5	26	112.6

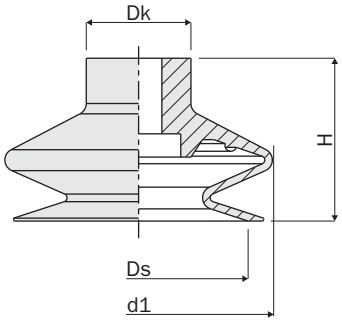
Morsetto a due orecchie per ventose ovali

Two-ear clamp for oval vacuum cups

1	Materiale *Material*	Dk [mm]	m [g]
VS.ZOKL1113	Acciaio zincato *Galvanised steel*	11÷13	1.7
VS.ZOKL1518	Acciaio zincato *Galvanised steel*	15÷18	2.56

Ventose con 1.5 soffietti

Vacuum cups with 1.5 bellows



	Materiale *Material*	Nipplo *Nipple*	Dk [mm]	d1 [mm]	Ds [mm]	H [mm]	R [mm]	V [cm³]	m [g]	F [N]
VS.FGA11HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	10	12	10.4	16	10	0.225	0.9	0.95
VS.FGA11NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	10	12	10.4	16	10	0.225	0.9	0.95
VS.FGA11SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	10	12	10.4	16	10	0.225	0.8	0.95
VS.FGA16HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	10	17	15.6	19.2	20	0.75	1.2	2.3
VS.FGA16NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	10	17	15.6	19.2	20	0.75	1.3	2.3
VS.FGA16SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	10	17	15.6	19.2	20	0.75	1.2	2.3
VS.FGA22HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	10	24.2	21.5	19	25	1.4	1.9	5.7
VS.FGA22NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	10	24.2	21.5	19	25	1.4	1.9	5.7
VS.FGA22SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	10	24.2	21.5	19	25	1.4	1.8	5.7
VS.FGA33HT160N018	HT1	AVS.N018G14AG440	18	36	30	27	40	4.75	7.3	13.6
VS.FGA33NBR55N018	NBR	AVS.N018G14AG440	18	36	30	27	40	4.75	7.3	13.6
VS.FGA33SI55N018	SIL	AVS.N018G14AG440	18	36	30	27	40	4.75	7	13.6
VS.FGA43HT160N018	HT1	AVS.N018G14AG440	18	45.9	38	27.6	60	9.25	11.5	22.8
VS.FGA43NBR55N018	NBR	AVS.N018G14AG440	18	45.9	38	27.6	60	9.25	11.6	22.8
VS.FGA43SI55N018	SIL	AVS.N018G14AG440	18	45.9	38	27.6	60	9.25	11	22.8
VS.FGA53HT160N018	HT1	AVS.N018G14AG440	18	58.6	50	34	75	26.25	19.4	51.3
VS.FGA53NBR55N018	NBR	AVS.N018G14AG440	18	58.6	50	34	75	26.25	19.3	51.3
VS.FGA53SI55N018	SIL	AVS.N018G14AG440	18	58.6	50	34	75	26.25	18.4	51.3
VS.FGA78HT160N019	HT1	AVS.N019G14AG	25	83	74	47	70	76	60	137.4
VS.FGA78NBR55N019	NBR	AVS.N019G14AG	25	83	74	47	70	76	58.4	137.4
VS.FGA78SI55N019	SIL	AVS.N019G14AG	25	83	74	47	70	76	54.3	137.4

Materiali

Materials

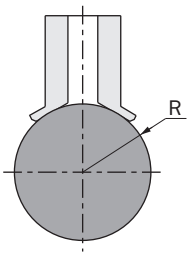
		Colore *Color*	Durezza *Hardness*	Temperatura di esercizio *Temperature range*
Materiale antialone / Non-marking material	HT1	Blu / Blue	60 Sh.A	-25° ÷ +170° C
Gomma nitrilica / Nitrile rubber	NBR	Nero / Black	55/60/70 Sh.A	-30° ÷ +120° C
Silicone / Silicone	SIL	Trasparente / Translucent	55 Sh.A	-50° ÷ +220° C

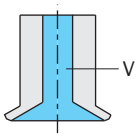
R Il raggio della più piccola sfera prendibile
Radius of the smallest grippable ball

V Il volume interno
The inner volume

m Peso
Weight

F Forza di sollevamento a -0.6bar
Suction force at -0.6bar





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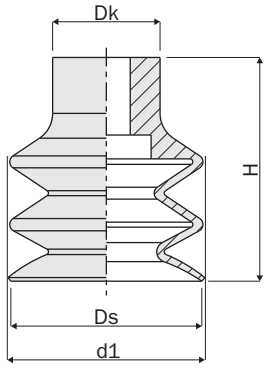
Ventose con 2.5 soffietti

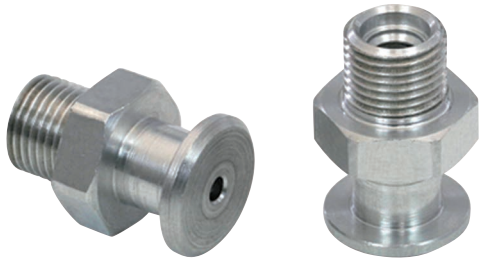
Vacuum cups with 2.5 bellows

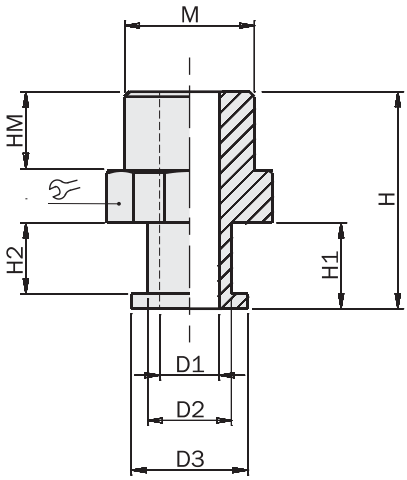


	Materiale *Material*	Nipplo *Nipple*	Dk [mm]	d1 [mm]	Ds [mm]	H [mm]	R [mm]	V [cm³]	m [g]	F [N]
VS.FG5HT160N017	HT1	AVS.N017M5AG200	7	6	5	14	8	0.033	0.3	0.1
VS.FG5NBR55N017	NBR	AVS.N017M5AG200	7	6	5	14	8	0.033	0.3	0.1
VS.FG5SI55N017	SIL	AVS.N017M5AG200	7	6	5	14	8	0.033	0.3	0.1
VS.FG9HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	9	8.9	9	15	10	0.15	0.6	0.7
VS.FG9NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	9	8.9	9	15	10	0.15	0.6	0.7
VS.FG9SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	9	8.9	9	15	10	0.15	0.6	0.7
VS.FG12HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	10	12	12	21	13	0.6	1.1	0.9
VS.FG12NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	10	12	12	21	13	0.6	1.1	0.9
VS.FG12SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	10	12	12	21	13	0.6	1.1	0.9
VS.FG14HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	10	13.9	14.5	22.8	15	0.975	1.4	1.2
VS.FG14NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	10	13.9	14.5	22.8	15	0.975	1.4	1.2
VS.FG14SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	10	13.9	14.5	22.8	15	0.975	1.3	1.2
VS.FG18HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	10	17.8	17.2	22.6	20	1.35	1.9	2.3
VS.FG18NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	10	17.8	17.2	22.6	20	1.35	2.1	2.3
VS.FG18SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	10	17.8	17.2	22.6	20	1.35	1.9	2.3
VS.FG20HT160N016	HT1	AVS.N016G18AG350 AVS.N016M5AG250	10	20	20	22.1	30	2	2	3.8
VS.FG20NBR55N016	NBR	AVS.N016G18AG350 AVS.N016M5AG250	10	20	20	22.1	30	2	2.2	3.8
VS.FG20SI55N016	SIL	AVS.N016G18AG350 AVS.N016M5AG250	10	20	20	22.1	30	2	2	3.8
VS.FG32HT160N018	HT1	AVS.N018G14AG440	18	32.6	32	37.5	35	10	9.5	12
VS.FG32NBR55N018	NBR	AVS.N018G14AG440	18	32.6	32	37.5	35	10	9.6	12
VS.FG32SI55N018	SIL	AVS.N018G14AG440	18	32.6	32	37.5	35	10	9	12
VS.FG42HT160N018	HT1	AVS.N018G14AG440	18	43.5	42.6	46	75	19.5	20.9	13.6
VS.FG42NBR55N018	NBR	AVS.N018G14AG440	18	43.5	42.6	46	75	19.5	22.5	13.6
VS.FG42SI55N018	SIL	AVS.N018G14AG440	18	43.5	42.6	46	75	19.5	20.6	13.6
VS.FG62HT160N018	HT1	AVS.N018G14AG440	18	62	62	54	75	72.5	40.3	39.6
VS.FG62NBR55N018	NBR	AVS.N018G14AG440	18	62	62	54	75	72.5	42.1	39.6
VS.FG62SI55N018	SIL	AVS.N018G14AG440	18	62	62	54	75	72.5	38.1	39.6
VS.FG88NBR55N019	NBR	AVS.N019G14AG	25	88.2	89	86.5	100	165	166.6	45.2
VS.FG88SI55N019	SIL	AVS.N019G14AG	25	88.2	89	86.5	100	165	155.6	45.2

Nippli (per ventose serie VS.)

Nipples (for vacuum cups series VS.)

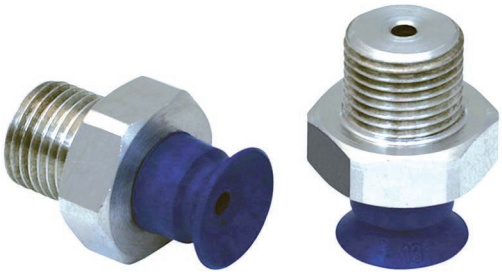


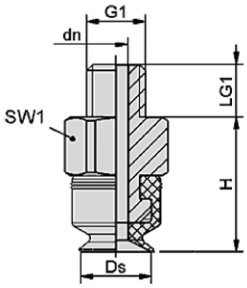


	M	D1 [mm]	D2 [mm]	D3 [mm]	H [mm]	H1 [mm]	H2 [mm]	HM [mm]	[mm]	Peso *Weight*
AVS.N003M3AG100	M3	1	2	3.2	7.5	2.5	1.5	3	5	0.18 g
AVS.N004M5AG200	M5	2	4	6	13.5	4	2	4.5	8	1.05 g
AVS.N004G18AG200	1/8	2	4	6	17	4	2	8	14	3.8 g
AVS.N005G18AG200	1/8	2	5	8	17.5	4.5	2.5	8	14	4.05 g
AVS.N006G18AG200	1/8	2	5	10	19.5	6.5	4.5	8	14	4.3 g
AVS.N007G18AG240	1/8	2.4	6.5	10	21.5	8.5	7	8	14	3.8 g
AVS.N008G18AG240	1/8	2.4	8.5	14	22	9	7	8	14	4.7 g
AVS.N009G14AG	1/4	5.5	10x1.25	-	25	10	-	10	17	9.3 g
AVS.N023G14AG350	1/4	3.5	12	13.5	25	10	8	10	17	9.6 g
AVS.N022G18AG350	1/8	3.5	6	7.5	18.5	4.5	2	8	14	3.8 g
AVS.N021M5AG200	M5	2	5	6.5	15.5	4.5	2	5	8	1.2 g
AVS.N016M5AG250	M5	2.5	5.8	6.5	16	6	3,5	5	7	1.02 g
AVS.N017M5AG200	M5	2	4.2	4.5	17	7	4	5	8	1.1 g
AVS.N018G14AG440	1/4	4.4	8.7	14	28.8	13.8	12.3	11	17	7.75 g
AVS.N019G14AG	1/4	8.2	13.5	20	40	23	19	11	21	14.2 g
AVS.N016G18AG350	1/8	3.5	5.8	6.5	20	6.5	4	7.5	14	4.13 g

Ventose piane con nipplo

Flat vacuum cups with nipple

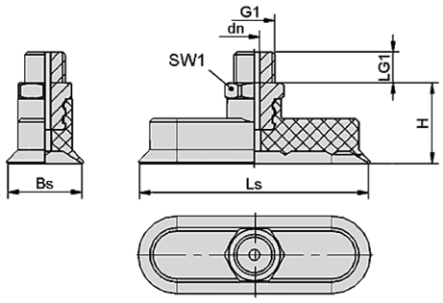




	Ventosa *Vacuum cup*	Nipplo *Nipple*	G1 [mm]	dn [mm]	Ds [mm]	H [mm]	LG1 [mm]	SW1 [mm]	R [mm]	V [cm³]	m [g]	F [N]
WS.PFYN2NBR55M3AG	VS.PFG2NBR55N003	AVS.N003M3AG	M3	1	2	6	3.17	5	2	0.001	0.28	0.12
WS.PFYN2SI55M3AG	VS.PFG2SI55N003	AVS.N003M3AG	M3	1	2	6	3.17	5	2	0.001	0.28	0.12
WS.PFYN3.5NBR55M3AG	VS.PFG3.5NBR55N003	AVS.N003M3AG	M3	1	3.5	6	3.17	5	8	0.002	0.48	0.42
WS.PFYN3.5SI55M3AG	VS.PFG3.5SI55N003	AVS.N003M3AG	M3	1	3.5	6	3.17	5	8	0.002	0.58	0.42
WS.PFYN5HT160M5AG	VS.PFG5HT160N004	AVS.N004M5AG200	M5	2	5	11.5	4.5	8	8	0.005	1.25	0.75
WS.PFYN5NBR55M5AG	VS.PFG5NBR55N004	AVS.N004M5AG200	M5	2	5	11.5	4.5	8	8	0.005	1.25	0.75
WS.PFYN5SI55M5AG	VS.PFG5SI55N004	AVS.N004M5AG200	M5	2	5	11.5	4.5	8	8	0.005	1.25	0.75
WS.PFYN8HT160M5AG	VS.PFG8HT160N004	AVS.N004M5AG200	M5	2	8	12	4.5	8	10	0.03	1.25	2.3
WS.PFYN8NBR55M5AG	VS.PFG8NBR55N004	AVS.N004M5AG200	M5	2	8	12	4.5	8	10	0.03	1.25	2.3
WS.PFYN8SI55M5AG	VS.PFG8SI55N004	AVS.N004M5AG200	M5	2	8	12	4.5	8	10	0.03	1.25	2.3
WS.PFYN10HT160G18AG	VS.PFG10HT160N004	AVS.N004G18AG200	1/8	2	10	12.5	8	14	13	0.07	4	4
WS.PFYN10HT160M5AG	VS.PFG10HT160N004	AVS.N004M5AG200	M5	2	10	12.5	4.5	8	13	0.07	1.36	4
WS.PFYN10NBR55G18AG	VS.PFG10NBR55N004	AVS.N004G18AG200	1/8	2	10	12.5	8	14	13	0.07	4.1	4
WS.PFYN10NBR55M5AG	VS.PFG10NBR55N004	AVS.N004M5AG200	M5	2	10	12.5	4.5	8	13	0.07	1.25	4
WS.PFYN10SI55G18AG	VS.PFG10SI55N004	AVS.N004G18AG200	1/8	2	10	12.5	8	14	13	0.07	4.11	4
WS.PFYN10SI55M5AG	VS.PFG10SI55N004	AVS.N004M5AG200	M5	2	10	12.5	4.5	8	13	0.07	1.35	4
WS.PFYN15HT160G18AG	VS.PFG15HT160N005	AVS.N005G18AG200	1/8	2	15	13	8	14	13	0.4	4.75	9
WS.PFYN15NBR55G18AG	VS.PFG15NBR55N005	AVS.N005G18AG200	1/8	2	15	13	8	14	13	0.4	4.75	9
WS.PFYN15SI55G18AG	VS.PFG15SI55N005	AVS.N005G18AG200	1/8	2	15	13	8	14	13	0.4	4.75	9
WS.PFYN20HT160G18AG	VS.PFG20HT160N006	AVS.N006G18AG200	1/8	2	20	15	8	14	20	0,8	5.7	15.5
WS.PFYN20NBR55G18AG	VS.PFG20NBR55N006	AVS.N006G18AG200	1/8	2	20	15	8	14	20	0,8	5.8	15.5
WS.PFYN20SI55G18AG	VS.PFG20SI55N006	AVS.N006G18AG200	1/8	2	20	15	8	14	20	0.8	5.7	15.5
WS.PFYN25HT160G18AG	VS.PFG25HT160N007	AVS.N007G18AG240	1/8	2.4	25	19	8	14	25	1.3	6.2	26.5
WS.PFYN25NBR55G18AG	VS.PFG25NBR55N007	AVS.N007G18AG240	1/8	2.4	25	19	8	14	25	1.3	6	26.5
WS.PFYN25SI55G18AG	VS.PFG25SI55N007	AVS.N007G18AG240	1/8	2.4	25	19	8	14	25	1.3	6.2	26.5
WS.PFYN30HT160G18AG	VS.PFG30HT160N007	AVS.N007G18AG240	1/8	2.4	28.8	17	8	14	40	1.3	7.3	34
WS.PFYN30NBR55G18AG	VS.PFG30NBR55N007	AVS.N007G18AG240	1/8	2.4	28.8	17	8	14	40	1.3	7.1	34
WS.PFYN30SI55G18AG	VS.PFG30SI55N007	AVS.N007G18AG240	1/8	2.4	28.8	17	8	14	40	1.3	7.2	34
WS.PFYN40HT160G18AG	VS.PFG40HT160N007	AVS.N007G18AG240	1/8	2.4	40	19	8	14	50	3.8	11.4	57.7
WS.PFYN40NBR55G18AG	VS.PFG40NBR55N007	AVS.N007G18AG240	1/8	2.4	40	19	8	14	50	3.8	11.4	57.7
WS.PFYN40SI55G18AG	VS.PFG40SI55N007	AVS.N007G18AG240	1/8	2.4	40	19	8	14	50	3.8	11.2	57.7
WS.PFYN50HT160G18AG	VS.PFG50HT160N008	AVS.N008G18AG240	1/8	2.4	50	20	8	14	75	7	10.6	91
WS.PFYN50NBR55G18AG	VS.PFG50NBR55N008	AVS.N008G18AG240	1/8	2.4	50	20	8	14	75	7	10.2	91
WS.PFYN50SI55G18AG	VS.PFG50SI55N008	AVS.N008G18AG240	1/8	2.4	50	20	8	14	75	7	10.5	91
WS.PFYN60HT160G14AG	VS.PFG60HT160N009	AVS.N009G14AG	1/4	5.5	60	23	10	17	100	10	24.2	125
WS.PFYN60NBR55G14AG	VS.PFG60NBR55N009	AVS.N009G14AG	1/4	5.5	60	23	10	17	100	10	24.7	125
WS.PFYN60SI55G14AG	VS.PFG60SI55N009	AVS.N009G14AG	1/4	5.5	60	23	10	17	100	10	23.6	125
WS.PFYN80NBR55G14AG	VS.PFG80NBR55N009	AVS.N009G14AG	1/4	5.5	80	25	10	17	150	25	51.2	260
WS.PFYN80SI55G14AG	VS.PFG80SI55N009	AVS.N009G14AG	1/4	5.5	80	25	10	17	150	25	52.8	260
WS.PFYN80HT160G14AG	VS.PFG80HT160N009	AVS.N009G14AG	1/4	5.5	80	25	10	17	150	25	50.5	260
WS.PFYN95NBR55G14AG	VS.PFG95NBR55N009	AVS.N009G14AG	1/4	5.5	95	25.5	10	17	200	35	92.4	350
WS.PFYN95SI55G14AG	VS.PFG95SI55N009	AVS.N009G14AG	1/4	5.5	95	25.5	10	17	200	35	87.9	350

Ventose piane ovali con nipplo

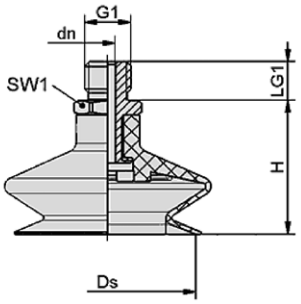
Oval flat vacuum cups with nipple



	Ventosa *Vacuum cup*	Nipplo *Nipple*	G1 [mm]	dn [mm]	B [mm]	H [mm]	L [mm]	LG1 [mm]	SW1 [mm]	R [mm]	V [cm³]	m [g]	F [N]
WS.SGON4X2HT1M3AG	VS.SGO4X2HT160N003	AVS.N003M3AG100	M3	1	2	8	4	3	5	1	0.004	0.28	0.42
WS.SGON4X2NBRM3AG	VS.SGO4X2NBR60N003	AVS.N003M3AG100	M3	1	2	8	4	3	5	1	0.004	0.28	0.42
WS.SGON7X3.5HT1M3AG	VS.SGO7X3.5HT160N003	AVS.N003M3AG100	M3	1	3.5	8	7	3	5	3	0.019	0.28	1
WS.SGON7X3.5NBRM3AG	VS.SGO7X3.5NBR60N003	AVS.N003M3AG100	M3	1	3.5	8	7	3	5	3	0.019	0.32	1
WS.SGON15X5HT1M5AG	VS.SGO15X5HT160N021	AVS.N021M5AG200	M5	2	5	17	15	5	8	4	0.036	0.71	3.1
WS.SGON15X5NBRM5AG	VS.SGO15X5NBR60N021	AVS.N021M5AG200	M5	2	5	17	15	5	8	4	0.036	0.71	3.1
WS.SGON18X6HT1M5AG	VS.SGO18X6HT160N021	AVS.N021M5AG200	M5	2	6	17	18	5	8	4	0.058	0.71	4.5
WS.SGON18X6NBRM5AG	VS.SGO18X6NBR60N021	AVS.N021M5AG200	M5	2	6	17	18	5	8	4	0.058	0.71	4.5
WS.SGON24X8HT1G18AG	VS.SGO24X8HT160N022	AVS.N022G18AG350	1/8	3.5	8	17	24	8	14	8	0.138	6.4	8
WS.SGON24X8NBRG18AG	VS.SGO24X8NBR60N022	AVS.N022G18AG350	1/8	3.5	8	17	24	8	14	8	0.138	6.4	8
WS.SGON30X10HT1G18AG	VS.SGO30X10HT160N022	AVS.N022G18AG350	1/8	3.5	10	17	30	8	14	8	0.28	6.6	12.2
WS.SGON30X10NBRG18AG	VS.SGO30X10NBR60N022	AVS.N022G18AG350	1/8	3.5	10	17	30	8	14	8	0.28	6.5	12.2
WS.SGON45X15HT1G14AG	VS.SGO45X15HT160N023	AVS.N023G14AG350	1/4	3.5	15	26	45	10	17	10	0.98	15.9	28.2
WS.SGON45X15NBRG14AG	VS.SGO45X15NBR60N023	AVS.N023G14AG350	1/4	3.5	15	26	45	10	17	10	0.98	15.9	28.2
WS.SGON60X20HT1G14AG	VS.SGO60X20HT160N023	AVS.N023G14AG350	1/4	3.5	20	26	60	9.95	17	20	2.3	19.3	50.1
WS.SGON60X20NBRG14AG	VS.SGO60X20NBR60N023	AVS.N023G14AG350	1/4	3.5	20	26	60	9.95	17	20	2.3	19.3	50.1
WS.SGON75X25NBRG14AG	VS.SGO75X25NBR60N023	AVS.N023G14AG350	1/4	3.5	25	26	75	10	17	30	4.7	27.4	78.3
WS.SGON75X25HT1G14AG	VS.SGO75X25HT160N023	AVS.N023G14AG350	1/4	3.5	25	26	75	10	17	30	4.7	27.4	78.3
WS.SGON90X30NBRG14AG	VS.SGO90X30NBR70N023	AVS.N023G14AG350	1/4	3.5	30	26	90	10	17	35	8.5	35.6	112.6

Ventose con 1.5 soffietti con nipplo

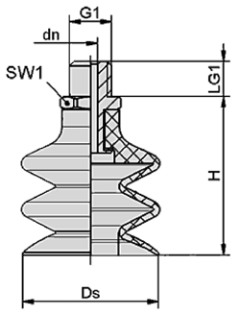
Vacuum cups with 1.5 bellows with nipple



	Ventosa *Vacuum cup*	Nipplo *Nipple*	G1 [mm]	dn [mm]	Ds [mm]	H [mm]	LG1 [mm]	SW1 [mm]	R [mm]	V [cm³]	m [g]	F [N]
WS.FSGA11HT160G18AG	VS.FGA11HT160N016	AVS.N016G18AG350	1/8	3.5	10.4	22	7.5	14	10	0.225	5.03	0.95
WS.FSGA11HT160M5AG	VS.FGA11HT160N016	AVS.N016M5AG250	M5	2.5	10.4	21	5	7	10	0.225	1.92	0.95
WS.FSGA11NBR55G18AG	VS.FGA11NBR55N016	AVS.N016G18AG350	1/8	3.5	10.4	22	7.5	14	10	0.225	5.03	0.95
WS.FSGA11NBR55M5AG	VS.FGA11NBR55N016	AVS.N016M5AG250	M5	2.5	10.4	21	5	7	10	0.225	1.92	0.95
WS.FSGA11SI55G18AG	VS.FGA11SI55N016	AVS.N016G18AG350	1/8	3.5	10.4	22	7.5	14	10	0.225	5.03	0.95
WS.FSGA11SI55M5AG	VS.FGA11SI55N016	AVS.N016M5AG250	M5	2.5	10.4	21	5	7	10	0.225	1.92	0.95
WS.FSGA16HT160G18AG	VS.FGA16HT160N016	AVS.N016G18AG350	1/8	3.5	15.6	25.2	7.5	14	20	0.75	5.33	2.3
WS.FSGA16HT160M5AG	VS.FGA16HT160N016	AVS.N016M5AG250	M5	2.5	15.6	24.2	5	7	20	0.75	2.32	2.3
WS.FSGA16NBR55G18AG	VS.FGA16NBR55N016	AVS.N016G18AG350	1/8	3.5	15.6	25.2	7.5	14	20	0.75	5.33	2.3
WS.FSGA16NBR55M5AG	VS.FGA16NBR55N016	AVS.N016M5AG250	M5	2.5	15.6	24.2	5	7	20	0.75	2.22	2.3
WS.FSGA16SI55G18AG	VS.FGA16SI55N016	AVS.N016G18AG350	1/8	3.5	15.6	25.2	7.5	14	20	0.75	5.43	2.3
WS.FSGA16SI55M5AG	VS.FGA16SI55N016	AVS.N016M5AG250	M5	2.5	15.6	24.2	5	7	20	0.75	2.22	2.3
WS.FSGA22HT160G18AG	VS.FGA22HT160N016	AVS.N016G18AG350	1/8	3.5	21.5	25	7.5	14	25	1.4	6.03	5.7
WS.FSGA22HT160M5AG	VS.FGA22HT160N016	AVS.N016M5AG250	M5	2.5	21.5	24	5	7	25	1.4	2.92	5.7
WS.FSGA22NBR55G18AG	VS.FGA22NBR55N016	AVS.N016G18AG350	1/8	3.5	21.5	25	7.5	14	25	1.4	5.93	5.7
WS.FSGA22NBR55M5AG	VS.FGA22NBR55N016	AVS.N016M5AG250	M5	2.5	21.5	24	5	7	25	1.4	2.92	5.7
WS.FSGA22SI55G18AG	VS.FGA22SI55N016	AVS.N016G18AG350	1/8	3.5	21.5	25	7.5	14	25	1.4	6.02	5.7
WS.FSGA22SI55M5AG	VS.FGA22SI55N016	AVS.N016M5AG250	M5	2.5	21.5	24	5	7	25	1.4	2.82	5.7
WS.FSGA33HT160G14AG	VS.FGA33HT160N018	AVS.N018G14AG440	1/4	4.4	30	31	11	17	40	4.75	15.05	13.6
WS.FSGA33NBR55G14AG	VS.FGA33NBR55N018	AVS.N018G14AG440	1/4	4.4	30	31	11	17	40	4.75	15.05	13.6
WS.FSGA33SI55G14AG	VS.FGA33SI55N018	AVS.N018G14AG440	1/4	4.4	30	31	11	17	40	4.75	14.75	13.6
WS.FSGA43HT160G14AG	VS.FGA43HT160N018	AVS.N018G14AG440	1/4	4.4	38	31.6	11	17	60	9.25	19.25	22.8
WS.FSGA43NBR55G14AG	VS.FGA43NBR55N018	AVS.N018G14AG440	1/4	4.4	38	31.6	11	17	60	9.25	19.35	22.8
WS.FSGA43SI55G14AG	VS.FGA43SI55N018	AVS.N018G14AG440	1/4	4.4	38	31.6	11	17	60	9.25	18.75	22.8
WS.FSGA53HT160G14AG	VS.FGA53HT160N018	AVS.N018G14AG440	1/4	4.4	50	38	11	17	75	26.25	27.15	51.3
WS.FSGA53NBR55G14AG	VS.FGA53NBR55N018	AVS.N018G14AG440	1/4	4.4	50	38	11	17	75	26.25	27.05	51.3
WS.FSGA53SI55G14AG	VS.FGA53SI55N018	AVS.N018G14AG440	1/4	4.4	50	38	11	17	75	26.25	26.15	51.3
WS.FSGA78NBR55G14AG	VS.FGA78NBR55N019	AVS.N019G14AG	1/4	8.2	74	53	11	21	70	76	74.20	137.4
WS.FSGA78SI55G14AG	VS.FGA78SI55N019	AVS.N019G14AG	1/4	8.2	74	53	11	21	70	76	72.6	137.4
WS.FSGA78HT160G14AG	VS.FGA78HT160N019	AVS.N019G14AG	1/4	8.2	74	53	11	21	70	76	68.5	137.4

