

## 2-jaw radial self-centering electric gripper

- Plug & play user friendly gripper.
- No electricity consumption when gripper is engaged.
- No programming required.
- Gripper retention guaranteed in event of blackout.
- Self Adapting jaws part.
- Long life Brushless motor (Brushless DC).
- Built-in motor driver.
- 24 Vdc Low Voltage Power Supply.
- M8x1, 3 poles standard connection.
- Controllable by PLC as a pneumatic valve.
- Exclusive self-centering system.
- Fiber-carbon gear reduction.
- 10 million cycle maintenance-free.
- Well protected against dusty environments.
- Weight-dimensions-force best trade off.
- Rotary actuator fitting compatible.
- Optional inductive sensors.



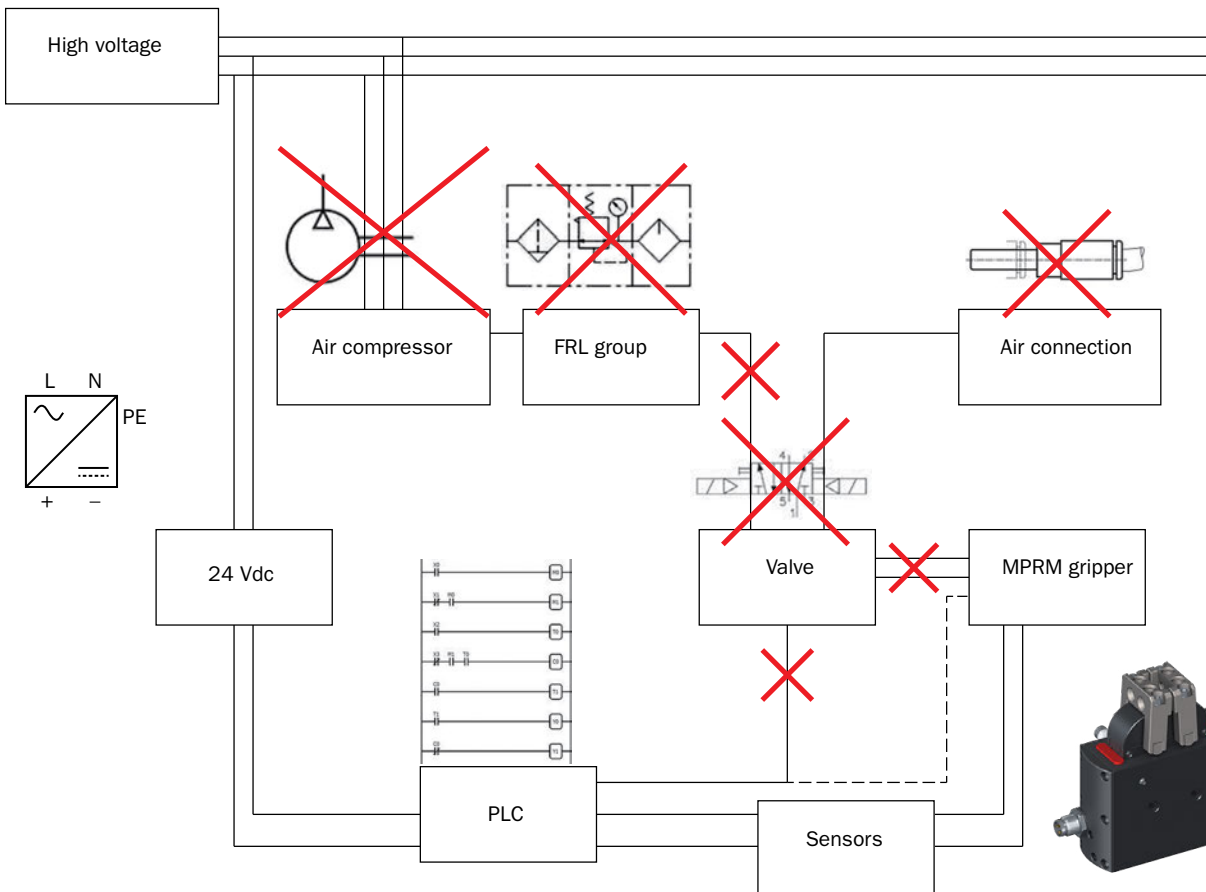
MPRM1690



MPRM2590



MPRM3290





	MPRM1690	MPRM2590	MPRM3290
Price	\$1,193.00	\$1,259.00	\$1,327.00
Total gripping torque	52 Ncm	90 Ncm	256 Ncm
Stroke	2x93°(±2°)	2x93°(±2°)	2x93°(±2°)
Frequency at an ambient temperature of 30°C	0.85 Hz	1.2 Hz	0.9 Hz
Jaw closing time	0.24 s	0.31 s	0.39 s
Working gripper time	0.43 s	0.42 s	0.45 s
Duty cycle at an ambient temperature of 30°C	73%	100%	83%
Power supply	24 Vdc ±10%	24 Vdc ±10%	24 Vdc ±10%
Peak current	0.9 Apk	1.2 Apk	3.8 Apk
