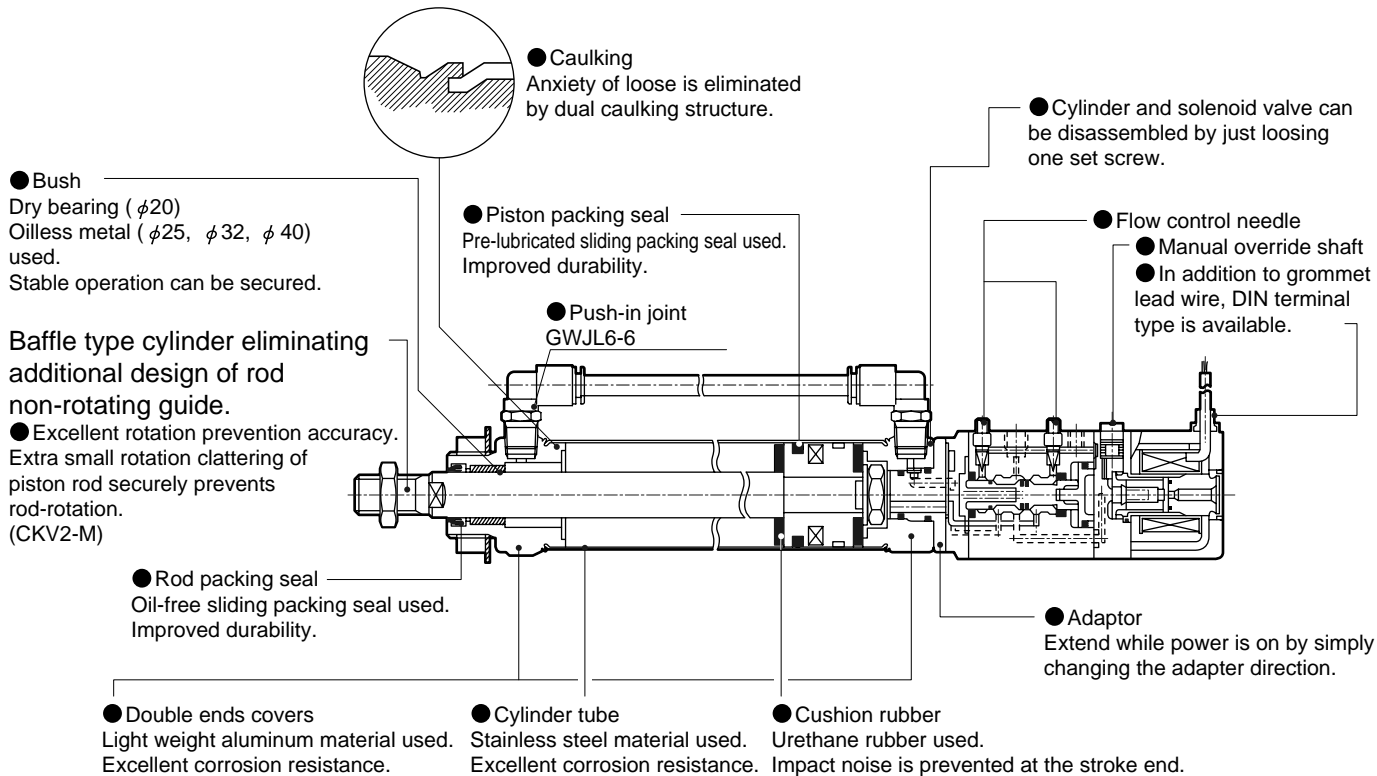


●: Standard, ◎: Option, ○: Custom order, ■: Not available

Variation	Model no. JIS symbol	Bore size (mm)	Standard stroke length (mm)						Min. stroke length (mm)	Max. stroke length (mm)	Custom stroke length (per mm)	Mounting style			Option						Accessory				Switch	Page											
			25	50	75	100	150	200				Basic type	Axial foot type	Rod end flange type	Rod end trunnion type	Head end trunnion type	Bellows (100 °C)	Bellows (250 °C)	Piston rod material (stainless steel)	With silencer	With surge suppressor	With indicator light	Retract at energized	Copper and PTFE free			Rod eye	Rod clevis	Eye bracket	Clevis bracket clevis type.							
			00	LB	FA	TA	TB	J				L	M	W	G	E	X	P6	I	Y	B2	B3															
Double acting single rod type	CKV2	φ20, φ25, φ32, φ40	●	●	●	●	●	●	5	750	1	●	●				●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	664
Double acting non-rotating type	CKV2-M	φ20, φ25, φ32, φ40	●	●	●	●	●	●	5	750	1	●	●				◎	◎	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	676	

Product introduction



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder with valve
With valve

Selection table of variation and options

- : Standard
- ◎ : Option
- : Available (custom order)
- △ : Available depending on conditions (consult with CKD.)
- X : Not available

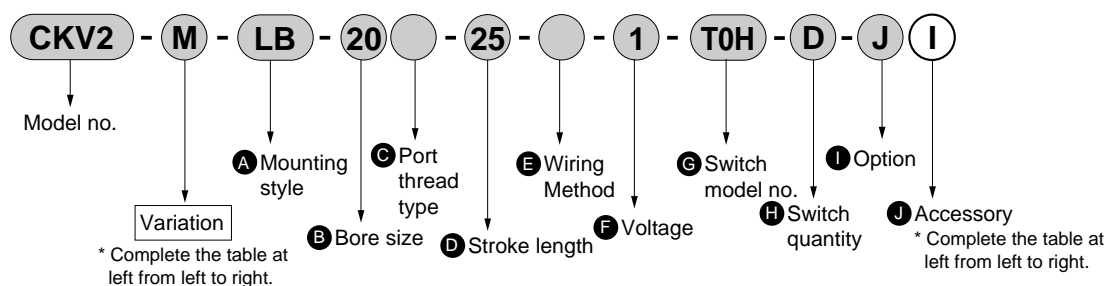
Code	Code	Variation		Port thread		Wiring		Option										
		Symbol	No	M	N	G	No	U	J	L	M	N	P6	W	G	E	X	
Code	Double acting basic type	Blank			○	○	●	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	
	Non-rotating	M			○	○	●	◎	◎	◎	Note 2	◎	△	◎	◎	◎	◎	
Port thread	NPT	N				X	○	○	○	○	○	○	○	○	○	○	○	
	G	G					○	○	○	○	○	○	○	○	○	○	○	
Wiring	Grommet	Blank						X	◎	◎	◎	◎	◎	◎	◎	X	◎	
	DIN terminal box	U							◎	◎	◎	◎	◎	◎	◎	◎	◎	
Option	Polyolefin with bellows	J								X	◎	◎	◎	◎	◎	◎	◎	
	Silicone rubber with bellows	L									◎	◎	◎	◎	◎	◎	◎	
	Piston rod material stainless steel	M										◎	◎	◎	◎	◎	◎	
	Customized piston rod end form	N										◎	◎	◎	◎	◎	◎	
	Copper and PTFE free	P6											◎	◎	◎	◎	◎	
	With silencer	W												◎	◎	◎	◎	
	With surge suppressor	G													◎	◎	◎	
	With neon light	E															◎	
Accessory	Retract at energized	X																
	Cylinder switch	Ending 1	◎	◎	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	Rod eye	I	◎	◎	○	○	◎	◎	◎	◎	◎	Note 1	◎	◎	◎	◎	◎	
	Rod clevis	Y	◎	◎	○	○	◎	◎	◎	◎	◎	Note 1	◎	◎	◎	◎	◎	
	B2 bracket	B2	◎	◎	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
B3 bracket	B3	◎	◎	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		

Note 1: If the size of the screw at the piston rod end is changed, this combination does not apply. Consult with CKD in this case.

Note 2: The nonrotating piston rod is made of stainless steel.

If option M, the stainless steel piston rod, is selected, stainless steel rod nuts are included.

(How to order)



Model no.: Medium bore size cylinder with valve

- Variation: Double acting non-rotating type
- A Mounting style : Axial foot type
- B Bore size : ϕ 20 mm
- C Port thread type : Rc thread
- D Stroke length : 25 mm
- E How to wire : Grommet
- F Voltage : 100 VAC
- G Switch model no. : Reed T0H switch, lead wire 1 m
- H Switch quantity : 2
- I Option : Bellows, max. ambient temperature 100°C
- J Accessory : Rod eye

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder with valve
With valve



Pneumatic components

Safety precautions

Always read this section before starting use.

Refer to Intro 71 for general notes of cylinders and Intro 78 for cylinder switches.

Medium bore size cylinder with valve CKV2 Series

Design & Selection

WARNING

- Check that the valve's exhaust port (including PE port) is not smaller than the connecting port size.

A respiration effect could be generated by the operation of the valve at the valve's exhaust port, and cause foreign matter around the exhaust port to be sucked in, or could cause foreign matter to enter if the exhaust port is facing upward.

The actuator does not operate properly if exhaust is not smooth.

- The actuator will not be activated normally if exhaust is not made smoothly.

CAUTION

- Check the leakage current to prevent malfunctions caused by leakage currents generated at other control devices.

- When using a programmable controller, etc., the valve could malfunction because of leakage currents from the device.
- The value at which the leakage current has an effect differs according to the valve type.

Programmable controller



References

For 100 VAC	3.0 mA or less
For 200 VAC	1.5 mA or less
For 24 VDC	1.8 mA or less

- Switch the valve once every 30 days to prevent operation faults.

- The reed switch's contact life is generally several hundred thousand times, but may differ with working conditions. The contact life range is reached quickly if the working device is used continuously or is operated at high frequency. In this case, use a proximity switch with no contact.

Installation & Adjustment

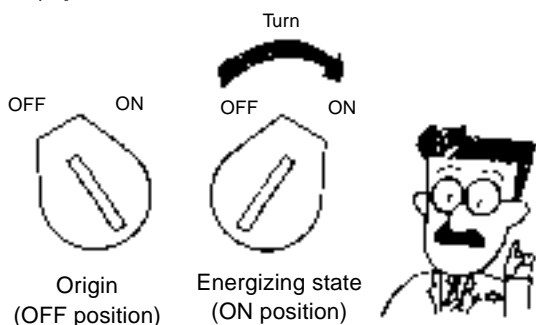
WARNING

- The connected device functions when manual operations are carried out, so check that no hazards exist before starting.

If the valve's manual override has been operated, return to the origin (initial position) before operating the unit.

If compressed air is supplied when the cylinder is not at the origin, the cylinder could start moving and cause problems.

[Example]



CAUTION

- Do not bump tools or devices, etc., against the solenoid during installation.

- Do not support the valves with pipes.