Ventose con 2.5 soffietti con nipplo

Vacuum cups with 2.5 bellows with nipple



	Ventosa *Vacuum cup*	Nipplo *Nipple*	G1 [mm]	dn [mm]	Ds [mm]	H [mm]	LG1 [mm]	SW1 [mm]	R [mm]	V [cm³]	m [g]	F [N]
WS.FSG5HT160M5AG	VS.FG5HT160N017	AVS.N017M5AG200	M5	2	5	19	5	8	8	0.033	1.4	0.1
WS.FSG5NBR55M5AG	VS.FG5NBR55N017	AVS.N017M5AG200	M5	2	5	19	5	8	8	0.033	1.4	0.1
WS.FSG5SI55M5AG	VS.FG5SI55N017	AVS.N017M5AG200	M5	2	5	19	5	8	8	0.033	1.4	0.1
WS.FSG9HT160G18AG	VS.FG9HT160N016	AVS.N016G18AG350	1/8	3.5	9	21	7.5	14	10	0.15	4.73	0.7
WS.FSG9HT160M5AG	VS.FG9HT160N016	AVS.N016M5AG250	M5	2.5	9	20	5	7	10	0.15	1.62	0.7
WS.FSG9NBR55G18AG	VS.FG9NBR55N016	AVS.N016G18AG350	1/8	3.5	9	21	7.5	14	10	0.15	4.73	0.7
WS.FSG9NBR55M5AG	VS.FG9NBR55N016	AVS.N016M5AG250	M5	2.5	9	20	5	7	10	0.15	1.62	0.7
WS.FSG9SI55G18AG	VS.FG9SI55N016	AVS.N016G18AG350	1/8	3.5	9	21	7.5	14	10	0.15	4.73	0.7
WS.FSG9SI55M5AG	VS.FG9SI55N016	AVS.N016M5AG250	M5	2.5	9	20	5	7	10	0.15	1.62	0.7
WS.FSG12HT160G18AG	VS.FG12HT160N016	AVS.N016G18AG350	1/8	3.5	12	27	7.5	14	13	0.6	5.23	0.9
WS.FSG12HT160M5AG	VS.FG12HT160N016	AVS.N016M5AG250	M5	2.5	12	26	5	7	13	0.6	2.12	0.9
WS.FSG12NBR55G18AG	VS.FG12NBR55N016	AVS.N016G18AG350	1/8	3.5	12	27	7.5	14	13	0.6	5.23	0.9
WS.FSG12NBR55M5AG	VS.FG12NBR55N016	AVS.N016M5AG250	M5	2.5	12	26	5	7	13	0.6	2.12	0.9
WS.FSG12SI55G18AG	VS.FG12SI55N016	AVS.N016G18AG350	1/8	3.5	12	27	7.5	14	13	0.6	5.23	0.9
WS.FSG12SI55M5AG	VS.FG12SI55N016	AVS.N016M5AG250	M5	2.5	12	26	5	7	13	0.6	2.12	0.9
WS.FSG14HT160G18AG	VS.FG14HT160N016	AVS.N016G18AG350	1/8	3.5	14.5	28	7.5	14	15	0.975	5.53	1.2
WS.FSG14HT160M5AG	VS.FG14HT160N016	AVS.N016M5AG250	M5	2.5	14.5	27	5	7	15	0.975	2.42	1.2
WS.FSG14NBR55G18AG	VS.FG14NBR55N016	AVS.N016G18AG350	1/8	3,5	14.5	28	7.5	14	15	0.975	5.43	1.2
WS.FSG14NBR55M5AG	VS.FG14NBR55N016	AVS.N016M5AG250	M5	2.5	14.5	27	5	7	15	0.975	2.42	1.2
WS.FSG14SI55G18AG	VS.FG14SI55N016	AVS.N016G18AG350	1/8	3.5	14.5	28	7.5	14	15	0.975	5.53	1.2
WS.FSG14SI55M5AG	VS.FG14SI55N016	AVS.N016M5AG250	M5	2.5	14.5	27	5	7	15	0.975	2.32	1.2
WS.FSG18HT160G18AG	VS.FG18HT160N016	AVS.N016G18AG350	1/8	3.5	17.2	28	7.5	14	20	1.35	6.03	2.3
WS.FSG18HT160M5AG	VS.FG18HT160N016	AVS.N016M5AG250	M5	2.5	17.2	27	5	7	20	1.35	3.12	2.3
WS.FSG18NBR55G18AG	VS.FG18NBR55N016	AVS.N016G18AG350	1/8	3.5	17.2	28	7.5	14	20	1.35	6.03	2.3
WS.FSG18NBR55M5AG	VS.FG18NBR55N016	AVS.N016M5AG250	M5	2.5	17.2	27	5	7	20	1.35	2.92	2.3
WS.FSG18SI55G18AG	VS.FG18SI55N016	AVS.N016G18AG350	1/8	3.5	17.2	28	7.5	14	20	1.35	6.23	2.3
WS.FSG18SI55M5AG	VS.FG18SI55N016	AVS.N016M5AG250	M5	2.5	17.2	27	5	7	20	1.35	2.92	2.3
WS.FSG20HT160G18AG	VS.FG20HT160N016	AVS.N016G18AG350	1/8	3.5	20	28	7.5	14	30	2	6.13	3.8
WS.FSG20HT160M5AG	VS.FG20HT160N016	AVS.N016M5AG250	M5	2.5	20	27	5	7	30	2	3.22	3.8
WS.FSG20NBR55G18AG	VS.FG20NBR55N016	AVS.N016G18AG350	1/8	3.5	20	28	7.5	14	30	2	6.13	3.8
WS.FSG20NBR55M5AG	VS.FG20NBR55N016	AVS.N016M5AG250	M5	2.5	20	27	5	7	30	2	3.02	3.8
WS.FSG20SI55G18AG	VS.FG20SI55N016	AVS.N016G18AG350	1/8	3.5	20	28.	7.5	14	30	2	6.33	3.8
WS.FSG20SI55M5AG	VS.FG20SI55N016	AVS.N016M5AG250	M5	2.5	20	27	5	7	30	2	3.02	3.8
WS.FSG32HT160G14AG	VS.FG32HT160N018	AVS.N018G14AG440	1/4	4.4	32	41.5	11	17	35	10	17.25	12
WS.FSG32NBR55G14AG	VS.FG32NBR55N018	AVS.N018G14AG440	1/4	4.4	32	41.5	11	17	35	10	17.25	12
WS.FSG32SI55G14AG	VS.FG32SI55N018	AVS.N018G14AG440	1/4	4.4	32	41.5	11	17	35	10	17.25	12
WS.FSG42HT160G14AG	VS.FG42HT160N018	AVS.N018G14AG440	1/4	4.4	42.6	50	11	17	75	19.5	28.65	13.6
WS.FSG42NBR55G14AG	VS.FG42NBR55N018	AVS.N018G14AG440	1/4	4.4	42.6	50	11	17	75	19.5	30.25	13.6
WS.FSG42SI55G14AG	VS.FG42SI55N018	AVS.N018G14AG440	1/4	4.4	42.6	50	11	17	75	19.5	28.35	13.6
WS.FSG62HT160G14AG	VS.FG62HT160N018	AVS.N018G14AG440	1/4	4.4	62.2	59	11	17	75	72.5	48.05	39.6
WS.FSG62NBR55G14AG	VS.FG62NBR55N018	AVS.N018G14AG440	1/4	4.4	62.2	59	11	17	75	72.5	49.85	39.6
WS.FSG62SI55G14AG	VS.FG62SI55N018	AVS.N018G14AG440	1/4	4.4	62.2	59	11	17	75	72.5	45.85	39.6
WS.FSG88NBR55G14AG	VS.FG88NBR55N019	AVS.N019G14AG	1/4	8	89	92	11	21	100	165	180.8	45.2
WS.FSG88SI55G14AG	VS.FG88SI55N019	AVS.N019G14AG	1/4	8	89	92	11	21	100	165	169.8	45.2

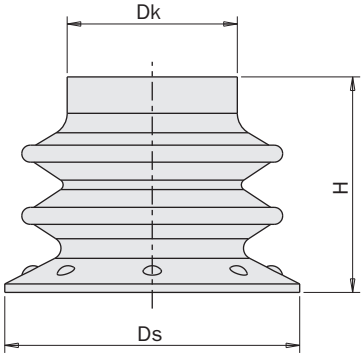
09/2015

Ventose con 2.5 soffietti

- Ventose Duraflex ®.
- Fabbricate in un pezzo unico.
- In poliuretano anti-macchia a durezza differenziata.
- Soffietto robusto e flessibile.
- Labbro molto morbido, perfetto per le superfici goffrate.

Vacuum cups with 2.5 bellows

- *Duraflex ® vacuum cups.*
- *Manufactured in one piece.*
- *In dual durometer non-marking polyurethane.*
- *Sturdy and flexible bellow.*
- *Very soft lip, ideal for embossed surfaces.*



NEW	Nipplo *Nipple*	Dk [mm]	Ds [mm]	H [mm]	R [mm]	V [cm³]	m [g]	F [N]
VD.0118329	AVD.3107030	9	11	16.5	4	0.56	3	2.3
VD.0118505	AVD.3107030	9	16	18.5	5.5	0.92	3	4
VD.0118507	AVD.3250085	11	21	15.2	8.5	1.16	5	7
VD.0109006	AVD.3250085	15	26	19	6	3	6	13
VD.0106292	AVD.0200714	20	37	27	10	10	10	20
VD.0104529	AVD.3250092	27	53	39	32	30	27	56

Materiali

Materials

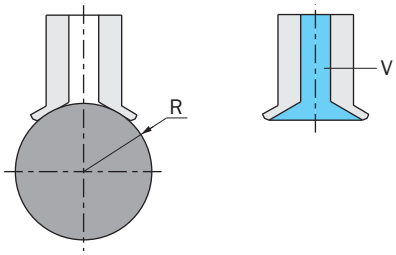
	Materiale *Material*	Colore *Color*	Durezza *Hardness*	Temperatura di esercizio *Temperature range*
Soffietto *Bellow*	PU	verde *green*	60 Sh.A	10° ÷ 50° C
Labbro *Lip*	PU	giallo *yellow*	30 Sh.A	10° ÷ 50° C

R Il raggio della più piccola sfera prendibile
Radius of the smallest grippable ball

V Il volume interno
The inner volume

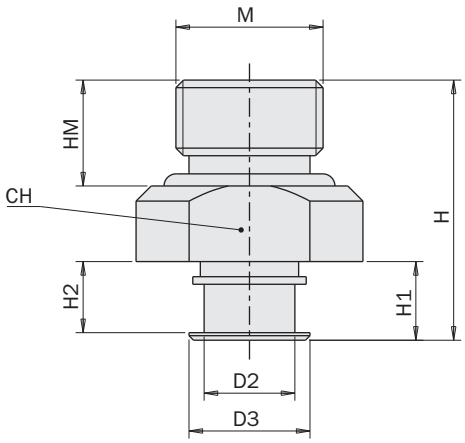
m Peso
Weight

F Forza di sollevamento a -0.6bar
Suction force at -0.6bar



Nippli (per ventose serie VD.)

Nipples (for vacuum cups series VD.)



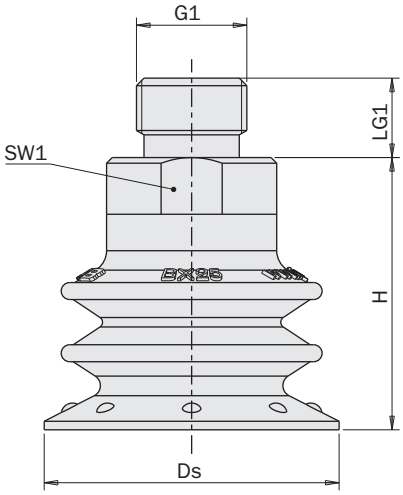
NEW	Ventosa *Vacuum cup*	M [mm]	D2 [mm]	D3 [mm]	H [mm]	H1 [mm]	H2 [mm]	HM [mm]	CH [mm]	m [g]
AVD.3107030	VD.0118329 VD.0118505	M5	4	5	17	8.5	3	3.5	7	5
AVD.3250085	VD.0118507 VD.0109006	1/8	6	8	17.2	5.2	4.7	7	13	6
AVD.0200714	VD.0106292	1/8	7.5	11	19.2	7.2	6.2	6	16	6
AVD.3250092	VD.0104529	1/4	11.5	15	24.2	9.2	8.2	9	22	13

Ventose con 2.5 soffietti con nipplo

- Ventose Duraflex ®.
- In poliuretano anti-macchia a durezza differenziata.
- Soffietto robusto e flessibile.
- Labbro molto morbido, perfetto per le superfici goffrate.

Vacuum cups with 2.5 bellows with nipple

- *Duraflex ® vacuum cups.*
- *In dual durometer non-marking polyurethane.*
- *Sturdy and flexible bellow.*
- *Very soft lip, the best for the embossed surfaces.*



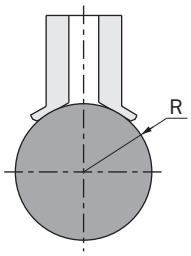
NEW	Ventosa *Vacuum cup*	Nipplo *Nipple*	G1 [mm]	Ds [mm]	H [mm]	LG1 [mm]	SW1 [mm]	R [mm]	V [cm³]	m [g]	F [N]
WD.0122869	VD.0118329	AVD.3107030	M5	11	21.5	3.5	7	4	0.56	8	2.3
WD.0124344	VD.0118505	AVD.3107030	M5	16	23.5	3.5	7	5.5	0.92	9	4
WD.0125108	VD.0118507	AVD.3250085	1/8	21	21	7	13	8.5	1.16	9	7
WD.0114131	VD.0109006	AVD.3250085	1/8	26	24	7	13	6	3	11	13
WD.9912151	VD.0106292	AVD.0200714	1/8	37	33	6	16	10	10	19	20
WD.0106045	VD.0104529	AVD.3250092	1/4	53	45	9	22	32	30	39	56

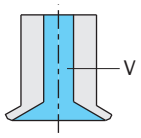
R Il raggio della più piccola sfera prendibile
Radius of the smallest grippable ball

V Il volume interno
The inner volume

m Peso
Weight

F Forza di sollevamento a -0.6bar
Suction force at -0.6bar





Ventose modulari piGRIP®

Un concetto unico di ventose modulari che consiste in componenti separati ottimizzati per la presa, il sollevamento e la compensazione in altezza.

piGRIP® modular suction cups

A unique modular suction cup concept with individually optimized parts for gripping, lifting and levelling.

ATTACCHI
In applicazioni con una pompa del vuoto centralizzata, il foro calibrato riduce la portata in perdita e mantiene il vuoto ad alti livelli quando si manipolano oggetti a tenuta.

G

FITTINGS
In applications with a centralized vacuum pump, flow restrictors reduce vacuum flow and maintain high vacuum levels when handling non-leaking objects.

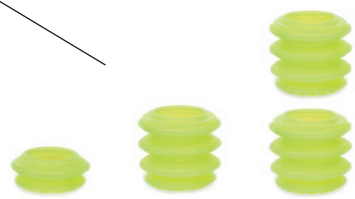
SUPPORTI
Un singolo supporto per taglia consente il montaggio di tutti i soffietti o direttamente dei labbri (nel caso di ventose piane).

S1

SUPPORTS
One only support per size fits with all bellows or directly with lips (in the case of flat cups).

SOFFIETTI
I robusti e stabili soffietti con 1, 3 e 6 involuzioni permettono di raggiungere elevate velocità della macchina. Il ridotto spessore delle pareti interne agevola la compressione del soffietto utilizzando meno forza ed energia. La robustezza del materiale è in grado di incrementare la capacità di sollevamento tra il 30 ed il 50% rispetto alle ventose convenzionali.

BELLOWS
Firm and stable 1, 3 and 6 folded bellows allow for faster machine speeds. Thin-wall design makes them faster to compress using less force and energy. The strength of the material increases lifting capacity between 30-50% compared to similar conventional cups.



B1 B3 B6

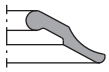
LABBRI
Per ottenere un'eccellente presa del prodotto è determinante scegliere il labbro idoneo all'applicazione.

LIPS
Get an excellent grip on almost anything with the right lip for your application.

S
Labbro Standard
Standard lip

T60

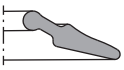
T50



FX
Labbro flessibile
Flexible lip

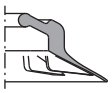
T50

T30

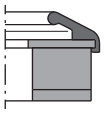


BG
Labbro per sacchetti
Bag lip

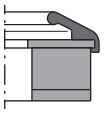
S50



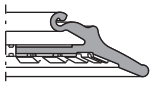
FLI-F
Gomma espansa in NR
Foam lip in NR



FLI-S
Gomma espansa in EPDM
Foam lip in EPDM



HS
Labbro per superfici calde
Hot surface lip



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Codici di ordinazione

Ordering codes

S25	Labbro standard Ø25mm *Ø25mm Standard lip*	**T60**	TPE con durezza 60 Sh.A *TPE with 60 Sh.A hardness*
S35	Labbro standard Ø35mm *Ø35mm Standard lip*		
S50	Labbro standard Ø50mm *Ø50mm Standard lip*	**T50**	TPE con durezza 50 Sh.A *TPE with 50 Sh.A hardness*
S70	Labbro standard Ø70mm *Ø70mm Standard lip*		
FX28	Labbro flessibile Ø28mm *Ø28mm Flexible lip*	**T50**	TPE con durezza 50 Sh.A *TPE with 50 Sh.A hardness*
FX39	Labbro flessibile Ø39mm *Ø39mm Flexible lip*		
FX55	Labbro flessibile Ø55mm *Ø55mm Flexible lip*	**T30**	TPE con durezza 30 Sh.A *TPE with 30 Sh.A hardness*
FX77	Labbro flessibile Ø77mm *Ø77mm Flexible lip*		
BG34	Labbro per sacchetti Ø34mm *Ø34mm Bag lip*	**S50**	Silicone con durezza 50 Sh.A *Silicone with 50 Sh.A hardness*
BG48	Labbro per sacchetti Ø48mm *Ø48mm Bag lip*		
BG63	Labbro per sacchetti Ø63mm *Ø63mm Bag lip*		
FLI25F	Gomma espansa Ø25mm *Ø25mm Foam lip*	**F**	NR (tenace) *NR (firm)*
FLI35F	Gomma espansa Ø35mm *Ø35mm Foam lip*		
FLI50F	Gomma espansa Ø50mm *Ø50mm Foam lip*		
FLI70F	Gomma espansa Ø70mm *Ø70mm Foam lip*		
FLI25S	Gomma espansa Ø25mm *Ø25mm Foam lip*	**F**	EDPM (soffice) *EDPM (soft)*
FLI35S	Gomma espansa Ø35mm *Ø35mm Foam lip*		
FLI50S	Gomma espansa Ø50mm *Ø50mm Foam lip*		
FLI70S	Gomma espansa Ø70mm *Ø70mm Foam lip*		
HS29	Labbro per superfici calde Ø29mm *Ø29mm Hot surface lip*	**HN50**	HNBR con durezza 50 Sh.A *HNBR with 50 Sh.A hardness*
HS39	Labbro per superfici calde Ø39mm *Ø39mm Hot surface lip*		
HS58	Labbro per superfici calde Ø58mm *Ø58mm Hot surface lip*		
HS79	Labbro per superfici calde Ø79mm *Ø79mm Hot surface lip*		

F	Piatta *Flat*
B1	1 Soffietto *1 Bellow*
B3	3 Soffietti *3 Bellows*
B6	6 Soffietti *6 Bellows*

S1	Supporto *Support*

G	Filettatura G *G-Thread*

18	1/8"
14	1/4"
38	3/8"

M	Maschio *Male*

VG.BG48S50B3S1G38M

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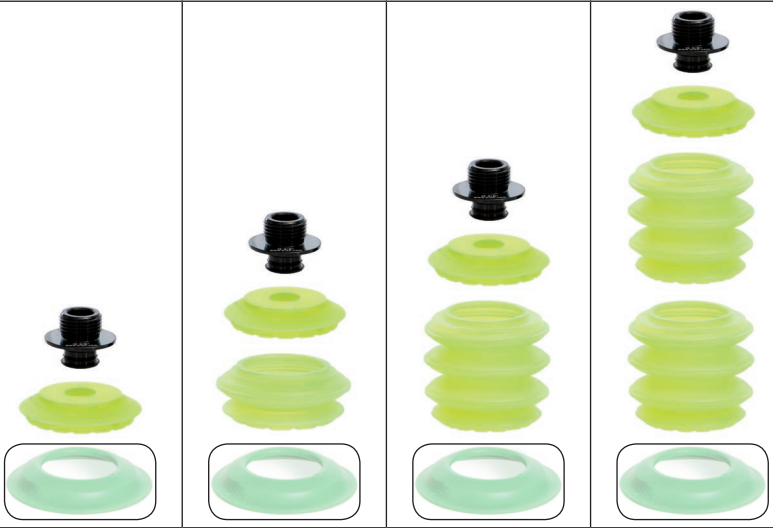
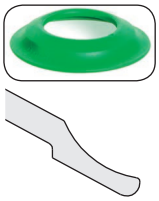
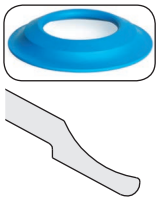
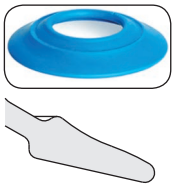
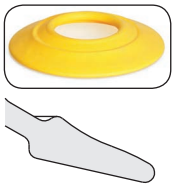
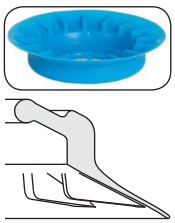
			Piatta *Flat*	1 Soffietto *1 Bellow*	3 Soffietti *3 Bellows*	6 Soffietti *6 Bellows*
						
Labbro standard in TPE con durezza 60 Sh.A *Standard lip in TPE with 60 Sh.A hardness*		Ø25 mm	VG.S25T60FS1	VG.S25T60B1S1	VG.S25T60B3S1	VG.S25T60B6S1
		Ø35 mm	VG.S35T60FS1	VG.S35T60B1S1	VG.S35T60B3S1	VG.S35T60B6S1
		Ø50 mm	VG.S50T60FS1	VG.S50T60B1S1	VG.S50T60B3S1	VG.S50T60B6S1
		Ø70 mm	VG.S70T60FS1	VG.S70T60B1S1	VG.S70T60B3S1	VG.S70T60B6S1
Labbro standard in TPE con durezza 50 Sh.A *Standard lip in TPE with 50 Sh.A hardness*		Ø25 mm	VG.S25T50FS1	VG.S25T50B1S1	VG.S25T50B3S1	VG.S25T50B6S1
		Ø35 mm	VG.S35T50FS1	VG.S35T50B1S1	VG.S35T50B3S1	VG.S35T50B6S1
		Ø50 mm	VG.S50T50FS1	VG.S50T50B1S1	VG.S50T50B3S1	VG.S50T50B6S1
		Ø70 mm	VG.S70T50FS1	VG.S70T50B1S1	VG.S70T50B3S1	VG.S70T50B6S1
Labbro flessibile in TPE con durezza 50 Sh.A *Flexible lip in TPE with 50 Sh.A hardness*		Ø28 mm	VG.FX28T50FS1	VG.FX28T50B1S1	VG.FX28T50B3S1	VG.FX28T50B6S1
		Ø39 mm	VG.FX39T50FS1	VG.FX39T50B1S1	VG.FX39T50B3S1	VG.FX39T50B6S1
		Ø55 mm	VG.FX55T50FS1	VG.FX55T50B1S1	VG.FX55T50B3S1	VG.FX55T50B6S1
		Ø77 mm	VG.FX77T50FS1	VG.FX77T50B1S1	VG.FX77T50B3S1	VG.FX77T50B6S1
Labbro flessibile in TPE con durezza 30 Sh.A *Flexible lip in TPE with 30 Sh.A hardness*		Ø28 mm	VG.FX28T30FS1	VG.FX28T30B1S1	VG.FX28T30B3S1	VG.FX28T30B6S1
		Ø39 mm	VG.FX39T30FS1	VG.FX39T30B1S1	VG.FX39T30B3S1	VG.FX39T30B6S1
		Ø55 mm	VG.FX55T30FS1	VG.FX55T30B1S1	VG.FX55T30B3S1	VG.FX55T30B6S1
		Ø77 mm	VG.FX77T30FS1	VG.FX77T30B1S1	VG.FX77T30B3S1	VG.FX77T30B6S1
Labbro per sacchetti in Silicone con durezza 50 Sh.A *Bag lip in Silicone with 50 Sh.A hardness*		Ø34 mm	VG.BG34S50FS1	VG.BG34S50B1S1	VG.BG34S50B3S1	VG.BG34S50B6S1
		Ø48 mm	VG.BG48S50FS1	VG.BG48S50B1S1	VG.BG48S50B3S1	VG.BG48S50B6S1
		Ø63 mm	VG.BG63S50FS1	VG.BG63S50B1S1	VG.BG63S50B3S1	VG.BG63S50B6S1

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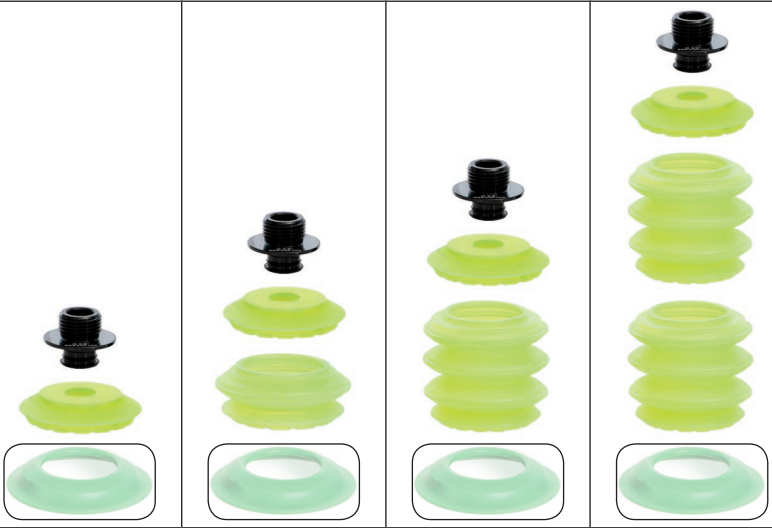
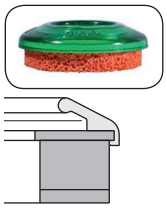
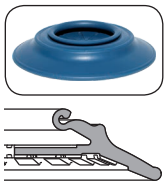
			Piatta *Flat*	1 Soffietto *1 Bellow*	3 Soffietti *3 Bellows*	6 Soffietti *6 Bellows*
						
Gomma espansa in NR (tenace) *Foam lip in NR (firm)*		Ø25 mm	VG.FLI25FFS1	VG.FLI25FB1S1	VG.FLI25FB3S1	VG.FLI25FB6S1
		Ø35 mm	VG.FLI35FFS1	VG.FLI35FB1S1	VG.FLI35FB3S1	VG.FLI35FB6S1
		Ø50 mm	VG.FLI50FFS1	VG.FLI50FB1S1	VG.FLI50FB3S1	VG.FLI50FB6S1
		Ø70 mm	VG.FLI70FFS1	VG.FLI70FB1S1	VG.FLI70FB3S1	VG.FLI70FB6S1
Gomma espansa in EPDM (soffice) *Foam lip in EPDM (soft)*		Ø25 mm	VG.FLI25SFS1	VG.FLI25SB1S1	VG.FLI25SB3S1	VG.FLI25SB6S1
		Ø35 mm	VG.FLI35SFS1	VG.FLI35SB1S1	VG.FLI35SB3S1	VG.FLI35SB6S1
		Ø50 mm	VG.FLI50SFS1	VG.FLI50SB1S1	VG.FLI50SB3S1	VG.FLI50SB6S1
		Ø70 mm	VG.FLI70SFS1	VG.FLI70SB1S1	VG.FLI70SB3S1	VG.FLI70SB6S1
Labbro per superfici calde in HNBR con durezza 50 Sh.A *Hot surface lip in HNBR with 50 Sh.A hardness*		Ø29 mm	VG.HS29HN50FS1	VG.HS29HN50B1S1	VG.HS29HN50B3S1	VG.HS29HN50B6S1
		Ø39 mm	VG.HS39HN50FS1	VG.HS39HN50B1S1	VG.HS39HN50B3S1	VG.HS39HN50B6S1
		Ø58 mm	VG.HS58HN50FS1	VG.HS58HN50B1S1	VG.HS58HN50B3S1	VG.HS58HN50B6S1
		Ø79 mm	VG.HS79HN50FS1	VG.HS79HN50B1S1	VG.HS79HN50B3S1	VG.HS79HN50B6S1

Tutte le ventose sono disponibili con tre taglie di attacchi maschio.

