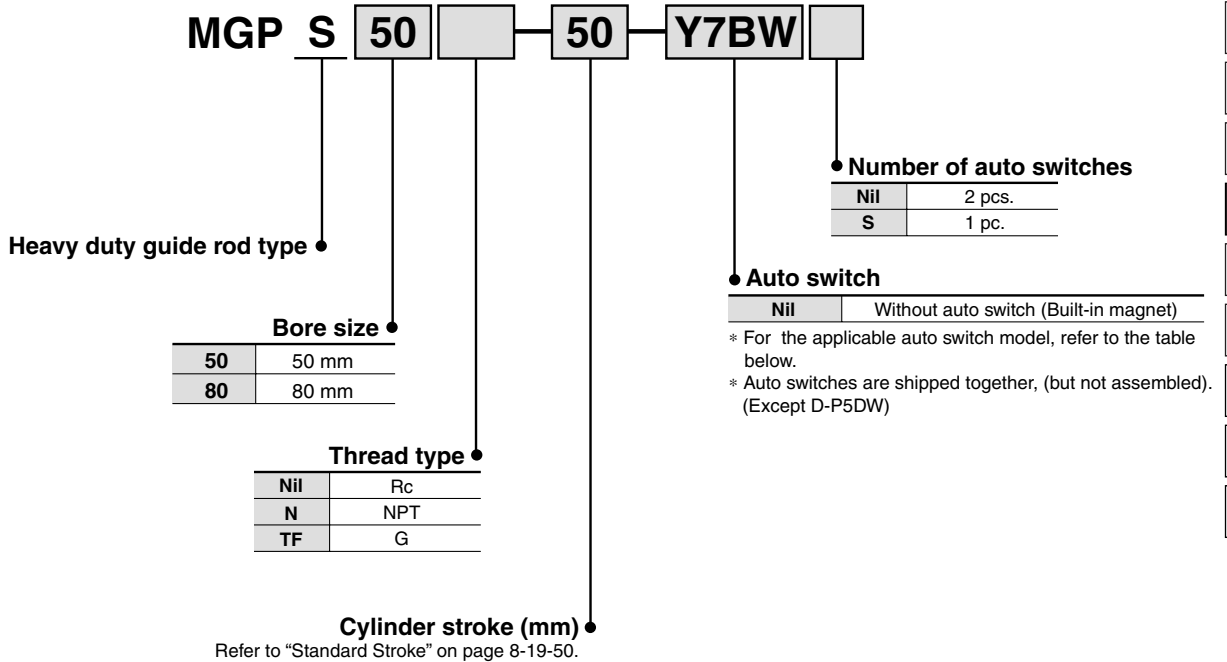




Compact Guide Cylinder Heavy Duty Guide Rod Type Series **MGPS** ø50, ø80

How to Order



- MX
- MTS
- MY
- CY
- MG**
- CX
- D-
- X
- 20-
- Data

Applicable Auto Switch/Refer to page 8-30-1 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-wire connector	Applicable load	
					DC	AC	Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)	IC circuit		Relay, PLC	
															24 V
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	Z76	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	—	Z73	●	●	●	—	—	Relay, PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y69A	Y59A	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				Y7PV	Y7P	●	●	○	○	IC circuit	
				2-wire				Y69B	Y59B	●	●	○	○	—	
	3-wire (NPN)			Y7NWV	Y7NW	●		●	○	○	IC circuit				
	3-wire (PNP)			Y7PWV	Y7PW	●		●	○	○	IC circuit				
	2-wire			Y7BWV	Y7BW	●		●	○	○	—				
	—			Y7BA	—	●		○	○	—					
—	P5DW	—	●	●	○	—									

* Lead wire length symbols: 0.5 m..... Nil (Example) Y59A
3 m..... L (Example) Y59AL
5 m..... Z (Example) Y59AZ

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

- Since there are other applicable auto switches than listed, refer to page 8-19-55 for details.
- For details about auto switches with pre-wire connector, refer to page 8-30-52.

Series MGPS



Specifications

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	50 to 400 mm/s
Cushion	Rubber bumper on both ends
Lubrication	Non-lube
Stroke length tolerance	+1.5 mm 0

Standard Stroke

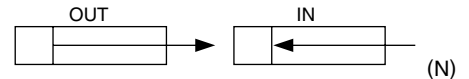
Bore size (mm)	Standard stroke (mm)
50, 80	25, 50, 75, 100, 125, 150, 175, 200

Manufacture of Intermediate Stroke

Description	Spacer installation type Spacers are installed in the standard stroke cylinder. Available by the 5 stroke interval.
Part no.	Refer to "How to Order" for the standard model numbers on page 8-19-49.
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.

Note) Intermediate stroke (by the 1 mm interval) based on an exclusive body will be available upon request for special.

