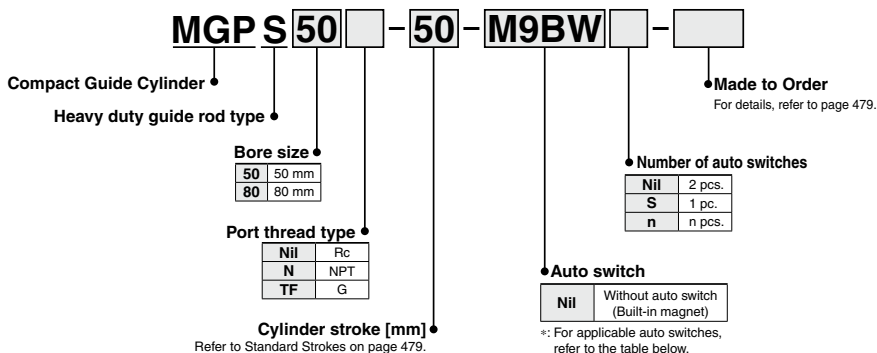


Compact Guide Cylinder/ Heavy Duty Guide Rod Type

MGPS Series

ø50, ø80

How to Order



Applicable Auto Switches

Refer to pages 1119 to 1245 for further information on auto switches.

| Type | Special function | Electrical entry | Indicator/light | Wiring (Output) | Load voltage | | Auto switch model | | Lead wire length [m] | | | | Pre-wired connector | Applicable load | | |
|--|--------------------|------------------|-----------------|-------------------------|--------------|------|---------------------|--------------------|----------------------|-------|-------|-------|---------------------|-----------------|------------|------------|
| | | | | | DC | AC | Perpendicular | In-line | 0.5 (Nil) | 1 (M) | 3 (L) | 5 (Z) | | | | |
| Solid state auto switch | — | Grommet | Yes | 3-wire (NPN) | 24 V | — | M9NV | M9N | ● | ● | ● | ○ | ○ | IC circuit | Relay, PLC | |
| | 3-wire (PNP) | | | 5 V, 12 V | | | M9PV | M9P | ● | ● | ● | ○ | ○ | | | |
| | 2-wire | | | 12 V | | | M9BV | M9B | ● | ● | ● | ○ | ○ | — | | |
| | 3-wire (NPN) | | | 5 V, 12 V | | | M9NWV | M9NW | ● | ● | ● | ○ | ○ | IC circuit | | |
| | 3-wire (PNP) | | | 12 V | | | M9PWV | M9PW | ● | ● | ● | ○ | ○ | | | IC circuit |
| | 2-wire | | | 12 V | | | M9BWV | M9BW | ● | ● | ● | ○ | ○ | — | | |
| | 3-wire (NPN) | | | 5 V, 12 V | | | M9NAV ^{*1} | M9NA ^{*1} | ○ | ○ | ● | ○ | ○ | IC circuit | | |
| | 3-wire (PNP) | | | 12 V | | | M9PAV ^{*1} | M9PA ^{*1} | ○ | ○ | ● | ○ | ○ | | | — |
| Magnetic field resistant (2-color indicator) | 2-wire (Non-polar) | — | — | P3DWA | ● | — | ● | ○ | — | — | | | | | | |
| Reed auto switch | — | Grommet | Yes | 3-wire (NPN equivalent) | — | 5 V | — | A96V | A96 | ● | — | ● | — | — | IC circuit | — |
| | | | | No | 2-wire | 24 V | 12 V | 100 V or less | A93V ^{*2} | A93 | ● | ● | ● | ● | — | — |
| | | | | | | | | A90V | A90 | ● | — | ● | — | — | IC circuit | |

*1: Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please consult with SMC regarding water resistant types with the above model numbers.

*2: 1 m type lead wire is only applicable to the D-A93.

*: Lead wire length symbols: 0.5 m..... Nil (Example) M9NW
1 m..... M (Example) M9NWM
3 m..... L (Example) M9NWL
5 m..... Z (Example) M9NWW

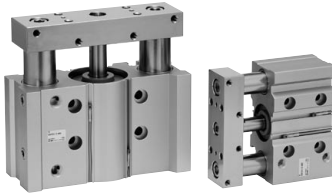
*: Solid state auto switches marked with "○" are produced upon receipt of order.

*: Since there are other applicable auto switches than listed above, refer to page 489 for details.

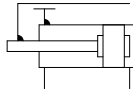
*: For details about auto switches with pre-wired connector, refer to pages 1192 and 1193.

*: Auto switches are shipped together, (but not assembled).

