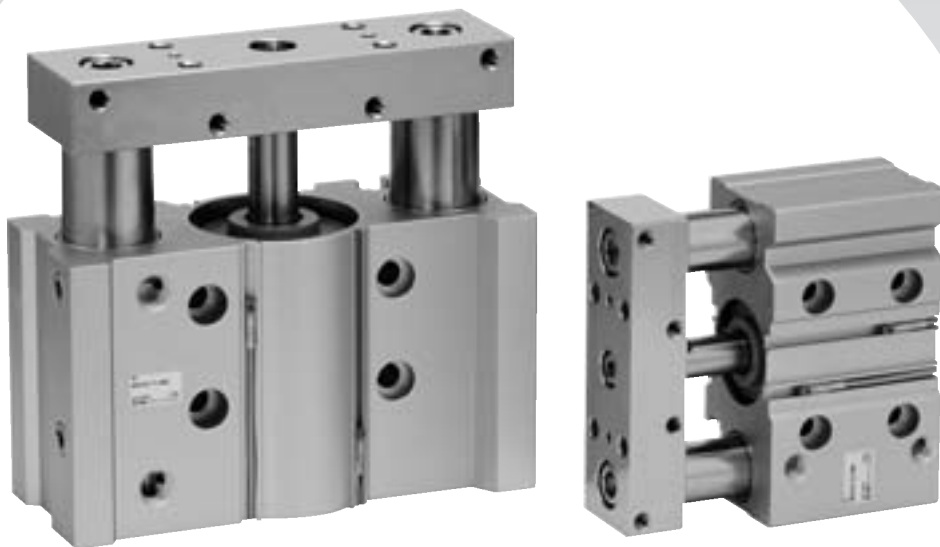


Compact Guide Cylinder/Heavy Duty Guide Rod Type

Series *MGPS*

Ø50, Ø80

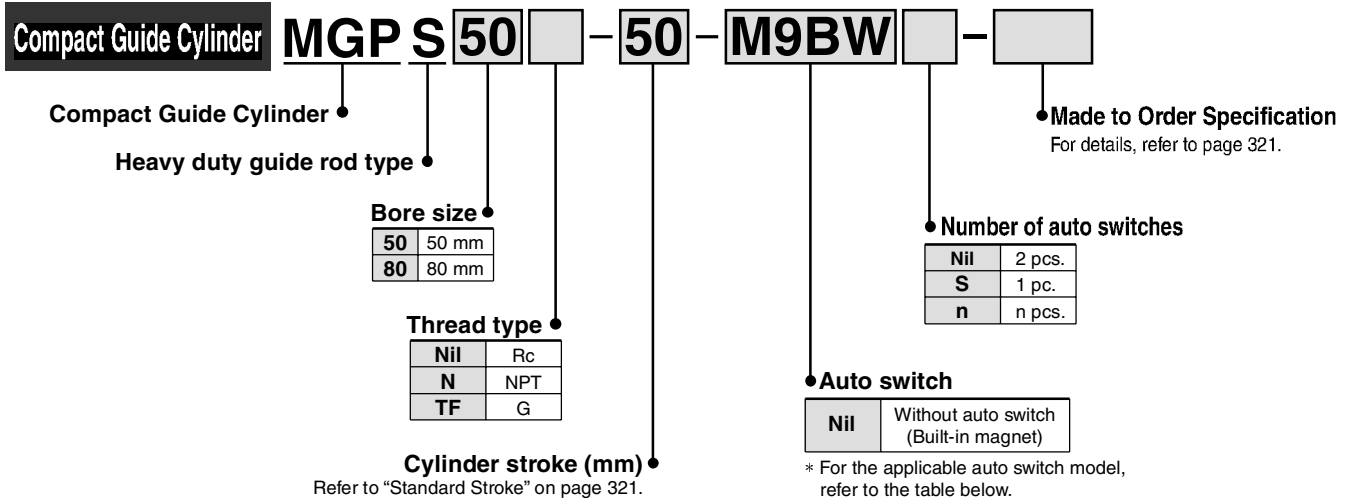


■ Stroke Variations

Bearing type	Bore size (mm)	Stroke (mm)							
		25	50	75	100	125	150	175	200
MGPM Slide bearing	50	●	●	●	●	●	●	●	●
	80	●	●	●	●	●	●	●	●

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

How to Order



Applicable Auto Switch/Refer to pages 1719 to 1827 for further information on auto switches.