Theoretical Output



Auto Switch Mounting Bracket Part No. for D-P5DW

Bore size (mm)	Mounting bracket part no.	Note
50, 80	BMG1-040	Switch mounting bracket Hexagon socket head cap screw (M2.5 x 0.45 x 8 ϕ) 2 pcs. Hexagon socket head cap screw (M3 x 0.5 x 16 ϕ) 2 pcs. Spring washer (Nominal size 3)

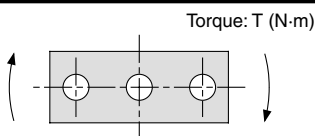
Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)								
				0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
50	20	OUT	1963	393	589	785	982	1178	1374	1571	1767	1963
		IN	1649	330	495	660	825	990	1155	1319	1484	1649
80	25	OUT	5027	1005	1508	2011	2513	3016	3519	4021	4524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

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm²)

Weight

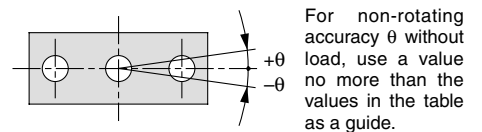
Bore size (mm)	Model	Standard stroke (mm)								
		25	50	75	100	125	150	175	200	
50	MGPS50	3.90	4.68	5.74	6.52	7.30	8.08	8.86	9.64	
80	MGPS80	9.21	10.7	13.0	14.5	15.9	17.9	18.9	20.3	

Allowable Rotational Torque of Plate



Bore size (mm)	Model	Standard stroke (mm)								
		25	50	75	100	125	150	175	200	
50	MGPS50	15	12	16	15	13	12	11	9.8	
80	MGPS80	49	41	51	45	41	38	35	32	

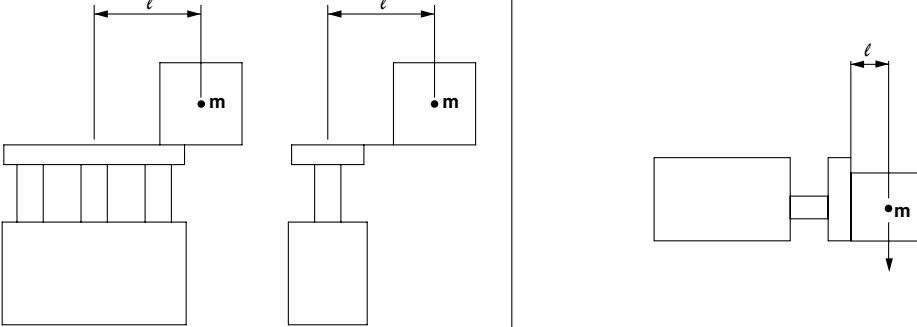
Non-rotating Accuracy of Plate



Bore size (mm)	Model	Non-rotating accuracy θ
50	MGPS50	$\pm 0.05^\circ$
80	MGPS80	$\pm 0.04^\circ$

Series MGPS Model Selection

Selection Conditions

Mounting orientation	Vertical		Horizontal	
				
Maximum speed (mm/s)	200	400	200	400
Graph (Slide bearing type)	(1), (2)	(3), (4)	(5), (6)	(7), (8)

MX

MTS

MY

CY

MG

CX

D-

-X

20-

Data

Selection Example 1 (Vertical mounting)

Selection conditions
 Mounting: Vertical
 Stroke: 50 mm
 Maximum speed: 200 mm/s
 Load weight: 100 kg
 Eccentric distance: 100 mm

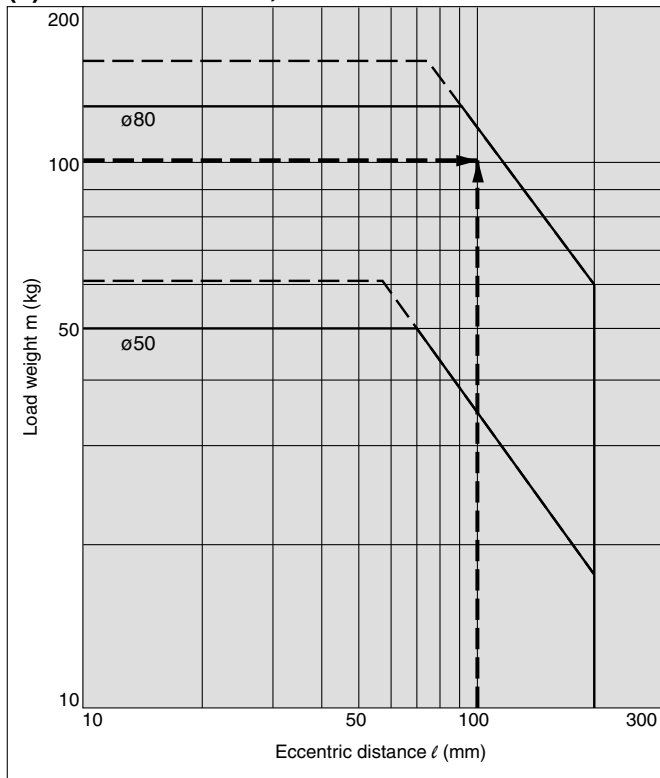
Find the point of intersection for the load weight of 100 kg and the eccentric distance of 100 mm on graph 1, based on vertical mounting, 50 mm stroke, and the speed of 200 mm/s.
 → MGPS80-50 is selected.

Selection Example 2 (Horizontal mounting)

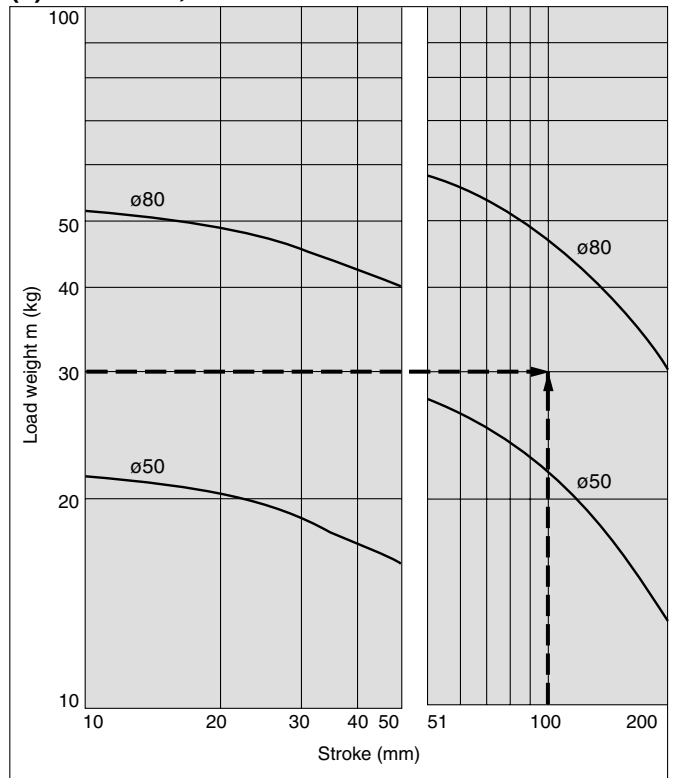
Selection conditions
 Mounting: Horizontal
 Distance between plate and load center of gravity: 50 mm
 Maximum speed: 200 mm/s
 Load weight: 30 kg
 Stroke: 100 mm

