

Plate Cylinder/Single Acting Spring Return/Extend

Series MU

ø25, ø32, ø40, ø50, ø63

How to Order

Standard

MU B 25 10 S M

With auto switch

MDU B 25 10 S M A73 S

Built-in magnet

Mounting

B	Basic
L	Axial foot
F	Front flange
G	Rear flange
C	Single clevis
D	Double clevis

Size

25	Equiv. ø25 piston area
32	Equiv. ø32 piston area
40	Equiv. ø40 piston area
50	Equiv. ø50 piston area
63	Equiv. ø63 piston area

Standard Stroke (mm)

ø25, ø32	5, 10
ø40, ø50, ø63	5, 10, 15, 20

* Refer to p.2.4-11 when using auto switch.

Action

S	Single acting spring return
T	Single acting spring extend

Rod end shape

—	Rod end female thread
M	Rod end male thread

Auto Switch

— Without auto switch(built-in magnet)

Number of auto switches

—	2
S	1
n	n

Applicable Auto Switches/Refer to p.5.3-2 for further information on auto switch.

Style	Special function	Electrical entry	Indicator	Wiring (output)	Load voltage		Auto switch model		Lead wire (m)*				Applicable load					
					DC	AC	Perp.	In-line	0.5 (—)	3 (L)	5 (Z)	None (N)						
Reed switch	—	Grommet	Yes	3 wire (Equiv. NPN)	—	5V	—	A76H	●	●	—	—	IC circuit	—				
								A72	A72H	●	●	—			—			
								A73	A73H	●	●	●			—			
								5V 12V	100V or less	A80	A80H	●			●	—	—	
								12V	—	A73C	—	●			●	●	●	
								5V 12V	24V or less	A80C	—	●			●	●	●	
Diagnostic indicator (2 color)	Grommet	Yes	—	—	A79W	—	●	●	—	—								
Solid state switch	—	Grommet	Yes	3 wire (NPN)	—	5V 12V	—	F7NV	F79	●	●	○	—	IC circuit	—			
								F7PV	F7P	●	●	○	—					
								F7BV	J79	●	●	○	—					
								J79C	—	●	●	●	●					
								F7NWV	F79W	●	●	○	—					
		Connector	Grommet	Yes	3 wire (PNP)	—	5V 12V	—	—	F7PW	●	●	○	—	IC circuit	Relay, PLC		
									2 wire	12V	—	—	●	●			●	●
									3 wire (NPN)	5V 12V	—	—	●	●			○	—
									3 wire (PNP)	24V	—	—	●	●			○	—
									2 wire	12V	—	—	●	●			○	—
Grommet	No	Water resistant (2 color)	—	2 wire	12V	—	—	F7BA	—	●	○	—	—	—				
							—	F7NT	—	●	○	—						
							—	F79F	●	●	○	—						
							—	F7LF	●	●	○	—						
							—	—	—	—	—	—			—	—		

* Lead wire length 0.5m..... (Example) A80C 5m.....Z (Example) A80CZ
3m.....L A80CL NoneN A80CN

* Solid state switches marked with a "○" are manufactured upon receipt of order.

Mounting Bracket/Part No.

Bracket	25	32	40	50	63
Foot (1)	MU-L02	MU-L03	MU-L04	MU-L05	MU-L06
Flange	MU-F02	MU-F03	MU-F04	MU-F05	MU-F06
Single clevis	MU-C02	MU-C03	MU-C04	MU-C05	MU-C06
Double clevis (3)	MU-D02	MU-D03	MU-D04	MU-D05	MU-D06

Note 1) When ordering foot brackets, 2pcs. should be ordered for each cylinder.
 Note 2) Parts attached with each mounting brackets are as follows.
 Foot, Flange, Single clevis/Body mounting bolt
 Double clevis/A clevis pin, C shape snap rings for axis, body mounting bolts
 Note 3) A clevis pin and snap rings are packed with the double clevis style.

Auto Switch Mounting Bracket/Part No.

