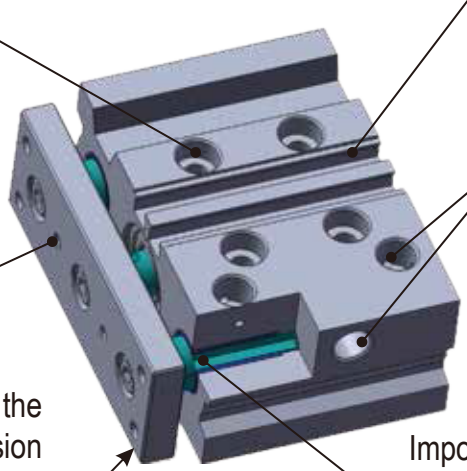
Compact Guide Cylinder
FGPM Series Φ12~Φ80

Advantages
Small axial size and more compact structure.
Strong load capacity and torque force.
Two ways to connect the pipes.
Good guidance.
Imported bearings free of copper.



Can be mounted on both sides and bottom.

Easy to install and disassemble.

The cylinder block and end plate are designed with dowel hole.

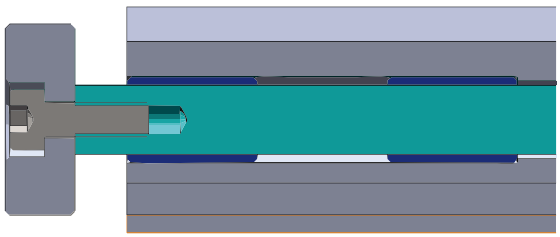
Electroless nickle is used on the end plate to ensure its corrosion and rust resistance.

Magnetic switch can be installed on both sides.

Pipes can be connected on both sides.

Imported bearings free of copper.Non-lube during the movement.

The diagram of internal structure between JELPC & S product



Lengthened bearing which could extend service life and ensure guiding performance of the cylinder.

S from Japan

Shorter bearing which reduces the resistance between guide rod and bearing but increases the wear,sothe service life is shorter.

Compact Guide Cylinder
FGPM Series Φ12~Φ80

Specification

Bore size(mm)	12	16	20	25	32	40	50	63	80
Action	Doubleacting								
Fluid	Air								
Proofpressure	1.5MPa								
Max.operating pressure	1.0MPa								
Min. operating pressure	0.12MPa			0.1MPa					
Ambient and fluid temperature	-10°C ~60°C（Not Freezing）								
Speed of piston	50~500mm/s							50~400mm/s	
Cushioning	Rubber bumper on both ends								
Lubrication	Non-lube								
Stroke length tolerance	$^{+1.5}_{0}$ mm								

note） No load

Theoretical Output

(N)

Bore size (mm)	Rod size (mm)	Action		Piston area (mm^2)	Operating pressure(MPa)					
					0.1	0.2	0.3	0.4	0.5	0.6
12	6	Double acting	OUT	113.0	11.3	22.6	33.9	45.2	56.5	67.8
			IN	84.8	8.5	17.0	25.4	33.9	42.4	50.9
16	8	Double acting	OUT	201.0	20.1	40.2	60.3	80.4	100.5	120.6
			IN	150.7	15.1	30.1	45.2	60.3	75.4	90.4
20	10	Double acting	OUT	314.0	31.4	62.8	94.2	125.6	157.0	188.4
			IN	235.5	23.6	47.1	70.7	94.2	117.8	141.3
25	12	Double acting	OUT	490.6	49.1	98.1	147.2	196.3	245.3	294.4
			IN	377.6	37.8	75.5	113.3	151.0	188.8	226.6
32	16	Double acting	OUT	803.8	80.4	160.8	241.2	321.5	401.9	482.3
			IN	602.9	60.3	120.6	180.9	241.2	301.4	361.7
40	16	Double acting	OUT	1256.0	125.6	251.2	376.8	502.4	628.0	753.6
			IN	1055.0	105.5	211.0	316.5	422.0	527.5	633.0
50	20	Double acting	OUT	1962.5	196.3	392.5	588.8	785.0	981.3	1177.5
			IN	1648.5	164.9	329.7	494.6	659.4	824.3	989.1
63	20	Double acting	OUT	3115.7	311.6	623.1	934.7	1246.3	1557.8	1869.4
			IN	2801.7	280.2	560.3	840.5	1120.7	1400.8	1681.0
80	25	Double acting	OUT	5024.0	502.4	1004.8	1507.2	2009.6	2512.0	3014.4
			IN	4533.4	453.3	906.7	1360.0	1813.4	2266.7	2720.0

FGP M 25 □ – 30 M9B □

Compact Guide Cylinder

Bearing type

M	Slide bearing

Bore size

12	12mm	40	40mm
16	16mm	50	50mm
20	20mm	63	63mm
25	25mm	80	80mm
32	32m		

Thread type

Nil	M5×0.8
	Rc

Cylinder stroke(mm)
Refer to "Standard Stroke"

Magnetic switch

Nil	Without magnetic switch
M9N	3-wire
M9B	2-wire

* Lead wire length sysmbols:
1m—Nil(Example)M9B
3m--L(Example)M9BL

Number of magnetic switches

Nil	2 pcs.
s	1 pcs.
n	n pcs.

