

# 3 Port Direct Acting Valve 3QRA1•3QRB1 Series



3 PORT DIRECT ACTING VALVE 3QRA1-3QRB1 SERIES

High-speed **atmospheric release** by large flow rate and quick response

Suitable for ON/OFF control of air blow



New **self hold type** added  
to 3QR Series!!





3 Port Direct Acting Valve

# 3QRA1-3QRB1 Series

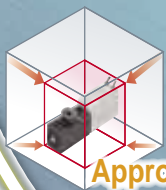
High-speed **atmospheric release** by large flow rate and quick response

## QUALITY

Contributes to increase in speed and optimization of device (downsizing and improved maintainability)

Compact and light in weight  
**19 g (Lightest in its class)**  
**10 mm** (w) x 20 mm (H) x 46 mm (D)

In-house comparison



Volume

Less than **1/2**

Weight

Approximately **1/3**

Durability exceeding  
**100 million cycles**

(Tested under strict conditions of CKD standard)



## QUICK

High-speed transition between vacuum and atmospheric release by enhanced flow rate and response time

Large flow rate

C: **0.4** (dm<sup>3</sup>/s·bar) Large flow rate

C: **0.3** (dm<sup>3</sup>/s·bar) Standard

Quick response

**4±1 ms**

**1.5±1 ms** (ON/OFF)

## QUALIFIED

Compliant to various applications

All ports support vacuum-positive pressure transition

Pressurizing allowed universally

- Ozone-proof (Rubber raw material FKM used)
- Compatible with RoHS directive
- Restricting with copper-based materials (air flow path and sliding section)

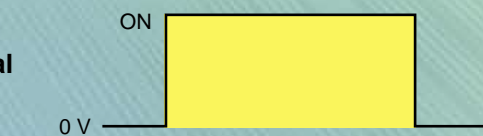
● **New self holding function added**



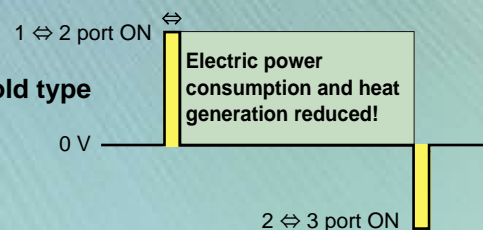
■ Maintains valve position during power failure (useful for vacuum system)

■ Does not require continuous energization, which reduces electric power consumption and heat generation

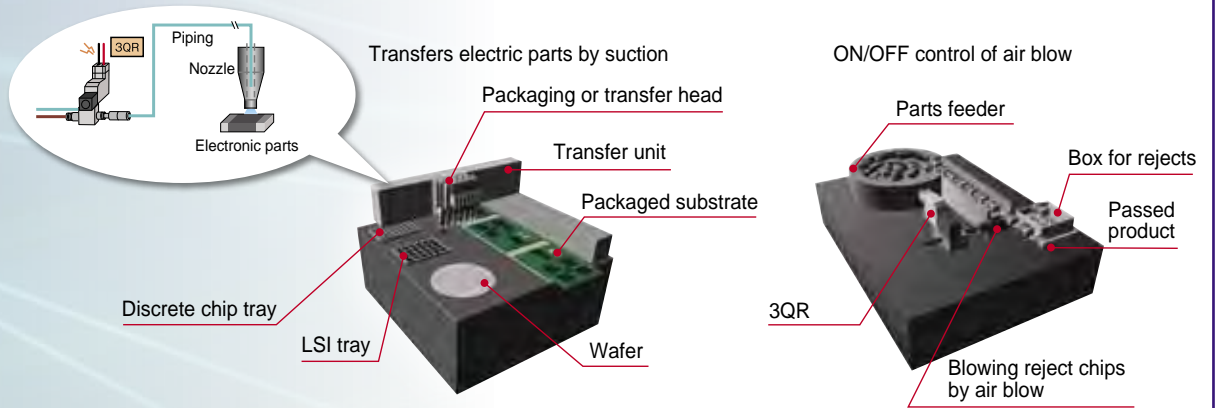
Normal



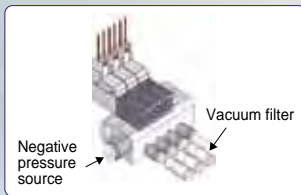
Self hold type



## ● Application sample



## ● Suitable for vacuum switching application!



Large flow rate only with width of 10 mm!

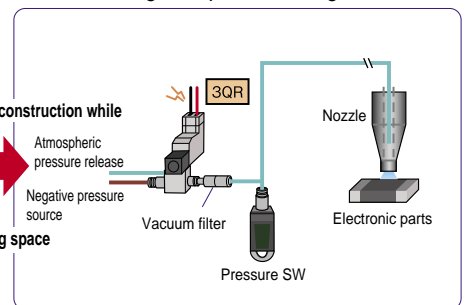
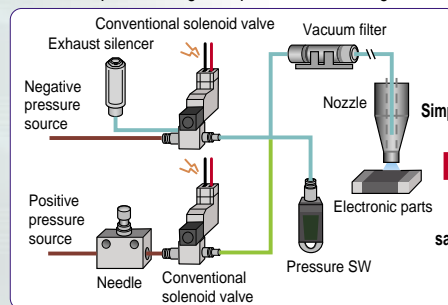
Response time between vacuum and atmospheric pressure is short and capable of high speed operation

### ■ No positive pressure valve and needle required. Simplified control while saving space.

• Universal positive/negative pressure switching control

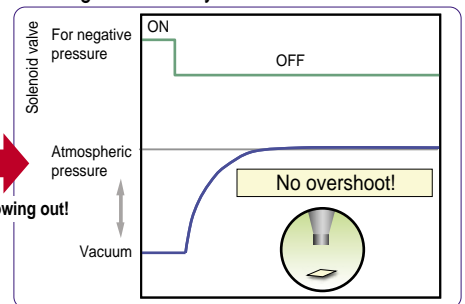
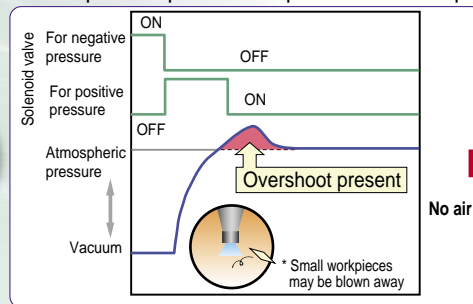
• 3QR negative pressure single control

Device configuration



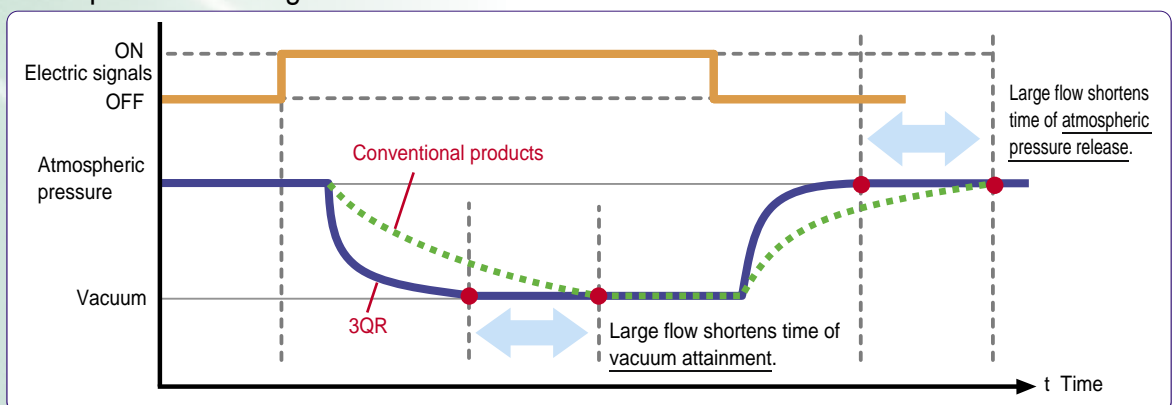
### ■ Vacuum release without positive pressure to prevent small chips from being blown away. (For details, consult us.)

