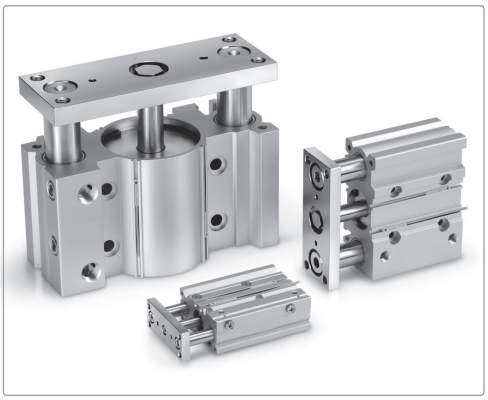
WGP - Basic Serisi Kompakt Yataklamalı Silindirler / WGP - Basic Series Compact Guided Cylinders



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 fluid 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	$^{+1.5}_{0}$ mm									
Sensör/ Sensor Switches	D-M9B, D-M9P									

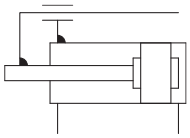
*1: Maximum speed with no load. Depending on the operating conditions, the piston speed may not be satisfied.
Make a model selection, considering a load according to the graph on pages 05 to 11.

Sipariş Kodu / Ordering Code

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

YATAKLAMALI Guiding	M :**BURÇ YATAKLAMALI** Bushing Guide L :**RULMANLI YATAKLAMA** Bearing Guide	**PİSTON ÇAPI (mm)** Piston Dia	– M5 x 0.8 Rc **TN** NPT **TF** G	**STROK (mm)** Stroke

Symbol
Rubber bumper



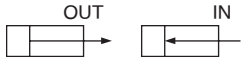
Standard Strokes

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

	Spacer installation type		Exclusive body (-XB10)	
Description	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.		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 [mm²]	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]

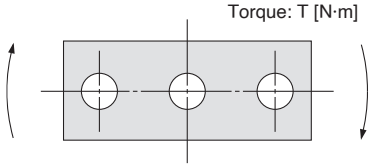
Bore size [mm]	Standard stroke [mm]															
	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400
12	0.22	0.25	—	0.29	0.33	0.36	0.46	0.55	0.66	0.75	0.84	0.93	1.11	—	—	—
16	0.32	0.37	—	0.42	0.46	0.51	0.66	0.78	0.94	1.06	1.18	1.31	1.55	—	—	—
20	—	0.59	—	0.67	0.74	0.82	1.06	1.24	1.43	1.61	1.80	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: WGPL12 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

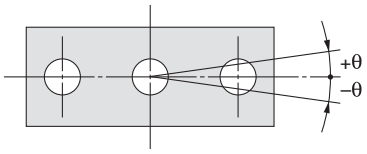
Allowable Rotational Torque of Plate



T [N·m]

Bore size [mm]	Bearing type	Stroke [mm]															
		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

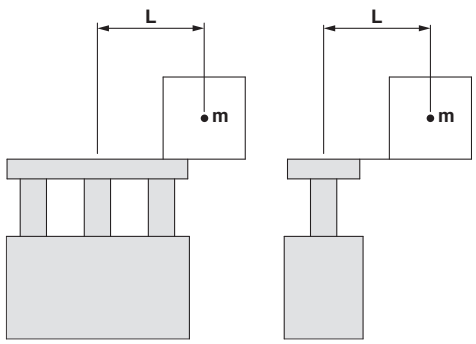
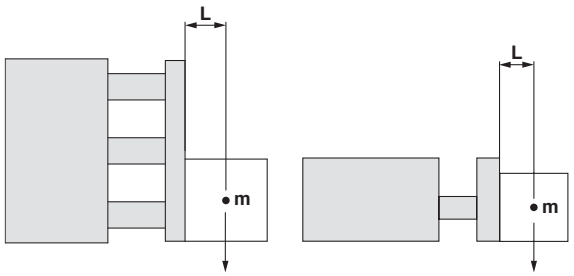


Non-rotating accuracy θ when retracted and when no load is applied should be not more than the values shown in the table.

Bore size [mm]	Non-rotating accuracy θ	
	WGPM	WGPL
12	±0.07°	±0.05°
16		
20	±0.06°	±0.04°
25		
32	±0.05°	±0.03°
40		
50	±0.04°	±0.03°
63		
80	±0.03°	±0.03°
100		

Model Selection

Selection Conditions

	Vertical		Horizontal	
Mounting orientation				
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)

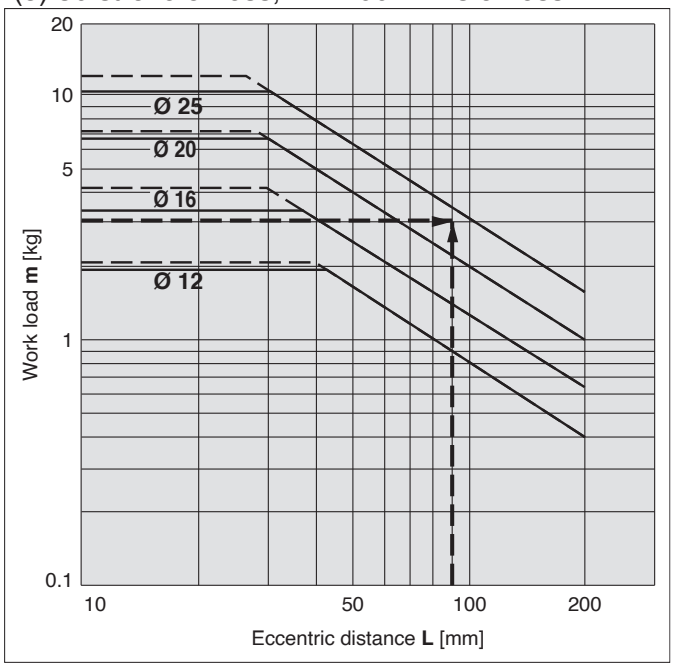
Selection Example 1 (Vertical Mounting)

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



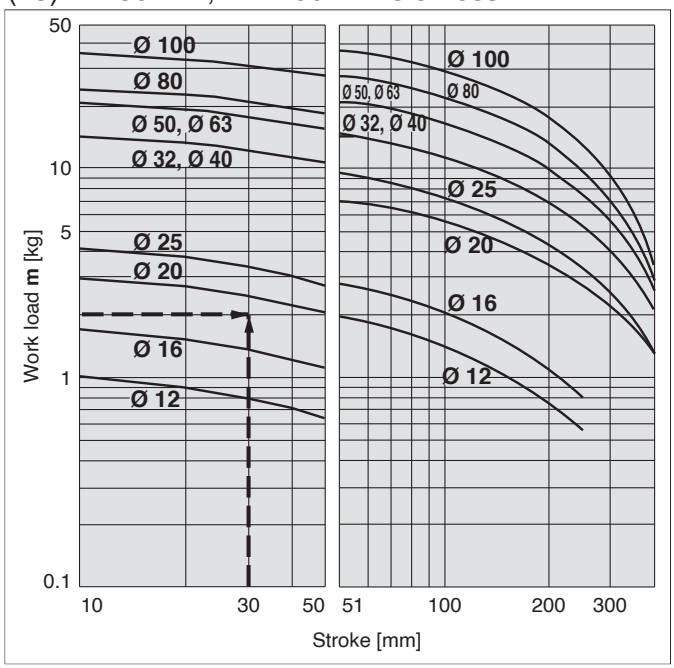
Selection Example 2 (Horizontal Mounting)

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

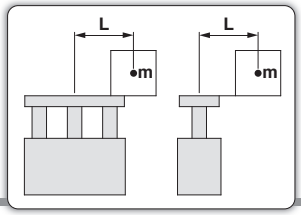


· When the maximum speed exceeds 200 mm/s, the allowable work load is determined by multiplying the value shown in the graph at 400 mm/s by the coefficient listed in the table below.

