

## Metal free 2,3 port solenoid valve for chemical liquid MR16 Series



METAL FREE 2, 3 PORT SOLENOID VALVE FOR CHEMICAL LIQUIDS MR16 SERIES


Achieved making  
analytical equipment  
with high-tacted.

*New*



*MR16*

*Medical  
Products*

 Before use, make sure to read the safety precautions on "General Purpose Valves (Catalog No. CB-03-1SA)".

**CKD Corporation**

CC-1231A

# The first in the industry! Rocker valve with indicator is now available!

# Viewable

Volumetric capacity  
**50 $\mu$ l**



**LED light  
Mounted as  
standard**

LED is lighten when energized for visual confirmation.



**The first  
in the  
industry**

Mechanical indicator to visually confirm the valve state open/close directly.



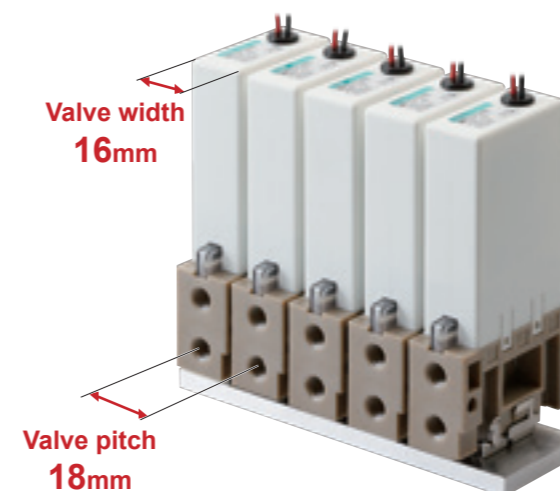
Compact metal free 2,3 port solenoid valve for chemical liquid

# MR16 Series

## Space saving

Width 16mm, valve pitch 18mm

For actuator type, valve pitch can be set as 17mm.



(Unit: mm)

| Body type                                | Product width | Valve pitch |
|--|---------------|-------------|
| Actuator type                            | 16            | 17          |
| Direct piping type                       | 16.4          | 17*         |
| Direct piping type (with mounting plate) | 16.5          | 18          |

\*This will be 16.4mm, if direct piping type is connected.

## High corrosion proof metal free structure

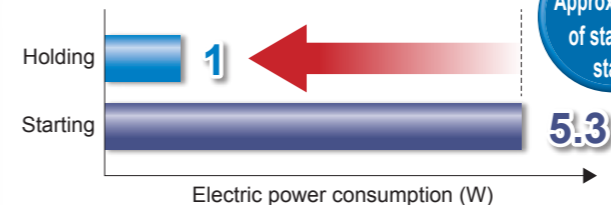
PEEK resin is used for body

Resin and rubber with high corrosion proof for wetted parts to adapt to various fluids.

|                  |          |
|------------------|----------|
| Body material    | PEEK     |
| Sealant material | FKM,EPDM |

## Power saving substrate is mounted as standard

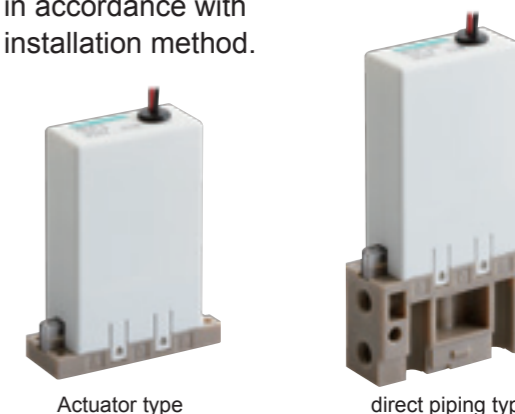
With lessening heat of coil, prevents heat influence to the fluid.



## Different body types

Actuator type and direct piping type are available.

Body type is selectable, in accordance with installation method.



