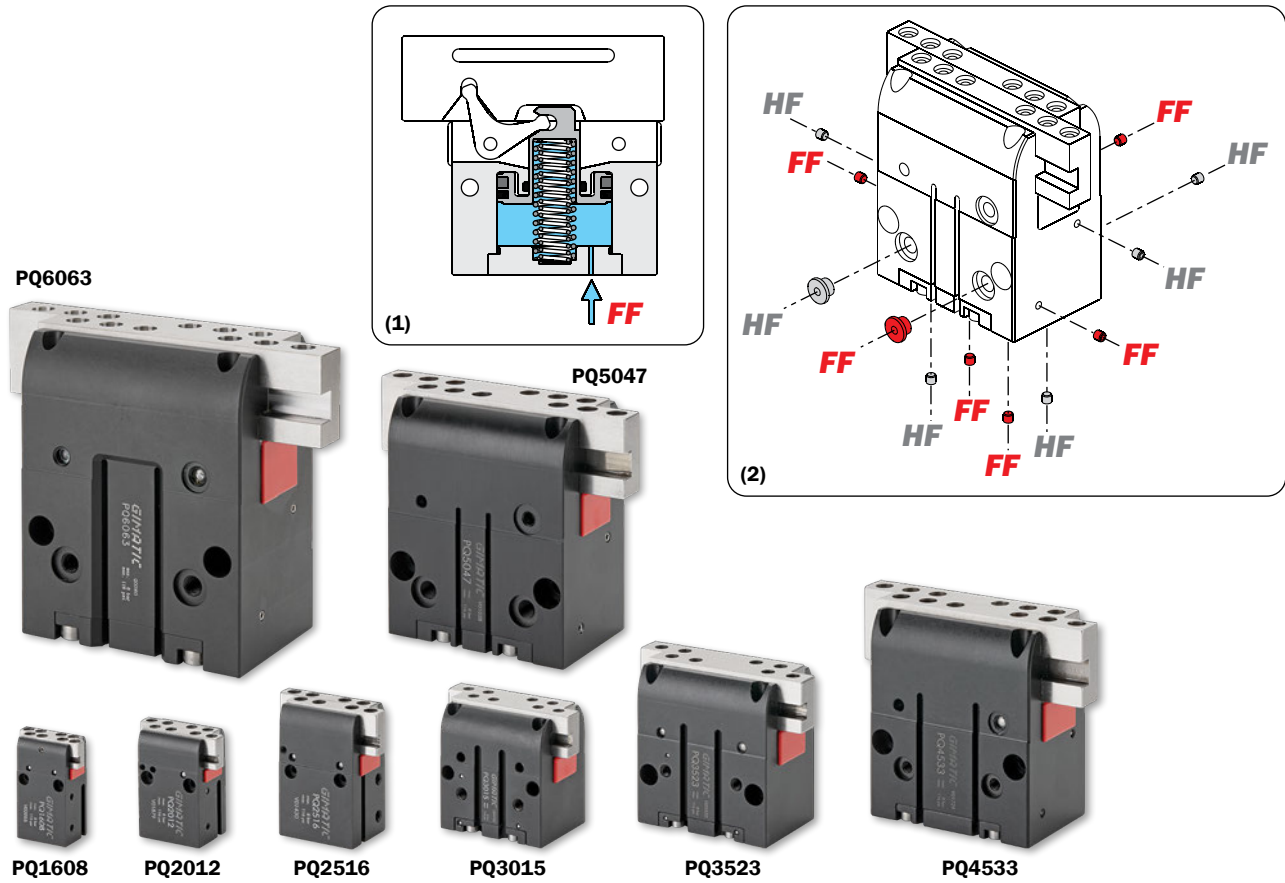


2-jaw self-centering pneumatic parallel gripper (series PQ)

- Robust guide.
- Long stroke.
- Integrated springs (1).
- Various fastening and air feeding options (2).
- FDA-H1 food-grade grease.



