



Pneumatic components

Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Compact cylinder with valve CKV2 Series

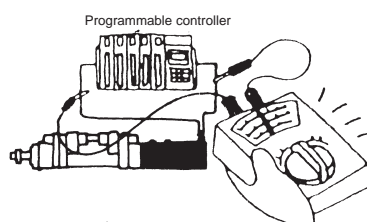
Design/selection

WARNING

- An inhale effect may be generated at the exhaust port of the valve due to valving element operation, causing the intake of foreign matter near the exhaust port. Foreign matter may also enter when the exhaust port is pointed upwards. Install a silencer and/or arrange the piping of the exhaust port to open facing downward.
 - The actuator will not operate correctly if the exhaust air is not discharged smoothly.

CAUTION

- Check for leakage current to avoid malfunction caused by leakage current from other fluid control components.
 - When a programmable controller is used, leakage current may affect the valve and cause a malfunction.
 - The values affected by leakage current depend on the voltage type. Refer to the table below.



Reference

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

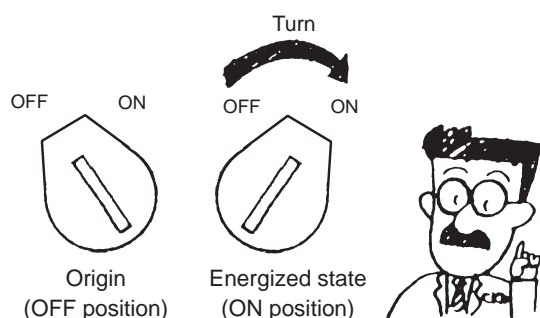
- Switch the valve at least once every 30 days to prevent malfunction.
- Although the contact service life of the reed switch varies depending on usage conditions, it will generally last several million cycles. The contact service life is reached sooner if the device is used continuously or operated at a high frequency. In this case, use a proximity switch with no contact.

Mounting, installation and adjustment

WARNING

- Manual operation causes the connected device to function. Make sure that there is no danger before performing manual operation. If you have activated the manual override of the valve, return it to the origin (OFF position) before operating the equipment. If compressed air is supplied when not at origin, the cylinder will become operational, creating hazardous conditions.

[Example]



CAUTION

- Be careful not to hit the solenoid valve with a tool or the equipment during mounting.
- Do not support the cylinder with pipes during mounting.
- Do not pick up the product by the coil lead wire.
 - This may lead to disconnection.
- Polarity
All series are without polarity. (Non-polar)
- Applied voltage
When wiring the valve, check that the voltage type (AC or DC) and voltage are correct. Failure to comply may cause defective operation or burnout of the coil.
- Checking wiring
After wiring, check that the connections are correct.

Use/maintenance

1. Common

⚠ WARNING

- Manual operation causes the connected device to function. Make sure that there is no danger before performing manual operation.

⚠ CAUTION

- Infrequent use
 - Switch the valve at least once every 30 days to prevent malfunction.

- After disassembling and assembling the valve, be sure to check normal valve operation with the following procedure.

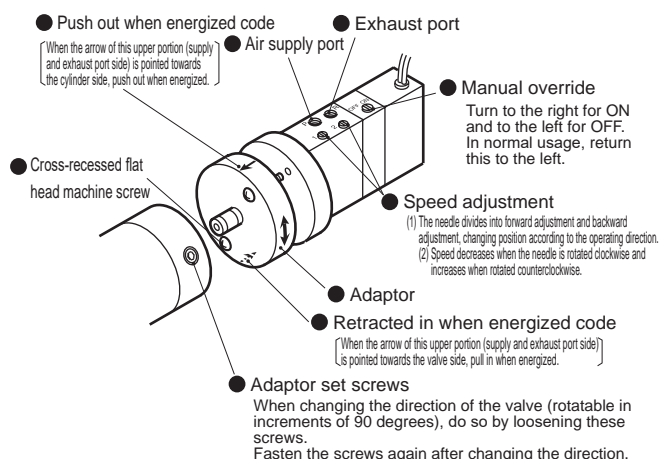
Work procedure

- Check that the manual override is at the origin (OFF position).
- Configure the unit to low pressure. (0.15MPa)
- Switch the manual override to the operation side (ON position) to check that the cylinder is operational.
- Return the manual override to the initial position (OFF position) and check that the cylinder returns. (Manual operation check is complete.)
- Check the operation electrically.
 - After manual operation check, energize/de-energize to confirm operation.

