



Compact Guide Cylinder With Air Cushion Series *MGP*

ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

MGP M 32 [] 50 A Y7BW []

Bearing type

M	Slide bearing
L	Ball bushing bearing

Number of auto switches

Nil	2 pcs.
S	1 pc.

Auto switch

Nil	Without auto switch (Built-in magnet)
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* For the applicable auto switch model, refer to the table below.
* Auto switches are shipped together, (but not assembled). (Except D-P5DW)

With air cushion

Cylinder stroke (mm)
Refer to "Standard Stroke" on page 8-19-26.

Thread type

Nil	M5 x 0.8
	Rc
N	NPT
TF	G

* For bore size 16, M5 x 0.8 is only available.

Bore size

16	16 mm	50	50 mm
20	20 mm	63	63 mm
25	25 mm	80	80 mm
32	32 mm	100	100 mm
40	40 mm		

- 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)				
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	●	●	○	○		
				2-wire				Y69B	Y59B	●	●	○	○		
				3-wire (NPN)				Y7NWV	Y7NW	●	●	○	○		
				3-wire (PNP)				Y7PWV	Y7PW	●	●	○	○		
				2-wire				Y7BWV	Y7BW	●	●	○	○		
Water resistant (2-color indication)	—	Y7BA	—	●	○	○	—								
Magnetic field resistant (2-color indication)	—	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.
* D-P5DW type can be mounted only on bore sizes 40 to 100.

- Since there are other applicable auto switches than listed, refer to page 8-19-36 for details.
- For details about auto switches with pre-wire connector, refer to page 8-30-52.

Series MGP



Specifications

Action	Double acting	
Fluid	Air	
Proof pressure	1.5 MPa	
Maximum operating pressure	1.0 MPa	
Minimum operating pressure	ø16	0.15 MPa
	ø20 to ø100	0.12 MPa
Ambient and fluid temperature	-10 to 60°C (No freezing)	
Piston speed	ø16 to ø63	50 to 500 mm/s
	ø80, ø100	50 to 400 mm/s
Cushion	Air cushion on both ends (Without bumper)	
Lubrication	Non-lube	
Stroke length tolerance	$^{+1.5}_0$ (mm)	

Standard Stroke

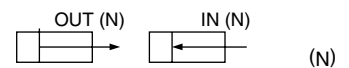
Bore size (mm)	Standard stroke (mm)
16	25, 50, 75, 100, 125, 150, 175, 200, 250
20 to 63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400
80, 100	50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400

Manufacture of Intermediate Stroke

Description	Dealing with the stroke by the 1 mm interval is available by installing spacer with standard stroke cylinder. Minimum manufacturable stroke ø16 to ø63: 15 mm ø80, ø100: 20 mm Select a rubber bumper type, because the cushion effect is not obtainable for less than this stroke.	
Part no.	Suffix "-XC19" to the end of standard part number.	
Applicable stroke (mm)	ø16	15 to 249
	ø20 to ø63	15 to 399
	ø80, ø100	20 to 399
Example	Model: MGPM20-35A-XC19 A collar 15 mm in width is installed in a MGPM20-50A C dimension is 112 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	
16	8	OUT	201	40	60	80	101	121	141	161	181	201	
		IN	151	30	45	60	76	91	106	121	136	151	
20	10	OUT	314	63	94	126	157	188	220	251	283	314	
		IN	236	47	71	94	118	142	165	189	212	236	
25	12	OUT	491	98	147	196	246	295	344	393	442	491	
		IN	378	76	113	151	189	227	265	302	340	378	
32	16	OUT	804	161	241	322	402	482	563	643	724	804	
		IN	603	121	181	241	302	362	422	482	543	603	
40	16	OUT	1257	251	377	503	629	754	880	1006	1131	1257	
		IN	1056	211	317	422	528	634	739	845	950	1056	
50	20	OUT	1963	393	589	785	982	1178	1374	1570	1767	1963	
		IN	1649	330	495	660	825	990	1154	1319	1484	1649	
63	20	OUT	3117	623	935	1247	1559	1870	2182	2494	2805	3117	
		IN	2803	561	841	1121	1402	1682	1962	2242	2523	2803	
80	25	OUT	5027	1005	1508	2011	2514	3016	3519	4022	4524	5027	
		IN	4536	907	1361	1814	2268	2722	3175	3629	4082	4536	
100	30	OUT	7854	1571	2356	3142	3927	4712	5498	6283	7069	7854	
		IN	7147	1429	2144	2859	3574	4288	5003	5718	6432	7147	

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

Made to Order Specifications (For details, refer to page 8-31-1.)

Symbol	Specifications
-XC19	Intermediate stroke (with spacer installed)
-XC79	Machining tapped hole, drilled hole and pin hole additionally.

Auto Switch Mounting Bracket Part No. for D-P5DW

Bore size (mm)	Mounting bracket part no.	Note
40, 50, 63, 80, 100	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)

Weight

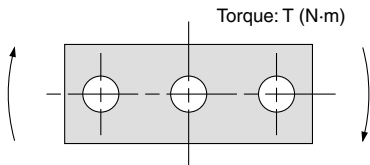
Slide bearing: MGPM16 to 100

Bore size (mm)	Model	Standard stroke (mm)								(kg)
		25	50	75	100	125	150	175	200	
16	MGPM16	0.51	0.69	0.78	0.91	—	—	—	—	
20	MGPM20	0.89	1.14	1.34	1.54	1.74	1.94	2.13	2.33	
25	MGPM25	1.23	1.60	1.87	2.14	2.41	2.68	2.95	3.23	
32	MGPM32	1.98	2.51	2.77	3.15	3.53	3.91	4.29	4.68	
40	MGPM40	2.34	2.91	3.21	3.64	4.06	4.49	4.92	5.34	
50	MGPM50	3.92	4.75	5.29	5.93	6.57	7.21	7.85	8.49	
63	MGPM63	4.94	5.89	6.54	7.29	8.05	8.81	9.56	10.32	
80	MGPM80	—	8.98	9.64	10.6	11.5	12.5	13.4	14.3	
100	MGPM100	—	14.2	15.1	16.5	17.8	19.1	20.5	21.8	

Ball bushing bearing: MGPL16 to 100

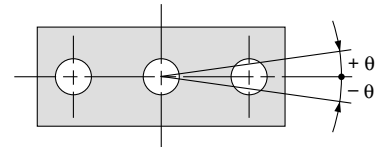
Bore size (mm)	Model	Standard stroke (mm)								(kg)
		25	50	75	100	125	150	175	200	
16	MGPL16	0.56	0.66	0.78	0.89	—	—	—	—	
20	MGPL20	0.97	1.12	1.30	1.50	1.68	1.85	2.03	2.20	
25	MGPL25	1.34	1.54	1.78	2.05	2.28	2.51	2.74	2.97	
32	MGPL32	1.81	2.34	2.57	2.94	3.26	3.58	3.89	4.21	
40	MGPL40	2.15	2.73	3.01	3.42	3.78	4.14	4.50	4.86	
50	MGPL50	3.65	4.47	4.95	5.71	6.14	6.69	7.24	7.79	
63	MGPL63	4.66	5.60	6.20	7.07	7.61	8.28	8.95	9.61	
80	MGPL80	—	8.88	9.63	10.5	11.3	12.1	12.9	13.7	
100	MGPL100	—	13.7	14.9	16.0	17.2	18.4	19.6	20.8	

Allowable Rotational Torque of Plate (Air cushion)



Bore size (mm)	Bearing type	Stroke								T (N-m)
		25	50	75	100	125	150	175	200	
16	MGPM	0.53	0.84	0.69	0.58	—	—	—	—	
	MGPL	1.27	0.86	0.65	0.52	—	—	—	—	
20	MGPM	0.99	2.23	1.88	1.63	1.44	1.28	1.16	1.06	
	MGPL	2.66	1.94	1.52	1.57	1.34	1.17	1.03	0.93	
25	MGPM	1.64	3.51	2.96	2.57	2.26	2.02	1.83	1.67	
	MGPL	4.08	3.02	2.38	2.41	2.05	1.78	1.58	1.41	
32	MGPM	6.35	6.64	5.69	4.97	4.42	3.98	3.61	3.31	
	MGPL	5.95	5.89	5.11	6.99	6.34	5.79	5.33	4.93	
40	MGPM	7.00	7.32	6.27	5.48	4.87	4.38	3.98	3.65	
	MGPL	6.55	6.49	5.62	7.70	6.98	6.38	5.87	5.43	
50	MGPM	13.0	13.8	12.0	10.6	9.50	8.60	7.86	7.24	
	MGPL	9.17	11.2	9.8	12.8	11.6	10.7	9.80	9.10	
63	MGPM	14.7	15.6	13.5	11.9	10.7	9.69	8.86	8.16	
	MGPL	10.2	12.5	11.0	14.3	13.0	11.9	11.0	10.2	
80	MGPM	—	26.0	22.9	20.5	18.6	17.0	15.6	14.5	
	MGPL	—	25.2	22.7	20.6	18.9	17.3	16.0	14.8	
100	MGPM	—	41.9	37.5	33.8	30.9	28.4	26.2	24.4	
	MGPL	—	41.7	37.9	34.6	31.8	29.3	27.2	25.3	

Non-rotating Accuracy of Plate



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

Bore size (mm)	Non-rotating accuracy θ	
	MGPM	MGPL
16	$\pm 0.08^\circ$	$\pm 0.10^\circ$
20	$\pm 0.07^\circ$	$\pm 0.09^\circ$
25		
32	$\pm 0.06^\circ$	$\pm 0.08^\circ$
40		
50	$\pm 0.05^\circ$	$\pm 0.06^\circ$
63		
80	$\pm 0.04^\circ$	$\pm 0.05^\circ$
100		

MX

MTS

MY

CY

MG

CX

D-

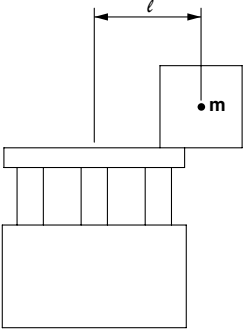
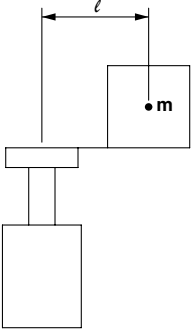
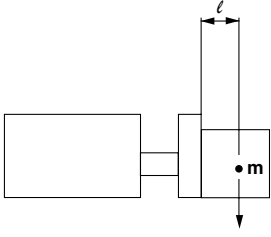
-X

20-

Data

Series MGP (With air cushion) Model Selection

Selection Conditions

Mounting orientation	Vertical		Horizontal	
				
Maximum speed (mm/s)	200	400	200	400
Graph (Slide bearing type)	(1), (2)	(3), (4)	(15), (16)	(17), (18)
Graph (Ball bushing bearing type)	(5) to (9)	(10) to (14)	(19), (20)	(21), (22)

Selection Example 1 (Vertical mounting)

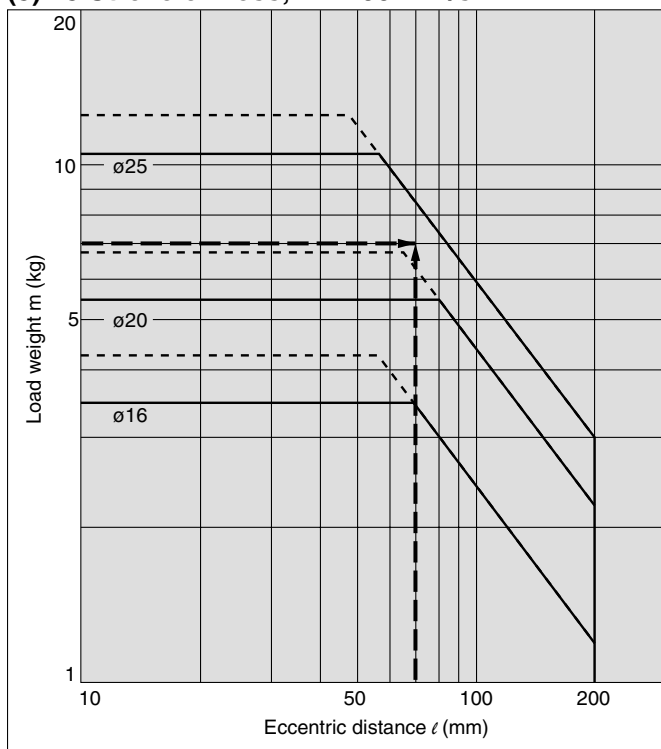
Selection conditions

Mounting: Vertical
 Bearing type: Ball bushing
 Stroke: 75 stroke
 Maximum speed: 200 mm/s
 Load weight: 7 kg
 Eccentric distance: 70 mm

Find the point of intersection for the load weight of 7 kg and the eccentric distance of 70 mm on graph (5), based on vertical mounting, ball bushing, 75 mm stroke, and the speed of 200 mm/s.

→ MGPL25-75A is selected.

(5) 75 Stroke or Less, V = 200 mm/s



Selection Example 2 (Horizontal mounting)

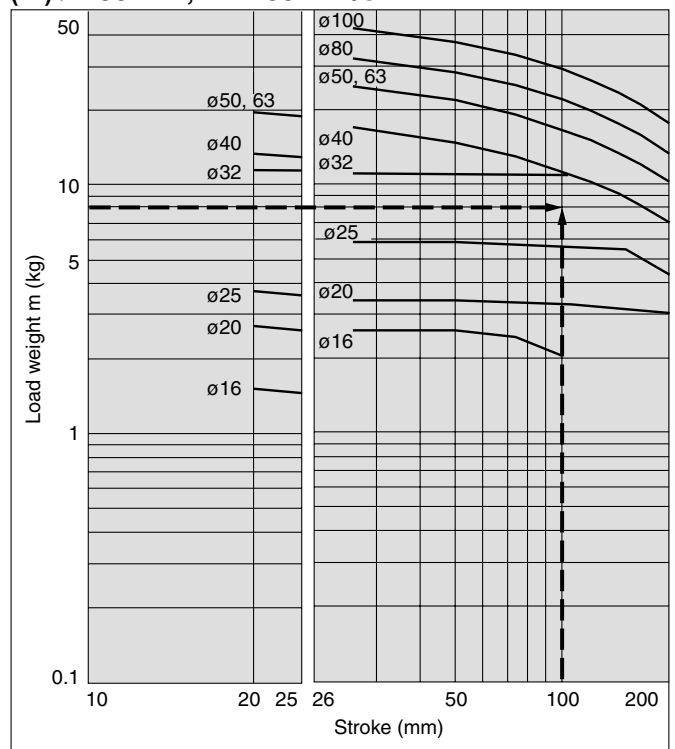
Selection conditions

Mounting: Horizontal
 Bearing type: Slide bearing
 Distance between plate and load center of gravity: 40 mm
 Maximum speed: 300 mm/s
 Load weight: 8 kg
 Stroke: 100 stroke

Find the point of intersection for the load weight of 8 kg and 100 stroke on graph (17), based on horizontal mounting, slide bearing, the distance of 40 mm between the plate and load center of gravity, and the speed of 300 mm/s.

→ MGPM32-100A is selected.

(17) $l = 50$ mm, V = 400 mm/s

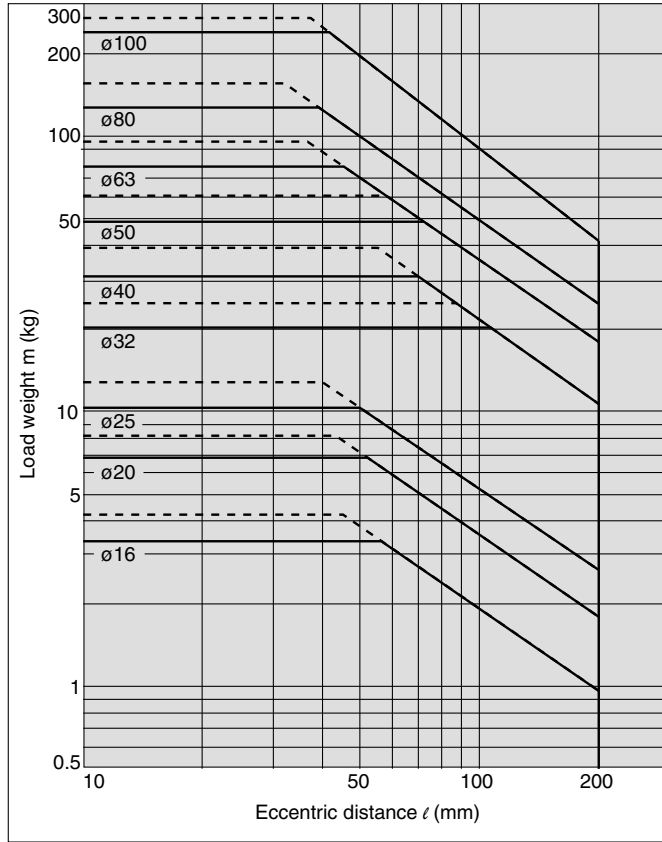


Vertical Mounting (Slide bearing)

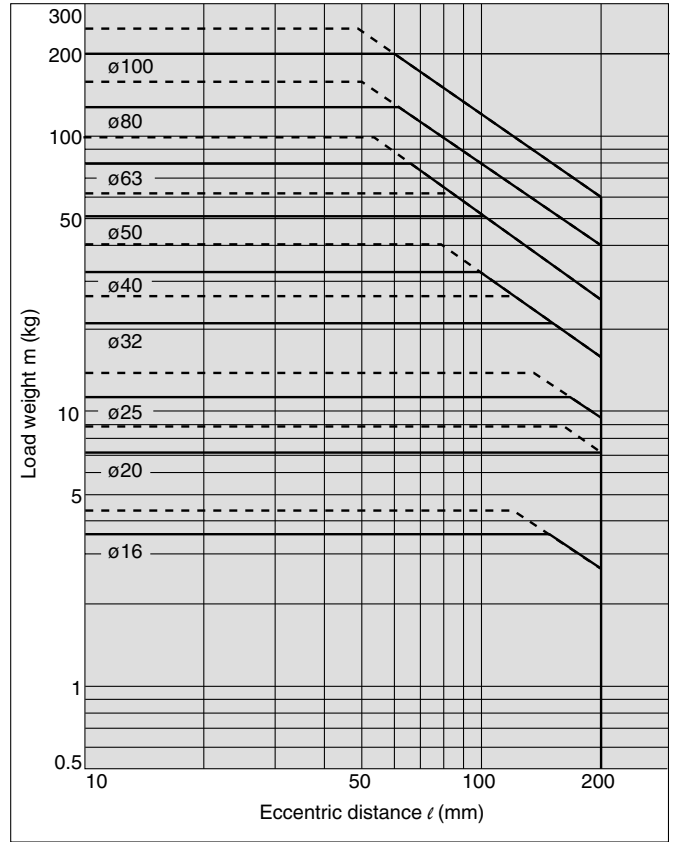
— Operating pressure 0.4 MPa
- - - Operating pressure 0.5 MPa or more

MGPM16 to 100

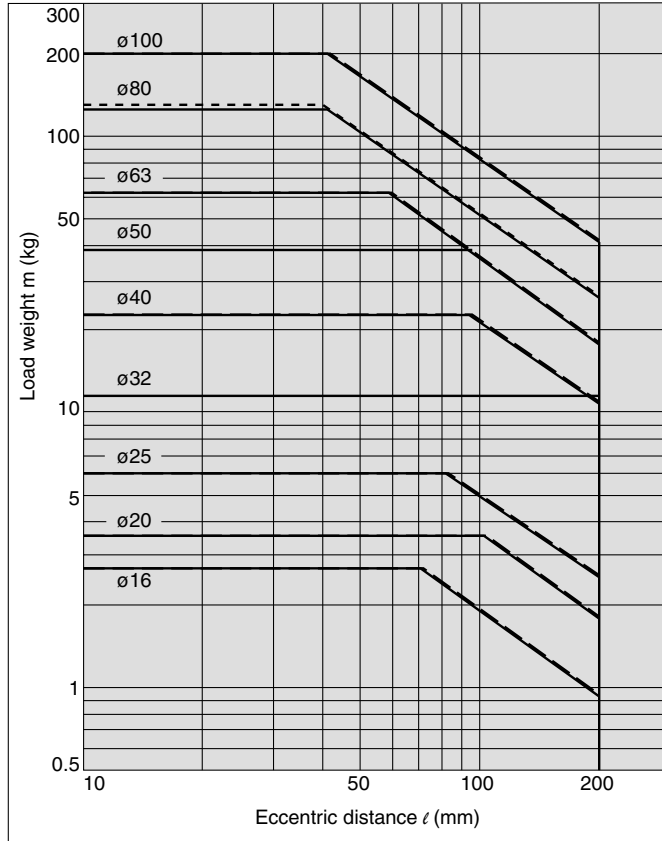
(1) 25 Stroke, V = 200 mm/s



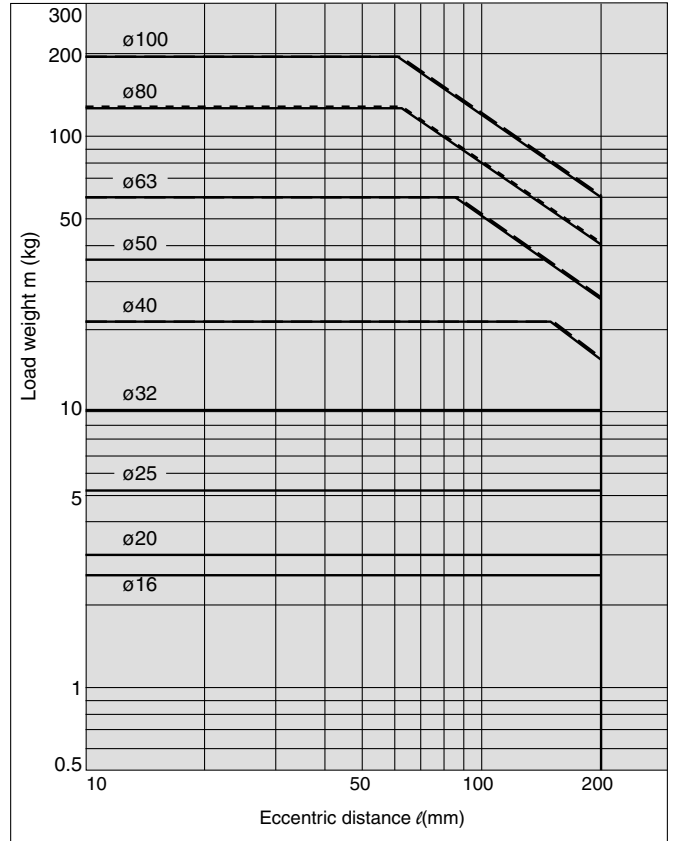
(2) Over 25 Stroke, V = 200 mm/s



(3) 25 Stroke, V = 400 mm/s



(4) Over 25 Stroke, V = 400 mm/s



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

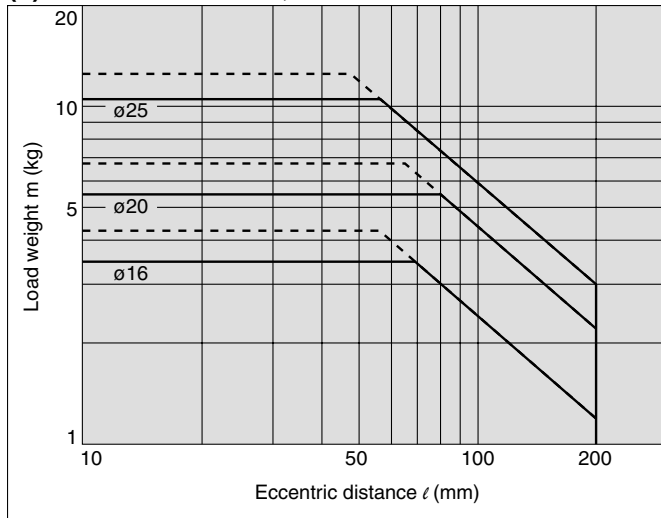
Series MGP

Vertical Mounting (Ball bushing bearing)

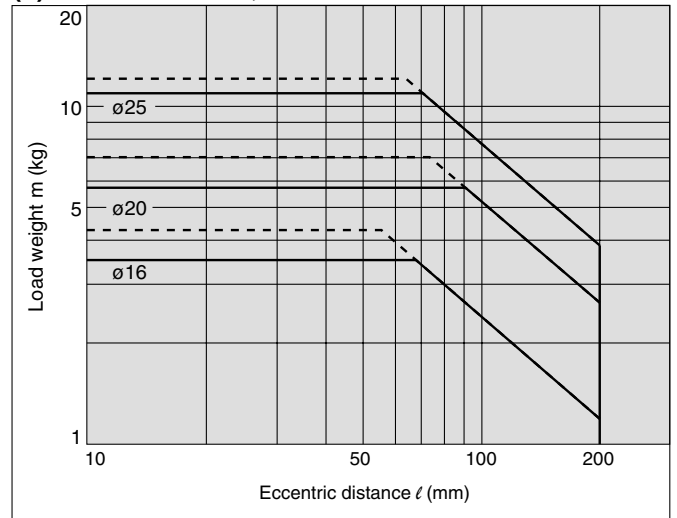
— Operating pressure 0.4 MPa
 - - - - - Operating pressure 0.5 MPa or more

MGPL16 to 25

(5) 75 Stroke or Less, V = 200 mm/s

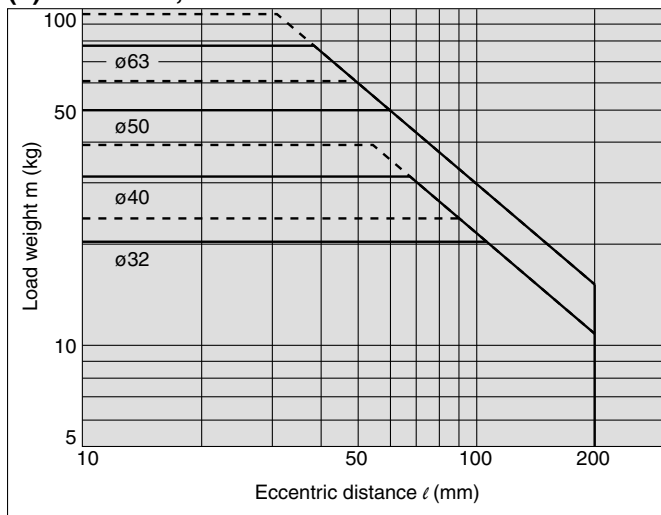


(6) Over 75 Stroke, V = 200 mm/s

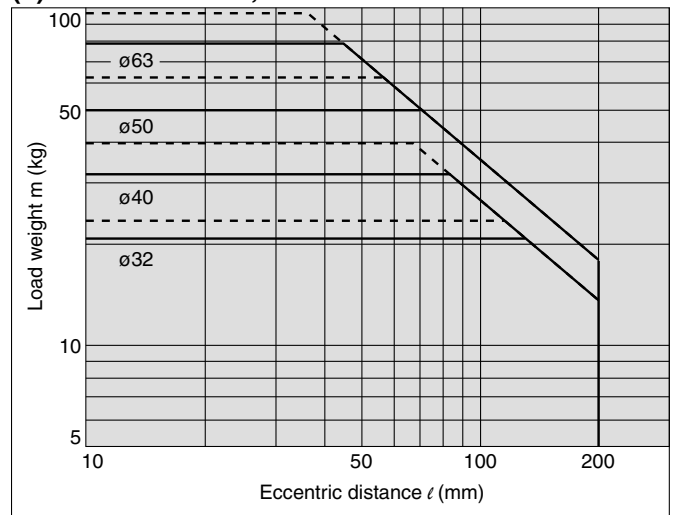


MGPL32 to 63

(7) 25 Stroke, V = 200 mm/s

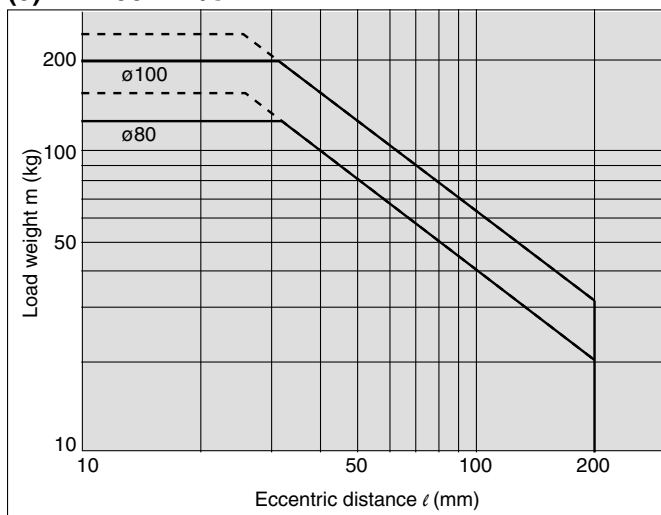


(8) Over 25 Stroke, V = 200 mm/s



MGPL80, 100

(9) V = 200 mm/s

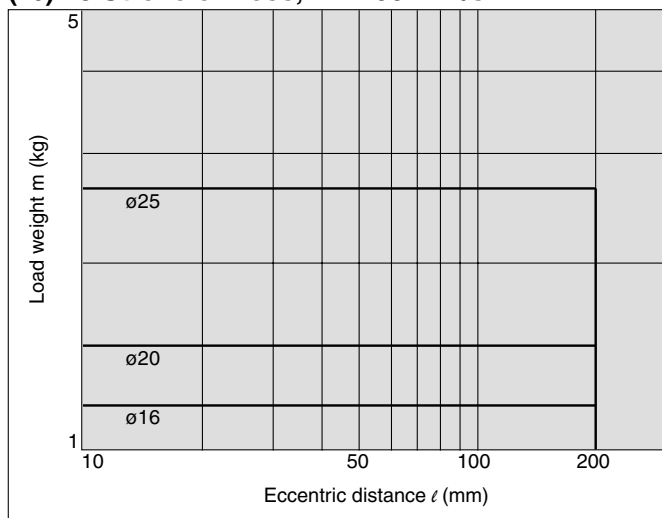


Vertical Mounting (Ball bushing bearing)

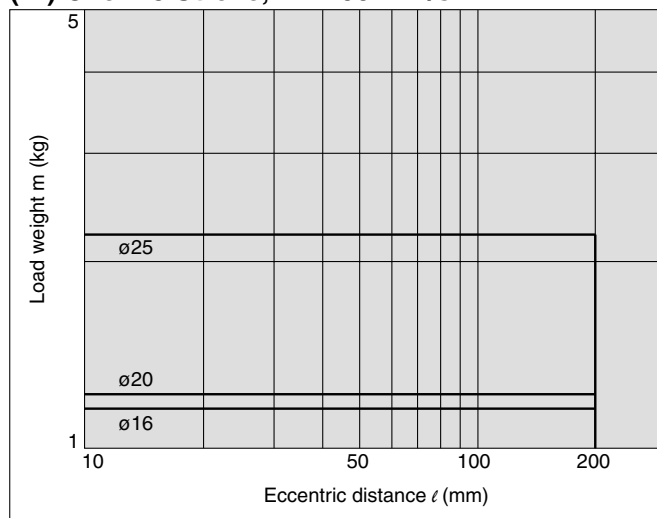
Operating pressure: 0.4 MPa

MGPL16 to 25

(10) 75 Stroke or Less, V = 400 mm/s

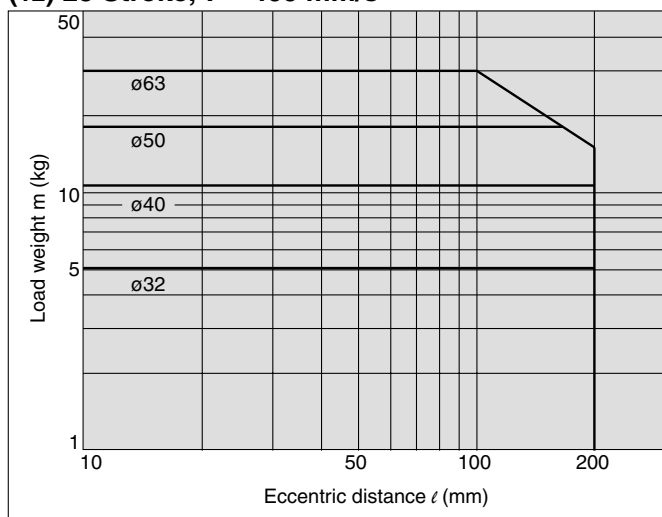


(11) Over 75 Stroke, V = 400 mm/s

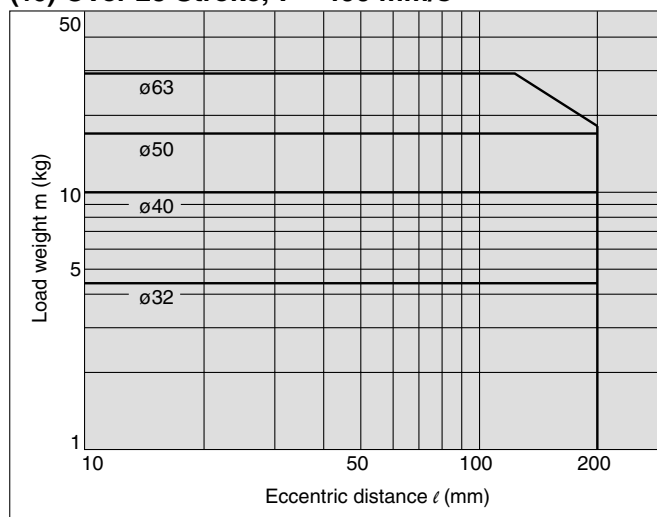


MGPL32 to 63

(12) 25 Stroke, V = 400 mm/s

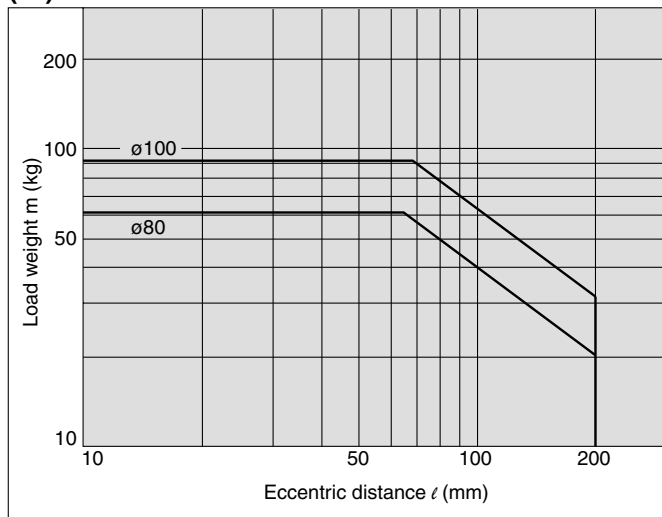


(13) Over 25 Stroke, V = 400 mm/s



MGPL80, 100

(14) V = 400 mm/s



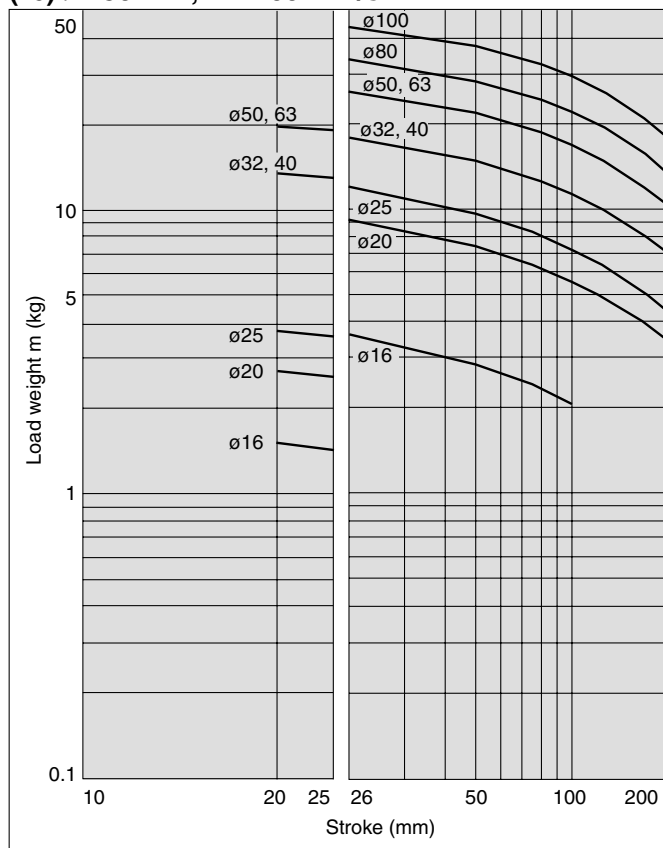
- MX
- MTS
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- X
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- Data

Series MGP

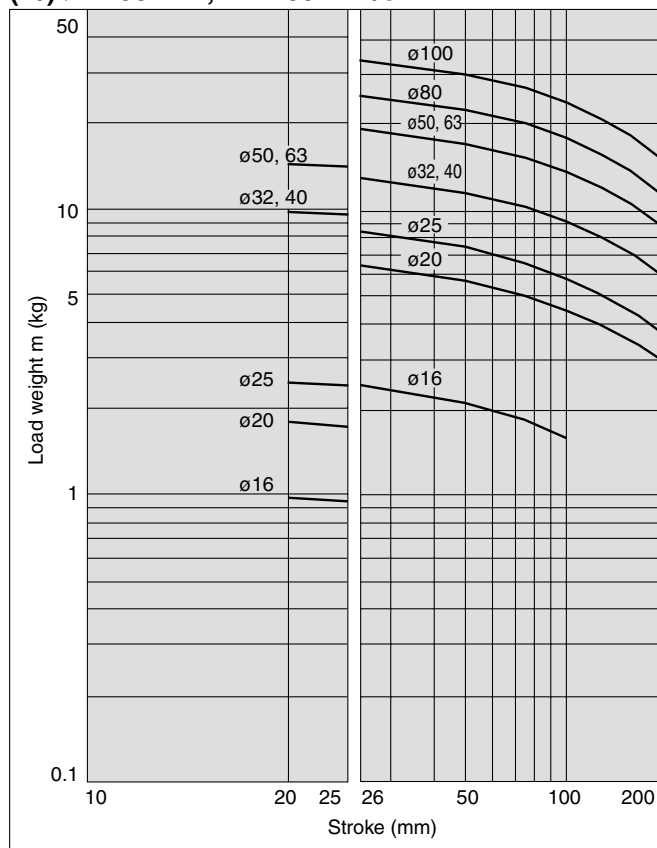
Horizontal Mounting (Slide bearing)

MGPM16 to 100

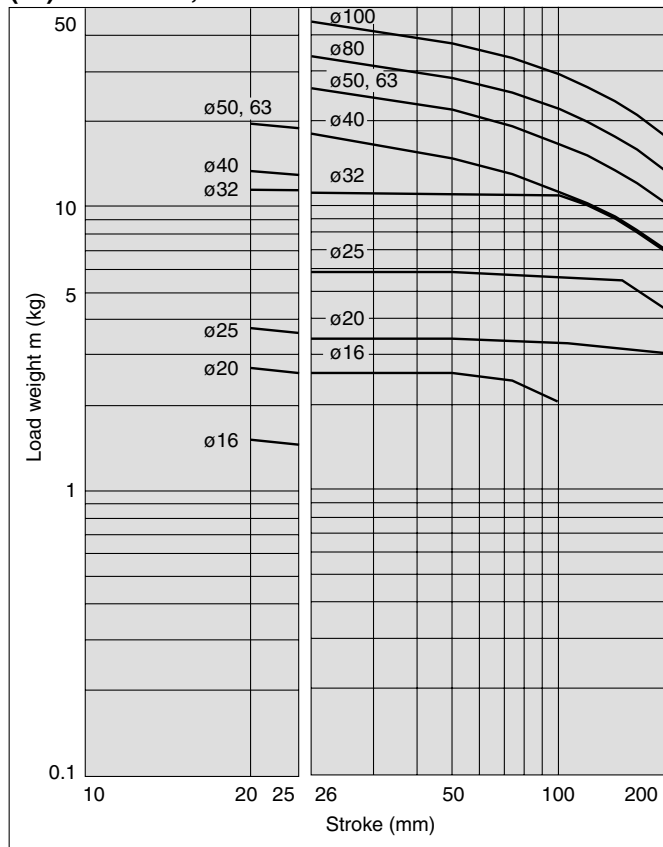
(15) $\ell = 50 \text{ mm}$, $V = 200 \text{ mm/s}$



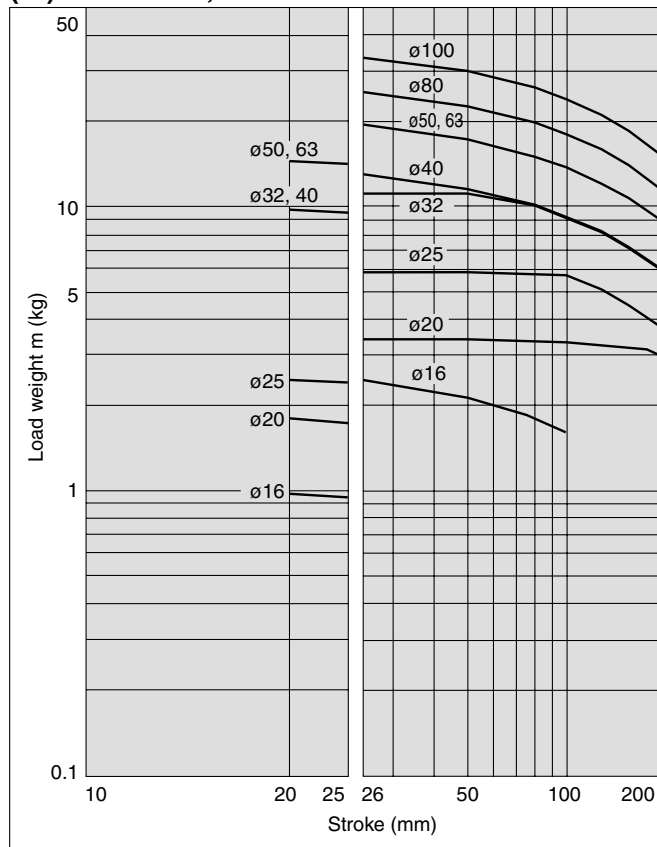
(16) $\ell = 100 \text{ mm}$, $V = 200 \text{ mm/s}$



(17) $\ell = 50 \text{ mm}$, $V = 400 \text{ mm/s}$



(18) $\ell = 100 \text{ mm}$, $V = 400 \text{ mm/s}$

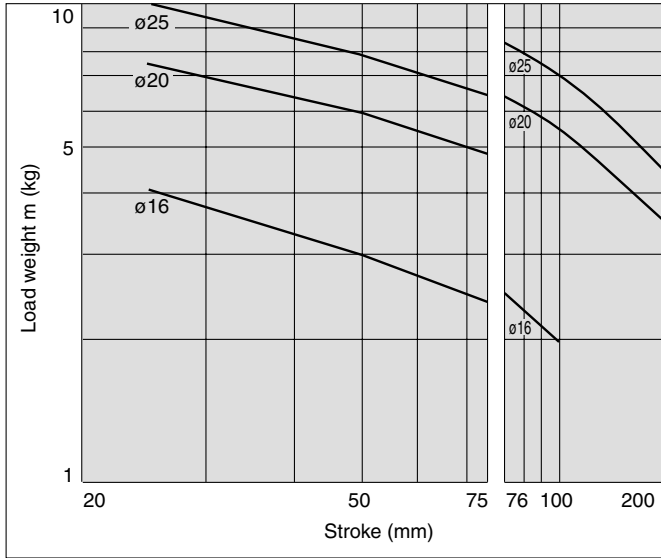


Horizontal Mounting (Ball bushing bearing)

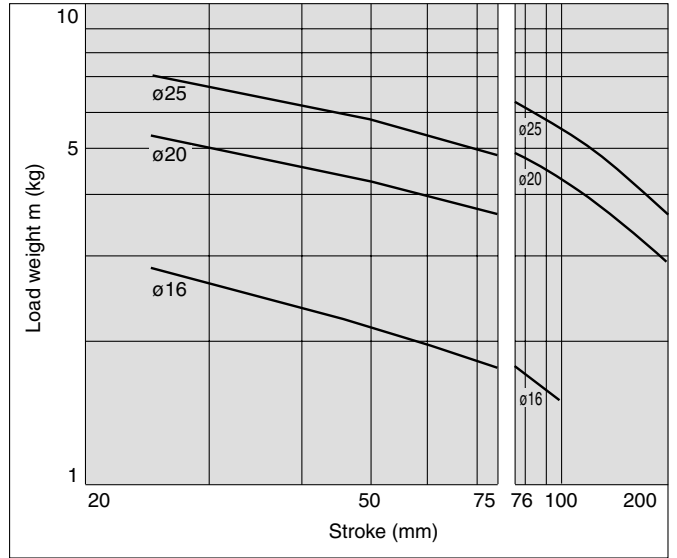
(19) $l = 50 \text{ mm}$, $V = 200 \text{ m/s}$

(20) $l = 100 \text{ mm}$, $V = 200 \text{ m/s}$

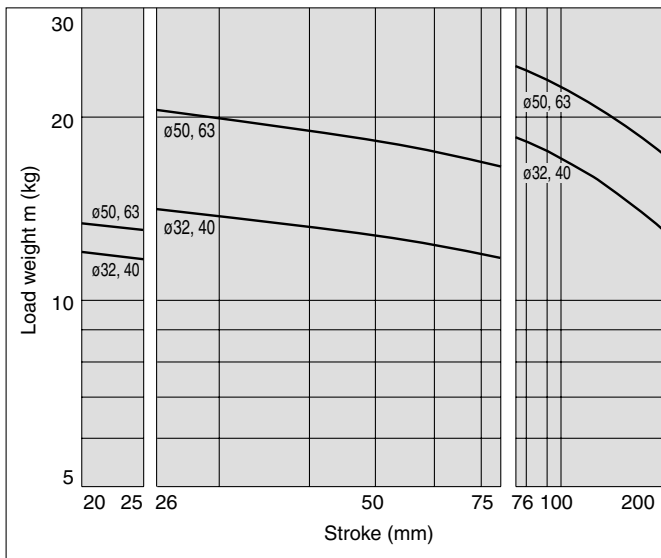
MGPL16 to 25



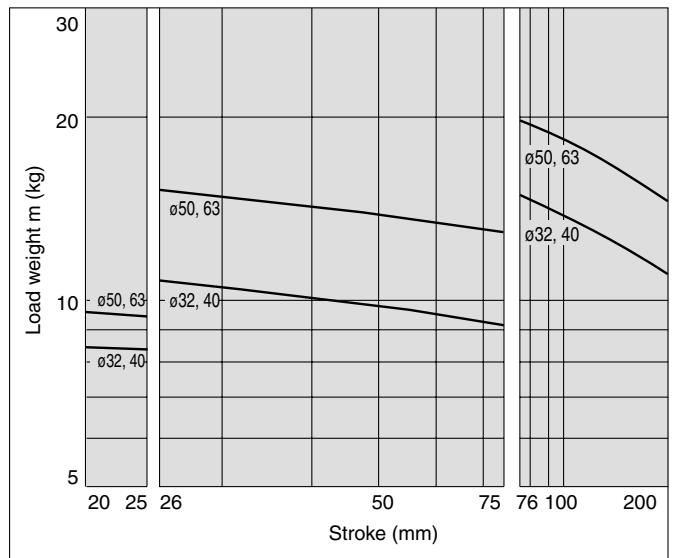
MGPL16 to 25



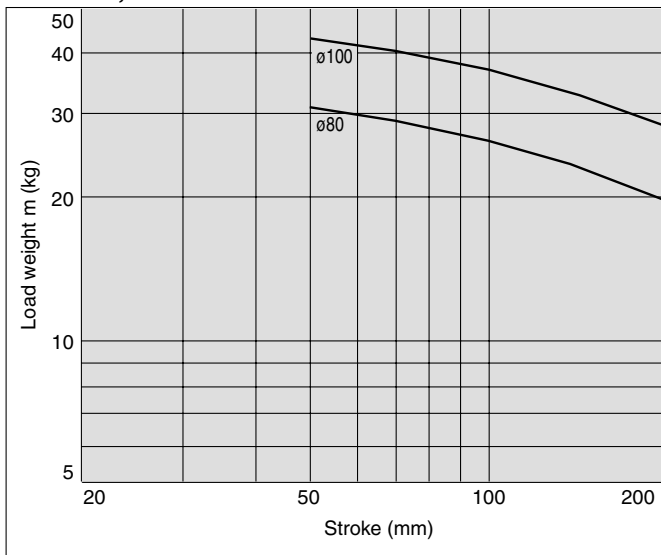
MGPL32 to 63



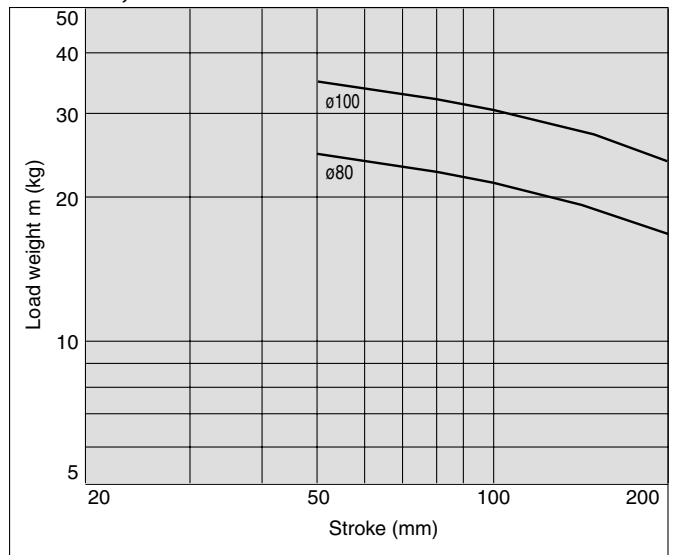
MGPL32 to 63



MGPL80, 100



MGPL80, 100



- MX
- MTS
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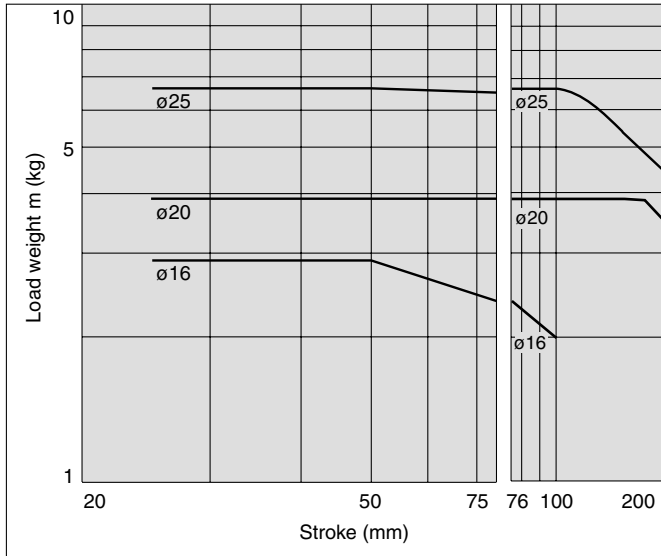
Series MGP

Horizontal Mounting (Ball bushing bearing)

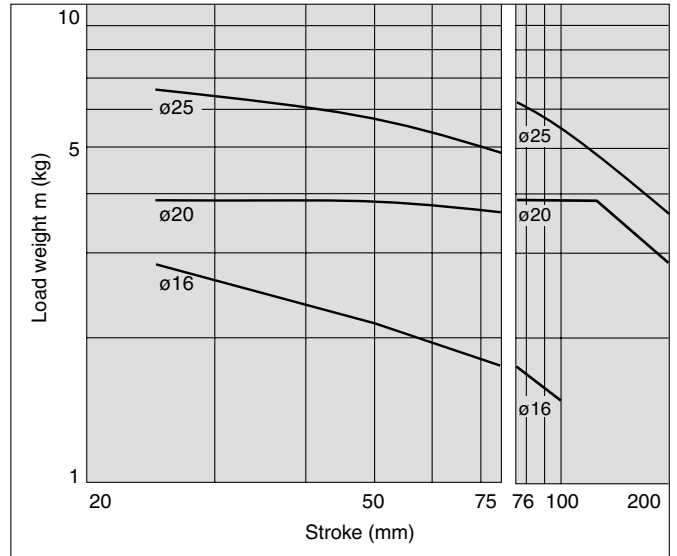
(21) $l = 50 \text{ mm}$, $V = 400 \text{ m/s}$

(22) $l = 100 \text{ mm}$, $V = 400 \text{ m/s}$

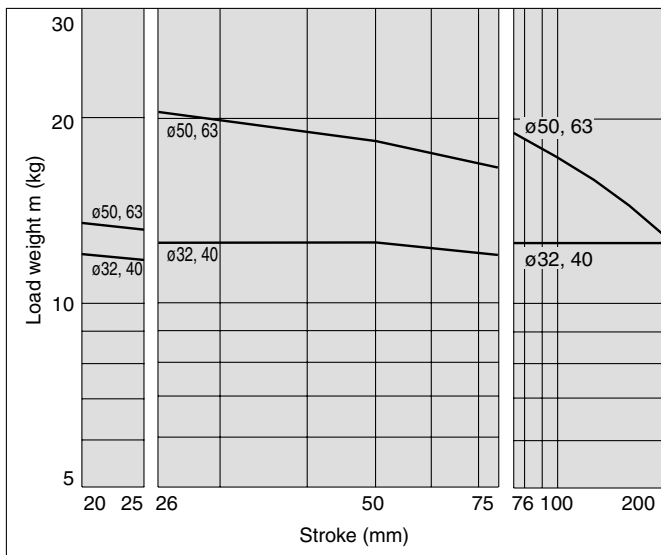
MGPL16 to 25



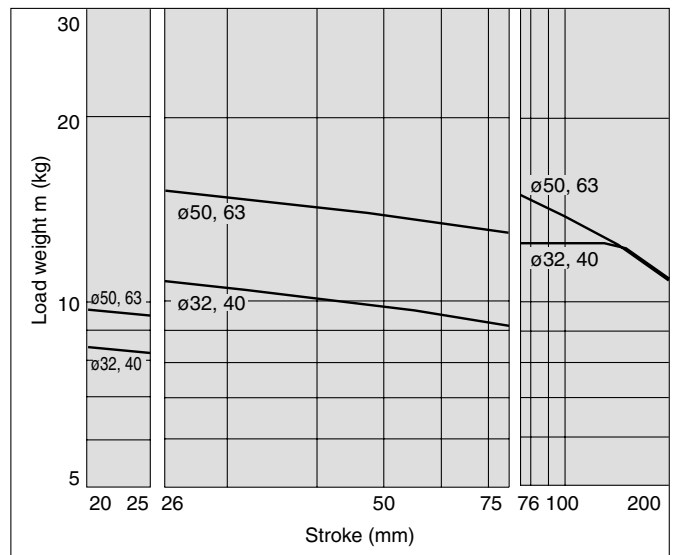
MGPL16 to 25



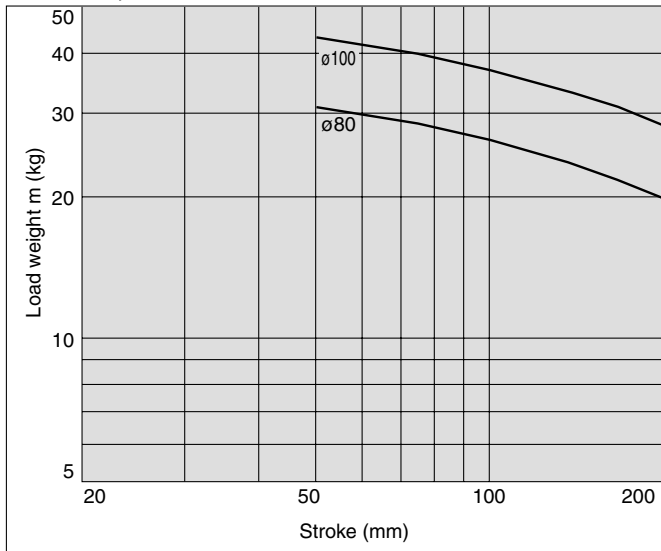
MGPL32 to 63



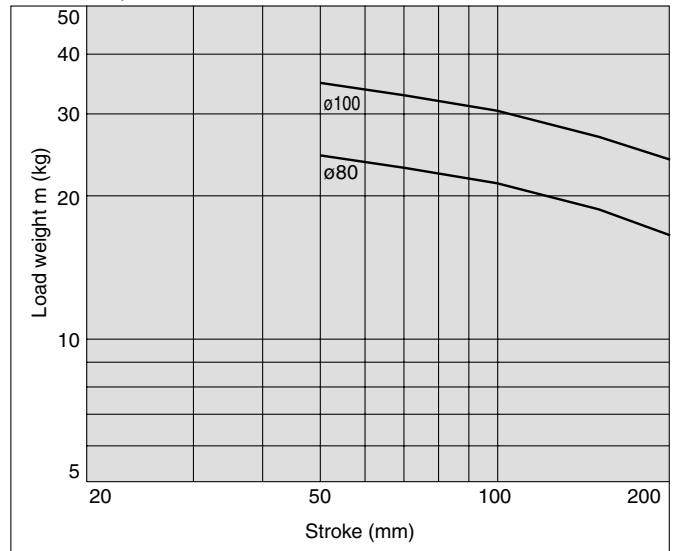
MGPL32 to 63



MGPL80, 100

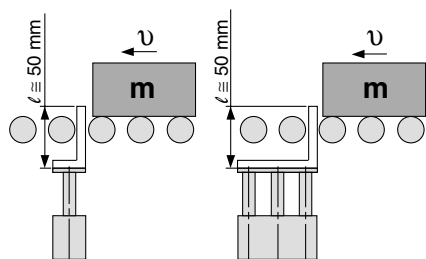


MGPL80, 100



Operating Range when Used as Stopper

Bore size 16 to 25/MGPM16 to 25 (Slide bearing)



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

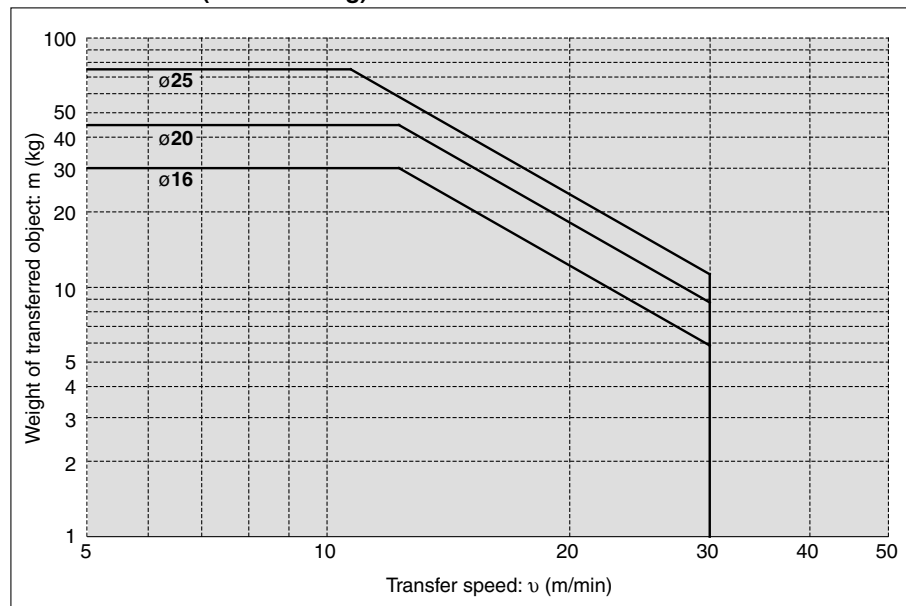
⚠ Caution

Caution on handling

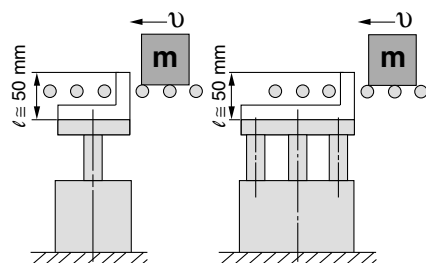
Note 1) When using as a stopper, select a model with 25 stroke or less.

Note 2) Model MGPL (Ball bushing bearing) cannot be used as a stopper.

MGPM16 to 25 (Slide bearing)



Bore Size 32 to 100/MGPM32 to 100 (Slide bearing)



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

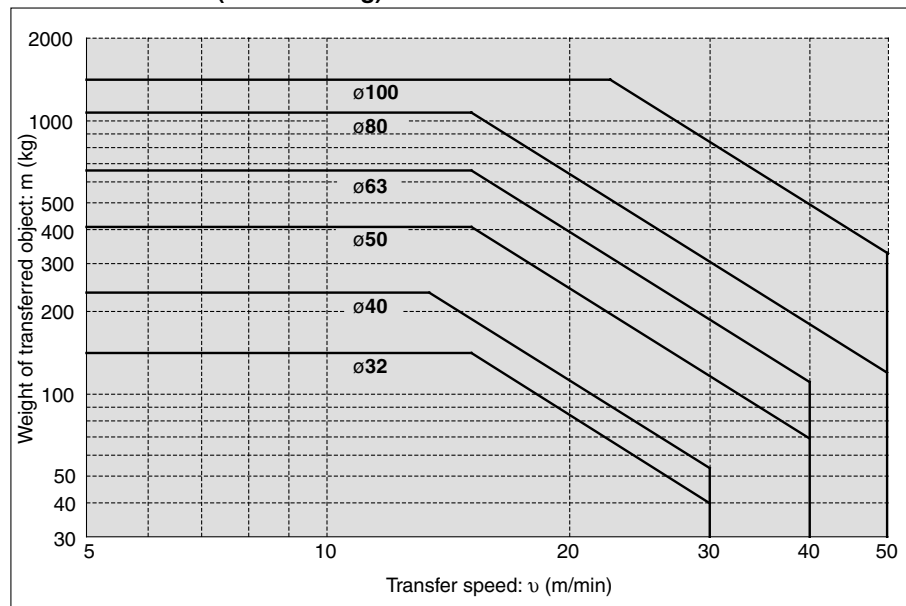
⚠ Caution

Caution on handling

Note 1) When using as a stopper, select a model with 50 stroke or less.

Note 2) Model MGPL (Ball bushing bearing) cannot be used as a stopper.

MGPM32 to 100 (Slide bearing)



MX

MTS

MY

CY

MG

CX

D-

-X

20-

Data

Series MGP

Copper-free (For CRT manufacturing process)

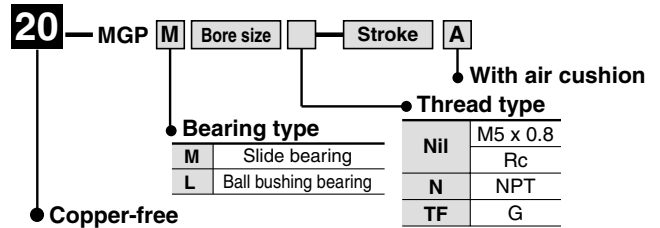
To prevent the influence of copper ions or halogen ions during CRT manufacturing processes, copper and fluorine materials are not used in the component parts.

Specifications

Applicable series	MGPM	MGPL
Bearing type	Slide bearing	Ball bushing bearing
Bore size (mm)	16, 20, 25, 32, 40, 50, 63, 80, 100	

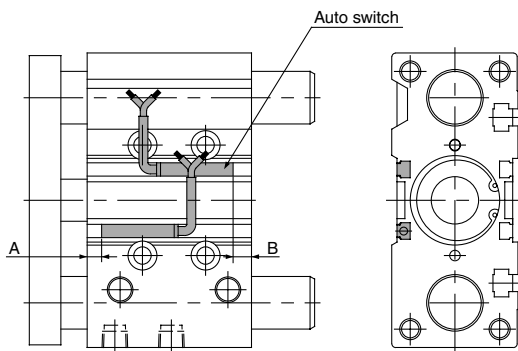
* Specifications and dimensions other than above are the same as the standard basic style.

How to Order



* For bore size 16, M5 x 0.8 is only available.

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



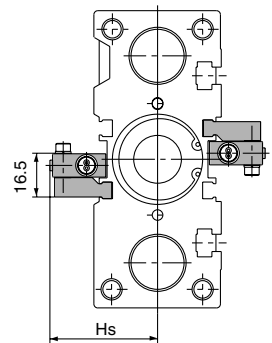
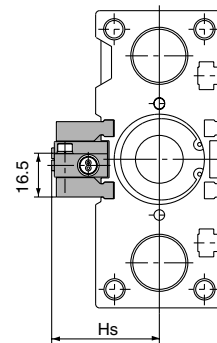
Proper Mounting Position

Bore size (mm)	A	B
16	17.5	15.5
20	26	11
25	23	14.5
32	16	21.5

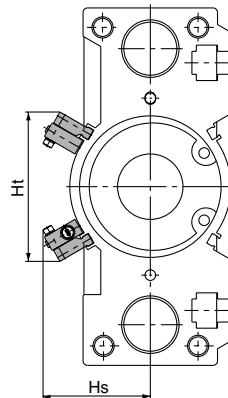
Bore size (mm)	A	B
40	26	18
50	27.5	16.5
63	28	21
80	25	31.5
100	28.5	37.5

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

For D-P5DW (* Cannot be mounted on bore sizes ø32 or less.)



ø80, ø100



For 25 stroke

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

Bore size (mm)	Hs	Ht
40	44.5	—
50	50	—
63	57	—
80	60.7	84.4
100	70.8	96.1

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

Operating Range

Auto switch model	Applicable bore size (mm)								
	16	20	25	32	40	50	63	80	100
D-Z7□/Z80	10	10	10	10.5	10.5	10.5	11.5	11.5	12
D-Y59□/Y69□/Y7P/Y7PV D-Y7□W/Y7□WV	7.5	7.5	7	6.5	6	7	8	9.5	10
D-Y7BAL	5	5	5	6	6	6	6	6	6.5
D-P5DWL	—	—	—	—	4	4	5	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.

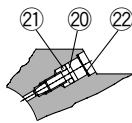
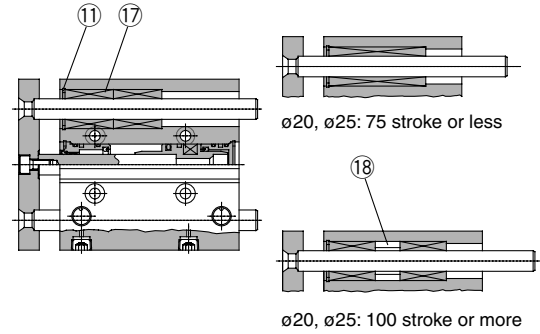
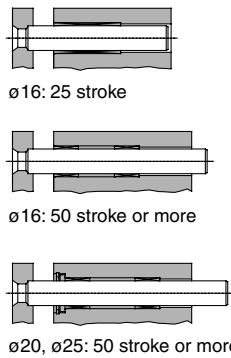
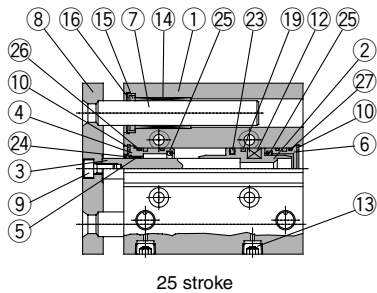
Construction (With air cushion)

Series MGPM

Series MGPL

MGPM16 to 25

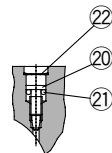
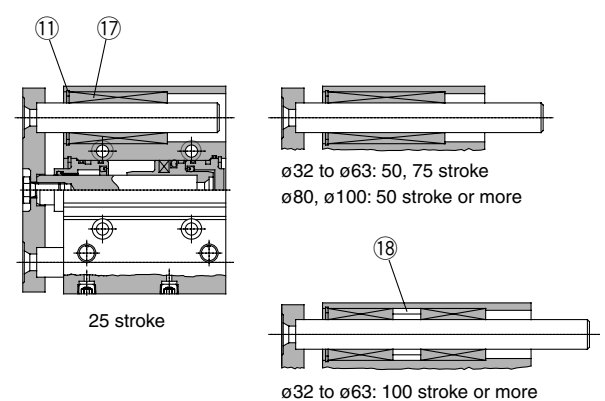
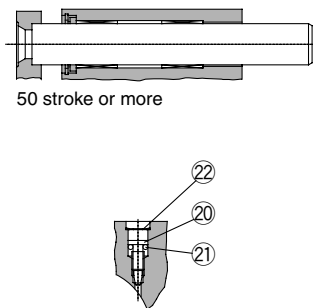
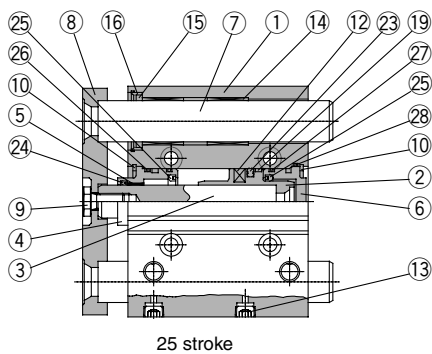
MGPL16 to 25



Cushion valve section

MGPM32 to 100

MGPL32 to 100



Cushion valve section

Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Piston	Aluminum alloy	Chromated
③	Piston rod	Stainless steel	ø16 to ø25
		Carbon steel	ø32 to ø100
④	Collar	Aluminum alloy	ø16 to ø63
			ø80, ø100
⑤	Bushing	Lead bronze casting	
⑥	Head cover	Aluminum alloy	ø16 to ø25
			ø32 to ø100
⑦	Guide rod	Carbon steel	Hard chrome plated
⑧	Plate	Carbon steel	Nickel plated
⑨	Plate mounting bolt	Carbon steel	Nickel plated
⑩	Snap ring	Carbon tool steel	Phosphate coated
⑪	Snap ring	Carbon tool steel	Phosphate coated
⑫	Magnet	Magnetic material	
⑬	Plug (M-5P) Hexagon socket head taper plug	Carbon steel	ø16
			ø20 to ø100
⑭	Slide Bearing	Lead-bronze casted	
⑮	Felt	Felt	Except ø16
⑯	Holder	Resin	Except ø16
⑰	Ball bushing		

Component Parts

No.	Description	Material	Note
⑱	Spacer	Aluminum alloy	
⑲	Wear ring	Resin	
⑳	Cushion valve	Steel	
㉑	Gasket	NBR	
㉒	Snap ring	Carbon tool steel	Except ø16
㉓*	Piston seal	NBR	
㉔*	Rod seal	NBR	
㉕*	Cushion seal	Urethane	
㉖*	Gasket A	NBR	
㉗*	Gasket B	NBR	
㉘*	Gasket C	NBR	

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents	Bore size (mm)	Kit no.	Contents
16	MGP16-A-PS	Set of nos. above ㉓, ㉔, ㉕ ㉖, ㉗, ㉘	50	MGP50-A-PS	Set of nos. above ㉓, ㉔, ㉕ ㉖, ㉗, ㉘
20	MGP20-A-PS		63	MGP63-A-PS	
25	MGP25-A-PS		80	MGP80-A-PS	
32	MGP32-A-PS		100	MGP100-A-PS	
40	MGP40-A-PS				

* Seal kit includes ㉓ to ㉘. Order the seal kit, based on each bore size.

MX

MTS

MY

CY

MG

CX

D-

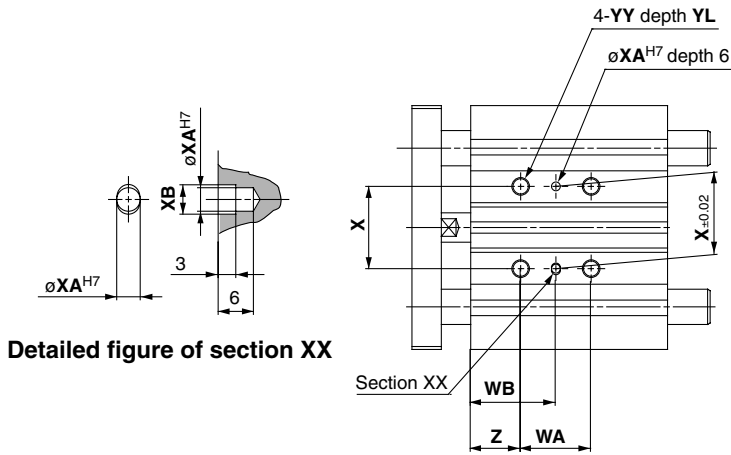
-X

20-

Data

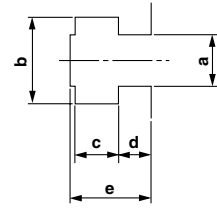
Series MGP

MGPM, MGPL (With air cushion): $\phi 16$ to $\phi 25$

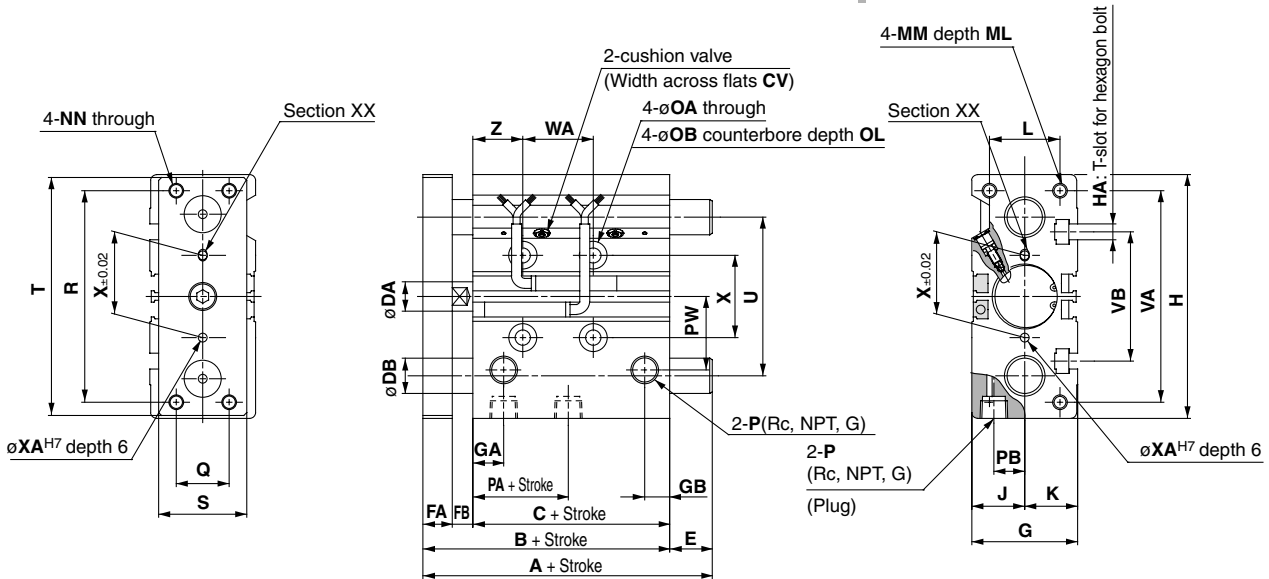


Detailed figure of section XX

T-slot dimensions



Bore size (mm)	a	b	c	d	e
16	4.4	7.4	3.7	2.5	6.7
20	5.4	8.4	4.5	2.8	7.8
25	5.4	8.4	4.5	3	8.2



Note 1) For the intermediate strokes, refer to "Manufacture of Intermediate Stroke" on page 8-19-26.
 Note 2) When adjusting the $\phi 16$ cushion valve, use a 3 mm flat head watchmakers' screwdriver.

• For bore size 16, M5 x 0.8 is only available.
 • Rc, NPT, G port can be selected for bore sizes with $\phi 20$ or more. (Refer to page 8-19-26.)

MGPM, MGPL Common Dimensions

Bore size (mm)	Standard stroke (mm)	B	C	CV	DA	FA	FB	G	GA	GB	H	HA	J	K	L	MM	ML	NN	OA	OB	OL	P	PA	PB	PW	Q
16	25, 50, 75, 100, 125, 150, 175, 200, 250	71	58	—	8	8	5	30	11	8	64	M4	15	15	22	M5 x 0.8	12	M5 x 0.8	4.3	8	4.5	M5 x 0.8	40	10	19	16
20	25, 50, 75, 100, 125, 150, 175, 200	78	62	1.5	10	10	6	36	10.5	8.5	83	M5	18	18	24	M5 x 0.8	13	M5 x 0.8	5.6	9.5	5.5	1/8	37.5	10.5	25	18
25	250, 300, 350, 400	78.5	62.5	1.5	12	10	6	42	11.5	9	93	M5	21	21	30	M6 x 1.0	15	M6 x 1.0	5.6	9.5	5.5	1/8	37.5	13.5	28.5	26

Bore size (mm)	Standard stroke (mm)	R	S	T	U	VA	VB	WA				WB				X	XA	XB	YY	YL	Z
								75 st or less	100 to 175 st	200 to 250 st	300 to 400 st	75 st or less	100 to 175 st	200 to 250 st	300 to 400 st						
16	25, 50, 75, 100, 125, 150, 175, 200, 250	54	25	62	46	56	38	44	110	200	—	27	60	105	—	24	3	3.5	M5 x 0.8	10	5
20	25, 50, 75, 100, 125, 150, 175, 200	70	30	81	54	72	44	44	120	200	300	39	77	117	167	28	3	3.5	M6 x 1.0	12	17
25	250, 300, 350, 400	78	38	91	64	82	50	44	120	200	300	39	77	117	167	34	4	4.5	M6 x 1.0	12	17

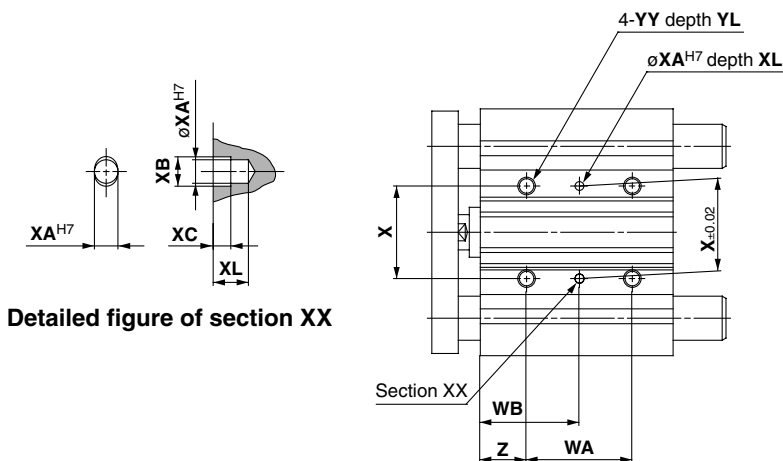
MGPM (Slide bearing) A, DB, E Dimensions

Bore size (mm)	A					DB	E				
	25 st	50 st	75 to 100 st	125 to 200 st	250 st or more		25 st	50 st	75 to 100 st	125 to 200 st	250 st or more
16	71	89.5	71	95	95	10	0	18.5	0	24	24
20	78	87.5	84.5	84.5	122	12	0	9.5	6.5	6.5	44
25	78.5	87	85	85	122	16	0	8.5	6.5	6.5	43.5

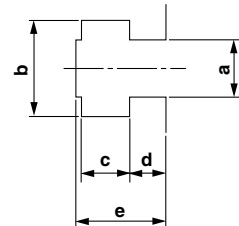
MGPL (Ball bushing bearing) A, DB, E Dimensions

Bore size (mm)	A					DB	E				
	25 st	50, 75 st	100 st	125 to 200 st	250 st or more		25 st	50, 75 st	100 st	125 to 200 st	250 st or more
16	80	71	71	95	95	8	9	0	0	24	24
20	95	80	100.5	104	122	10	17	2	22.5	26	44
25	100.5	85.5	105.5	104.5	122	13	22	7	27	26	43.5

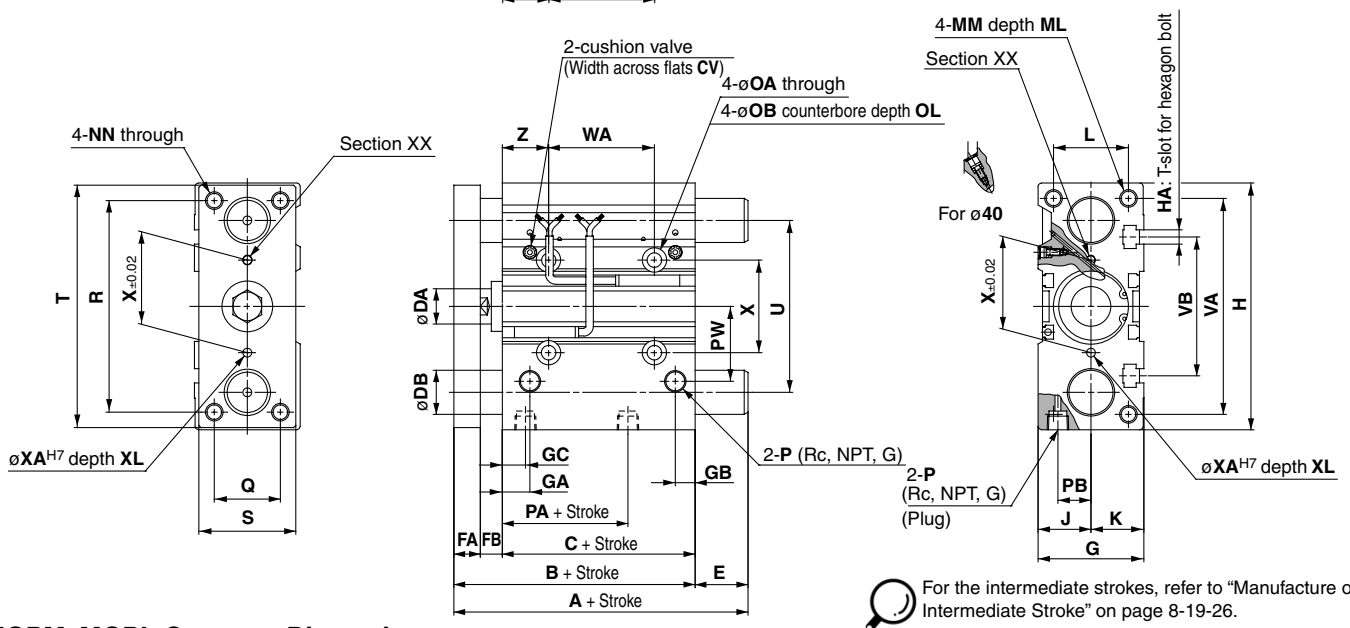
MGPM, MGPL (With air cushion): $\phi 32$ to $\phi 63$



T-slot dimensions



Bore size (mm)	a	b	c	d	e
32	6.5	10.5	5.5	3.5	9.5
40	6.5	10.5	5.5	4	11
50	8.5	13.5	7.5	4.5	13.5
63	11	17.8	10	7	18.5



For the intermediate strokes, refer to "Manufacture of Intermediate Stroke" on page 8-19-26.

MGPM, MGPL Common Dimensions

Bore size (mm)	Standard stroke (mm)	B	C	CV	DA	FA	FB	G	GA	GB	GC	H	HA	J	K	L	MM	ML	NN	OA	OB	OL	P	PA	PB	PW	Q
32	25, 50, 75, 100,	84.5	62.5	1.5	16	12	10	48	12.5	9	12.5	112	M6	24	24	34	M8 x 1.25	20	M8 x 1.25	6.6	11	7.5	1/8	32	15	34	30
40	125, 150, 175,	91	69	1.5	16	12	10	54	14	10	14	120	M6	27	27	40	M8 x 1.25	20	M8 x 1.25	6.6	11	7.5	1/8	38	18	38	30
50	200, 250, 300,	97	69	2.5	20	16	12	64	14	11	12	148	M8	32	32	46	M10 x 1.5	22	M10 x 1.5	8.6	14	9	1/4	34	21.5	47	40
63	350, 400	102	74	2.5	20	16	12	78	16.5	13.5	16.5	162	M10	39	39	58	M10 x 1.5	22	M10 x 1.5	8.6	14	9	1/4	39	28	55	50

Bore size (mm)	Standard stroke (mm)	R	S	T	U	VA	VB	WA				WB				X	XA	XB	XC	XL	YY	YL	Z	
								25, 50, 75 st	100 to 175 st	200 to 250 st	300 to 400 st	25, 50, 75 st	100 to 175 st	200 to 250 st	300 to 400 st									
32	25, 50, 75, 100,	96	44	110	78	98	63	48	124	200	300	25	45	83	121	171	42	4	4.5	3	6	M8 x 1.25	16	21
40	125, 150, 175,	104	44	118	86	106	72	48	124	200	300	46	84	122	172	200	50	4	4.5	3	6	M8 x 1.25	16	22
50	200, 250, 300,	130	60	146	110	130	92	48	124	200	300	48	86	124	174	220	66	5	6	4	8	M10 x 1.5	20	24
63	350, 400	130	70	158	124	142	110	52	128	200	300	50	88	124	174	220	80	5	6	4	8	M10 x 1.5	20	24

MGPM (Slide bearing) A, DB, E Dimensions

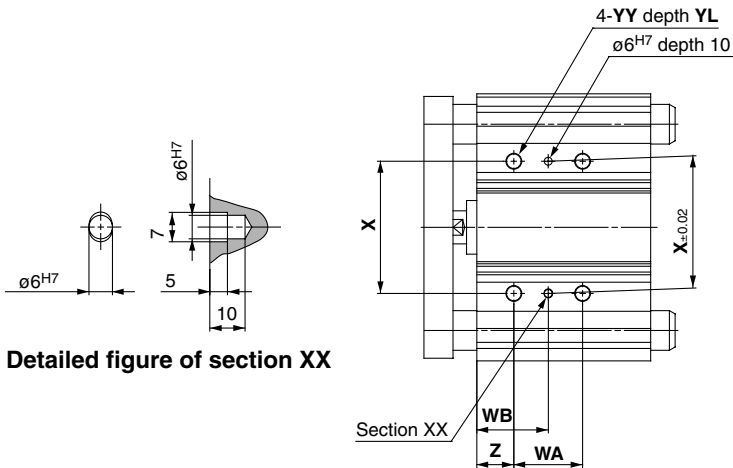
Bore size (mm)	A				DB	E			
	25 st	50 st	75 to 200 st	250 to 400 st		25 st	50 st	75 to 200 st	250 to 400 st
32	97	127	102	140	20	12.5	42.5	17.5	55.5
40	97	127	102	140	20	6	36	11	49
50	106.5	131.5	118	161	25	9.5	34.5	21	64
63	106.5	131.5	118	161	25	4.5	29.5	16	59

MGPL (Ball bushing bearing) A, DB, E Dimensions

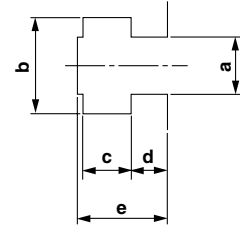
Bore size (mm)	A						DB	E					
	25 st	50 st	75 st	100 st	125 to 200 st	250 to 400 st		25 st	50 st	75 st	100 st	125 to 200 st	250 to 400 st
32	84.5	123	98	115.5	118	140	16	0	38.5	13.5	31	33.5	55.5
40	91	123	98	115.5	118	140	16	0	32	7	24.5	27	49
50	97	127.5	114	159	134	161	20	0	30.5	17	62	37	64
63	102	127.5	114	159	134	161	20	0	25.5	12	57	32	59

Series MGP

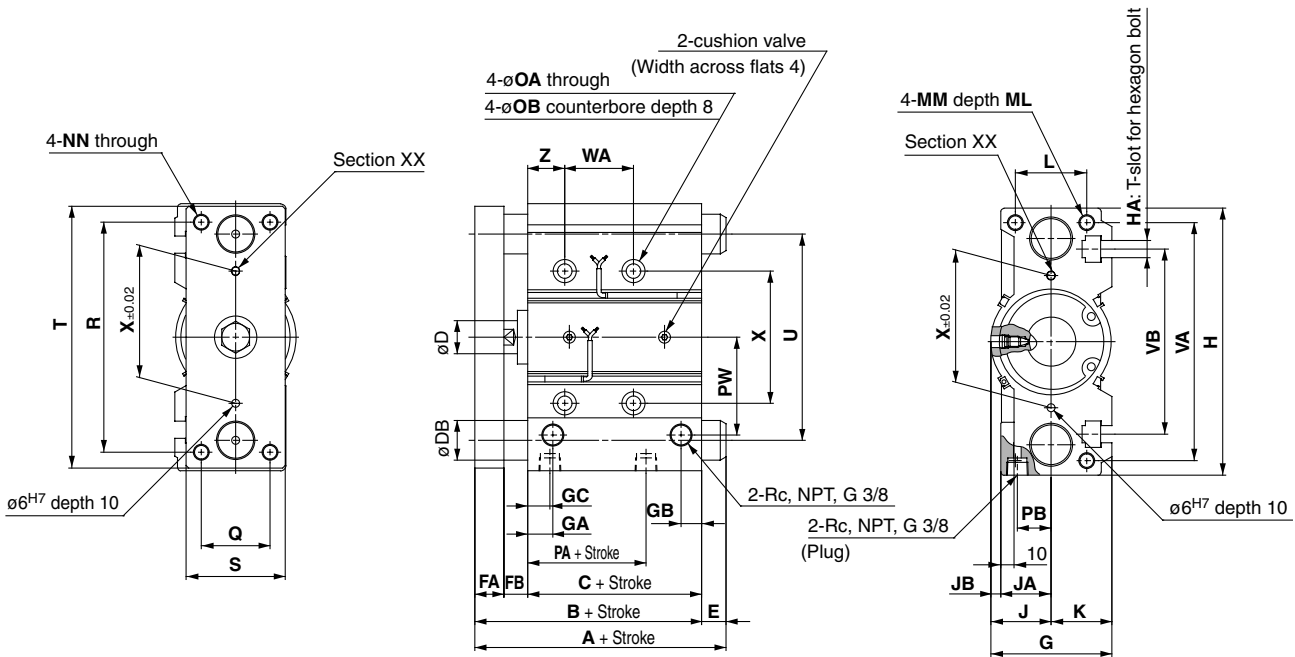
MGPM, MGPL (With air cushion): $\phi 80, \phi 100$



T-slot dimensions



Bore size (mm)	a	b	c	d	e
80	13.3	20.3	12	8	22.5
100	15.3	23.3	13.5	10	30



For the intermediate strokes, refer to "Manufacture of Intermediate Stroke" on page 8-19-26.

MGPM, MGPL Common Dimensions

Bore size (mm)	Standard stroke (mm)	B	C	DA	FA	FB	G	GA	GB	GC	H	HA	J	JA	JB	K	L	MM	ML	NN	OA	OB	PA	PB	PW
		80	50, 75, 100, 125, 150, 175,	121.5	81.5	25	22	18	91.5	19	15.5	14.5	202	M12	45.5	38	7.5	46	54	M12 x 1.75	25	M12 x 1.75	10.6	17.5	39.5
100	200, 250, 300, 350, 400	141	91	30	25	25	111.5	23	19	18	240	M14	55.5	45	10.5	56	62	M14 x 2.0	31	M14 x 2.0	12.5	20	42.5	32.5	89

Bore size (mm)	Standard stroke (mm)	Q	R	S	T	U	VA	VB	WA				WB				X	YY	YL	Z
									50, 75 st	100 to 175 st	200 to 250 st	300 to 400 st	50, 75 st	100 to 175 st	200 to 250 st	300 to 400 st				
80	50, 75, 100, 125, 150, 175,	52	174	75	198	156	180	140	52	128	200	300	54	92	128	178	100	M12 x 1.75	24	28
100	200, 250, 300, 350, 400	64	210	90	236	188	210	166	72	148	220	320	47	85	121	171	124	M14 x 2.0	28	11

MGPM (Slide bearing) A, DB, E Dimensions

Bore size (mm)	A			DB	E		
	50 st	75 to 200 st	250 to 400 st		50 st	75 to 200 st	250 to 400 st
80	167	142	193	30	45.5	20.5	71.5
100	187	162	203	36	46	21	62

MGPL (Ball bushing bearing) A, DB, E Dimensions

Bore size (mm)	A			DB	E		
	50 st	75 to 200 st	250 to 400 st		50 st	75 to 200 st	250 to 400 st
80	168.5	160	193	25	47	38.5	71.5
100	178.5	180	203	30	37.5	39	62