Size	Part No.	Note
25, 32, 40, 50, 63	BMU1-025	• Auto switch mounting screw (M3 X 0.5 X 6.5) • Switch mounting nut

* Mounting screw set made of stainless steel
 Following stainless steel mounting screw set (included nut) is provided. Use them with accordance to environment. (Auto switch interface is available. Order it separately.)
 BBA2: For D-A7/A8/F7/J7
 When D-F7BAL mounted on cylinder is required, the stainless steel screw mentioned above is used at shipping. When auto switch unit is shipped, BBA2 is attached.

⚠ Precautions

Be sure to read before handling. Refer to p.0-39 to 0-46 for Safety Instructions and common precautions.

Plate Cylinder/Single Acting Spring Return/Extend **Series MU**

Specifications

Action	Single acting/Spring return, Spring extend
Fluid	Air
Proof pressure	1.05MPa
Max. operating pressure	0.7MPa
Min. operating pressure	0.18MPa
Ambient and fluid temperature	-10 to 60°C
Lubrication	Not required (Non-lube)
Piston speed	50 to 500mm/S
Stroke length tolerance	+1.4 0
Cushion	Rubber bumper
Thread tolerance	JIS Class 2
Equivalent tube I.D. (mm)	ø25, ø32, ø40, ø50, ø63
Mounting	Axial foot, Front flange, Rear flange, Single clevis, Double clevis

Rod Non-rotating Accuracy

Model	MU25	MU32	MU40	MU50	MU63
Non-rotating accuracy	±1°	±0.8°	±0.5°	±0.5°	±0.5°

Standard Stroke

Action	Equivalent bore size (mm)				
	25	32	40	50	63
Spring return/extend	5, 10		5, 10, 15, 20		

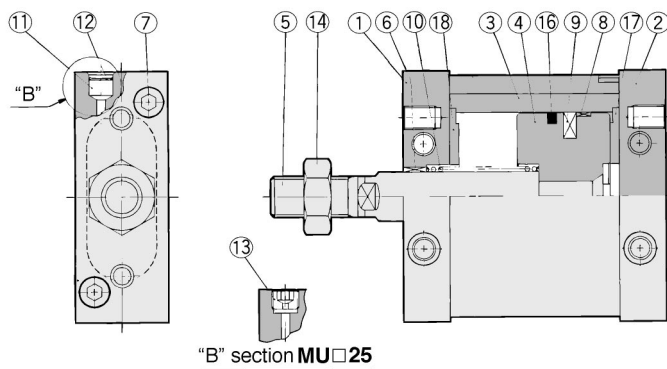
* Contact SMC for strokes not indicated.

Minimum Stroke for Auto Switch Mounting

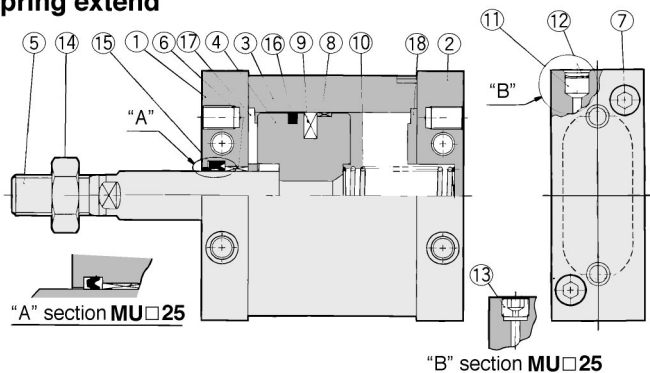
Number of auto switches	D-F7□V D-J79C	D-A7□ D-A80 D-A73C D-A80C	D-F7□WV	D-A7□H, A80H D-F7□W, J79W D-A79W D-F7□, J79 D-F7BA, F7NT D-F7□F	
				15	15
2 pcs.	5	10	15	15	15
1 pc.	5	5	10	15	15