Find the point of intersection for the load weight of 30 kg and 100 stroke on graph 5, based on horizontal mounting, the distance of 50 mm between the plate and load center of gravity, and the speed of 200 mm/s.
 → MGPS80-100 is selected.

(1) 50 stroke or less, V = 200 mm/s



(5) $l = 50$ mm, V = 200 mm/s



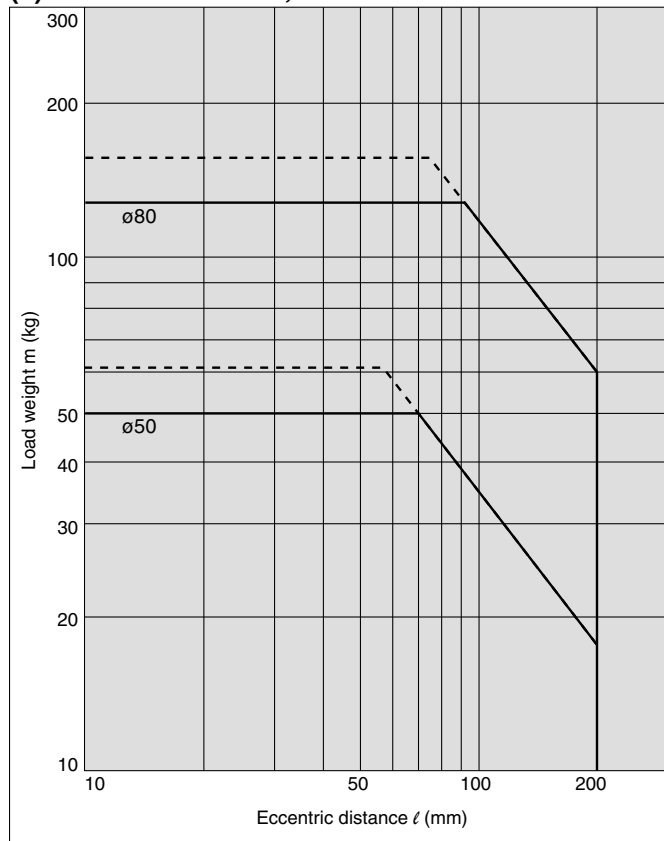
Series MGPS

Vertical Mounting (Slide bearing)

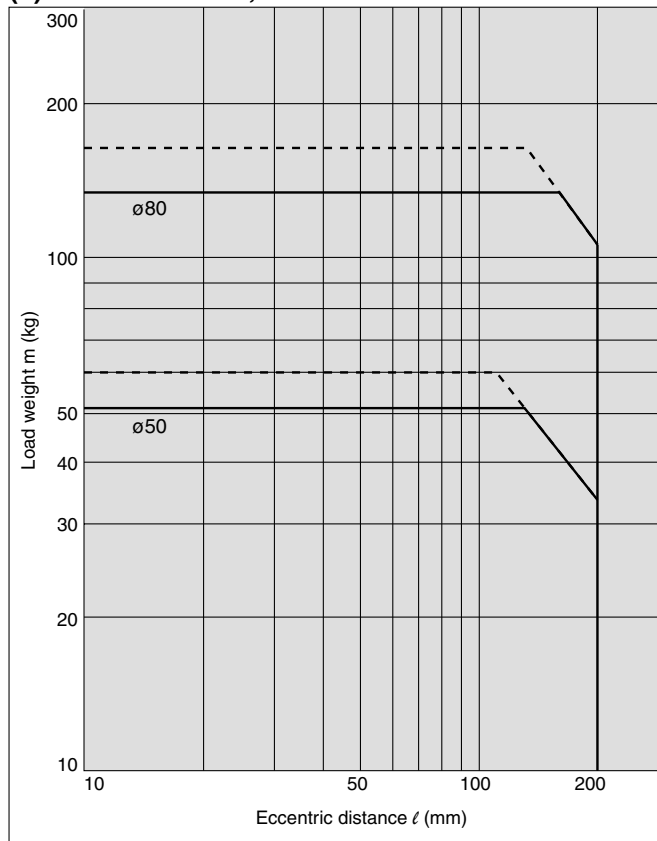
— Operating pressure 0.4 MPa
 - - - Operating pressure 0.5 MPa or more

