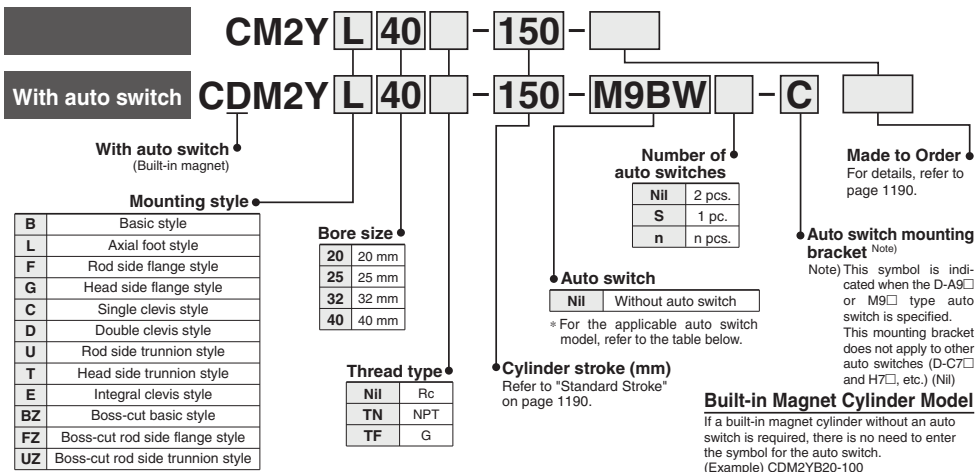


# Smooth Cylinder

# Series CM2Y

ø20, ø25, ø32, ø40

## How to Order



## Applicable Auto Switches

Refer to pages 1893 to 2007 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)				Pre-wired connector	Applicable load			
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)			None (N)		
Solid state auto switch	—	Grommet	No	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	○	○	○	IC circuit			
				3-wire (PNP)			M9PV	M9P	●	●	○	○	—				
		Connector	No	2-wire	12 V	—	M9BV	M9B	●	●	○	○		—			
				Terminal conduit	3-wire (NPN)	5 V, 12 V	—	—	G39A	—	—	—	●		IC circuit		
	Diagnostic indication (2-color indication)	Grommet	Yes	2-wire	12 V	24 V	—	—	H7C	●	●	●	●	—			
				3-wire (NPN)	5 V, 12 V			M9NVV	M9NV	●	●	○	○		IC circuit		
				3-wire (PNP)	5 V, 12 V			M9PWW	M9PW	●	●	○	○			—	
				2-wire	12 V			M9BWW	M9BW	●	●	○	○		—		
				3-wire (NPN)	5 V, 12 V			M9NAV***	M9NA***	○	○	○	○			IC circuit	
				3-wire (PNP)	5 V, 12 V			M9PAV***	M9PA***	○	○	○	○		—		
2-wire	12 V	M9BAV***	M9BA***	○	○	○	○	IC circuit									
4-wire (NPN)	5 V, 12 V	—	H7NF	●	●	○	○		IC circuit								
3-wire (NPN equivalent)	5 V	—	A96V	A96	●	●	●	●		IC circuit							
Reed auto switch	—	Grommet	No	2-wire	24 V	—	A93V	A93	●		●	●	●	IC circuit			
							A90V	A90	●	●	●	●	—				
		Connector	Yes				No	—	—	—	—	B54		●	●	●	●
												B64	●	●	●	●	—
		Terminal conduit	Yes				No	—	—	—	—	C73C	●	●	●	●	
												C80C	●	●	●	●	—
		DIN terminal	Yes				No	—	—	—	—	A33A	—	—	—	—	
												A34A	—	—	—	—	—
		Grommet	Yes				No	—	—	—	—	A44A	—	—	—	—	
												B59W	●	●	—	—	—

\*\*\* Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.

Consult with SMC regarding water resistant types with the above model numbers.

\* Lead wire length symbols: 0.5 m ..... Nil (Example) M9NV \* ○: Manufactured upon receipt of order.

1 m ..... M (Example) M9NWM \* Do not add the suffix (N) indicating "no lead wire" to the part numbers of models D-A3□A,

3 m ..... L (Example) M9NWL A44A, G39A and K39A.

5 m ..... Z (Example) M9NWZ

None ..... N (Example) H7CN

\* In addition to the models in the above table, there are some other auto switches that are applicable. For more information, refer to page 1202.

\* Refer to pages 1960 and 1961 for details of auto switches with a pre-wired connector.

\* D-A9□(V)/M9□(V)/M9CW(V)/M9CA(V) auto switches are shipped together (not assembled). (Only auto switch mounting brackets are assembled before shipped.)

\* D-C7□□/C80□/H7□□ auto switches are assembled at the time of shipment.

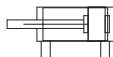
- REA
- REB
- REC
- COY
- COX
- MQ
- RHC
- RZQ
- D-□
- X□

# Series CM2Y



## Symbol

Double acting: Single rod, Rubber bumper



## Integral clevis



## Made to Order

(For details, refer to pages 2009 to 2152.)

Symbol	Specifications
-XA□	Change of rod end shape
-XC3	Special port location
-XC6	Made of stainless steel
-XC9	Adjustable stroke cylinder/adjustable retraction type
-XC13	Auto switch rail mounting style
-XC20	Head cover axial port

## ⚠ Precautions

**Be sure to read before handling.**  
**Refer to front matter 39 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.**

### Handling Precautions

#### ⚠ Warning

##### 1. Do not rotate the cover

When installing a cylinder or screwing a fitting into the port, the coupling portion of the cover may be damaged if the cover rotates.