Construction

Spring return



Spring extend



Theoretical Force

Unit: N

Action	Size	Rod diameter (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)						Spring force	
					0.2	0.3	0.4	0.5	0.6	0.7	Begin	End
Spring return	25	12	OUT	491	68	117	166	216	265	314	30	15
	32	14	OUT	804	119	199	280	360	440	521	42	24
	40	16	OUT	1257	195	321	447	573	698	824	56	30
	50	20	OUT	1963	346	542	738	935	1131	1327	47	76
Spring extend	25	12	IN	378	46	83	121	159	197	235	30	15
	32	14	IN	650	88	153	218	283	348	413	42	24
	40	16	IN	1056	155	261	366	472	578	683	56	30
	50	20	IN	1649	283	448	613	777	942	1107	47	76
	63	20	IN	2803	448	728	1008	1289	1569	1849	113	61

Note) Theoretical force (N) = Pressure (MPa) X Piston area (mm²)

Weight

Unit: kg

	Size	25	32	40	50	63
		Weight	5 stroke	0.22	0.27	0.57
Weight	10 stroke	0.23	0.35	0.60	1.09	1.60
	15 stroke	—	—	0.62	1.12	1.64
	20 stroke	—	—	0.64	1.16	1.69
	Mounting bracket	Axial foot	0.07	0.14	0.21	0.34
Mounting bracket	Flange/Front side, Rear side	0.10	0.14	0.23	0.46	0.83
	Single clevis	0.06	0.12	0.22	0.40	0.68
	Double clevis (with pin)	0.07	0.16	0.26	0.47	0.76
	Accessories	Single clevis (Pivot bracket for double clevis)	0.06	0.12	0.22	0.40
Accessories	Double clevis (Pivot bracket for single clevis)	0.07	0.16	0.26	0.47	0.76
	Single knuckle joint	0.03	0.04	0.07	0.16	0.16
	Double knuckle joint (with pin)	0.05	0.09	0.14	0.29	0.29

Note) Weight of single clevis and double clevis as optional bracket includes 2pcs. brackets for bracket mounting.

Example 2: MUC50-5S(T)
 • Basic weight.....1.06
 • Additional weight (mounting bracket).....0.40
 • Total weight.....1.06 + 0.40 = 1.46 kg

Component Parts

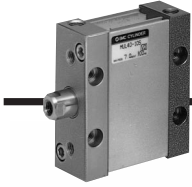
No.	Description	Material	Note
①	Rod cover	Aluminum alloy	Anodized
②	Head cover	Aluminum alloy	Anodized
③	Cylinder tube	Aluminum alloy	Hard anodized
④	Piston	Aluminum alloy	Chromated
⑤	Piston rod	Carbon steel	Hard chrome plated
⑥	Bushing	Oil impregnated sintered alloy	
⑦	Hex. socket head cap screw	Stainless steel	
⑧	Wearing	Resin	
⑨	Magnet	Magnet material	Only built-in magnet style
⑩	Return spring	Steel wire	Zinc chromated
⑪	Element	Bronze	
⑫	Snap ring	Spring steel	
⑬	Plug	Chromium molybdenum steel	
⑭	Rod end nut	Rolled steel	Attached for only male thread rod end
⑮	Rod seal	NBR	
⑯	Piston seal	NBR	
⑰	Bumper	Urethane	
⑱	Bumper B	Urethane	

Replacement Parts: Seal Kits

Bore size (mm)	Kit No.		Contents
	Spring return	Spring extend	
25	MU25S-PS	MU25T-PS	A set of above numbers ⑮, ⑯, ⑰ and ⑱.
32	MU32S-PS	MU32T-PS	
40	MU40S-PS	MU40T-PS	
50	MU50S-PS	MU50T-PS	
63	MU63S-PS	MU63T-PS	

* Seal kits consist of items ⑮, ⑯, ⑰ and ⑱ contained in one kit, and can be ordered using the kits number for each cylinder bore size.