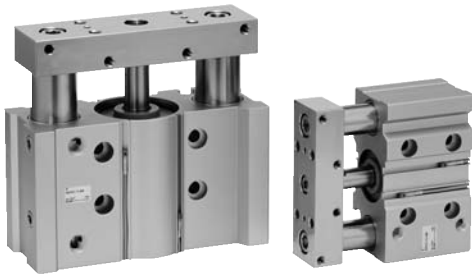
Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)				Pre-wired connector	Applicable load				
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)						
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24V	5V, 12V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC		
				3-wire (PNP)				M9PV	M9P	●	●	●	○	○				
	2-wire			5V, 12V	M9BV	M9B	●	●	●	○	○	—						
	3-wire (NPN)				M9NWV	M9NW	●	●	●	○	○							
	3-wire (PNP)			12V	M9PWV	M9PW	●	●	●	○	○	IC circuit						
	2-wire				M9BWV	M9BW	○	○	●	○	○							
	Diagnostic indication (2-color indication)			3-wire (NPN)	5V, 12V	—	—	—	—	M9NAV	M9NA	○	○	●	○		○	IC circuit
										M9PAV	M9PA	○	○	●	○		○	
	Water resistant (2-color indication)			3-wire (PNP)	12V	—	—	—	—	M9BAV	M9BA	○	○	●	○		○	—
										—	P3DW	●	—	●	●		○	
Magnetic field resistant (2-color indication)	2-wire (Non-polar)	—	—	—	—	—	—	P4DW	—	—	●	●	○	—				
							—	—	—	—	—	—	—		—			
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	24V	12V	100V	A96V	A96	●	—	●	—	—	IC circuit	—		
				2-wire				100V or less	A93V	A93	●	—	●	—	—	—	Relay, PLC	
									A90V	A90	●	—	●	—	—	—	IC circuit	

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW
1 m..... M (Example) M9NWM
3 m..... L (Example) M9NWL
5 m..... Z (Example) M9NWZ

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

* Since there are other applicable auto switches than listed, refer to page 336 for details.
* For details about auto switches with pre-wired connector, refer to pages 1784 and 1785. For D-P3DW□, refer to pages 1773-1 and 1773-2.
* Auto switches are shipped together (not assembled).

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



Specifications

Bore size	ø50	ø80
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	Not required (Non-lube)	
Stroke length tolerance	$^{+1.5}_0$ mm	

Standard Stroke

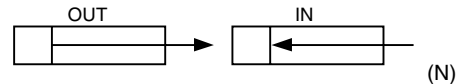
Bore size (mm)	Standard stroke (mm)
50, 80	25, 50, 75, 100, 125, 150, 175, 200

Manufacture of Intermediate Stroke

Description	Spacer installation type Spacers are installed in the standard stroke cylinder. Available by the 5 mm stroke interval.
Part no.	Refer to "How to Order" for the standard model numbers on page 320.
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



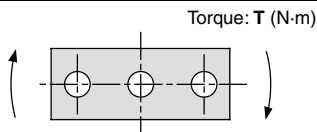
Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)								
				0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
50	20	OUT	1963	393	589	785	982	1178	1374	1571	1767	1963
		IN	1649	330	495	660	825	990	1155	1319	1484	1649
80	25	OUT	5027	1005	1508	2011	2513	3016	3519	4021	4524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

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

Mass

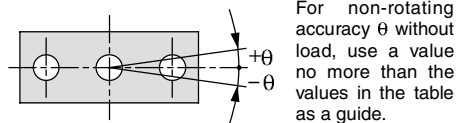
Bore size (mm)	Model	Standard stroke (mm)							
		25	50	75	100	125	150	175	200
50	MGPS50	3.90	4.68	5.74	6.52	7.30	8.08	8.86	9.64
80	MGPS80	9.21	10.7	13.0	14.5	15.9	17.9	18.9	20.3

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



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

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



Made to Order Specifications
(For details, refer to page 1995.)

Symbol	Specifications
—X867	Lateral piping type (Change of plug position)

Refer to pages 334 to 336 for cylinders with auto switches.

- Minimum auto switch mounting stroke
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Auto switch mounting bracket: Part no.

Series MGPS Model Selection

Selection Conditions

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

Selection Example 1 (Vertical Mounting)