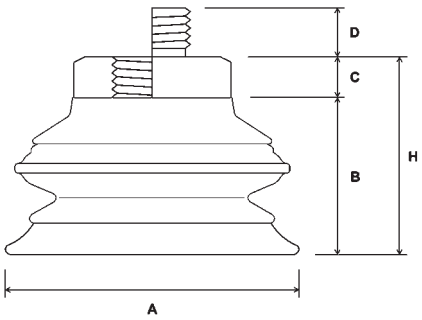
All cups are available with three sizes of male fittings.

		G	Codice *Code*
Attacchi *Fittings*		1/8”	G18M
		1/4”	G14M
		3/8”	G38M

Dimensioni della ventosa (mm)

Suction cup dimensions (mm)

Tipo labbro e taglia *Lip type and size*	A	B			
S25	25	10.9	18.7	29.8	48.7
S35	35	12.4	23.3	38.8	65.2
S50	50	14.7	30.3	52.4	90.1
S70	70	17.8	39.6	70.6	123.4
FX28	28	11.4	19.2	30.3	49.2
FX39	38	13.1	24	39.5	65.9
FX55	55	15.7	31.3	53.4	91.1
FX77	77	19.2	41	72	124.8
BG34	34	15.5	23.3	34.4	53.3
BG48	48	18.4	29.3	44.8	71.2
BG63	63	21.3	36.9	59	96.7
FLI25F	25	16	23.8	34.9	53.8
FLI35F	35	17	27.9	43.4	69.8
FLI50F	50	21.1	36.7	58.8	96.5
FLI70F	70	23.1	44.9	75.9	128.7
FLI25S	25	17.5	25.3	36.4	55.3
FLI35S	35	21.5	32.4	47.9	74.3
FLI50S	50	32.1	47.7	69.8	107.5
FLI70S	70	34.1	55.9	86.9	139.7
HS29	29	13.4	21.2	32.3	51.2
HS39	39	15.6	26.5	42	68.4
HS58	58	19.5	35.1	57.2	94.9
HS79	79	24.3	46.1	77.1	129.6



Dimensioni attacco (mm)

Fitting dimensions (mm)

Codice *Code*	C	D	Dimensioni raccomandate di attacco per non penalizzare le prestazioni (1) *Recommended fitting size for best performance (1)*			
			Ø25÷29	Ø34÷39	Ø48÷58	Ø63÷79
G18M	5	6	☑	☑	☑	☐
G14M	6	9	☑	☑	☑	☑
G38M	6	10	☐	☑	☑	☑

(1)
Nessuna restrizione di flusso o eccessivo volume da evacuare che limitano le prestazioni del circuito di vuoto.

(1)
No flow restriction or excessive volume for evacuation, which impair vacuum system performance.

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Caratteristiche dei materiali — *Material specifications*

	Durezza *Hardness*	Componente *Item*	Colore *Colour*	Temperatura di esercizio *Temperature range*	T Max. (2) *Max T (2)*	Proprietà speciali *Special qualities*
TPE	80-87 Sh.A	Supporto S1 *Support S1*	Lime *Lime*	-20 ÷ 60°C.	100°C.	Esente da Silicone/PWIS, antialone, resistente agli oli *Silicone/PWIS free, mark free, oil resistant*
TPE	87 Sh.A	Soffietti *Bellows*	Lime *Lime*			
TPE	60 Sh.A	Labbro standard (S) T60 *Standard lip (S) T60*	Verde *Green*			
TPE	50 Sh.A	Labbro standard (S) T50 *Standard lip (S) T50*	Blu *Blue*	-40 ÷ 60°C.		FDA
TPE	50 Sh.A	Labbro flessibile (FX) T50 *Flexible lip (FX) T50*	Blu *Blue*			
TPE	30 Sh.A	Labbro flessibile (FX) T30 *Flexible lip (FX) T30*	Giallo *Yellow*			
SIL	50 Sh.A	Labbro per sacchetti (BG) S50 *Bag lip (BG) S50*	Blu *Blue*	-40 ÷ 200°C.		
EPDM	-	Gomma espansa (FLI-S) *Foam lip (FLI-S)*	Nero *Black*	-40 ÷ 120°C.		Gomma espansa ultra soffice *Ultra soft cellular rubber*
NR	-	Gomma espansa (FLI-F) *Foam lip (FLI-F)*	Arancio *Orange*	-20 ÷ 80°C.		Gomma naturale tenace *Firm natural rubber*
PU	60 Sh.A	Supporto per gomma espansa *Foam lip holder*	Verde *Green*	+10 ÷ 50°C.		
HNBR	50 Sh.A	Labbro per superfici calde *Hot surface lip*	Blu *Blue*	-30 ÷ 120°C.	150°C.	Esente da Silicone/PWIS, antialone, resistente agli oli *Silicone/PWIS free, mark free, oil resistant*

(2)
Temperatura Max. per un contatto breve, <10 sec. con intermittenza al 50%, temperatura ambiente 15-30°C., le proprietà meccaniche inizieranno a degradare.

(2)
Max Temperature for short term contact, <10 sec. and 50% intermittence, ambient temperature 15-30°C., mechanical properties will start to degrade.

Resistenza dei materiali — *Material resistances*

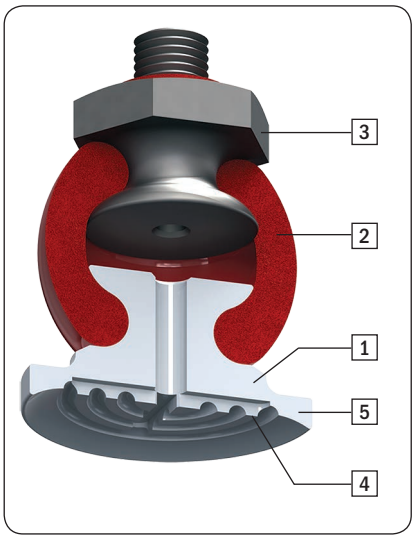
	Durezza *Hardness*	Usura Wear resistance	Olii *Oils*	Agenti atmosferici e ozono *Weather & ozone*	Idrolisi *Hydrolysis*	Petrolio *Petrol*	Acidi concentrati *Concentrated acids*	Alcool *Alcohol*	Ossidazione *Oxidation*
TPE	30 Sh.A 50 Sh.A	Discreta *Fair*	Scarsa *Poor*	Eccellente *Excellent*	Scarsa *Poor*	Scarsa *Poor*	Scarsa *Poor*	Eccellente *Excellent*	Buona *Good*
TPE	60 Sh.A	Eccellente *Excellent*	Eccellente *Excellent*	Eccellente *Excellent*	Discreta *Fair*	Scarsa *Poor*	Scarsa *Poor*	Buona *Good*	Buona *Good*
SIL	50 Sh.A	Buona *Good*	Scarsa *Poor*	Eccellente *Excellent*	Discreta *Fair*	Scarsa *Poor*	Scarsa *Poor*	Buona *Good*	Eccellente *Excellent*
EPDM	-	Discreta *Fair*	Scarsa *Poor*	Eccellente *Excellent*	Buona *Good*	Scarsa *Poor*	Scarsa *Poor*	Eccellente *Excellent*	Eccellente *Excellent*
NR	-	Buona *Good*	Scarsa *Poor*	Discreta *Fair*	Buona *Good*	Scarsa *Poor*	Scarsa *Poor*	Scarsa *Poor*	Scarsa *Poor*
PU	60 Sh.A	Eccellente *Excellent*	Eccellente *Excellent*	Eccellente *Excellent*	Discreta *Fair*	Discreta *Fair*	Discreta *Fair*	Discreta *Fair*	Scarsa *Poor*
HNBR	50 Sh.A	Eccellente *Excellent*	Eccellente *Excellent*	Eccellente *Excellent*	Buona *Good*	Eccellente *Excellent*	Discreta *Fair*	Buona *Good*	Eccellente *Excellent*

Sistema di presa a depressione per “organo sheet”

- Ventosa in PTFE 1 .
- Compensatore in Silicone 2 .
- Nipplo in acciaio inox 3 .
- Temperatura di lavoro fino a 250 °C.
- Il PTFE non si incolla ai polimeri ed alle fibre calde.
- Le nervature di supporto evitano il risucchio dei materiali delicati 4 .
- Il labbro flessibile garantisce la tenuta del vuoto anche a bassa temperatura 5 .
- La sospensione elastica permette movimenti assiali ed angolari.

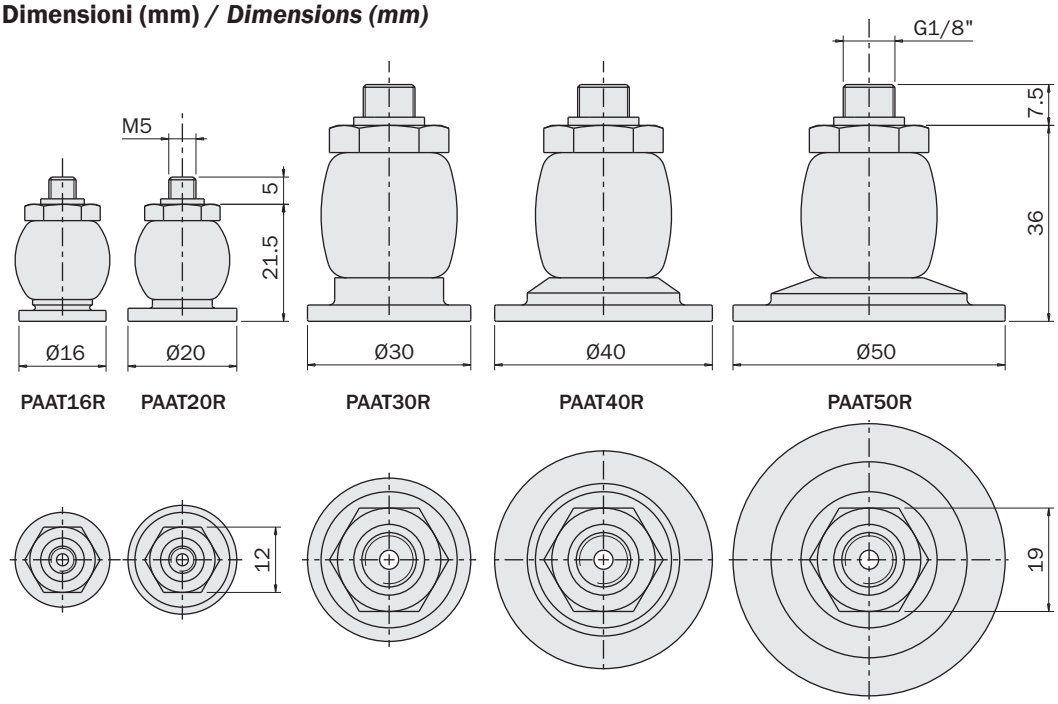
Vacuum gripping system for “organo sheet”

- *PTFE vacuum cup* 1 .
- *Flexible silicone bellow* 2 .
- *Stainless steel nipple* 3 .
- *Working temperature up to 250 °C.*
- *The PTFE cup does not stick to hot polymers and fibres.*
- *The supporting ribs avoid the suction of the soft materials* 4 .
- *The flexible lip allows a good vacuum even at the low temperatures* 5 .
- *The elastic suspension allows axial and angular movements.*



	NEW PAAT16R	NEW PAAT20R	NEW PAAT30R	NEW PAAT40R	NEW PAAT50R
Peso *Weight*	9 g	9 g	35 g	37 g	41 g

Dimensioni (mm) / *Dimensions (mm)*



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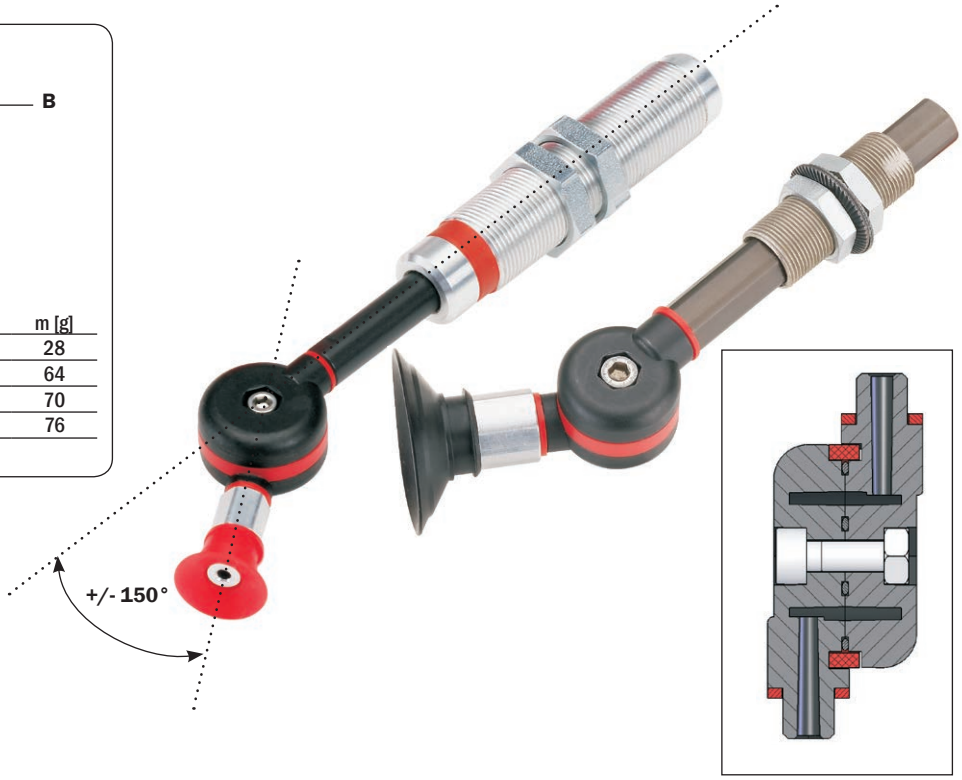
Giunti angolari

- 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.

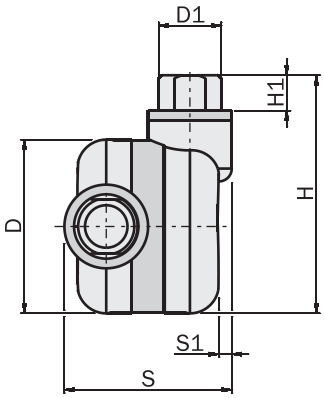
Elbow arms

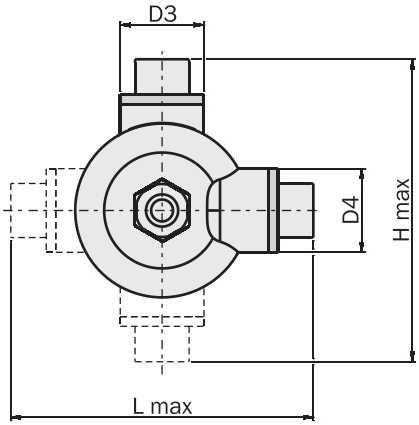
- *They are mounted between the vacuum cup and its support by two male threads.*
- *They are used to tilt the vacuum cup with respect to the support under a predefined angle.*
- *It is possible to set the angle between 0° and +/-150°.*
- *By tightening a screw the angle is fixed.*
- *The vacuum lead 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

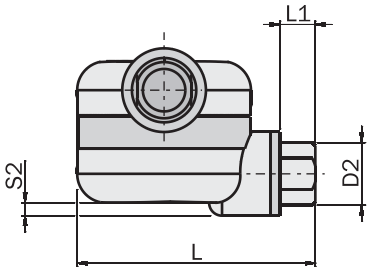


Dimensioni (mm) / *Dimensions (mm)*





	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

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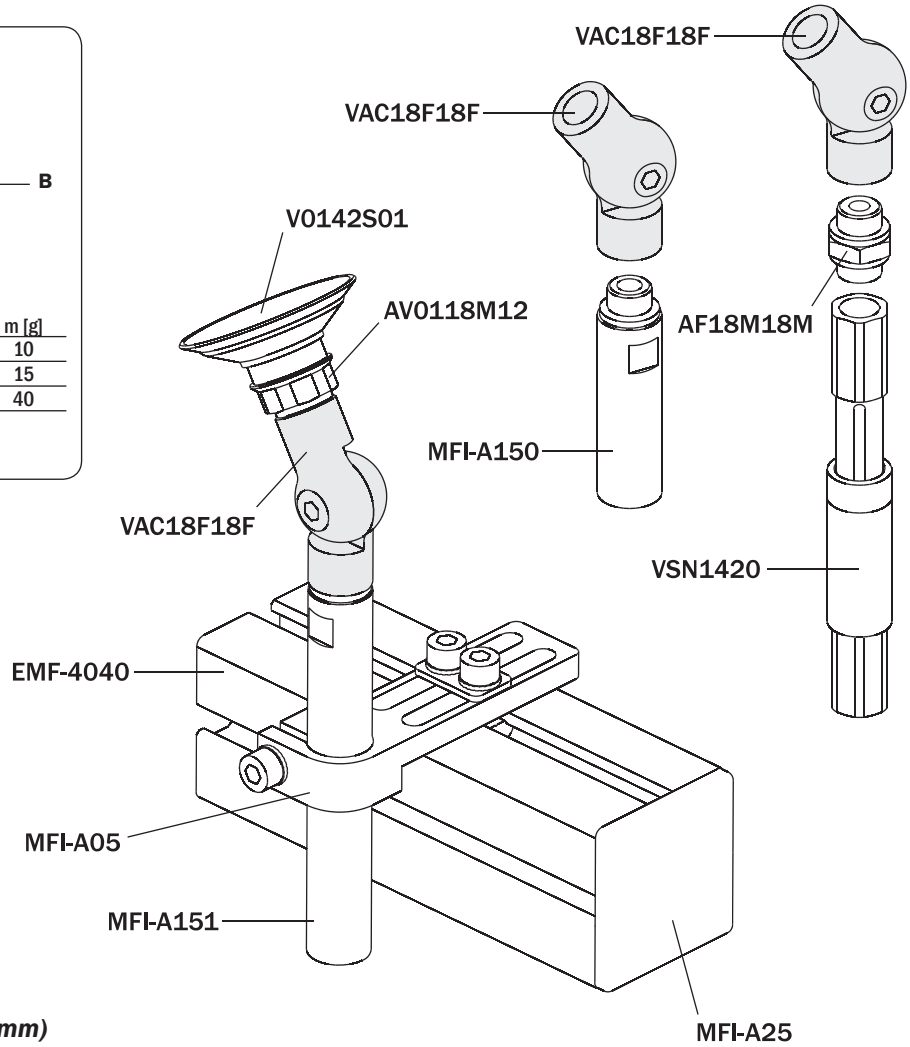
Giunti angolari

- Non per aria compressa (solo vuoto).
- 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.

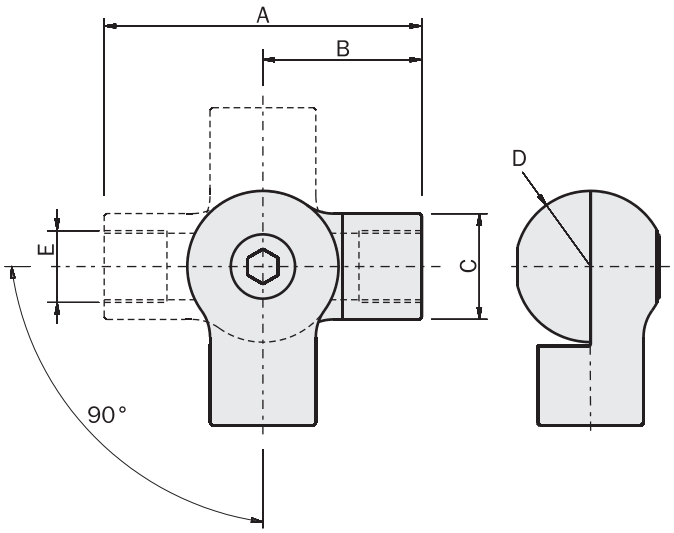
Elbow arms

- *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.*

VAC	A	B	m [g]
VAC05F05F	M5	M5	10
VAC18F18F	G1/8"	G1/8"	15
VAC14F14F	G1/4"	G1/4"	40



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"

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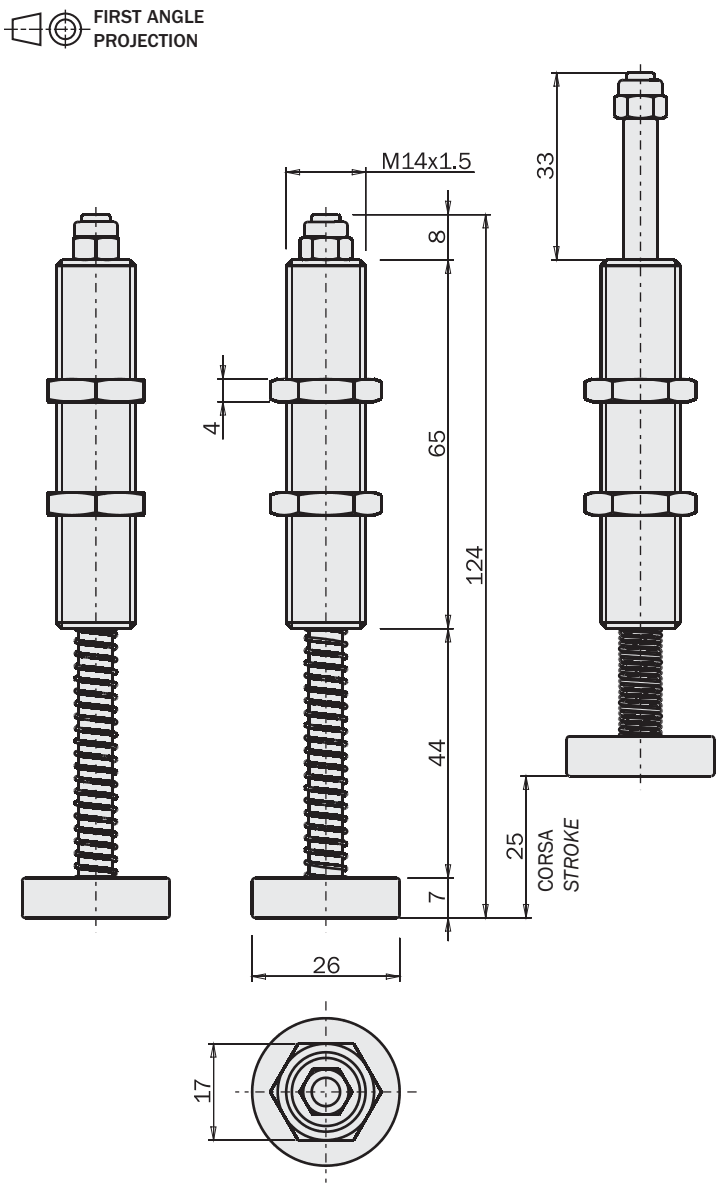
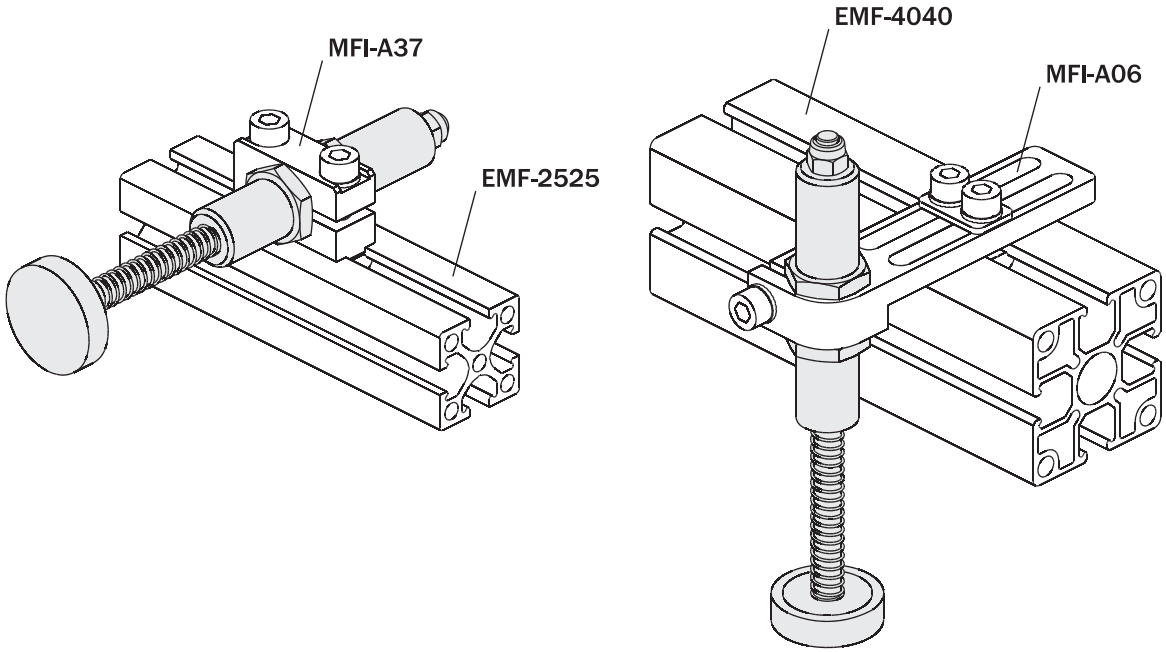
Pressore a molla

Spring rod



	VSX1425
Peso / *Weight*	65 g

Materiale: Gomma TPU
Material: TPU Rubber

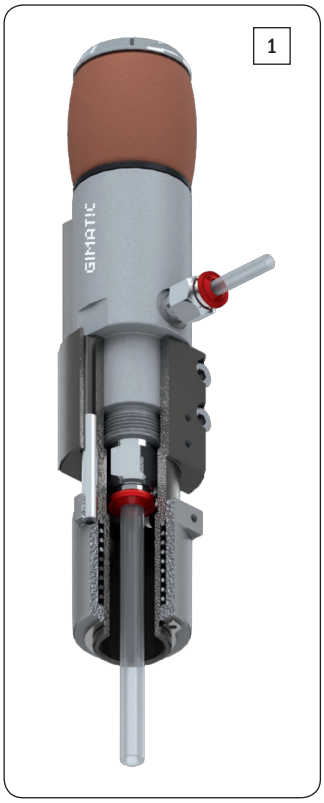


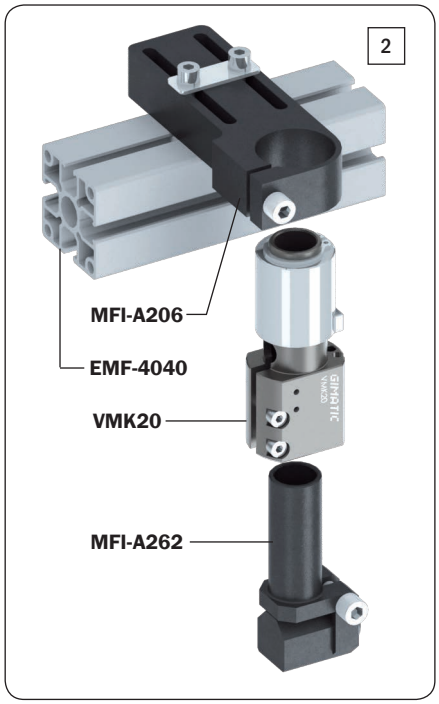
Sospensioni universali anti-rotazione

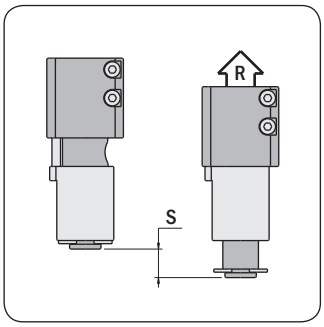
- Per tutti gli attuatori e le staffe con codolo da 14mm, 20mm e 30mm.
- Con foro passante per i tubi dell'aria 1 .
- Fissaggio a cravatta 2 .
- Sensore magnetico opzionale.
- Sensore induttivo opzionale (non per VMK14).