Nominal current	0.3 Arms	0.4 Arms	0.8 Arms
Brushless motor power	6 W	11 W	23 W
Connection	M8 - 3 poles		
Open/closed input signal	PNP open collector		
Repetition accuracy	0.06°	0.06°	0.06°
Operating temperature	41-140°F		
Environmental Degree	IP54	IP54	IP54
Noise level	< 70 dB	< 70 dB	< 70 dB
Mass (motor included)	210 g	445 g	730 g
Maximum inertial load	-	-	-
IPA Clean Room Certification	-	-	-
Reference standards	EN 61000-6-2 + EC + IS1; EN 61000-6-3 + A1		
Barycentric moment of inertia	0.92 kgcm <sup>2</sup>	3.27 kgcm <sup>2</sup>	7.56 kgcm <sup>2</sup>
Barycentric moment of inertia	1.19 kgcm <sup>2</sup>	4.09 kgcm <sup>2</sup>	9.68 kgcm <sup>2</sup>
Barycentric moment of inertia	0.5 kgcm <sup>2</sup>	1.62 kgcm <sup>2</sup>	3.66 kgcm <sup>2</sup>
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## Gripping force

This electric gripper can be used for either external or internal gripping applications.

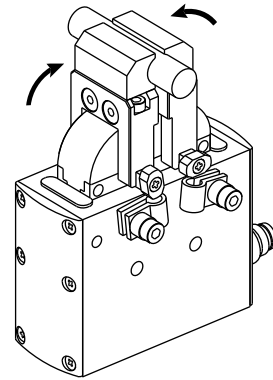
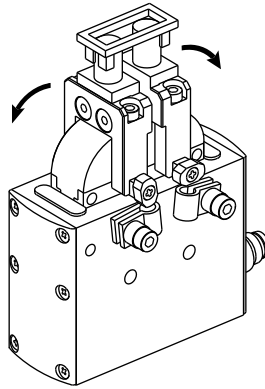
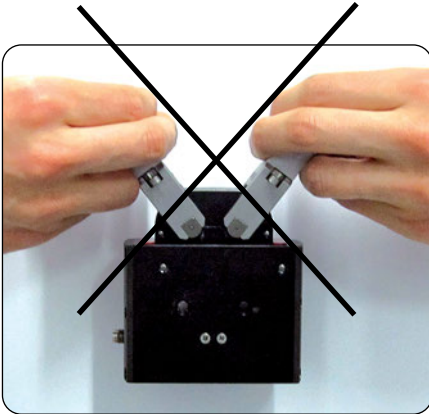
The part will be gripped in any position within the jaw stroke.

After the part is gripped, the spring force will hold the part (motor OFF and ZERO consumption).

