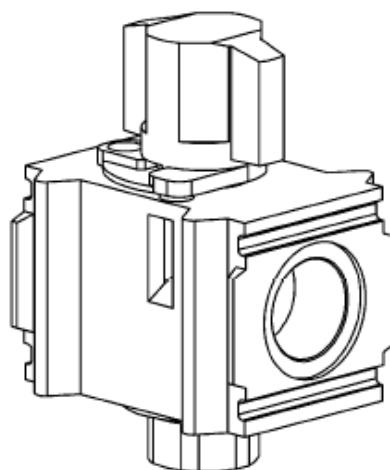
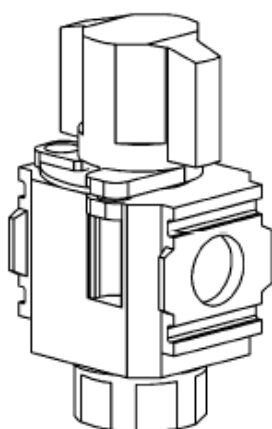


INSTRUCTION MANUAL

Shut-off valve with lock hole

V3010-W

V6010-W



- Please read this instruction manual carefully before using this product, particularly the section describing safety.
- Retain this instruction manual with the product for further consultation whenever necessary.

Ver. 2

CKD Corporation

Safety precautions

When designing and manufacturing a device using CKD products, the manufacturer is obligated to manufacture a safe product by confirming safety of the system comprising the following items:

- Device mechanism
- Pneumatic or water control circuit
- Electric control that controls the above

It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD product is used safely.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

WARNING

1. **This product is designed and manufactured as a general industrial machine part**
It must be handled by someone having sufficient knowledge and experience.
2. **Use this product within its specifications.**
Consult with CKD for details when using the product beyond the unique specification range, outdoors, or in the following conditions or environment: Additionally, the product must not be modified or machined.
 - ① Use for special applications requiring safety including nuclear energy, railroad, aviation, ship, vehicle, medical equipment, equipment or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits, or for safeguard.
 - ② Use for applications where life or assets could be adversely affected, and special safety measures are required.
3. **Observe corporate standards and regulations, etc., related to the safety of device design and control, etc.**
ISO4414, JIS B 8370 (pneumatic system rules)
JFPS2008(principles for pneumatic cylinder selection and use)
Including High Pressure Gas Maintenance Law, Occupational Safety and Sanitation Laws, other safety rules, body standards and regulations, etc.
4. **Do not handle, pipe, or remove devices before confirming safety.**
 - ① Inspect and service the machine and devices after confirming safety of the entire system related to this product.
 - ② Note that there may be hot or charged sections even after operation is stopped.
 - ③ When inspecting or servicing the device, turn off the energy source (air supply or water supply), and turn off power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
 - ④ When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.
5. **Observe warnings and cautions on the pages below to prevent accidents.**

■ The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.



DANGER

: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.



WARNING

: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.



CAUTION

: When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation. In any case, important information that must be observed is explained.

Precautions with regard to guarantee

● Guarantee period

The guarantee period of our product shall be one (1) year after it is delivered to the place specified by the customer.

● Guarantee coverage

If any failure for which CKD CORPORATION is recognized to be responsible occurs within the above warranty period, a substitute or necessary replacement parts shall be provided free of charge, or the product shall be repaired free of charge at the plant of CKD CORPORATION.

However, the guarantee excludes following cases:

- ① Defects resulting from operation under conditions beyond those stated in the catalogue or specifications.
- ② Failure resulting from malfunction of the equipment and/or machine manufactured by other companies.
- ③ Failure resulting from wrong use of the product.
- ④ Failure resulting from modification or repairing that CKD CORPORATION is not involved in.
Failure resulting from causes that could not be foreseen by the technology available at the time of delivery.
- ⑥ Failure resulting from disaster that CKD is not responsible of.

Guarantee stated here covers only the delivered products. Any other damage resulting from failure of the delivered products is not covered by this guarantee.

● Confirmation of product compatibility

Our customer shall be responsible of confirming compatibility of our product used in our customer's system, machinery or device.