## Wide pressure range

Max 0.3MPa, available to use under negative pressure condition

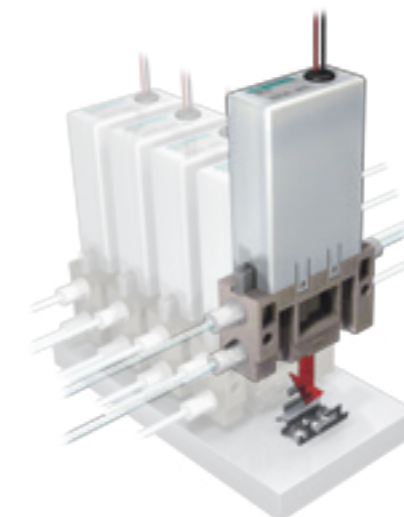
With volumetric capacity of less than 50 $\mu$ l, achieved high pressure. Available for negative pressure when syringe or waste liquid switching.

Working pressure(MPa) -0.08-0.3

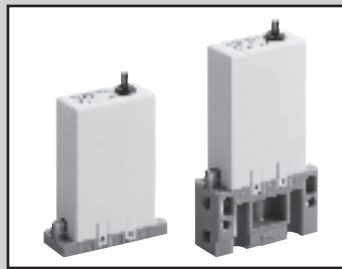
## Easy maintenance

Mounting with a single touch

Easy installation and removing of product. Installable even after piping.







Metal free 2,3 port solenoid valve for chemical liquid

# MR16 Series

Working fluid: Water, pure water, chemical liquid  
Port size: M6 , 1/4-28UNF

How to order, internal structure drawing, and material of main part

## Specifications

| Descriptions                            | 2 port   |                         | 3 port         |
|---|--|-------------------------|----------------|
|   | MR16-2NC   | MR16-2NO                | MR16-3         |
| Actuation                               | NC (normally closed) type  | No (normally open) type | Universal type |
| Working fluid                           | Water, pure water, chemical water (fluid that will not corrode the material of wetted parts) |                         |                |
| Working pressure MPa                    | -0.08 to 0.3   |                         |                |
| Proof pressure MPa                      | 0.45   |                         |                |
| Fluid temperature °C                    | 5 to 40  |                         |                |
| Ambient temperature °C                  | 5 to 45  |                         |                |
| Atmosphere                              | Not in explosive or corrosive environment  |                         |                |
| Valve seat leakage cm <sup>3</sup> /min | 0 (water pressure)   |                         |                |
| Port size                               | M6 , 1/4-28UNF   |                         |                |
| Orifice size mm                         | 1.6  |                         |                |
| Cv                                      | 0.05   |                         |                |
| Volumetric capacity μl                  | 50 (*7)  |                         |                |
| Valve structure                         | Diaphragm type direct acting (locker type)   |                         |                |
| Mounting orientation                    | Free   |                         |                |
| Weight g                                | 75 (Actuator type), 85 (direct piping type)  |                         |                |
| <b>Electrical specifications</b>        |  |                         |                |
| Rated voltage                           | DC24V / DC12V  |                         |                |
| Voltage fluctuation range               | ±10%   |                         |                |
| Power consumption W                     | Starting   | 5.3 (*9)                |                |
|   | Holding  | 1                       |                |
| Leakage current mA                      | 1.0 or less (DC24V), 2.0 or less (DC12V) (*12)   |                         |                |
| Thermal class                           | Class 130 (B)  |                         |                |