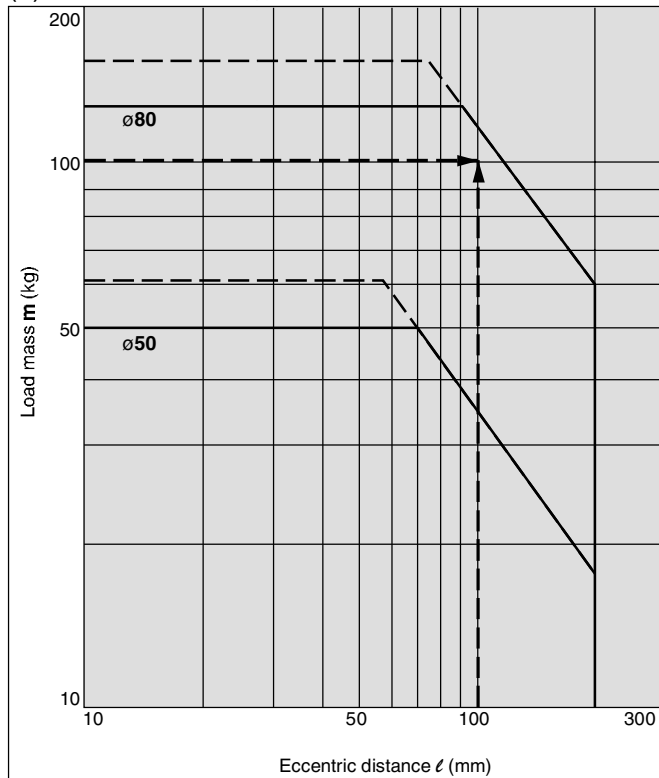
Selection conditions

Mounting: Vertical
Stroke: 50 stroke
Maximum speed: 200 mm/s
Load mass: 100 kg
Eccentric distance: 100 mm

Find the point of intersection for the load mass 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.

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



Selection Example 2 (Horizontal Mounting)

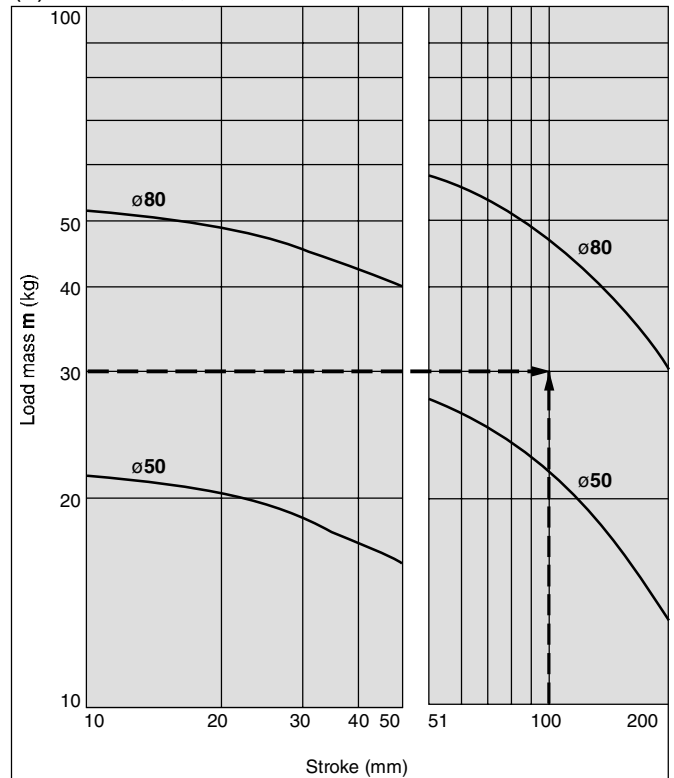
Selection conditions

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

Find the point of intersection for the load mass 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.

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



When the maximum speed exceeds 200 mm/s, the allowable load mass is determined by multiplying the value shown in the graph at 400 mm/s by the coefficient listed in the table below.

Maximum	Up to 300 mm/s	Up to 400 mm/s	Up to 500 mm/s
Coefficient	1.7	1	0.6

Gentle Automatic Solution Sdn Bhd

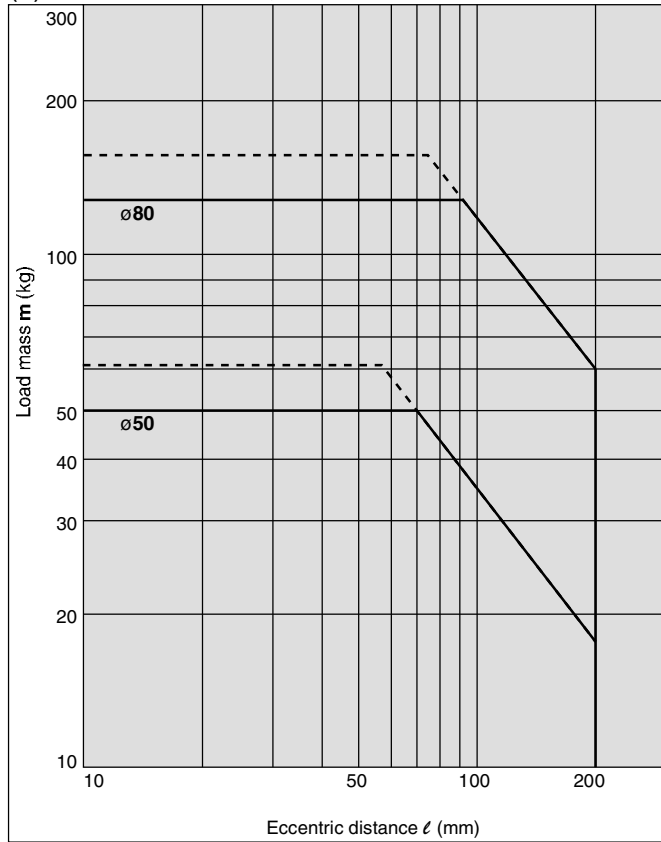
Tel :603-80237743 Fax :603-80239743 Email :sales@gentle.com.my <http://www.gentle.com.my>

