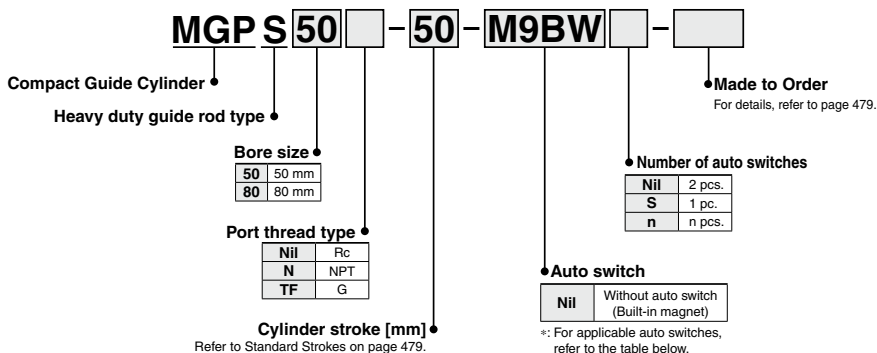


# Compact Guide Cylinder/ Heavy Duty Guide Rod Type

## 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		
	Diagnostic indication (2-color indicator)			3-wire (PNP)			5 V, 12 V	M9PV	M9P	●	●	●	○			○	
				2-wire			12 V	M9BV	M9B	●	●	●	○			○	
				3-wire (NPN)			5 V, 12 V	M9NWV	M9NW	●	●	●	○			○	
				3-wire (PNP)			12 V	M9PWV	M9PW	●	●	●	○			○	
	Water resistant (2-color indicator)			2-wire			12 V	M9BWV	M9BW	●	●	●	○			○	IC circuit
				3-wire (NPN)			5 V, 12 V	M9NAV <sup>*1</sup>	M9NA <sup>*1</sup>	○	○	●	○			○	
	Magnetic field resistant (2-color indicator)			3-wire (PNP)			12 V	M9PAV <sup>*1</sup>	M9PA <sup>*1</sup>	○	○	●	○			○	IC circuit
				2-wire (Non-polar)			—	—	P3DWA	●	—	●	○			—	
	Reed auto switch			—			Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V			A96	●
No		2-wire	24 V		12 V	100 V			A93V <sup>*2</sup>	A93	●	●	●	—	—	IC circuit	Relay, PLC
						100 V or less			A90V	A90	●	—	●	—	—		

\*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

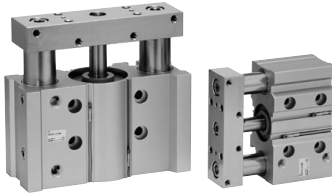
\*: Solid state auto switches marked with "○" are produced upon receipt of order.

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

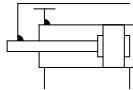
\*: For details about auto switches with pre-wired connector, refer to pages 1192 and 1193.

\*: 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
<b>Action</b>	Double acting	
<b>Fluid</b>	Air	
<b>Proof pressure</b>	1.5 MPa	
<b>Maximum operating pressure</b>	1.0 MPa	
<b>Minimum operating pressure</b>	0.1 MPa	
<b>Ambient and fluid temperature</b>	-10 to 60°C (No freezing)	
<b>Piston speed</b> *1	50 to 400 mm/s	
<b>Cushion</b>	Rubber bumper on both ends	
<b>Lubrication</b>	Not required (Non-lube)	
<b>Stroke length tolerance</b>	+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 <sup>2</sup> ]	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	

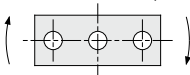
\*: Theoretical output [N] = Pressure [MPa] x Piston area [mm<sup>2</sup>]

## 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	

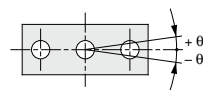
## Allowable Rotational Torque of Plate

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  $\theta$  without load, use a value no more than the values in the table as a guide.

Bore size [mm]	Non-rotating accuracy $\theta$
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

MGT

MGT