MGPS50, 80

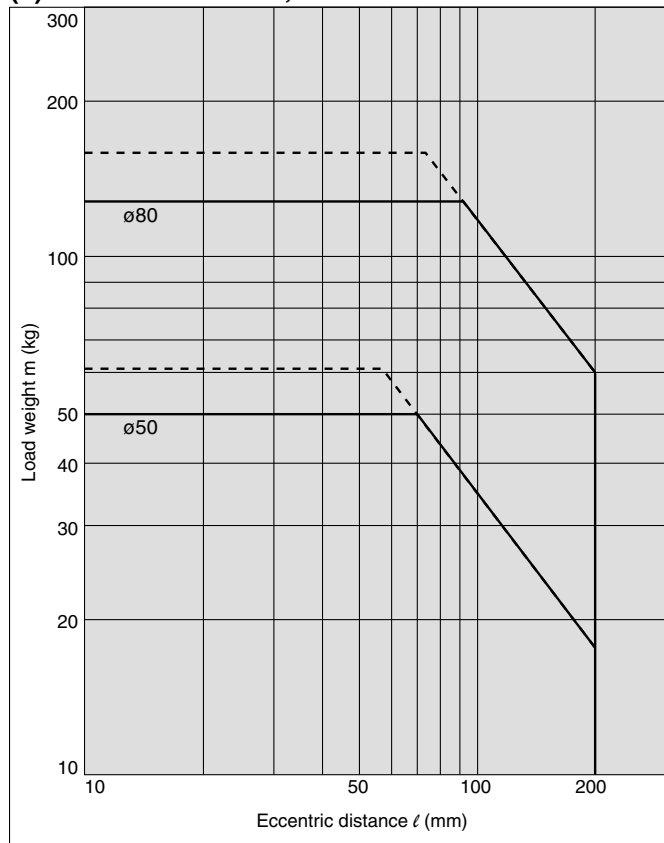
(1) 50 Stroke or Less, V = 200 mm/s



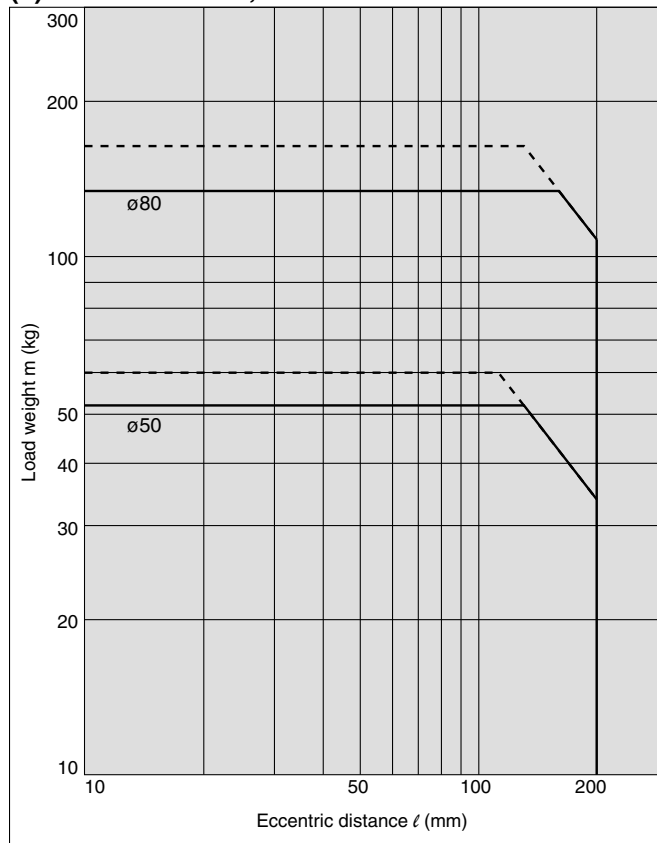
(2) Over 50 Stroke, V = 200 mm/s



(3) 50 Stroke or Less, V = 400 mm/s



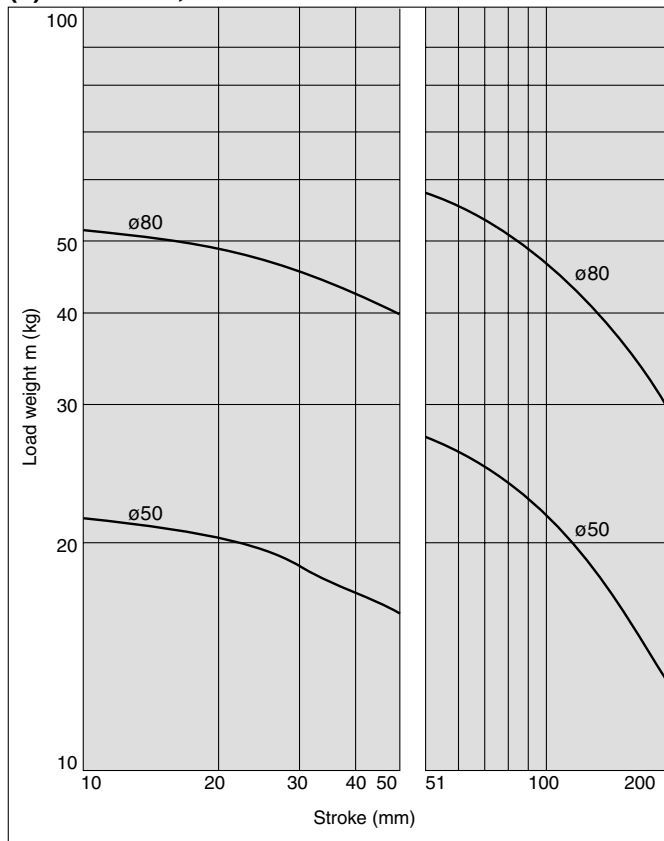
(4) Over 50 Stroke, V = 400 mm/s



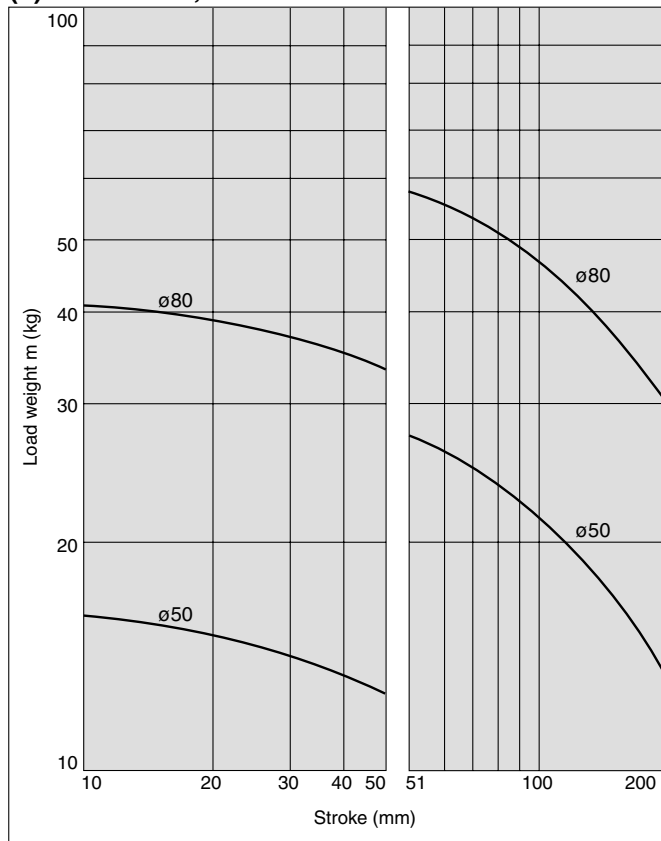
Horizontal Mounting (Slide bearing)