	PQ1608	PQ2012	PQ2516	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
Medium	Compressed air in compliance with ISO 8573-1:2010 [7:4:4]							
Operating pressure range	3.5 ÷ 8 bar							
Operating temperature range	5 ÷ 100 °C							
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
Total gripping force (6 bar in FF)	120 N	180 N	300 N	400 N	560 N	920 N	1340 N	1860 N
Total stroke	8 mm	12 mm	16 mm	15 mm	23 mm	33 mm	47 mm	63 mm
Maximum working frequency	2 Hz	2 Hz	2 Hz	2 Hz	2 Hz	1 Hz	1 Hz	1 Hz
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
Gripping time (air in FF)	20 ms	40 ms	40 ms	60 ms	60 ms	100 ms	140 ms	190 ms
Release time (air in HF)	20 ms	50 ms	50 ms	110 ms	110 ms	160 ms	230 ms	400 ms
Repetition accuracy	0.02 mm							
Weight	63 g	110 g	200 g	330 g	610 g	1270 g	2430 g	4900 g

Pneumatic circuit

Possible problems on a compressed air supply circuit:

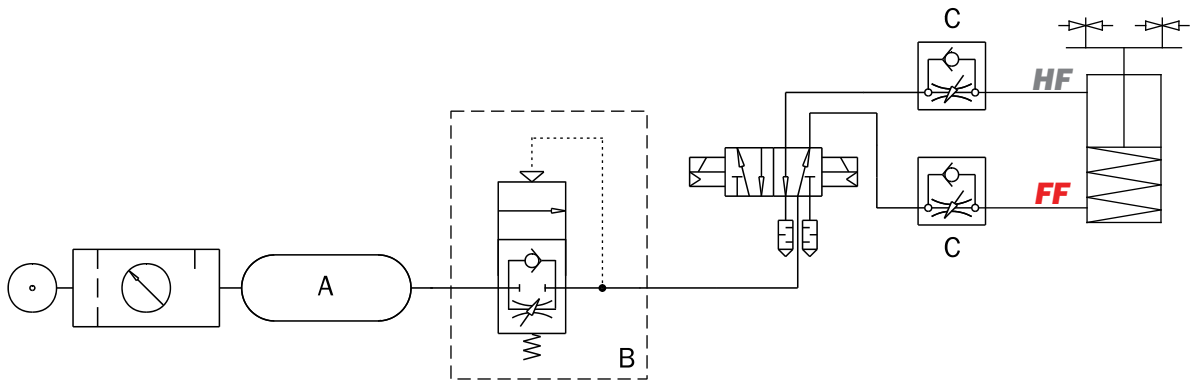
- 1- Pressure variation.
- 2- Pressurizing with empty gripper.
- 3- Excessive operating speed.

Possible solutions:

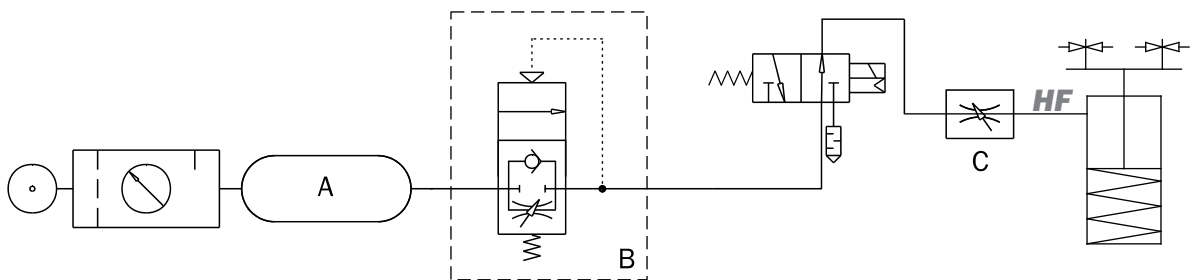
- 1- External air tank (A).
- 2- Start-up valve (B).
- 3- Flow controller (C).

The gripper can operate either in single-effect mode or double-effect mode.

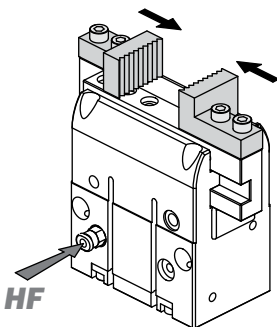
The double-effect mode (see circuit below, with 5/2 valve) is recommended when the highest gripping force is required.



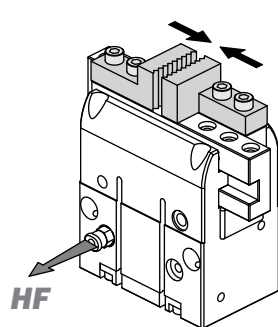
For single-effect operation with reset spring, the pneumatic circuit must be similar to that shown below, with a 3/2 valve.