Specifications



Symbol
Rubber bumper



Made to Order: Individual Specifications
(For details, refer to page 491.)

| Symbol | Specifications |
|--------|--|
| -X867 | Side porting type (Plug location changed) *1 |

*1: The shape is the same as the current product.



Made to Order
(For details, refer to pages 1247 to 1440.)

| Symbol | Specifications |
|--------|--------------------------------------|
| -XC85 | Grease for food processing equipment |

Refer to pages 486 to 490 for cylinders with auto switches.

- Minimum stroke for auto switch mounting
- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Operating range
- Auto switch mounting brackets/Part no.
- Auto switch mounting

| Bore size [mm] | 50 | 80 |
|--------------------------------------|----------------------------|----|
| Action | Double acting | |
| Fluid | Air | |
| Proof pressure | 1.5 MPa | |
| Maximum operating pressure | 1.0 MPa | |
| Minimum operating pressure | 0.1 MPa | |
| Ambient and fluid temperature | -10 to 60°C (No freezing) | |
| Piston speed *1 | 50 to 400 mm/s | |
| Cushion | Rubber bumper on both ends | |
| Lubrication | Not required (Non-lube) | |
| Stroke length tolerance | +1.5 -0 mm | |

*1: Maximum speed with no load. Depending on the operating conditions, the piston speed may not be satisfied. Make a model selection, considering a load according to the graph on pages 480 to 482.

Standard Strokes

| Bore size [mm] | Standard stroke [mm] |
|----------------|-------------------------------------|
| 50, 80 | 25, 50, 75, 100, 125, 150, 175, 200 |

Manufacture of Intermediate Stroke

| | |
|------------------------|--|
| Description | Spacer installation type Spacers are installed in the standard stroke cylinder. Available in 5 mm stroke increments. |
| Part no. | Refer to "How to Order" for the standard model numbers on page 478. |
| Applicable stroke [mm] | 5 to 195 |
| Example | Part no.: MGPS50-35 A spacer 15 mm in width is installed in a MGPS50-50. C dimension is 94 mm. |

*: Intermediate stroke (in 1 mm increments) based on an exclusive body will be available upon request for special.

Theoretical Output



| Bore size [mm] | Rod size [mm] | Operating direction | Piston area [mm ²] | Operating pressure [MPa] | | | | | | | | | |
|----------------|---------------|---------------------|--------------------------------|--------------------------|------|------|------|------|------|------|------|------|-----|
| | | | | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | [N] |
| 50 | 20 | OUT | 1963 | 393 | 589 | 785 | 982 | 1178 | 1374 | 1571 | 1767 | 1963 | |
| | | IN | 1649 | 330 | 495 | 660 | 825 | 990 | 1155 | 1319 | 1484 | 1649 | |
| 80 | 25 | OUT | 5027 | 1005 | 1508 | 2011 | 2513 | 3016 | 3519 | 4021 | 4524 | 5027 | |
| | | IN | 4536 | 907 | 1361 | 1814 | 2268 | 2721 | 3175 | 3629 | 4082 | 4536 | |

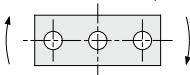
*: Theoretical output [N] = Pressure [MPa] x Piston area [mm²]

Weights

| Bore size [mm] | Standard stroke [mm] | | | | | | | | [kg] |
|----------------|----------------------|------|------|------|------|------|------|------|------|
| | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | |
| 50 | 3.90 | 4.68 | 5.74 | 6.52 | 7.30 | 8.08 | 8.86 | 9.64 | |
| 80 | 9.21 | 10.7 | 13.0 | 14.5 | 15.9 | 17.9 | 18.9 | 20.3 | |

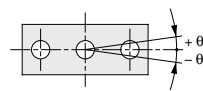
Allowable Rotational Torque of Plate

Torque: T [N·m]



| Bore size [mm] | Standard stroke [mm] | | | | | | | | T [N·m] |
|----------------|----------------------|----|----|-----|-----|-----|-----|-----|---------|
| | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | |
| 50 | 15 | 12 | 16 | 15 | 13 | 12 | 11 | 9.8 | |
| 80 | 49 | 41 | 51 | 45 | 41 | 38 | 35 | 32 | |

Non-rotating Accuracy of Plate



For non-rotating accuracy θ without load, use a value no more than the values in the table as a guide.

| Bore size [mm] | Non-rotating accuracy θ |
|----------------|--------------------------------|
| 50 | $\pm 0.05^\circ$ |
| 80 | $\pm 0.04^\circ$ |

MGJ

JMGP

MGP

MGPW

MGQ

MGG

MGC

MGF

MGZ

MGT

MGT

MGT

MGT

MGT

MGT

MGT

MGT

MGT

MGT

MGT

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