

# Air Cylinder

# Series CM2

ø20, ø25, ø32, ø40

## Longer life, over 1.5 times longer:

The cylinder's mounting and the machining accuracy of the parts have been improved. Furthermore, the shapes and the materials of the seals have been improved to enhance their wear resistance. As a result, the cylinder's life has been dramatically increased to 1.5 times that of Series CM.

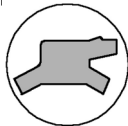
## Compact and light weight:

The tube is made of stainless steel and the cover and the piston are made of aluminum. Through a compact design, it weighs 30 to 40% less than Series CM. The lateral width of the cover has been reduced approximately 10%, requiring less installation space.



## Excellent dust resistance:

A special shaped rod seal with a composite formed dust lip has been adopted. It prevents the intrusion of external dust, enabling the cylinder to be operated in unfavorable environments containing large amounts of cutting chips.



## Reduced piston rod deflection:

The clearance between the bushing and the piston rod, and between the tube and the wear ring have been decreased to achieve higher accuracy. Thus, the deflection of the piston rod has been decreased to 1/2 of Series CM.

## A tube that is resistant against external impacts:

To prevent deformation or damage caused by external impacts, a stainless tube with a thicker wall has been adopted to increase its strength. Furthermore, the strength of the support bracket has been increased.

## Easy installation:

Because the rod cover and the head cover have wide surfaces, a wrench can be placed over the cover during installation, thus facilitating installation.

## Improved installation accuracy:

The cylinder body and the mounting support bracket have been made with an even higher level of accuracy. Improving the installation accuracy simplifies the installation work and prolongs the life of the cylinder.

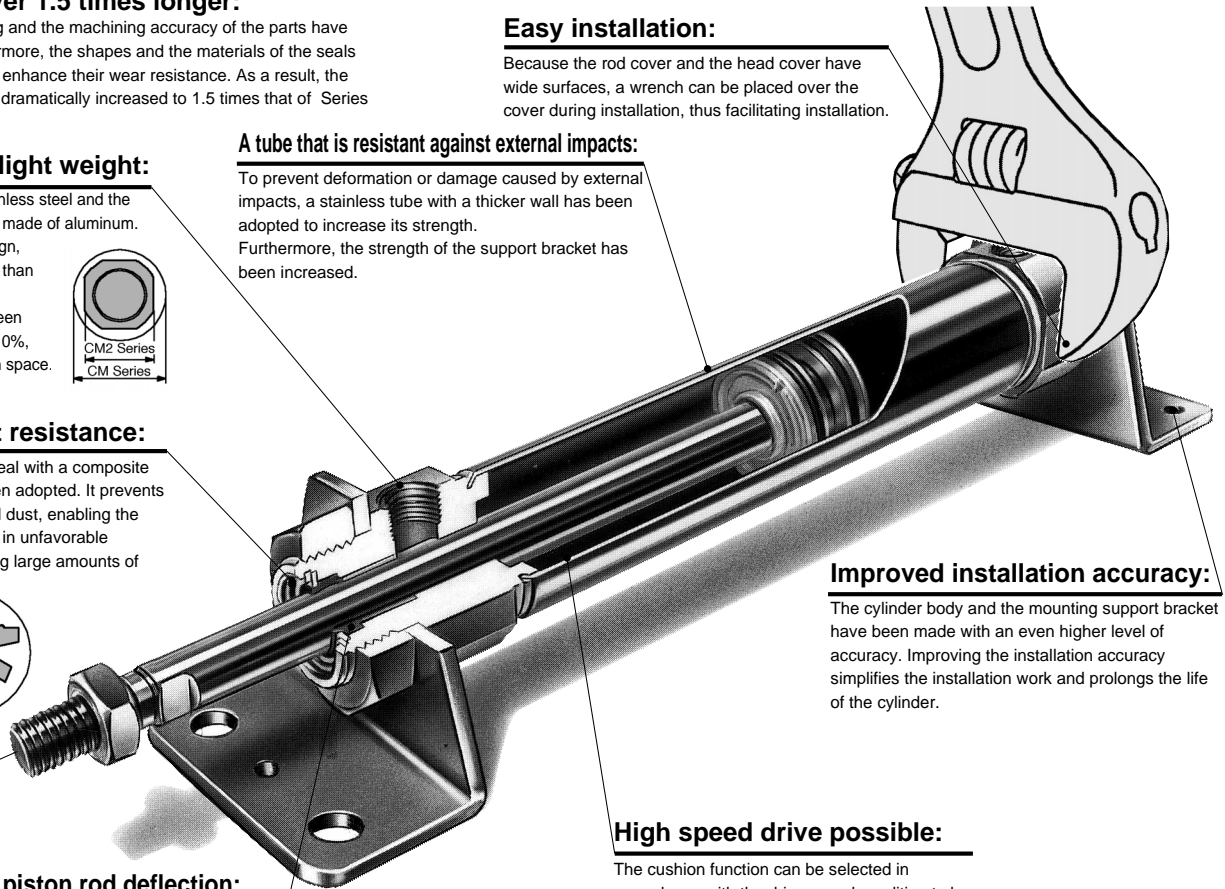
## High speed drive possible:

The cushion function can be selected in accordance with the drive speed condition to be used. Therefore, it can support a high-speed drive.

- Rubber bumper ..... 50 to 750mm/s (Standard equipment)

## Replaceable rod seal:







The rod seal, which is the first to wear out in a cylinder, can be replaced. This extends the life of the cylinder, and is economical. The seal can be replaced with the cylinder mounting, thus requiring less manpower.



# Air Cylinder Series CM2

ø20, ø25, ø32, ø40

## Variations

Series	Action	Rod	Cushion	Basic	Variation					Bore size (mm)	Page
					With One-touch fitting	Rod boot	Air hydro	Clean series	Copper free		
<b>Standard Series CM2</b> 	Double acting	Single rod	Rubber	●	●	●	●	●	20 25 32 40	1.4-3	
		Air	●	●	●	●	●				
	Double rod	Rubber	●	●	●	●	●	●	1.4-22		
<b>Non-rotating rod Series CM2K</b> 	Double acting	Single rod	Rubber	●	●	●	●	●	20 25 32 40	1.4-50	
		Air	●	●	●	●	●				
	Double rod	Rubber	●	●	●	●	●	●	1.4-56		
<b>Direct mount style Series CM2R</b> 	Double acting	Single rod	Rubber	●	●	●	●	●	20 25 32 40	1.4-66	
			Air	●	●	●	●	●			
	Single acting	Single rod (Spring return/ Spring extend)	Rubber	●	●	●	●	●	1.4-61		
<b>Direct mount/Non-rotating rod Series CM2RK</b> 	Double acting	Single rod	Rubber	●	●	●	●	●	20 25 32 40	1.4-73	
			Air	●	●	●	●	●			
<b>Low friction Series CM2Q</b> 	Double acting	Single rod	Rubber	●	●	●	●	●	20 25 32 40	1.4-78	
			Air	●	●	●	●	●			
<b>Centralized piping Series CM2□□P</b> 	Double acting	Single rod	Rubber	●	●	●	●	●	20 25 32 40	1.4-83	
			Air	●	●	●	●	●			

CJ1

CJP

CJ2

**CM2**

C85

CG1

MB

C95

CA1

CS1

## Applicable auto switch

Auto switch model	Band mounting
<b>Reed switch</b>	D-C7/C8, D-C73C/C80C, D-B5/B6 D-B59W, D-A3□A, D-A44A
<b>Solid state switch</b>	D-H7□, D-H7□W, D-H7□F D-H7BAL, D-G5NTL, D-G39A/K39A

## Made to Order

Refer to p.5.4-1 for made to order specifications for series CM2.

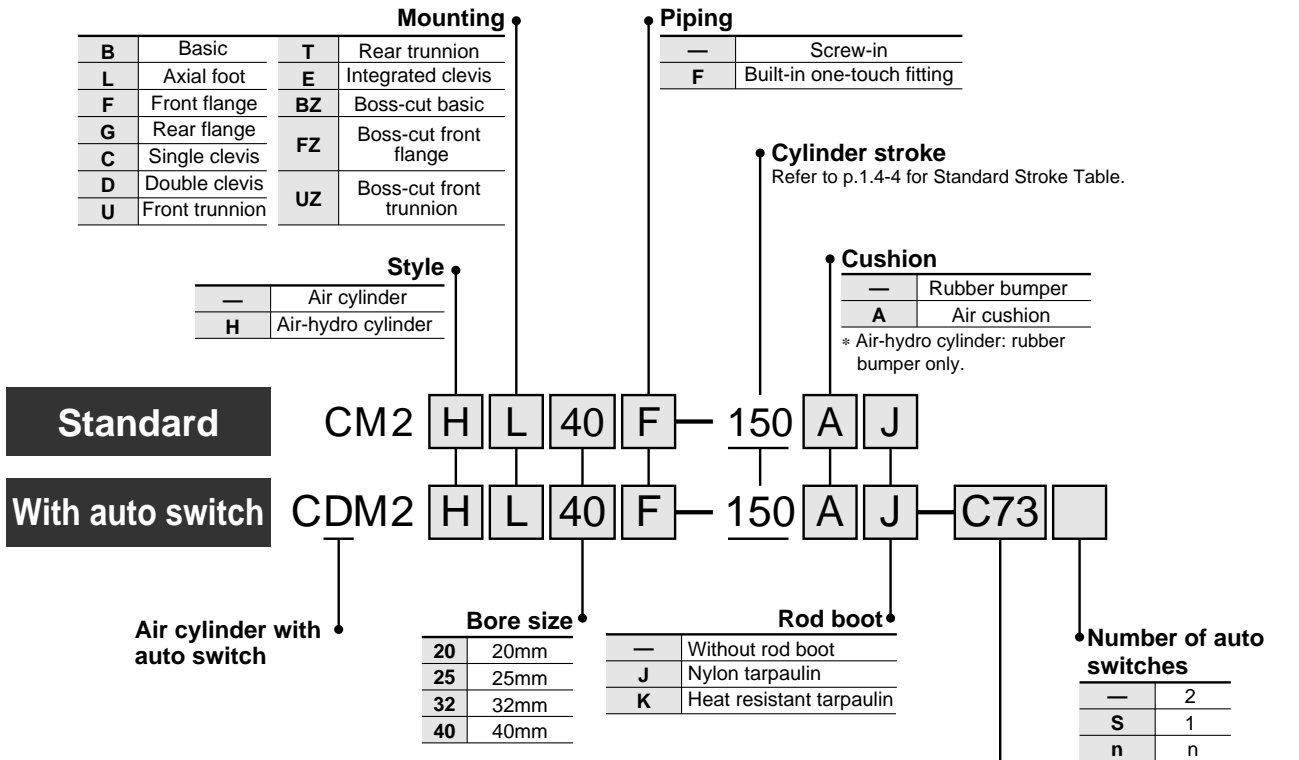
# Standard: Double Acting Single Rod

# Series CM2



ø20, ø25, ø32, ø40

## How to Order



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

Style	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage		Auto switch model	Lead wire* (m)				Applicable load			
					DC	AC		0.5 (—)	3 (L)	5 (Z)	None (N)				
Reed switch	—	Grommet	Yes	3 wire (NPN)	24V	5V	—	<b>C76</b>	●	●	—	—	IC		
						12V	100V	<b>C73</b>	●	●	●	—	—	Relay PLC	
						5V, 12V	100V or less	<b>C80</b>	●	●	—	—	—	IC	
						12V	—	<b>B53</b>	●	●	—	—	—	PLC	
						12V	100V, 200V	<b>B54</b>	●	●	●	—	—	—	
						12V	200V or less	<b>B64</b>	●	●	—	—	—	Relay PLC	
						12V	—	<b>C73C</b>	●	●	●	●	—	—	
						5V, 12V	24V or less	<b>C80C</b>	●	●	●	●	—	IC	
						12V	—	<b>A33A</b>	—	—	—	●	—	—	PLC
						12V	100V, 200V	<b>A34A</b>	—	—	—	—	●	—	—
Solid state switch	—	Grommet	Yes	3 wire(NPN)	24V	5V, 12V	—	<b>H7A1</b>	●	●	○	—	IC		
						12V	—	<b>H7A2</b>	●	●	○	—	—		
						12V	—	<b>H7B</b>	●	●	○	—	—		
						12V	—	<b>H7C</b>	●	●	●	●	—	—	
						5V, 12V	—	<b>G39A</b>	—	—	—	●	—	IC	
						12V	—	<b>K39A</b>	—	—	—	●	—	—	
						5V, 12V	—	<b>H7NW</b>	●	●	○	—	—	Relay PLC	
						12V	—	<b>H7PW</b>	●	●	○	—	—	—	
						12V	—	<b>H7BW</b>	●	●	○	—	—	—	
						12V	—	<b>H7BA</b>	—	●	○	—	—	—	
Diagnostic indicator (2 color)	Grommet	Yes	3 wire(NPN)	24V	5V, 12V	—	<b>G5NT</b>	—	●	○	—	—			
					12V	—	<b>H7NF</b>	●	●	○	—	IC			
					12V	—	<b>H7LF</b>	●	●	○	—	—			
					12V	—	<b>H7LF</b>	●	●	○	—	—			
Water resistant (2 color)	Grommet	Yes	3 wire(NPN)	24V	5V, 12V	—	—	—	—	—	—	—			
													With timer	3 wire(NPN)	24V
Diagnostic output (2 color)	Grommet	Yes	4 wire (NPN)	24V	5V, 12V	—	—	—	—	—	—				
												Latch with diagnostic output (2 color)	Grommet	Yes	4 wire (NPN)

Auto switch	
—	Without auto switch (Built-in magnet)

\* Refer to the left table for selecting applicable auto switches.



\* Lead wire length

0.5m : —

3m : L

5m : Z

None: N

e.g.) C80CZ, C80CN

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

\* Do not indicate symbol "N" for no lead wire on "D-A3□A", "A44A", "G39A" and "K39A".

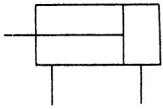
# Standard: Double Acting Single Rod *Series CM2*



Integrated clevis style

## JIS symbol

Double acting/Single rod



**Made to Order**

Refer to p.5.4-1 for made to order specifications for series CM2.

## Specifications

Bore size (mm)	20	25	32	40
Style	Air cylinder			
Action	Double acting/Single rod			
Fluid	Air			
Proof pressure	1.5MPa			
Max. operating pressure	1.0MPa			
Min. operating pressure	0.05MPa			
Ambient and fluid temperature	Without auto switch: -10 to +70°C (No freezing) With auto switch: -10 to +60°C (No freezing)			
Lubrication	Non-lube			
Thread tolerance	JIS class 2			
Stroke tolerance	+1.4 0			
Piston speed	50 to 750mm/s			
Cushion	Rubber bumper			
Allowable kinetic energy	0.27J	0.4J	0.65J	1.2J

**CJ1**

**CJP**

**CJ2**

**CM2**

**C85**

**CG1**

**MB**

**C95**

**CA1**

**CS1**

## Standard Stroke

Bore size (mm)	Standard stroke(mm) (1)	Long stroke (2) (mm)	Max. stroke (mm)
20	25, 50, 75, 100, 125, 150 200, 250, 300	400	1000
25		450	1500
32		450	2000
40		500	2000



Note 1) Other intermediate strokes can be manufactured upon receipt of order.

Note 2) Long stroke applies to the axial foot style and the front flange style. If other mounting brackets are used or the length exceeds the long stroke limit, the stroke should be selected based on the stroke selection table. (Refer to Data on p.0-21.)

## Minimum Strokes for Auto Switches Mounting

(mm)

Auto switch model	Number of switches				1
	2		n		
	On different surfaces	On the same surface	On different surfaces	On the same surface	
<b>D-C7</b> <b>D-C8</b>	15	50	15+45 ( $\frac{n-2}{2}$ ) (n=2, 4, 6...)	50+45(n-2)	10
<b>D-H7</b> □ <b>D-H7</b> □W <b>D-H7BAL</b> <b>D-H7NF</b>	15	60		60+45(n-2)	10
<b>D-C73C</b> <b>D-C80C</b> <b>D-H7C</b>	15	65	15+50 ( $\frac{n-2}{2}$ ) (n=2, 4, 6...)	65+50(n-2)	10
<b>D-H7LF</b>	20	65	20+50 ( $\frac{n-2}{2}$ ) (n=2, 4, 6...)		10
<b>D-B5</b> <b>D-B6</b>	15	75	15+50 ( $\frac{n-2}{2}$ ) (n=2, 4, 6...)	75+55(n-2)	10
<b>D-B59W</b>	20	75	20+50 ( $\frac{n-2}{2}$ ) (n=2, 4, 6...)		15
<b>D-A3</b> □A <b>D-G39A</b> <b>D-K39A</b> <b>D-A44A</b>	35	100	35+30 (n-2)	100+100(n-2)	10

# Series CM2

## Boss-cut Style

Boss for the head cover bracket is eliminated and the total length of cylinder is shortened.



### Comparison of total cylinder length with standard style (mm)

ø20	ø25	ø32	ø40
▲13	▲13	▲13	▲16

### Mounting

- Boss-cut basic (BZ)
- Boss-cut flange (FZ)
- Boss-cut trunnion (UZ)

## Rod Boot Materials

Symbol	Material	Max. ambient temp.
J	Nylon tarpaulin	70°C
K	Neoprene cloth	110°C*

\* Maximum ambient temperature for the rod boot only.

## Mounting Bracket Part No.

Bore size mm	20	25	32	40
Axial foot*	CM-L020B	CM-L032B	CM-L040B	
Flange	CM-F020B	CM-F032B	CM-F040B	
Single clevis	CM-C020B	CM-C032B	CM-C040B	
Double clevis (with pins)**	CM-D020B	CM-D032B	CM-D040B	
Trunnion (with nuts)	CM-T020B	CM-T032B	CM-T040B	

\* Two foot brackets and a mounting nut are attached.

\*\* Clevis pins and snap rings (cotter pins for bore size 40) are attached.

## Auto Switch Mounting Bracket Part No.

Auto switch model	Bore size (mm)			
	20	25	32	40
D-C7/C8 D-H7□	BM2-020	BM2-025	BM2-032	BM2-040
D-B5/B6 D-G5NTL	BA2-020	BA2-025	BA2-032	BA2-040
D-A3□A/A44A D-G39A/K39A	BM3-020	BM3-025	BM3-032	BM3-040



Note) A set of following stainless steel mounting screws is attached.  
(A switch mounting band is not attached. Please order the band separately.)

BBA3: D-B5/B6/G5  
BBA4: D-C7/C8/H7

· "D-H7BAL" switch is set on the cylinder with the screws above when shipped.

When a switch only is shipped, "BBA4" screws are attached



## Precautions

Be sure to read before handling. Refer to p.0-39 to 0-43 for Safety Instructions and common precautions.

### Precautions on Handling

#### Warning

- ① Do not rotate the cover.
  - When installing the cylinder or screwing a pipe fitting into the port, the coupling portion of the cover could break if the cover is rotated.

#### Caution

- ① Be careful with the snap ring that could fly out.
  - When replacing the rod seal, be careful with the removal of the snap ring, as the snap ring could fly out.
- ② Do not touch the cylinder during operation.
  - If the cylinder is operating at a high frequency, be aware that the cylinder tube surface could become very hot, creating the risk of burns.

# Standard: Double Acting Single Rod *Series CM2*

## Mounting Accessories

Mounting	Standard			Option			
	Mounting nut	Rod end nut	Clevis pin	Single knuckle joint	Double knuckle joint (3)	Pivot bracket	Rod boot
Basic	● (1 pc.)	●	—	●	●	—	●
Axial foot	● (2)	●	—	●	●	—	●
Front flange	● (1)	●	—	●	●	—	●
Rear flange	● (1)	●	—	●	●	—	●
Integrated clevis	—(1)	●	—	●	●	●	●
Single clevis	—(1)	●	—	●	●	—	●
Double clevis (3)	—(1)	●	●	●	●	—	●
Front trunnion	● (1) (2)	●	—	●	●	—	●
Rear trunnion	● (1) (2)	●	—	●	●	—	●
Boss-cut basic	● (1)	●	—	●	●	—	●
Boss-cut flange	● (1)	●	—	●	●	—	●
Boss-cut trunnion	● (1)	●	—	●	●	—	●
Note					With pins	With pins	



- Note 1) Mounting nuts are not attached for the integrated clevis, the single clevis, and the double clevis styles.
- Note 2) Trunnion nuts are attached for the front trunnion and the rear trunnion styles.
- Note 3) Pins and snap rings (cotter pins for bore size 40) are attached for double clevis and the double knuckle joint.

CJ1

CJP

CJ2

**CM2**

C85

CG1

MB

C95

CA1

CS1

## Weight

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

Calculation example: CM2L32-100

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

## Water Resistant

CM2 **Mounting** **Bore size** **R** **Stroke** **-XC6**

● Material of piston rod and rod end nut

—	Carbon steel
-XC6	Stainless steel

● Water resistant

R	Seal: NBR (Nitrile rubber)
V	Seal: FKM (Fluorine rubber)

Ideal for use in a machine tool environment exposed to coolant mist. Also suited for use in areas in which water splashes, such as food processing equipment or car washers.

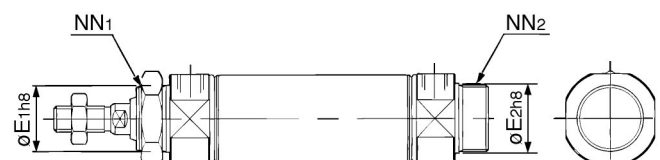


## Specifications

Action	Double acting/Single rod
Bore size	ø20, ø25, ø32, ø40
Max. operating pressure	1.0MPa
Min. operating pressure	0.05MPa
Cushion	Rubber bumper
Piping	Screw-in
Piston speed	50 to 750mm/s

\* Auto switch can be mounted.

## Dimensions



Bore size (mm)	E1	E2 *	NN1	NN2 *
20	22 <sup>0</sup> <sub>-0.033</sub>	20 <sup>0</sup> <sub>-0.033</sub>	M22 X 1.5	M20 X 1.5

\* These dimensions and other dimensions are the same as standard style. Contact SMC for part numbers of the foot, the flange and the mounting nut for ø20.

# Series CM2

## Air-hydro

CM2H **Mounting** **Bore size** **Stroke** **Rod boot**

↓ Air-hydro style

A low hydraulic pressure cylinder used at a pressure of 1.0MPa or below. Through the concurrent use of a CC series air-hydro unit, it is possible to operate at a constant or low speeds or to effect an intermediate stop, just like a hydraulic unit, while using pneumatic equipment such as a valve.



### Specifications

Style	Air-hydro
Fluid	Turbine oil
Action	Double acting/Single rod
Bore size	ø20, ø25, ø32, ø40
Proof pressure	1.5MPa
Max. operating pressure	1.0MPa
Min. operating pressure	0.18MPa
Piston speed	15 to 300mm/s
Ambient and fluid temperature	+5 to +60°C
Thread tolerance	JIS class 2
Stroke tolerance	+1.4 0
Cushion	Rubber bumper (Standard equipment)
Mounting	Basic, Axial foot, Front flange, Rear flange, Single clevis, Double clevis, Front trunnion, Rear trunnion, Integrated clevis, Boss-cut

\* Auto switch can be mounted.