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

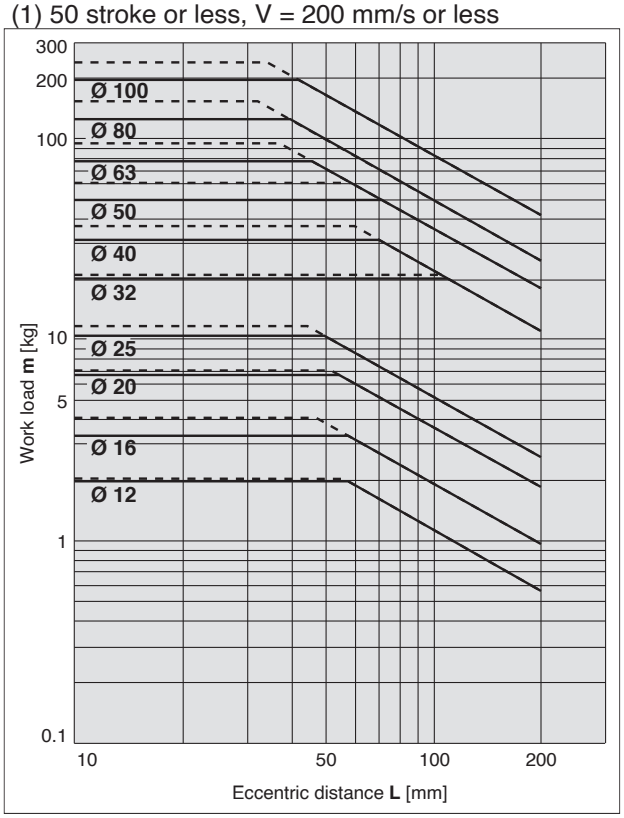


Vertical Mounting Slide Bearing

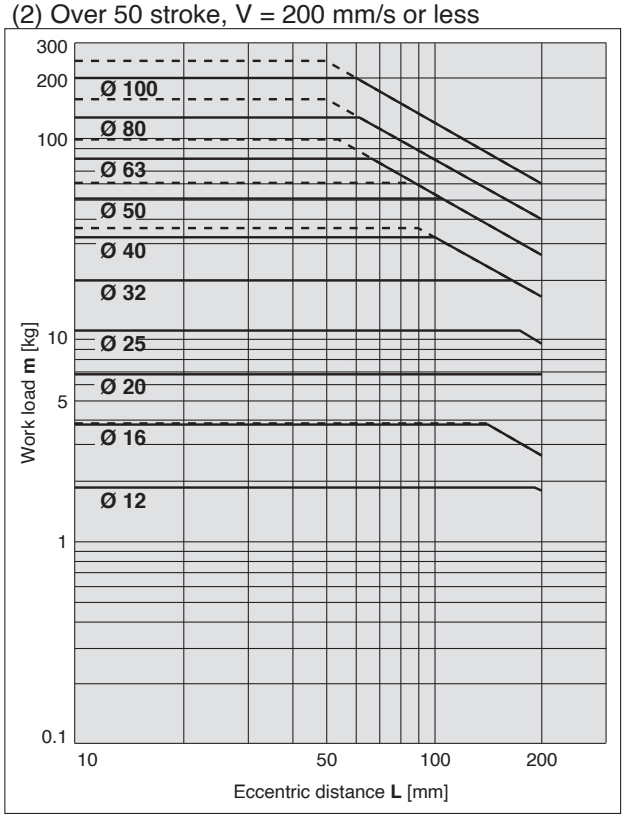
Operating pressure 0.4 MPa
Operating pressure 0.5 MPa or more

WGPM12 to 100

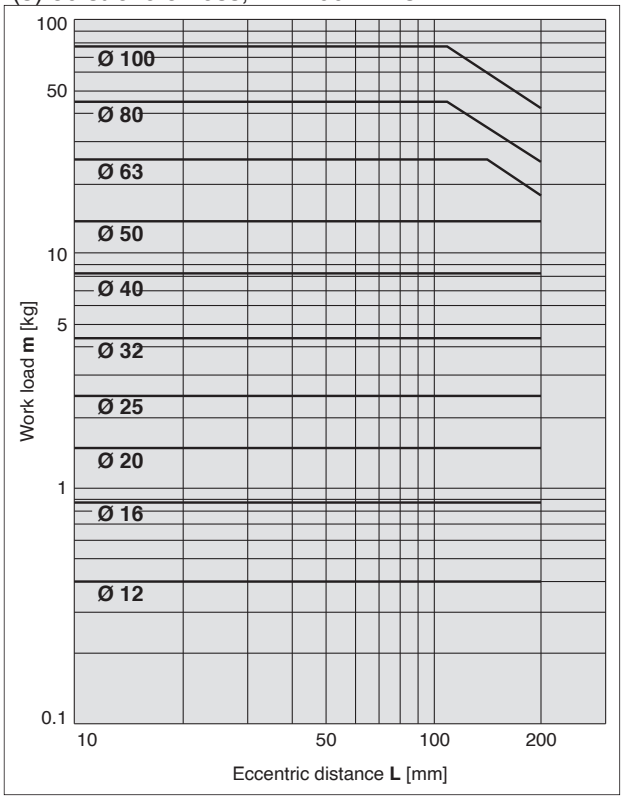
(1) 50 stroke or less, V = 200 mm/s or less



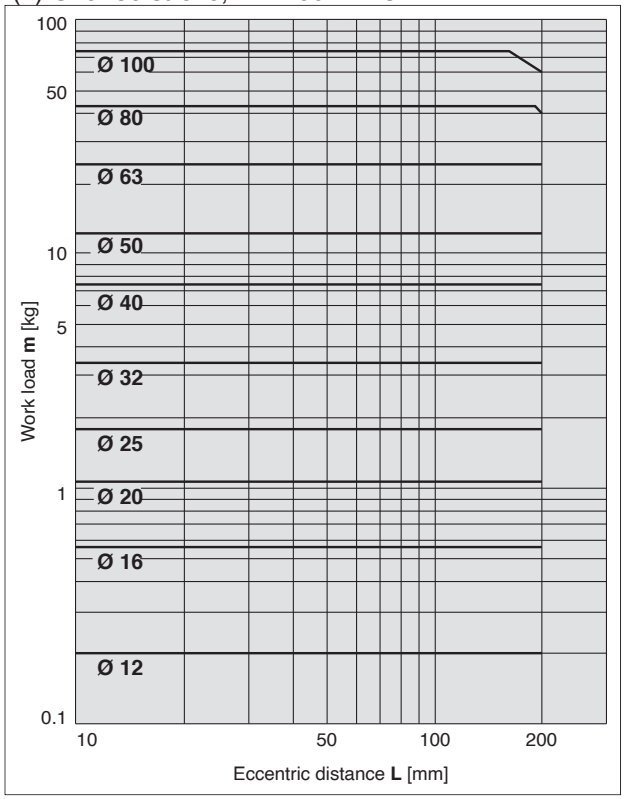
(2) Over 50 stroke, V = 200 mm/s or less



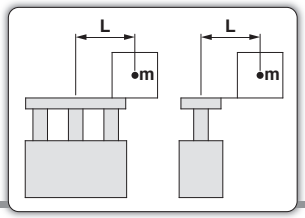
(3) 50 stroke or less, V = 400 mm/s



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



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

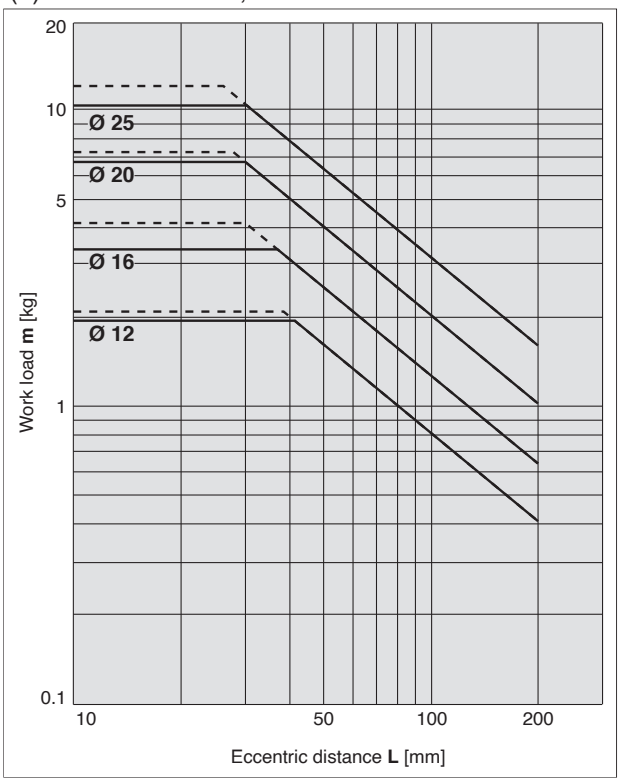


Vertical Mounting Ball Bushing

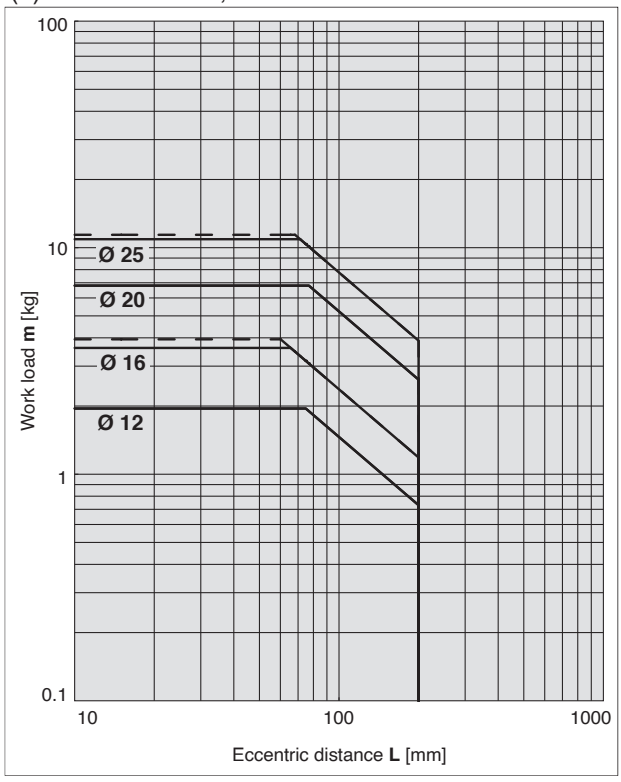
Operating pressure 0.4 MPa
Operating pressure 0.5 MPa or more