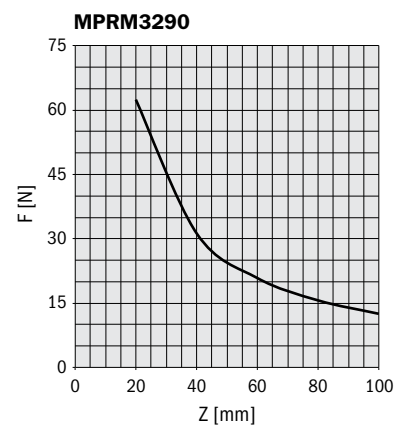
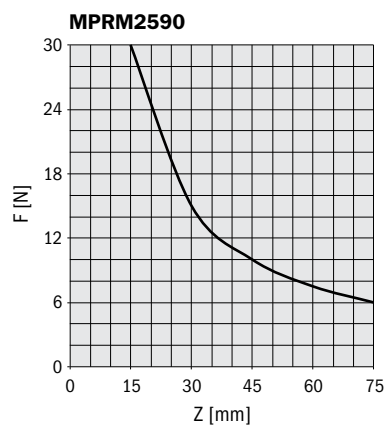
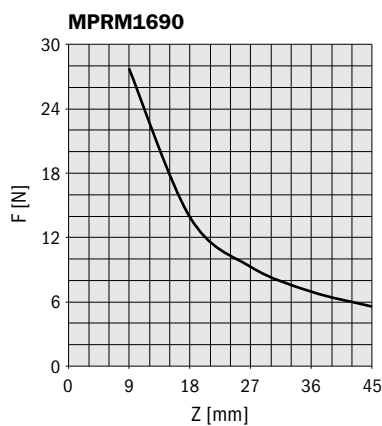
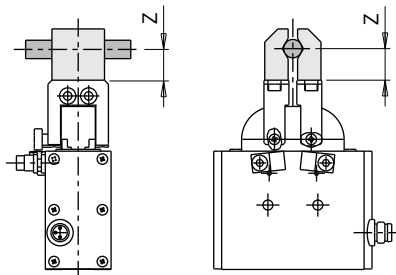
Even in case of power black-out.

Furthermore the gripper mechanism is irreversible, even without power supply.

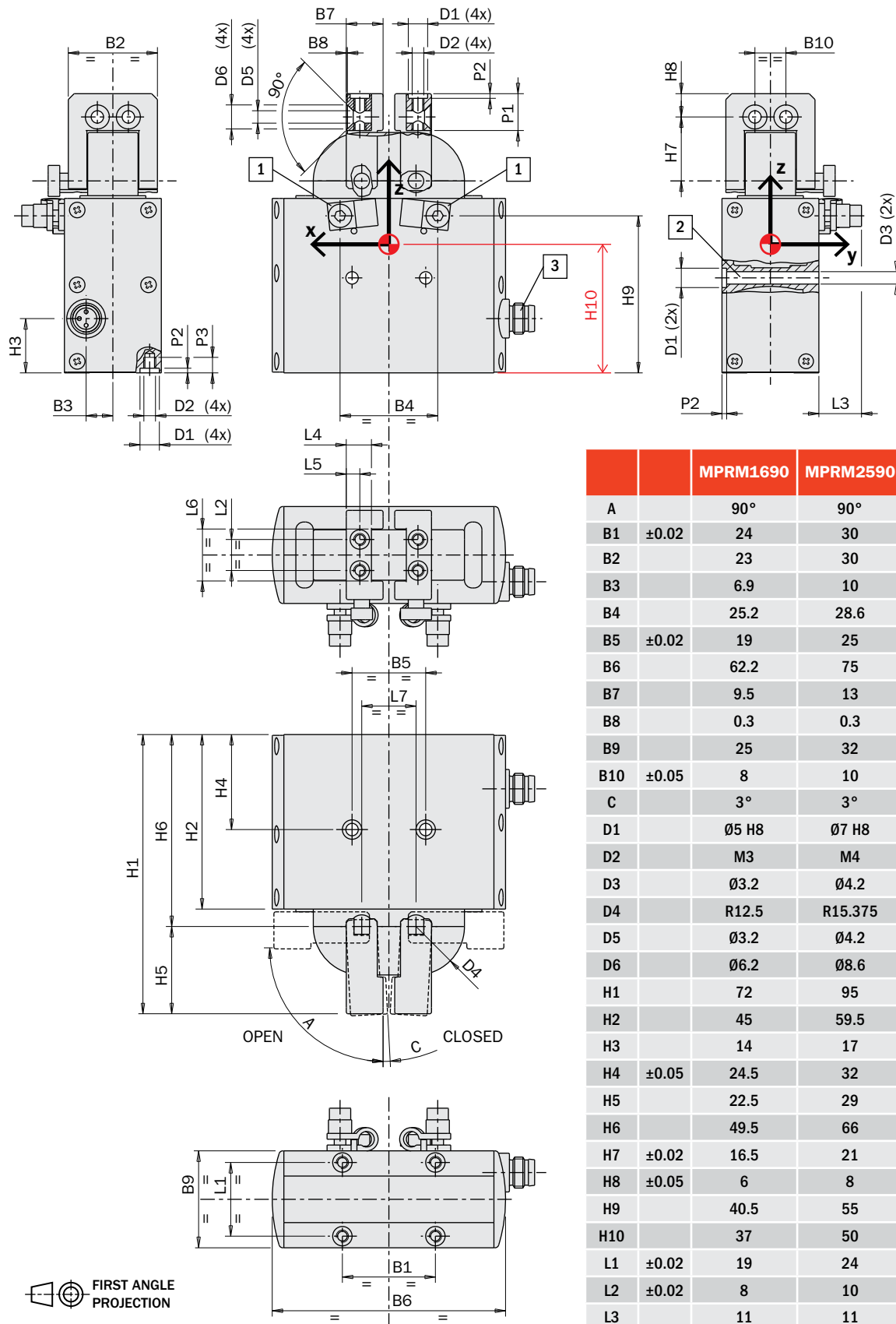
So do not attempt to open or close the gripper manually.