Standard Stroke

Bore size(mm)	Standard Stroke(mm)	Magnetic Switch
12，16	10,20,30,40,50,75,100,125,150,175,200,250	SW- M9B(L) SW- M9N(L)
20，25	20,30,40,50,75,100,125,150,175,200,250,300,350,400	
32~80	25,50,75,100,125,150,175,200,250,300,350,400	

Intermediate stroke(mm)

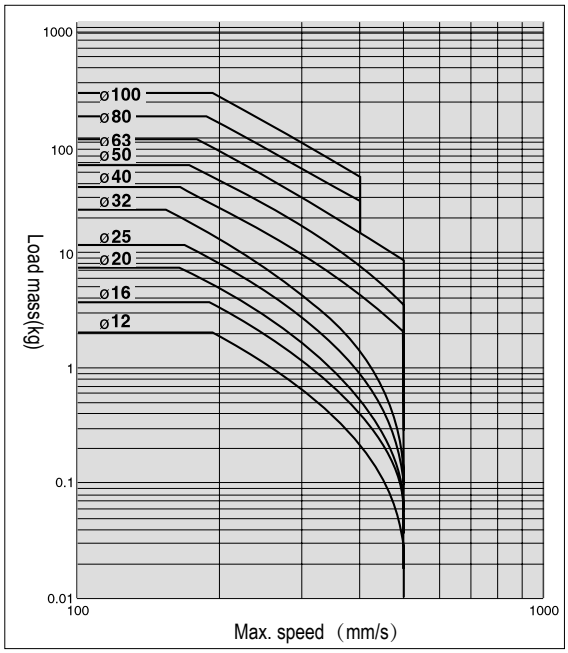
Method	As for the intermediate strokes other than the standard strokes at left are manufactured by means of installing a spacer. Φ12 toΦ32……Stroke available in 1 stroke increments Φ40 to Φ80……Stroke available in 5 stroke increments
Example	For AGPM20-39,AGPM20-40 is provided with a 10mm width spacer.

For example

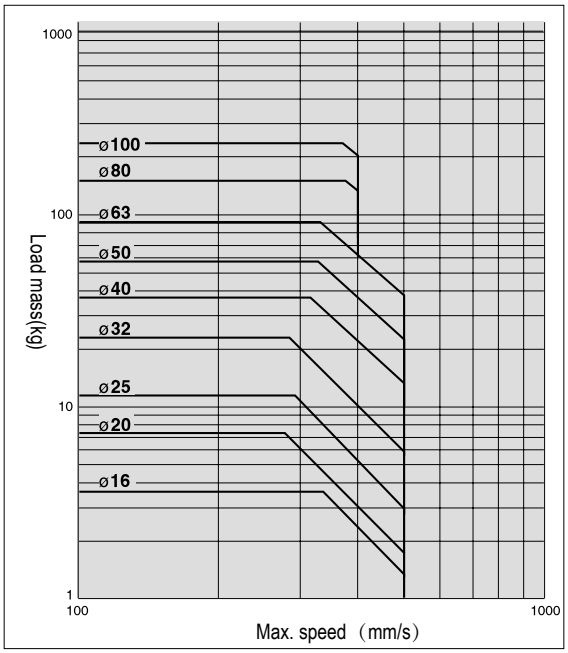
1.Bore size: 25mm; Stroke: 50mm;Slide bearing;Magnetic switch Model:
FGPM25-50-M9B
2.Bore size:16mm;Stroke:100mm;Slide bearingModel: JGPM16-100
3.For magnetic switch
SW-M9B 1m lead wire
SW-M9BL 3m lead wire

Load mass and cylinder speed should be observed within the range given in the graph below.

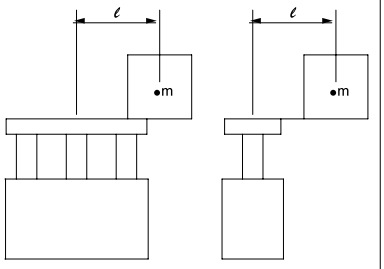
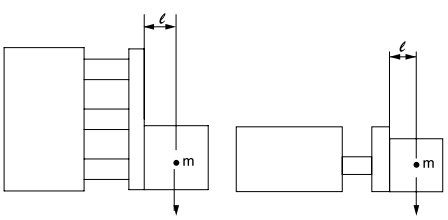
FGPM with a rubber bumper



FGPM without a cushion



Selection

Mounting Type	Vertical Mount		Horizontal Mount	
				
Max. speed(mm/s)	≤200	400	≤200	400
Slide bearing type	(1), (2)	(3), (4)	(13), (14)	(15), (16)

Horizontal mounting

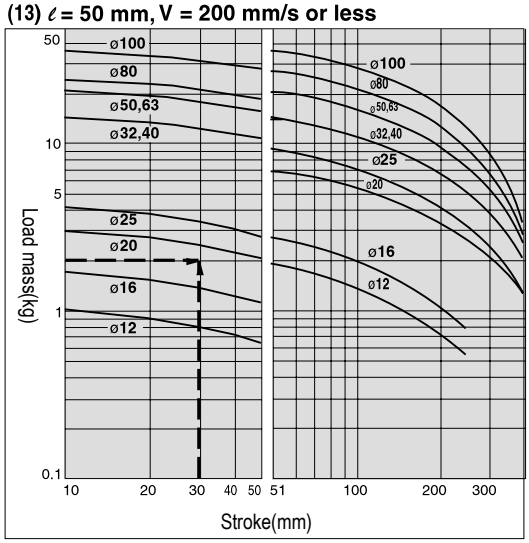
Conditions:
Horizontal mounting. Sliding ball bearing.
50mm between plate and center of gravity load.Max. speed is 200mm/s.
Load mass is 2kg. Stroke is 30mm.

Choosing FGPM20-30

When max. speed is more than 200mm,
load mass is related to the coefficient as below.