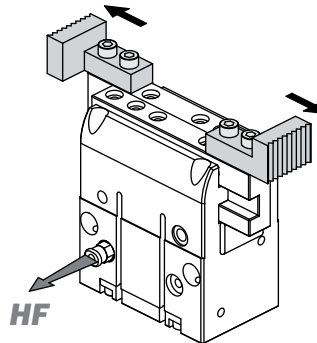
Normally open with outside gripping



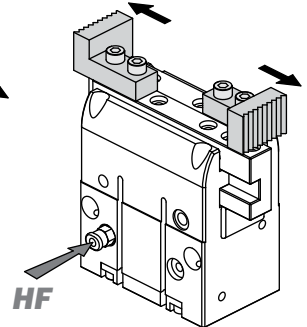
Normally closed with outside gripping



Normally open with inside gripping



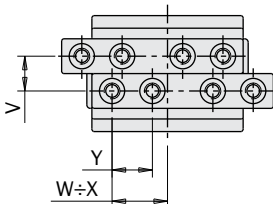
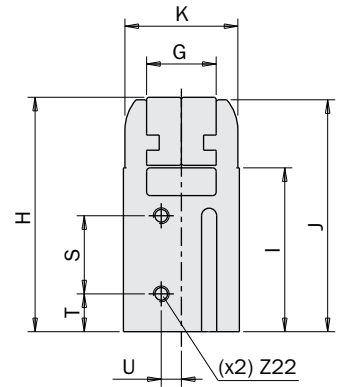
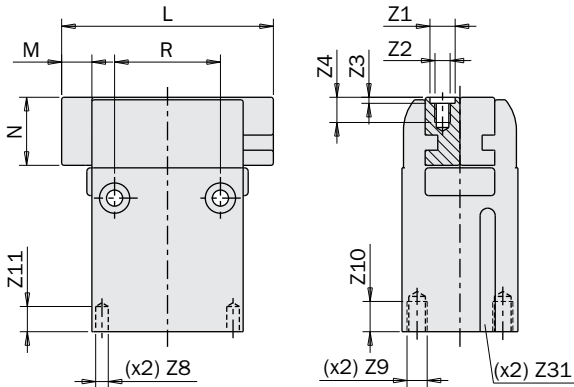
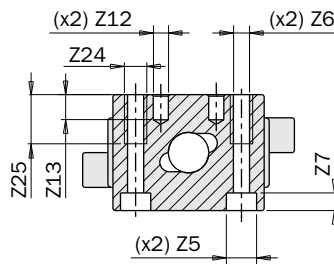
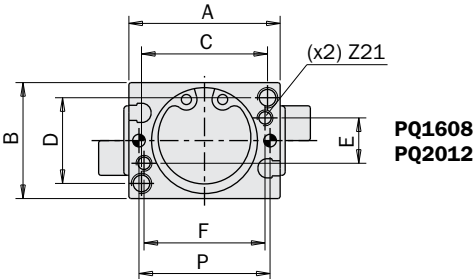
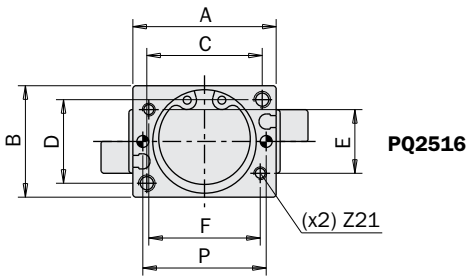
Normally closed with inside gripping