The graphs show the gripping force on each jaw, as a function of the gripping tool length  $Z$  and the overhanging  $X$ .



Dimensions (mm)



FIRST ANGLE PROJECTION

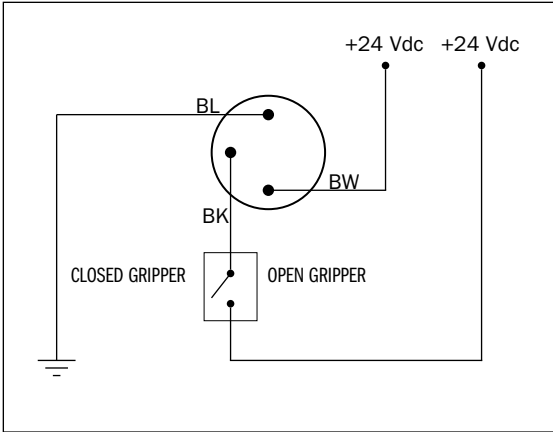
- 1 Inductive sensor bracket
- 2 Through hole for gripper fastening
- 3 Electrical connection

		MPRM1690	MPRM2590	MPRM3290
A		90°	90°	90°
B1	±0.02	24	30	36
B2		23	30	34
B3		6.9	10	11
B4		25.2	28.6	33
B5	±0.02	19	25	30
B6		62.2	75	89
B7		9.5	13	16
B8		0.3	0.3	0.3
B9		25	32	35
B10	±0.05	8	10	12
C		3°	3°	3°
D1		Ø5 H8	Ø7 H8	Ø7 H8
D2		M3	M4	M5
D3		Ø3.2	Ø4.2	Ø5.2
D4		R12.5	R15.375	R18
D5		Ø3.2	Ø4.2	Ø5.2
D6		Ø6.2	Ø8.6	Ø10
H1		72	95	111
H2		45	59.5	68.5
H3		14	17	19
H4	±0.05	24.5	32	38
H5		22.5	29	34
H6		49.5	66	77
H7	±0.02	16.5	21	24.5
H8	±0.05	6	8	9.5
H9		40.5	55	64
H10		37	50	58.6
L1	±0.02	19	24	26
L2	±0.02	8	10	12
L3		11	11	11
L4		6.5	9	11
L5	±0.02	3.5	5	5
L6		13.4	18.4	20.4
L7		14	17.5	22
P1		9.5	12.5	15
P2	+0.1	1.2	1.5	1.5
P3		4	6	8