#### ⚠ Caution

##### 1. Be careful of the retaining ring to pop out.

When replacing the rod seal, be careful of the retaining ring not to pop out while removing it.

## Replacement Part: Rod Seal

Bore size (mm)	Part no.
20	KB01587
25	KB01588
32	KB01590
40	KB01592

## Grease Pack for Maintenance

When only grease for maintenance is necessary, please order by the following part numbers.

Grease pack part no.: GR-L-005 (5 g)  
 GR-L-010 (10 g)  
 GR-L-150 (150 g)

## Specifications

Bore size (mm)	20	25	32	40
<b>Action</b>	Double acting, Single rod			
<b>Piston speed</b>	5 to 500 mm/s			
<b>Fluid</b>	Air			
<b>Proof pressure</b>	1.05 MPa			
<b>Maximum operating pressure</b>	0.7 MPa			
<b>Ambient and fluid temperature</b>	Without auto switch -10 to 70°C (with no freezing) With auto switch -10 to 60°C (with no freezing)			
<b>Lubrication</b>	Non-lube			
<b>Stroke length tolerance</b>	+1,4 -0 mm			
<b>Cushion</b>	Rubber bumper			
<b>Allowable leakage rate</b>	0.5 L/min (ANR) or less			

## Minimum Operating Pressure

Unit: MPa				
Bore size (mm)	20	25	32	40
Minimum operating pressure	0.02			

## Mounting Bracket Part No.

Mounting bracket	Minimum order	Bore size (mm)				Description (when ordering a minimum number)
		20	25	32	40	
Axial foot*	2	CM-L020B	CM-L032B	CM-L040B		Foot 2 pcs., Mounting nut 1 pc.
Flange	1	CM-F020B	CM-F032B	CM-F040B		Flange 1 pc.
Single clevis**	1	CM-C020B	CM-C032B	CM-C040B		Single clevis 1 pc., Liner 3 pcs.
Double clevis (with pin) **, ***	1	CM-D020B	CM-D032B	CM-D040B		Double clevis 1 pc., Liner 3 pcs., Clevis pin 1 pc., Retaining ring 2 pcs.
Trunnion (with nut)	1	CM-T020B	CM-T032B	CM-T040B		Trunnion 1 pc., Trunnion nut 1 pc.

\* When ordering foot brackets, order 2 pieces per cylinder unit.

\*\* Three liners are included in the clevis bracket for adjusting an angle when mounting it.

\*\*\* Clevis pins and retaining rings (cotter pins for ø40) are included.

## Mounting Bracket and Accessory

Accessory	Standard				Option			
	Mounting nut	Rod end nut	Clevis pin	Single knuckle joint	Double knuckle joint	Note 4) Clevis bracket	Note 6) Pivot bracket	Note 7) Pivot bracket pin
Basic style	● (1 pc.)	●	—	●	●	—		
Axial foot style	● (2)	●	—	●	●	—		
Rod side flange style	● (1)	●	—	●	●	—	—	—
Head side flange style	● (1)	●	—	●	●	—		
Integral clevis style	— Note 1)	●	—	●	●	●		
Single clevis style	— Note 1)	●	—	●	●	—	●	●
Double clevis style	— Note 1)	●	● Note 5)	●	●	—	—	—
Rod side trunnion style	● (1) Note 2)	●	—	●	●	—		
Head side trunnion style	● (1) Note 2)	●	—	●	●	—	●	—
Boss-cut basic style	● (1)	●	—	●	●	—		
Boss-cut flange style	● (1)	●	—	●	●	—	—	—
Boss-cut trunnion style	● (1)	●	—	●	●	—		

Note 1) Mounting nuts are not attached to the integral clevis, single clevis and double clevis types.

Note 2) Trunnion nuts are mounted on the rod side trunnion style and head side trunnion style.

Note 3) Pins and retaining rings (cotter pins in case of ø40) are packed with the double clevis and double knuckle joint styles.

Note 4) Pins and retaining rings are packed with clevis brackets.

Note 5) Retaining rings (cotter pins for ø40) are included in clevis pins.

Note 6) Pivot brackets come with pins and retaining rings.

Note 7) Pivot bracket pins come with retaining rings.

## Standard Stroke

Bore size (mm)	Standard stroke (mm)
20, 25, 32, 40	25, 50, 75, 100, 125, 150, 200, 250, 300

Note 1) Manufacture of intermediate strokes at 1 mm intervals is possible. (Spacers are not used.)

Note 2) As the stroke increases, more sliding resistance may result due to the deflection of the piston rod and other factors. Take measures such as the installation of a guide.

## Weight

(kg)

Bore size (mm)		20	25	32	40
Basic weight	Basic style	0.14	0.21	0.28	0.56
	Axial foot style	0.29	0.37	0.44	0.83
	Flange style	0.20	0.30	0.37	0.68
	Clevis integrated style	0.12	0.19	0.27	0.52
	Single clevis style	0.18	0.25	0.32	0.65
	Double clevis style	0.19	0.27	0.33	0.69
	Trunnion style	0.18	0.28	0.34	0.66
	Boss-cut basic style	0.13	0.19	0.26	0.53
	Boss-cut flange style	0.19	0.28	0.35	0.65
	Boss-cut trunnion style	0.17	0.26	0.32	0.63
Additional weight per each 50 mm of stroke		0.04	0.06	0.08	0.13
Option bracket	Clevis bracket (With pin)	0.07	0.07	0.14	0.14
	Single knuckle joint	0.06	0.06	0.06	0.23
	Double knuckle joint (With pin)	0.07	0.07	0.07	0.20

