

Series 12-/13- 21-/22-MGPL

Compact guide cylinder
 ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63

How to Order

Clean series

12	Relief type (with specially treated sliding parts)
13	Vacuum suction type (with specially treated sliding parts)

12 - M G P L 25 - 50 - Y59B

21 - M G P L 25 - 50 - Y59B

Ball bushing bearing

Copper, fluorine and silicon-free + low particle generation

21	Relief type
22	Vacuum suction type

Bore size (mm)

Symbol	Type	Bore size
Nil	M5 x 0.8	ø12, ø16
	Rc	
N	NPT	ø20 to ø63
TF	G	

Port type

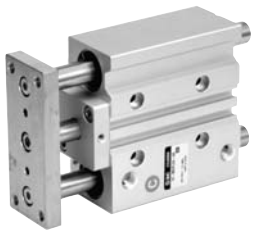
Number of auto switches

Nil	2 pcs.
S	1 pc.

Type of auto switch

Nil	Without auto switch
Reed switch	Z73
Solid state switch	Y59A, Y59B

Cylinder stroke (mm)



Model

Model		Bore size (mm)	Port size	Lubrication	Action	Standard stroke (mm)	Auto switch mounting	Cushion	
								Rubber	Air
(with specially treated sliding parts) Relief type	12-/21-MGPL12	12	M5 x 0.8	Non-lube	Double acting	10, 20, 30, 40, 50, 75,100, 125, 150, 175, 200, 250	○	○ (Both sides)	—
	12-/21-MGPL16	16				20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400			
	12-/21-MGPL20	20	1/8			25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400			
	12-/21-MGPL25	25							
	12-/21-MGPL32	32							
	12-/21-MGPL40	40							
	12-/21-MGPL50	50	1/4			25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400			
12-/21-MGPL63	63								
(with specially treated sliding parts) Vacuum suction type	13-/22-MGPL12	12	M5 x 0.8			10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250			
	13-/22-MGPL16	16				20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400			
	13-/22-MGPL20	20	1/8			25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400			
	13-/22-MGPL25	25							
	13-/22-MGPL32	32							
	13-/22-MGPL40	40							
	13-/22-MGPL50	50	1/4			25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400			
	13-/22-MGPL63	63							

Specifications

Item	Bore size (mm)	
	12/16	20/25/32/40/50/63
Proof pressure	1.5MPa	
Max. operating pressure	1.0MPa	
Min. operating pressure	0.12MPa	0.1MPa
Ambient and fluid temperature	-10°C to 60°C (With no condensation)	
Piston speed	50 to 400mm/s	
Stroke length tolerance	+1.5 0	
Grease	12-/13-: Fluorine grease 21-/22-: Lithium soap base grease	
Particle generation grade	13-: Grade 2, 21-: Grade 4	
(Refer to front matter pages 13 to 22 for details.)	12-/22-: Grade 3	

Suction flow rate of vacuum suction type (Reference values)

Size	Suction flow rate l/min (ANR)
12/16/20/25	5
32/40/50/63	10

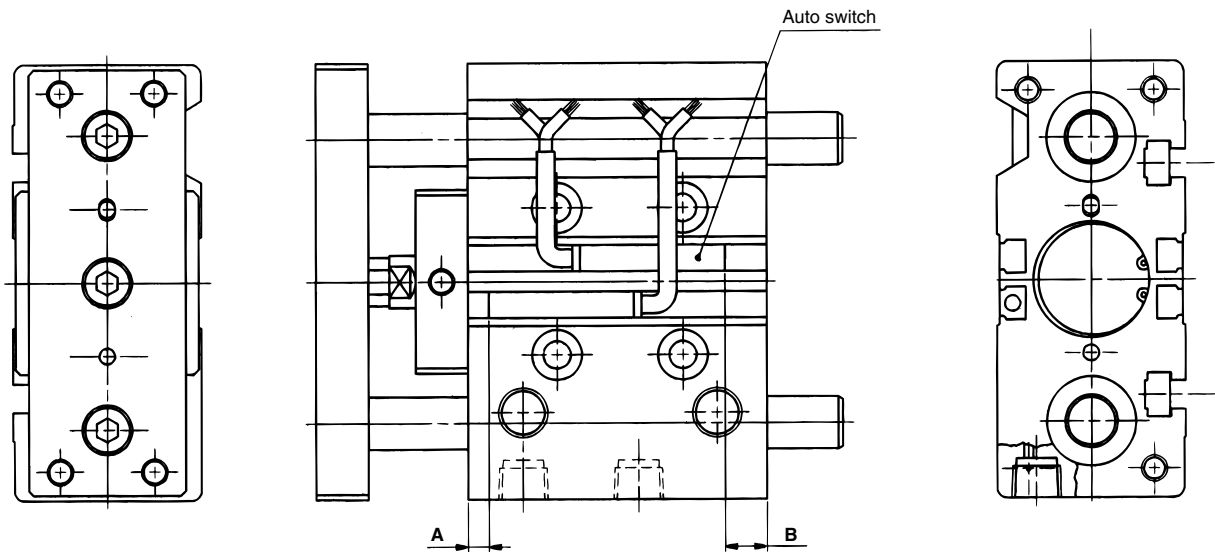
Auto switch specifications (Refer to Best Pneumatics catalog for detailed specifications and auto switches not in the following table.)

Style	Auto switch part no.	Load voltage	Load current range	Indicator light	Application
Reed switch	D-Z73	24 VDC, 100 VAC	5 to 40mA, 5 to 20mA	○	Relay, PLC
Solid state switch	2-wire type D-Y59B	24 VDC (10 to 28 VDC)	5 to 40mA	○	24 VDC Relay, PLC
	3-wire type D-Y59A	28 VDC or less	40mA or less	○	IC circuit, Relay, PLC

Refer to applicable auto switch list — Page 182.

PLC: Programmable Logic Controller

Auto switches / Proper mounting position for stroke end detection

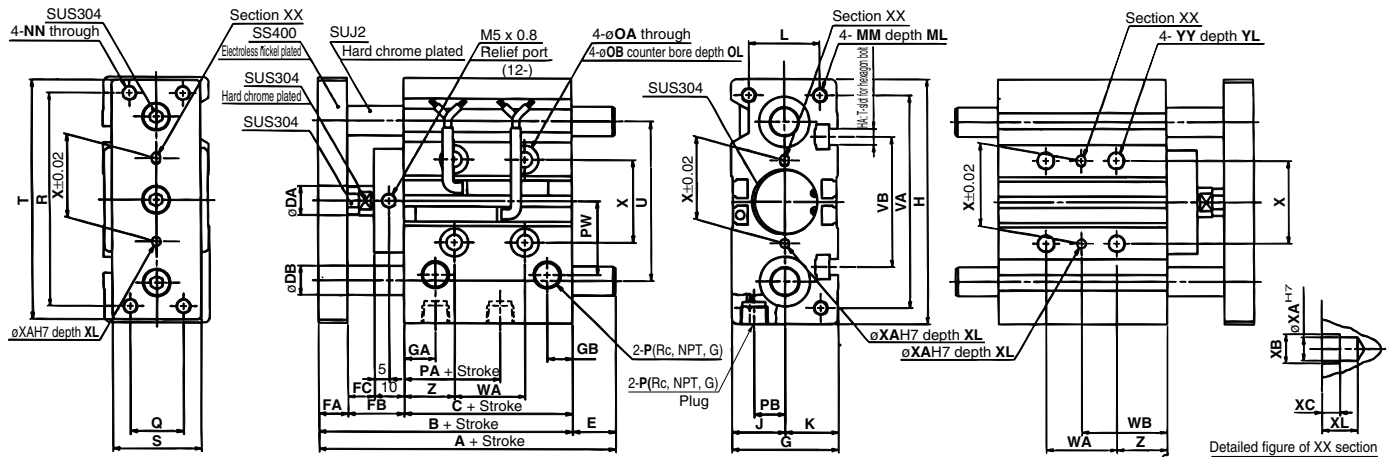


Proper mounting position (mm)		
Bore size(mm)	A	B
12	1	3
16	4	4
20	4.5	7.5
25	4.5	8

(mm)		
Bore size(mm)	A	B
32	5.5	7
40	9.5	9.5
50	7.5	11.5
63	10	14

Note 1) The minimum stroke for auto switch mounting is 10 mm or larger for types with 2 pieces and 5 mm or larger for types with 1 piece.
Note 2) The above mentioned values are indicated as a guide for auto switch mounting position for stroke end detection. When actually mounting an auto switch, adjust the position after confirming the operating state of the auto switch.

Basic style / ¹²⁻MGPL 12 to 25, ²¹⁻MGPL 12 to 25

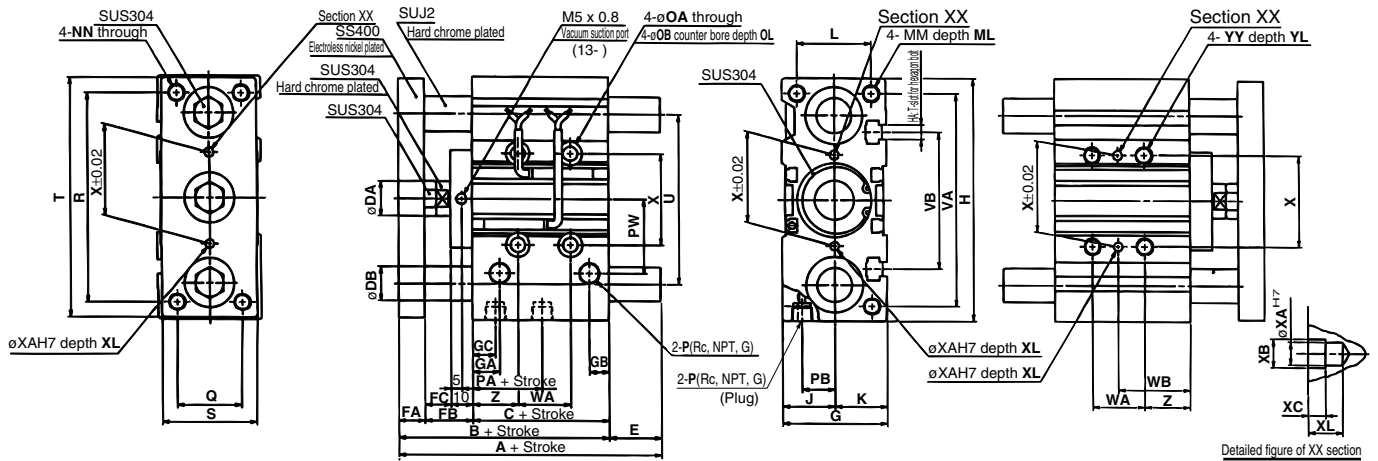


(mm)																			
Bore size	A				B	C	DA	DB	E				FA	FB	FC	G	GA	GB	H
	30st or less	Over 30st and up to 100st	Over 100st and up to 200st	Over 200st					30st or less	Over 30st and up to 100st	Over 100st and up to 200st	Over 200st							
12	56	68	98	98	55	29	6	6	1	13	43	43	8	18	8	26	11	7.5	58
16	62	78	108	108	59	33	8	8	3	19	49	49	8	18	8	30	11	8	64
20	76	93	117	135	66	37	10	10	10	27	51	69	10	19	9	36	10.5	8.5	83
25	82.5	98.5	117.5	135	66.5	37.5	12	13	16	32	51	68.5	10	19	9	42	11.5	9	93

Bore size	HA	J	K	L	MM	ML	NN	OA	OB	OL	P	PA	PB	PW	Q	R	S	T	U	VA	VB
12	M4	13	13	18	M4 x 0.7	10	M4 x 0.7	4.3	8	4.5	M5 x 0.8	13	8	18	14	48	22	56	41	50	37
16	M4	15	15	22	M5 x 0.8	12	M5 x 0.8	4.3	8	4.5	M5 x 0.8	15	10	19	16	54	25	62	46	56	38
20	M5	18	18	24	M5 x 0.8	13	M5 x 0.8	5.6	9.5	5.5	1/8	12.5	10.5	25	18	70	30	81	54	72	44
25	M5	21	21	30	M6 x 1.0	15	M6 x 1.0	5.6	9.5	5.5	1/8	12.5	13.5	28.5	26	78	38	91	64	82	50

Bore size	WA					WB					X	XA	XB	XC	XL	YY	YL	Z
	30st or less	Over 30st and up to 100st	Over 100st and up to 200st	Over 200st and up to 300st	Over 300st	30st or less	Over 30st and up to 100st	Over 100st and up to 200st	Over 200st and up to 300st	Over 300st								
12	20	40	110	200	—	15	25	60	105	—	23	3	3.5	3	6	M5 x 0.8	10	5
16	24	44	110	200	—	17	27	60	105	—	24	3	3.5	3	6	M5 x 0.8	10	5
20	24	44	120	200	300	29	39	77	117	167	28	3	3.5	3	6	M6 x 1.0	12	17
25	24	44	120	200	300	29	39	77	117	167	34	4	4.5	3	6	M6 x 1.0	12	17

Basic style / ¹²⁻MGPL 32 to 63, ²¹⁻MGPL 32 to 63



(mm)																					
Bore size	A				B	C	DA	DB	E				FA	FB	FC	G	GA	GB	GC		
	50st or less	Over 50st and up to 100st	Over 100st and up to 200st	Over 200st					50st or less	Over 50st and up to 100st	Over 100st and up to 200st	Over 200st									
32	93	110	130	152	71.5	37.5	16	16	21.5	38.5	58.5	80.5	12	22	12	48	12.5	9	12.5		
40	93	110	130	152	78	44	16	16	15	32	52	74	12	22	12	54	14	10	14		
50	104	125	145	172	83	44	20	20	21	42	62	89	16	23	13	64	14	11	12		
63	104	125	145	172	88	49	20	20	16	37	57	84	16	23	13	78	16.5	13.5	16.5		

Bore size	H	HA	J	K	L	MM	ML	NN	OA	OB	OL	P	PA	PB	PW	Q	R	S	T	U	VA	VB
32	112	M6	24	24	34	M8 x 1.25	20	M8 x 1.25	6.6	11	7.5	1/8	7	15	34	30	96	44	110	78	98	63
40	120	M6	27	27	40	M8 x 1.25	20	M8 x 1.25	6.6	11	7.5	1/8	13	18	38	30	104	44	118	86	106	72
50	148	M8	32	32	46	M10 x 1.5	22	M10 x 1.5	8.6	14	9	1/4	9	21.5	47	40	130	60	146	110	130	92
63	162	M10	39	39	58	M10 x 1.5	22	M10 x 1.5	8.6	14	9	1/4	14	28	55	50	130	70	158	124	142	110

Bore size	WA					WB					X	XA	XB	XC	XL	YY	YL	Z
	25st or less	Over 25st and up to 100st	Over 100st and up to 200st	Over 200st and up to 300st	Over 300st	25st or less	Over 25st and up to 100st	Over 100st and up to 200st	Over 200st and up to 300st	Over 300st								
32	24	48	124	200	300	33	45	83	121	171	42	4	4.5	3	6	M8 x 1.25	16	21
40	24	48	124	200	300	34	46	84	122	172	50	4	4.5	3	6	M8 x 1.25	16	22
50	24	48	124	200	300	36	48	86	124	174	66	5	6	4	8	M10 x 1.5	20	24
63	28	52	128	200	300	38	50	88	124	174	80	5	6	4	8	M10 x 1.5	20	24



Specific Product Precautions

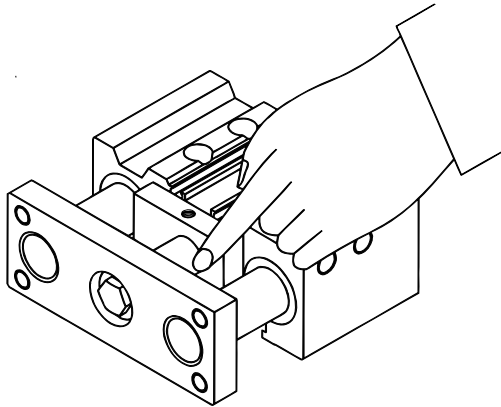
Be sure to read before handling.

Mounting

Warning

1. Do not place your hands or fingers between the cylinder and the body.

Be careful not to get your hands or fingers caught between the cylinder body and the plate when air is applied.



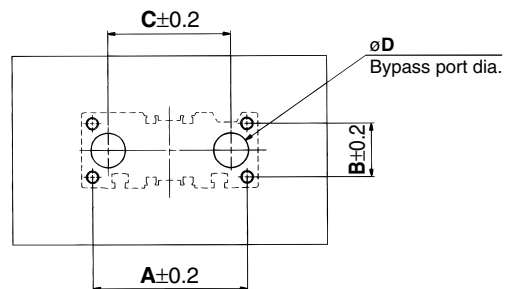
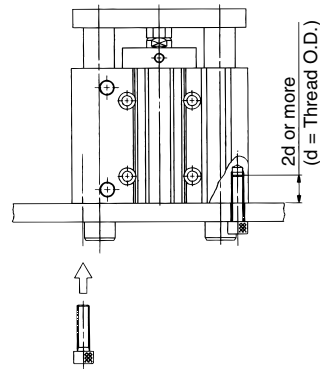
Caution

1. Be careful not to scratch or gouge the sliding portion of the piston rod and the guide rod.

Damaged seals may cause leakage or malfunction.

2. Bottom of cylinder

The guide rods protrude from the bottom of the cylinder at the end of the retracting stroke. Therefore, in cases where the cylinder is to be bottom mounted, it is necessary to provide bypass ports in the mounting surface for the guide rods, as well as holes for the hexagon socket head screws which are used for mounting.



Bore size (mm)	A (mm)	B (mm)	C (mm)	øD (mm)	Hexagon socket head cap screw
12	50	18	41	8	M4 x 0.7
16	56	22	46	10	M5 x 0.8
20	72	24	54	12	M5 x 0.8
25	82	30	64	15	M6 x 1.0
32	98	34	78	18	M8 x 1.25
40	106	40	86	18	M8 x 1.25
50	130	46	110	22	M10 x 1.5
63	142	58	124	22	M10 x 1.5