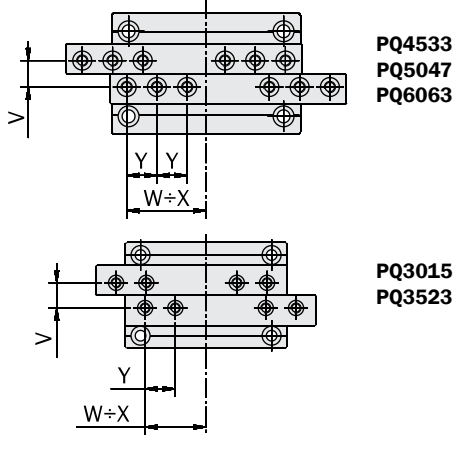
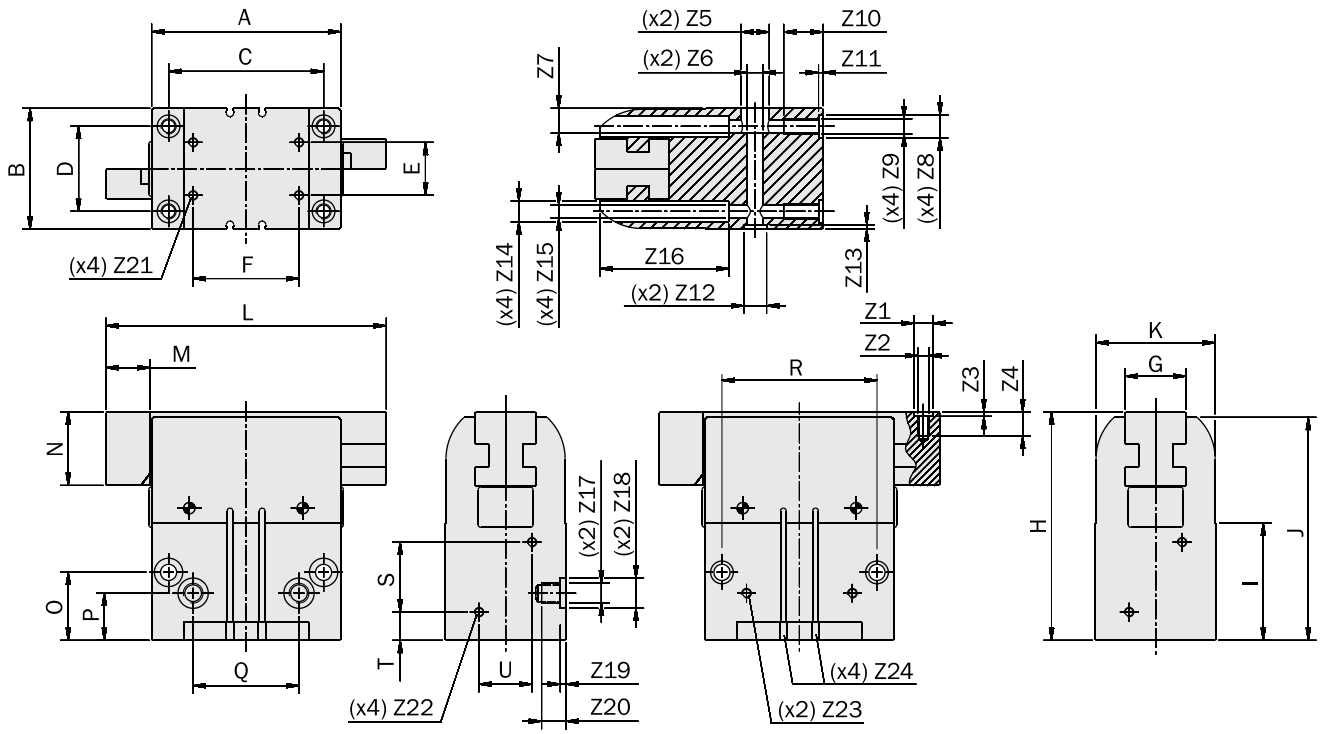
Dimensions (mm)

- Z1** Spot face for the centering sleeve of the gripping tool
- Z2** Threaded hole for the gripping tool fastening
- Z6** Through hole for the gripper side fastening
- Z9** Threaded hole for the gripper fastening on the bottom
- Z12** Spot face for the centering sleeve of the gripper body
- Z21** Ports for direct air supply from the bottom
- Z22** Air supply ports
- Z23** Air supply ports
- Z31** Magnetic sensor slots

	PQ1608	PQ2012	PQ2516
A	24	30	36
B	18	23	28
C±0.02	20	25	29
D±0.02	14	17	21
E	6.6	8	16
F	20	25	28
G	11	13.8	16
H	44	46.5	57
I	32.5	32.5	37.5
J	43.5	46	56
K	17.5	22.4	27
L	32	42	52
M	4	6	8
N	11	13.5	18
O±0.02	26	26.5	28.5
P	21	26	31
Q	7.5	8.5	11
R±0.02	17	21	24
S	13.5	15.3	16
T	7	7.5	8
U	3.7	4	8
V	5.5	6.9	8
W	13	17	21
X	9	11	13
Y±0.02	6	8	9
Z1	Ø5 H8	Ø5 H8	Ø6 H8
Z2	M3	M3	M4
Z3	1.2	1.2	2.5
Z4	4	5	7.5
Z5	Ø5	Ø6	Ø6
Z6	Ø2.6	Ø3.2	Ø3.2
Z7	3	3.5	3.5
Z8	Ø2 H7	Ø2.5 H7	Ø3 H7
Z9	M3	M4	M4
Z10	5	6	6
Z11	3	5	5
Z12	Ø2 H7	Ø2.5 H7	Ø3 H7
Z13	3	5	5
Z21	M2	M2.5	M3
Z22	M3	M3	M5
Z23	M2.5	M3	M3
Z24	M3	M4	M4
Z25	7	7	7
Z30±0.02	9	11	12