Calculation: (Example) **CM2YL32-100**

- Basic weight.....0.44 (Foot style, ø32)
- Additional weight.....0.08/50 stroke
- Cylinder stroke.....100 stroke  
0.44 + 0.08 x 100/50 = 0.60 kg

## Low Friction Cylinder Mounting

CM2Y   -  - X1854

Same mounting specification as CM2Q

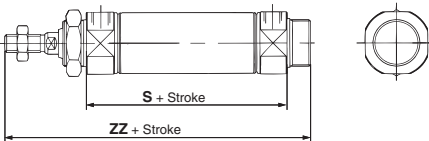
In order to adjust the mounting dimensions of the low friction cylinder (CM2Q), extend the longitudinal dimension (S, ZZ) by 3 mm.

## Specifications

Cylinder bore size (mm)	20	25	32	40
<b>Action</b>	Double acting, Single rod			
<b>Direction of low friction</b>	Dual directions			
<b>Fluid</b>	Air			
<b>Proof pressure</b>	1.05 MPa			
<b>Maximum operating pressure</b>	0.7 MPa			

\* Low friction operates in dual directions.

## Dimensions



Bore size (mm)	S	ZZ
20	65	119
25	65	123
32	67	125
40	91	157

\* Add 3 mm to S and ZZ dimensions of the double acting, single rod type on pages 1192 to 1196 for the dimensions for each mounting bracket other than the basic style.

REA

REB

REC

CEY

CEX

MQ

RHC

RZQ

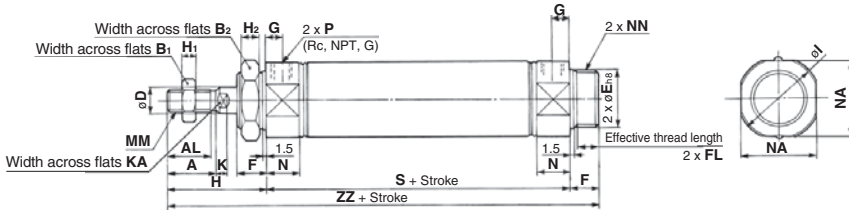
D-□

-X□

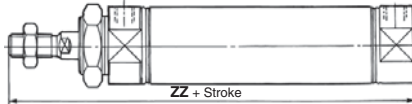
# Series CM2Y

## Basic Style (B)

CM2YB  —



## Boss-cut



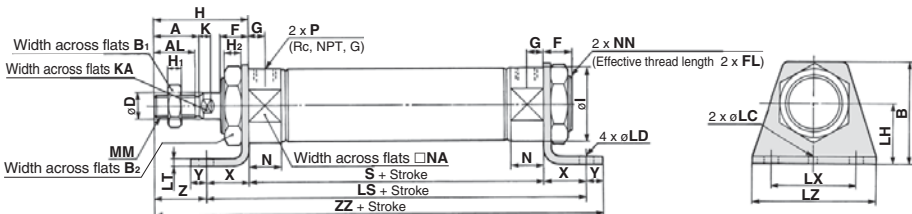
Bore size (mm)	A	AL	B <sub>1</sub>	B <sub>2</sub>	D	E	F	FL	G	H	H <sub>1</sub>	H <sub>2</sub>	I	K	KA	MM	N	NA	NN	P	S	ZZ
20	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	41	5	8	28	5	6	M8 x 1.25	15	24	M20 x 1.5	1/8	62	116
25	22	19.5	17	32	10	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	8	33.5	5.5	8	M10 x 1.25	15	30	M26 x 1.5	1/8	62	120
32	22	19.5	17	32	12	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	8	37.5	5.5	10	M10 x 1.25	15	34.5	M26 x 1.5	1/8	64	122
40	24	21	22	41	14	32 <sup>0</sup> <sub>-0.039</sub>	16	13.5	11	50	8	10	46.5	7	12	M14 x 1.5	21.5	42.5	M32 x 2	1/4	88	154

## Boss-cut (mm)

Bore size (mm)	ZZ
20	103
25	107
32	109
40	138

## Axial Foot Style (L)

CM2YL  —

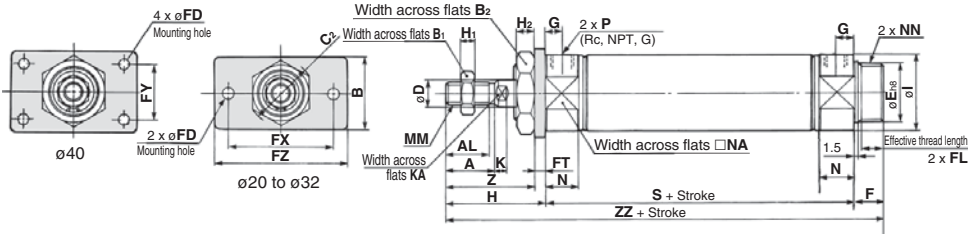


Bore size (mm)	A	AL	B	B <sub>1</sub>	B <sub>2</sub>	D	F	FL	G	H	H <sub>1</sub>	H <sub>2</sub>	I	K	KA	LC	LD	LH	LS	LT	LX	LZ	MM	N	NA	NN	P	S	X	Y	Z	ZZ
20	18	15.5	40	13	26	8	13	10.5	8	41	5	8	28	5	6	4	6.8	25	102	3.2	40	55	M8 x 1.25	15	24	M20 x 1.5	1/8	62	20	8	21	131
25	22	19.5	47	17	32	10	13	10.5	8	45	6	8	33.5	5.5	8	4	6.8	28	102	3.2	40	55	M10 x 1.25	15	30	M26 x 1.5	1/8	62	20	8	25	135
32	22	19.5	47	17	32	12	13	10.5	8	45	6	8	37.5	5.5	10	4	6.8	28	104	3.2	40	55	M10 x 1.25	15	34.5	M26 x 1.5	1/8	64	20	8	25	137
40	24	21	54	22	41	14	16	13.5	11	50	8	10	46.5	7	12	4	7	30	134	3.2	55	75	M14 x 1.5	21.5	42.5	M32 x 2	1/4	88	23	10	27	171