MGPS50/80

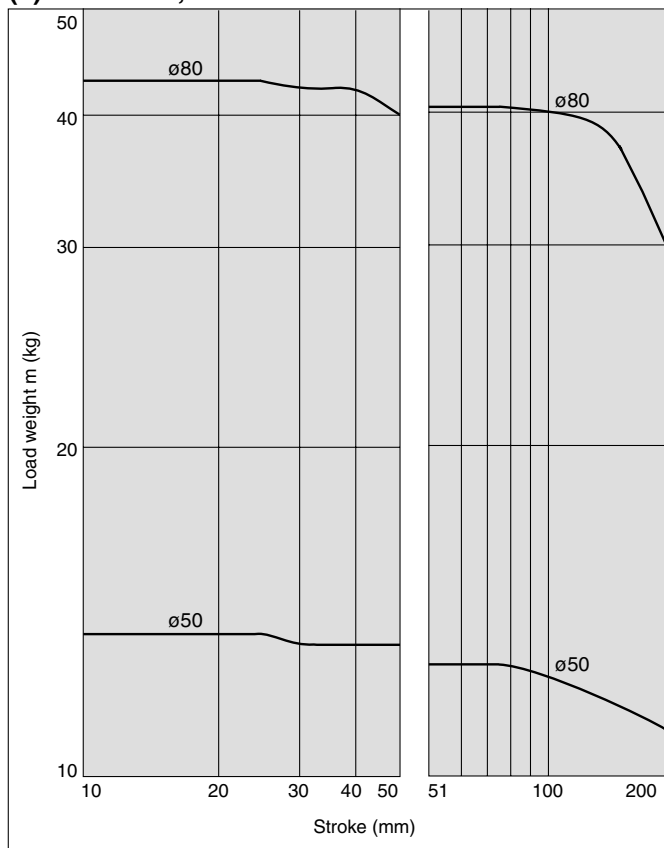
(5) $\ell = 50$ mm, $V = 200$ mm/s



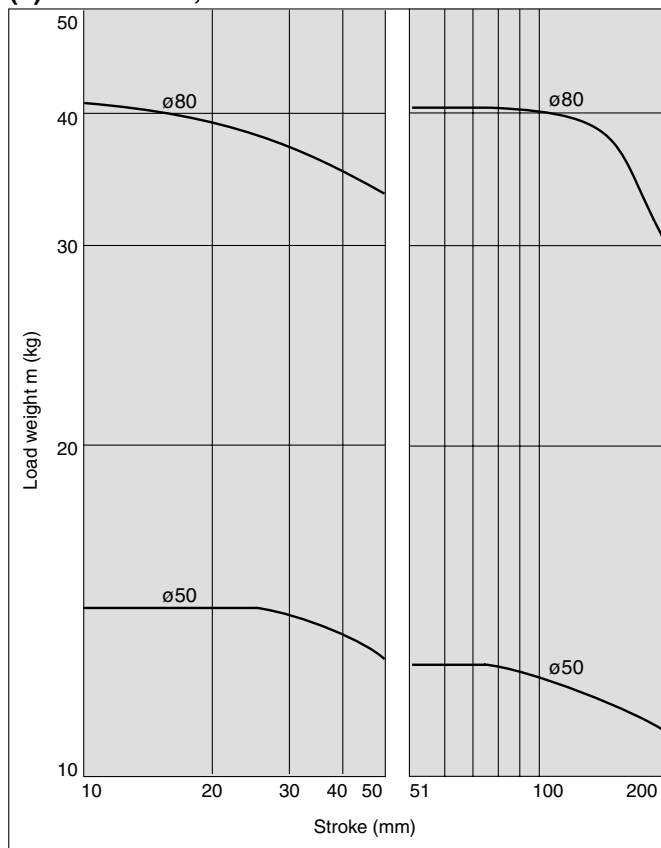
(6) $\ell = 100$ mm, $V = 200$ mm/s



(7) $\ell = 50$ mm, $V = 400$ mm/s



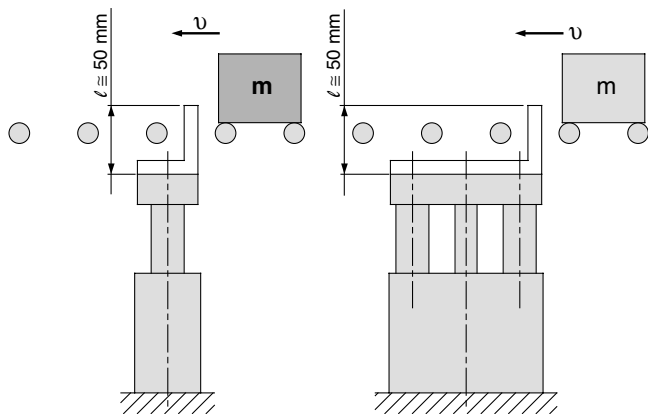
(8) $\ell = 100$ mm, $V = 400$ mm/s



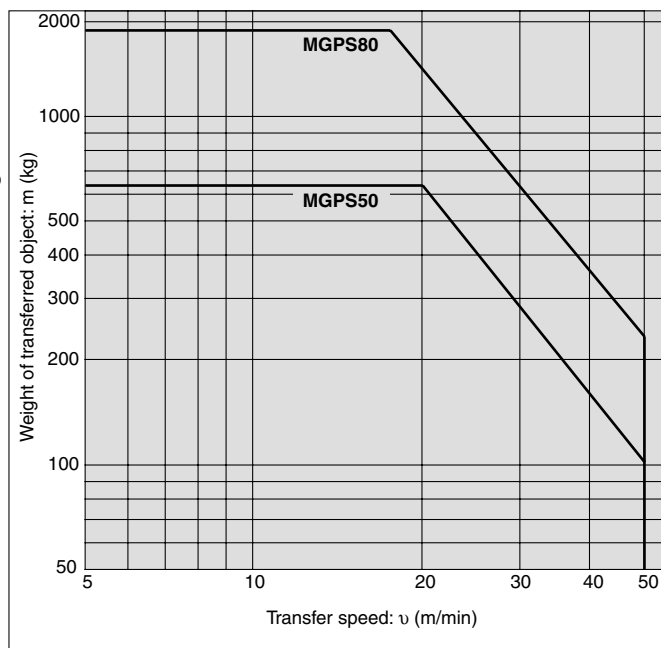
- MX
- MTS
- MY
- CY
- MG
- CX
- D-
- X
- 20-
- Data

Series MGPS

Operating Range when Used as Stopper



* When selecting a model with a longer l dimension, be sure to choose a bore size which is sufficiently large.

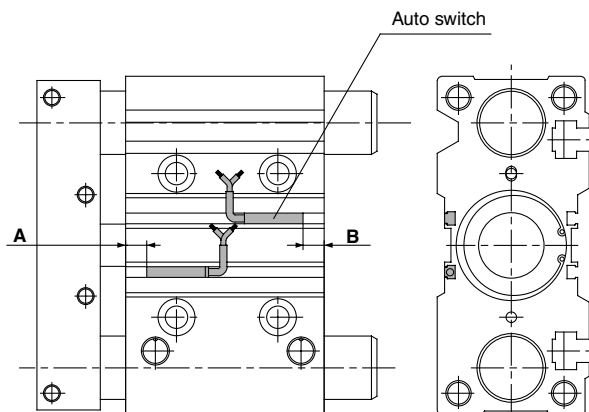


Caution

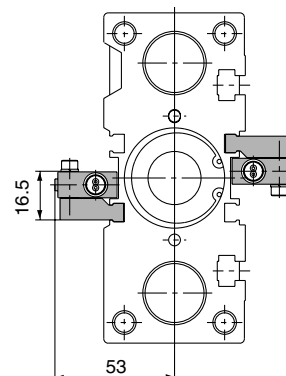
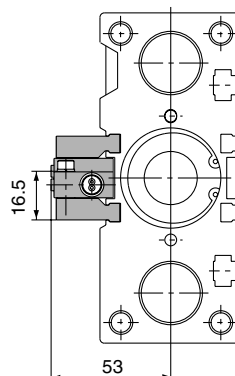
Caution on handling

Note) When using as a stopper, select a model with 50 stroke or less.

Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height



**For D-P5DW
ø50**



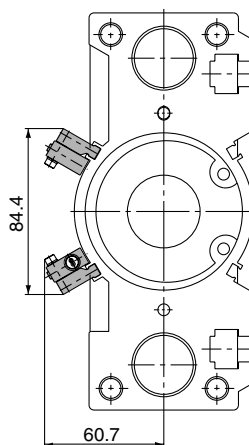
For 25 stroke
* For bore sizes ø40 to 63 with two switches, one switch is mounted on each side.

Proper Mounting Position

Bore size (mm)	A	B
50	7.5	11.5
80	13	37

* Minimum mountable strokes for auto switch are 10 stroke or more for two switches, and 5 stroke or more for one switch.

ø80



Operating Range

Auto switch model	Applicable bore size(mm)	
	50	80
D-Z7□/Z80	10.5	11.5
D-Y59□/Y69□/Y7P/Y7PV D-Y7□W/Y7□WV	7	9.5
D-Y7BAL	6	6
D-P5DWL	4	4

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted. For detailed specifications, refer to page 8-30-1.

