

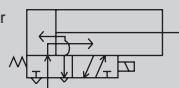


Small cylinder with valve double acting/single rod

# CKV2 Series

● Bore size:  $\phi 20/\phi 25/\phi 32/\phi 40$

JIS symbol ● Double acting cylinder with valve



## Specifications

Item	CKV2 (Standard/with switch)			
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation	Double acting/with valve			
Working fluid	Compressed air			
Max. working pressure MPa	1 ( $\approx 150$ psi, 10 bar)			
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar)			
Proof pressure MPa	1.6 ( $\approx 230$ psi, 16 bar)			
Ambient temperature $^{\circ}\text{C}$	-5 (23 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ ) (no freezing)			
Port size	Rc1/8			
Stroke tolerance mm	$^{+2.0}_0$ ( to 200)		$^{+2.4}_0$ (201 to 750)	
Working piston speed mm/s	50 to 500		50 to 430	50 to 300
Cushion	Rubber cushion			
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)			
Allowable absorbed energy J	0.166	0.308	0.424	0.639
<b>Solenoid valve specifications</b>				
Rated voltage (note) V	100 AC(50/60 Hz)	200 AC(50/60 Hz)	24 DC	
Starting current A	0.056/0.048	0.028/0.024	0.110	
Holding current A	0.028/0.024	0.014/0.012		
Power consumption W	2.0	2.0	2.5	
Voltage fluctuation range	$\pm 10\%$			
Thermal class	Class B or equivalent			

● Note: 100 VAC and 200 VAC are available with 110 VAC and 220 VAC (60 Hz).

## Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 20$	25/50/75/100/150/200	750	5
$\phi 25$			
$\phi 32$			
$\phi 40$			

\*1: The custom stroke is available in 1 mm increments.

\*2: The stroke will be 25 mm and over with bellows "J". Contact CKD when stroke is shorter than 25 mm.

## Min. stroke with switch

(Unit: mm)

Switch quantity	1					2					3				
	Proximity			Reed		Proximity			Reed		Proximity			Reed	
	T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8	T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8	T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8
Bore size (mm)															
$\phi 20$	10					25	30	35	25	35	50	55	55	50	55
$\phi 25$	10					25	30	35	25	35	50	55	55	50	55
$\phi 32$	10					25	30	35	25	35	50	55	55	50	55
$\phi 40$	10					25	30	35	25	35	50	55	55	50	55

\*1: Up to 3 switches can be mounted.

### Switch specifications

● 1-color/2-color LED

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed						
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay	For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-			10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)		
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142				

\*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

\*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

\*3: The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

### Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke (S) = 0 mm					Switch weight	Switch rail + band weight	Additional weight per S = 10 mm
	Bore size (mm)	Basic (00)	Axial foot (LB)	Rod side flange (FA)	Rod side trunnion (TA)			
ø20	0.47	0.63	0.53	0.52	0.49	Refer to the weight in the switch specifications.	0.005	0.01
ø25	0.57	0.79	0.72	0.67	0.60		0.005	0.01
ø32	0.62	0.84	0.77	0.72	0.65		0.009	0.02
ø40	0.81	1.08	0.96	0.97	0.85		0.009	0.02

(Example) Product weight of CKV2-FA-32-50-1-T0H-D

Product weight when S = 0 mm ..... 0.77 kg

Additional weight when S = 50 mm ... Additional weight when S = 10 mm  $0.02 \times \frac{\text{Product stroke (50)}}{10} = 0.10$  kg

Weight of 2 switches ..... 0.036 kg

Weight of switch rail + 2 bands ..... 0.018 kg

Product weight ..... 0.77 kg + 0.1 kg + 0.036 kg + 0.018 kg = 0.924 kg

### Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	47.1	62.8	94.2	1.26x10 <sup>2</sup>	1.57x10 <sup>2</sup>	1.88x10 <sup>2</sup>	2.20x10 <sup>2</sup>	2.51x10 <sup>2</sup>	2.83x10 <sup>2</sup>	3.14x10 <sup>2</sup>
	Pull	35.3	47.1	70.7	94.2	1.18x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.65x10 <sup>2</sup>	1.88x10 <sup>2</sup>	2.12x10 <sup>2</sup>	2.36x10 <sup>2</sup>
ø25	Push	73.6	98.2	1.47x10 <sup>2</sup>	1.96x10 <sup>2</sup>	2.45x10 <sup>2</sup>	2.95x10 <sup>2</sup>	3.44x10 <sup>2</sup>	3.93x10 <sup>2</sup>	4.42x10 <sup>2</sup>	4.91x10 <sup>2</sup>
	Pull	56.7	75.6	1.13x10 <sup>2</sup>	1.51x10 <sup>2</sup>	1.89x10 <sup>2</sup>	2.27x10 <sup>2</sup>	2.64x10 <sup>2</sup>	3.02x10 <sup>2</sup>	3.40x10 <sup>2</sup>	3.78x10 <sup>2</sup>
ø32	Push	1.21x10 <sup>2</sup>	1.61x10 <sup>2</sup>	2.41x10 <sup>2</sup>	3.22x10 <sup>2</sup>	4.02x10 <sup>2</sup>	4.83x10 <sup>2</sup>	5.63x10 <sup>2</sup>	6.43x10 <sup>2</sup>	7.24x10 <sup>2</sup>	8.04x10 <sup>2</sup>
	Pull	1.04x10 <sup>2</sup>	1.38x10 <sup>2</sup>	2.07x10 <sup>2</sup>	2.76x10 <sup>2</sup>	3.46x10 <sup>2</sup>	4.15x10 <sup>2</sup>	4.84x10 <sup>2</sup>	5.53x10 <sup>2</sup>	6.22x10 <sup>2</sup>	6.91x10 <sup>2</sup>
ø40	Push	1.88x10 <sup>2</sup>	2.51x10 <sup>2</sup>	3.77x10 <sup>2</sup>	5.03x10 <sup>2</sup>	6.28x10 <sup>2</sup>	7.54x10 <sup>2</sup>	8.80x10 <sup>2</sup>	1.01x10 <sup>3</sup>	1.13x10 <sup>3</sup>	1.26x10 <sup>3</sup>
	Pull	1.65x10 <sup>2</sup>	2.21x10 <sup>2</sup>	3.31x10 <sup>2</sup>	4.41x10 <sup>2</sup>	5.51x10 <sup>2</sup>	6.62x10 <sup>2</sup>	7.72x10 <sup>2</sup>	8.82x10 <sup>2</sup>	9.92x10 <sup>2</sup>	1.10x10 <sup>3</sup>

# CKV2 Series

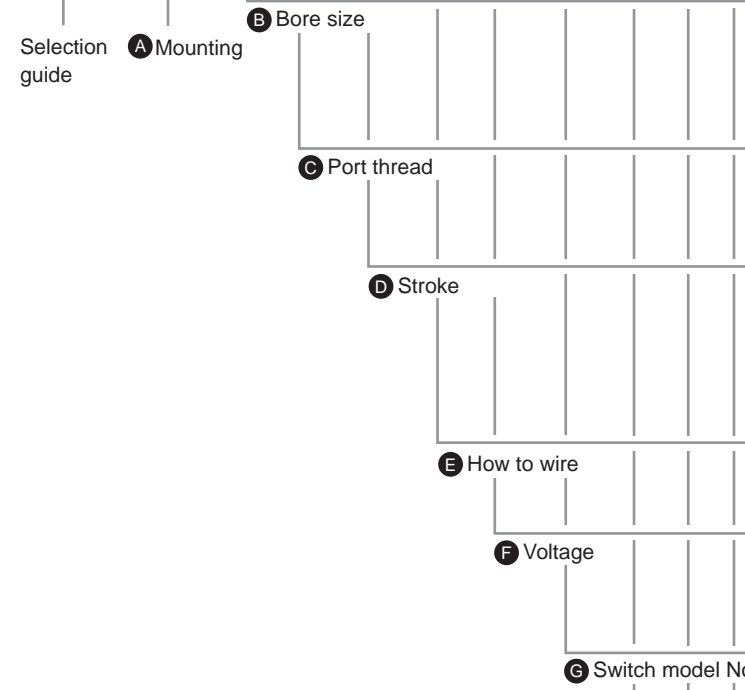
## How to order

No switch (built-in magnet for switch)

CKV2 - LB - 20 - 25 - U - 1 - J I

With switch (built-in magnet for switch)

CKV2 - LB - 20 - 25 - U - 1 - T0H - R - J I



### ⚠ Precautions for model No. selection

- \*1 : Refer to page 680 for the min. stroke with switch.
- \*2 : The stroke will be 25 mm and over with bellows "J". Contact CKD when stroke is shorter than 25 mm.
- \*3 : The surge suppressor (G) is included when the wiring method is grommet lead wire.
- \*4 : The type with lamp (E) is available only for the DIN terminal (U) wiring method.
- \*5 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- \*6 : For copper and PTFE free (P6), check the delivery date as it is a made-to-order product.
- \*7 : "I" and "Y" cannot be selected together.
- \*8 : Refer to Ending Page 85 for custom specifications of rod end form.
- \*9 : Refer to page 678 for combination of variations/options.
- \*10: Up to 3 switches can be mounted. If four or more switches are required, switch mounting brackets for the extra switches must be prepared separately.

[Example of model No.]

**CKV2-LB-20-25-U-1-T0H-R-JI**

Model: Small cylinder with valve double acting/single rod

- A** Mounting : Axial foot
- B** Bore size : ø20 mm
- C** Port thread : Rc thread
- D** Stroke : 25 mm
- E** How to wire : DIN terminal
- F** Voltage : 100 VAC
- G** Switch model No. : Reed T0H switch, lead wire 1m
- H** Switch quantity : 1 on rod side
- I** Option : Bellows for max. ambient temperature 100°C
- J** Accessory : Rod eye

Code	Description						
<b>A Mounting</b>							
00	Basic						
LB	Axial foot						
FA	Rod side flange						
TA	Rod side trunnion						
TB	Head side trunnion						
<b>B Bore size (mm)</b>							
20	ø20						
25	ø25						
32	ø32						
40	ø40						
<b>C Port thread</b>							
Blank	Rc thread						
NN	NPT thread (made-to-order product)						
GN	G thread (made-to-order product)						
<b>D Stroke (mm)</b>							
Bore size	Stroke *1	Custom stroke					
ø20	5 to 750	In 1 mm increments					
ø25	5 to 750						
ø32	5 to 750						
ø40	5 to 750						
<b>E How to wire</b>							
Blank	Grommet lead wire (300 mm)						
U	DIN terminal						
<b>F Voltage</b>							
1	100 VAC						
2	200 VAC						
3	24 VDC						
<b>G Switch model No.</b>							
Axial lead wire	Radial lead wire	Contact	Voltage	Indicator	Lead wire		
T0H*	T0V*	Reed	AC	1-color LED	2-wire		
T5H*	T5V*		DC			No indicator lamp	
T8H*	T8V*		●	1-color LED			
T1H*	T1V*		●	1-color LED			
T2H*	T2V*	Proximity	●	2-color LED	2-wire		
T3H*	T3V*		●			1-color LED	3-wire
T3PH*	T3PV*		●				
T2WH*	T2WV*		●	2-color LED	2-wire		
T2YH*	T2YV*		●			2-color LED	3-wire
T3WH*	T3WV*		●				
T3YH*	T3YV*	●	1-color LED off-delay	2-wire			
T2JH*	T2JV*	●			1-color LED off-delay	2-wire	
<b>* Lead wire length</b>							
Blank	1 m (standard)						
3	3 m (option)						
5	5 m (option)						
<b>H Switch quantity</b>							
R	1 on rod side						
H	1 on head side						
D	2						
T	3						
<b>I Option</b>							
J	Bellows	Max. ambient temp.	100°C	Instantaneous max. temp	200°C		
L	Bellows	250°C		400°C			
M	Piston rod material (stainless steel)						
W	With silencer						
G	With surge suppressor						
E	With indicator lamp						
X	Pull when energized						
P6	Copper and PTFE free specification (made-to-order product)						
<b>J Accessory</b>							
I	Rod eye						
Y	Rod clevis (pin, washer, split pin included)						
B2	Clevis bracket						
B3	Clevis bracket (clevis)						