Dimensions (mm)



- Z1** Spot face for the centering sleeve of the gripping tool
- Z2** Threaded hole for the gripping tool fastening
- Z6** Through hole for the gripper side fastening
- Z9** Threaded hole for the gripper fastening on the bottom
- Z12** Spot face for the centering sleeve of the gripper body
- Z15** Through hole for the gripper fastening on the bottom
- Z17** Main port for air fittings
- Z21** Ports for direct air supply from the bottom
- Z22** Air supply ports
- Z23** Air supply ports
- Z24** Magnetic sensor slots

	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

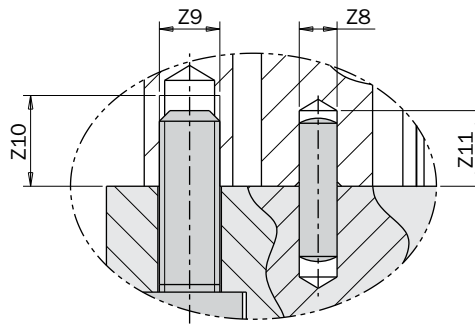
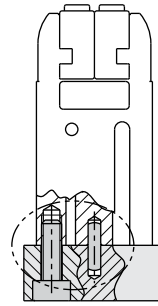
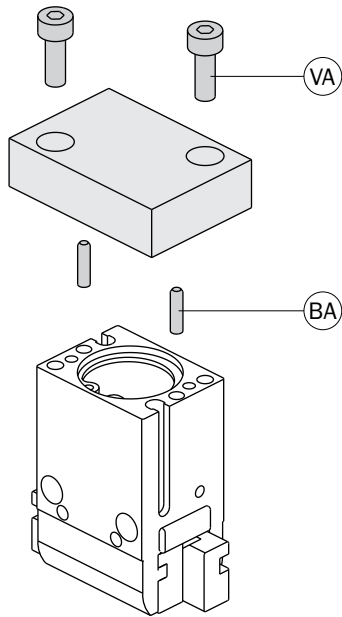
Rotary Units
Quick Changer
Profiles and Brackets
Grippers
Linear Actuators
Suspensions
Nippers
Robot Kit
Options
Sensors

Gripper fastening

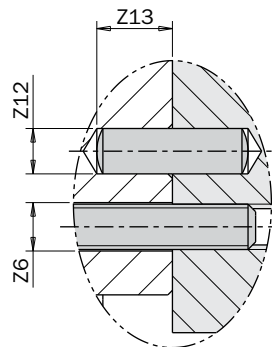
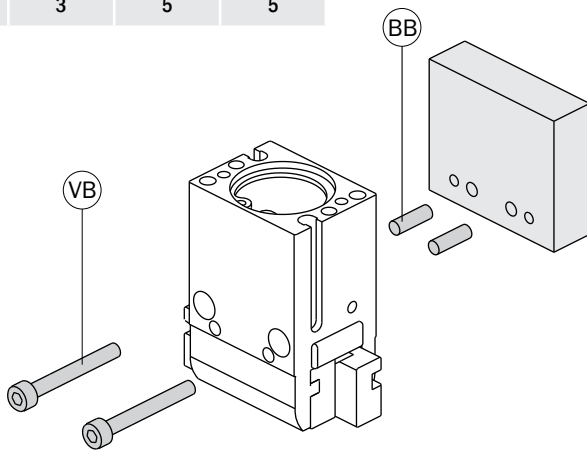
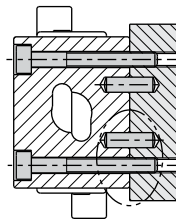
The gripper can be fastened to a static or moving part. When on a moving part, you must pay attention to the inertial force to which the gripper and its load are subjected.