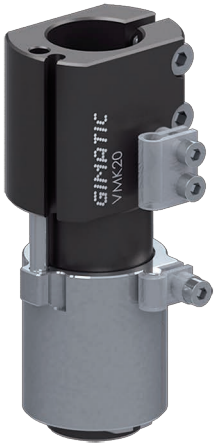
Non-rotative universal suspensions

- *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).*









		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

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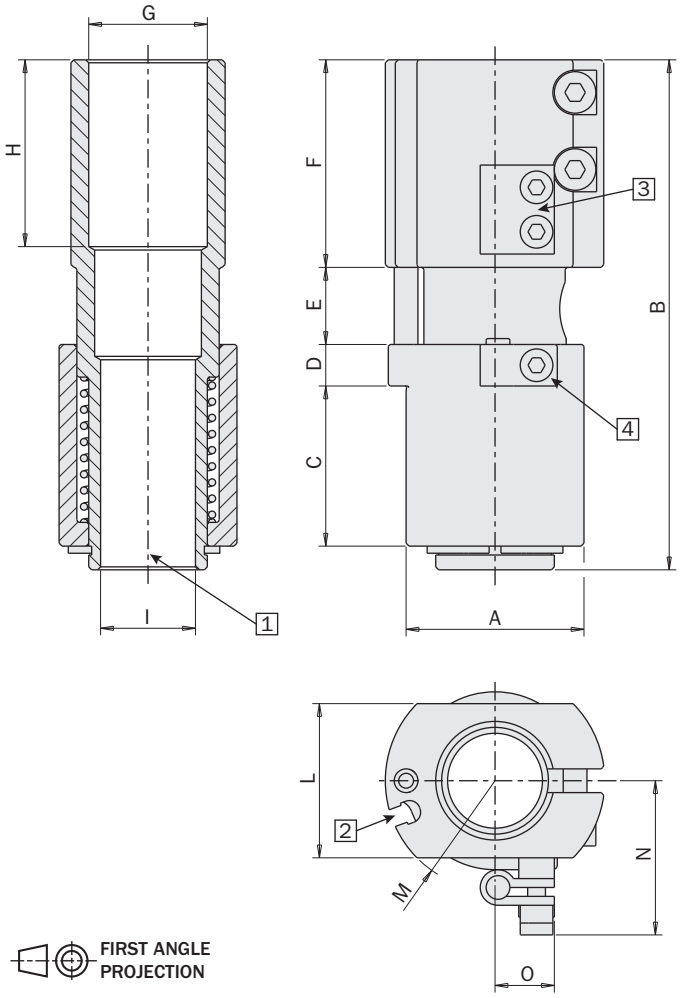
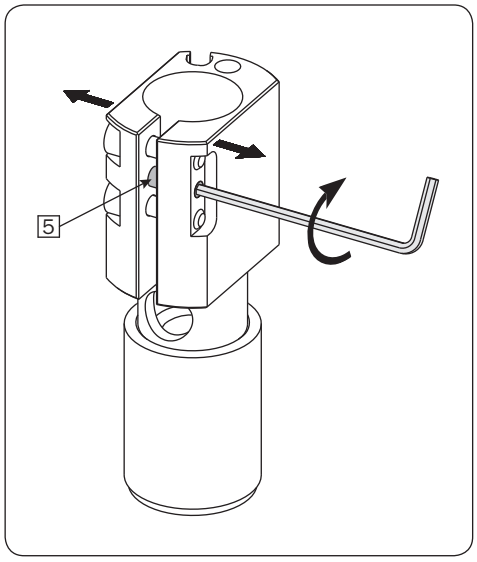
Dimensioni (mm) / *Dimensions (mm)*

	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	17	26	35
M	Ø27	Ø37	Ø48
N	-	26	28.5
O	-	10	12.5





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)

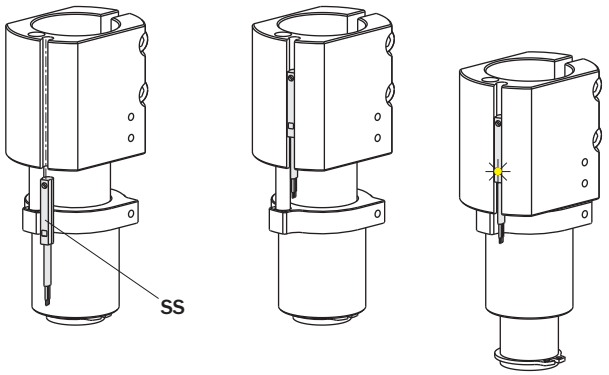
Il rilevamento della posizione compressa della sospensione può essere effettuato con un sensore magnetico, oppure con un sensore induttivo (non per VKM14).

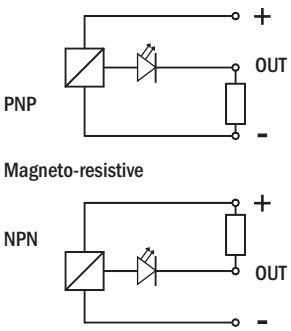
Sensors (optional)

The compressed position of the suspension can be detected by a magnetic sensor, or an inductive sensor (not for VMK14).

Sensori magnetici

SN4N225-G	PNP	Cavo 2.5m / 2.5m cable
SN4M225-G	NPN	Cavo 2.5m / 2.5m cable
SN3N203-G	PNP	Connettore M8 / M8 snap plug connector
SN3M203-G	NPN	Connettore M8 / M8 snap plug connector
SS4N225-G	PNP	Cavo 2.5m / 2.5m cable
SS4M225-G	NPN	Cavo 2.5m / 2.5m cable
SS3N203-G	PNP	Connettore M8 / M8 snap plug connector
SS3M203-G	NPN	Connettore M8 / M8 snap plug connector

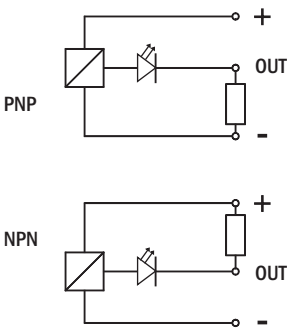




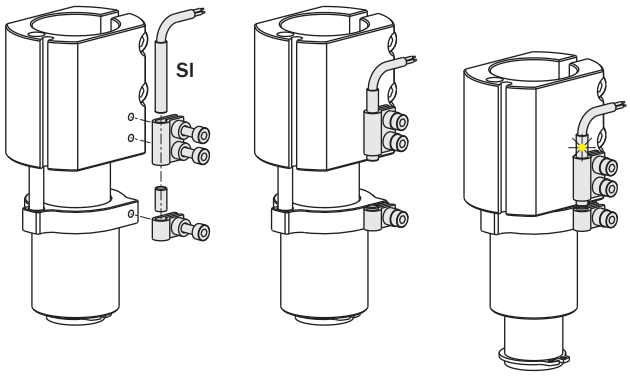
Magnetic sensors

Sensori induttivi

SI4M225-G	NPN	Cavo 2.5m / 2.5m cable
SI4N225-G	PNP	Cavo 2.5m / 2.5m cable



Inductive sensors



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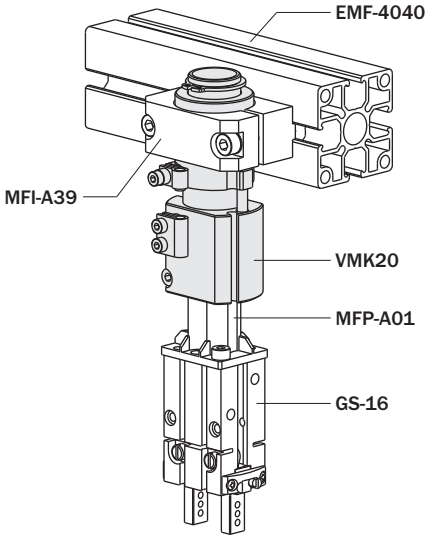
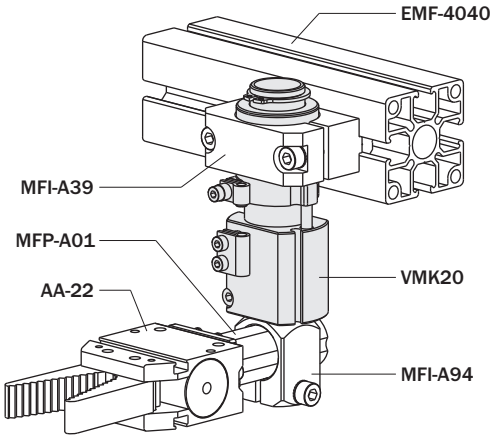
Esempi di applicazione

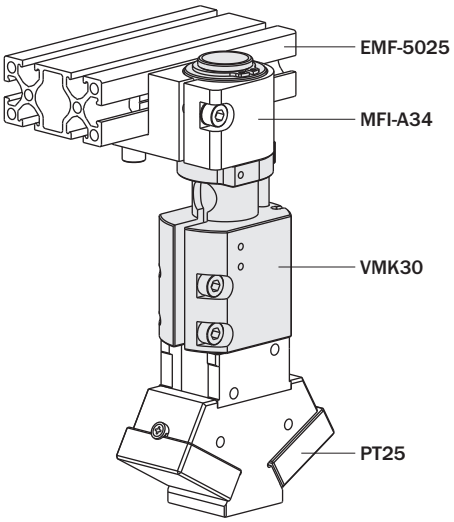
Sospensione di una pinza parallela GS.
Buffering of a parallel gripper GS.



Sospensione di una pinza per materozze AA.
Buffering of a sprue gripper AA.

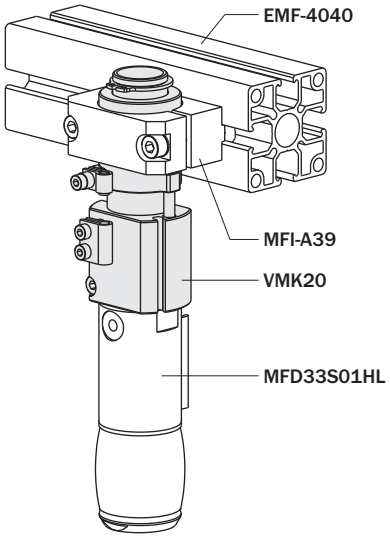


Sospensione di una pinza ad aghi PT.
Buffering of a needle gripper PT.

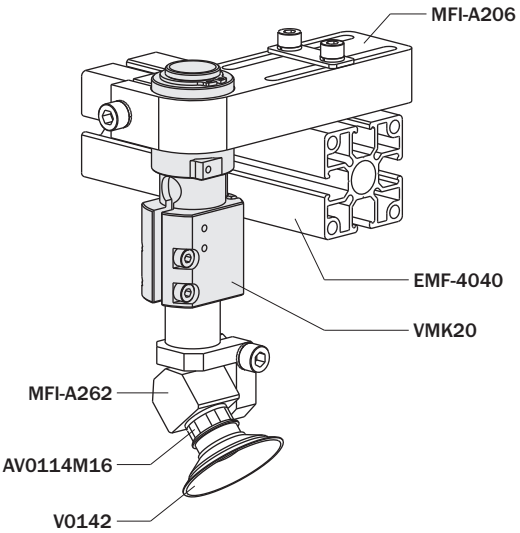


Application examples

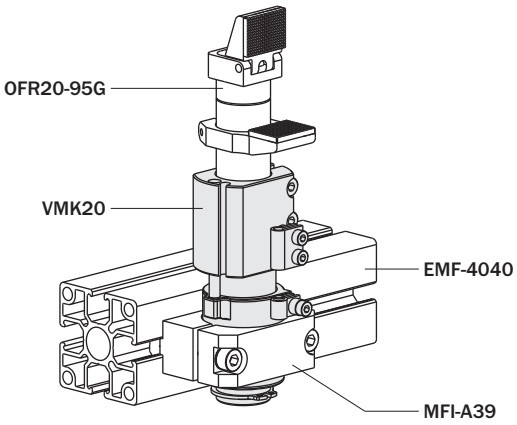
Sospensione di una pinza ad espansione MFD/MFU.
Buffering of an expansion gripper MFD/MFU.



Sospensione di una ventosa V01.
Buffering of a vacuum cup V01.



Sospensione di una pinza monodito OF.
Buffering of an one finger gripper OF.



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.

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 EAOTs (End Of Arm Toolings) with MFI brackets.*

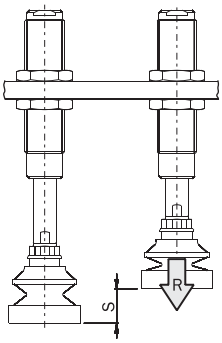
Forza di reazione

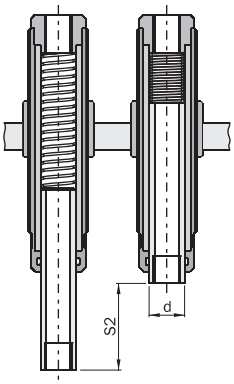
La forza di reazione dipende dalla compressione (S) della molla interna. E anche dal diametro del pistone (d) e dalla pressione di utilizzo (p), nel caso delle sospensioni telescopiche.
Usare la formula seguente per il calcolo.

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.

$$R = R1 + K \cdot S + d^2 \cdot \frac{\pi}{40} \cdot p$$





R [N]	Forza di reazione *Reaction force*
R1 [N]	Forza della molla all'inizo 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*


VSL


VSC


VSR


VSRT


VSN


VSNT


VSE


VSET


VVX


VSRTG


VSNG

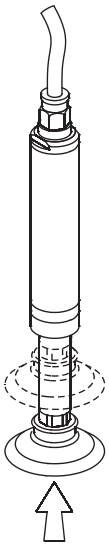

VSNTG


VSS


VSD

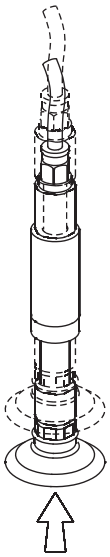
Sospensioni telescopiche
Telescopic suspensions

VSC
VSL
VSS



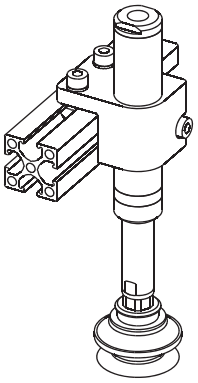
Sospensioni con stelo passante
Through rod suspensions

VSR
VSRT
VSN
VSNT
VSE
VSET
VVX
VSRTG
VSNG
VSNTG
VSD



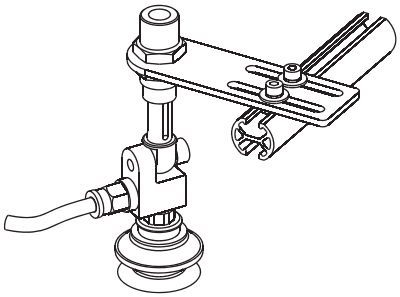
Sospensioni con corpo liscio
Suspensions with smooth body

VSL
VSS
VSR
VSN
VSE
VVX
VSNG
VSD



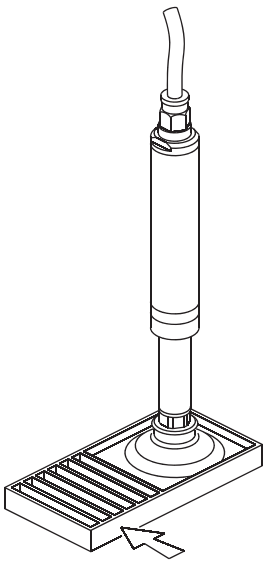
Sospensioni con corpo filettato
Suspensions with threaded body

VSC
VSRT
VSNT
VSET
VSRTG
VSNTG



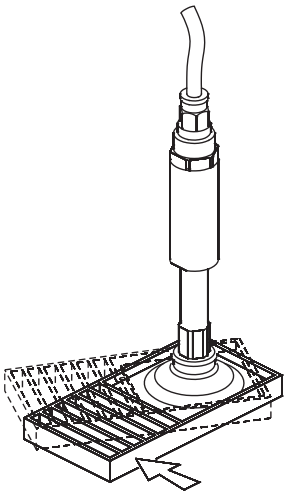
Sospensioni anti-rotazione
Non-rotative suspensions

VSC
VSL
VSN
VSNT
VSE
VSET
VVX
VSNG
VSNTG
VSD



Sospensioni rotanti
Rotative suspensions

VSS
VSR
VSRT
VSRTG

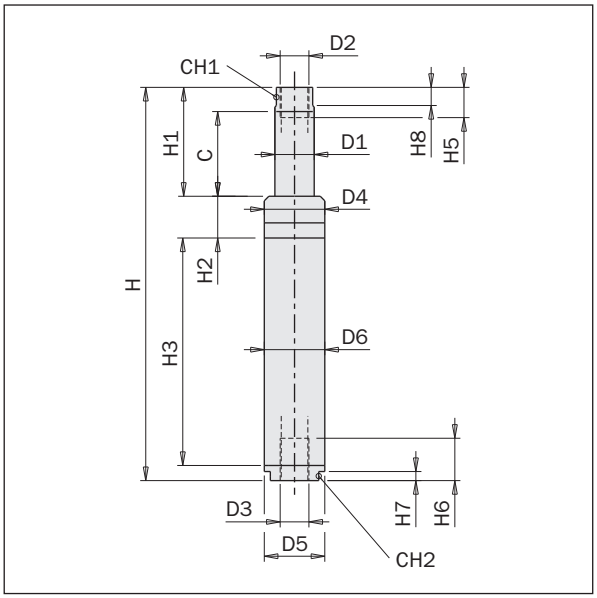


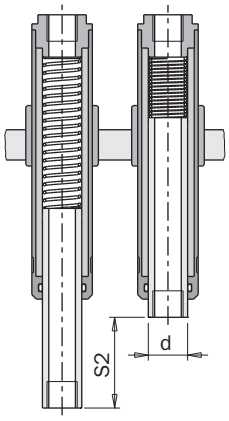
Sospensioni telescopiche anti-rotazione con corpo liscio

- 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 ÷ 0 bar.

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 ÷ 0 bar.*





VSL

		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

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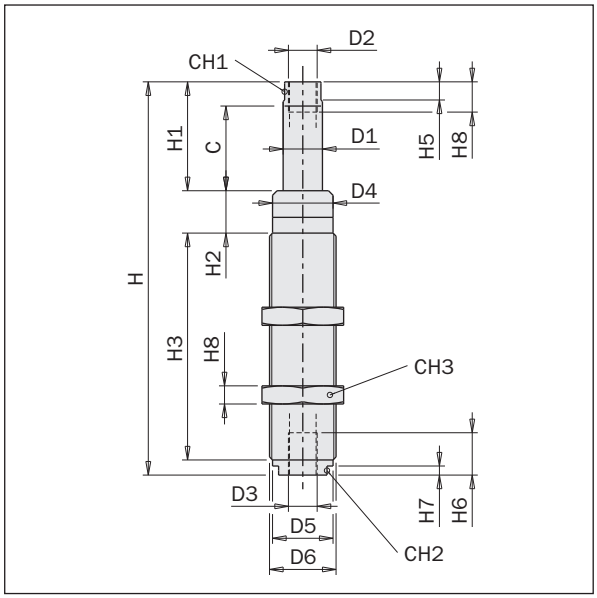
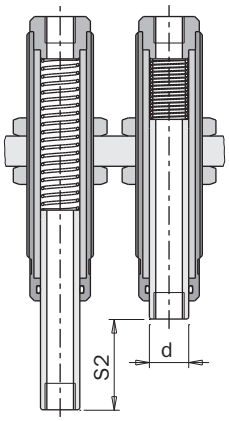
Sospensioni telescopiche anti-rotazione con corpo filettato

- 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 ÷ 0 bar.

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 ÷ 0 bar.*





VSC

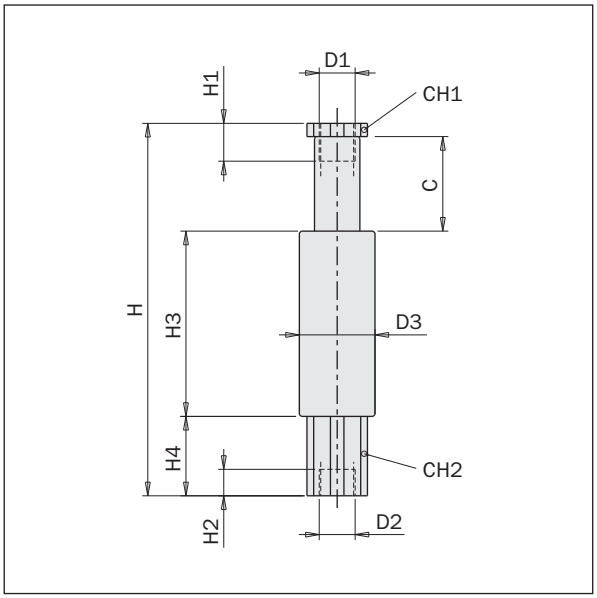
		VSC1620	VSC2230	VSC2530
H	[mm]	100	130	130
H1	[mm]	26	36	36
H2	[mm]	12	14	14
H3	[mm]	57	75	75
H4	[mm]	5	5	5
H5	[mm]	10	10	10
H6	[mm]	14	14	14
H7	[mm]	3	3	3
H8	[mm]	5	6	6
D1	[mm]	Ø8	Ø13	Ø16
D2		M5	G1/8"	G1/4"
D3		M5	G1/8"	G1/4"
D4	[mm]	Ø14.5	Ø20	Ø23
D5	[mm]	Ø14.5	Ø20	Ø23
D6		M16x1	M22x1.5	M25x1.5
CH1	[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

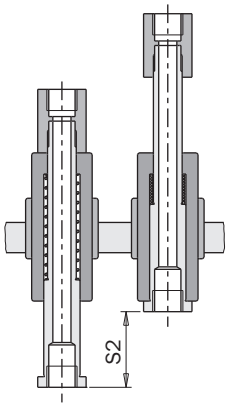
Sospensioni rotanti con corpo liscio

- Corpo e stelo in alluminio anodizzato.
- Stelo girevole.
- Pressione di utilizzo: -1 ÷ 8 bar.

Smooth-body rotative suspensions

- *Body and rod in anodized aluminum.*
- *Rotative rod.*
- *Pressure range: -1 ÷ 8 bar.*





VSR

		VSR1010	VSR1025	VSR1420	VSR1435	VSR2025	VSR2050
H	[mm]	51	85.5	92.5	127.5	98.5	156
H1	[mm]	6	6	10	10	10	10
H2	[mm]	5	5	7	7	7	7
H3	[mm]	21	40.5	38.5	58.5	49	81.5
H4	[mm]	17	17	20	20	21	21
D1		M5	M5	G1/8”	G1/8”	G1/8”	G1/8”
D2		M5	M5	G1/8”	G1/8”	G1/8”	G1/8”
D3	[mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20
CH1	[mm]	8	8	12	12	16	16
CH2	[mm]	8	8	12	12	16	16
C	[mm]	10	25	20	35	25	50
S2	[mm]	10	25	20	35	25	50
d	[mm]	0	0	0	0	0	0
K	[N/mm]	0.213	0.085	0.268	0.150	0.275	0.141
R1	[N]	1.490	1.575	3.617	4.267	4.131	4.308
R2	[N]	3.619	3.704	8.975	9.507	11.02	11.37
m	[g]	7	11	23	32	50	77

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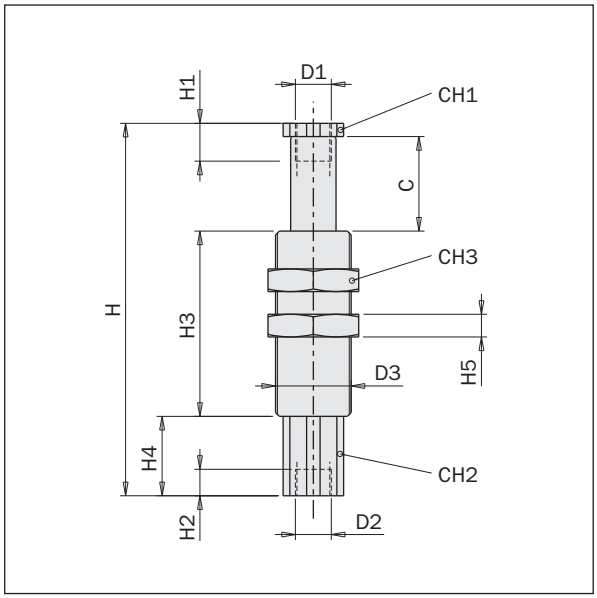
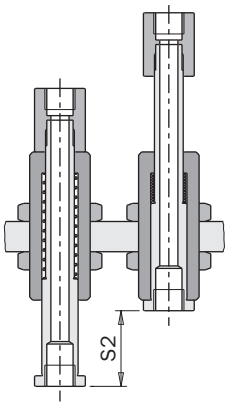
Sospensioni rotanti con corpo filettato

- Corpo e stelo in alluminio anodizzato.
- Stelo girevole.
- Pressione di utilizzo: -1 ÷ 8 bar.

Threaded-body rotative suspensions

- *Body and rod in anodized aluminum.*
- *Rotative rod.*
- *Pressure range: -1 ÷ 8 bar.*





VSRT

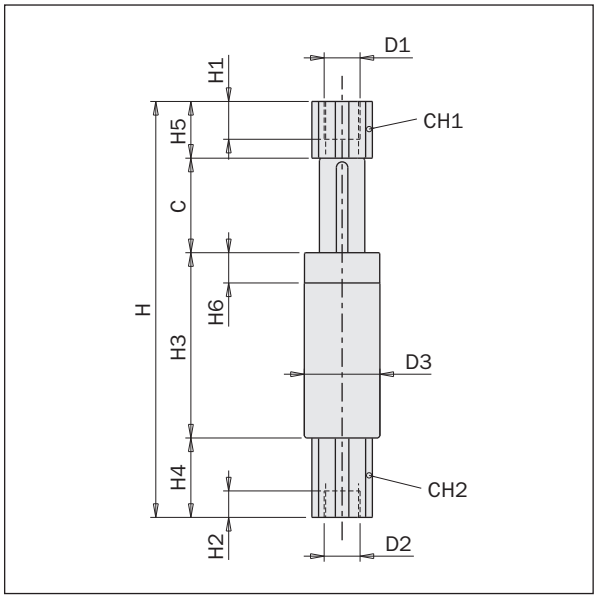
		VSRT1010	VSRT1025	VSRT1420	VSRT1435	VSRT1620	VSRT1635	VSRT2025	VSRT2050
H	[mm]	51	85.5	92.5	127.5	92.5	127.5	98.5	156
H1	[mm]	6	6	10	10	10	10	10	10
H2	[mm]	5	5	7	7	7	7	7	7
H3	[mm]	21	40.5	38.5	58.5	38,5	58,5	49	81.5
H4	[mm]	17	17	20	20	20	20	21	21
H5	[mm]	3.5	3.5	4	4	5	5	6	6
D1		M5	M5	G1/8”	G1/8”	G1/8”	G1/8”	G1/8”	G1/8”
D2		M5	M5	G1/8”	G1/8”	G1/8”	G1/8”	G1/8”	G1/8”
D3		M10x1	M10x1	M14x1.5	M14x1.5	M16x1	M16x1	M20x1.5	M20x1.5
CH1	[mm]	8	8	12	12	12	12	16	16
CH2	[mm]	8	8	12	12	12	12	16	16
CH3	[mm]	13	13	17	17	19	19	24	24
C	[mm]	10	25	20	35	20	35	25	50
S2	[mm]	10	25	20	35	20	35	25	50
d	[mm]	0	0	0	0	0	0	0	0
K	[N/mm]	0.213	0.085	0.268	0.150	0.268	0.150	0.275	0.141
R1	[N]	1.490	1.575	3.617	4.267	3.617	4.267	4.131	4.308
R2	[N]	3.619	3.704	8.975	9.507	8.975	9.507	11.02	11.37
m	[g]	11	16	32	42	40	50	70	104

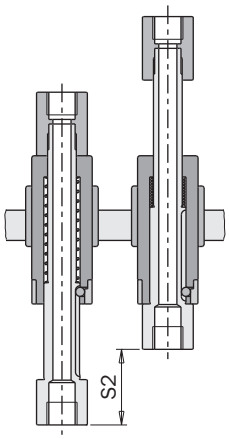
Sospensioni anti-rotazione con corpo liscio

- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.

Smooth-body non-rotative telescopic suspensions

- *Body and rod in anodized aluminum.*
- *Non-rotative rod with high load capability.*
- *Pressure range: -1 ÷ 8 bar.*





VSN

		VSN1010	VSN1025	VSN1420	VSN1435	VSN2025	VSN2050
H	[mm]	56	90.5	98.5	133.5	110	167.5
H1	[mm]	6	6	10	10	10	10
H2	[mm]	5	5	7	7	7	7
H3	[mm]	21	40.5	38.5	58.5	49	81.5
H4	[mm]	17	17	20	20	21	21
H5	[mm]	8	8	20	20	15	15
H6	[mm]	5	5	7	7	8	8
D1		M5	M5	G1/8”	G1/8”	G1/8”	G1/8”
D2		M5	M5	G1/8”	G1/8”	G1/8”	G1/8”
D3	[mm]	Ø10	Ø10	Ø14	Ø14	Ø20	Ø20
CH1	[mm]	8	8	12	12	16	16
CH2	[mm]	8	8	12	12	16	16
C	[mm]	10	25	20	35	25	50
S2	[mm]	10	25	20	35	25	50
d	[mm]	0	0	0	0	0	0
K	[N/mm]	0.213	0.085	0.268	0.150	0.275	0.141
R1	[N]	1.490	1.575	3.617	4.267	4.131	4.308
R2	[N]	3.619	3.704	8.975	9.507	11.02	11.37
m	[g]	7	11	24	33	54	80

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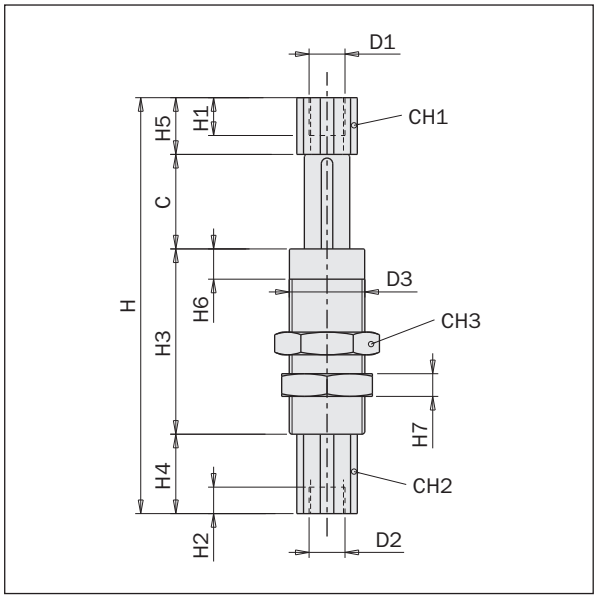
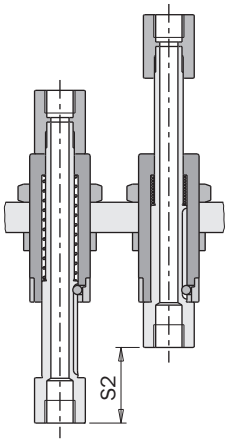
Sospensioni anti-rotazione con corpo filettato

- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.