WGPL12 to 25

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

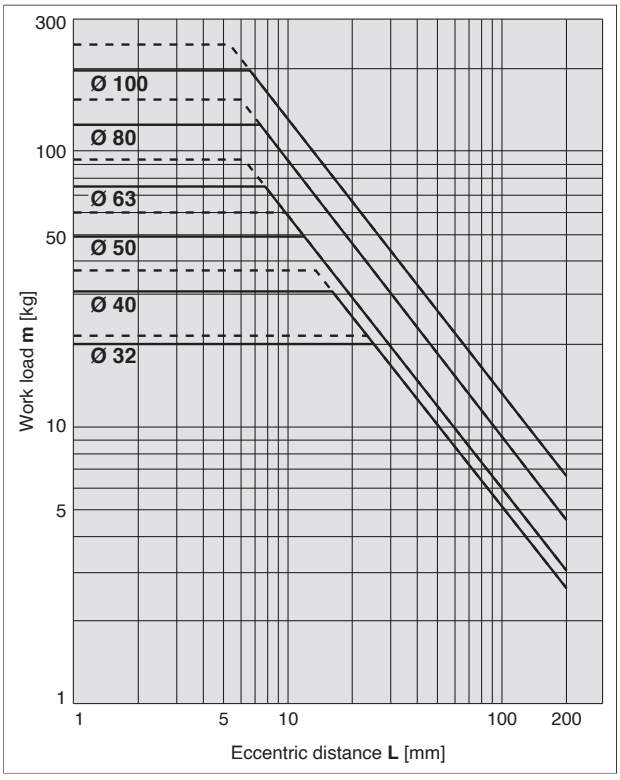


(6) Over 30 stroke, V = 200 mm/s or less

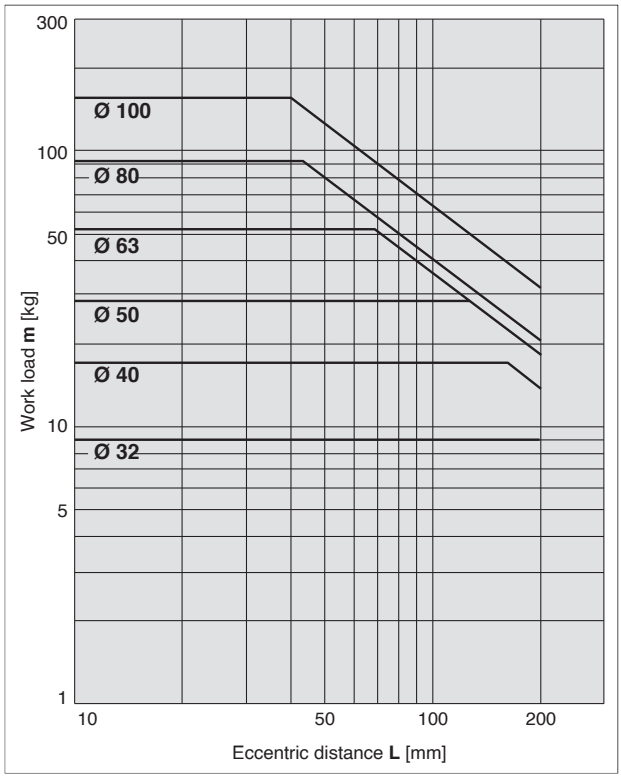


WGPL32 to 100

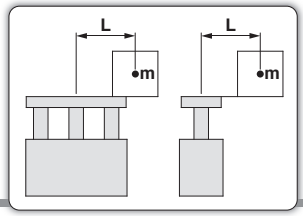
(7) 50 stroke or less, V = 200 mm/s or less



(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.