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Shut-off valve with lock hole

V3010-W

V6010-W

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1. Unpacking



CAUTION

To prevent foreign matter from entering the product, unpack the product just before piping starts.

- Make sure that the model number indicated on the product matches with what you have ordered.
- Check the exterior of the product for damage.

2. Installation

2. 1 Installation environment



CAUTION

- 1) Avoid installing this product where it is subject to ultraviolet rays.
- 2) Prevent installation where the product is exposed to a direct sunlight.
- 3) Avoid installation at places where there is excessive vibration or impact.
- 4) If amount of drain is large
Install an air dryer and drain separator before an air filter. If there is a large amount of drain from the compressor ,hot and highly humid air could shorten the device life or result in corrosion.
- 5) If the product is used in a water-lubricated compressor circuit
Make sure that chlorine-based substances, etc., do not enter compressed air.

- Avoid using this product under the following conditions.
 - The ambient temperature is beyond 5-60°C.
 - The air may be frozen.
 - The water drop or coolant is splashed onto the product.
 - The humidity is high and the temperature changes largely, causing dew condensation.
 - Sea breeze or seawater is splashed onto the product.
 - Atmosphere contains corrosive gas, corrosive fluid or chemicals.

2. 2 Installation



CAUTION

- 1) Do not move or swing the product holding the knob of the product.
- 2) Provide enough space for maintenance
Provide space around the product for installation, removal, wring, and piping work.

- Mount the C type bracket onto the product prior to piping, if the C type bracket (optional) is used for installation. To mount the C type bracket onto the product, align the convex of the bracket and concave of the product, and push in.

Note: The Piping adapter set and the C type bracket cannot be used at the same time.

2. 3 Piping

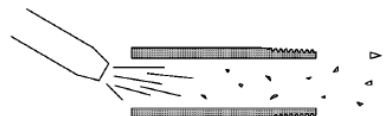
**WARNING**

- 1) EXH port is exclusively for mounting a silencer.
Tightening torque shall be 3N•m or less. (Force when tightening with fingers.)
When removing the silencer, hold the bottom plug with a tool and remove the silencer.

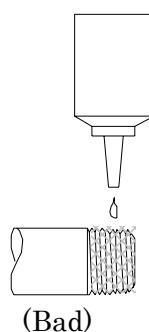
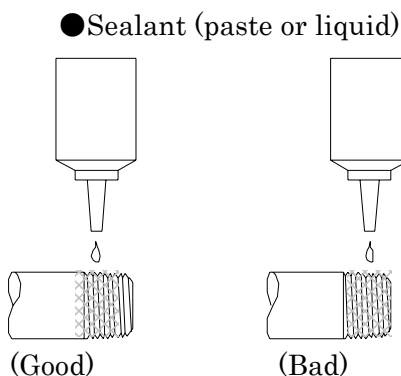
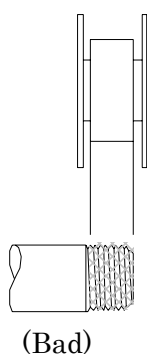
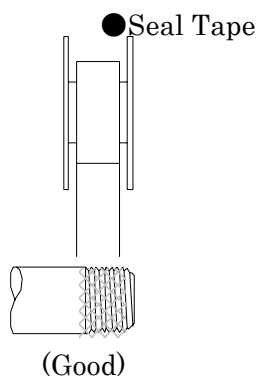
**CAUTION**

- 1) Flush the air piping to be used sufficiently before connecting the regulator.
If dust or sealant enters the product during piping work, this may cause the product to malfunction or operate incorrectly.
- 2) Install the Residual pressure release valve so as the arrow mark on the name plate of the valve matches the air flow direction.
- 3) If dust or sealant enters the product during piping work, this may cause the product to decline in performance.
- 4) When connecting the piping, tighten with proper tightening torque.
- 5) Carefully connect the piping so that no bending moment caused by the piping load is applied to the product main body and piping.

- Flush air into the pipe to blow out foreign substances and chips before piping.