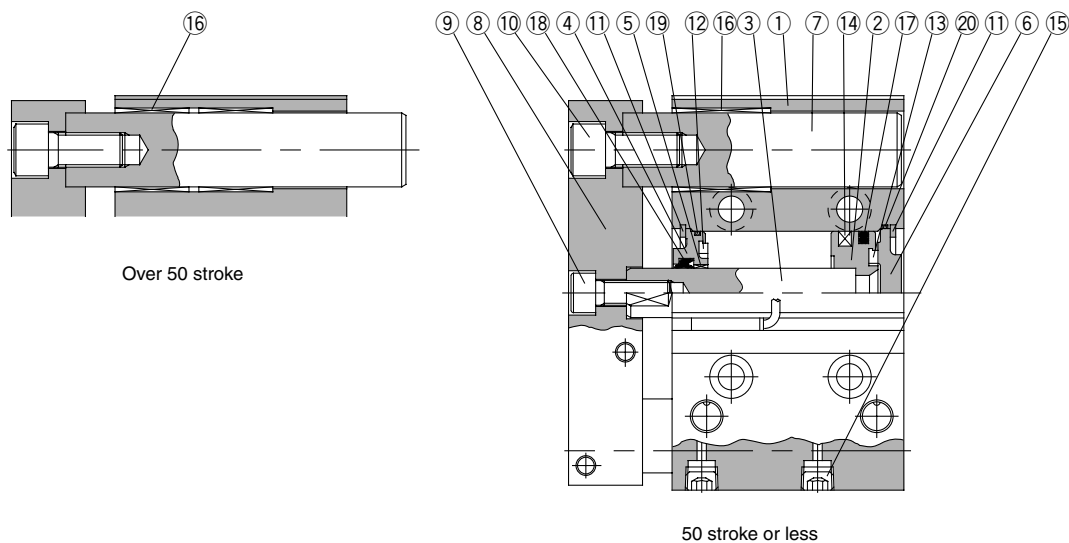
Type	Model	Electrical entry (Fetching direction)	Features
Reed switch	D-Z80	Grommet (In-line)	Without indicator light

* Normally closed (NC = b contact), solid state switch (D-Y7G/Y7H type) are also available. For details, refer to page 8-30-32.

- MX□
- MTS
- MY□
- CY□
- MG□**
- CX□
- D-
- X
- 20-
- Data

Series MGPS

Construction



Component Parts

No.	Description	Material	Note	
①	Body	Aluminum alloy	Hard anodized	
②	Piston	Aluminum alloy	Chromated	
③	Piston rod	Carbon steel	Hard chrome plated	
④	Collar	Aluminum alloy casted	Painted	
⑤	Bushing	Lead bronze casted		
⑥	Head cover	Aluminum alloy	ø50	Colorless chromated
			ø80	Painted
⑦	Guide rod	Carbon steel	Hard chrome plated	
⑧	Plate	Carbon steel	Nickel plated	
⑨	Plate mounting bolt A	Carbon steel	Nickel plated	For piston rod
⑩	Plate mounting bolt B	Carbon steel	Nickel plated	For guide rod

No.	Description	Material	Note
⑪	Snap ring	Carbon tool steel	Phosphate coated
⑫	Bumper A	Urethane	
⑬	Bumper B	Urethane	
⑭	Magnet	Magnetic material	
⑮	Hexagon socket head taper plug	Carbon steel	Nickel plated
⑯	Slide Bearing	Lead-bronze casted	
⑰*	Piston seal	NBR	
⑱*	Rod seal	NBR	
⑲*	Gasket A	NBR	
⑳*	Gasket B	NBR	

Replacement Parts: Seal Kit

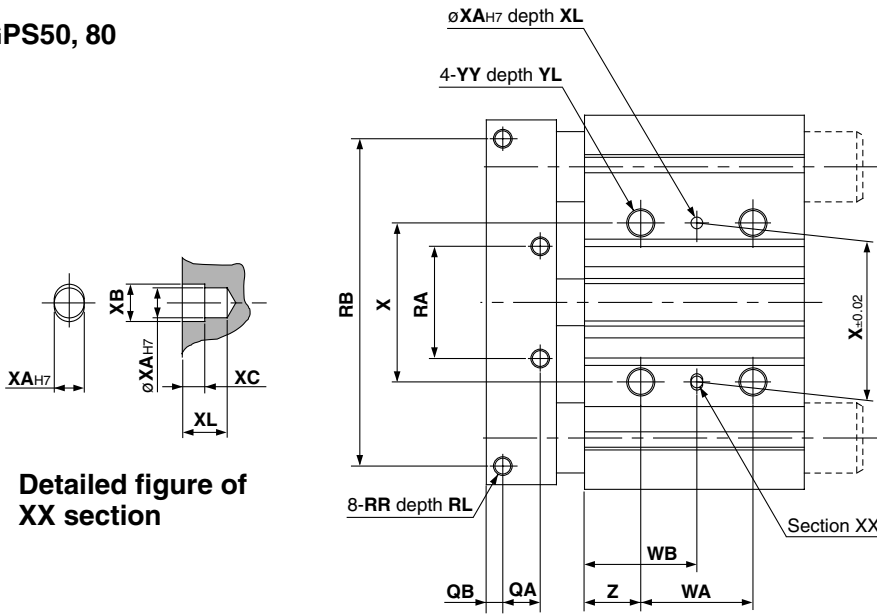
Bore size (mm)	Kit no.	Contents
50	MGP50-PS	Set of nos. above ⑰, ⑱, ⑲, ⑳.
80	MGP80-PS	

* Seal kit includes ⑰ to ⑳. Order the seal kit, based on each bore size.