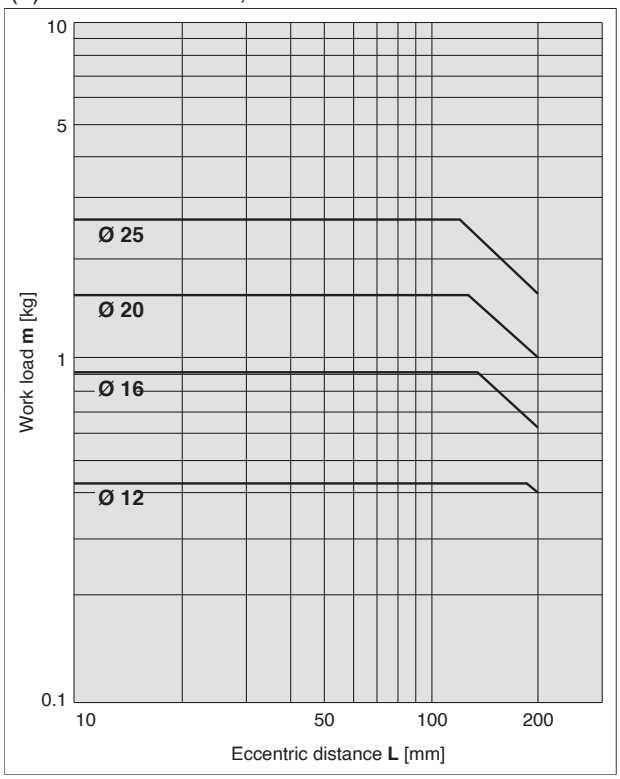


Vertical Mounting Ball Bushing

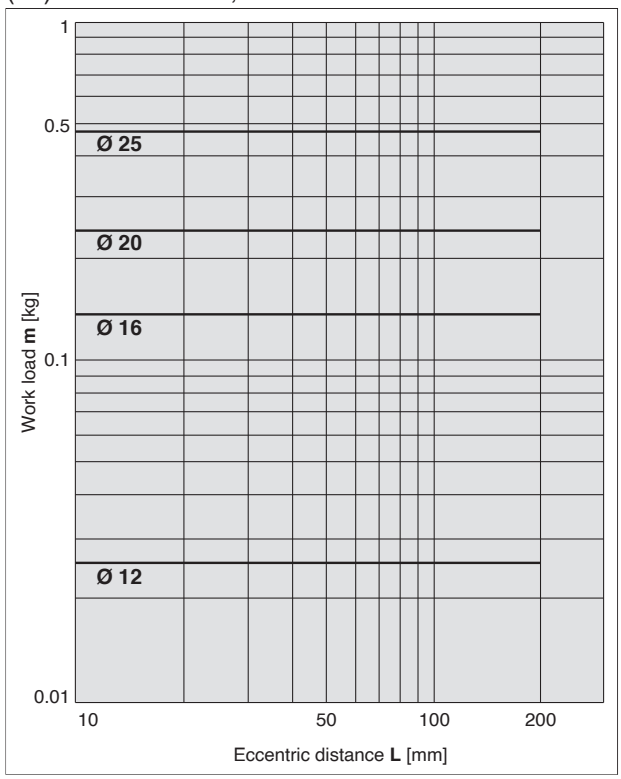
Operating pressure 0.4 MPa

WGPL12 to 25

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

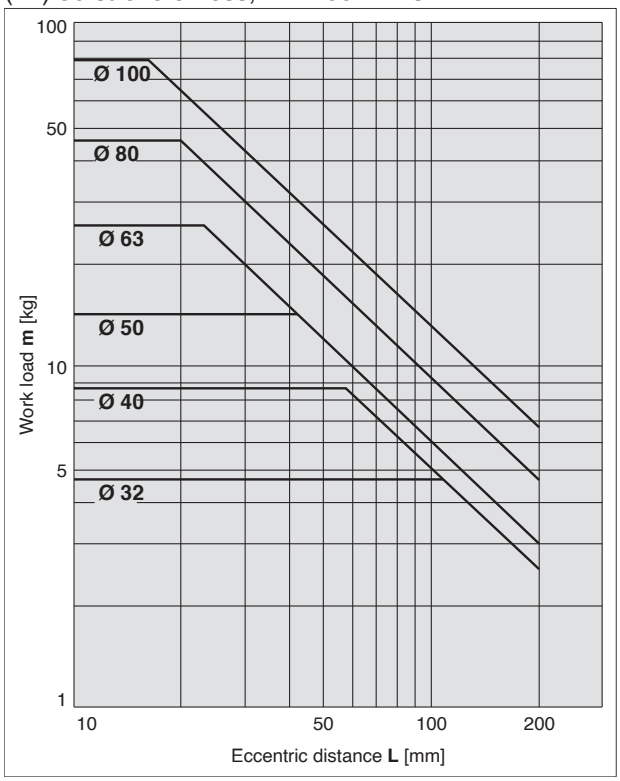


(10) Over 30 stroke, V = 400 mm/s

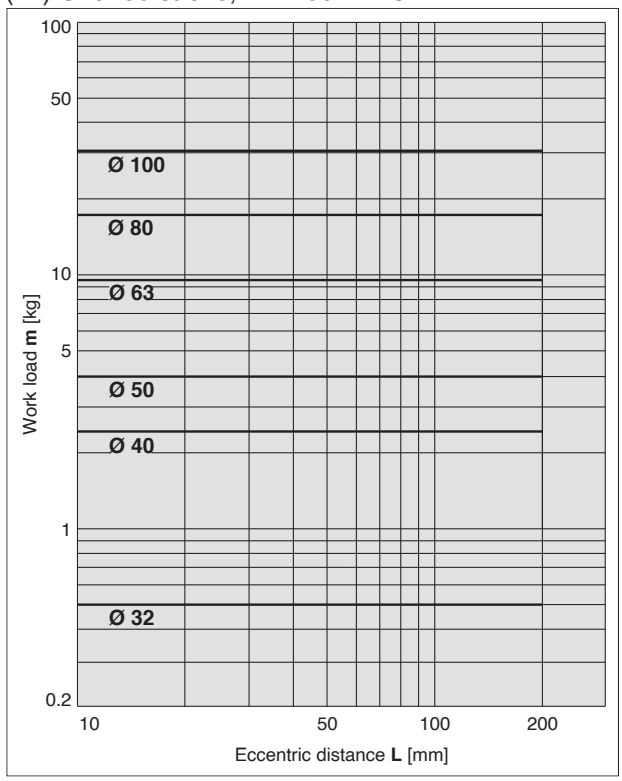


WGPL32 to 100

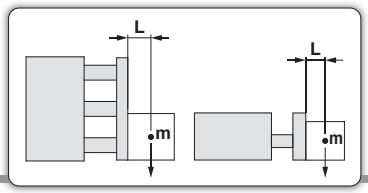
(11) 50 stroke or less, V = 400 mm/s



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



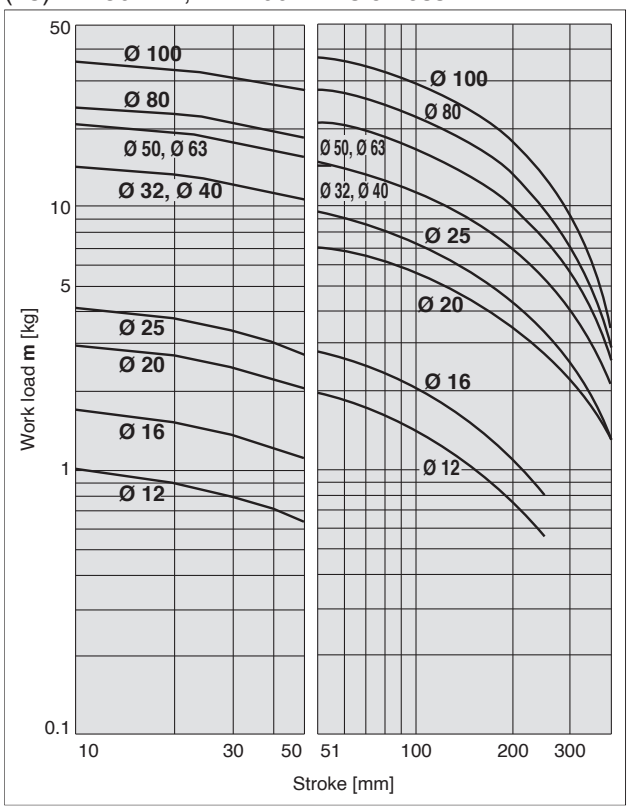
· Use the Guide Cylinder Selection Software, when the eccentric distance is 200 mm or more.



