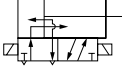
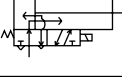
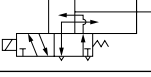
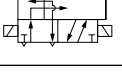
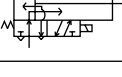
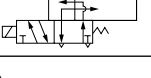
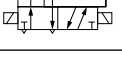
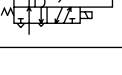


Series variation

Cylinder with valve
CAV2/COV^P_N2Series

CAV2/COV^P_N2 Series
Series variation

●: Standard ○: Option ■: Not available

Variation	Model no. JIS symbol	Bore size (mm)	Standard stroke length (mm)						Min. stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Custom stroke length (per mm)		Mounting style					Cushion		Option							Accessory			Switch	Page			
														Axial foot type	Rod end flange type	Eye bracket type	Center trunnion type axis type	Center trunnion type hole type	No cushion	Both sides cushion	Bellows (60 °C)	Round terminal box	Square terminal box	With muffler	Molded coil	Air supply block	Rod eye	Rod clevis	Clevis bracket						
			LB	FA	CA	TC	TF	N						B	J	TB1	TB2	MF1	Z	Q	I	Y	B2												
Double acting double solenoid lubrication type	CAV2 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	694			
		φ75	●	●	●	●	●	●		●				●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○
		φ100	●	●	●	●	●	●		●				●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○
Double acting single solenoid extend at energized lubrication type	COVP2 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	●	○	○	■	○	●	○	○	○	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	■	○	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	■	○	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
Double acting single solenoid retract at energized lubrication type	COVN2 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	●	○	○	■	○	●	○	○	○	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	■	○	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	■	○	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
Double acting double solenoid oil-free type	CAV2-N 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	●	○	○	○	●	○	○	○	○	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○			○	○
Double acting single solenoid extend at energized oil-free type	COVP2-N 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	●	○	○	■	●	●	○	○	○	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	■	●	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	■	●	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
Double acting single solenoid retract at energized oil-free type	COVN2-N 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	●	○	○	■	●	●	○	○	○	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	■	●	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	■	●	●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
Double acting double solenoid cushioned short overall length type	CAV2-S CAV2-NS 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	■	●	○	○	○	Lubrication Oil-free	○ ●	○	○	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	○	Lubrication Oil-free	○ ●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	○	Lubrication Oil-free	○ ●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
Double acting single solenoid extend at energized cushioned short overall length type	COVP2-S COVP2-NS 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	■	●	○	○	■	Lubrication Oil-free	○ ●	○	●	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	○	Lubrication Oil-free	○ ●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	○	Lubrication Oil-free	○ ●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
Double acting single solenoid retract at energized cushioned short overall length type	COVN2-S COVN2-NS 	φ50	●	●	●	●	●	●	1	500	1000	1		●	●	●	●	●	■	●	○	○	■	Lubrication Oil-free	○ ●	○	●	○	○	○	○	○	694		
		φ75	●	●	●	●	●	●		●				●	○	○	○	Lubrication Oil-free	○ ●	○	○	○	○	○	○	○	○	○	○	○	○			○	○
		φ100	●	●	●	●	●	●		●				●	○	○	○	Lubrication Oil-free	○ ●	○	○	○	○	○	○	○	○	○	○	○	○			○	○

CAV2(-S)/CAV2-N(S) COV^P_N2(-S)/COV^P_N2-N(S) Series

Selection table of variation and options

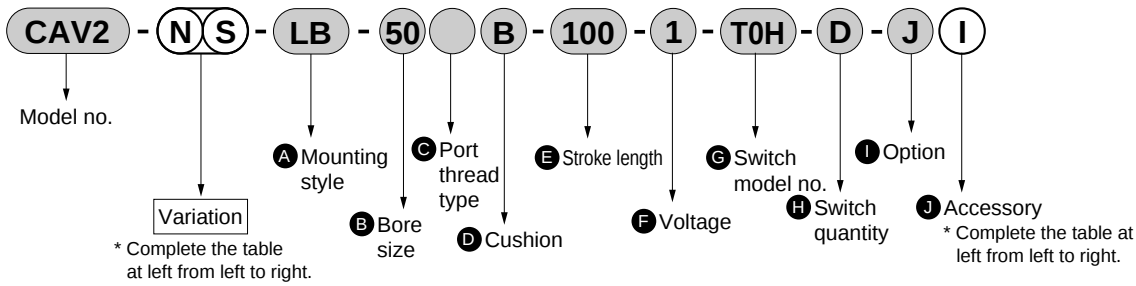
⊙ : Option
○ : Available (custom order)
△ : Available depending on conditions (consult with CKD.)
X : Not available

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

Code		Code	Variation						Port thread				Option							
			Double acting standard type (lubrication type)	Oil-free	Short overall length type	Double solenoid	Single solenoid	Cushioned	With cylinder switch	NPT	G		Nylon tarpaulin with bellows	Square terminal box	Round terminal box	With muffler	Molded coil	Intake block	Customized piston rod end form	
		Symbol	No	N	S	CAV2	COV*2	No	No	N	G		J	TB1	TB2	MF1	Z	Q	N*	
Variation	Double acting standard type (lubrication type)	Blank			⊙	⊙	⊙	⊙	⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	○	
	Oil-free	N			⊙	⊙	⊙	⊙	⊙	○	○		⊙	⊙	⊙	X	⊙	⊙	○	
	Short overall length type	S					⊙	Note 1	⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	○	
	Double solenoid	CAV2						⊙	⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	○	
	Single solenoid	COV*2						⊙	⊙	○	○		⊙	⊙	X	⊙	Note 2	⊙	○	
	Cushioned	Blank							⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	○	
	With cylinder switch	Blank								○	○		⊙	⊙	⊙	⊙	⊙	⊙	○	
Port thread	NPT	N									X		○	○	○	○	○	○	○	
	G	G											○	○	○	○	○	○	○	
Option	Nylon tarpaulin with bellows	J											⊙	⊙	⊙	⊙	⊙	⊙	○	
	Round terminal box	TB1													X	⊙	⊙	X	○	
	Square terminal box	TB2														⊙	⊙	X	○	
	With muffler	MF1															⊙	⊙	○	
	Molded coil	Z																X	○	
	Intake block	Q																	○	
	Customized piston rod end form	N*																		
Accessory	Cylinder switch	Ending 1	⊙	⊙	⊙	⊙	⊙	⊙	⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	○	
	Rod eye	I	⊙	⊙	⊙	⊙	⊙	⊙	⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	△	
	Rod clevis	Y	⊙	⊙	⊙	⊙	⊙	⊙	⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	△	
	Clevis bracket	B2	⊙	⊙	⊙	⊙	⊙	⊙	⊙	○	○		⊙	⊙	⊙	⊙	⊙	⊙	○	

Note 1: The short overall length type is available only with the cushioned cylinder.
Note 2: The standard COV*2 coil is molded.

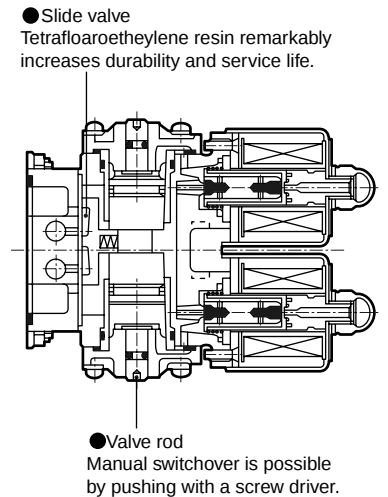
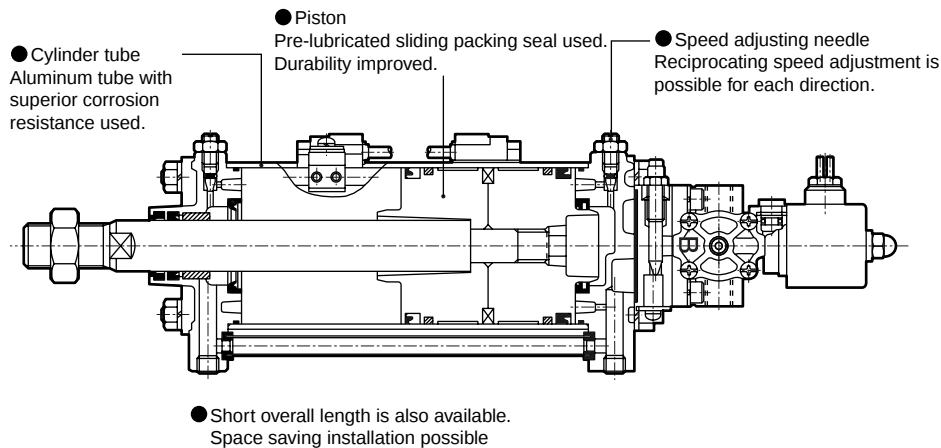
<Example of model number>



Model no.: Cylinder with valve

- Variation: Oil-free and cushioned short overall length type
- A Mounting style : Axial foot type
- B Bore size : ϕ 50 mm
- C Port thread type : Rc thread
- D Cushion : Both sides cushioned
- E Stroke length : 100 mm
- F Voltage : 100 VAC
- G Switch model no. : Reed T0H switch, lead wire 1 m
- H Switch quantity : 2
- I Option : Bellows and max. ambient temperature 60 °C
- J Accessory : Rod eye

Product introduction



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CAIOV2
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

Cylinder with valve
 With valve



Safety precautions

Always read this section before starting use.

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

Cylinder with valve CAV2/COV_N^P2 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

- Instantaneous energizing

When using the double solenoid type with instantaneous energizing, set the energizing time to 0.1 sec. or more.

- When the 2-position double solenoid type is operated and then switched, that state is held until the reverse operation electric signal is input.

- 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



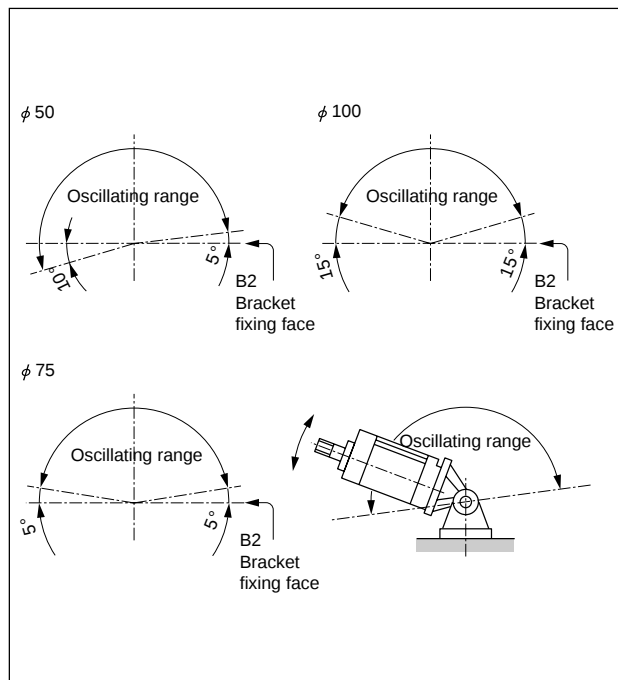
References

For 100 VAC	3.0 mA or less
For 200 VAC	1.5 mA or less

- When continuously energizing the valve for a long time, switch the valve once every 30 days to prevent operation faults.

■ Oscillating range

- ◎ When using the eye bracket (CA) in combination with the clevis bracket (B2), the oscillation range is limited as shown below.



Installation & Adjustment

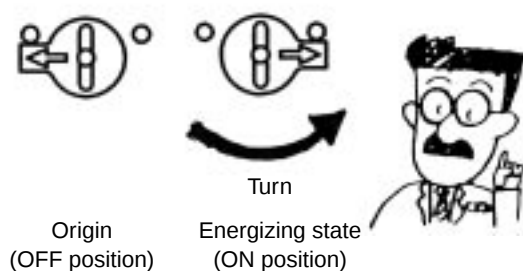
⚠ WARNING

- 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.

When using a non-locking type (CAV2, COV_N^P2), check the automatic return, and when using a locking type (COV_N^P2), release the lock (OFF state).

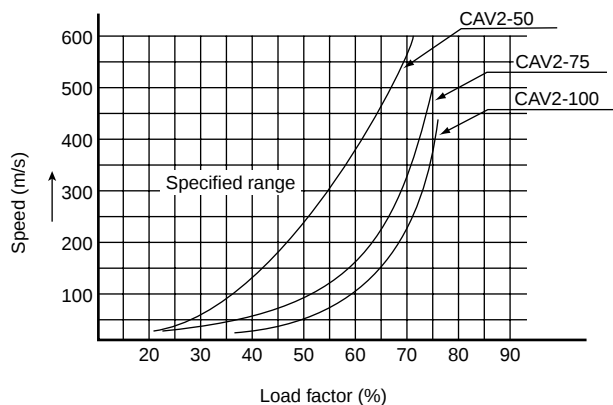
[Example]



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

- When installing the CAV2 or COV2 vertically and moving a load, use within the service range shown below.

It is not possible to adjust cylinder speed when out of the range.



⚠ 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

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

During Use & Maintenance

⚠ 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.

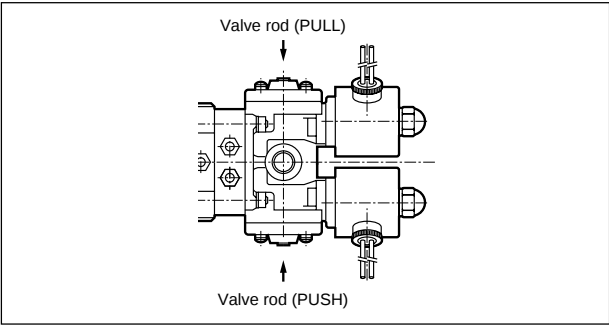
■ After disassembling and assembling the valve, use the following work procedures to confirm that the valve operates correctly.

Work procedures

1. Confirm the origin (OFF) of the locked manual override.
2. Set to low pressure. (0.15 MPa)
3. Switch manual override to activation (press the nonlocked type or turn the manual dial for locked) and confirm that the cylinder operates.
4. Return the locked manual override to the origin (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.

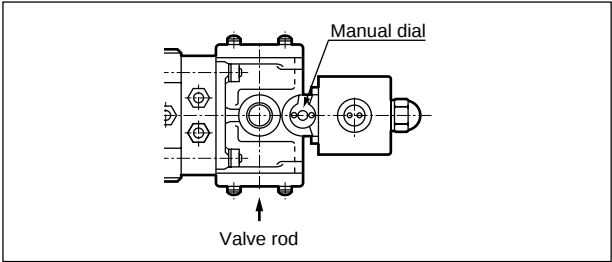
■ Method of manual override

- For CAV2 type



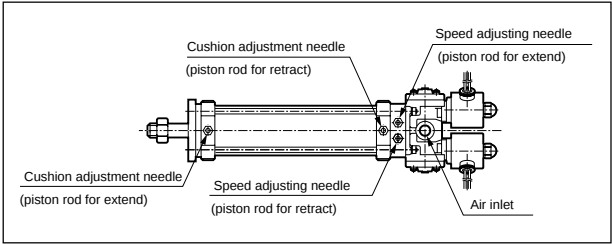
- The piston rod protrudes when the valve rod (PUSH) is pressed with a screwdriver, etc.
- The piston rod retracts when the valve rod (PULL) is pressed with a screwdriver.
- Nonlocked type is used, but PUSH and PULL piston rod are held at the pressed position.

- For COV2 type



- The solenoid is energized when the manual dial is turned. This dial can be locked. (Locking)
- The solenoid is energized when the valve rod is pressed with a screw driver, etc. (Non-locking)
- ▲ When using mounting bracket CA or B2 with COV2-75/100, the locked manual override cannot be used, although the nonlocking manual override can be used.

■ Adjustment of CAV2 and COV2 speed and cushion



1. When the speed adjusting needle is turned clockwise, the speed decreases, and increases when turned counterclockwise.
2. The effect of the cushion increases when the cushion needle is turned clockwise with a screwdriver, and decreases when turned counterclockwise.

Operational explanation

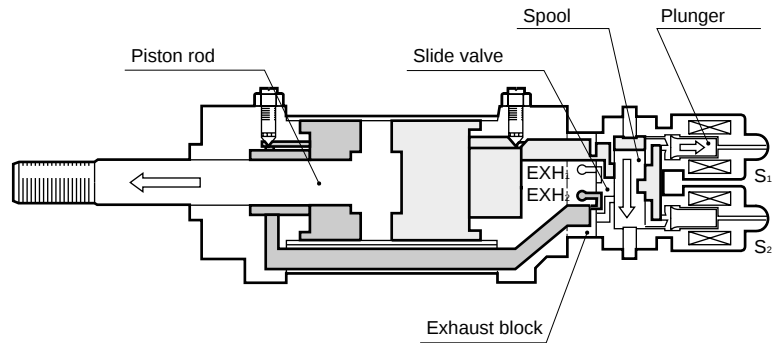
Supply Exhaust

For explanatory purpose, the valve position is rotated counterclockwise 90° viewed from the piston rod.

● CAV2, CAV2-N, CAV2-S, CAV2-NS

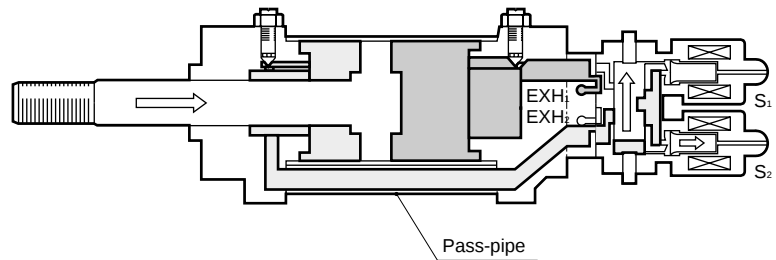
A For piston rod extended

1. When solenoid S₁ is energized, the plunger is attracted.
2. The orifice opens, so air will move the spool and the slide valve moves downward.
3. Air immediately passes through the exhaust block, flows into the cylinder, and pushes the piston rod out.
4. Even when power to the solenoid S₁ is turned OFF, the spool is held, so the piston rod is held protruding.



B For piston rod retracted

1. When solenoid S₂ is energized, the plunger is attracted.
2. The orifice opens, so air moves the spool and the slide valve moves upward.
3. Air immediately passes through the exhaust block and pass pipe, flows into the cylinder, and pulls the piston rod in.
4. Even when power to the solenoid S₂ is turned OFF, the spool is held, so the piston rod is held retracted.



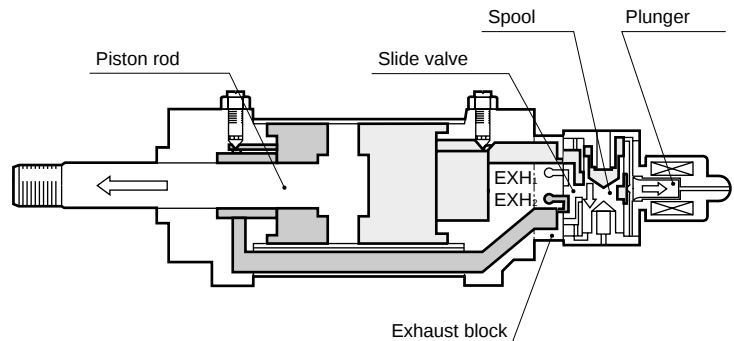
● COV_N^P2, COV_N^P2-N, COV_N^P2-S, COV_N^P2-NS

This operational explanation is for the extend at energized type (P type).

The opposite operation takes place for the retract at energized type (N type).

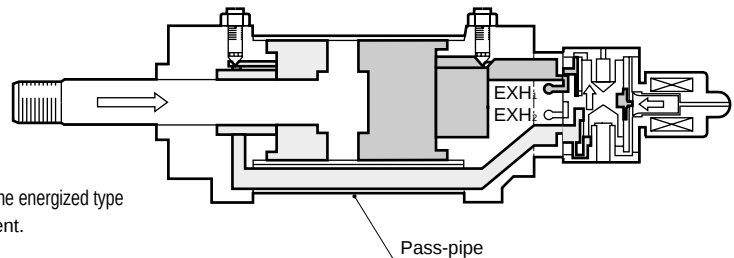
A When the solenoid is energized.

1. When the solenoid is energized, the plunger is attracted, and the orifice opens.
2. The force on the upper side of the spool becomes larger than the force on the lower side, so the spool moves and the slide valve moves downward due to the difference in pressurized areas. (Depending on the differential of pressurized area)
3. Air immediately passes through the exhaust block, flows into the cylinder, and pushes the piston rod out.



B When power to solenoid is stopped

1. When power to the solenoid is stopped, the plunger is lowered by the force of the spring, and the orifice is closed.
2. The flow of compressed air to the top of the spool is stopped, so the force on the lower side of the spool increases. The spool moves and the slide valve moves upward.
3. Air immediately passes through the exhaust block and pass pipe, flows into the cylinder, and pulls the piston rod in.



C Changing between the push at the energized type with the retract at the energized type

Note 1: Extend at energized specifications are set at shipment.

⚠ CAUTION

Note 1: Stop air before changing the type.

1. Using a cross-point screwdriver, loosen and remove the 4 screws fixing cap B and fixed piston A shown in Fig. 1.
2. As shown in Fig. 2, replace cap B and fixed piston A, and tighten screws.

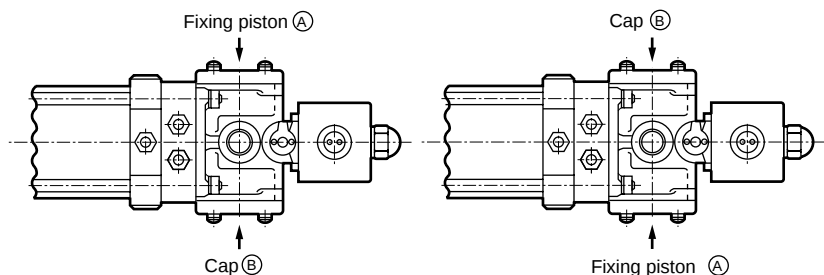


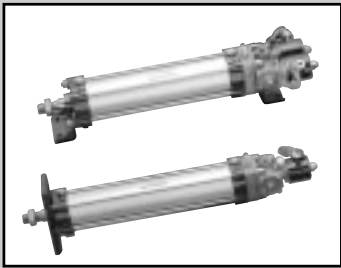
Fig. 1 Extend at energized

Fig. 2 Retract at energized

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

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

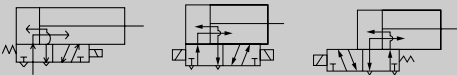


Cylinder with valve

CAV2(-S)/CAV2-N(S) COV^P_N2(-S)/COV^P_N2-N(S) Series

● Bore size: $\phi 50$, $\phi 75$, $\phi 100$

JIS symbol



Specifications

Descriptions		CAV2 CAV2-S			CAV2-N CAV2-NS			COV ^P _N 2 COV ^P _N 2-S			COV ^P _N 2-N COV ^P _N 2-NS		
Bore size	mm	φ 50	φ 75	φ 100	φ 50	φ 75	φ 100	φ 50	φ 75	φ 100	φ 50	φ 75	φ 100
Actuation		Double acting with valve											
No. of solenoid		Double solenoid						Single solenoid					
Working fluid		Compressed air											
Max. working pressure	MPa	0.7											
Min. working pressure	MPa	0.15											
Withstanding pressure	MPa	1											
Ambient temperature	℃	5 to 40											
Port size		Rc1/4											
Stroke tolerance	mm	^{+0.9} ₀ (up to 360), ^{+1.4} ₀ (from 361)											
Working piston speed	mm/s	50 to 750	50 to 450	50 to 250	50 to 750	50 to 450	50 to 250	50 to 750	50 to 450	50 to 250	50 to 750	50 to 450	50 to 250
Cushion		Cushioned or no-cushioned can be selected.											
Length of effective cushion	mm	6.5	6.5	5	6.5	6.5	5	6.5	6.5	5	6.5	6.5	5
Lubrication		Required ^{Note 1}			Not required			Required ^{Note 1}			Not required		
Allowable energy absorption J	Cushioned	1.37	3.33	10.3	1.37	3.33	10.3	1.37	3.33	10.3	1.37	3.33	10.3
	No cushion	0.072	0.154	0.154	0.072	0.154	0.154	0.072	0.154	0.154	0.072	0.154	0.154
		The type without cushioning cannot absorb a large energy generated by an external load. So an external shock absorber should be used.											

Note 1: When lubricating, use turbine oil Class 1 ISO VG32.

Valve specifications

Valve specifications		
Rated voltage (V)	100 VAC (50/60Hz)	200 VAC (50/60Hz)
Starting current (A)	0.29/0.27	0.15/0.14
Holding current (A)	0.11/0.09	0.06/0.04
Power consumption (W)	6/5	6/5
Voltage fluctuation range	±10%	
Insulation class	Class A (CAV2) Class B (COV ^P _N 2)	

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 50$	50, 75, 100 150, 200, 300	500	1000	1
$\phi 75$		600		
$\phi 100$		800		

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

T0/T5/T8 type min. stroke length with switch

● CAV2/COV2 (N) no cushion type

(Unit: mm)

	Different surface installation				Same surface installation				Center trunnion installation			
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4
$\phi 50$	9 (9)	18 (18)	35 (35)	53 (53)	9 (9)	18 (18)	49 (48)	81 (79)	215 (215)	215 (215)	215 (215)	215 (215)
$\phi 75$	10 (10)	19 (19)	38 (38)	57 (57)	10 (10)	19 (19)	51 (50)	82 (81)	193 (193)	193 (193)	193 (193)	193 (193)
$\phi 100$	10 (10)	19 (19)	38 (38)	57 (57)	10 (10)	19 (19)	51 (50)	82 (81)	83 (71)	83 (71)	83 (73)	83 (73)

Note 1: The value in () are the value for T*V radial lead wire.

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

● CAV2/COV2 (B) type with cushion

(Unit: mm)

	Different surface installation				Same surface installation				Center trunnion installation			
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4
$\phi 50$	9 (9)	18 (18)	35 (35)	53 (53)	9 (9)	18 (18)	49 (48)	81 (79)	241 (241)	241 (241)	241 (241)	241 (241)
$\phi 75$	10 (10)	19 (19)	38 (38)	57 (57)	10 (10)	19 (19)	51 (50)	82 (81)	241 (241)	241 (241)	241 (241)	241 (241)
$\phi 100$	10 (10)	19 (19)	38 (38)	57 (57)	10 (10)	19 (19)	51 (50)	82 (81)	120 (108)	120 (108)	120 (110)	120 (110)

Note 1: The value in () are the value for T*V radial lead wire.

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

T1/T2/T3/T2Y/T3Y type min. stroke length with switch

● CAV2/COV2 (N) no cushion type

(Unit: mm)

	Different surface installation								Same surface installation				Center trunnion installation			
Switch quantity	1		2		3		4		1	2	3	4	1	2	3	4
φ50	5	(5)	10	(10)	20	(20)	30	(30)	5 (5)	10 (10)	50 (48)	89 (88)	76 (46)	76 (46)	76 (47)	76 (47)
φ75	5	(5)	11	(11)	21	(21)	32	(32)	5 (5)	11 (11)	50 (49)	90 (88)	54 (24)	54 (24)	54 (26)	54 (26)
φ100	6	(6)	12	(12)	23	(23)	35	(35)	6 (6)	12 (12)	51 (50)	91 (89)	84 (54)	84 (54)	84 (58)	84 (58)

Note 1: The value in () are the value for T*V radial lead wire.

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

● CAV2/COV2 (B) type with cushion

(Unit: mm)

	Different surface installation								Same surface installation				Center trunnion installation			
Switch quantity	1		2		3		4		1	2	3	4	1	2	3	4
φ50	5	(5)	10	(10)	20	(20)	30	(30)	5 (5)	10 (10)	50 (48)	89 (88)	102 (72)	102 (72)	102 (73)	102 (73)
φ75	5	(5)	11	(11)	21	(21)	32	(32)	5 (5)	11 (11)	50 (49)	90 (88)	102 (72)	102 (72)	102 (74)	102 (74)
φ100	6	(6)	12	(12)	23	(23)	35	(35)	6 (6)	12 (12)	51 (50)	91 (89)	121 (91)	121 (91)	121 (95)	121 (95)

Note 1: The value in () are the value for T*V radial lead wire.

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

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

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

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire						Proximity 2-wire	
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH T3PV (Custom order)	T3YH T3YV	T0H/T0V	T5H/T5V		T8H·T8V		T2YD		
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		Programmable controller dedicated		
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 VAC to 265 V	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	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	A7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 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)			Red/green LED (ON lighting)	
Current leakage	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA						1 mA or less	

Note 1: 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 weighth when stroke length (S) = 0 mm									Weight per switch (Including mounting bracket)	Additional weight per S = 100mm
	Cushion status	Foot type LB		Flange type FA		Clevis type CA		Trunnion type TC/TF			
		CAV2 CAV2-S	COV _N 2 COV _N 2-S	CAV2 CAV2-S	COV _N 2 COV _N 2-S	CAV2 CAV2-S	COV _N 2 COV _N 2-S	CAV2 CAV2-S	COV _N 2 COV _N 2-S		
Bore size (mm)											
φ50	B (selected)	2.1	1.9	2.3	2.1	2.2	2.0	2.4	3.2	0.018	0.50
	N (none)	1.9	2.2	2.1	1.9	2.0	1.8	2.2	2.0		
φ75	B (selected)	3.6	4.5	3.8	3.6	4.3	4.1	4.3	4.1		1.20
	N (none)	3.3	3.1	3.5	3.3	4.0	3.8	4.0	3.8		
φ100	B (selected)	4.7	10.2	5.7	5.9	5.5	5.7	7.1	7.3		1.50
	N (none)	4.1	6.4	5.1	5.3	4.9	5.1	6.5	6.7		

(E.g.) CAV2-LB-50B-200-1-T0H-R

Product weight when S = 0 mm ... 2.1 kg

Additional weight when S = 200 ... $0.50 \times \frac{200}{100} = 1.0$ kg

Weight per switch ... 0.018 kg

Product weight ... 2.1 kg + 1.0 kg + 0.018 kg = 3.118 kg

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CAIOV2
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

Cylinder with valve
With valve

CAV2(-S)/CAV2-N(S) COV^P_N2(-S)/COV^P_N2-N(S) Series

How to order

Without switch

CAV2 - LB - 50 - B - 100 - 1 - J I

With switch

CAV2 - LB - 50 - B - 100 - 1 - T0H - R - J I

A Model no.

B Enclosed model no.

C Mounting style

D Bore size

E Port thread type

F Cushion

G Stroke length
Note 1

H Voltage

I Switch model no.

J Switch quantity

K Option
Note 3, Note 4

L Accessory
Note 5, Note 6

⚠ Note on model no. selection

Note 1: When exceeded max. stroke, a non-sag block is provided.

Note 2: Refer to pages 694, 695 for min. stroke length.

Note 3: For mounting style "CA" and $\phi 75$ or $\phi 100$, "TB2" is not available.

Note 4: Instantaneous max. temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.

Note 5: "I" and "Y" can not be selected at the same time.

Note 6: "B2" can not be selected with mounting style "TC" and "TF".

<Example of model number>

CAV2-LB-50B-100-1-T0H-R-JY

Model: Cylinder with valve

- A Model no. : Double acting double solenoid
- B Enclosed model no. : Lubrication type
- C Mounting style : Axial foot type
- D Bore size : $\phi 50$ mm
- E Port thread type : Rc thread
- F Cushion : Both sides cushioned
- G Stroke length : 100 mm
- H Voltage : 100 VAC
- I Switch model no. : Reed T0H switch, lead wire 1 m
- J Switch quantity : One on rod end
- K Option : Bellows, max. ambient temperature 60 °C
- L Accessory : Rod clevis

Symbol	Descriptions		
A Model no.			
CAV2	Double acting double solenoid		
COVP2	Double acting single solenoid extend at energized		
COVN2	Double acting single solenoid retract at energized		
B Enclosed model no.			
Blank	Lubrication type		
N	Oil-free type		
S	Cushioned short overall length, lubrication type		
NS	Cushioned short overall length, oil-free type		
C Mounting style			
LB	Axial foot type		
FA	Rod end flange type		
CA	Clevis type		
TC	Center trunnion type (axis type)		
TF	Center trunnion type (hole type)		
D Bore size (mm)			
50	φ 50		
75	φ 75		
100	φ 100		
E Port thread type			
Blank	Rc thread		
N	NPT thread (custom order)		
G	G thread (custom order)		
F Cushion			
B	Both sides cushioned		
N	No cushion (cushioned short overall length type not available.)		
G Standard stroke length (mm)			
Bore size	Stroke length Note 2	Available stroke length	Custom stroke length
φ 50	1 to 500	1000	Per 1 mm increment
φ 75	1 to 600	1000	
φ 100	1 to 800	1000	
H Voltage			
Blank	K When selected "Q" air supply block in K Option.		
1	100 VAC		
2	200 VAC		
I Switch model no.			
Refer to the following page for switch model no. table.			
*Lead wire length			
Blank	1 m (standard)		
3	3 m (option)		
5	5 m (option)		
J Switch quantity			
R	One on rod end		
H	One on head end		
D	Two		
T	Three		
K Option			
		Max. ambient	Max. instantaneous
J	Bellows	60 °C	100 °C
TB1	Round terminal box		
TB2	Square terminal box (not available for single solenoid type.)		
MF1	Types with muffler (only for lubrication type. Pre-lubrication type is provided as standard.)		
Z	Molded coil (only CAV2. Mold coil is provided as standard for COV 2 _N .)		
Q	Air supply block		
L Accessory			
I	Rod eye		
Y	Rod clevis (pin, washer or split pin attached)		
B2	Clevis bracket (pin, washer or split pin attached)		

[I] switch model no.

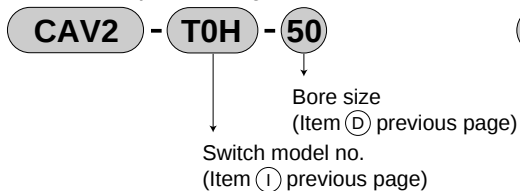
T type switch model no.			
Axial lead wire	Radial lead wire	Contact	Indicator
T0H*	T0V*	Reed	1 color indicator type
T5H*	T5V*		Without indicator light
T8H*	T8V*		1 color indicator type
T1H*	T1V*	Proximity	1 color indicator type
T2H*	T2V*		2 color indicator type
T3H*	T3V*		
T2YH*	T2YV*		2 color indicator type
T3YH*	T3YV*		3-wire
T3PH*	T3PV*		1 color indicator type (custom order)
T2YD*	-		Strong magnetic field proof switch
T2YDT*	-		Off-delay type
T2JH*	T2JV*		

R type switch				
Grommet type	Terminal box type		Contact	Indicator
	Standard type	Splash prf.		
These types have been changed to T-switch integrated type since Oct 1st 2007.				
R0*	R0B	R0A	1 color indicator type	

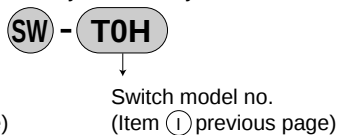
How to order switch

T type switch

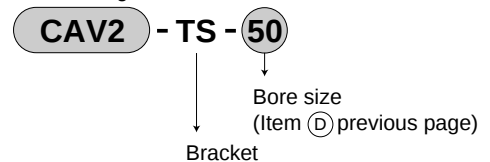
● Switch body + mounting bracket



● Only switch body



● Mounting bracket



Mounting bracket model no.

Bore size (mm)	φ50	φ75	φ100
Mounting bracket			
Foot (LB)	CAV2-50-LB	CAV2-75-LB	CAV2-100-LB
Flange (FA)	CAV2-50-FA	CAV2-75-FA	CAV2-100-FA
Clevis (CA)	CAV2-50-CA	CAV2-75-CA	CAV2-100-CA
Axis type trunnion (TC)	CAV2-50-TC	CAV2-75-TC	CAV2-100-TC
Supporting hole (TF)	CAV2-50-TF	CAV2-75-TF	CAV2-100-TF

Note 1: Above model No. is applied to only discrete bracket but not to tie rod.

Note 2: The foot type bracket is 2 pcs./set.

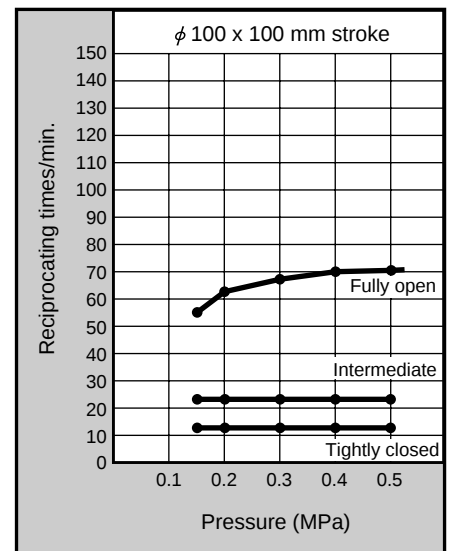
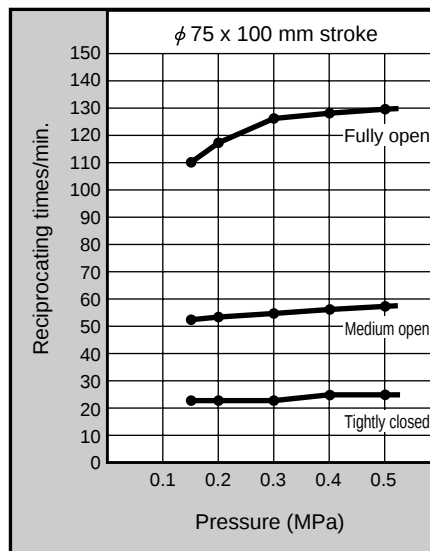
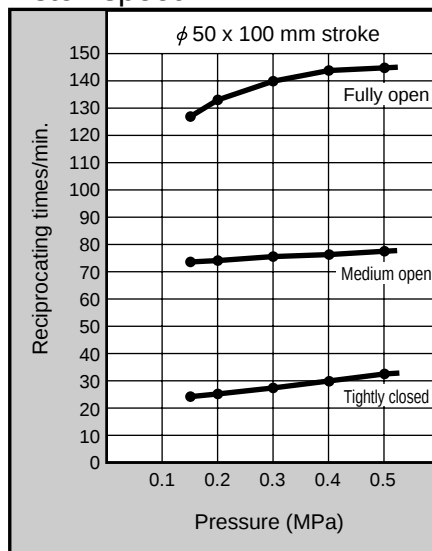
Valve model no.

Model no.		Model no.
CAV2	Lubrication type	CAV2-ACTUATOR-*1
		CAV2-ACTUATOR-*1-Z (molded coil)
	Oil-free type	CAV2-N-ACTUATOR-*1
COVP2	Lubrication type	COVP2-ACTUATOR-*1
		COVP2-N-ACTUATOR-*1
	Oil-free type	COVP2-N-ACTUATOR-*1
COVN2	Lubrication type	COVN2-ACTUATOR-*1
		COVN2-N-ACTUATOR-*1
	Oil-free type	COVN2-N-ACTUATOR-*1

Note: Indicate the voltage for *1.

1 ... 100 VAC 2 ... 200 VAC

Piston speed



Note: Tightly closed, medium and fully open indicate aperture degree of speed adjustment needle. This value is the value at no load.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CAIOV2
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

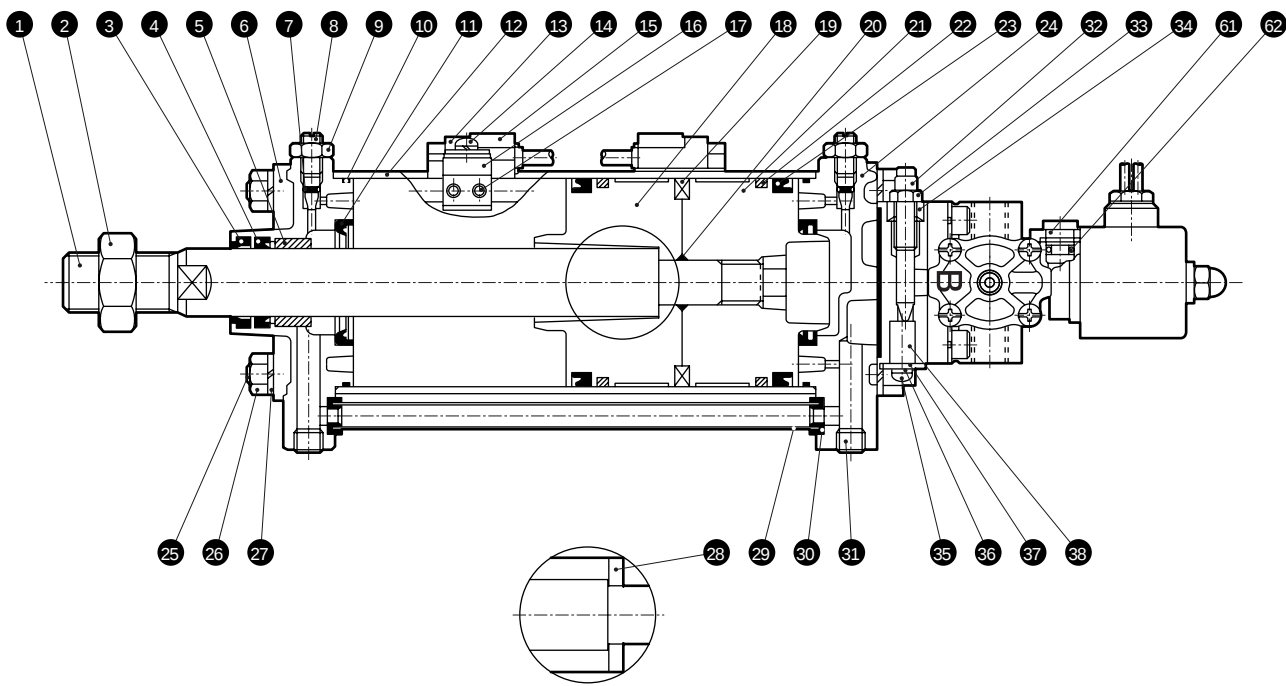
Cylinder with valve
With valve

CAV2(-S)/CAV2-N(S)
COV^P2(-S)/COV^P2-N(S) Series

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

Internal structure and parts list

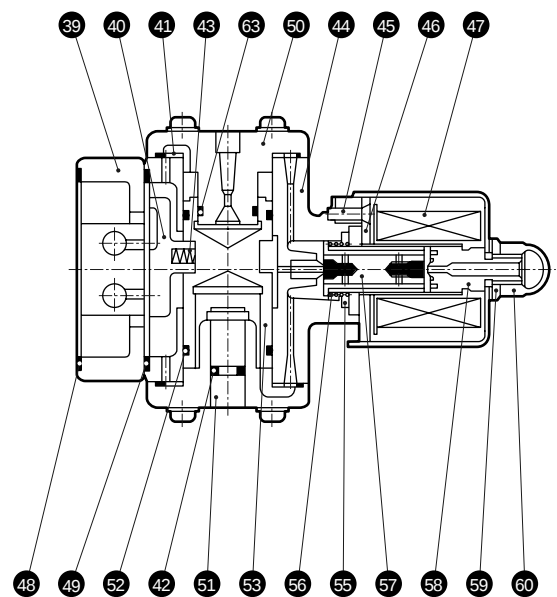
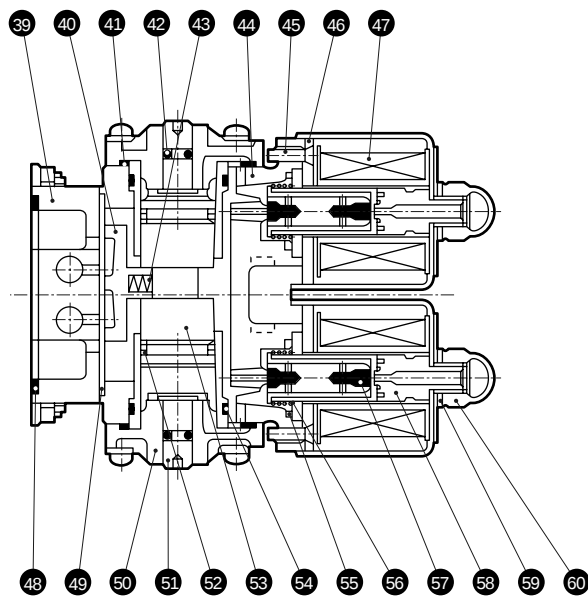
● CAV2, COV^P2



Only $\phi 100$ cylinder,
washer (28) is integrated in $\bigcirc$ section.

● CAV2, CAV2-N (double solenoid type)

● COV^P2, COV^P2-N (single solenoid type)



Part list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Piston rod	Steel	Industrial chrome plating	33	Lock nut	Steel	Zinc chromate
2	Hexagon nut	Steel	Zinc chromate	34	U nut	Steel	Zinc chromate
3	Dust wiper	Nitrile rubber		35	Cross headed pan	Steel	Zinc chromate (only pre-lubricated)
4	Rod packing seal	Nitrile rubber		36	Spring washer	Steel	Zinc chromate (only pre-lubricated)
5	Bush	Oil impregnated bearing alloy		37	Muffler holding plate	Steel	Zinc chromate (only pre-lubricated)
6	Rod cover	Aluminum alloy die-casting	Paint	38	Element	Resin	(Only pre-lubricated)
7	Needle gasket	Nitrile rubber		39	Exhaust block	Aluminum alloy die-casting	Hard alumite (only lubrication type) Nickeling (only pre-lubricated)
8	Cushion needle	Copper alloy		40	Slide valve	Tetrafluoroethylene resin	
9	Needle nut	Copper alloy		41	Cap gasket	Nitrile rubber	
10	Cylinder gasket	Nitrile rubber		42	Rod gasket	Nitrile rubber	O ring
11	Cushion packing seal	Nitrile rubber and steel		43	Port spring	Stainless steel	
12	Cylinder tube	Aluminum alloy	Hard alumite	44	Port body	Aluminum alloy die-casting	
13	Switch holder	Stainless steel		45	Cross headed flat head screw	Steel	Zinc chromate
14	Cross headed pan	Steel		46	Ring core	Steel	
15	Cylinder switch			47	Coil assembly		Bobbin (CAV2), mold (COV2)
16	Switch installation unit	Aluminum alloy		48	Exhaust block gasket	Nitrile rubber	
17	Set screw	Steel		49	Port body gasket	Nitrile rubber	
18	Piston (R)	Aluminum alloy die-casting		50	Cap	Aluminum alloy die-casting	
19	Magnet	Plastic		51	Valve rod	Aluminum alloy	
20	Piston gasket	Nitrile rubber		52	Spool packing seal	Nitrile rubber	
21	Piston (H)	Aluminum alloy die-casting		53	Spool	Aluminum alloy	
22	Wear ring	Polyacetal resin		54	Sleeve gasket	Nitrile rubber	Only CAV*2
23	Piston packing seal	Nitrile rubber		55	Core gasket	Nitrile rubber	
24	Head cover	Aluminum alloy die-casting	Paint	56	Plunger spring	Stainless steel	
25	Tie rod	Steel	Zinc chromate	57	Plunger assembly	Stainless steel, nitrile rubber	
26	Hexagon nut	Steel	Zinc chromate	58	Core assembly	Stainless steel, copper	
27	Spring washer	Steel	Zinc chromate	59	Spring washer	Steel	
28	Washer	Steel	Zinc chromate (only ϕ 100)	60	Cap nut	Steel	
29	Pass-pipe	Aluminum alloy		61	Manual dial	Polyacetal resin	Only COV*2
30	Pipe gasket	Nitrile rubber		62	Manual gasket	Nitrile rubber	Only COV*2
31	Plug	Steel	Blackening	63	Spool packing seal	Nitrile rubber	Only COV*2
32	Speed adjusting needle	Steel	Nickeling				

Note 1: For no cushion type, 7, 8, 9 and 11 are not available.

Cylinder section repair parts list

Tube I.D. (mm)	Kit No.	Repair parts number
ϕ 50	CAV2-50BK	3 4 7 10
ϕ 75	CAV2-75BK	11 22 23 30
ϕ 100	CAV2-100BK	

Note: Common to lubricated or pre-lubricated, and cushioned or no cushion type. (7), (11) are not required for no cushion type.

Valve repair parts list

Valve	Kit No.	Repair parts number
Double solenoid type	CAV2-N-K	40 41 42 43 48 49 52 54 55 56 57
Single solenoid type	COV2-N-K	40 41 42 43 48 49 52 55 56 57 63

Note: Common to lubrication or pre-lubrication.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Blackening
FA	Steel	Paint
CA	Cast iron	Paint
TC and TF	Cast iron	Paint

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CAIOV2
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

Cylinder with valve
With valve

CAV2(-S)/CAV2-N(S) Series

Dimensions

● CAV2-LB, CAV2-N-LB (double solenoid)

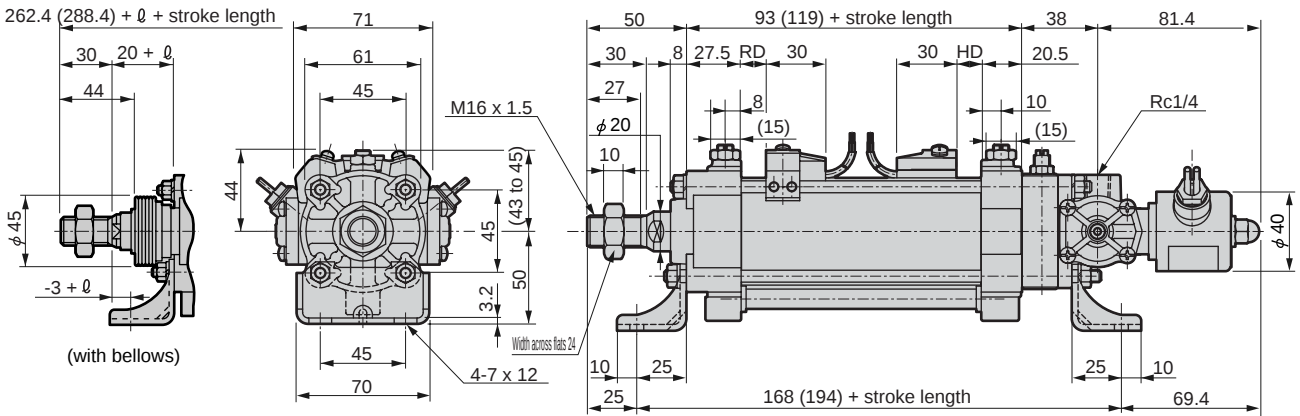
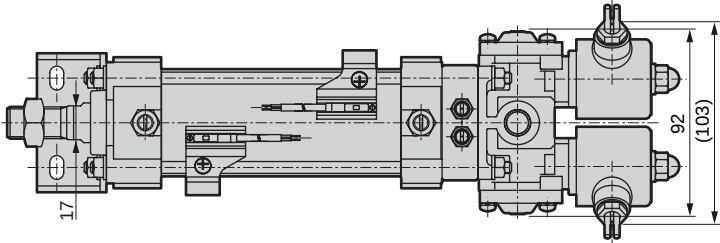
Axial foot type (LB) ϕ 50

Note 1: For cushioned type (B), refer to dimensions in ().

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

Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.

Note 4: Refer to page 712 for accessory dimensions.



Symbol	With bellows							With switch					
	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
	50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
ϕ 50	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)		12.5 (25.5)		7 (20.5)	

CAV2(-S)/CAV2-N(S) Series

Double acting double solenoid

Dimensions



● CAV2-LB (double solenoid)

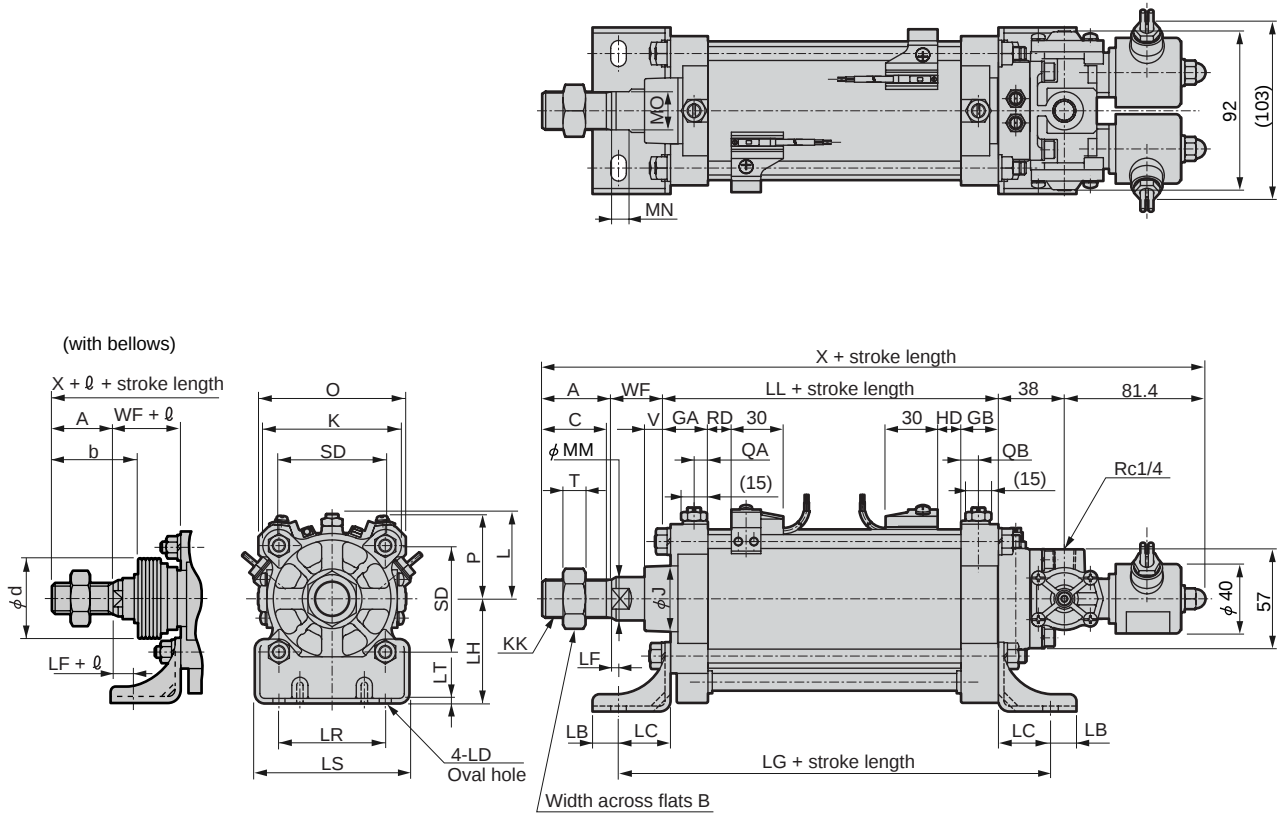
Axial foot type (LB) $\phi 75, \phi 100$

Note 1: For cushioned type (B), refer to dimensions in ().

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

Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.

Note 4: Refer to page 712 for accessory dimensions.



Symbol	Basic dimensions for axial foot type																				Installation dimensions		
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	LB	LC	
ϕ 75	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	284.4 (332.4)	15	30	
ϕ100	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	299.4 (336.4)	15	30	
Symbol	Installation dimensions								With bellows								With switch						
Bore size (mm)	LD	LF	LG	LH	LR	LS	LT	b	d	ℓ						O	P	T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
										50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300			Over 300	RD	HD	RD	HD	RD
ϕ 75	9 x 15	4	151 (199)	65	66	96	3.2	55	50	7	14	27	37	47	57	(Stroke length)5	92	52	13.5 (37.5)	13.5 (37.5)	8.5 (32.5)		
ϕ100	11 x 20	5	165 (202)	85	85	120	3.2	55	50	7	14	27	37	47	57	(Stroke length)5	118	64	17.5 (36)	17.5 (36)	12.5 (31)		

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CAIOV2
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

Cylinder with valve
With valve

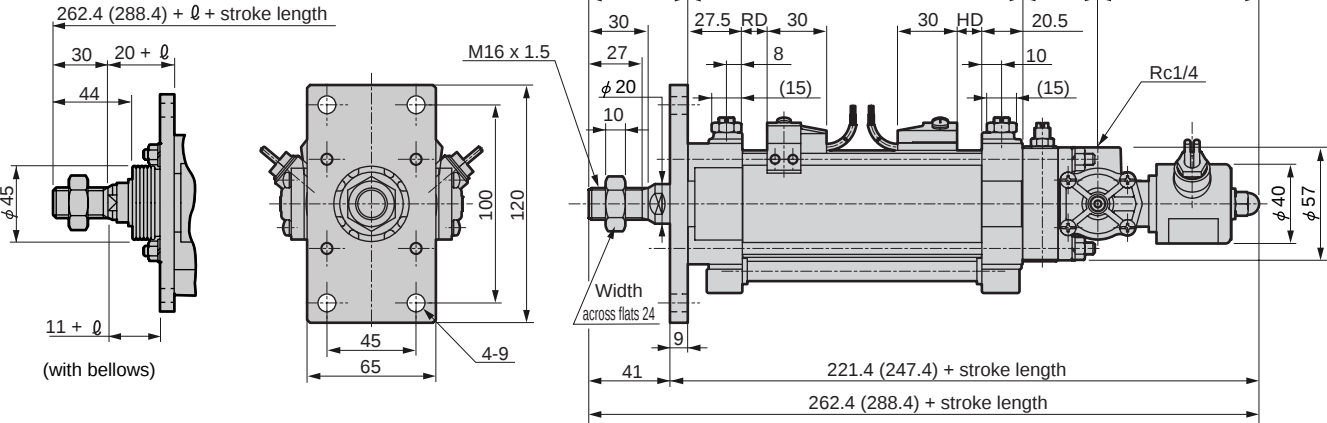
CAV2(-S)/CAV2-N(S) Series

Dimensions



● CAV2-FA, CAV2-N-FA (double solenoid)
Rod end flange type (FA) $\phi 50$

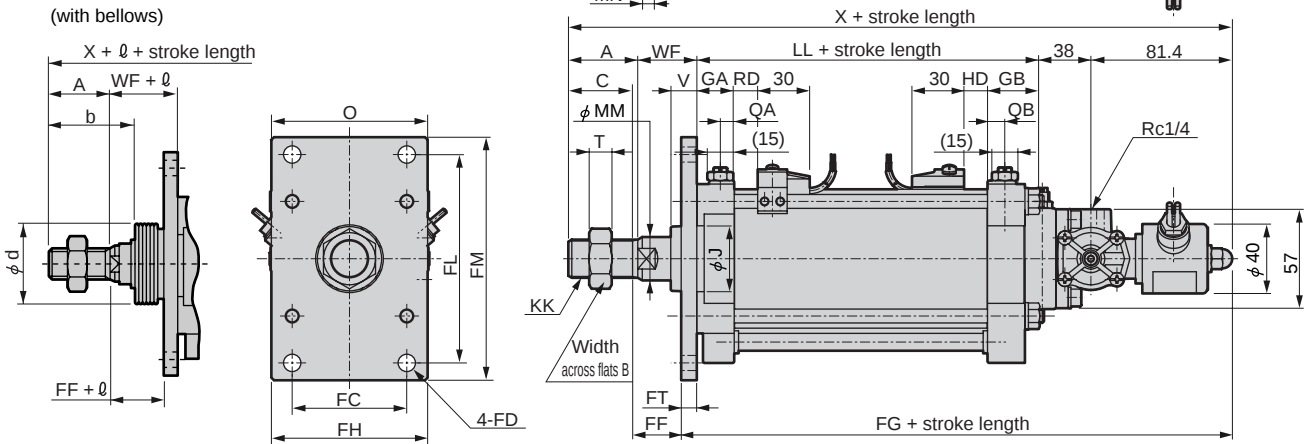
- Note 1: For cushioned type (B), refer to dimensions in ().
Note 2: ℓ dimensions below decimal point are rounded up.
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of non cushion (N) on this drawing.
Note 4: When the type with a bellows is selected, the bellows mounting surface and hexagon nut (M6), etc., protrude from the flange mounting. Provide a relief of $\phi 77$ or more with a depth of 11 or more.
Note 5: Refer to page 712 for accessory dimensions.



Symbol	With bellows							With switch			
	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J	
	50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD
Bore size (mm)											
$\phi 50$	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)	12.5 (25.5)	7 (20.5)	

Rod end flange type (FA) $\phi 75$, $\phi 100$

- Note 1: For cushioned type (B), refer to dimensions in ().
Note 2: ℓ dimensions below decimal point are rounded up.
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
Note 4: Refer to page 712 for accessory dimensions.



Symbol	Basic dimensions for rod end flange type																	Install. dimen.				
Bore size (mm)	A	B	C	GA	GB	J	KK		LL		MM	MN	MO	QA	QB	T	V	WF	X	FC	FD	
ϕ 75	40	32	37	22	22	38	M22 x 1.5		91 (139)		25	10	22	8	10	13	15	34	284.4 (332.4)	66	10	
ϕ100	40	32	37	24.5	24.5	38	M22 x 1.5		105 (142)		25	10	22	10.7	10.7	13	15	35	299.4 (336.4)	85	12	
Symbol	Installation dimensions						With bellows								With switch							
Bore size (mm)	FF	FG	FH	FL	FM	FT	b	d	ℓ						O	P	T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
									50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300			Over 300	RD	HD	RD	HD	RD
ϕ 75	25	219.4 (267.4)	90	120	140	9	55	50	7	14	27	37	47	57	(Stroke length/5)	92	52	13.5 (37.5)	13.5 (37.5)	8.5 (32.5)		
ϕ100	23	236.4 (273.4)	120	150	180	12	55	50	7	14	27	37	47	57	(Stroke length/5)	118	64	17.5 (36)	17.5 (36)	12.5 (31)		

CAV2(-S)/CAV2-N(S) Series

Double acting double solenoid

Dimensions



● CAV2-CA/CAV2-N-CA (double solenoid)
Clevis type (CA) $\phi 50$

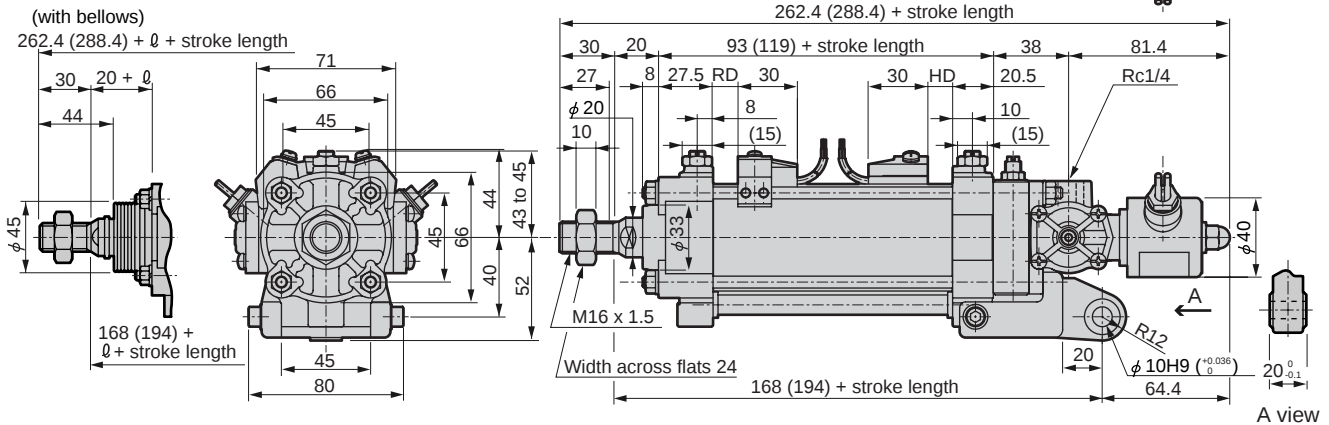
Note 1: For cushioned type (B), refer to dimensions in ().

Note 2: $\varnothing$ dimensions below decimal point are rounded up.

Note 3: Refer to page 572 for oscillating range combined with clevis bracket.

Note 4: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.

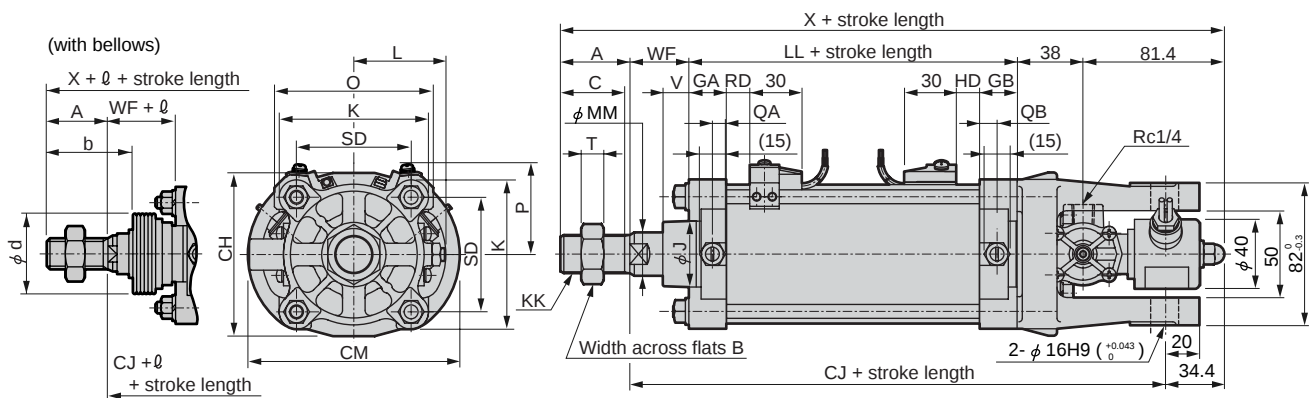
Note 5: Refer to page 712 for accessory dimensions.



Symbol	With bellows							With switch					
Bore size (mm)	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
	50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
	$\phi 50$	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)		12.5 (25.5)		7 (20.5)

Eye bracket type (CA) $\phi 75$, $\phi 100$

Note 1: For cushioned type (B), refer to dimensions in ().
 Note 2: ℓ dimensions below decimal point are rounded up.
 Note 3: Refer to page 572 for oscillating range combined with clevis bracket.
 Note 4: Note that the valve cannot be operated manually.
 Note 5: Refer to page 712 for accessory dimensions.



Symbol	Basic dimensions for eye bracket type																				Install. dimen.	
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	CH	CJ
ϕ 75	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	284.4 (332.4)	94	210 (258)
ϕ 100	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	299.4 (336.4)	109	225 (262)
Symbol	Install. dimen.	With bellows														With switch						
Bore size (mm)	CM	b	d	ℓ											O	P	T0, T5		T1, T2Y,		T8	
				50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	T2, T3		T3Y, T2J									
											RD	HD	RD	HD			RD	HD				
ϕ 75	122	55	50	7	14	27	37	47	57	(Stroke length)5	92	52	13.5 (37.5)	13.5 (37.5)	8.5 (32.5)							
ϕ 100	124	55	50	7	14	27	37	47	57	(Stroke length)5	118	64	17.5 (36)	17.5 (36)	12.5 (31)							

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

Cylinder with valve
With valve

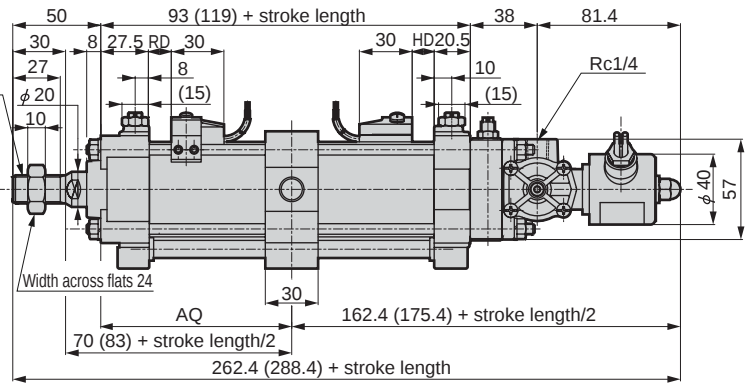
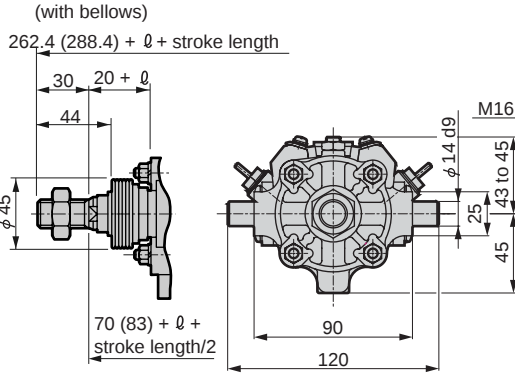
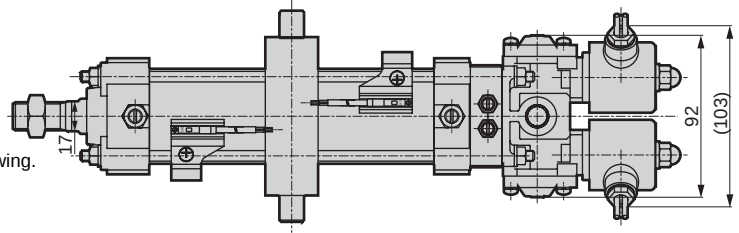
CAV2(-S)/CAV2-N(S) Series

Dimensions



● CAV2-TC/CAV2-N-TC (double solenoid) Center trunnion type (axis type) (TC) $\phi 50$

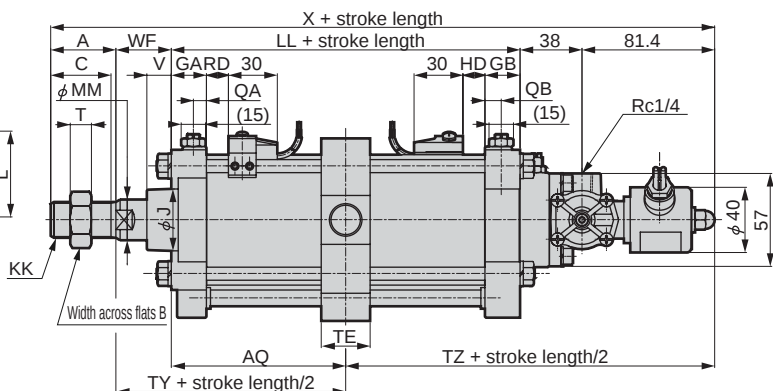
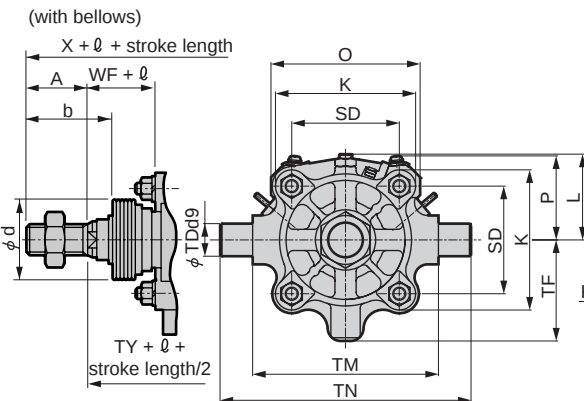
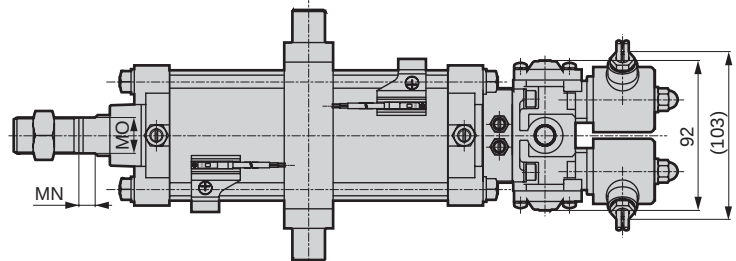
Note 1: For cushioned type (B), refer to dimensions in ().
 Note 2: ℓ dimensions below decimal point are rounded up.
 Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
 Note 4: Refer to page 712 for accessory dimensions.



Symbol	Installation dimensions	With bellows							With switch					
	AQ	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
		50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
$\phi 50$	50 (63) + stroke length/2	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)		12.5 (25.5)		7 (20.5)	

Center trunnion type (axis type) (TC) $\phi 75$, $\phi 100$

Note 1: For cushioned type (B), refer to dimensions in ().
 Note 2: ℓ dimensions below decimal point are rounded up.
 Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
 Note 4: Refer to page 712 for accessory dimensions.



Symbol	Basic dimensions for center trunnion type (axis type) ϕ 75, ϕ 100																				Installation dimensions	
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	AQ	TD
ϕ 75	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	284.4 (332.4)	45.5 (69.5) + $\frac{\text{Stroke}}{2}$	20
ϕ 100	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	299.4 (336.4)	52.5 (71) + $\frac{\text{Stroke}}{2}$	35
Symbol	Installation dimensions							With bellows								With switch						
Bore size (mm)	TE	TF	TM	TN	TZ	TY	b	d	ℓ							O	P	T0, T5		T1, T2Y,		T8
									50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300			T2, T3		T3Y, T2J		
																		RD	HD	RD	HD	
ϕ 75	30	62	114	154	164.9 (188.9)	79.5 (103.5)	55	50	7	14	27	37	47	57	(Stroke/5)	92	52	13.5 (37.5)		13.5 (37.5)		8.5 (32.5)
ϕ 100	50	78	135	205	171.9 (190.4)	87.5 (106)	55	50	7	14	27	37	47	57	(Stroke/5)	118	64	17.5 (36)		17.5 (36)		12.5 (31)

CAV2(-S)/CAV2-N(S) Series

Double acting double solenoid

Dimensions

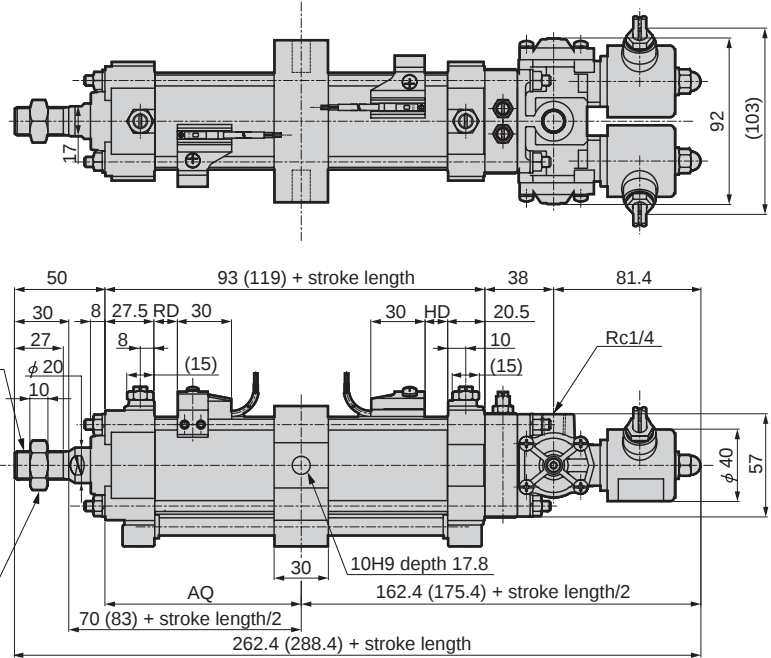
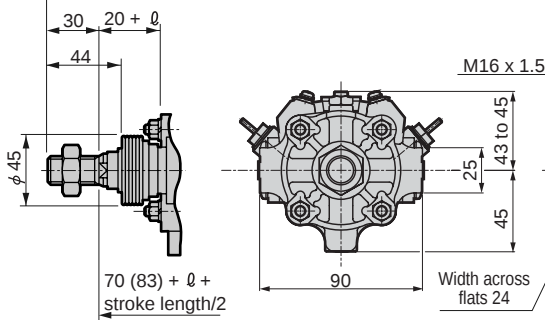


● CAV2-TF/CAV2-N-TF (double solenoid) Center trunnion type (hole type) (TF) $\phi 50$

Note 1: For cushioned type (B), refer to dimensions in ().
Note 2: ℓ dimensions below decimal point are rounded up.
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
Note 4: Refer to page 712 for accessory dimensions.

(with bellows)

262.4 (288.4) + ℓ + stroke length



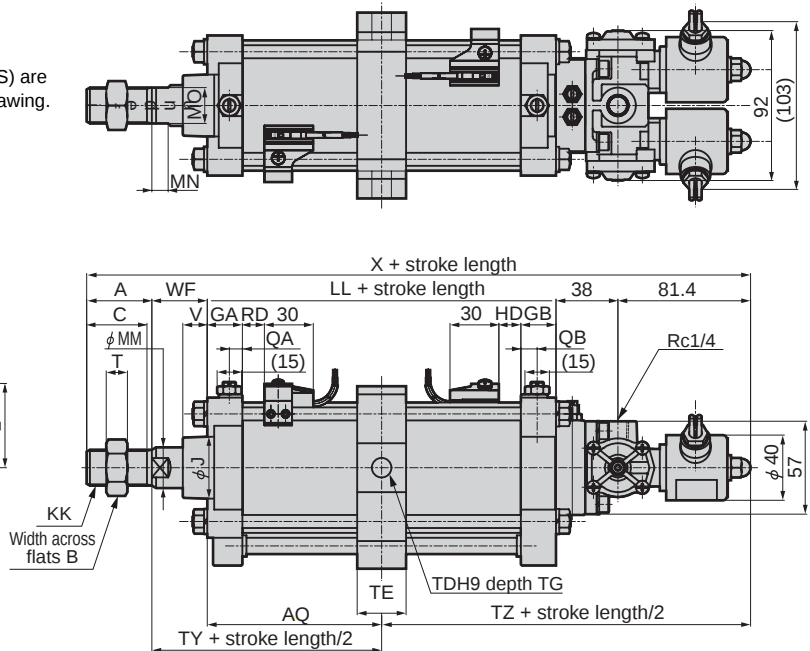
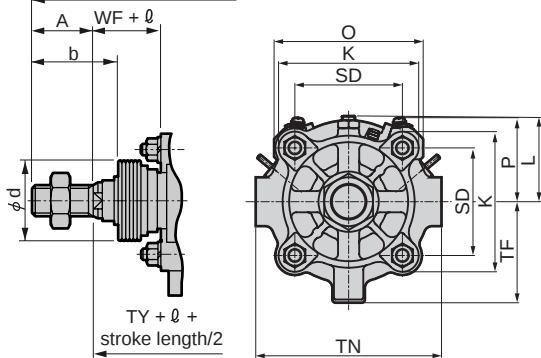
Symbol	Installation dimensions	With bellows							With switch					
	AQ	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
Bore size (mm)		50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
$\phi 50$	50 (63) + stroke length/2	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)		12.5 (25.5)		7 (20.5)	

Center trunnion type (hole type) (TF) $\phi 75$, $\phi 100$

Note 1: For cushioned type (B), refer to dimensions in ().
Note 2: ℓ dimensions below decimal point are rounded up.
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
Note 4: Refer to page 712 for accessory dimensions.

(with bellows)

X + ℓ + stroke length



Symbol	Basic dimensions for center trunnion type (hole type) (TF) ϕ 75, ϕ 100																				Installation dimensions			
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	AQ	TD		
ϕ 75	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	284.4 (332.4)	45.5 (69.5) + $\frac{\text{Stroke}}{2}$	12		
ϕ 100	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	299.4 (336.4)	52.5 (71) + $\frac{\text{Stroke}}{2}$	16		
Symbol	Installation dimensions							With bellows									With switch							
Bore size (mm)	TE	TF	TG	TN	TZ	TY	b	d	ℓ								O	P	T0, T5		T1, T2Y,		T8	
																			T2, T3		T3Y, T2J			
									50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD			HD	RD	HD	RD	HD	
ϕ 75	30	62	16.8	114	164.9 (188.9)	79.5 (103.5)	55	50	7	14	27	37	47	57	(Stroke/5)	92	52	13.5 (37.5)		13.5 (37.5)		8.5 (32.5)		
ϕ 100	40	78	18.6	144	171.9 (190.4)	87.5 (106)	55	50	7	14	27	37	47	57	(Stroke/5)	118	64	17.5 (36)		17.5 (36)		12.5 (31)		

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CAIOV2
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

Cylinder with valve
With valve

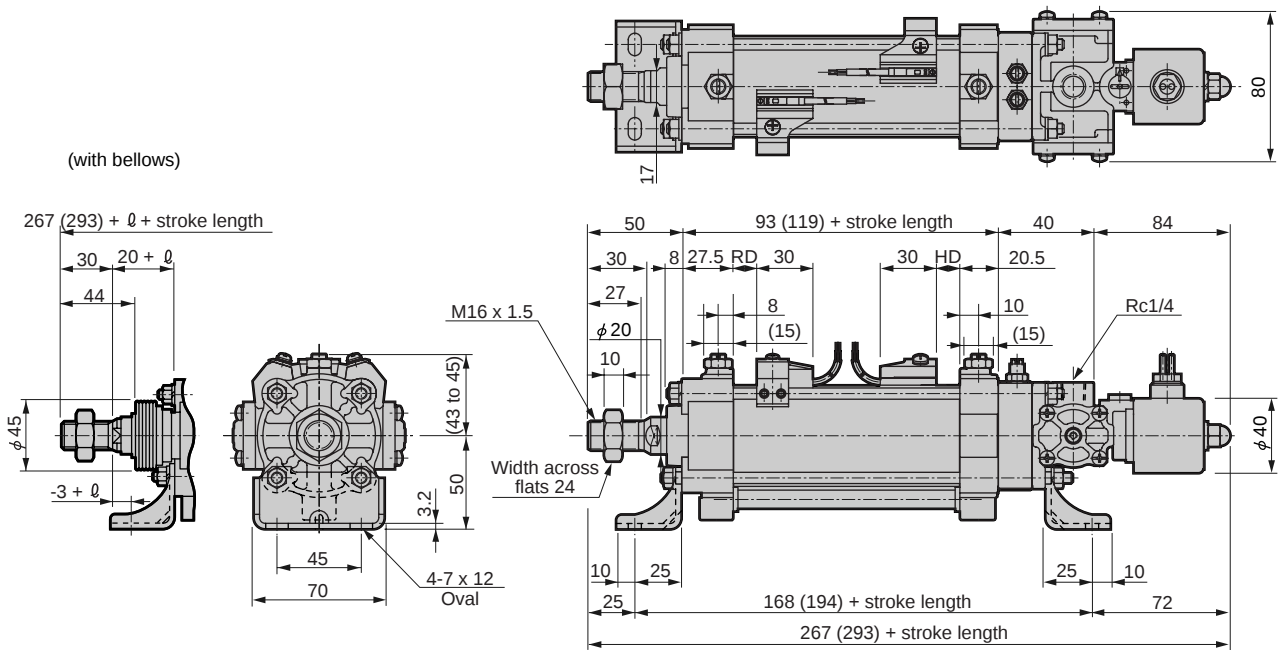
COV_N^P 2(-S)/COV_N^P 2-N(S) Series

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

Dimensions

● COV_N^P2-LB/COV_N^P2-N-LB (single solenoid)
Axial foot type (LB) $\phi 50$

Note 1: For cushioned type (B), refer to dimensions in ().
Note 2: ℓ dimensions below decimal point are rounded up.
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
Note 4: Refer to page 712 for accessory dimensions.

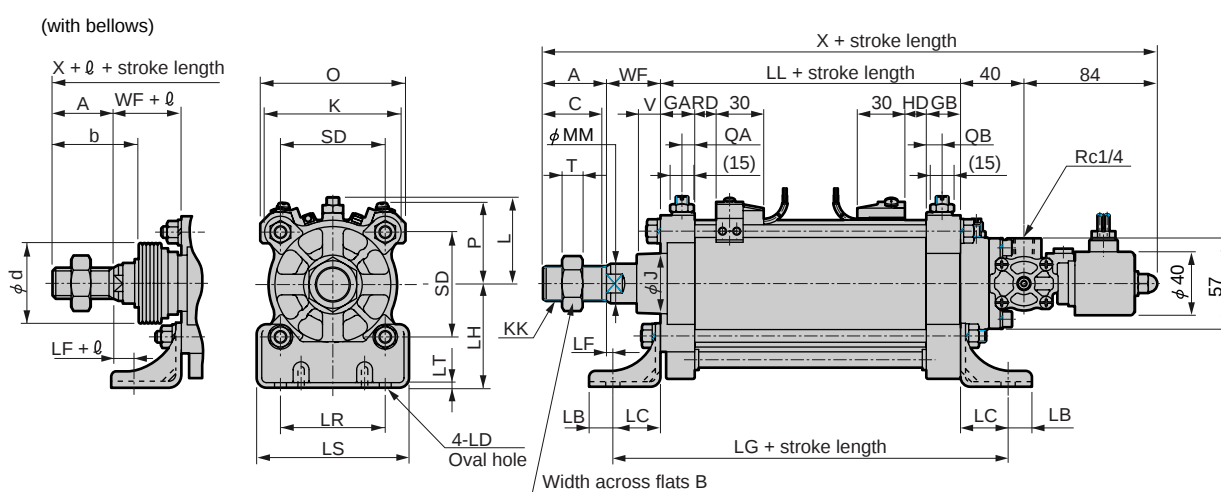
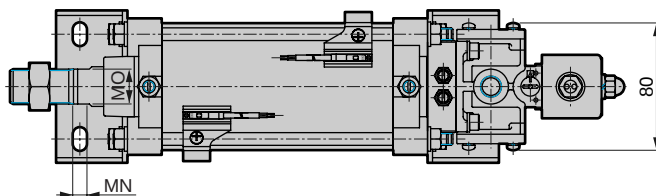


Symbol	With bellows							With switch					
	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
Bore size (mm)	50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
$\phi 50$	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)	12.5 (25.5)	7 (20.5)			

Double acting single solenoid

Axial foot type (LB) ϕ 75, ϕ 100

Note 4: Refer to page 712 for accessory dimensions.



Symbol	Basic dimensions for axial foot type $\phi 75$, $\phi 100$																				Install. dimen.		
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	LB	LC	
$\phi 75$	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	289 (337)	15	30	
$\phi 100$	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	304 (341)	15	30	
Symbol	Installation dimensions							With bellows							With switch								
Bore size (mm)	LD	LF	LG	LH	LR	LS	LT	b	d	ℓ							O	P	T0, T5		T1, T2Y,		T8
										50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300			T2, T3	T3Y, T2J	RD	HD	
$\phi 75$	9 x 15	4	151 (199)	65	66	96	3.2	55	50	7	14	27	37	47	57	(Stroke/5)	92	52	13.5 (37.5)	13.5 (37.5)	8.5 (32.5)		
$\phi 100$	11 x 20	5	165 (202)	85	85	120	3.2	55	50	7	14	27	37	47	57	(Stroke/5)	118	64	17.5 (36)	17.5 (36)	12.5 (31)		

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

Cylinder with valve
With valve

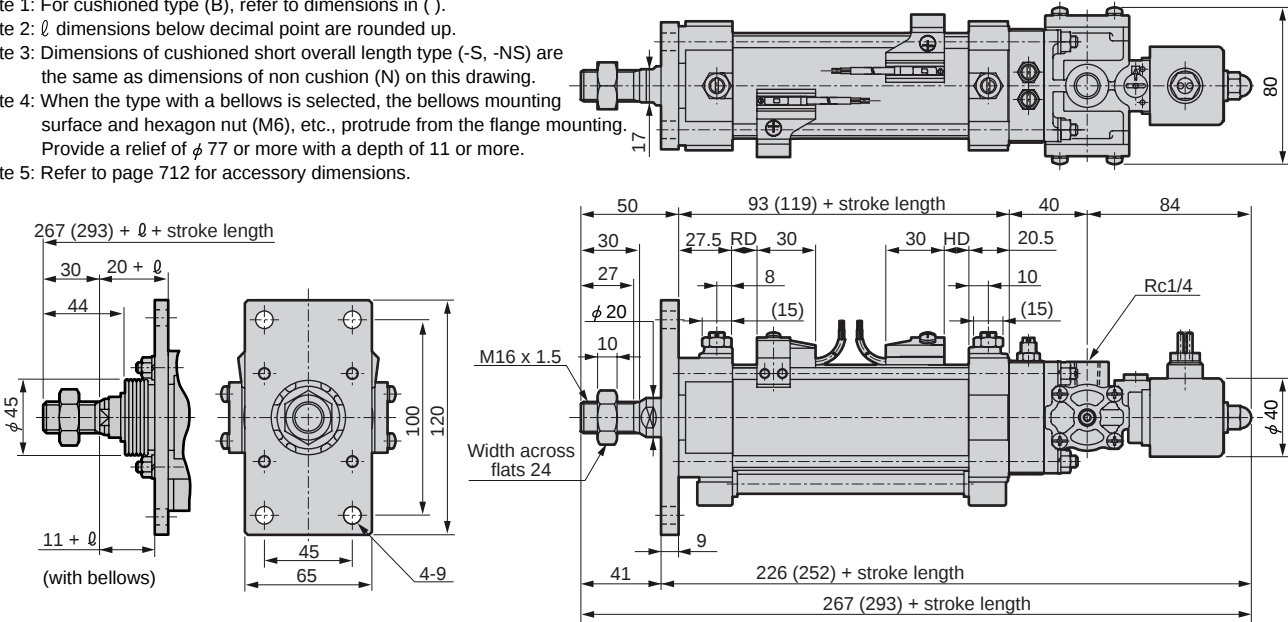
COV^P_N2(-S)/COV^P_N2-N(S) Series

Dimensions

● COV^P_N2-FA/COV^P_N2-N-FA (single solenoid)