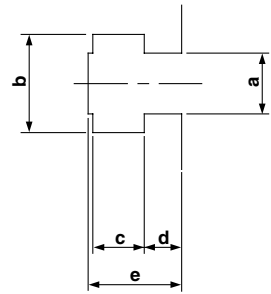
Compact Guide Cylinder Heavy Duty Guide Rod Type **Series MGPS**

Dimensions

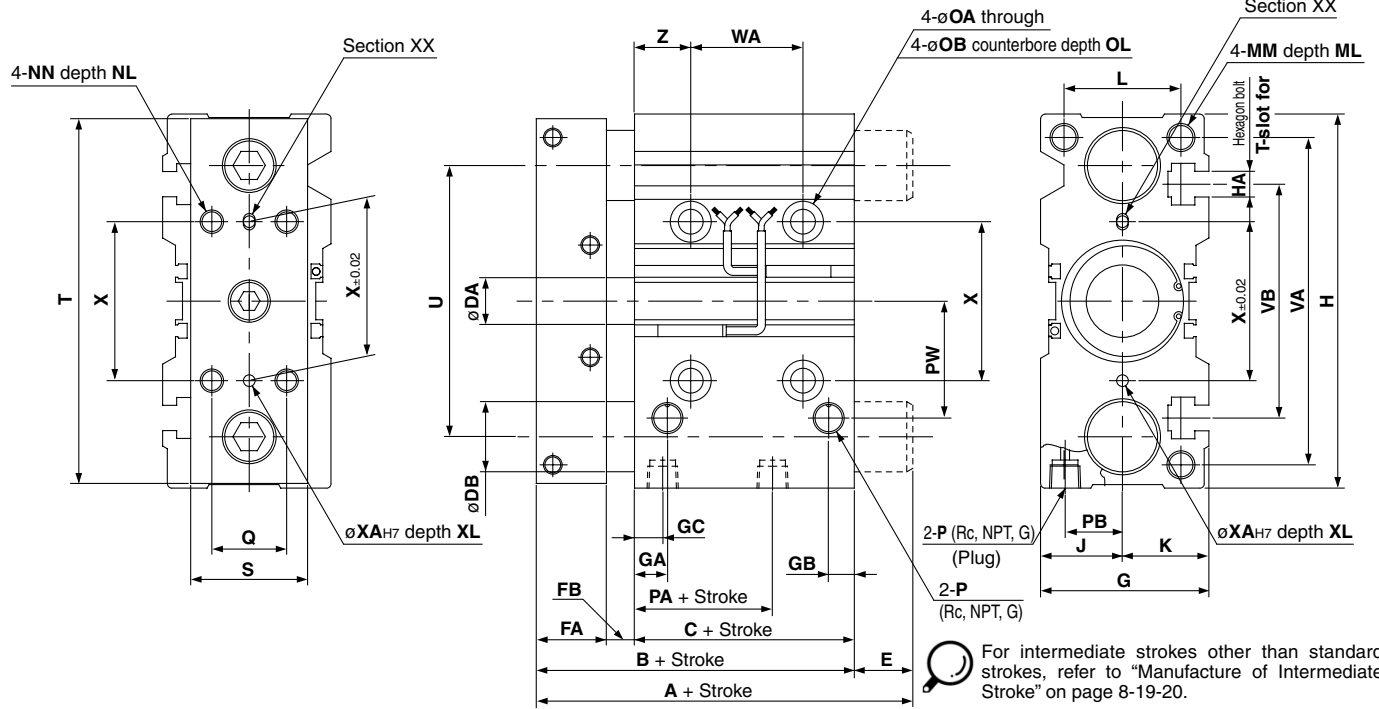
MGPS50, 80



T-slot dimensions



Bore size (mm)	T-slot dimensions (mm)				
	a	b	c	d	e
50	11	17.8	10	6	17.5
80	13.3	20.3	12	8	22.5



Dimensions

Bore size (mm)	Standard stroke (mm)	A		B	C	DA	DB	E		FA	FB	G	GA	GB	GC	H	HA	J	K	L
		25, 50 st	Over 50 st					25, 50 st	Over 50 st											
50	25, 50, 75, 100, 125, 150, 175, 200	86	110	86	44	20	30	0	24	30	12	72	14	11	12	160	M10	35	37	50
80	125, 150, 175, 200	118	151	118	65	25	45	0	33	35	18	95	19	24	14.5	242	M12	47	48	66

Bore size (mm)	Standard stroke (mm)	MM	ML	NN	NL	OA	OB	OL	P	PA	PB	PW	Q	QA	QB	RA	RB	RR	RL
80	125, 150, 175, 200	M16 x 2	32	M12 x 1.75	24	12.5	20	17.5	3/8	14.5	29	77	40	18	9	80	200	M10 x 1.5	20

Bore size (mm)	Standard stroke (mm)	S	T	U	VA	VB	WA			WB			X	XA	XB	XC	XL
							25 st	50, 75, 100 st	Over 100 st	25 st	50, 75, 100 st	Over 100 st					
50	25, 50, 75, 100, 125, 150, 175, 200	50	156	116	140	100	24	48	124	36	48	86	68	5	6	4	8
80	125, 150, 175, 200	65	228	170	214	138	28	52	128	42	54	92	100	6	7	5	10

Bore size (mm)	Standard stroke (mm)	YY	YL	Z
80	125, 150, 175, 200	M14 x 2	28	28

- MX
- MTS
- MY
- CY
- MG**
- CX
- D-
- X
- 20-
- Data

For intermediate strokes other than standard strokes, refer to "Manufacture of Intermediate Stroke" on page 8-19-20.