Vertical Mounting (Slide Bearing)

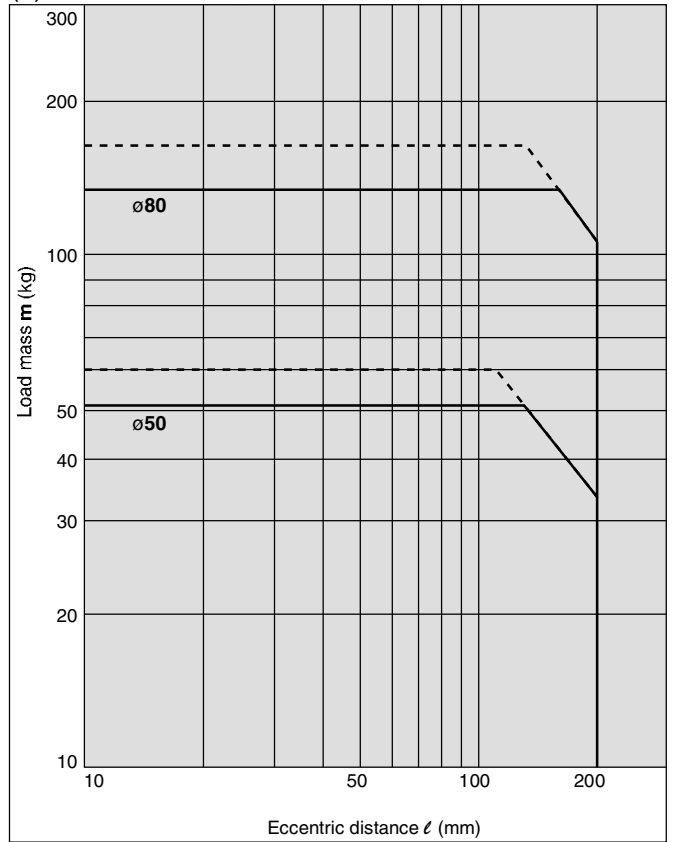
— Operating pressure 0.4 MPa
- - - Operating pressure 0.5 MPa or more

MGPS50, 80

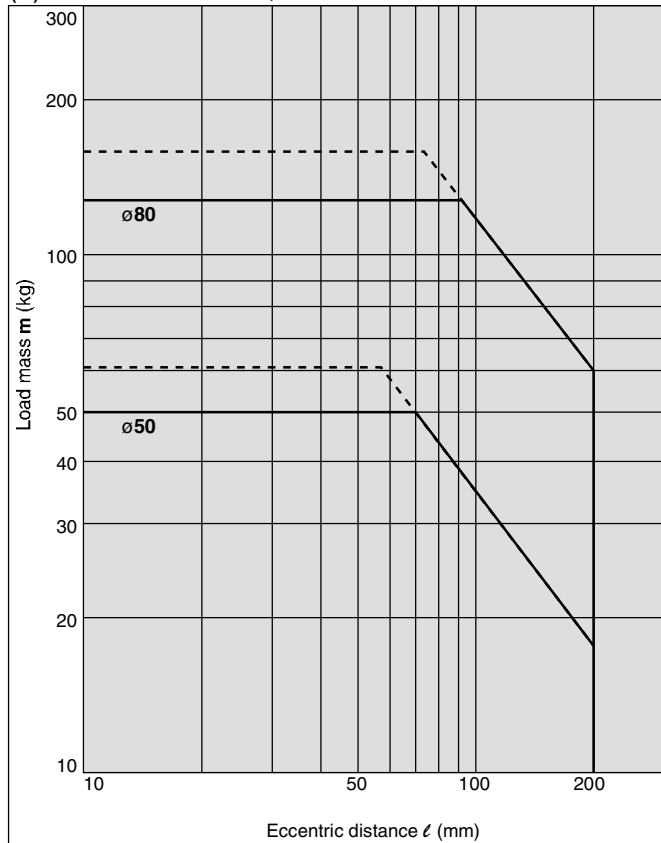
(1) 50 Stroke or Less, V = 200 mm/s or less