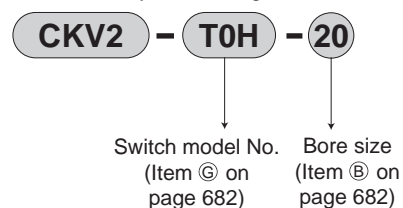
**H** Switch quantity  
\*1

**I** Option  
\*2/\*3/\*4/\*5/\*6

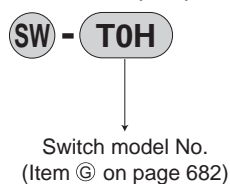
**J** Accessory  
\*7

### How to order switch

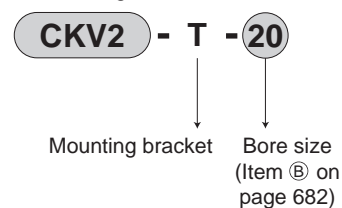
● Switch body + mounting bracket set



● Switch body only



● Mounting bracket set



### How to order mounting bracket

Bore size (mm)	ø20	ø25	ø32	ø40
<b>Mounting bracket</b>				
Axial foot (LB) rod side	M1-LB-20	M1-LB-30	M1-LB-30	M1-LB-30
Axial foot (LB) head side	M1-LBV-20	M1-LBV-30	M1-LBV-30	M1-LBV-40
Flange (FA)	M1-FA-20	M1-FA-30	M1-FA-30	M1-FA-30
Trunnion (TA)	M1-TA-20	M1-TA-30	M1-TA-30	M1-TA-40
Bolt for head side trunnion (TB)	M1-TB-20	M1-TB-30	M1-TB-30	M1-TB-40

\*1 : With regard to mounting brackets, the axial foot rod side and the flange include mounting nuts and toothed washers, the trunnion includes mounting nuts, and the axial foot head side includes mounting bolts.

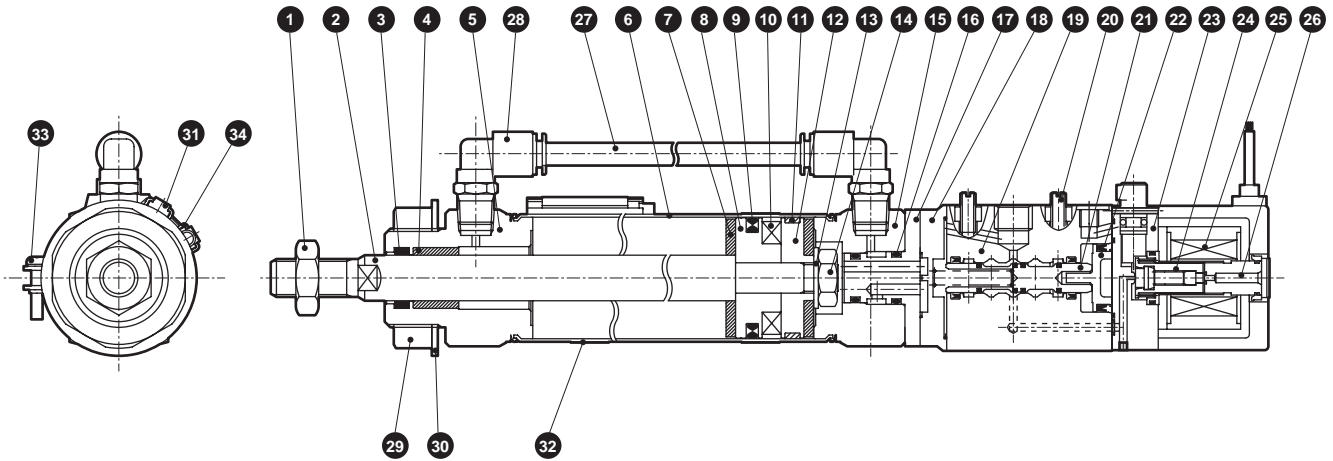
\*2 : For material of the mounting bracket, refer to page 684.

\*3 : For axial foot, 1 set each of the above "M1-LB-\*" and "M1-LBV-\*" is required.

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
<b>CKV2</b>
CAV2/ COVP/N2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/ MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

## Internal structure and parts list

● CKV2 (with switch)



Cannot be disassembled

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Zinc chromate	17	Adaptor	Steel	Zinc chromate
2	Piston rod	ø20, ø25: Stainless steel ø32, ø40: Carbon steel	Industrial chrome plating	18	Cap	Aluminum alloy die-casting	Chromate
3	Rod packing	Nitrile rubber		19	Valve body	Aluminum alloy	Alumite
4	Bush	ø20: Dry bearing ø25, ø32, ø40: Copper-based	*1	20	Speed adjustment needle	Copper alloy	
5	Rod cover	Aluminum alloy		21	Spool assembly	—	
6	Cylinder tube	Stainless steel		22	Piston assembly	—	
7	Cushion rubber	Urethane rubber		23	Pilot valve body	Nylon	
8	Piston A	Aluminum alloy		24	Plunger assembly	—	
9	Piston packing	Nitrile rubber		25	Coil assembly	—	
10	Magnet	Plastic		26	Core assembly	—	
11	Wear ring	Polyacetal		27	Pass-pipe	Nylon	
12	Piston B	Aluminum alloy		28	Fitting	—	GWJL6-6
13	Spacer	Steel	Zinc chromate	29	Nut	Steel	Zinc chromate
14	Hexagon nut	Steel	Zinc chromate	30	Toothed washer	Steel	Zinc chromate
15	Head cover	Aluminum alloy		With switch			
16	O-ring	Nitrile rubber		31	Switch body	—	
				32	Band	Stainless steel	
				33	Pan head machine screw	Stainless steel	
				34	Switch rail	Stainless steel	

\*1: Oil-impregnated cast iron bearing for copper and PTFE free.

## Material of mounting bracket

Mounting	Material	Remarks
LB	Steel	Zinc chromate
FA	Steel	Zinc chromate
TA	Steel	Zinc chromate

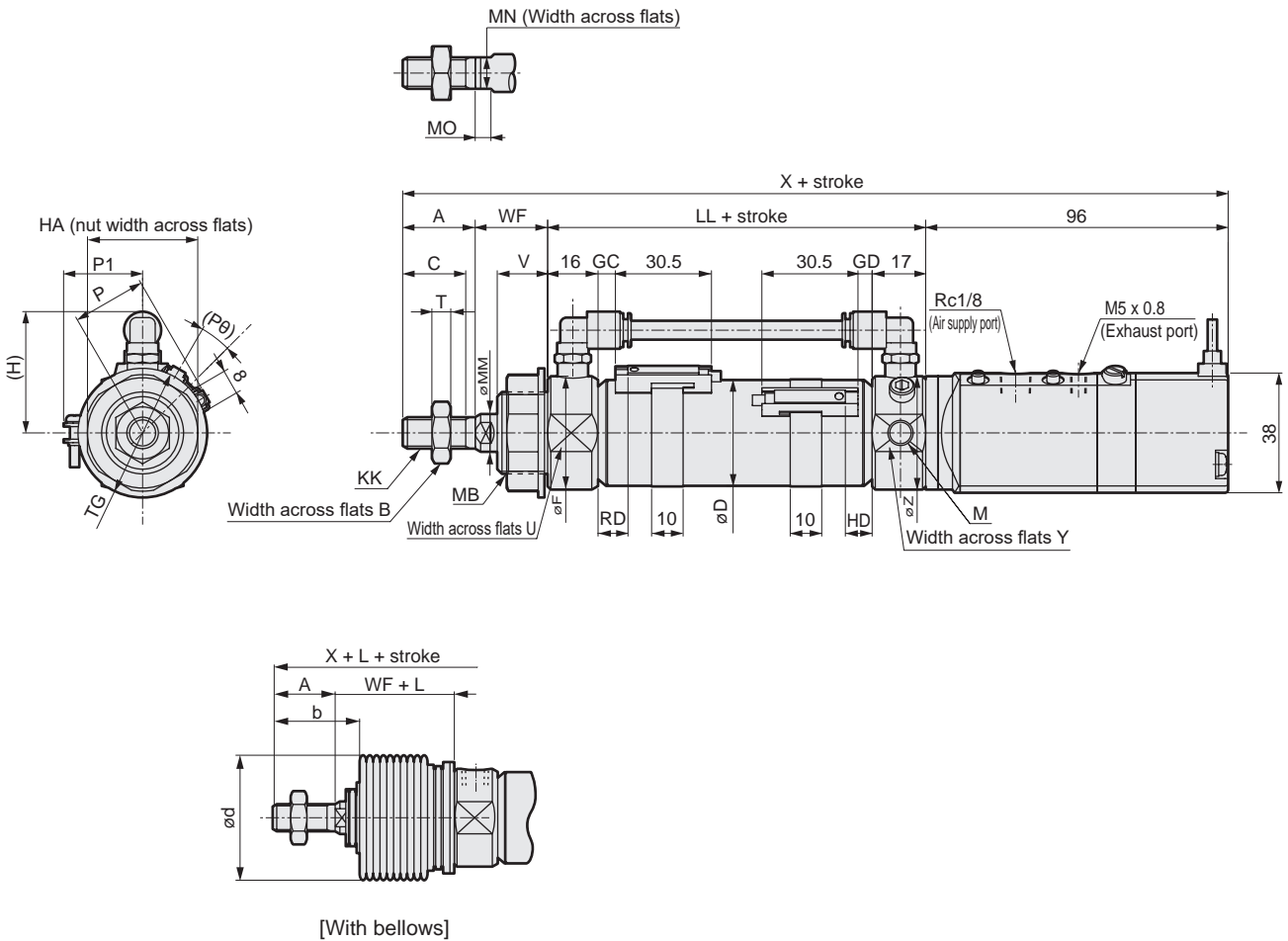
Note: Mounting bracket will be shipped with the product.  
However, LB, FA, and TA with bellows will be shipped assembled.

## Repair parts list of valve section

Kit No.	Repair parts No.
CKV2-VK	16 21 22

## Dimensions

● Basic (00)



\*1: Refer to page 698 for HD, RD and protruding dimensions of T1\*, T8\* and 2-color LED switches.