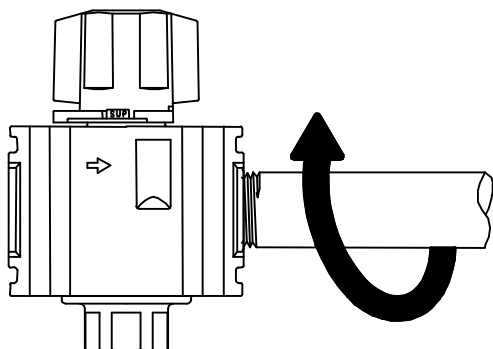
- Do not apply sealant or sealing tape for two pitches of thread from the tip of the pipe to avoid residual substances from falling into the piping system.



- When connecting the piping, tighten with proper tightening torque.

Observe this item to avoid air leakage and thread breakdown.

Tighten the thread first by hand, then with a tool.



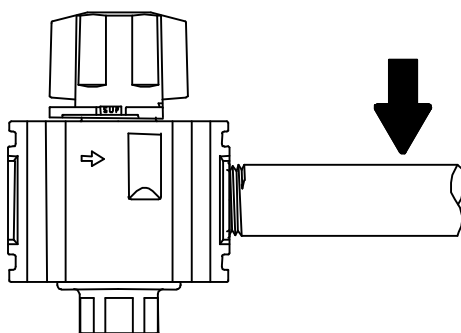
Port size	Tightening torque N·m
Rc1/4	6~8
Rc3/8	13~15
Rc1/2	16~18
Rc3/4	19~40
Rc1	41~70

3. Proper operation



WARNING

- 1) Operate the product always within its specifications.
- 2) This product is intended for use as a general-purpose industrial device or part. Do not use this product for medical devices or circuits, or devices or circuits that affect human lives.
- 3) If exhaust is incomplete because of air quality, manually discharge air by operating the knob (turn and raise).
- 4) Torque from piping
Make sure that the piping load or torque is not applied on the body or piping.



	Max torque N·m
V3010	50
V6010	100



CAUTION

- 1) Confirm the circuit and the working fluid.

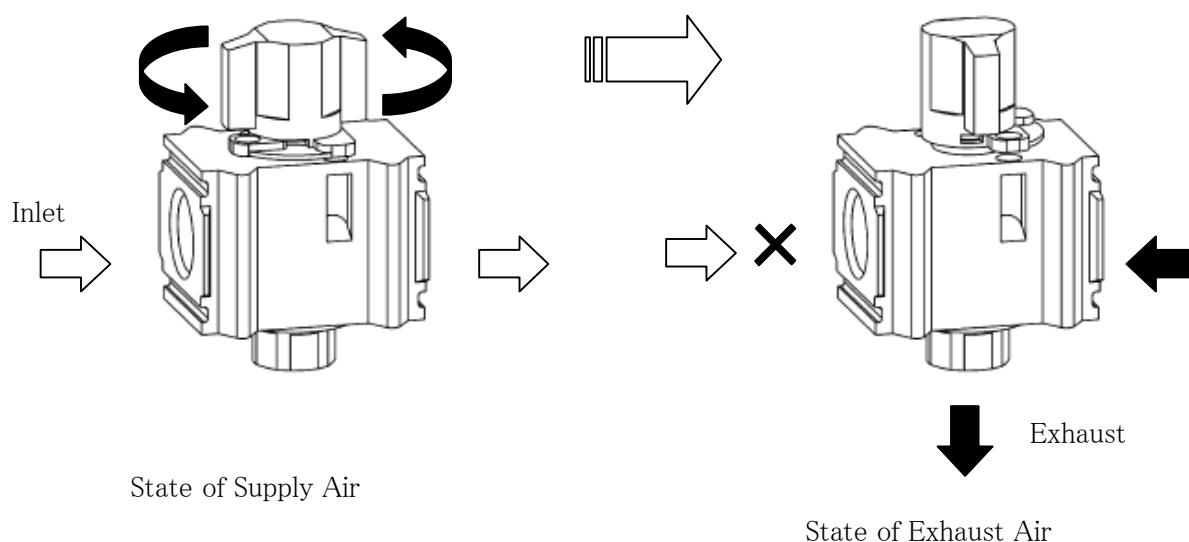
Flowing fluids that contain solid particles or those outside of specification may cause the product to malfunction. To prevent solid particles from entering, connect a filter to the primary side of the product.