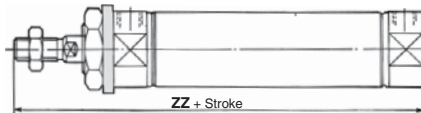
\* Mounting bracket is shipped together with the product.

**Rod Side Flange Style (F)**

CM2YF  —



**Boss-cut style**



\* Mounting bracket is shipped together with the product.

Bore size (mm)	A	AL	B	B <sub>1</sub>	B <sub>2</sub>	C <sub>2</sub>	D	E	F	FL	FD	FT	FX	FY	FZ	G	H	H <sub>1</sub>	H <sub>2</sub>	I	K	KA	MM	N	NA	NN	P	S	Z	ZZ
20	18	15.5	34	13	26	30	8	20 <sup>0</sup> <sub>-0.033</sub>	13	10.5	7	4	60	—	75	8	41	5	8	28	5	6	M8 x 1.25	15	24	M20 x 1.5	1/4	62	37	116
25	22	19.5	40	17	32	37	10	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	7	4	60	—	75	8	45	6	8	33.5	5.5	8	M10 x 1.25	15	30	M26 x 1.5	1/4	62	41	120
32	22	19.5	40	17	32	37	12	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	7	4	60	—	75	8	45	6	8	37.5	5.5	10	M10 x 1.25	15	34.5	M26 x 1.5	1/4	64	41	122
40	24	21	52	22	41	47.3	14	32 <sup>0</sup> <sub>-0.039</sub>	16	13.5	7	5	66	36	82	11	50	8	10	46.5	7	12	M14 x 1.5	21.5	42.5	M32 x 2	1/4	88	45	154

**Boss-cut Style (mm)**

Bore size (mm)	ZZ
20	103
25	107
32	109
40	138

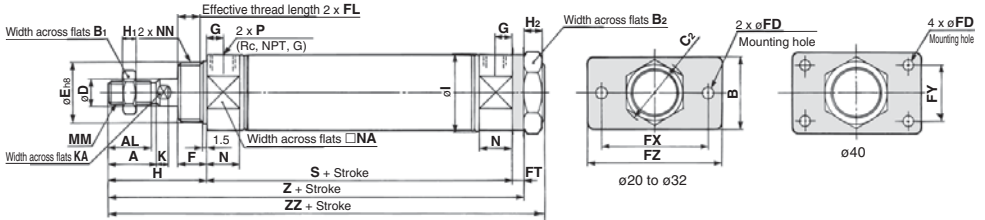
- REA
- REB
- REC
- C<sub>0</sub>Y
- C<sub>0</sub>X
- MQ
- RHC
- RZQ

- D-□
- X□

# Series CM2Y

## Head Side Flange Style (G)

CM2YG  —



\* Mounting bracket is shipped together with the product.

(mm)

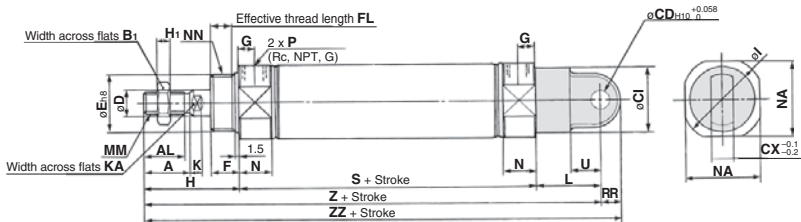
Bore size (mm)	A	AL	B	B <sub>1</sub>	B <sub>2</sub>	D	E	F	FL	FD	FT	FX	FY	FZ	G	H	H <sub>1</sub>	H <sub>2</sub>	I	
20	18	15.5	34	13	26	30	8	20 <sup>0</sup> <sub>-0.033</sub>	13	10.5	7	4	60	—	75	8	41	5	8	28
25	22	19.5	40	17	32	37	10	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	7	4	60	—	75	8	45	6	8	33.5
32	22	19.5	40	17	32	37	12	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	7	4	60	—	75	8	45	6	8	37.5
40	24	21	52	22	41	47.3	14	32 <sup>0</sup> <sub>-0.039</sub>	16	13.5	7	5	66	36	82	11	50	8	10	46.5

(mm)

Bore size (mm)	K	KA	MM	N	NA	NN	P	S	Z	ZZ
20	5	6	M8 x 1.25	15	24	M20 x 1.5	1/8	62	107	116
25	5.5	8	M10 x 1.25	15	30	M26 x 1.5	1/8	62	111	120
32	5.5	10	M10 x 1.25	15	34.5	M26 x 1.5	1/8	64	113	122
40	7	12	M14 x 1.5	21.5	42.5	M32 x 2	1/4	88	143	154