\*2: For the L dimension, round up below the decimal point.

\*3: For the dimensions of the accessories, refer to page 699.

Code	Basic (00) Basic dimensions																	
Bore size (mm)	A	B	C	D	F	(H)	HA	KK	LL	M	MB	MM	MN	MO	T	TG	U	V
ø20	20	13	18	21.4	28	38.5	26	M8x1.0	67	M8	M18x1.5	10	8	5	5	29	24	14
ø25	23	17	20	26.4	32	38.5	35	M10x1.25	70	M8	M26x1.5	12	10	5	6	41	30	16
ø32	23	17	20	33.6	36	38.5	35	M10x1.25	70	M8	M26x1.5	12	10	5	6	41	34	16
ø40	25	19	22	41.6	45	43.0	35	M12x1.5	74	M10	M26x1.5	14	12	6	7	41	43	16

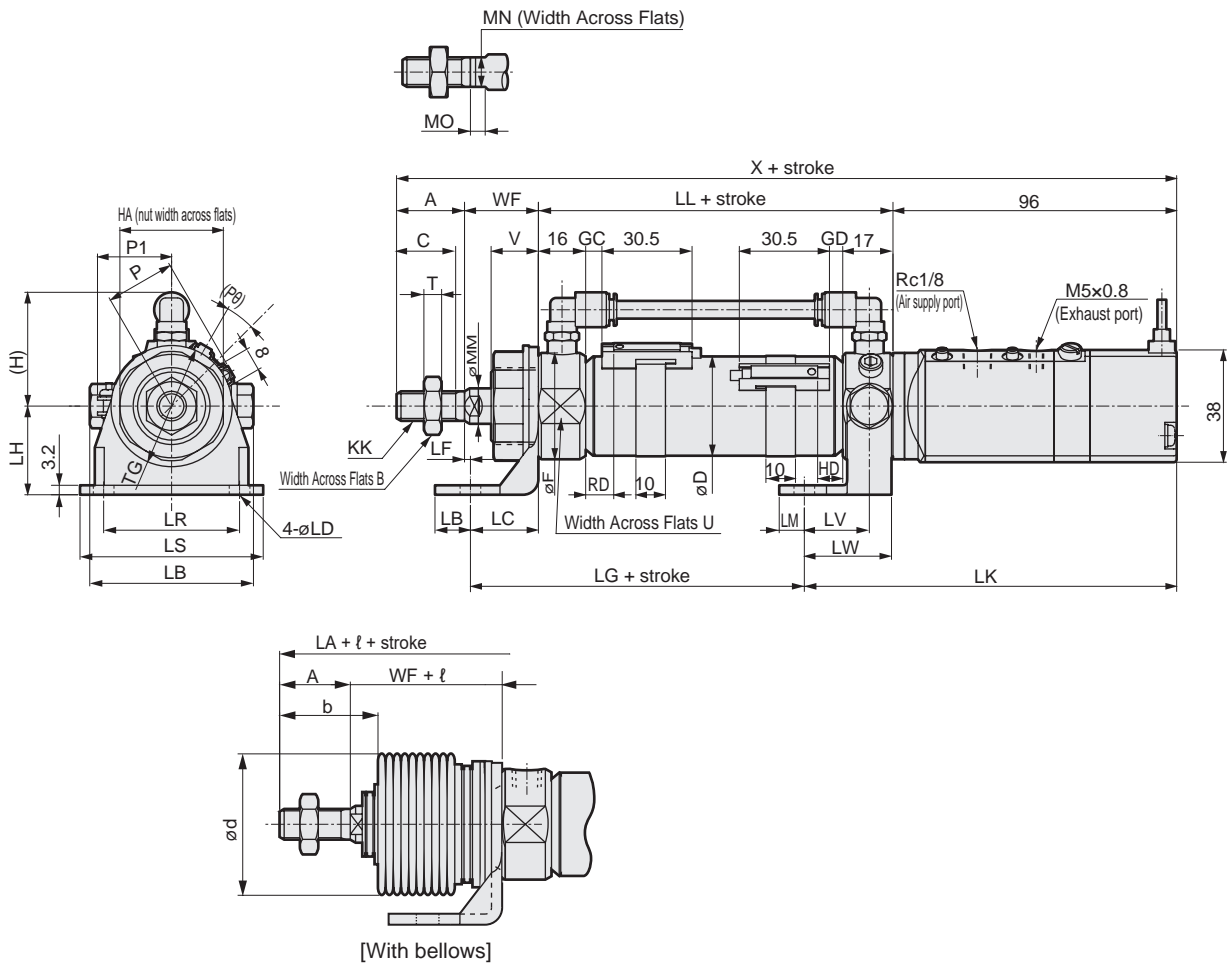
Code	With switch												With bellows					
	WF	X	Y	Z	T0, T5, T2, T3				T2W, T3W				P	P1	(Pθ)°	b	d	L
					GC	GD	RD	HD	GC	GD	RD	HD						
ø20	24	207	34	36	4	3	8	7	6	5	10	9	17.3	19.5	22	30	30	(Stroke/3) + 6
ø25	23	212	34	36	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	19.8	22.0	18	32	46	(Stroke/3.25) + 7
ø32	23	212	34	36	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	24.3	25.5	15	32	46	(Stroke/3.25) + 7
ø40	23	218	43	45	7.5	6.5	11.5	10.5	9.5	8.5	13.5	12.5	28.3	29.5	12	34	46	(Stroke/3.25) + 7

SCP\*3  
 CMK2  
 CMA2  
 SCM  
 SCG  
 SCA2  
 SCS2  
**CKV2**  
 CAV2/  
 COVP/N2  
 SSD2  
 SSG  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMG  
 MSD/  
 MSDG  
 FC\*  
 STK  
 SRL3  
 SRG3  
 SRM3  
 SRT3  
 MRL2  
 MRG2  
 SM-25  
 ShkAbs  
 FJ  
 FK  
 Spd  
 Contr  
 Ending

## Dimensions



### ● Axial foot (LB)



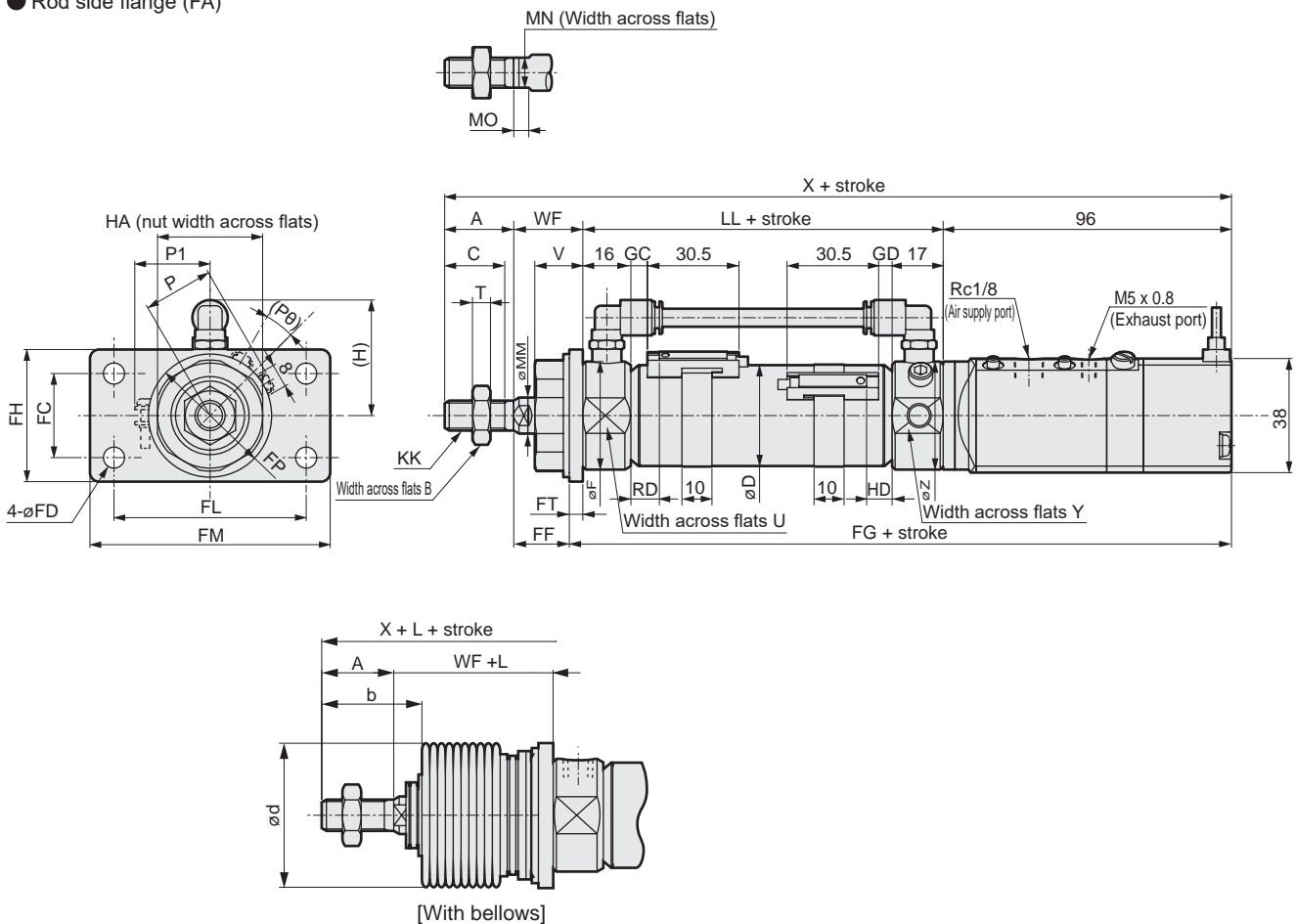
\*1: Refer to page 698 for HD, RD and protruding dimensions of T1\*, T8\* and 2-color LED switches.

\*2: For the dimensions of the accessories, refer to page 699.

Code	Axial foot (LB) Basic dimensions																		Mounting dimensions		
	A	B	C	D	F	(H)	HA	KK	LL	MM	MN	MO	T	TG	U	V	WF	X	LB	LC	
Bore size (mm)	∅20	20	13	18	21.4	28	38.5	26	M 8 x 1.0	67	10	8	5	5	29	24	14	24	207	10	18
	∅25	23	17	20	26.4	32	38.5	35	M 10 x 1.25	70	12	10	5	6	41	30	16	23	212	12	23
Bore size (mm)	∅32	23	17	20	33.6	36	38.5	35	M 10 x 1.25	70	12	10	5	6	41	34	16	23	212	12	23
	∅40	25	19	22	41.6	45	43	35	M 12 x 1.5	74	14	12	6	7	41	43	16	23	218	12	23
Code	Mounting dimensions											With switch									
	LD	LF	LG	LH	LK	LM	LR	LS	LT	LV	LW	T0, T5, T2, T3				T2W, T3W				P	
Bore size (mm)	∅20	6	6	55	25	126	7.5	30	44	55.4	22	29.5	4	3	8	7	6	5	10	9	17.3
	∅25	7	0	63	30	126	8.5	46	62	55.4	22	29.5	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	19.8
Bore size (mm)	∅32	7	0	63	30	126	8.5	46	62	55.4	22	29.5	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	24.3
	∅40	7	0	64	30	129	8	46	62	68.4	25	35	7.5	6.5	11.5	10.5	9.5	8.5	13.5	12.5	28.3
Code	With bellows																				
	P1	(Pθ)°	b	d	ℓ																
Bore size (mm)	∅20	19.5	22	30	30	(Stroke/3) + 6															
	∅25	22.0	18	32	46	(stroke/3.25) + 7															
Bore size (mm)	∅32	25.5	15	32	46	(stroke/3.25) + 7															
	∅40	29.5	12	34	46	(stroke/3.25) + 7															

## Dimensions

### ● Rod side flange (FA)



\*1: Refer to page 698 for HD, RD and protruding dimensions of T1\*, T8\* and 2-color LED switches.