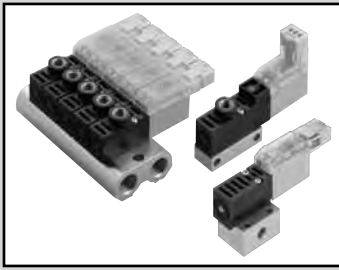
Electric response and pressure wave form



### ■ Improved response time by releasing vacuum without positive pressure and shortening suction time without increased vacuum flow.

<Response time image>





# 3 port direct acting valve

Discrete valve body piping and sub-plate piping

## 3QRA-3QRB Series

Individual wiring manifold, body piping and sub-plate piping

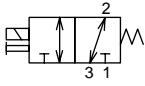
## M3QRA-M3QRB Series

● Applicable cylinder bore size: φ 6 to φ 25



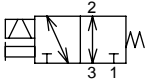
### JIS symbol

● 2-position universal type  
(Self reset)



Port Nos. 1, 2 and 3 indicate  
Port 1: P, NC  
Port 2: A, COM  
Port 3: R, NO,  
respectively.

(Self holding)



Port Nos. 1, 2 and 3 indicate  
Port 1: P, NC  
Port 2: A, COM  
Port 3: R, NO,  
respectively.

### Common specifications

Descriptions	Descriptions
Valve type and operation	Direct acting poppet valve
Working fluid	Compressed air and low vacuum
Max. working pressure MPa	0.70
Min. working pressure MPa	Low vacuum: -100 KPa
Proof pressure MPa	1.05 (low vacuum: -101 KPa)
Max. operating pressure differential MPa	0.70
Ambient temperature °C	-5 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not available *
Degree of protection	Dust proof
Vibration /shock resistance $m/s^2$	50 or less/300 or less
Atmosphere	Containing corrosive gas is impermissible

\* Lubrication will deteriorate the performance.

### Individual specifications

Descriptions	3QRA11		3QRB11		3QRA12		3QRB12		M3QRA11		M3QRB11		M3QRA12		M3QRB12	
	Port size	Port 1	M5						Rc1/8							
	Port 2	M5						M5								
	Port 3	M5						Rc1/8								
Response time Note 1 ON/OFF ms	4±1/1.5±1				5 or less				4±1/1.5±1				5 or less			
Weight g	24		27		28		31		19 (Discrete solenoid valve)				23 (Discrete solenoid valve)			

Note 1: Response time is the value for continuous operation under the condition of 0.5 MPa supply pressure at 20°C.

### Flow characteristics

Model no.	Option	Port 1 → 2		Port 2 → 1		Port 2 → 3		Port 3 → 2	
		C [dm <sup>3</sup> /(s · bar)]	S (references) [mm <sup>2</sup> ]	C [dm <sup>3</sup> /(s · bar)]	S (references) [mm <sup>2</sup> ]	C [dm <sup>3</sup> /(s · bar)]	S (references) [mm <sup>2</sup> ]	C [dm <sup>3</sup> /(s · bar)]	S (references) [mm <sup>2</sup> ]
3QRA1	Blank	0.30	1.5	0.32	1.6	0.32	1.6	0.30	1.5
	H	0.36	1.8	0.38	1.9	0.38	1.9	0.36	1.8
3QRB1	Blank	0.30	1.5	0.34	1.7	0.36	1.8	0.34	1.7
	H	0.36	1.8	0.40	2.0	0.40	2.0	0.40	2.0
M3QRA1	Blank	0.30	1.5	0.32	1.6	0.32	1.6	0.30	1.5
	H	0.36	1.8	0.38	1.9	0.38	1.9	0.36	1.8
M3QRB1	Blank	0.30	1.5	0.34	1.7	0.36	1.8	0.34	1.7
	H	0.36	1.8	0.40	2.0	0.40	2.0	0.40	2.0

### Ozone specifications

Conforms to low-concentration ozone specifications as standard.

### Secondary battery specifications

Conforms to our P4 series equivalent specifications as standard.

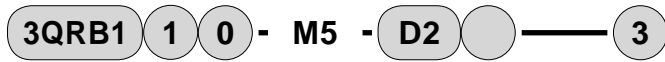
### Electric connection circuit diagram

Voltage type	Switching position category	Option	Electric wire circuit diagram	Connection
DC	2-position single solenoid (self reset)	-		Grommet lead wire (blank) Not polarized
		With surge suppressor and light		C-connector (C2*·C3) D-connector (D2*·D3) Not polarized
	Large flow rate with surge suppressor and light		C-connector (C2*·C3) D-connector (D2*·D3) With polarity	
	2-position single solenoid (self hold)	Surge suppressor and light		C-connector (C2*·C3) D-connector (D2*·D3) With polarity

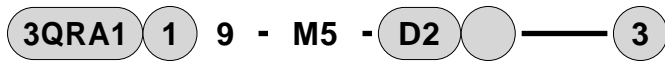


### How to order

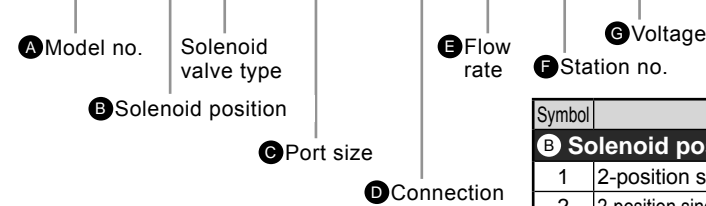
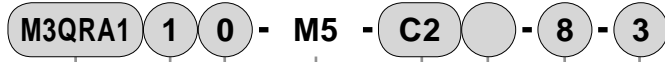
- Discrete solenoid valve



- Solenoid valve unit



- Manifold



A Model no.			
Discrete		Manifold	
Body porting	Sub plate porting	Body porting	Sub plate porting
3QRA1	3QRB1	M3QRA1	M3QRB1

Symbol	Descriptions	3QRA1	3QRB1	M3QRA1	M3QRB1
<b>B Solenoid position</b>					
1	2-position single solenoid (self reset)	●	●	●	●
2	2-position single solenoid (self hold) Note 2	●	●	●	●
8	Mix manifold Note 3			●	●

<b>C Port size</b>					
M5	M5	●	●	●	●

<b>D Connection</b>					
<b>Grommet lead wire</b>					
Blank	Grommet lead wire (300 mm) Note 1	●	●	●	●
<b>C-connector (axial lead wire)</b>					
C2	Lead wire (300 mm) with surge suppressor and light	●	●	●	●
C20	Lead wire (500 mm) with surge suppressor and light	●	●	●	●
C21	Lead wire (1000 mm) with surge suppressor and light	●	●	●	●
C22	Lead wire (2000 mm) with surge suppressor and light	●	●	●	●
C3	No lead wire with surge suppressor and light	●	●	●	●

<b>D-connector (radial lead wire)</b>					
D2	Lead wire (300 mm) with surge suppressor and light	●	●	●	●
D20	Lead wire (500 mm) with surge suppressor and light	●	●	●	●
D21	Lead wire (1000 mm) with surge suppressor and light	●	●	●	●
D22	Lead wire (2000 mm) with surge suppressor and light	●	●	●	●
D3	No lead wire with surge suppressor and light	●	●	●	●

<b>E Flow</b>					
Blank	Standard 2 W	●	●	●	●
H	Large flow rate 3.2 W → 2.4 W	●	●	●	●

<b>F Station number</b>					
2	2-station				
to				●	●
20	20-station				

<b>G Voltage</b>					
3	24 VDC	●	●	●	●
4	12 VDC	●	●	●	●

### Note on model no. selection

Note 1: For connection with the grommet lead wire (300 mm), "2", 2-position single solenoid (self hold) for B and "H", large flow rate for E are not selectable.

Note 2: For "2", 2-position single solenoid (self hold), "H" for E and "4" for G are not selectable.

Note 3: Combination with a masking plate  
Combination of A and B type is not available.  
Solenoid position "1" and "2" cannot be combined.