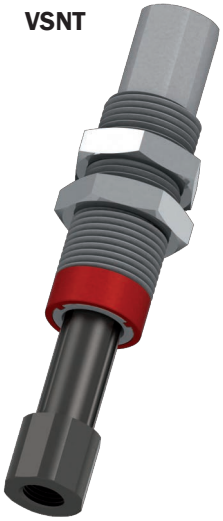
Threaded-body non-rotative suspensions

- *Body and rod in anodized aluminum.*
- *Non-rotative rod with high load capability.*
- *Pressure range: -1 ÷ 8 bar.*





VSNT



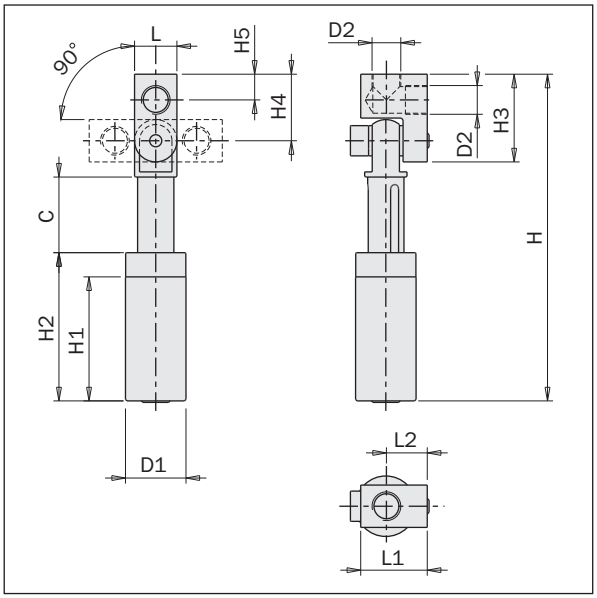
		VSNT1010	VSNT1025
H	[mm]	56	90.5
H1	[mm]	6	6
H2	[mm]	5	5
H3	[mm]	21	40.5
H4	[mm]	17	17
H5	[mm]	8	8
H6	[mm]	5	5
H7	[mm]	3.5	3.5
D1		M5	M5
D2		M5	M5
D3		M10x1	M10x1
CH1	[mm]	8	8
CH2	[mm]	8	8
CH3	[mm]	13	13
C	[mm]	10	25
S2	[mm]	10	25
d	[mm]	0	0
K	[N/mm]	0.213	0.085
R1	[N]	1.490	1.575
R2	[N]	3.619	3.704
m	[g]	12	16

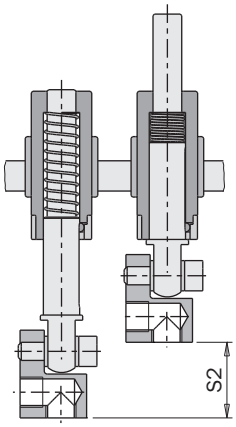
Sospensioni anti-rotazione con giunto angolare integrato e corpo liscio

- 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.*





VSE

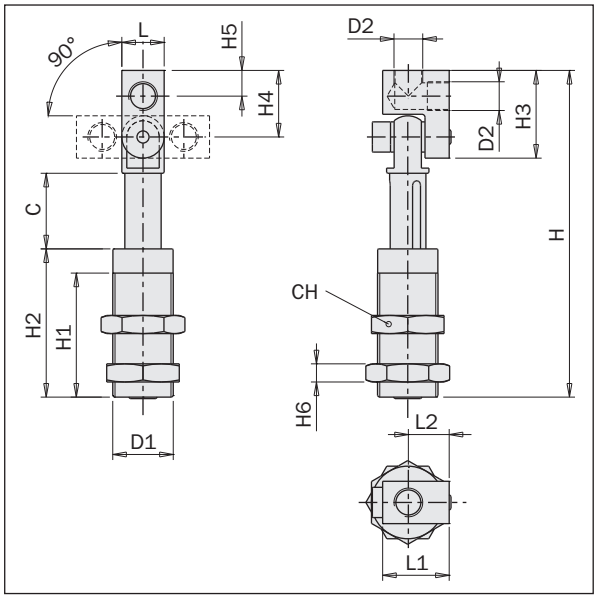
		VSE1010F05	VSE1025F05	VSE1420F18	VSE1435F18	VSE2025F18	VSE2025F14	VSE2050F18	VSE2050F14
H	[mm]	51.5	86	89.3	124.3	108	114	165.5	171.5
H1	[mm]	16	35.5	31.4	51.4	41	41	73.5	73.5
H2	[mm]	21	40.5	38.5	58.5	49	49	81.5	81.5
H3	[mm]	19	19	29	29	29	38	29	38
H4	[mm]	14	14	22	22	22	28	22	28
H5	[mm]	5.5	5.5	8.5	8.5	8.5	12	8.5	12
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	20	14	20
L1	[mm]	16.5	16.5	22	22	22	27	22	27
L2	[mm]	11	11	13.5	13.5	13.5	15	13.5	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	11.37	11.37
m	[g]	15	20	45	55	70	90	105	120

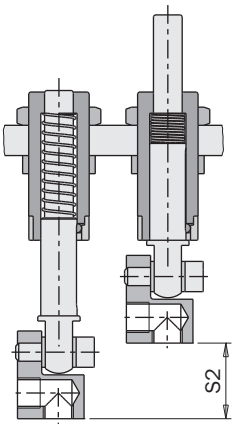
Sospensioni anti-rotazione con giunto angolare integrato e corpo filettato

- 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.*





VSET

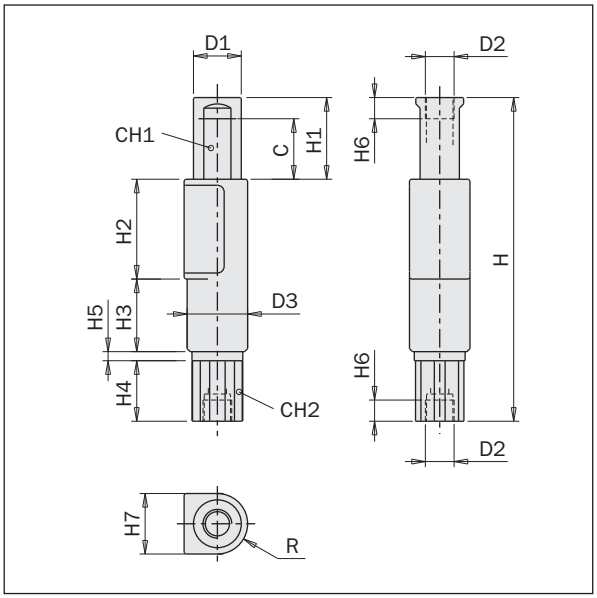
		VSET1010F05	VSET1025F05	VSET1620F18	VSET1635F18	VSET2025F18	VSET2025F14	VSET2050F18	VSET2050F14
H	[mm]	51.5	86	89.3	124.3	108	114	165.5	171.5
H1	[mm]	16	35.5	31.4	51.4	41	41	73.5	73.5
H2	[mm]	21	40.5	38.5	58.5	49	49	81.5	81.5
H3	[mm]	19	19	29	29	29	38	29	38
H4	[mm]	14	14	22	22	22	28	22	28
H5	[mm]	5.5	5.5	8.5	8.5	8.5	12	8.5	12
H6	[mm]	3.5	3.5	5	5	6	6	6	6
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	20	14	20
L1	[mm]	16.5	16.5	22	22	22	27	22	27
L2	[mm]	11	11	13.5	13.5	13.5	15	13.5	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

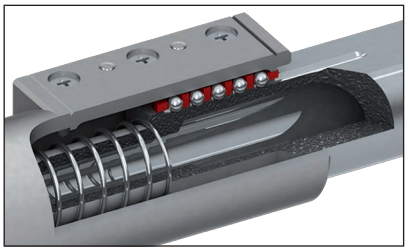
Sospensioni inox anti-rotazione per carichi elevati

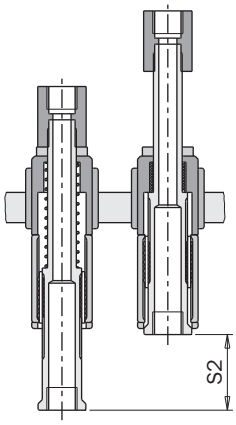
- Corpo, stelo, cuscinetto e molla in acciaio inossidabile.
- Guida a sfere per un'altissima capacità di carico.
- Gioco zero.
- Grasso alimentare FDA-H1.
- Pressione di utilizzo: -1 ÷ 8 bar.

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.*







VVX

		VVX1010F	VVX1025F	VVX1420F	VVX1435F	VVX2025F	VVX2050F
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

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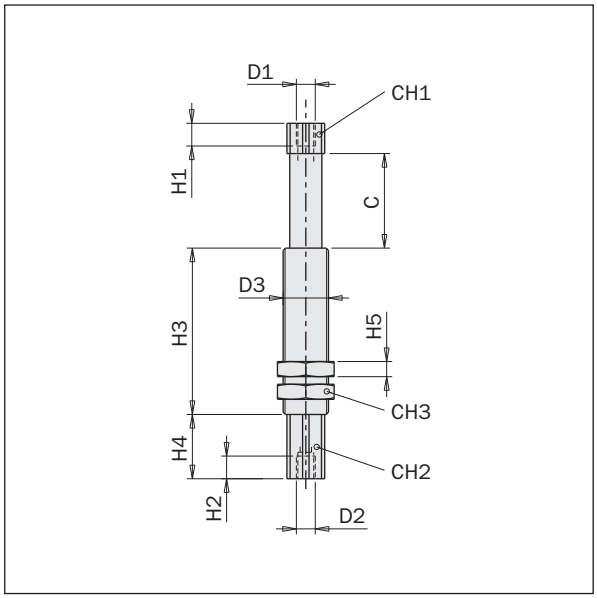
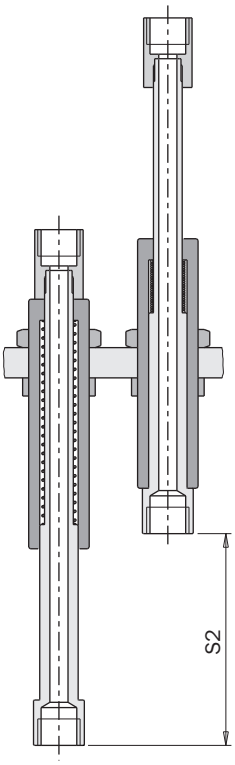
Sospensioni inox rotanti con corpo filettato

- 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.*





VSRTG

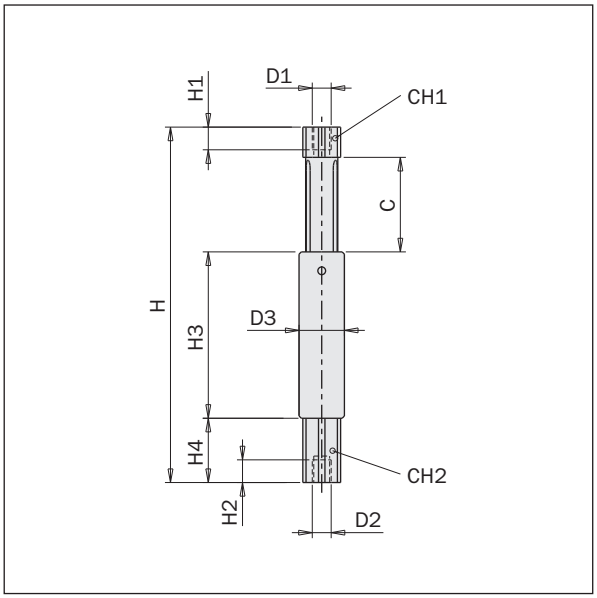
		VSRTG1225	VSRTG1635	VSRTG2050	VSRTG2580
H	[mm]	94	127.5	170.5	249
H1	[mm]	5.5	9	10	11
H2	[mm]	5.5	7	10	11
H3	[mm]	44	58.5	82.5	121
H4	[mm]	17	20	23	33
H5	[mm]	4	5	6	8
D1		M5	G1/8”	G1/4”	G3/8”
D2		M5	G1/8”	G1/4”	G3/8”
D3		M12x1	M16x1	M20x1.5	M25x1.5
CH1	[mm]	10	12	16	23
CH2	[mm]	10	12	16	23
CH3	[mm]	15	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

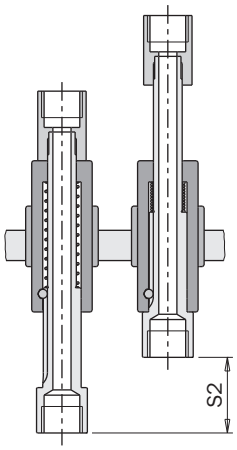
Sospensioni anti-rotazione con corpo liscio

- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.

Smooth-body non-rotative telescopic suspensions

- *Body and rod in anodized aluminum.*
- *Non-rotative rod with high load capability.*
- *Pressure range: -1 ÷ 8 bar.*





VSNG

		VSNG1210	VSNG1225	VSNG1620	VSNG1635	VSNG2025	VSNG2050	VSNG2540	VSNG2580
H	[mm]	60	94	100	135	113	170.5	159	249
H1	[mm]	5.5	5.5	9	9	10	10	11	11
H2	[mm]	5.5	5.5	7	7	10	10	11	11
H3	[mm]	25	44	38.5	58.5	50	82.5	71	121
H4	[mm]	17	17	20	20	23	23	33	33
D1		M5	M5	G1/8"	G1/8"	G1/4"	G1/4"	G3/8"	G3/8"
D2		M5	M5	G1/8"	G1/8"	G1/4"	G1/4"	G3/8"	G3/8"
D3	[mm]	Ø12	Ø12	Ø16	Ø16	Ø20	Ø20	Ø25	Ø25
CH1	[mm]	10	10	12	12	16	16	22	22
CH2	[mm]	10	10	12	12	16	16	22	22
C	[mm]	10	25	20	35	25	50	40	80
S2	[mm]	10	25	20	35	25	50	40	80
d	[mm]	0	0	0	0	0	0	0	0
K	[N/mm]	0.277	0.108	0.252	0.137	0.258	0.129	0.230	0.119
R1	[N]	1.938	2.112	3.650	4.325	4.388	4.452	6.082	6.005
R2	[N]	4.706	4.820	8.685	9.132	10.84	10.90	15.26	15.52
m	[g]	15	20	40	50	55	85	135	205

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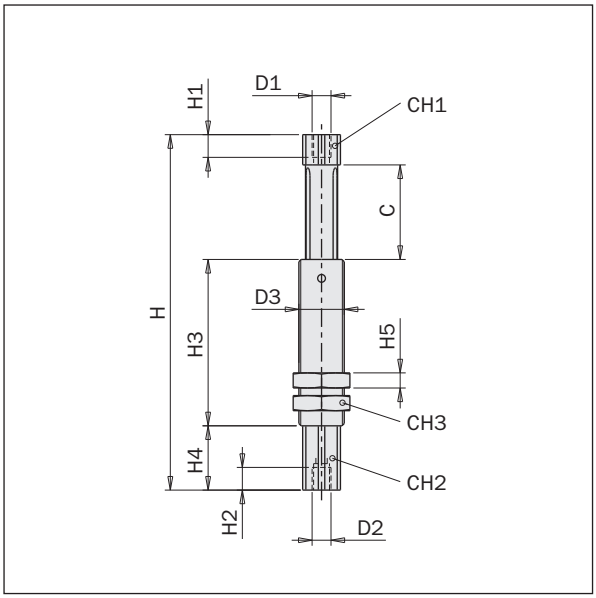
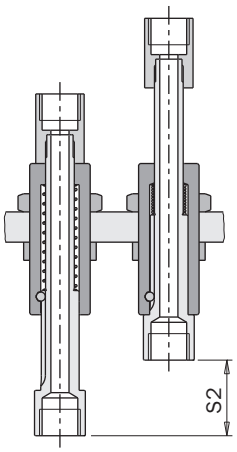
Sospensioni anti-rotazione con corpo filettato

- Corpo e stelo in alluminio anodizzato.
- Stelo anti-rotazione con elevata capacità di carico.
- Pressione di utilizzo: -1 ÷ 8 bar.

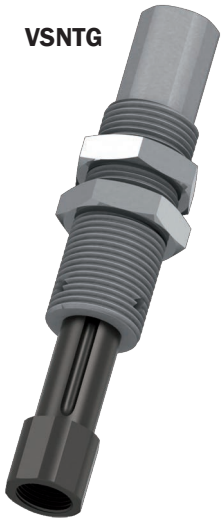
Threaded-body non-rotative suspensions

- *Body and rod in anodized aluminum.*
- *Non-rotative rod with high load capability.*
- *Pressure range: -1 ÷ 8 bar.*





VSNTG



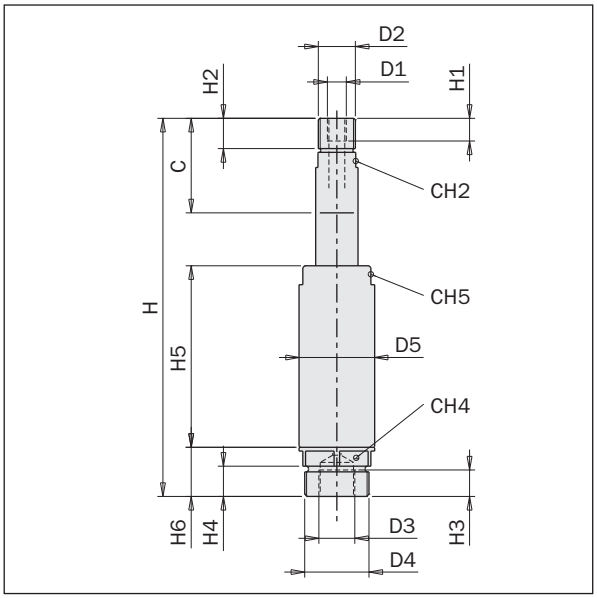
		VSNTG1210	VSNTG1225	VSNTG1620	VSNTG1635	VSNTG2025	VSNTG2050	VSNTG2540	VSNTG2580
H	[mm]	60	94	100	135	113	170,5	159	249
H1	[mm]	5.5	5.5	7	7	10	10	11	11
H2	[mm]	5.5	5.5	9	9	10	10	11	11
H3	[mm]	25	44	38.5	58.5	50	82.5	71	121
H4	[mm]	17	17	20	20	23	23	33	33
H5	[mm]	4	4	5	5	6	6	8	8
D1		M5	M5	G1/8"	G1/8"	G1/4"	G1/4"	G3/8"	G3/8"
D2		M5	M5	G1/8"	G1/8"	G1/4"	G1/4"	G3/8"	G3/8"
D3		M12x1	M12x1	M16x1	M16x1	M20x1.5	M20x1.5	M25x1.5	M25x1.5
CH1	[mm]	10	10	12	12	16	16	22	22
CH2	[mm]	10	10	12	12	16	16	22	22
CH3	[mm]	15	15	19	19	24	24	32	32
S2	[mm]	10	25	20	35	25	50	40	80
d	[mm]	0	0	0	0	0	0	0	0
K	[N/mm]	0.277	0.108	0.252	0.137	0.258	0.129	0.230	0.119
R1	[N]	1.938	2.112	3.650	4.325	4.388	4.452	6.082	6.005
R2	[N]	4.706	4.820	8.685	9.132	10.84	10.90	15.26	15.52
m	[g]	15	20	35	45	65	90	170	235

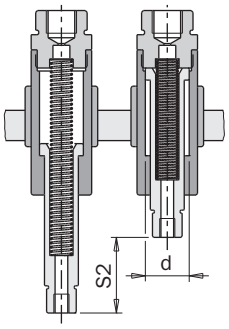
Sospensioni telescopiche auto-ritraenti

- 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 ÷ 0 bar.

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 ÷ 0 bar.*





VSS

		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

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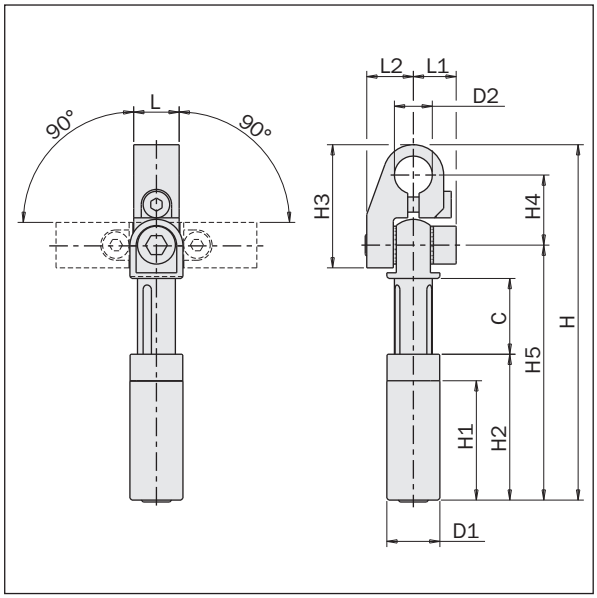
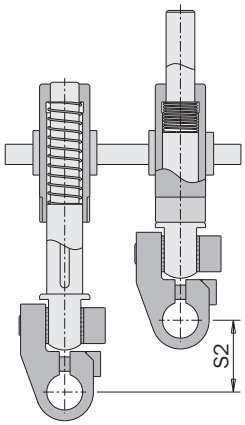
Sospensioni anti-rotazione con cravatta regolabile e corpo liscio

- 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

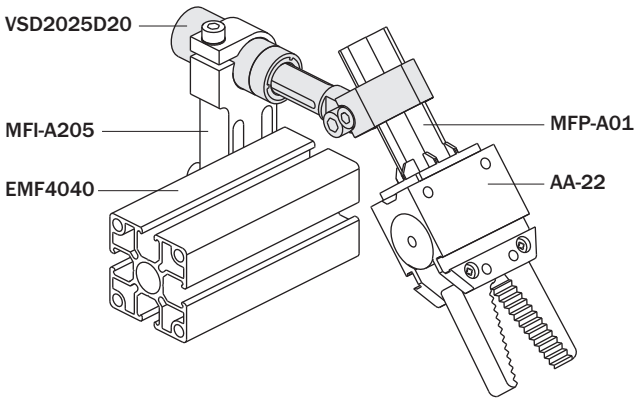
- *It is possible to set continuously the angle between 0° and +/-90°.*
- *External air feeding.*
- *Body and rod in anodized aluminum.*
- *Non-rotative rod.*

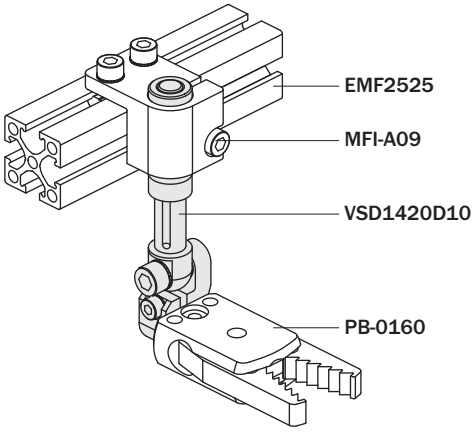




VSD

		VSD1420D10	VSD2025D10	VSD2025D20
H	[mm]	93.8	112.5	124.5
H1	[mm]	31.5	41	41
H2	[mm]	38.5	49	49
H3	[mm]	32.5	32.5	46.5
H4	[mm]	18.5	18.5	25
H5	[mm]	67.3	86	86
D1	[mm]	Ø14	Ø20	Ø20
D2	[mm]	Ø10	Ø10	Ø20
L	[mm]	12	12	16
L1	[mm]	11.3	11.3	13.5
L2	[mm]	12.3	12.3	13.5
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	69	85





Attuatore a depressione serie VAQ

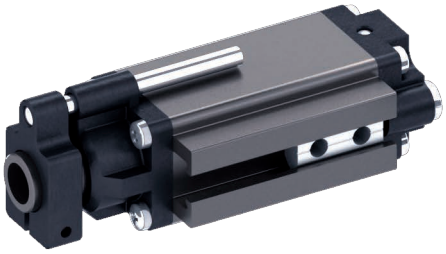
- Azionato solo con il vuoto.
- I movimenti di estensione e ritrazione sono attuati automaticamente.
- La corsa si autoregola.
- Opzione VAQN per stelo anti rotazione.
- La ventosa 1 è da ordinare a parte.

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.*

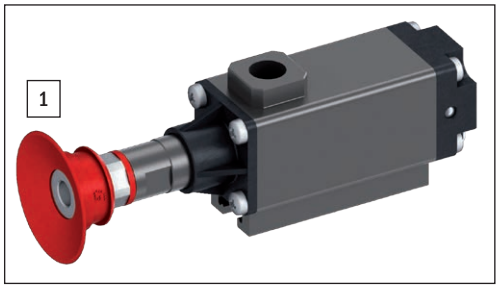
VAQ1840

VAQ1820



VAQN1820

VAQN1840



	VAQ1820	VAQ1840	VAQN1820	VAQN1840
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

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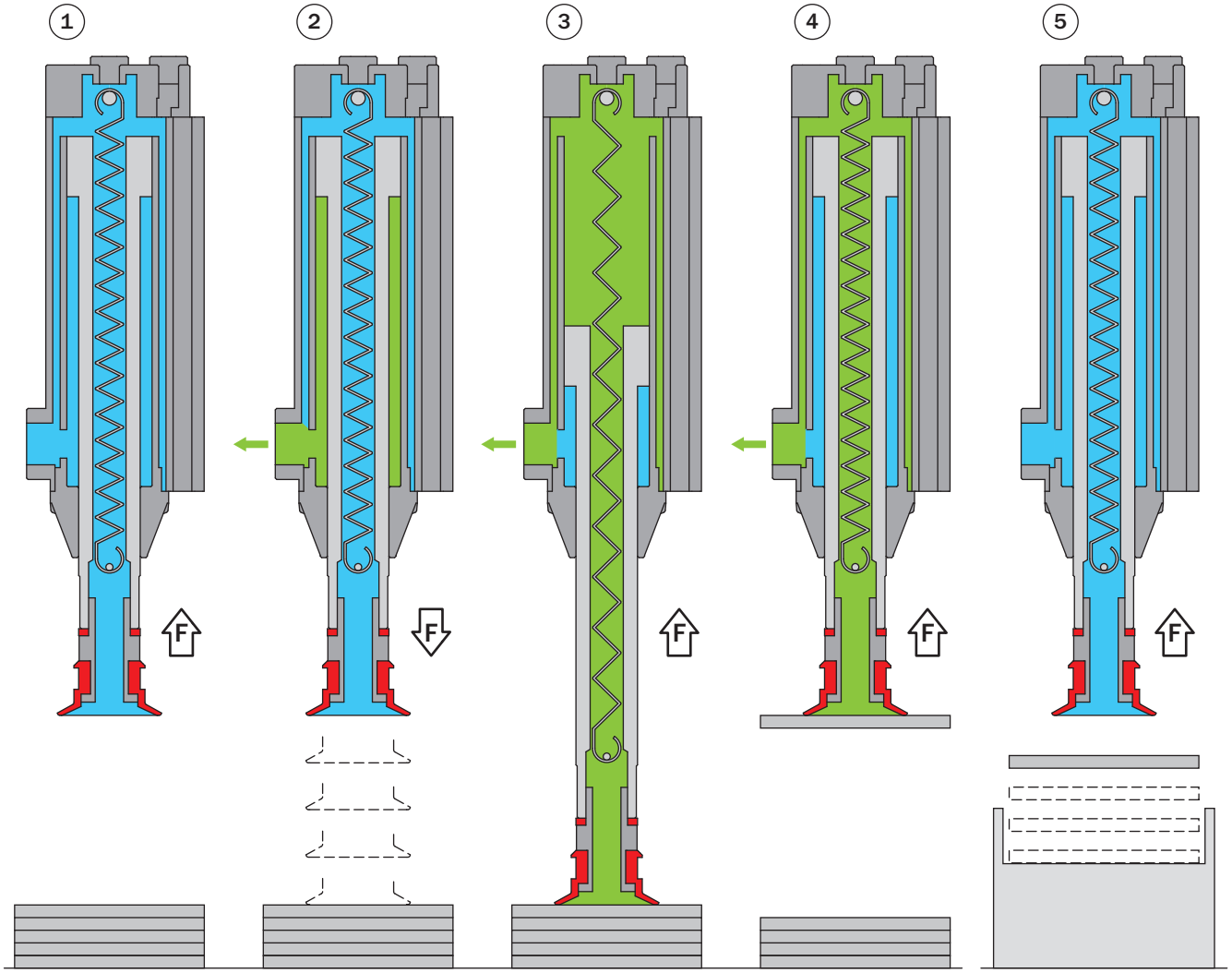
Principio di funzionamento

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).