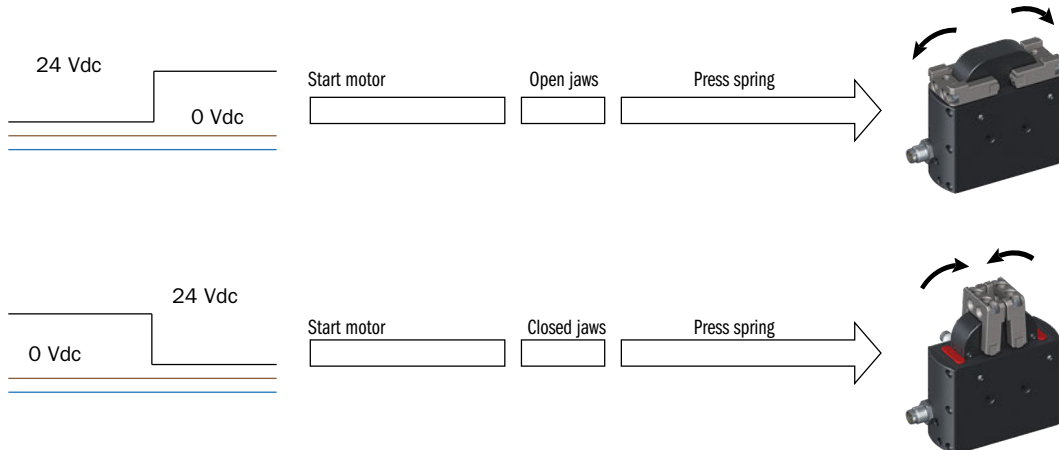
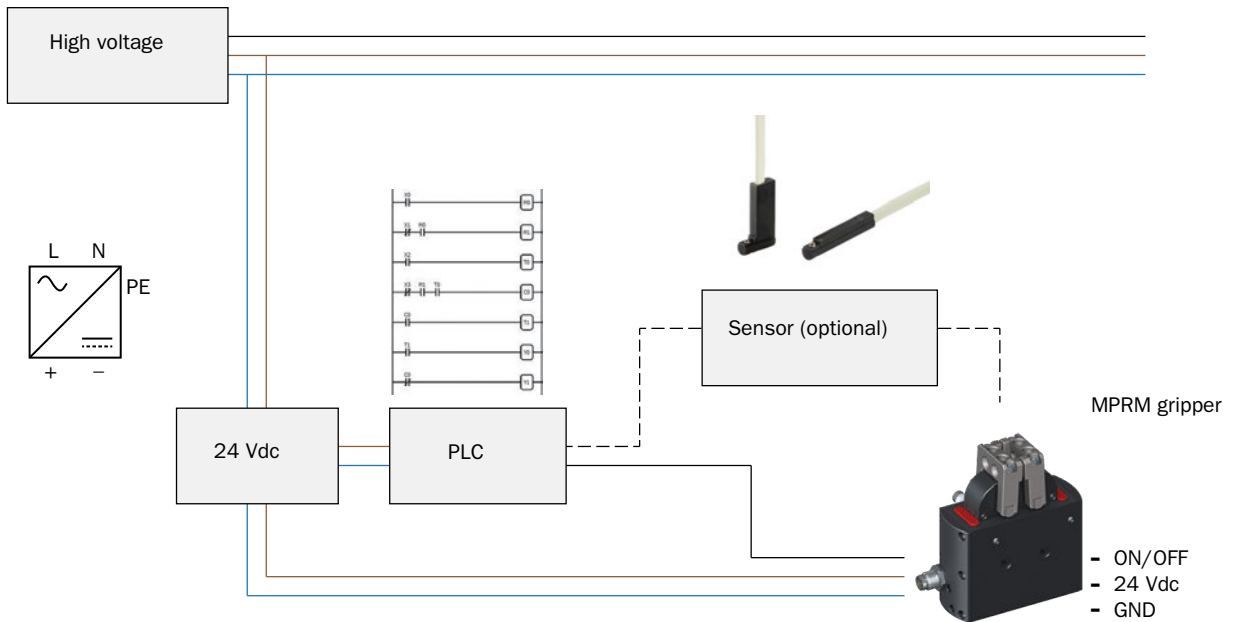
**Electrical connection**

It is possible to provide the power supply at 24Vdc and the closing/opening signal (ON/OFF) by the M8 standard connector with 3 poles.

No further electronics is necessary to drive the gripper.

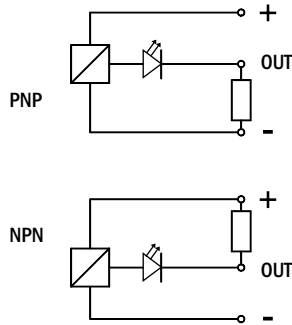


Optional M8x1 standard female connector.  
Gimatic code: CFGM800325P / CFGM890325P.



**Inductive sensors (optional)**

The operating position is detected by Ø4mm inductive sensors (optional) fixed with brackets included in the package. The switch-on point of the sensors can be changed by suitably adjusting the position of the relevant nut. For details, see the "Accessories" section.

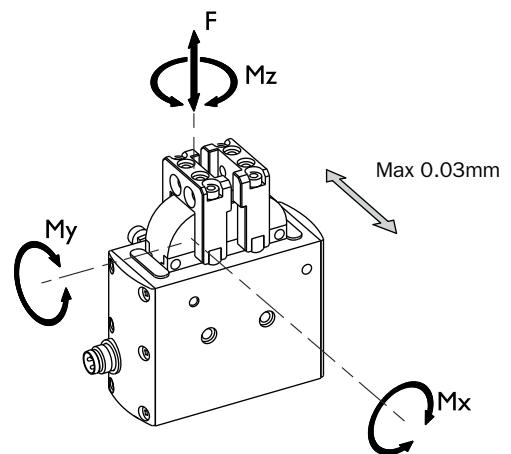


GSG-IS-NPN	NPN	\$60.80	2.5m Cable
GSG-IS-PNP	PNP		

**Safety loads and backlashes**

Check the table for the maximum permitted loads. Excessive forces or torques can damage the gripper, cause operation problems and endanger the safety of the operator.  $F_s$ ,  $M_x s$ ,  $M_y s$ ,  $M_z s$ , are the maximum permitted loads under static conditions, that is with motionless jaws.  $J$  is the maximum permitted moment of inertia on each gripping tool. The picture below shows also the jaw maximum backlash.

	MPRM1690	MPRM2590	MPRM3290
$F_s$	50 N	80 N	140 N
$M_x s$	0.5 Nm	1 Nm	2.5 Nm
$M_y s$	1 Nm	2 Nm	5 Nm
$M_z s$	1 Nm	2 Nm	5 Nm
$J$	0.3 kgcm <sup>2</sup>	1.5 kgcm <sup>2</sup>	3 kgcm <sup>2</sup>



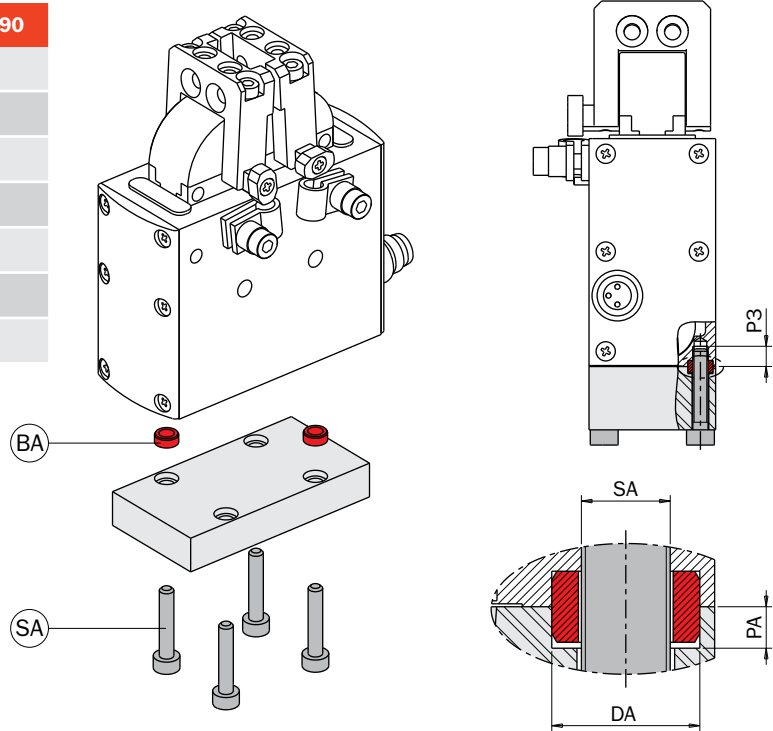
## Gripper fastening

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.

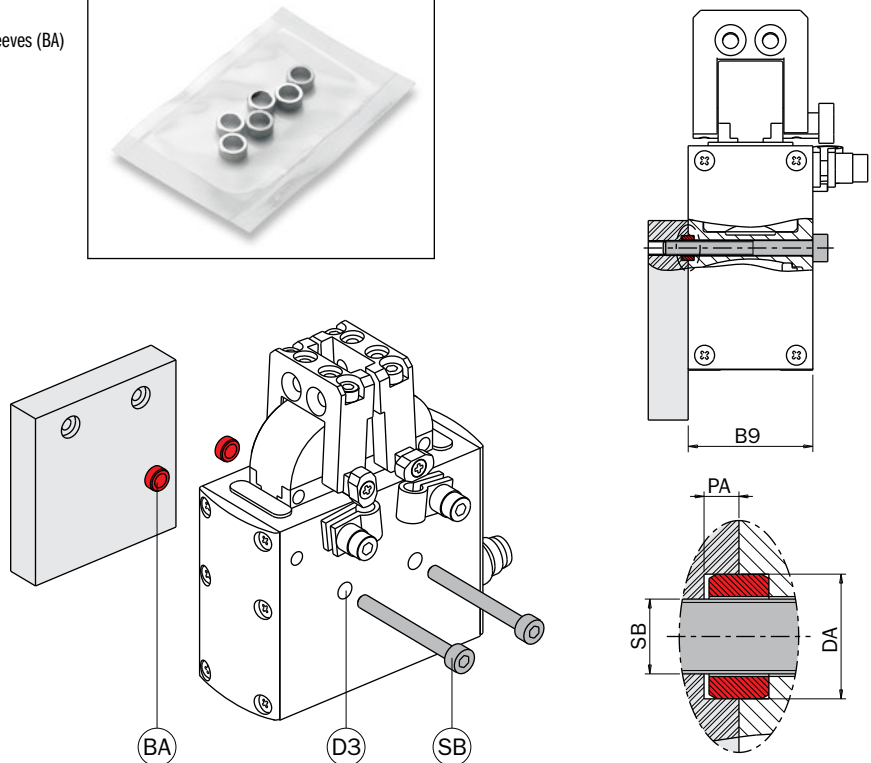
- To fasten gripper to base, use four screws (SA) through the mounting plate, screwed in the gripper.
- To fasten the gripper side, use two screws (SB) in the through holes (D3).

In every case, put the two centering sleeves (BA), which are supplied in the package. Check the dimensions (DA and PA) in the table for their housings in the mounting plate.

	MPRM1690	MPRM2590	MPRM3290
B9	25	32	35
D3	Ø3.2	Ø4.2	Ø5.2
DA	Ø5 h7	Ø7 h7	Ø7 h7
P3	4	6	8
PA	1.2	1.5	1.5
SA	M3	M4	M5
SB	M3	M4	M5



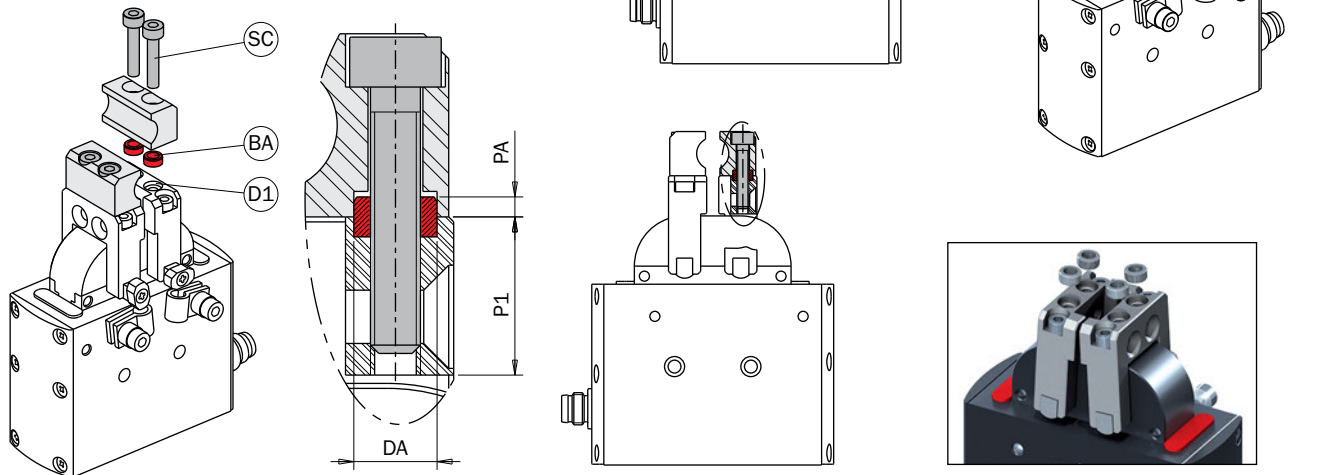
4 centering rings (BA) for the gripping tools and 2 centering sleeves (BA) for the housing are supplied in the packaging.



**Gripping tool fastening**

The gripping tools should be as short and light as possible. They have to be fastened by two screws (SC) and two centering sleeves (BA) in the calibrated holes (D1) of the jaws.

	MPRM1690	MPRM2590	MPRM3290
DA	Ø5 h7	Ø7 h7	Ø7 h7
P1	9.5	12.5	15
PA	1.2	1.5	1.5
SC	M3	M4	M5



**Serie compatibility**

MPRM grippers series is perfectly compatible with MRE rotary series actuators without any special plate.