- 2) If this product is to be installed on the primary side of a regulator or a filter regulator, the reverse regulator (R※100) or the reverse filter regulator (W※100) must be selected.

■ Operation

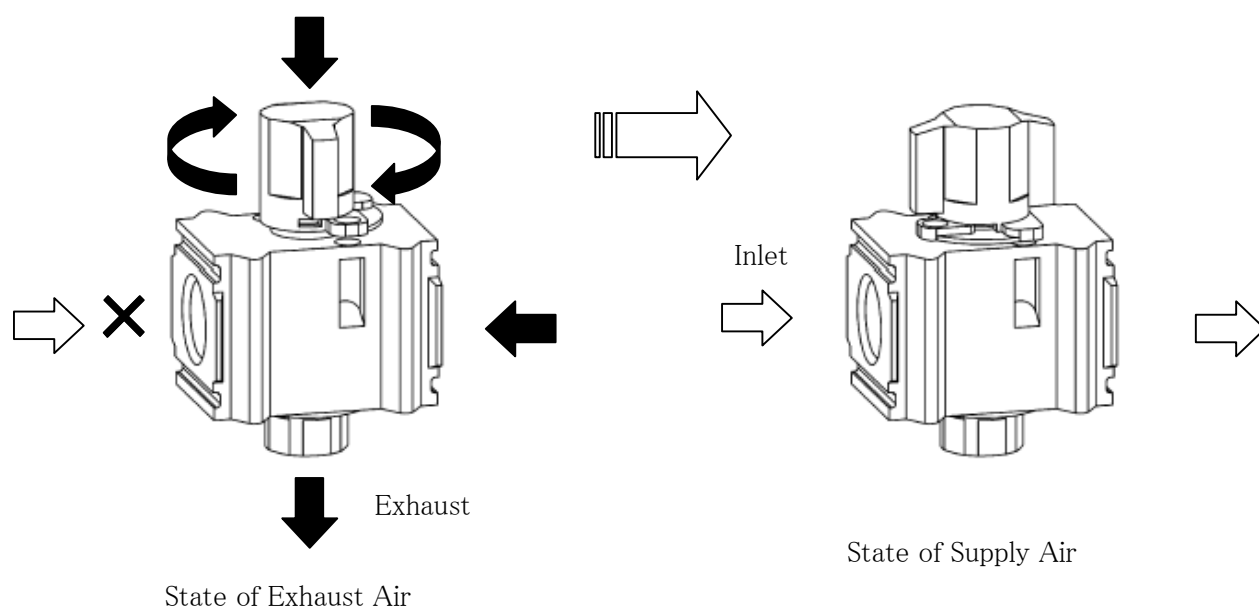
- 1) Shifting from the state of SUP to the state of EXH.

Turn the knob counterclockwise.



- 2) Shifting from the state of EXH to the state of SUP.

Turn the knob clockwise while holding down the knob.



3) Key lock

The body and knob of this product comprises a hole for a lock to fix the knob at the EXH position.

This lock can prevent mishandled pneumatic pressure to flow, preventing second disaster.

This product accords with the provisions of OSHA(US Occupational Safety and Health Agency).

4. Maintenance

4. 1 Inspection

1) Daily inspection

- Before operating the product, confirm proper operation.

2) Periodic inspection

- To operate the product in its optimal operating state, carry out the periodic inspection normally once every six months.
- Check that no leak occurs in the piping.

4. 2 Disassembly and assembly



CAUTION

Before starting the maintenance work, turn OFF the power, shut down the supply pressure, and make sure that no residual pressure remains.

- Refer to "6. Repair Parts" when performing disassembly and assembly.

■ Disassembly

- Turn the knob to exhaust position (EXH). Loosen and remove the rod.
- Lift and remove the knob while turning it clockwise.
- Loosen and remove the bottom plug. Be careful as the bottom spring may pop out.
- Pull out the pin, and pull out the spool assembly from the body.