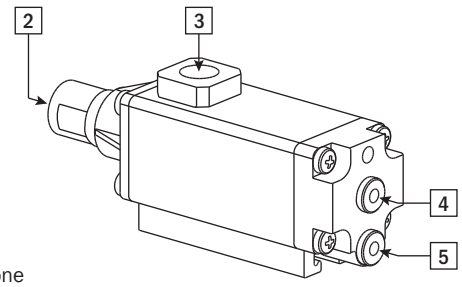


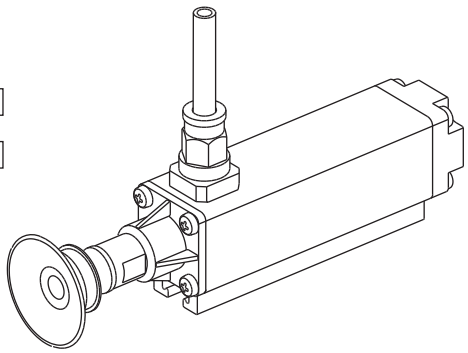
2 G1/8
Filetto femmina per ventosa
Female thread for suction cup

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





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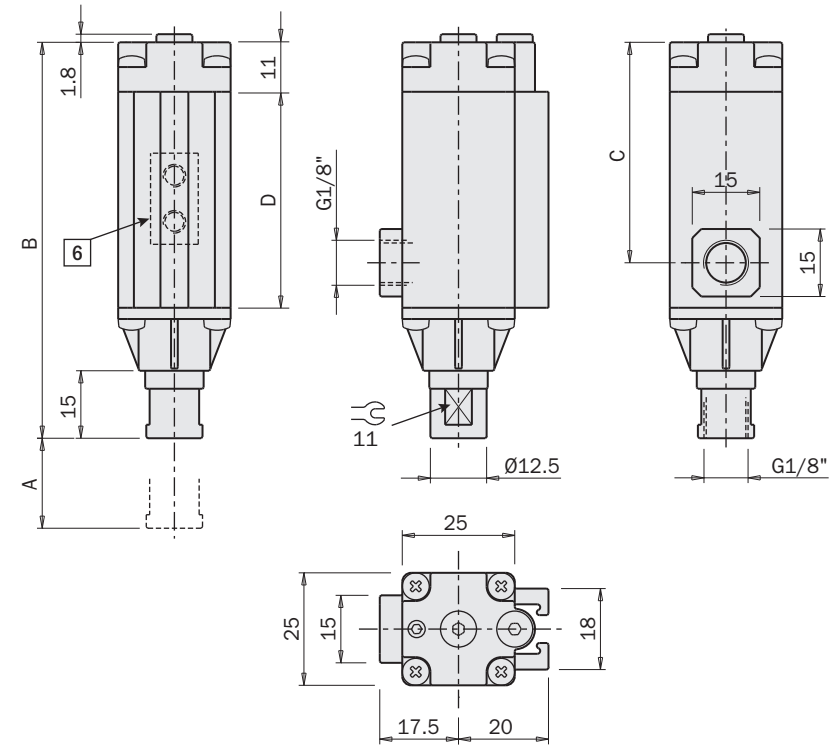
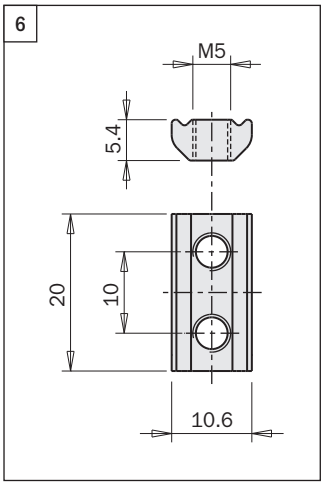
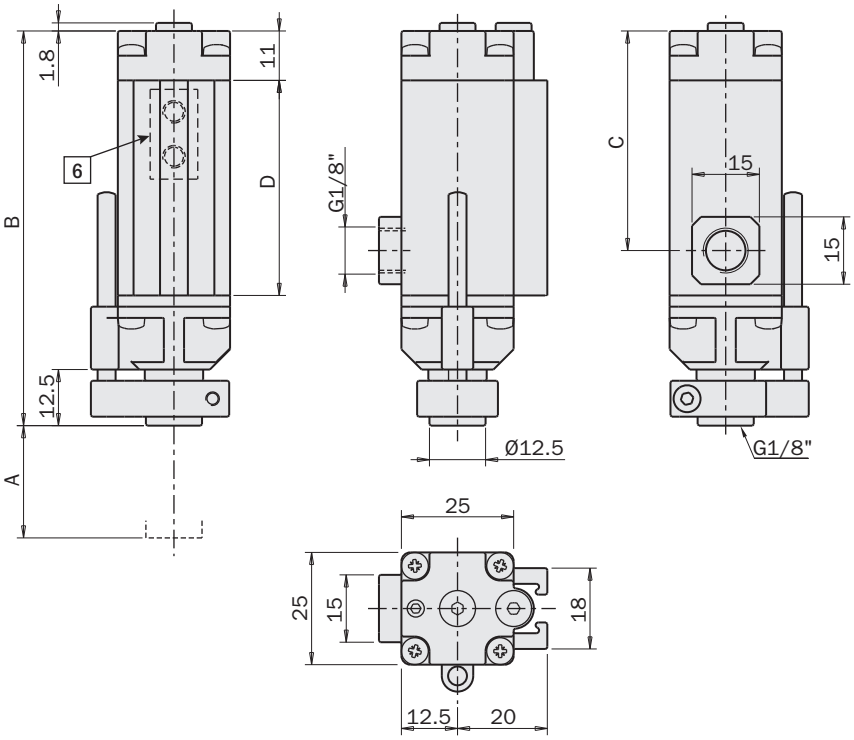
Dimensioni (mm) / *Dimensions (mm)*



	VAQ1820 VAQN1820	VAQ1840 VAQN1840
A	20	40
B	88	119
C	49	80
D	48	79





FIRST ANGLE PROJECTION

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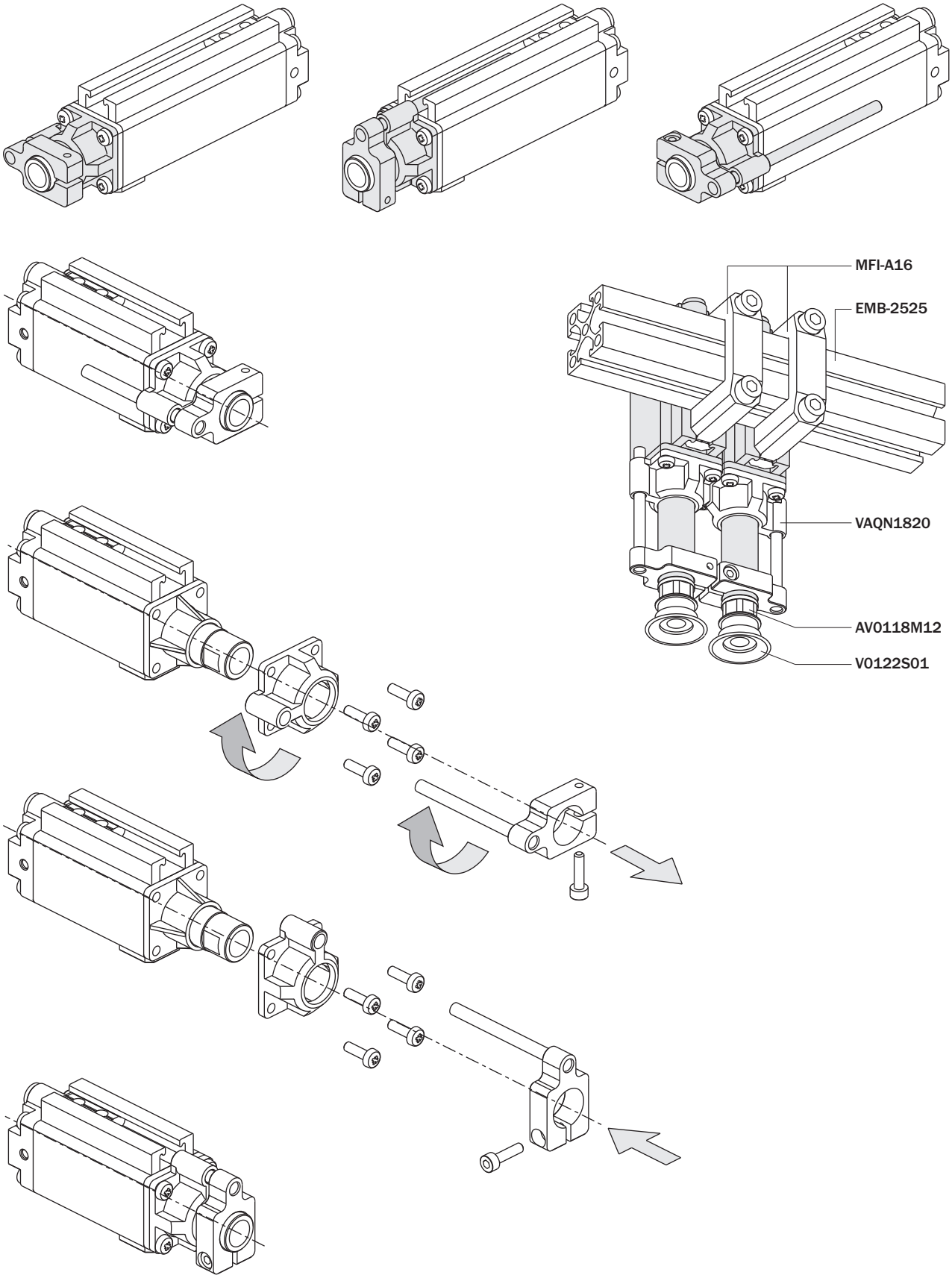
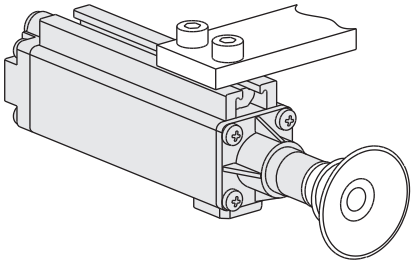
Il dispositivo anti-giro dei VAQN può essere posizionato su 3 lati in base allo spazio disponibile.

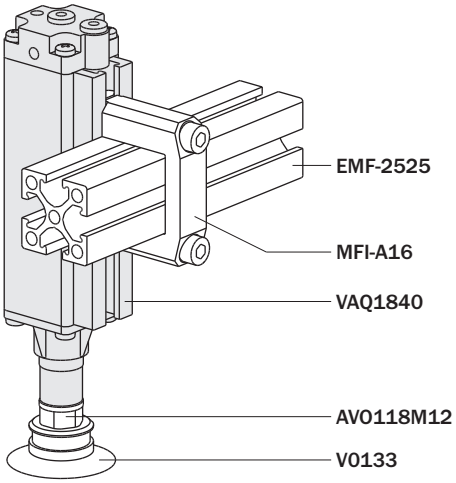
The anti-rotation device can be positioned on 3 sides, based on the space available.

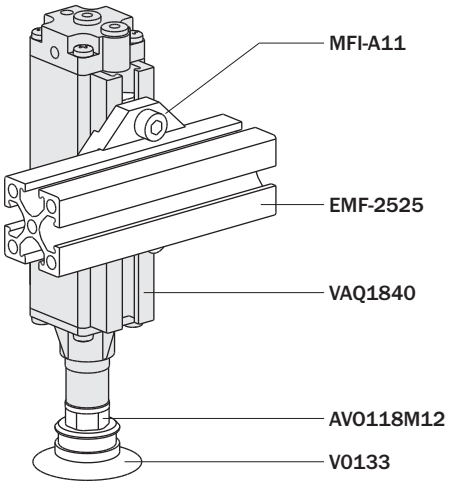


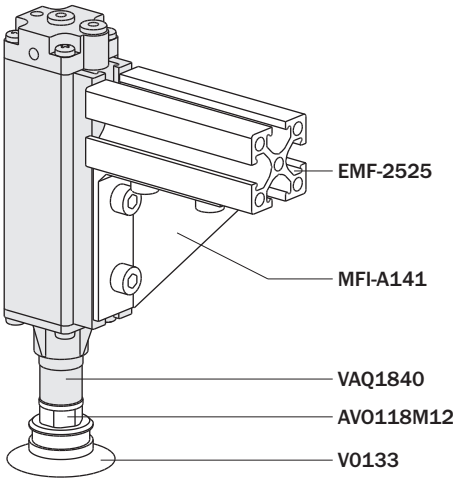
Fissaggio

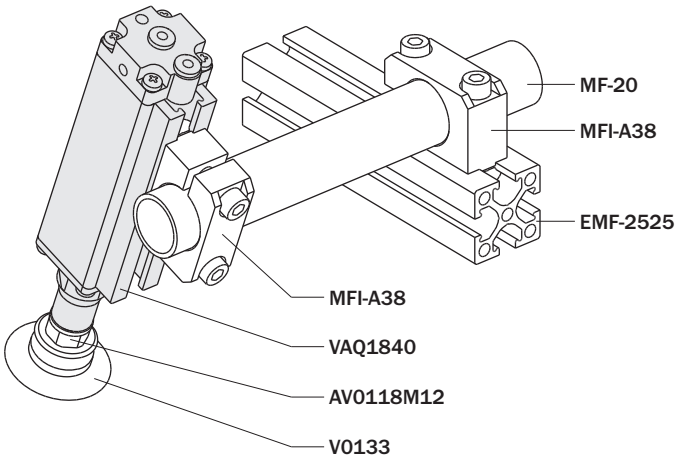
Fastening









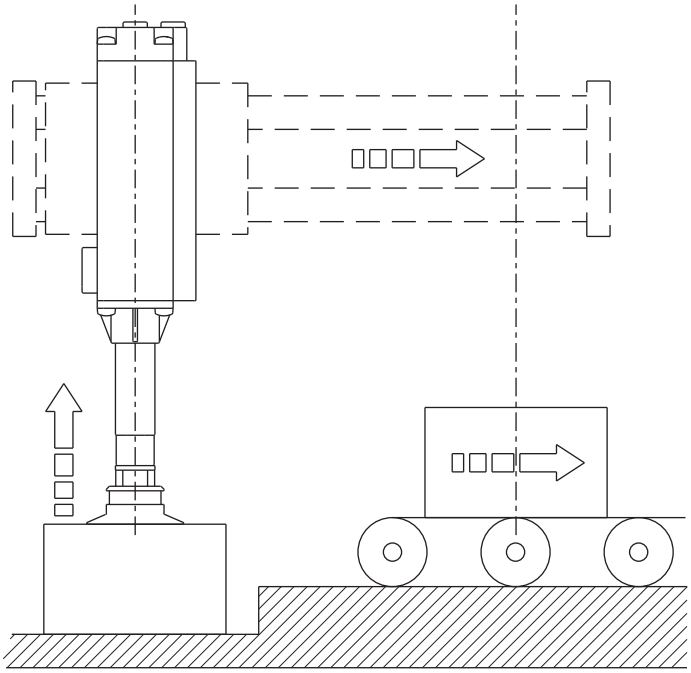


Esempio di applicazione

Presa e deposito a livelli diversi.

Application example

Pick and placing at different levels.

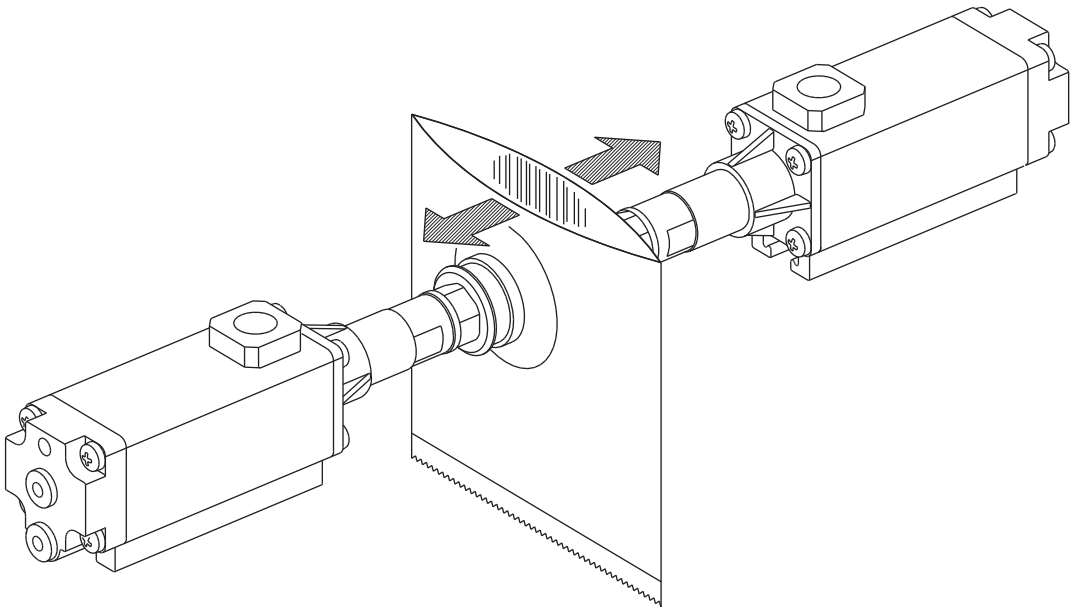


Esempio di applicazione

Apertura sacchetti in macchine per confezionamento.

Application example

Bag opening in packaging machines.



Pompe a vuoto

- Tecnologia brevettata COAX®.
- Elevato rapporto tra portata aspirata e consumo di aria compressa.
- Peso ridotto e innesti rapidi in linea.
- Installazione facile e veloce sulla tubazione.
- Cartucce COAX® alimentate a 6 bar per un'elevata portata.

Vacuum pumps

- *Patented COAX® cartridge technology.*
- *High vacuum flow capacity in relation to energy consumption.*
- *Low weight inlinedesign with push-in fittings.*
- *Quick and easy installation directly on the hose.*
- *Cartridge COAX® at 6 bar for extra vacuum flow.*

PV.0122882

PV.0122025
PV.0122896

	PV.0122882	PV.0122025	PV.0122896
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
Pressione di esercizio *Pressure range*	2 ÷ 7 bar		
Temperatura di esercizio *Temperature range*	-10 ÷ +80°C.		
Livello di rumorosità *Noise level, min-max*	67-73 dBA	68-84 dBA	68-84 dBA
Connessione *Connection*	Ø6 mm	Ø6 mm	Ø8 mm
Peso *Weight*	9.8 g	23 g	21.8 g

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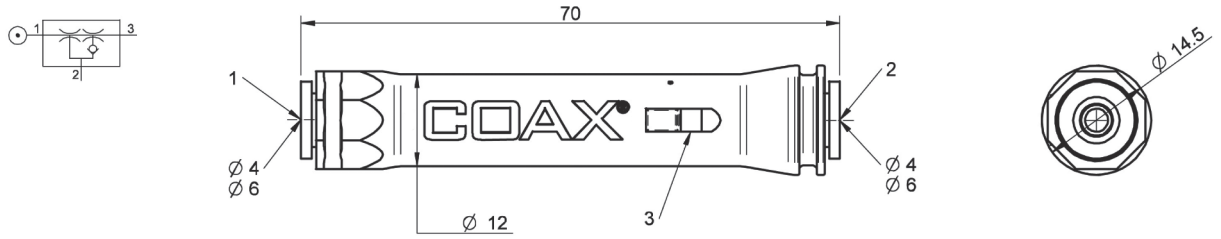
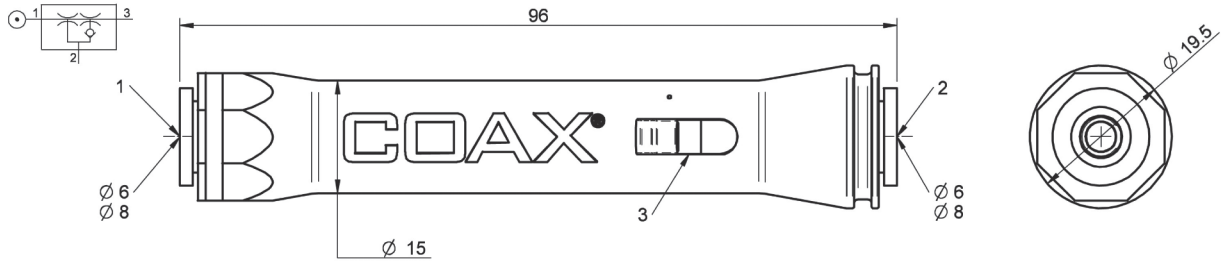
Dimensioni (mm) *Dimensions (mm)*

PV.0122882



PV.0122025
PV.0122896



Prestazioni di aspirazione *Suction performances*

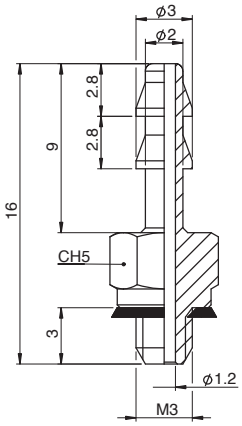
		PV.0122882	PV.0122025 PV.0122896
Pressione di alimentazione ottimale *Optimal feed pressure*		6 bar	6 bar
Consumo d'aria a 6 bar *Air consumption at 6 bar*		0.12 Nl/s	0.44 Nl/s
Vuoto max *Max vacuum*		-0.75 bar	-0.75 bar
Portata d'aria aspirata ai diversi gradi di vuoto *Vacuum flow at different vacuum levels*	0 bar	0.28 Nl/s	0.69 Nl/s
	-0.1 bar	0.21 Nl/s	0.55 Nl/s
	-0.2 bar	0.12 Nl/s	0.42 Nl/s
	-0.3 bar	0.08 Nl/s	0.28 Nl/s
	-0.4 bar	0.07 Nl/s	0.23 Nl/s
	-0.5 bar	0.06 Nl/s	0.16 Nl/s
	-0.6 bar	0.04 Nl/s	0.12 Nl/s
	-0.7 bar	0.02 Nl/s	0.08 Nl/s

Pressione di alimentazione ottimale *Optimal feed pressure*		6 bar	6 bar
Consumo d'aria a 6 bar *Air consumption at 6 bar*		0.12 Nl/s	0.44 Nl/s
Vuoto max *Max vacuum*		-0.75 bar	-0.75 bar
Tempo di evacuazione ai diversi gradi di vuoto *Evacuation time to reach different vacuum levels*	-0.1 bar	0.41 s/l	0.16 s/l
	-0.2 bar	1.01 s/l	0.37 s/l
	-0.3 bar	2.01 s/l	0.66 s/l
	-0.4 bar	3.3 s/l	1.1 s/l
	-0.5 bar	4.9 s/l	1.4 s/l
	-0.6 bar	6.9 s/l	2.1 s/l
	-0.7 bar	10 s/l	3.1 s/l

Raccordi / *Fittings*

Raccordo diritto a calzamento
Straight push-on fitting

	Ø	n°	m
RG.RO-1376-AS1	4	10	50

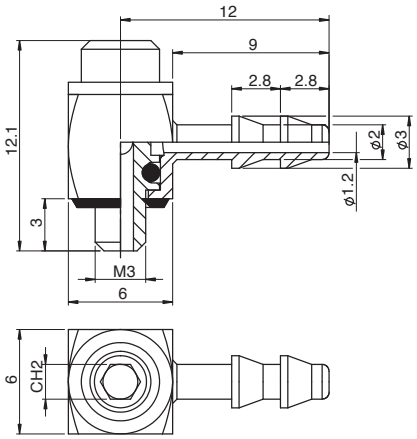


Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Raccordo orientabile a "L" a calzamento
Adjustable-position push-on elbow fitting

	Ø	n°	m
RG.RO-1376-AS2	4	10	50



Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

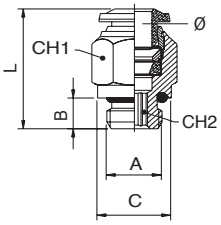
Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

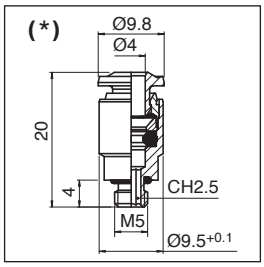
09/2015

Raccordi / *Fittings*

Raccordo diritto maschio cilindrico
Straight male adaptor (parallel)

	Ø	A	B	C	L	CH1	CH2	n°	m
RG.50-020-00N01	(*)	(*)	(*)	(*)	(*)	(*)	(*)	10	45
RG.5002000N02	4	1/8	6	13	20	10	3	10	70
RG.5002000N22	4	1/4	8	16	19.5	16	3	10	160
RG.5002000N20	6	M5	4	10	24.5	13	2	10	110
RG.5002000N03	6	1/8	6	13	23.5	13	4	10	125
RG.5002000N04	6	1/4	8	16	23.5	13	4	10	170
RG.5002000N05	8	1/8	6	13	25	14	5	10	130
RG.5002000N06	8	1/4	8	16	23	14	6	10	130



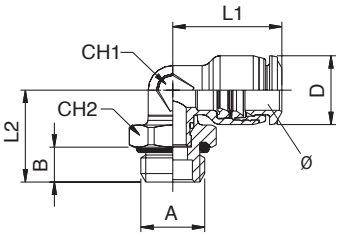


Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Raccordo a L orientabile maschio cilindrico
Orienting elbow male adaptor (parallel)

	Ø	A	B	L1	L2	CH1	CH2	D	n°	m
RG.5511600001	4	M3x0.5	3	16.5	12	7	9	10	10	35
RG.5511600002	4	M5	3.6	16.5	13.8	7	9	10	10	45
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	60
RG.5511600013	6	1/8	5.4	20.5	15.8	9	13	12	10	90
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	115
RG.5511600018	8	1/4	7.1	22	18.7	10	16	14	10	145

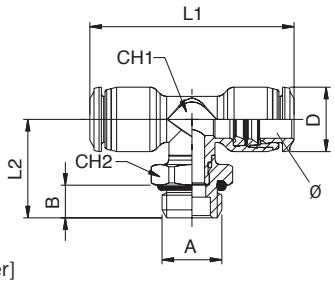


Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Raccordo a T orientabile maschio cilindrico
Orienting Tee male adaptor (parallel) – centre leg

	Ø	A	B	L1	L2	CH1	CH2	D	n°	m
RG.5521600002	4	M5	3.6	33	15.5	7	9	10	10	65
RG.5521600011	6	M5	3.6	41	14.7	9	9	12.5	10	80
RG.5521600013	6	1/8	5.4	41	18.4	9	13	12.5	10	115
RG.5521600014	6	1/4	7.1	41	20	9	16	12.5	10	165
RG.5521600017	8	1/8	5.4	44	22.1	10	13	14	10	145
RG.5521600018	8	1/4	7.1	44	21.4	10	16	14	10	175



Caratteristiche tecniche
Technical characteristics

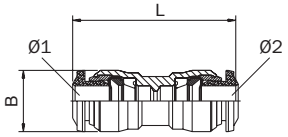
T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

Raccordi / *Fittings*

Raccordo diritto intermedio
Straight connector

	Ø1	Ø2	B	L	n°	m
RG.5504000002	4	4	10	31	10	35
RG.5504000004	6	6	12.5	35	10	50
RG.5504000009	6	4	12.5	34	10	50
RG.5504000005	8	8	14	37	10	65
RG.5504000010	8	6	14	37.5	10	65

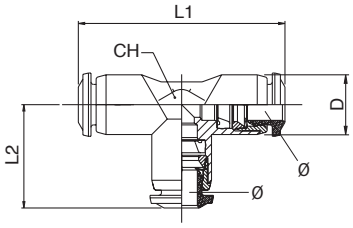


Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Raccordo a T intermedio
Tee connector

	Ø	L1	L2	CH	D	n°	m
RG.5523000002	4	33	16.5	9	10	10	55
RG.5523000004	6	41	20.5	11	12	10	80
RG.5523000005	8	44	22	13	14	10	105

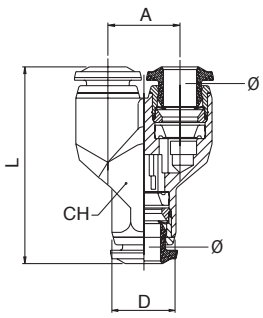


Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Raccordo a Y intermedio
Y connector

	Ø	A	L	CH	D	n°	m
RG.5531000002	4	11	31.5	10	10	10	55
RG.5531000004	6	13.5	37	12	12	10	55
RG.5531000005	8	15.5	40	14	14	10	65



Caratteristiche tecniche
Technical characteristics

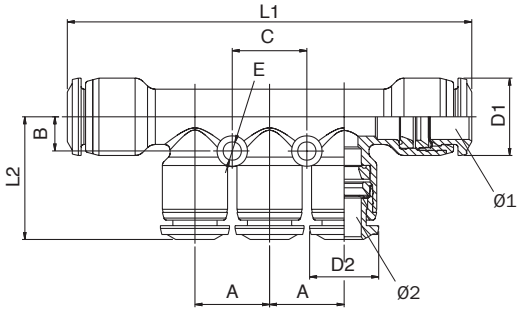
T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