Rod end flange type (FA) $\phi 50$

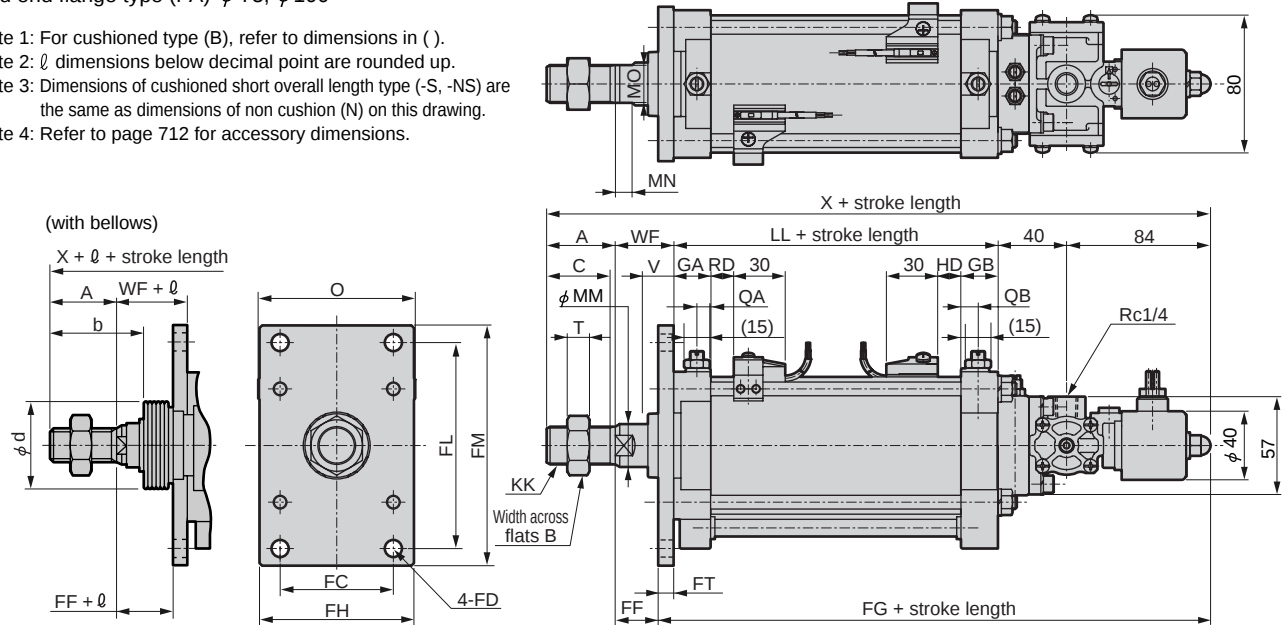
- Note 1: For cushioned type (B), refer to dimensions in ().
Note 2: ℓ dimensions below decimal point are rounded up.
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of non cushion (N) on this drawing.
Note 4: When the type with a bellows is selected, the bellows mounting surface and hexagon nut (M6), etc., protrude from the flange mounting. Provide a relief of $\phi 77$ or more with a depth of 11 or more.
Note 5: Refer to page 712 for accessory dimensions.



Symbol	With bellows							With switch					
	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
Bore size (mm)	50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
$\phi 50$	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)	12.5 (25.5)	12.5 (25.5)	12.5 (25.5)	7 (20.5)	

Rod end flange type (FA) $\phi 75$, $\phi 100$

- Note 1: For cushioned type (B), refer to dimensions in ().
Note 2: ℓ dimensions below decimal point are rounded up.
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of non cushion (N) on this drawing.
Note 4: Refer to page 712 for accessory dimensions.



Symbol	Basic dimensions for rod end flange type ϕ 75, ϕ 100																	Install. dimen.				
Bore size (mm)	A	B	C	GA	GB	J	KK		LL		MM	MN	MO	QA	QB	T	V	WF	X	FC	FD	
ϕ 75	40	32	37	22	22	38	M22 x 1.5		91 (139)		25	10	22	8	10	13	15	34	289 (337)	66	10	
ϕ 100	40	32	37	24.5	24.5	38	M22 x 1.5		105 (142)		25	10	22	10.7	10.7	13	15	35	304 (341)	85	12	
Symbol	Installation dimensions						With bellows									With switch						
Bore size (mm)	FF	FG	FH	FL	FM	FT	b	d	ℓ							O	P	T0, T5		T1, T2Y,		T8
									50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300			T2, T3		T3Y, T2J		
																		RD	HD	RD	HD	
ϕ 75	25	224 (272)	90	120	140	9	55	50	7	14	27	37	47	57	(Stroke/5)	92	52	13.5 (37.5)	13.5 (37.5)	8.5 (32.5)		
ϕ 100	23	241 (278)	120	150	180	12	55	50	7	14	27	37	47	57	(Stroke/5)	118	64	17.5 (36)	17.5 (36)	12.5 (31)		

COV_N^P2(-S)/COV_N^P2-N(S) Series

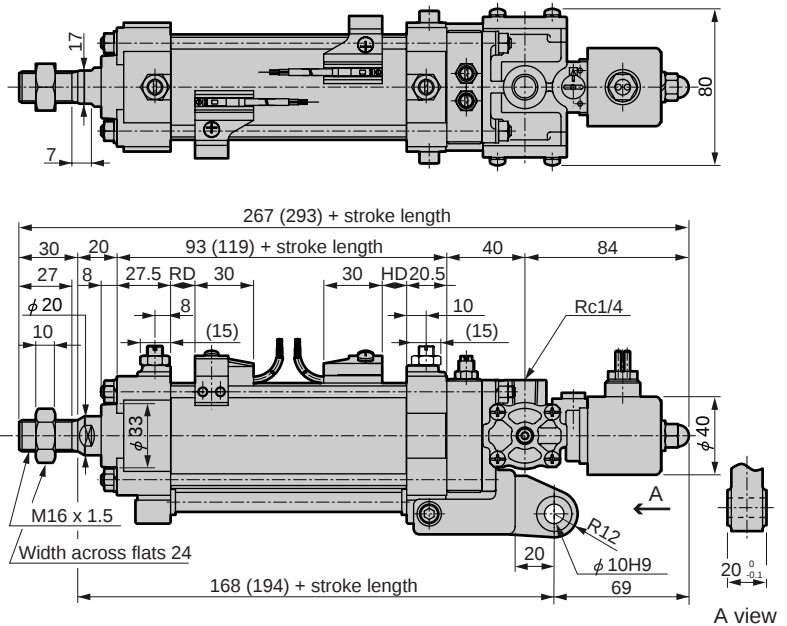
Double acting single solenoid

Dimensions



● COV_N^P2-CA/COV_N^P2-N-CA (single solenoid) Clevis type (CA) $\phi 50$

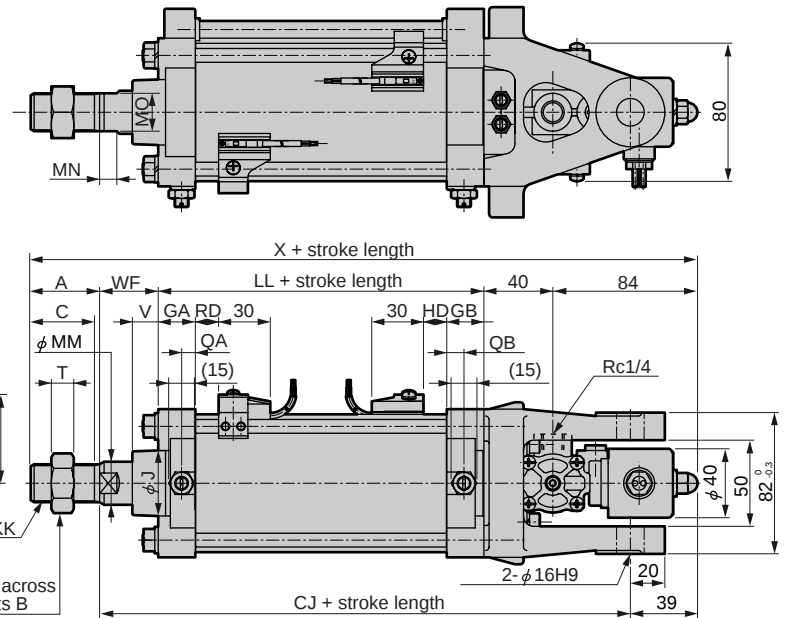
- Note 1: For cushioned type (B), refer to dimensions in ().
 Note 2: ℓ dimensions below decimal point are rounded up.
 Note 3: Refer to page 572 for oscillating range combined with clevis bracket.
 Note 4: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
 Note 5: Refer to page 712 for accessory dimensions.



Symbol	With bellows							With switch					
	ℓ							T0, T5 T2, T3	T1, T2Y, T3Y, T2J	T8			
Bore size (mm)	50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
$\phi 50$	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)	12.5 (25.5)	7	(20.5)		

Eye bracket type (CA) $\phi 75$, $\phi 100$

- Note 1: For cushioned type (B), refer to dimensions in ().
 Note 2: ℓ dimensions below decimal point are rounded up.
 Note 3: Refer to page 572 for oscillating range combined with clevis bracket.
 Note 4: Note that the valve cannot be operated manually.
 Note 5: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.
 Note 6: Refer to 712 page for accessory dimensions.



Symbol	Basic dimensions for eye bracket type ϕ 75, ϕ 100																				Install. dimen.	
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	CH	CJ
ϕ 75	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	289 (337)	94	210 (258)
ϕ 100	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	304 (341)	109	225 (262)
Symbol	Install. dimen.	With bellows													With switch							
Bore size (mm)	CM	b	d	ℓ							O	P	T0, T5		T1, T2Y,		T8					
				50 to 100		100 to 150		150 to 200		200 to 250			250 to 300		T2, T3			T3Y, T2J				
				or less												RD	HD	RD	HD	RD	HD	
ϕ 75	122	55	50	7	14	27	37	47	57	(Stroke/5)	92	52	13.5 (37.5)	13.5 (37.5)	8.5 (32.5)							
ϕ 100	124	55	50	7	14	27	37	47	57	(Stroke/5)	118	64	17.5 (36)	17.5 (36)	12.5 (31)							

Cylinder with valve
With valve

COV_N2(-S)/COV_N2-N(S) Series

Dimensions



● COV_N2-TC/COV_N2-N-TC (single solenoid)

Center trunnion type (axis type) (TC) $\phi 50$

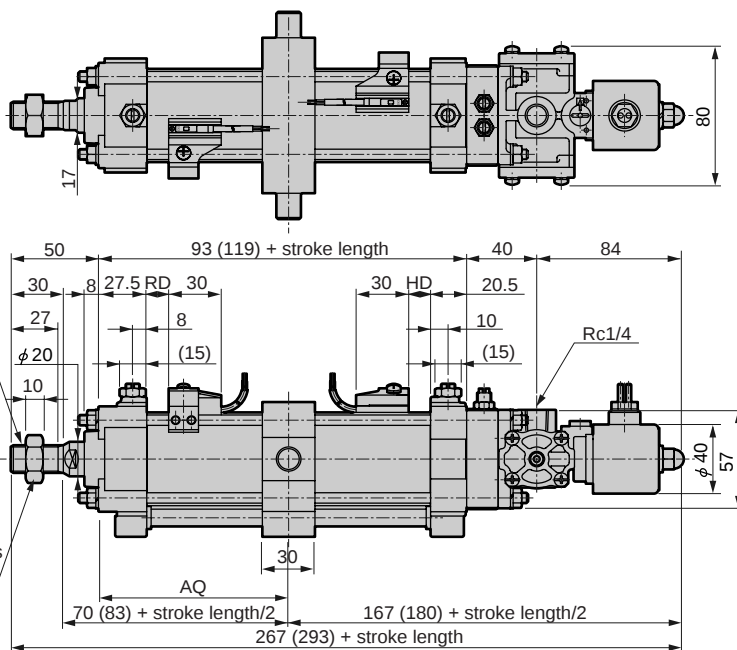
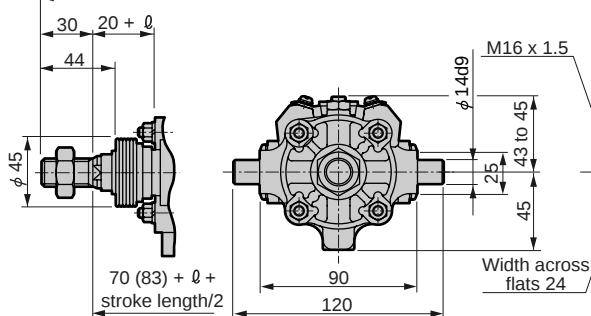
Note 1: For cushioned type (B), refer to dimensions in ().

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

Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of non cushion type (N) on this drawing.

Note 4: Refer to page 712 for accessory dimensions.

(with bellows)
267 (293) + ℓ + stroke length



Symbol	Installation dimensions	With bellows							With switch					
Bore size (mm)	AQ	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
		50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
$\phi 50$	50 (63) + stroke length/2	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)		12.5 (25.5)		7 (20.5)	

Center trunnion type (hole type) (TF) $\phi 75$, $\phi 100$

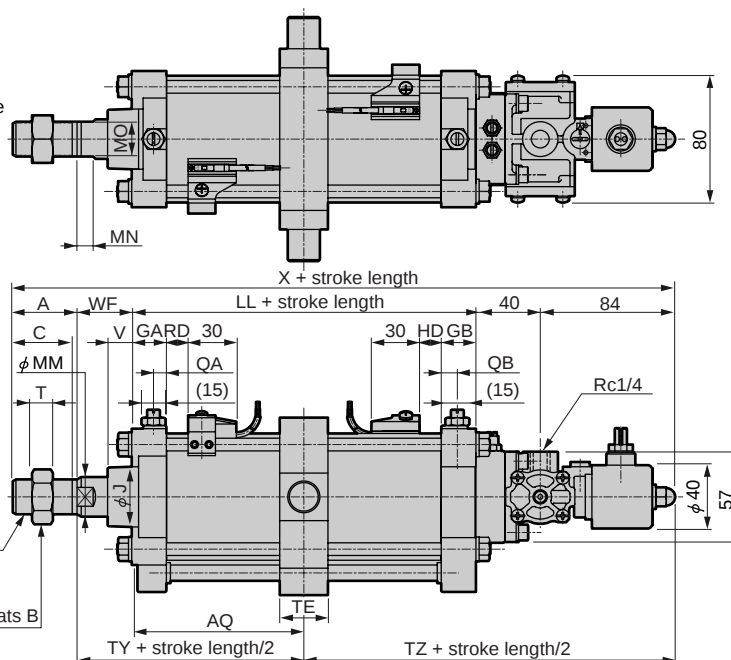
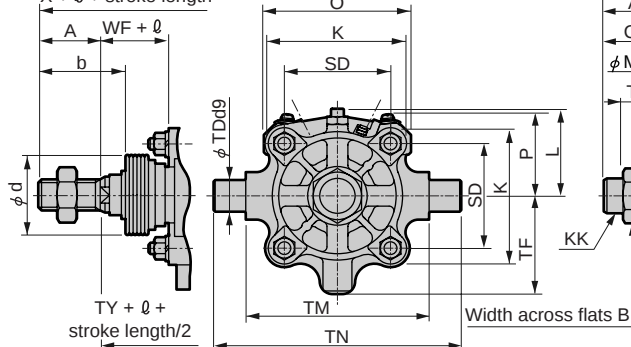
Note 1: For cushioned type (B), refer to dimensions in ().