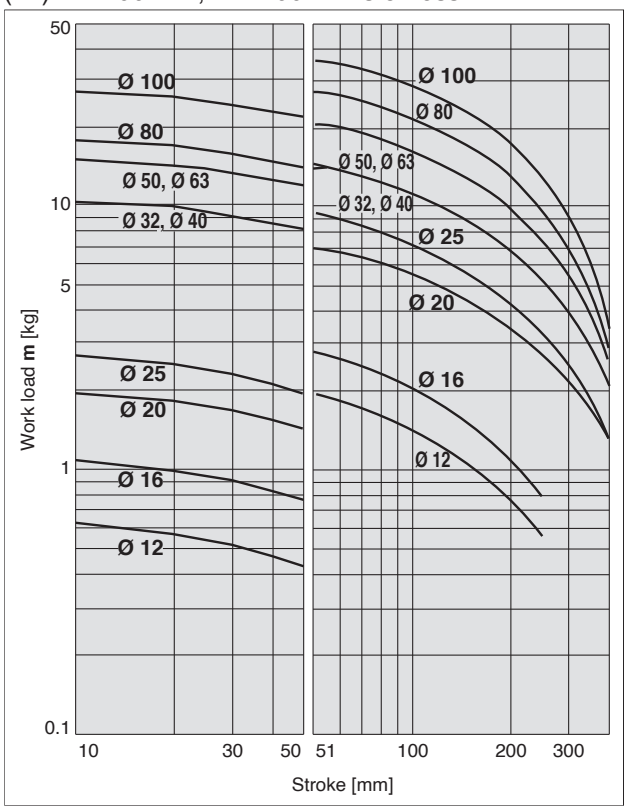
Horizontal Mounting Slide Bearing

WGPM12 to 100

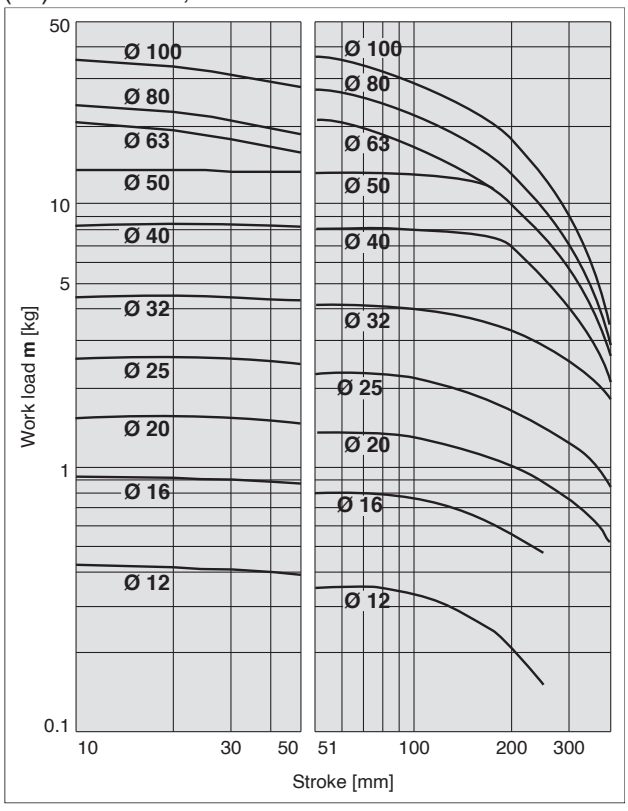
(13) L = 50 mm, V = 200 mm/s or less



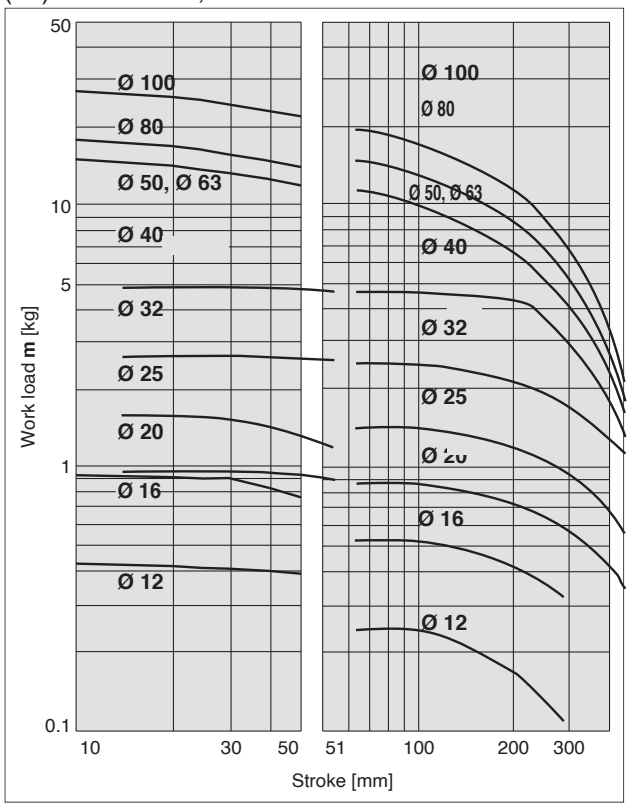
(14) L = 100 mm, V = 200 mm/s or less



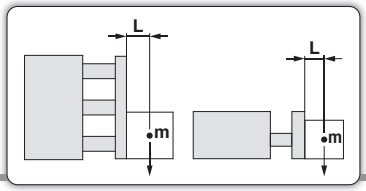
(15) L = 50 mm, V = 400 mm/s



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



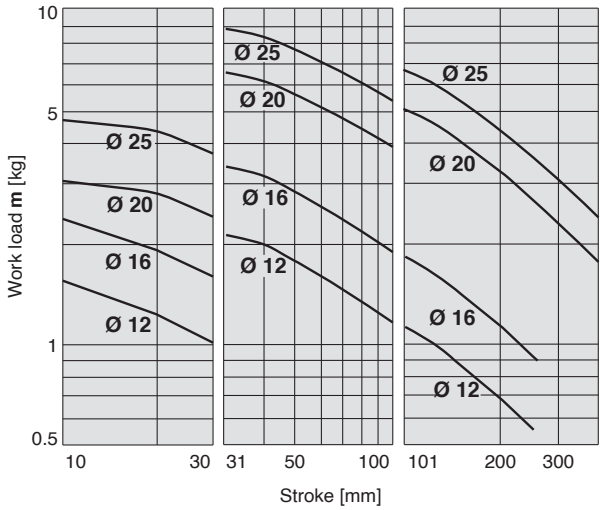
WINMAN



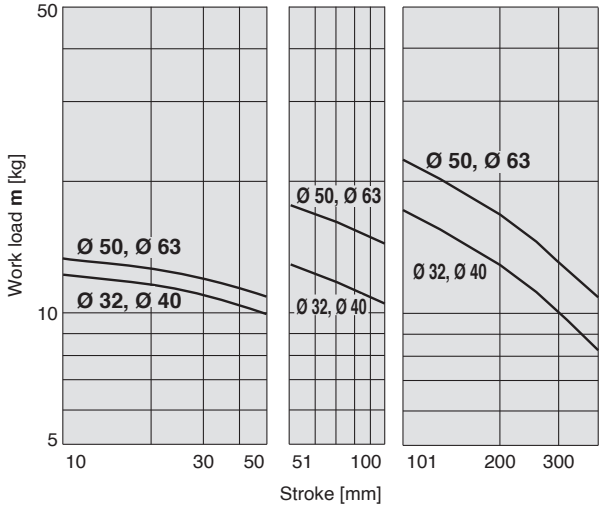
Horizontal Mounting Ball Bushing

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

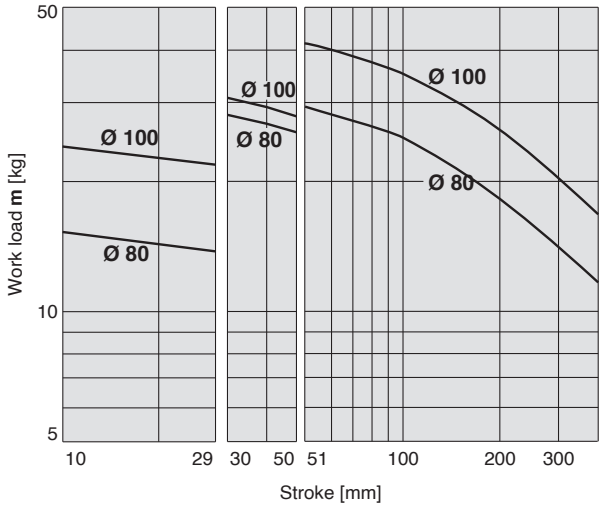
WGPL12 to 25



WGPL32 to 63

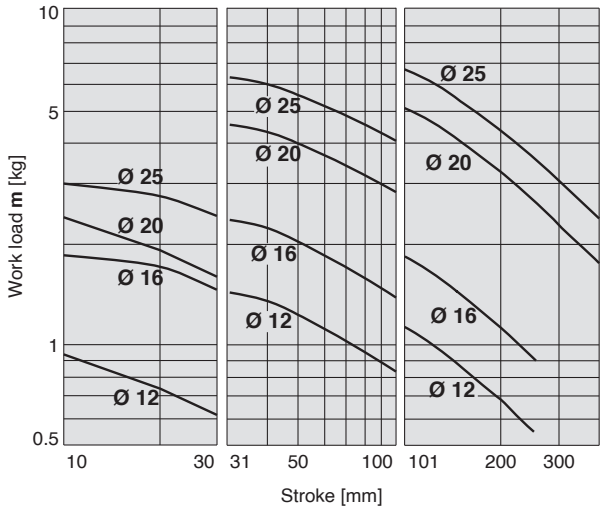


WGPL80/100

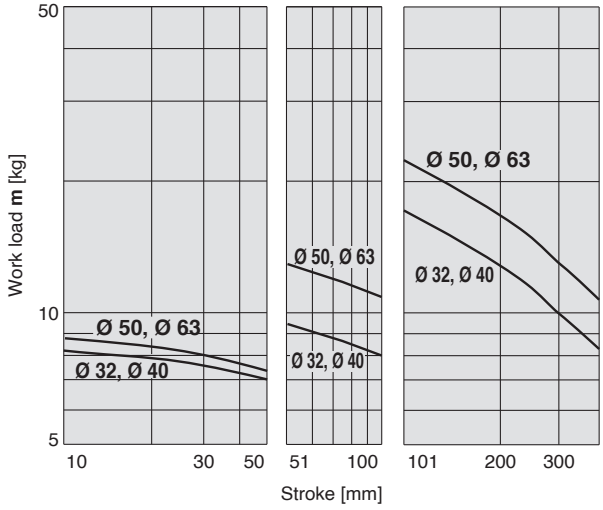


(18) L =100 mm, V = 200 mm/s or less

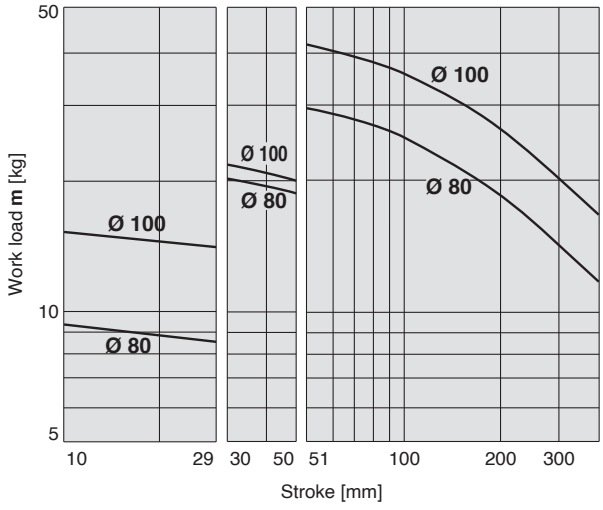
WGPL12 to 25



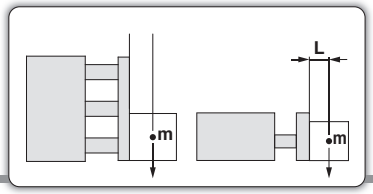
WGPL32 to 63



WGPL80/100

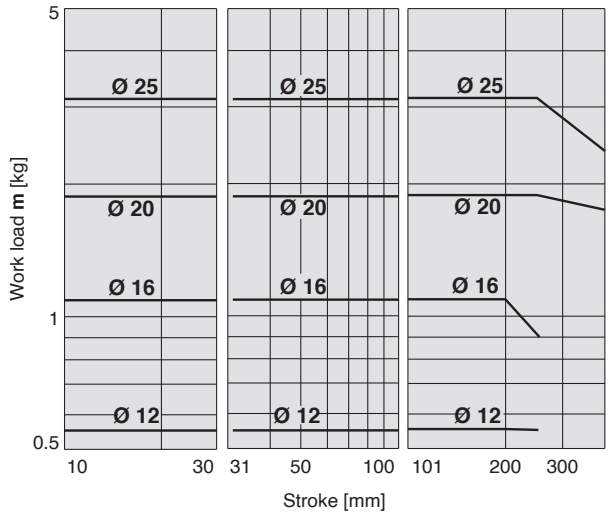


Horizontal Mounting Ball Bushing

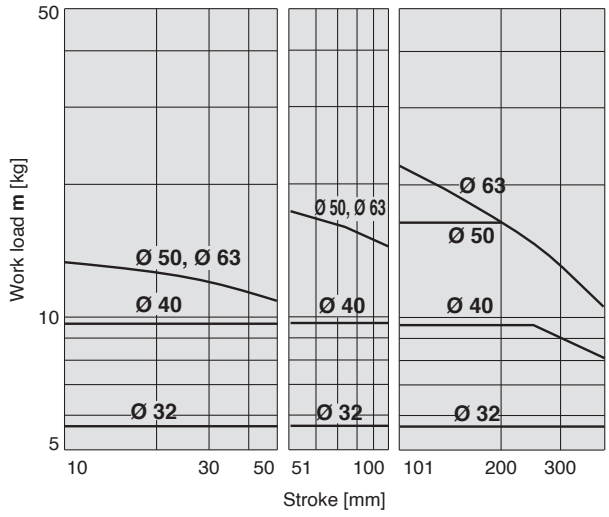