Raccordi / *Fittings*

Raccordo multiplo di riduzione
Reduction manifold

	Ø1-Ø2	A	B	L1	L2	C	D1	D2	E	n°	m
RG.5535000001	6-4	13.5	6	74	21.8	13.5	14	12	3.3	10	170
RG.5535000002	8-4	13.5	6	73	21.8	13.5	14	12	3.3	10	160
RG.5535000003	8-6	13.5	6	73	22.3	13.5	14	12.5	3.3	10	160

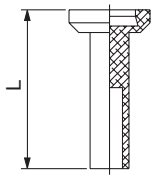


Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Tappo in poliamide
Plug polyamede

	Ø	L	n°	m
RG.086100031X1R0	4	23.5	10	3
RG.086100031X4R0	6	24.5	10	6
RG.086100031X7R0	8	26	10	9



Caratteristiche tecniche
Technical characteristics

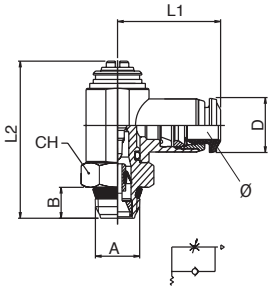
T= -20° ÷ +80°C
P= -0.99 ÷ +15bar

Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

Raccordi / *Fittings*

Regolatore unidirezionale orientabile per cilindro short regolazione a cacciavite
Orienting flow regulator for cilinder (short) screwdriver regulation

	Ø	A	B	L1	L2	CH	D	n°	m
RG.5590000002	4	M5	5.5	19.5	29.5	8	10	1	8
RG.5590000003	4	1/8	5.5	21.5	31	14	10	1	18
RG.5590000007	6	M5	5.5	21	29.5	8	12.5	1	7
RG.5590000008	6	1/8	5.5	23	31	14	12.5	1	16
RG.5590000010	8	1/8	5.5	23.5	31	14	14	1	19
RG.5590000011	8	1/4	7	26	36.5	17	14	1	33

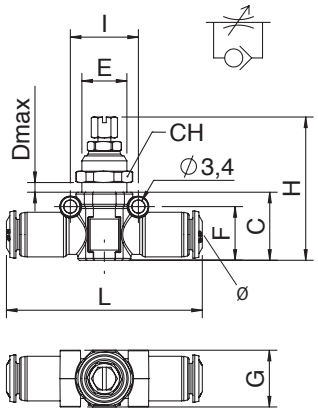


Caratteristiche tecniche
Technical characteristics

T= -20° ÷ +80°C
P= 1 ÷ 10bar

Regolatore in linea unidirezionale tubo-tubo
Tube in-line needle valve (unidirectional flow)

	Ø	C	D	E	F	G	H	I	L	CH	n°	m
RG.5594000001	6	18	6	M12x1	14.5	15	37.5÷43.5	18	52	14	1	27
RG.5594000002	8	20	6.5	M14x1	16.5	17	39.5÷45.5	20	58	16	1	37



Caratteristiche tecniche
Technical characteristics

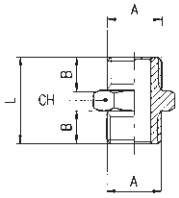
T= -20° ÷ +80°C
P= 1 ÷ 10bar

Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

Raccordi / *Fittings*

Nipplo cilindrico
Nipple (parallel)

	A	B	L	CH	n°	m
RG.020100001B5NB	M5	4	11.5	8	10	20
RG.02010000102NB	1/8	6	16.5	14	10	90
RG.02010000103NB	1/4	8	21	17	10	165

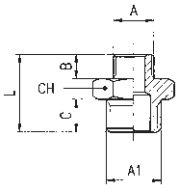


Caratteristiche tecniche
Technical characteristics

T= 300°C max

Nipplo di riduzione cilindrico
Reducing nipple (parallel)

	A	A1	B	C	L	CH	n°	m
RG.0203000010WNB	M5	1/8	4	6	14.5	14	10	80
RG.020300001ATNB	1/8	1/4	6	8	19	17	10	140



Caratteristiche tecniche
Technical characteristics

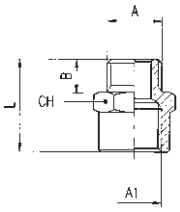
T= 300°C max

Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

Raccordi / *Fittings*

Riduzione cilindrica
Reducer (parallel)

	A	A1	B	L	CH	n°	m
RG.0205000012WNB	1/8	1/8	6	17	14	10	110
RG.020500001ATNB	1/8	1/4	6	20.5	17	10	175
RG.0205000016WNB	1/4	1/4	8	22.5	17	10	190

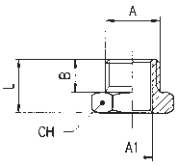


Caratteristiche tecniche
Technical characteristics

T= 300°C max

Riduzione cilindrica
Reducer (parallel)

	A	A1	B	L	CH	n°	m
RG.0209000010WNT	1/8	M5	6	10.5	14	10	80
RG.0209000015WNT	1/4	1/8	8	13	17	10	100

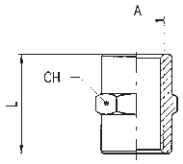


Caratteristiche tecniche
Technical characteristics

T= 300°C max

Manicotto
Sleeve

	A	L	CH	n°	m
RG.030000001B5NB	M5	11	8	10	30
RG.03000000102NB	1/8	15	14	10	100
RG.03000000103NB	1/4	22	17	10	180



Caratteristiche tecniche
Technical characteristics

T= 300°C max

Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

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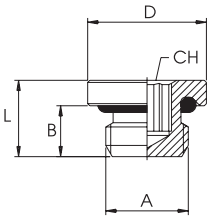
Raccordi / *Fittings*

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
RG.0301500005	M5	4	6	8	2	10	10
RG.0301500001	1/8	6	8.5	14	5	10	60
RG.0301500002	1/4	8	11	17	6	10	110

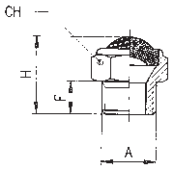


Caratteristiche tecniche
Technical characteristics

T= -20 ÷ +80°C
P= -0.99 ÷ +15bar

Silenziatore
Silencer

	A	F	H	CH	dB	S	n°	m
RG.0702000001	M5	4	8	8	-	100µm	10	15
RG.0702000002	1/8	6	15	13	74	100µm	10	55
RG.0702000003	1/4	7	18	16	72	100µm	10	110



Caratteristiche tecniche
Technical characteristics

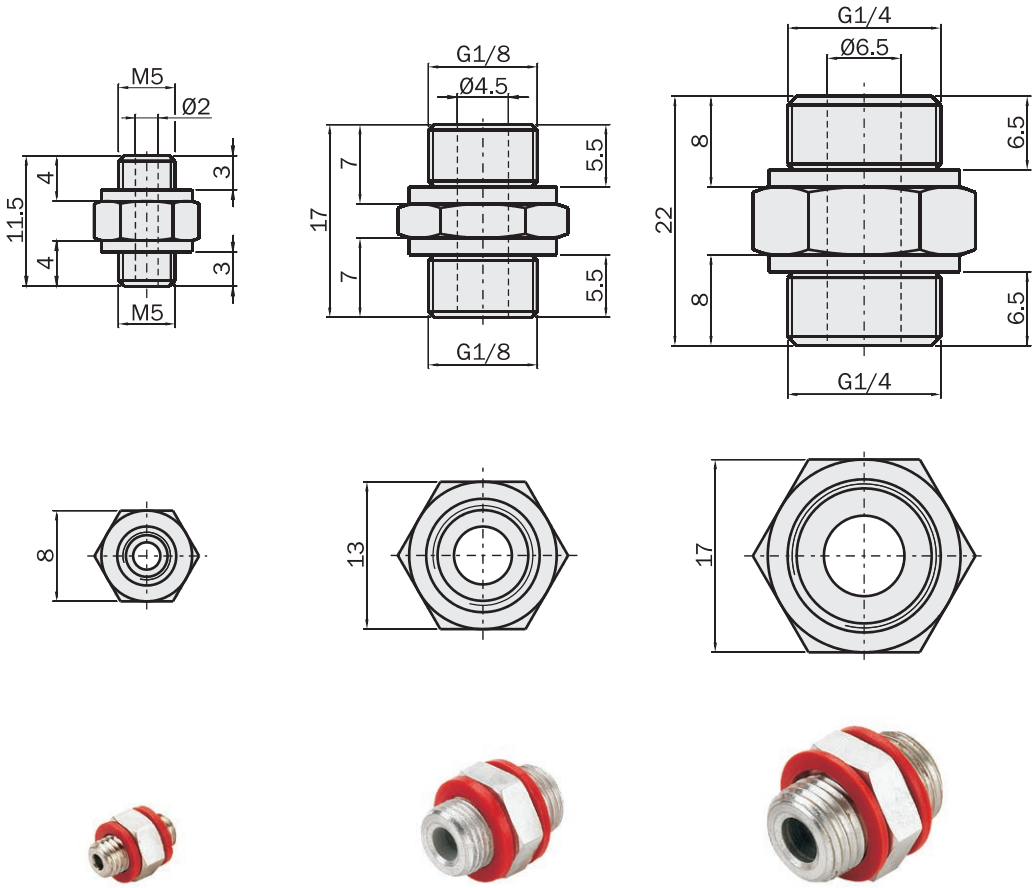
T= -10 ÷ +80°C
P= 12bar max

Ø [Diametro esterno tubo - Hose outer diameter]
n° [Quantità pezzi in confezione - Number of pieces in the pack]
m [Peso di una confezione da 10 pezzi - Weight of a 10-piece pack]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]
dB [Livello di rumore in (dB) a 6 bar - Noise level in (dB) at 6 bar]
S [Soglia di filtrazione - Filtration threshold]

Nippli filettati

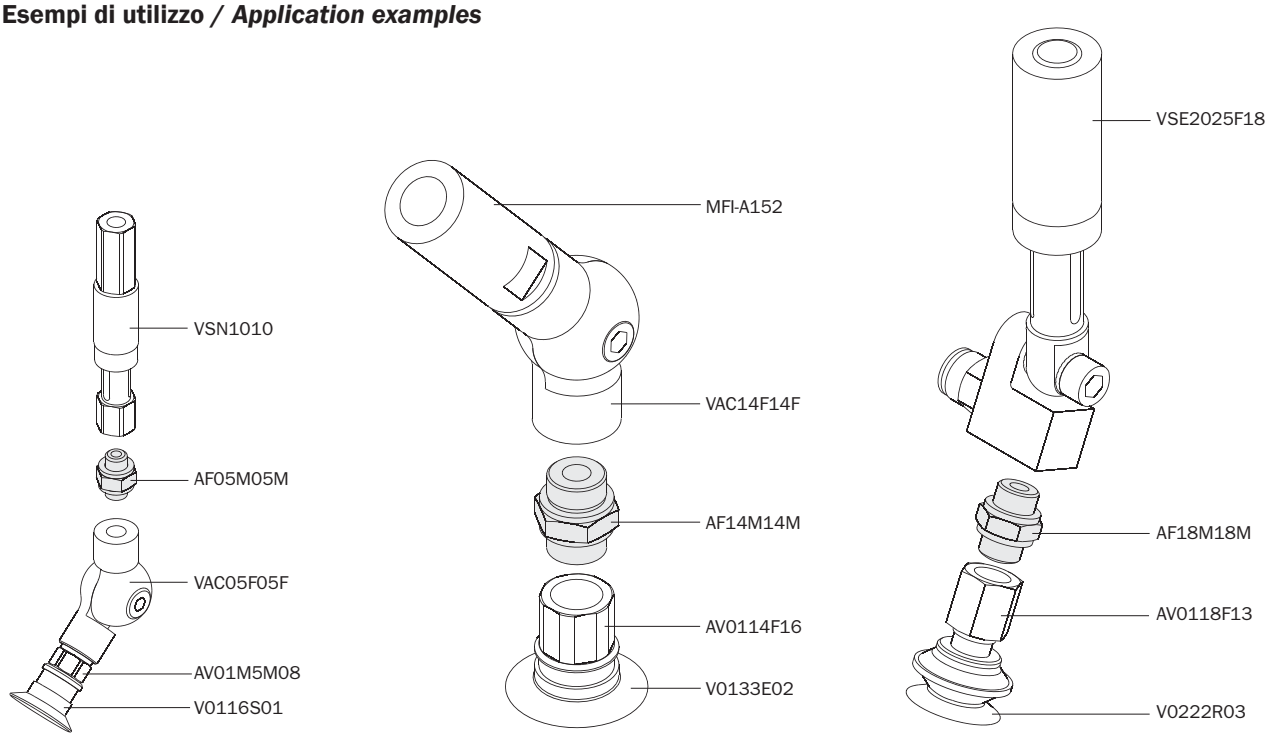
Threaded nipples

FIRST ANGLE PROJECTION



	AF05M05M	AF18M18M	AF14M14M
Peso *Weight*	3 g	4 g	8 g

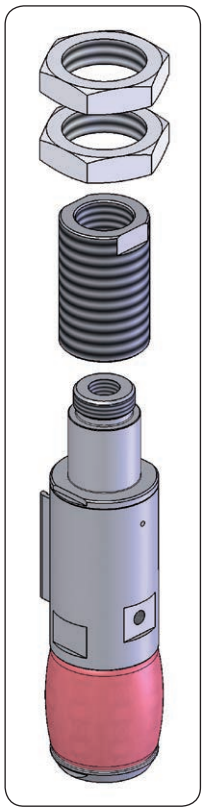
Esempi di utilizzo / *Application examples*

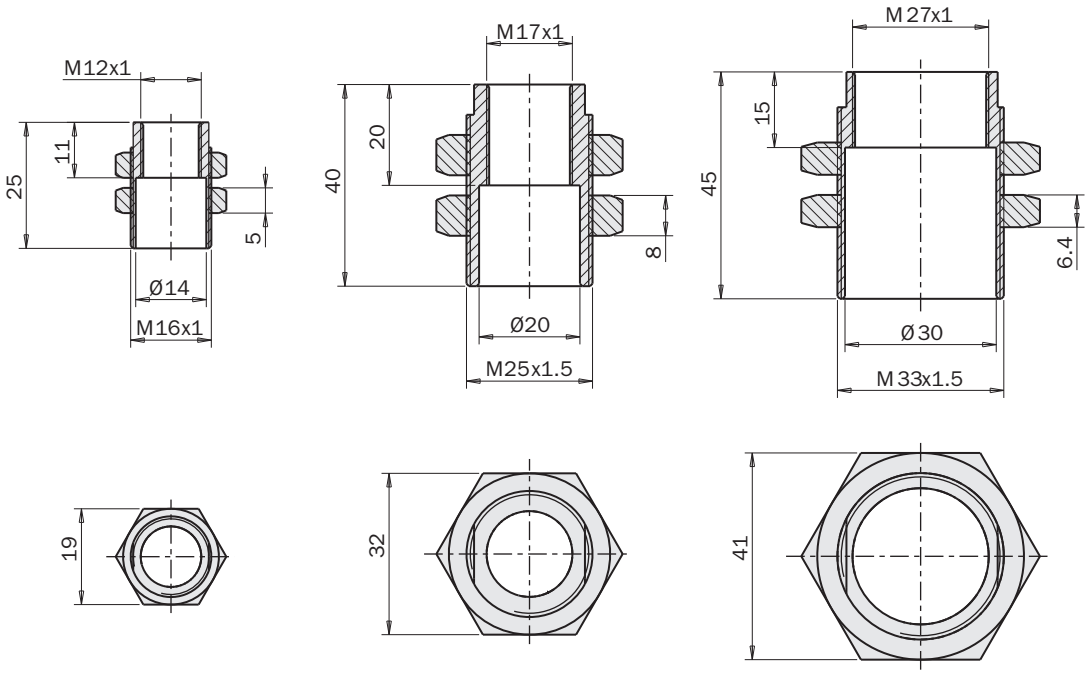


Nippli filettati

Threaded nipples

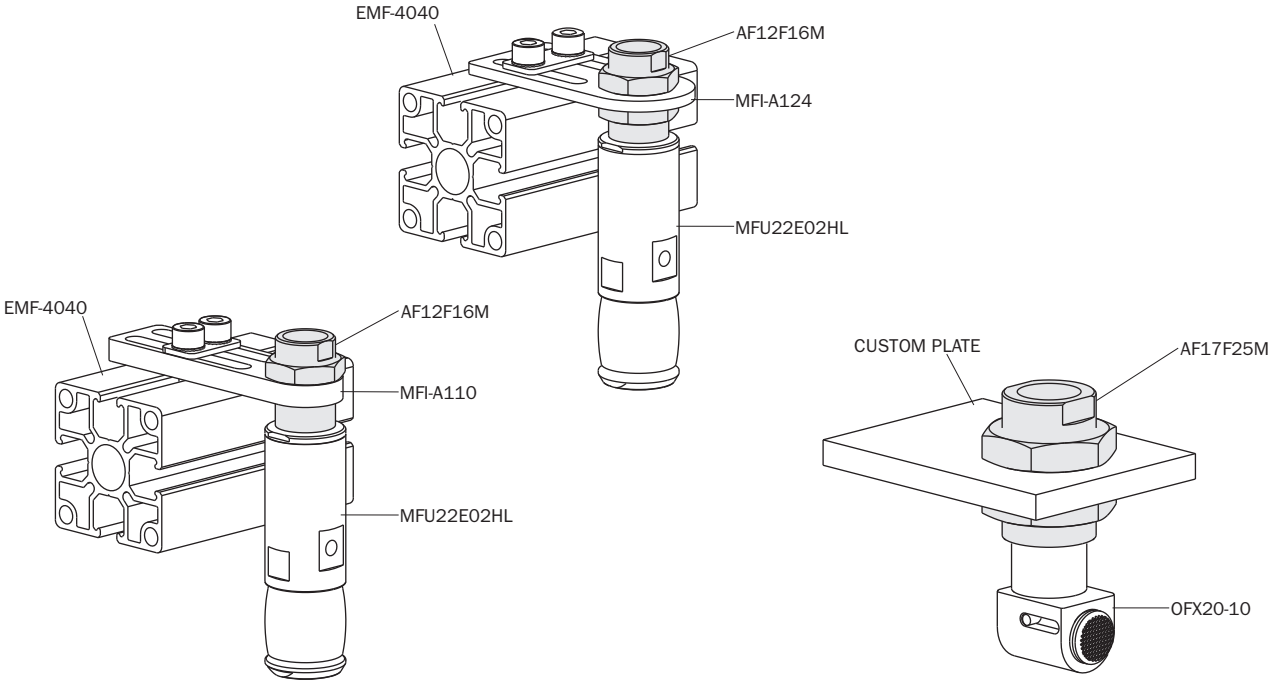
FIRST ANGLE PROJECTION





	AF12F16M	AF17F25M	AF27F33M
Peso *Weight*	25 g	130 g	140 g

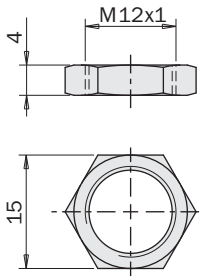
Esempi di utilizzo / *Application examples*



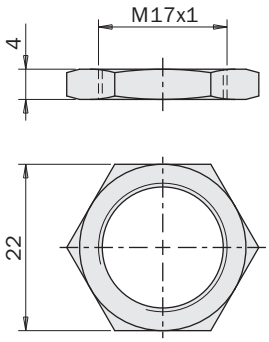
Dadi

Nuts

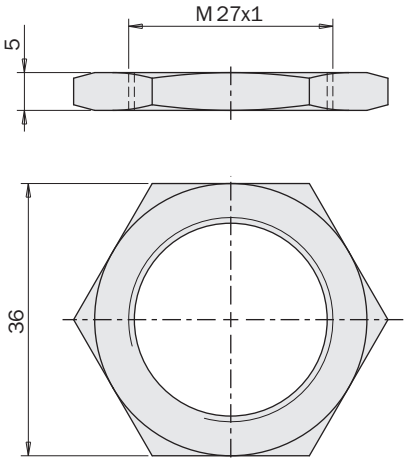
FIRST ANGLE PROJECTION



VITE-293



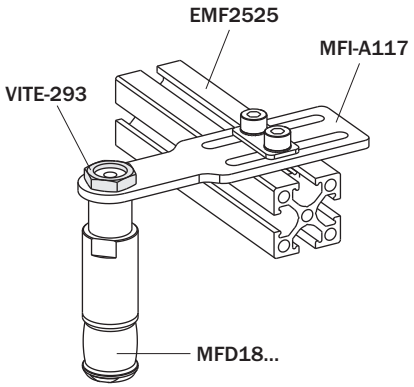
VITE-455

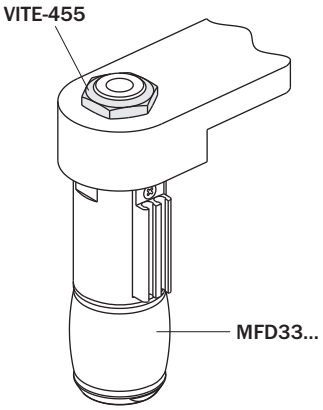


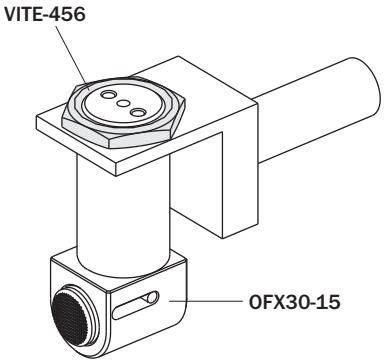
VITE-456

	VITE-293	VITE-455	VITE-456
Peso *Weight*	4 g	7 g	23 g

Esempi di utilizzo / *Application examples*







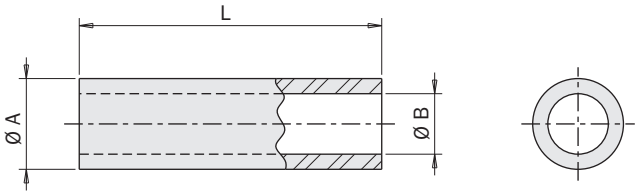
09/2015

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]	
TUB04X2,5B	Nero / Black	4	2.5	20	25	9.49	
TUB04X2,5BL	Blu / Blue	4	2.5	20	25	9.49	
TUB04X2,5GR	Verde / Green	4	2.5	20	25	9.49	
TUB04X2,5RE	Rosso / Red	4	2.5	20	25	9.49	
TUB04X2,5SI	Grigio / Silver	4	2.5	20	25	9.49	
TUB04X2,5YE	Giallo / Yellow	4	2.5	20	25	9.49	
TUB06X4B	Nero / Black	6	4	30	25	19.47	
TUB06X4BL	Blu / Blue	6	4	30	25	19.47	
TUB06X4GR	Verde / Green	6	4	30	25	19.47	
TUB06X4RE	Rosso / Red	6	4	30	25	19.47	
TUB06X4SI	Grigio / Silver	6	4	30	25	19.47	
TUB06X4YE	Giallo / Yellow	6	4	30	25	19.47	
TUB08X6B	Nero / Black	8	6	40	25	30	
TUB08X6BL	Blu / Blue	8	6	40	25	30	
TUB08X6SI	Grigio / Silver	8	6	40	25	30	
TUB08X6YE	Giallo / Yellow	8	6	40	25	30	

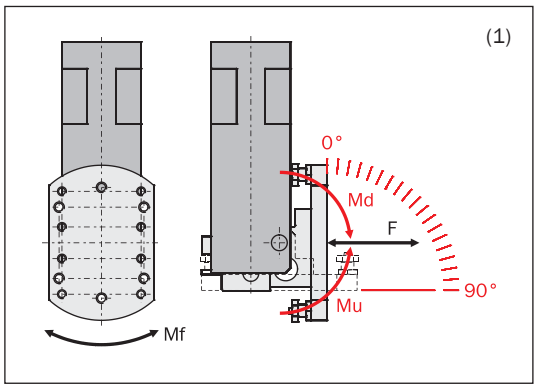
A [Diametro esterno - Outer diameter]
B [Diametro interno - Inner diameter]
R [Raggio di curvatura minimo - Minimum bending radius]
L [Lunghezza - Lenght]
Lm [Peso lineare - Linear mass]
P [Pressione di esercizio - Operating pressure range]
T [Temperatura di esercizio - Operating temperature range]

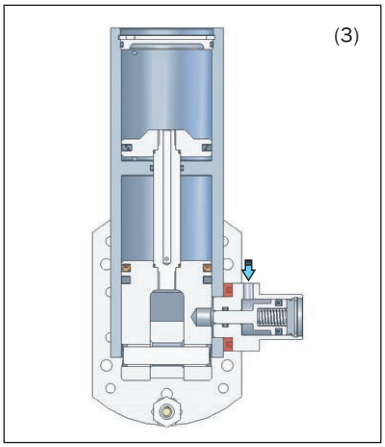
Ribaltatori pneumatici per EOAT serie RBT

- Rotazione di 90° (1).
- Due fine corsa su gomma regolabili (2).
- Elevata coppia di sollevamento.
- Bloccaggio di sicurezza (3).
- 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).*
- *Optional magnetic sensors.*





		RBT40	RBT50	RBT63
Fluido *Medium*		Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*		
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*		± 4°	± 3°	± 2°
Consumo d'aria per ciclo *Cycle air consumption*		135 cm^3	243 cm^3	441 cm^3
Coppia di sollevamento a 6 bar (90° → 0°) *Lift torque at 6 bar (90° → 0°)*	(Mu)	> 24 Nm	> 45 Nm	> 78 Nm
Coppia di abbassamento a 6 bar (0° → 90°) *Drop torque at 6 bar (0° → 90°)*	(Md)	> 11 Nm	> 22 Nm	> 42 Nm
Carico ammissibile *Allowed load*	(F)	100 N	200 N	300 N
Momento ammissibile *Allowed moment*	(Mf)	7 Nm	12 Nm	30 Nm
Peso *Weight*		1050 g	1635 g	2390 g

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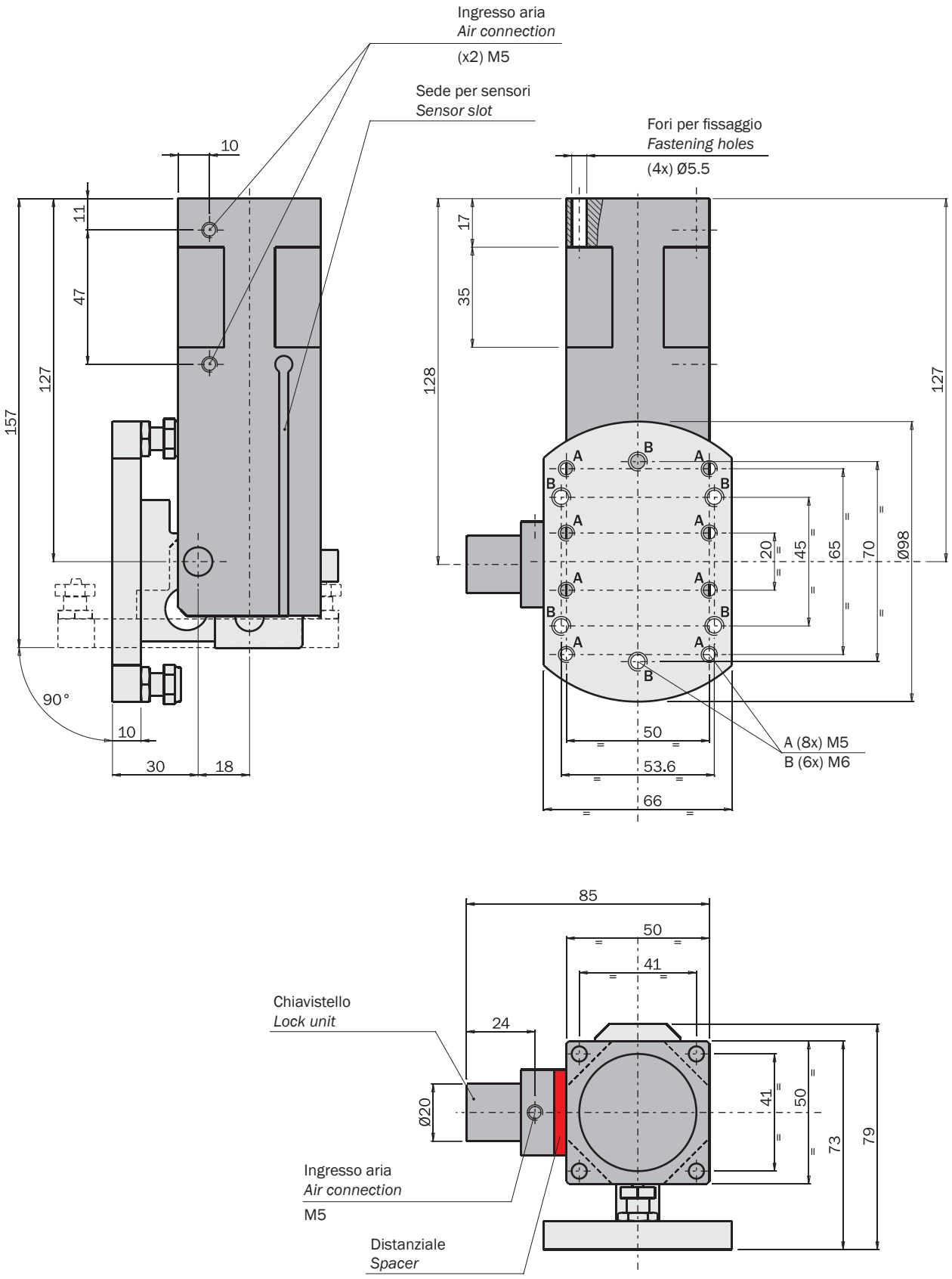
Dimensioni (mm) / *Dimensions (mm)*