\*2: For the dimensions of the accessories, refer to page 699.

Code	Rod side flange (FA) Basic dimensions																		
Bore size (mm)	A	B	C	D	F	(H)	HA	KK	LL	MM	MN	MO	T	U	V	WF	X	Y	Z
ø20	20	13	18	21.4	28	38.5	26	M8x1.0	67	10	8	5	5	24	14	24	207	34	36
ø25	23	17	20	26.4	32	38.5	35	M10x1.25	70	12	10	5	6	30	16	23	212	34	36
ø32	23	17	20	33.6	36	38.5	35	M10x1.25	70	12	10	5	6	34	16	23	212	34	36
ø40	25	19	22	41.6	45	43	35	M12x1.5	74	14	12	6	7	43	16	23	218	43	45

Code	Mounting dimensions									With switch								
	FC	FD	FF	FG	FH	FL	FM	FT	FP	T0, T5, T2, T3				T2W, T3W				P
										GC	GD	RD	HD	GC	GD	RD	HD	
ø20	20	6	20.8	166.2	34	40	54	3.2	29	4	3	8	7	6	5	10	9	17.3
ø25	28	7	18.5	170.5	44	64	80	4.5	41	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	19.8
ø32	28	7	18.5	170.5	44	64	80	4.5	41	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	24.3
ø40	28	7	18.5	174.5	44	64	80	4.5	41	7.5	6.5	11.5	10.5	9.5	8.5	13.5	12.5	28.3

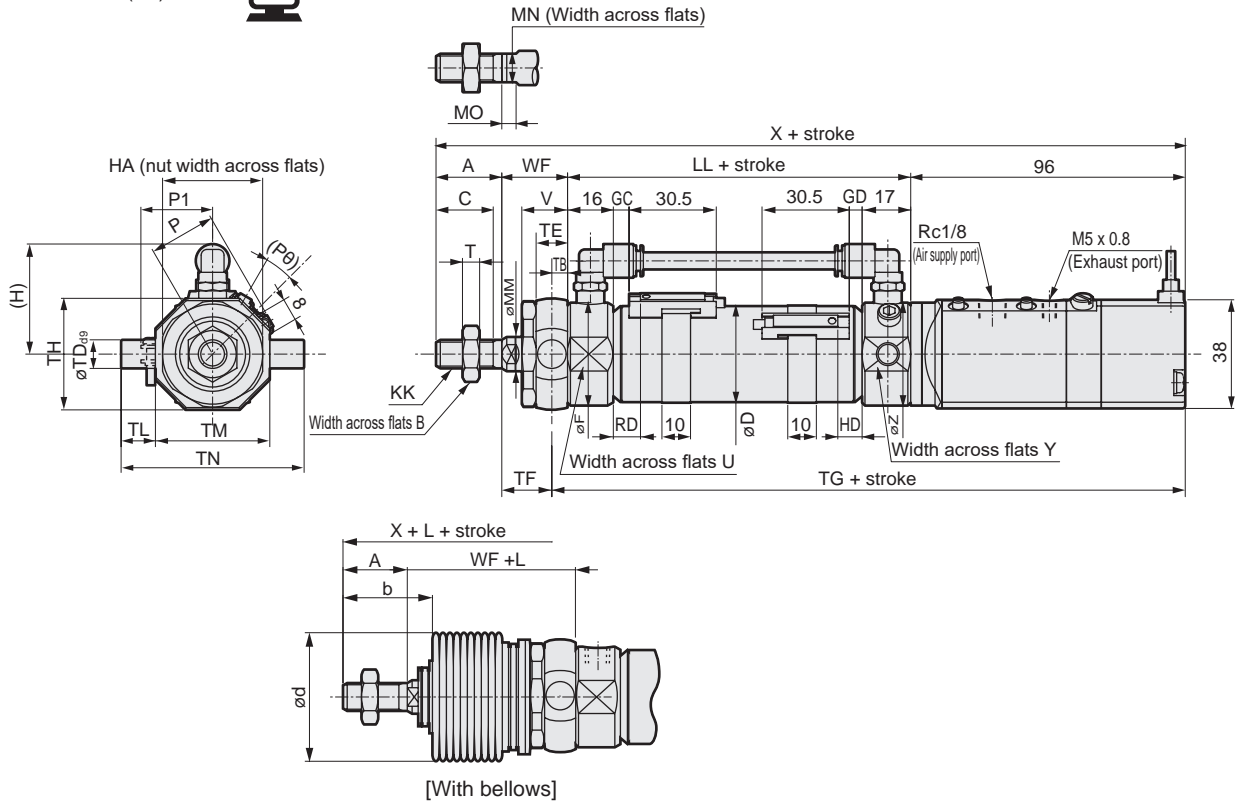
Code	With bellows				
	P1	(P0)°	b	d	L
ø20	19.5	22	30	30	(Stroke/3) + 6
ø25	22.0	18	32	46	(Stroke/3.25) + 7
ø32	25.5	15	32	46	(Stroke/3.25) + 7
ø40	29.5	12	34	46	(Stroke/3.25) + 7

SCP\*3  
 CMK2  
 CMA2  
 SCM  
 SCG  
 SCA2  
 SCS2  
**CKV2**  
 CAV2/  
 COVP/N2  
 SSD2  
 SSG  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMG  
 MSD/  
 MSDG  
 FC\*  
 STK  
 SRL3  
 SRG3  
 SRM3  
 SRT3  
 MRL2  
 MRG2  
 SM-25  
 ShkAbs  
 FJ  
 FK  
 Spd  
 Contr  
 Ending

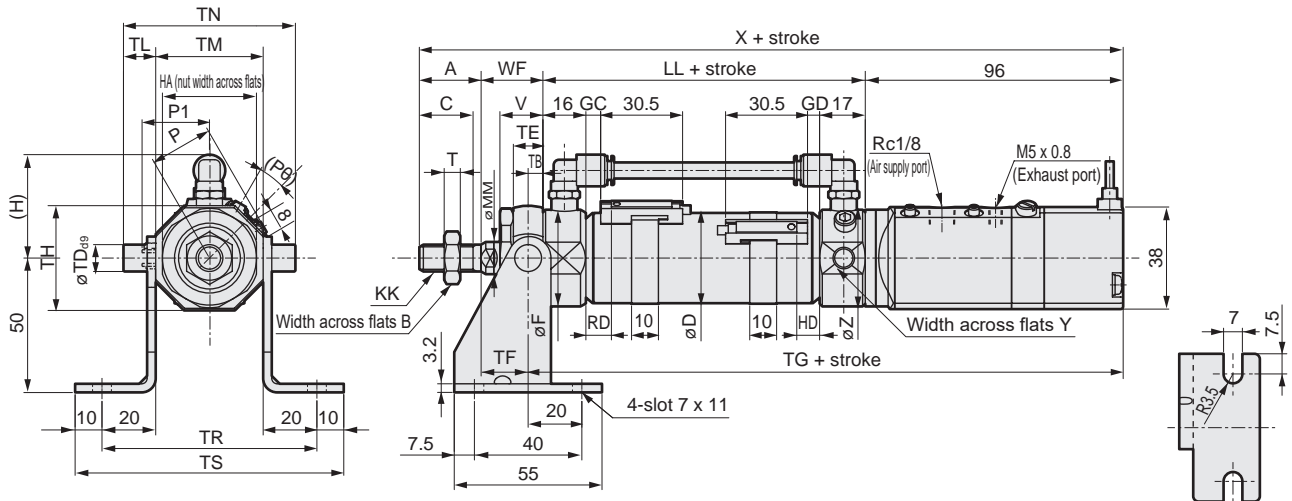


## Dimensions

### ● Rod side trunnion (TA)



### ● Rod side trunnion (TA) bracket (option code B2)



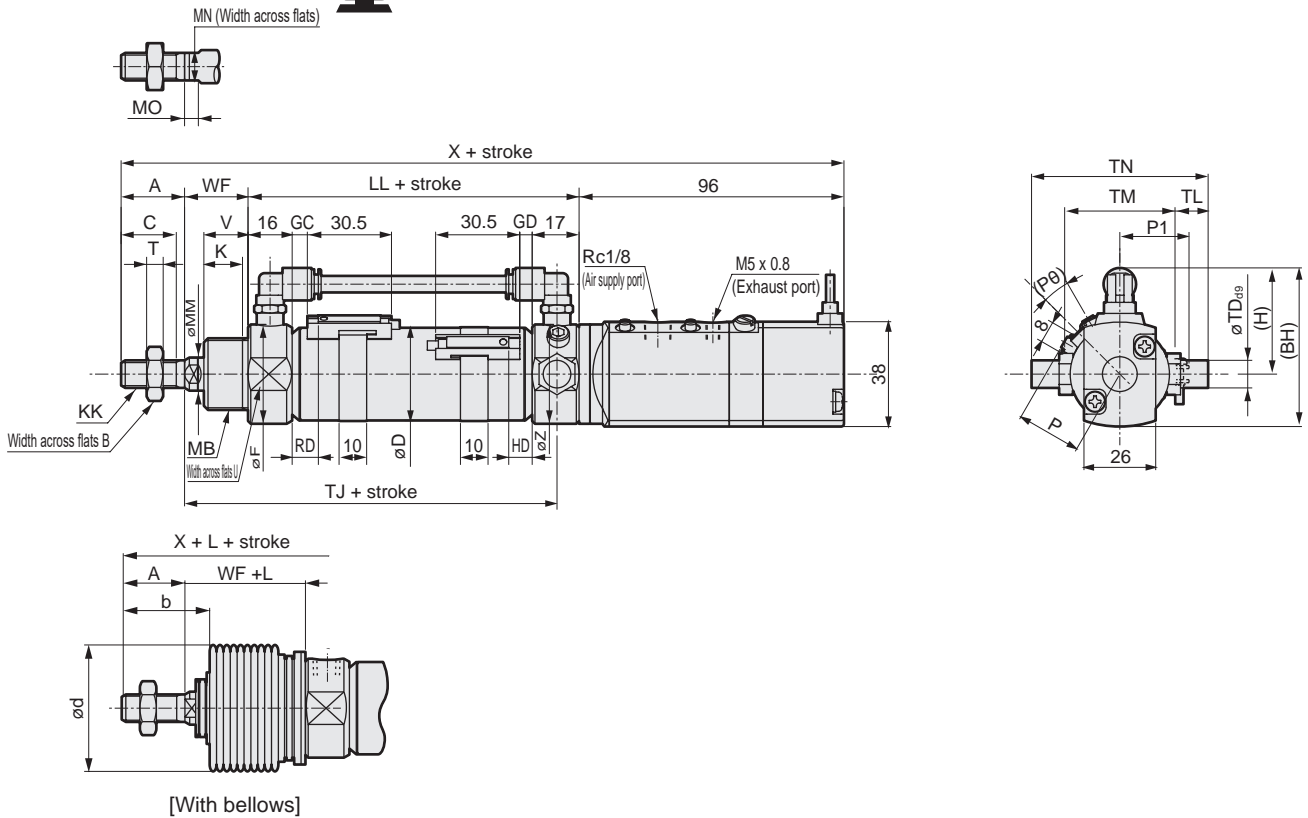
\*1: Refer to page 698 for HD, RD and protruding dimensions of T1\*, T8\* and 2-color LED switches.

