

Specifications

Bore size [mm]	12	16	20	25	32	40	50	63	80	100
Action	Double acting									
Fluid	Air									
Proof pressure	1.5 MPa									
Maximum operating pressure	1.0 MPa									
Minimum operating pressure	0.12 MPa		0.1 MPa							
Ambient and uid temperature	−10 to 60 °C (No freezing)									
Piston speed *1	50 to 500 mm/s								50 to 400 mm/s	
Cushion	Rubber bumper on both ends									
Lubrication	Not required (Non-lube)									
Stroke length tolerance	$\begin{smallmatrix} +1.5 \\ 0 \end{smallmatrix}$ 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 16 to 22.

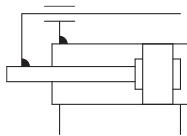
Sipariş Kodu / Ordering Code

MODEL	YATAKLAMA GUIDING	ÇAP DIA	THREAD TYPE DIŞ TİPİ	STROK STROKE
WGP	M	Ø12 - Ø100		

YATAKLAMALI Guiding	M	:BURÇ YATAKLAMALI Bushing Guide	PİSTON ÇAPI (mm) Piston Dia	<table><tr><td>—</td><td>M5 x 0.8</td></tr><tr><td></td><td>Rc</td></tr><tr><td>TN</td><td>NPT</td></tr><tr><td>TF</td><td>G</td></tr></table>	—	M5 x 0.8		Rc	TN	NPT	TF	G	STROK (mm) Stroke
	—	M5 x 0.8											
		Rc											
	TN	NPT											
TF	G												
L	:RULMANLI YATAKLAMA Bearing Guide												

Symbol

Rubber bumper



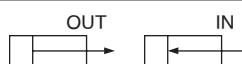
Standard Strokes

Bore size [mm]	Standard stroke [mm]
12, 16	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250
20, 25	20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400
32 to 100	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400

Manufacture of Intermediate Strokes

Description	Spacer installation type Spacers are installed in the standard stroke cylinder. • Ø 12 to Ø 32: Available in 1 mm stroke increments. • Ø 40 to Ø 100: Available in 5 mm stroke increments.		Exclusive body (-XB10) Dealing with the stroke by making an exclusive body. • All bore sizes are available in 1 mm increments.	
Model no.	Refer to How to Order for the standard model numbers.		Add "-XB10" to the end of standard model number. For details, refer to Made to Order.	
Applicable stroke [mm]	Ø 12, Ø 16	1 to 249	Ø 12, Ø 16	11 to 249
	Ø 20, Ø 25, Ø 32	1 to 399	Ø 20, Ø 25	21 to 399
	Ø 40 to Ø 100	5 to 395	Ø 32 to Ø 100	26 to 399
Example	Part no.: WGPM20-39Z A spacer 1 mm in width is installed in the MGPM20-40. C dimension is 77 mm.		Part no.: WGPM20-39Z-XB10 Special body manufactured for 39 stroke. C dimension is 76 mm.	

Theoretical Output



[N]

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	
12	6	OUT	113	23	34	45	57	68	79	90	102	113	
		IN	85	17	25	34	42	51	59	68	76	85	
16	8	OUT	201	40	60	80	101	121	141	161	181	201	
		IN	151	30	45	60	75	90	106	121	136	151	
20	10	OUT	314	63	94	126	157	188	220	251	283	314	
		IN	236	47	71	94	118	141	165	188	212	236	
25	10	OUT	491	98	147	196	245	295	344	393	442	491	
		IN	412	82	124	165	206	247	289	330	371	412	
32	14	OUT	804	161	241	322	402	483	563	643	724	804	
		IN	650	130	195	260	325	390	455	520	585	650	
40	14	OUT	1257	251	377	503	628	754	880	1005	1131	1257	
		IN	1103	221	331	441	551	662	772	882	992	1103	
50	18	OUT	1963	393	589	785	982	1178	1374	1571	1767	1963	
		IN	1709	342	513	684	855	1025	1196	1367	1538	1709	
63	18	OUT	3117	623	935	1247	1559	1870	2182	2494	2806	3117	
		IN	2863	573	859	1145	1431	1718	2004	2290	2576	2863	
80	22	OUT	5027	1005	1508	2011	2513	3016	3519	4021	4524	5027	
		IN	4646	929	1394	1859	2323	2788	3252	3717	4182	4646	
100	26	OUT	7854	1571	2356	3142	3927	4712	5498	6283	7069	7854	
		IN	7323	1465	2197	2929	3662	4394	5126	5858	6591	7323	

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

Weights

Slide Bearing: WGPM12 to 100

[kg]

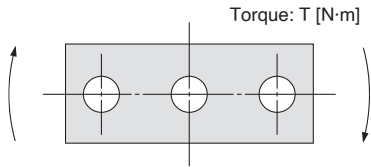
Bore size [mm]	Standard stroke [mm]															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
12	0.22	0.25	—	0.29	0.33	0.36	0.46	0.55	0.66	0.75	0.84	0.93	1.11	—	—	—
16	0.32	0.37	—	0.42	0.46	0.51	0.66	0.78	0.94	1.06	1.18	1.31	1.55	—	—	—
20	—	0.59	—	0.67	0.74	0.82	1.06	1.24	1.43	1.61	1.80	1.99	2.42	2.79	3.16	3.53
25	—	0.84	—	0.94	1.04	1.14	1.50	1.75	2.00	2.25	2.50	2.75	3.35	3.85	4.34	4.84
32	—	—	1.41	—	—	1.77	2.22	2.57	2.93	3.29	3.65	4.00	4.90	5.61	6.33	7.04
40	—	—	1.64	—	—	2.04	2.52	2.92	3.32	3.71	4.11	4.50	5.47	6.26	7.06	7.85
50	—	—	2.79	—	—	3.38	4.13	4.71	5.30	5.89	6.47	7.06	8.55	9.73	10.9	12.1
63	—	—	3.48	—	—	4.15	4.99	5.67	6.34	7.02	7.69	8.37	10.0	11.4	12.7	14.1
80	—	—	5.41	—	—	6.26	7.41	8.26	9.10	9.95	10.8	11.6	13.9	15.6	17.3	19.0
100	—	—	9.12	—	—	10.3	12.0	13.2	14.4	15.6	16.9	18.1	21.2	23.6	26.1	28.5

Ball Bushing: WGPM12 to 100,

[kg]

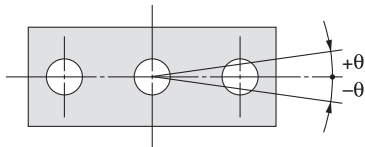
Bore size [mm]	Standard stroke [mm]															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
12	0.21	0.24	—	0.27	0.32	0.35	0.43	0.50	0.59	0.67	0.75	0.83	0.99	—	—	—
16	0.31	0.35	—	0.40	0.47	0.51	0.62	0.72	0.85	0.96	1.06	1.17	1.38	—	—	—
20	—	0.60	—	0.66	0.79	0.85	1.01	1.17	1.36	1.52	1.68	1.84	2.17	2.49	2.81	3.13
25	—	0.87	—	0.96	1.12	1.20	1.41	1.62	1.86	2.06	2.27	2.48	2.92	3.33	3.75	4.16
32	—	—	1.37	—	—	1.66	2.08	2.37	2.74	3.03	3.31	3.60	4.25	4.82	5.39	5.97
40	—	—	1.59	—	—	1.92	2.38	2.70	3.11	3.44	3.77	4.09	4.81	5.46	6.11	6.76
50	—	—	2.65	—	—	3.14	3.85	4.34	4.97	5.47	5.96	6.45	7.57	8.56	9.54	10.5
63	—	—	3.33	—	—	3.91	4.71	5.29	6.01	6.59	7.17	7.75	9.05	10.2	11.4	12.5
80	—	—	5.27	—	—	6.29	7.49	8.21	8.92	9.64	10.4	11.1	12.9	14.3	15.7	17.2
100	—	—	8.62	—	—	10.1	11.8	12.9	13.9	15.0	16.0	17.1	19.6	21.7	23.8	25.9

Allowable Rotational Torque of Plate



Bore size [mm]	Bearing type	Stroke [mm]																T [N·m]
		10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
12	WGPM	0.39	0.32	—	0.27	0.24	0.21	0.43	0.36	0.31	0.27	0.24	0.22	0.19	—	—	—	
	WGPL	0.61	0.45	—	0.35	0.58	0.50	0.37	0.29	0.24	0.20	0.18	0.16	0.12	—	—	—	
16	WGPM	0.69	0.58	—	0.49	0.43	0.38	0.69	0.58	0.50	0.44	0.40	0.36	0.30	—	—	—	
	WGPL	0.99	0.74	—	0.59	0.99	0.86	0.65	0.52	0.43	0.37	0.32	0.28	0.23	—	—	—	
20	WGPM	—	1.05	—	0.93	0.83	0.75	1.88	1.63	1.44	1.28	1.16	1.06	0.90	0.78	0.69	0.62	
	WGPL	—	1.26	—	1.03	2.17	1.94	1.52	1.25	1.34	1.17	1.03	0.93	0.76	0.65	0.56	0.49	
25	WGPM	—	1.76	—	1.55	1.38	1.25	2.96	2.57	2.26	2.02	1.83	1.67	1.42	1.24	1.09	0.98	
	WGPL	—	2.11	—	1.75	3.37	3.02	2.38	1.97	2.05	1.78	1.58	1.41	1.16	0.98	0.85	0.74	
32	WGPM	—	—	6.35	—	—	5.13	5.69	4.97	4.42	3.98	3.61	3.31	2.84	2.48	2.20	1.98	
	WGPL	—	—	5.95	—	—	4.89	5.11	4.51	6.34	5.79	5.33	4.93	4.29	3.78	3.38	3.04	
40	WGPM	—	—	7.00	—	—	5.66	6.27	5.48	4.87	4.38	3.98	3.65	3.13	2.74	2.43	2.19	
	WGPL	—	—	6.55	—	—	5.39	5.62	4.96	6.98	6.38	5.87	5.43	4.72	4.16	3.71	3.35	
50	WGPM	—	—	13.0	—	—	10.8	12.0	10.6	9.50	8.60	7.86	7.24	6.24	5.49	4.90	4.43	
	WGPL	—	—	9.17	—	—	7.62	9.83	8.74	11.6	10.7	9.83	9.12	7.95	7.02	6.26	5.63	
63	WGPM	—	—	14.7	—	—	12.1	13.5	11.9	10.7	9.69	8.86	8.16	7.04	6.19	5.52	4.99	
	WGPL	—	—	10.2	—	—	8.48	11.0	9.74	13.0	11.9	11.0	10.2	8.84	7.80	6.94	6.24	
80	WGPM	—	—	21.9	—	—	18.6	22.9	20.5	18.6	17.0	15.6	14.5	12.6	11.2	10.0	9.11	
	WGPL	—	—	15.1	—	—	23.3	22.7	20.6	18.9	17.3	16.0	14.8	12.9	11.3	10.0	8.94	
100	WGPM	—	—	38.8	—	—	33.5	37.5	33.8	30.9	28.4	26.2	24.4	21.4	19.1	17.2	15.7	
	WGPL	—	—	27.1	—	—	30.6	37.9	34.6	31.8	29.3	27.2	25.3	22.1	19.5	17.3	15.5	

Non-rotating Accuracy of Plate



Non-rotating accuracy θ when retracted and when no load is applied should be not more than the values shown in the table.