Max. Speed	＞300 mm/s	＞400 mm/s	＞500 mm/s
Coefficient	1.7	1	0.6

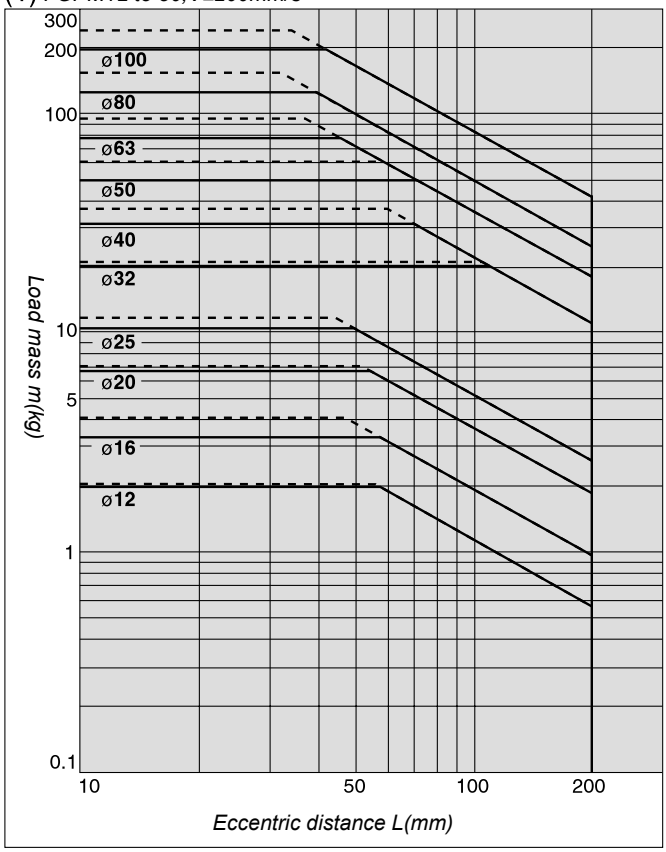
(13) ℓ = 50 mm, V = 200 mm/s or less



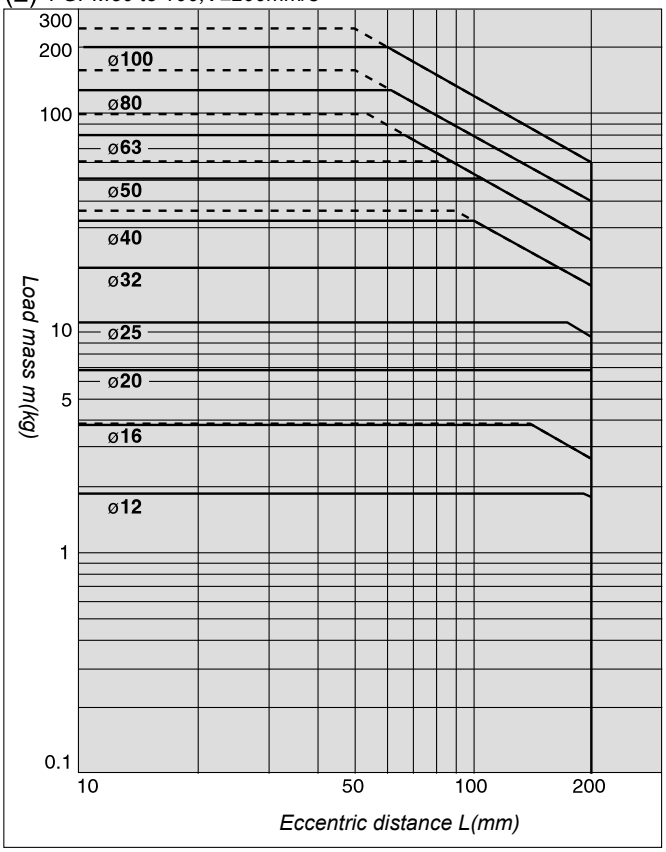
——— working pressure 0.4 MPa
- - - - - working pressure 0.5 MPa above