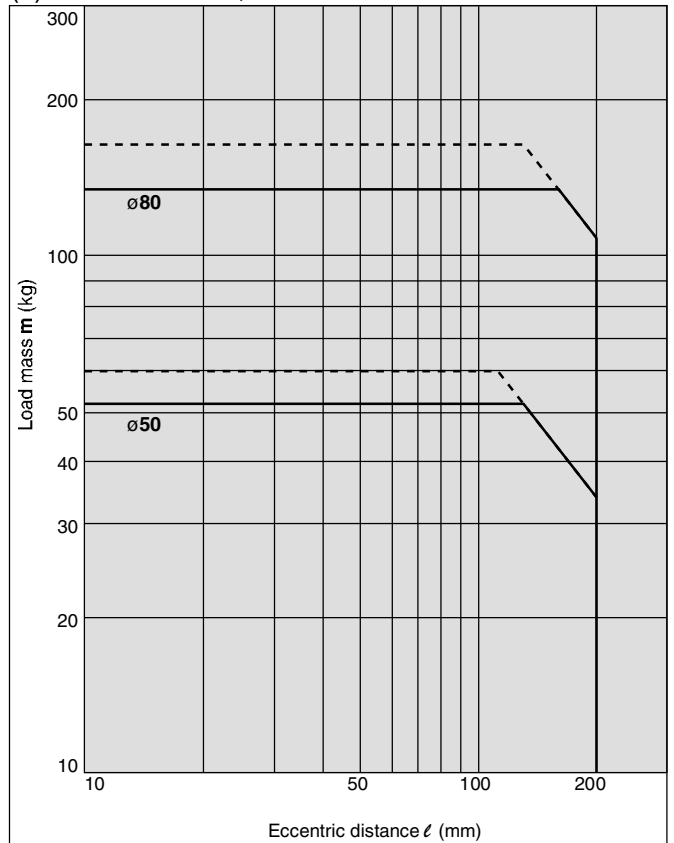
(2) Over 50 Stroke, V = 200 mm/s or less



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



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

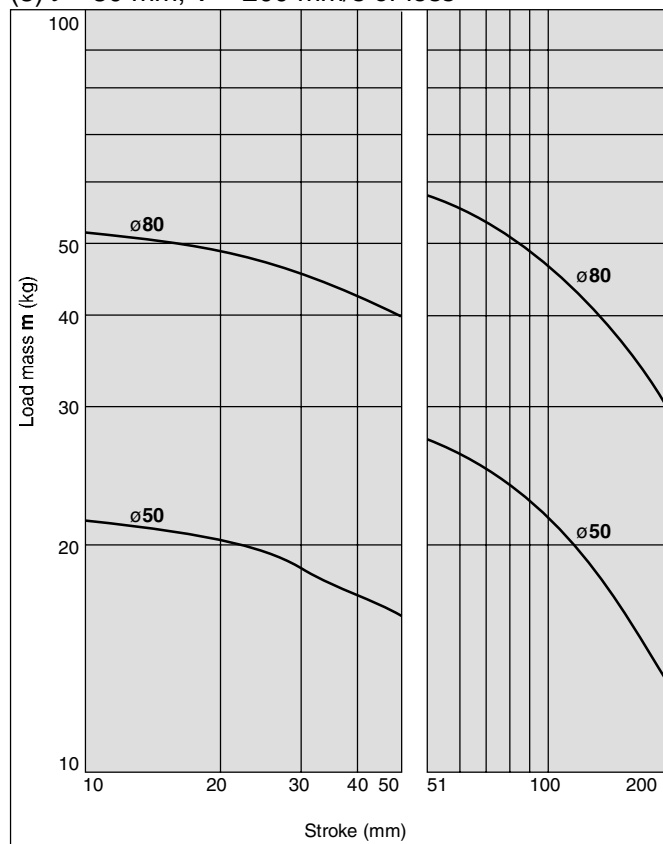


Series MGPS

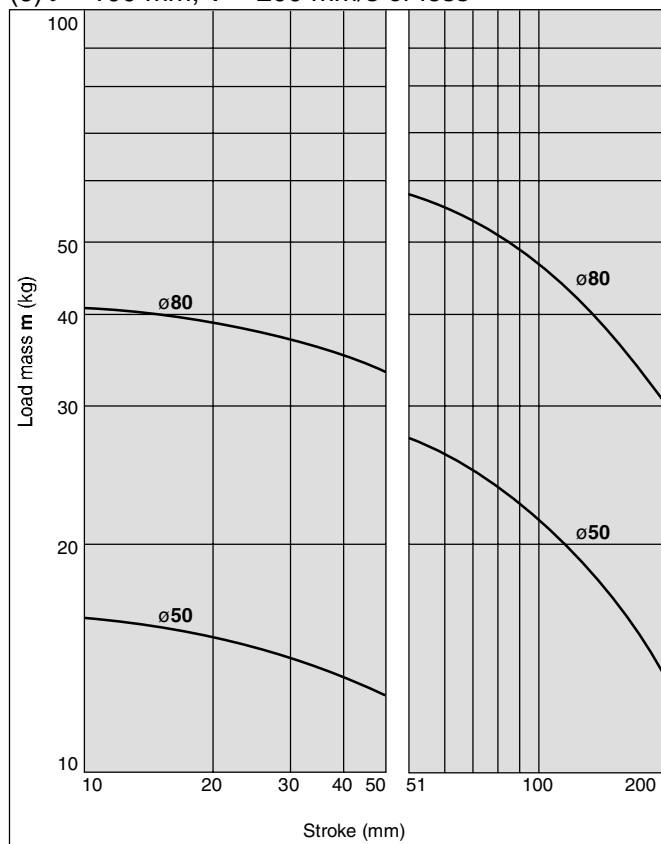
Horizontal Mounting (Slide Bearing)