## Single Clevis Style (C)

CM2YC  —

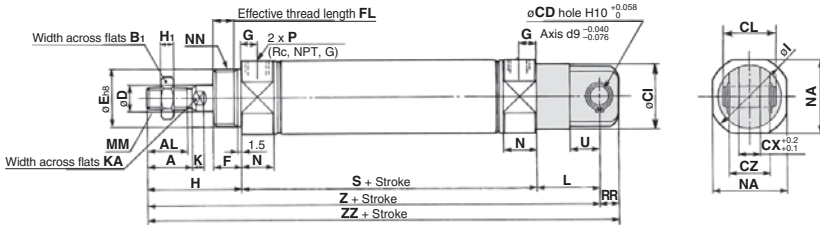


(mm)

Bore size (mm)	A	AL	B <sub>1</sub>	C <sub>1</sub>	CD	CX	D	E	F	FL	G	H	H <sub>1</sub>	I	K	KA	L	MM	N	NA	NN	P	RR	S	U	Z	ZZ
20	18	15.5	13	24	9	10	8	20 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	41	5	28	5	6	30	M8 x 1.25	15	24	M20 x 1.5	1/8	9	62	14	133	142
25	22	19.5	17	30	9	10	10	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	33.5	5.5	8	30	M10 x 1.25	15	30	M26 x 1.5	1/8	9	62	14	137	146
32	22	19.5	17	30	9	10	12	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	37.5	5.5	10	30	M10 x 1.25	15	34.5	M26 x 1.5	1/8	9	64	14	139	148
40	24	21	22	38	10	15	14	32 <sup>0</sup> <sub>-0.039</sub>	16	13.5	11	50	8	46.5	7	12	39	M14 x 1.5	21.5	42.5	M32 x 2	1/4	11	88	18	177	188

**Double Clevis Style (D)**

CM2YD  —

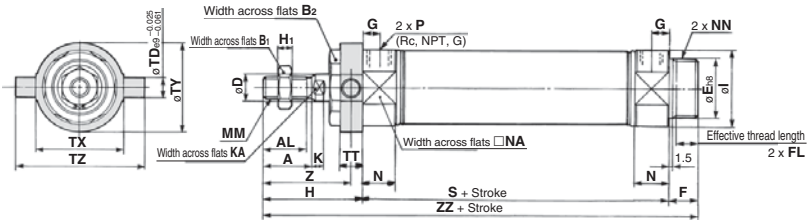


Bore size (mm)	A	AL	B <sub>1</sub>	CD	CI	CX	CZ	D	E	F	FL	G	H	H <sub>1</sub>	I	K	KA	L	MM	N	NA	NN	P	RR	S	U	Z	ZZ	
20	18	15.5	13	9	24	25	10	19	8	20 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	41	5	28	5	6	30	M8 x 1.25	15	24	M20 x 1.5	1/8	9	62	14	133	142
25	22	19.5	17	9	30	25	10	19	10	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	33.5	5.5	8	30	M10 x 1.25	15	30	M26 x 1.5	1/8	9	62	14	137	146
32	22	19.5	17	9	30	25	10	19	12	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	37.5	5.5	10	30	M10 x 1.25	15	34.5	M26 x 1.5	1/8	9	64	14	139	148
40	24	21	22	10	38	41.2	15	30	14	32 <sup>0</sup> <sub>-0.039</sub>	16	13.5	11	50	8	46.5	7	12	39	M14 x 1.5	21.5	42.5	M32 x 2	1/4	11	88	18	177	188

\* Clevis pin and snap ring (cotter pin for bore size ø40) are shipped together.

**Rod Side Trunnion Style (U)**

CM2YU  —



**Boss-cut style**



\* Mounting bracket is shipped together with the product.

Bore size (mm)	A	AL	B <sub>1</sub>	B <sub>2</sub>	D	E	F	FL	G	H	H <sub>1</sub>	I	K	KA	MM	N	NA	NN	P
20	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	41	5	28	5	6	M8 x 1.25	15	24	M20 x 1.5	1/8
25	22	19.5	17	32	10	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	33.5	5.5	8	M10 x 1.25	15	30	M26 x 1.5	1/8
32	22	19.5	17	32	12	26 <sup>0</sup> <sub>-0.033</sub>	13	10.5	8	45	6	37.5	5.5	10	M10 x 1.25	15	34.5	M26 x 1.5	1/8
40	24	21	22	41	14	32 <sup>0</sup> <sub>-0.039</sub>	16	13.5	11	50	8	46.5	7	12	M14 x 1.5	21.5	42.5	M32 x 2	1/4

Bore size (mm)	S	TD	TT	TX	TY	TZ	Z	ZZ
20	62	8	10	32	32	52	36	116
25	62	9	10	40	40	60	40	120
32	64	9	10	40	40	60	40	122
40	88	10	11	53	53	77	44.5	154