(19) L = 50 mm, V = 400 mm/s

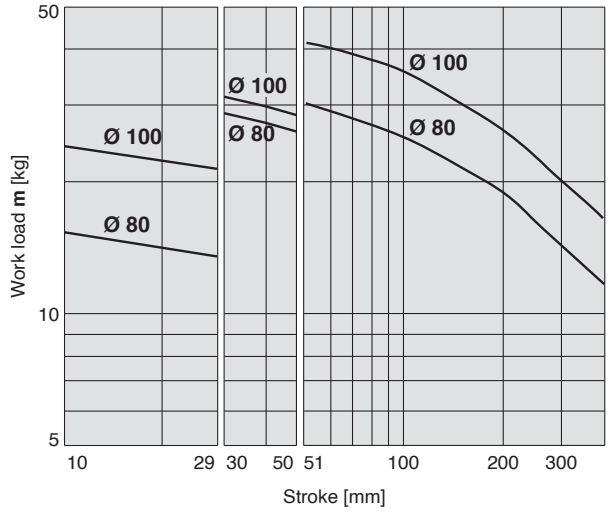
WGPL12 to 25



WGPL32 to 63

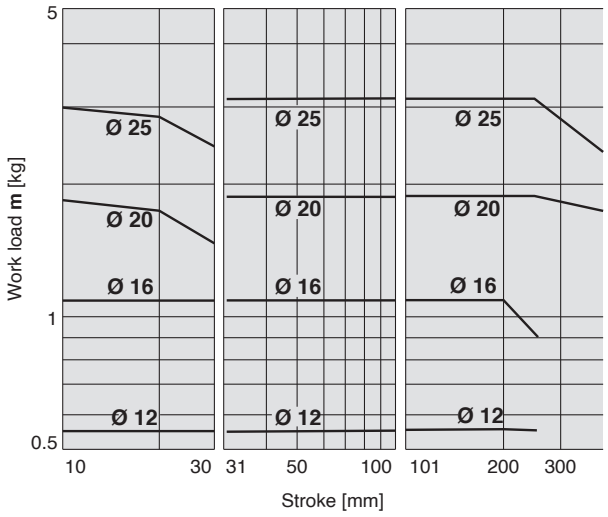


WGPL80/100

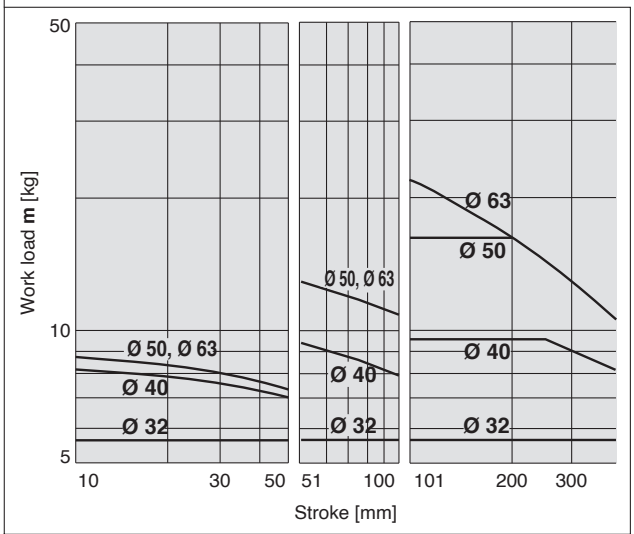


(20) L =100 mm, V = 400 mm/s

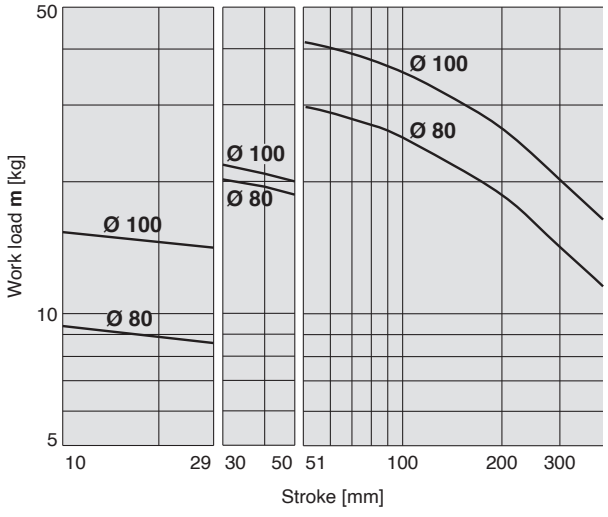
WGPL12 to 25



WGPL32 to 63

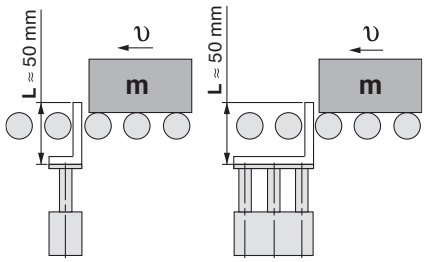


WGPL80/100



Operating Range when Used as Stopper

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



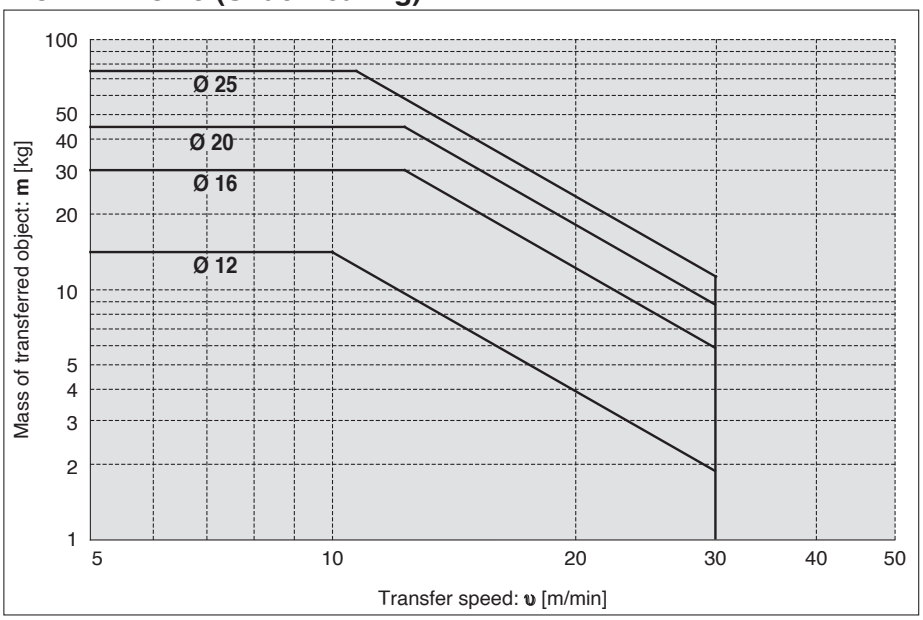
: When selecting a model with a longer **L** dimension, be sure to choose a bore size which is sufficiently large.

⚠Caution

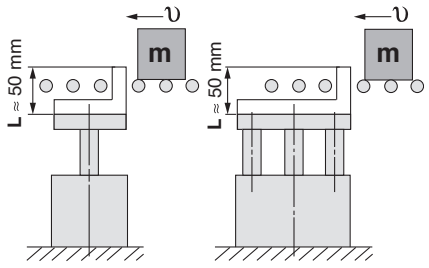
Caution on handling

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.

WGPM12 to 25 (Slide Bearing)



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



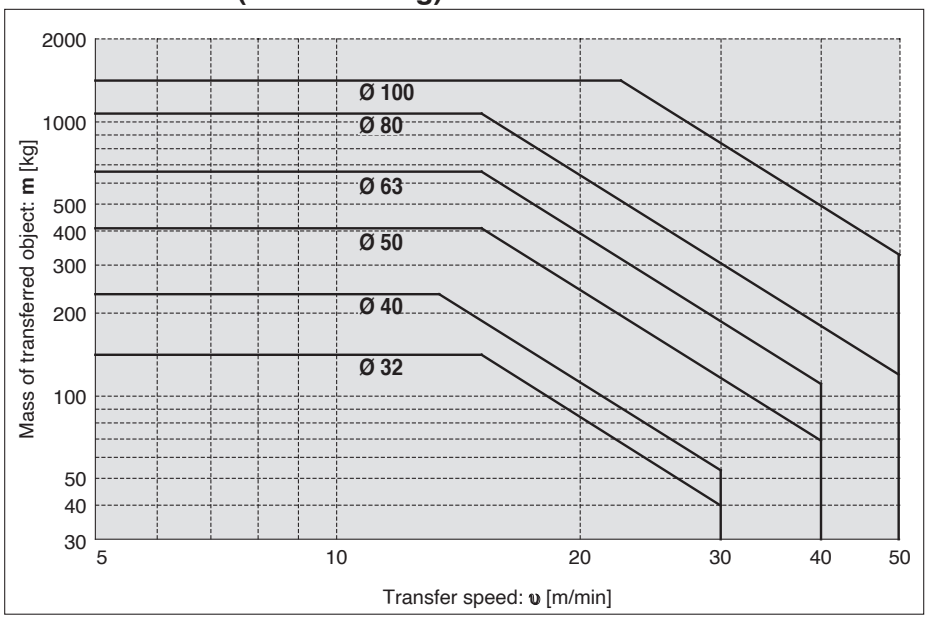
: When selecting a model with a longer **L** dimension, be sure to choose a bore size which is sufficiently large.