The gripper can be mounted from the bottom using two screws (VA) and two dowel pins (BA).

It can also be mounted on the side using two screws (VB) and two dowel pins (BB).



	PQ1608	PQ2012	PQ2516
Z6	Ø2.6	Ø3.2	Ø3.2
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



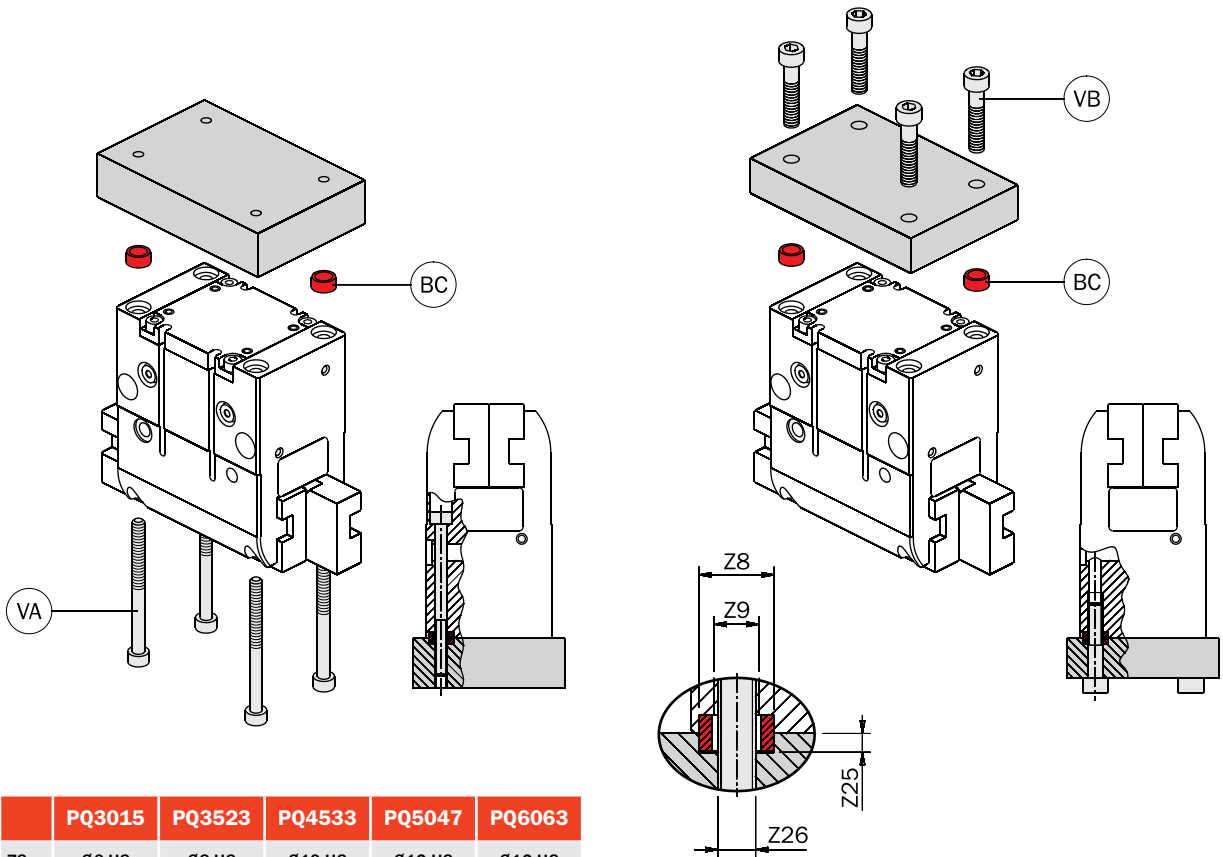
Gripper fastening

The gripper can be fastened to a static or moving part. When on a moving part, you must pay attention to the inertial force to which the gripper and its load are subjected.

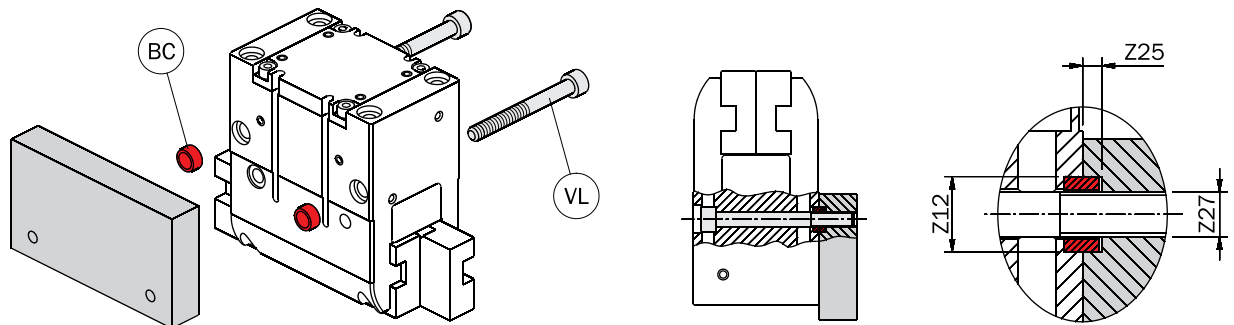
The gripper can be fastened either from the top or from the bottom.

4 centering sleeves for the gripping tools (BD) and 2 centering sleeves for the body (BC) are supplied in the package.

The gripper can also be fastened on one side by 2 screws (VL) and 2 centering sleeves (BC).



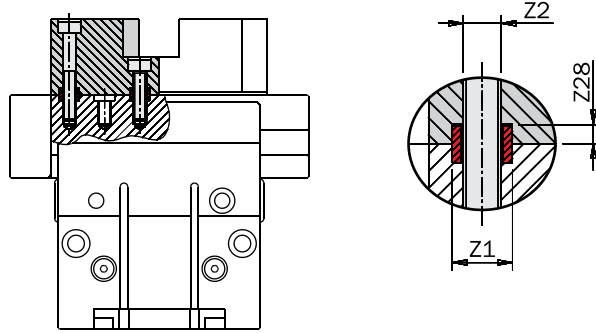
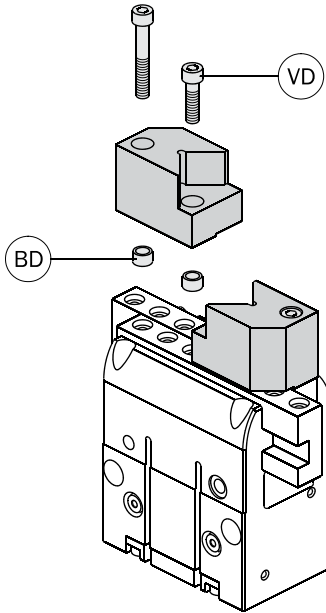
	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
Z8	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8	Ø12 H8
Z9	M4	M5	M6	M8	M8
Z12	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8	Ø12 H8
Z25	2.8	2.5	2.5	2.5	2.5
Z26	M3	M4	M5	M6	M6
Z27	M3	M5	M6	M8	M8



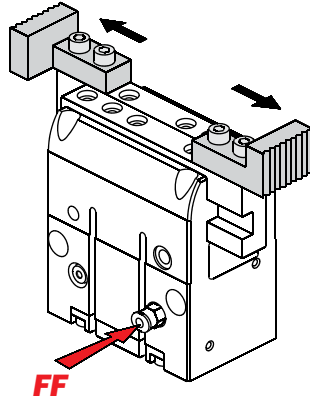
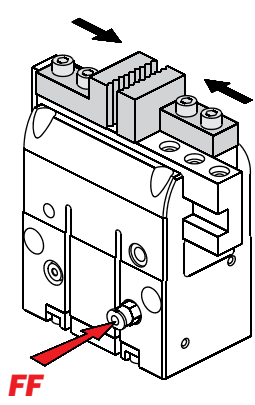
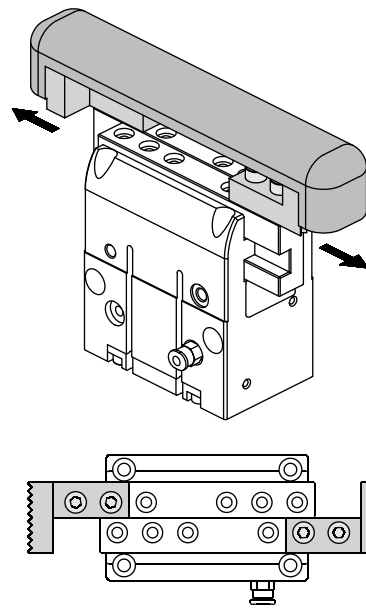
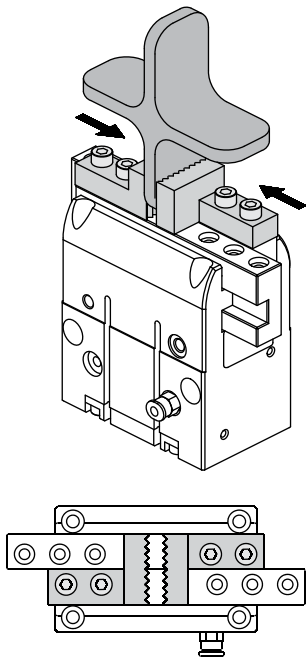
Fitting the gripping tools