**Boss-cut Style (mm)**

Bore size (mm)	ZZ
20	103
25	107
32	109
40	138

- REA
- REB
- REC
- CY
- CX
- MQ
- RHC
- RZQ

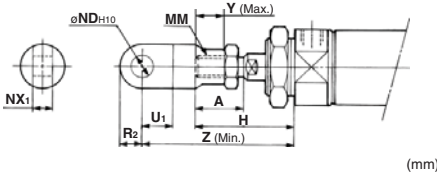
- D
- X





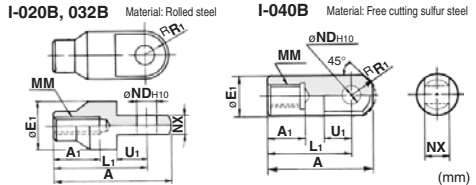
# Accessory Bracket Dimensions

## Single Knuckle Joint



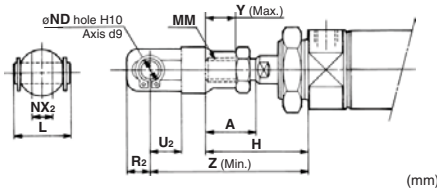
Bore size	A	H	MM	ND H10	NX1	U1	R2	Y	Z
20	18	41	M8 x 1.25	9 <sup>+0.058</sup> / <sub>0</sub>	9 <sup>+0.1</sup> / <sub>-0.2</sub>	14	10	11	66
25, 32	22	45	M10 x 1.25	9 <sup>+0.058</sup> / <sub>0</sub>	9 <sup>+0.1</sup> / <sub>-0.2</sub>	14	10	14	69
40	24	50	M14 x 1.5	12 <sup>+0.070</sup> / <sub>0</sub>	16 <sup>+0.1</sup> / <sub>-0.3</sub>	20	14	13	92

## Single Knuckle Joint



Part no.	Applicable bore size (mm)	A	A1	E1	L1	MM	ND H10	NX	R1	U1
I-020B	20	46	16	20	36	M8 x 1.25	9 <sup>+0.058</sup> / <sub>0</sub>	9 <sup>+0.1</sup> / <sub>-0.2</sub>	10	14
I-032B	25, 32	48	18	20	38	M10 x 1.25	9 <sup>+0.058</sup> / <sub>0</sub>	9 <sup>+0.1</sup> / <sub>-0.2</sub>	10	14
I-040B	40	69	22	24	55	M14 x 1.5	12 <sup>+0.070</sup> / <sub>0</sub>	16 <sup>+0.1</sup> / <sub>-0.3</sub>	15.5	20

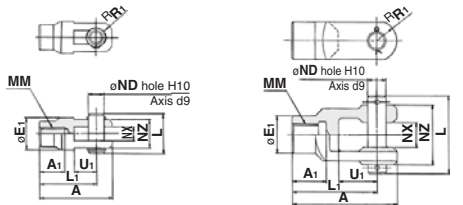
## Double Knuckle Joint



Bore size	A	H	L	MM	ND	NX2	R2	U2	Y	Z
20	18	41	25	M8 x 1.25	9	9 <sup>+0.2</sup> / <sub>-0.1</sub>	10	14	11	66
25, 32	22	45	25	M10 x 1.25	9	9 <sup>+0.2</sup> / <sub>-0.1</sub>	10	14	14	69
40	24	50	49.7	M14 x 1.5	12	16 <sup>+0.3</sup> / <sub>-0.1</sub>	13	25	13	92

## Double Knuckle Joint

**Y-020B, Y-032B** Material: Rolled steel      **Y-040B** Material: Cast iron

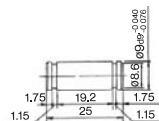


Part no.	Applicable bore size (mm)	A	A1	E1	L	L1	MM	ND	NX	NZ	R1	U1	Applicable pin part number	Retaining ring size
Y-020B	20	46	16	20	25	36	M8 x 1.25	9	9 <sup>+0.2</sup> / <sub>-0.1</sub>	18	5	14	CDP-1	Type C 9 for axis
Y-032B	25, 32	48	18	20	25	38	M10 x 1.25	9	9 <sup>+0.2</sup> / <sub>-0.1</sub>	18	5	14	CDP-1	Type C 9 for axis
Y-040B	40	68	22	24	49.7	55	M14 x 1.5	12	16 <sup>+0.3</sup> / <sub>-0.1</sub>	38	13	25	CDP-3	ø3 x 18 L

\* Clevis pin and retaining ring (cotter pin for ø40) are attached.

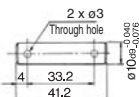
## Double Clevis Pin/Material: Carbon steel (mm)

**Bore size: ø20, ø25, ø32**  
**CDP-1**



Retaining ring: Type C9 for axis

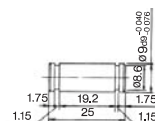
**Bore size: ø40**  
**CDP-2**



Cotter pin  
ø3 x 18 L

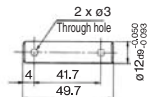
## Double Knuckle Pin/Material: Carbon steel (mm)

**Bore size: ø20, ø25, ø32**  
**CDP-1**



Retaining ring: Type C9 for axis

**Bore size: ø40**  
**CDP-3**



Cotter pin  
ø3 x 18 L

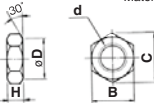
\* Retaining rings (cotter pins for ø40) are included.

\* Retaining rings (cotter pins for ø40) are included.

# Series CM2Y

## Rod End Nut

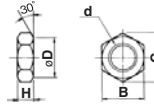
Material: Carbon steel



Part no.	Applicable bore size (mm)	B	C	D	d	H
NT-02	20	13	15.0	12.5	M8 x 1.25	5
NT-03	25, 32	17	19.6	16.5	M10 x 1.25	6
NT-04	40	22	25.4	21.0	M14 x 1.5	8

## Mounting Nut

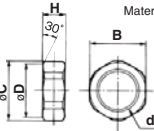
Material: Carbon steel



Part no.	Applicable bore size (mm)	B	C	D	d	H
SN-020B	20	26	30	25.5	M20 x 1.5	8
SN-032B	25, 32	32	37	31.5	M26 x 1.5	8
SN-040B	40	41	47.3	40.5	M32 x 2.0	10

## Trunion Nut

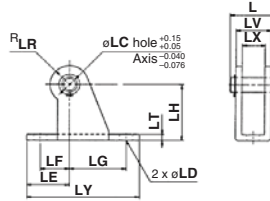
Material: Carbon steel



Part no.	Applicable bore size (mm)	B	C	D	d	H
TN-020B	20	26	28	25.5	M20 x 1.5	10
TN-032B	25, 32	32	34	31.5	M26 x 1.5	10
TN-040B	40	41	45	40.5	M32 x 2	10

## Clevis Pivot Bracket (For CM2E)

Material: Rolled steel plate



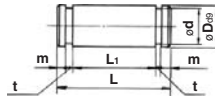
Part no.	Applicable bore size (mm)	L	LC	LD	LE	LF	LG	LH	LR	LT	LX	LY	LV	Applicable pin part no.
CM-E020B	20, 25	24.5	8	6.8	22	15	30	30	10	3.2	12	59	18.4	CD-S02
CM-E032B	32, 40	34	10	9	25	15	40	40	13	4	20	75	28	CD-S03

Note 1) Clevis bracket pins and retaining rings are included.

Note 2) It cannot be used for single clevis style (CM2C) and double clevis style (CM2D).

## Clevis Pin (For CM2E)

Material: Carbon steel



Part no.	Applicable bore size (mm)	D <sub>d9</sub>	d	L	L <sub>1</sub>	m	t	Applicable retaining ring part no.
CD-S02	20, 25	8 <sup>+0.040/-0.076</sup>	7.6	24.5	19.5	1.6	0.9	Type C 8 for axis
CD-S03	32, 40	10 <sup>+0.040/-0.076</sup>	9.6	34	29	1.35	1.15	Type C 10 for axis

Note) Retaining rings are included.

Refer to page 2048 (–XB12: External stainless steel cylinder) for stainless steel mounting brackets and accessories (some are not applicable.)

Refer to Best Pneumatics No.2 for pivot brackets.



# Auto Switch Mounting 2

## Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

### Auto Switch Proper Mounting Position

(mm)

Auto switch model Bore size (mm)	D-A9□ (V)		D-M9□ (V) D-M9□W (V) D-M9□A (V)		D-B5□ D-B64		D-C7□ D-C80 D-C73C D-C80C		D-B59W		D-A3□A D-G39A D-K39A D-A44A		D-H7□ D-H7C D-H7□W D-H7NF		D-G5NT	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
20	6.5	5.5	10.5	9.5	1	0	7	6	4	3	0.5	0	6	5	2.5	1.5
25	6.5	5.5	10.5	9.5	1	0	7	6	4	3	0.5	0	6	5	2.5	1.5
32	7.5	6.5	11.5	10.5	2	1	8	7	5	4	1.5	0.5	7	6	3.5	2.5
40	13.5	11.5	17.5	15.5	7	6	13	12	10	9	6.5	5.5	12	11	8.5	7.5

Note) Adjust the auto switch after confirming the operating conditions in the actual setting.

### Auto Switch Mounting Height

(mm)

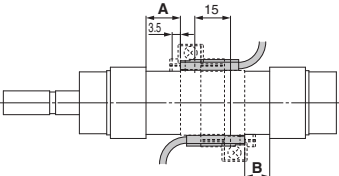
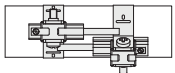
Auto switch model Bore size (mm)	D-A9□V D-M9□V D-M9□WV D-M9□AV		D-B5□ D-B64 D-B59W D-G5NT D-H7C		D-M9□ D-M9□W D-M9□A D-A9□ D-C7□ D-C80 D-H7□ D-H7□W D-H7NF		D-C73C D-C80C		D-A3□A D-G39A D-K39A		D-A44A	
	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs		
20	23.5	25.5	22.5	25	60	69.5						
25	26	28	25	27.5	62.5	72						
32	29.5	31.5	28.5	31	66	75.5						
40	33.5	35.5	32.5	35	70	79.5						

## Minimum Auto Switch Mounting Stroke

Auto switch model	n: No. of auto switch (mm)				
	1 pc.	No. of auto switch mounted		n pcs.	
		2 pcs.		Different surfaces	Same surface
D-M9□	5	20	55	20 + 35 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	55 + 35 (n-2) (n=2, 3, 4, 5...)
D-M9□W	10	20	55	20 + 35 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	55 + 35 (n-2) (n=2, 3, 4, 5...)
D-M9□A	10	25	60	25 + 35 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	60 + 35 (n-2) (n=2, 3, 4, 5...)
D-A9□	5	15	50	15 + 35 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	50 + 35 (n-2) (n=2, 3, 4, 5...)
D-M9□V	5	20	35	20 + 35 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	35 + 35 (n-2) (n=2, 3, 4, 5...)
D-A9□V	5	15	25	15 + 35 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	25 + 35 (n-2) (n=2, 3, 4, 5...)
D-M9□WV D-M9□AV	10	20	35	20 + 35 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	35 + 35 (n-2) (n=2, 3, 4, 5...)
D-C7□ D-C80	10	15	50	15 + 45 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	50 + 45 (n-2) (n=2, 3, 4, 5...)
D-H7□ D-H7□W D-H7NF	10	15	60	15 + 45 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	60 + 45 (n-2) (n=2, 3, 4, 5...)
D-C73C D-C80C D-H7C	10	15	65	15 + 50 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	65 + 50 (n-2) (n=2, 3, 4, 5...)
D-B5□/B64 D-G5NT	10	15	75	15 + 50 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	75 + 55 (n-2) (n=2, 3, 4, 5...)
D-B59W	15	20	75	20 + 50 $\frac{(n-2)}{2}$ (n=2, 4, 6...) <small>Note 3)</small>	75 + 55 (n-2) (n=2, 3, 4, 5...)
D-A3□A/G39A D-K39A/A44A	10	35	100	35 + 30 (n-2) (n=2, 3, 4, 5...)	100 + 100 (n-2) (n=2, 3, 4, 5...)