⚠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.

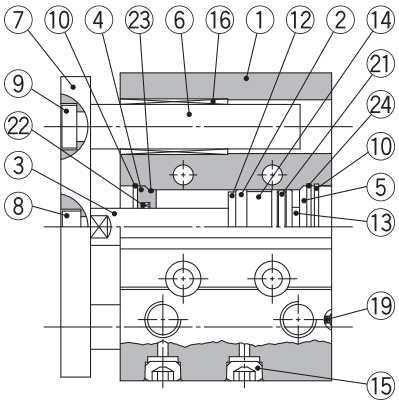
WGPM32 to 100 (Slide Bearing)

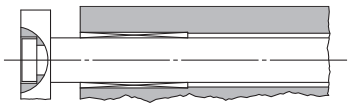


: Refer to graphs (13) and (15) if line pressure is applied by a roller conveyor after the workpiece is stopped.

Construction/Series WGPM

WGPM12 to 25



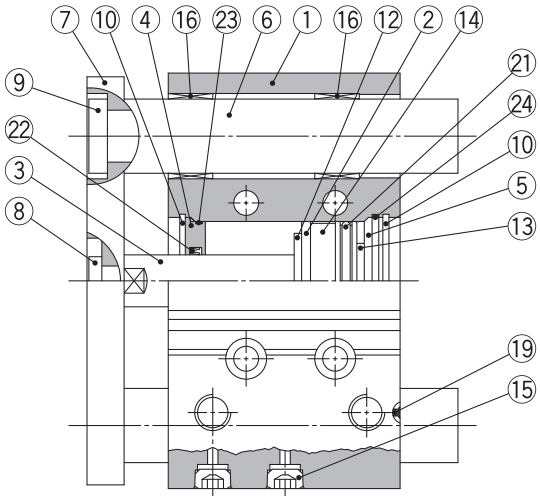


Ø 12 to Ø 25 50 stroke or less

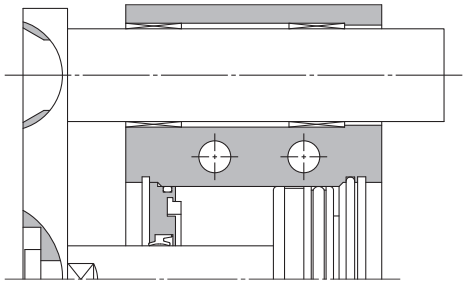


Ø 12 to Ø 25 Over 50 stroke

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

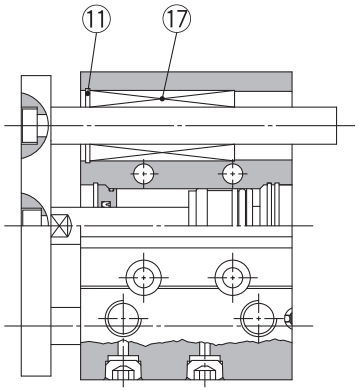
Bore size [mm]	Kit no.	Contents
12	WGP12-Z-PS	Set of nos. above 21, 22
16	WGP16-Z-PS	
20	WGP20-Z-PS	
25	WGP25-Z-PS	
32	WGP32-Z-PS	23, 24

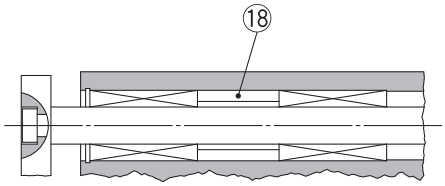
Bore size [mm]	Kit no.	Contents
40	WGP40-Z-PS	Set of nos. above 21, 22 23, 24
50	WGP50-Z-PS	
63	WGP63-Z-PS	
80	WGP80-Z-PS	
100	WGP100-Z-PS	

: 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

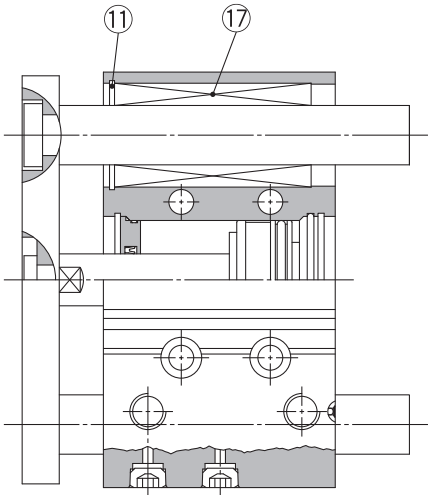
WGPL12 to 25

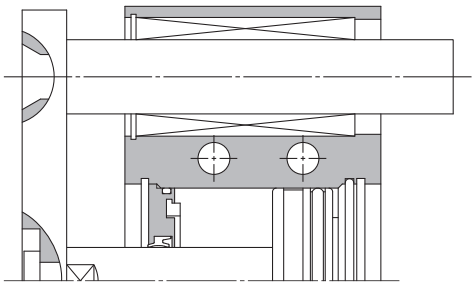




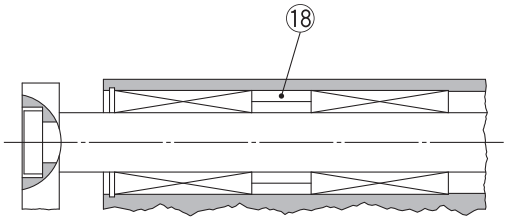
Ø 12 to Ø 25 Over 100 stroke

WGPL32 to 100





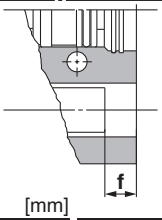
Ø 50 or more



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

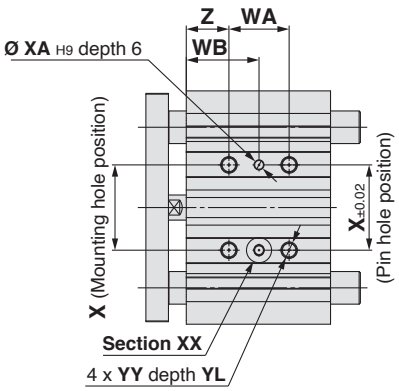
Ø 12 to Ø 25/WGPM, WGPL

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



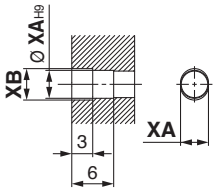
[mm]

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

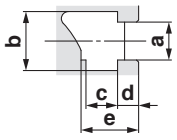


Bottom view

Section XX details

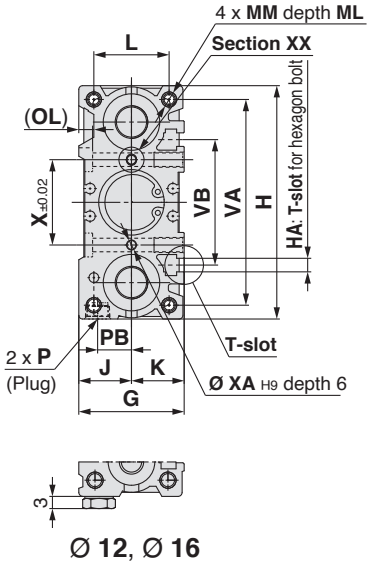


T-slot dimensions

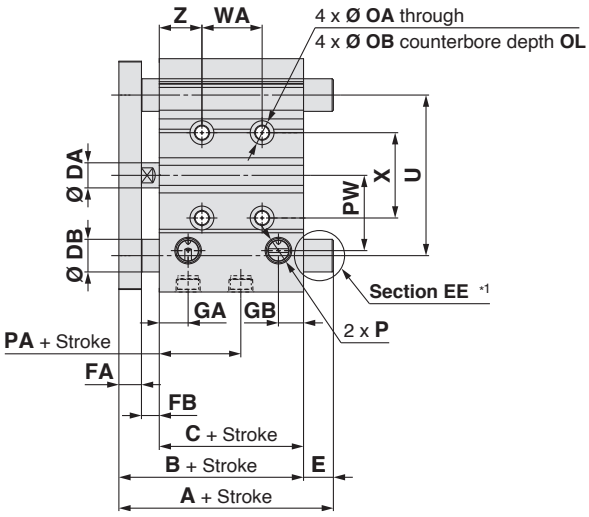


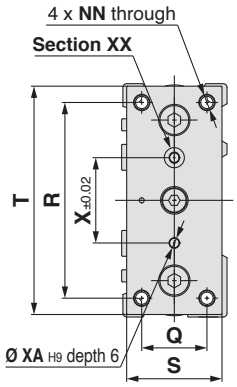
[mm]