- With the DIN terminal box, as the ambient temperature is high and the gaskets will deteriorate due to heat when used with continuously powered specifications, be sure to regularly replace the gaskets.

Switching between push and pull when energized

- Loosen the adaptor set screws and the cross-recessed flat head machine screw.
- Rotate only the adaptor by 180 degrees in the direction of the arrow. (←●: Rotation direction)
- Fasten the cross-recessed flat head machine screws (tightening torque 1.7 N·m) and the adaptor set screws (tightening torque 9 N·m).



Speed adjustment	Forward adjustment	Backward adjustment
Operating direction		
Push out when energized	1	2
Pull when energized	2	1

How to wire the terminal box

Wire the terminal box with steps (1) to (3) referring to the figure below.

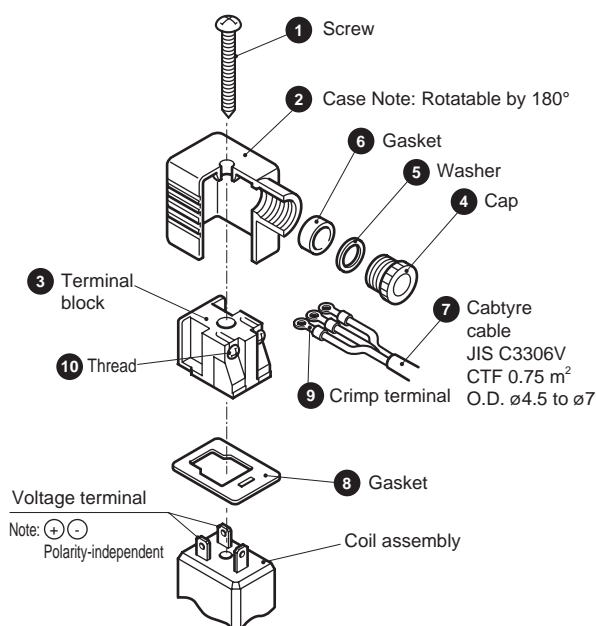
- Pass the cabtyre cable ⑦ through the cap ④, washer ⑤ and gasket ⑥ in order, and insert into the case ②.
 - When using a crimping terminal, prepare the cabtyre cable ⑦ at an appropriate length as illustrated and crimp the crimping terminal ⑨ on the end thereof.
 - Remove the screws ⑩ from the terminal block ③, pass through the crimping terminal ⑨ (loosen and crimp when using a Y type terminal), and fasten the screws ⑩ again.
- (Note) Fasten the screw with a tightening torque of 0.5 N·m ±15%.

Remarks: ● It is possible to wire the terminals with bare wires. In this case, loosen the screws ⑩, place the lead wires in the bracket, and fasten the screws again.

- The orientation of the cord can be changed by pulling out the terminal block from the case, rotating it by 180°, and returning the block to the case.
- The crimping terminals ⑨ listed in the table below can be used.

Nichifu Terminal Industries Co., Ltd.		Fuji Terminal Industry Co., Ltd.		J.S.T. 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				

When using a product from a different manufacturer, be sure to use an equivalent item.



SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

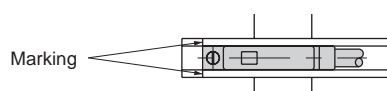
2. Common (With T-switch)

⚠ CAUTION

■ When moving the switch position to the stroke direction

- The T2, T3, T0, and T5 switches can be fine-tuned by approximately ± 3 mm from the default position of installation. If the adjusting range exceeds ± 3 mm, or when fine-tuning the position of any other switch, move the position of the band.
- Loosen the switch fixing screw, shift the switch along the rail, then tighten at the specified position.
When using T2, T3, T0, or T5, use a flathead screwdriver (clockwork screwdriver, precision screwdriver, etc.) with a grip diameter of 5 to 6 mm, a 2.4 mm or smaller tip, and a thickness of 0.3 mm or less to tighten the screws with a tightening torque of 0.1 to 0.2 N·m.
When using T1, T*C, T2J, T2Y, T3Y, or T8, tighten the screw with a tightening torque of 0.5 to 0.7 N·m.
- The switch bracket rail has a marking 4 mm from the rail end. Use as a guide to the mounting position when replacing the switch.
Switch rail markings are set to the default switch max. sensitivity position.
The max. sensitivity position will change when the switch is changed or when the band is moved. Adjust the position accordingly in this case.

■ When moving the switch position to the circumferential direction



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

