

INSTRUCTION MANUAL

MASTER VALVE

02

AFS1-03-3

04

- 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.

For Safety Use

To use this product safely, basic knowledge of pneumatic equipment, including materials, piping, electrical system and mechanism, is required (ISO 4414 *1, JIS B 8370 *2).

We do not bear any responsibility for accidents caused by any person without such knowledge or arising from improper operation.

Our customers use this product for a very wide range of applications, and we cannot keep track of all of them. Depending on operating conditions, the product may fail to operate to maximum performance, or cause an accident. Thus, before placing an order, examine whether the product meets your application, requirements, and how to use it.

This product incorporates many functions and mechanisms to ensure safety. However, improper operation could result in an accident. To prevent such accidents, **read this operation manual carefully for proper operation.**

Observe the cautions on handling described in this manual, as well as the following instructions:

CAUTION :

- Do not touch electric wiring connections (exposed live parts) : this will cause an electric shock. During wiring, keep the power off. Also, do not touch these live parts with wet hands.

*1) ISO 4414 : Pneumatic fluid power ... Recommendations for the application of equipment to transmission and control systems.

*2) JIS B 8370 : General rule for pneumatic systems

Discontinue

No. SM-0650-A

OPERATING INSTRUCTIONS

Model

AFS 1 - $\begin{matrix} 02 \\ 04 \end{matrix}$ - 3

Thank you very much for adoption of the CKD products.

All the CKD products are produced under the severe quality control.

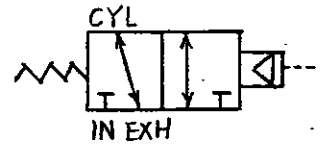
In order to use CKD products more effectively and to prolong its service life, read through the manual carefully.

Operating Instructions

02
AFS1 - 03 - 3 type master valve
04

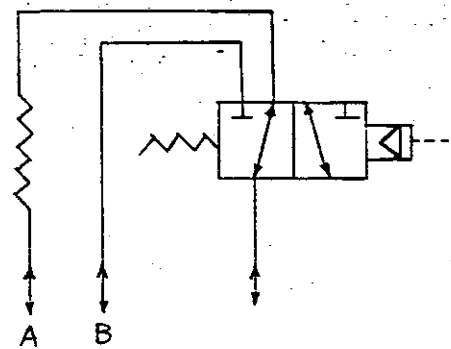
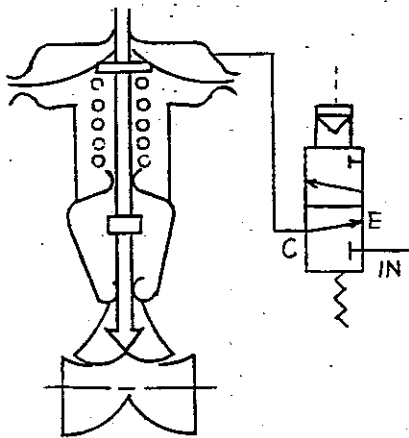
Operation Theory

Pilot signal OFF	IN Stop	CYL \nrightarrow EXH
Pilot signal ON	IN \nrightarrow CYL	EXH Stop

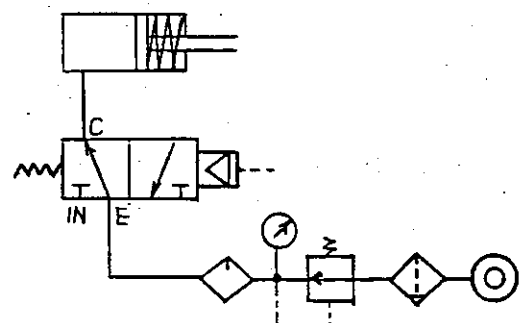
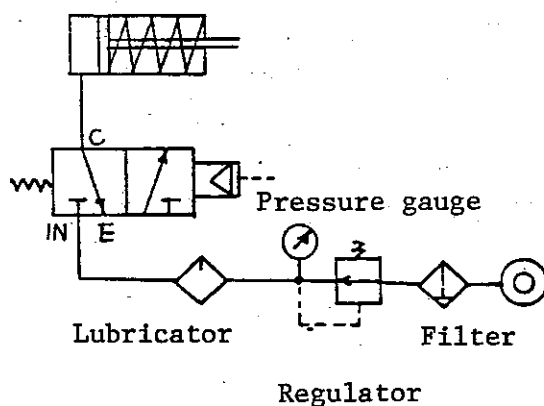