RBT40

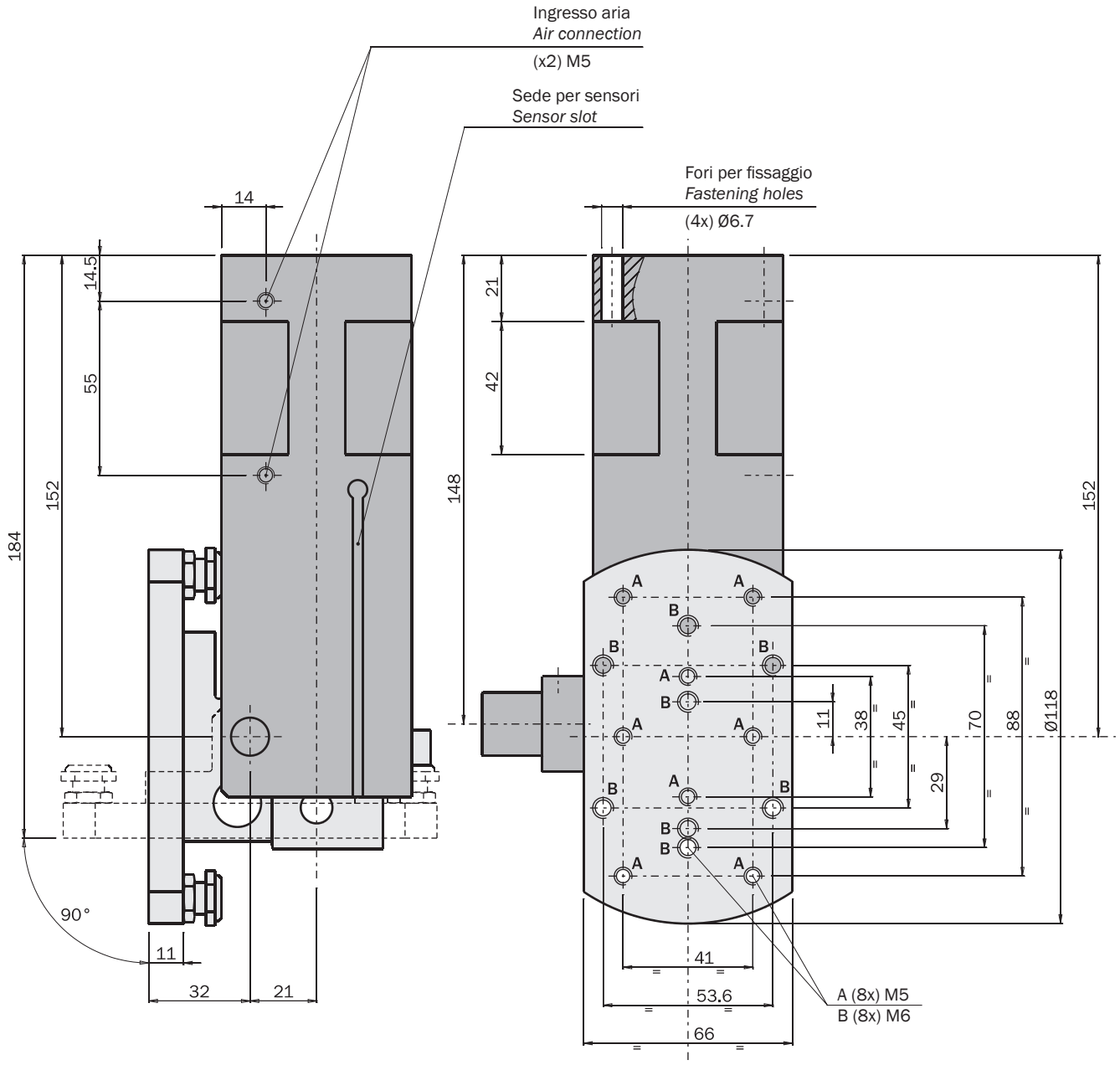


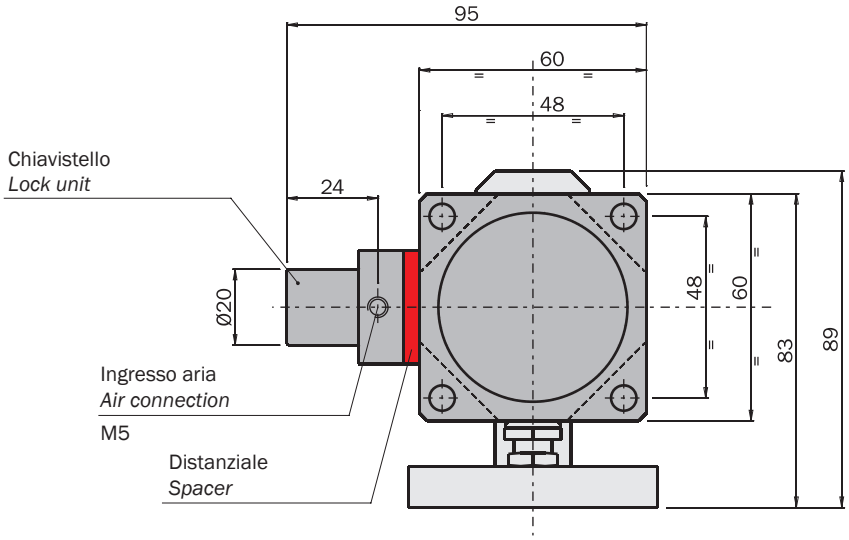
FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

RBT50



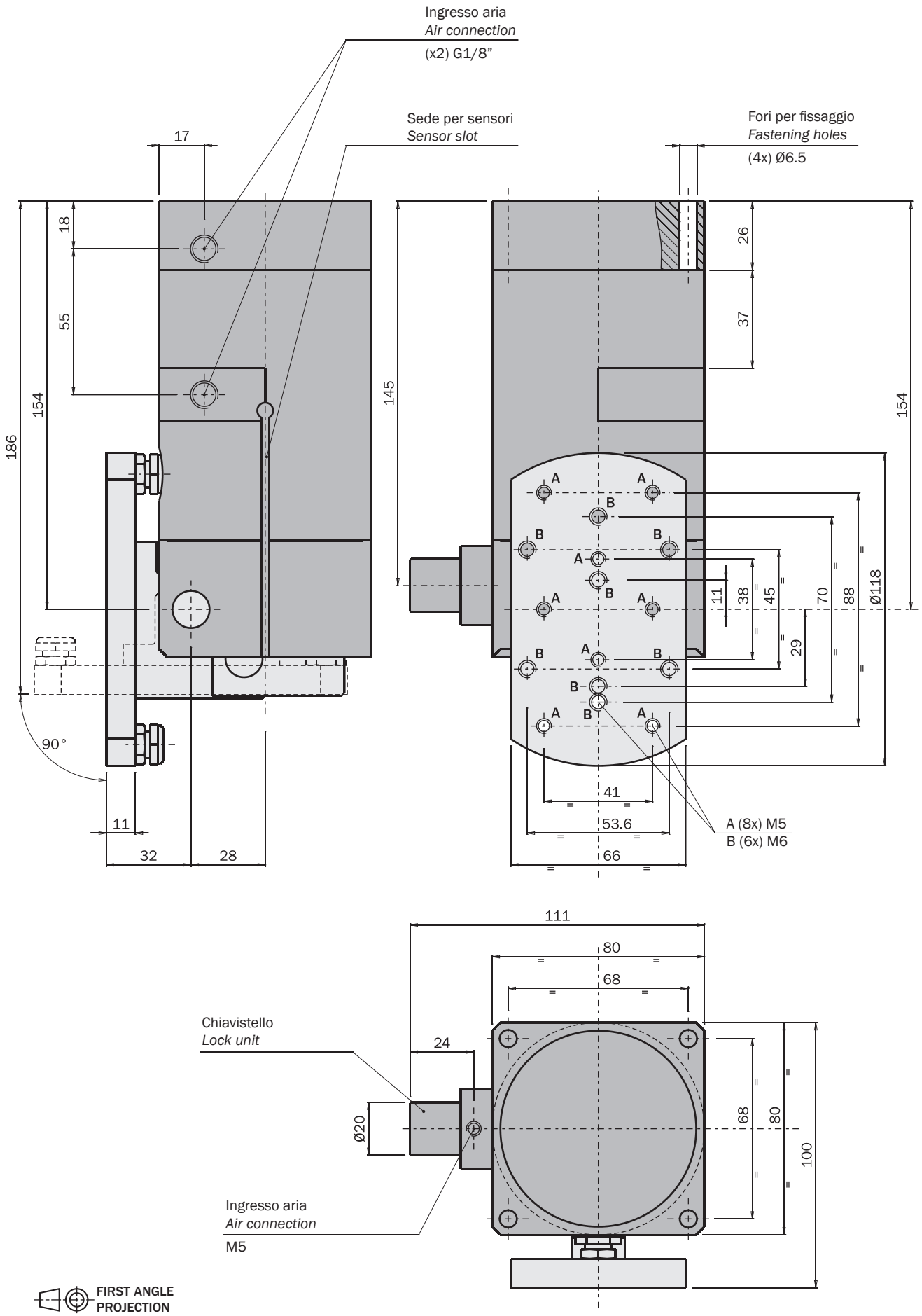


FIRST ANGLE PROJECTION

09/2015

Dimensioni (mm) / *Dimensions (mm)*

RBT63



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Ribaltatore pneumatico per piccoli EOAT, serie OFN

- Rotazione di 90°.
- Funzionamento a semplice effetto.
- Sollevamento con aria compressa, rilascio a molla.
- Vari accessori disponibili per il fissaggio.
- Sensori magnetici opzionali.

Pneumatic tilt unit for small EAOTs, series OFN

- *90° rotation.*
- *Single-acting.*
- *Lifting by compressed air, spring reset.*
- *Several mounting accessories.*
- *Optional magnetic sensors.*

Con due sensori
With two sensors

	OFN30-90
Fluido *Medium*	Aria compressa filtrata, lubrificata / non lubrificata *Filtered, lubricated / non lubricated compressed air*
Pressione di esercizio *Pressure range*	2 ÷ 8 bar
Temperatura di esercizio *Temperature range*	5 ÷ 60 °C.
Corsa angolare *Tilt angle*	90°C.
Consumo d'aria per ciclo *Cycle air consumption*	12.9 cm^3
Coppia di sollevamento a 6 bar *Lift torque at 6 bar*	300 Ncm
Peso *Weight*	210 g

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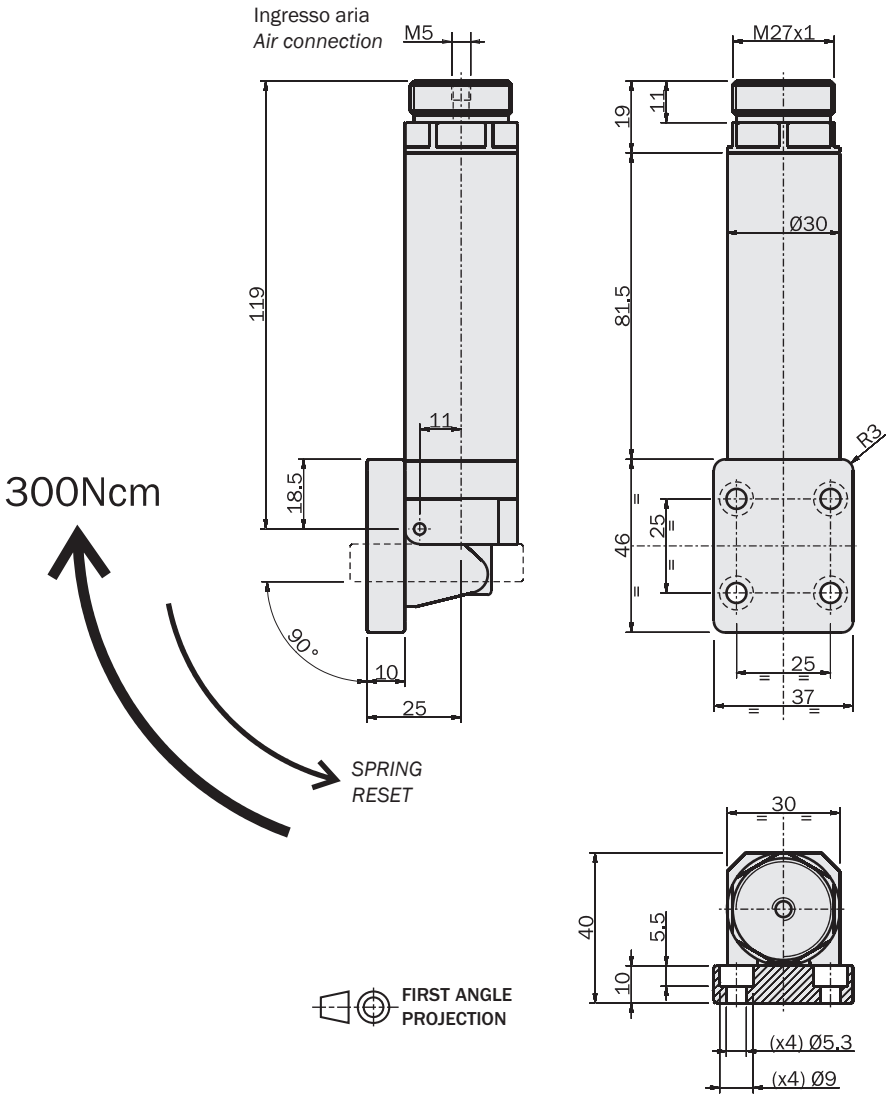
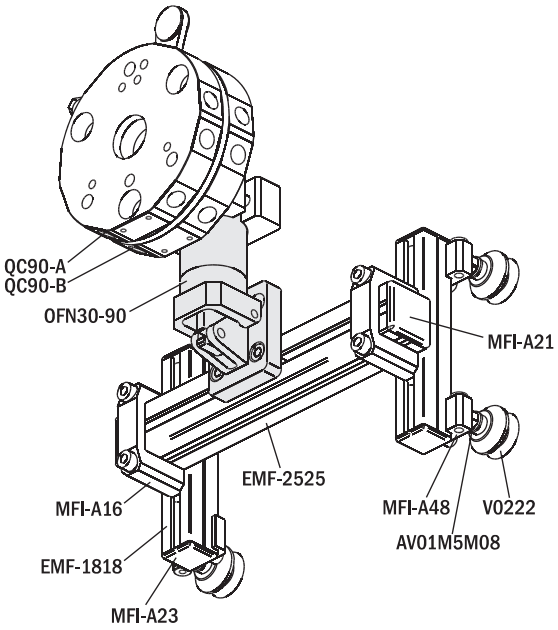
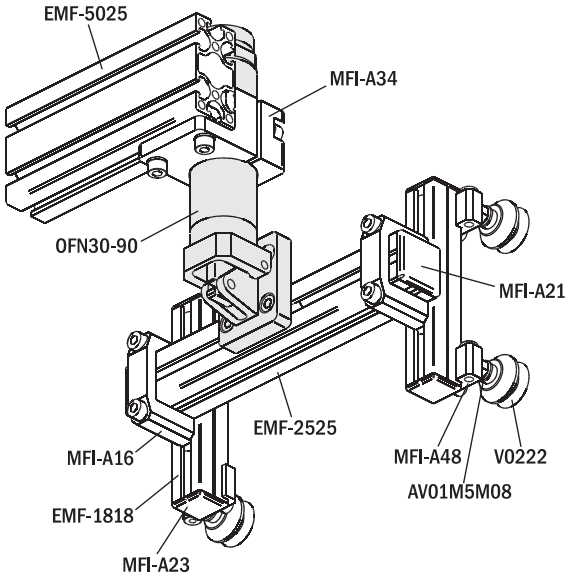
Dimensioni (mm) / *Dimensions (mm)*



Esempi di utilizzo / *Application example*



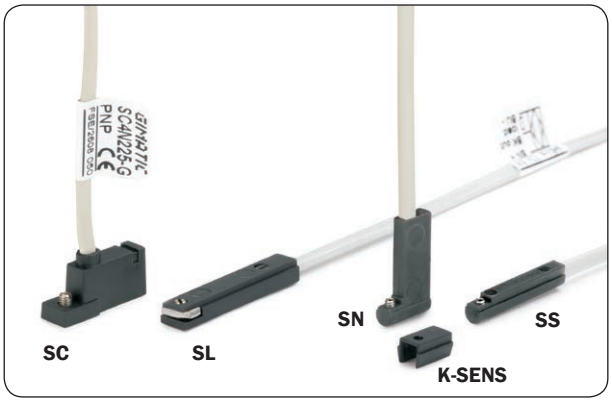


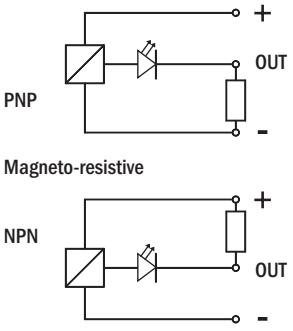
Sensori magnetici

- Sensori magnetorestivi 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” o “T” standard.
- Adattatori per cave K-SENS opzionali.
- Prolunghe 2.5m, 5m e 10m opzionali.

Magnetic sensors

- *GMR magnetoresistive sensors.*
- *PNP or NPN logic output.*
- *No problems in case of vibrations.*
- *Cable or M8 connector output.*
- *100% traceability.*
- *Standard direct “C” or “T” slot application.*
- *Optional K-SENS slot adapters.*
- *Optional 2.5m, 5m and 10m extensions.*





			SC4N225Y PNP 2.5m cable	SC3N203Y PNP M8 Connector	SL4N225-G PNP 2.5m cable	SL4M225-G NPN 2.5m cable	SL3N203-G PNP M8 Connector	SL3M203-G NPN M8 Connector	SN4N225-G PNP 2.5m cable	SN4M225-G NPN 2.5m cable	SN3N203-G PNP M8 Connector	SN3M203-G NPN M8 Connector	SS4N225-G PNP 2.5m cable	SS4M225-G NPN 2.5m cable	SS3N203-G PNP M8 Connector	SS3M203-G NPN M8 Connector
	⊔	∪														
AA	●		☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑(1)	☑(1)	☑(1)	☑(1)
AGG		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
AQC		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
DD		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
GN-240 / GN-263		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
GN...S		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
GS-10	●		☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑(1)	☑(1)	☑(1)	☑(1)
GS-16 / GS-20 / GS-25		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
GS-16 / GS-20 / GS-25	●		☑	☑	☑	☑	☑	☑	☐	☐	☐	☐	☑(1)	☑(1)	☑(1)	☑(1)
GW-10	●		☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑(1)	☑(1)	☑(1)	☑(1)
GW-16 / GW-20 / GW-25		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
GW-16 / GW-20 / GW-25	●		☑	☑	☑	☑	☑	☑	☐	☐	☐	☐	☑(1)	☑(1)	☑(1)	☑(1)
MFD / MFU		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
OFA...S / OFR...S / OFS...S		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
OFL		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
PQ16 / PQ20 / PQ25		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐
PQ30 / PQ35 / PQ45 / PQ50 / PQ60		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
RBT		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
TFA...S		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
ZG...S		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
ZJ		●	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑
LOQC		●	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑

(1)
Utilizzando l’adattatore fornito nella confezione K-SENS.

(1)
Using the adapter included in the K-SENS pack.

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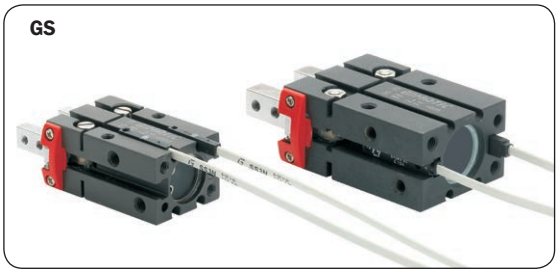
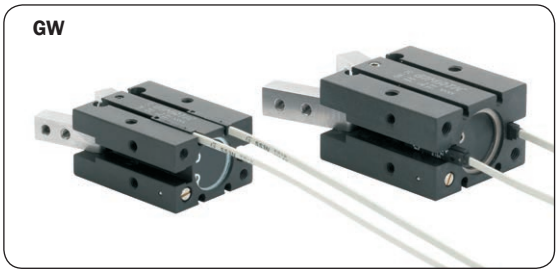
Esempi di utilizzo / *Application example*

GS



GW



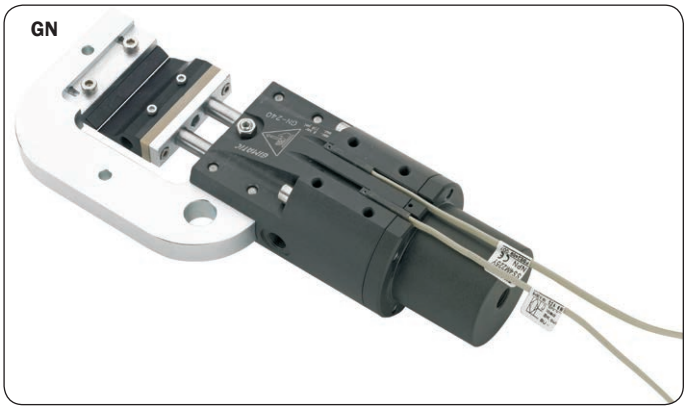
OF

GN

DD

ZG

GN



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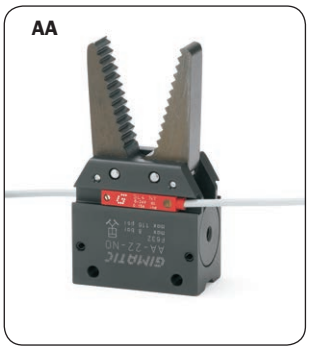


AQC

RBT

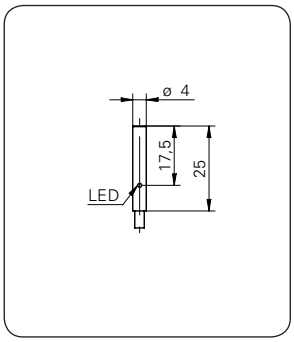
AGG

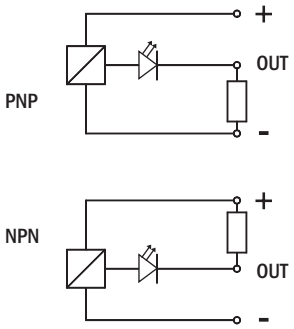
Sensori induttivi

- Sensori induttivi Ø4 mm a profilo pulito.
- Uscita in logica PNP o NPN.
- Distanza di lettura 1 mm.
- Uscita cavo 2 m.
- Nessun problema in caso di vibrazioni.

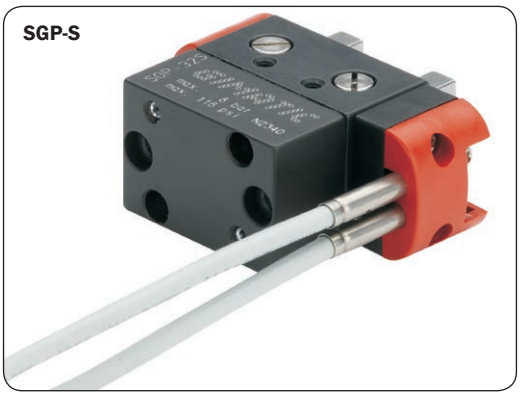
Inductive sensors

- *Ø4 mm inductive sensors with clean design profile.*
- *PNP or NPN logic output.*
- *1 mm sensing distance.*
- *2 m cable output.*
- *No problems in case of vibrations.*





	SI4M225-G NPN 2.5m cable	SI4N225-G PNP 2.5m cable
AQC	☑	☑
SGP-25S / SGP-32S / SGP-40S	☑	☑
LOQC	☑	☑

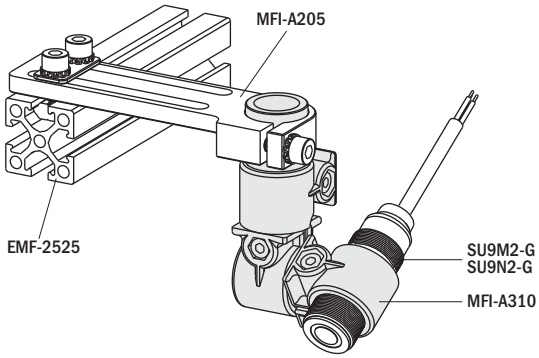


Sensori ultrasonici

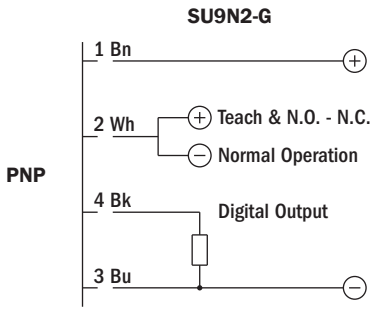
- Sensori ultrasuoni M18x1 mm.
- Uscita digitale PNP/NPN programmabile in logica NA o NC.
- Campo di lettura 40-300 mm con punto programmabile a mezzo Teach esterno.
- Uscita connettore M12, 4 pin.
- Corpo plastico corto e leggero.
- Ghiere e rondelle incluse.

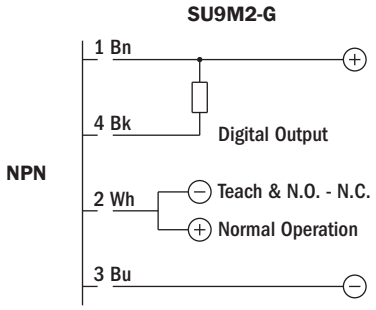
Ultrasonic sensor

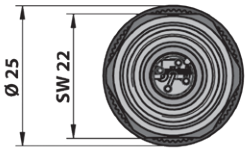
- *M18x1 mm ultrasonic sensors.*
- *PNP/NPN digital output with NO or NC programmable logic.*
- *40-300 mm sensing range with programmable point via External Teach.*
- *M12, 4 pin connector output.*
- *Short and lightweight plastic body.*
- *Lock nuts and washers included.*

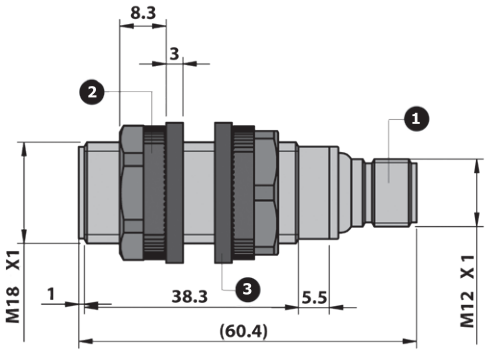


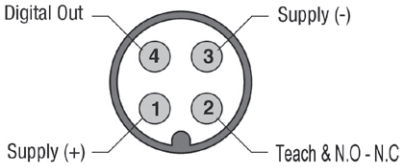
	SU9N2-G PNP	SU9M2-G NPN
Massima distanza di rilevamento *Maximum sensing distance*	300 mm	
Minima distanza di rilevamento (zona morta) *Minimum sensing distance (blind zone)*	40 mm	
Apertura fascio angolare *Beam angle*	±10°	
Tempo di risposta (uscita digitale) *Response time (digital output)*	13 ms	
Range di temperatura *Temperature range*	-20°÷60°C	
Compensazione in temperatura *Temperature compensation*	si *yes*	
Tensione di alimentazione *Operating voltage*	+15÷30 Vcc	
Caduta di tensione in uscita *Output voltage drop*	2.2 V max. @ (IL=100 mA)	
Corrente assorbita *No-Load supply*	≤ 40 mA	
Corrente di uscita (uscita digitale) *Maximum load current (digital output)*	100 mA	
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	
Grado di protezione *Protection degree*	IP67	
Coppia di serraggio *Tighteening torque*	1 Nm	
Peso (uscita connettore) *Weight (plug exit)*	15 g (uscita connettore) *15 g (plug exit)*	











Codice connettore / *Connector code*

CF G M8 00 3 25 P

Serie / *Series*

CF

Tipo / *Type*

G Metallica / Metal
S Snap

Filetto / *Thread*

M8 M8x1
M12 M12x1

Angolo / *Angle*

00 0°
90 90°

Numero PIN / *PIN number*

2
3
4

Lunghezza cavo / *Cable leght*

... 0 m
25 2.5 m
30 3 m
50 5 m
1K 10 m

Personalizzazione / *Personalization*

... PVC
P PUR

Materiali connettore *Connector type*	PVC / ottone dorato *PVC / gold plated brass*
Temperatura di esercizio *Temperature range*	-25 ÷ 75°C
Cavo *Cable*	PVC CEI 20-22II O.R 0.25mm² / AWG 26 / 32 x 0.1 mm²
Grado di protezione *Environmental protection degree*	IP67 EN60529
Normative di riferimento *Reference norm*	CEI 20/22 II O.R. CEI EN 60947-5-2

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Note / *Notes*

Indice dei codici / *Code index*

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