FGPM 12 to 100

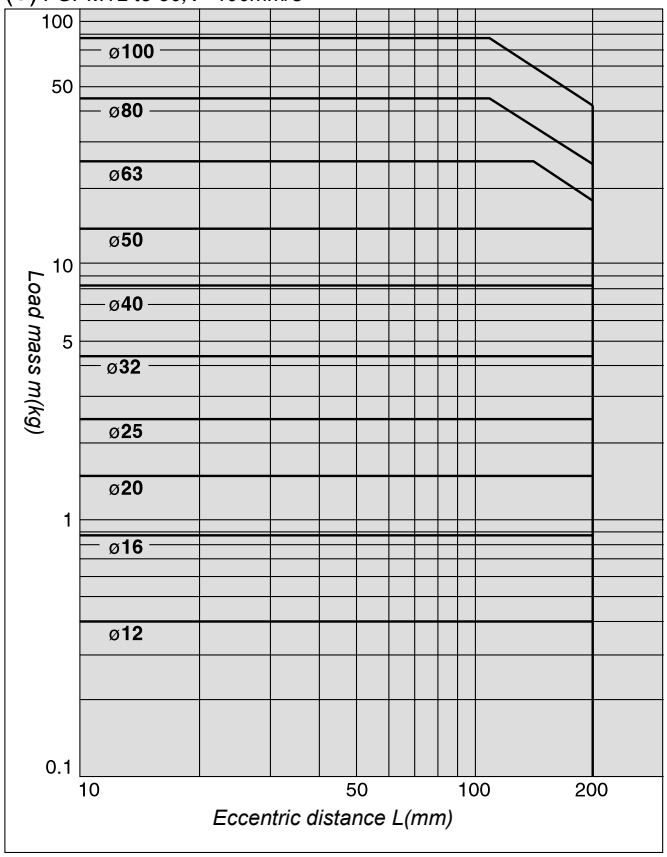
(1) FGPM12 to 50,V≤200mm/s



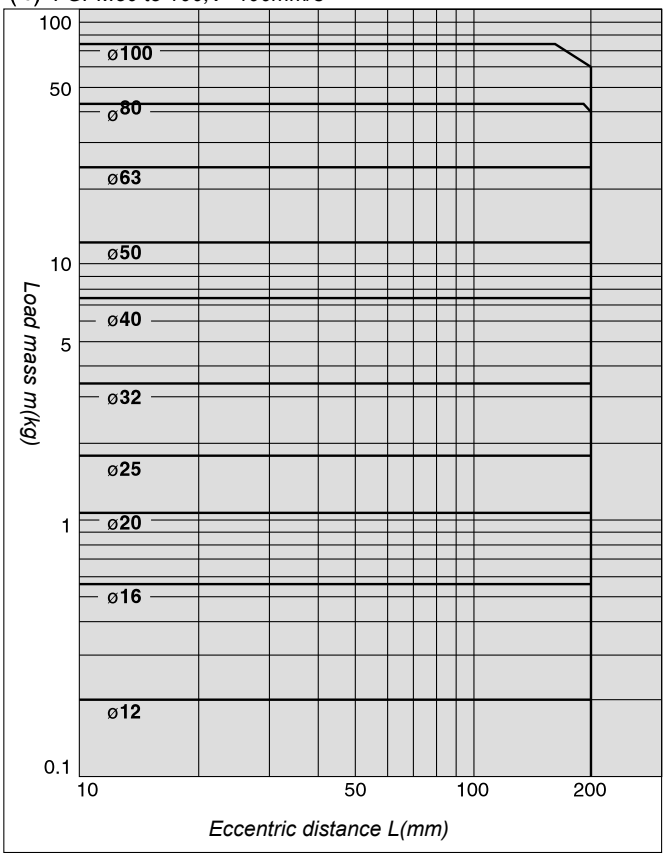
(2) FGPM50 to 100,V≤200mm/s



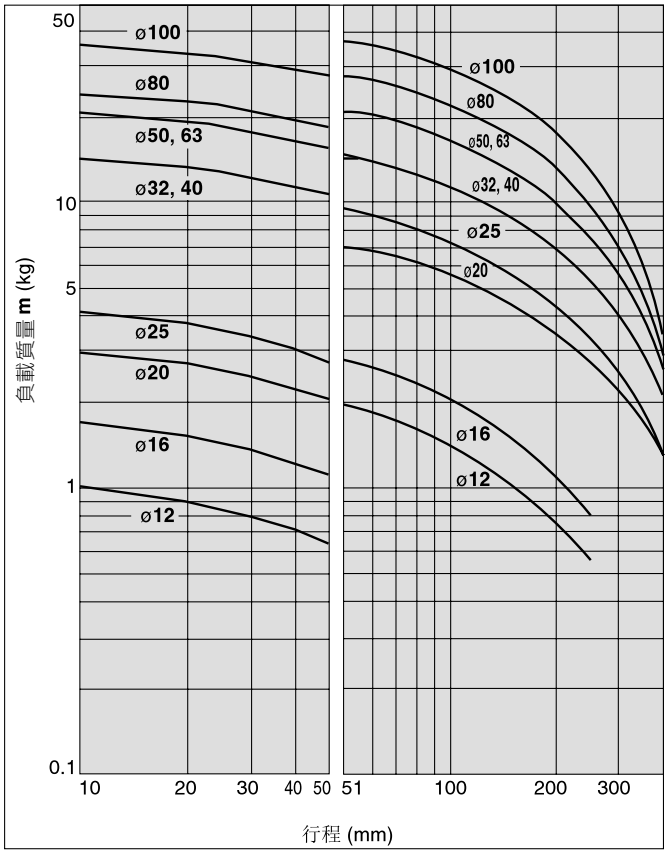
(3) FGPM12 to 50,V=400mm/s



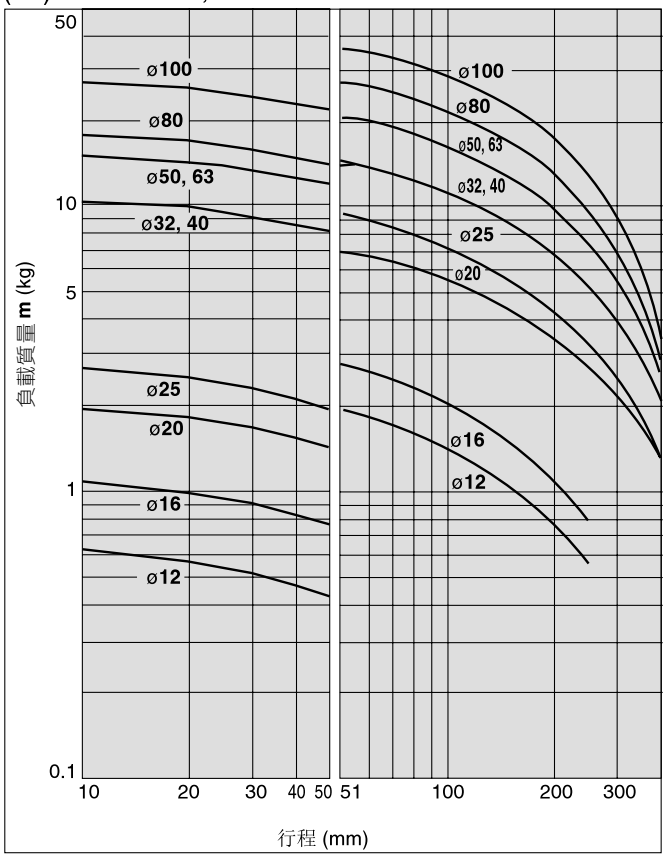
(4) FGPM50 to 100,V=400mm/s



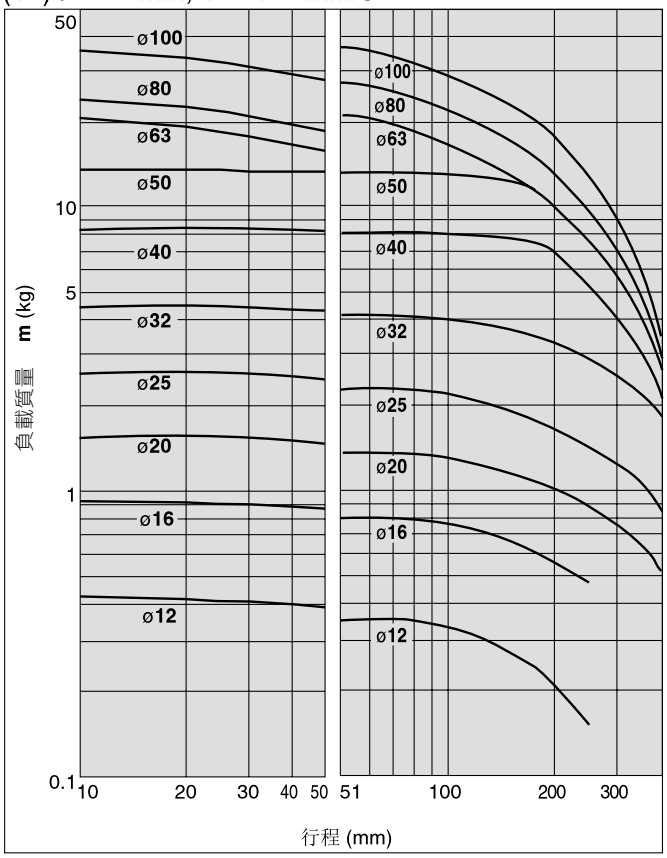
(13) ℓ = 50 mm, V = 200 mm/s or less



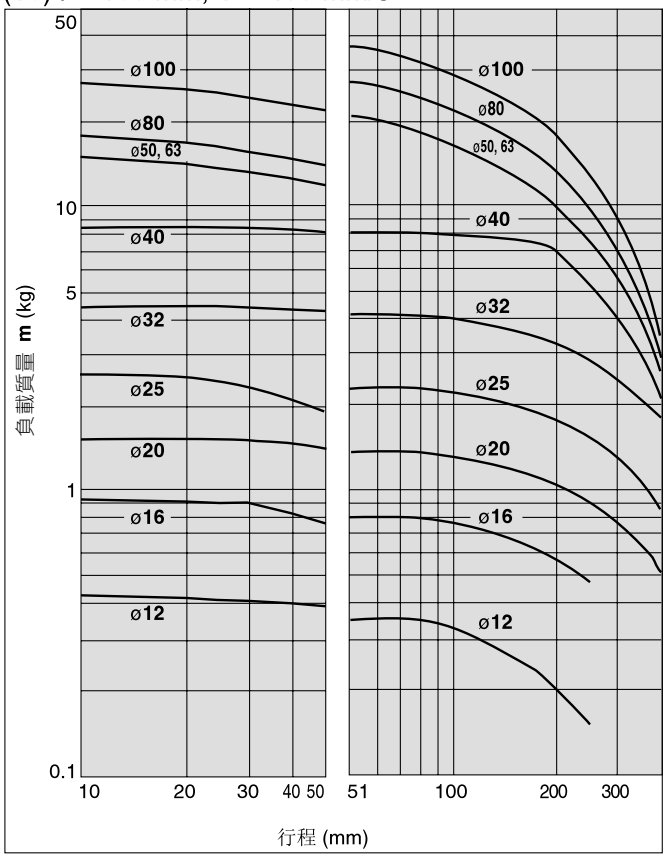
(14) ℓ = 100 mm, V = 200 mm/s or less



(15) ℓ = 50 mm, V = 400 mm/s

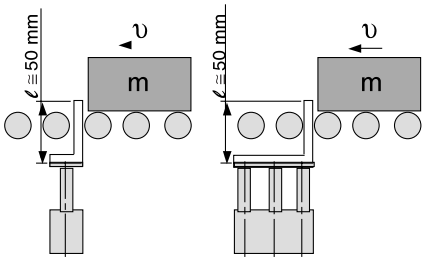


(16) ℓ = 100 mm, V = 400 mm/s

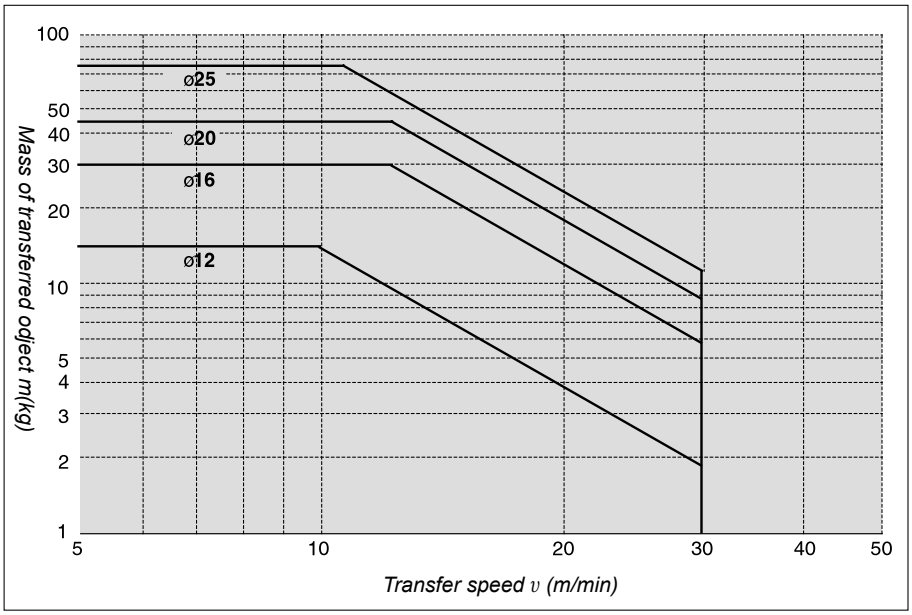


Operating Range

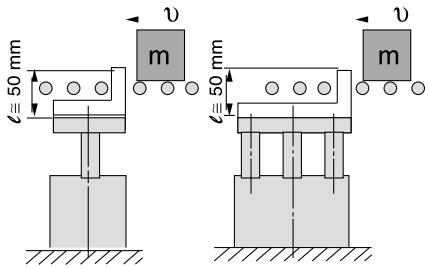
FGPM 12 to 25



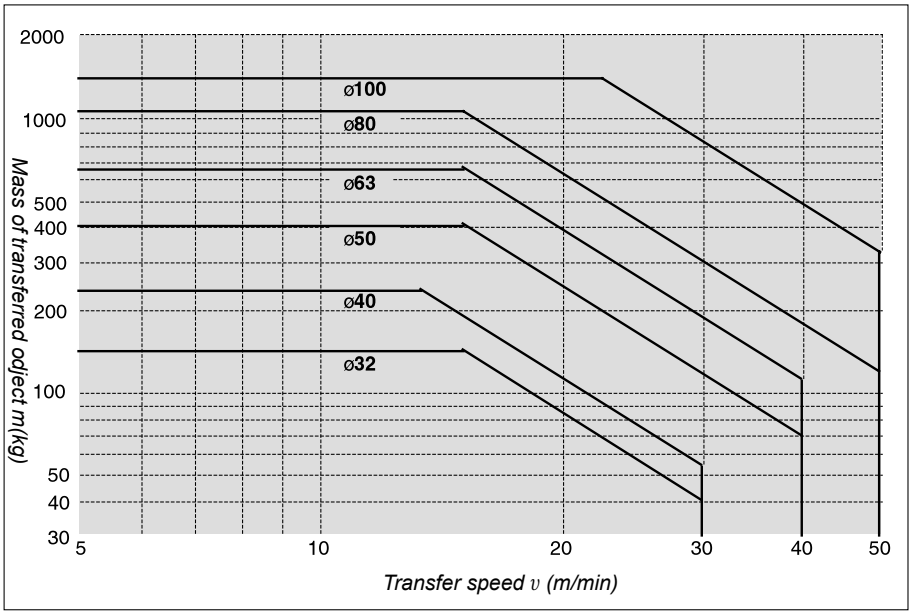
FGPM 12 to 25



FGPM 32 to 100

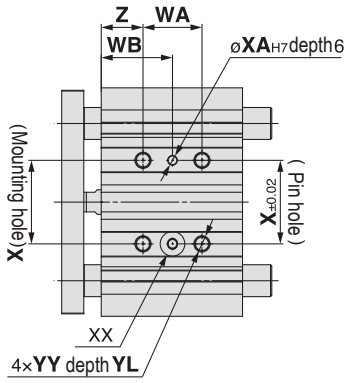


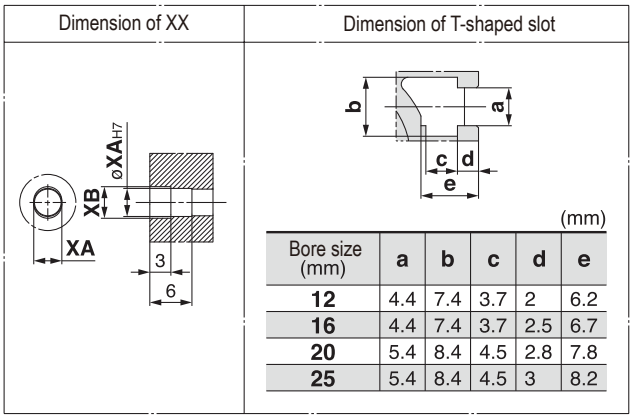
FGPM 32 to 100



Outline Drawing(mm)

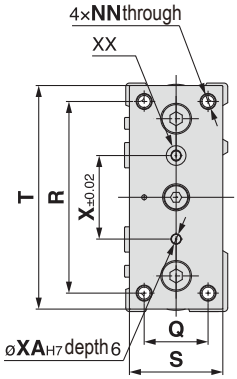
Φ12～Φ25/F

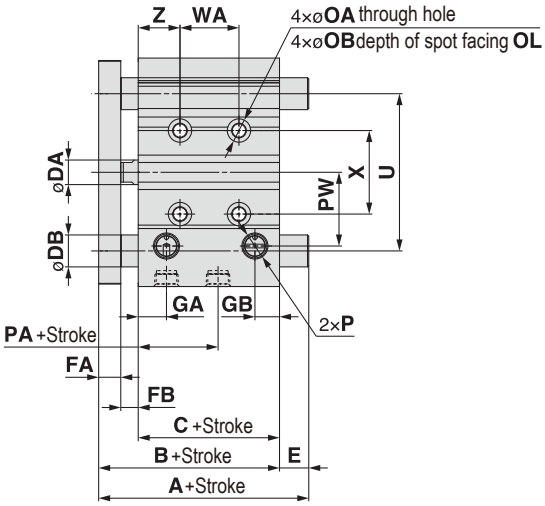


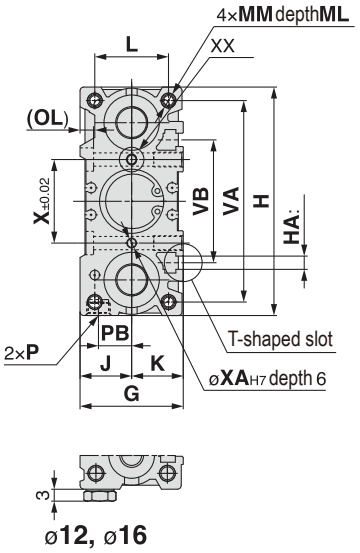


(mm)

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







ø12, ø16

※ Bore size 12 and 16 are only for the M5×0.8 port.

FGPM 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
12	10,20,30,40,50,75,100	42	29	6	7	6	26	10	7	58	M4	13	13	18	M4×0.7	10	M4×0.7	4.3	8	4.5	M5×0.8
16	125,150,175,200,250	46	33	8	7	6	30	10.5	7.5	64	M4	15	15	22	M5×0.8	12	M5×0.8	4.3	8	4.5	M5×0.8
20	20,30,40,50,75,100,125,150	53	37	10	8	8	36	11.5	9	83	M5	18	18	24	M5×0.8	13	M5×0.8	5.4	9.5	5.5	Rc1/8
25	175,200,250,300,350,400	53.5	37.5	12	9	7	42	11.5	10	93	M5	21	21	30	M6×1.0	15	M6×1.0	5.4	9.5	5.5	Rc1/8

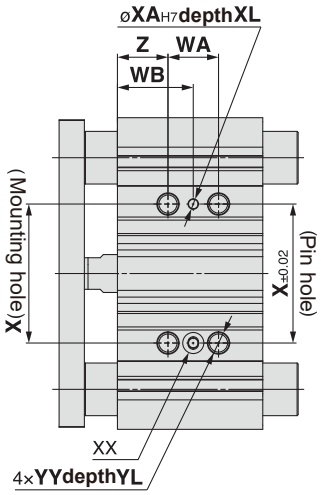
Bore size (mm)	PA	PB	PW	Q	R	S	T	U	VA	VB	WA					WB					X	XA	XB	YY	YL	Z
											≤30st	30st≤WA ≤100st	100st≤WA ≤200st	200st≤WA ≤300st	≤300st	≤30st	30st≤WB ≤100st	100st≤WB ≤200st	200st≤WB ≤300st	≤300st						
12	13	8	18	14	48	22	56	41	50	37	20	40	110	200	—	15	25	60	105	—	23	3	3.5	M5×0.8	10	5
16	14.5	10	19	16	54	25	62	46	56	38	24	44	110	200	—	17	27	60	105	—	24	3	3.5	M5×0.8	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	M6×1.0	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	M6×1.0	12	17

(Slide bearing) /A, DB, E

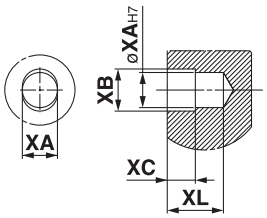
Dimensions(mm)

Bore size (mm)	A				DB	E			
	≤50st	50st≤A ≤100st	100st≤A ≤200st	≤200st		≤50st	50st≤E ≤100st	100st≤E ≤200st	≤200st
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

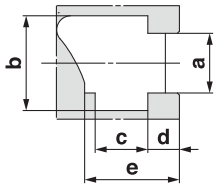
Φ32～Φ63/



Dimension of XX

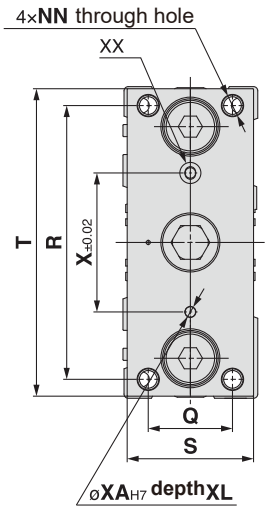


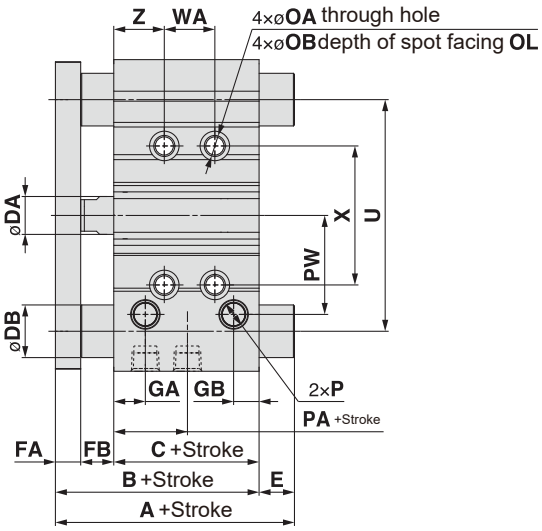
Dimension of T-shaped slot

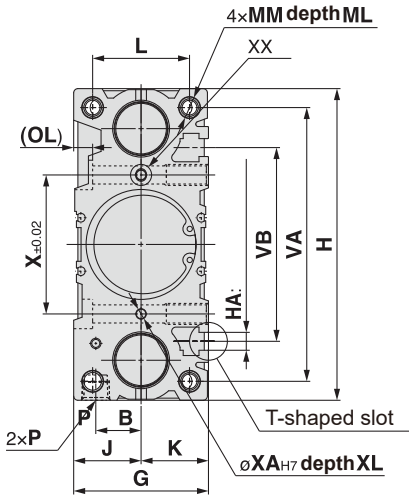


(mm)