\*2: For the dimensions of the accessories, refer to page 699.

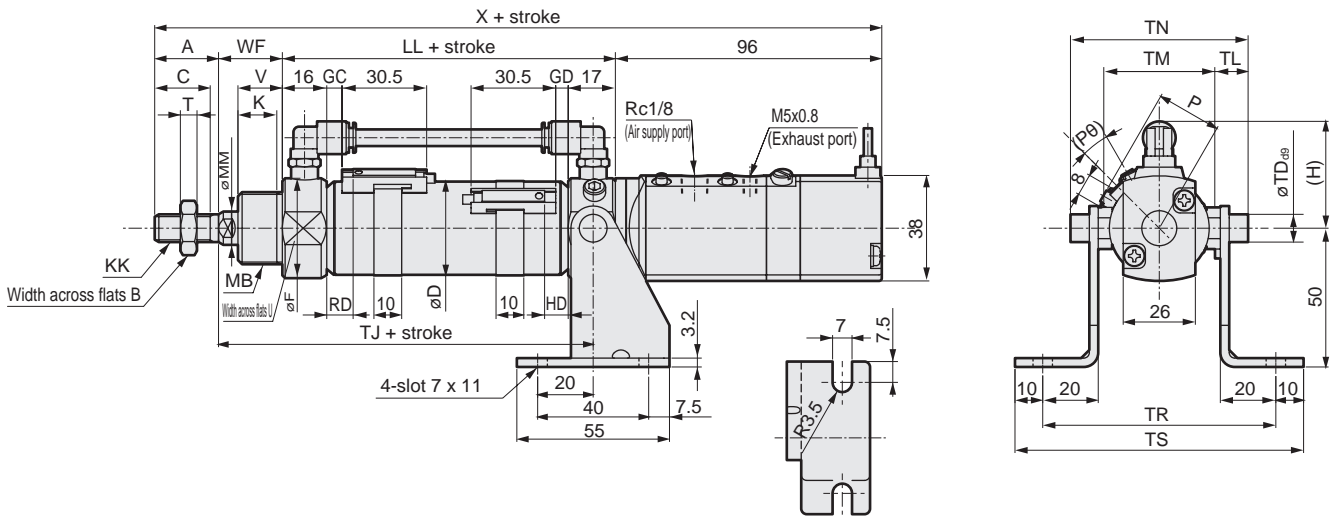
Code	Rod side trunnion (TA) Basic dimensions																	Mounting dimensions						
	A	B	C	D	F	(H)	HA	KK	LL	MM	MN	MO	T	U	V	WF	X	Y	Z	TB	TD	TE	TF	TG
SM-25	20	13	18	21.4	28	38.5	26	M8x1.0	67	10	8	5	5	24	14	24	207	34	36	4.5	8	9	19.5	167.5
ShkAbs	25	17	20	26.4	32	38.5	35	M10x1.25	70	12	10	5	6	30	16	23	212	34	36	5.5	10	11	17.5	171.5
	32	17	20	33.6	36	38.5	35	M10x1.25	70	12	10	5	6	34	16	23	212	34	36	5.5	10	11	17.5	171.5
FJ	40	19	22	41.6	45	43	35	M12x1.5	74	14	12	6	7	43	16	23	218	43	45	5.5	10	11	17.5	175.5
Code							With switch								With bellows									
	TH	TL	TM	TN	TR	TS	T0, T5, T2, T3				T2W, T3W				P	P1	(PØ)°	b	d	L				
Bore size (mm)	GC	GD	RD	HD	GC	GD	RD	HD	P	P1	(PØ)°	b	d	L										
Spd Contr	29.5	8	30	46	70	90	4	3	8	7	6	5	10	9	17.3	19.5	22	30	30	(Stroke/3) + 6				
Ending	25	39	12	40	64	80	100	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	19.8	22.0	18	32	46	(Stroke/3.25) + 7			
	32	39	12	40	64	80	100	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	24.3	25.5	15	32	46	(Stroke/3.25) + 7			
40	44	9.5	53	72	93	113	7.5	6.5	11.5	10.5	9.5	8.5	13.5	12.5	28.3	29.5	12	34	46	(Stroke/3.25) + 7				

## Dimensions

### ● Head side trunnion (TB)



### ● Head end trunnion (TB) with bracket (option code B2)



\*1: Refer to page 698 for HD, RD and protruding dimensions of T1\*, T8\* and 2-color LED switches.  
 \*2: For the dimensions of the accessories, refer to page 699.

Code	Head side trunnion (TB) Basic dimensions																			
Bore size (mm)	A	B	BH	C	D	F	(H)	K	KK	LL	MB	MM	MN	MO	T	U	V	WF	X	Z
ø20	20	13	57.5	18	21.4	28	38.5	12	M8x1.0	67	M18x1.5	10	8	5	5	24	14	24	207	36
ø25	23	17	57.5	20	26.4	32	38.5	14	M10x1.25	70	M26x1.5	12	10	5	6	30	16	23	212	36
ø32	23	17	57.5	20	33.6	36	38.5	14	M10x1.25	70	M26x1.5	12	10	5	6	34	16	23	212	36
ø40	25	19	62	22	41.6	45	43	14	M12x1.5	74	M26x1.5	14	12	6	7	43	16	23	218	45

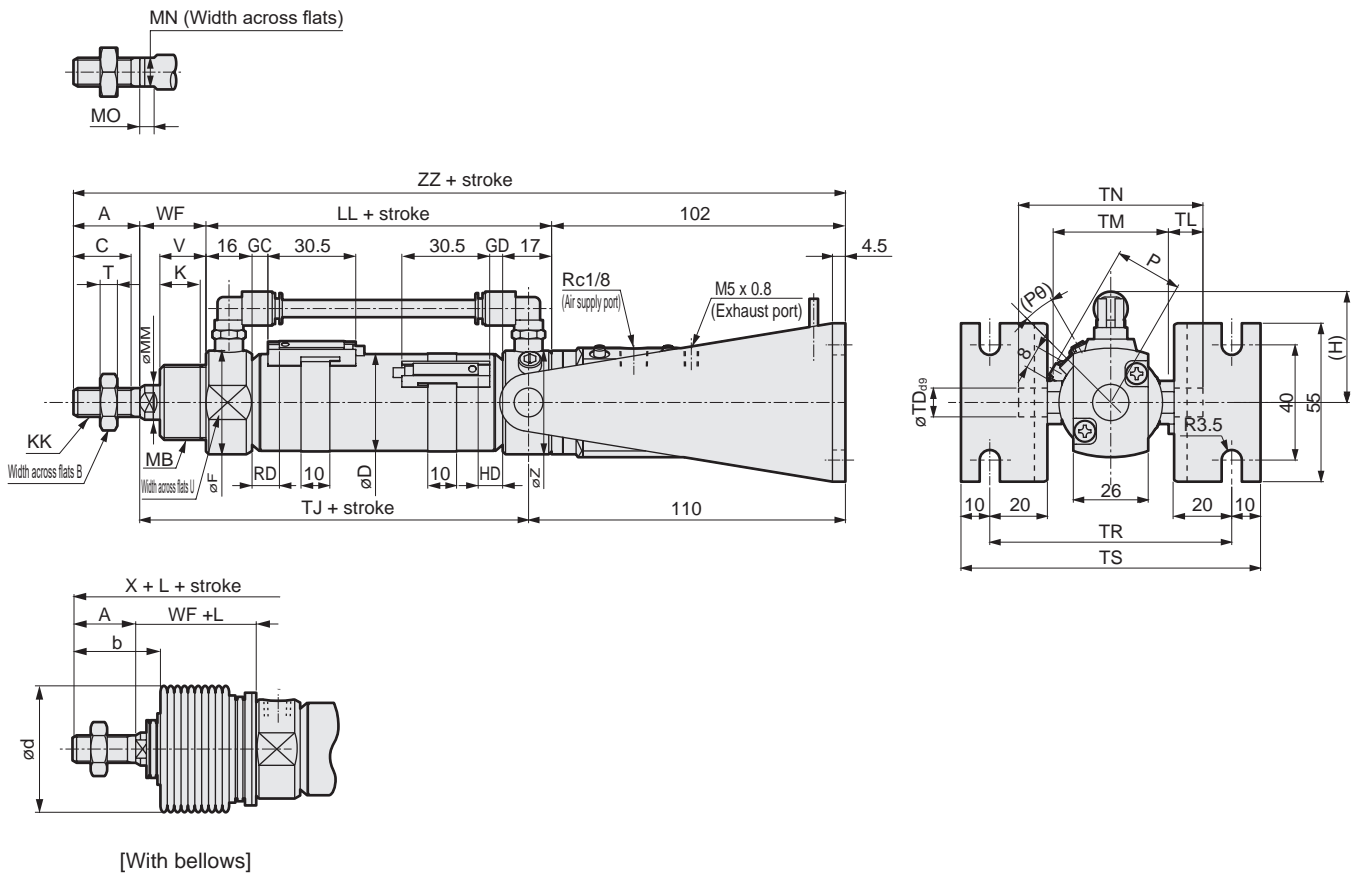
  

Code	Mounting dimensions							With switch								With bellows					
	TD	TJ	TL	TM	TN	TR	TS	T0, T5, T2, T3				T2W, T3W				P	P1	(Pθ)°	b	d	L
								GC	GD	RD	HD	GC	GD	RD	HD						
ø20	8	83	8	44	60	84	104	4	3	8	7	6	5	10	9	17.3	19.5	22	30	30	(Stroke/3) + 6
ø25	10	85	10	44	64	84	104	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	19.8	22.0	18	32	46	(Stroke/3.25) + 7
ø32	10	85	10	44	64	84	104	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	24.3	25.5	15	32	46	(Stroke/3.25) + 7
ø40	10	89	10	53	73	93	113	7.5	6.5	11.5	10.5	9.5	8.5	13.5	12.5	28.3	29.5	12	34	46	(Stroke/3.25) + 7

- SCP\*3
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS2
- CKV2**
- CAV2/COVP/N2
- SSD2
- SSG
- SSD
- CAT
- MDC2
- MVC
- SMG
- MSD/MSDG
- FC\*
- STK
- SRL3
- SRG3
- SRM3
- SRT3
- MRL2
- MRG2
- SM-25
- ShkAbs
- FJ
- FK
- Spd Contr
- Ending

## Dimensions

● Head side trunnion (TB) with bracket (option code B3)



\*1: Refer to page 698 for HD, RD and protruding dimensions of T1\*, T8\* and 2-color LED switches.  
 \*2: For the dimensions of the accessories, refer to page 699.