### <Example of model no.>

#### M3QRA110-M5-C2-7-3

- A** Model: M3QRA1 (body porting)
- B** Solenoid position : 2-position single solenoid
- C** Port size : M5
- D** Connection : Lead wire 300 mm  
With surge suppressor and light
- E** Flow rate : Standard 2W
- F** Station number : 7-station
- G** Voltage : 24 VDC

### How to order masking plate kit

#### 3QR1-MP-KIT

\* Gasket and set screw attached

### Electric connection

#### ● 3QRA11-3QRB11

Blank	Grommet lead wire	C2	C3	D2	D3
	Lead wire: 300 mm	C-connector with lead wire, with surge suppressor and light	C-connector No lead wire with surge suppressor and light	D-connector with lead wire, with surge suppressor and light	D-connector without lead wire, with surge suppressor and light
		• Lead wire length C2 : 300 mm C20 : 500 mm C21 : 1000 mm C22 : 2000 mm 		• Lead wire length D2 : 300 mm D20 : 500 mm D21 : 1000 mm D22 : 2000 mm 	

#### ● 3QRA12-3QRB12

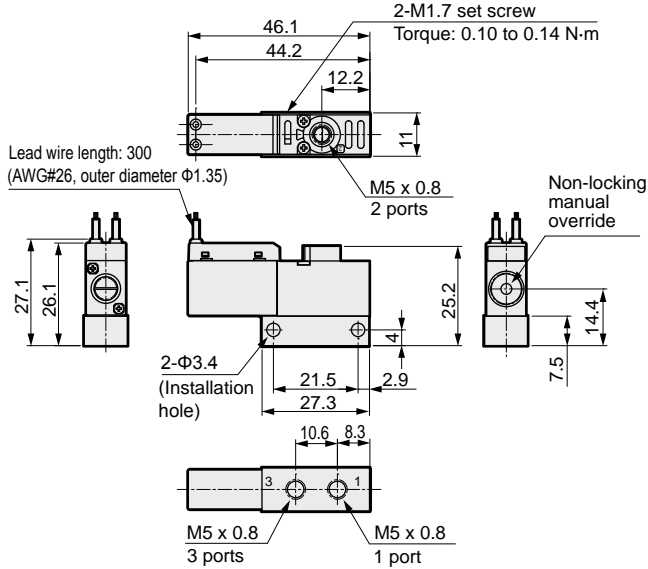
C2	C3	D2	D3
C-connector with lead wire, with surge suppressor and light	C-connector without lead wire, with surge suppressor and light	D-connector with lead wire, with surge suppressor and light	D-connector without lead wire, with surge suppressor and light
• Lead wire length D2 : 300 mm D20 : 500 mm D21 : 1000 mm D22 : 2000 mm 		• Lead wire length D2 : 300 mm D20 : 500 mm D21 : 1000 mm D22 : 2000 mm 	

# 3QRA-3QRB Series

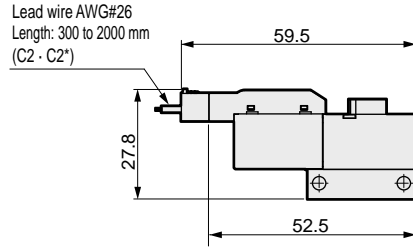
## Dimensions (3QRA11-3QRB11)

### 3QRA110-M5

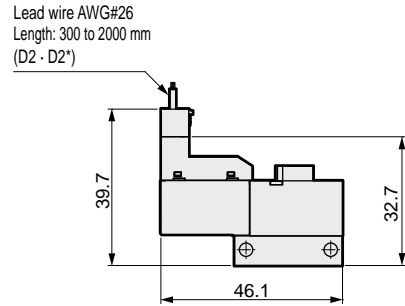
- 2-position single solenoid: Grommet lead wire



- C-connector (C2-C3)

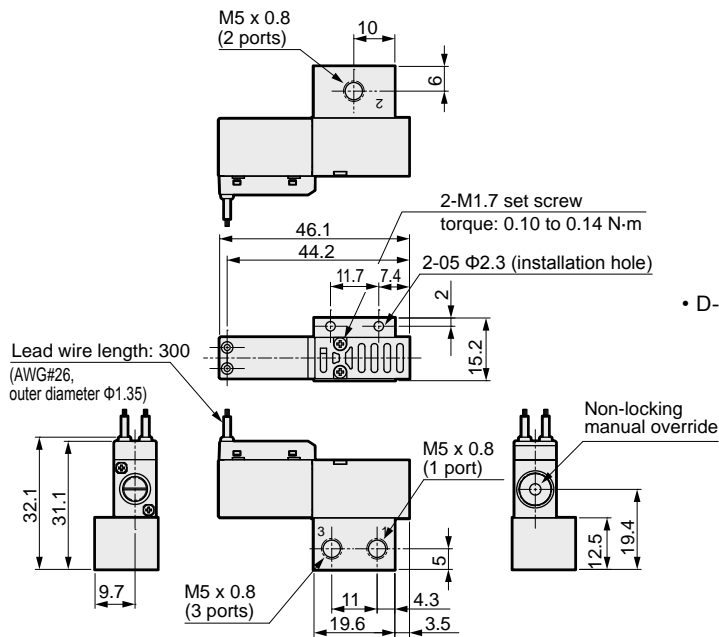


- D-connector (D2-D3)

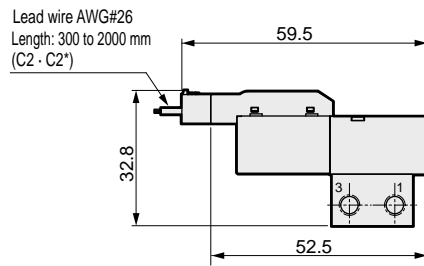


### 3QRB110-M5

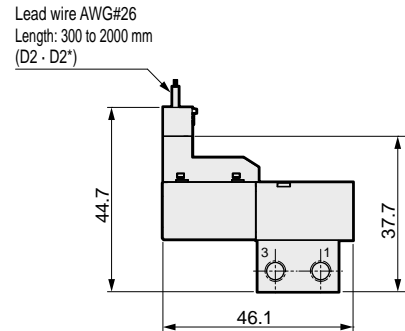
- 2-position single solenoid: Grommet lead wire



- C-connector (C2-C3)

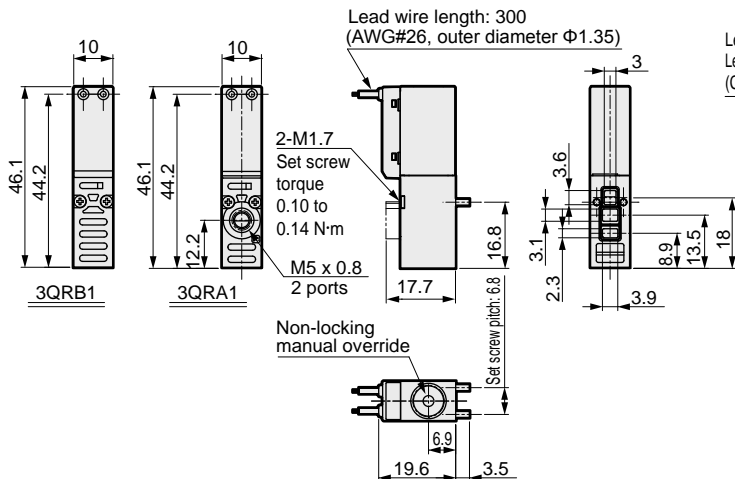


- D-connector (D2-D3)

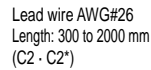


### 3QRA/B119-00 (discrete solenoid valve)

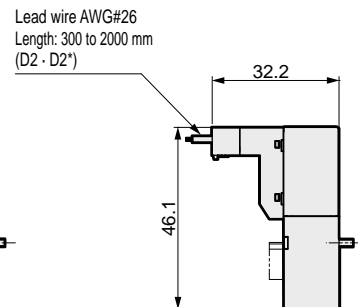
- 2-position single solenoid: Grommet lead wire



- C-connector (C2-C3)



- D-connector (D2-D3)



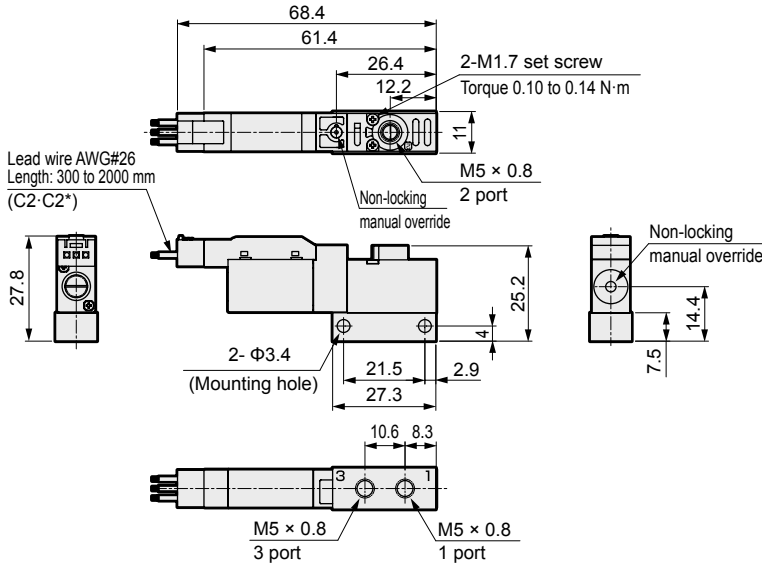


# 3QRA-3QRB Series

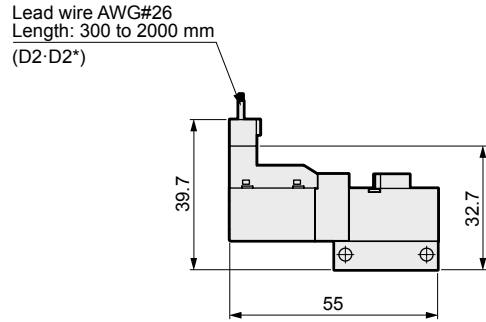
## Dimensions (3QRA12-3QRB12)

### 3QRA120-M5

- 2-position single solenoid: C-connector (C2·C3)

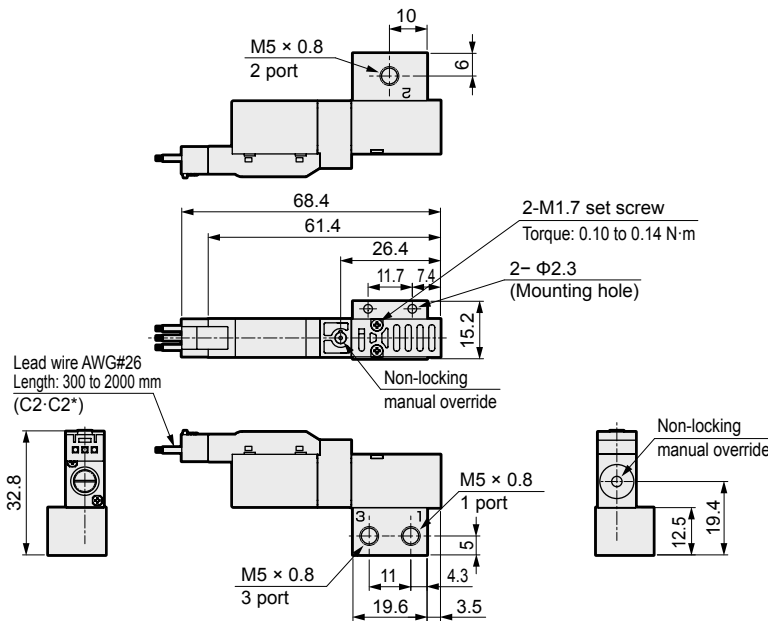


- D-connector (D2·D3)

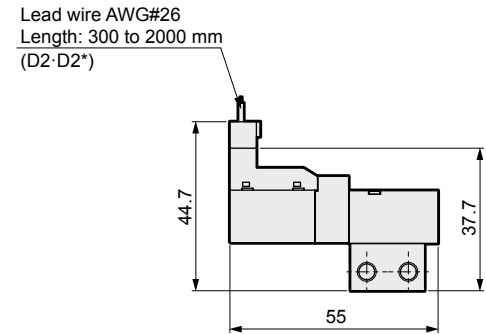


### 3QRB120-M5

- 2-position single solenoid: C-connector (C2·C3)

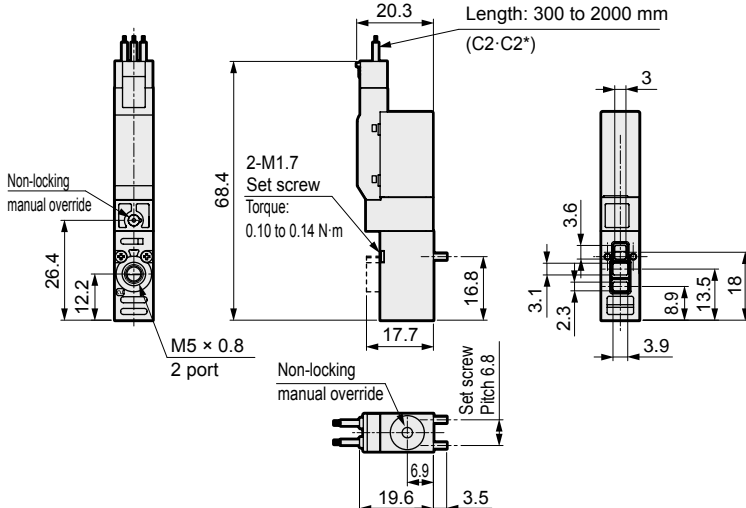


- D-connector (D2·D3)

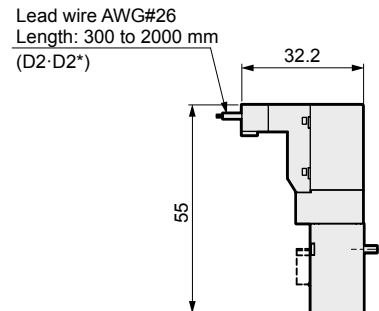


### 3QRA/3QRB129-00 (Discrete solenoid valve)

- 2-position single solenoid: C-connector (C2·C3)
- Lead wire AWG#26  
Length: 300 to 2000 mm  
(C2·C2\*)



- D-connector (D2·D3)



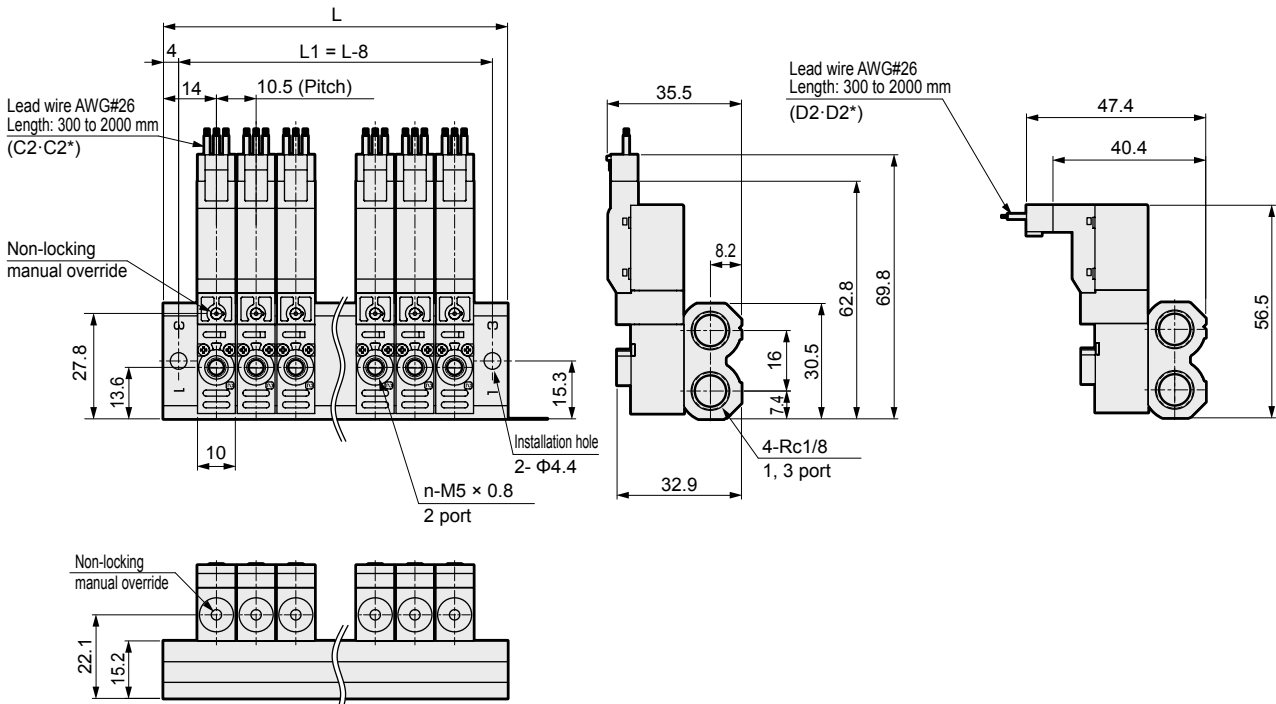


## Dimensions (M3QRA12·M3QRB12)

### M3QRA120-M5

• 2-position single solenoid: C-connector (C2·C3)

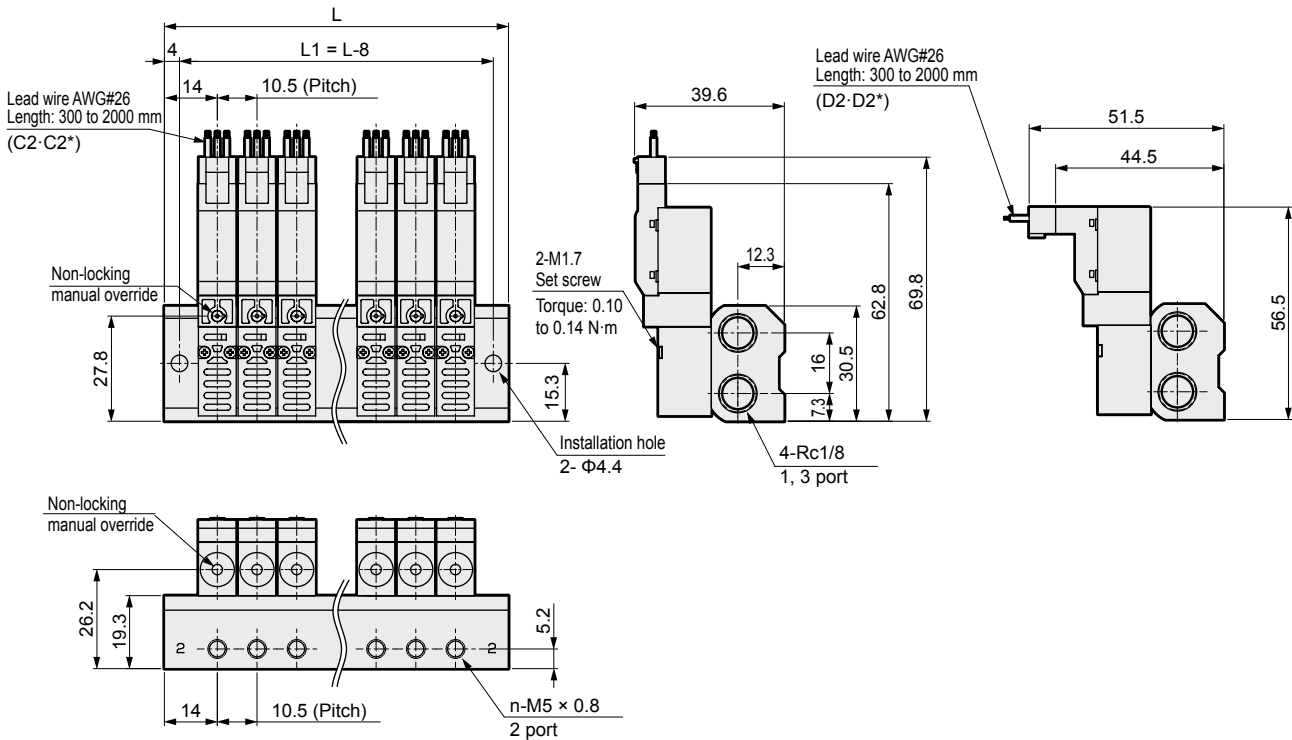
• D-connector (D2·D3)



### M3QRB120-M5

• 2-position single solenoid: C-connector (C2·C3)

• D-connector (D2·D3)

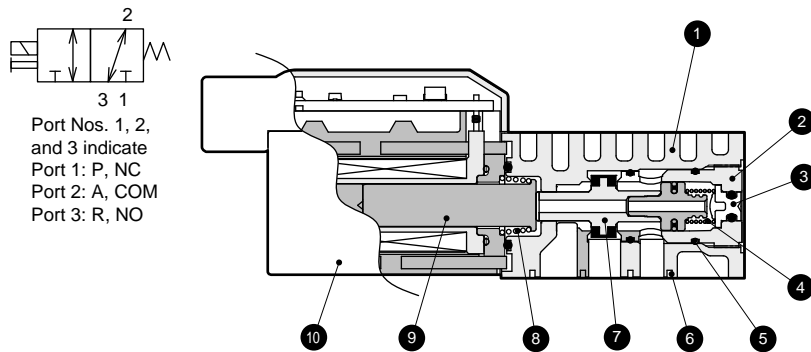


Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	38.5	49.0	59.5	70.0	80.5	91.0	101.5	112.0	122.5	133.0	143.5	154.0	164.5	175.0	185.5	196.0	206.5	217.0	227.5
L1	30.5	41.0	51.5	62.0	72.5	83.0	93.5	104.0	114.5	125.0	135.5	146.0	156.5	167.0	177.5	188.0	198.5	209.0	219.5

# 3QRA-3QRB Series

## Internal structure and parts list

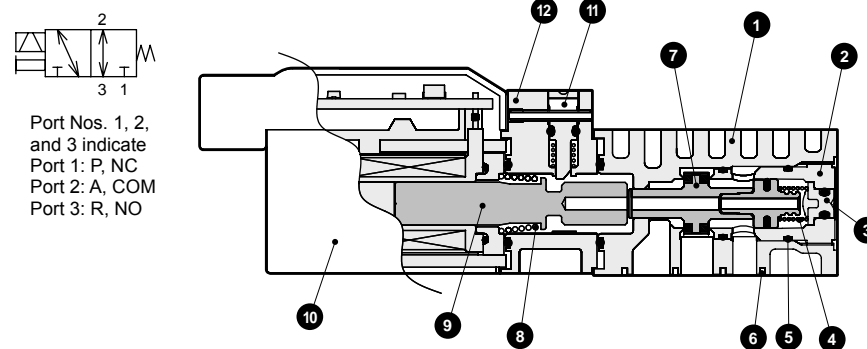
### ● 2-position single solenoid (self reset)



### Main parts list

No.	Parts name	Material
1	Body	Resin
2	Body (plug)	Resin
3	Manual button	Resin
4	Valve spring	Stainless steel
5	O ring	Fluoro rubber
6	Body gasket	Fluoro rubber
7	Valving element	Aluminum, hydrogenated nitrile rubber
8	Plunger spring	Stainless steel
9	Plunger	Stainless steel
10	Coil assembly	-

### ● 2-position single solenoid (self hold)



### Main parts list

No.	Parts name	Material
1	Body (body)	Resin
2	Body (plug)	Resin
3	Manual button	Resin
4	Valve spring	Stainless steel
5	O ring	Fluoro rubber
6	Body gasket	Fluoro rubber
7	Valving element	Aluminum, hydrogenated nitrile rubber
8	Plunger spring	Stainless steel
9	Plunger	Stainless steel
10	Coil assembly	-
11	Manual button B	Resin
12	Manual block	Resin

## Operational principle

### ● 2-position single solenoid (self reset)

3QR Series structure is a pressure balance type poppet valve, which is not affected by the working pressure and achieves a low wattage large flow rate performance.

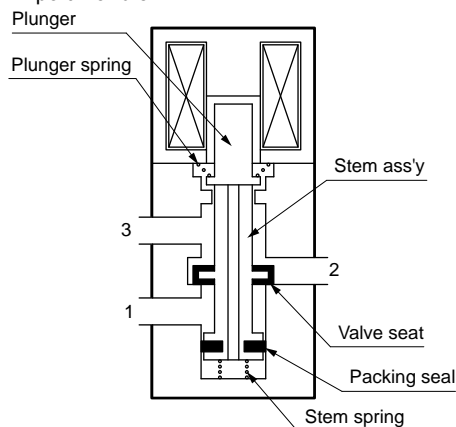
Port can be pressurized from either 1, 2 or 3 port.

The diameters of valve seat and packing seal of stem assembly are same. Since pressure differentials of each port are stabilized by through hole of stem assembly, pressure is well balanced during both ON and OFF.

### ● When de-energized

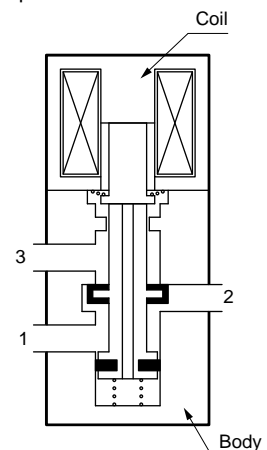
The stem assembly is pushed toward port 1 side by the plunger spring force transmitted by the plunger.

Valve seat and packing seal of stem assembly close port 1, while opening port 2 and 3.

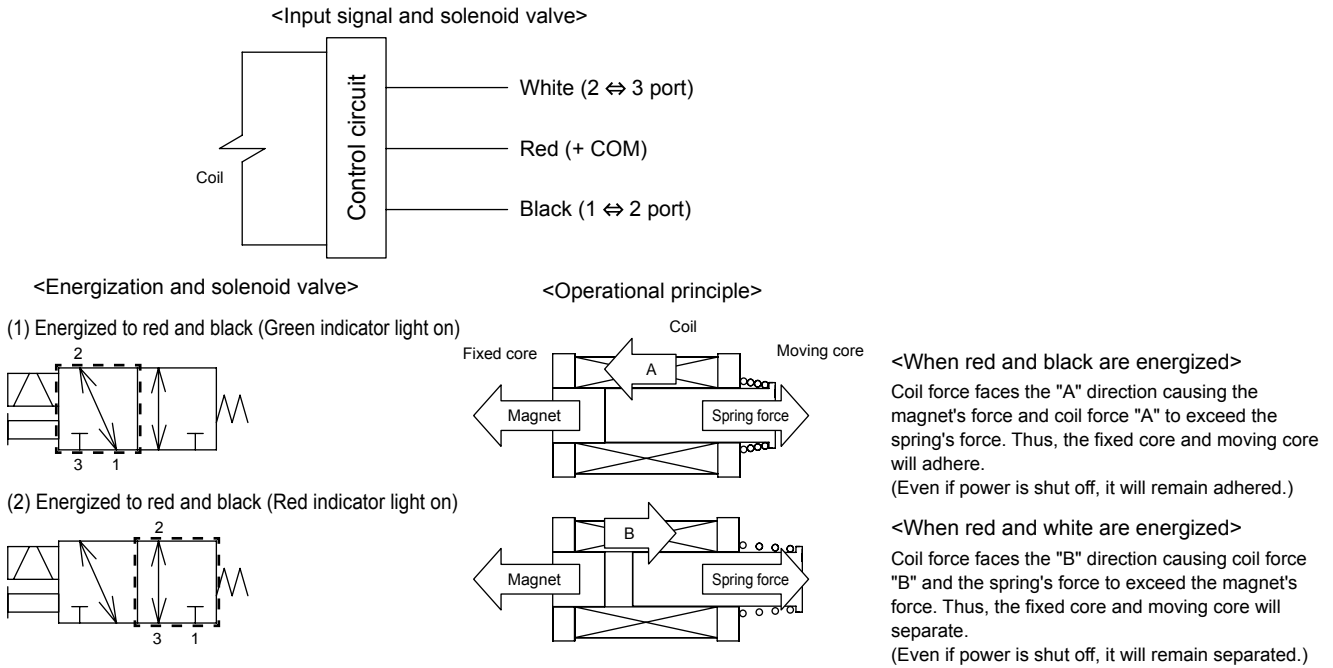


### ● When energized

When energizing the coil, the plunger is adsorbed toward the coil side, while the stem assembly is moved by the stem spring force. This opens port 1 and 2, but closes port 3.



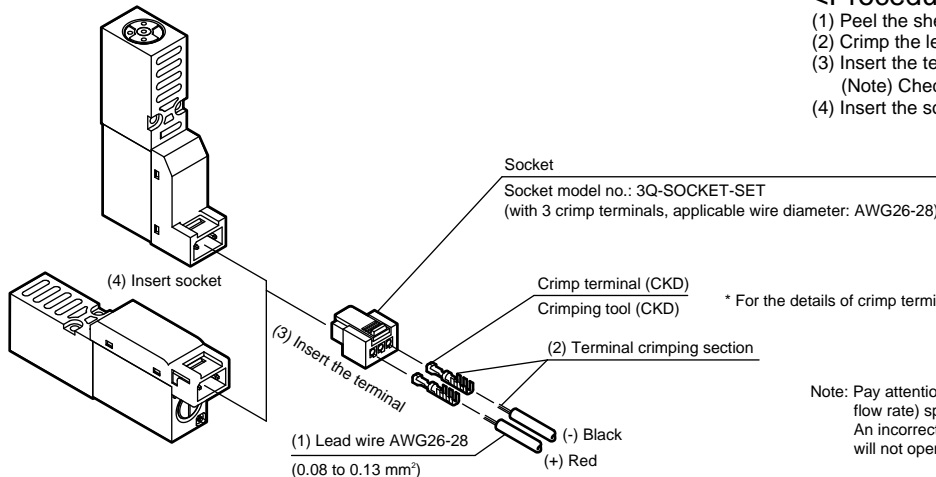
## ● 2-position single solenoid (self hold)



## C-D-connector fitting type

### ● 2-position single solenoid (self reset)

Referring to the figure below, wire the connector according to the procedures (1) to (4).

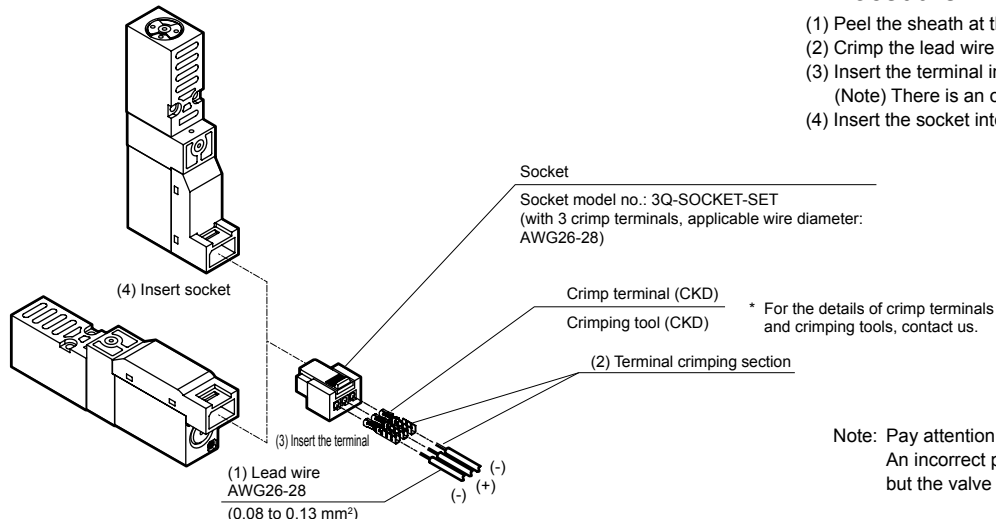


### <Procedure>

- (1) Peel the sheath at the end of the lead wire by 2 to 3 mm.
- (2) Crimp the lead wire with a special tool.
- (3) Insert the terminal into holes on both ends of the socket.  
(Note) Check the orientation for insertion.
- (4) Insert the socket into the solenoid valve connector section.

### ● 2-position single solenoid (self hold)

Referring to the figure below, wire the connector according to the procedures (1) to (4).



### <Procedure>

- (1) Peel the sheath at the end of the lead wire by 2 to 3 mm.
- (2) Crimp the lead wire with a special tool.
- (3) Insert the terminal into holes on both ends of the socket.  
(Note) There is an orientation for insertion.
- (4) Insert the socket into the solenoid valve connector section.



# Safety Precautions

Always read this section before starting use.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices is secured. 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 a safe device is manufactured.


## WARNING


- 1** This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience in handling.
  - 2** Use this product in accordance with specifications.

This product must be used within its stated specifications. It must not be modified or machined. This product is intended for use as a device or part for general-purpose industrial machinery. It is not intended for use outdoors (except for outdoor type) or for use under the following conditions or environment. (Note that this product can be used when CKD is consulted prior to use and the customer consents to CKD product specifications. The customer must provide safety measures to avoid risks in the event of problems.)

    - (1) Use for special applications including nuclear energy, railway, aircraft, marine vessel, vehicle, medicinal devices, devices or applications coming into contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
    - (2) Use for applications where life or assets could be significantly affected, and special safety measures are required.
  - 3** Observe body standards and regulations, etc., related to the safety of device design and control, etc.

ISO4414, JIS B 8370 (General rules for pneumatic systems)  
JFPS2008 (Principles for pneumatic cylinder selection and use)  
Including High Pressure Gas Safety Act, Industrial Safety and Health Act, 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 leakage of water and electricity.
    - (4) When starting or restarting the machinery and equipment using 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 precautions 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, and 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. Every item provides important information and must be observed.

## Limited warranty and disclaimer

- 1** Term of warranty  
This warranty shall be valid for one year after delivery to the customer's designated site.
- 2** Scope of warranty  
If any faults, found to be the responsibility of CKD, occur during the above warranty term, the product shall be replaced, the required replacement parts provided free of charge, or shall be repaired at the CKD factory free of charge. This Limited Warranty will not apply to:
  - (1) Faults due to use exceeding the conditions and environments set forth in the catalog or these specifications.
  - (2) Faults resulting from factors other than this product.
  - (3) Faults caused by improper use of the product.
  - (4) Faults resulting from modifications or repairs made without CKD consent.
  - (5) Faults caused by matters that could not be predicted with the technologies applied when the product was delivered.
  - (6) Faults resulting from natural disasters or accidents for which CKD is not liable.The warranty covers the actually delivered product, and does not cover any damage resulting from losses induced by faults in the delivered product.
- 3** Compatibility confirmation  
The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.





# Safety Precautions

Be sure to read and understand before use.

Refer to Pneumatic valves Catalog No. CB-023S for the general valves.

## 3 Port Direct Acting Valve 3QRA1•3QRB1 Series

### Design & Selection

#### 1. Common

##### ⚠ WARNING

- A mesh filter is built in the 2 (A) port as standard to prevent foreign substance from being suctioned into the pipe, but it cannot remove fine dust particles. When using this in the vacuum condition, install a vacuum filter between the pad nozzle and the valve.
- Do not use this as a solenoid valve for emergency shut down.  
If left pressurized for a long time, the starting response could be delayed.
- Follow the items below when installing the solenoid valve to the base which is not supplied from CKD.
  - A solenoid valve installation pitch shall be 10.5 mm and over.
  - A base material shall be aluminum.
 Contact us for other applications that require heat dissipation.
- Air leakage of a solenoid valve is not zero. It cannot retain the pressure for a long time.  
For an application which requires the pressure to be retained, give a sufficient margin to the container volume and the retaining time when you design.

#### 2. Surge suppressor

- The surge suppressor attached to the solenoid valve is intended to protect output contacts for solenoid valve drive. There is no significant protection for the other peripheral devices, and devices could be damaged or malfunction by the surge. Surge generated by other devices could be absorbed and which may result in an accident such as burning. Care must be taken for points below.

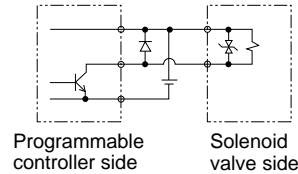
(1) The surge suppressor functions to limit a solenoid valve surge voltage, which can reach several hundred V, to a low voltage level that the output contact can withstand. Depending on the output circuit, this may be insufficient and could result in damage or malfunction. Check whether the surge suppressor can be used by the surge voltage limit of the solenoid valve in use, the output device's withstand pressure and circuit structure, and by the degree of return delay time.

If necessary, provide other surge measures. The inverse voltage surge generated when OFF can be suppressed to the following levels.

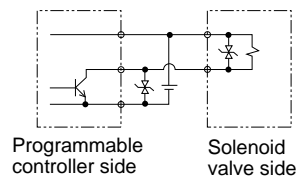
Rated voltage	Reverse voltage value when power turned OFF
12 VDC	Approx. 27 V
24 VDC	Approx. 47 V

(2) When using the NPN type output unit, the voltage given in the left table and a surge voltage equivalent to the power supply voltage could be applied on the output transistor. Increase the contact protection circuits in this case.

<example of output transistor protective circuit installation 1>



<example of output transistor protective circuit installation 2>

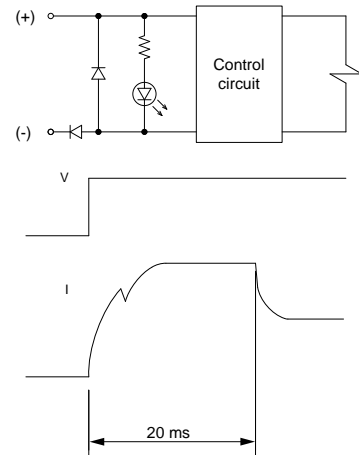


- (3) If another device or solenoid valve is connected in parallel to the solenoid valve, reverse voltage surge generated during the solenoid valve is off is applied to these devices. Even when using the solenoid valve with surge suppressor for 24 VDC, the surge voltage may reach minus several ten V depending on the model. This inverse polarity voltage could damage or cause the other devices connected in parallel to malfunction. Avoid parallel connection of devices suspected of reversing polarity voltages, e.g., LED indicators.  
When driving several solenoid valves in parallel, the surge from other solenoid valves could enter the surge suppressor of one solenoid valve with a surge suppressor. Depending on the current value, that surge suppressor could burn.  
When driving several solenoid valves with surge suppressors in parallel, surge current could concentrate at the surge suppressor with the lowest limit voltage and cause similar burning. Even if the solenoid valve type is the same, the surge suppressor's limit voltage can be inconsistent, and in the worst case, could result in burning. Avoid driving several solenoid valves in parallel.
- (4) The surge suppressor incorporated in the solenoid valve often short-circuits if damaged by excessive voltage or current the other solenoid valves. If the surge suppressor fails, if a large current flows when output is on, the output circuit or solenoid valve could be damaged or ignite. Do not keep power on in a faulty state.  
Provide an overcurrent protection circuit on the power or drive circuit or use a power supply with overcurrent protection so that a large current does not flow continuously.

## 3. Large flow rate type

### CAUTION

- Do not use in the environment where vibration or impact exceeding the specification is applied. This may result in valve faulty operation. The large flow rate type includes a current control circuit, which is designed to reduce a current value when the coil is sucked and held. Only plus common polarity is used.