■ Assembly

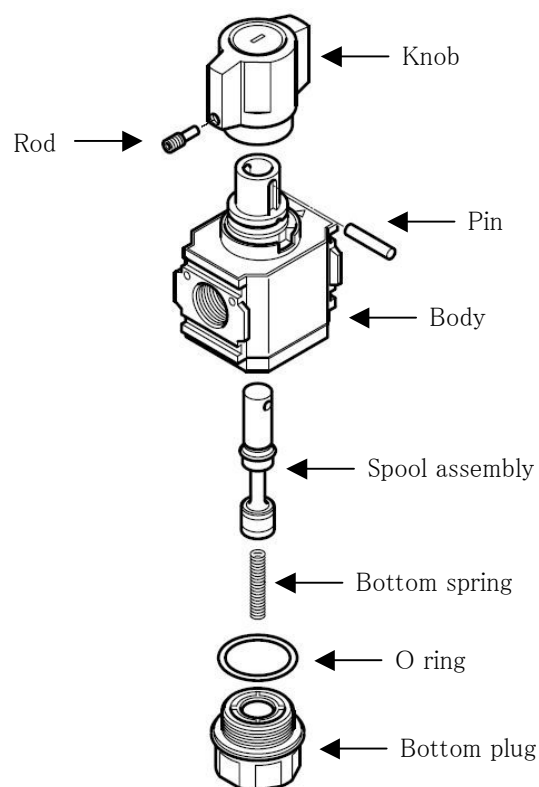
- Apply grease to packing, O ring, and the surface on which they slide.
- In the reverse order of disassembly, set the spool assembly mini Y packing or O ring into the body, and insert the pin.
- Set the bottom spring. Set and tighten the bottom plug.
- Set the knob while turning it counter-clockwise. Be careful of the direction of the lock hole.
- While holding down the knob, screw in the rod. Stop screwing the rod when there are 0 to 2 threads from the knob-end surface.

5. Troubleshooting

Trouble symptom	Cause	Remedy
Air leaks through EXH port at the state of SUP.	Foreign particles caught in the spool assembly packing or damage to the packing.	First, shut off the supply air. Next, it to clean or replace valve with a new one as required.
Air leaks through other than EXH port at the state of SUP.	Foreign particles caught in the spool assembly mini Y packing or O ring.	
At the state of EXH, the supply air escapes to EXH port and the residual pressure remains within the system.	IN and OUT direction is installed reverse.	First shut off the supply air. Next, correct the direction of valve proper way of flow.

6. Repair Parts

■ V3010-W



Name	Model	Part
Spool assembly	V3000-SPOOL	Spool assembly Bottom spring
Bottom plug assembly	V3000-W-PLUG	Bottom plug O ring

■ Please contact CKD for V6010-W

7. Product specifications and designation

7. 1 Product specifications

Specifications

Descriptions		V3010-8-W	V3010-10-W	V3010-15-W	V6010-20-W	V6010-25-W
Working fluid		Compressed air				
Max. working pressure MPa		1				
Withstanding pressure MPa		1.5				
Fluid temperature °C		5 to 60				
Operation lever switching angle		90°				
Operating force	Pushing force N	80 or less				
	Torque N·m	2.5 or less				
Valve seat leakage cm ³ /min (ANR)		10 or less				
External leakage cm ³ /min (ANR)		10 or less				
Port size (Rc, NPT, G)	IN-OUT	1/4	3/8	1/2	Rc 3/4	Rc1
	EXH	3/8			Rc1/2	
Product weight kg		0.3			0.8	
Effective sectional area(mm ²)	IN→OUT	40	70	85	145	150
	OUT→EXH	40	50	50	105	110

7. 2 Product designation

● FRL 2000, 4000 Series

V3010 - 8 - W - A8W

● For FRL 6000, 8000 Series

V6010 - 20 - W - A20W
(White type)

A Model no.

B Port size

C Port thread type

D Option

E Displayed unit

F Attachment

⚠ Cautions for model No. selection

Note 1: The piping adaptor set and C bracket cannot be used together.