Code	Head side trunnion (TB) with bracket (option code B3) Basic dimensions																	
Bore size (mm)	A	B	C	D	F	(H)	K	KK	LL	MB	MM	MN	MO	T	U	V	WF	ZZ
ø20	20	13	18	21.4	28	38.5	12	M8x1.0	67	M18x1.5	10	8	5	5	24	14	24	213
ø25	23	17	20	26.4	32	38.5	14	M10x1.25	70	M26x1.5	12	10	5	6	30	16	23	218
ø32	23	17	20	33.6	36	38.5	14	M10x1.25	70	M26x1.5	12	10	5	6	34	16	23	218
ø40	25	19	22	41.6	45	43	14	M12x1.5	74	M26x1.5	14	12	6	7	43	16	23	224

Code	Mounting dimensions							With switch							With bellows				
Bore size (mm)	TD	TJ	TL	TM	TN	TR	TS	T0, T5, T2, T3				T2W, T3W				P	(Pø) <sup>o</sup>	b	d
								GC	GD	RD	HD	GC	GD	RD	HD				
ø20	8	83	8	44	60	84	104	4	3	8	7	6	5	10	9	17.3	22	30	30
ø25	10	85	10	44	64	84	104	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	19.8	18	32	46
ø32	10	85	10	44	64	84	104	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	24.3	15	32	46
ø40	10	89	10	53	73	93	113	7.5	6.5	11.5	10.5	9.5	8.5	13.5	12.5	28.3	12	34	46

Code	L
Bore size (mm)	
ø20	(Stroke/3) + 6
ø25	(Stroke/3.25) + 7
ø32	(Stroke/3.25) + 7
ø40	(Stroke/3.25) + 7

---

# MEMO

---

SCP\*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

**CKV2**

CAV2/  
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/  
MSDG

FC\*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd  
Contr

Ending

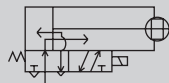


Small cylinder with valve double acting/rotation-stop

# CKV2-M Series

● Bore size:  $\phi 20/\phi 25/\phi 32/\phi 40$

JIS symbol ● Double acting cylinder rotation-stop with valve



## Specifications

Item	CKV2-M			
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation	Double acting/rotation-stop			
Working fluid	Compressed air			
Max. working pressure MPa	1 ( $\approx 150$ psi, 10 bar)			
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar)			
Proof pressure MPa	1.6 ( $\approx 230$ psi, 16 bar)			
Ambient temperature $^{\circ}\text{C}$	-5 (23 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ ) (no freezing)			
Port size	Rc1/8			
Stroke tolerance mm	$^{+2.0}_0$ (to 200) $^{+2.4}_0$ (201 to 750)			
Working piston speed mm/s	50 to 500		50 to 430	50 to 300
Cushion	Rubber cushion			
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)			
Non-rotating accuracy Note $^{\circ}$	$\pm 1.5$			$\pm 1$
Allowable absorbed energy J	0.166	0.308	0.424	0.639

Note: Values of when the stroke is 0 mm (except for flexure of the piston rod)

## Solenoid valve specifications

Rated voltage V	100 AC(50/60 Hz)	200 AC(50/60 Hz)	24 DC
Starting current A	0.056/0.048	0.028/0.024	0.110
Holding current A	0.028/0.024	0.014/0.012	
Power consumption W	2.0	2.0	2.5
Voltage fluctuation range	$\pm 10\%$		
Thermal class	Class B or equivalent		

● Note: 100 VAC and 200 VAC are available with 110 VAC and 220 VAC (60 Hz).

## Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 20$	25/50/75 100/150/200	750	5
$\phi 25$			
$\phi 32$			
$\phi 40$			

\*1: The custom stroke is available in 1 mm increments.

\*2: The stroke will be 25 mm and over with bellows "J". Contact CKD when stroke is shorter than 25 mm.

## Min. stroke with switch

(Unit: mm)

Switch quantity	1						2						3					
	Proximity			Reed			Proximity			Reed			Proximity			Reed		
	T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8	T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8	T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8			
$\phi 20$	10						25	30	35	25	35	50	55	55	50	55		
	10						25	30	35	25	35	50	55	55	50	55		
$\phi 25$	10						25	30	35	25	35	50	55	55	50	55		
	10						25	30	35	25	35	50	55	55	50	55		
$\phi 32$	10						25	30	35	25	35	50	55	55	50	55		
	10						25	30	35	25	35	50	55	55	50	55		
$\phi 40$	10						25	30	35	25	35	50	55	55	50	55		
	10						25	30	35	25	35	50	55	55	50	55		

\*1: Up to 3 switches can be mounted.

### Switch specifications

● 1 color/2-color LED/strong magnetic field proof

Item	2-wire proximity		2-wire proximity		3-wire proximity				2-wire reed						
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay	For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay			
Output method	-				NPN output	PNP output	NPN output	NPN output	-						
Pwr. supp. V.	-				10 to 28 VDC				-						
Load voltage	85 to 265 VAC	10 to 30 VDC	24 VDC ±10%		30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)		
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142		1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142		1 m:33 3 m:87 5 m:142		

\*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

\*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

\*3: The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

### Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke (S) = 0 mm					Switch weight	Switch rail + band weight	Additional weight per S = 10 mm
	Bore size (mm)	Basic (00)	Axial foot (LB)	Rod side flange (FA)	Rod side trunnion (TA)			
ø20	0.47	0.63	0.53	0.52	0.49	Refer to the weight in the switch specifications.	0.005	0.01
ø25	0.57	0.79	0.72	0.67	0.60		0.005	0.01
ø32	0.62	0.84	0.77	0.72	0.65		0.009	0.02
ø40	0.81	1.08	0.96	0.97	0.85		0.009	0.02

Product weight when S = 0 mm .....0.77 kg  
 Additional weight when S = 50 mm ...Additional weight when S = 10 mm  $0.02 \times \frac{\text{Product stroke (50)}}{10} = 0.10$  kg  
 (Example) Product weight of CKV2-M-FA-32-50-1-TOH-D  
 Weight of 2 switches .....0.036 kg  
 Weight of switch rail + 2 bands .....0.018 kg  
 Product weight .....0.77 kg + 0.1 kg + 0.036 kg + 0.018 kg = 0.924 kg

### Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	47.1	62.8	94.2	1.26x10 <sup>2</sup>	1.57x10 <sup>2</sup>	1.88x10 <sup>2</sup>	2.20x10 <sup>2</sup>	2.51x10 <sup>2</sup>	2.83x10 <sup>2</sup>	3.14x10 <sup>2</sup>
	Pull	35.3	47.1	70.7	94.2	1.18x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.65x10 <sup>2</sup>	1.88x10 <sup>2</sup>	2.12x10 <sup>2</sup>	2.36x10 <sup>2</sup>
ø25	Push	73.6	98.2	1.47x10 <sup>2</sup>	1.96x10 <sup>2</sup>	2.45x10 <sup>2</sup>	2.95x10 <sup>2</sup>	3.44x10 <sup>2</sup>	3.93x10 <sup>2</sup>	4.42x10 <sup>2</sup>	4.91x10 <sup>2</sup>
	Pull	56.7	75.6	1.13x10 <sup>2</sup>	1.51x10 <sup>2</sup>	1.89x10 <sup>2</sup>	2.27x10 <sup>2</sup>	2.64x10 <sup>2</sup>	3.02x10 <sup>2</sup>	3.40x10 <sup>2</sup>	3.78x10 <sup>2</sup>
ø32	Push	1.21x10 <sup>2</sup>	1.61x10 <sup>2</sup>	2.41x10 <sup>2</sup>	3.22x10 <sup>2</sup>	4.02x10 <sup>2</sup>	4.83x10 <sup>2</sup>	5.63x10 <sup>2</sup>	6.43x10 <sup>2</sup>	7.24x10 <sup>2</sup>	8.04x10 <sup>2</sup>
	Pull	1.04x10 <sup>2</sup>	1.38x10 <sup>2</sup>	2.07x10 <sup>2</sup>	2.76x10 <sup>2</sup>	3.46x10 <sup>2</sup>	4.15x10 <sup>2</sup>	4.84x10 <sup>2</sup>	5.53x10 <sup>2</sup>	6.22x10 <sup>2</sup>	6.91x10 <sup>2</sup>
ø40	Push	1.88x10 <sup>2</sup>	2.51x10 <sup>2</sup>	3.77x10 <sup>2</sup>	5.03x10 <sup>2</sup>	6.28x10 <sup>2</sup>	7.54x10 <sup>2</sup>	8.80x10 <sup>2</sup>	1.01x10 <sup>3</sup>	1.13x10 <sup>3</sup>	1.26x10 <sup>3</sup>
	Pull	1.65x10 <sup>2</sup>	2.21x10 <sup>2</sup>	3.31x10 <sup>2</sup>	4.41x10 <sup>2</sup>	5.51x10 <sup>2</sup>	6.62x10 <sup>2</sup>	7.72x10 <sup>2</sup>	8.82x10 <sup>2</sup>	9.92x10 <sup>2</sup>	1.10x10 <sup>3</sup>

# CKV2-M Series

## How to order

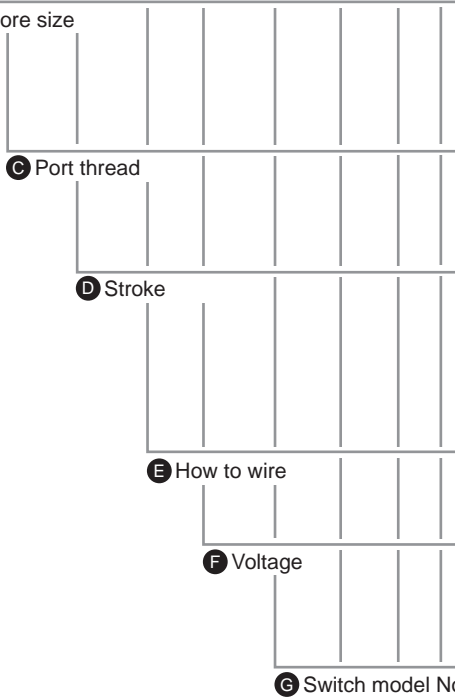
No switch (built-in magnet for switch)

CKV2-M - LB - 20 - 25 - U - 1 - J Y

With switch (built-in magnet for switch)

CKV2-M - LB - 20 - 25 - U - 1 - T0H - R - J Y

Selection guide



## ⚠ Precautions for model No. selection

- \*1 : Refer to page 692 for the min. stroke with switch.
- \*2 : The stroke will be 25 mm and over with bellows "J". Contact CKD when stroke is shorter than 25 mm.
- \*3 : Units with a surge suppressor (G) will come with grommet lead wires.
- \*4 : The type with lamp (E) is available only for the DIN terminal (U) wiring method.
- \*5 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- \*6 : Piston rod material is stainless steel. If option M is selected, the rod nut material will be stainless steel.
- \*7 : "I" and "Y" cannot be selected together.
- \*8 : Refer to Ending Page 85 for custom specifications of rod end form.
- \*9 : Refer to page 678 for combination of variations/options.
- \*10 : Up to 3 switches can be mounted. If four or more switches are required, switch mounting brackets for the extra switches must be prepared separately.