- \*1 : Check compatibility between the material of each components and working fluid.  
Working fluid must not adhere to main body.
- \*2 : Foreign matter etc. inside the piping may cause malfunction and valve seat leakage. Always flush the piping before installing the valve.
- \*3 : Do not use metal fittings. They could damage the port.  
Use a PP or fluorine resin fitting.  
Refer to the recommended torque for fitting below.  
Recommended tightening torque: 0.10 to 0.15N/m
- \*4 : When standing secondary piping, do not make it higher than 2 m. Use tube or pipes with a bore the same size or larger than the orifice size, and fix the pipe in place.
- \*5 : Do not disassemble the product.
- \*6 : Do not use for hydrochloric acid, hydrofluoric acid, or nitric acid.  
Select FKM for diaphragm material, if sodium hypochlorite (soda) is used.  
(EPDM will be debased even with chlorine residual level of tap water, if long term using.)  
If valid chloride concentration for sodium hypochlorite (soda) is higher than 0.1%, please contact CKD.
- \*7 : Volume of wetted area formed by the product and diaphragm. However, this except for piping section volume.
- \*8 : Solenoid valve is with polarity. Connect the red lead to the plus (+) side.
- \*9 : 100ms from power distribution starting.
- \*10 : After the solenoid valve is turned OFF completely, wait at least 1 sec. then turn ON.
- \*11 : Do not hold lead wire, when handling.
- \*12 : Keep leakage current from the control circuit within the levels below.
- \*13 : For option with mounting plate, remove the product from mounting plate with sliding the product toward piping direction by pulling lever.
- \*14 : As this product generates noise due to the integrated electronic oscillator, noise prevention should be taken on the same power supply wire.

## How to order

MR16 - 2NC - M6 - EF L B - A - DC24V

Model no.

A Quantity of port/model no.

B port size

C Material combination

D Options with circuit board

E Options with mounting plate

\*1

F Indicator direction

\*2

G voltage

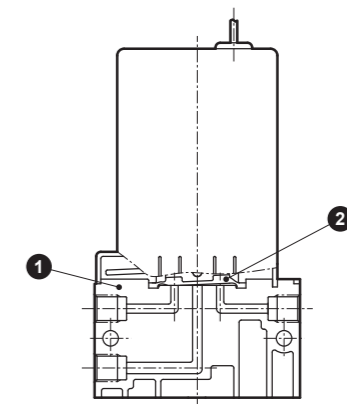
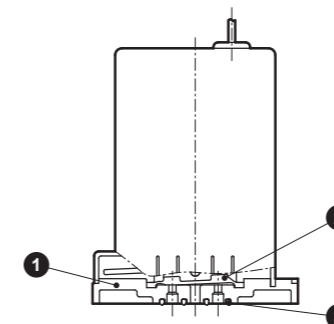
| Symbol                               | Descriptions                          |                  |
|--------------------------------------|---------------------------------------|------------------|
| <b>A Quantity of port/model no.</b>  |                                       |                  |
| 2NC                                  | 2 port/NC (normally closed) type      |                  |
| 2NO                                  | 2 port/NO (normally opened) type      |                  |
| 3                                    | 3 port/Universal type                 |                  |
| <b>B port size</b>                   |                                       |                  |
| Blank                                | Actuator type                         |                  |
| M6                                   | M6 (direct piping type)               |                  |
| 4U                                   | 1/4-28UNF (direct piping type)        |                  |
| <b>C Material combination</b>        |                                       |                  |
|                                      | Body material                         | Sealant material |
| EF                                   | PEEK                                  | FKM              |
| EE                                   | PEEK                                  | EPDM             |
| <b>D Options with circuit board</b>  |                                       |                  |
| L                                    | With light/power saving circuit board |                  |
| <b>E Options with mounting plate</b> |                                       |                  |
| Blank                                | Without mounting plate                |                  |
| B                                    | Mounting plate                        |                  |
| <b>F Indicator direction</b>         |                                       |                  |
| A                                    | Port A side                           |                  |
| B                                    | Port B side                           |                  |
| <b>G voltage</b>                     |                                       |                  |
| DC24V                                | 24VDC                                 |                  |
| DC12V                                | 12VDC                                 |                  |

- \*1 : "B" can be selected only for port sizes of "M6"/"4U".
- \*2 : Only "A" can be selected for quantity of port/model "2NC" and only "B" can be selected for "2NO".  
For "3", both "A" and "B" can be selected.

## Internal structure drawing, and material of main part

● Actuator

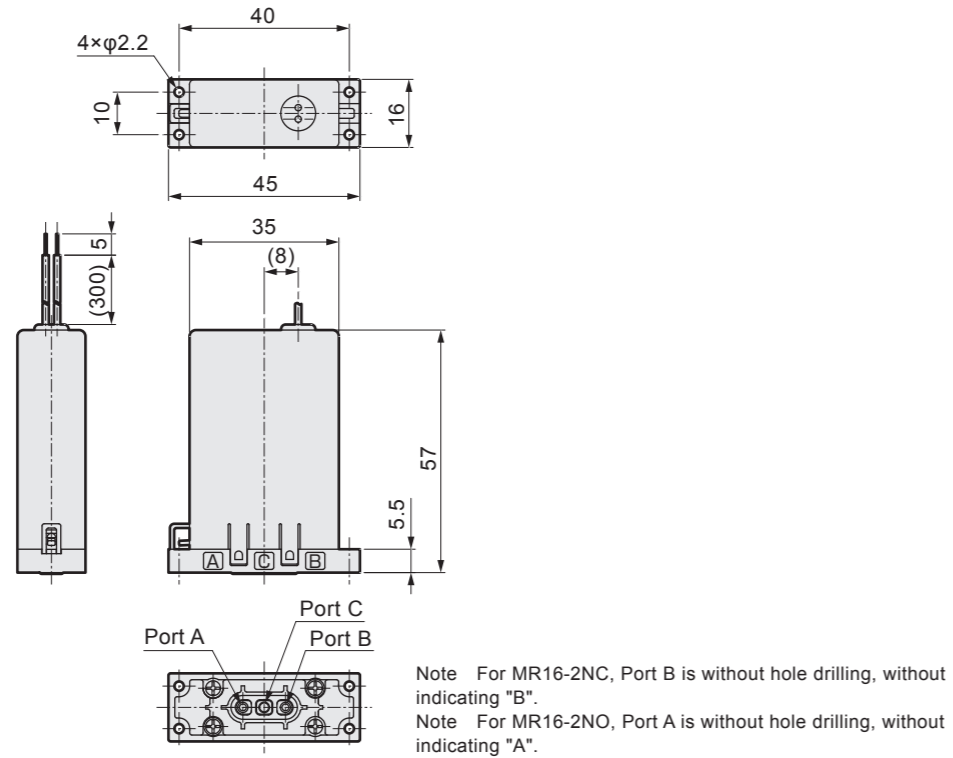
● Direct piping type



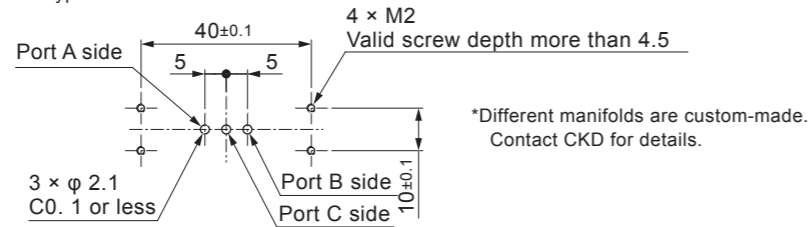
| No. | Parts name | Material  |  |
|-----|------------|-----------|--|
| 1   | Body       | PEEK      | Polyether ether ketone                   |
| 2   | Diaphragm  | FKM, EPDM | Fluoro rubber, ethylene-propylene rubber |
| 3   | Gasket     | FKM, EPDM | Fluoro rubber, ethylene-propylene rubber |

Dimensions

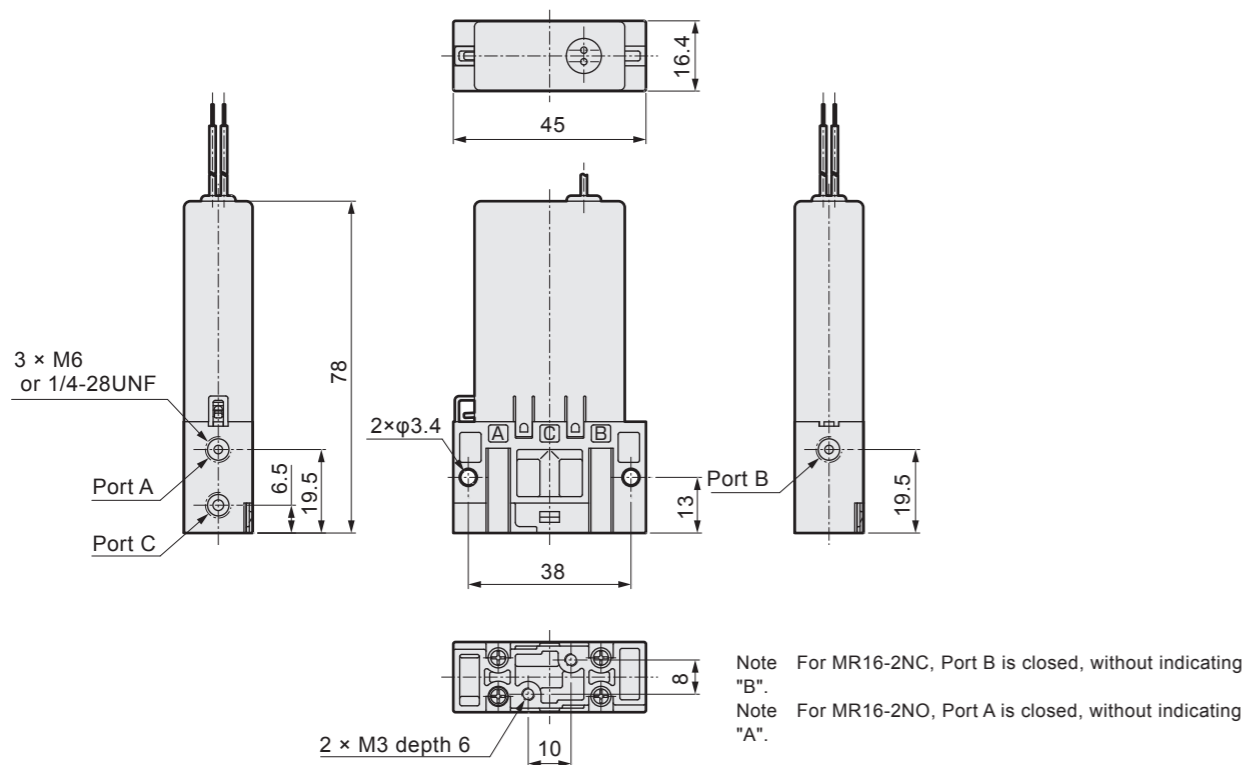
● Actuator type



● Actuator type installation dimensions



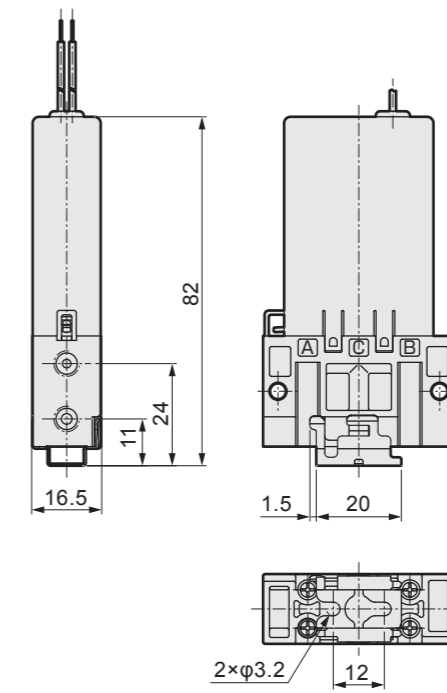
● Direct piping type



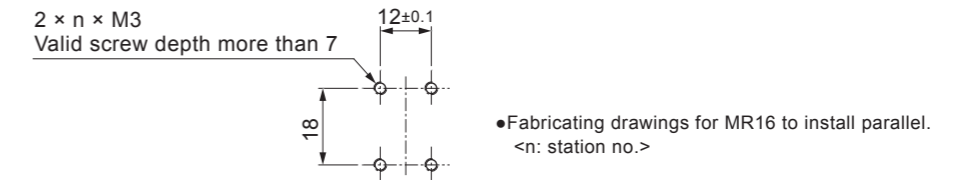
Dimensions

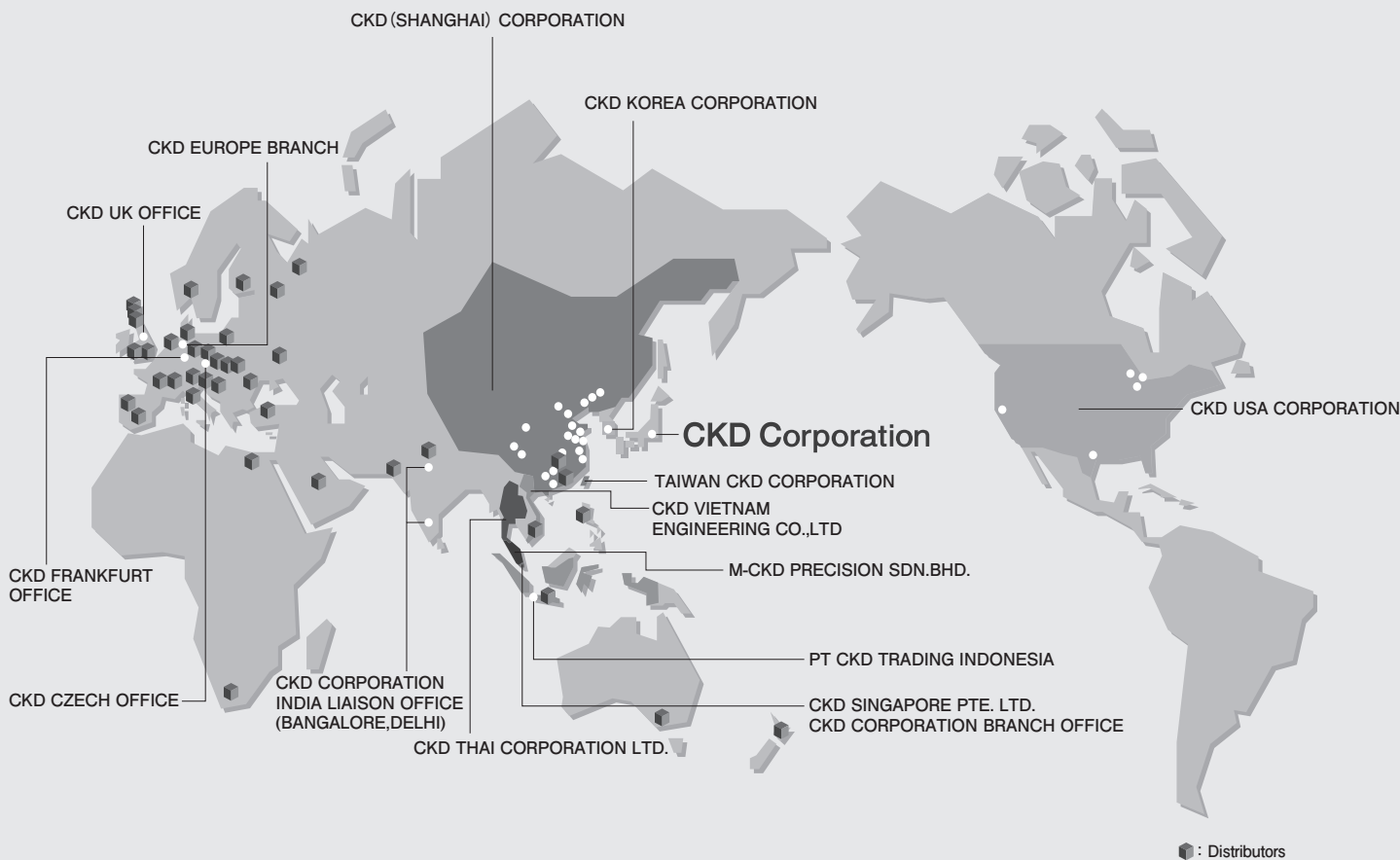
Dimensions

● Direct piping type (with mounting plate)



● Direct piping type (with mounting plate) installation dimensions





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