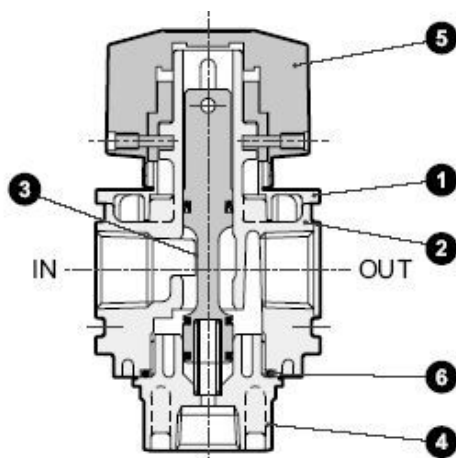
Note 2: A joiner set is attached with the piping adaptor set.

⚠ Select the reverse regulator (R*100-W) or reverse filter regulator (W*100-W) when installing the V*010-W onto the primary side of the regulator or filter regulator.

		A Model no.	
		V 3 0 1 0	V 6 0 1 0
Symbol	Descriptions		
B Port size			
8	1/4	●	
10	3/8	●	
15	1/2	●	
20	3/4		●
25	1		●
C Port thread type			
Blank	Rc thread	●	●
N	NPT thread	●	●
G	G thread	●	●
D Option			
Blank	None	●	●
X1	IN/out reverse flow (right to left)	●	●
E Displayed unit			
Blank	MPa display, Rc thread	●	●
J1	MPa display, NPT, G thread	●	●
F Attachment Note 1, Note 2			
Blank	No attachments	●	●
A8W	1/4 piping adaptor set	●	
A10W	3/8 piping adaptor set	●	
A15W	1/2 piping adaptor set	●	
A20W	3/4 piping adaptor set	●	●
A25W	1 piping adaptor set	●	●
A32W	1 1/4 piping adaptor set		●
BW	C type bracket	●	●
S	Silencer	●	●
* Adaptor thread type			
Blank	Rc thread	●	●
N	NPT thread	●	●
G	G thread	●	●

7. 3 Internal structure and parts list

● V3010-W

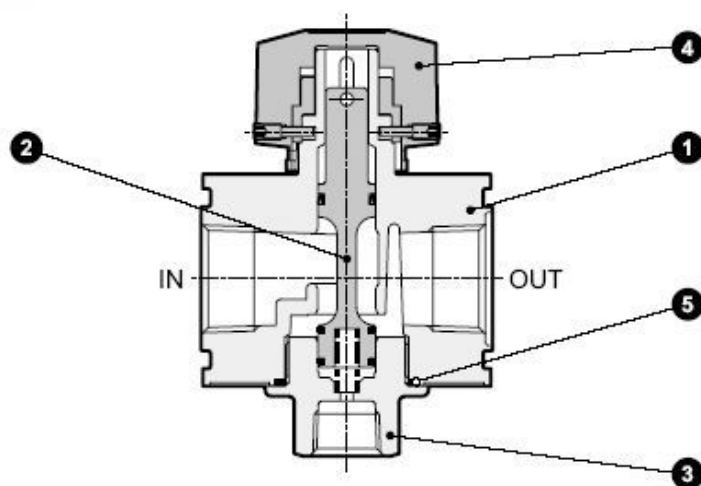


No.	Part name	Material
1	Plate cover	ABS Resin (Note 2)
2	Body	Aluminum alloy die-casting
3	Spool assembly	Aluminum alloy urethane resin
4	Bottom plug	PBT Resin (Note 1) (Note 2)
5	Knob	Aluminum alloy die-casting
6	O-ring	Nitrile rubber

Note 1: The metal bottom plug is used as a custom-order part.

Note 2: Flame resistant resin UL94 standard equivalent

● V6010-W



No.	Part name	Material
1	Body	Aluminum alloy die-casting
2	Spool assembly	Aluminum alloy, hydrogenated nitrile rubber
3	Bottom plug	Aluminum alloy die-casting
4	Knob	Aluminum alloy die-casting
5	O-ring	Nitrile rubber