- Do not lift the product by coil lead.

- Leads could disconnect.

- Polarity

All series have no polarity. (Not polarized type)

- Applied voltage

Check the voltage type (AC or DC) and voltage when working with electrical wiring.

Incorrect connections could lead to operation faults or coil burning.

- Wiring confirmation

Check that connections are correct after wiring is completed.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

During Use & Maintenance

1. Common

⚠ WARNING

- The connected device functions when manual operations are carried out, so check that no hazards exist before starting.

⚠ CAUTION

- Low frequency use
 - Switch the valve once every 30 days to prevent operation faults.

- After disassembling and assembling the valve, conduct an operation test in order below and confirm that operation is correct.

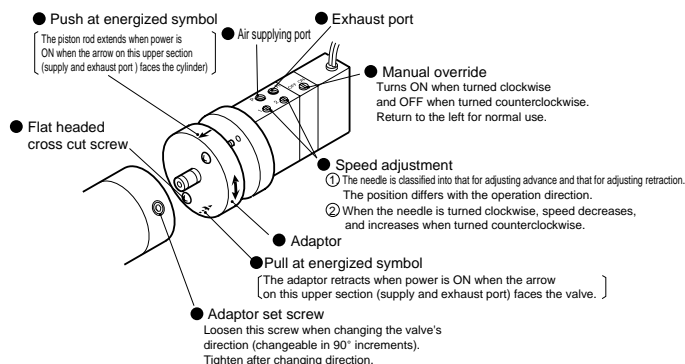
Work procedures

1. Check the origin (OFF position) of the manual override.
2. Set to low pressure. (0.15 MPa)
3. Switch manual override to activation (ON), and confirm that the cylinder moves.
4. Return manual override to the initial position (OFF), and confirm that the cylinder returns. (This completes manual confirmation of operation.)
5. Conduct an energizing test.
 - After confirming manually, check operation with power on and off.

- If the DIN terminal box is used in a hot environment with power continuously on, the gasket could be thermally degraded. Replace the gasket regularly.

■ Changing extension and retraction with power ON

- (1) Loosen the adapter set screw and flat headed cross cut screw.
- (2) Rotate only adapter 180° in the direction of arrow.
(←→ : Rotation direction)
- (3) Tighten the flat headed cross cut screw (proper torque 1.7 N·m) and adapter set screw (proper torque 9 N·m).



Speed adjustment	Advance adjustment	Return adjustment
Operating direction		
Extend at energized	1	2
Retract at energized	2	1

■ Terminal box wiring methods

Refer to the following drawings, and wire the terminal box in steps (1) to (3).

- 1) Pass the cap (4), washer (5), and gasket (6) in this order through the cable (7), and insert into the case (2).
- 2) When using a crimp terminal, treat the cable (7) at an appropriate length as shown in the figure, and crimp the crimp terminal (9) onto the end.
- 3) Remove the screw (10) from the gland (3), and pass the crimp terminal (9) through. (When using a Y type terminal, loosen and sandwich the terminal.) Retighten screw (10).
(Note) Tighten at a torque of 0.5 N·m ± 15%.

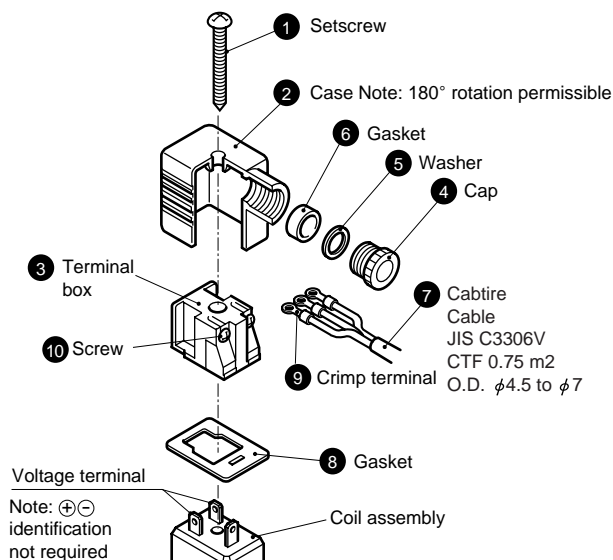
Remarks: ● Bare wires can be wired. Loosen the screw (10), and insert leads into the bracket, then retighten.

- The lead wire outlet direction is changed by pulling the gland out of the case, rotating it 180°, then pressing it into the case again.

- The following crimp terminals (9) are used:

NICHIFU		FUJII TERMINAL INDUSTRY CO. LTD.		JST MFG CO. LTD.	
O terminal	Y terminal	O terminal	Y terminal	O terminal	Y terminal
0.3-3	0.3-3	1.25-3	1.25-YAS3	0.5-3	0.25-B3A
1.25-3	1.25Y-3		1.25-YAS3.5	1.25-3	1.25-C3A
1.25-3S	1.25Y-3.5				

Use equivalent products when using other brands.



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC

Ending

Medium bore size cylinder with valve
With valve

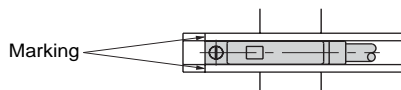
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

2. Common (with T type switch)

⚠ CAUTION

■ Moving the switch position in the stroke direction

- Switches T2, T3, T0, T5 can be finely adjusted at ± 3 mm from the default installation position. If the adjustment range exceeds 3 mm, or when other switches are adjusted, move the band position.
- Loosen the switch fixing screw, move the switch along the rail, and tighten at the required position.
When using the T2, T3, T0 or T5 switch, use a flat-tip screwdriver with 5 to 6 mm grip, 2.4 mm or smaller tip width, and 0.3 mm or thinner (clock screwdriver, precision screwdriver, etc.), and tighten with a tightening torque of 0.1 to 0.2 N·m.
When using T1, T*C, T2J, T2Y, T3Y, T2YF, T3YF, T2YM, T3YM, or T8, tighten with a tightening torque of 0.5 to 0.7 N·m.
- The switch bracket rail has a mark 4 mm from the rail end. Use this as a guide to the mounting position when replacing the switch.
Switch rail markings are set to the default switch maximum sensitivity position.
Maximum sensitivity position changes when the switch type is changed or when the switch bracket is moved. Adjust the position accordingly.

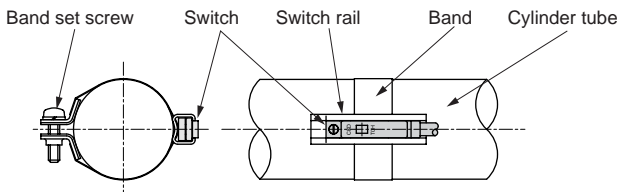


■ Shifting the switch position in the circumference direction

- Loosen the band fixing screw, shift the switch rail in the circumference direction, then tighten at the specified position. Tightening torque is 0.6 to 0.8 N·m.

■ Shifting the band position

- Loosen the band fixing screw, shift the switch rail and band along cylinder tubing, then tighten at the specified position. Tightening torque is 0.6 to 0.8 N·m.



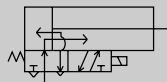
Medium bore size cylinder with valve Double acting single rod type



CKV2 Series

● Bore size: ϕ 20, ϕ 25, ϕ 32, ϕ 40

JIS symbol ● Double acting cylinder with valve



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS

Specifications

Descriptions	CKV2 (standard type/with switch)			
Bore size mm	ϕ 20	ϕ 25	ϕ 32	ϕ 40
Actuation	Double acting with valve			
Working fluid	Compressed air			
Max. working pressure MPa	1			
Min. working pressure MPa	0.15			
Withstanding pressure MPa	1.6			
Ambient temperature °C	-5 to 60 (no freezing)			
Port size	Rc1/8			
Stroke tolerance mm	$^{+2.0}_0$ (up 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 (when lubricating, use turbine oil Class 1 ISO VG32.)			
Allowable energy absorption J	0.166	0.308	0.424	0.639
Solenoid valve specifications				
Rated voltage (note) V	100 AC (50/60Hz)	200 AC (50/60Hz)	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	$\pm 10\%$			
Insulation class	Class B or equivalent			

● Note: 100/200 VAC are available for 110/220 VAC (60Hz).

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ϕ 20	25, 50, 75, 100, 150, 200	750	5
ϕ 25			
ϕ 32			
ϕ 40			

Note 1: Custom stroke length is available per 1 mm increment.

Note 2: For bellows J, the min. stroke length is 25 mm. If less than 25 mm stroke, consult with CKD.

Min. stroke length with switch

(Unit: mm)

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

Note 1: Switches cannot be installed more than three.

Ending

Switch specifications

- 1 color/2 color indicator, strong magnetic field proof

* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire						
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V		
Applications	Programmable controller relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay		
Output method	-			NPN output	PNP output	NPN output	-						
Power voltage	-			10 to 28 VDC			-						
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		Without indicator light		LED (ON lighting)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA						

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V	
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay	
Output method	NPN output							
Light	Red/green LED (ON lighting)							
	Installation position adjustment section				Yellow LED (ON lighting)			
Regular output	Preventive maintenance output							
	-		-		-		-	
	Power voltage		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less	
Preventive maintenance output	Load current		50 mA or less		5 to 20 mA		50 mA or less	
	Leakage current		10 μA or less		1.2 mA or less		10 μA or less	
	Load voltage		30 VDC or less		-		-	
Preventive maintenance output	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	
	Leakage current		10 μA or less		-		-	

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10 mA at 60 °C)

Cylinder weight

(Unit: kg)

Descriptions, mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Switch rail	Additional weight
	Basic type (00)	Axial foot type (LB)	Rod end flange type (FA)	Rod end trunion type (TA)	Head end trunion type (TB)	Grommet	+ band weight	per S = 10 mm
φ 20	0.47	0.63	0.53	0.52	0.49	0.018	0.005	0.01
φ 25	0.57	0.79	0.72	0.67	0.60	0.018	0.005	0.01
φ 32	0.62	0.84	0.77	0.72	0.65	0.018	0.009	0.02
φ 40	0.81	1.08	0.96	0.97	0.85	0.018	0.009	0.02

(E.g.) 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 $0.02 \times \frac{\text{Stroke length of product (50)}}{10} = 0.10$ kg
 Weight of two 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

SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
 JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC

Ending
 Medium bore size cylinder with valve
 With valve

How to order

Without switch

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

With switch

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

Selection guide

A Mounting style

B Bore size

C Port thread type

D Stroke length

E How to wire

F Voltage

G Switch model no.

H Switch quantity
Note 1

I Option
Note 2, Note 3, Note 4
Note 5, Note 6

J Accessory
Note 7

Note on model no. selection

- Note 1: Refer to page 664 for min. stroke length with switch.
- Note 2: For bellows J, the min. stroke length is 25 mm. If less than 25 mm stroke, consult with CKD.
- Note 3: The type with a surge killer (G) is included when a grommet lead is selected for connection.
- Note 4: The type with a lamp (E) is available only when DIN terminal (U) connection is selected.
- Note 5: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.
- Note 6: P6 (PTFE free specifications) are customized order parts. Contact CKD for details on the delivery schedule.
- Note 7: "I" and "Y" can not be selected at the same time.
- Note 8: Refer to Ending 89 for custom specifications of rod end form.
- Note 9: Refer to page 658 for variation and combinations of options
- Note 10: Up to three 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 number>

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

Model: Medium bore size cylinder with valve double acting single rod type

- A Mounting style : Axial foot type
- B Bore size : ϕ 20 mm
- C Port thread type : Rc thread
- D Stroke length : 25 mm
- E How to wire : DIN terminal
- F Voltage : 100 VAC
- G Switch model no. : Reed T0H switch, lead wire 1 m
- H Switch quantity: One on rod end
- I Option : Bellows, max. ambient temperature 100 °C
- J Accessory : Rod eye

Symbol	Descriptions			
A Mounting style				
00	Basic type			
LB	Axial foot type			
FA	Rod end flange type			
TA	Rod end trunnion type			
TB	Head end trunnion type			
B Bore size (mm)				
20	ϕ 20			
25	ϕ 25			
32	ϕ 32			
40	ϕ 40			
C Port thread type				
Blank	Rc thread			
NN	NPT thread (custom order)			
GN	G thread (custom order)			
D Stroke length (mm)				
Bore size	Stroke length Note 1	Custom stroke length		
ϕ 20	5 to 750	Per 1 mm increment		
ϕ 25	5 to 750			
ϕ 32	5 to 750			
ϕ 40	5 to 750			
E How to wire				
Blank	Grommet			
U	DIN terminal			
F Voltage				
1	100 VAC			
2	200 VAC			
3	24 VDC			
G Switch model no.				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		Without indicator light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*		1 color indicator type (custom order)	3-wire
T3H*	T3V*			
T3PH*	T3PV*		2 color indicator type (w/o light for preventive maintenance output)	4-wire
T2YH*	T2YV*		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YH*	T3YV*		2 color indicator type (with light for preventive maintenance output (1 color))	4-wire
T2YFH*	T2YFV*		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YFH*	T3YFV*		2 color indicator type (with light for preventive maintenance output (1 color))	4-wire
T2YMH*	T2YMV*		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	T3YMV*		2 color indicator type (with light for preventive maintenance output (1 color))	4-wire
T2JH*	T2JV*		Off-delay type	2-wire
*Lead wire length				
Blank	1 m (standard)			
3	3 m (option)			
5	5 m (option)			
H Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			
I Option				
		Max. ambient	Max. instantaneous	
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 light			
X	Retract at energized			
P6	Copper and PTFE free (custom order)			
J Accessory				
I	Rod eye			
Y	Rod clevis (pin, washer or split pin attached)			
B2	Clevis bracket			
B3	Clevis bracket (clevis type)			

How to order switch

● Switch body + mounting bracket

CKV2 - T0H - 20

Switch model no.
(Item ⑥ previous page) Bore size
(Item ⑧ previous page)

● Only switch body

SW - T0H

Switch model no.
(Item ⑥ previous page)

● Mounting bracket

CKV2 - T - 20

Bracket Bore size
(Item ⑧ previous page)

How to order mounting bracket

Bore size (mm)	φ 20	φ 25	φ 32	φ 40
Mounting bracket				
Axial foot type (LB) rod end	M1-LB-20	M1-LB-30	M1-LB-30	M1-LB-30
Axial foot type (LB) head end	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 end trunnion (TB)	M1-TB-20	M1-TB-30	M1-TB-30	M1-TB-40

Note 1: Mounting nut and toothed washer are attached to the mounting bracket.

Note 2: Refer to page 668 for the mounting bracket material.

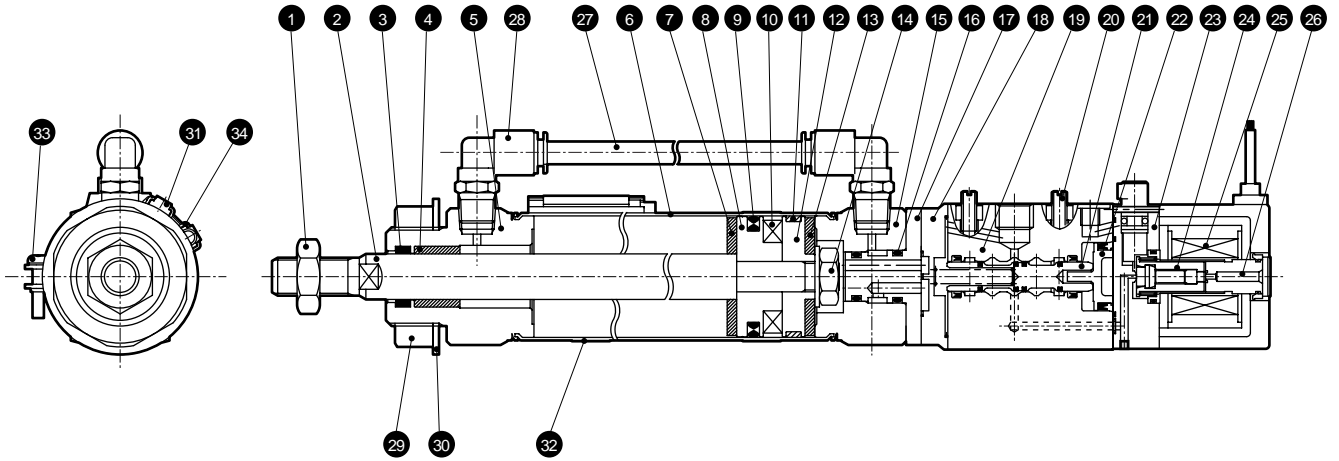
Note 3: For axial foot type, one each set of [M1-LB-*] and [M1-LBV-*] is required.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder with valve
With valve

Internal structure and parts list

● CKV2 (with switch)



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Zinc chromate	17	Adaptor	Steel	Zinc chromate
2	Piston rod	$\phi 20, \phi 25$ are stainless steel. $\phi 32, \phi 40$ are carbon steel.	Industrial chrome plating	18	Cap	Aluminum alloy die-casting	Chromate
3	Rod packing seal	Nitrile rubber		19	Valve body	Aluminum alloy	Alumite
4	Bush	Dry bearing SBK2118	$\phi 20$ Note 1 $\phi 25, \phi 32, \phi 40$	20	Speed adjustment needle	Brass	
5	Rod cover	Aluminum alloy		21	Spool assembly	————	
6	Cylinder tube	Stainless steel		22	Piston assembly	————	
7	Cushion rubber	Urethane rubber		23	Pie valve body	Nylon	
8	Piston A	Aluminum alloy		24	Plunger assembly	————	
9	Piston packing seal	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	Joint	————	GWJL-6-6
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	————	
Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free.				32	Band	Stainless steel	
				33	Pan head machine screw	Stainless steel	
				34	Switch rail	Stainless steel	

Mounting bracket material

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

Note: The mounting bracket is shipped with the product.

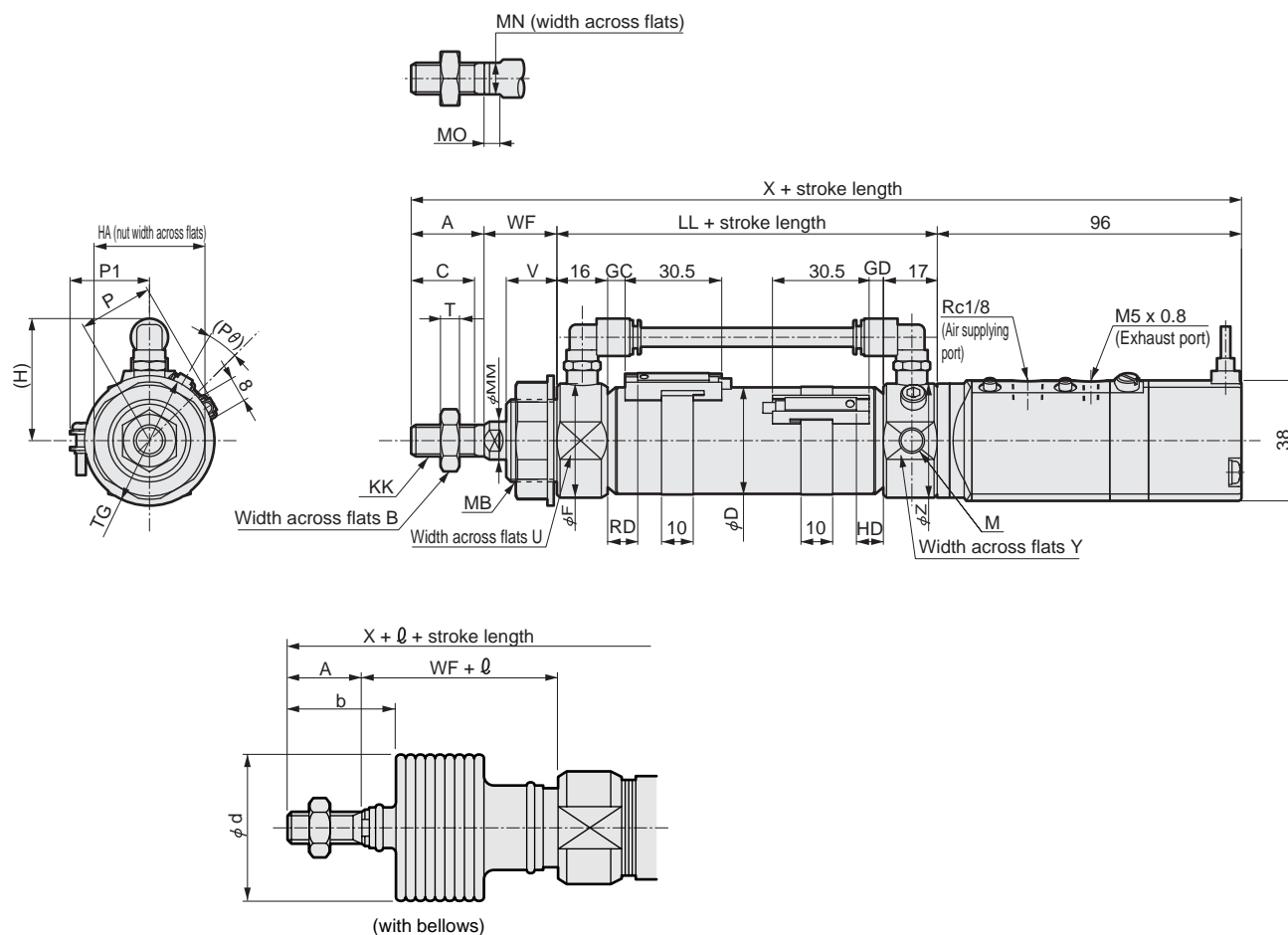
Valve repair parts list

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

Dimensions



● Basic type (00)



Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output.

Note 2: ℓ dimensions below decimal point are rounded up.

Note 3: Refer to page 683 for accessory dimensions.

Symbol	Basic dimensions for basic type (00)																	
Bore size (mm)	A	B	C	D	F	(H)	HA	KK	LL	M	MB	MM	MN	MO	T	TG	U	V
φ 20	20	13	18	21.4	28	38.5	26	M8 x 1.0	67	M8	M18 x 1.5	10	8	5	5	29	24	14
φ 25	23	17	20	26.4	32	38.5	35	M10 x 1.25	70	M8	M26 x 1.5	12	10	5	6	41	30	16
φ 32	23	17	20	33.6	36	38.5	35	M10 x 1.25	70	M8	M26 x 1.5	12	10	5	6	41	34	16
φ 40	25	19	22	41.6	45	43.0	35	M12 x 1.5	74	M10	M26 x 1.5	14	12	6	7	41	43	16
Symbol	With switch											With bellows						
Bore size (mm)	WF	X	Y	Z	GC	GD	RD	HD	P	P1	(Pθ)°	b	d	ℓ				
φ 20	24	207	34	36	4.0	3.0	8.0	7.0	17.3	19.5	22	30	30	(Stroke length/3) + 6				
φ 25	23	212	34	36	5.5	4.5	9.5	8.5	19.8	22.0	18	32	46	(Stroke length/3.25) + 7				
φ 32	23	212	34	36	5.5	4.5	9.5	8.5	24.3	25.5	15	32	46	(Stroke length/3.25) + 7				
φ 40	23	218	34	45	7.0	6.5	11.0	10.5	28.3	29.5	12	34	46	(Stroke length/3.25) + 7				

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2**
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

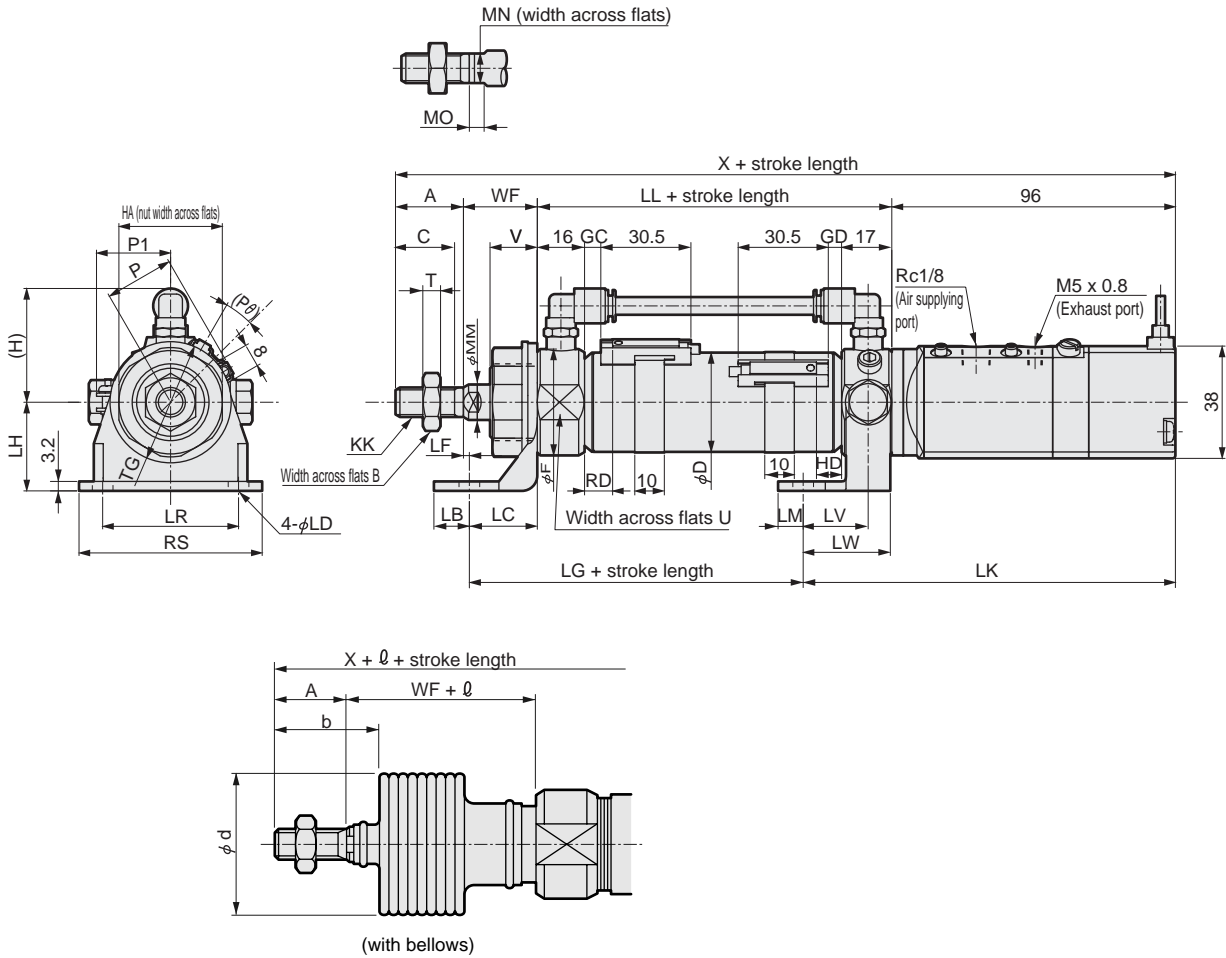
Ending

Medium bore size cylinder with valve
With valve

Dimensions



● Axial foot type (LB)



Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output.

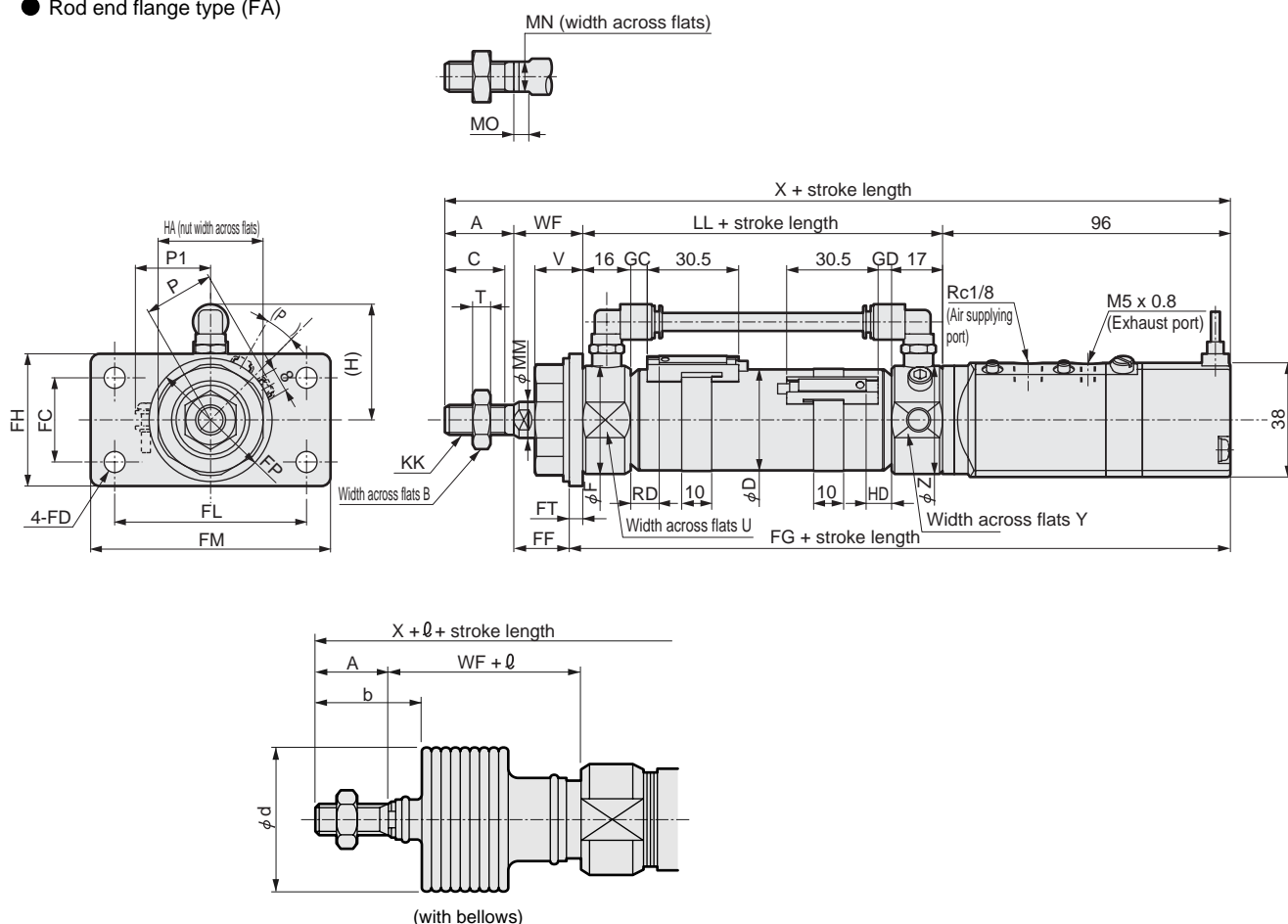
Note 2: Refer to page 683 for accessory dimensions.

Symbol	Basic dimensions for axial foot type (LB)																		Installation dimensions	
Bore size (mm)	A	B	C	D	F	(H)	HA	KK	LL	MM	MN	MO	T	TG	U	V	WF	X	LB	LC
φ 20	20	13	18	21.4	28	38.5	26	M8 x 1.0	67	10	8	5	5	29	24	14	24	207	10	18
φ 25	23	17	20	26.4	32	38.5	35	M10 x 1.25	70	12	10	5	6	41	30	16	23	212	12	23
φ 32	23	17	20	33.6	36	38.5	35	M10 x 1.25	70	12	10	5	6	41	34	16	23	212	12	23
φ 40	25	19	22	41.6	45	43	35	M12 x 1.5	74	14	12	6	7	41	43	16	23	218	12	23
Symbol	Installation dimensions											With switch						With bellows		
Bore size (mm)	LD	LF	LG	LH	LK	LM	LR	LS	LT	LV	LW	GC	GD	RD	HD	P	P1	(Pθ)°	b	d
φ 20	6	6	55	25	126	7.5	30	44	55.4	22	29.5	4.0	3.0	8.0	7.0	17.3	19.5	22	30	30
φ 25	7	0	63	30	126	8.5	46	62	55.4	22	29.5	5.5	4.5	9.5	8.5	19.8	22.0	18	32	46
φ 32	7	0	63	30	126	8.5	46	62	55.4	22	29.5	5.5	4.5	9.5	8.5	24.3	25.5	15	32	46
φ 40	7	0	64	30	129	8	46	62	68.4	25	35	7.0	6.5	11.0	10.5	28.3	29.5	12	34	46
Symbol																				
Bore size (mm)	ℓ																			
φ 20	(Stroke length/3) + 6																			
φ 25	(Stroke length/3.25) + 7																			
φ 32	(Stroke length/3.25) + 7																			
φ 40	(Stroke length/3.25) + 7																			

Dimensions



- Rod end flange type (FA)



Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output.
 Note 2: Refer to page 683 for dimensions of an accessory.

Symbol	Rod end flange type (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
φ 20	20	13	18	21.4	28	38.5	26	M8 x 1.0	67	10	8	5	5	24	14	24	207	34	36
φ 25	23	17	20	26.4	32	38.5	35	M10 x 1.25	70	12	10	5	6	30	16	23	212	34	36
φ 32	23	17	20	33.6	36	38.5	35	M10 x 1.25	70	12	10	5	6	34	16	23	212	34	36
φ 40	25	19	22	41.6	45	43	35	M12 x 1.5	74	14	12	6	7	43	16	23	218	43	45

Symbol	Installation dimensions										With switch						With bellows	
Bore size (mm)	FC	FD	FF	FG	FH	FL	FM	FT	FP	GC	GD	RD	HD	P	P1	(Pθ)°	b	d
φ 20	20	6	20.8	166.2	34	40	54	3.2	29	4.0	3.0	8.0	7.0	17.3	19.5	22	30	30
φ 25	28	7	18.5	170.5	44	64	80	4.5	41	5.5	4.5	9.5	8.5	19.8	22.0	18	32	46
φ 32	28	7	18.5	170.5	44	64	80	4.5	41	5.5	4.5	9.5	8.5	24.3	25.5	15	32	46
φ 40	28	7	18.5	174.5	44	64	80	4.5	41	7.0	6.5	11.0	10.5	28.3	29.5	12	34	46

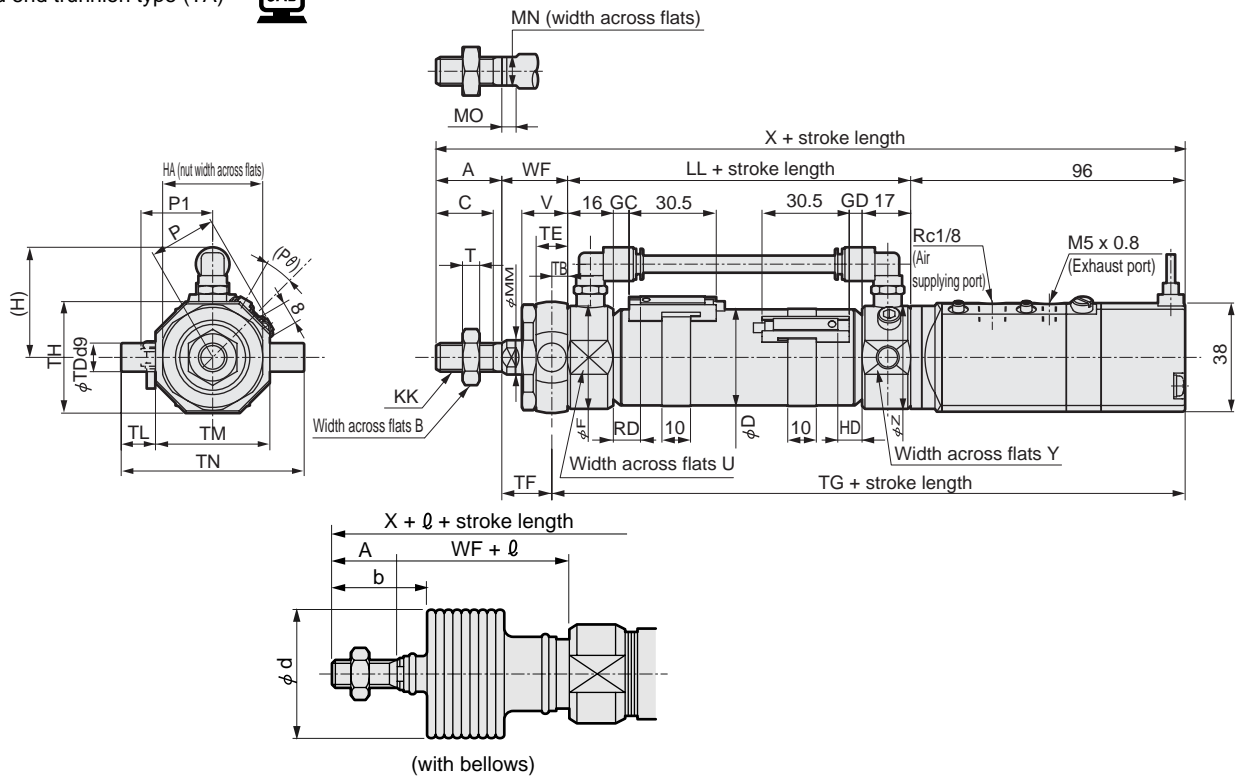
Symbol	
Bore size (mm)	ℓ
φ 20	(Stroke length/3) + 6
φ 25	(Stroke length/3.25) + 7
φ 32	(Stroke length/3.25) + 7
φ 40	(Stroke length/3.25) + 7

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2**
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

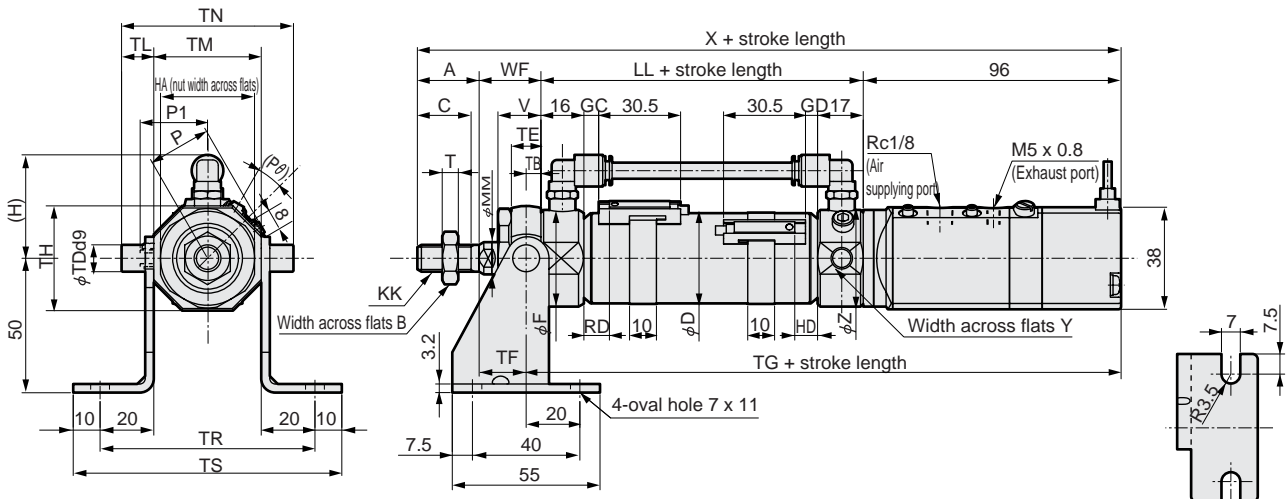
Medium bore size cylinder with valve
With valve

Dimensions

● Rod end trunnion type (TA)



● Rod side trunnion type (TA) bracket (option symbol B2)

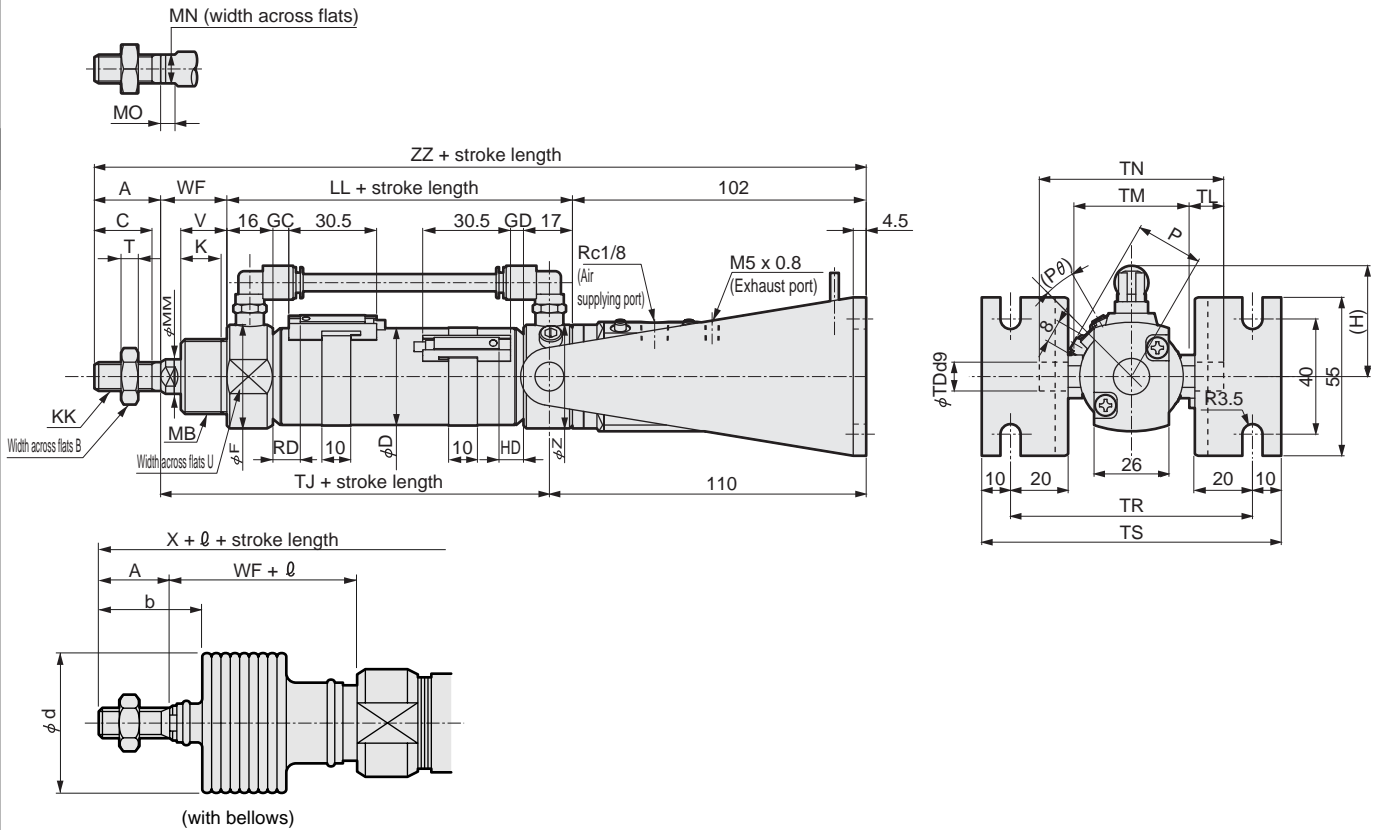


Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output.
 Note 2: Refer to page 683 for accessory dimensions.

Symbol	Basic dimensions for rod end trunnion type (TA)																	Installation dimensions				
Bore size (mm)	A	B	C	D	F	(H)	HA	KK	LL	MM	MN	MO	T	U	V	WF	X	Y	Z	TB	TD	TE
φ 20	20	13	18	21.4	28	38.5	26	M8 x 1.0	67	10	8	5	5	24	14	24	207	34	36	4.5	8	9
φ 25	23	17	20	26.4	32	38.5	35	M10 x 1.25	70	12	10	5	6	30	16	23	212	34	36	5.5	10	11
φ 32	23	17	20	33.6	36	38.5	35	M10 x 1.25	70	12	10	5	6	34	16	23	212	34	36	5.5	10	11
φ 40	25	19	22	41.6	45	43	35	M12 x 1.5	74	14	12	6	7	43	16	23	218	43	45	5.5	10	11
Symbol											With switch					With bellows						
Bore size (mm)	TF	TG	TH	TL	TM	TN	TR	TS	GC	GD	RD	HD	P	P1	(Pθ)°	b	d	l				
φ 20	19.5	167.5	29.5	8	30	46	70	90	4.0	3.0	8.0	7.0	17.3	19.5	22	30	30	(Stroke length/3) + 6				
φ 25	17.5	171.5	39	12	40	64	80	100	5.5	4.5	9.5	8.5	19.8	22.0	18	32	46	(Stroke length/3.25) + 7				
φ 32	17.5	171.5	39	12	40	64	80	100	5.5	4.5	9.5	8.5	24.3	25.5	15	32	46	(Stroke length/3.25) + 7				
φ 40	17.5	175.5	44	9.5	53	72	93	113	7.0	6.5	11.0	10.5	28.3	29.5	12	34	46	(Stroke length/3.25) + 7				

Dimensions

- Head side trunnion type (TB), with bracket (option symbol B3)



Note 1: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2-color indicator switch with preventive maintenance output.
 Note 2: Refer to page 683 for accessory dimensions.

Symbol	Basic dimensions for head side trunnion type (TB) with bracket (option symbol B3)																	
Bore size (mm)	A	B	C	D	F	(H)	K	KK	LL	MB	MM	MN	MO	T	U	V	WF	ZZ
φ 20	20	13	18	21.4	28	38.5	12	M8 x 1.0	67	M18 x 1.5	10	8	5	5	24	14	24	213
φ 25	23	17	20	26.4	32	38.5	14	M10 x 1.25	70	M26 x 1.5	12	10	5	6	30	16	23	218
φ 32	23	17	20	33.6	36	38.5	14	M10 x 1.25	70	M26 x 1.5	12	10	5	6	34	16	23	218
φ 40	25	19	22	41.6	45	43	14	M12 x 1.5	74	M26 x 1.5	14	12	6	7	43	16	23	224

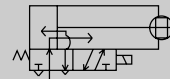
Symbol	Installation dimensions								With switch				With bellows			
Bore size (mm)	TD	TJ	TL	TM	TN	TR	TS	GC	GD	RD	HD	P	(Pθ) [°]	b	d	ℓ
φ 20	8 ^{-0.040} _{-0.076}	83	8	44	60	84	104	4.0	3.0	8.0	7.0	17.3	22	30	30	(Stroke length/3) + 6
φ 25	10 ^{-0.040} _{-0.076}	85	10	44	64	84	104	5.5	4.5	9.5	8.5	19.8	18	32	46	(Stroke length/3.25) + 7
φ 32	10 ^{-0.040} _{-0.076}	85	10	44	64	84	104	5.5	4.5	9.5	8.5	24.3	15	32	46	(Stroke length/3.25) + 7
φ 40	10 ^{-0.040} _{-0.076}	89	10	53	73	93	113	7.0	6.5	11.0	10.5	28.3	12	34	46	(Stroke length/3.25) + 7

Medium bore size cylinder with valve Double acting non-rotating type

CKV2-M Series

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

JIS symbol ● Double acting cylinder non-rotating type with valve



RoHS



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS

Specifications

CA/OV2

SSD

CAT

MDC2

MVC

SMD2

MSD*

FC*

STK

ULK*

JSK/M2

JSG

JSC3

USSD

USC

JSB3

LMB

STG

STS/L

LCS

LCG

LCM

LCT

LCY

STR2

UCA2

HCM

HCA

SRL2

SRG

SRM

SRT

MRL2

MRG2

SM-25

CAC3

UCAC

RCC2

MFC

SHC

GLC

Ending

Descriptions		CKV2-M			
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation		Double acting non-rotating type			
Working fluid		Compressed air			
Max. working pressure	MPa	1			
Min. working pressure	MPa	0.15			
Withstanding pressure	MPa	1.6			
Ambient temperature	°C	-5 to 60 (no freezing)			
Port size		Rc1/8			
Stroke tolerance	mm	$^{+2.0}_0$ (up 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 (when lubricating, use turbine oil Class 1 ISO VG32.)			
Revolvable angle tolerance Note	Degree	± 1.5			± 1
Allowable energy absorption	J	0.166	0.308	0.424	0.639

Note: Value when stroke length is 0 mm (excluding bent of piston rod)

Solenoid valve specifications				
Rated voltage	V	100 AC (50/60Hz)	200 AC (50/60Hz)	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		$\pm 10\%$		
Insulation class		Class B or equivalent		

● Note: 100/200 VAC are available for 110/220 VAC (60Hz).

Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

Note 2: For bellows J, the min. stroke length is 25 mm. If less than 25 mm stroke, consult with CKD.

Min. stroke length with switch

(Unit: mm)

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

Note 1: Switches cannot be installed more than three.

Switch specifications

- 1 color/2 color indicator, strong magnetic field proof

* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting) Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		Without indicator light		LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V	
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay	
Output method	NPN output							
Light	Red/green LED (ON lighting)							
	-				Yellow LED (ON lighting)			
Regular output	Power voltage		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
	Leakage current		10 μA or less		1.2 mA or less		10 μA or less	
Preventive maintenance output	30 VDC or less							
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	
	10 μA or less							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10 mA at 60 °C)

Cylinder weight

(Unit: kg)

Descriptions, mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Switch rail	Additional weight per S = 10 mm
	Basic type (00)	Axial foot type (LB)	Rod end flange type (FA)	Rod end trunnion type (TA)	Head end trunnion type (TB)	Grommet	+ band weight	
φ20	0.47	0.63	0.53	0.52	0.49	0.018	0.005	0.01
φ25	0.57	0.79	0.72	0.67	0.60	0.018	0.005	0.01
φ32	0.62	0.84	0.77	0.72	0.65	0.018	0.009	0.02
φ40	0.81	1.08	0.96	0.97	0.85	0.018	0.009	0.02

(E.g.) Product weight of CKV2-M-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 ... $0.02 \times \frac{\text{Stroke length of product (50)}}{10} = 0.10$ kg
 Weight of two 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

SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
 JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC
 Ending

Medium bore size cylinder with valve
 With valve

How to order

Without switch

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

With switch

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

Selection guide

A Mounting style

B Bore size

C Port thread type

D Stroke length

E How to wire

F Voltage

G Switch model no.

H Switch quantity
Note 10

I Option
Note 2, Note 3, Note 4
Note 5, Note 6

J Accessory
Note 7

⚠ Note on model no. selection

- Note 1: Refer to page 676 for min. stroke length with switch.
 Note 2: For bellows J, the min. stroke length is 25 mm.
 If less than 25 mm stroke, consult with CKD.
 Note 3: The type with a surge killer (G) is included when a grommet lead is selected for connection.
 Note 4: The type with a lamp (E) is available only when DIN terminal (U) connection is selected.
 Note 5: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.
 Note 6: P6 (PTFE free specifications) are customized order parts. Contact CKD for details on the delivery schedule.
 Note 7: "I" and "Y" can not be selected at the same time.
 Note 8: Refer to Ending 87 for custom specifications of rod end form.
 Note 9: Refer to Page 658 for variation and combinations of options
 Note 10: Up to three 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 number>

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

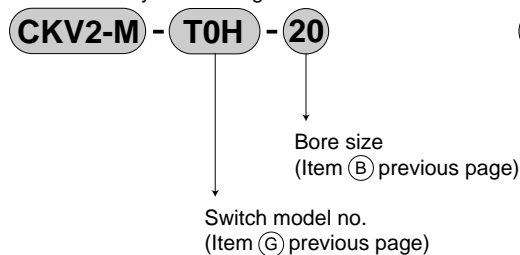
Model: Medium bore size cylinder with valve double acting non-rotating type

- A Mounting style : Axial foot type
- B Bore size : ϕ 20 mm
- C Port thread type : Rc thread
- D Stroke length : 25 mm
- E How to wire : DIN terminal
- F Voltage : 100 VAC
- G Switch model no. : Reed T0H switch, lead wire 1 m
- H Switch quantity : One on rod end
- I Option : Bellows, max. ambient temperature 100 °C
- J Accessory : Rod clevis

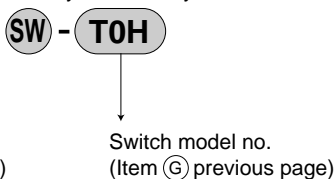
Symbol	Descriptions			
A Mounting style				
00	Basic type			
LB	Axial foot type			
FA	Rod end flange type			
TA	Rod end trunnion type			
TB	Head end trunnion type			
B Bore size (mm)				
20	ϕ 20			
25	ϕ 25			
32	ϕ 32			
40	ϕ 40			
C Port thread type				
Blank	Rc thread			
NN	NPT thread (custom order)			
GN	G thread (custom order)			
D Stroke length (mm)				
Bore size	Stroke length Note 1	Custom stroke length		
ϕ 20	5 to 750	Per 1 mm increment		
ϕ 25	5 to 750			
ϕ 32	5 to 750			
ϕ 40	5 to 750			
E How to wire				
Blank	Grommet			
U	DIN terminal			
F Voltage				
1	100 VAC			
2	200 VAC			
3	24 VDC			
G Switch model no.				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		Without indicator light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*		1 color indicator type (custom order)	3-wire
T3H*	T3V*			3-wire
T3PH*	T3PV*		1 color indicator type (custom order)	3-wire
T2YH*	T2YV*		2 color indicator type	2-wire
T3YH*	T3YV*		2 color indicator type	3-wire
T2YFH*	T2YFV*		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	T3YFV*		2 color indicator type (w/o light for preventive maintenance output)	4-wire
T2YMH*	T2YMV*		2 color indicator type (with light for preventive maintenance output. 1 color)	3-wire
T3YMH*	T3YMV*		2 color indicator type (with light for preventive maintenance output. 1 color)	4-wire
T2JH*	T2JV*	Off-delay type	2-wire	
*Lead wire length				
Blank	1 m (standard)			
3	3 m (option)			
5	5 m (option)			
H Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			
I Option				
		Max. ambient	Max. instantaneous	
J	Bellows	100 °C	200 °C	
L	Bellows	250 °C	400 °C	
W	With silencer			
G	With surge suppressor			
E	With indicator light			
X	Retract at energized			
J Accessory				
I	Rod eye			
Y	Rod clevis (pin, washer or split pin attached)			
B2	Clevis bracket			
B3	Clevis bracket (clevis type)			

How to order switch

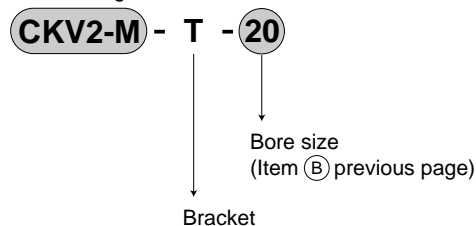
● Switch body + mounting bracket



● Only switch body



● Mounting bracket



How to order mounting bracket

Bore size (mm)	φ20	φ25	φ32	φ40
Axial foot type (LB) rod end	M1-LB-20	M1-LB-30	M1-LB-30	M1-LB-30
Axial foot type (LB) head end	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 end trunnion (TB)	M1-TB-20	M1-TB-30	M1-TB-30	M1-TB-40

Note 1: Mounting nut and toothed washer are attached to the mounting bracket.

Note 2: Refer to page 668 for mounting bracket material.

Note 3: For axial foot type, one each set of [M1-LB-*] and [M1-LBV-*] is required.

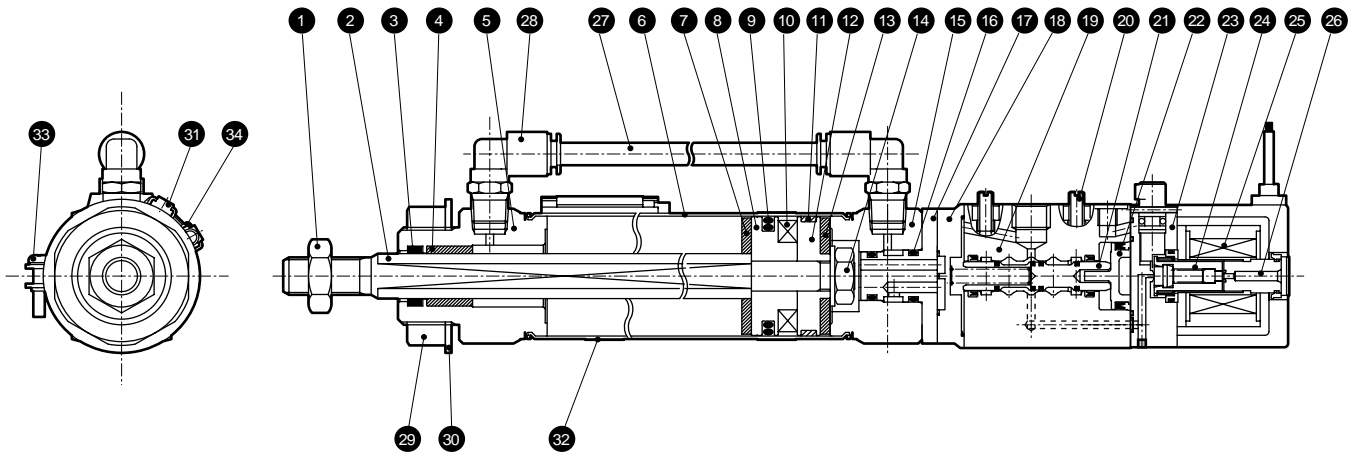
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder with valve
With valve

CKV2-M Series

Internal structure and parts list

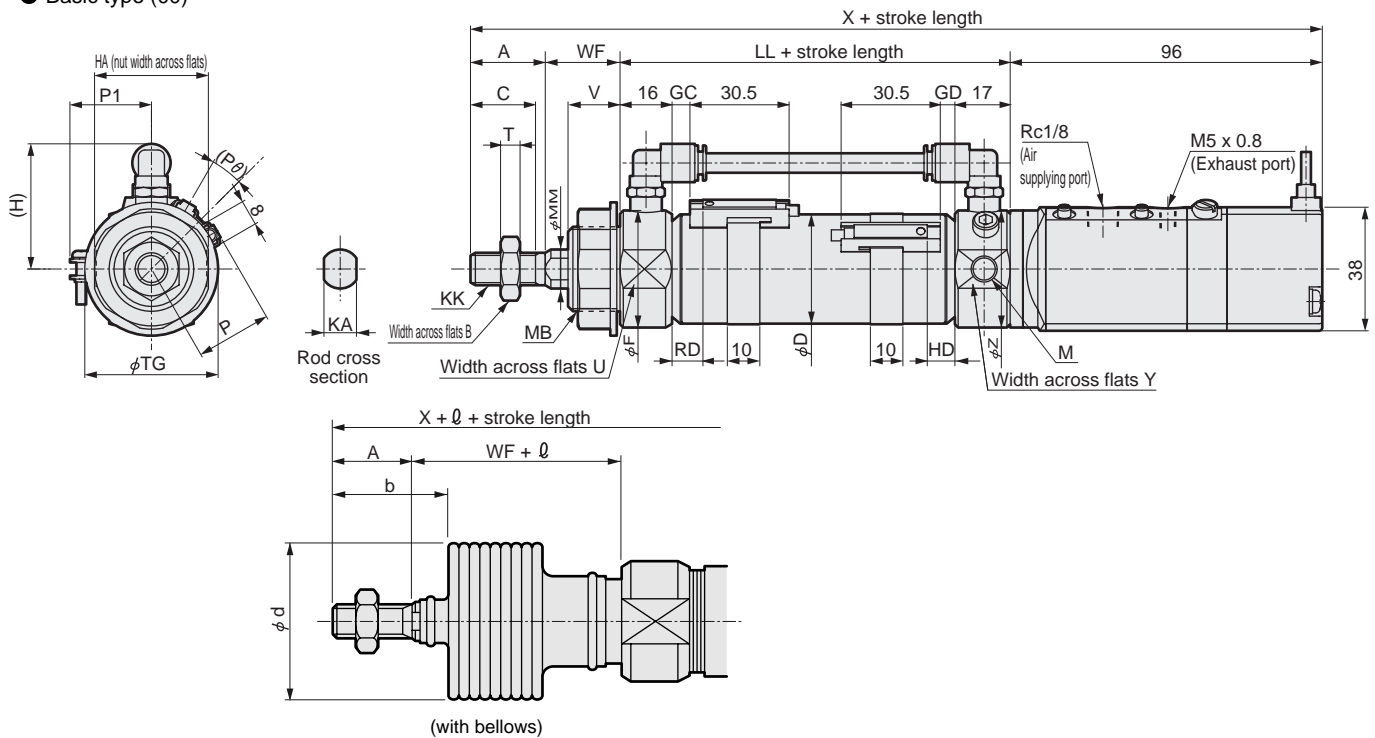
CKV2-M (with switch)



No.	Parts name	Material	Remarks	No.	Parts 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 seal	Nitrile rubber		20	Speed adjustment needle	Brass	
4	Bush	SBK2118	Note 1	21	Spool assembly	-	
5	Rod cover	Aluminum alloy		22	Piston assembly	-	
6	Cylinder tube	Stainless steel		23	Pie valve body	Nylon	
7	Cushion rubber	Urethane rubber		24	Plunger assembly	-	
8	Piston A	Aluminum alloy		25	Coil assembly	-	
9	Piston packing seal	Nitrile rubber		26	Core assembly	-	
10	Magnet	Plastic		27	Pass-pipe	Nylon	
11	Wear ring	Polyacetal		28	Joint	-	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	
Note 1: Oil impregnated resin bearing is used for copper and PTFE free.				34	Switch rail	Stainless steel	

Dimensions

● Basic type (00)



Note 1: Refer to pages 670 to 674 for the dimensions of other mounting style.

Note 2: Refer to page 682 for HD, RD, and projecting dimensions of T1* and T8* switches and the 2 color indicator switch with preventive maintenance output.

Note 3: Refer to page 683 for accessory dimensions.

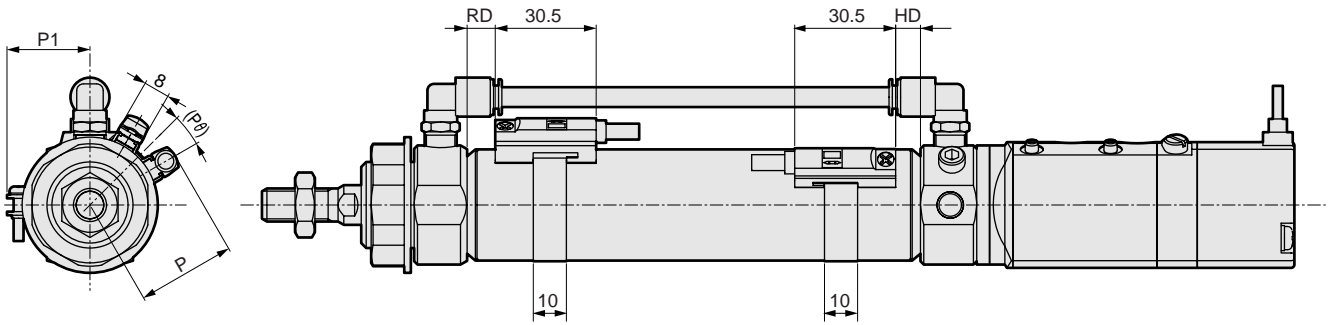
Symbol	Basic dimensions for basic type (00)																	
Bore size (mm)	A	B	C	D	F	(H)	HA	KA	KK	LL	M	MB	MM	T	TG	U	V	WF
φ20	20	13	18	21.4	28	38.5	26	8	M8 x 1.0	67	M8	M18 x 1.5	10	5	29	24	14	24
φ25	23	17	20	26.4	32	38.5	35	10	M10 x 1.25	70	M8	M26 x 1.5	12	6	41	30	16	23
φ32	23	17	20	33.6	36	38.5	35	10	M10 x 1.25	70	M8	M26 x 1.5	12	6	41	34	16	23
φ40	25	19	22	41.7	45	43.0	35	12	M12 x 1.5	74	M10	M26 x 1.5	14	7	41	43	16	23
Symbol	With switch										With bellows							
Bore size (mm)	X	Y	Z	GC	GD	RD	HD	P	P1	(Pθ)°	b	d	ℓ					
φ20	207	34	36	4.0	3.0	8.0	7.0	17.3	19.5	22	30	30	(Stroke length/3) + 6					
φ25	212	34	36	5.5	4.5	9.5	8.5	19.8	22.0	18	32	46	(Stroke length/3.25) + 7					
φ32	212	34	36	5.5	4.5	9.5	8.5	24.3	25.5	15	32	46	(Stroke length/3.25) + 7					
φ40	218	43	45	7.0	6.5	11.0	10.5	28.3	29.5	12	34	46	(Stroke length/3.25) + 7					

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder with valve
With valve

CKV2 Series common (2 color indicator type, with preventive maintenance output with switch) dimensions

● CKV2-**-**-T₃YH/V, T₃YFH/V, T₃YMHV

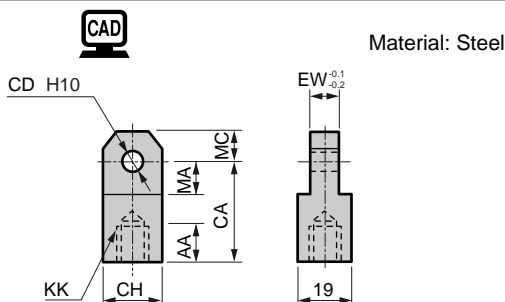


2 color indicator type, preventive maintenance output switch installation dimensions

Symbol	1 color indicator (T1, T8) 2 color indicator (T ₃ Y, T ₃ Y _M ^F)									
	RD Note 1		HD Note 2		P			P1	(Pθ)°	
	T1, T ₃ Y, T ₃ Y _M ^F	T8	T1, T ₃ Y, T ₃ Y _M ^F	T8	T1	T ₃ Y, T8	T ₃ Y _M ^F			
Bore size (mm)										
CAC3	φ20	7.0	2.0	6.0	1	28.5	23.1	28.1	19.5	22
UCAC	φ25	8.5	3.5	7.5	2.5	31.0	25.6	30.6	22.0	18
RCC2	φ32	8.5	3.5	7.5	2.5	35.5	30.1	35.1	25.5	15
MFC	φ40	10.5	5.5	9.5	4.5	39.5	34.1	39.1	29.5	12

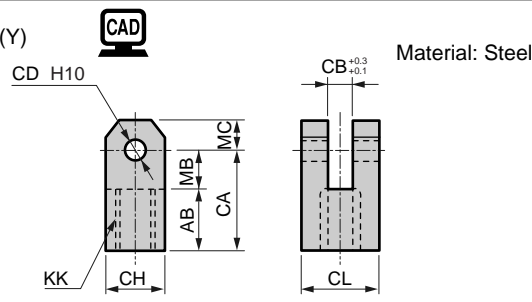
Accessory dimensions (rod eye/clevis, bracket, pin)

● Rod eye (I)



Model no.	Applicable tube I.D. (mm)	AA	CA	CD	CH	EW	KK	MA	MC	Weight (g)
M1-I-20	φ20	14	30	10	19	8	M8 x 1.0	13	10	60
M1-I-30	φ25, φ32	16	36	12	25	10	M10 x 1.25	16	12	110
M1-I-40	φ40	16	36	12	25	10	M12 x 1.5	16	12	100

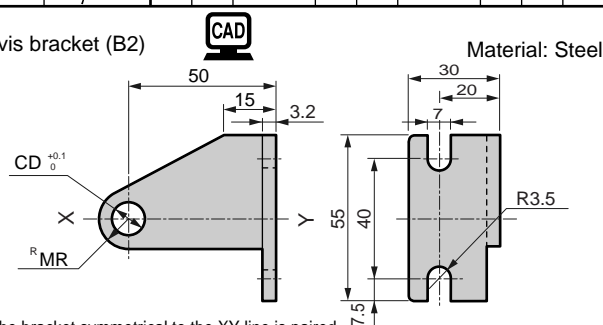
● Rod clevis (Y)



Model no.	Applicable tube I.D. (mm)	AB	CA	CB	CD	CH	CL	KK	MB	MC	Weight (g)
M1-Y-20	φ20	17	30	8	10	19	19	M8 x 1.0	13	10	100
M1-Y-30	φ25, φ30	20	36	10	12	25	25	M10 x 1.25	16	12	210
M1-Y-40	φ40	20	36	10	12	25	25	M12 x 1.5	16	12	200

Note: Pin, washer and split pin are attached.

● Clevis bracket (B2)

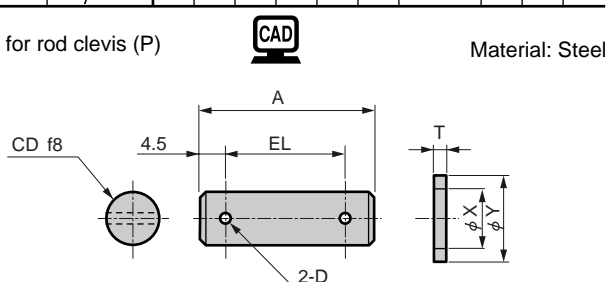


Note: The bracket symmetrical to the XY line is paired.

Model no.	Applicable tube I.D. (mm)	CD	MR	Weight (g)
M1-B2-20-TA	φ20	8	8	130
M1-B2-30-TA	φ25, φ32, φ40	10	11	150

Note: Snap ring and pin are attached.

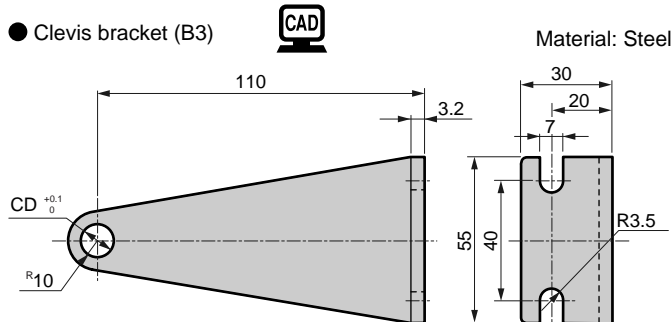
● Pin for rod clevis (P)



Model no.	Applicable tube I.D. (mm)	A	D	CD	EL	T	X	Y	Weight (g)
M1-P-20	φ20	37	4	10	28	2	10.5	18	30
M1-P-30	φ25, φ32, φ40	46	4	12	37	2.5	13	21	50

Note: For rod clevis, pin, washer and split pin are attached to the product.

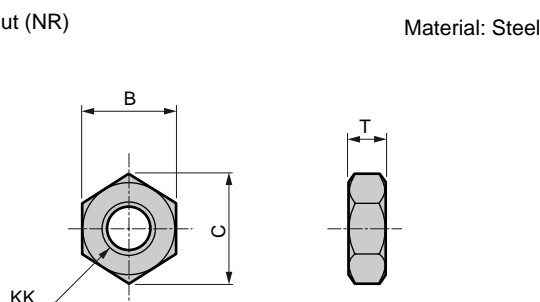
● Clevis bracket (B3)



Model no.	Applicable tube I.D. (mm)	CD	Weight (g)
M1-B3-20-TA	φ20	8	370
M1-B3-30-TA	φ25, φ32, φ40	10	360

Note: Snap ring and pin are attached.

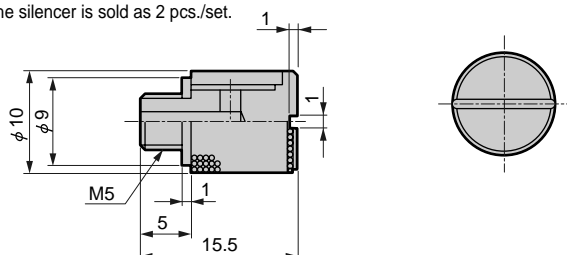
● Rod end nut (NR)



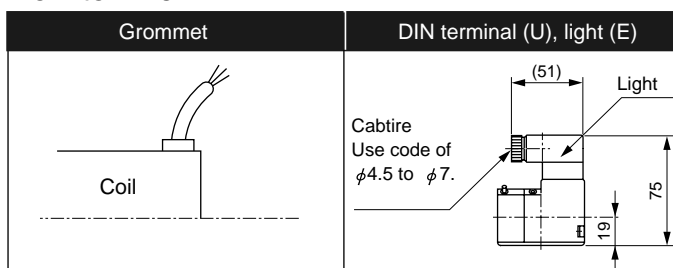
Model no.	Applicable tube I.D. (mm)	B	C	KK	T	Weight (g)
M1-NR-20	φ20	13	15	M8 x 1.0	5	3
M1-NR-30	φ25, φ32	17	19.6	M10 x 1.25	6	7
M1-NR-40	φ40	19	21.9	M12 x 1.5	7	9

● Silencer (SL-M5)

* The silencer is sold as 2 pcs./set.



How to wire



Note 1: The light and surge suppressor cannot be assembled into the grommet.
 Note 2: Refer to the terminal box wiring methods on page 661 for connections to the DIN terminal box.

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2**
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

Ending

Medium bore size cylinder with valve
With valve