Series MU

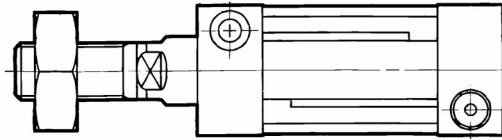


Basic

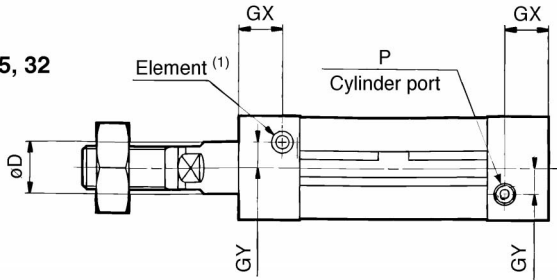


Spring return

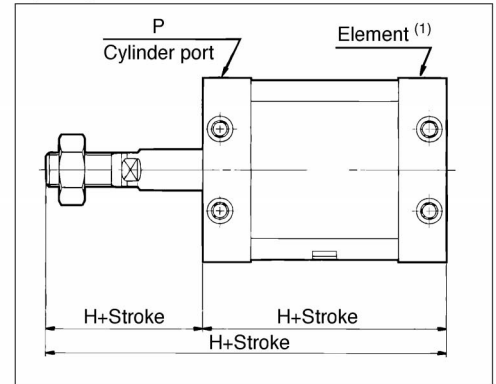
MUB40, 50, 63



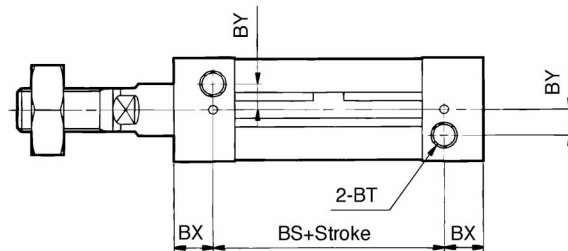
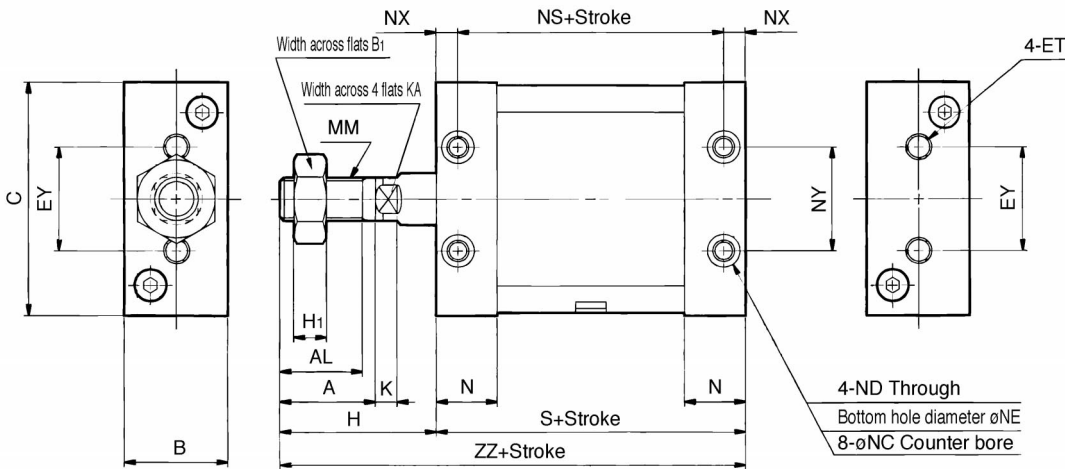
MUB25, 32



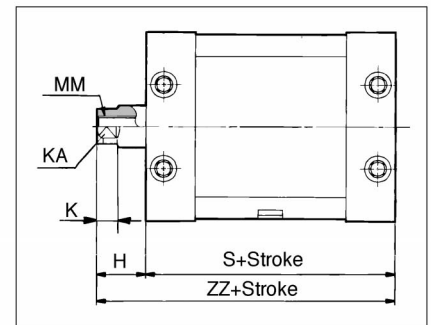
Spring extend



Note1) Plug with bleeding hole is used instead of element for MUB25.



Rod end female thread



* Dimensions except mentioned above are same as male thread style. However, K and KA dimensions are same as male thread style.