Note 3) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation.

Note 1) Auto switch mounting

Auto switch model	With 2 auto switches	
	Different surfaces	Same surface
	 <p>Correct auto switch mounting position is 3.5 mm from the back face of the switch holder.</p>	 <p>The auto switch is mounted by slightly displacing it in a direction (cylinder tube circumferential exterior) so that the auto switch and lead wire do not interfere with each other.</p>
D-M9□ D-M9□W	Less than 20 stroke <small>Note 2)</small>	Less than 55 stroke <small>Note 2)</small>
D-M9□A	Less than 25 stroke <small>Note 2)</small>	Less than 60 stroke <small>Note 2)</small>
D-A9□	—	Less than 50 stroke <small>Note 2)</small>

Note 2) Minimum stroke for auto switch mounting in styles other than those in Note 1.

## Operating Range

Auto switch model	(mm)			
	20	25	32	40
D-A9□(V)	6	6	6	6
D-M9□(V) D-M9□W(V) D-M9□A(V)	3.5	3	3.5	3
D-C7□/C80 D-C73C/C80C	7	8	8	8
D-B5□/B64 D-A3□A/A44A	8	8	9	9

Auto switch model	(mm)			
	20	25	32	40
D-B59W	12	12	13	13
D-H7□/H7□W D-G5NT/H7NF	4	4	4.5	5
D-H7C	7	8.5	9	10
D-G39A/K39A	8	9	9	9

\* Since this is a guideline including hysteresis, not meant to be guaranteed. (Assuming approximately ±30% dispersion)  
There may be the case it will vary substantially depending on an ambient environment.

Note) D-A9□ and D-A9□V cannot be mounted on ø50.

# Series CM2Y

## Auto Switch Mounting 3

### Auto Switch Mounting Bracket Part No.

Auto switch model	Bore size (mm)			
	20	25	32	40
D-M9□ (V) D-M9□W (V) D-A9□ (V)	Note 1 BM5-020	Note 1 BM5-025	Note 1 BM5-032	Note 1 BM5-040
D-M9□A (V)	Note 2 BM5-020S	Note 2 BM5-025S	Note 2 BM5-032S	Note 2 BM5-040S
D-C7□/C80 D-C73C/C80C D-H7□ D-H7□W D-H7NF	BM2-020A	BM2-025A	BM2-032A	BM2-040A
D-B5□/B64 D-B59W D-G5NT	BA2-020	BA2-025	BA2-032	BA2-040
D-A3□A/A44A D-G39A/K39A	BM3-020	BM3-025	BM3-032	BM3-040

Note 1) Set part number which includes the auto switch mounting band (BM2-□□□A) and the holder kit (BJ5-1/Switch bracket: Transparent).

Since the switch bracket (made from nylon) is affected in an environment where alcohol, chloroform, methylamines, hydrochloric acid or sulfuric acid is splashed over, so it cannot be used. Please consult SMC regarding other chemicals.

Note 2) Set part number which includes the auto switch mounting band (BM2-□□□AS) and the holder kit (BJ4-1/Switch bracket: White).

Note 3) For the D-M9□A (V) type auto switch, do not install the switch bracket on the indicator light.

#### [Stainless Steel Mounting Screw Kit]

The following set of stainless steel mounting screws is available. Use them in accordance with the operating environment.

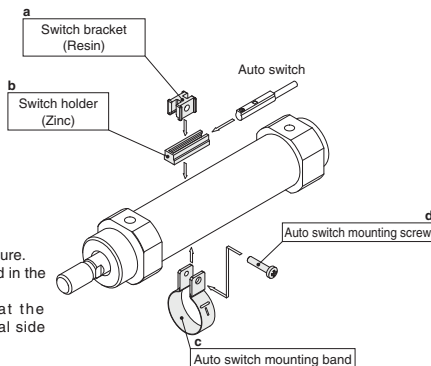
(Since auto switch brackets are not included, order them separately.)

BBA4: For D-C7/C8/H7 types

Note 4) Refer to page 1990 for the details of BBA4 screws.

The above stainless steel screws are used when a cylinder is shipped with D-H7BA type auto switches.

When only a switch is shipped independently, BBA4 screws are attached.



①BJ□-1: A set of a and b in the figure.

②BM2-□□□A (S): A set of c and d in the figure.

Band (c) is mounted so that the projected part is on the internal side (contact side with the tube).

BJ4-1 (Switch bracket: White)

BJ5-1 (Switch bracket: Transparent)

#### Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted.

For detailed specifications, refer to pages 1893 to 2007.

Auto switch type	Model	Electrical entry (Direction)	Features
Solid state	D-H7A1, H7A2, H7B	Grommet (In-line)	—
	D-H7NW, H7PW, H7BW		Diagnostic indication (2-color indication)
	D-H7BA		Water resistant (2-color indication)
	D-G5NT		With timer
	D-B53, C73, C76		—
Reed	D-C80		Without indicator light

\* With pre-wired connector is available for solid state auto switches. For details, refer to pages 1960 and 1961.

\* Normally closed (NC = b contact), solid state auto switches (D-F9G, F9H type) are also available. For details, refer to page 1911.

\* Wide range detection type, solid state auto switches (D-GNB type) are also available. Refer to page 1953 for details.