## During Use & Maintenance

### CAUTION

- Coil may become hot due to ambient temperature or energizing time. Be careful enough when touching the valve.
- Long energizing time causes performance deterioration of the solenoid valve. Care must be taken as to the following items especially for the standard flow rate type.
  - Energizing time shall be set equal to or less than the de-energizing time at intermittent energizing.
  - One energizing time shall be set to 5 minutes or less.
  - Set so that the peripheral temperature of the solenoid valve does not exceed max. working temperature.
- Apply adequate torque when connecting pipes.
  - To prevent air leak and to protect threads from damage. Tighten by hand first, then use a tool, to prevent screw thread damaged.

Port thread	Tightening torque N·m
M5	1.0 to 1.5
Rc1/8	3 to 5

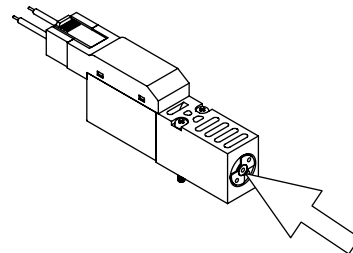
- Tighten the solenoid valve with an appropriate torque when installing it.
  - Excessive tightening may damage the valve. Tightening torque 0.10 to 0.14 N·m
  - Use the sequence No. 0 driver.

## 1. Self hold type

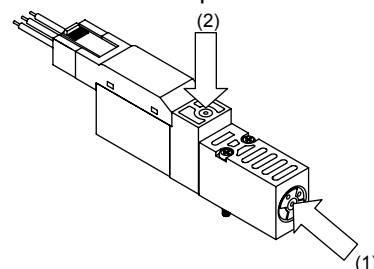
### CAUTION

- Precautions when energizing
  - Limit energizing within 30 seconds.
  - Limit energization ratio to 50% or less.
  - Min. time of excitation should be 50 ms or longer.
  - Do not energize to black and white lead wire simultaneously. Solenoid valves will not operate if they are simultaneously energized. The state before energization will be maintained (the indicator on both sides will light). Be cautious as the valve will be activated from that state if both sides are not turned off simultaneously.

- Malfunction may occur if a magnet comes close to the solenoid valve. Make sure to keep a distance of 10 cm or more from a magnet.
- The holding position may change during installation and transport due to impact exceeding the specifications. Before use, verify the position manually or electrically.
- Manual override
  - <2-position single solenoid (self reset)> Pushing the manual override can switch the main valve to the solenoid position when energized. Push the manual override from the front using a thin-tipped tool such as a precise screw driver. Pushing it in a slanting manner may result in incomplete position switching and cause internal leakage. To work normally, once detach the tool and press it again from the front.



- <2-position single solenoid (self hold)> Flow path can be switched by pushing (1) or (2) in the manual override. ((1): switch from 1 to 2, (2): switch from 2 to 3) Push the manual override from the front using a thin-tipped tool such as a precise screw driver.



## M3QRA•B1 How to prepare manifold specification sheet

● Manifold model no.

**M3QRA • (B) 1 8 0 - M5 - (C2) (H) - 8 - 3**

Piping type
Note 1
Port size
Connection
Option
Station number
Voltage

Note 1: Combination of the above-specified points is not acceptable. Specify by a model number.

Part name	Model no.	Layout																				Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Valve	3QRA119-□																					
	3QRB119-□	○	○	○		○	○	○														6
	3QRA129-□																					
	3QRB129-□																					
Masking plate	3QR1-MP				○					○												2

### Preparing the manifold specifications

- Complete from the left end, with the piping port facing forward.
- Manifold specifications are prepared for each model, so fill out corresponding specifications.

Date of issue     /     /

Your company name

Contact messrs.

Purchase order No.

## M3QRA•B1 manifold specification sheet

● Contact                      ● Quantity                      set                      ● Request date                      month                      day

Slip No.	Order No.
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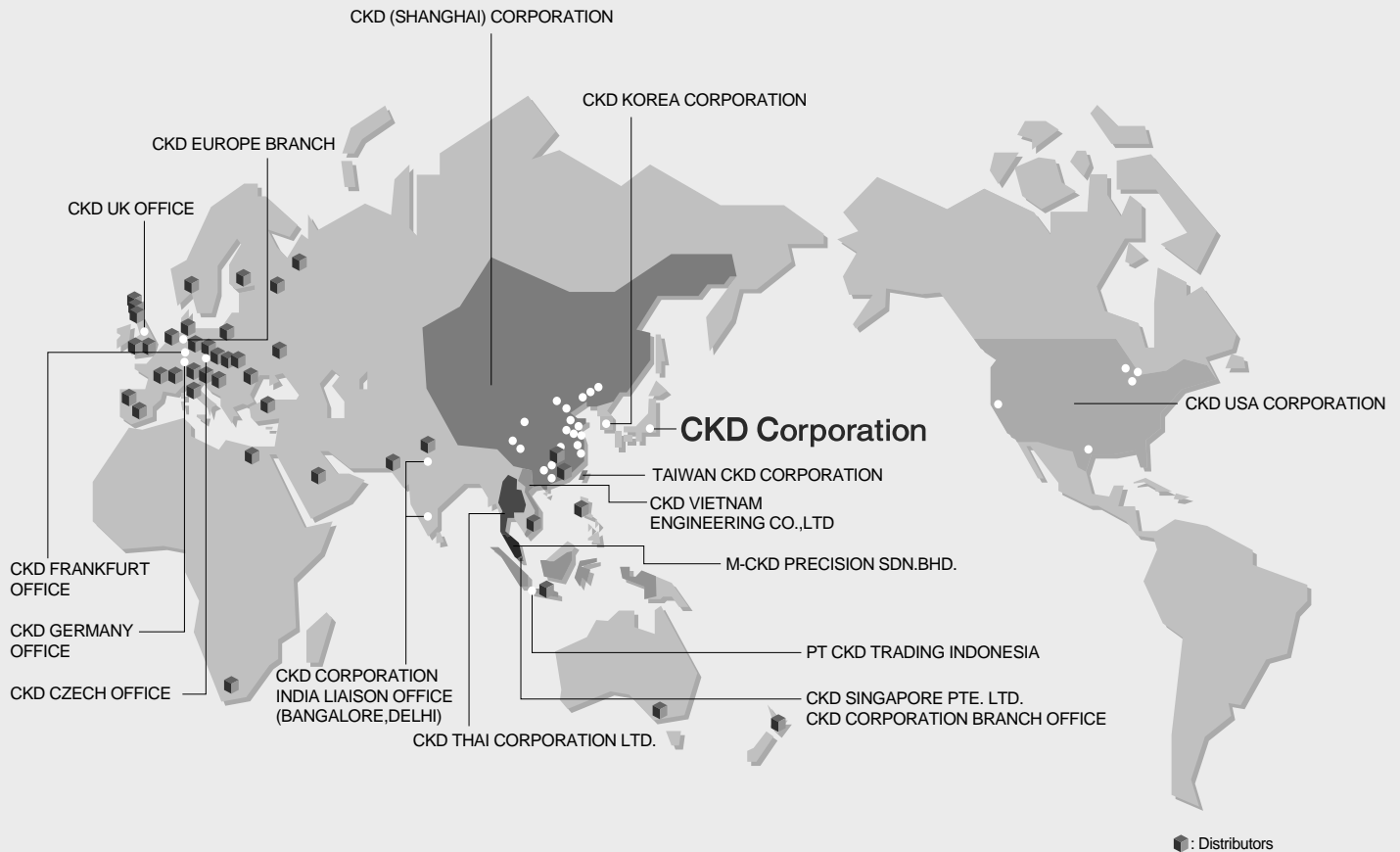
● Manifold model no.

**M3QR (A•B) 1 0 - M5 - ( ) ( ) - ( ) - ( )**

Note 1
Port size
Connection
Option
Station number
Voltage

Note 1: Combination of the above-specified points is not acceptable. Specify by a model number.

Product name	Model no.	Layout																				Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Valve	3QRA119-□																					
	3QRB119-□																					
	3QRA129-□																					
	3QRB129-□																					
Masking plate	3QR1-MP																					



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