Bore size [mm]	Non-rotating accuracy θ	
	WGPM	WGPL
12	$\pm 0.07^\circ$	$\pm 0.05^\circ$
16		
20	$\pm 0.06^\circ$	$\pm 0.04^\circ$
25		
32	$\pm 0.05^\circ$	$\pm 0.03^\circ$
40		
50	$\pm 0.04^\circ$	$\pm 0.03^\circ$
63		
80	$\pm 0.03^\circ$	$\pm 0.03^\circ$
100		

Model Selection

Selection Conditions

Mounting orientation	Vertical		Horizontal	
Maximum speed [mm/s]	200 or less	400	200 or less	400
Graph (Slide bearing)	(1), (2)	(3), (4)	(13), (14)	(15), (16)
Graph (Ball bushing)	(5) to (8)	(9) to (12)	(17), (18)	(19), (20)

Selection Example 1 (Vertical Mounting)

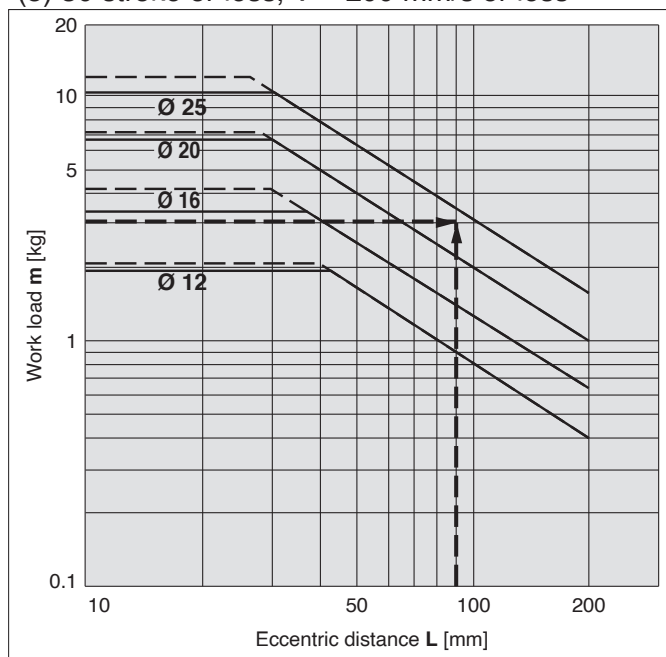
Selection conditions

Mounting: Vertical
 Bearing type: Ball bushing
 Stroke: 30 stroke
 Maximum speed: 200 mm/s
 Work load: 3 kg
 Eccentric distance: 90 mm

Find the point of intersection for the work load of 3 kg and the eccentric distance of 90 mm on graph (5), based on vertical mounting, ball bushing, 30 stroke, and the speed of 200 mm/s.

→ **WGPL25-30Z** is selected.

(5) 30 stroke or less, V = 200 mm/s or less



Selection Example 2 (Horizontal Mounting)

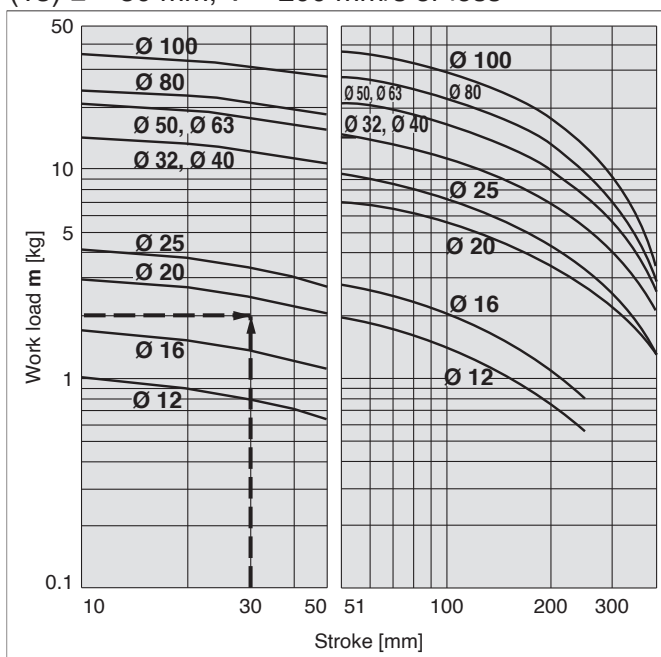
Selection conditions

Mounting: Horizontal
 Bearing type: Slide bearing
 Distance between plate and load centre of gravity: 50 mm
 Maximum speed: 200 mm/s
 Work load: 2 kg
 Stroke: 30 stroke

Find the point of intersection for the work load of 2 kg and 30 stroke on graph (13), based on horizontal mounting, slide bearing, the distance of 50 mm between the plate and load centre of gravity, and the speed of 200 mm/s.

→ **WGPM20-30Z** is selected.

(13) L = 50 mm, V = 200 mm/s or less

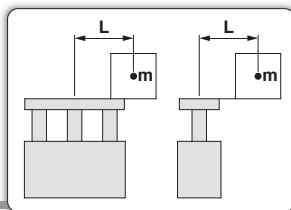


When the maximum speed exceeds 200 mm/s, the allowable work load is determined by multiplying the value shown in the graph at 400 mm/s by the coefficient listed in the table below.

Max. speed	Up to 300 mm/s	Up to 400 mm/s	Up to 500 mm/s
Coefficient	1.7	1	0.6

Use the Guide Cylinder Selection Software, when the eccentric distance is 200 mm or more.

Series WGP

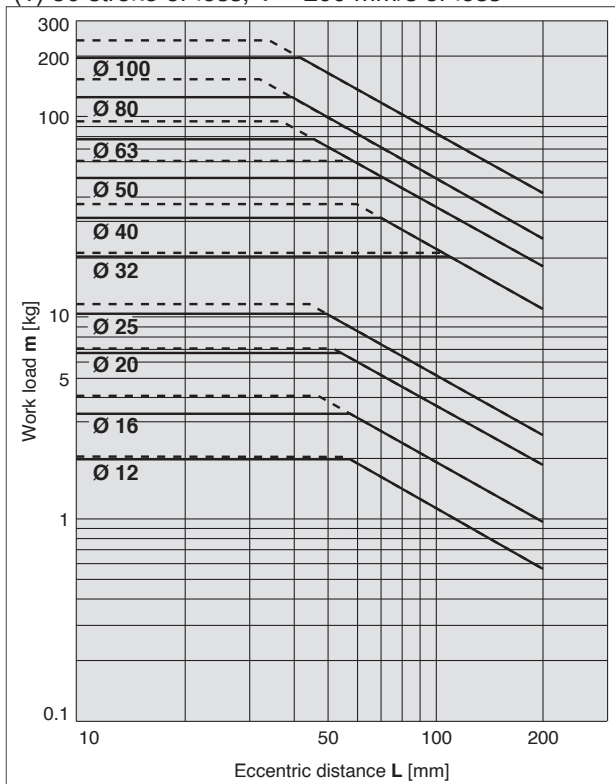


Vertical Mounting Slide Bearing

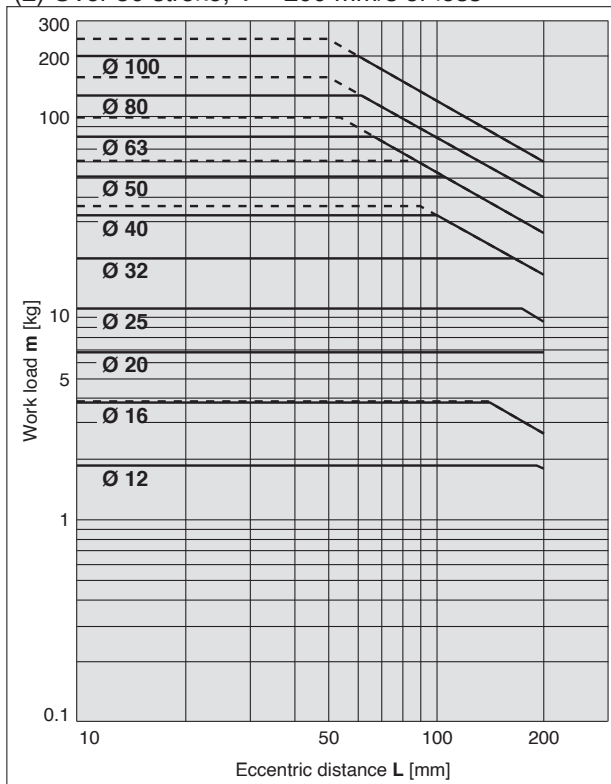
— Operating pressure 0.4 MPa
 - - - - - Operating pressure 0.5 MPa or more

WGPM12 to 100

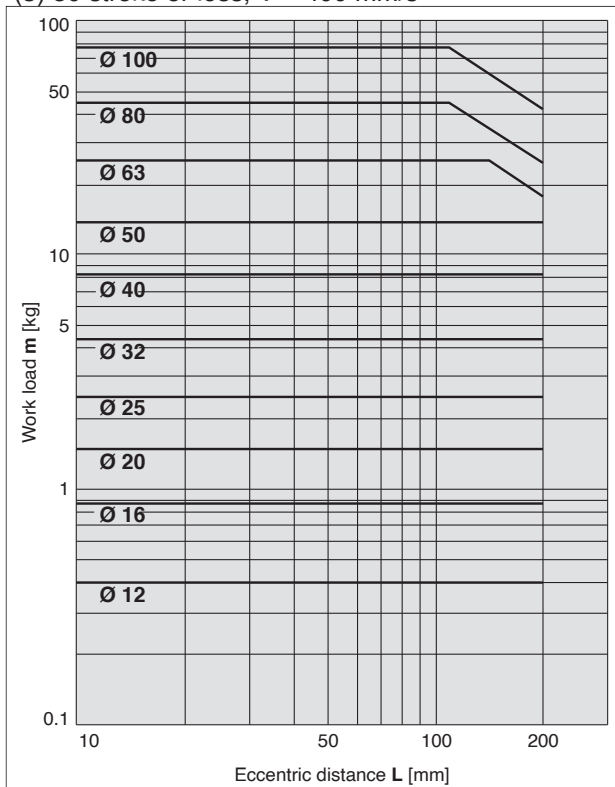
(1) 50 stroke or less, $V = 200$ mm/s or less



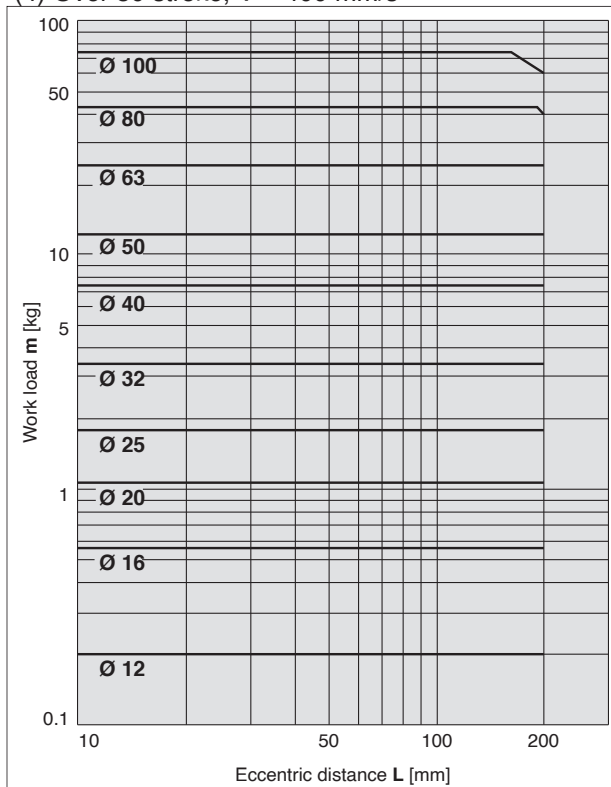
(2) Over 50 stroke, $V = 200$ mm/s or less



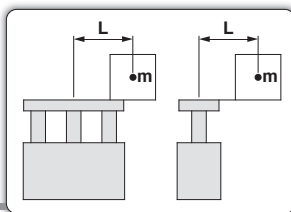
(3) 50 stroke or less, $V = 400$ mm/s



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



* Use the Guide Cylinder Selection Software, when the eccentric distance is 200 mm or more.