\* Dimensions are the same as the standard model.

- Construction: Refer to p.1.4-9
- Dimensions: Refer to p.1.4-10 to 1.4-18

## Built-in One-touch Fitting

CM2 **Mounting** **Bore size** **F** **Stroke**

↓ Built-in One-touch fitting

A style in which One-touch fittings are built in the cylinder. It dramatically reduces the piping labor and installation space.



- Construction: Refer to p.1.4-9
- Dimensions: Refer to p.1.4-10 to 1.4-18
- Refer to p1.4-4 for other specifications.

## With Air Cushion

CM2 **Mounting** **Bore size** **Stroke** **A** **Rod boot**

↓ With air cushion

A cushion mechanism is provided on the cover at both ends to absorb the impact that is created during high speed operations. Thus, it does not transmit vibrations to the surroundings and prolongs the life of the cylinder.



### Specifications

Action	Double acting/Single rod
Bore size	ø20, ø25, ø32, ø40
Max. operating pressure	1.0MPa
Min. operating pressure	0.05MPa
Cushion	Air cushion
Piston speed	50 to 1000mm/s
Mounting	Basic, Axial foot, Front flange, Rear flange, Single clevis, Double clevis, Front trunnion, Rear trunnion, Integrated clevis, Boss-cut

\*Auto switches can be mounted.

### Allowable Kinetic Energy

Bore size (mm)	Effective cushion length (mm)	Kinetic energy absorption
20	11.0	0.54J
25	11.0	0.78J
32	11.0	1.27J
40	11.8	2.35J

- Construction: Refer to p.1.4-9
- Dimensions: Refer to p.1.4-10 to 1.4-18
- Refer to p.1.4-4 for other specifications.

### Specifications

Action	Double acting/Single rod
Bore size	ø20, ø25, ø32, ø40
Max. operating pressure	1.0MPa
Min. operating pressure	0.05MPa
Cushion	Rubber bumper
Piping	Built-in One-touch fitting
Piston speed	50 to 750mm/s
Mounting	Basic, Axial foot, Front flange, Rear flange, Single clevis, Double clevis, Front trunnion, Rear trunnion, Integrated clevis, Boss-cut

\* Auto switches can be mounted.

### Applicable Tube O.D./I.D.

Bore size (mm)	ø20	ø25	ø32	ø40
Applicable tube (mm)	ø6/4	ø6/4	ø6/4	ø8/6
Applicable tube material	Nylon, Soft nylon, Polyurethane			

### Caution

The One-touch fitting cannot be replaced.

- The One-touch fitting is press-fit into the cover and cannot be replaced.

# Standard: Double Acting Single Rod *Series CM2*

## Clean Series

10-CM2 Mounting Bore size Stroke

Clean series

The rod portion of the actuator has a double seal construction, and a relief port is provided to discharge the exhaust air directly outside of the clean room. Thus, it can be used in a Class 100 clean room.

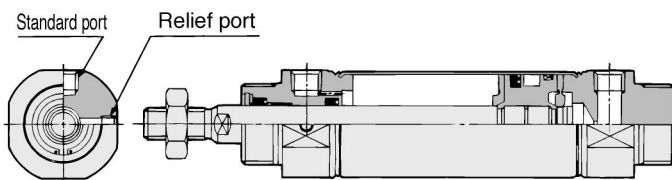


### Specifications

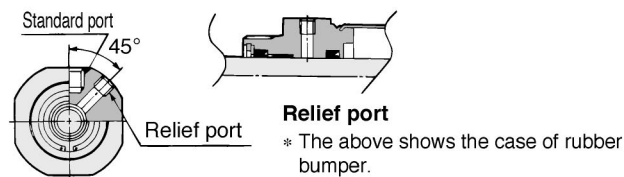
Action	Double acting/Single rod
Bore size	ø20, ø25, ø32, ø40
Max. operating pressure	1.0MPa
Min. operating pressure	0.05MPa
Cushion	Rubber bumper/Air cushion
Relief port size	M5 X 0.8
Piston speed	30 to 400mm/s
Mounting	Basic, Axial foot, Front flange, Rear flange, Boss-cut

\* Auto switches can be mounted.

### Construction



ø20, ø25



ø32, ø40

**Relief port**  
\* The above shows the case of rubber bumper.

## Copper Free

20-CM2 Mounting Bore size Stroke

Copper free

This cylinder eliminates any influences of copper ions or fluororesins on color CRTs. Copper materials have been nickel plated or replaced with non-copper materials to prevent the generation of copper ions.

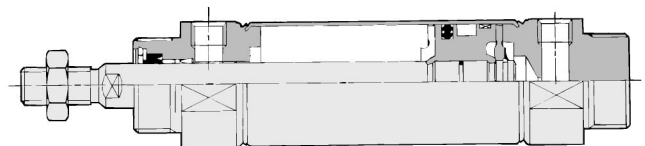


### Specifications

Action	Double acting/Single rod	
Bore size	ø20, ø25, ø32, ø40	
Max. operating pressure	1.0MPa	
Min. operating pressure	0.05MPa	
Cushion	Rubber bumper	Air cushion
Piston speed	50 to 750mm/s	50 to 1000mm/s
Mounting	Basic, Axial foot, Front flange, Rear flange, Single clevis, Double clevis, Front trunnion, Rear trunnion, Integrated clevis, Boss-cut	

\* Auto switches can be mounted.

### Construction



CJ1

CJP

CJ2

CM2

C85

CG1

MB

C95

CA1

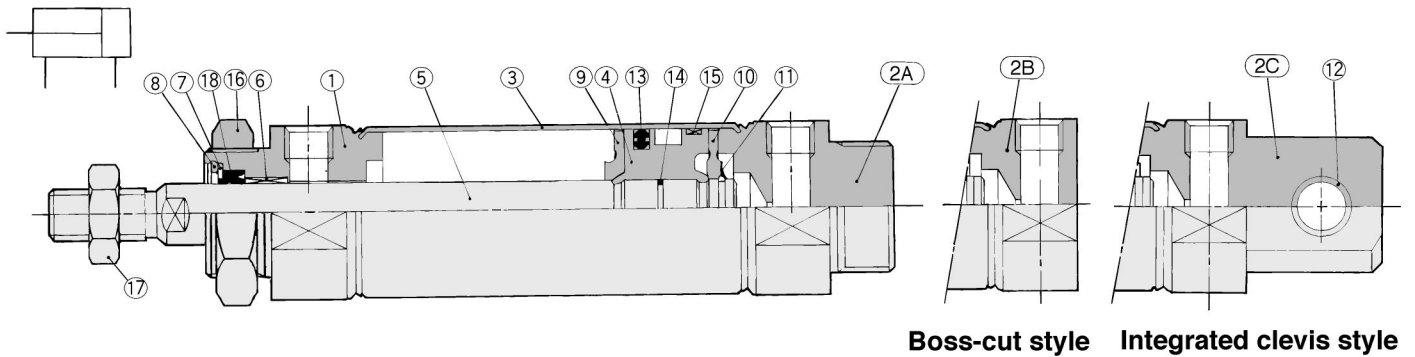
CS1



# Series CM2

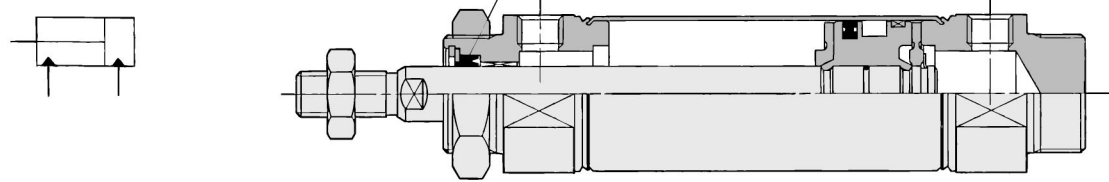
## Construction

### Rubber bumper

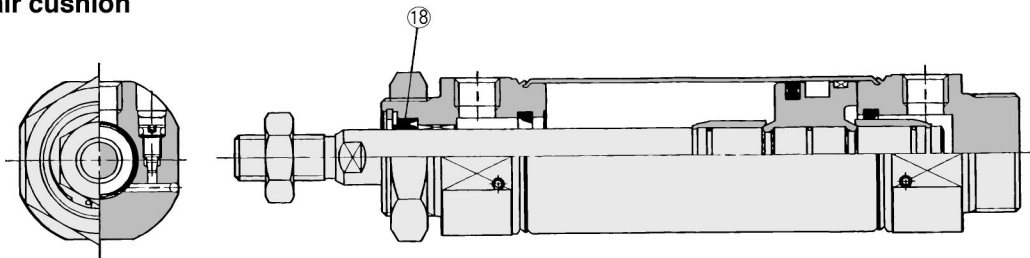


2A Boss-cut style 2B Integrated clevis style 2C Integrated clevis style

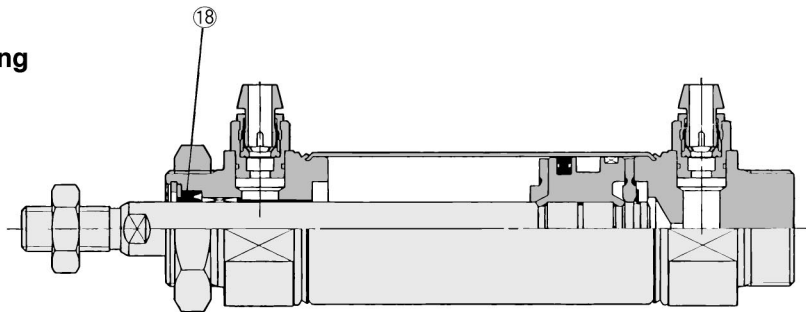
### Air-hydro



### With air cushion



### Built-in One-touch fitting



### Component Parts

No.	Description	Material	Note
①	Rod cover	Aluminum alloy	White anodized
②A	Head cover A	Aluminum alloy	White anodized (Standard style)
②B	Head cover B	Aluminum alloy	White anodized (boss-cut style)
②C	Head cover C	Aluminum alloy	White anodized (Integrated clevis style)
③	Cylinder tube	Stainless steel	
④	Piston	Aluminum alloy	Chromated
⑤	Piston rod	Carbon steel	Hard chrome plated
⑥	Bushing	Oil impregnated sintered alloy	
⑦	Seal retainer	Rolled steel	Nickel plated
⑧	Snap ring	Carbon steel	Nickel plated
⑨	Bumper A	Urethane	
⑩	Bumper B	Urethane	
⑪	Snap ring	Stainless	

No.	Description	Material	Note
⑫	Bushing for clevis	Oil impregnated sintered alloy	
⑬	Piston seal	NBR	
⑭	Piston gasket	NBR	
⑮	Wearing	Resin	
⑯	Mounting nut	Carbon steel	Nickel plated
⑰	Rod end nut	Carbon steel	Nickel plated

### Replacement Parts

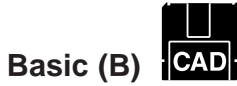
#### ●With rubber bumper/With air cushion/Built-in One-touch fitting

No.	Description	Material	Bore size (mm)/Part No.			
			20	25	32	40
⑱	Rod seal	NBR	PDU-8Z	PDU-10Z	PDU-12LZ	PDU-14LZ

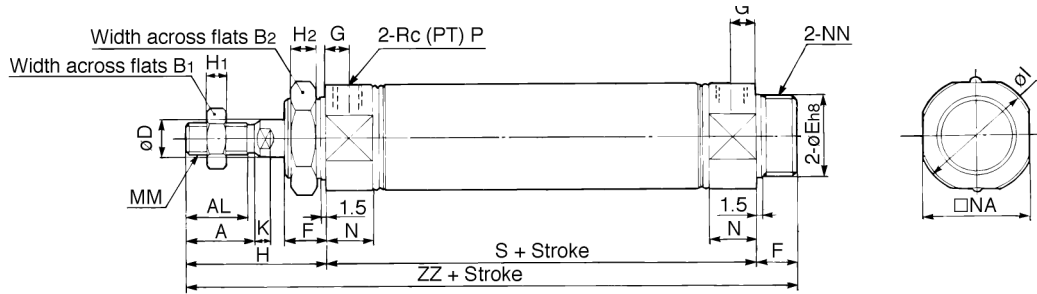
#### ●Air-hydro style

⑱	Rod seal	NBR	HDU-8	HDU-10	HDU-12L	HDU-14
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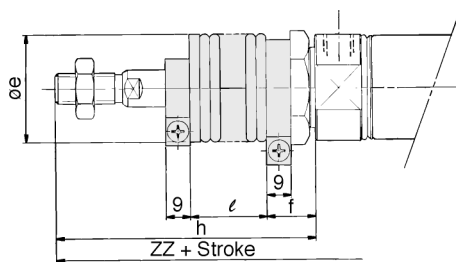
# Standard: Double Acting Single Rod *Series CM2*



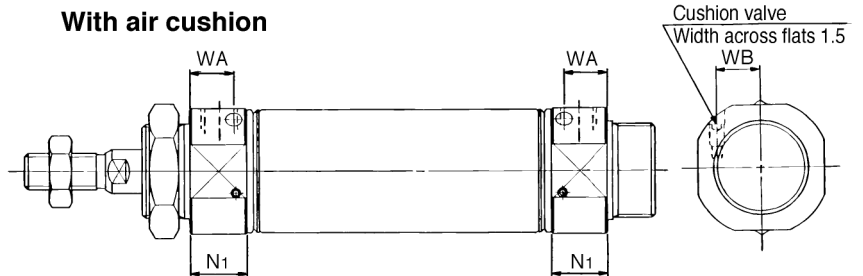
CM2B



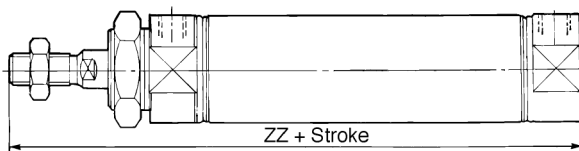
### With rod boot



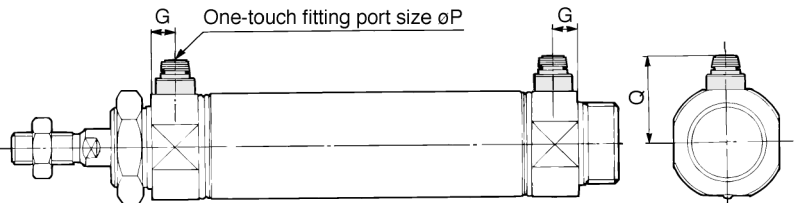
### With air cushion



### Boss-cut



### Built-in One-touch fitting



- CM2
- CJ1
- CJP
- CJ2
- C85
- CG1
- MB
- C95
- CA1
- CS1

Bore	Stroke range	A	AL	B1	B2	D	E	F	G	H	H1	H2	I	K	MM	N	NA	NN	P	S	ZZ
20	1 to 300	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	8	28	5	M8 X 1.25	15	24	M20 X 1.5	1/8	62	116
25	1 to 300	22	19.5	17	32	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	8	33.5	5.5	M10 X 1.25	15	30	M26 X 1.5	1/8	62	120
32	1 to 300	22	19.5	17	32	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	8	37.5	5.5	M10 X 1.25	15	34.5	M26 X 1.5	1/8	64	122
40	1 to 300	24	21	22	41	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	10	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4	88	154

### With rod boot

Symbol Stroke	e	f	h					l					ZZ				
			1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	36	17	68	81	93	106	131	12.5	25	37.5	50	75	143	156	168	181	206
25	36	17	72	85	97	110	135	12.5	25	37.5	50	75	147	160	172	185	210
32	36	17	72	85	97	110	135	12.5	25	37.5	50	75	149	162	174	187	212
40	46	19	77	90	102	115	140	12.5	25	37.5	50	75	181	194	206	219	244

### Boss-cut

Bore	ZZ (mm)					
	Without gaiter	With gaiter				
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	103	130	143	155	168	193
25	107	134	147	159	172	197
32	109	136	149	161	174	199
40	138	165	178	190	203	228

### With air cushion

Bore	N <sub>1</sub>	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

### Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5

Basic Built-in One-touch fitting

- CM2B20.....SCM220A, #1 SCM220A, #1, #19
- CM2B25.....SCM225A, #1 SCM225A, #1, #19
- CM2B32.....SCM232A, #1 SCM232A, #1, #19
- CM2B40.....SCM240A, #1 SCM240A, #1, #19

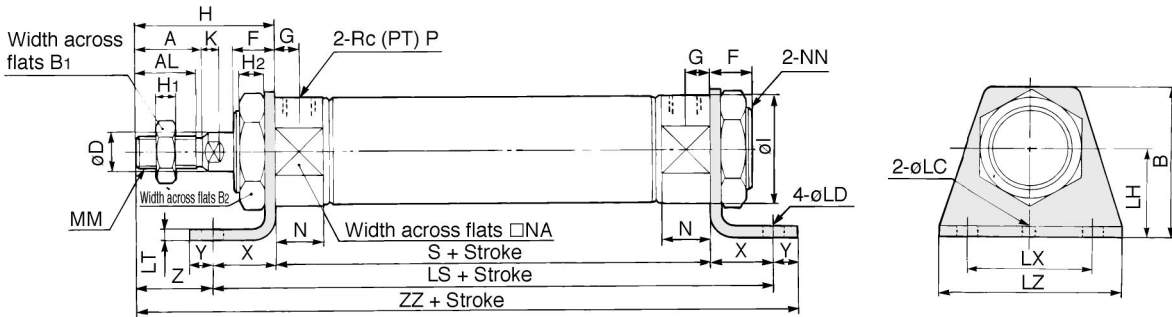
\* The data shows auto switch equipped styles.  
Please delete the unnecessary part.

# Series CM2

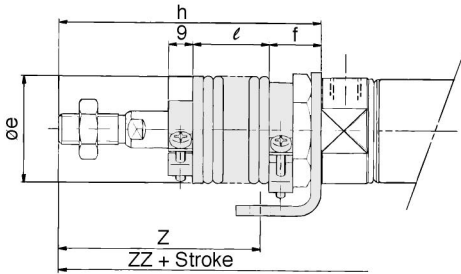
## Axial Foot (L)



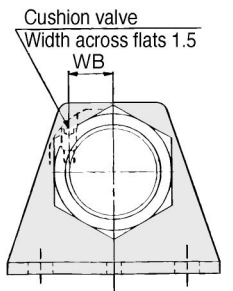
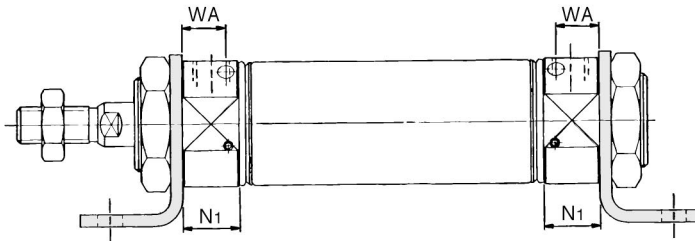
CM2L



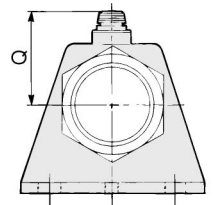
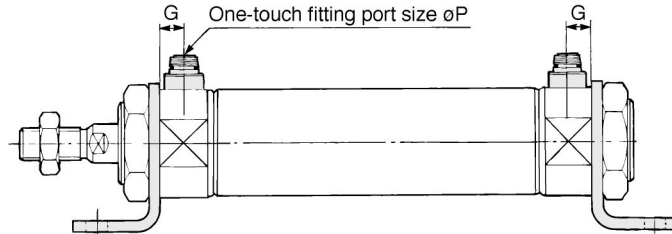
### With rod boot



### With air cushion



### Built-in One-touch fitting



Bore	Stroke range	A	AL	B	B1	B2	D	F	G	H	H1	H2	I	K	LC	LD	LH	LS	LT	LX	LZ	MM	N	NA	NN	P	S	X	Y	Z	ZZ
20	1to400	18	15.5	40	13	26	8	13	8	41	5	8	28	5	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	1to450	22	19.5	47	17	32	10	13	8	45	6	8	33.5	5.5	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	1to450	22	19.5	47	17	32	12	13	8	45	6	8	37.5	5.5	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	1to500	24	21	54	22	41	14	16	11	50	8	10	46.5	7	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

### With rod boot

Symbol Stroke	Bore	e	f	h							l							Z						
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	36	18.2	68	81	93	106	131	156	—	12.5	25	37.5	50	75	100	—	48	61	73	86	111	136	—	
25	36	18.2	72	85	97	110	135	160	185	12.5	25	37.5	50	75	100	125	52	65	77	90	115	140	165	
32	36	18.2	72	85	97	110	135	160	185	12.5	25	37.5	50	75	100	125	52	65	77	90	115	140	165	
40	46	20.2	77	90	102	115	140	165	190	12.5	25	37.5	50	75	100	125	54	67	79	92	117	142	167	

### With rod boot

Symbol Stroke	ZZ						
Bore	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	158	171	183	196	221	246	—
25	162	175	187	200	225	250	275
32	164	177	189	202	227	252	277
40	198	211	223	236	261	286	311

### With air cushion

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

### Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5



CM2L20.....SCM220A, #3 SCM220A, #3, #19  
 CM2L25.....SCM225A, #3 SCM225A, #3, #19  
 CM2L32.....SCM232A, #3 SCM232A, #3, #19  
 CM2L40.....SCM240A, #3 SCM240A, #3, #19

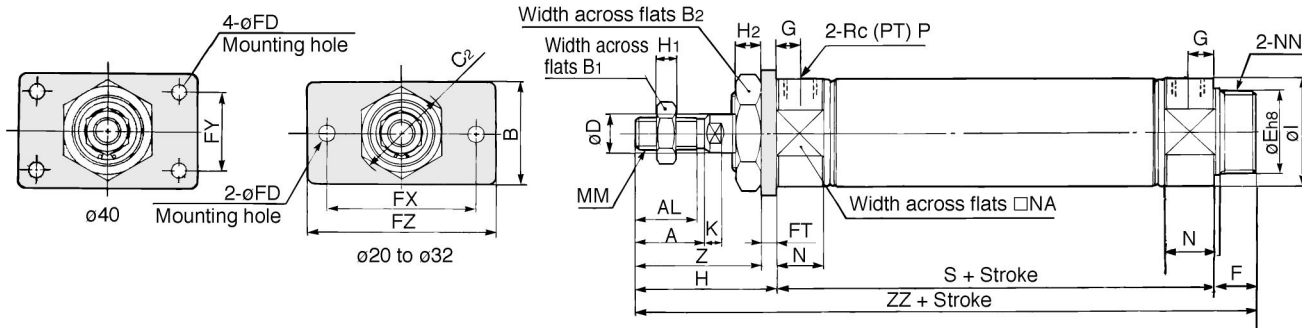
\* The data shows auto switch equipped styles.  
 Please delete the unnecessary part.