Spring return

MUB25.....SMU25, #8
 MUB32.....SMU32, #8
 MUB40.....SMU40, #8
 MUB50.....SMU50, #8
 MUB63.....SMU63, #8

Spring extend

MUB25.....SMU25, #9
 MUB32.....SMU32, #9
 MUB40.....SMU40, #9
 MUB50.....SMU50, #9
 MUB63.....SMU63, #9

Model	Standard stroke(mm)	A	AL	B	B ₁	BS	BT	BX	BY	C	D	ET	EY	GX	GY	H	H ₁	K
MUB25	5, 10	22	19.5	24	17	42	M5 X 0.8 Depth 7.5	9	7	54	12	M5 X 0.8 Depth 11	26	10	5	36	6	5.5
MUB32	5, 10	26	23.5	28	19	50	M6 X 1 Depth 12	6.5	8	68	14	M6 X 1 Depth 11	42	8.5	5.5	40	7	5.5
MUB40	5, 10, 15, 20	30	27	32	22	54	M8 X 1.25 Depth 13	8	9	86	16	M8 X 1.25 Depth 11	54	9	7	45	8	6
MUB50	5, 10, 15, 20	35	32	39	27	64	M10 X 1.5 Depth 14.5	10	9	104	20	M10 X 1.5 Depth 15	64	11.5	8	53	11	7
MUB63	5, 10, 15, 20	35	32	50	27	63	M12 X 1.75 Depth 18	11	12	124	20	M12 X 1.75 Depth 15	72	11.5	10	56	11	7

Model	KA	MM	N	NC	ND	NE	NS	NX	NY	P	S	ZZ
MUB25	10	M10 X 1.25	14	7.5 Depth 4.5	M5 X 0.8	4.3	48	6	26	M5 X 0.8	60	96
MUB32	12	M12 X 1.25	15.5	9 Depth 5.5	M6 X 1	5.1	50	6.5	28	Rc(PT) 1/8	63	103
MUB40	14	M14 X 1.5	16	10.5 Depth 6.5	M8 X 1.25	6.9	54	8	36	Rc(PT) 1/8	70	115
MUB50	18	M18 X 1.5	21.5	13.5 Depth 8.5	M10 X 1.5	8.7	64	10	42	Rc(PT) 1/4	84	137
MUB63	18	M18 X 1.5	21.5	17 Depth 10.5	M12 X 1.75	10.5	63	11	46	Rc(PT) 1/4	85	141

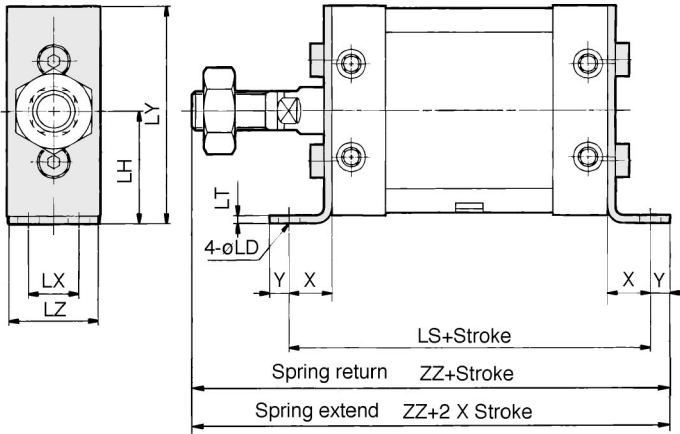
Rod end female thread (mm)

Model	H	MM	ZZ
MUB25	14	M6 X 1 Depth 12	74
MUB32	14	M8 X 1.25 Depth 13	77
MUB40	15	M8 X 1.25 Depth 13	85
MUB50	18	M10 X 1.5 Depth 15	102
MUB63	21	M10 X 1.5 Depth 15	106

* The position of the four flats of the piston rod is ±3° in relation to the cylinder side surface.