Bore size [mm]	a	b	c	d	e
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



Ø 12, Ø 16





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

[mm]

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 100 st or less	Over 100 st 200 st or less	Over 200 st 300 st or less	Over 300 st	30 st or less	Over 30 st 100 st or less	Over 100 st 200 st or less	Over 200 st 300 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

[mm]

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	Over 200 st
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

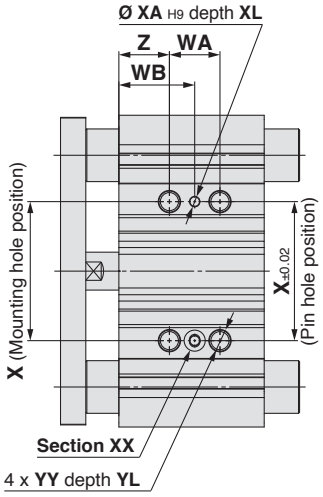
WGPL (Ball bushing) (High precision ball bushing) A, DB, E Dimensions

[mm]

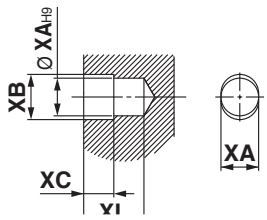
Bore size [mm]	A				DB	E			
	30 st or less	Over 30 st 100 st or less	Over 100 st 200 st or less	Over 200 st		30 st or less	Over 30 st 100 st or less	Over 100 st 200 st or less	Over 200 st
12	43	55	84.5	84.5	6	1	13	42.5	42.5
16	49	65	94.5	94.5	8	3	19	48.5	48.5
20	59	76	100	117.5	10	6	23	47	64.5
25	65.5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

WINMAN

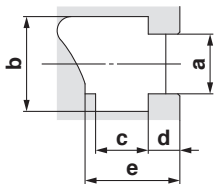
Ø 32 to Ø 63/WGPM, WGPL



Section XX details

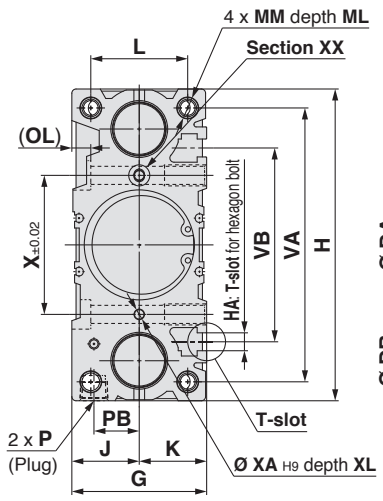


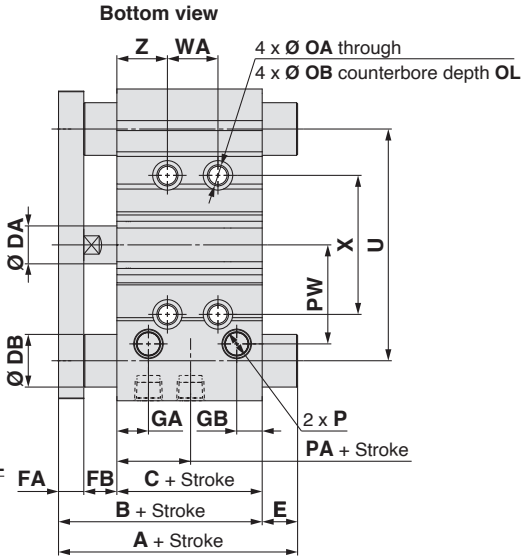
T-slot dimensions

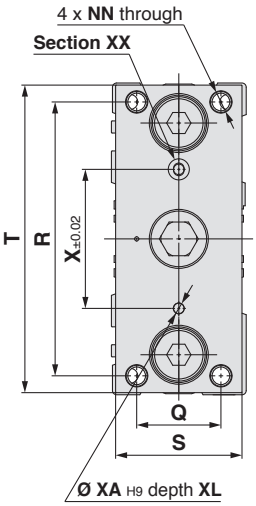


[mm]

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







: 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

[mm]

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

[mm]

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

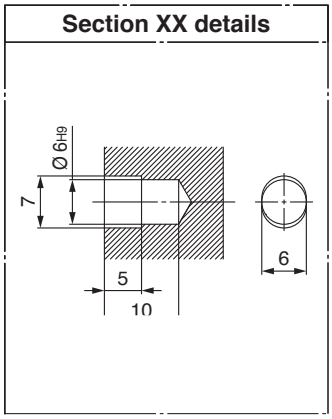
WGPL (Ball bushing) (High precision ball bushing) A, DB, E Dimensions

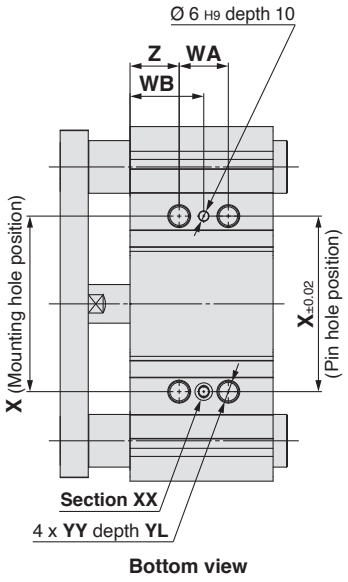
[mm]

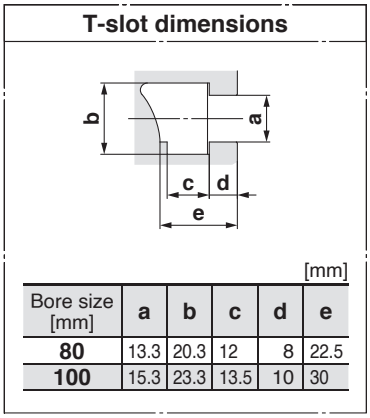
Bore size [mm]	A				DB	E			
	50 st or less	Over 50 st 100 st or less	Over 100 st 200 st or less	Over 200 st		50 st or less	Over 50 st 100 st or less	Over 100 st 200 st or less	Over 200 st
32	79.5	96.5	116.5	138.5	16	20	37	57	79
40	79.5	96.5	116.5	138.5	16	13.5	30.5	50.5	72.5
50	91.5	112.5	132.5	159.5	20	19.5	40.5	60.5	87.5
63	91.5	112.5	132.5	159.5	20	14.5	35.5	55.5	82.5

WINMAN

Ø 80, Ø 100/WGPM, WGPL,

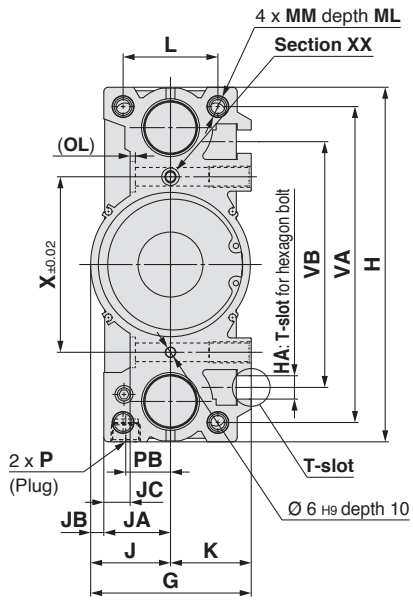


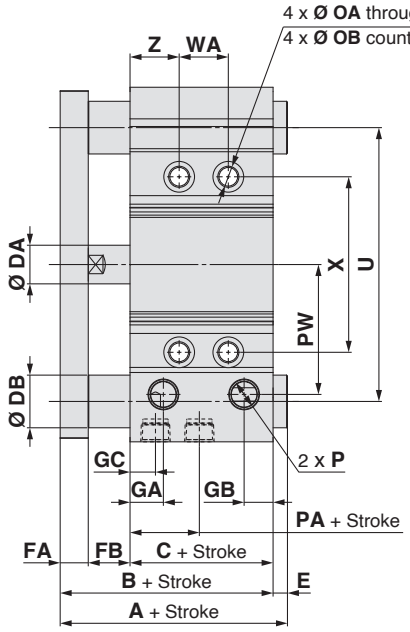


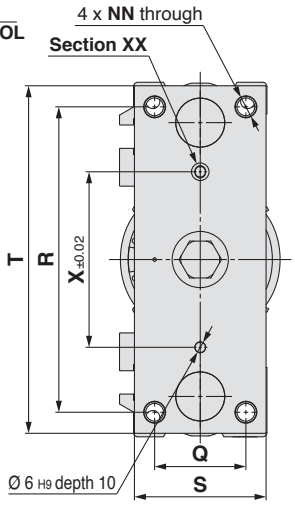


[mm]

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 6H9, 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

[mm]

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, 200 250, 300, 350, 400	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		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

[mm]

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

[mm]

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