# Standard: Double Acting Single Rod *Series CM2*

## Front Flange (F)

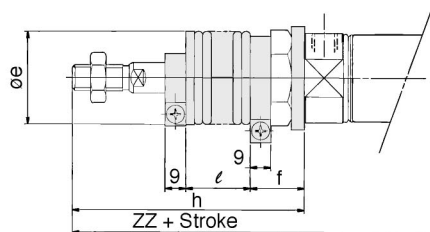


CM2F

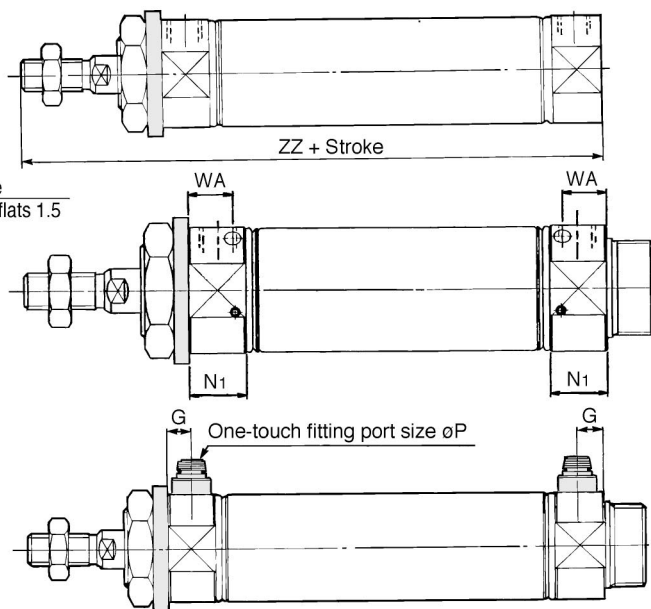


- CJ1
- CJP
- CJ2
- CM2
- C85
- CG1
- MB
- C95
- CA1
- CS1

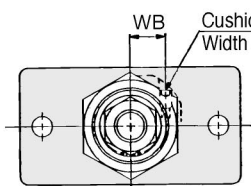
### With rod boot



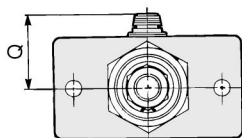
### Boss-cut



### With air cushion



### Built-in One-touch fitting



Bore	Stroke range	A	AL	B	B1	B2	C2	D	E	F	FD	FT	FX	FY	FZ	G	H	H1	H2	I	K	MM	N	NA	NN	P	S	Z	ZZ
20	1to400	18	15.5	34	13	26	30	8	20 <sup>-0.033</sup>	13	7	4	60	—	75	8	41	5	8	28	5	M8 X 1.25	15	24	M20 X 1.5	1/8	62	37	116
25	1to450	22	19.5	40	17	32	37	10	26 <sup>-0.033</sup>	13	7	4	60	—	75	8	45	6	8	33.5	5.5	M10 X 1.25	15	30	M26 X 1.5	1/8	62	41	120
32	1to450	22	19.5	40	17	32	37	12	26 <sup>-0.033</sup>	13	7	4	60	—	75	8	45	6	8	37.5	5.5	M10 X 1.25	15	34.5	M26 X 1.5	1/8	64	41	122
40	1to500	24	21	52	22	41	47.3	14	32 <sup>-0.039</sup>	16	7	5	66	36	82	11	50	8	10	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4	88	45	154

### With rod boot

Bore	Symbol Stroke	e	f	h								l								ZZ							
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500			
20		36	19	68	81	93	106	131	156	—	12.5	25	37.5	50	75	100	—	143	156	168	181	206	231	—			
25		36	19	72	85	97	110	135	160	185	12.5	25	37.5	50	75	100	125	147	160	172	185	210	235	260			
32		36	19	72	85	97	110	135	160	185	12.5	25	37.5	50	75	100	125	149	162	174	187	212	237	262			
40		46	22	77	90	102	115	140	165	190	12.5	25	37.5	50	75	100	125	181	194	206	219	244	269	294			

### Boss-cut

Bore	ZZ							
	Without gaiter	With gaiter						
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	103	130	143	155	168	193	218	—
25	107	134	147	159	172	197	222	247
32	109	136	149	161	174	199	224	249
40	138	165	178	190	203	228	253	278

### With air cushion

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

### Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5



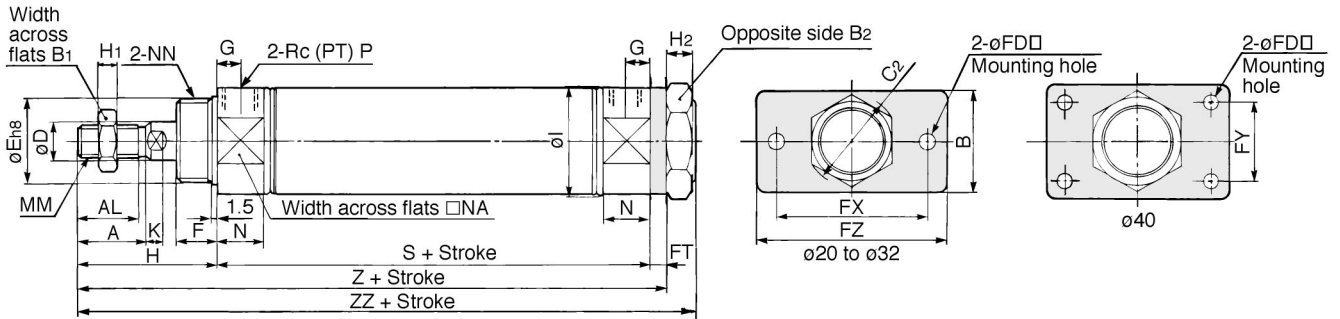
Front flange style Built-in One-touch fitting  
 CM2F20.....SCM220A, #4 SCM220A, #4, #19  
 CM2F25.....SCM225A, #4 SCM225A, #4, #19  
 CM2F32.....SCM232A, #4 SCM232A, #4, #19  
 CM2F40.....SCM240A, #4 SCM240A, #4, #19  
 \* The data shows auto switch equipped styles.  
 Please delete the unnecessary part.

# Series CM2

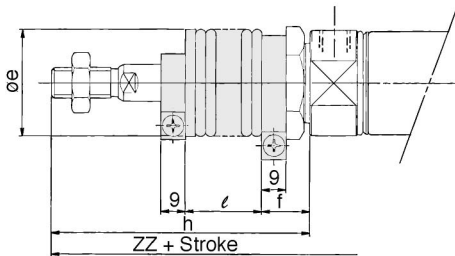
## Rear Flange (G)



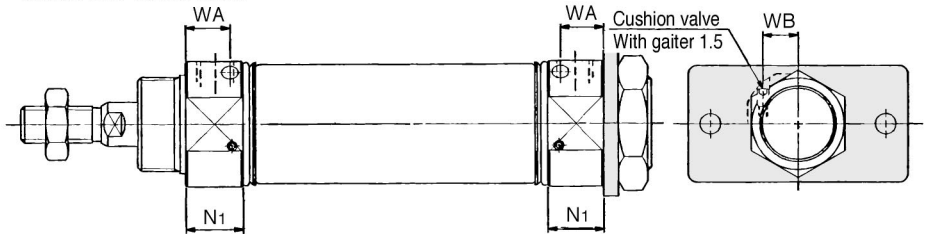
CM2G



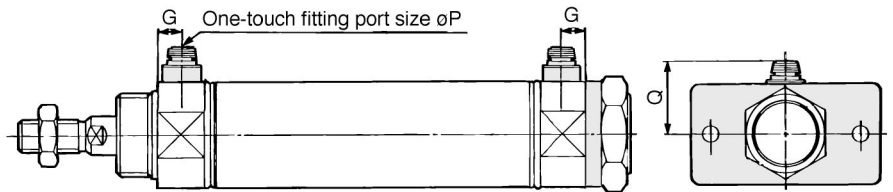
### With rod boot



### With air cushion



### Built-in One-touch fitting



Bore	Stroke range	A	AL	B	B1	B2	C2	D	E	F	FD	FT	FX	FY	FZ	G	H	H1	H2	I
20	1 to 300	18	15.5	34	13	26	30	8	20 <sup>0</sup> <sub>-0.033</sub>	13	7	4	60	—	75	8	41	5	8	28
25	1 to 300	22	19.5	40	17	32	37	10	26 <sup>0</sup> <sub>-0.033</sub>	13	7	4	60	—	75	8	45	6	8	33.5
32	1 to 300	22	19.5	40	17	32	37	12	26 <sup>0</sup> <sub>-0.033</sub>	13	7	4	60	—	75	8	45	6	8	37.5
40	1 to 300	24	21	52	22	41	47.3	14	32 <sup>0</sup> <sub>-0.039</sub>	16	7	5	66	36	82	11	50	8	10	46.5

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

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5

### With rod boot

Symbol Stroke	e	f	h					l					ZZ				
			1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	35	17	68	81	93	106	131	12.5	25	37.5	50	75	143	156	168	181	206
25	35	17	72	85	97	110	135	12.5	25	37.5	50	75	147	160	172	185	210
32	35	17	72	85	97	110	135	12.5	25	37.5	50	75	149	162	174	187	212
40	46	19	77	90	102	115	140	12.5	25	37.5	50	75	181	194	206	219	244



Rear flange      Built-in One-touch fitting

CM2G20.....SCM220A, #5    SCM220A, #5, #19  
 CM2G25.....SCM225A, #5    SCM225A, #5, #19  
 CM2G32.....SCM232A, #5    SCM232A, #5, #19  
 CM2G40.....SCM240A, #5    SCM240A, #5, #19

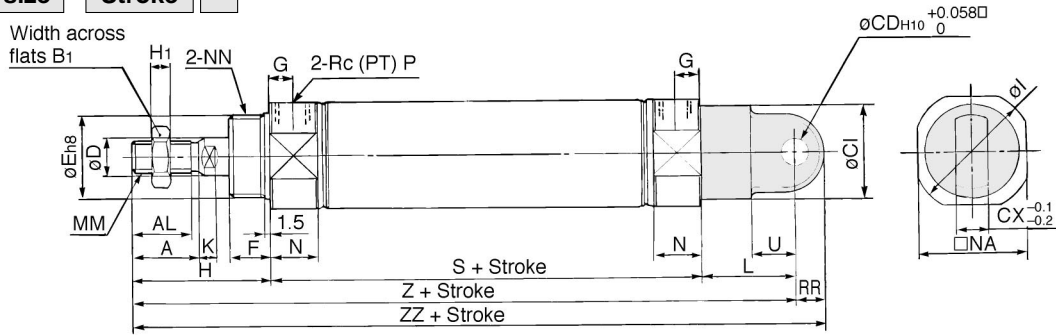
\* The data shows auto switch equipped styles.  
 Please delete the unnecessary part.

# Standard: Double Acting Single Rod *Series CM2*

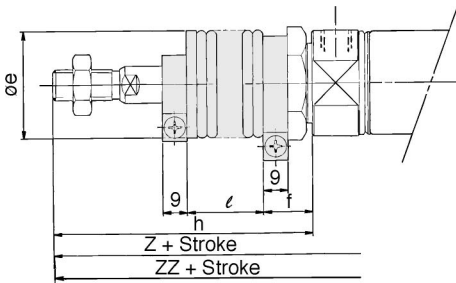
## Single Clevis (C)



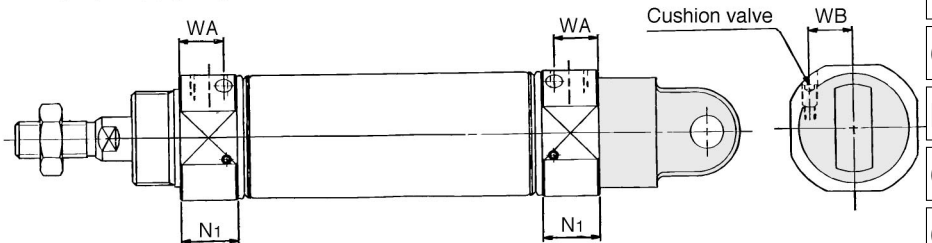
CM2C Bore size Stroke



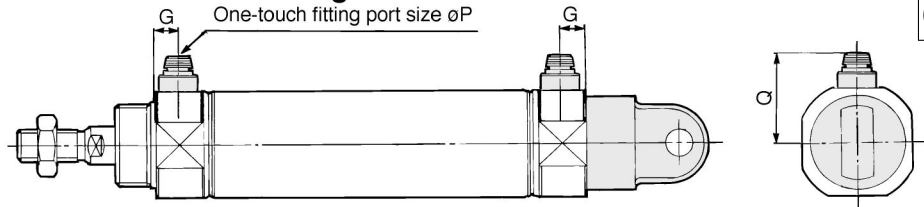
### With rod boot



### With air cushion



### Built-in One-touch fitting



- CJ1
- CJP
- CJ2
- CM2**
- C85
- CG1
- MB
- C95
- CA1
- CS1

Bore	Stroke range	A	AL	B1	Cl	CD	CX	D	E	F	G	H	H1	I	K	L	MM	N	NA	NN	P	RR	S	U	Z	ZZ
20	1 to 300	18	15.5	13	24	9	10	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	30	M8 X 1.25	15	24	M20 X 1.5	1/8	9	62	14	133	142
25	1 to 300	22	19.5	17	30	9	10	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	30	M10 X 1.25	15	30	M26 X 1.5	1/8	9	62	14	137	146
32	1 to 300	22	19.5	17	30	9	10	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	30	M10 X 1.25	15	34.5	M26 X 1.5	1/8	9	64	14	139	148
40	1 to 300	24	21	22	38	10	15	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	39	M14 X 1.5	21.5	42.5	M32 X 2	1/4	11	88	18	177	188

### With rod boot

Symbol Stroke Bore	e	f	h					l					Z				
			1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	36	17	68	81	93	106	131	12.5	25	37.5	50	75	160	173	185	198	223
25	36	17	72	85	97	110	135	12.5	25	37.5	50	75	164	177	189	202	227
32	36	17	72	85	97	110	135	12.5	25	37.5	50	75	166	179	191	204	229
40	46	19	77	90	102	115	140	12.5	25	37.5	50	75	204	217	229	242	267

Symbol Stroke Bore	ZZ				
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	169	182	194	207	232
25	173	186	198	211	236
32	175	188	200	213	238
40	215	228	240	253	278

### With air cushion

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

### Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5



Single clevis

Built-in One-touch fitting

- CM2C20.....SCM220A, #6    SCM220A, #6, #19
- CM2C25.....SCM225A, #6    SCM225A, #6, #19
- CM2C32.....SCM232A, #6    SCM232A, #6, #19
- CM2C40.....SCM240A, #6    SCM240A, #6, #19

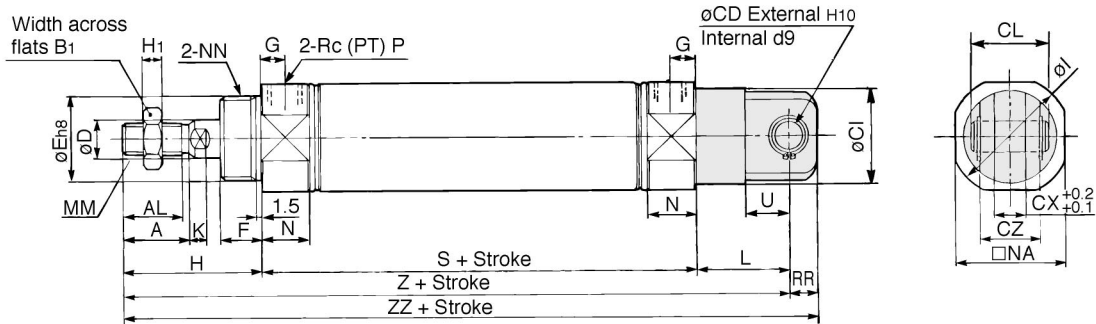
\* The data shows auto switch equipped styles.  
Please delete the unnecessary part.

# Series CM2

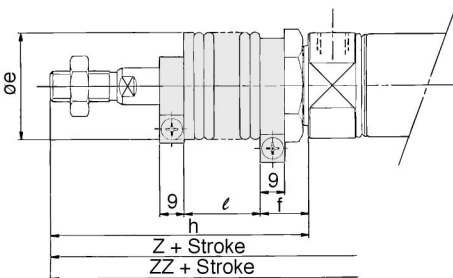
## Double Clevis (D)



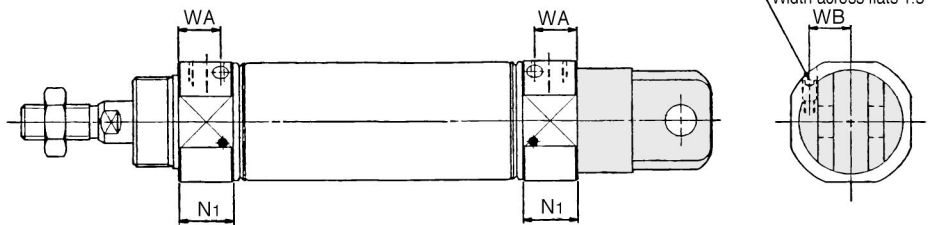
CM2D Bore size Stroke



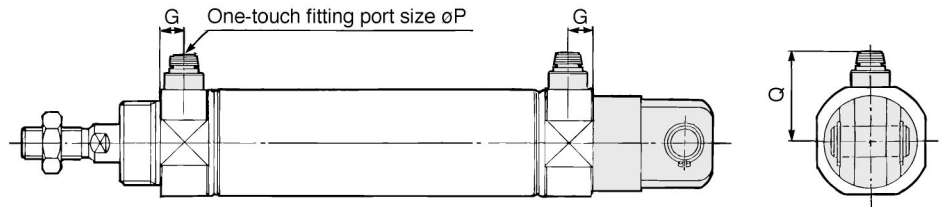
### With rod boot



### With air cushion



### Built-in One-touch fitting



Bore	Stroke range	A	AL	B1	CD	CI	CL	CX	CZ	D	E	F	G	H	H1	I	K	L	MM	N	NA	NN	P	RR	S	U	Z	ZZ
20	1 to 300	18	15.5	13	9	24	25	10	19	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	30	M8 X 1.25	15	24	M20 X 1.5	1/8	9	62	14	133	142
25	1 to 300	22	19.5	17	9	30	25	10	19	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	30	M10 X 1.25	15	30	M26 X 1.5	1/8	9	62	14	137	146
32	1 to 300	22	19.5	17	9	30	25	10	19	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	30	M10 X 1.25	15	34.5	M26 X 1.5	1/8	9	64	14	139	148
40	1 to 300	24	21	22	10	38	41.2	15	30	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	39	M14 X 1.5	21.5	42.5	M32 X 2	1/4	11	88	18	177	188

\* Clevis pins and snap rings (cotter pins for ø40) are attached. (mm)

### With rod boot

Symbol Stroke	e	f	h					ℓ					Z				
			1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	36	17	68	81	93	106	131	12.5	25	37.5	50	75	160	173	185	198	223
25	36	17	72	85	97	110	135	12.5	25	37.5	50	75	164	177	189	202	227
32	36	17	72	85	97	110	135	12.5	25	37.5	50	75	166	179	191	204	229
40	46	19	77	90	102	115	140	12.5	25	37.5	50	75	204	217	229	242	267

### With rod boot

Symbol Stroke	ZZ				
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	169	182	194	207	232
25	173	186	198	211	236
32	175	188	200	213	238
40	215	228	240	253	278

### With air cushion

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

### Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5



Double clevis Built-in One-touch fitting

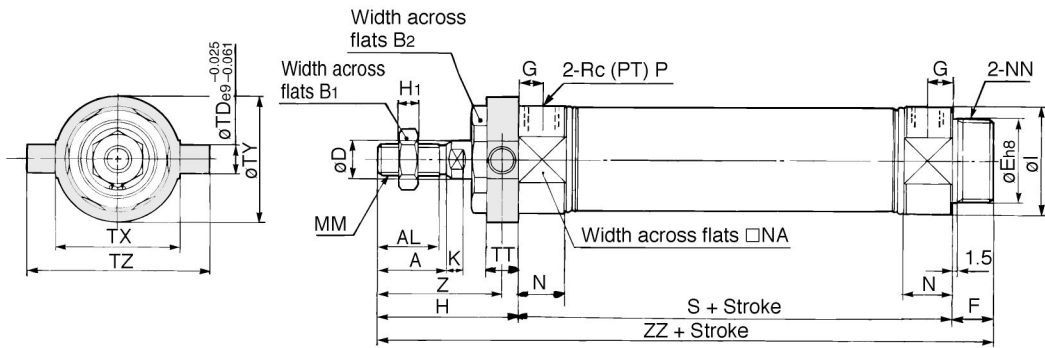
CM2D20.....SCM220A, #7 SCM220A, #7, #19  
 CM2D25.....SCM225A, #7 SCM225A, #7, #19  
 CM2D32.....SCM232A, #7 SCM232A, #7, #19  
 CM2D40.....SCM240A, #7 SCM240A, #7, #19

\* The data shows auto switch equipped styles.  
 Please delete the unnecessary part.

# Standard: Double Acting Single Rod *Series CM2*

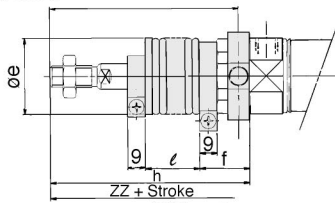
## Front Trunnion (U)

CM2U

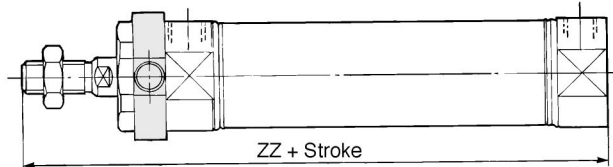


- CJ1**
- CJP**
- CJ2**
- CM2**
- C85**
- CG1**
- MB**
- C95**
- CA1**
- CS1**

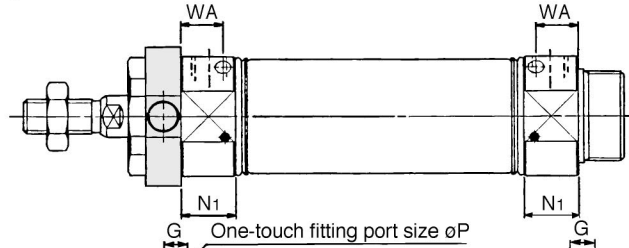
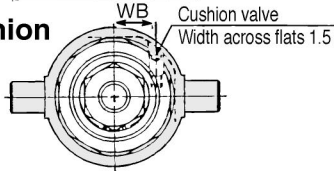
### With rod boot



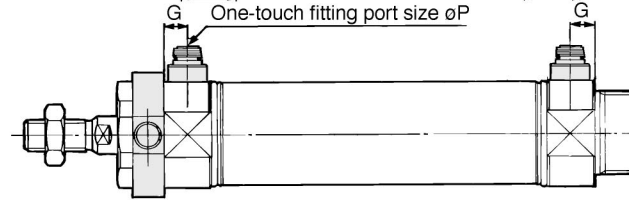
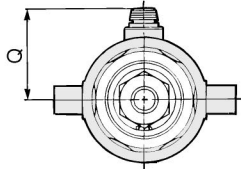
### Boss-cut



### With air cushion



### Built-in One-touch fitting



Bore size	Stroke range	A	AL	B1	B2	D	E	F	G	H	H1	I	K	MM	N	NA	NN	P
20	1 to 300	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	M8 X 1.25	15	24	M20 X 1.5	1/8
25	1 to 300	22	19.5	17	32	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	M10 X 1.25	15	30	M26 X 1.5	1/8
32	1 to 300	22	19.5	17	32	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	M10 X 1.25	15	34.5	M26 X 1.5	1/8
40	1 to 300	24	21	22	41	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4

Bore	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

### With rod boot

Symbol	Stroke	e	f	h						
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	36	24	68	81	93	106	131	156	—	
25	36	24	72	85	97	110	135	160	185	
32	36	24	72	85	97	110	135	160	185	
40	46	25	77	90	102	115	140	165	190	

### With rod boot

Symbol	Stroke	e					Z					ZZ				
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	12.5	25	37.5	50	75	63	76	88	101	126	143	156	168	181	206	
25	12.5	25	37.5	50	75	67	80	92	105	130	147	160	172	185	210	
32	12.5	25	37.5	50	75	67	80	92	105	130	149	162	174	187	212	
40	12.5	25	37.5	50	75	71.5	84.5	96.5	109.5	134.5	181	194	206	219	244	

### Boss-cut style

Bore	ZZ (mm)					
	Without gaiter	With gaiter				
		1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	103	130	143	155	168	193
25	107	134	147	159	172	197
32	109	136	149	161	174	199
40	138	165	178	190	203	228

### With air cushion

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

### Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5



Front trunnion      Built-in One-touch fitting

CM2U20.....SCM220A, #8      SCM220A, #8, #19

CM2U25.....SCM225A, #8      SCM225A, #8, #19

CM2U32.....SCM232A, #8      SCM232A, #8, #19

CM2U40.....SCM240A, #8      SCM240A, #8, #19

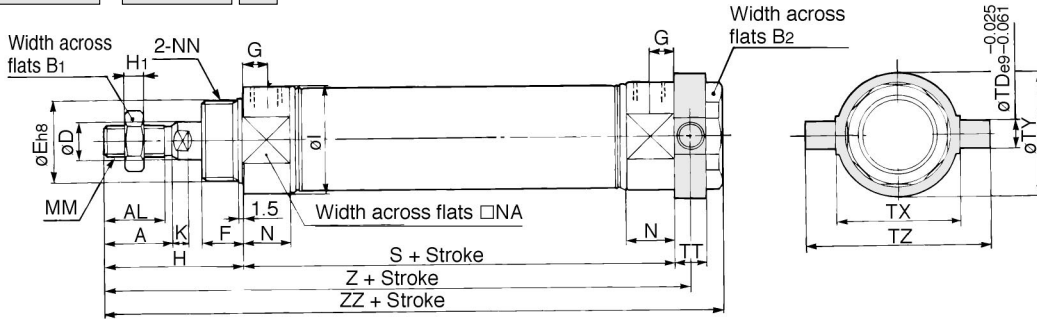
\* The data shows auto switch equipped styles.  
Please delete the unnecessary part.



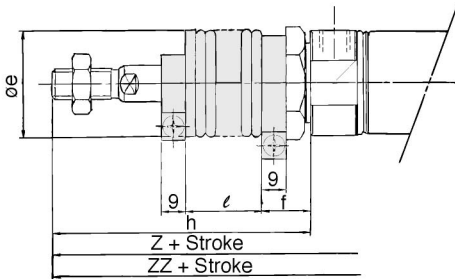
# Series CM2

Rear Trunnion (T) 

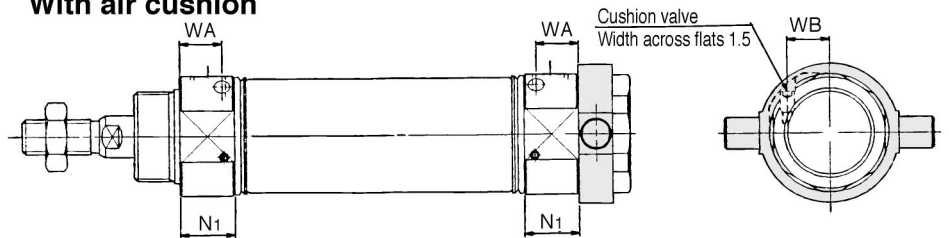
CM2T



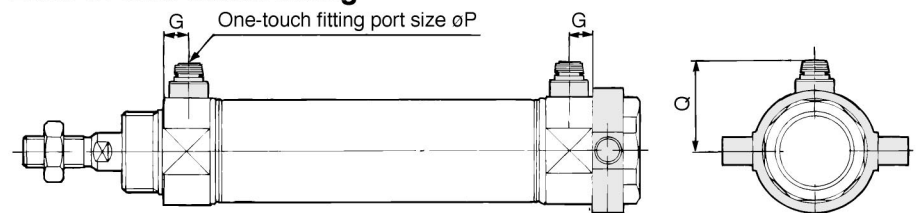
## With rod boot



## With air cushion



## Built-in One-touch fitting



Bore	Stroke range	A	AL	B1	B2	D	E	F	G	H	H1	I	K	MM	N	NA	NN	P
20	1 to 300	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	M8 X 1.25	15	24	M20 X 1.5	1/8
25	1 to 300	22	19.5	17	32	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	M10 X 1.25	15	30	M26 X 1.5	1/8
32	1 to 300	22	19.5	17	32	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	M10 X 1.25	15	34.5	M26 X 1.5	1/8
40	1 to 300	24	21	22	41	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4

Bore	S	TD	TT	TX	TY	TZ	Z	ZZ
20	62	8	10	32	32	52	108	118
25	62	9	10	40	40	60	112	122
32	64	9	10	40	40	60	114	124
40	88	10	11	53	53	77	143.5	154

## With rod boot

Symbol Bore \ Stroke	e	f	h						
			1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
20	36	17	68	81	93	106	131	156	—
25	36	17	72	85	97	110	135	160	185
32	36	17	72	85	97	110	135	160	185
40	46	19	77	90	102	115	140	165	190

## With rod boot

Symbol Bore \ Stroke	l					Z					ZZ				
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	12.5	25	37.5	50	75	135	148	160	173	198	145	158	170	183	208
25	12.5	25	37.5	50	75	139	152	164	177	202	149	162	174	187	212
32	12.5	25	37.5	50	75	141	154	166	179	204	151	164	176	189	214
40	12.5	25	37.5	50	75	170.5	183.5	195.5	208.5	233.5	181	194	206	219	244

## With air cushion

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

## Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5

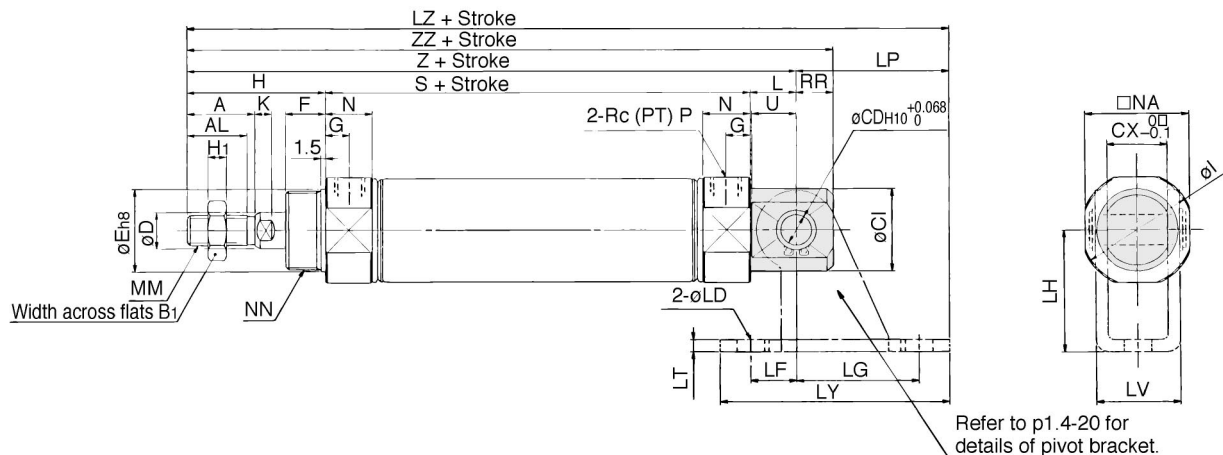


Rear trunnion Built-in One-touch fitting  
 CM2T20.....SCM220A, #9 SCM220A, #9, #19  
 CM2T25.....SCM225A, #9 SCM225A, #9, #19  
 CM2T32.....SCM232A, #9 SCM232A, #9, #19  
 CM2T40.....SCM240A, #9 SCM240A, #9, #19  
 \* The data shows auto switch equipped styles.  
 Please delete the unnecessary part.

## Integrated Clevis (E)

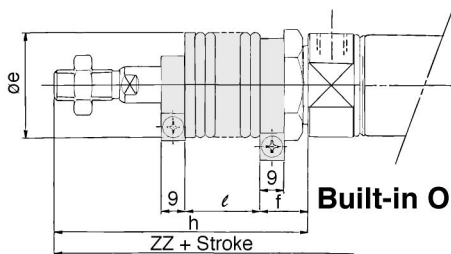


CM2E Bore size — Stroke

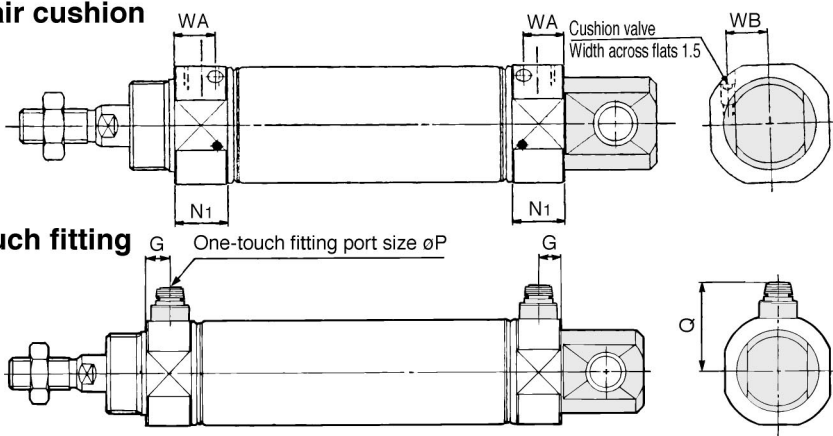


- CJ1
- CJP
- CJ2
- CM2**
- C85
- CG1
- MB
- C95
- CA1
- CS1

### With rod boot



### With air cushion



### Built-in One-touch fitting

Bore	Stroke range	A	AL	B1	CD	CI	CX	D	E	F	G	H	H1	I	K	L	MM	N	NA	NN
20	1 to 300	18	15.5	13	8	20	12	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	12	M8 X 1.25	15	24	M20 X 1.5
25	1 to 300	22	19.5	17	8	22	12	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	12	M10 X 1.25	15	30	M26 X 1.5
32	1 to 300	22	19.5	17	10	27	20	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	15	M10 X 1.25	15	34.5	M26 X 1.5
40	1 to 300	24	21	22	10	33	20	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	15	M14 X 1.5	21.5	42.5	M32 X 2

Bore	P	RR	S	U	Z	ZZ
20	1/8	9	62	11.5	115	124
25	1/8	9	62	11.5	119	128
32	1/8	12	64	14.5	124	136
40	1/4	12	88	14.5	153	165

### With rod boot

Symbol Stroke	e	f	h				
			1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	36	17	68	81	93	106	131
25	36	17	72	85	97	110	135
32	36	17	72	85	97	110	135
40	46	19	77	90	102	115	140

### With rod boot

Symbol Stroke	e					Z					ZZ				
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300
20	12.5	25	37.5	50	75	142	155	167	180	205	151	164	176	189	214
25	12.5	25	37.5	50	75	146	159	171	184	209	155	168	180	193	218
32	12.5	25	37.5	50	75	151	164	176	189	214	163	176	188	201	226
40	12.5	25	37.5	50	75	180	193	205	218	243	192	205	217	230	255

### With air cushion

Bore	N1	WA	WB
20	17.5	13	8.5
25	17.5	13	10.5
32	17.5	13	11.5
40	21.5	16	15

### Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5

### Pivot bracket

Bore	LD	LF	LG	LH	LP	LT	LV	LY	LZ
20	6.8	15	30	30	37	3.2	18.4	59	152
25	6.8	15	30	30	37	3.2	18.4	59	156
32	9	15	40	40	50	4	28	75	174
40	9	15	40	40	50	4	28	75	203



Integrated clevis

Built-in One-touch fitting

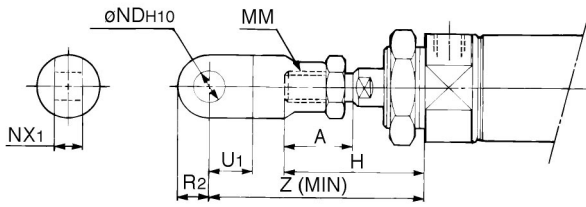
CM2E20.....SCM220A, #10 SCM220A, #10, #19  
 CM2E25.....SCM225A, #10 SCM225A, #10, #19  
 CM2E32.....SCM232A, #10 SCM232A, #10, #19  
 CM2E40.....SCM240A, #10 SCM240A, #10, #19

\* The data shows auto switch equipped styles.  
 Please delete the unnecessary part.

# Series CM2 Accessory Dimensions

## Single Knuckle Joint

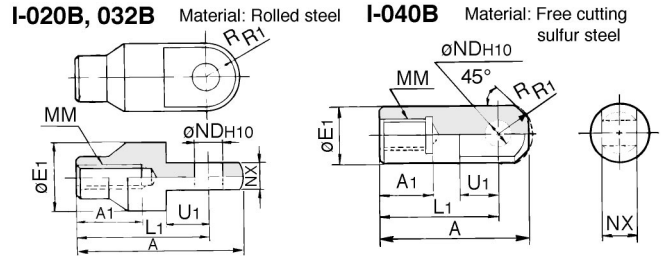
(mm)



Bore size	A	H	MM	NDH10	NX1	U1	R2	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	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	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	92

## Single Knuckle Joint

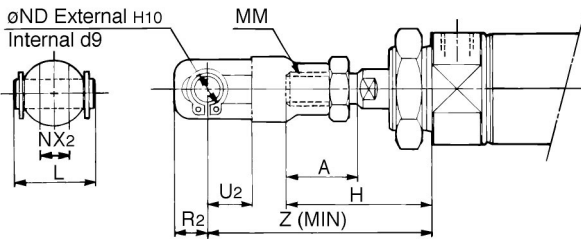
(mm)



Part No.	Applicable bore size	A	A1	E1	L1	MM	NDH10	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

(mm)

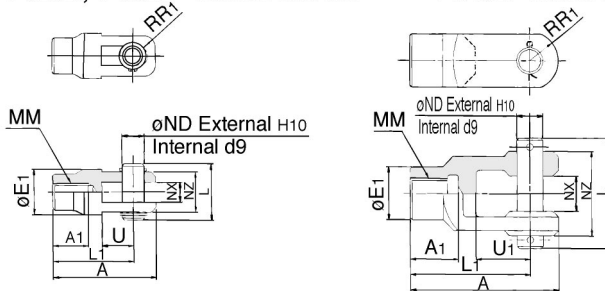


Bore size	A	H	L	MM	ND	NX2	R2	U2	Z
20	18	41	25	M8 X 1.25	9	9 <sup>+0.2</sup> <sub>+0.1</sub>	10	14	66
25/32	22	45	25	M10 X 1.25	9	9 <sup>+0.2</sup> <sub>+0.1</sub>	10	14	69
40	24	50	49.7	M14 X 1.5	12	16 <sup>+0.3</sup> <sub>+0.1</sub>	13	25	92

## Double Knuckle Joint

(mm)

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



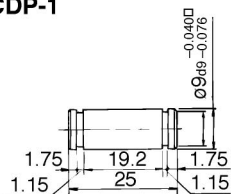
Part No.	Applicable bore size	A	A1	E1	L	L1	MM	ND	NX	NZ	R1	U1	Applicable pin part No.	Snap ring/Cotter pin size
Y-020B	20	46	16	20	25	36	M8 X 1.25	9	9 <sup>+0.2</sup> <sub>+0.1</sub>	18	5	14	CDP-1	C9 type for pivot
Y-032B	25,32	48	18	20	25	38	M10 X 1.25	9	9 <sup>+0.2</sup> <sub>+0.1</sub>	18	5	14	CDP-1	C9 type for pivot
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 18ℓ

\*Clevis pins and snap rings (cotter pins for bore size 40) are attached.

## Double Clevis Pin/Material: Carbon steel

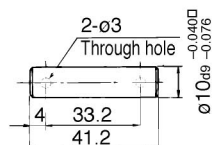
(mm)

Bore size: ø20, ø25, ø32  
CDP-1



Snap ring: C9 type for pivot

Bore size: ø40  
CDP-2

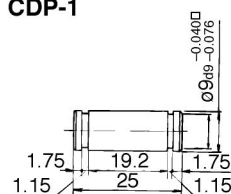


Cotter pin: ø3 X 18ℓ

## Double Knuckle Pin/Material: Carbon steel

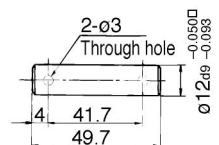
(mm)

Bore size: ø20, ø25, ø32  
CDP-1



Snap ring: C9 type for pivot

Bore size: ø40  
CDP-3

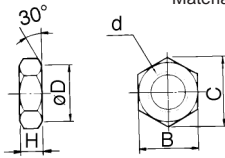


Cotter pin: ø3 X 18ℓ

# Standard: Double Acting Single Rod *Series CM2*

## Rod End Nut (mm)

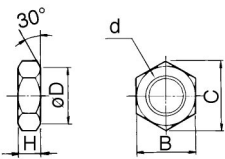
Material: Carbon steel



Part No.	Applicable bore size	B	C	D	d	H
<b>NT-02</b>	<b>20</b>	13	15.0	12.5	M8 X 1.25	5
<b>NT-03</b>	<b>25/32</b>	17	19.6	16.5	M10 X 1.25	6
<b>NT-04</b>	<b>40</b>	22	25.4	21.0	M14 X 1.5	8

## Mounting Nut (mm)

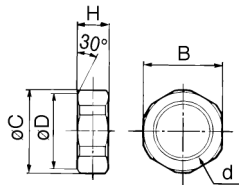
Material: Carbon steel



Part No.	Applicable bore size	B	C	D	d	H
<b>SN-020B</b>	<b>20</b>	26	30	25.5	M20 X 1.5	8
<b>SN-032B</b>	<b>25/32</b>	32	37	31.5	M26 X 1.5	8
<b>SN-040B</b>	<b>40</b>	41	47.3	40.5	M32 X 2.0	10

## Trunnion Nut (mm)

Material: Carbon steel

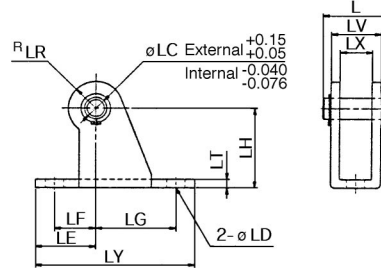


Part No.	Applicable bore size	B	C	D	d	H
<b>TN-020B</b>	<b>20</b>	26	28	25.5	M20 X 1.5	10
<b>TN-032B</b>	<b>25/32</b>	32	34	31.5	M26 X 1.5	10
<b>TN-040B</b>	<b>40</b>	41	45	40.5	M32 X 2	10

Pivot bracket for integrated clevis style CM2E: Please order it separately.

## Pivot Bracket (mm)

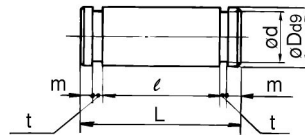
Material: Rolled steel



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

## Clevis Pin (mm)

Material: Carbon steel



Part No.	Applicable bore size	D <sub>ø9</sub>	d	L	ℓ	m	t	Applicable snap ring part No.
<b>CD-S02</b>	<b>20/25</b>	8 <sup>-0.040</sup> <sub>-0.076</sub>	7.6	24.5	19.5	1.6	0.9	C8 type for pivot
<b>CD-S03</b>	<b>32/40</b>	10 <sup>-0.040</sup> <sub>-0.076</sub>	9.6	34	29	1.35	1.15	C10 type for pivot

**CJ1**

**CJP**

**CJ2**

**CM2**

**C85**

**CG1**

**MB**

**C95**

**CA1**

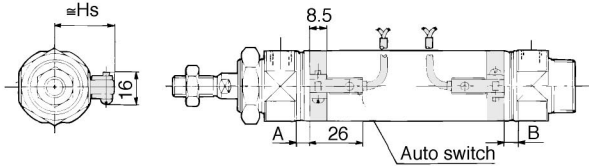
**CS1**

# Series CDM2

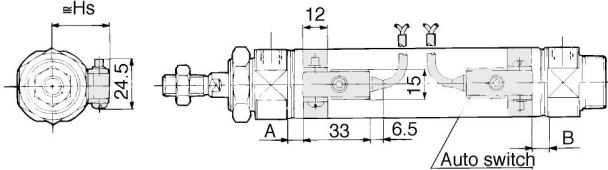
## Auto Switch Mounting Position and Mounting Height

### Reed Switch

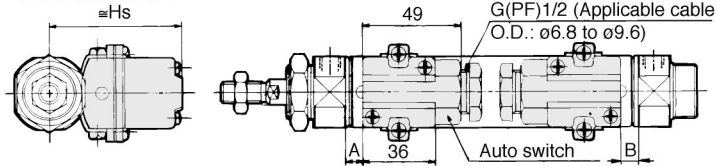
D-C7/C8



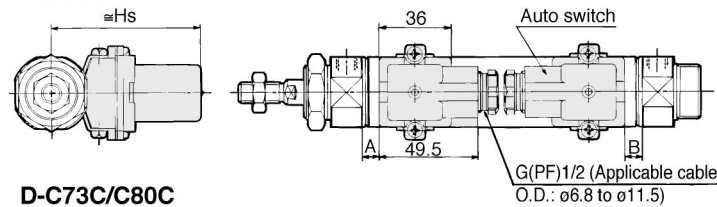
D-B5/B6/B59W



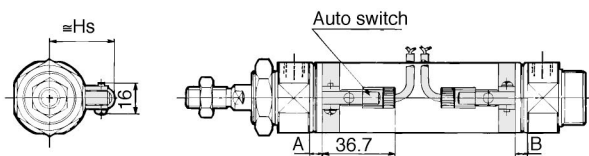
D-A33A/A34A



D-A44A

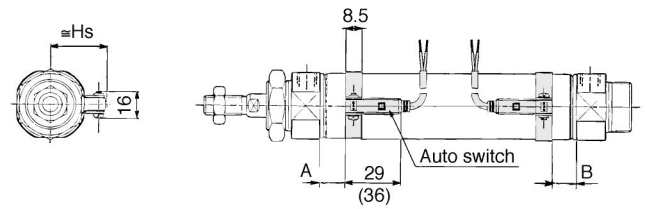


D-C73C/C80C



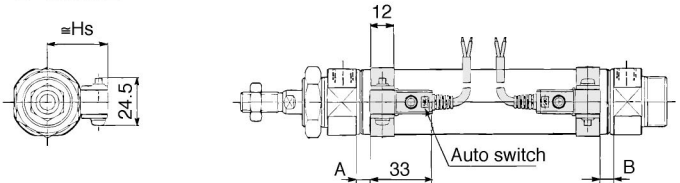
### Solid State Switch

D-H7□/H7□W/H7□F/H7BAL

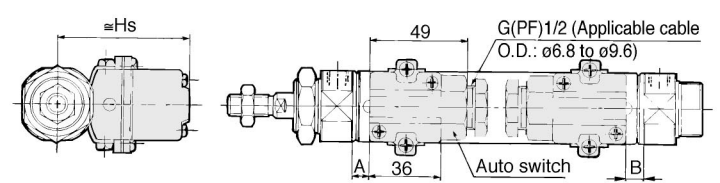


\*( ): D-H7LF

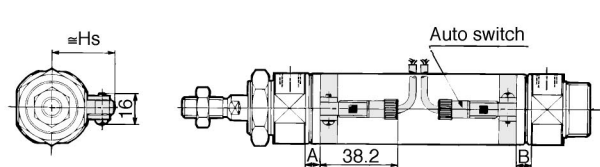
D-G5NTL



D-G39A/K39A



D-H7C



### Auto Switch Mounting Position

(mm)

Auto switch model	D-B5 D-B6		D-C7 D-C8 D-C73C D-C80C		D-B59W		D-A3□A D-G39A D-K39A D-A44A		D-H7□ D-H7C		D-H7□W D-H7BAL D-H7□F		D-G5NTL	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
ø20	1(0)	0(0)	7(5)	6(4)	4(2)	3(1)	0.5(0)	0(0)	6(4)	5(3)	4.5(2.5)	3.5(1.5)	2.5(0.5)	1.5(0)
ø25	1(0)	0(0)	7(5)	6(4)	4(2)	3(1)	0.5(0)	0(0)	6(4)	5(3)	4.5(2.5)	3.5(1.5)	2.5(0.5)	1.5(0)
ø32	2(0)	1(0)	8(6)	7(5)	5(3)	4(2)	1.5(0)	0.5(0)	7(5)	6(4)	5.5(3.5)	4.5(2.5)	3.5(1.5)	2.5(0.5)
ø40	7	6	13	12	10	9	6.5	5.5	12	11	10.5	9.5	8.5	7.5

\*( ): With air cushion

### Mounting Height

(mm)

D-B5 D-B6 D-B59W D-G5NTL D-H7C	D-C7 D-C8 D-H7□ D-H7□W D-H7BAL D-H7□F	D-C73C D-C80C	D-A3□A D-G39A D-K39A	D-A44A
Hs	Hs	Hs	Hs	Hs
25.5	22.5	25	60	69.5
28	25	27.5	62.5	72
31.5	28.5	31	66	75.5
35.5	32.5	35	70	79.5

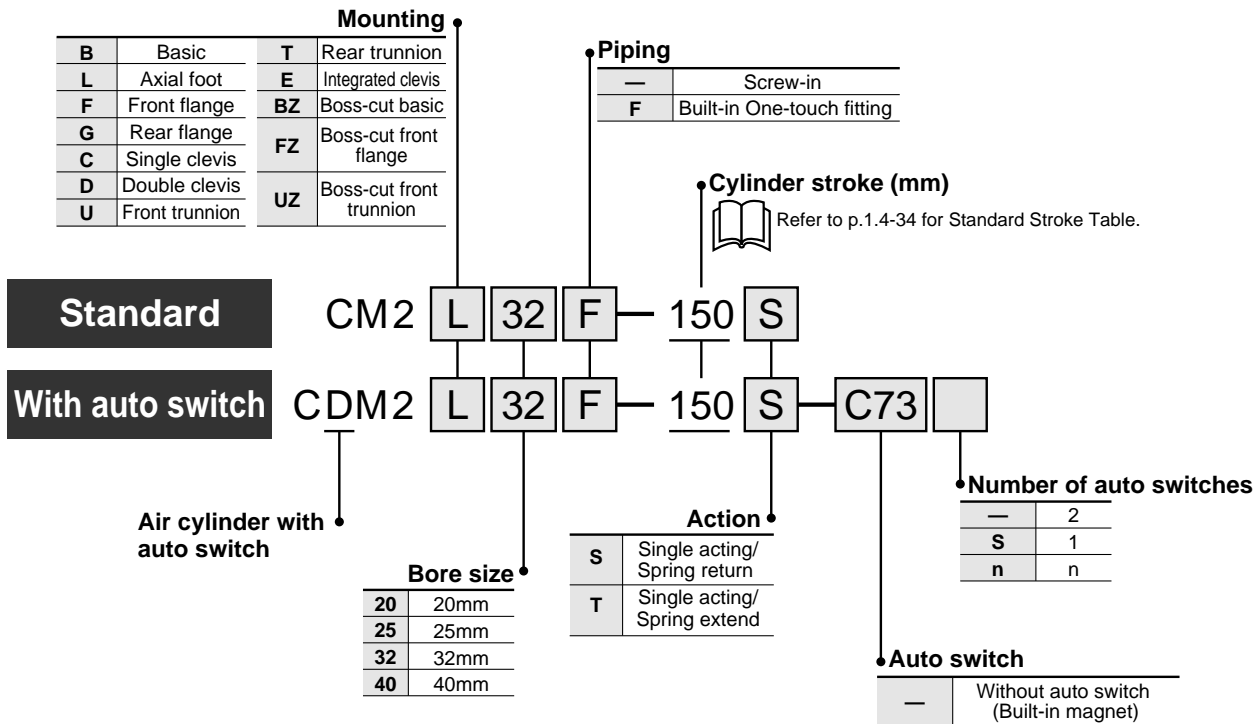
# Standard: Single Acting Spring Return/Extend

# Series CM2



ø20, ø25, ø32, ø40

## How to Order



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

Style	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage		Auto switch model	Lead wire (m)*				Applicable load																																																																																									
					DC	AC		0.5 (—)	3 (L)	5 (Z)	None (N)																																																																																										
Reed switch	—	Grommet	Yes	3 wire (NPN)	—	5V	—	●	●	—	—	IC	—																																																																																								
														No	12V	100V	●	●	●	—	—	—	—	Relay PLC																																																																													
																									Yes	5V, 12V	100V or less	●	●	—	—	—	—	—	IC																																																																		
																																				Yes	12V	—	●	●	●	—	—	—	—	PLC																																																							
																																															No	12V	100V, 200V	●	●	●	—	—	—	—	—																																												
																																																										Yes	12V	200V or less	●	●	—	—	—	—	—	Relay PLC																																	
																																																																					Yes	12V	—	●	●	●	●	●	—	—	—																						
																																																																																No	5V, 12V	24V or less	●	●	●	●	●	—	—	IC											
																																																																																											Yes	12V	—	—	—	—	—	●	—	—	PLC
Yes	12V	100V, 200V	—	—	—	—	—	—	—	—																																																																																											
											Grommet	—	—	●	●	—	—	—	—	—	—																																																																																
																						Grommet	3 wire(NPN)	5V, 12V	●	●	○	—	—	—	—	IC																																																																					
																																	Grommet	3 wire(PNP)	5V, 12V	●	●	○	—	—	—	—	—																																																										
																																												Connector	2 wire	12V	●	●	●	●	—	—	—	—																																															
																																																							Terminal conduit	3 wire(NPN)	5V, 12V	—	—	—	●	—	—	—	IC																																				
																																																																		Terminal conduit	2 wire	12V	—	—	—	—	●	—	—	—																									
																																																																													Yes	3 wire(NPN)	24V	●	●	○	—	—	—	—	Relay PLC														
																																																																																								Yes	3 wire(PNP)	24V	●	●	○	—	—	—	—	—			
																																																																																																			Grommet	2 wire	12V
Grommet	3 wire(NPN)	5V, 12V	—	—	—	—	—	—	—	IC																																																																																											
											Grommet	3 wire(PNP)	5V, 12V	—	—	—	—	—	—	—	—																																																																																
																						Grommet	2 wire	12V	●	●	○	—	—	—	—	—																																																																					
																																	Grommet	3 wire(NPN)	5V, 12V	—	—	—	—	—	—	—	IC																																																										
																																												Grommet	2 wire	12V	●	●	○	—	—	—	—	—																																															
																																																							Grommet	3 wire(NPN)	5V, 12V	—	—	—	—	—	—	—	—																																				
																																																																		Grommet	2 wire	12V	●	●	○	—	—	—	—	—																									
																																																																													Grommet	3 wire(NPN)	5V, 12V	—	—	—	—	—	—	—	IC														
																																																																																								Grommet	4 wire (NPN)	—	●	●	○	—	—	—	—	—			



\* Lead wire length  
0.5m : —  
3m : L  
5m : Z  
None: N  
e.g.) C80CZ, C80CN

\* Solid state switches marked with "○" are manufactured upon receipt of order.  
\* Do not indicate symbol "N" for no lead wire on "D-A3□A", "A44A", "G39A" and "K39A" models.

# Standard: Single Acting Spring Return/Extend *Series CM2*



## Specifications

Action	Single acting/Spring return	Single acting/Spring extend
Style	Air cylinder	
Cushion	Rubber bumper	
Fluid	Air	
Proof pressure	1.5MPa	
Max. operating pressure	1.0MPa	
Min. operating pressure	0.18MPa	0.23MPa
Ambient and fluid temperature	Without auto switch: -10°C to +70°C (No freezing) With auto switch: -10 to +60°C (No freezing)	
Lubrication	Non-lube	
Thread tolerance	JIS class 2	
Stroke tolerance	+1.4 0	
Piston speed	50 to 750mm/s	

## Allowable Kinetic Energy

Bore size (mm)	20	25	32	40
Allowable kinetic energy	0.27	0.4	0.65	1.2

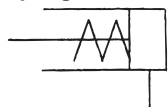
## Standard Stroke

Bore size (mm)	Standard stroke (mm) <sup>(1)</sup>
20	25, 50, 75, 100, 125, 150
25	25, 50, 75, 100, 125, 150
32	25, 50, 75, 100, 125, 150, 200
40	25, 50, 75, 100, 125, 150, 200, 250

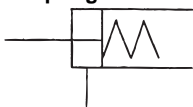
Note 1) Other intermediate strokes can be manufactured upon receipt of order.  
Contact SMC for longer strokes.

## JIS symbol

Single acting/  
Spring return



Spring extend



**Made to Order**

Refer to p.5.4-1 for made to order specifications of series CM2R.

## Minimum Strokes for Auto Switch Mounting

Auto switch model	Number of switches				1
	2		n		
	On different surfaces	On the same surface	On different surfaces	On the same surface	
D-C7 D-C8	15	50	15+45( $\frac{n-2}{2}$ )	50+45(n-2)	10
D-H7□ D-H7□W D-H7BAL D-H7NF	15	60	(n=2, 4, 6...)	60+45(n-2)	10
D-C73C D-C80C D-H7C	15	65	15+50( $\frac{n-2}{2}$ )	65+50(n-2)	10
D-H7LF	20	65	20+50( $\frac{n-2}{2}$ )	65+50(n-2)	10
D-B5 D-B6	15	75	15+50( $\frac{n-2}{2}$ )	75+55(n-2)	10
D-B59W	20	75	20+50( $\frac{n-2}{2}$ )	75+55(n-2)	15
D-A3□A D-G39A D-K39A D-A44A	35	100	35+30(n-2)	100+100(n-2)	10

## Mounting Bracket

Refer to p.1.4-35 for part numbers of the mounting brackets.

## Auto Switch Mounting Band

Refer to p.1.4-35 for part numbers of the mounting bands.

CJ1

CJP

CJ2

CM2

C85

CG1

MB

C95

CA1

CS1

# Series CM2

## Boss-cut Style

Boss for the head cover bracket is eliminated and the total length of cylinder is shortened.



## Comparison of total cylinder length with standard style (mm)

ø20	ø25	ø32	ø40
▲13	▲13	▲13	▲16

## Mounting

- Boss-cut basic (BZ)
- Boss-cut flange (FZ)
- Boss-cut trunnion (UZ)

## Mounting Accessories

Accessories	Standard			Option		
	Mounting nut	Rod end nut	Clevis pin	Single knuckle joint	Double knuckle joint <sup>(3)</sup>	Pivot bracket
Basic	● (1 pc.)	●	—	●	●	—
Axial foot	● (2)	●	—	●	●	—
Front flange	● (1)	●	—	●	●	—
Rear flange	● (1)	●	—	●	●	—
Integrated clevis	—(1)	●	—	●	●	●
Single clevis	—(1)	●	—	●	●	—
Double clevis <sup>(3)</sup>	—(1)	●	●	●	●	—
Front trunnion	●(1) <sup>(2)</sup>	●	—	●	●	—
Rear trunnion	●(1) <sup>(2)</sup>	●	—	●	●	—
Boss-cut basic	● (1)	●	—	●	●	—
Boss-cut flange	● (1)	●	—	●	●	—
Boss-cut trunnion	● (1)	●	—	●	●	—
Note					With pins	With pins

## Mounting Bracket

Refer to p.1.4-19 and 1.4-20 for mounting brackets.



Note 1) Mounting nuts are not attached for the integrated clevis, the single clevis, and the double clevis styles.

Note 2) Trunnion nuts are attached for the front trunnion and the rear trunnion styles.

Note 3) Pins and snap rings (cotter pins for bore size 40) are attached for double clevis and the double knuckle joint.

## Mounting Bracket Part No.

Bore size mm	20	25	32	40
Axial foot*	CM-L020B	CM-L032B		CM-L040B
Flange	CM-F020B	CM-F032B		CM-F040B
Single clevis	CM-C020B	CM-C032B		CM-C040B
Double clevis** (with pins)	CM-D020B	CM-D032B		CM-D040B
Trunnion (with nuts)	CM-T020B	CM-T032B		CM-T040B

\* Two foot brackets and a mounting nut are attached.

\*\* Clevis pins and snap rings (cotter pins for bore size 40) are attached.

## Auto Switch Mounting Bracket Part No.

Auto switch model	Bore size (mm)			
	20	25	32	40
D-C7/C8 D-H7□	BM2-020	BM2-025	BM2-032	BM2-040
D-B5/B6 D-G5NTL	BA2-020	BA2-025	BA2-032	BA2-040
D-A3□/A/A44A D-G39A/K39A	BM3-020	BM3-025	BM3-032	BM3-040



Note) A set of following stainless steel mounting screws is attached. (A switch mounting band is not attached. Please order the band separately.)

BBA3: D-B5/B6/G5

BBA4: D-C7/C8/H7

· "D-H7BAL" switch is set on the cylinder with the screws above when shipped.

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



# Standard: Single Acting Spring Return/Extend *Series CM2*

## Weight

### Spring Return

Bore size (mm)		(kg)			
		20	25	32	40
Basic weight	25stroke	0.20	0.30	0.42	0.77
	50stroke	0.22	0.33	0.46	0.84
	75stroke	0.27	0.42	0.58	1.03
	100stroke	0.29	0.45	0.63	1.09
	125stroke	0.35	0.54	0.76	1.29
	150stroke	0.37	0.57	0.80	1.36
	200stroke	—	—	0.97	1.61
	250stroke	—	—	—	1.87
Mounting bracket weight	Axial foot	0.15	0.16	0.16	0.27
	Flange	0.06	0.09	0.09	0.12
	Single clevis	0.04	0.04	0.04	0.09
	Double clevis	0.05	0.06	0.06	0.13
	Trunnion	0.04	0.07	0.07	0.10
	Integrated clevis	-0.02	-0.02	-0.01	-0.04
	Boss-cut basic	-0.01	-0.02	-0.02	-0.03
	Boss-cut flange	0.05	0.07	0.07	0.09
	Boss-cut trunnion	0.03	0.05	0.05	0.07
	Pivot bracket (with pins)	0.07	0.07	0.14	0.14
Accessory	Single knuckle joint	0.06	0.06	0.06	0.23
	Double knuckle joint (with pins)	0.07	0.07	0.07	0.20

### Spring Extend

Bore size (mm)		(kg)			
		20	25	32	40
Basic weight	25stroke	0.19	0.29	0.40	0.74
	50stroke	0.21	0.32	0.44	0.81
	75stroke	0.25	0.39	0.54	0.97
	100stroke	0.27	0.42	0.58	1.03
	125stroke	0.32	0.49	0.69	1.20
	150stroke	0.34	0.52	0.73	1.27
	200stroke	—	—	0.88	1.49
	250stroke	—	—	—	1.72
Mounting bracket weight	Axial foot	0.15	0.16	0.16	0.27
	Flange	0.06	0.09	0.09	0.12
	Single clevis	0.04	0.04	0.04	0.09
	Double clevis	0.05	0.06	0.06	0.13
	Trunnion	0.04	0.07	0.07	0.10
	Integrated clevis	-0.02	-0.02	-0.01	-0.04
	Boss-cut basic	-0.01	-0.02	-0.02	-0.03
	Boss-cut flange	0.05	0.07	0.07	0.09
	Boss-cut trunnion	0.03	0.05	0.05	0.07
	Pivot bracket (with pins)	0.07	0.07	0.14	0.14
Accessory	Single knuckle joint	0.06	0.06	0.06	0.23
	Double knuckle joint (with pins)	0.07	0.07	0.07	0.20

CJ1

CJP

CJ2

CM2

C85

CG1

MB

C95

CA1

CS1

Calculation Example: CM2L32-100S (Bore size ø32, Foot, 100 stroke)  
0.63 (Basic weight) + 0.16 (Mounting bracket weight) = 0.79kg

## Built-in One-touch Fitting

CM2 **Mounting** **Bore size** **F** **Stroke** **Action**

● Built-in One-touch fitting

A style in which One-touch fittings are built in the cylinder. It dramatically reduces the piping labor and installation space.



- Construction: Refer to p.1.4-38.
- Dimensions: Refer to p.1.4-39 to 1.4-47.
- Refer to p.1.4-34 for other specifications.

## Specifications

Action	Single acting/Spring return	Single acting/Spring extend
Bore size	ø20, ø25, ø32, ø40	
Max. operating pressure	1.0MPa	
Min. operating pressure	0.18MPa	0.23MPa
Cushion	Rubber bumper	
Piping	Built-in One-touch fitting	
Piston speed	50 to 750mm/s	
Mounting	Basic, Axial foot, Front flange, Rear flange, Single clevis, Double clevis, Front trunnion, Rear trunnion, Integrated clevis, Boss-cut	

\* Auto switches can be mounted.

## Applicable Tube O.D./I.D.

Bore size (mm)	ø20	ø25	ø32	ø40
Applicable tube (mm)	ø6/4	ø6/4	ø6/4	ø8/6
Applicable tube material	Nylon, Soft nylon, Polyurethane			

## ⚠ Caution

The One-touch fitting cannot be replaced.  
The One-touch fitting is press-fit into the cover and cannot be replaced.

# Series CM2

## Copper Free

20-CM2 **Mounting** **Bore size** **Stroke** **Action**

• Copper free

This cylinder eliminates any influences of copper ions or fluororesins on color CRTs. Copper materials have been nickel plated or replaced with non-copper materials to prevent the generation of copper ions.

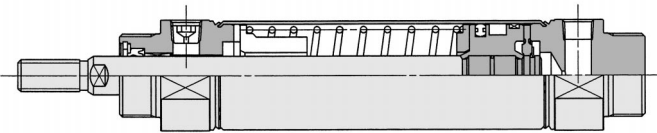


## Specifications

Action	Single acting/Spring return	Single acting/Spring extend
Bore size	ø20, ø25, ø32, ø40	
Max. operating pressure	1.0MPa	
Min. operating pressure	0.18MPa	0.23MPa
Cushion	Rubber bumper	
Relief port size	M5 X 0.8	
Piston speed	50 to 750mm/s	
Mounting	Basic, Axial foot, Front flange, Rear flange, Single clevis, Double clevis, Front trunnion, Rear trunning, Integrated clevis, Boss-cut.	

\* Auto switches can be mounted.

## Construction



\* The above shows the case of single acting/spring return style.

## ⚠ Precautions

Be sure to read before handling. Refer to p.0-39 to 0-43 for Safety Instructions and common precautions.

### Handling

#### ⚠ Warning

- ① **Do not rotate the cover.**
  - When installing the cylinder or screwing a pipe fitting into the port, the coupling portion of the cover could break if the cover is rotated.

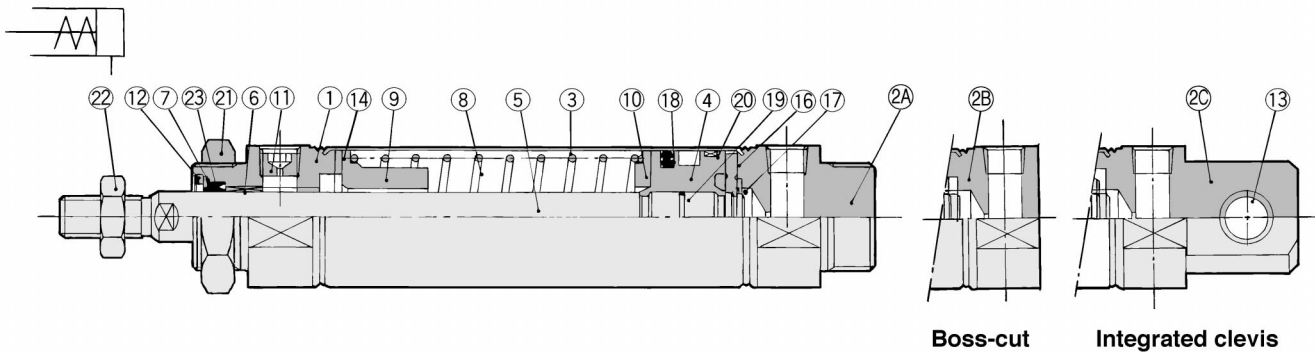
#### ⚠ Caution

- ① **Be careful with the snap ring that could fly out.**
  - When replacing the rod seal, be careful with the removal of the snap ring, as the snap ring could fly out.
- ② **Do not touch the cylinder during operation.**
  - If the cylinder is operating at a high frequency, be aware that the cylinder tube surface could become very hot, creating the risk of burns.
  - If the cylinder is operating at a high frequency, be aware that the cylinder tube surface could become very hot, creating the risk of burns.
- ③ **The One-Touch fitting cannot be replaced.**
  - The One-Touch fitting is press-fit into the cover and cannot be replaced.

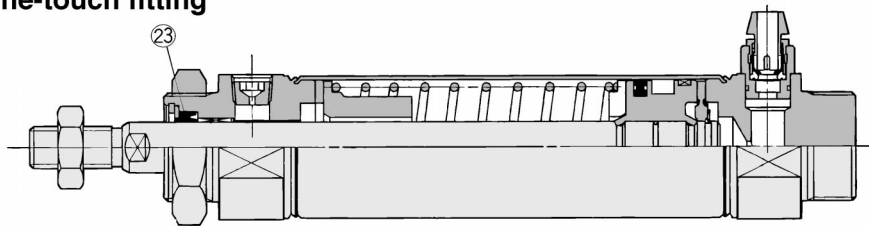
# Standard: Single Acting Spring Return/Extend *Series CM2*

## Construction

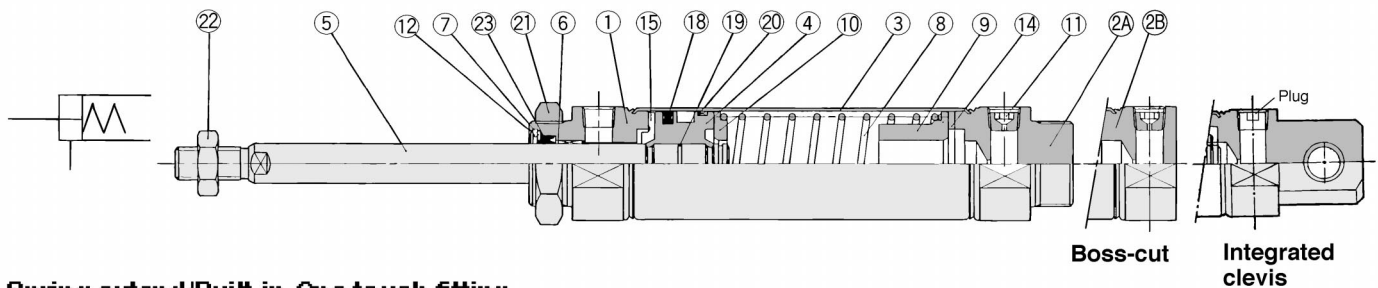
### Spring return



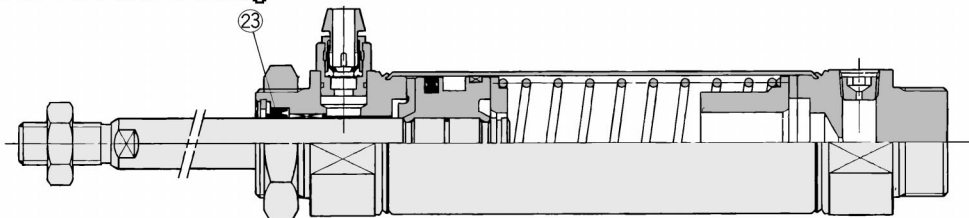
### Spring return/Built-in One-touch fitting



### Spring extend



### Spring extend/Built-in One-touch fitting



### Component Parts

No.	Description	Material	Note
①	Rod cover	Aluminum alloy	White anodized
②A	Head cover A	Aluminum alloy	White anodized(Standard style)
②B	Head cover B	Aluminum alloy	White anodized(Boss-cut style)
②C	Head cover C	Aluminum alloy	White anodized(Integrated clevis style)
③	Cylinder tube	Stainless steel	
④	Piston	Aluminum alloy	Chromated
⑤	Piston rod	Carbon steel	Hard chrome plated
⑥	Bushing	Oil impregnated sintered alloy	
⑦	Seal retainer	Rolled steel	Nickel plated
⑧	Return spring	Steel wire	Zinc chromated
⑨	Spring guide	Aluminum alloy	Chromated
⑩	Spring sead	Aluminum alloy	Chromated
⑪	Plug with needle	Alloy steel	Black zinc chromated
⑫	Snap ring	Carbon steel	Nickel plated

No.	Description	Material	Note
⑬	Bush for clevis	Oil impregnated sintered alloy	
⑭	Bumper	Urethane	
⑮	Bumper A	Urethane	
⑯	Bumper B	Urethane	
⑰	Snap ring	Stainless steel	
⑱	Piston seal	NBR	
⑲	Piston gasket	NBR	
⑳	Wearing	Resin	
㉑	Mounting nut	Carbon steel	Nickel plated
㉒	Rod end nut	Carbon steel	Nickel plated

### Replacement Parts

#### • With rubber bumper/Built-in One-touch fitting

No.	Description	Material	Bore size(mm)/Part No.			
			20	25	32	40
㉓	Rod seal	NBR	PDU-8Z	PDU-10Z	PDU-12LZ	PDU-14LZ

- CJ1
- CJP
- CJ2
- CM2**
- C85
- CG1
- MB
- C95
- CA1
- CS1

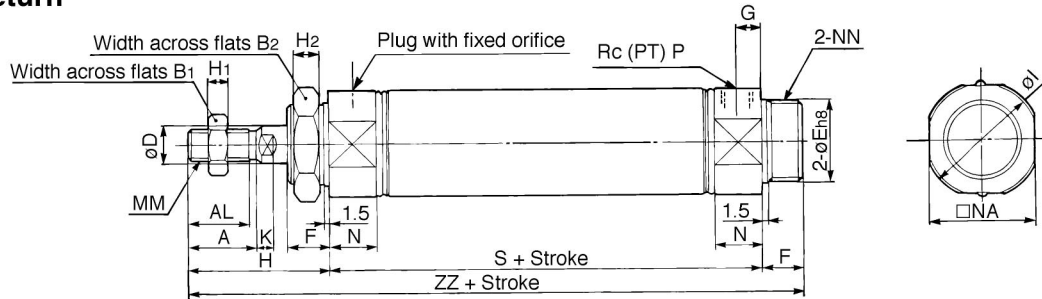
# Series CM2

Basic (B)

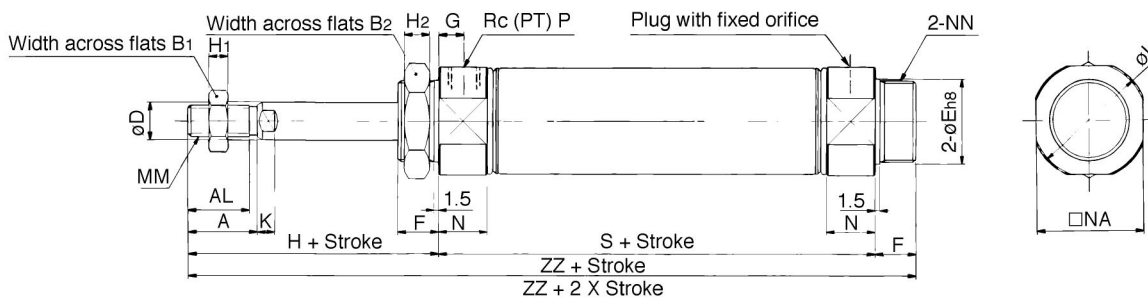


CM2B Bore size — Stroke  $\begin{matrix} S \\ T \end{matrix}$

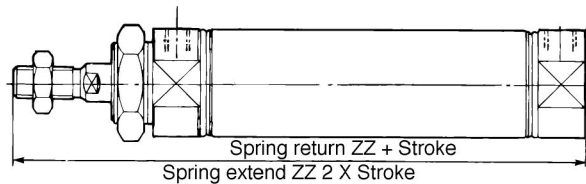
## Spring return



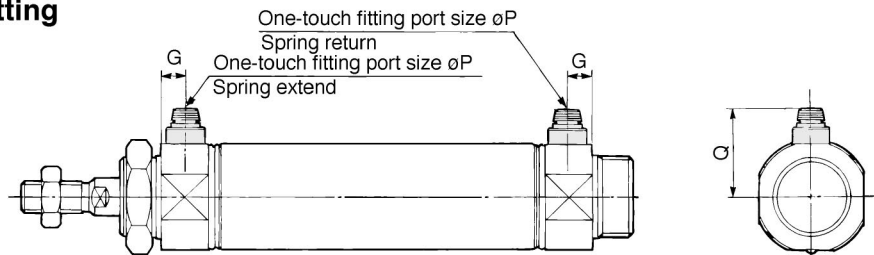
## Spring extend



## Boss-cut style



## Built-in One-touch fitting



Bore	A	AL	B1	B2	D	E	F	G	H	H1	H2	I	K	MM	N	NA	NN	P
20	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	8	28	5	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	8	45	6	8	33.5	5.5	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	8	45	6	8	37.5	5.5	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	11	50	8	10	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4

## Dimensions by stroke (mm)

Stroke Symbol	1 to 50		51 to 100		101 to 150		151 to 200		201 to 250	
	S	ZZ	S	ZZ	S	ZZ	S	ZZ	S	ZZ
20	87	141	112	166	137	191	—	—	—	—
25	87	145	112	170	137	195	—	—	—	—
32	89	147	114	172	139	197	164	222	—	—
40	113	179	138	204	163	229	188	254	213	279

## Boss-cut style (mm)

Stroke Symbol	1 to 50		51 to 100		101 to 150		151 to 200		201 to 250	
	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ	
20	128	153	178	—	—	—	—	—	—	
25	132	157	182	—	—	—	—	—	—	
32	134	159	184	209	—	—	—	—	—	
40	163	188	213	238	263	—	—	—	—	

## Built-in One-touch fitting

Bore	G	P	Q
20	8	6	23
25	8	6	26
32	8	6	28.5
40	11	8	32.5



Spring return Basic	Built-in One-touch fitting	Spring extend Basic	Built-in One-touch fitting
CM2B20.....SCM220A, #11	SCM220A, #11, #19	CM2B20.....SCM220A, #12	SCM220A, #12, #19
CM2B25.....SCM225A, #11	SCM225A, #11, #19	CM2B25.....SCM225A, #12	SCM225A, #12, #19
CM2B32.....SCM232A, #11	SCM232A, #11, #19	CM2B32.....SCM232A, #12	SCM232A, #12, #19
CM2B40.....SCM240A, #11	SCM240A, #11, #19	CM2B40.....SCM240A, #12	SCM240A, #12, #19

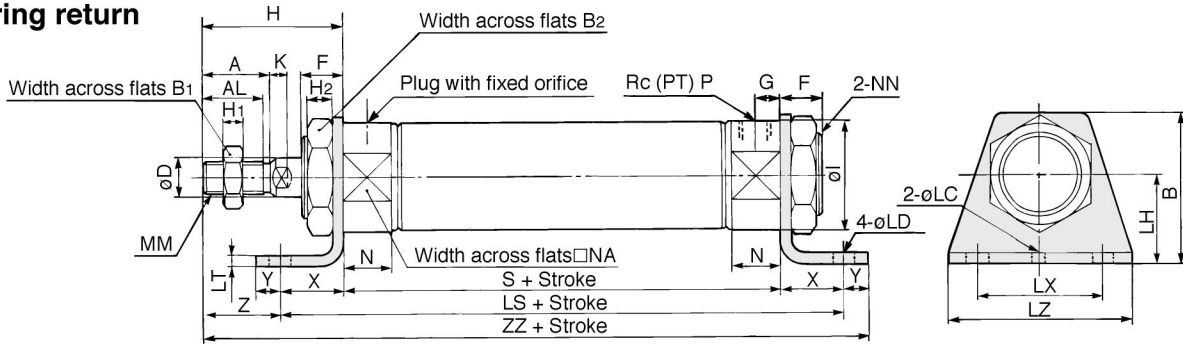
# Standard: Single Acting Spring Return/Extend **Series CM2**

Axial Foot (L)

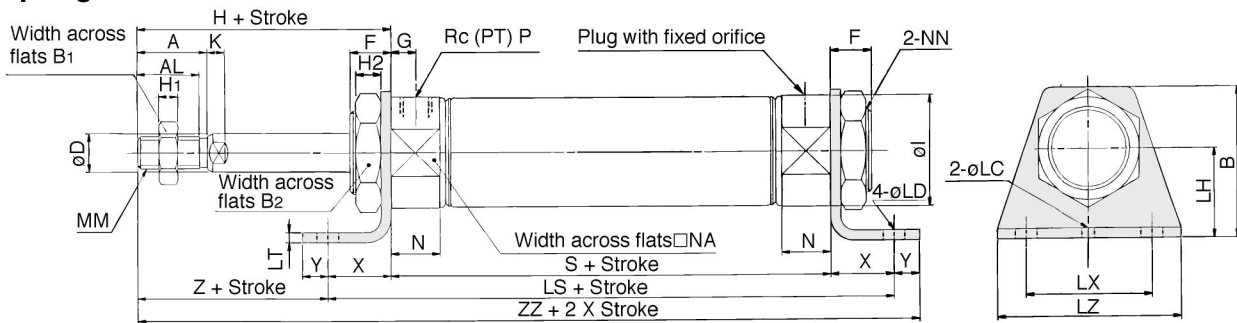


CM2L Bore size — Stroke  $\frac{S}{T}$

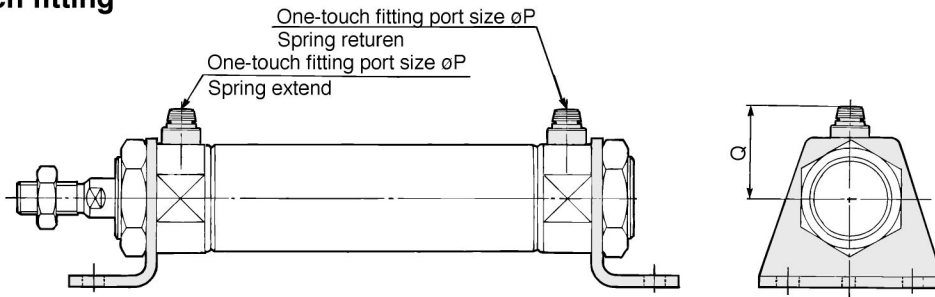
## Spring return



## Spring extend



## Built-in One-touch fitting



Bore	A	AL	B	B1	B2	D	F	G	H	H1	H2	I	K	LC	LD	LH	LT	LX	LZ	MM	N	NA	NN	P	X	Y	Z
20	18	15.5	40	13	26	8	13	8	41	5	8	28	5	4	6.8	25	3.2	40	55	M8 X 1.25	15	24	M20 X 1.5	1/8	20	8	21
25	22	19.5	47	17	32	10	13	8	45	6	8	33.5	5.5	4	6.8	28	3.2	40	55	M10 X 1.25	15	30	M26 X 1.5	1/8	20	8	25
32	22	19.5	47	17	32	12	13	8	45	6	8	37.5	5.5	4	6.8	28	3.2	40	55	M10 X 1.25	15	34.5	M26 X 1.5	1/8	20	8	25
40	24	21	54	22	41	14	16	11	50	8	10	46.5	7	4	7	30	3.2	55	75	M14 X 1.5	21.5	42.5	M32 X 2	1/4	23	10	27

## Dimensions by stroke

Bore	1 to 50			51 to 100			101 to 150			151 to 200			201 to 250		
	LS	S	ZZ	LS	S	ZZ	LS	S	ZZ	LS	S	ZZ	LS	S	ZZ
20	127	87	156	152	112	181	177	137	206	—	—	—	—	—	—
25	127	87	160	152	112	185	177	137	210	—	—	—	—	—	—
32	129	89	162	154	114	187	179	139	212	204	164	237	—	—	—
40	159	113	196	184	138	221	209	163	246	234	188	271	259	213	296

## Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5

Spring return	Basic	Foot	Built-in One-touch fitting	Spring extend	Basic	Foot	Built-in One-touch fitting
CM2L20	.....SCM220A, #11	SCM220A, #11, #3	SCM220A, #11, #3, #19	CM2L20	.....SCM220A, #12	SCM220A, #12, #3	SCM220A, #12, #3, #19
CM2L25	.....SCM225A, #11	SCM225A, #11, #3	SCM225A, #11, #3, #19	CM2L25	.....SCM225A, #12	SCM225A, #12, #3	SCM225A, #12, #3, #19
CM2L32	.....SCM232A, #11	SCM232A, #11, #3	SCM232A, #11, #3, #19	CM2L32	.....SCM232A, #12	SCM232A, #12, #3	SCM232A, #12, #3, #19
CM2L40	.....SCM240A, #11	SCM240A, #11, #3	SCM240A, #11, #3, #19	CM2L40	.....SCM240A, #12	SCM240A, #12, #3	SCM240A, #12, #3, #19

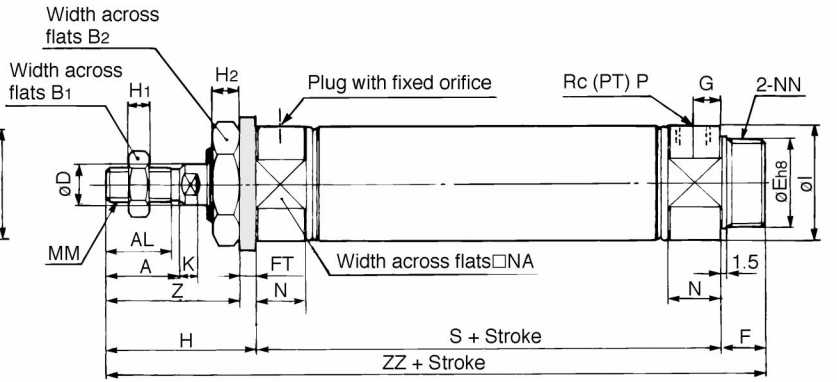
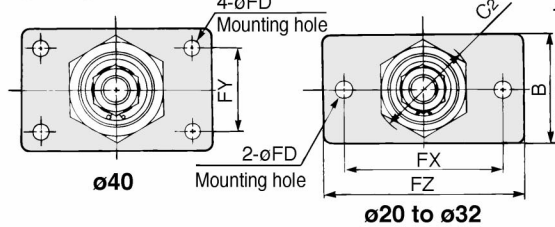
# Series CM2

Front Flange (F)

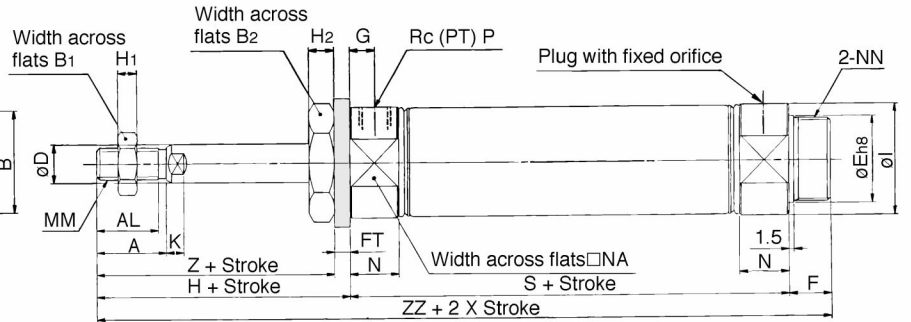
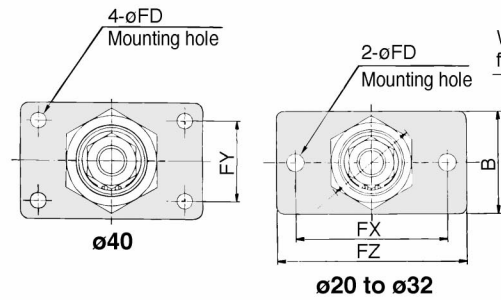


CM2F Bore size — Stroke  $\frac{S}{T}$

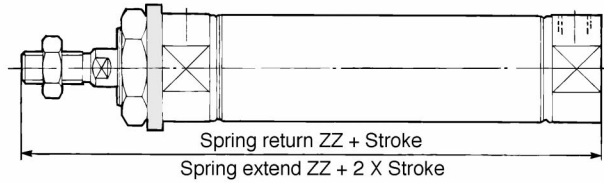
## Spring return



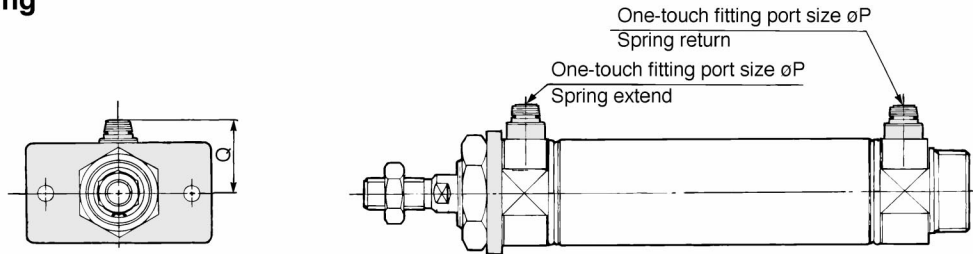
## Spring extend



## Boss-cut



## Built-in One-touch fitting



Bore	A	AL	B	B1	B2	C2	D	E	F	FD	FT	FX	FY	FZ	G	H	H1	H2	I	K	MM	N	NA	NN	P	Z
20	18	15.5	34	13	26	30	8	20 <sup>0</sup> <sub>-0.033</sub>	13	7	4	60	—	75	8	41	5	8	28	5	M8 X 1.25	15	24	M20 X 1.5	1/8	37
25	22	19.5	40	17	32	37	10	26 <sup>0</sup> <sub>-0.033</sub>	13	7	4	60	—	75	8	45	6	8	33.5	5.5	M10 X 1.25	15	30	M26 X 1.5	1/8	41
32	22	19.5	40	17	32	37	12	26 <sup>0</sup> <sub>-0.033</sub>	13	7	4	60	—	75	8	45	6	8	37.5	5.5	M10 X 1.25	15	34.5	M26 X 1.5	1/8	41
40	24	21	52	22	41	47.3	14	32 <sup>0</sup> <sub>-0.039</sub>	16	7	5	66	36	82	11	50	8	10	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4	45

## Dimensions by stroke

Bore	Stroke Symbol		1 to 50		51 to 100		101 to 150		151 to 200		201 to 250	
	S	ZZ	S	ZZ	S	ZZ	S	ZZ	S	ZZ	S	ZZ
20	87	141	112	166	137	191	—	—	—	—	—	—
25	87	145	112	170	137	195	—	—	—	—	—	—
32	89	147	114	172	139	197	164	222	—	—	—	—
40	113	179	138	204	163	229	188	254	213	279	—	—

## Boss-cut

Bore	Stroke Symbol		1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ	ZZ
20	128	153	178	—	—	—	—
25	132	157	182	—	—	—	—
32	134	159	184	209	—	—	—
40	163	188	213	238	263	—	—

## Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5



Spring return Basic  
 CM2F20.....SCM220A, #11  
 CM2F25.....SCM225A, #11  
 CM2F32.....SCM232A, #11  
 CM2F40.....SCM240A, #11

Spring extend Basic  
 CM2F20.....SCM220A, #12  
 CM2F25.....SCM225A, #12  
 CM2F32.....SCM232A, #12  
 CM2F40.....SCM240A, #12

Front flange  
 SCM220A, #11, #4  
 SCM225A, #11, #4  
 SCM232A, #11, #4  
 SCM240A, #11, #4

Front flange  
 SCM220A, #12, #4  
 SCM225A, #12, #4  
 SCM232A, #12, #4  
 SCM240A, #12, #4

Built-in One-touch fitting  
 SCM220A, #11, #4, #19  
 SCM225A, #11, #4, #19  
 SCM232A, #11, #4, #19  
 SCM240A, #11, #4, #19

Built-in One-touch fitting  
 SCM220A, #12, #4, #19  
 SCM225A, #12, #4, #19  
 SCM232A, #12, #4, #19  
 SCM240A, #12, #4, #19

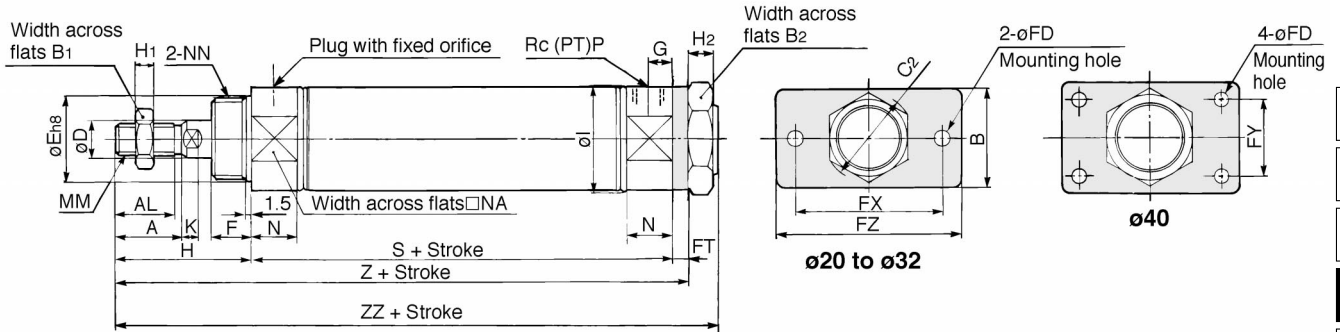
# Standard: Single Acting Spring Return/Extend **Series CM2**

## Rear Flange (G)

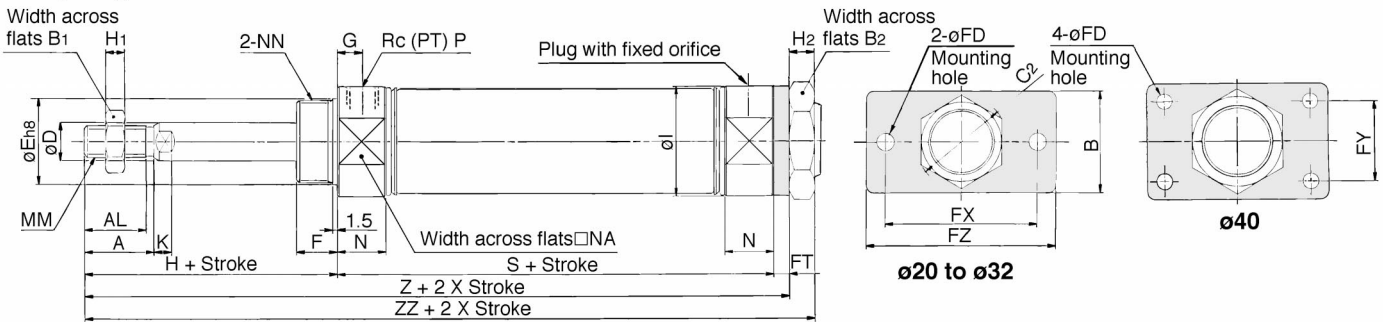


CM2G Bore size — Stroke  $\frac{S}{T}$

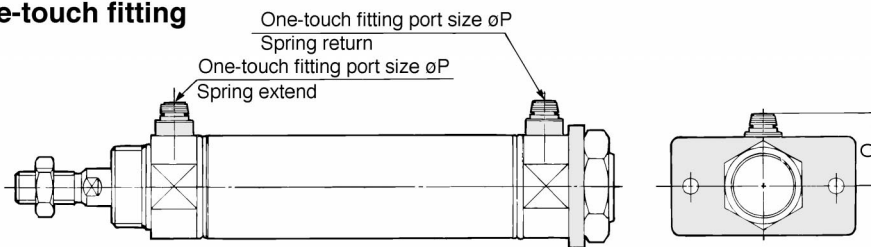
### Spring return



### Spring extend



### Built-in One-touch fitting



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

### Dimensions by stroke

Bore	Stroke Symbol			Stroke			Stroke			Stroke			Stroke		
	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ
20	87	132	141	112	157	166	137	182	191	—	—	—	—	—	—
25	87	136	145	112	161	170	137	186	195	—	—	—	—	—	—
32	89	138	147	114	163	172	139	188	197	164	213	222	—	—	—
40	113	168	179	138	193	204	163	218	229	188	243	254	213	268	279

### Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5

Spring return	Basic	Rear flange	Built-in One-touch fitting	Spring extend	Basic	Rear flange	Built-in One-touch fitting
CM2G20.....	SCM220A, #11	SCM220A, #11, #5	SCM220A, #11, #5, #19	CM2G20.....	SCM220A, #12	SCM220A, #12, #5	SCM220A, #12, #5, #19
CM2G25.....	SCM225A, #11	SCM225A, #11, #5	SCM225A, #11, #5, #19	CM2G25.....	SCM225A, #12	SCM225A, #12, #5	SCM225A, #12, #5, #19
CM2G32.....	SCM232A, #11	SCM232A, #11, #5	SCM232A, #11, #5, #19	CM2G32.....	SCM232A, #12	SCM232A, #12, #5	SCM232A, #12, #5, #19
CM2G40.....	SCM240A, #11	SCM240A, #11, #5	SCM240A, #11, #5, #19	CM2G40.....	SCM240A, #12	SCM240A, #12, #5	SCM240A, #12, #5, #19

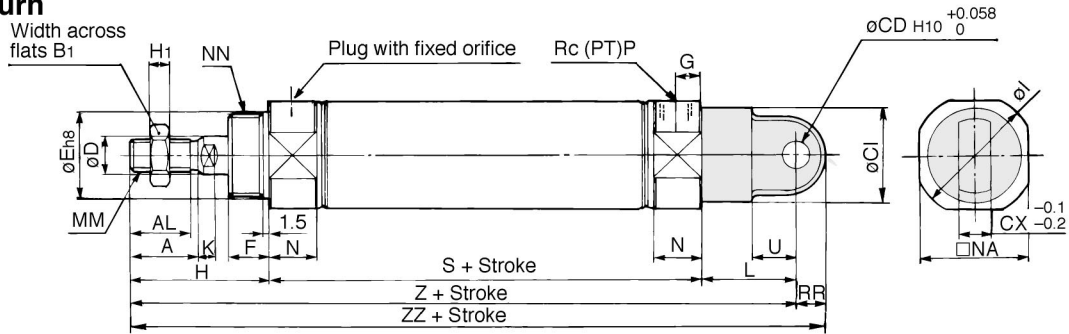
# Series CM2

Single Clevis (C)

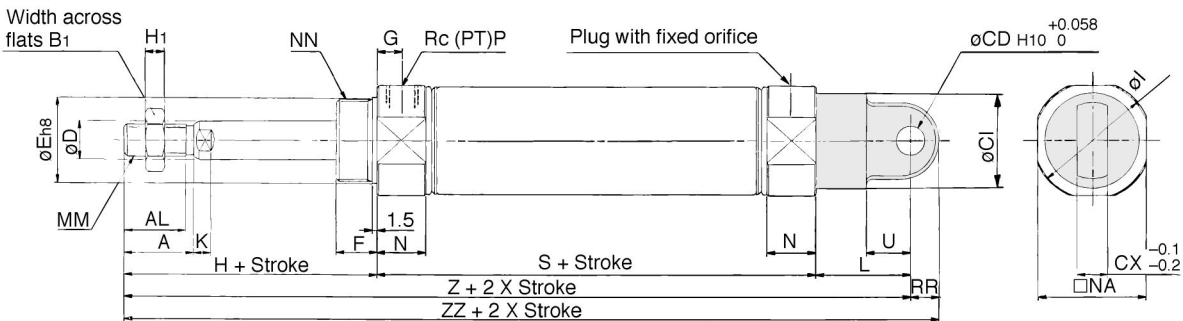


CM2C Bore size Stroke  $\frac{S}{T}$

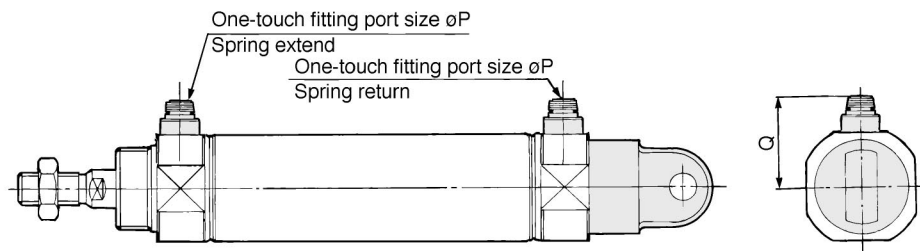
## Spring return



## Spring extend



## Built-in One-touch fitting



Bore	A	AL	B1	CD	CI	CX	D	E	F	G	H	H1	I	K	L	MM	N	NA	NN	P	RR	U
20	18	15.5	13	9	24	10	8	$20 \begin{smallmatrix} 0 \\ -0.033 \end{smallmatrix}$	13	8	41	5	28	5	30	M8 X 1.25	15	24	M20 X 1.5	$\frac{1}{8}$	9	14
25	22	19.5	17	9	30	10	10	$26 \begin{smallmatrix} 0 \\ -0.033 \end{smallmatrix}$	13	8	45	6	33.5	5.5	30	M10 X 1.25	15	30	M26 X 1.5	$\frac{1}{8}$	9	14
32	22	19.5	17	9	30	10	12	$26 \begin{smallmatrix} 0 \\ -0.033 \end{smallmatrix}$	13	8	45	6	37.5	5.5	30	M10 X 1.25	15	34.5	M26 X 1.5	$\frac{1}{8}$	9	14
40	24	21	22	10	38	15	14	$32 \begin{smallmatrix} 0 \\ -0.039 \end{smallmatrix}$	16	11	50	8	46.5	7	39	M14 X 1.5	21.5	42.5	M32 X 2	$\frac{1}{4}$	11	18

## Dimensions by stroke

Bore	Stroke		1 to 50			51 to 100			101 to 150			151 to 200			201 to 250		
	Symbol	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	
20		87	158	167	112	183	192	137	208	217	—	—	—	—	—	—	
25		87	162	171	112	187	196	137	212	221	—	—	—	—	—	—	
32		89	164	173	114	189	198	139	214	223	164	239	248	—	—	—	
40		113	202	213	138	227	238	163	252	263	188	277	288	213	302	313	

## Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5

Symbol	Spring return Basic	Single clevis	Built-in One-touch fitting	Spring extend Basic	Single clevis	Built-in One-touch fitting
CM2C20	SCM220A, #11	SCM220A, #11, #6	SCM220A, #11, #6, #19	SCM220A, #12	SCM220A, #12, #6	SCM220A, #12, #6, #19
CM2C25	SCM225A, #11	SCM225A, #11, #6	SCM225A, #11, #6, #19	SCM225A, #12	SCM225A, #12, #6	SCM225A, #12, #6, #19
CM2C32	SCM232A, #11	SCM232A, #11, #6	SCM232A, #11, #6, #19	SCM232A, #12	SCM232A, #12, #6	SCM232A, #12, #6, #19
CM2C40	SCM240A, #11	SCM240A, #11, #6	SCM240A, #11, #6, #19	SCM240A, #12	SCM240A, #12, #6	SCM240A, #12, #6, #19

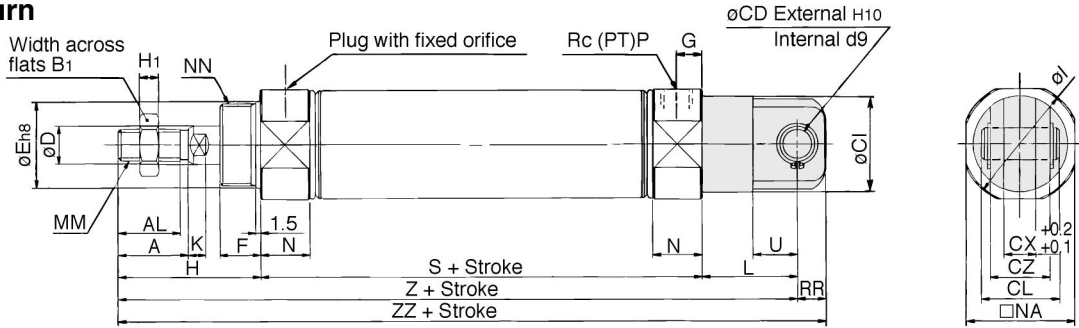


# Standard: Single Acting Spring Return/Extend **Series CM2**

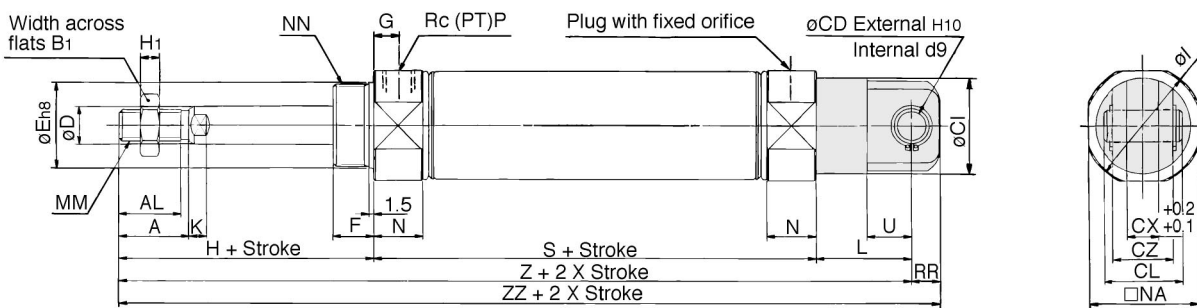
## Double Clevis (D)

CM2D Bore size Stroke  $\frac{S}{T}$

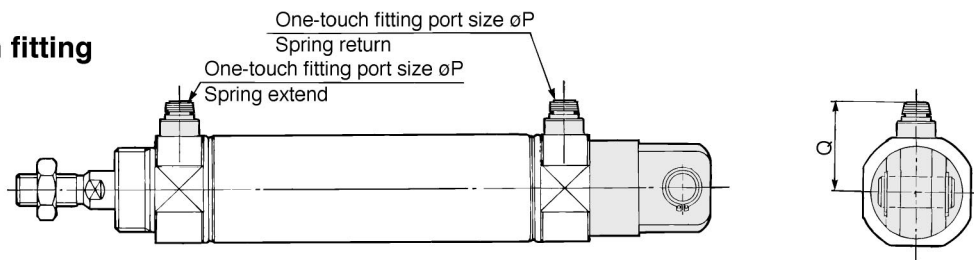
### Spring return



### Spring extend



### Built-in One-touch fitting



Bore	A	AL	B1	CD	CI	CL	CX	CZ	D	E	F	G	H	H1	I	K	L	MM	N	NA	NN	P	RR	U
20	18	15.5	13	9	24	25	10	19	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	30	M8 X 1.25	15	24	M20 X 1.5	1/8	9	14
25	22	19.5	17	9	30	25	10	19	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	30	M10 X 1.25	15	30	M26 X 1.5	1/8	9	14
32	22	19.5	17	9	30	25	10	19	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	30	M10 X 1.25	15	34.5	M26 X 1.5	1/8	9	14
40	24	21	22	10	38	41.2	15	30	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	39	M14 X 1.5	21.5	42.5	M32 X 2	1/4	11	18

### Dimensions by stroke \* Clevis pins and snap rings (cotter pins for bore size 40) are attached. (mm)

Bore	Stroke		1 to 50			51 to 100			101 to 150			151 to 200			201 to 250		
	Symbol	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	
20	S	87	158	167	112	183	192	137	208	217	—	—	—	—	—	—	
25	S	87	162	171	112	187	196	137	212	221	—	—	—	—	—		
32	S	89	164	173	114	189	198	139	214	223	164	239	248	—	—		
40	S	113	202	213	138	227	238	163	252	263	188	277	288	213	302	313	

### Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5

Spring return	Basic	Double clevis	Built-in One-touch fitting	Spring extend	Basic	Double clevis	Built-in One-touch fitting
CM2D20.....	SCM220A, #11	SCM220A, #11, #7	SCM220A, #11, #7, #19	CM2D20.....	SCM220A, #12	SCM220A, #12, #7	SCM220A, #12, #7, #19
CM2D25.....	SCM225A, #11	SCM225A, #11, #7	SCM225A, #11, #7, #19	CM2D25.....	SCM225A, #12	SCM225A, #12, #7	SCM225A, #12, #7, #19
CM2D32.....	SCM232A, #11	SCM232A, #11, #7	SCM232A, #11, #7, #19	CM2D32.....	SCM232A, #12	SCM232A, #12, #7	SCM232A, #12, #7, #19
CM2D40.....	SCM240A, #11	SCM240A, #11, #7	SCM240A, #11, #7, #19	CM2D40.....	SCM240A, #12	SCM240A, #12, #7	SCM240A, #12, #7, #19

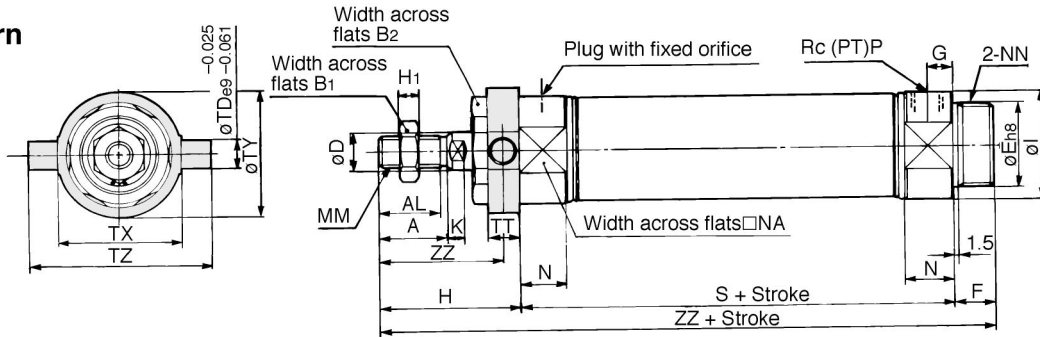
# Series CM2

Front Trunnion (U)

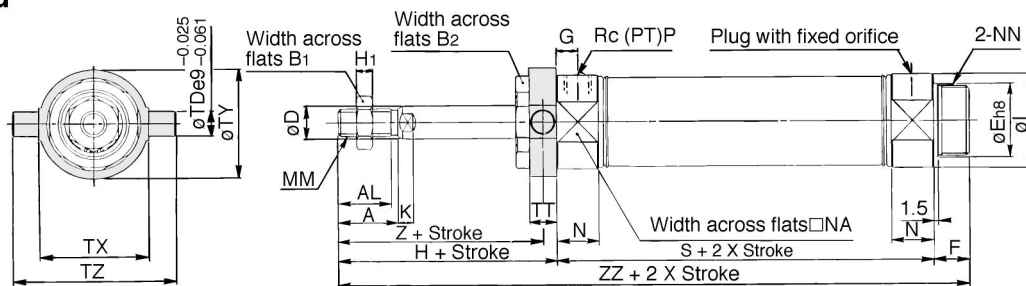


CM2U Bore size Stroke S T

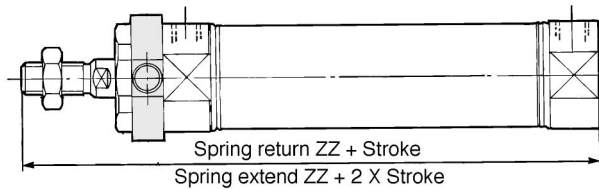
## Spring return



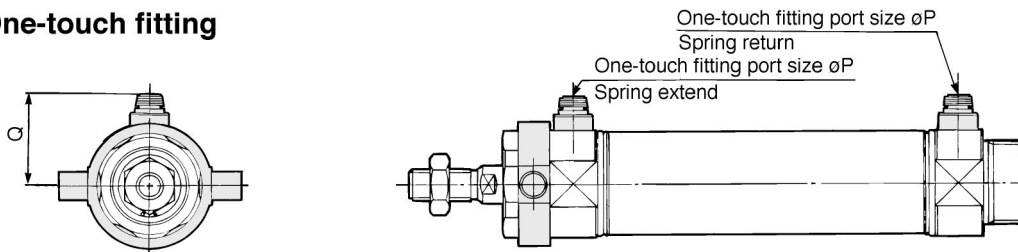
## Spring extend



## Boss-cut style



## Built-in One-touch fitting



Bore	A	AL	B1	B2	D	E	F	G	H	H1	I	K	MM	N	NA	NN	P	TD	TT	TX	TY	TZ	Z
20	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	M8 X 1.25	15	24	M20 X 1.5	1/8	8	10	32	32	52	36
25	22	19.5	17	32	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	M10 X 1.25	15	30	M26 X 1.5	1/8	9	10	40	40	60	40
32	22	19.5	17	32	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	M10 X 1.25	15	34.5	M26 X 1.5	1/8	9	10	40	40	60	40
40	24	21	22	41	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4	10	11	53	53	77	44.5

## Dimensions by stroke

Stroke Symbol	(mm)																
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250												
Bore	S	ZZ	S	ZZ	S	ZZ	S	ZZ	S	ZZ							
20	87	141	112	166	137	191	—	—	—	—							
25	87	145	112	170	137	195	—	—	—	—							
32	89	147	114	172	139	197	164	222	—	—							
40	113	179	138	204	163	229	188	254	213	279							

## Boss-cut

Stroke Symbol	(mm)				
	1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
Bore	ZZ	ZZ	ZZ	ZZ	ZZ
20	128	153	178	—	—
25	132	157	182	—	—
32	134	159	184	209	—
40	163	188	213	238	263

## Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5

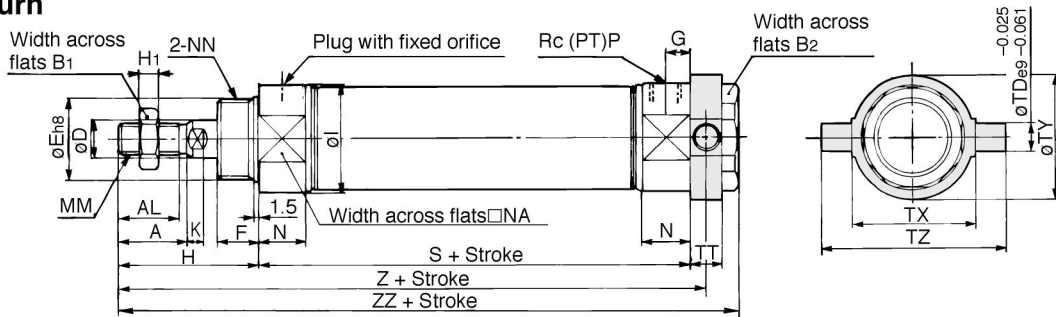
Spring return Basic	Front trunnion	Built-in One-touch fitting	Spring extend Basic	Front trunnion	Built-in One-touch fitting
CM2U20.....SCM220A, #11	SCM220A, #11, #8	SCM220A, #11, #8, #19	CM2U20.....SCM220A, #12	SCM220A, #12, #8	SCM220A, #12, #8, #19
CM2U25.....SCM225A, #11	SCM225A, #11, #8	SCM225A, #11, #8, #19	CM2U25.....SCM225A, #12	SCM225A, #12, #8	SCM225A, #12, #8, #19
CM2U32.....SCM232A, #11	SCM232A, #11, #8	SCM232A, #11, #8, #19	CM2U32.....SCM232A, #12	SCM232A, #12, #8	SCM232A, #12, #8, #19
CM2U40.....SCM240A, #11	SCM240A, #11, #8	SCM240A, #11, #8, #19	CM2U40.....SCM240A, #12	SCM240A, #12, #8	SCM240A, #12, #8, #19

# Standard: Single Acting Spring Return/Extend *Series CM2*

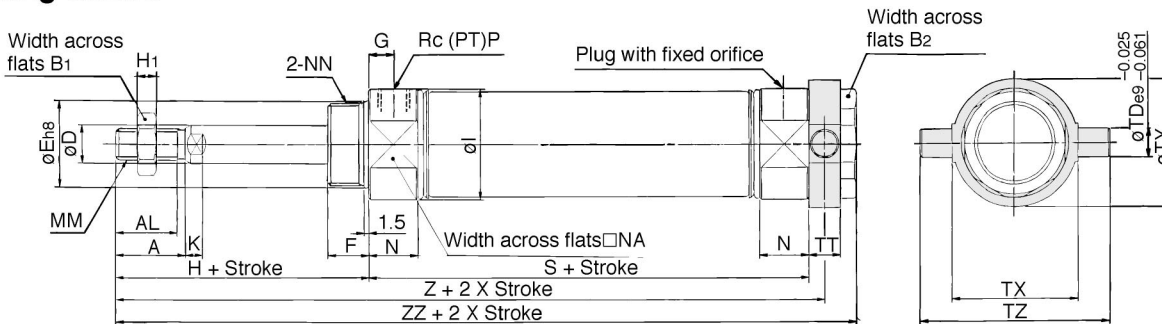
Rear Trunnion (T) 

CM2T Bore size — Stroke  $\frac{S}{T}$

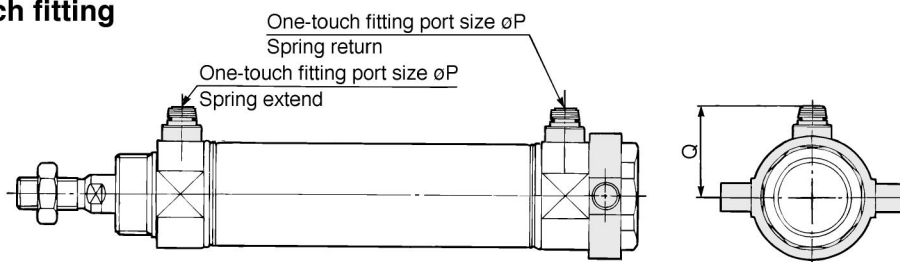
## Spring return



## Spring extend



## Built-in One-touch fitting



Bore	A	AL	B1	B2	D	E	F	G	H	H1	I	K	MM	N	NA	NN	P	TD	TT	TX	TY	TZ
20	18	15.5	13	26	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	M8 X 1.25	15	24	M20 X 1.5	1/8	8	10	32	32	52
25	22	19.5	17	32	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	M10 X 1.25	15	30	M26 X 1.5	1/8	9	10	40	40	60
32	22	19.5	17	32	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	M10 X 1.25	15	34.5	M26 X 1.5	1/8	9	10	40	40	60
40	24	21	22	41	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	M14 X 1.5	21.5	42.5	M32 X 2	1/4	10	11	53	53	77

## Dimensions by stroke

Stroke Symbol	1 to 50		51 to 100			101 to 150			151 to 200			201 to 250			
	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ
20	87	133	143	112	158	168	137	183	193	—	—	—	—	—	—
25	87	137	147	112	162	172	137	187	197	—	—	—	—	—	—
32	89	139	149	114	164	174	139	189	199	164	214	224	—	—	—
40	113	168.5	179	138	193.5	204	163	218.5	229	188	243.5	254	213	268.5	279

## Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5

Spring return	Basic	Rear trunnion	Built-in One-touch fitting	Spring extend	Basic	Rear trunnion	Built-in One-touch fitting
CM2T20.....	SCM220A, #11	SCM220A, #11, #9	SCM220A, #11, #9, #19	CM2T20.....	SCM220A, #12	SCM220A, #12, #9	SCM220A, #12, #9, #19
CM2T25.....	SCM225A, #11	SCM225A, #11, #9	SCM225A, #11, #9, #19	CM2T25.....	SCM225A, #12	SCM225A, #12, #9	SCM225A, #12, #9, #19
CM2T32.....	SCM232A, #11	SCM232A, #11, #9	SCM232A, #11, #9, #19	CM2T32.....	SCM232A, #12	SCM232A, #12, #9	SCM232A, #12, #9, #19
CM2T40.....	SCM240A, #11	SCM240A, #11, #9	SCM240A, #11, #9, #19	CM2T40.....	SCM240A, #12	SCM240A, #12, #9	SCM240A, #12, #9, #19

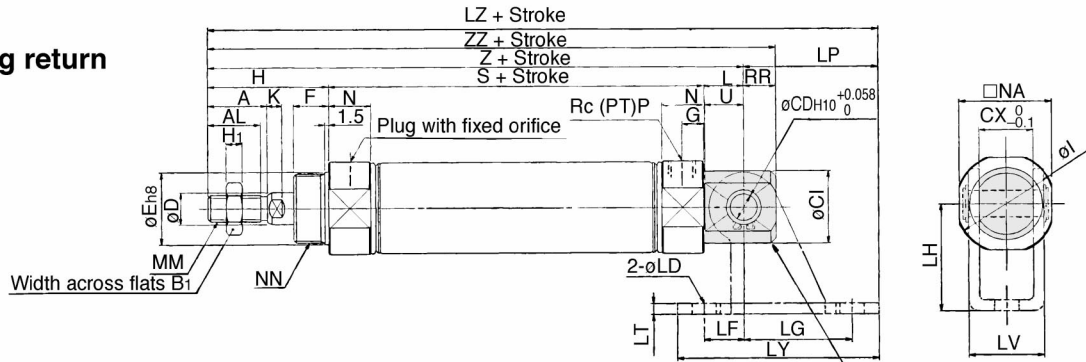
# Series CM2

Integrated Clevis (E)



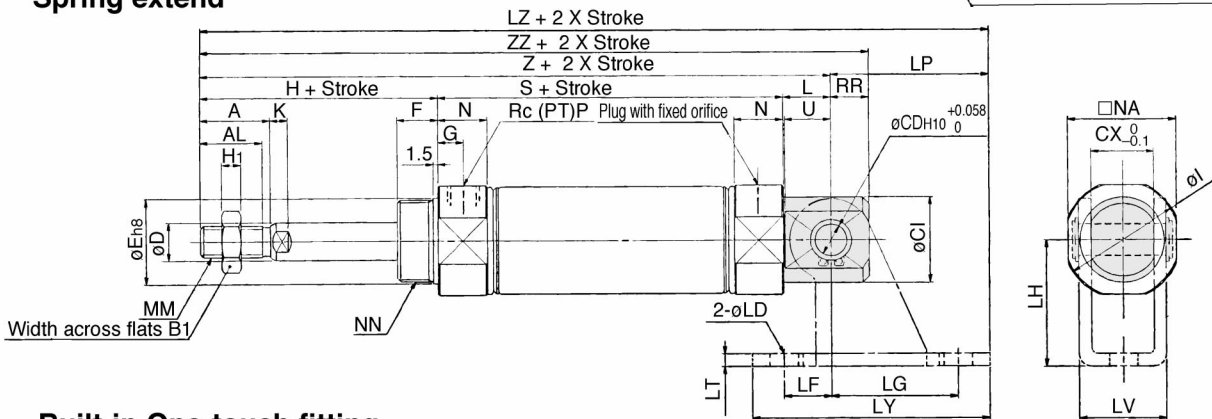
CM2E Bore size Stroke  $\frac{S}{T}$

## Spring return

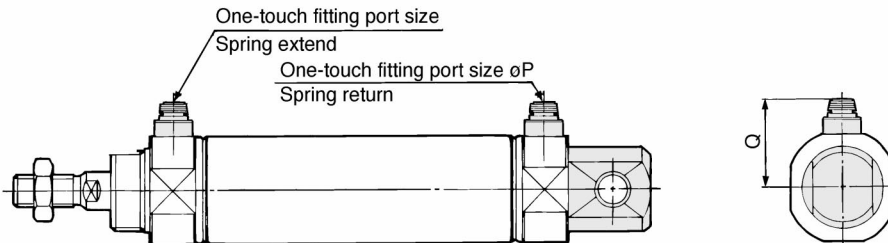


Refer to p.1.4-20 for details of the clevis bracket.

## Spring extend



## Built-in One-touch fitting



Bore	A	AL	B1	CD	CI	CX	D	E	F	G	H	H1	I	K	L	MM	N	NA	NN	P	PR	U
20	18	15.5	13	8	20	12	8	20 <sup>0</sup> <sub>-0.033</sub>	13	8	41	5	28	5	12	M8 X 1.25	15	24	M20 X 1.5	1/8	9	11.5
25	22	19.5	17	8	22	12	10	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	33.5	5.5	12	M10 X 1.25	15	30	M26 X 1.5	1/8	9	11.5
32	22	19.5	17	10	27	20	12	26 <sup>0</sup> <sub>-0.033</sub>	13	8	45	6	37.5	5.5	15	M10 X 1.25	15	34.5	M26 X 1.5	1/8	12	14.5
40	24	21	22	10	33	20	14	32 <sup>0</sup> <sub>-0.039</sub>	16	11	50	8	46.5	7	15	M14 X 1.5	21.5	42.5	M32 X 2	1/4	12	14.5

## Dimensions by stroke

Stroke Symbol	1 to 50			51 to 100			101 to 150			151 to 200			201 to 250		
	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ	S	Z	ZZ
20	87	140	149	112	165	174	137	190	199	—	—	—	—	—	—
25	87	144	153	112	169	178	137	194	203	—	—	—	—	—	—
32	89	149	161	114	174	186	139	199	211	164	224	236	—	—	—
40	113	178	190	138	203	215	163	228	240	188	253	265	213	278	290

## Pivot bracket

Bore	LD	LF	LG	LH	LP	LT	LV	LY	(mm)				
									1 to 50	51 to 100	101 to 150	151 to 200	201 to 250
20	6.8	15	30	30	37	3.2	18.4	59	LZ	LZ	LZ	LZ	LZ
25	6.8	15	30	30	37	3.2	18.4	59	181	206	231	—	—
32	9	15	40	40	50	4	28	75	199	224	249	274	—
40	9	15	40	40	50	4	28	75	228	253	278	303	328

## Built-in One-touch fitting

Bore	P	Q
20	6	23
25	6	26
32	6	28.5
40	8	32.5

Spring return Basic	Clevis bracket	Built-in One-touch fitting	Spring extend Basic	Clevis bracket	Built-in One-touch fitting
CM2E20.....SCM220A, #11	SCM220A, #11, #7	SCM220A, #11, #7, #19	CM2E20.....SCM220A, #12	SCM220A, #12, #7	SCM220A, #12, #7, #19
CM2E25.....SCM225A, #11	SCM225A, #11, #7	SCM225A, #11, #7, #19	CM2E25.....SCM225A, #12	SCM225A, #12, #7	SCM225A, #12, #7, #19
CM2E32.....SCM232A, #11	SCM232A, #11, #7	SCM232A, #11, #7, #19	CM2E32.....SCM232A, #12	SCM232A, #12, #7	SCM232A, #12, #7, #19
CM2E40.....SCM240A, #11	SCM240A, #11, #7	SCM240A, #11, #7, #19	CM2E40.....SCM240A, #12	SCM240A, #12, #7	SCM240A, #12, #7, #19

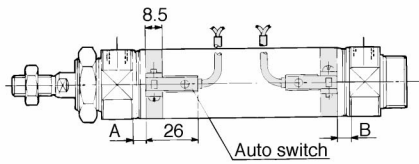
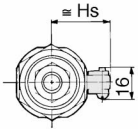
# Standard: Single Acting Spring Return/Extend *Series CM2*

## Auto Switch Mounting Position and Mounting Height: Spring Return (S)

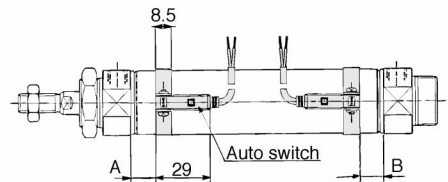
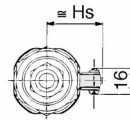
### Reed Switch

### Solid State Switch

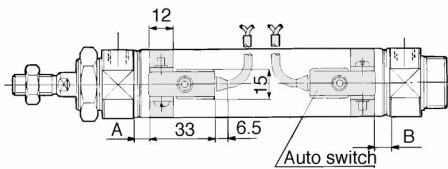
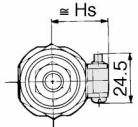
D-C7/C8



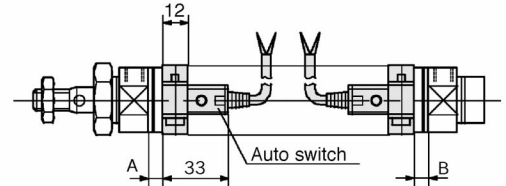
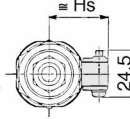
D-H7□/H7□W  
D-H7□F/H7BAL



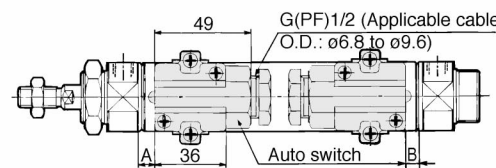
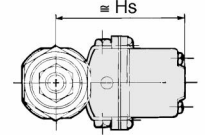
D-B5/B6/B59W



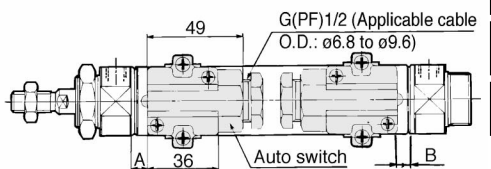
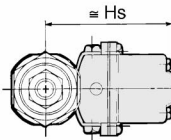
D-G5NTL



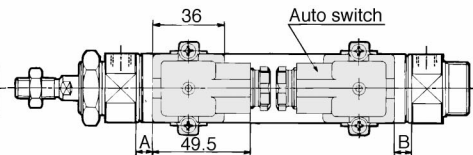
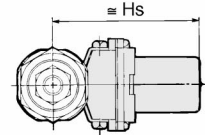
D-A33A/A34A



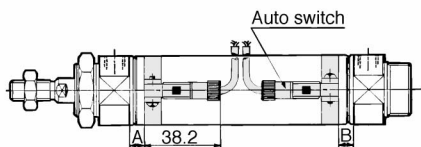
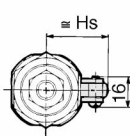
D-G39A  
D-K39A



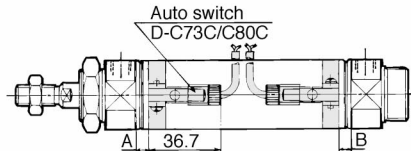
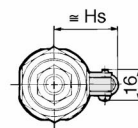
D-A44A



D-H7C



D-C73C/C80C



### Auto Switch Position: Spring Return (S)

(mm)

### Mounting Height

(mm)

Auto switch model	Bore size	A dimensions					B
		to 50	51 to 100	101 to 150	151 to 200	200 to 250	
D-B5 D-B6	20	26	51	76	—	—	0
	25	26	51	76	—	—	0
	32	27	52	77	102	—	1
	40	32	57	82	107	132	6
D-C7 D-C8 D-C73C D-C80C	20	32	57	82	—	—	6
	25	32	57	82	—	—	6
	32	33	58	83	108	—	7
	40	38	63	88	113	138	12
D-B59W	20	29	54	79	—	—	3
	25	29	54	79	—	—	3
	32	30	55	80	105	—	4
	40	35	60	85	110	135	9
D-A3□A D-G39A D-K39A D-A44A	20	25.5	50.5	75.5	—	—	0
	25	25.5	50.5	75.5	—	—	0
	32	26.5	51.5	76.5	101.5	—	0.5
	40	31.5	56.5	81.5	106.5	131.5	5.5
D-H7□ D-H7C	20	31	56	81	—	—	5
	25	31	56	81	—	—	5
	32	32	57	82	107	—	6
	40	37	62	87	112	137	11
D-H7□W D-H7BAL D-H7□F	20	29.5	54.5	79.5	—	—	3.5
	25	29.5	54.5	79.5	—	—	3.5
	32	30.5	55.5	80.5	105.5	—	4.5
	40	35.5	60.5	85.5	110.5	135.5	9.5
D-G5NTL	20	27.5	52.5	77.5	—	—	1.5
	25	27.5	52.5	77.5	—	—	1.5
	32	28.5	53.5	78.5	103.5	—	2.5
	40	33.5	58.5	83.5	108.5	133.5	7.5

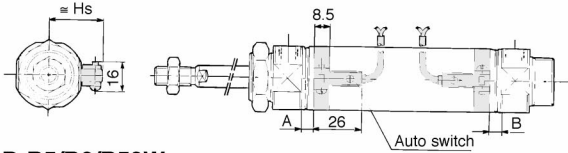
Auto switch model	Bore size	Hs
D-B5 D-B6 D-B59W D-G5NTL	20	25.5
	25	28
	32	31.5
	40	35.5
D-C7/C8 D-H7□ D-H7□W D-H7BAL D-H7□F	20	22.5
	25	25
	32	28.5
	40	32.5
	20	25
D-C73C D-C80C D-H7C	25	27.5
	32	31
	40	35
	20	60
D-A3□A D-G39A D-K39A	25	62.5
	32	66
	40	70
	20	69.5
D-A44A	25	72
	32	75.5
	40	79.5

# Series CDM2

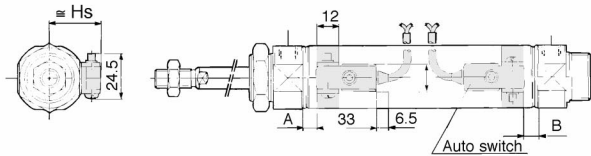
## Auto Switch Mounting Position and Mounting Height: Spring Extend (T)

### Reed Switch

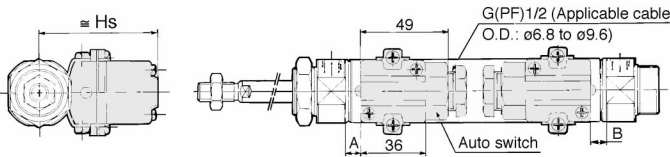
D-C7/C8



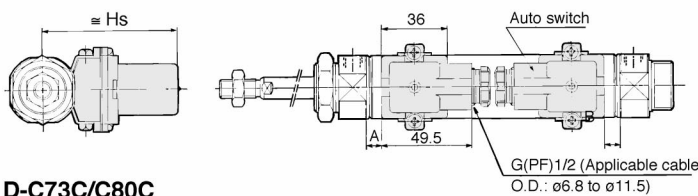
D-B5/B6/B59W



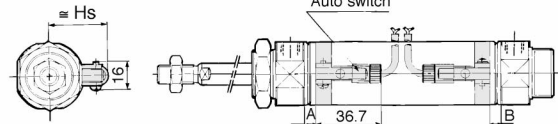
D-A33A/A34A



D-A44A

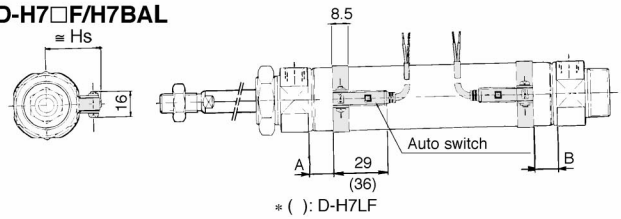


D-C73C/C80C



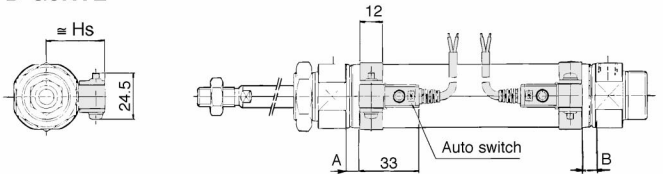
### Solid State Switch

D-H7□/H7□W  
D-H7□F/H7BAL

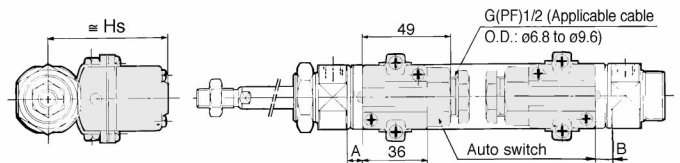


\* ( ) : D-H7LF

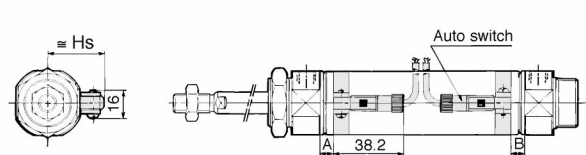
D-G5NTL



D-G39A  
D-K39A



D-H7C



### Auto Switch Position: Spring Extend (T)

Auto switch model	Bore size (mm)	A	B dimensions (mm)				
			to 50	51 to 100	101 to 150	151 to 200	200 to 250
D-B5 D-B6	20	1	25	50	75	—	—
	25	1	25	50	75	—	—
	32	2	26	51	76	101	—
	40	7	31	56	81	106	131
D-C7 D-C8 D-C73C D-C80C	20	7	31	56	81	—	—
	25	7	31	56	81	—	—
	32	8	32	57	82	107	—
	40	13	37	62	87	112	137
D-B59W	20	4	28	53	78	—	—
	25	4	28	53	78	—	—
	32	5	29	54	79	104	—
	40	10	34	59	84	109	134
D-A3□A D-G39A D-K39A D-A44A	20	0.5	24.5	49.5	74.5	—	—
	25	0.5	24.5	49.5	74.5	—	—
	32	1.5	25.5	50.5	75.5	100.5	—
	40	6.5	30.5	55.5	80.5	105.5	130.5
D-H7□ D-H7C	20	6	30	55	80	—	—
	25	6	30	55	80	—	—
	32	7	31	56	81	106	—
	40	12	36	61	86	111	136
D-H7□W D-H7BAL D-H7□F	20	4.5	28.5	53.5	78.5	—	—
	25	4.5	28.5	53.5	78.5	—	—
	32	5.5	29.5	54.5	79.5	104.5	—
	40	10.5	34.5	59.5	83.5	109.5	134.5
D-G5NTL	20	2.5	26.5	51.5	76.5	—	—
	25	2.5	26.5	51.5	76.5	—	—
	32	3.5	27.5	52.5	77.5	102.5	—
	40	8.5	32.5	57.5	81.5	107.5	132.5

### Mounting Height

Auto switch model	Bore size (mm)	≅ Hs (mm)
D-B5 D-B6 D-B59W D-G5NTL	20	25.5
	25	28
	32	31.5
	40	35.5
D-C7/C8 D-H7□ D-H7□W D-H7BAL D-H7□F	20	22.5
	25	25
	32	28.5
	40	32.5
D-C73C D-C80C D-H7C	20	25
	25	27.5
	32	31
	40	35
D-A3□A D-G39A D-K39A	20	60
	25	62.5
	32	66
	40	70
D-A44A	20	69.5
	25	72
	32	75.5
	40	79.5

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