MGPS50, 80

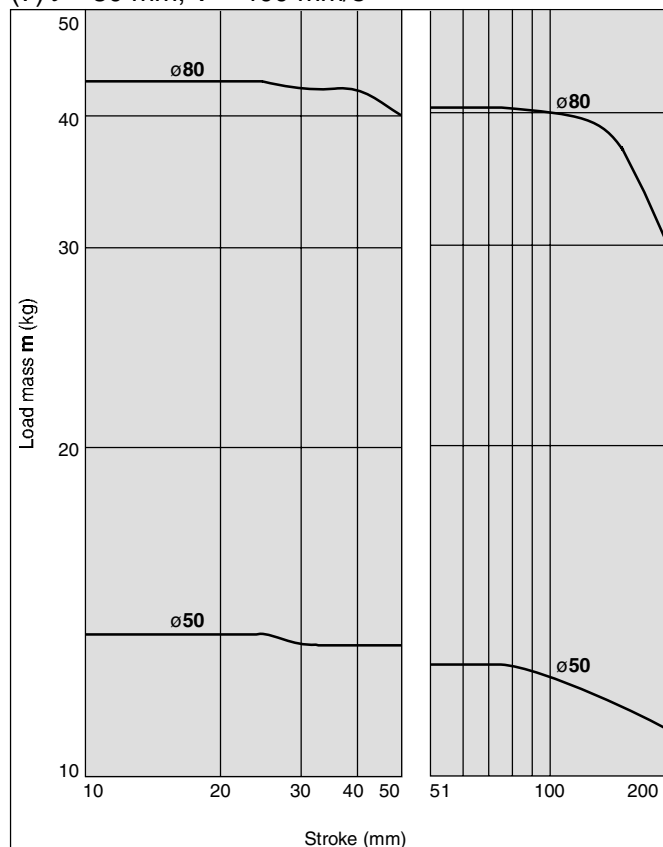
(5) $\ell = 50$ mm, $V = 200$ mm/s or less



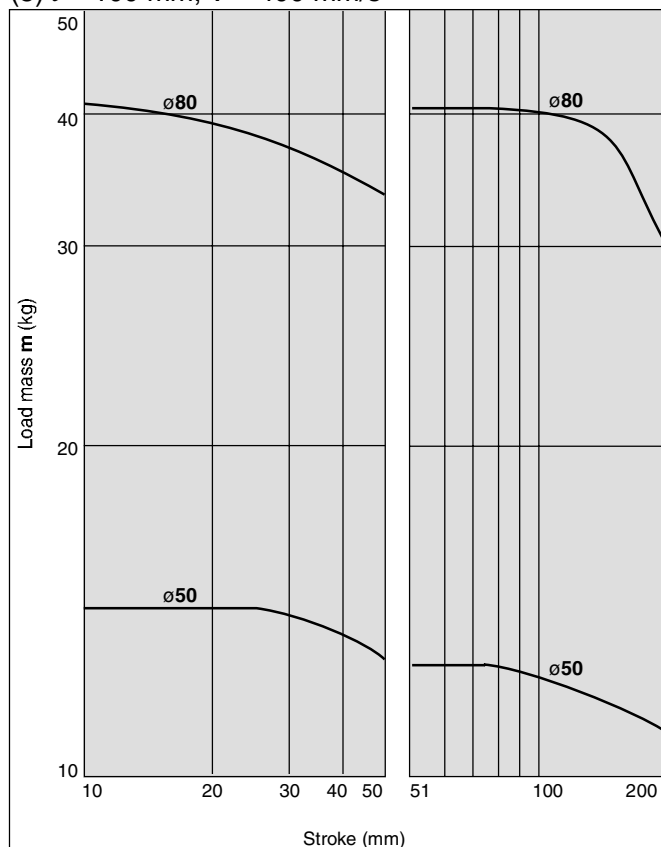
(6) $\ell = 100$ mm, $V = 200$ mm/s or less