Example

1. In case of using diaphragm valve
2. In case of flow direction change-over



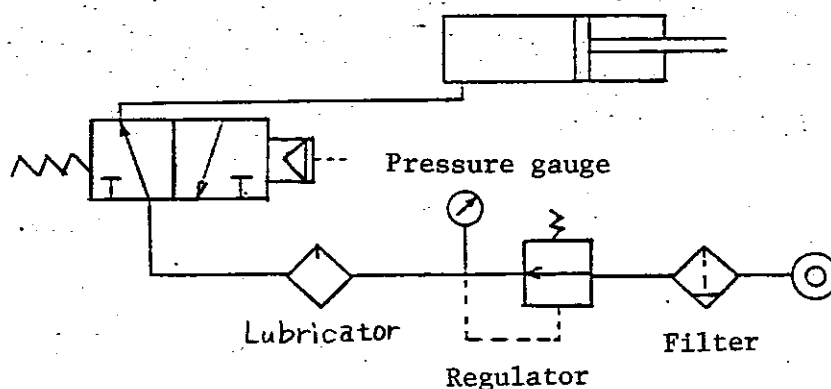
3. In case of operating the single pressure cylinder and not operating the cylinder at the signal OFF.
4. In case of operating the single pressure cylinder and operating the cylinder at the signal ON.



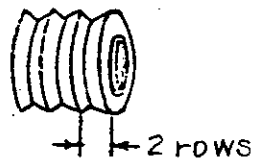
Others

1. Because of this is a 2-position valve, there is no neutral position.
2. If the speed control of this cylinder is required, connect a metalling valve (Needle type) to exhaust side.
3. Besides the air signal operation, it is possible to operate manually by pushing with a rod from above the rubber bushings.

Piping and Installation



1. Before installing the valve, inside the pipe should be cleaned as much as possible.
 - (a) Remove, dust, burr, etc., well. (Perform flushing before installing it.)
 - (b) Apply sealant up to the second row of the thread.



2. Install a filter and an oiler at the valve front. If air quality is poor, when using a reciprocal compressor, install a filter for far removal.
3. The valve should be installed as to become parallel to the spool (piston related).
4. When installing, never apply any excessive force.
5. The valve should be installed where there is less vibration and shock.
6. After piping, check to see if there is any leakage from each part.
7. Provide an enough space for maintenance work.
8. Be sure to drain out excessive moisture.

Maintenance Control

(A) Disassembling

1. Disassembling of valve body

- (1) Take out the cover.
- (2) Remove the pilot valve body.
- (3) Remove a cap to take out a spring.
- (4) Pull out a spool.
- (5) Pull out a sleeve.

Refer to the drawing (CD-583758, CD-583759)

2. Cautions

- (1) Never leave a sleeve in the air so long after being pulled out.
- (2) When pulling out the sleeve and spool, do not touch them with bare hands. You should always wear rubber gloves. (A part where touched is easy to corrode.)
- (3) The sleeve may not be taken out so often. (O-ring may be damaged.)
- (4) When assembling, be sure to clean outer surface of piston, spring hole, inner surface of sleeve, etc.
- (5) Tighten cap and pilot valve body firmly. (It is easy to slip off when used so frequently.)
- (6) Though this is a waterproof mechanism, special care should be taken to prevent water from getting in, when using outdoor.
- (7) Rustproofing shall be provided when using the valve under the bad atmosphere.
- (8) When the valve is left unused for a long period of time, manually start to operate at the beginning. (Manual device is option.)
- (9) When the operation is finished, be sure to stop air source and drain air and water out.