The gripping tools must be as short and light as possible. They must be fastened by 2 screws (VD) and 2 centering sleeves (BD).

To achieve the maximum gripping force, the gripping tools should be fastened as shown in the pictures below, depending on whether the gripper is used for outside or inside gripping.



	PQ1608	PQ2012	PQ2516	PQ3015	PQ3523	PQ4533	PQ5047	PQ6063
Z1	Ø5 H8	Ø5 H8	Ø6 H8	Ø5 H8	Ø6 H8	Ø8 H8	Ø10 H8	Ø12 H8
Z2	M3	M3	M4	M3	M4	M5	M6	M6
Z28	1.2	1.2	2.5	1.2	2.8	2.5	2.5	2.5

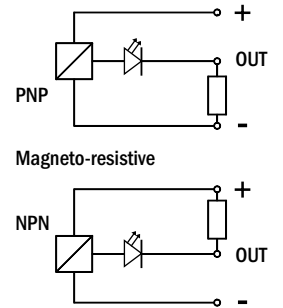


Sensors

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

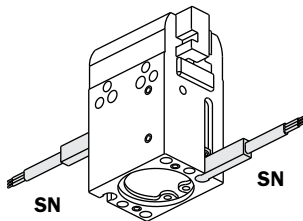
The sensors that can be used are:

				PQ16 PQ20 PQ25	PQ30	PQ35 PQ45 PQ50 PQ60
SN4N225G	PNP	2.5m cable	\$27.20	☑	☑	☑
SN4M225G	NPN	2.5m cable	\$27.20	☑	☑	☑
SN3N203G	PNP	M8 snap plug connector	\$31.16	☑	☑	☑
SN3M203G	NPN	M8 snap plug connector	\$31.16	☑	☑	☑
SS4N225G	PNP	2.5m cable	\$27.20	☐	☑ (1)	☑
SS4M225G	NPN	2.5m cable	\$27.20	☐	☑ (1)	☑
SS3N203G	PNP	M8 snap plug connector	\$31.16	☐	☑ (1)	☑
SS3M203G	NPN	M8 snap plug connector	\$31.16	☐	☑ (1)	☑

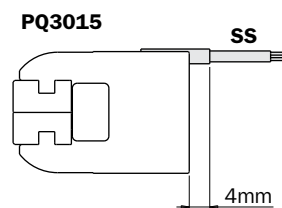
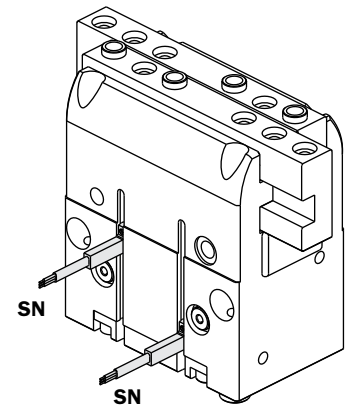
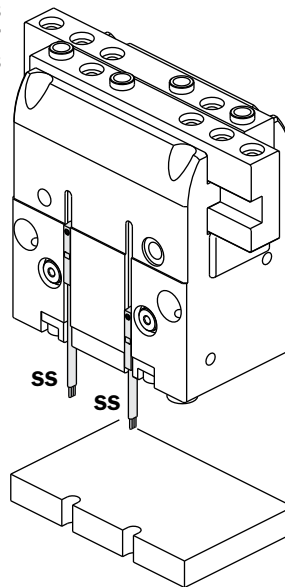


They are all provided with a 3-wire flat cable and a LED.

**PQ1608
PQ2012
PQ2516**



**PQ3015
PQ3523
PQ4533
PQ5047
PQ6063**



(1) On the PQ3015 the SS sensors protude 4mm.