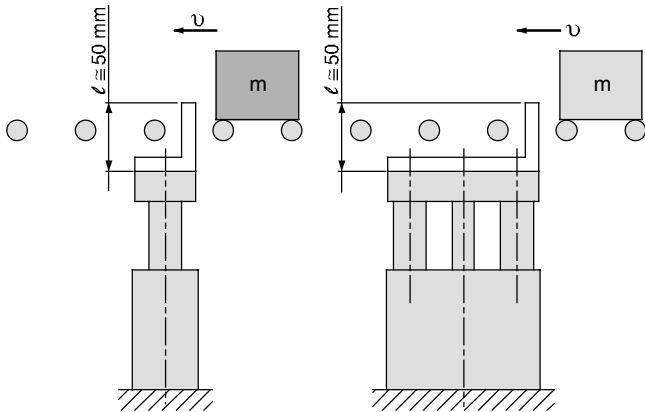
(7) $\ell = 50$ mm, $V = 400$ mm/s



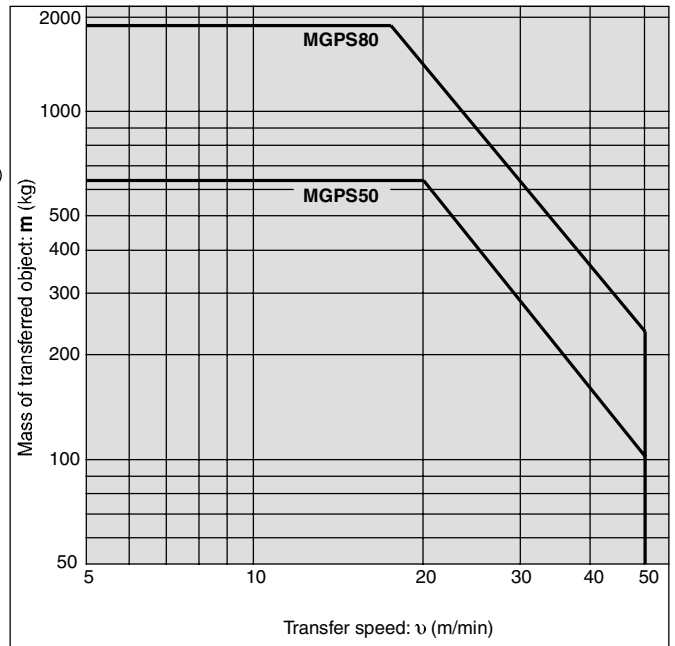
(8) $\ell = 100$ mm, $V = 400$ mm/s



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.



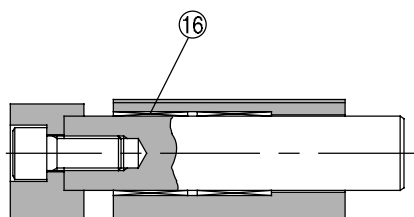
⚠ Caution

Caution on handling

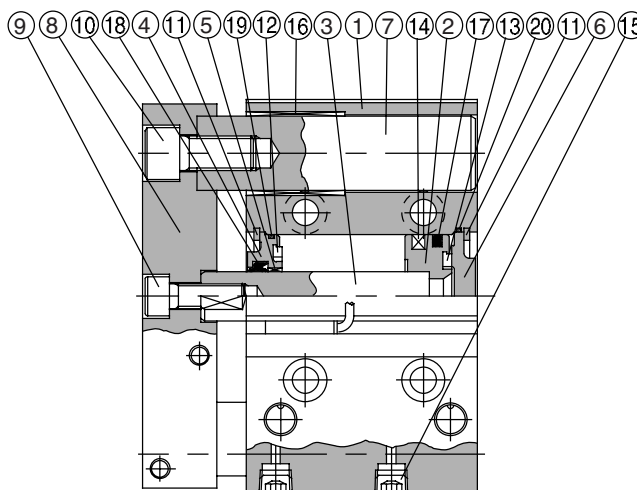
Note) When using as a stopper, select a model with 50 stroke or less.

Series MGPS

Construction



Over 50 stroke



50 stroke or less

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	Babbitt		
6	Head cover	Aluminum alloy	ø50	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

Component Parts

No.	Description	Material	Note
11	Retaining ring	Carbon tool steel	Phosphate coated
12	Bumper A	Urethane	
13	Bumper B	Urethane	
14	Magnet	—	
15	Hexagon socket head taper plug	Carbon steel	Nickel plated
16	Slide Bearing	Babbitt	
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.

* Since the seal kit does not include a grease pack, order it separately.

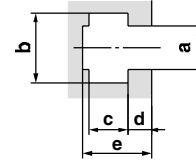
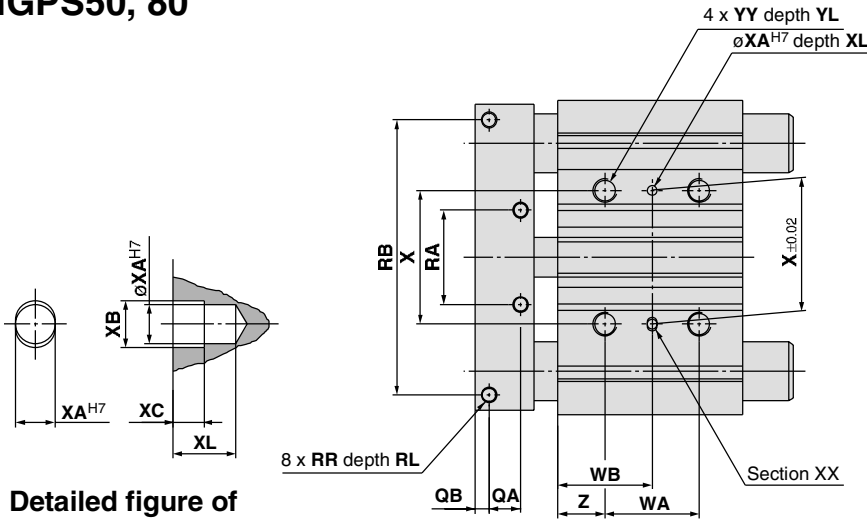
Grease pack part no.: GR-S-010 (10 g)