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







FGPM

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
32	25,50,75	59.5	37.5	16	10	12	48	12	9	112	M6	24	24	34	M8×1.25	20	M8×1.25	6.7	11	7.5	Rc1/8
40	100,125,150	66	44	16	10	12	54	15	12	120	M6	27	27	40	M8×1.25	20	M8×1.25	6.7	11	7.5	Rc1/8
50	175,200,250	72	44	20	12	16	64	15	12	148	M8	32	32	46	M10×1.5	22	M10×1.5	8.6	14	9	Rc1/4
63	300,350,400	77	49	20	12	16	78	15.5	13.5	162	M10	39	39	58	M10×1.5	22	M10×1.5	8.6	—	9	Rc1/4

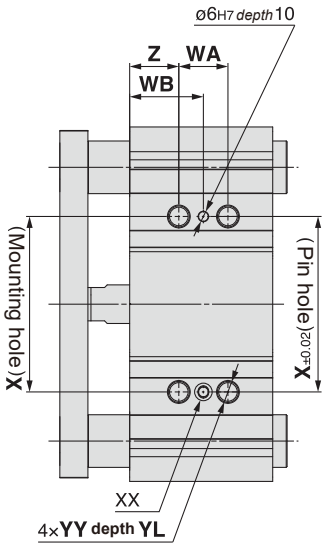
Bore size (mm)	PA	PB	PW	Q	R	S	T	U	VA	VB	WA					WB					X	XA	XB	XC	XL	YY	YL	Z
											≤25st	25st≤WA ≤100st	100st≤WA ≤200st	200st≤WA ≤300st	≤300st	≤25st	25st≤WB ≤100st	100st≤WB ≤200st	200st≤WB ≤300st	≤300st								
32	6.5	16	35.5	30	96	44	110	78	98	63	24	48	124	200	300	33	45	83	121	171	42	4	4.5	3	6	M8×1.25	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	M8×1.25	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	M10×1.5	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	M10×1.5	20	24

FGPM (Slide bearing) **/A, DB, E**

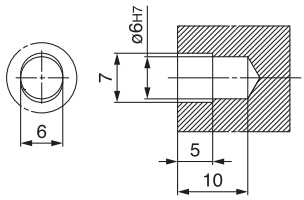
Dimensions (mm)

Bore size (mm)	A			DB	E		
	≤50st	50st≤A ≤200st	≤200st		≤50st	50st≤E ≤200st	≤200st
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

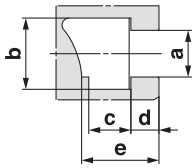
Φ80 /



Dimension of XX

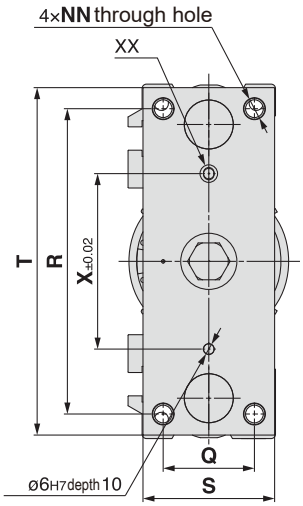


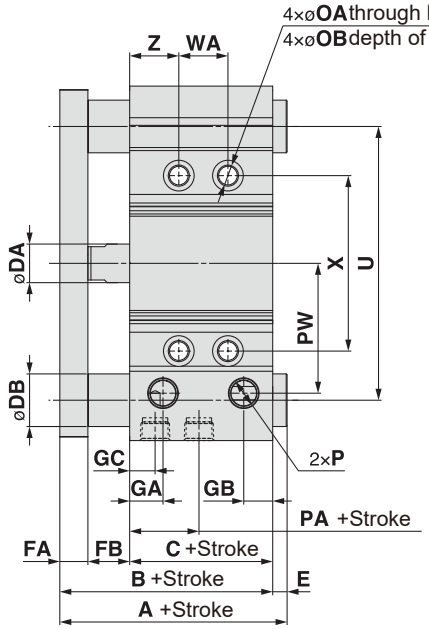
Dimension of T-shaped slot

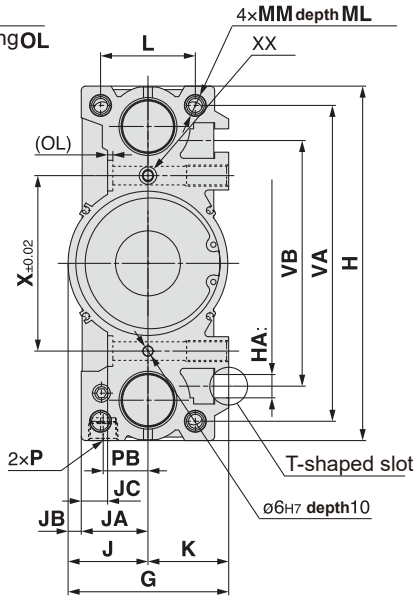


(mm)

Bore size (mm)	a	b	c	d	e
80	13.3	20.3	12	8	22.5







FGPM

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
80	25,50,75,100 125,150,175,200 250,300,350,400	96.5	56.5	25	16	24	91.5	19	16.5	14.5	202	M12	45.5	38	7.5	15	46	54	M12x1.75	25	M12x1.75	10.6	17.5	3	Rc3/8

Bore size (mm)	PA	PB	PW	Q	R	S	T	U	VA	VB	WA					WB					X	YY	YL	Z
											≤25st	25st≤WA ≤100st	100st≤WA ≤200st	200st≤WA ≤300st	≤300st	≤25st	25st≤WB ≤100st	100st≤WB ≤200st	200st≤WB ≤300st	≤300st				
80	14.5	25.5	74	52	174	75	198	156	180	140	28	52	128	200	300	42	54	92	128	178	100	M12x1.75	24	28

FGPM (Slide bearing) /A, DB, E

Dimensions (mm)

缸徑 (mm)	A			DB	E		
	≤50st	50st≤A ≤200st	≤200st		≤50st	50st≤E ≤200st	≤200st
80	104.5	131.5	180.5	30	8	35	84