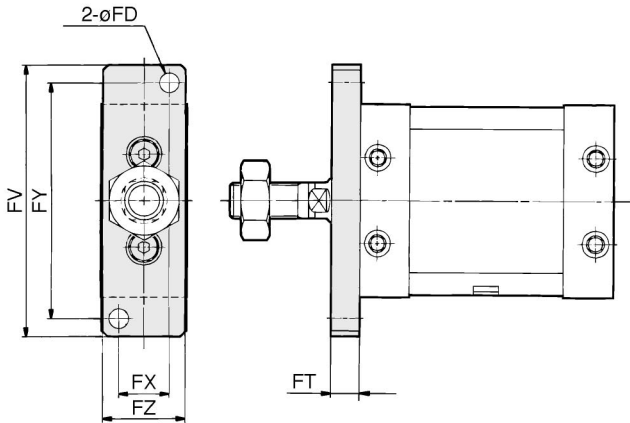
Dimensions

Axial foot

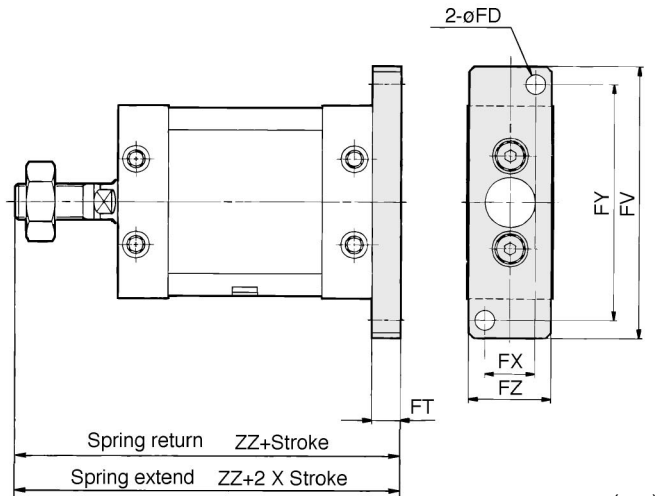


Model	LD	LH	LS	LT	LX	LY	LZ	X	Y	ZZ
MUL25	5.5	29	84	3.2	11	56	23	12	6	114
MUL32	6.6	37	95	4.5	12	71	27	16	8	127
MUL40	9	46	106	4.5	15	89	31	18	10	143
MUL50	11	57	126	5	18	109	37	21	11	169
MUL63	13.5	67	133	6	22	129	48	24	14	179

Front flange



Rear flange



Model	FD	FT	FV	FX	FY	FZ	ZZ
MUF25, MUG25	5.5	8	76	14	66	24	104
MUF32, MUG32	7	8	94	16	82	28	111
MUF40, MUG40	9	9	118	18	102	32	124
MUF50, MUG50	11	12	144	22	126	39	149
MUF63, MUG63	13	14	168	30	148	50	155

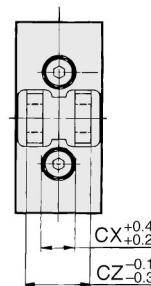
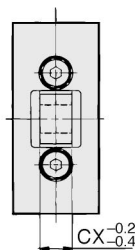
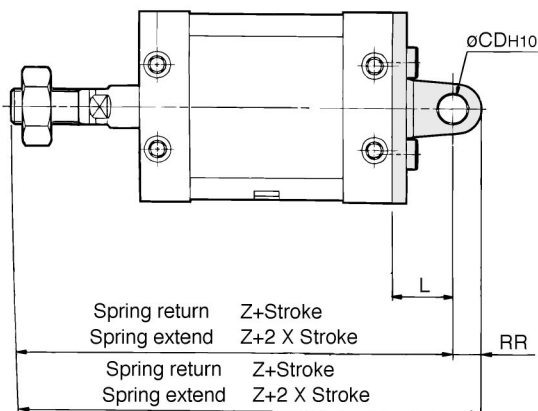
CU
CQS
CQ2
MU

Single clevis

Double clevis

Single clevis

Double clevis



Model	CDH10	CX	CZ	L	RR	Z	ZZ
MUC25, MUD25	8 ^{+0.058} ₀	9	18	17	8	113	121
MUC32, MUD32	10 ^{+0.058} ₀	11	22	22	10	125	135
MUC40, MUD40	10 ^{+0.058} ₀	13	26	27	10	142	152
MUC50, MUD50	14 ^{+0.070} ₀	16	32	32	14	169	183
MUC63, MUD63	14 ^{+0.070} ₀	16	32	38	16	179	185

A clevis pin and snap rings are packed with the double clevis style.