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

Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of non cushion (N) on this drawing.

Note 4: Refer to page 712 for accessory dimensions.

(with bellows)
X + ℓ + stroke length



Symbol	Basic dimensions for center trunnion type (axis type) ϕ 75, ϕ 100																				Installation dimensions		
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	AQ	TD	
ϕ 75	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	289 (337)	45.5 (69.5) + $\frac{\text{Stroke}}{2}$	20	
ϕ 100	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	304 (341)	52.5 (71) + $\frac{\text{Stroke}}{2}$	35	
Symbol	Installation dimensions							With bellows								With switch							
Bore size (mm)	TE	TF	TM	TN	TZ	TY	b	d	ℓ								O	P	T0, T5		T1, T2Y,		T8
									50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	T2, T3			T3Y, T2J	RD	HD		
																						RD	
ϕ 75	30	62	114	154	169.5 (193.5)	79.5 (103.5)	55	50	7	14	27	37	47	57	(Stroke/5)	92	52	13.5 (37.5)		13.5 (37.5)		8.5 (32.5)	
ϕ 100	50	78	135	205	176.5 (195)	87.5 (106)	55	50	7	14	27	37	47	57	(Stroke/5)	118	64	17.5 (36)		17.5 (36)		12.5 (31)	

COV_N^P2(-S)/COV_N^P2-N(S) Series

Double acting single solenoid

Dimensions



● COV_N^P2-TF/COV_N^P2-N-TF (single solenoid)

Center trunnion type (hole type) (TF) ϕ 50

Note 1: For cushioned type (B), refer to dimensions in ().

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

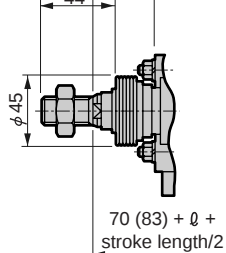
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.

Note 4: Refer to page 712 for accessory dimensions.

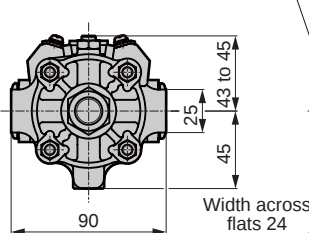
(with bellows)

267 (293) + ℓ + stroke length

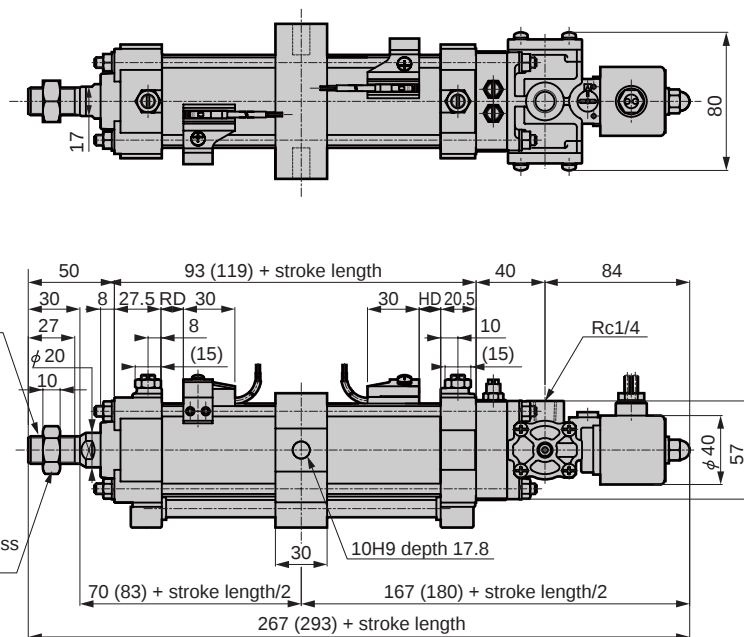
30 20+ ℓ
44



70 (83) + ℓ + stroke length/2



Width across flats 24



Symbol	Installation dimensions	With bellows							With switch					
	AQ	ℓ							T0, T5 T2, T3		T1, T2Y, T3Y, T2J		T8	
		50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	RD	HD	RD	HD	RD	HD
ϕ 50	50 (83) + stroke length/2	17	24	37	47	57	67	(Stroke length/5)	12.5 (25.5)	12.5 (25.5)	7 (20.5)			

Center trunnion type (hole type) (TF) ϕ 75, ϕ 100

Note 1: For cushioned type (B), refer to dimensions in ().

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

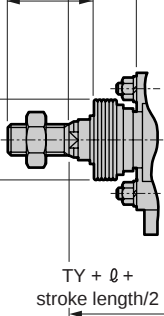
Note 3: Dimensions of cushioned short overall length type (-S, -NS) are the same as dimensions of no cushion type (N) on this drawing.

Note 4: Refer to page 712 for accessory dimensions

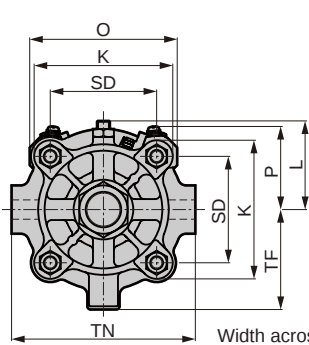
(with bellows)

X + ℓ + stroke length

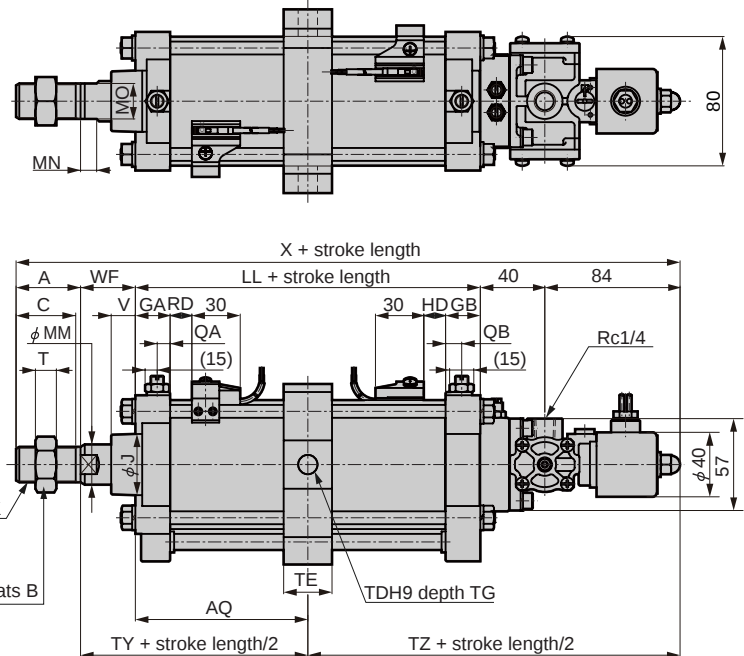
A WF + ℓ
b



TY + ℓ + stroke length/2



Width across flats B



Symbol	Basic dimensions for center trunnion type (axis type) ϕ 75, ϕ 100																				Installation dimensions		
Bore size (mm)	A	B	C	GA	GB	J	K	KK	L	LL	MM	MN	MO	QA	QB	SD	T	V	WF	X	AQ	TD	
ϕ 75	40	32	37	22	22	38	86	M22 x 1.5	52 to 54	91 (139)	25	10	22	8	10	66	13	15	34	289 (337)	45.5 (69.5) + $\frac{\text{Stroke}}{2}$	12	
ϕ 100	40	32	37	24.5	24.5	38	109	M22 x 1.5	60.5 to 62.5	105 (142)	25	10	22	10.7	10.7	86.3	13	15	35	304 (341)	52.5 (71) + $\frac{\text{Stroke}}{2}$	16	
Symbol	Installation dimensions							With bellows									With switch						
Bore size (mm)	TE	TF	TG	TN	TZ	TY	b	d	ℓ								O	P	T0, T5		T1, T2Y,		T8
									50 or less	50 to 100	100 to 150	150 to 200	200 to 250	250 to 300	Over 300	T2, T3			T3Y, T2J				
																RD			HD	RD	HD		
ϕ 75	30	62	16.8	114	169.5 (193.5)	79.5 (103.5)	55	50	7	14	27	37	47	57	(Stroke/5)	92	52	13.5 (37.5)		13.5 (37.5)		8.5 (32.5)	
ϕ 100	50	78	18.6	144	176.5 (195)	87.5 (106)	55	50	7	14	27	37	47	57	(Stroke/5)	118	64	17.5 (36)		17.5 (36)		12.5 (31)	

Cylinder with valve
With valve

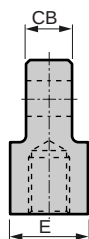
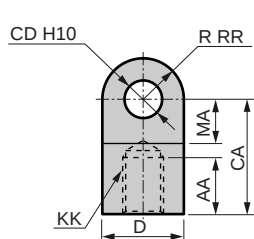
CAV2(-S)/CAV2-N(S) COV_N2(-S)/COV_N2-N(S) Series

Dimensions: accessory (rod eye/clevis, bracket, pin)



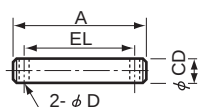
● Rod eye (I)

Material: Cast iron



Model no.	Applicable tube I.D. (mm)	AA	CA	CB	CD	D	E	KK	MA	RR	Weight (g)
CAV2-50-I	φ50	25	50	20 ^{+0.0} _{-0.3}	14 ^{+0.070} ₀	26	26	M16 x 1.5	20	15	217
CAV2-75-I	φ75, 100	30	65	28 ^{+0.0} _{-0.3}	20 ^{+0.084} ₀	38	35	M22 x 1.5	28	22.5	622

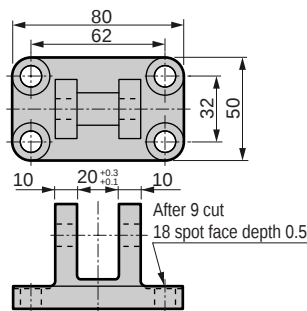
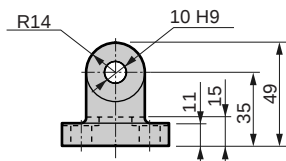
● Pin for rod eye/clevis (P1)



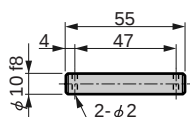
Material: Body: Cast iron
Pin : steel

● Clevis bracket (B2) / pin (P2) for φ50

Model no.
CAV2-50-B2



Model no.
CAV2-50-P2

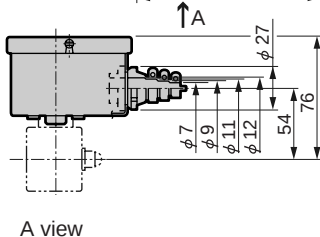
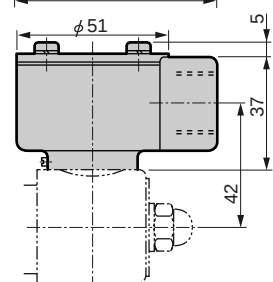
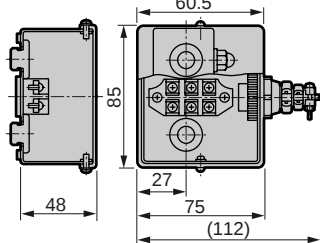
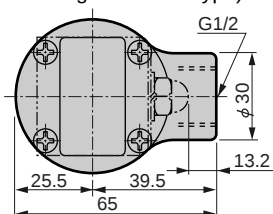


Note 1: Pin, split pin (JIS B 1351 φ 2X15) and plain washer are attached to clevis bracket (for JIS B1256 MIGAKI-MARU M10)
Note 2: Not assembled into cylinder when shipping.
Note 3: Refer to page 690 for oscillating range combined with eye type(CA).

● Terminal box

TB1 (double solenoid type, single solenoid type)

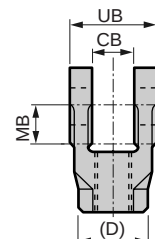
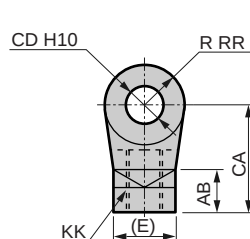
TB2 (double solenoid type)



Note 1: When placing an order together with a cylinder, the parts are assembled at shipment.
Note 2: Do not turn the bonnet with the cap nut tightened. The coil and lead are disconnected.

● Rod clevis (Y)

Material: Cast iron



Model no.	Applicable tube I.D. (mm)	AB	CA	CB	CD	D	E	KK	MB	RR	UB	Weight (g)
CAV2-50-Y	φ50	25	50	20 ^{+0.3} ₀	14 ^{+0.070} ₀	26.6	23	M16 x 1.5	23	15	42	189
CAV2-75-Y	φ75, 100	30	65	28 ^{+0.3} ₀	20 ^{+0.084} ₀	40.4	35	M22 x 1.5	33	22.5	60	577

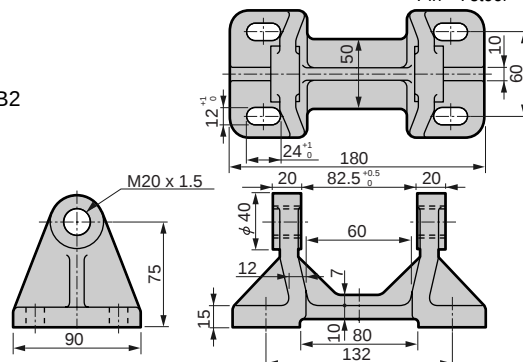
Note 1: MB dimensions show effective length of CB dimensions. Note 2: Pin, washer and split pin are attached to the product.

Model no.	Applicable tube I.D. (mm)	A	CD	D	EL	Plain washer JIS B 1256 MIGAKI-MARU	Split pin JIS B 1351	Weight (g)
CAV2-50-P1	φ50	62	φ14 ^{+0.042} _{-0.075}	4	53	M14	φ4 x 20	96
CAV2-75-P1	φ75, 100	82	φ20 ^{+0.012} _{-0.045}	4	72	M20	φ4 x 25	243

● Clevis bracket (B2) / pin (P2) for φ75, φ100

Material: Body : Cast iron
Pin : steel

Model no.
CAV2-75-B2



Model no.
CAV2-75-P2

Note 1: Pin and toothed washer are attached to clevis bracket (JIS B 1225M20).
Note 2: Not assembled into cylinder when shipping.
Note 3: Refer to page 690 for oscillating range combined with eye type(CA).

● Muffler (MF1)

Intake block (Q)

Flat head screw
JIS B1101
M4 x 8