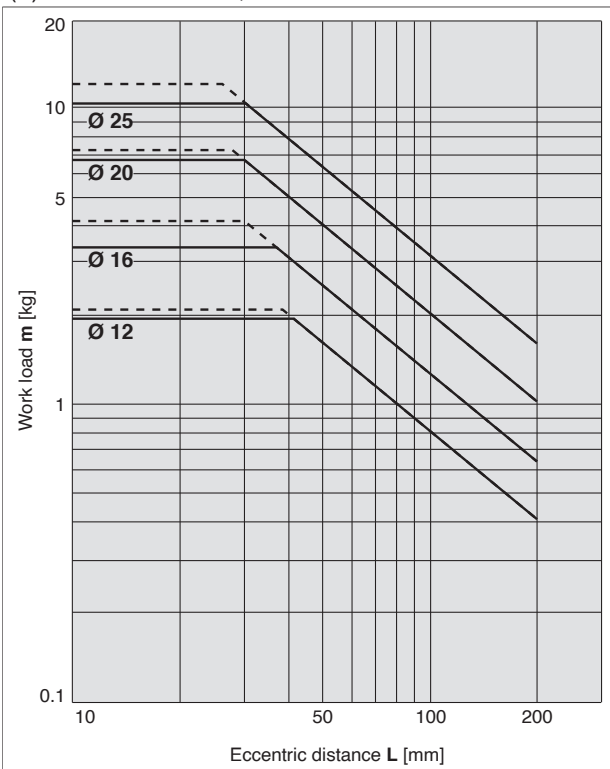


Vertical Mounting Ball Bushing

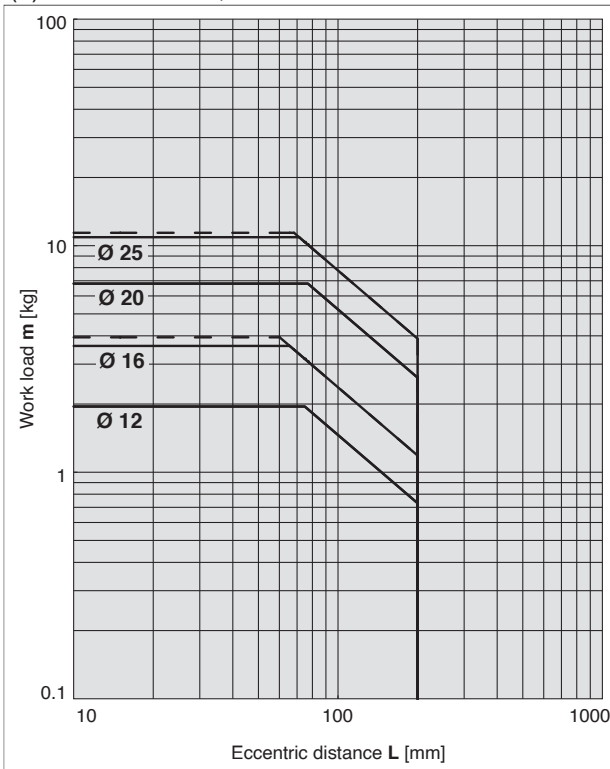
— Operating pressure 0.4 MPa
 - - - - - Operating pressure 0.5 MPa or more

WGPL12 to 25

(5) 30 stroke or less, $V = 200$ mm/s or less

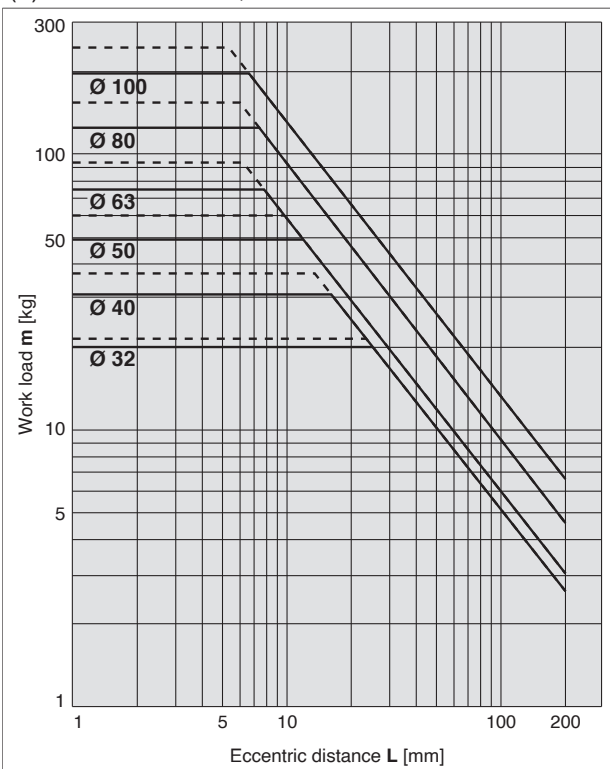


(6) Over 30 stroke, $V = 200$ mm/s or less

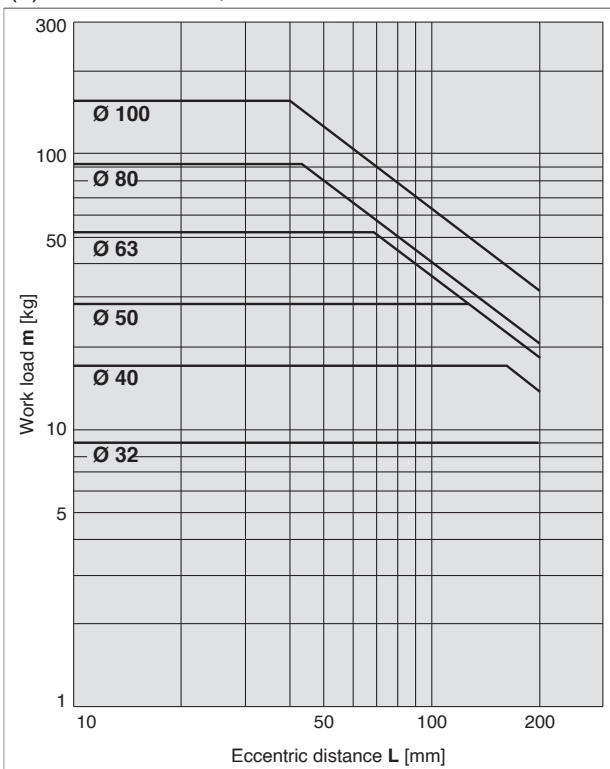


WGPL32 to 100

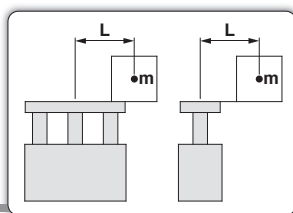
(7) 50 stroke or less, $V = 200$ mm/s or less



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



· Use the Guide Cylinder Selection Software, when the eccentric distance is 200 mm or more.

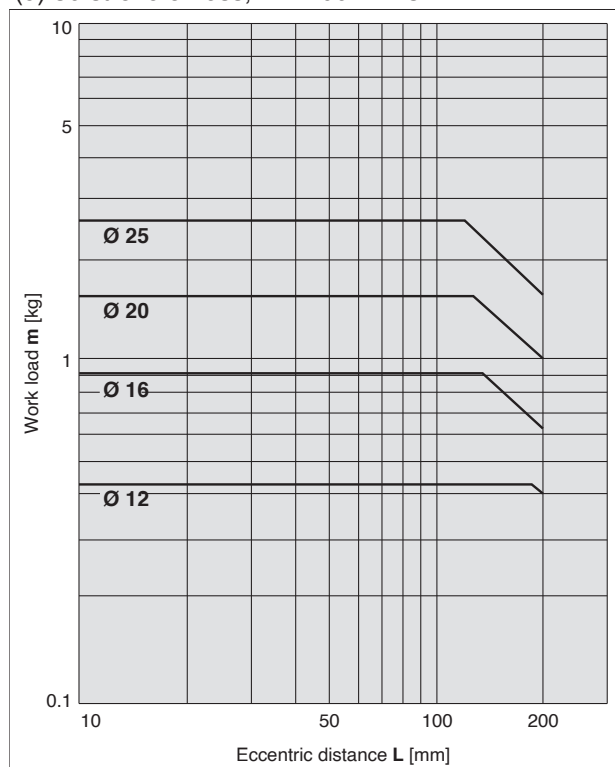


Vertical Mounting Ball Bushing

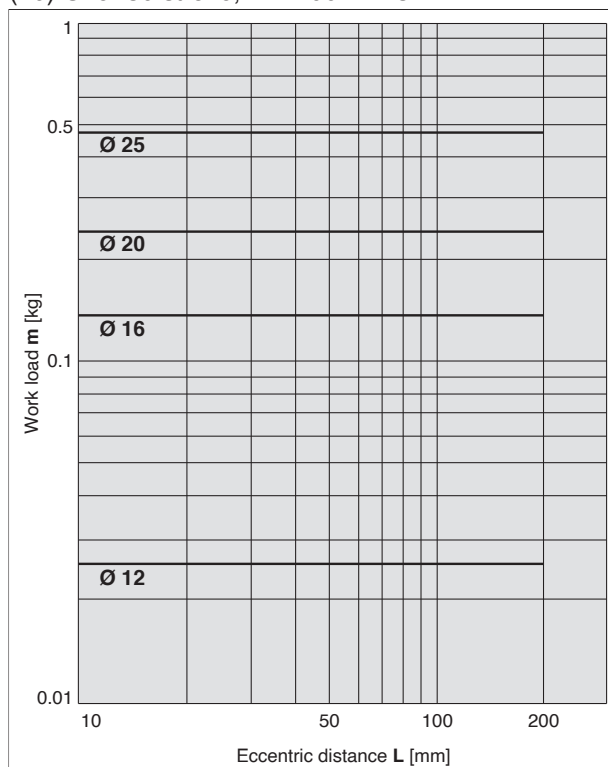
— Operating pressure 0.4 MPa

WGPL12 to 25

(9) 30 stroke or less, $V = 400$ mm/s

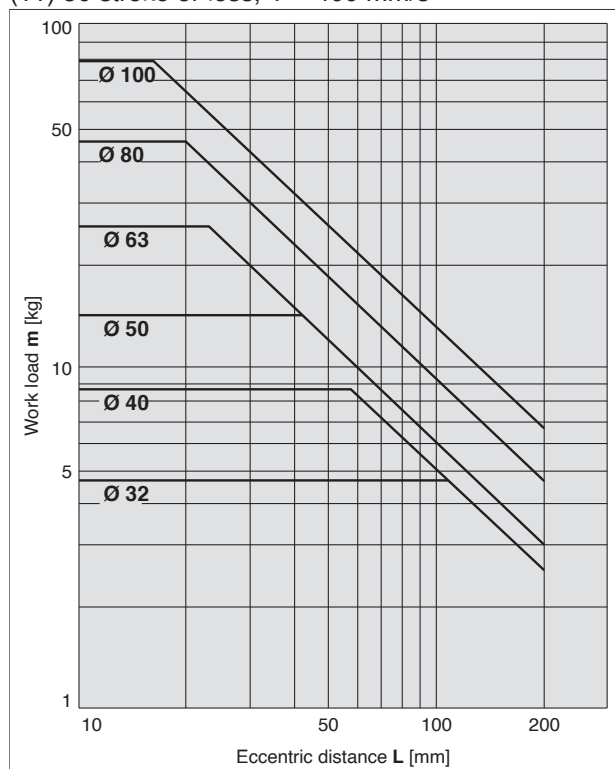


(10) Over 30 stroke, $V = 400$ mm/s

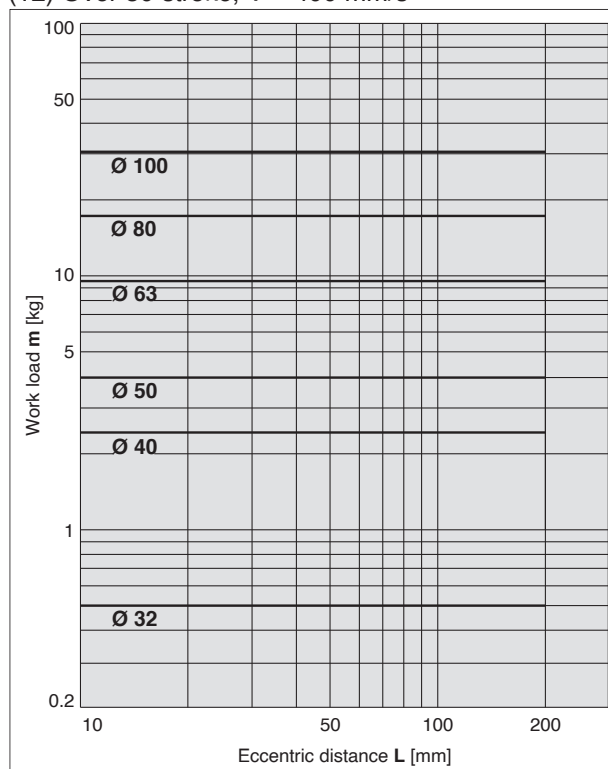


WGPL32 to 100

(11) 50 stroke or less, $V = 400$ mm/s

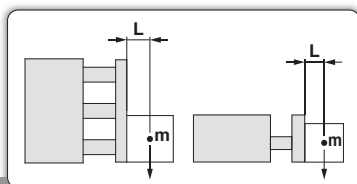


(12) Over 50 stroke, $V = 400$ mm/s



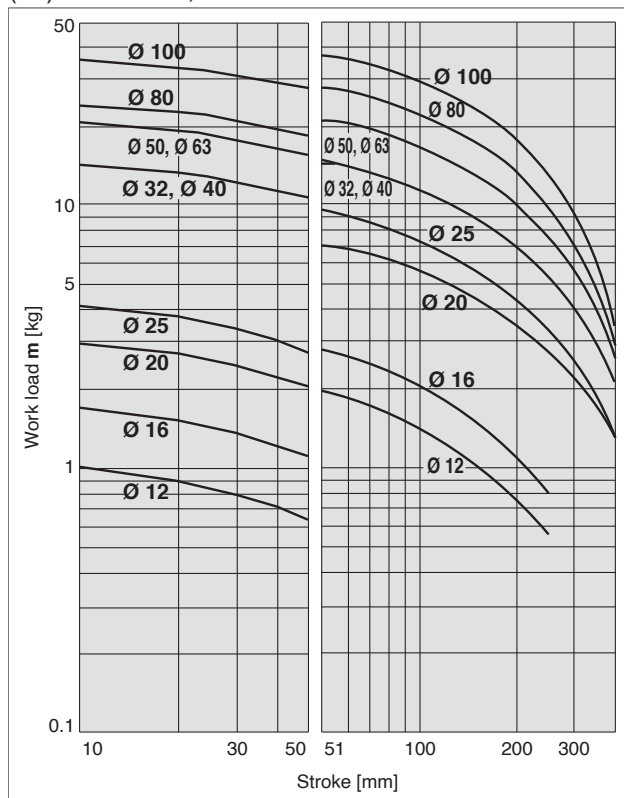
Use the Guide Cylinder Selection Software, when the eccentric distance is 200 mm or more.

Horizontal Mounting Slide Bearing

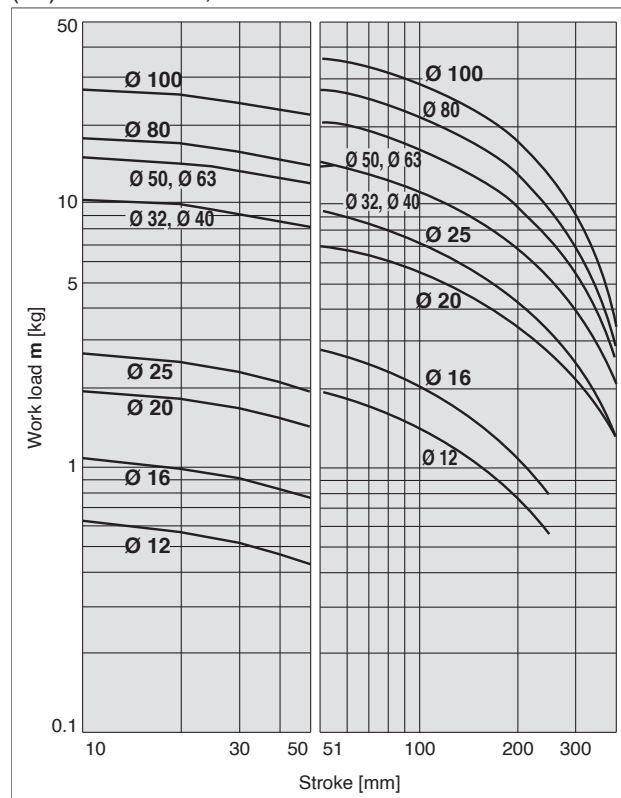


WGPM12 to 100

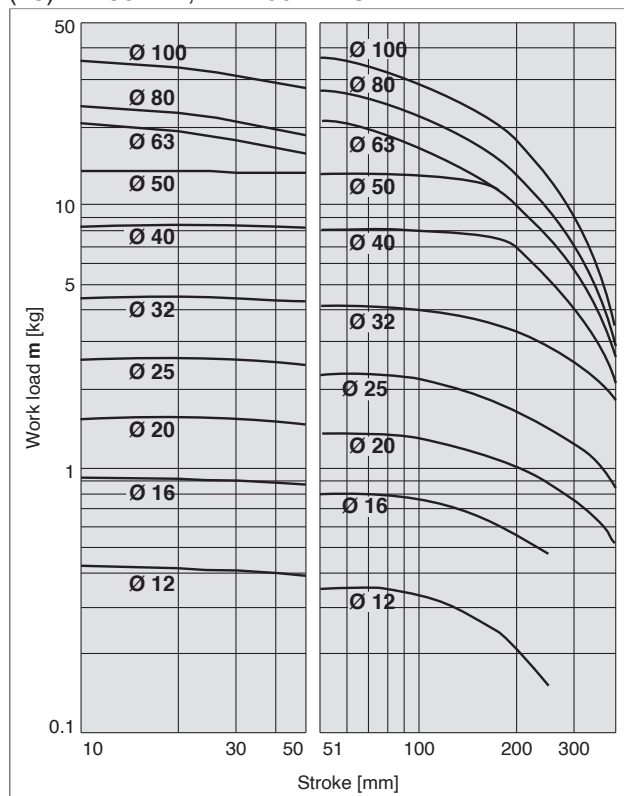
(13) $L = 50 \text{ mm}$, $V = 200 \text{ mm/s}$ or less



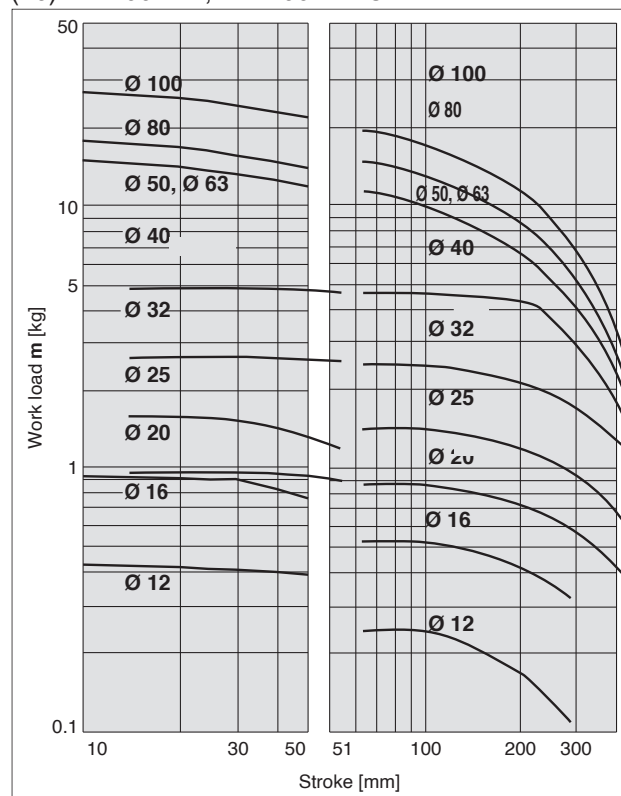
(14) $L = 100 \text{ mm}$, $V = 200 \text{ mm/s}$ or less

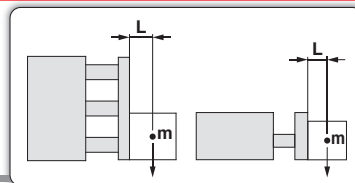


(15) $L = 50 \text{ mm}$, $V = 400 \text{ mm/s}$



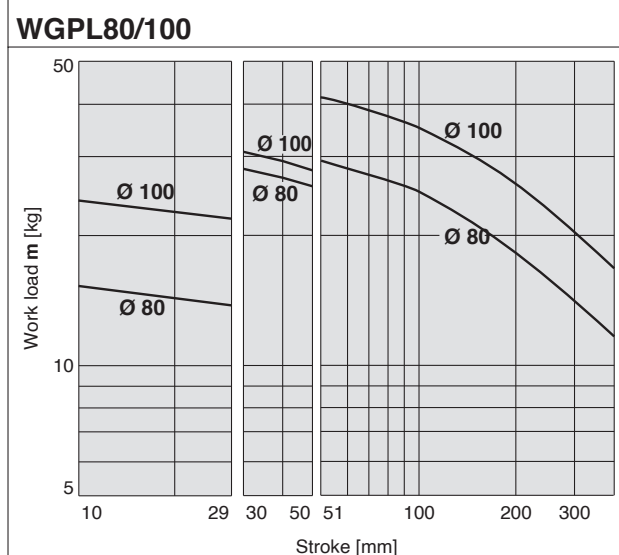
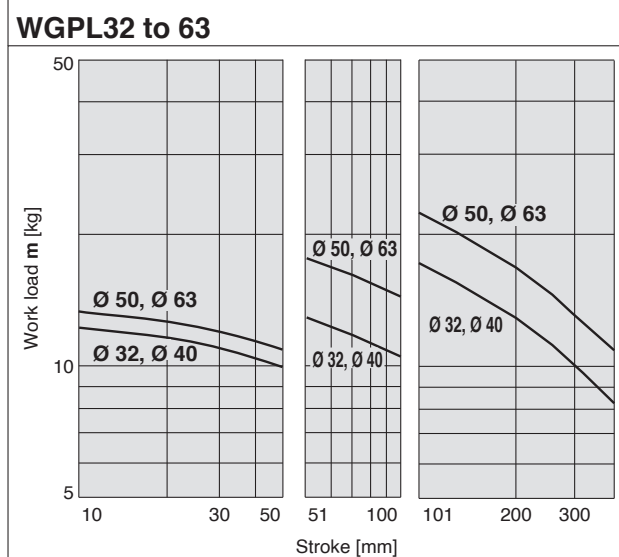
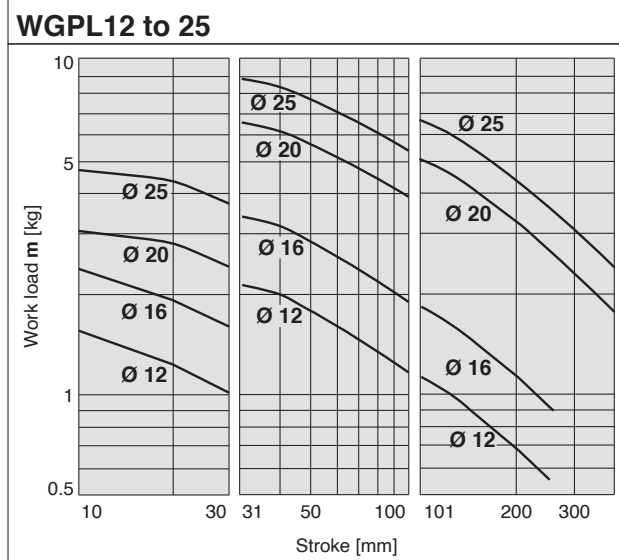
(16) $L = 100 \text{ mm}$, $V = 400 \text{ mm/s}$



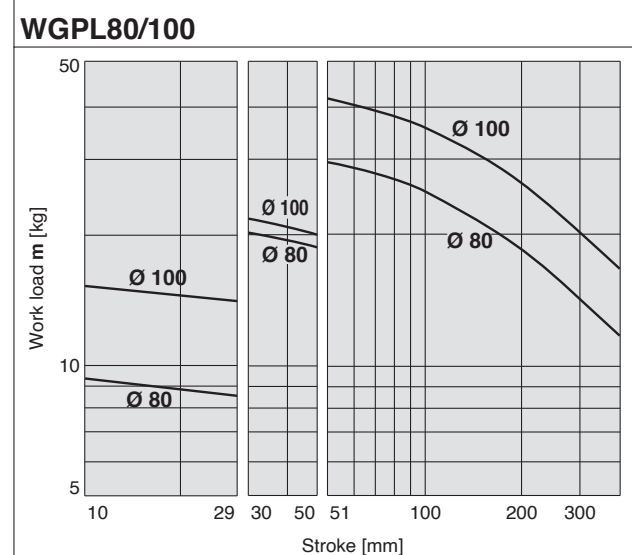
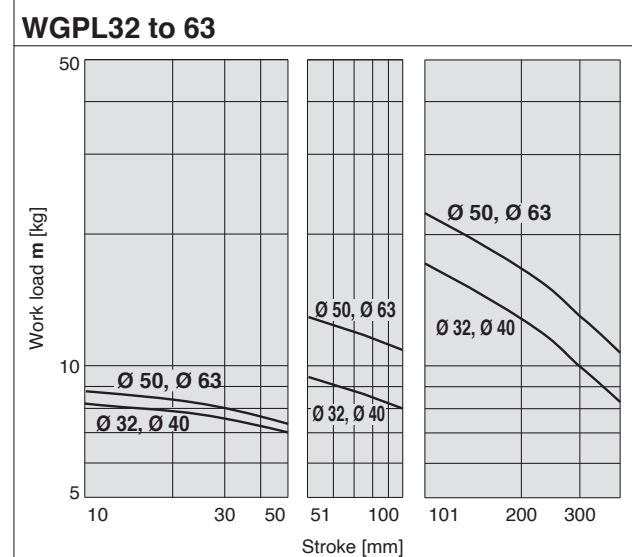
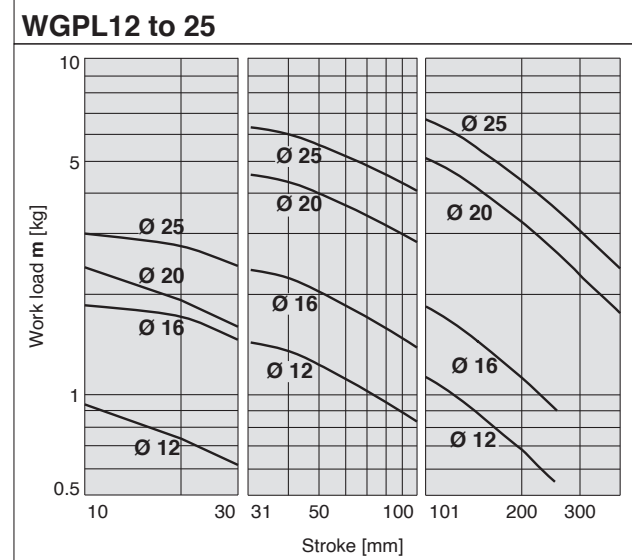


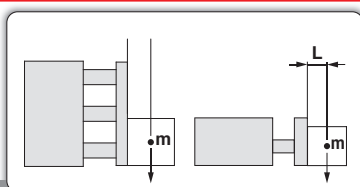
Horizontal Mounting Ball Bushing

(17) L = 50 mm, V = 200 mm/s or less

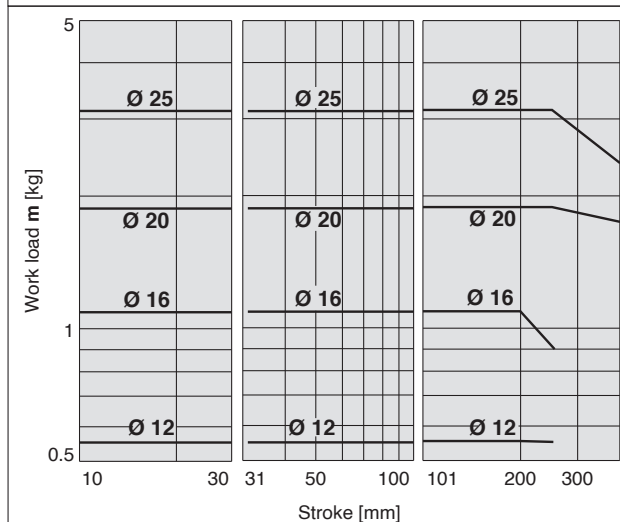


(18) L = 100 mm, V = 200 mm/s or less

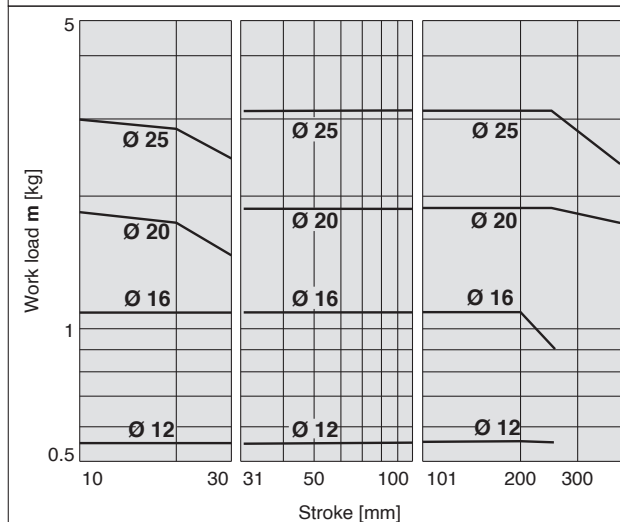
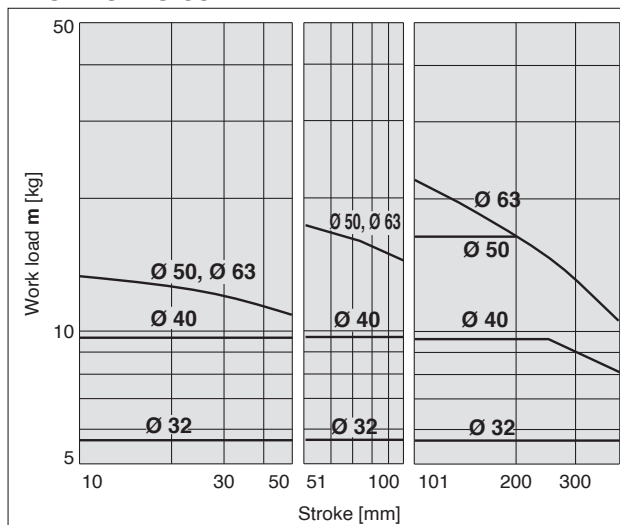
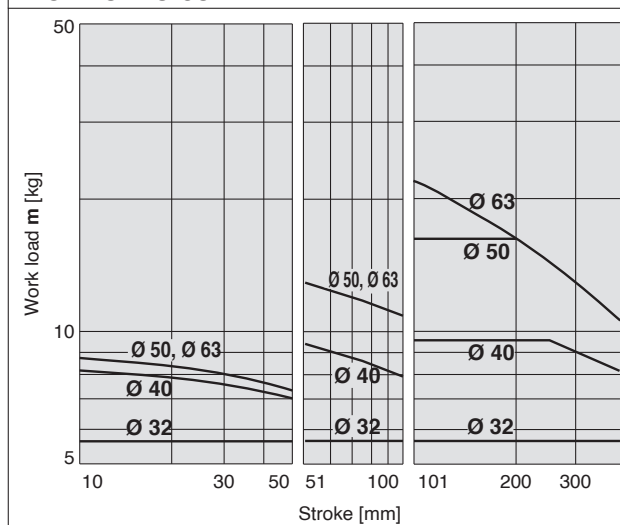
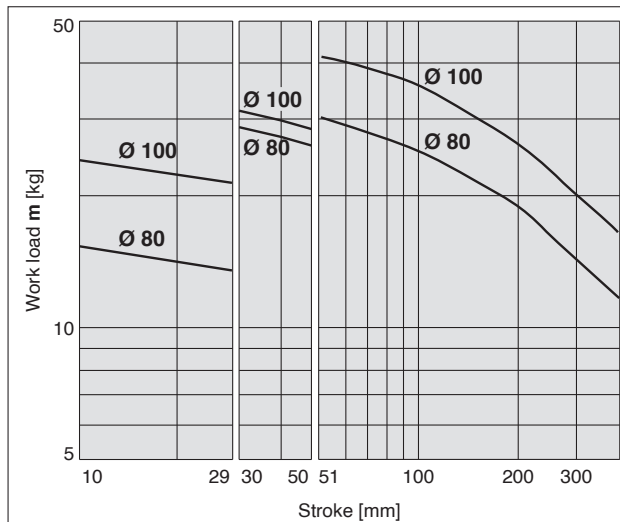
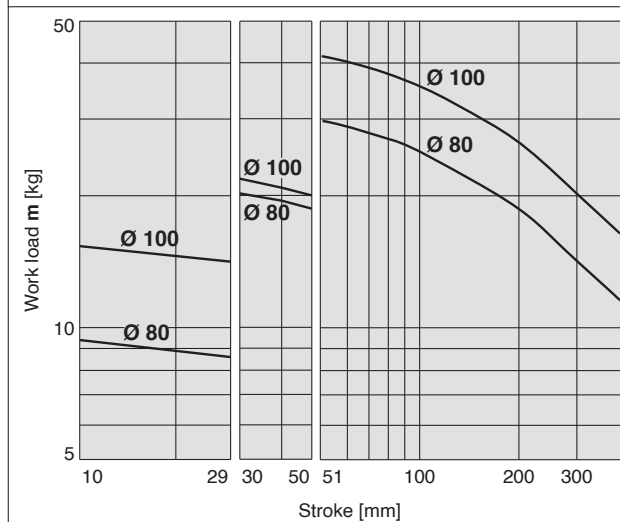



Horizontal Mounting Ball Bushing

(19) L = 50 mm, V = 400 mm/s

WGPL12 to 25


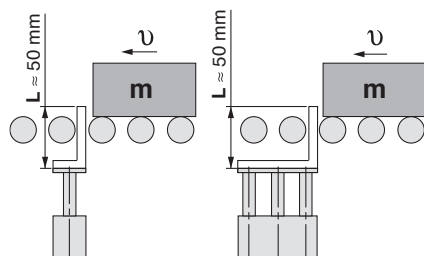
(20) L = 100 mm, V = 400 mm/s

WGPL12 to 25

WGPL32 to 63

WGPL32 to 63

WGPL80/100

WGPL80/100


Operating Range when Used as Stopper

Bore Size: Ø 12 to Ø 25/WGPM12 to 25 (Slide Bearing)

WGPM12 to 25 (Slide Bearing)

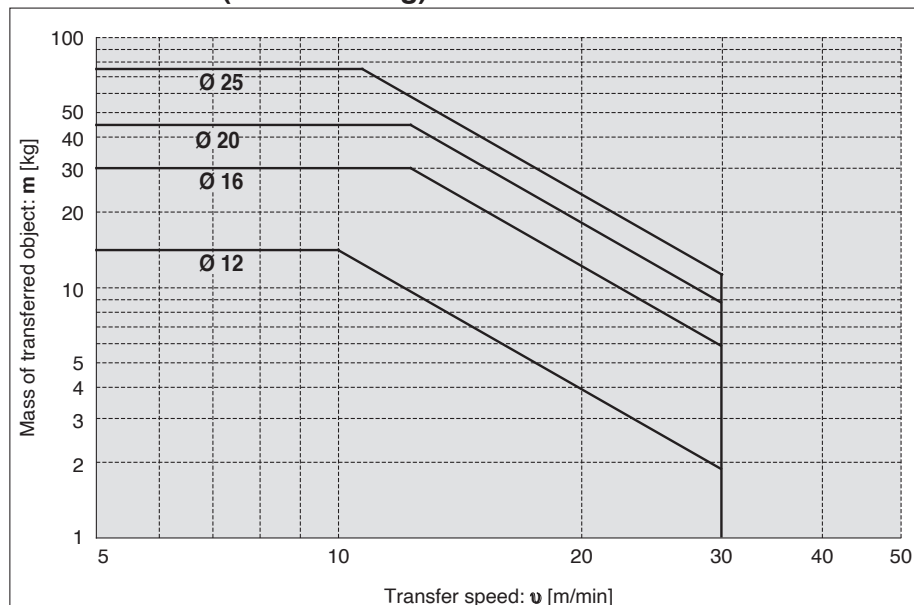


: When selecting a model with a longer **L** dimension, be sure to choose a bore size which is sufficiently large.

⚠ Caution

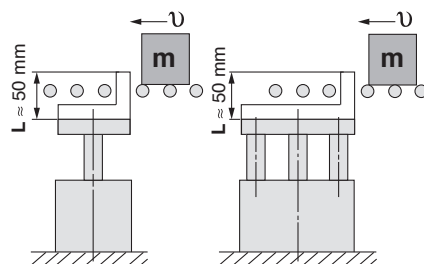
Caution on handling

1. When using as a stopper, select a model with 30 stroke or less.
2. The WGPL (Ball bushing) and the MGPA (High precision ball bushing) cannot be used as a stopper.



Bore Size: Ø 32 to Ø 100/WGPM32 to 100 (Slide Bearing)

WGPM32 to 100 (Slide Bearing)

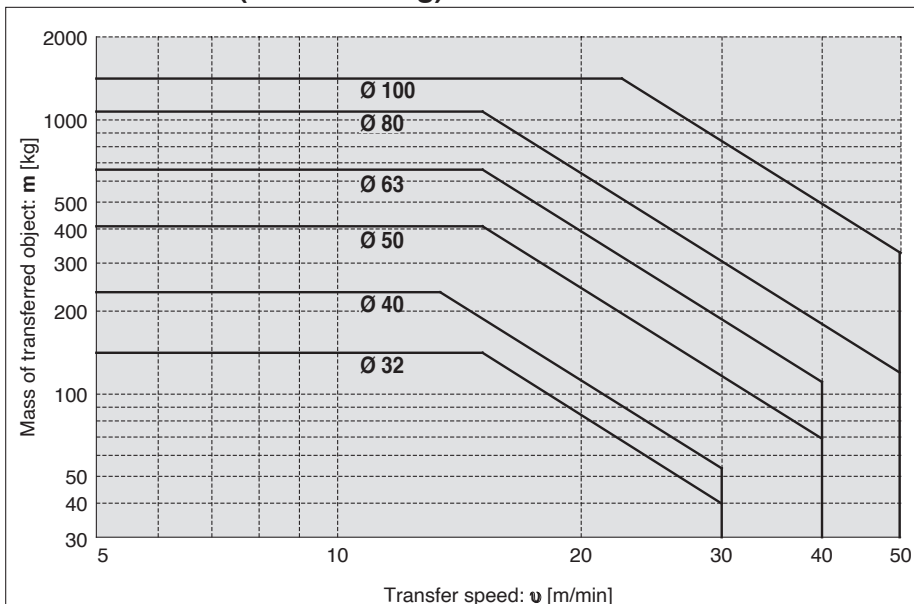


: When selecting a model with a longer **L** dimension, be sure to choose a bore size which is sufficiently large.

⚠ Caution

Caution on handling

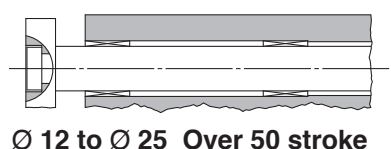
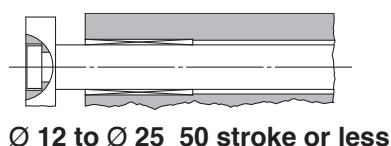
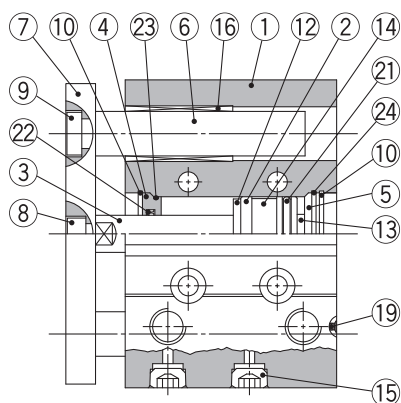
1. When using as a stopper, select a model with 50 stroke or less.
2. The WGPL (Ball bushing) and the MGPA (High precision ball bushing) cannot be used as a stopper.



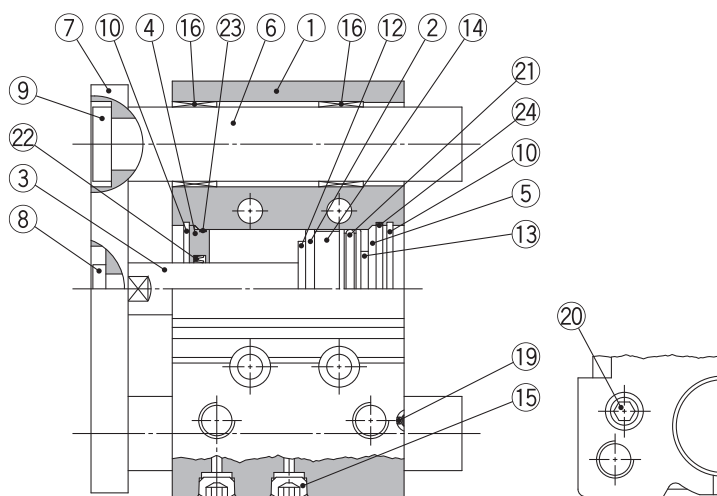
: Refer to graphs (13) and (15) if line pressure is applied by a roller conveyor after the workpiece is stopped.

Construction/Series WGPM

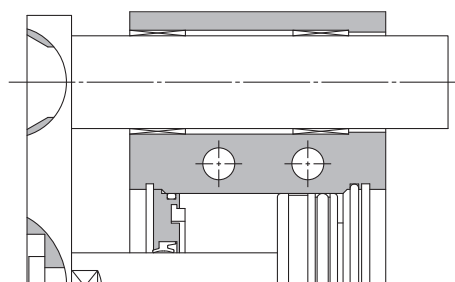
WGPM12 to 25



WGPM32 to 100



Ø 63 or more



Ø 50 or more

Component Parts

No.	Description	Material	Note
1	Body	Aluminium alloy	Hard anodised
2	Piston	Aluminium alloy	
3	Piston rod	Stainless steel	Ø 12 to Ø 25
		Carbon steel	Ø 32 to Ø 100 Hard chrome plating
4	Collar	Aluminium alloy	Chromated
5	Head cover	Aluminium alloy	Ø 12 to Ø 63 Chromated Ø 80, Ø 100 Painted
6	Guide rod	Carbon steel	Hard chrome plating
7	Plate	Carbon steel	Nickel plating
8	Plate mounting bolt	Carbon steel	Nickel plating
9	Guide bolt	Carbon steel	Nickel plating
10	Retaining ring	Carbon tool steel	Phosphate coated
11	Retaining ring	Carbon tool steel	Phosphate coated
12	Bumper A	Urethane	
13	Bumper B	Urethane	
14	Magnet	—	
15	Plug	Carbon steel	Ø 12, Ø 16 Nickel plating
	Hexagon socket head plug		Ø 20 to Ø 100
16	Slide bearing	Bearing alloy	

: A felt is not installed on the slide bearing.

Component Parts

No.	Description	Material	Note
17	Ball bushing		
18	Spacer	Aluminium alloy	
19	Steel ball	Carbon steel	Ø 12 to Ø 50
20	Plug	Carbon steel	Ø 63 to Ø 100 Nickel plating
21	Piston seal	NBR	
22	Rod seal	NBR	
23	Gasket A	NBR	
24	Gasket B	NBR	

Replacement Parts/Seal Kit

Bore size [mm]	Kit no.	Contents	Bore size [mm]	Kit no.	Contents
12	WGP12-Z-PS	Set of nos.	40	WGP40-Z-PS	Set of nos.
16	WGP16-Z-PS	above	50	WGP50-Z-PS	above
20	WGP20-Z-PS	(21), (22)	63	WGP63-Z-PS	(21), (22)
25	WGP25-Z-PS	(23), (24)	80	WGP80-Z-PS	(21), (22)
32	WGP32-Z-PS		100	WGP100-Z-PS	(23), (24)

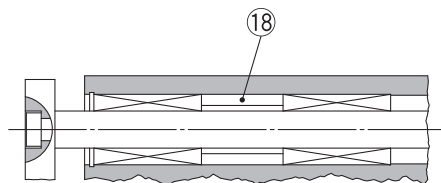
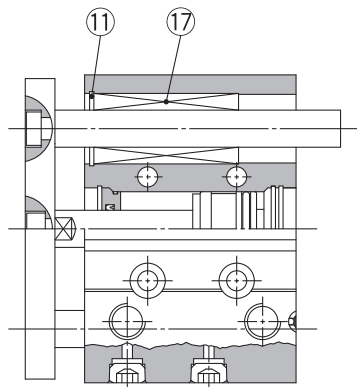
: Seal kit includes (21) to (24) Order the seal kit, based on each bore size.
: Since the seal kit does not include a grease pack, order it separately.

Grease pack part number: GR-S-010 (10 g)

: For Made to Order, refer to page 91.

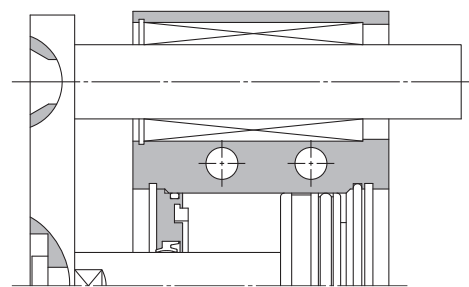
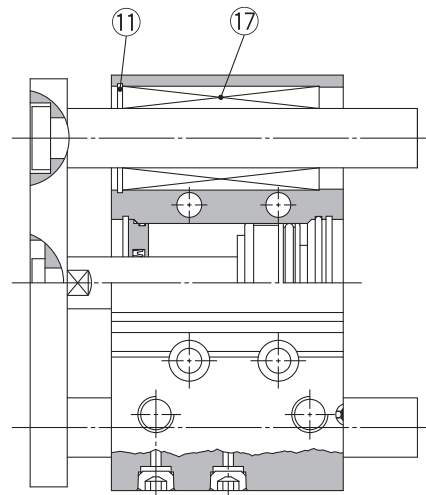
Construction/Series WGPL

WGPL12 to 25

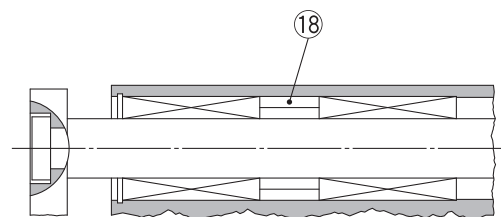


Ø 12 to Ø 25 Over 100 stroke

WGPL32 to 100



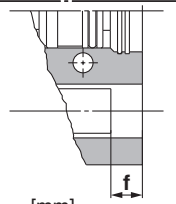
Ø 50 or more



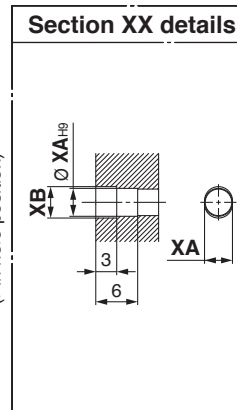
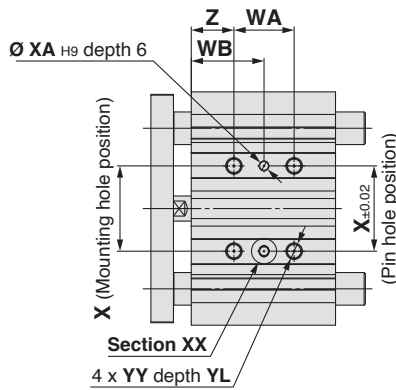
Ø 32 to Ø 63 Over 100 stroke
Ø 80, Ø 100 Over 200 stroke

Ø 12 to Ø 25/WGPM, WGPL

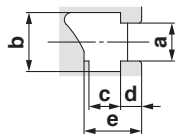
Section EE details
(Ø 12 to Ø 25, 50 stroke or less)



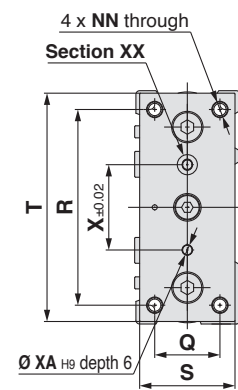
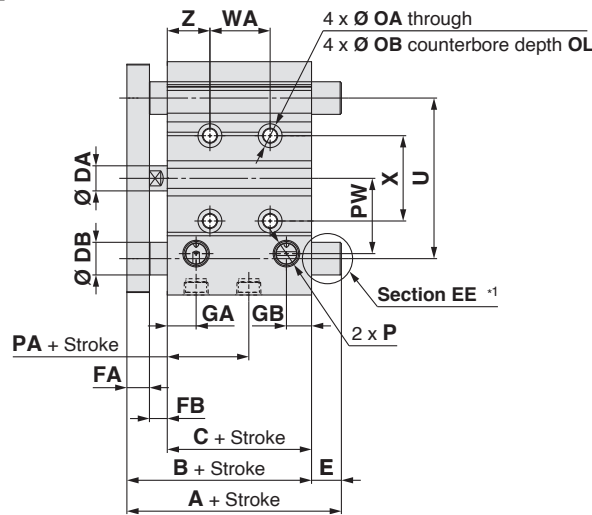
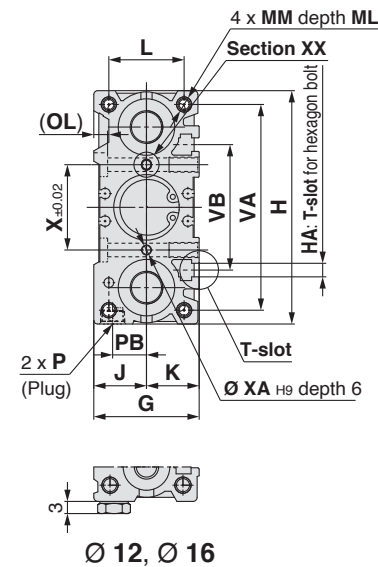
Bore size [mm]	f [mm]	Bore size [mm]	f [mm]
12	4.5	20	8.5
16	4.5	25	8



T-slot dimensions



Bore size [mm]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]
12	4.4	7.4	3.7	2	6.2
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



1: Refer to Section EE details for the shape of Ø 12 to Ø 25 with stroke of 50 or less.

: The use of a slot (width XA, length XB, depth 3) allows for a relaxed pin pitch tolerance, with the pin hole (Ø XA_{H9}, depth 6) as the reference, without affecting mounting accuracy.

: For intermediate strokes other than standard strokes, refer to Manufacture of Intermediate Strokes on page 10.

: For bore size Ø 12 and Ø 16, only M5 x 0.8 port is available.

: For bore size Ø 20 or more, choice of Rc, NPT, G port is available. (Refer to page 9.)

WGPM, WGPL Common Dimensions

Bore size [mm]	Standard stroke [mm]	B	C	DA	FA	FB	G	GA	GB	H	HA	J	K	L	MM	ML	NN	OA	OB	OL	P		
																					—	TN	TF
12	10, 20, 30, 40, 50, 75, 100	42	29	6	7	6	26	10	7	58	M4	13	13	18	M4 x 0.7	10	M4 x 0.7	4.3	8	4.5	M5 x 0.8	—	—
16	125, 150, 175, 200, 250	46	33	8	7	6	30	10.5	7.5	64	M4	15	15	22	M5 x 0.8	12	M5 x 0.8	4.3	8	4.5	M5 x 0.8	—	—
20	20, 30, 40, 50, 75, 100, 125, 150	53	37	10	8	8	36	11.5	9	83	M5	18	18	24	M5 x 0.8	13	M5 x 0.8	5.4	9.5	5.5	Rc 1/8	NPT 1/8	G 1/8
25	175, 200, 250, 300, 350, 400	53.5	37.5	10	9	7	42	11.5	10	93	M5	21	21	30	M6 x 1.0	15	M6 x 1.0	5.4	9.5	5.5	Rc 1/8	NPT 1/8	G 1/8

Bore size [mm]	PA	PB	PW	Q	R	S	T	U	VA	VB	WA				WB				X	XA	XB	YY	YL	Z		
											30 st or less	Over 30 st or less	Over 100 st or less	Over 200 st or less	30 st or less	Over 30 st or less	Over 100 st or less	Over 200 st or less							Over 300 st	
12	13	8	18	14	48	22	56	41	50	37	20	40	110	200	—	15	25	60	105	—	23	3	3.5	M5 x 0.8	10	5
16	14.5	10	19	16	54	25	62	46	56	38	24	44	110	200	—	17	27	60	105	—	24	3	3.5	M5 x 0.8	10	5
20	13.5	10.5	25	18	70	30	81	54	72	44	24	44	120	200	300	29	39	77	117	167	28	3	3.5	M6 x 1.0	12	17
25	12.5	13.5	30	26	78	38	91	64	82	50	24	44	120	200	300	29	39	77	117	167	34	4	4.5	M6 x 1.0	12	17

WGPM (Slide bearing) A, DB, E Dimensions

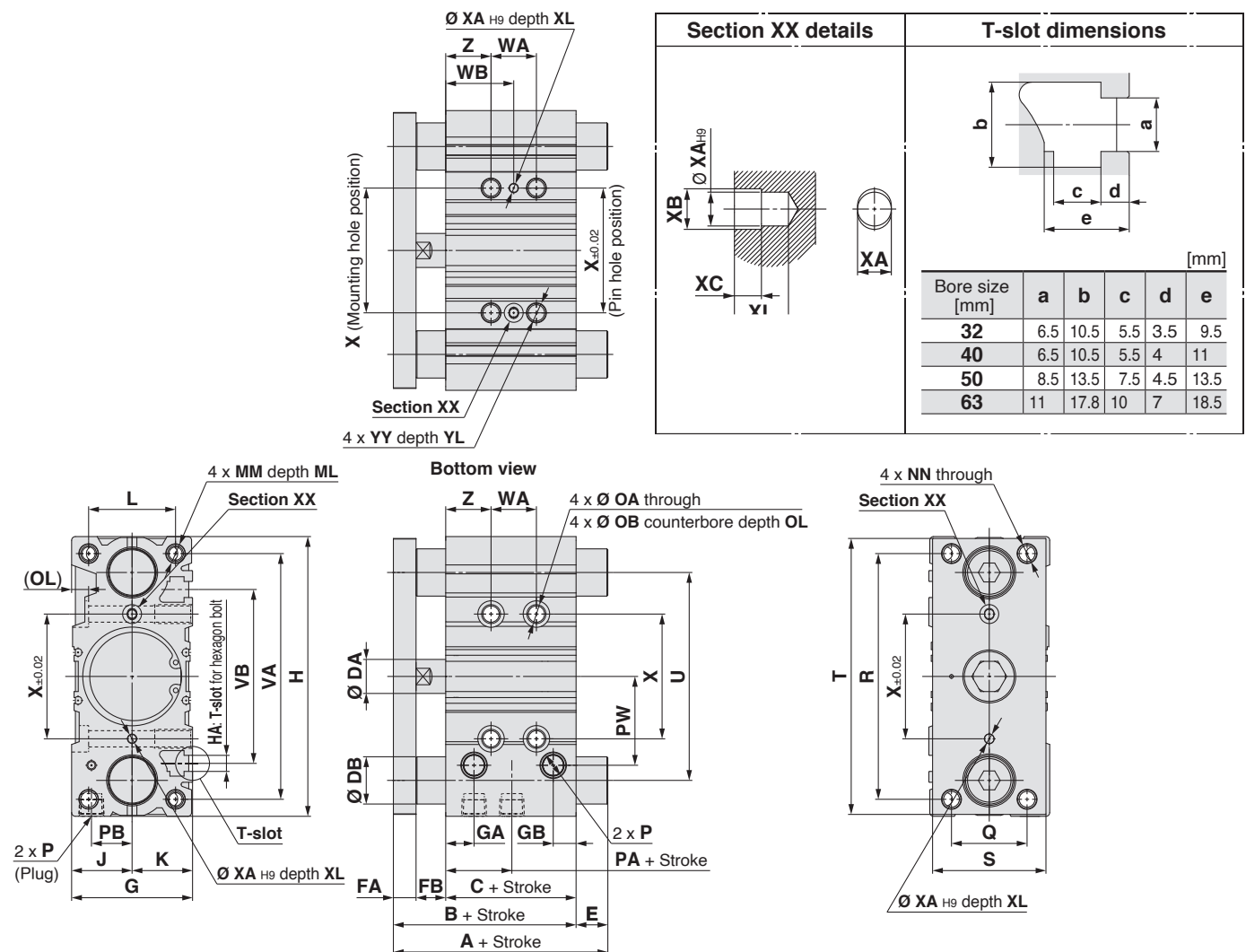
Bore size [mm]	A				DB	E			
	50 st or less	Over 50 st or less	Over 100 st or less	Over 200 st or less		50 st or less	Over 50 st or less	Over 100 st or less	Over 200 st or less
12	42	60.5	82.5	82.5	8	0	18.5	40.5	40.5
16	46	64.5	92.5	92.5	10	0	18.5	46.5	46.5
20	53	77.5	77.5	110	12	0	24.5	24.5	57
25	53.5	77.5	77.5	109.5	16	0	24	24	56

WGPL (Ball bushing)

(High precision ball bushing) A, DB, E Dimensions

Bore size [mm]	A				DB	E			
	30 st or less	Over 30 st or less	Over 100 st or less	Over 200 st or less		30 st or less	Over 30 st or less	Over 100 st or less	Over 200 st or less
12	43	55	84.5	84.5	6	1	13	42.5	42.5
16	49	65	94.5	94.5	8	3	19	48.5	48.5
20	59	76	100	117.5	10	6	23	47	64.5
25	65.5	81.5	100.5	117.5	13	12	28	47	64

Ø 32 to Ø 63/WGPM, WGPL



: The use of a slot (width XA, length XB, depth XC) allows for a relaxed pin pitch tolerance, with the pin hole (Ø XAH9, depth XL) as the reference, without affecting mounting accuracy.
 : For intermediate strokes other than standard strokes, refer to Manufacture of Intermediate Strokes on page 10.
 : Choice of Rc, NPT, G port is available. (Refer to page 9.)

WGPM, WGPL Common Dimensions

Bore size [mm]	Standard stroke [mm]	B	C	DA	FA	FB	G	GA	GB	H	HA	J	K	L	MM	ML	NN	OA	OB	OL	P		
																					—	TN	TF
32	25, 50, 75	59.5	37.5	14	10	12	48	12	9	112	M6	24	24	34	M8 x 1.25	20	M8 x 1.25	6.7	11	7.5	Rc 1/8	NPT 1/8	G 1/8
40	100, 125, 150	66	44	14	10	12	54	15	12	120	M6	27	27	40	M8 x 1.25	20	M8 x 1.25	6.7	11	7.5	Rc 1/8	NPT 1/8	G 1/8
50	175, 200, 250	72	44	18	12	16	64	15	12	148	M8	32	32	46	M10 x 1.5	22	M10 x 1.5	8.6	14	9	Rc 1/4	NPT 1/4	G 1/4
63	300, 350, 400	77	49	18	12	16	78	15.5	13.5	162	M10	39	39	58	M10 x 1.5	22	M10 x 1.5	8.6	—	9	Rc 1/4	NPT 1/4	G 1/4

Bore size [mm]	PA	PB	PW	Q	R	S	T	U	VA	VB	WA					WB					X	XA	XB	XC	XL	YY	YL	Z
											25 st or less	Over 25 st 100 st or less	Over 100 st 200 st or less	Over 200 st 300 st or less	Over 300 st	25 st or less	Over 25 st 100 st or less	Over 100 st 200 st or less	Over 200 st 300 st or less	Over 300 st								
32	6.5	16	35.5	30	96	44	110	78	98	63	24	48	124	200	300	33	45	83	121	171	42	4	4.5	3	6	M8 x 1.25	16	21
40	13	18	39.5	30	104	44	118	86	106	72	24	48	124	200	300	34	46	84	122	172	50	4	4.5	3	6	M8 x 1.25	16	22
50	9	21.5	47	40	130	60	146	110	130	92	24	48	124	200	300	36	48	86	124	174	66	5	6	4	8	M10 x 1.5	20	24
63	13	28	58	50	130	70	158	124	142	110	28	52	128	200	300	38	50	88	124	174	80	5	6	4	8	M10 x 1.5	20	24

WGPM (Slide bearing) A, DB, E Dimensions

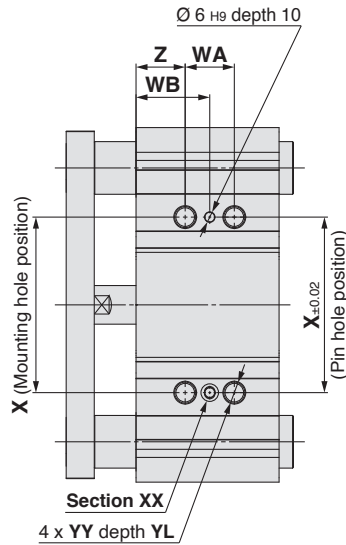
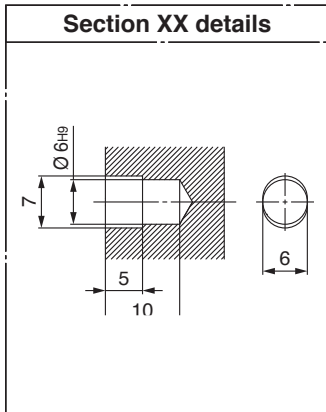
Bore size [mm]	A			DB	E		
	50 st or less	Over 50 st 200 st or less	Over 200 st		50 st or less	Over 50 st 200 st or less	Over 200 st
32	75	93.5	129.5	20	15.5	34	70
40	75	93.5	129.5	20	9	27.5	63.5
50	88.5	109.5	150.5	25	16.5	37.5	78.5
63	88.5	109.5	150.5	25	11.5	32.5	73.5

WGPL (Ball bushing)

(High precision ball bushing) A, DB, E Dimensions

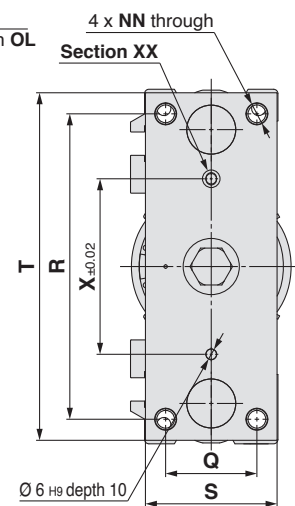
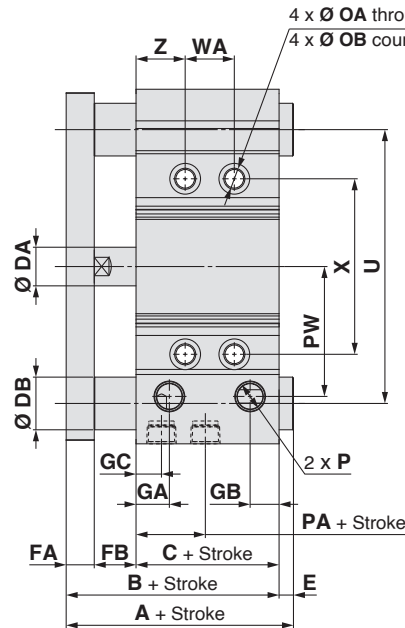
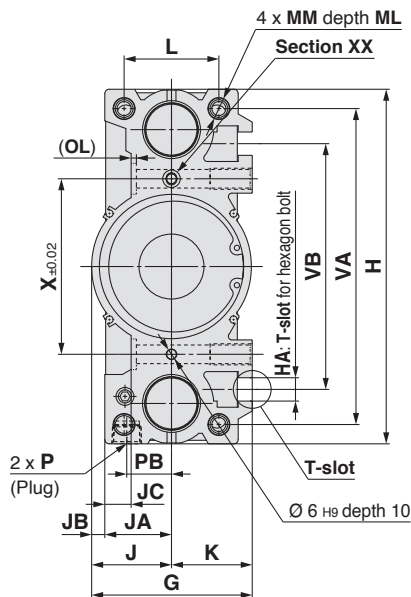
Bore size [mm]	A			DB	E		
	50 st or less	Over 50 st 100 st or less	Over 100 st 200 st or less	Over 200 st	50 st or less	Over 50 st 100 st or less	Over 100 st 200 st or less
32	79.5	96.5	116.5	16	20	37	57
40	79.5	96.5	116.5	16	13.5	30.5	50.5
50	91.5	112.5	132.5	20	19.5	40.5	60.5
63	91.5	112.5	132.5	20	14.5	35.5	55.5

Ø 80, Ø 100/WGPM, WGPL,



Bottom view

T-slot dimensions					
	[mm]				
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



- : The use of a slot (width X6, length 7, depth 5) allows for a relaxed pin pitch tolerance, with the pin hole (Ø 6 H9, depth 10) as the reference, without affecting mounting accuracy.
- : For intermediate strokes other than standard strokes, refer to Manufacture of Intermediate Strokes on page 10.
- : Choice of Rc, NPT, G port is available. (Refer to page 9.)

WGPM, WGPL, Common Dimensions

Bore size [mm]	Standard stroke [mm]	B	C	DA	FA	FB	G	GA	GB	GC	H	HA	J	JA	JB	JC	K	L	MM	ML	NN	OA	OB	OL	P		
																									—	TN	TF
80	25, 50, 75, 100 125, 150, 175, 200	96.5	56.5	22	16	24	91.5	19	16.5	14.5	202	M12	45.5	38	7.5	15	46	54	M12 x 1.75	25	M12 x 1.75	10.6	17.5	3	Rc 3/8	NPT 3/8	G 3/8
100	250, 300, 350, 400	116	66	26	19	31	111.5	22.5	20.5	18	240	M14	55.5	45	10.5	10	56	62	M14 x 2.0	31	M14 x 2.0	12.5	20	8	Rc 3/8	NPT 3/8	G 3/8

Bore size [mm]	PA	PB	PW	Q	R	S	T	U	VA	VB	WA					WB					X	YY	YL	Z
											25 st or less	Over 25 st 100 st or less	Over 100 st 200 st or less	Over 200 st 300 st or less	Over 300 st	25 st or less	Over 25 st 100 st or less	Over 100 st 200 st or less	Over 200 st 300 st or less	Over 300 st				
80	14.5	25.5	74	52	174	75	198	156	180	140	28	52	128	200	300	42	54	92	128	178	100	M12 x 1.75	24	28
100	17.5	32.5	89	64	210	90	236	188	210	166	48	72	148	220	320	35	47	85	121	171	124	M14 x 2.0	28	11

WGPM (Slide bearing) A, DB, E Dimensions

Bore size [mm]	A			DB	E		
	50 st or less	Over 50 st 200 st or less	Over 200 st		50 st or less	Over 50 st 200 st or less	Over 200 st
80	104.5	131.5	180.5	30	8	35	84
100	126.5	151.5	190.5	36	10.5	35.5	74.5

WGPL (Ball bushing)

(High precision ball bushing) A, DB, E Dimensions

Bore size [mm]	A				DB	E			
	25 st or less	Over 25 st 50 st or less	Over 50 st 200 st or less	Over 200 st		25 st or less	Over 25 st 50 st or less	Over 50 st 200 st or less	Over 200 st
80	104.5	128.5	158.5	191.5	25	8	32	62	95
100	119.5	145.5	178.5	201.5	30	3.5	29.5	62.5	85.5