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

Dimensions

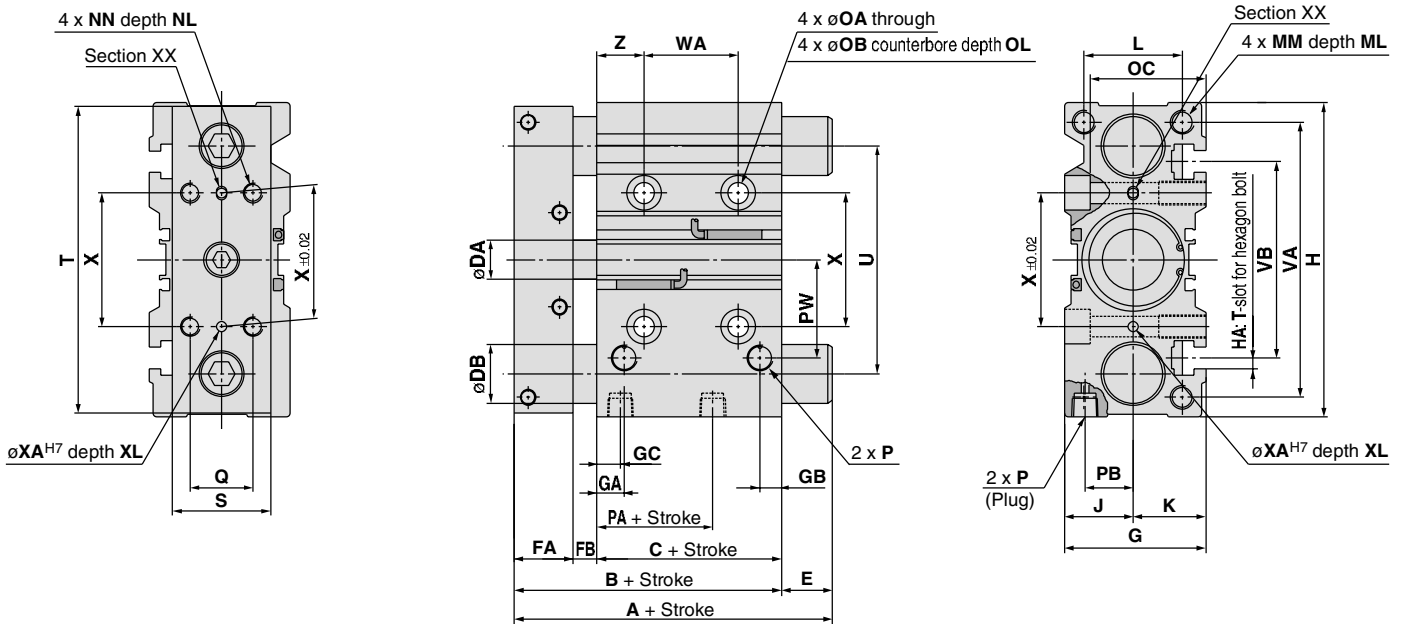
MGPS50, 80

T-slot dimensions



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

Detailed figure of XX section



For intermediate strokes other than standard strokes, refer to "Manufacture of Intermediate Stroke" on page 321.

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	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)	MM	ML	NN	NL	OA	OB	OC	OL	P			PA	PB	PW	Q	QA	QB	RA	RB	RR
									Nil	N	TF									
50	M12 x 1.75	20	M10 x 1.5	20	10.6	17.5	59	13	Rc 1/4	NPT 1/4	G 1/4	9	24.5	50	32	16	7	48	140	M8 x 1.25
80	M16 x 2.0	32	M12 x 1.75	24	12.5	20	72	17.5	Rc 3/8	NPT 3/8	G 3/8	14.5	29	77	40	18	9	80	200	M10 x 1.5
Bore size (mm)	RL	S	T	U	VA	VB	WA			WB			X	XA	XB	XC	XL	YY	YL	Z
							25 st	50, 75, 100 st	Over 100 st	25 st	50, 75, 100 st	Over 100 st								
50	14	50	156	116	140	100	24	48	124	36	48	86	68	5	6	4	8	M12 x 1.75	24	24
80	20	65	228	170	214	138	28	52	128	42	54	92	100	6	7	5	10	M14 x 2.0	28	28