[Example of model No.]

**CKV2-M-LB-20-25-U-1-T0H-R-JY**

Model: Small cylinder with valve double acting/rotation-stop

- A** Mounting : Axial foot
- B** Bore size : ø20 mm
- C** Port thread : Rc thread
- D** Stroke : 25 mm
- E** How to wire : DIN terminal
- F** Voltage : 100 VAC
- G** Switch model No. : Reed T0H switch, lead wire 1m
- H** Switch quantity : 1 on rod side
- I** Option : Bellows for max. ambient temperature 100°C
- J** Accessory : Rod clevis

Code	Description					
<b>A Mounting</b>						
00	Basic					
LB	Axial foot					
FA	Rod side flange					
TA	Rod side trunnion					
TB	Head side trunnion					
<b>B Bore size (mm)</b>						
20	ø20					
25	ø25					
32	ø32					
40	ø40					
<b>C Port thread</b>						
Blank	Rc thread					
NN	NPT thread (made-to-order product)					
GN	G thread (made-to-order product)					
<b>D Stroke (mm)</b>						
Bore size	Stroke *1	Custom stroke				
ø20	5 to 750	In 1 mm increments				
ø25	5 to 750					
ø32	5 to 750					
ø40	5 to 750					
<b>E How to wire</b>						
Blank	Grommet lead wire (300 mm)					
U	DIN terminal					
<b>F Voltage</b>						
1	100 VAC					
2	200 VAC					
3	24 VDC					
<b>G Switch model No.</b>						
Axial lead wire	Radial lead wire	Contact	Voltage	Indicator	Lead wire	
T0H*	T0V*	Reed	AC	DC	2-wire	
T5H*	T5V*		●	●		1-color LED
T8H*	T8V*		●	●		No indicator lamp
T1H*	T1V*		●	●		1-color LED
T2H*	T2V*	Proximity	●	●	2-wire	
T3H*	T3V*		●	●		1-color LED
T3PH*	T3PV*		●	●	1-color LED	3-wire
T2WH*	T2WV*		●	●	2-color LED	2-wire
T2YH*	T2YV*		●	●		
T3WH*	T3WV*		●	●		
T3YH*	T3YV*		●	●	1-color LED off-delay	2-wire
T2JH*	T2JV*		●	●		
<b>* Lead wire length</b>						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
<b>H Switch quantity</b>						
R	1 on rod side					
H	1 on head side					
D	2					
T	3					
<b>I Option</b>						
		Max. ambient temp.	Instantaneous max. temp.			
J	Bellows	100°C	200°C			
L	Bellows	250°C	400°C			
M	Piston rod material (stainless steel)					
W	With silencer					
G	With surge suppressor					
E	With indicator lamp					
X	Pull when energized					
<b>J Accessory</b>						
I	Rod eye					
Y	Rod clevis (pin, washer, split pin included)					
B2	Clevis bracket					
B3	Clevis bracket (clevis)					

### How to order switch

● Switch body + mounting bracket set

**CKV2 - T0H - 20**

Switch model No.  
(Item ㉔ on page 694)

Bore size  
(Item ㉔ on page 694)

● Switch body only

**SW - T0H**

Switch model No.  
(Item ㉔ on page 694)

● Mounting bracket set

**CKV2 - T - 20**

Mounting bracket

Bore size  
(Item ㉔ on page 694)

### How to order mounting bracket

Bore size (mm)	ø20	ø25	ø32	ø40
<b>Mounting bracket</b>				
Axial foot (LB) rod side	M1-LB-20	M1-LB-30	M1-LB-30	M1-LB-30
Axial foot (LB) head side	M1-LBV-20	M1-LBV-30	M1-LBV-30	M1-LBV-40
Flange (FA)	M1-FA-20	M1-FA-30	M1-FA-30	M1-FA-30
Trunnion (TA)	M1-TA-20	M1-TA-30	M1-TA-30	M1-TA-40
Bolt for head side trunnion (TB)	M1-TB-20	M1-TB-30	M1-TB-30	M1-TB-40

\*1 : With regard to mounting brackets, the axial foot rod side and the flange include mounting nuts and toothed washers, the trunnion includes mounting nuts, and the axial foot head side includes mounting bolts.

\*2: For material of the mounting bracket, refer to page 684.

\*3 : For axial foot, 1 set each of the above "M1-LB-\*" and "M1-LBV-\*" is required.

SCP\*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/  
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/  
MSDG

FC\*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd  
Contr

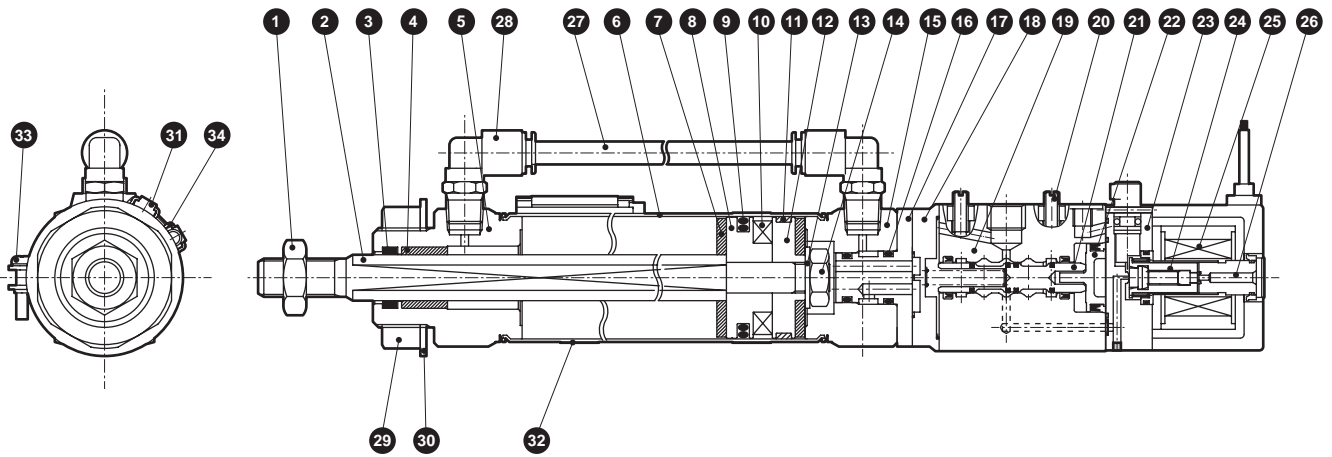
Ending



# CKV2-M Series

## Internal structure and parts list

● CKV2-M (with switch)

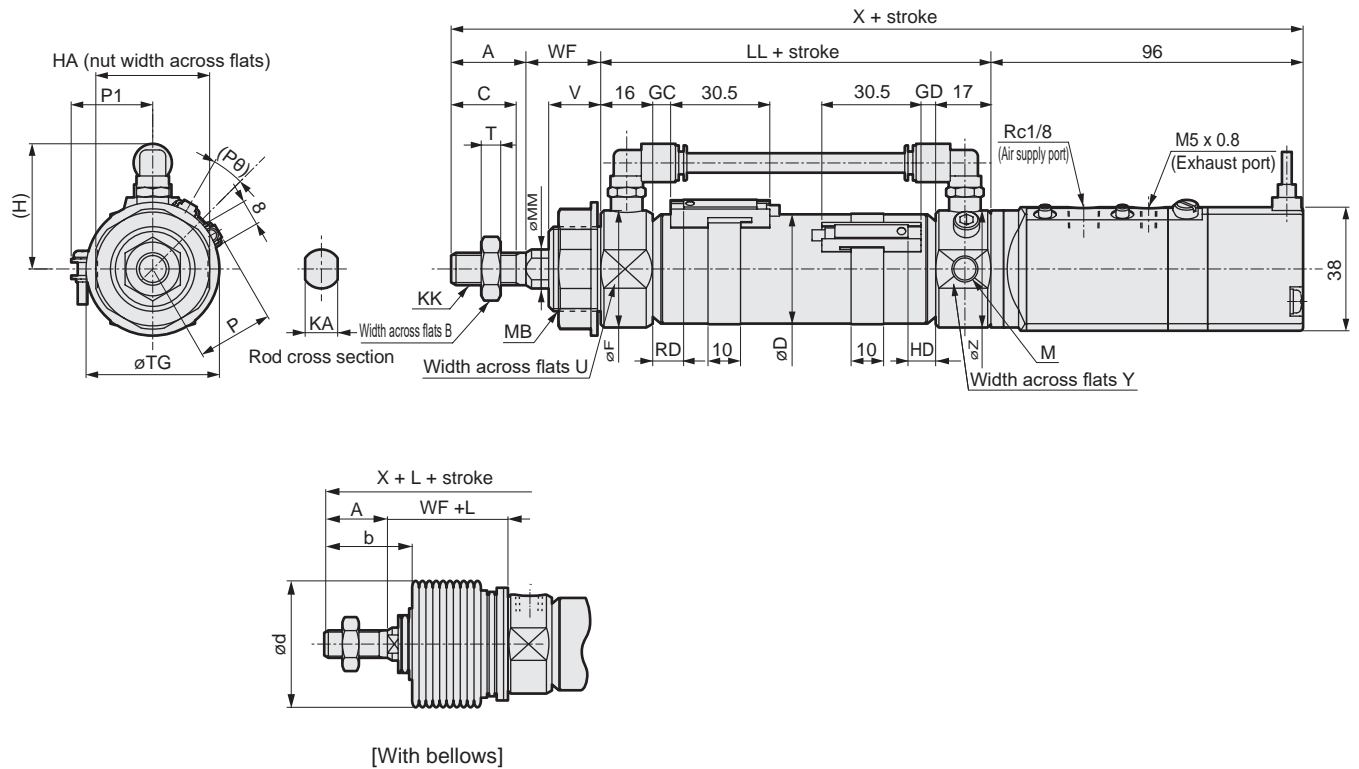


Cannot be disassembled

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Zinc chromate	18	Cap	Aluminum alloy die-casting	Chromate
2	Piston rod	Stainless steel		19	Valve body	Aluminum alloy	Alumite
3	Rod packing	Nitrile rubber		20	Speed adjustment needle	Copper alloy	
4	Bush	Copper-based		21	Spool assembly	---	
5	Rod cover	Aluminum alloy		22	Piston assembly	---	
6	Cylinder tube	Stainless steel		23	Pilot valve body	Nylon	
7	Cushion rubber	Urethane rubber		24	Plunger assembly	---	
8	Piston A	Aluminum alloy		25	Coil assembly	---	
9	Piston packing	Nitrile rubber		26	Core assembly	---	
10	Magnet	Plastic		27	Pass-pipe	Nylon	
11	Wear ring	Polyacetal		28	Fitting	---	GWJL6-6
12	Piston B	Aluminum alloy		29	Nut	Steel	Zinc chromate
13	Spacer	Steel	Zinc chromate	30	Toothed washer	Steel	Zinc chromate
14	Hexagon nut	Steel	Zinc chromate	With switch			
15	Head cover	Aluminum alloy		31	Switch body	---	
16	O-ring	Nitrile rubber		32	Band	Stainless steel	
17	Adaptor	Steel	Zinc chromate	33	Pan head machine screw	Stainless steel	
				34	Switch rail	Stainless steel	

## Dimensions

● Basic (00)



\*1: For dimensions of other mounting formats, refer to pages 686 to 690.

\*2: Refer to page 698 for HD, RD and protruding dimensions of T1\*, T8\* and 2-color LED switches.

\*3: For the dimensions of the accessories, refer to page 699.

Code	Basic (00) Basic dimensions																	
Bore size (mm)	A	B	C	D	F	(H)	HA	KA	KK	LL	M	MB	MM	T	TG	U	V	WF
ø20	20	13	18	21.4	28	38.5	26	8	M8x1.0	67	M8	M18x1.5	10	5	29	24	14	24
ø25	23	17	20	26.4	32	38.5	35	10	M10x1.25	70	M8	M26x1.5	12	6	41	30	16	23
ø32	23	17	20	33.6	36	38.5	35	10	M10x1.25	70	M8	M26x1.5	12	6	41	34	16	23
ø40	25	19	22	41.7	45	43.0	35	12	M12x1.5	74	M10	M26x1.5	14	7	41	43	16	23

Code	With switch											With bellows					
	X	Y	Z	T0, T5, T2, T3				T2W, T3W				P	P1	(P0)°	b	d	L
				GC	GD	RD	HD	GC	GD	RD	HD						
ø20	207	34	36	4	3	8	7	6	5	10	9	17.3	19.5	22	30	30	(Stroke/3) + 6
ø25	212	34	36	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	19.8	22.0	18	32	46	(Stroke/3.25) + 7
ø32	212	34	36	5.5	4.5	9.5	8.5	7.5	6.5	11.5	10.5	24.3	25.5	15	32	46	(Stroke/3.25) + 7
ø40	218	43	45	7.5	6.5	11.5	10.5	9.5	8.5	13.5	12.5	28.3	29.5	12	34	46	(Stroke/3.25) + 7

SCP\*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

**CKV2**

CAV2/  
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/  
MSDG

FC\*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

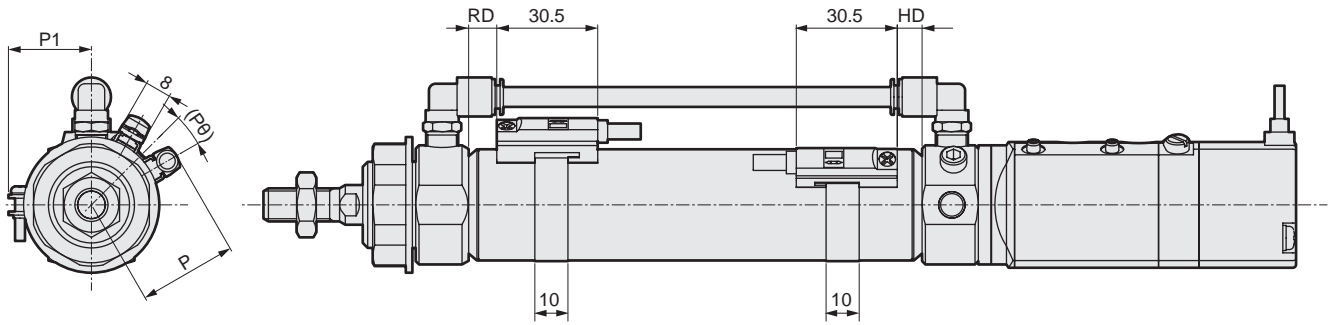
FK

Spd  
Contr

Ending

## CKV2 Series common dimensions (with T1\*, T8\* switches and 2-color LED switch)

● CKV2-\*\*-\*\*\*-T<sub>3</sub><sup>2</sup>YH/V



T1\*, T8\* switches and 2-color LED switch mounting dimensions

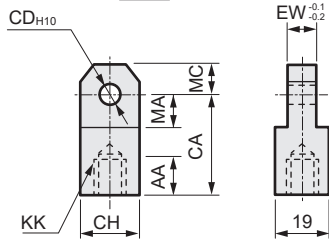
Code	1-color LED (T1, T8) 2-color LED (T <sub>3</sub> <sup>2</sup> Y)				P		P1	(P0)°
	RD		HD		T1	T <sub>3</sub> <sup>2</sup> Y, T8		
Bore size (mm)	T1, T <sub>3</sub> <sup>2</sup> Y	T8	T1, T <sub>3</sub> <sup>2</sup> Y	T8	T1	T <sub>3</sub> <sup>2</sup> Y, T8		
ø20	7.0	2.0	6.0	1	28.5	23.1	19.5	22
ø25	8.5	3.5	7.5	2.5	31.0	25.6	22.0	18
ø32	8.5	3.5	7.5	2.5	35.5	30.1	25.5	15
ø40	10.5	5.5	9.5	4.5	39.5	34.1	29.5	12

## Accessory dimensions (rod eye/clevis bracket/pin)

### ● Rod eye (I)



Material: Steel  
Zinc chromate treatment

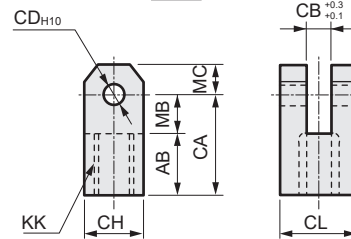


Model No.	Applicable bore size (mm)	AA	CA	CD	CH	EW	KK	MA	MC	Wt (g)
M1-I-20	ø20	14	30	10	19	8	M8x1.0	13	10	60
M1-I-30	ø25/ø32	14	36	12	25	10	M10x1.25	16	12	110
M1-I-40	ø40	14	36	12	25	10	M12x1.5	16	12	100

### ● Rod clevis (Y)



Material: Steel  
Zinc chromate treatment



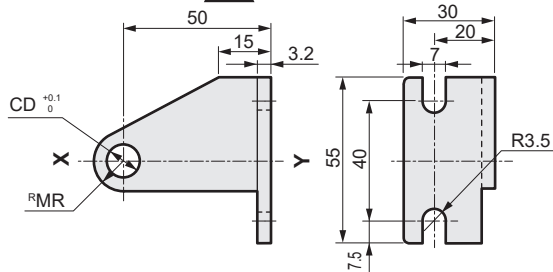
Model No.	Applicable bore size (mm)	AB	CA	CB	CD	CH	CL	KK	MB	MC	Wt (g)
M1-Y-20	ø20	17	30	8	10	19	19	M8x1.0	13	10	100
M1-Y-30	ø25/ø30	20	36	10	12	25	25	M10x1.25	16	12	210
M1-Y-40	ø40	20	36	10	12	25	25	M12x1.5	16	12	200

Note: A pin, a washer and a split pin are included.

### ● Clevis bracket (B2)



Material: Steel, zinc chromate treatment



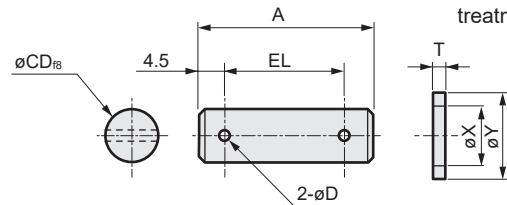
Model No.	Applicable bore size (mm)	CD	MR	Weight (g)
M1-B2-20-TA	ø20	8	8	130
M1-B2-30-TA	ø25/ø32/ø40	10	11	150

\*1: One pair is composed of two pieces with XY symmetry.  
\*2: The snap ring and pin are not included.

### ● Rod clevis pin (P)



Material: Steel  
Zinc chromate treatment



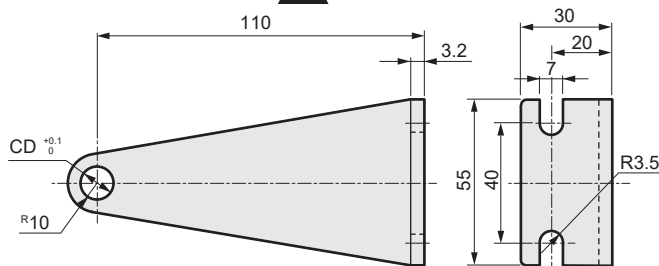
Model No.	Applicable bore size (mm)	A	D	CD	EL	T	X	Y	Wt (g)
M1-P-20	ø20	37	4	10	28	1.6	10.5	18	30
M1-P-30	ø25/ø32/ø40	46	4	12	37	2.5	12.5	22	50

Note: A pin, a washer and a split pin for rod clevis use are included with the product.

### ● Clevis bracket (B3)



Material: Steel, zinc chromate treatment

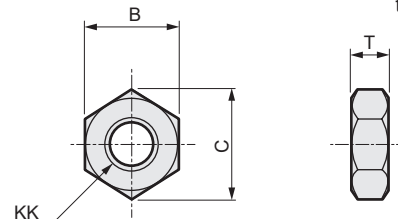


Model No.	Applicable bore size (mm)	CD	Weight (g)
M1-B3-20-TA	ø20	8	370
M1-B3-30-TA	ø25/ø32/ø40	10	360

Note: The snap ring and pin are not included.

### ● Rod end nut (NR)

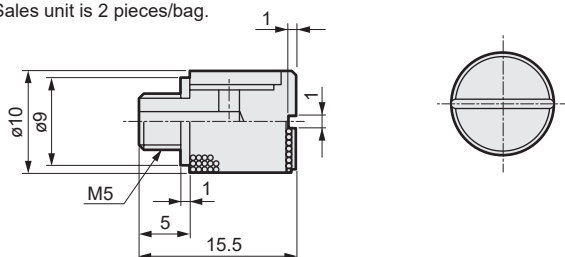
Material: Steel  
Zinc chromate treatment



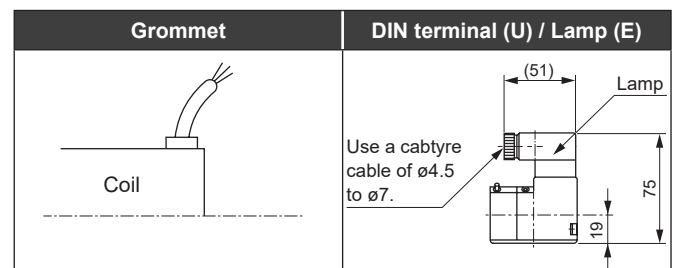
Model No.	Applicable bore size (mm)	B	C	KK	T	Weight (g)
M1-NR-20	ø20	13	15	M8x1.0	5	3
M1-NR-30	ø25/ø32	17	19.6	M10x1.25	6	7
M1-NR-40	ø40	19	21.9	M12x1.5	7	9

### ● Silencer (SL-M5)

\* Sales unit is 2 pieces/bag.



## How to wire



\*1: Lights and surge suppressors cannot be built into grommets.

\*2: Refer to "How to wire the terminal box" on page 701 when connecting the wires to the DIN terminal box.

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
<b>CKV2</b>
CAV2/COVP/N2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending