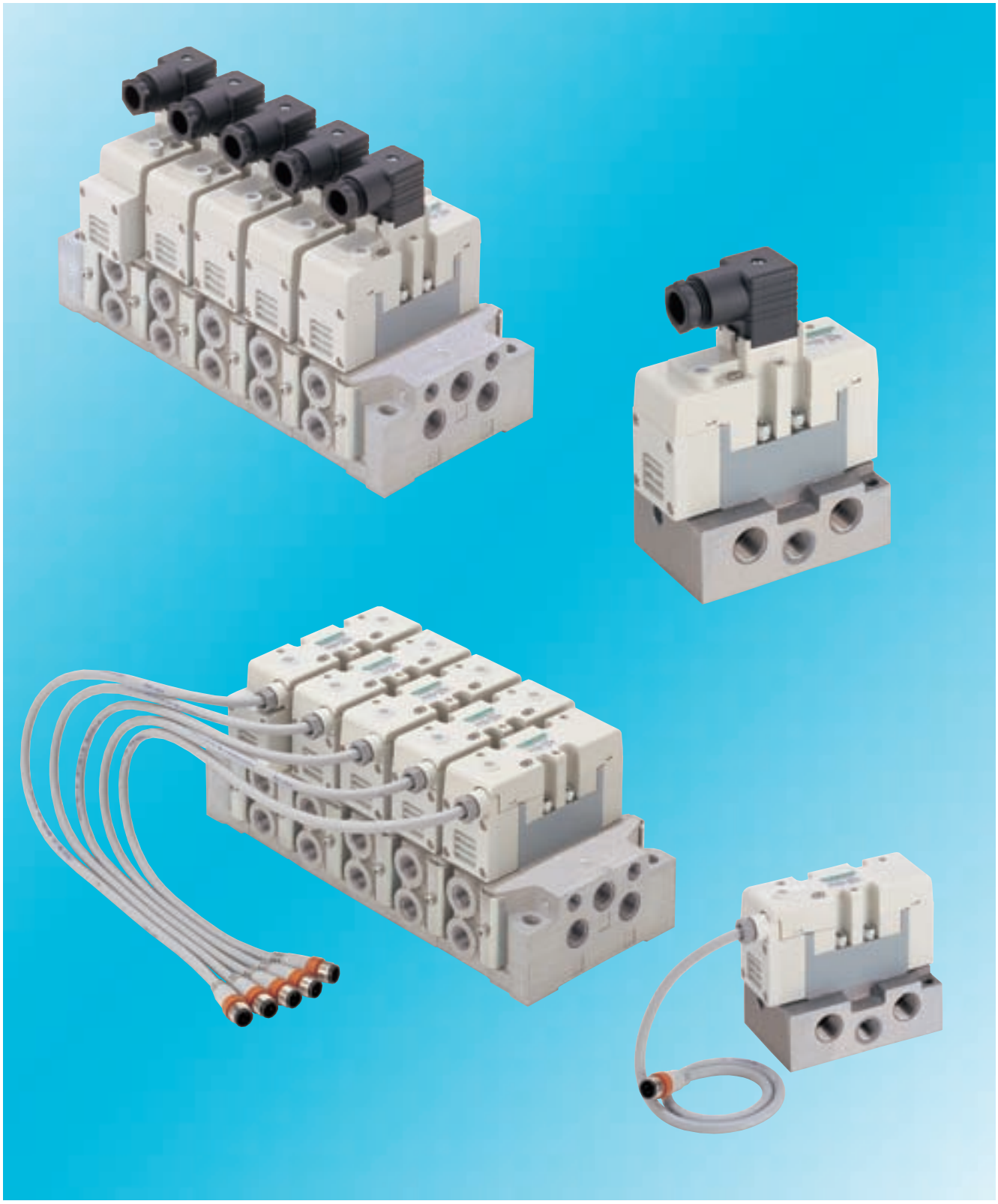
CKD

New Products

ISO conformed valve
PV5G/PV5/CMF Series

ISO CONFORMED VALVE

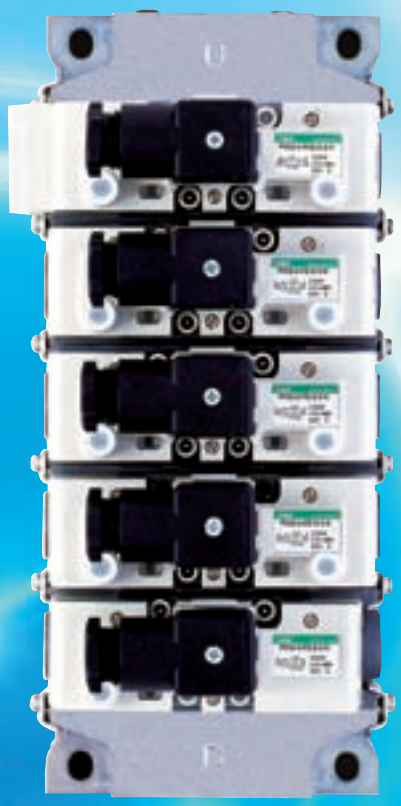


CKD Corporation

CC-824A 1

Introducing the New Compact

New ISO-compliant valve PV5G, PV5, and CMF Series are compact, lightweight, and energy-saving, featuring greatly improved operability, life, and environmental innovations.



Compact body size

A compact size is realized while improving the total performance.

(CKD comparison)
10% Reduced

Improved operability

The manual button and power indicator light are optimally positioned taking operability and visibility into consideration.Adjustment work during installation and operability during maintenance are improved.

2-color indicator

Solenoid a: red
Solenoid b: green

▼Enlarged view

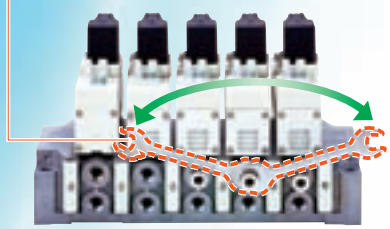
Improved reliability and safety

Rubber covers on manual pushbuttons prevent malfunctions from dirt, etc., stuck in buttons.
This design focuses on safety while maintaining manual tool use suitability.

Easy, smooth piping

The valve lies even with the base even in the manifold, allowing rotary tools such as wrenches to be used freely, significantly improving piping efficiency.

Large rotation angle for wrench is provided.



Easy-Use ISO Valve!

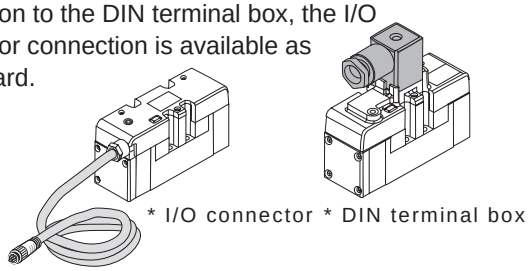
CKD Green Technology

Low wattage design 1 W

Power consumption is reduced from the conventional 1.8 W to 1 W, enabling greater energy saving.

I/O connector provided as standard.

In addition to the DIN terminal box, the I/O connector connection is available as a standard.



* I/O connector * DIN terminal box

RoHS directive complied

Eco-friendly design complies with RoHS Directives.

RoHS

Protective structure of IP65 or equivalent

A dustproof, jet-proof structure equivalent to IP65 enables use in rough environments.

Longer life

Improved sliding section structure and packing further increase life.

Lighter weight

The aluminum body and resin components further lighten weight.

ISO standards conformed

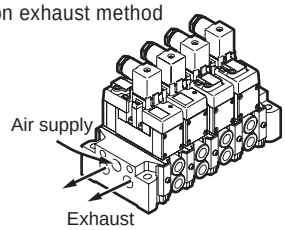
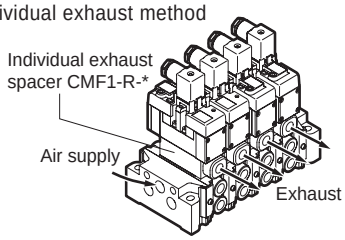
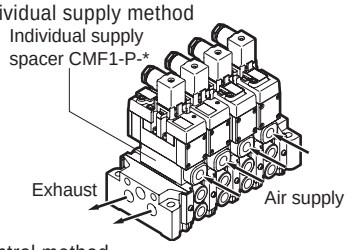
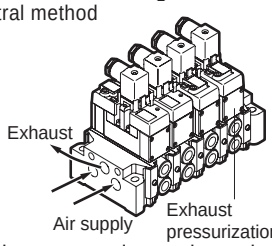
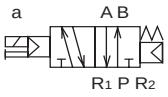
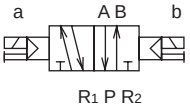
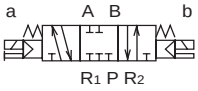
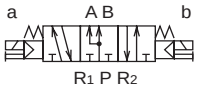
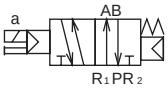
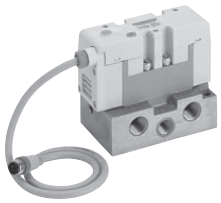
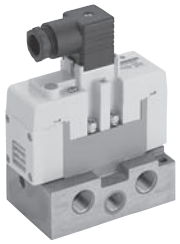
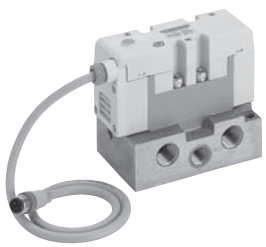
This 5-port pilot operated pneumatic valve features ISO-compliant valve mounting spacing, screw size, and flow path dimensions.

Improved design

White tones and rounded corners complement the new design.

■PV5G/PV5/CMF product series variation

	Series/appearance			Cylinder bore	Port size		Voltage
ISO size 1	Discrete valve **PV5G-6** Series 	DIN terminal box Type	Manifold **CMF1** Series 	MAX. Φ100	P/A/B	Rc1/4, Rc3/4	100 VAC 110 VAC 12 VDC 24 VDC
					R_1 / R_2	Rc3/8	
	Discrete valve **PV5-6R** Series 	I/O connector Type			P/A/B	Rc1/4, Rc3/8	24 VDC
					R_1 / R_2	Rc3/8, Rc1/2	
ISO size 2	Discrete valve **PV5G-8** Series 	DIN terminal box Type	Manifold **CMF2** Series 	MAX. Φ160	P/A/B	Rc3/8, Rc1/2, Rc3/4	100 VAC 110 VAC 12 VDC 24 VDC
					R_1 / R_2	Rc1/2, Rc3/4	
	Discrete valve **PV5-8R** Series 	I/O connector Type			P/A/B	Rc3/8, Rc1/2	24 VDC
					R_1 / R_2	Rc1/2, Rc3/4	

Series variation/appearance				Position no. of solenoid JIS symbol	Valve performance		Voltage
Size	Connection	Discrete valve	Individual wiring type manifold * The drawing is for an example of DIN terminal box.		Applicable cylinder bore size	Flow characteristics C [dm³/(s•bar)]	
ISO size 1	DIN terminal box	**PV5G-6**  Discrete: Page 2 Manifold: Page 14	● Common exhaust method  ● Individual exhaust method  ● Individual supply method  ● Central method  ● Multi-pressure air supply method A masking plate (CM1-01) lies between manifold blocks with different pressures, supplying two pressures, high and low, to one manifold. ● Individual supply and exhaust method Individual supply (CMF1-P-*) and exhaust (CMF1-R-*) spacers inserted between the manifold block and valve enable individual air supply and exhaust. ● Back porting method If side porting is not possible, pipes can be connected from either the A or B port, or all pipes can be connected from the bottom of the manifold.	● 2-position single solenoid  ● 2-position double solenoid  ● 3-position all ports closed  ● 3-position all ports closed (non-leak type)  ● 3-position A/B/R connection  ● 3-position P/A/B connection  ● 2-position single solenoid (exhaust pressurization type)  ● 2-position double solenoid (exhaust pressurization type) 	MAX. Φ100	P → A/B 3.4 to 6.3 A/B → R1/R2 3.0 to 6.9 Note 1	100 VAC 12 VDC 24 VDC 110 VAC Note 2
	I/O connector	**PV5-6R**  Discrete: Page 36 Manifold: Page 48					
ISO size 2	DIN terminal box	**PV5G-8**  Discrete: Page 8 Manifold: Page 20			MAX. Φ160	P → A/B 6.6 to 11.0 A/B → R1/R2 6.2 to 13.0 Note 1	100 VAC 12 VDC 24 VDC 110 VAC Note 2
	I/O connector	**PV5-8R**  Discrete: Page 42 Manifold: Page 54					

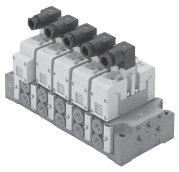
Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.
Note 2: I/O connector type is only for 24 VDC.

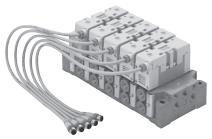
ISO size	Size 1	Size 2
	Discrete: PV5G-6, PV5-6R Series Manifold: CMF1 Series	Discrete: PV5G-8, PV5-8R Series Manifold: CMF2 Series
Sub-plate	DIN terminal box type: Page 2 I/O connector type: Page 36	DIN terminal box type: Page 8 I/O connector type: Page 42

Model no.	Connection	Port size P/A/B	Port size R1/R2
CB1-A02	Side porting	Rc1/4	Rc3/8
CB1-A03	Side porting	Rc3/8	Rc3/8
CB1-B02	Back porting	Rc1/4	Rc3/8
CB1-B03	Back porting	Rc3/8	Rc3/8

Model no.	Connection	Port size P/A/B	Port size R1/R2
CB2-A03	Side porting	Rc3/8	Rc1/2
CB2-A04	Side porting	Rc1/2	Rc1/2
CB2-A06	Side porting	Rc3/4	Rc3/4
CB2-B03	Back porting	Rc3/8	Rc1/2
CB2-B04	Back porting	Rc1/2	Rc1/2
CB2-B06	Back porting	Rc3/4	Rc3/4

Manifold	DIN terminal box type: Page 14 I/O connector type: Page 48	DIN terminal box type: Page 20 I/O connector type: Page 54





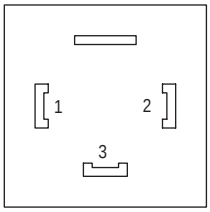
Model no.	Descriptions		Specifications
CMF1	Station number		1 to 10 stations (The control unit is 2 station or equivalent if the control unit is included.)
	Connecting port	A/B port	Rc1/4, 3/8
	Connecting port	P/R1/R2 port	Rc3/8, 1/2
	Option: Control unit		Air filter (manual drain and automatic drain) regulator and air release valve
	Option: Individual supply spacer		CMF1-P-*
	Option: Individual exhaust spacer		CMF1-R-*
	Option: Masking plate		CM1-00
	Option: Spacer type regulator		CMF1-SR-P/A/B
	Option: Air pilot check valve		CMF1-PC

Model no.	Descriptions		Specifications
CMF2	Station number		1 to 10 stations
	Connecting port	A/B port	Rc3/8, 1/2
	Connecting port	P/R1/R2 port	Rc1/2, 3/4
	Option: Individual supply spacer		CMF2-P-*
	Option: Individual exhaust spacer		CMF2-R-*
	Option: Masking plate		CM2-00
	Option: Spacer type regulator		CMF2-SR-P/A/B
	Option: Air pilot check valve		CMF2-PC

Manifold type (The CMFZ type, combining the CMF1 and CMF2, is also available as an option.)			
1	Common exhaust method	1	Common exhaust method
2	Individual exhaust method	2	Individual exhaust method
3	Individual supply method	3	Individual supply method
4	Multi-pressure air supply method	4	Multi-pressure air supply method
5	Individual supply and exhaust method	5	Individual supply and exhaust method
6	Back porting method	6	Back porting method

PV5G/CMF (DIN terminal box type)

How to wire



Pin No.	Name
1	a SOL
2	b SOL
3	COM

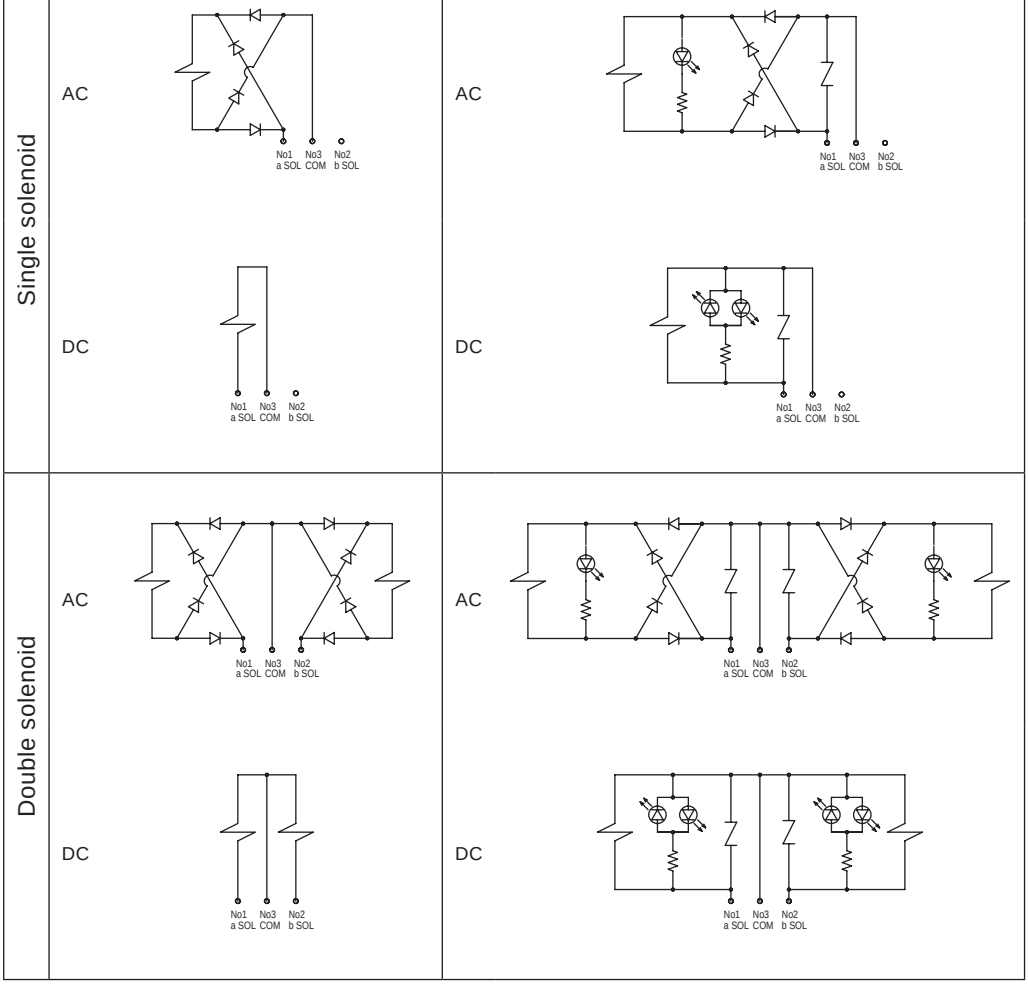
No polarity is designated when DC power is used.

Electric connection circuit diagram

Electric connection (wiring method)

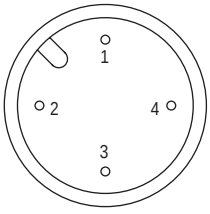
Blank Without power indicator light

N Light and surge suppressor



PV5, CMF (I/O connector type)

How to wire

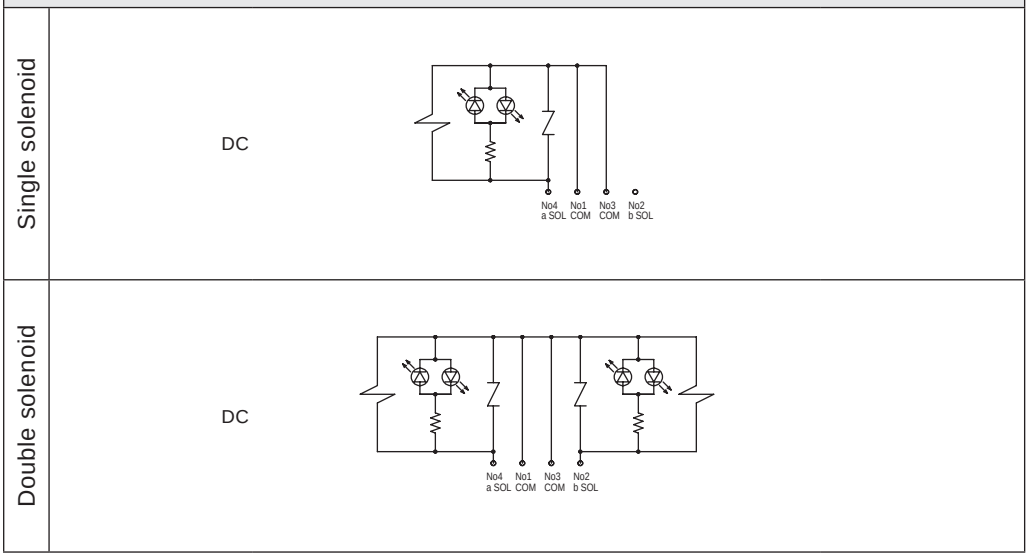


Pin No.	Name
1	COM (NPN)
2	b SOL
3	COM (PNP)
4	a SOL

Pin 2 is not used for single solenoid.

Electric connection circuit diagram

Electric connection (wiring method)



Note: This applies when rated voltage 24 VDC is used and light and surge suppressor is installed.

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 mechanical 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 manufacture a safe device.

⚠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 of specifications.

Contact CKD when using the product outside the unique specifications range, when using it outdoors, and when using it under the conditions and environment below. Do not attempt to modify or additionally machine the product.

❶ 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.
❷ 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.,

ISO 4414, JIS B8370 (pneumatic system rules)
JFPS 2008 (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.

❶ Inspect and service the machine and devices after confirming safety of the entire system related to this product.
❷ Note that there may be hot or charged sections even after operation is stopped.
❸ 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.
❹ 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.

Pneumatic components

Safety precautions

Always read this section before starting use.
Refer to Pneumatic valves No.CB-023SA for the general valves.

Pilot operated 5 port valve PV5G/PV5/CMF Series

Design & Selection

1. Safety designing

⚠WARNING

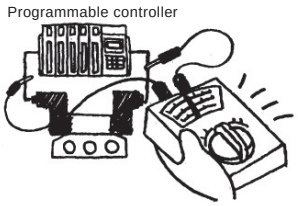
■Use this product in accordance with the specifications range.
Products in this catalog are for use only in a compressed air system. Use with pressure or temperature exceeding the specification range may result in damage or operation faults. (Refer to the specifications.)
Consult with CKD when using fluids other than compressed air

■When using the 3-position valve all port block as a brake, operation does not stop at the precise position because of air compression.
When using for pressure holding applications, devices such as the valve and cylinder tolerate air leakage, so the brake position may change or pressure may drop.

■Take measures to prevent harm to operators or objects if this product fails

⚠CAUTION

■Check leakage current to prevent malfunction caused by leakage current from other fluid control components.
When using a programmable controller, etc., the solenoid valve could malfunction because of leakage current.
The value affected by leakage current differs with the solenoid valve.



For 100 VAC	3.0mA or less
For 12 VDC	1.5mA or less
For 24 VDC	1.8mA or less

2. Common

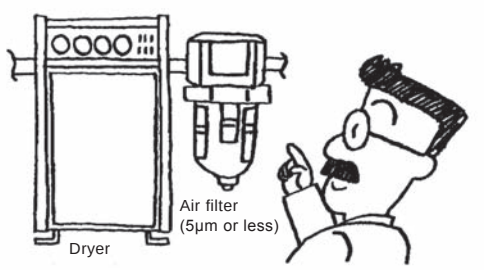
⚠WARNING

■Do not block exhaust port of a manifold valve.
Other cylinders could malfunction due to back pressure generated by switch valve exhaust. Exhaust from both sides of the manifold or use a discrete exhaust valve with a spacer or discrete valve for the valve.

⚠CAUTION

■Keep momentary power on and limit manual operation of the double-solenoid 2-position valve to 0.1 seconds or longer.
Note that the cylinder may malfunction depending on secondary load conditions, so power ON and manual operations should be continued until the cylinder reaches the stroke end.

■Use dry compressed air that does not cause condensation in piping.



- If the temperature drops in pneumatic piping or pneumatic devices, drainage could form.
- If the drainage enters the air passage of the pneumatic device, it could cause the passage to instantly block, resulting in operation faults.
- Drainage could cause rust, making the pneumatic device fail.
- Drainage may also wash out lubricant and cause lubrication faults.

Design & Selection

3. Surge suppressor

⚠CAUTION

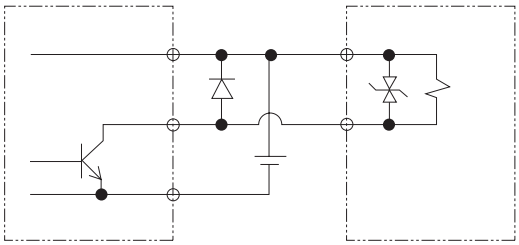
■The surge suppressor with the solenoid valve protects the solenoid valve drive output contact, but not other peripheral devices, meaning these could be affected by surge damage or malfunction. Surge generated by other devices could be absorbed, resulting in damage or accidents such as burning. Note the following points.

- The surge suppressor limits solenoid valve surge voltage, which can reach several hundred V, to a low voltage level withstandable by the output contact. This may be insufficient for the output circuit, however, and could result in damage or malfunction. Check that the surge suppressor is adequate for the surge voltage limit of the solenoid valve used, the output device withstand voltage, and circuit configuration, and the degree of return delay time.
  Provide separate surge measures if necessary. Reverse voltage surge generated at OFF status is suppressed to the following levels.

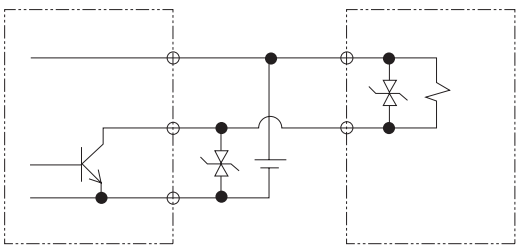
Specifications voltage	Reverse voltage value when power turned OFF
12 VDC	Approx. 27V
24 VDC	Approx. 47V

- When using NPN output, voltage given in the upper table and surge voltage equivalent to the power voltage could be applied on the output transistor. Install contact protection circuits in this case.

<Example of output transistor protective circuit installation 1>



<Example of output transistor protective circuit installation 2>



- If another device or solenoid valve is connected in parallel to the solenoid valve, reverse voltage surge generated at OFF status is applied to these devices. Even when using the solenoid valve for the surge suppressor for 24 VDC, surge voltage may reach minus several ten V depending on the model. This reverse polarity voltage could damage or cause other devices connected in parallel to malfunction. Avoid parallel connection with a device having weak reverse polarity voltage. (Example: LED indicator.)
  When driving several solenoid valves in parallel, surge from other solenoid valves could flow into the surge suppressor, burning the surge suppressor.
  Even when driving several solenoid valves with surge suppressors, surge current will concentrate at the surge suppressor having the lowest limit voltage, and could result in similar burning. Even if the solenoid valve is the same, surge suppressor limit voltage is inconsistent and in the worst case could result in burning. Avoid driving several solenoid valves in parallel.
- The surge suppressor in the solenoid valve may short-circuit if damaged by overvoltage or overcurrent from other solenoid valves. After such damage, large current flows when output is turned on, and in the worst case, the output circuit or solenoid valve is damaged or fires start. Do not leave the solenoid valve energized 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 no large current flows continuously.

4. 100/110 VAC specifications

⚠CAUTION

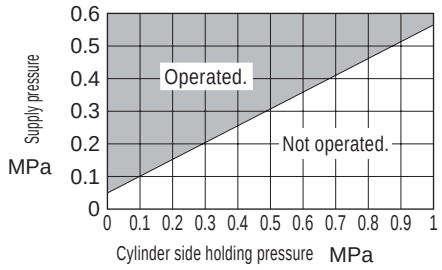
■The 100/110 VAC specifications have a built-in all-wave-rectified bridge.
When using an SSR to turn the solenoid valve on and off, a solenoid valve reset fault may occur depending on the SSR type. Select the SSR appropriately. Consult with the relay or PLC manufacturer for details.

Installation & Adjustment

1. Common

⚠CAUTION

■When using the pilot check valve (PV5G-*-FPG-D, CMF*-PC) to hold the cylinder when pressure supplied next is too low, operation could fail because of the pressure balance on the poppet valve's primary and secondary sides.



■When using the pilot check valve when back pressure is applied on exhaust ports R1 and R2, the cylinder or braking accuracy could drop. An individual exhaust spacer (CMF*-R) should be used in combination to prevent back pressure.

■Do not transport the solenoid valve by the cable. The cable could break.

■Turn power off externally before starting installation or wiring work. There is a risk of electrical shock or damage.

■Check the product's rated voltage and terminal layout and wire the product correctly. Connecting an incorrect power rating or incorrect wiring could result in fires or faults.

■Tighten the waterproof connector and terminal screws within the specified torque range. A loose connection could result in fires or malfunctions.

■Do not use this product where it will be continuously submerged in water.

■Apply adequate torque when connecting pipes to prevent air leak and to protect thread.

Tighten by hand at first, then use the tool, so as screw thread is not damaged.

(Reference value)

Set screw	Tightening torque N•m
Rc 1/8	3 to 5
Rc 1/4	6 to 8
Rc 3/8	13 to 15
Rc 1/2	16 to 18
Rc 3/4	19 to 40

2. DIN terminal box

⚠CAUTION

■Use a JIS C3312 (600 V vinyl insulated vinyl cable) with a core cross-section of 0.75 mm^2 or 1.25 mm^2 with 2, 3, or 4 cores (outer diameter: ø8.5 to 11.5) for the cable.

■Use a crimp terminal on the cable to prevent connection faults and disconnection.
(Example: Use a 1.25 Y-3U, 1.25-3.5 S, 1.25-4 M with inner diameter of M3.5 and outer diameter of 7 mm or less.)

■Incorrect terminal connections will cause malfunctions.
Refer to Page 5 in the Introduction for correct connection.

During Use & Maintenance

1. Assembling & Disassembling

⚠WARNING

■If valves are assembled or disassembled, read the instruction manual of the product very well and understand the contents before disassembling and assembling the product.
- Understand the structure and operational principle of the solenoid valve to secure safety.
- The grade not less than Pneumatics technique certification grade 2 is required.

2. Pneumatics pressure source

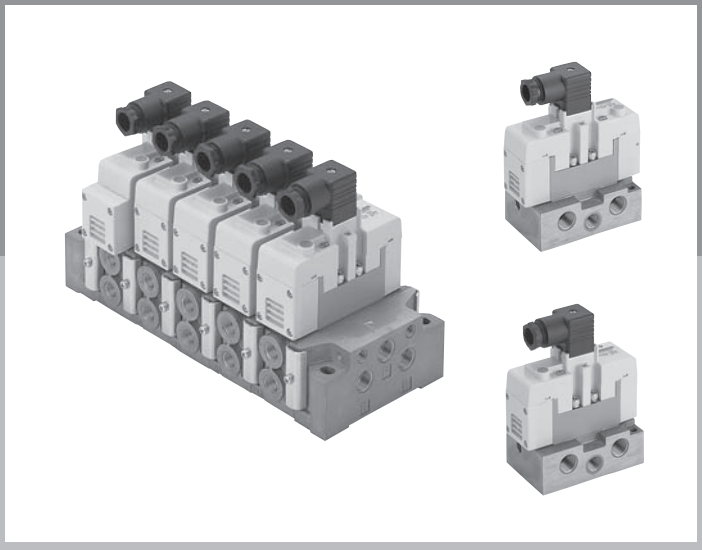
⚠CAUTION

■The oil-free property cannot be maintained if oil is supplied to the prelubricated valve even once.
Once lubricated, continue the lubrication.
- Pneumatic components to be oil-free or to be lubricated and either lubrication method are determined to use, and the operation should be accurately controlled.
- Use additive-free turbine oil ISO VG32 for the lubricated valve.

PV5G/CMF
(DIN terminal box type)

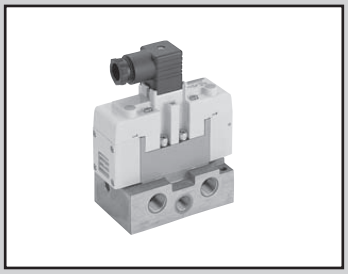
Pilot operated 5 port valve

ISO conformed valve



CONTENTS

CKD



Discrete valve ISO size 1
DIN terminal box type
Pilot operated 5 port valve ISO conformed valve

PV5G-6 Series

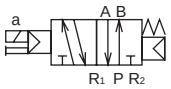
● Applicable cylinder bore size: max. Φ100

CE (Subject: DC voltage)

JIS symbol

●5 port valve

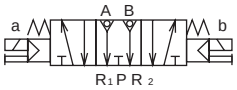
2-position single solenoid (FG-S)



2-position double solenoid (FG-D)

3-position all ports closed (FHG)

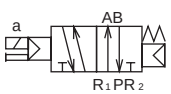
3-position all ports closed non-leak type (FPG)



3-position A/B/R connection (FJG)

3-position P/A/B connection (FIG)

2-position single solenoid exhaust pressurization type (YZ-S)



2-position double solenoid exhaust pressurization type (YZ-D)

Common specifications

Descriptions	
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15 0.20 (3-position) Note 1
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm^3/min (A, B → R port)	10 (ANR) or less Only 3-position all ports closed non-leak type 0.3 (ANR) or less Note 2
Vibration/shock m/s^2	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: For YZ-S only, use supply pressure at R1>R2≥0.1 MPa.
Note 2: The default is indicated.

Electric specifications

Descriptions				
Rated voltage V	AC		100 (50/60Hz) 110 (50/60Hz)	
	DC		12, 24	
Rated voltage fluctuation range			±10%	
			Without light	With light
Apparent power VA (Ampere A) Note 3	AC	100 V	2.3 (0.023)	2.4 (0.024)
		110 V	2.5 (0.023)	2.6 (0.024)
Power consumption W (Ampere A)	DC	12 V	1.0 (0.083)	1.2 (0.100)
		24 V	1.0 (0.042)	1.2 (0.050)
Heat proof class			B (molded coil)	
Wiring methods			Electric plug connector	

Note 3: Ampere of AC type is holding current.

Individual specifications

Descriptions			PV5G-6	
Port size Note 1			Rc1/4	Rc3/8
Response time ms Note 2	2-position	Single solenoid	30 (when turned ON) and 40 (when turned OFF)	
		Double solenoid	30	
	3-position		30 (when turned ON) and 50 (neutral)	
Weight kg Note 3	2-position	Single solenoid	0.40	
		Double solenoid	0.44	
	3-position	Other than non-leak type	0.48	
		All ports closed non-leak type	1.14	

Note 1: The piping port screw is compatible with G and NPT screws. Contact CKD for details.
Note 2: The response time is the value at supply pressure of 0.5 MPa, oilless. This may change depending on the pressure and type of oil supplied.
Note 3: Weight does not include the sub-plate.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b
PV5G-6	Rc1/4	2-position single solenoid	6.1	0.28	6.7	0.20
		2-position double solenoid	6.1	0.28	6.7	0.20
		3-position all ports closed	5.2	0.32	5.6	0.30
		3-position A/B/R connection	5.1	0.32	6.9	0.16
		3-position P/A/B connection	6.3	0.28	5.9	0.28
		3-position all ports closed no leakage	3.4	-	3.0	-

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

Coolant proof specifications

Refer to the section Ⓓ in "How to order" on Page 4 to select option "A".

PV5G-6 Series

Discrete valve; ISO size 1

How to order DIN terminal box

● ISO size 1

PV5G - 6 - FG-S - 3 - N ○ - A03

- PV5G: Model no.
- 6: ISO size 1
- FG-S: Ⓐ Solenoid position
- 3: Ⓑ Rated voltage
- N: Ⓒ Light and surge suppressor
- ○: Ⓓ Option
- A03: Ⓔ Sub-plate and port size

Symbol	Descriptions		Model no. PV5G-6
Ⓐ Solenoid position			
FG-S	P pressurization type	2-position single solenoid	●
FG-D		2-position double solenoid	●
FHG-D		3-position all ports closed	●
FJG-D		3-position ABR connection	●
FIG-D		3-position PAB connection	●
FPG-D		3-position all ports closed	●
YZ-S	Exhaust pressurization type	2-position single solenoid	●
YZ-D		2-position double solenoid	●
Ⓑ Rated voltage			
1	100 VAC		●
3	24 VDC		●
4	12 VDC		●
5	110 VAC		●
Ⓒ Light and surge suppressor			
Blank	None		●
N	Light and surge suppressor Note 1		●
Ⓓ Option			
Blank	None		●
A	Coolant proof		●
Ⓔ Sub-plate and port size			
Blank	Without sub-plate		●
A02	Side porting Rc1/4 (Rc3/8 for R port)		●
A03	Side porting Rc3/8		●
B02	Back porting Rc1/4 (Rc3/8 for R port)		●
B03	Back porting Rc3/8		●

Note on model no. selection

Note 1: Refer to Intro 5 Page for the circuit diagram of the type with light and surge suppressor.

<Example of model number>

PV5G-6-FG-S-3-N-A03

Model: PV5G/ISO size 1 (DIN terminal box type)

- Ⓐ Solenoid position : P pressurization type 2-position single solenoid
- Ⓑ Rated voltage : 24 VDC
- Ⓒ Power indicator light : Light and surge suppressor
- Ⓓ Option : None
- Ⓔ Sub-plate port size : Side porting Rc3/8

ISO size 1 sub-plate specifications and "How to order"

CB1 - A02

- A02: Ⓐ Port connection

Symbol	Method	P/A/B port	R1/R2 port	Weight (kg)
Ⓐ Port connection				
A02	Side porting	Rc 1/4	Rc 3/8	0.36
A03		Rc 3/8		
B02	Back porting	Rc 1/4	Rc 3/8	
B03		Rc 3/8		

Internal structure and parts list: DIN terminal box type

PV5G-6-FG-S

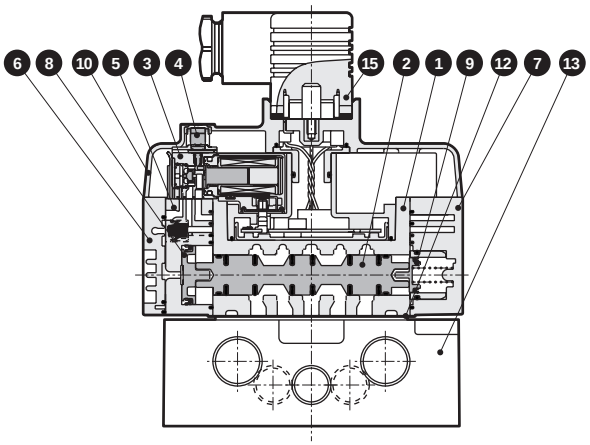
●2-position single solenoid

PV5G-6-FG-D

●2-position double solenoid

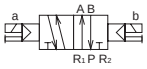
PV5G-6-YZ-S

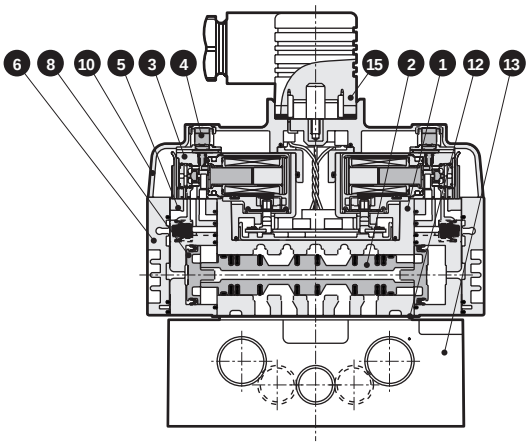
●2-position single solenoid exhaust pressurization type



PV5G-6-YZ-D

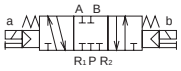
●2-position double solenoid exhaust pressurization type





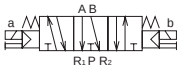
PV5G-6-FHG-D

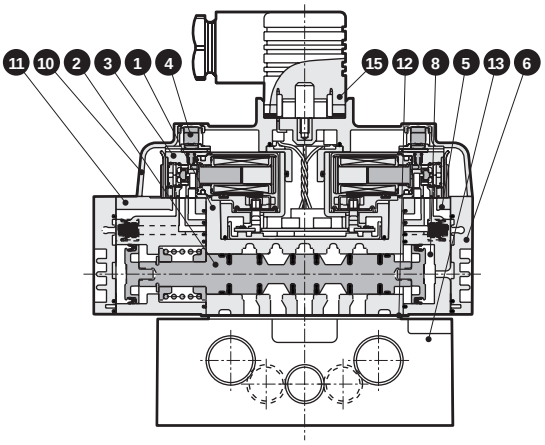
●3-position all ports closed



PV5G-6-FJG-D

●3-position A/B/R connection



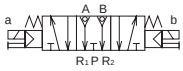


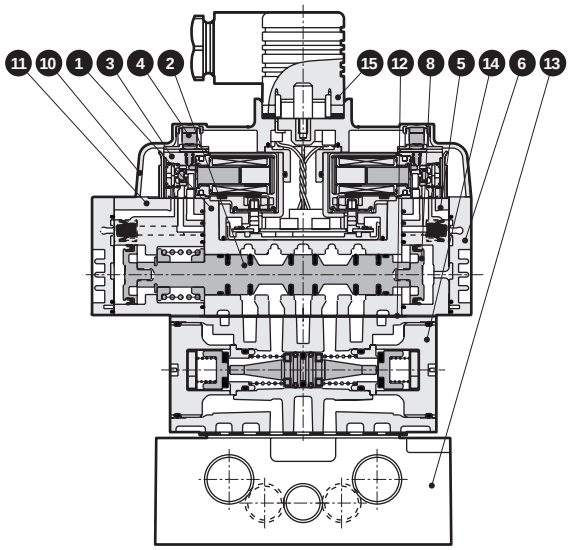
PV5G-6-FIG-D

●3-position P/A/B connection

PV5G-6-FPG-D

●3-position all ports closed non-leak type





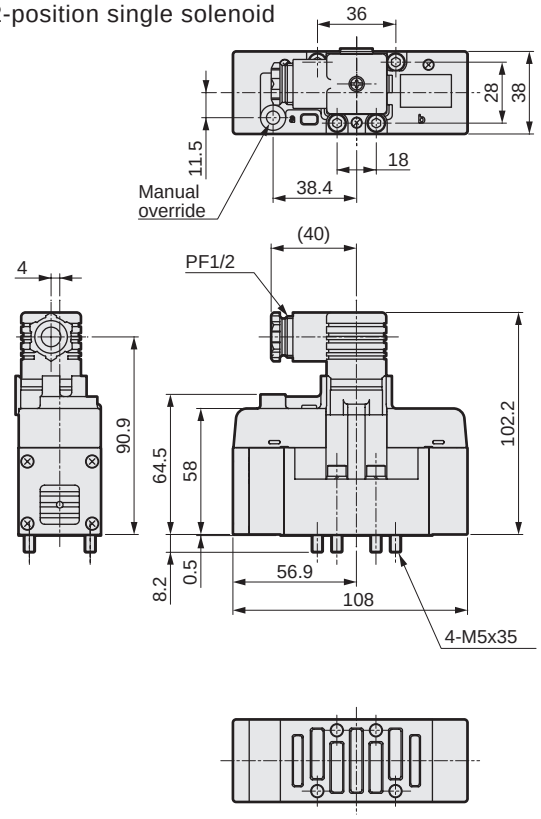
Main parts list

No.	Parts name	Material	No.	Parts name	Material
1	Body	Aluminum alloy die-casting	9	Piston S assembly	-
2	Spool assembly	-	10	Electric cover	Resin
3	Pilot valve	-	11	Pilot operated valve assembly for 3-position	Resin
4	Manual override	-	12	Gasket	-
5	Pilot operated valve assembly for double solenoid	Resin	13	Sub-plate	Aluminum alloy die-casting
6	Cap D	Resin	14	Air pilot check valve	-
7	Cap S	Resin	15	DIN terminal box	-
8	Piston D assembly	-			

Dimensions: DIN terminal box type (without sub-plate)

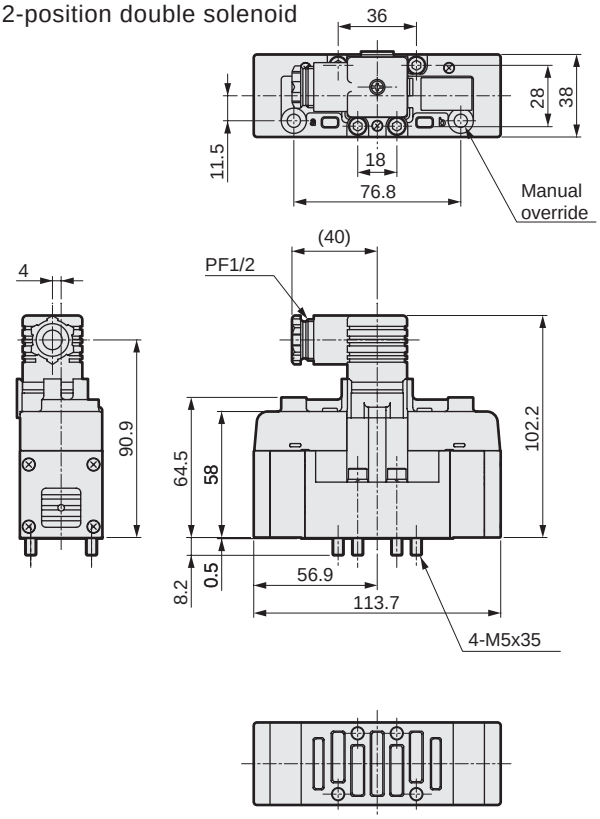
PV5G-6-FG-S-*
PV5G-6-YZ-S-*

●2-position single solenoid



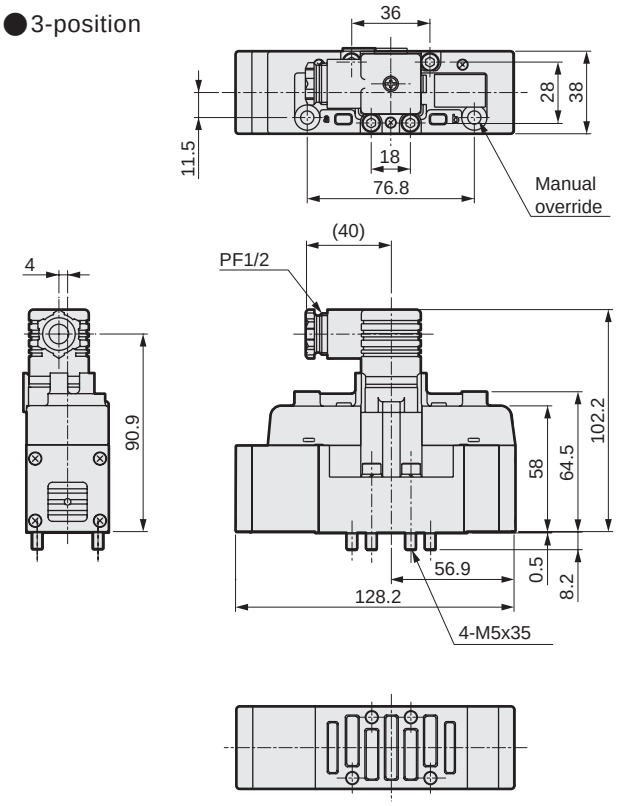
PV5G-6-FG-D-*
PV5G-6-YZ-D-*

●2-position double solenoid



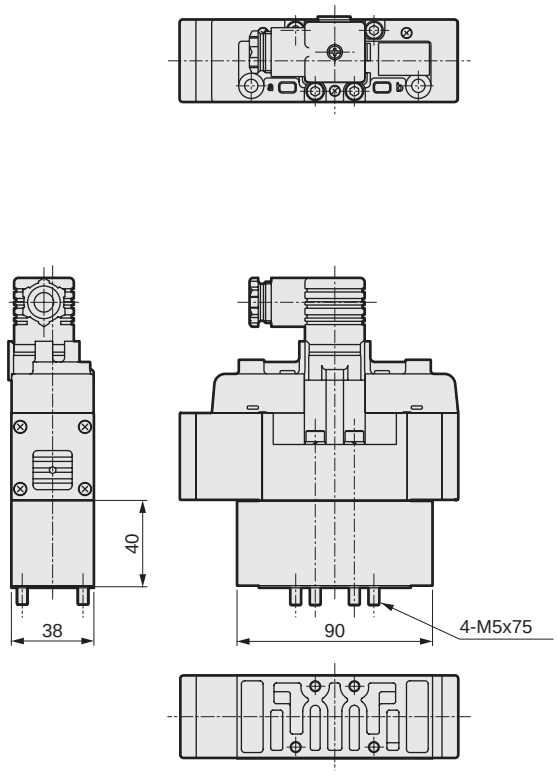
PV5G-6-FHG-D-*
PV5G-6-FJG-D-*
PV5G-6-FIG-D-*

●3-position



PV5G-6-FPG-D-*

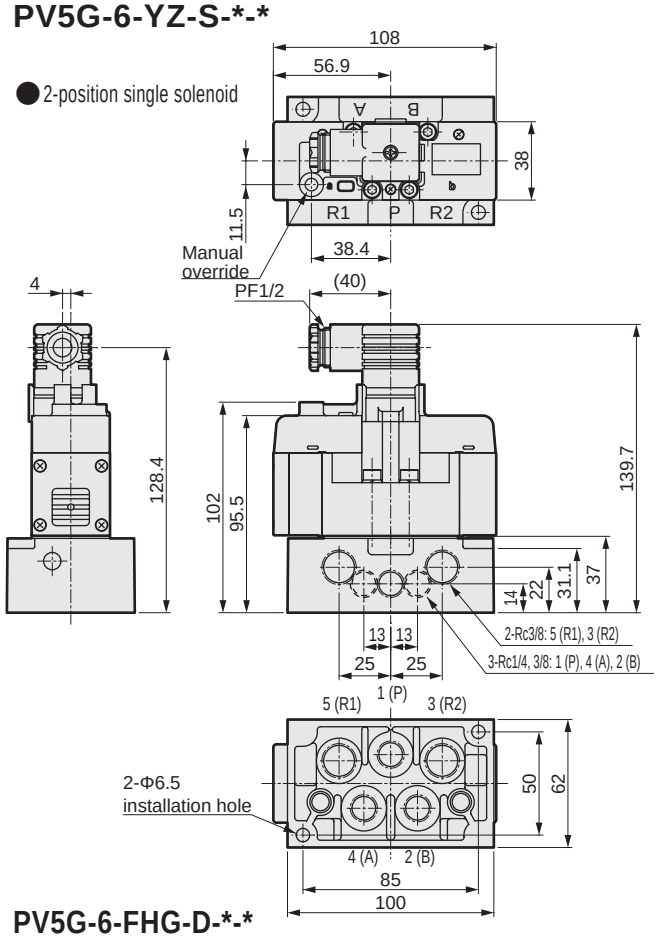
●3-position and non-leak type



Dimensions: DIN terminal box type (with sub-plate)

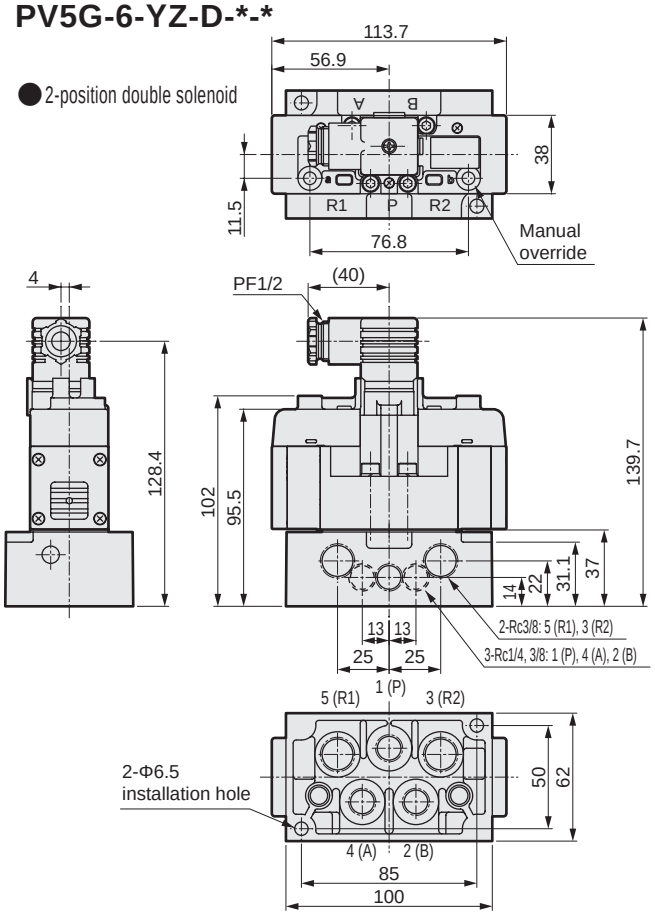
PV5G-6-FG-S-*-*
PV5G-6-YZ-S-*-*

● 2-position single solenoid



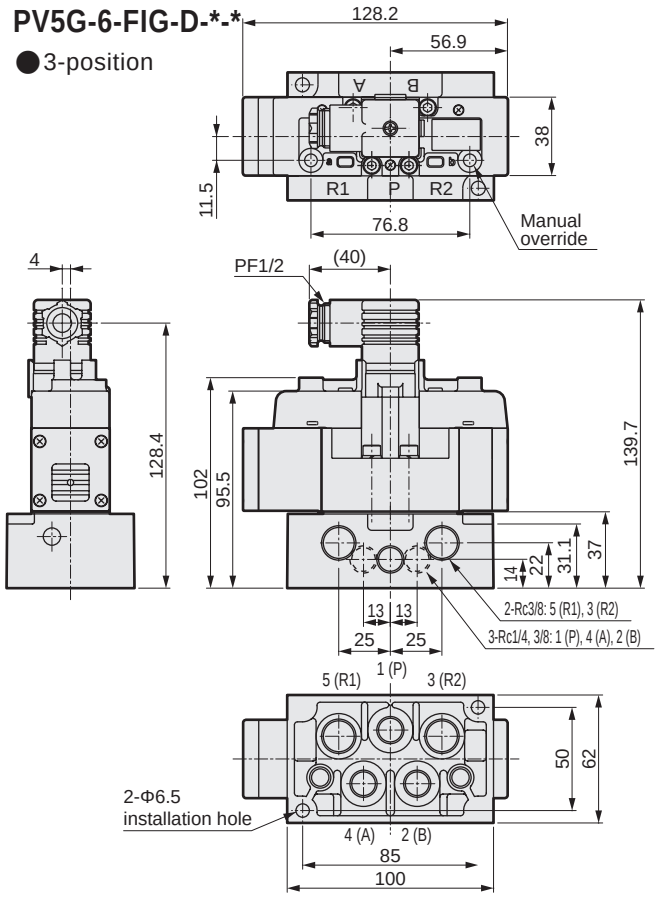
PV5G-6-FG-D-*-*
PV5G-6-YZ-D-*-*

● 2-position double solenoid

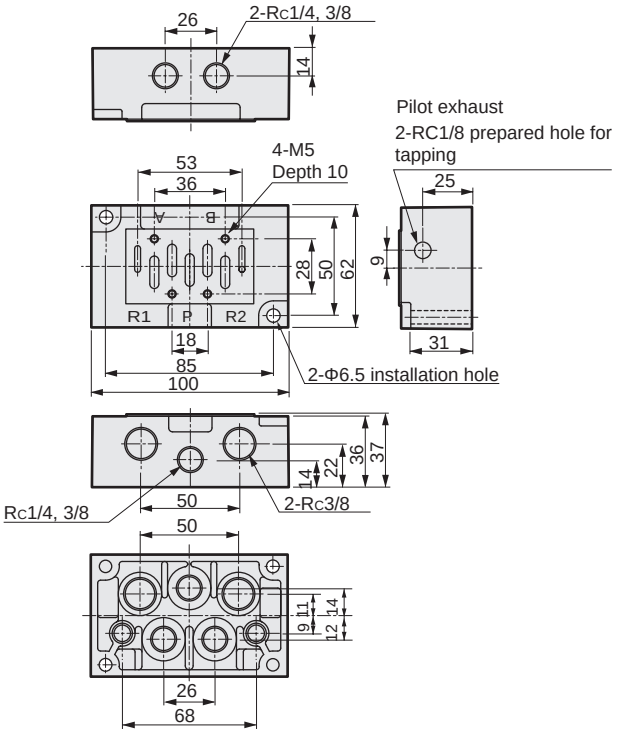


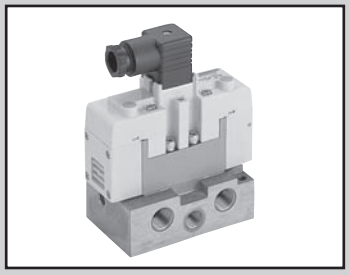
PV5G-6-FHG-D-*-*
PV5G-6-FJG-D-*-*
PV5G-6-FIG-D-*-*

● 3-position



● Sub-plate dimensions (CB1-*)





Discrete valve ISO size 2
DIN terminal box type
Pilot operated 5 port valve ISO conformed valve

PV5G-8 Series

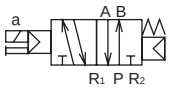
● Applicable cylinder bore size: max. Φ160

CE (Subject: DC voltage)

JIS symbol

●5 port valve

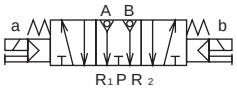
2-position single solenoid (FG-S)



2-position double solenoid (FG-D)

3-position all ports closed (FHG)

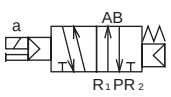
3-position all ports closed non-leak type (FPG)



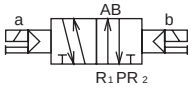
3-position A/B/R connection (FJG)

3-position P/A/B connection (FIG)

2-position single solenoid exhaust pressurization type (YZ-S)



2-position double solenoid exhaust pressurization type (YZ-D)



Common specifications

Descriptions	
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15, 0.20 (3-position) Note 1
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm^3/min (A, B → R port)	10 (ANR) or less Only 3-position all ports closed non-leak type 0.3 (ANR) or less Note 2
Vibration/shock m/s^2	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: For YZ-S only, use supply pressure at R1>R2≥0.1 MPa.
Note 2: The default is indicated.

Electric specifications

Descriptions				
Rated voltage V	AC		100 (50/60Hz) 110 (50/60Hz)	
	DC		12, 24	
Rated voltage fluctuation range			±10%	
			Without light	With light
Apparent power VA (Ampere A) Note 3	AC	100 V	2.3 (0.023)	2.4 (0.024)
		110 V	2.5 (0.023)	2.6 (0.024)
Power consumption W (Ampere A)	DC	12 V	1.0 (0.083)	1.2 (0.100)
		24 V	1.0 (0.042)	1.2 (0.050)
Heat proof class			B (molded coil)	
Wiring methods			Electric plug connector	

Note 3: Ampere of AC type is holding current.

Individual specifications

Descriptions			PV5G-8		
Port size Note 1			Rc3/8	Rc1/2	Rc3/4
Response time ms Note 2	2-position	Single solenoid	40 (when turned ON), 60 (when turned OFF)		
		Double solenoid	40		
	3-position		40 (when turned ON), 60 (neutral)		
Weight kg Note 3	2-position	Single solenoid	0.63		
		Double solenoid	0.67		
	3-position	Other than non-leak type	0.70		
		All ports closed non-leak type	1.35		

Note 1: The piping port screw is compatible with G and NPT screws. Contact CKD for details.
Note 2: The response time is the value at supply pressure of 0.5 MPa, oilless. This may change depending on the pressure and type of oil supplied.
Note 3: Weight does not include the sub-plate.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b
PV5G-8	Rc3/8	2-position single solenoid	10.7	0.17	13.0	0.19
		2-position double solenoid	10.7	0.17	13.0	0.19
		3-position all ports closed	10.0	0.16	11.0	0.25
		3-position A/B/R connection	9.9	0.14	13.0	0.16
		3-position P/A/B connection	11.0	0.12	12.0	0.21
		3-position all ports closed no leakage	6.6	-	6.2	-

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

Coolant proof specifications

Refer to the section Ⓓ in "How to order" on Page 10 to select option "A".

PV5G-8 Series

Discrete valve; ISO size 2

How to order DIN terminal box

● ISO size 2

PV5G - 8 - FG-S - 3 - N ○ - A03

- PV5G: Model no.
- 8: ISO size 2
- FG-S: Ⓐ Solenoid position
- 3: Ⓑ Voltage
- N: Ⓒ Light and surge suppressor
- ○: Ⓓ Option
- A03: Ⓔ Sub-plate and port size

Symbol	Descriptions		Model no. PV5G-8
Ⓐ Solenoid position			
FG-S	P pressurization type	2-position single solenoid	●
FG-D		2-position double solenoid	●
FHG-D		3-position all ports closed	●
FJG-D		3-position ABR connection	●
FIG-D		3-position PAB connection	●
FPG-D		3-position all ports closed	●
YZ-S	Exhaust pressurization type	2-position single solenoid	●
YZ-D		2-position double solenoid	●
Ⓑ Voltage			
1	100 VAC		●
3	24 VDC		●
4	12 VDC		●
5	110 VAC		●
Ⓒ Light and surge suppressor			
Blank	None		●
N	Light and surge suppressor Note 1		●
Ⓓ Option			
Blank	None		●
A	Coolant proof		●
Ⓔ Sub-plate and port size			
Blank	Without sub-plate		●
A03	Side porting Rc3/8 (Rc1/2 for R port)		●
A04	Side porting Rc1/2		●
A06	Side porting Rc3/4		●
B03	Back porting Rc3/8 (Rc1/2 for R port)		●
B04	Back porting Rc1/2		●
B06	Back porting Rc3/4		●

Note on model no. selection

Note 1: Refer to Intro 5 Page for the circuit diagram of the type with light and surge suppressor.

<Example of model number>

PV5G-8-FG-S-3-N-A03

Model: PV5G/ISO size 2 (DIN terminal box type)

- Ⓐ Solenoid position : P pressurization type 2-position single solenoid
- Ⓑ Rated voltage : 24 VDC
- Ⓒ Power indicator light : Light and surge suppressor
- Ⓓ Option : None
- Ⓔ Sub-plate port size : Side porting Rc3/8 R port Rc1/2

ISO size 2 sub-plate specifications and "How to order"

CB2 - A03

- A03: Ⓐ Port connection

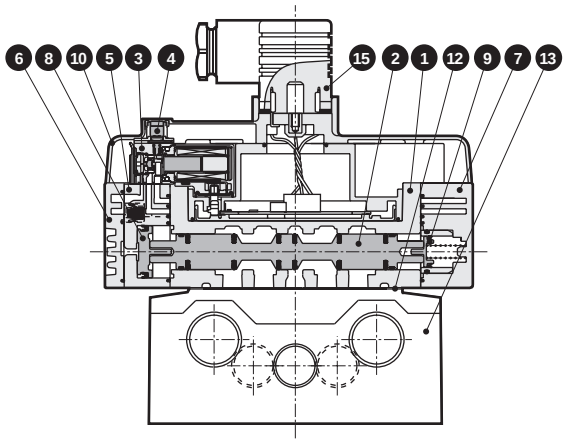
Symbol	Method	P/A/B port	R1/R2 port	Weight (kg)
Ⓐ Port connection				
A03	Side porting	Rc 3/8	Rc 1/2	0.66
A04		Rc 1/2		0.64
A06		Rc 3/4	Rc 3/4	1.40
B03	Back porting	Rc 3/8	Rc 1/2	0.62
B04		Rc 1/2		0.61
B06		Rc 3/4	Rc 3/4	1.40

Internal structure and parts list: DIN terminal box type

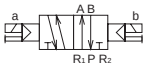
PV5G-8-FG-S
●2-position single solenoid

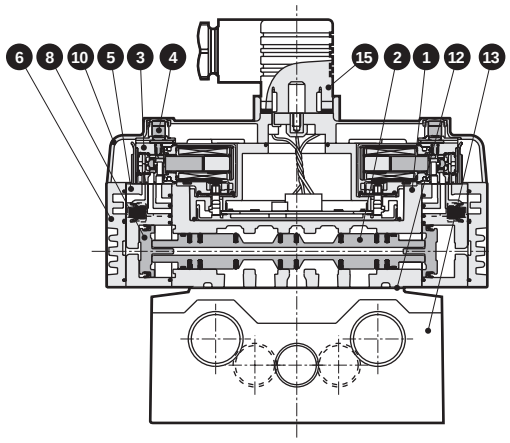
PV5G-8-FG-D
●2-position double solenoid

PV5G-8-YZ-S
●2-position single solenoid
exhaust pressurization type

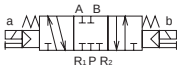


PV5G-8-YZ-D
●2-position double solenoid
exhaust pressurization type

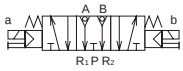




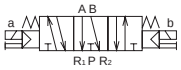
PV5G-8-FHG-D
●3-position all ports closed

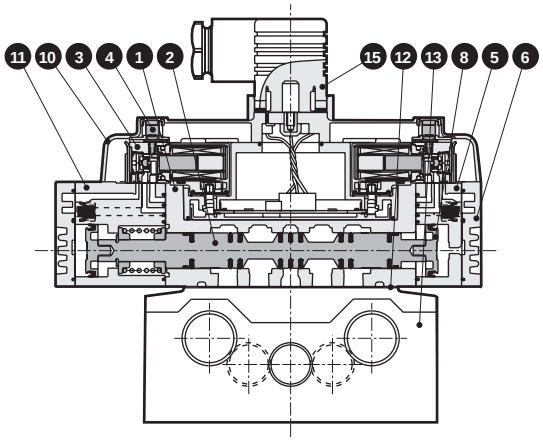


PV5G-8-FPG-D
●3-position all ports closed non-leak type

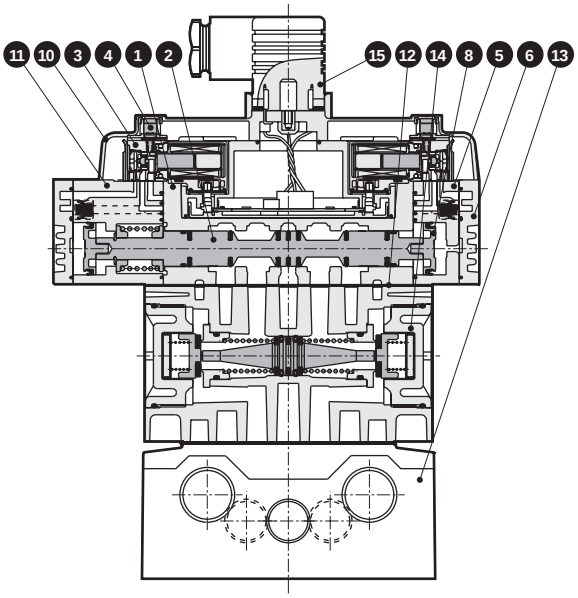


PV5G-8-FJG-D
●3-position A/B/R connection





PV5G-8-FIG-D
●3-position P/A/B connection



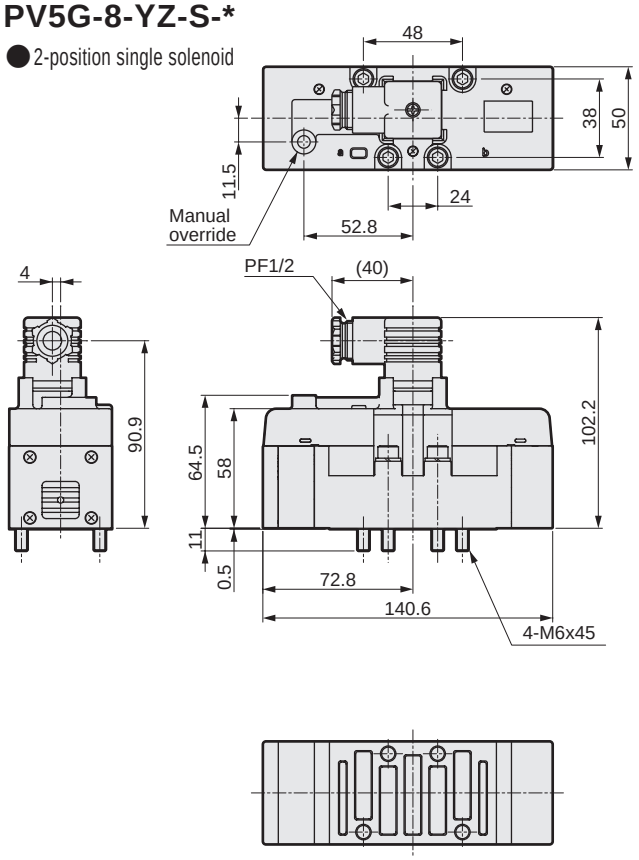
Main parts list

No.	Parts name	Material	No.	Parts name	Material
1	Body	Aluminum alloy die-casting	9	Piston S assembly	-
2	Spool assembly	-	10	Electric cover	Resin
3	Pilot valve	-	11	Pilot operated valve assembly for 3-position	Resin
4	Manual override	-	12	Gasket	-
5	Pilot operated valve assembly for double solenoid	Resin	13	Sub-plate	Aluminum alloy die-casting
6	Cap D	Resin	14	Air pilot check valve	-
7	Cap S	Resin	15	DIN terminal box	-
8	Piston D assembly	-			

Dimensions: DIN terminal box type (without sub-plate)

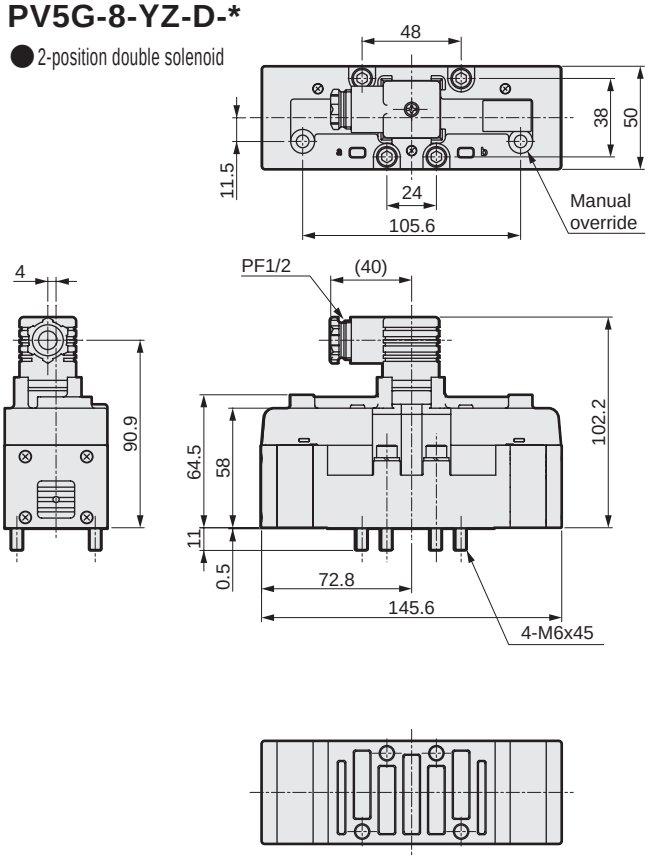
PV5G-8-FG-S-*
PV5G-8-YZ-S-*

● 2-position single solenoid



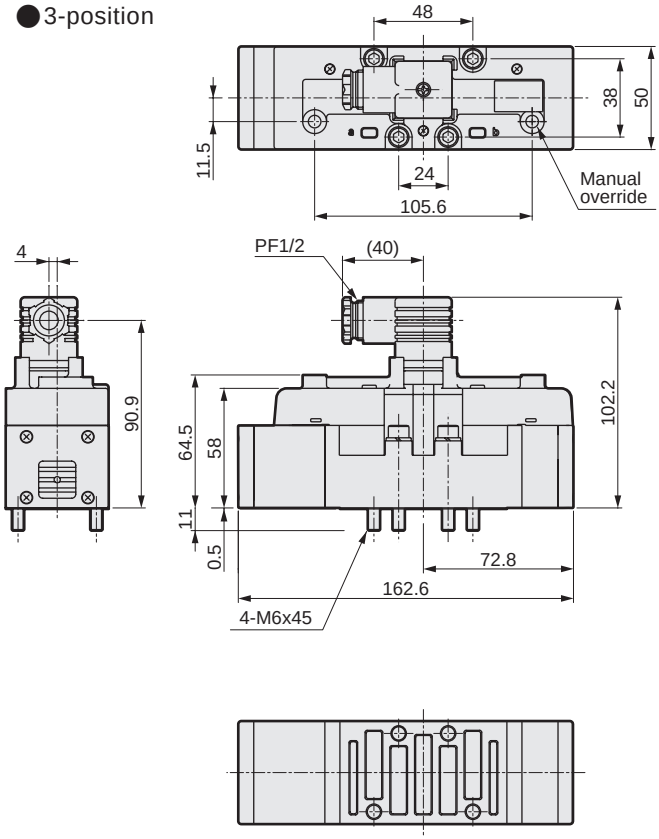
PV5G-8-FG-D-*
PV5G-8-YZ-D-*

● 2-position double solenoid



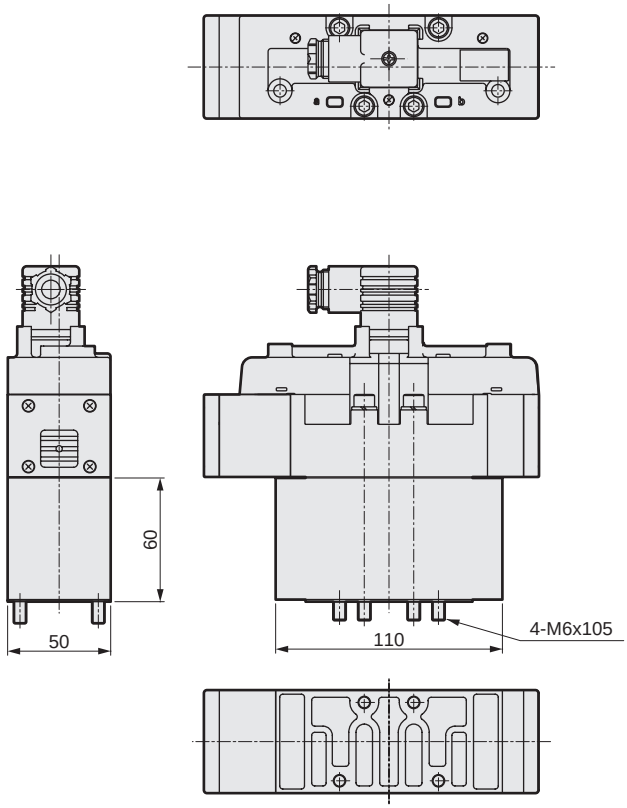
PV5G-8-FHG-D-*
PV5G-8-FJG-D-*
PV5G-8-FIG-D-*

● 3-position



PV5G-8-FPG-D-*

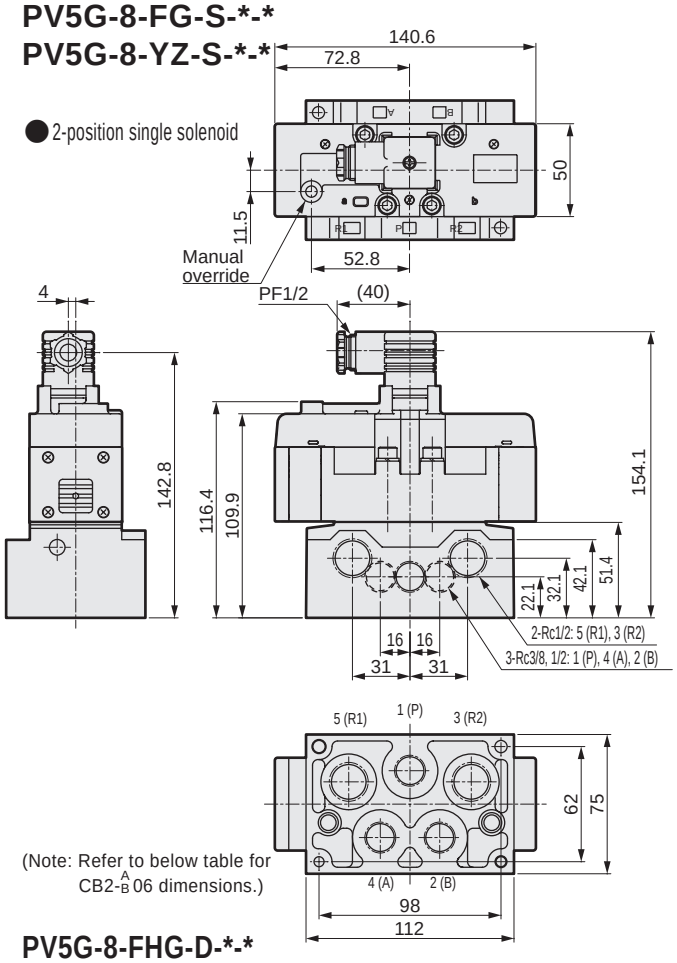
● 3-position and non-leak type



Dimensions: DIN terminal box type (with sub-plate)

PV5G-8-FG-S-*-*
PV5G-8-YZ-S-*-*

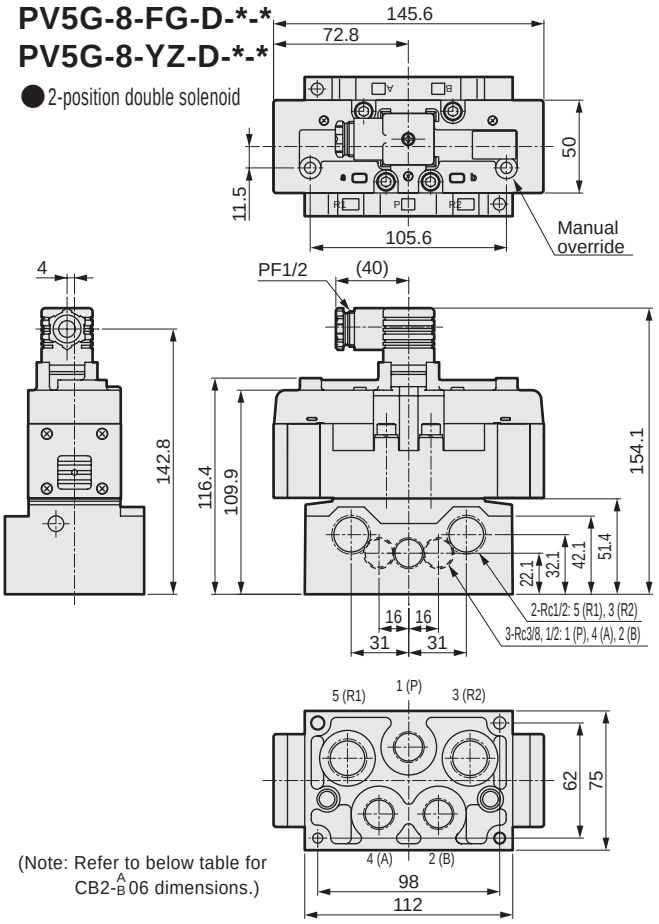
● 2-position single solenoid



(Note: Refer to below table for CB2-$^{A}_{B}$06 dimensions.)

PV5G-8-FG-D-*-*
PV5G-8-YZ-D-*-*

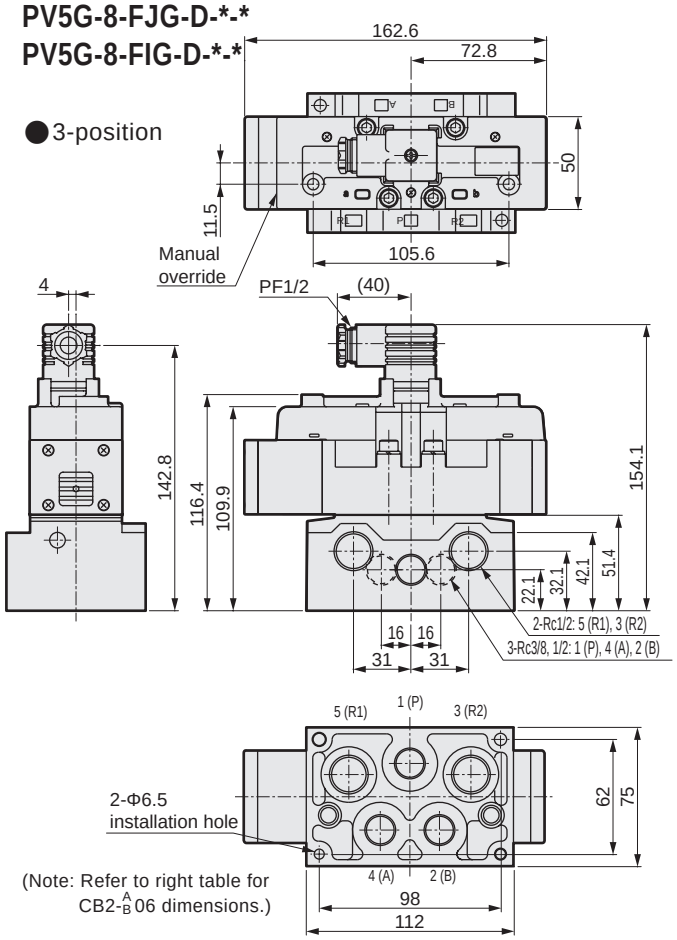
● 2-position double solenoid



(Note: Refer to below table for CB2-$^{A}_{B}$06 dimensions.)

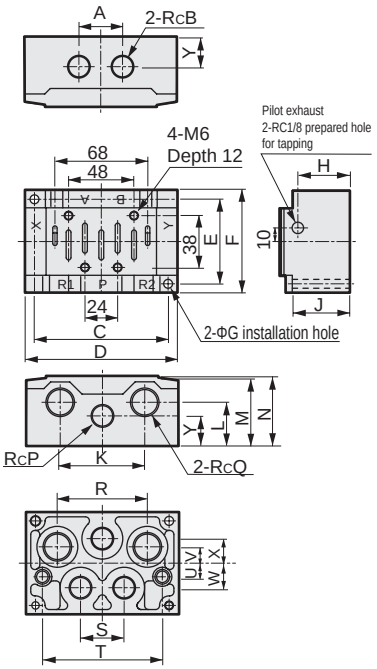
PV5G-8-FHG-D-*-*
PV5G-8-FJG-D-*-*
PV5G-8-FIG-D-*-*

● 3-position

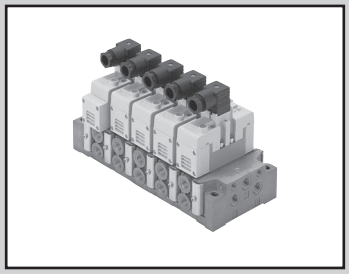


(Note: Refer to right table for CB2-$^{A}_{B}$06 dimensions.)

● Sub-plate dimensions (CB2-*)



Model no.	CB2-$^{A}_{B}$03	CB2-$^{A}_{B}$04	CB2-$^{A}_{B}$06
A	32		40
B	3/8	1/2	3/4
C	98		128
D	112		142
E	62		72
F	75		86
G	6.5		7.5
H	38		53
J	42		55
K	62		84
L	32		42
M	50		62
N	51		63
P	3/8	1/2	3/4
Q	1/2		3/4
R	66		84
S	32		40
T	88		116
U	10		11
V	12		16
W	18		22
X	18		23
Y	22		30



Individual wiring type manifold ISO size 1
DIN terminal box type
Pilot operated 5 port valve ISO conformed valve

CMF1 Series

● Applicable cylinder bore size: max. Φ100

Common specifications

Descriptions	
Manifold type	Manifold integrated
Type of manifold	Common supply, common exhaust common supply and individual exhaust Individual supply, common exhaust individual supply and individual exhaust Multi-pressure air supply
Station number	1 to 10 stations
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15, 0.20 (3-position) Note 1
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm^3/min (A, B → R port)	10 (ANR) or less Only 3-position all ports closed non-leak type 0.3 (ANR) or less Note 2
Vibration/shock m/s^2	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: For YZ-S only, use supply pressure at R1>R2≥0.1 MPa.
Note 2: The default is indicated.

Electric specifications

Descriptions				
Rated voltage V	AC		100 (50/60Hz) 110 (50/60Hz)	
	DC		12, 24	
Rated voltage fluctuation range			±10%	
			Without light	With light
Apparent power VA (Ampere A) Note 3	AC	100 V	2.3 (0.023)	2.4 (0.024)
		110 V	2.5 (0.023)	2.6 (0.024)
Power consumption W (Ampere A)	DC	12 V	1.0 (0.083)	1.2 (0.100)
		24 V	1.0 (0.042)	1.2 (0.050)
Heat proof class			B (molded coil)	
Wiring methods			Electric plug connector	

Note 3: Ampere of AC type is holding current.

Individual specifications

Descriptions			CMF1	
Port size Note 1	P/R1/R2 port		Rc3/8, Rc1/2	
	A/B port		Rc3/8	Rc3/4
Response time ms Note 2	2-position	Single solenoid	30 (when turned ON) and 40 (when turned OFF)	
		Double solenoid	30	
	3-position		30 (when turned ON) and 60 (neutral)	

Note 1: The piping port screw is compatible with G and NPT screws. Contact CKD for details.
Note 2: The response time is the value at supply pressure of 0.5 MPa, oilless. This may change depending on the pressure and type of oil supplied.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b
CMF1	Rc1/4	2-position single solenoid	4.8	0.25	5.2	0.26
		2-position double solenoid	4.8	0.25	5.2	0.26
		3-position all ports closed	4.4	0.27	4.7	0.27
		3-position A/B/R connection	4.4	0.25	5.3	0.25
		3-position P/A/B connection	4.8	0.27	4.7	0.27
		3-position all ports closed no leakage	3.2	-	2.8	-

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

Control unit specifications

Control unit component	Descriptions	Descriptions
Air filter (with automatic drain/manual drain)	Filtration rating	5μm
Regulator	Setting pressure (secondary pressure)	0.1 to 0.83MPa
	Pressure adjusting range	0.1 to 0.8MPa
Pressure switch	Contact configuration	1C
	Rated current (inductive load)	125 VAC 15A and 250 VAC 15A
Air release valve (only single)	Working pressure range	0.15 to 1.0MPa

● Refer to pneumatic/vacuum/auxiliary components catalog (No. CB-024SA) for specifications of pressure switch APE-8F-*.
● PV5G-6-FG-S-*-N is used for air release valve.

How to order DIN terminal box type (without control unit)

● ISO size 1

CMF 1 5 - 02 L - HY1 B DU - SB

- Model no.
- Ⓐ Station number
- Ⓑ A/B port size Note 1
- Ⓒ A/B port position Note 2
- Ⓓ P/R port size
- Ⓔ P/R port position Note 3, Note 4
- Ⓕ HY configuration
- Ⓖ Silencer box Note 5

Symbol	Descriptions	Model no. CMF1
Ⓐ Station number		
1	1 station	●
to	to	
10	10 stations	
Ⓑ A/B port size		
02	Rc 1/4	●
03	Rc 3/8	●
HX1	Rc1/4, Rc3/8 mix	●
Ⓒ A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●
Ⓓ P/R port size		
03	Rc 3/8	●
04	Rc 1/2	●
HY1	Rc 3/8, Rc 1/2 mix	●
Ⓔ P/R port position		
B	Top and bottom	●
D	Bottom	●
U	Top	●
E	P is top, R is bottom.	●
F	P is bottom, R is top.	●
T	Flexible selection (plug attached)	●
Ⓕ HY configuration		
Blank	When bore size other than HY1 is selected in Ⓓ.	●
DU	Rc 3/8 is bottom, Rc 1/2 is top.	●
UD	Rc 3/8 is top, Rc 1/2 is bottom.	●
Ⓖ Silencer box		
Blank	None	●
SB	Selected (D side installation)	●

The valve unit must be prepared separately. Refer to page 4 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 30 must be submitted when preparing the manifold with valves.

Note on model no. selection

Note 1: HX indicates mix of port size. Contact CKD for details.

Note 2: Ⓒ indicates port position.
Ports will be plugged unless indicated.

Note 3: Ⓔ indicates port position.
The opposite side of indicated port will be plugged.

Note 4: When the Ⓖ silencer box is selected, the P-port position is selected from B, D, U, or T.

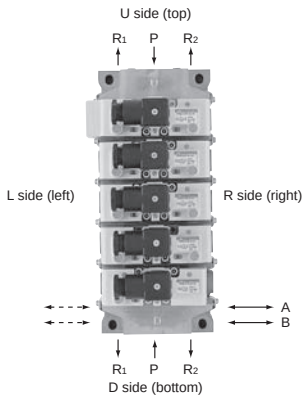
Note 5: When the Ⓖ silencer box type is selected, a plug assembly is provided on both top and bottom.

<Example of model number>

CMF15-02L-HY1BDU-SB

Model: Manifold ISO size 1

- Ⓐ Station number : 5 stations
- Ⓑ Ⓒ A/B port : Rc1/4 (left-right sides porting)
- Ⓓ Ⓔ Ⓕ P/R port : Rc3/8, Rc1/2 mixed (Rc3/8 is bottom, Rc1/2 is top piping)
- Ⓖ Silencer box : Selected (D side installation)



Without control unit

How to order DIN terminal box type (with control unit)

● ISO size 1

CMF 1 5 - 02 L - A - HY1 B DU - 1

Model no.

Ⓐ Station number Note 1

Ⓑ A/B port size Note 2

Ⓒ A/B port position Note 3

Ⓓ Control unit Note 4, Note 5

Ⓔ R port size

Ⓕ R port position Note 6

Ⓖ HY configuration

Ⓗ Air release valve

Symbol	Descriptions	Model no. CMF1
Ⓐ Station number		
3	3 stations	●
to	to	
10	10 stations	
Ⓑ A/B port size		
02	Rc 1/4	●
03	Rc 3/8	●
HX1	Rc1/4, Rc3/8 mix	●
Ⓒ A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●

Ⓓ Control unit (Reg.: Regulator, Air: Air release valve, Pre: Pressure switch)					
A	Filter with auto drain	Reg.	Air		●
AP	Filter with auto drain	Reg.	Air	Pre	●
M	Filter with manual drain	Reg.	Air		●
MP	Filter with manual drain	Reg.	Air	Pre	●
F	Filter with auto drain (air release valve plug)	Reg.			●
G	Filter with manual drain (air release valve plug)	Reg.			●
C	With air release valve		Air		●

Ⓔ R port size		
03	Rc 3/8	●
04	Rc 1/2	●
HY1	Rc 3/8, Rc 1/2 mix	●
Ⓕ R port position		
B	R on top or at bottom	●
D	R at bottom	●
U	R on top	●
T	Flexible selection (plug attached)	●
Ⓖ HY configuration		
Blank	When bore size other than HY1 is selected in Ⓔ.	●
DU	Rc 3/8 is bottom, Rc 1/2 is top.	●
UD	Rc 3/8 is top, Rc 1/2 is bottom.	●
Ⓗ Air release valve		
Blank	Without air release valve	●
1	100 VAC	●
3	24 VDC	●
4	12 VDC	●
5	110 VAC	●

The valve unit must be prepared separately. Refer to page 4 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 31 must be submitted when preparing the manifold with valves.

Note on model no. selection

Note 1: This is the station number including 2 stations of unit base.
Note 2: HX indicates mix of port size. Contact CKD for details.
Note 3: Ⓒ indicates port position.
Ports will be plugged unless indicated.
Note 4: The pressure switch has no indicator light. (Indicator light is available as custom order.)
Note 5: Air release valve has light, surge suppressor and manual override.
Note 6: Instruction of Ⓕ indicates the port position.
The opposite side of indicated port will be plugged.

<Example of model number>

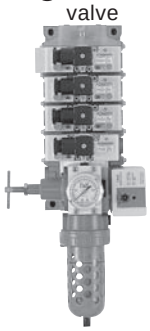
CMF15-02L-A-HY1BDU-1

Model: Manifold ISO size 1
Ⓐ Station number : 5 stations
Ⓑ Ⓒ A/B port : Rc1/4 (left-right sides porting)
Ⓓ Control unit : With filter with auto drain, regulator and air release valve
Ⓔ Ⓕ Ⓖ R port : Rc3/8, Rc1/2 mixed (Rc3/8 is bottom, Rc1/2 is top piping)
Ⓗ Voltage of air release valve : 100 VAC

Manifold option control unit

Control units such as an air filter, regulator, pressure switch, and air release valve can be installed on the manifold to reduce piping work.

Control unit Ⓓ	A	AP	M	MP	F	G	C
Filter regulator with auto drain CMF1-AFR-3F	○	○	-	-	○	-	-
Filter with manual drain regulator CMF1-AFR-3E	-	-	○	○	-	○	-
Installation spacer CMF1-FRB-D	○	○	○	○	○	○	○
Air release valve PV5G-6-FG-S-*-N	○	○	○	○	-	-	○
Release valve spacer block CMF1-VP	-	-	-	-	○	○	-
FR spacer block CMF1-FR	-	-	-	-	-	-	○
Pressure switch APE-8F	-	○	-	○	-	-	-

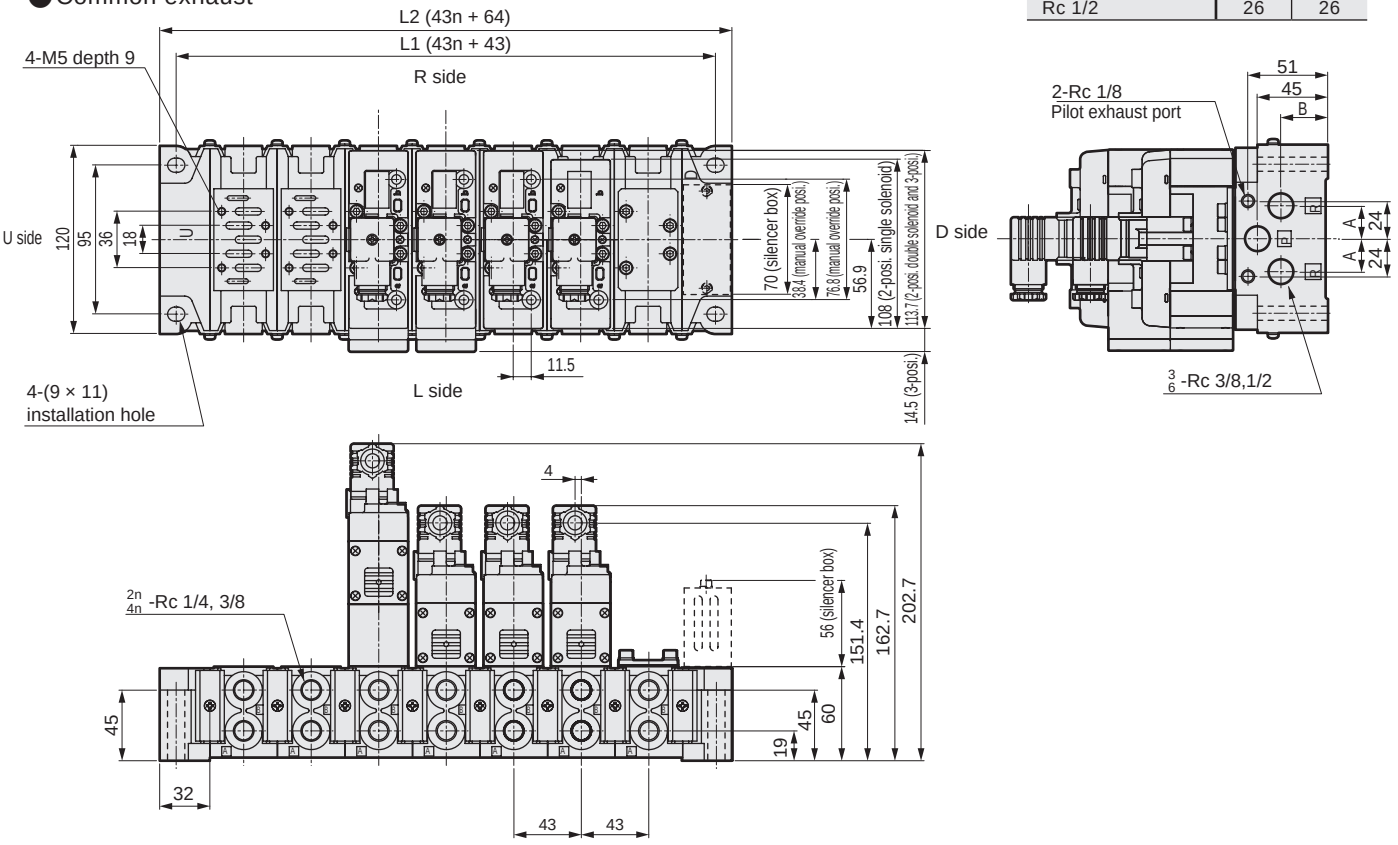


Dimensions: DIN terminal box type

CMF1

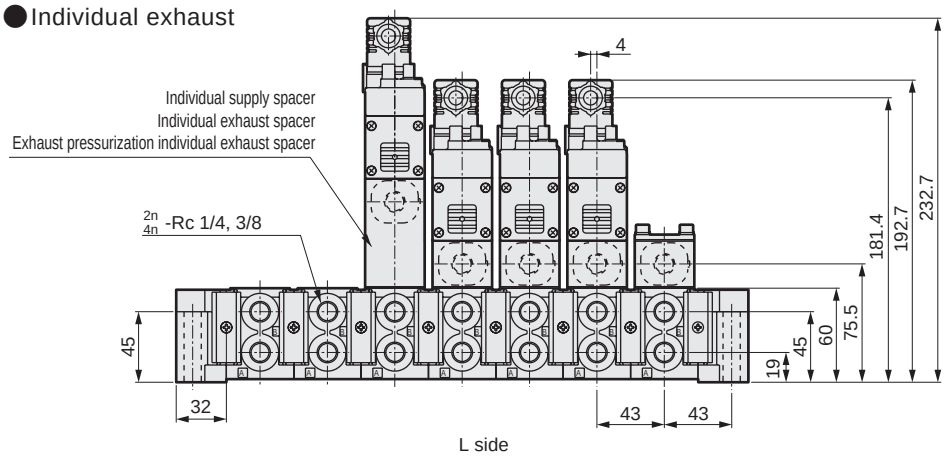
● Common exhaust

P/R port size	A	B
Rc 3/8	21	30
Rc 1/2	26	26



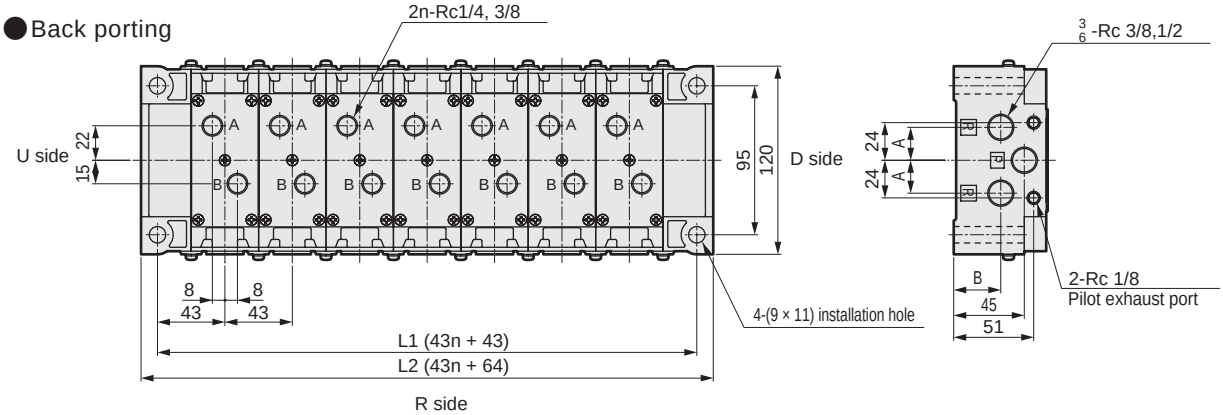
CMF1

● Individual exhaust



CMF1

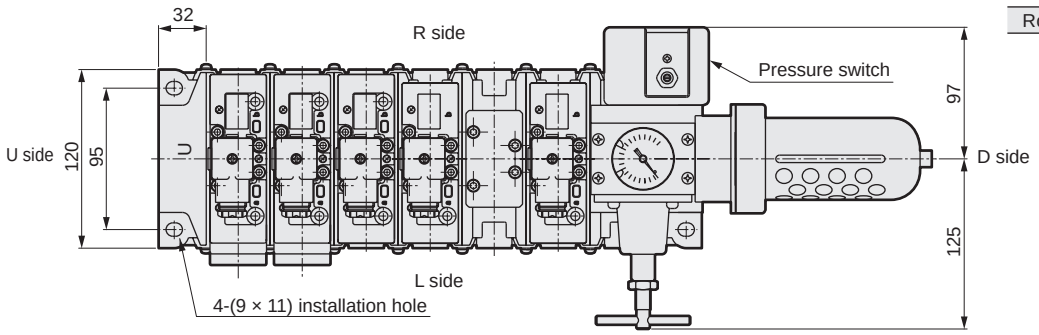
● Back porting

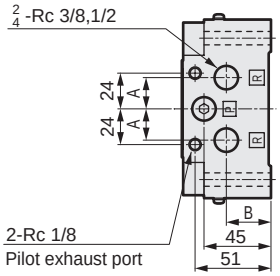


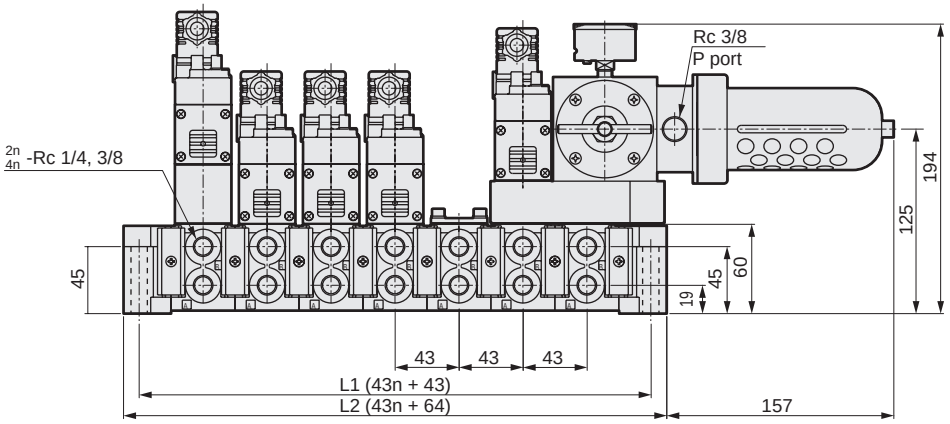
Dimensions: DIN terminal box type

● With control unit

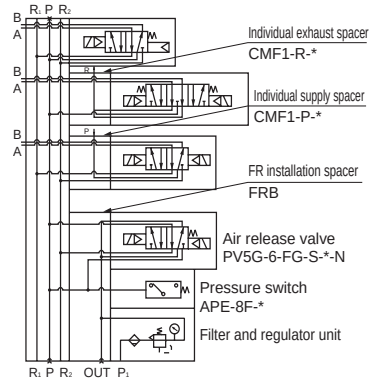
P/R port size	A	B
Rc 3/8	21	30
Rc 1/2	26	26







● JIS symbol



How to order

● Spacer type regulator

CMF **1** - **SR** - **A** - **T05** **C**

Ⓐ Size	
1	ISO size 1

Ⓑ Decompression port position	
P	P port
A	A port
B	B port

Ⓒ Pressure gauge	
T05	MPa display (With limit mark)

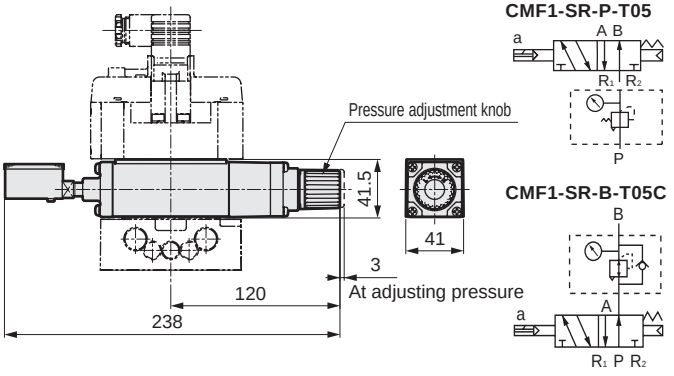
Ⓓ Check valve	
Blank	No
C	Yes

Indicate "no check valve" (blank) for SR-P, and "with check valve" (C) for SR-A and SR-B.

Note that the pressure gauge direction differs for the **CMF1-SR-A-T05C**.

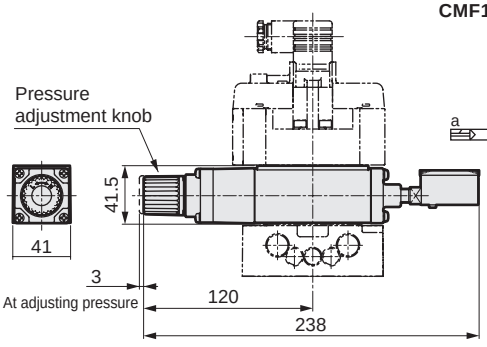
CMF1-SR-P-T05
CMF1-SR-B-T05C

● Spacer type regulator

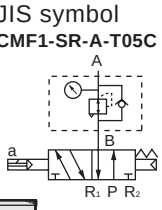


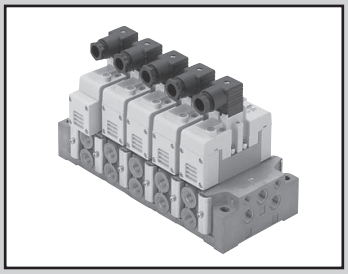
● JIS symbol

CMF1-SR-A-T05C



● JIS symbol





Individual wiring type manifold ISO size 2
DIN terminal box type
Pilot operated 5 port valve ISO conformed valve

CMF2 Series

● Applicable cylinder bore size: max. Φ160

Common specifications

Descriptions	
Manifold type	Manifold integrated
Type of manifold	Common supply, common exhaust common supply and individual exhaust Individual supply, common exhaust individual supply and individual exhaust Multi-pressure air supply
Station number	1 to 10 stations
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15 0.20 (3-position) Note 1
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm^3/min (A, B → R port)	10 (ANR) or less Only 3-position all ports closed non-leak type 0.3 (ANR) or less Note 2
Vibration/shock m/s^2	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: For YZ-S only, use supply pressure at R1>R2≥0.1 MPa.
Note 2: The default is indicated.

Electric specifications

Descriptions				
Rated voltage V	AC		100 (50/60Hz) 110 (50/60Hz)	
	DC		12, 24	
Rated voltage fluctuation range			±10%	
			Without light	With light
Apparent power VA (Ampere A) Note 3	AC	100 V	2.3 (0.023)	2.4 (0.024)
		110 V	2.5 (0.023)	2.6 (0.024)
Power consumption W (Ampere A)	DC	12 V	1.0 (0.083)	1.2 (0.100)
		24 V	1.0 (0.042)	1.2 (0.050)
Heat proof class			B (molded coil)	
Wiring methods			Electric plug connector	

Note 3: Ampere of AC type is holding current.

Individual specifications

Descriptions			CMF2	
Port size Note 1	P/R1/R2 port		Rc3/8, Rc1/2	
	A/B port		Rc3/8	Rc3/4
Response time ms Note 2	2-position	Single solenoid	40 (when turned ON), 60 (when turned OFF)	
		Double solenoid	40	
	3-position		40 (when turned ON), 60 (neutral)	

Note 1: The piping port screw is compatible with G and NPT screws. Contact CKD for details.
Note 2: The response time is the value at supply pressure of 0.5 MPa, oilless. This may change depending on the pressure and type of oil supplied.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b
CMF2	Rc3/8	2-position single solenoid	9.7	0.12	11.0	0.14
		2-position double solenoid	9.7	0.12	11.0	0.14
		3-position all ports closed	9.2	0.12	10.1	0.15
		3-position A/B/R connection	9.2	0.11	11.6	0.11
		3-position P/A/B connection	9.6	0.11	10.2	0.18
		3-position all ports closed no leakage	6.2	-	5.9	-

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

How to order DIN terminal box

● ISO size 2

CMF 2 5 - 03 L - 04 B [ ] - SB

Model no.
Ⓐ Station number
Ⓑ A/B port size Note 1
Ⓒ A/B port position Note 2
Ⓓ P/R port size
Ⓔ P/R port position Note 3, Note 4
Ⓕ HY configuration
Ⓖ Silencer box Note 5

Symbol	Descriptions	Model no. CMF2
Ⓐ Station number		
1	1 station	●
to	to	
10	10 stations	
Ⓑ A/B port size		
03	Rc 3/8	●
04	Rc 1/2	●
HX2	Rc 3/8, Rc 1/2 mix	●
Ⓒ A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●
Ⓓ P/R port size		
04	Rc 1/2	●
06	Rc 3/4	●
HY2	Rc1/2, Rc3/4 mix	●
Ⓔ P/R port position		
B	Top and bottom	●
D	Bottom	●
U	Top	●
E	P is top, R is bottom.	●
F	P is bottom, R is top.	●
T	Flexible selection (plug attached)	●
Ⓕ HY configuration		
Blank	When bore size other than HY2 is selected in Ⓓ.	●
DU	Rc1/2 is bottom, Rc3/4 is top.	●
UD	Rc1/2 is top, Rc3/4 is bottom.	●
Ⓖ Silencer box		
Blank	None	●
SB	Selected (D side installation)	●

The valve unit must be prepared separately. Refer to page 10 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 32 must be submitted when preparing the manifold with valves.

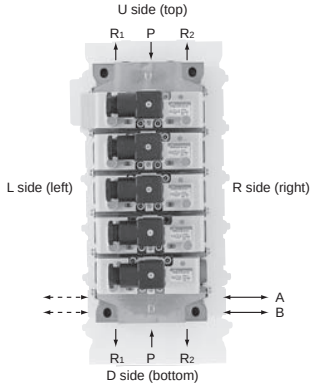
Note on model no. selection

Note 1: HX indicates mix of port size. Contact CKD for details.
Note 2: Ⓒ indicates port position.
Ports will be plugged unless indicated.
Note 3: Ⓔ indicates port position.
The opposite side of indicated port will be plugged.
Note 4: When the Ⓖ silencer box is selected, the P-port position is selected from B, D, U, or T.
Note 5: When the Ⓖ silencer box type is selected, a plug assembly is provided on both top and bottom.

<Example of model number>

CMF25-03L-04B-SB

Model: Manifold ISO size 2
Ⓐ Station number : 5 stations
Ⓑ Ⓒ A/B port : Rc3/8 (left-right sides porting)
Ⓓ Ⓔ P/R port : Rc1/2 (top-bottom side porting)
Ⓖ Silencer box : Selected (D side installation)



Without control unit

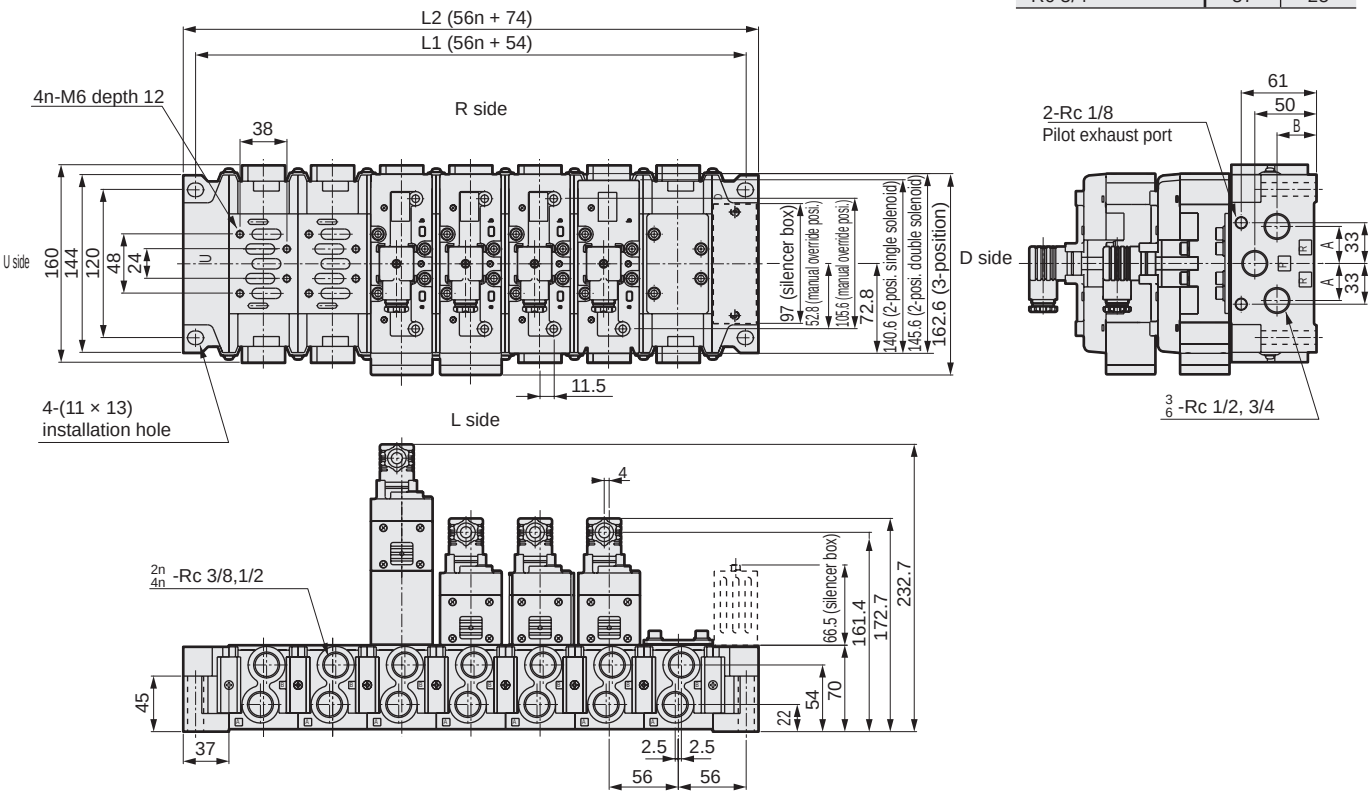
MEMO

Dimensions: DIN terminal box type

CMF2

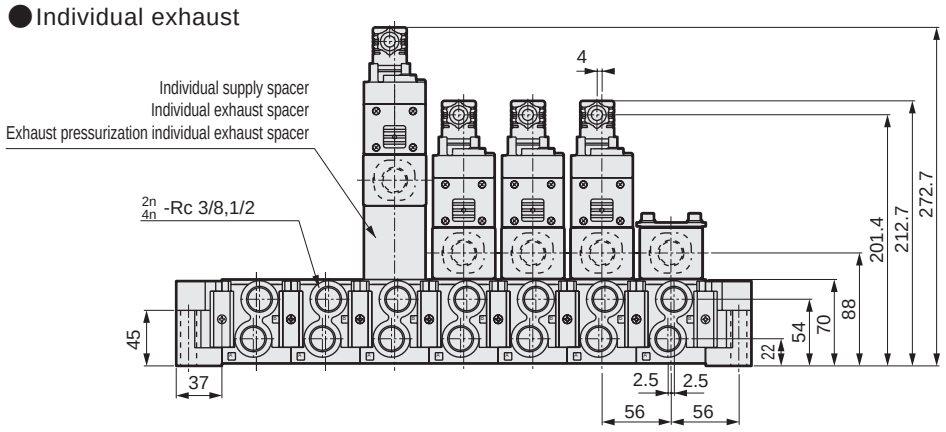
● Common exhaust

P/R port size	A	B
Rc 1/2	30	32
Rc 3/4	37	25



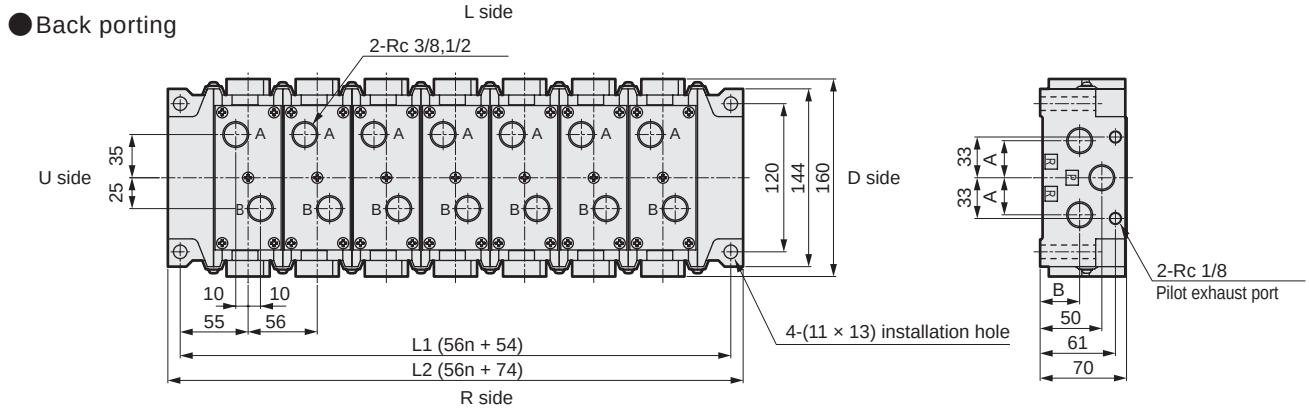
CMF2

● Individual exhaust



CMF2

● Back porting



How to order

●Spacer type regulator

CMF **2** - **SR** - **A** - **T05** **C**

Ⓐ Size	
2	ISO size 2

Ⓑ Decompression port position	
P	P port
A	A port
B	B port

Ⓒ Pressure gauge	
T05	MPa display (With limit mark)

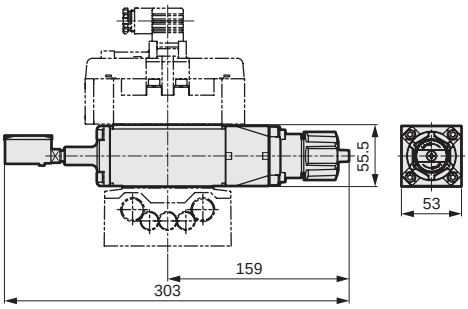
Ⓓ Check valve	
Blank	No
C	Yes

Indicate "no check valve" (blank) for SR-P, and "with check valve" (C) for SR-A and SR-B.

*Note that the pressure gauge direction differs for the **CMF2-SR-A-T05C**.

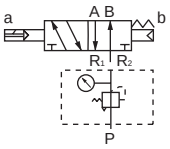
CMF2-SR-P-T05
CMF2-SR-B-T05C

●Spacer type regulator

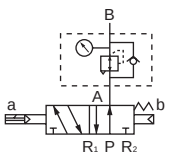


●JIS symbol

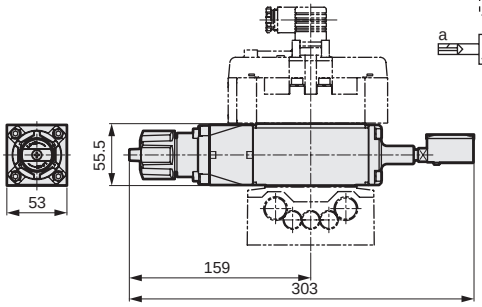
CMF2-SR-P-T05



CMF2-SR-B-T05C

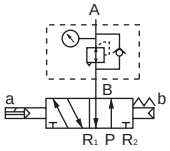


CMF2-SR-A-T05C

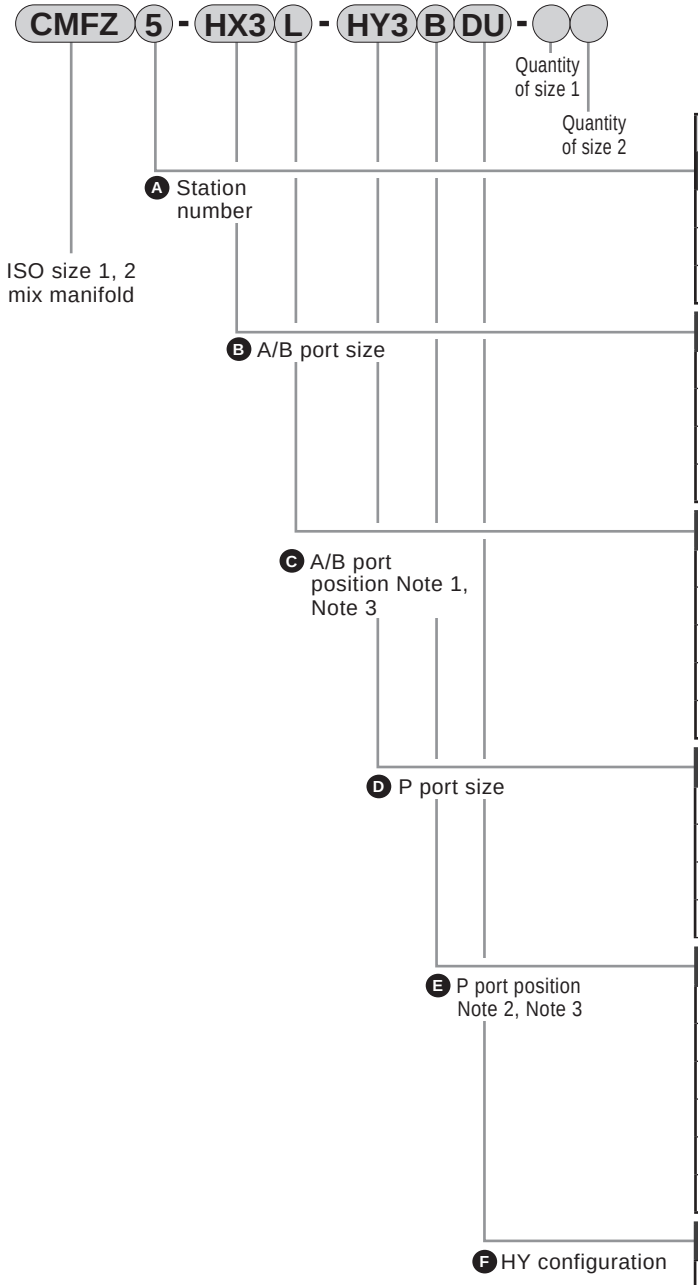


●JIS symbol

CMF2-SR-A-T05C



How to order DIN terminal box



Symbol	Descriptions	Model no. CMFZ
A Station number		
2	2 stations	●
to	to	
10	10 stations	
B A/B port size		
HX3	1:02, 2:03	●
HX4	1:02, 2:04	●
HX5	1:03, 2:03	●
HX6	1:03, 2:04	●
C A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●
D P port size		
HY3	1:03, 2:04	●
HY4	1:03, 2:06	●
HY5	1:04, 2:04	●
HY6	1:04, 2:06	●
E P port position		
B	Top and bottom	●
D	Bottom	●
U	Top	●
E	P is top, R is bottom.	●
F	P is bottom, R is top.	●
T	Flexible selection (plug attached)	●
F HY configuration.		
DU	The smaller bore size is bottom and larger bore size is top. 1 is bottom and 2 is top.	●
UD	The smaller bore size is top and larger bore size is bottom. 1 is top and 2 is bottom.	●

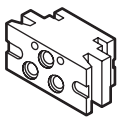
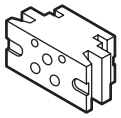
The valve unit must be prepared separately. Refer to pages 4 and 10 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 33 must be submitted when preparing the manifold with valves.

Note on model no. selection

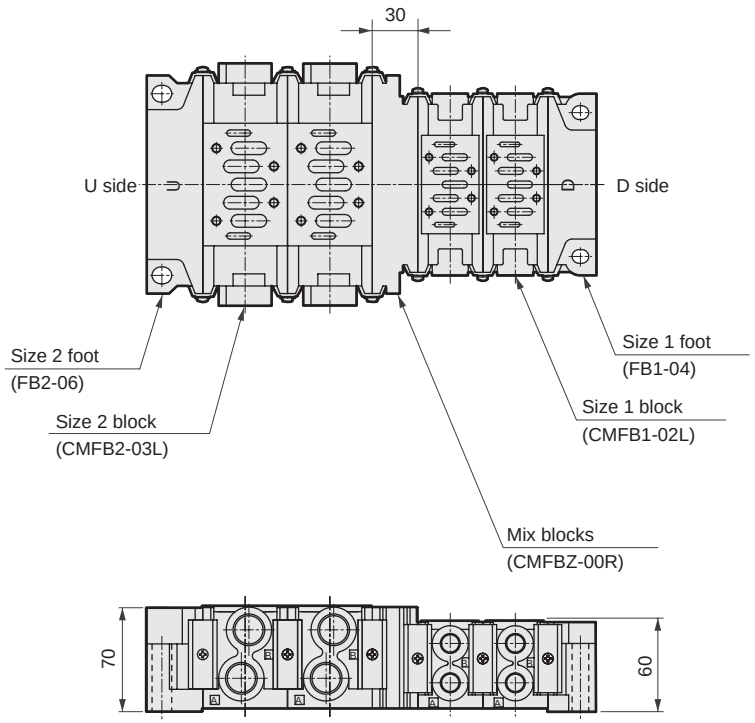
Note 1: C indicates the port position.
Ports will be plugged unless indicated.

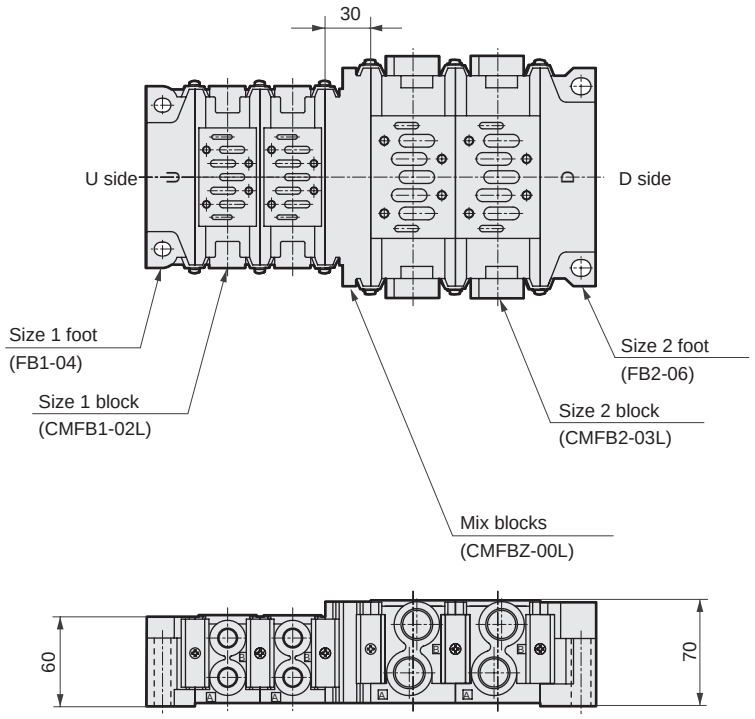
Note 2: E indicates the port position.
The side opposite that designated is plugged.

Note 3: If L is designated for the port position in C,
indicate the plug position in manifold specifications.

No	Descriptions	Model no.	Diagram	Remarks
1	ISO size 1, 2 Mix Block	**CMFBZ-00L**		U side size 1 D side size 2 With connecting bracket and O ring
		CMFBZ-00R		U side size 2 D side size 1 With connecting bracket and O ring

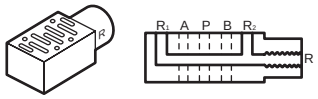
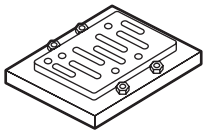
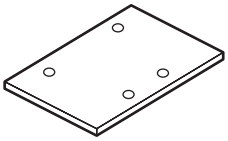
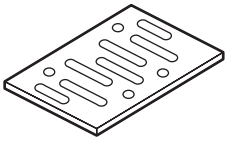
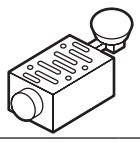
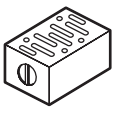
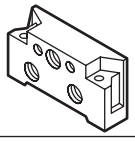
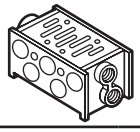
Mix manifold appearance image





* Refer to Page 18, 24 for size 1, 2 foot and block dimensions.

Manifold option

Options	Model no.		Remarks
	ISO size 1	ISO size 2	
1. Individual supply spacer 	CMF1-P-02 (Rc1/4) 03 (Rc3/8)	CMF2-P-03 (Rc3/8) 04 (Rc1/2)	1. Clamp for individual supply port, used for multi-pressure 2. Individual exhaust for exhaust pressurization
2. Individual exhaust spacer 	CMF1-R-02 (Rc1/4) 03 (Rc3/8)	CMF2-R-03 (Rc3/8) 04 (Rc1/2)	1 port exhaust by individual exhaust (back pressure proof)
3. Adaptor 	CU1-00 (FS/FD2 Series, Rc1/4, 3/8) CU1-01 (FS/FD3 Series, Rc1/4, 3/8, 1/2)	CU2-00 (FS/FD3 Series, Rc1/4, 3/8, 1/2) CU2-01 (FS/FD4 Series, Rc1/2, 3/4)	PV5G-6, PV5G-8 is installed on the conventional model F^{S2}_{D3} (Custom order)
4. Masking plate 	CM1-00	CM2-00	PV5G-6 PV5G-8 Discrete masking plate
	CM1-01	CM2-01	Manifold (CMF1, CMF2) P/R_1/R_2 port Masking plate
5. Base gasket 	PV5G-6-BASE-GASKET	PV5G-8-BASE-GASKET	PV5G-6 PV5G-8
6. Set screw 	CMF1-M5X35	CMF2-M6X45	
7. Spacer type regulator 	CMF1-SR-P-T05 CMF1-SR-A-T05C CMF1-SR-B-T05C "How to order" Page 19	CMF2-SR-P-T05 CMF2-SR-A-T05C CMF2-SR-B-T05C "How to order" Page 25	Multi-pressure use
8. Air pilot check valve 	CMF1-PC	CMF2-PC	Cylinder intermediate position holding
9. Foot U side 	FB1-$^{03}_{04}$ U	FB2-$^{04}_{06}$ U	O rings are included with manifold connecting bracket set (× 2), plug, or U side hood.
D side	FB1-$^{03}_{04}$ D	FB2-$^{04}_{06}$ D	
10. Manifold block 	CMFB1-$^{02}_{03}$ T	CMFB2- $^{03}_{04}$ T	Manifold connecting bracket set (× 2), plug and O ring are included.

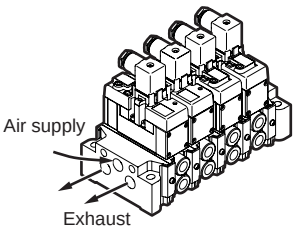
Type of manifold

A wide range of air supply, exhaust, and piping combinations is available.
Select the functions best suited to your application.

1 General use

●Common exhaust method

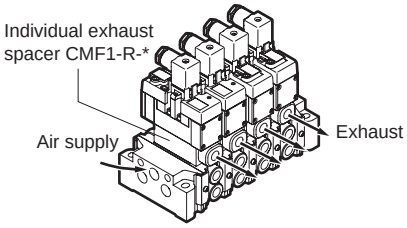
This is the most commonly used method. Each solenoid valve air supply and exhaust are grouped at one position with P (air supply) and R (exhaust) ports passing through the connected manifold block.



2 Application of general use

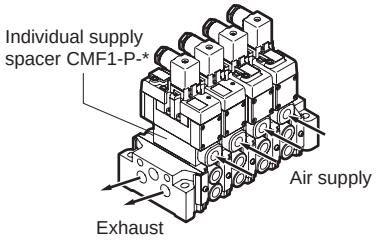
●Individual exhaust method

R1 and 2 (exhaust) ports are independent for each solenoid valve, so the adjacent cylinder will not pop out because of back pressure.
An individual exhaust spacer (CMF1-R-*) can be inserted between the manifold block and valve to enable individual exhaust.



●Individual supply method

P (air supply) ports are independent for each valve, so a different pressure can be supplied to a specific valve in the manifold.
An individual supply spacer (CMF1-P-*) can be inserted between the manifold block and valve to enable individual air supply.



●Individual supply and individual exhaust method

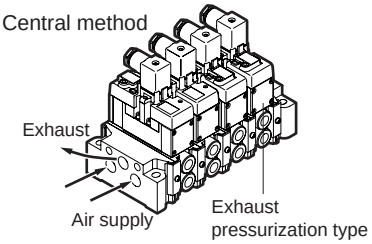
Use this when independent P (air supply) port and R (exhaust) port are to be used only for specific valves in the manifold.
Example: When using an oilless manifold but lubricating a specific valve.
Individual supply (CMF1-P-*) and exhaust (CMF1-R-*) spacers inserted between the manifold block and valve enable individual air supply and exhaust.

●Multi-pressure air supply method

A masking plate (CM1-01) lies between manifold blocks with different pressures, supplying two pressures, high and low, to one manifold.

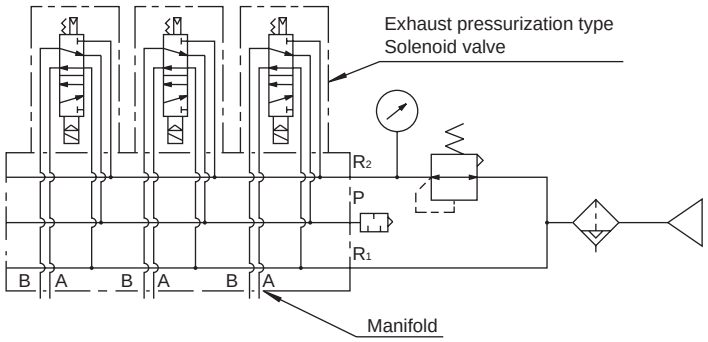
3 Special use (exhaust pressurization)

This is suitable for supplying more than one different pressure to one manifold.
Example: To drive two piston cylinders used in a welding machine.

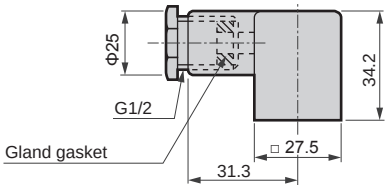


●Example of exhaust pressurization type

Central method

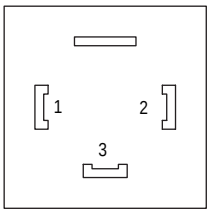


●Terminal box (model no.: PV5G-DIN-TRM-BOX)



Gland gasket inner diameter	Color	Applicable (code and cable) outer diameter
Φ10.5	Black	Φ8.5 to Φ11.5

How to wire



Pin No.	Name
1	a SOL
2	b SOL
3	COM

No polarity is designated when DC power is used.

4 Common descriptions for general and special purpose

●Back porting method

If side porting is not possible, pipes can be connected from either the A or B port, or all pipes can be connected from the bottom of the manifold.

Manifold specifications
ISO size 1 DIN terminal box type

Issue / /

Your company name

●Contact ●Quantity set ●Request date / /

Contact

Slip No.	Order No.

Order No.

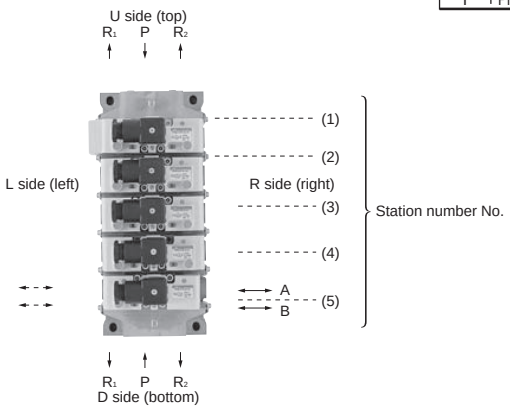
●Manifold model no.

CMF 1 □ - □ □ - □ □ □ - □ □ - □ - □ - □ □

Ⓐ ISO size | Ⓑ Station number | Ⓒ A/B port size | Ⓓ A/B port position | Ⓔ P/R port size | Ⓕ P/R port position | Ⓖ HY configuration | Ⓗ Silencer box | Ⓘ Voltage | Ⓙ Indicator light | Ⓚ Option

Ⓐ ISO size		Ⓑ Station No.		Ⓒ A/B port size		Ⓓ A/B port position		Ⓔ P/R port size		Ⓕ P/R port position		Ⓖ HY configuration		Ⓗ Silencer box		Ⓘ Voltage		Ⓙ Indicator light		Ⓚ Option	
1	PV5G-6	1	1 station	02	Rc1/4	Blank	Right side	03	Rc3/8	B	Top and bottom	Blank	Other than HY is selected for Ⓔ.	Blank	None	1	100 VAC	Blank	None	Blank	None
		to	to	03	Rc3/8	L	Left/right sides	04	Rc1/2	D	Bottom			SB	Selected (D side)	3	24 VDC	N	With indicator light	A	Coolant proof
		10	10 stations	HX1	Rc1/4,Rc3/8 mix	H	Left side	HY1	Rc3/8,Rc1/2 mix	U	Top	DU	Rc3/8 is bottom, Rc1/2 is top			4	12 VDC				
						Z	Rear side			E	P top, R bottom					5	110 VAC				
						T	Plug attached			F	P bottom, R top	UD	Rc3/8 is top, Rc1/2 is bottom								
										T	Plug attached										

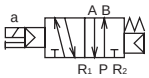
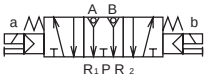
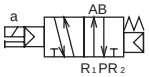
Note: Ⓘ, Ⓙ, and Ⓚ are installation valve options selected when assembling the manifold.

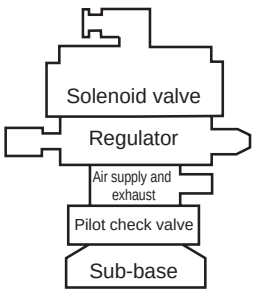


★Indicate left solenoid valve No. (1) to (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No			1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5G-6											
Plug position should be indicated when L is selected in Ⓓ		R										
		L										
Option	Air supply spacer											
	Exhaust spacer											
	Pilot check valve											
	Spacer type regulator	CMF⋆-SR-P										
		CMF⋆-SR-A										
		CMF⋆-SR-B										
	Flow path shut off plate	Air supply passage shut off										
		Exhaust passage shut off										
	A mixed bore size should be indicated when HX is selected for Ⓒ.	02										
		03										

Solenoid valve type No.

2-position single solenoid		PV5G-6-FG-S	(1)
2-position double solenoid		PV5G-6-FG-D	(2)
3-position all ports block		PV5G-6-FHG-D	(3)
3-position A-B-R connection		PV5G-6-FJG-D	(4)
3-position P-A-B connection		PV5G-6-FIG-D	(5)
3-position all ports block no leakage		PV5G-6-FPG-D	(6)
2-position single solenoid Exhaust pressurization		PV5G-6-YZ-S	(7)
2-position double solenoid Exhaust pressurization		PV5G-6-YZ-D	(8)
Masking plate		CM1-00	(9)



Option (spacer) assembly order

Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

Manifold specifications

ISO size 1 DIN terminal box type (with control unit)

Issue / /

Your company name

Contact

Order No.

●Contact ●Quantity set ●Request date / /

Slip No.	Order No.

●Manifold model no.

CMF 1 □ - □ □ - □ - □ □ □ - □ - □ □

Ⓐ ISO size
Ⓑ Station number
Ⓒ A/B port size
Ⓓ A/B port position
Ⓔ Control unit
Ⓕ R port
Ⓖ R port position
Ⓗ HY configuration
Ⓘ Voltage
Ⓙ Indicator light
Ⓚ Option

Ⓐ ISO size		Ⓑ Station No.		Ⓒ A/B port size	
1	PV5G-6	3	3 stations	02	Rc1/4
		to	to	03	Rc3/8
		10	10 stations	HX1	Rc1/4, Rc3/8 mix

Note: When using the control unit, select a number of stations including two for the unit base.

Ⓓ A/B port position	
Blank	Right side
L	Left/right sides
H	Left side
Z	Rear side
T	Plug attached

Ⓔ Control unit (option)	
A	Filter regulator with auto drain/air release valve
AP	Filter regulator with auto drain, air release valve/pressure switch
M	Filter with manual drain regulator/air release valve
MP	Filter with manual drain regulator, air release valve/pressure switch
F	Filter regulator with auto drain (air release valve plug)
G	Filter with manual drain regulator (air release valve plug)
C	Air release valve

Note: The air release valve with the control unit has light and surge suppressor and manual override.

Ⓕ R port	
03	Rc3/8
04	Rc1/2
HY1	Rc3/8, Rc1/2 mix

Ⓖ R port position	
B	R on top or at bottom
D	R at bottom
U	R on top
T	Plug attached

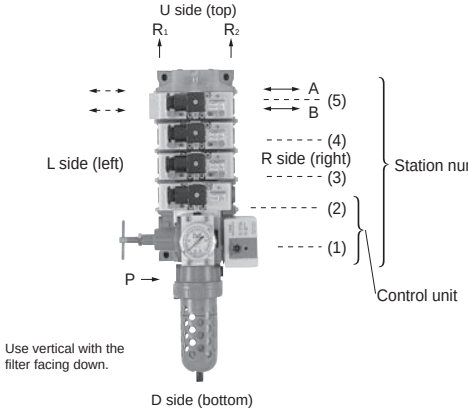
Ⓗ HY configuration	
Blank	Other than HY is selected for Ⓕ.
DU	Rc 3/8 is bottom, Rc 1/2 is top
UD	Rc 3/8 is top, Rc 1/2 is bottom

Ⓘ Voltage	
1	100 VAC
3	24 VDC
4	12 VDC
5	110 VAC

Ⓙ Indicator light	
Blank	None
N	Indicator light

Ⓚ Option	
Blank	None
A	Coolant proof

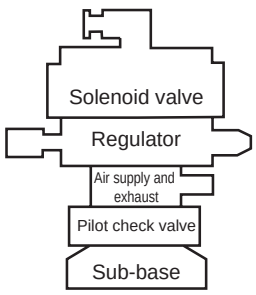
Note: Ⓘ, Ⓙ, and Ⓚ are installation valve options selected when assembling the manifold.



★Indicate left solenoid valve No. (1) to (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No			1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5G-6											
Plug position should be indicated when L is selected in Ⓓ		R										
		L										
Option	Air supply spacer											
	Exhaust spacer											
	Pilot check valve											
	Spacer type regulator	CMF1-SR-P										
		CMF1-SR-A										
		CMF1-SR-B										
	Flow path shut off plate	Air supply passage shut off										
		Exhaust passage shut off										
	A mixed bore size should be indicated when HX is selected for Ⓑ.	02										
		03										

	Solenoid valve type No.	
2-position single solenoid	PV5G-6-FG-S	(1)
2-position double solenoid	PV5G-6-FG-D	(2)
3-position all ports block	PV5G-6-FHG-D	(3)
3-position A-B-R connection	PV5G-6-FJG-D	(4)
3-position P-A-B connection	PV5G-6-FIG-D	(5)
3-position all ports block no leakage	PV5G-6-FPG-D	(6)
2-position single solenoid Exhaust pressurization	PV5G-6-YZ-S	(7)
2-position double solenoid Exhaust pressurization	PV5G-6-YZ-D	(8)
Masking plate	CM1-00	(9)



Option (spacer) assembly order

Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

Manifold specifications
ISO size 2 DIN terminal box type

Issue / /

Your company name

●Contact ●Quantity set ●Request date / /

Contact

Slip No.	Order No.

Order No.

●Manifold model no.

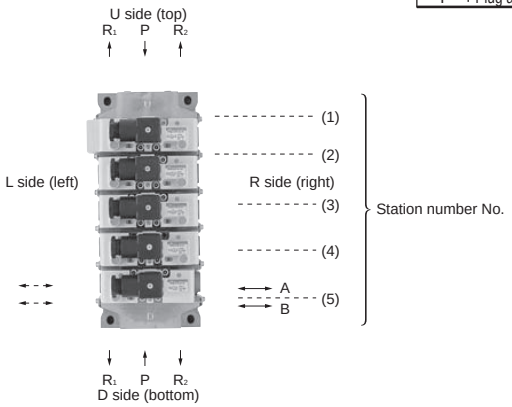
CMF 2 □ - □ □ - □ □ □ - □ □ - □ - □ - □ □

Ⓐ ISO size | Ⓑ Station number | Ⓒ A/B port size | Ⓓ A/B port position | Ⓔ P/R port size | Ⓕ P/R port position | Ⓖ HY configuration | Ⓗ Silencer box | Ⓘ Voltage | Ⓙ Indicator light | Ⓚ Option

Ⓐ ISO size		Ⓑ Station No.		Ⓒ A/B port size		Ⓓ A/B port position		Ⓔ P/R port size		Ⓕ P/R port position		Ⓖ HY configuration		Ⓗ Silencer box		Ⓘ Voltage	
2	PV5G-8	1	1 station	03	Rc 3/8	Blank	Right side	04	Rc 1/2	B	Top and bottom	Blank	Other than HY is selected for Ⓔ.	Blank	None	1	100 VAC
		to	to	04	Rc 1/2	L	Left/right sides	06	Rc 3/4	D	Bottom			SB	Selected (D side)	3	24 VDC
		10	10 stations	HX2	Rc 3/8/Rc 1/2 mix	H	Left side	HY2	Rc 1/2/Rc 3/8 mix	U	Top	DU	Rc 1/2 is bottom, Rc 3/4 is top			4	12 VDC
						Z	Rear side			E	P top, R bottom					5	110 VAC
						T	Plug attached			F	P bottom, R top	UD	Rc 1/2 is top, Rc 3/4 is bottom				
										T	Plug attached						

Ⓙ Indicator light		Ⓚ Option	
Blank	None	Blank	None
N	With indicator light	A	Coolant proof

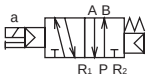
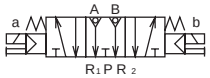
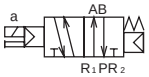
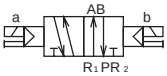
Note: Ⓘ, Ⓙ, and Ⓚ are installation valve options selected when assembling the manifold.

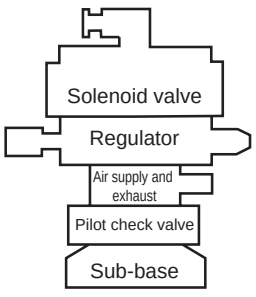


★Indicate left solenoid valve No. (1) to (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No			1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5G-8											
Plug position should be indicated when L is selected in Ⓓ		R										
		L										
Option	Air supply spacer											
	Exhaust spacer											
	Pilot check valve											
	Spacer type regulator	CMF⋆-SR-P										
		CMF⋆-SR-A										
		CMF⋆-SR-B										
	Flow path shut off plate	Air supply passage shut off										
		Exhaust passage shut off										
	A mixed bore size should be indicated when HX is selected for Ⓒ.	03										
		04										

Solenoid valve type No.

2-position single solenoid		PV5G-8-FG-S	(1)
2-position double solenoid		PV5G-8-FG-D	(2)
3-position all ports block		PV5G-8-FHG-D	(3)
3-position A-B-R connection		PV5G-8-FJG-D	(4)
3-position P-A-B connection		PV5G-8-FIG-D	(5)
3-position all ports block no leakage		PV5G-8-FPG-D	(6)
2-position single solenoid Exhaust pressurization		PV5G-8-YZ-S	(7)
2-position double solenoid Exhaust pressurization		PV5G-8-YZ-D	(8)
Masking plate		CM2-00	(9)



Option (spacer) assembly order

Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

Manifold specifications
ISO size 1, 2 mix DIN terminal box type

Issue / /

Your company name

Contact

Order No.

●Contact ●Quantity set ●Request date / /

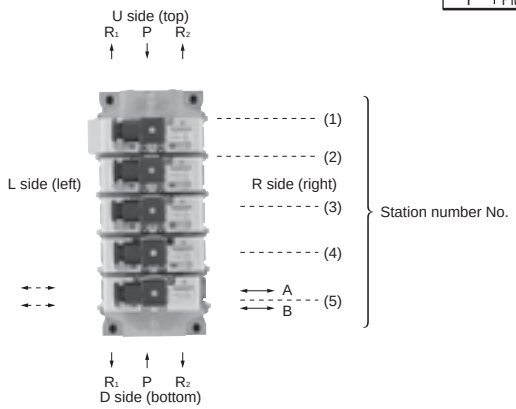
Slip No.	Order No.

●Manifold model no.

CMF Z □ - □ □ - □ □ □ - □ - □ □

Ⓐ ISO size; Ⓑ Station number; Ⓒ A/B port size; Ⓓ A/B port position; Ⓔ P/R port size; Ⓕ P/R port position; Ⓖ Configuration of HY; Ⓗ Voltage; Ⓘ Indicator light; Ⓙ Option

Ⓐ ISO size		Ⓑ Station No.		Ⓒ A/B port size	Ⓓ A/B port position		Ⓔ P/R port size	Ⓕ P/R port position		Ⓖ Configuration of HY		Ⓗ Voltage		Ⓘ Indicator light	
Z	Mix of size 1, 2	1	1 station	HX3 1:02 · 2:03	Blank	Right side	HY3 1:03 · 2:04	B	Top and bottom	DU	Size 1 is bottom, Size 2 is top	1	100 VAC	Blank	None
		to	to	HX4 1:02 · 2:04	L	Left/right sides	HY4 1:03 · 2:06	D	Bottom			3	24 VDC	N	Indicator light
		10	10 stations	HX5 1:03 · 2:03	H	Left side	HY5 1:04 · 2:04	U	Top	UD	Size 1 is top, Size 2 is bottom	4	12 VDC		
				HX6 1:03 · 2:04	Z	Rear side	HY6 1:04 · 2:06	E	P top, R bottom			5	110 VAC		
					T	Plug attached		F	P bottom, R top						
								T	Plug attached						



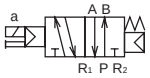
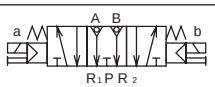
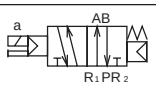
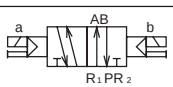
Ⓙ Option	
Blank	None
A	Coolant proof

Note: Ⓗ, Ⓘ, and Ⓙ are installation valve options selected when assembling the manifold.

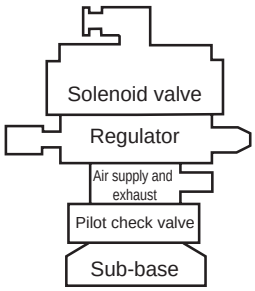
★Indicate left solenoid valve No. (1) to (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No			1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5G-6											
	PV5G-8											
Plug position should be indicated when L is selected in Ⓓ		R										
		L										
Option	Air supply spacer											
	Exhaust spacer											
	Pilot check valve											
	Spacer type regulator	CMF⋆-SR-P										
		CMF⋆-SR-A										
		CMF⋆-SR-B										
	Flow path shut off plate	Air supply passage shut off										
		Exhaust passage shut off										
	A mixed bore size should be indicated when HX is selected for Ⓒ.	02										
		03										
		04										

Solenoid valve type No.

2-position single solenoid		PV5G-*-FG-S	(1)
2-position double solenoid		PV5G-*-FG-D	(2)
3-position all ports block		PV5G-*-FHG-D	(3)
3-position A-B-R connection		PV5G-*-FJG-D	(4)
3-position P-A-B connection		PV5G-*-FIG-D	(5)
3-position all ports block no leakage		PV5G-*-FPG-D	(6)
2-position single solenoid Exhaust pressurization		PV5G-*-YZ-S	(7)
2-position double solenoid Exhaust pressurization		PV5G-*-YZ-D	(8)
Masking plate		CM*-00	(9)

Note: The asterisk (*) is "6" or "8" for the solenoid valve, and "1" or "2" for the masking plate and option.



Option (spacer) assembly order

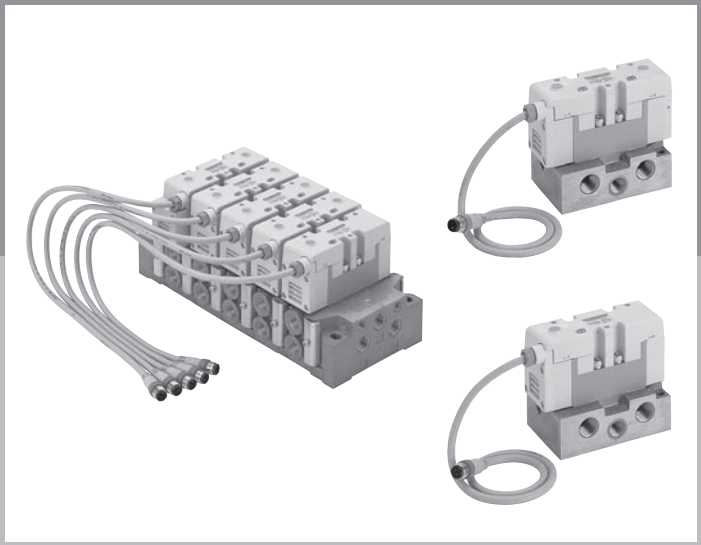
Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

MEMO

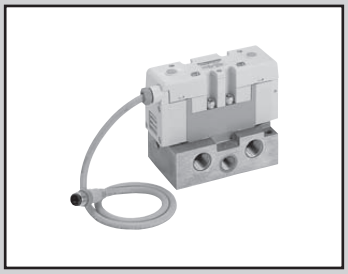
PV5/CMF
(I/O connector type)

Pilot operated 5 port valve

ISO conformed valve



CONTENTS



Discrete valve ISO size 1
I/O connector type
Pilot operated 5 port valve ISO conformed valve

PV5-6R Series

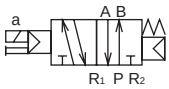
● Applicable cylinder bore size: max. Φ100

CE

JIS symbol

●5 port valve

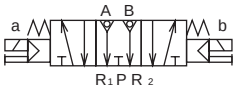
2-position single solenoid (FG-S)



2-position double solenoid (FG-D)

3-position all ports closed (FHG)

3-position all ports closed non-leak type (FPG)



3-position A/B/R connection (FJG)

3-position P/A/B connection (FIG)

Common specifications

Descriptions	
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15 0.20 (3-position)
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm^3/min (A, B → R port)	10 (ANR) or less 0.3 (ANR) or less only for 3-position all ports closed non-leak type Note 1
Vibration/shock m/s^2	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: The default value is indicated.

Electric specifications

Descriptions		
Rated voltage V	DC	24
Rated voltage fluctuation range		±10%
Power consumption W (ampere A)		1.2 (0.050) *This value applies to type with light.
Heat proof class		B (molded coil)
Wiring methods		I/O connector

Individual specifications

Descriptions			PV5-6R	
Port size Note 1			Rc1/4	Rc3/8
Response time ms Note 2	2-position	Single solenoid	30 (when turned ON) and 40 (when turned OFF)	
		Double solenoid	30	
	3-position		30 (when turned ON) and 50 (neutral)	
Weight kg Note 3	2-position	Single solenoid	0.40	
		Double solenoid	0.44	
	3-position	Other than non-leak type	0.46	
		All ports closed non-leak type	1.12	

Note 1: G and NPT threads are available for piping port, so please consult with CKD.
Note 2: Response time is the value at supply pressure of 0.5 Mpa, oilless. This may change depending on the pressure and type of oil supplied.
Note 3: The value is the weight without sub-plate.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [$dm^3/(s \cdot bar)$]	b	C [$dm^3/(s \cdot bar)$]	b
PV5-6R	Rc1/4	2-position single solenoid	6.1	0.28	6.7	0.20
		2-position double solenoid	6.1	0.28	6.7	0.20
		3-position all ports closed	5.2	0.32	5.6	0.30
		3-position A/B/R connection	5.1	0.32	6.9	0.16
		3-position P/A/B connection	6.3	0.28	5.9	0.28
		3-position all ports closed no leakage	3.4	-	3.0	-

Note 1: Effective sectional area S and sonic conductance C are converted as $S \fallingdotseq 5.0 \times C$.

Coolant proof specifications

Refer to the section Ⓑ in "How to order" on Page 37 to select option "A".

How to order I/O connector type

● ISO size 1

PV5 - **6R** - **FG-S** - ○ - **A03** - **TC**

- PV5: Model no.
- 6R: ISO size 1
- FG-S: Ⓐ Solenoid position
- ○: Ⓑ Option
- A03: Ⓒ Sub-plate and port size
- TC: NPN and PNP common type

Symbol	Descriptions		Model no. PV5-6R
Ⓐ Solenoid position			
FG-S	P pressurization type	2-position single solenoid	●
FG-D		2-position double solenoid	●
FHG-D		3-position automatic port block	●
FJG-D		3-position ABR connection	●
FIG-D		3-position PAB connection	●
FPG-D		3-position automatic port block	●
Ⓑ Option			
Blank	None		●
A	Coolant proof		●
Ⓒ Sub-plate and port size			
Blank	Without sub-plate		●
A02	Side porting Rc1/4 (Rc3/8 for R port)		●
A03	Side porting Rc3/8		●
B02	Back porting Rc1/4 (Rc3/8 for R port)		●
B03	Back porting Rc3/8		●

<Example of model number>

PV5-6R-FG-S-A03-TC

Model: PV5/ISO size 1(I/O connector type)

Ⓐ Solenoid position : P pressurization type
2-position single solenoid

Ⓒ Sub-plate port size : Side porting Rc3/8

● Note

Descriptions	
(1) I/O connector	With I/O connector (M12) NPN and PNP common type
(2) Rated voltage	24 VDC
(3) Power indicator light	Light and surge suppressor provided as standard

Note 1: Refer to Intro 5 Page for the circuit diagram of the type with light and surge suppressor.

ISO size 1 sub-plate specifications and "How to order"

CB1 - **A02**

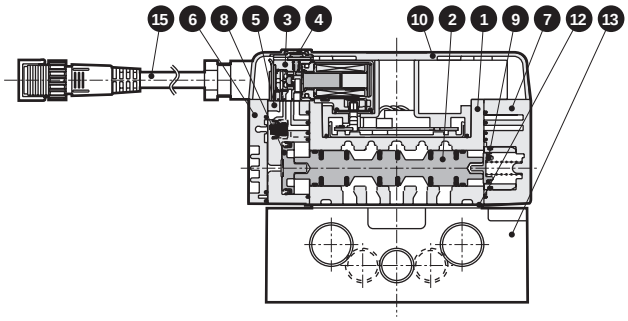
- A02: Ⓐ Port connection

Symbol	Method	P/A/B port	R1/R2 port	Weight (kg)
Ⓐ Port connection				
A02	Side porting	Rc 1/4	Rc 3/8	0.36
A03		Rc 3/8		
B02	Back porting	Rc 1/4	Rc 3/8	
B03		Rc 3/8		

Internal structure and parts list: I/O connector type

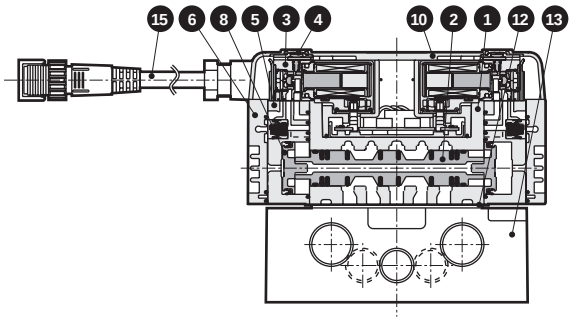
PV5-6R-FG-S

●2-position single solenoid



PV5-6R-FG-D

●2-position double solenoid

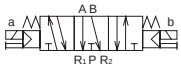


PV5-6R-FHG-D

●3-position all ports closed

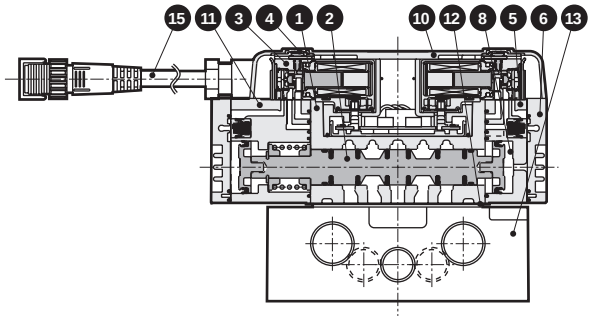
PV5-6R-FJG-D

●3-position A/B/R connection



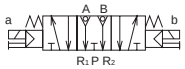
PV5-6R-FIG-D

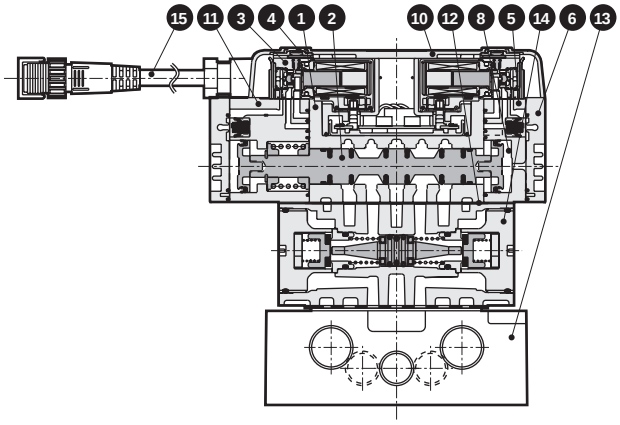
●3-position P/A/B connection



PV5-6R-FPG-D

●3-position all ports closed non-leak type





Main parts list

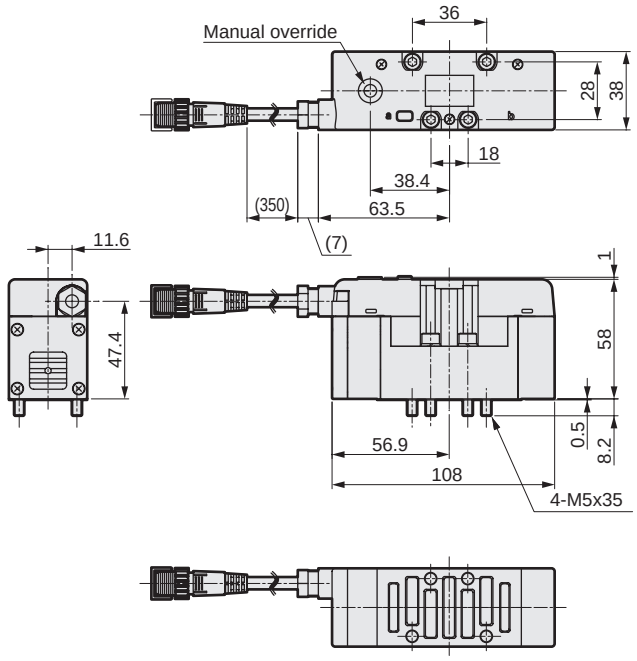
No.	Parts name	Material	No.	Parts name	Material
1	Body	Aluminum alloy die-casting	9	Piston S assembly	-
2	Spool assembly	-	10	Electric cover	Resin
3	Pilot valve	-	11	Pilot operated valve assembly for 3-position	Resin
4	Manual override	-	12	Gasket	-
5	Pilot operated valve assembly for double solenoid	Resin	13	Sub-plate	Aluminum alloy die-casting
6	Cap D	Resin	14	Air pilot check valve	-
7	Cap S	Resin	15	I/O cable assembly	-
8	Piston D assembly	-			

MEMO

Dimensions: I/O connector type (without sub-plate)

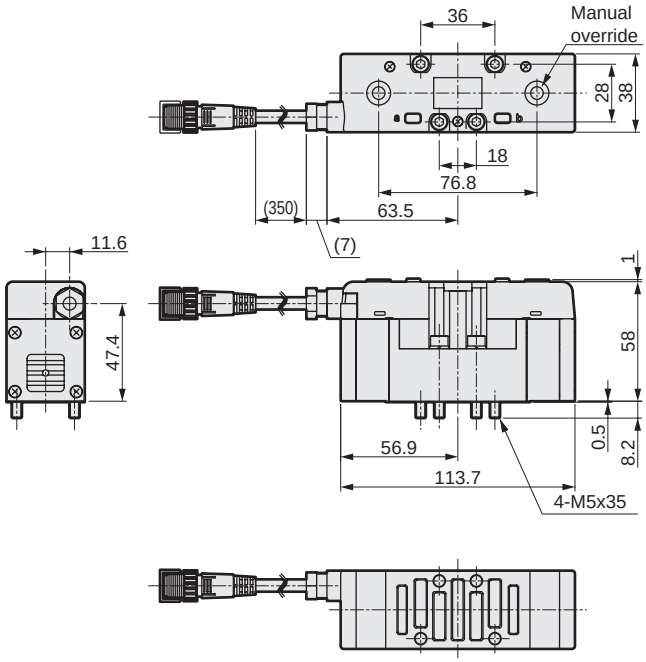
PV5-6R-FG-S

●2-position single solenoid



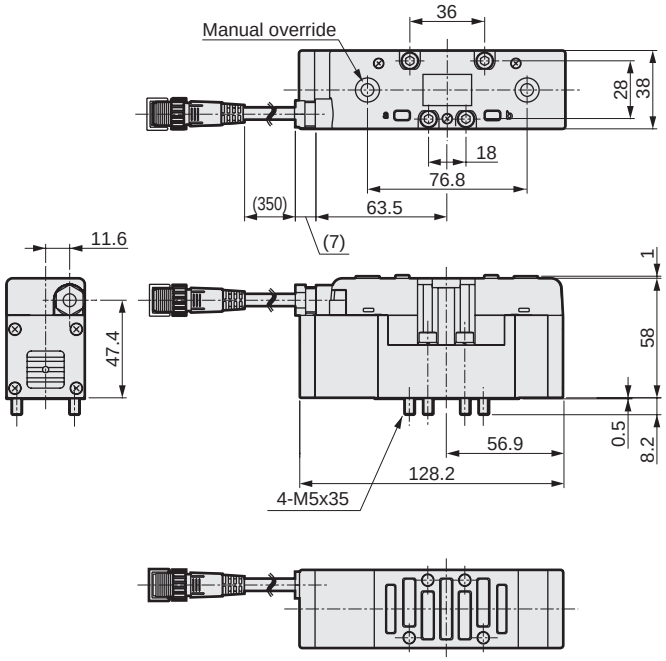
PV5-6R-FG-D

●2-position double solenoid



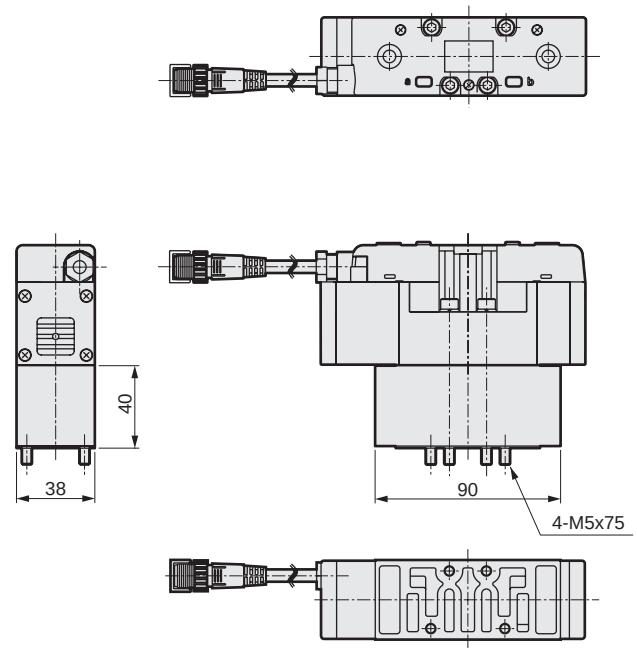
PV5-6R-FHG-D
PV5-6R-FJG-D
PV5-6R-FIG-D

●3-position



PV5-6R-FPG-D

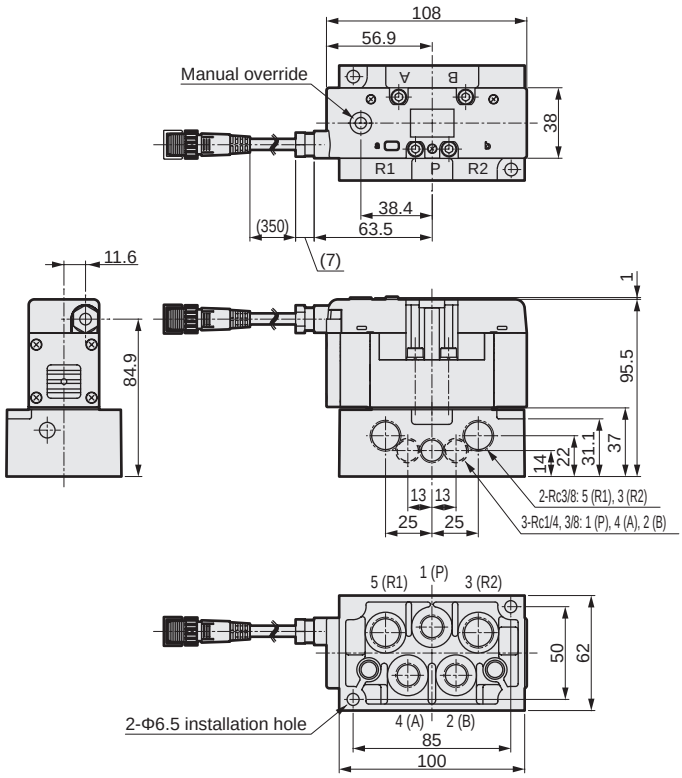
●3-position and non-leak type



Dimensions: I/O connector type (with sub-plate)

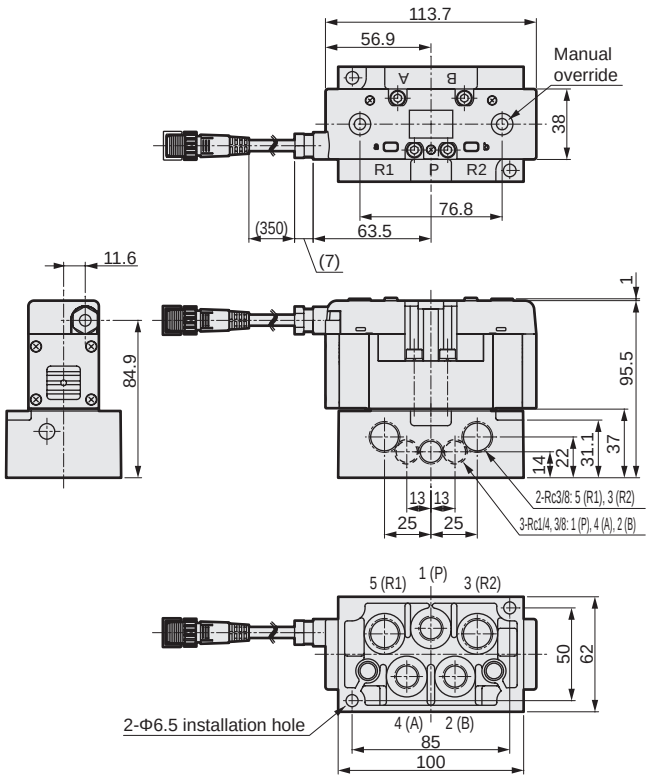
PV5-6R-FG-S-*

●2-position single solenoid



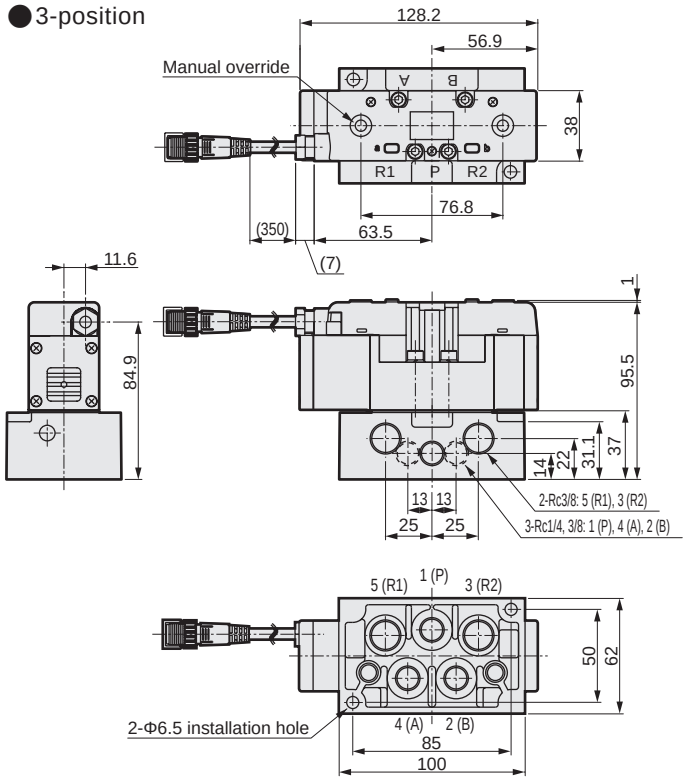
PV5-6R-FG-D-*

●2-position double solenoid

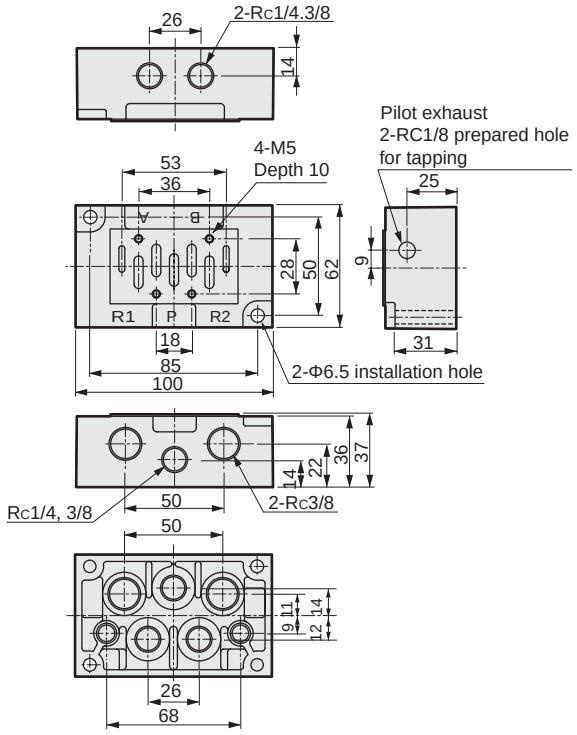


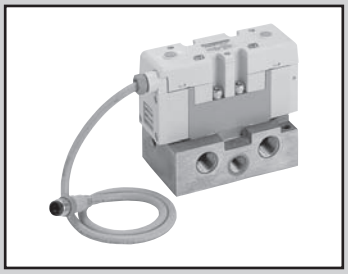
PV5-6R-FHG-D-*
PV5-6R-FJG-D-*
PV5-6R-FIG-D-*

●3-position



●Sub-plate dimensions (CB1-*)





Discrete valve ISO size 2
I/O connector type
Pilot operated 5 port valve ISO conformed valve

PV5-8R Series

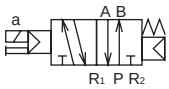
● Applicable cylinder bore size: max. Φ160

CE

JIS symbol

●5 port valve

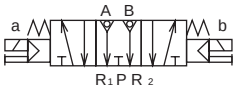
2-position single solenoid (FG-S)



2-position double solenoid (FG-D)

3-position all ports closed (FHG)

3-position all ports closed non-leak type (FPG)



3-position A/B/R connection (FJG)

3-position P/A/B connection (FIG)

Common specifications

Descriptions	
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15 0.20 (3-position)
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm^3/min (A, B → R port)	10 (ANR) or less 0.3 (ANR) or less only for 3-position all ports closed non-leak type Note 1
Vibration/shock m/s^2	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: The default value is indicated.

Electric specifications

Descriptions		
Rated voltage V	DC	24
Rated voltage fluctuation range		±10%
Power consumption W (ampere A)		1.2 (0.050) *This value applies to type with light.
Heat proof class		B (molded coil)
Wiring methods		I/O connector

Individual specifications

Descriptions			PV5-8R		
Port size Note 1			Rc3/8	Rc1/2	Rc3/4
Response time ms Note 2	2-position	Single solenoid	40 (when turned ON), 60 (when turned OFF)		
		Double solenoid	40		
	3-position		40 (when turned ON), 60 (neutral)		
Weight kg Note 3	2-position	Single solenoid	0.62		
		Double solenoid	0.66		
	3-position	Other than non-leak type	0.69		
		All ports closed non-leak type	1.34		

Note 1: G and NPT threads are available for piping port, so please consult with CKD.
Note 2: Response time is the value at supply pressure of 0.5 Mpa, oilless. This may change depending on the pressure and type of oil supplied.
Note 3: The value is the weight without sub-plate.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [$dm^3/(s \cdot bar)$]	b	C [$dm^3/(s \cdot bar)$]	b
PV5-8R	Rc3/8	2-position single solenoid	10.7	0.17	13.0	0.19
		2-position double solenoid	10.7	0.17	13.0	0.19
		3-position all ports closed	10.0	0.16	11.0	0.25
		3-position A/B/R connection	9.9	0.14	13.0	0.16
		3-position P/A/B connection	11.0	0.12	12.0	0.21
		3-position all ports closed no leakage	6.6	-	6.2	-

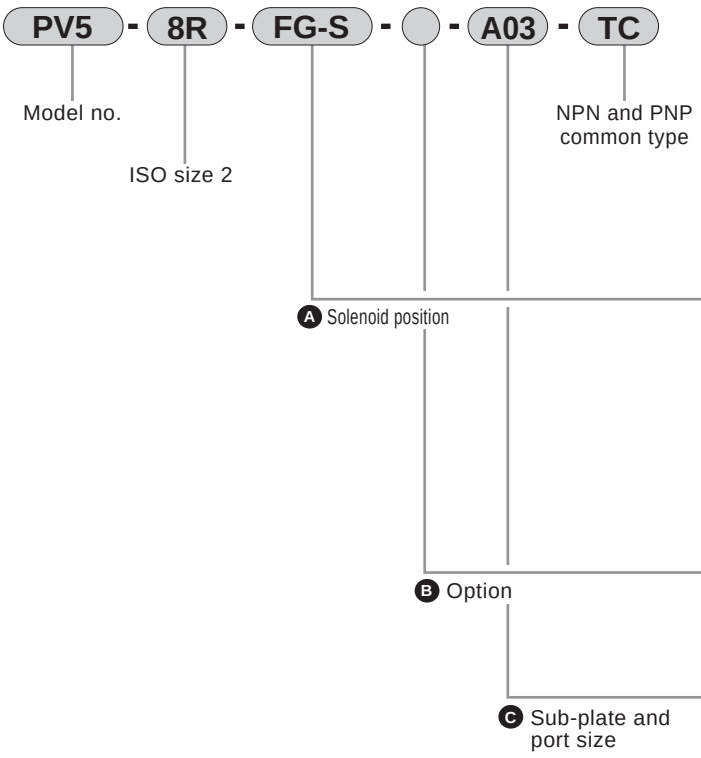
Note 1: Effective sectional area S and sonic conductance C are converted as $S \fallingdotseq 5.0 \times C$.

Coolant proof specifications

Refer to the section Ⓑ in "How to order" on Page 43 to select option "A".

How to order I/O connector type

● ISO size 2



Symbol	Descriptions		Model no. PV5-8R
A Solenoid position			
FG-S	P pressurization type	2-position single solenoid	●
FG-D		2-position double solenoid	●
FHG-D		3-position automatic port block	●
FJG-D		3-position ABR connection	●
FIG-D		3-position PAB connection	●
FPG-D		3-position automatic port block	●
B Option			
Blank	None		●
A	Coolant proof		●
C Sub-plate and port size			
Blank	Without sub-plate		●
A03	Side porting Rc3/8 (Rc1/2 for R port)		●
A04	Side porting Rc1/2		●
A06	Side porting Rc3/4		●
B03	Back porting Rc3/8 (Rc1/2 for R port)		●
B04	Back porting Rc1/2		●
B06	Back porting Rc3/4		●

<Example of model number>

PV5-8R-FG-S-A03-TC

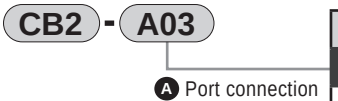
Model: PV5/ISO size 2 (I/O connector type)
A Solenoid position : P pressurization type
2-position single solenoid
C Sub-plate port size : Side porting Rc3/8
R port Rc1/2

●Note

Descriptions	
(1) I/O connector	With I/O connector (M12) NPN and PNP common type
(2) Rated voltage	24 VDC
(3) Power indicator light	Light and surge suppressor provided as standard

Note 1: Refer to Intro 5 Page for the circuit diagram of the type with light and surge suppressor.

ISO size 2 sub-plate specifications and "How to order"

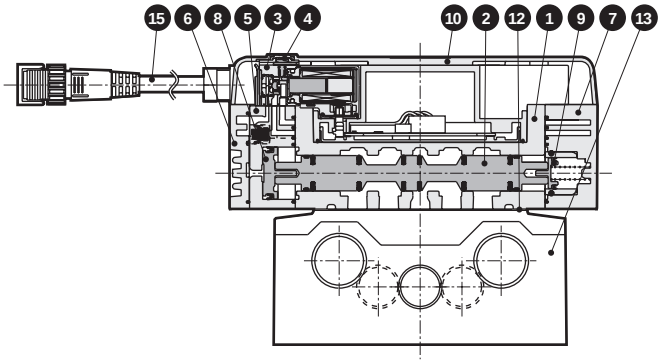


Symbol	Method	P/A/B port	R1/R2 port	Weight (kg)
A Port connection				
A03	Side porting	Rc 3/8	Rc 1/2	0.66
A04		Rc 1/2		0.64
A06		Rc 3/4	Rc 3/4	1.40
B03	Back porting	Rc 3/8	Rc 1/2	0.62
B04		Rc 1/2		0.61
B06		Rc 3/4	Rc 3/4	1.40

Internal structure and parts list: I/O connector type

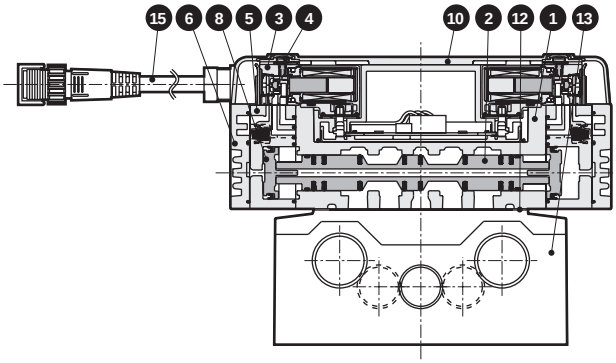
PV5-8R-FG-S

●2-position single solenoid



PV5-8R-FG-D

●2-position double solenoid



PV5-8R-FHG-D

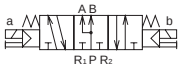
●3-position all ports closed

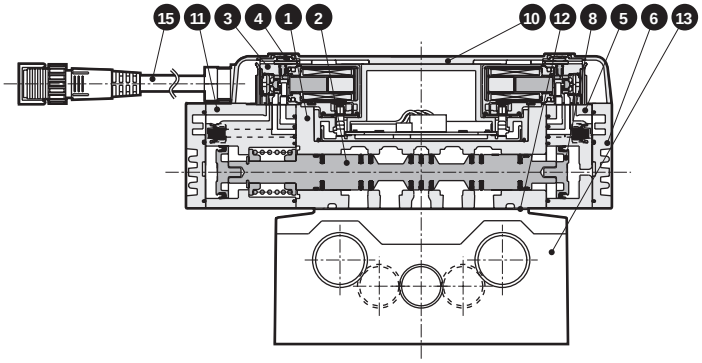
PV5-8R-FJG-D

●3-position A/B/R connection

PV5-8R-FIG-D

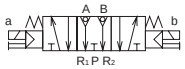
●3-position P/A/B connection

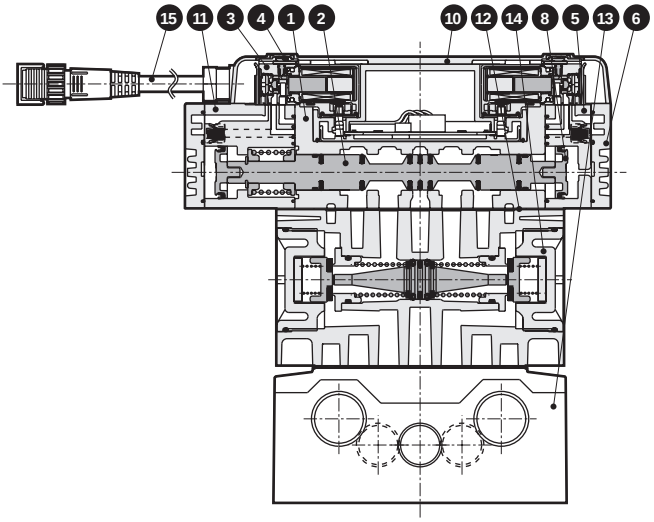




PV5-8R-FPG-D

●3-position all ports closed non-leak type





Main parts list

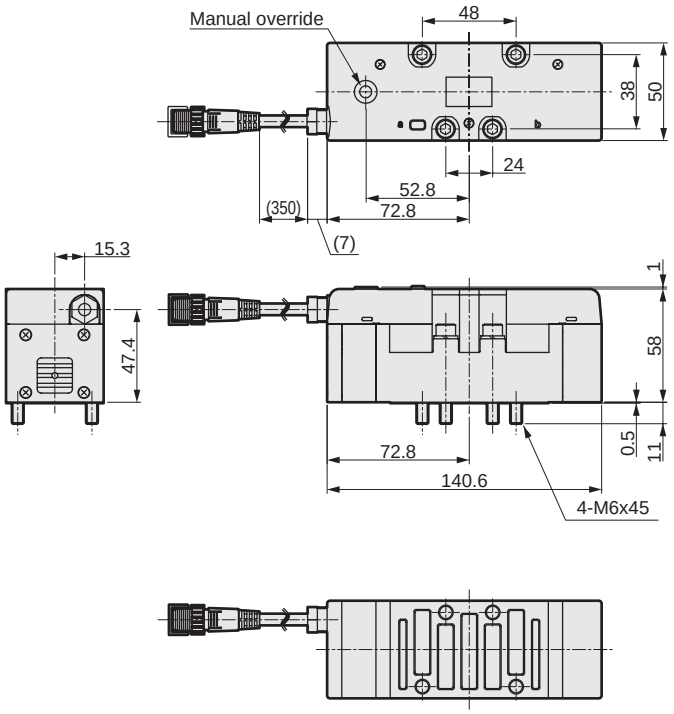
No.	Parts name	Material	No.	Parts name	Material
1	Body	Aluminum alloy die-casting	9	Piston S assembly	-
2	Spool assembly	-	10	Electric cover	Resin
3	Pilot valve	-	11	Pilot operated valve assembly for 3-position	Resin
4	Manual override	-	12	Gasket	-
5	Pilot operated valve assembly for double solenoid	Resin	13	Sub-plate	Aluminum alloy die-casting
6	Cap D	Resin	14	Air pilot check valve	-
7	Cap S	Resin	15	I/O cable assembly	-
8	Piston D assembly	-			

MEMO

Dimensions: I/O connector type (without sub-plate)

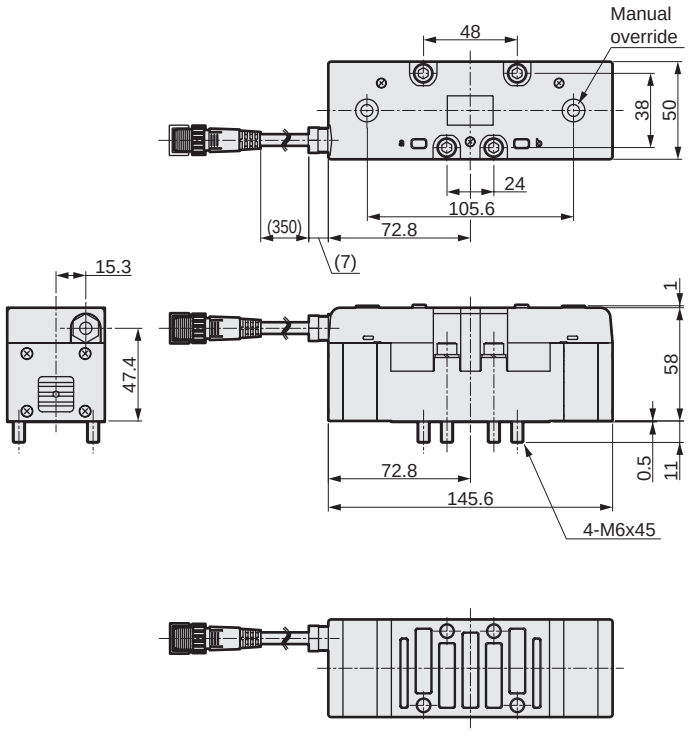
PV5-8R-FG-S

●2-position single solenoid



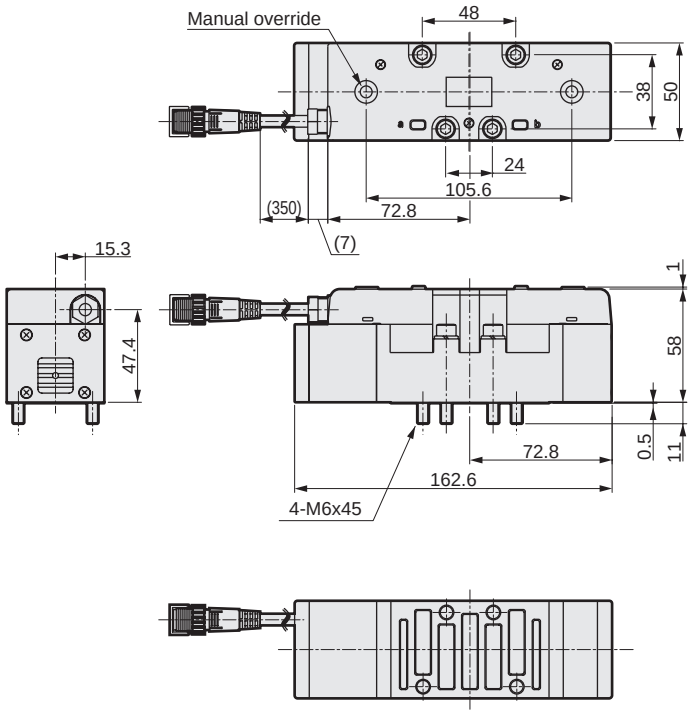
PV5-8R-FG-D

●2-position double solenoid



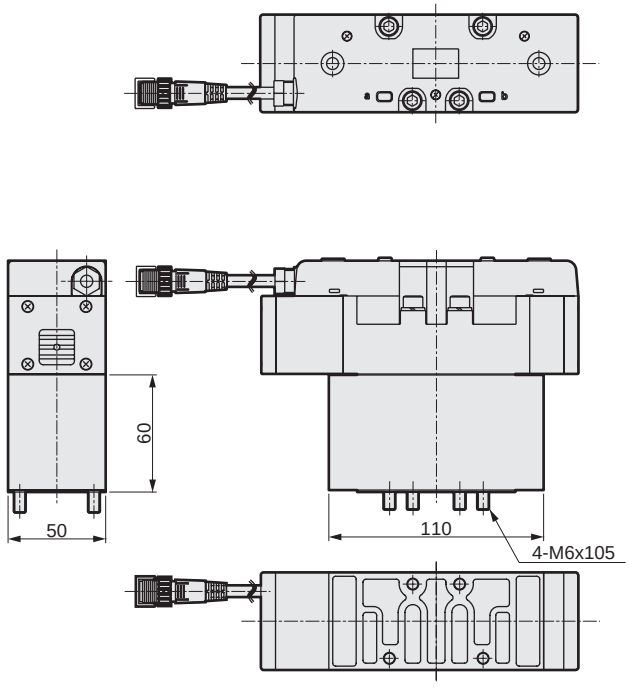
PV5-8R-FHG-D
PV5-8R-FJG-D
PV5-8R-FIG-D

●3-position



PV5-8R-FPG-D

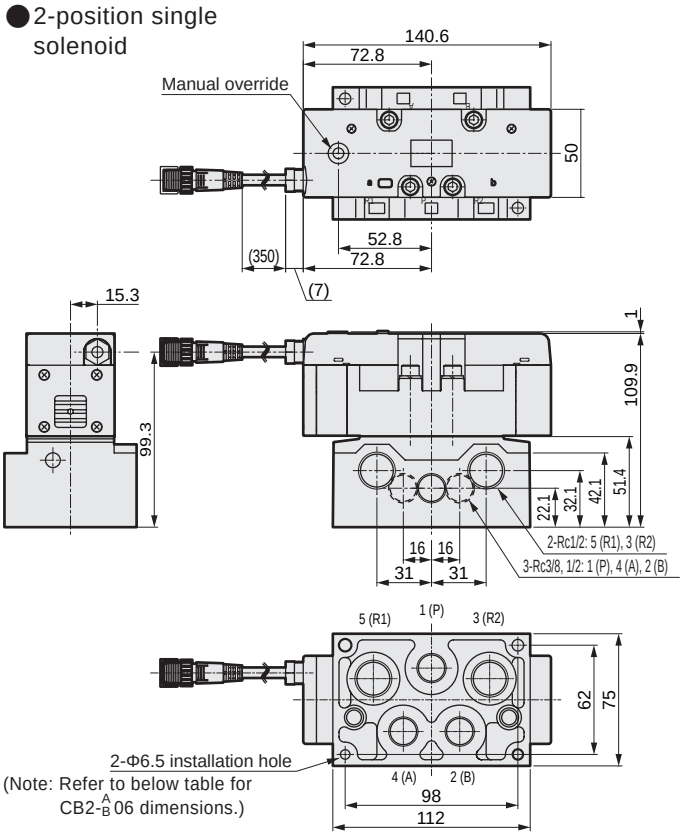
●3-position and non-leak type



Dimensions: I/O connector type (with sub-plate)

PV5-8R-FG-S-*

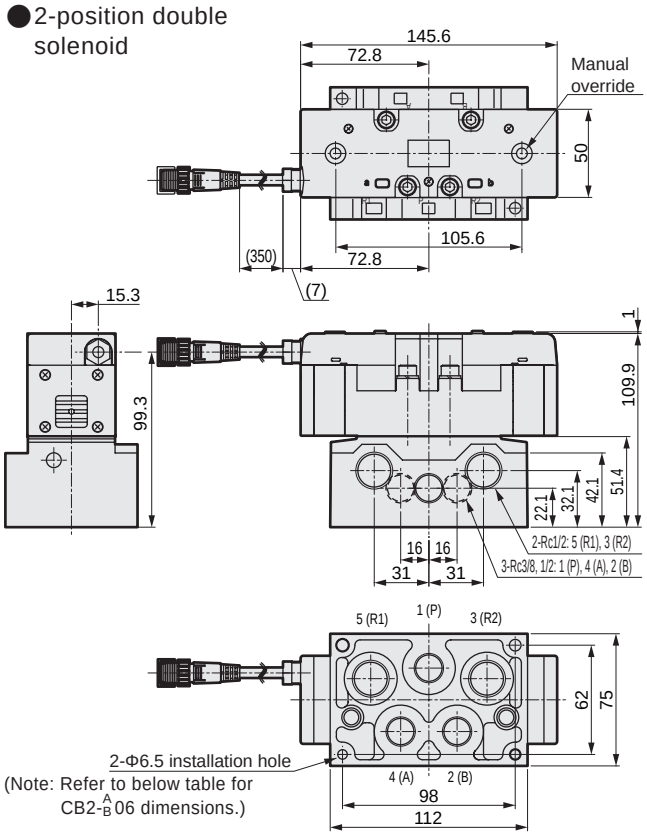
●2-position single solenoid



(Note: Refer to below table for CB2-$^{A}_{B}$06 dimensions.)

PV5-8R-FG-D-*

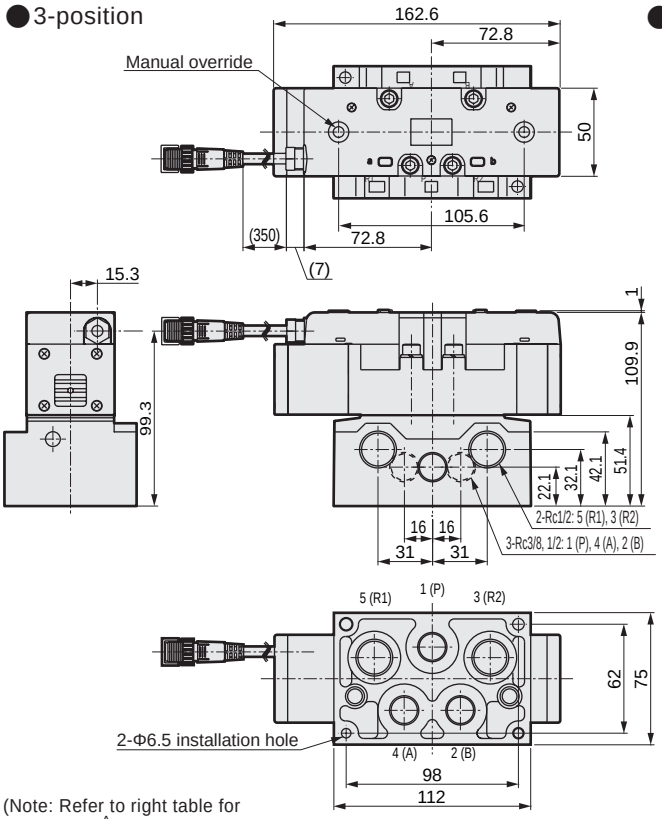
●2-position double solenoid



(Note: Refer to below table for CB2-$^{A}_{B}$06 dimensions.)

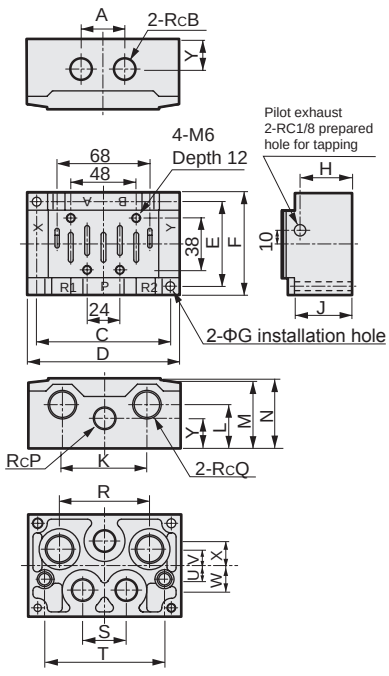
PV5-8R-FHG-D-*
PV5-8R-FJG-D-*
PV5-8R-FIG-D-*

●3-position

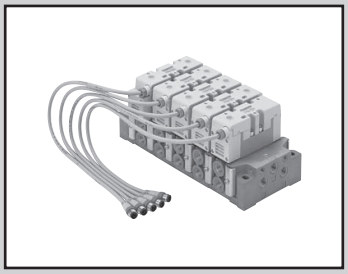


(Note: Refer to right table for CB2-$^{A}_{B}$06 dimensions.)

●Sub-plate dimensions (CB2-*)



Model no.	CB2-$^{A}_{B}$03	CB2-$^{A}_{B}$04	CB2-$^{A}_{B}$06
A	32		40
B	3/8	1/2	3/4
C	98		128
D	112		142
E	62		72
F	75		86
G	6.5		7.5
H	38		53
J	42		55
K	62		84
L	32		42
M	50		62
N	51		63
P	3/8	1/2	3/4
Q	1/2		3/4
R	66		84
S	32		40
T	88		116
U	10		11
V	12		16
W	18		22
X	18		23
Y	22		30



Individual wiring type manifold ISO size 1
I/O connector type
Pilot operated 5 port valve ISO conformed valve

CMF1 Series

● Applicable cylinder bore size: max. Φ100

Common specifications

Descriptions	
Manifold type	Manifold integrated
Type of manifold	Common supply, common exhaust common supply and individual exhaust Individual supply, common exhaust individual supply and individual exhaust Multi-pressure air supply
Station number	1 to 10 stations
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15 0.20 (3-position)
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm^3/min (A, B → R port)	10 (ANR) or less 0.3 (ANR) or less only for 3-position all ports closed non-leak type Note 1
Vibration/shock m/s^2	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: The default value is indicated.

Electric specifications

Descriptions		
Rated voltage V	DC	24
Rated voltage fluctuation range		±10%
Power consumption W (ampere A)		1.2 (0.050) *This value applies to type with light.
Heat proof class		B (molded coil)
Wiring methods		I/O connector

Individual specifications

Descriptions			CMF1	
Port size Note 1	P/R1/R2 port		Rc3/8, Rc1/2	
	A/B port		Rc3/8	Rc3/4
Response time ms Note 2	2-position	Single solenoid	30 (when turned ON) and 40 (when turned OFF)	
		Double solenoid	30	
	3-position		30 (when turned ON) and 60 (neutral)	

Note 1: The piping port screw is compatible with G and NPT screws. Contact CKD for details.
Note 2: The response time is the value at supply pressure of 0.5 MPa, oilless. This may change depending on the pressure and type of oil supplied.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b
CMF1	Rc1/4	2-position single solenoid	4.8	0.25	5.2	0.26
		2-position double solenoid	4.8	0.25	5.2	0.26
		3-position all ports closed	4.4	0.27	4.7	0.27
		3-position A/B/R connection	4.4	0.25	5.3	0.25
		3-position P/A/B connection	4.8	0.27	4.7	0.27
		3-position all ports closed no leakage	3.2	-	2.8	-

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

Control unit specifications

Control unit component	Descriptions	
Air filter (with automatic drain/manual drain)	Filtration rating	5μm
Regulator	Setting pressure (secondary pressure)	0.1 to 0.83MPa
	Pressure adjusting range	0.1 to 0.8MPa
Pressure switch	Contact configuration	1C
	Rated current (inductive load)	125 VAC 15A and 250 VAC 15A
Air release valve (only single)	Working pressure range	0.15 to 1.0MPa

● Refer to pneumatic/vacuum/auxiliary components catalog (No. CB-024SA) for specifications of pressure switch APE-8F-*.
● PV5-6R-FG-S-TC is used for air release valve.

How to order I/O connector type (without control unit)

● ISO size 1

CMF 1 5 - 02 L - HY1 B DU - SB

Model no.
Ⓐ Station number
Ⓑ A/B port size Note 1
Ⓒ A/B port position Note 2
Ⓓ P/R port size
Ⓔ P/R port position Note 3, Note 4
Ⓕ HY configuration
Ⓖ Silencer box Note 5

Symbol	Descriptions	Model no. CMF1
Ⓐ Station number		
1	1 station	●
to	to	
10	10 stations	
Ⓑ A/B port size		
02	Rc 1/4	●
03	Rc 3/8	●
HX1	Rc1/4, Rc3/8 mix	●
Ⓒ A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●
Ⓓ P/R port size		
03	Rc 3/8	●
04	Rc 1/2	●
HY1	Rc 3/8, Rc 1/2 mix	●
Ⓔ P/R port position		
B	Top and bottom	●
D	Bottom	●
U	Top	●
E	P is top, R is bottom.	●
F	P is bottom, R is top.	●
T	Flexible selection (plug attached)	●
Ⓕ HY configuration		
Blank	When port size other than HY1 is selected in Ⓓ.	●
DU	Rc 3/8 is bottom, Rc 1/2 is top.	●
UD	Rc 3/8 is top, Rc 1/2 is bottom.	●
Ⓖ Silencer box		
Blank	None	●
SB	Selected (D side installation)	●

The valve unit must be prepared separately. Refer to page 37 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 62 must be submitted when preparing the manifold with valves.

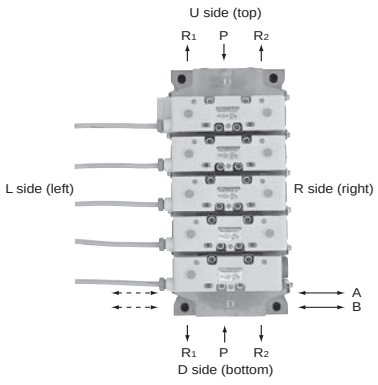
Note on model no. selection

Note 1: HX indicates mix of port size. Contact CKD for details.
Note 2: Ⓒ indicates port position.
Ports will be plugged unless indicated.
Note 3: Ⓔ indicates port position.
The opposite side of indicated port will be plugged.
Note 4: When the Ⓖ silencer box is selected, the P-port position is selected from B, D, U, or T.
Note 5: When the Ⓖ silencer box type is selected, a plug assembly is provided on both top and bottom.

<Example of model number>

CMF15-02L-HY1BDU-SB

Model: Manifold ISO size 1
Ⓐ Station number : 5 stations
Ⓑ Ⓒ A/B port : Rc1/4 (left-right sides porting)
Ⓓ Ⓔ Ⓕ P/R port : Rc3/8, Rc1/2 mixed (Rc3/8 is bottom, Rc1/2 is top piping)
Ⓖ Silencer box : Selected (D side installation)



Without control unit

How to order I/O connector type (with control unit)

● ISO size 1

CMF 1 5 - 02 L - A - HY1 B DU - TC

Model no.

Ⓐ Station number Note 1

Ⓑ A/B port size Note 2

Ⓒ A/B port position Note 3

Ⓓ Control unit Note 4, Note 5

Ⓔ R port size

Ⓕ R port position Note 6

Ⓖ HY configuration

Ⓗ Air release valve

Symbol	Descriptions	Model no. CMF1
Ⓐ Station number		
3	3 stations	●
to	to	
10	10 stations	
Ⓑ A/B port size		
02	Rc 1/4	●
03	Rc 3/8	●
HX1	Rc1/4, Rc3/8 mix	●
Ⓒ A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●

Ⓓ Control unit Reg.: Regulator, Air: Air release valve, Pre: Pressure switch					
A	Filter with auto drain	Reg.	Air		●
AP	Filter with auto drain	Reg.	Air	Pre	●
M	Filter with manual drain	Reg.	Air		●
MP	Filter with manual drain	Reg.	Air	Pre	●
F	Filter with auto drain (air release valve plug)	Reg.			●
G	Filter with manual drain (air release valve plug)	Reg.			●
C	With air release valve		Air		●

Ⓔ R port size		
03	Rc 3/8	●
04	Rc 1/2	●
HY1	Rc 3/8, Rc 1/2 mix	●
Ⓕ R port position		
B	R on top or at bottom	●
D	R at bottom	●
U	R on top	●
T	Flexible selection (plug attached)	●
Ⓖ HY configuration		
Blank	When port size other than HY1 is selected in Ⓔ	●
DU	Rc 3/8 is bottom, Rc 1/2 is top.	●
UD	Rc 3/8 is top, Rc 1/2 is bottom.	●
Ⓗ Air release valve		
Blank	Without air release valve	●
TC	I/O connector type	●

The valve unit must be prepared separately. Refer to page 37 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 63 must be submitted when preparing the manifold with valves.

Note on model no. selection

Note 1: This is the station number including 2 stations of unit base.
Note 2: HX indicates mix of port size. Contact CKD for details.
Note 3: Ⓒ indicates port position.
Ports will be plugged unless indicated.
Note 4: Air release valve is 24 VDC and has light, surge suppressor and manual override.
Note 5: The pressure switch has no indicator light. (Indicator light is available as custom order.)
Note 6: Instruction of Ⓕ indicates the port position.
The opposite side of indicated port will be plugged.

<Example of model number>

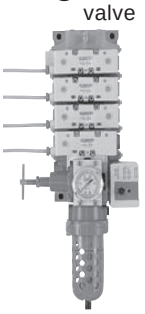
CMF15-02L-A-HY1BDU-TC

Model: Manifold ISO size 1
Ⓐ Station number : 5 stations
ⒷⒸ A/B port : Rc1/4 (left-right sides porting)
Ⓓ Control unit : With filter with auto drain, regulator and air release valve
ⒺⒻⒼ P/R port : Rc3/8, Rc1/2 mixed (Rc3/8 is bottom, Rc1/2 is top piping)
Ⓗ Air release valve : I/O connector type

Manifold option control unit

Control units such as an air filter, regulator, pressure switch, and air release valve can be installed on the manifold to reduce piping work.

Control unit Ⓓ	A	AP	M	MP	F	G	C
Filter regulator with auto drain CMF1-AFR-3F	○	○	-	-	○	-	-
Filter with manual drain regulator CMF1-AFR-3E	-	-	○	○	-	○	-
Installation spacer CMF1-FRB-D	○	○	○	○	○	○	○
Air release valve PV5-6R-FG-S-TC	○	○	○	○	-	-	○
Release valve spacer block CMF1-VP	-	-	-	-	○	○	-
FR spacer block CMF1-FR	-	-	-	-	-	-	○
Pressure switch APE-8F	-	○	-	○	-	-	-

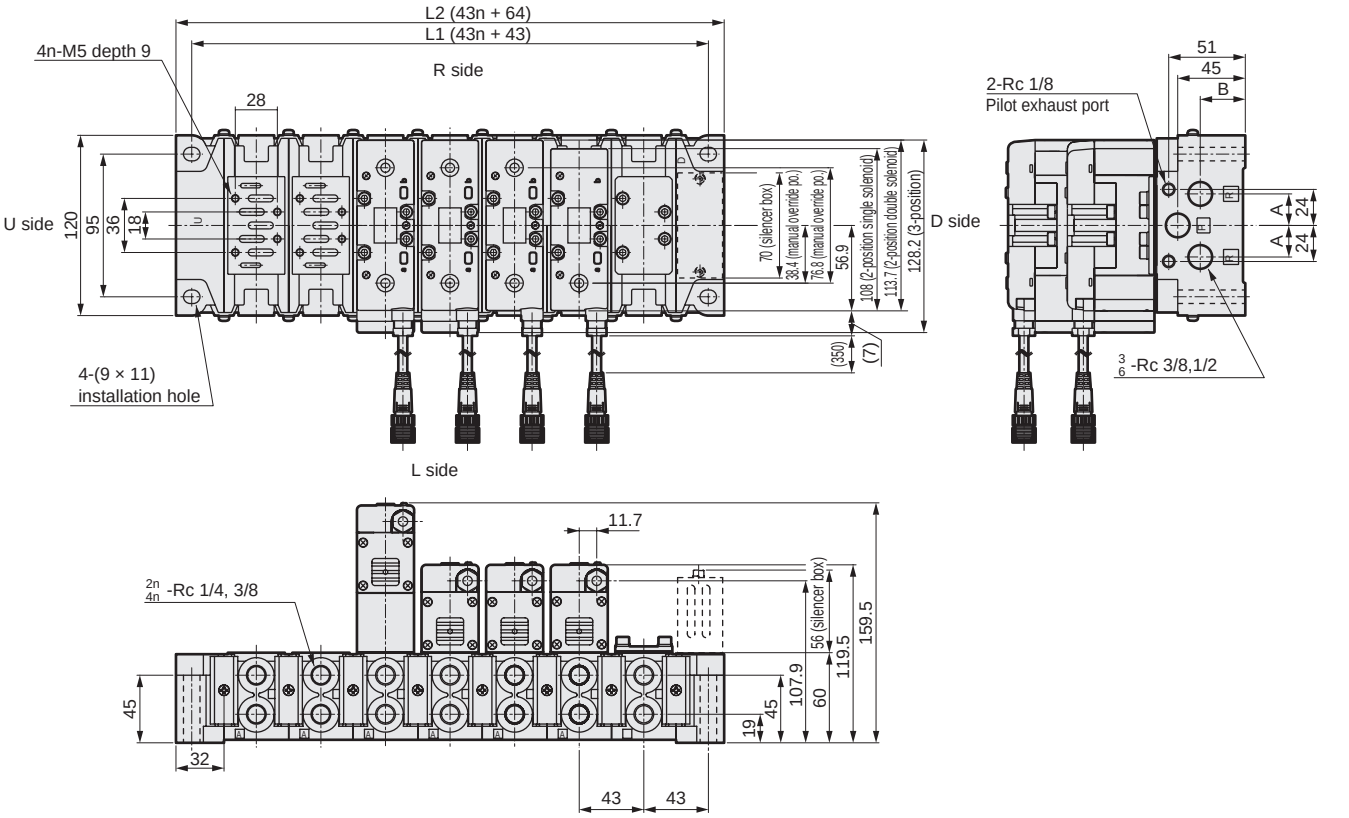


Dimensions: I/O connector type

CMF1

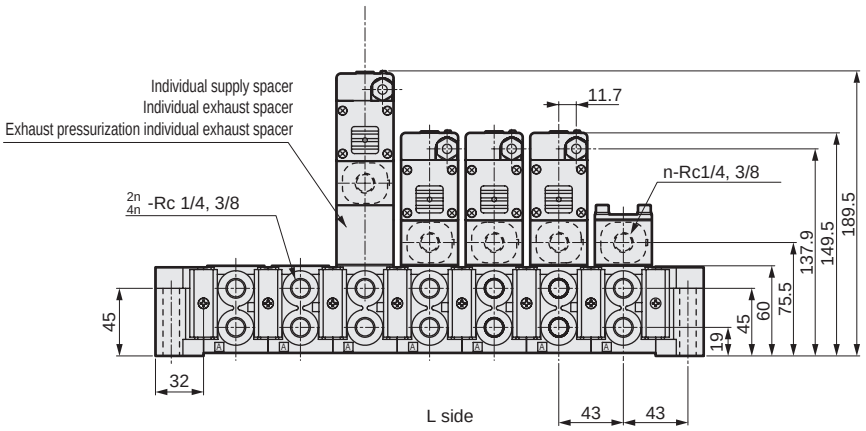
● Common exhaust

P/R port size	A	B
Rc 3/8	21	30
Rc 1/2	26	26



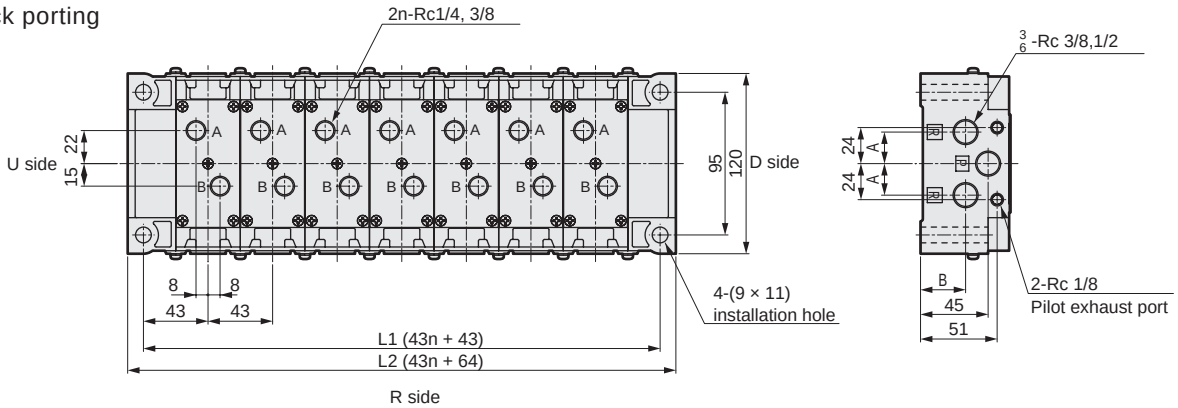
CMF1

● Individual exhaust



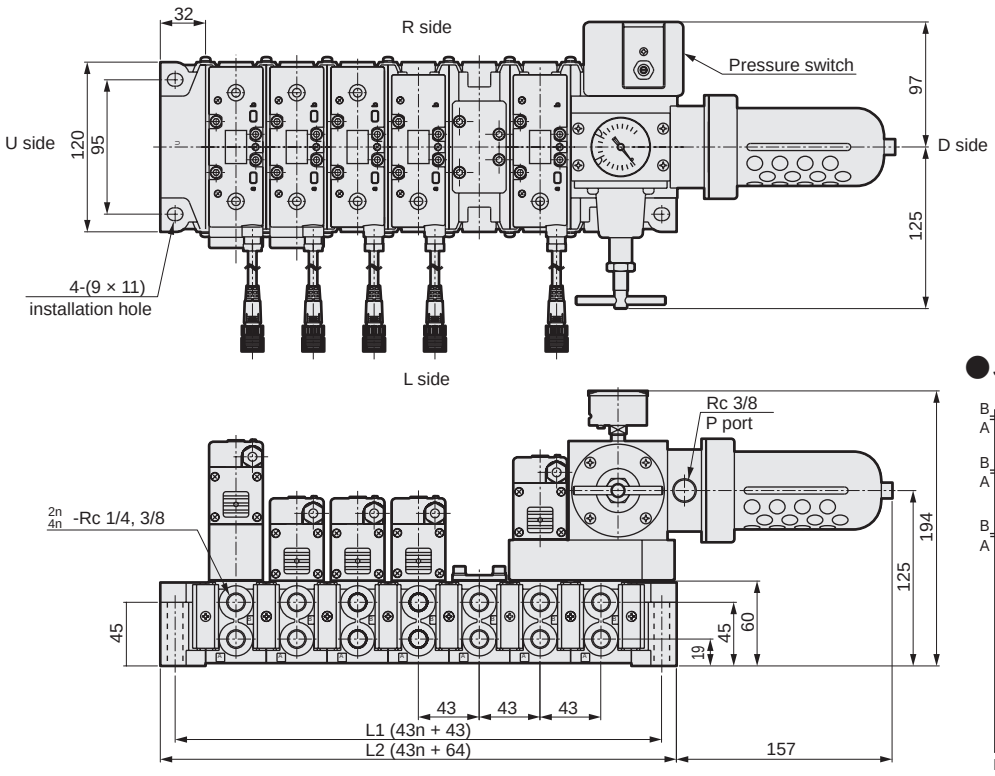
CMF1

● Back porting

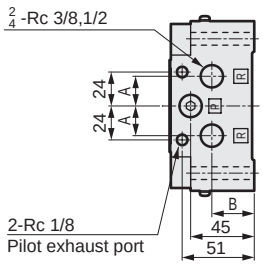


Dimensions: I/O connector type

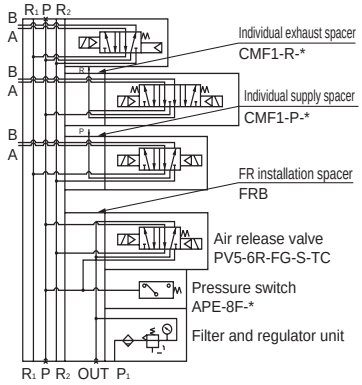
●With control unit



P/R port size	A	B
Rc 3/8	21	30
Rc 1/2	26	26



●JIS symbol



How to order

●Spacer type regulator

CMF **1** - **SR** - **A** - **T05** **C**

Ⓐ Size	
1	ISO size 1

Ⓑ Decompression port position	
P	P port
A	A port
B	B port

Ⓒ Pressure gauge	
T05	MPa display (With limit mark)

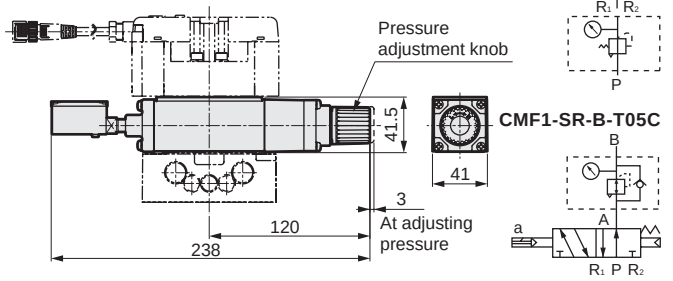
Ⓓ Check valve	
Blank	No
C	Yes

Indicate "no check valve" (blank) for SR-P, and "with check valve" (C) for SR-A and SR-B.

*Note that the pressure gauge direction differs for the **CMF1-SR-A-T05C**.

CMF1-SR-P-T05
CMF1-SR-B-T05C

●Spacer type regulator



●JIS symbol

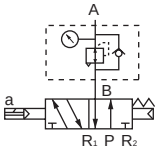
CMF1-SR-P-T05

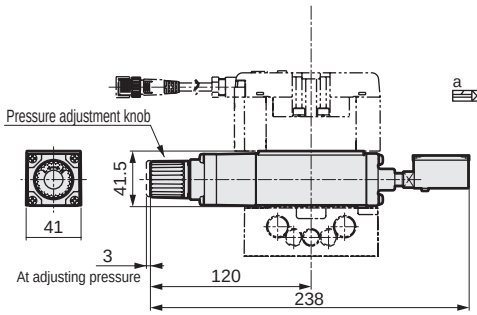
CMF1-SR-B-T05C

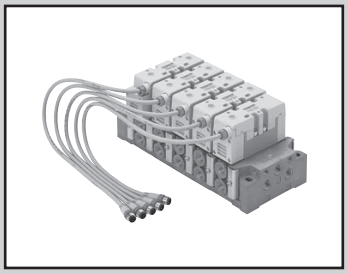
CMF1-SR-A-T05C

●JIS symbol

CMF1-SR-A-T05C







Individual wiring type manifold ISO size 2
I/O connector type
Pilot operated 5 port valve ISO conformed valve

CMF2 Series

● Applicable cylinder bore size: max. Φ160

Common specifications

Descriptions	
Manifold type	Manifold integrated
Type of manifold	Common supply, common exhaust common supply and individual exhaust Individual supply, common exhaust individual supply and individual exhaust Multi-pressure air supply
Station number	1 to 10 stations
Type of valve and operator type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	0.15, 0.20 (3-position) Note 1
Withstanding pressure MPa	1.50
Ambient temperature °C	-5 to 60 (to be unfrozen)
Fluid temperature °C	5 to 60
Lubrication	Not required
Protective structure	Dust proof and jet-proof (IP65 structure)
Leakage cm³/min (A, B → R port)	10 (ANR) or less 0.3 (ANR) or less only for 3-position all ports closed non-leak type Note 1
Vibration/shock m/s²	50 or less/300 or less
Working environment	Use in the environment containing corrosive gas is not permissible.

Note 1: The default value is indicated.

Electric specifications

Descriptions		
Rated voltage V	DC	24
Rated voltage fluctuation range		±10%
Power consumption W (ampere A)		1.2 (0.050) *This value applies to type with light.
Heat proof class		B (molded coil)
Wiring methods		I/O connector

Individual specifications

Descriptions			CMF2	
Port size Note 1	P/R1/R2 port		Rc3/8, Rc1/2	
	A/B port		Rc3/8	Rc3/4
Response time ms Note 2	2-position	Single solenoid	40 (when turned ON), 60 (when turned OFF)	
		Double solenoid	40	
	3-position		40 (when turned ON), 60 (neutral)	

Note 1: The piping port screw is compatible with G and NPT screws. Contact CKD for details.
Note 2: The response time is the value at supply pressure of 0.5 MPa, oilless. This may change depending on the pressure and type of oil supplied.

Flow characteristics

Model no.	Port size	Solenoid position	P → A/B		A/B → R1/R2	
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b
CMF2	Rc3/8	2-position single solenoid	9.7	0.12	11.0	0.14
		2-position double solenoid	9.7	0.12	11.0	0.14
		3-position all ports closed	9.2	0.12	10.1	0.15
		3-position A/B/R connection	9.2	0.11	11.6	0.11
		3-position P/A/B connection	9.6	0.11	10.2	0.18
		3-position all ports closed no leakage	6.2	-	5.9	-

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 × C.

How to order I/O connector type

● ISO size 2

CMF 2 5 - 03 L - 04 B [ ] - SB

Model no.

Ⓐ Station number

Ⓑ A/B port size Note 1

Ⓒ A/B port position Note 2

Ⓓ P/R port size

Ⓔ P/R port position Note 3, Note 4

Ⓕ HY configuration

Ⓖ Silencer box Note 5

Symbol	Descriptions	Model no. CMF2
Ⓐ Station number		
1	1 station	●
to	to	
10	10 stations	
Ⓑ A/B port size		
03	Rc 3/8	●
04	Rc 1/2	●
HX2	Rc 3/8, Rc 1/2 mix	●
Ⓒ A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●
Ⓓ P/R port size		
04	Rc 1/2	●
06	Rc 3/4	●
HY2	Rc1/2, Rc3/4 mix	●
Ⓔ P/R port position		
B	Top and bottom	●
D	Bottom	●
U	Top	●
E	P is top, R is bottom.	●
F	P is bottom, R is top.	●
T	Flexible selection (plug attached)	●
Ⓕ HY configuration		
Blank	When port size other than HY2 is selected in Ⓓ.	●
DU	Rc1/2 is bottom, Rc3/4 is top.	●
UD	Rc1/2 is top, Rc3/4 is bottom.	●
Ⓖ Silencer box		
Blank	None	●
SB	Selected (D side installation)	●

The valve unit must be prepared separately. Refer to page 43 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 64 must be submitted when preparing the manifold with valves.

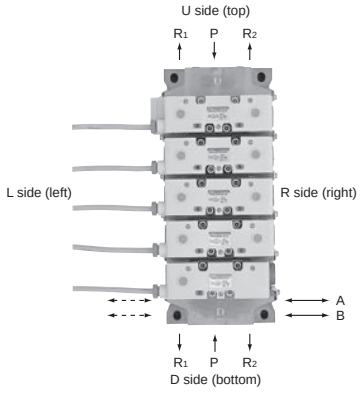
Note on model no. selection

Note 1: HX indicates mix of port size. Contact CKD for details.
Note 2: Ⓒ indicates port position.
Ports will be plugged unless indicated.
Note 3: Ⓔ indicates port position.
The opposite side of indicated port will be plugged.
Note 4: When the Ⓖ silencer box is selected, the P-port position is selected from B, D, U, or T.
Note 5: When the Ⓖ silencer box type is selected, a plug assembly is provided on both top and bottom.

<Example of model number>

CMF25-03L-04B-SB

Model: Manifold ISO size 2
Ⓐ Station number : 5 stations
Ⓑ Ⓒ A/B port : Rc3/8 (left-right sides porting)
Ⓓ Ⓔ P/R port : Rc1/2 (top-bottom side porting)
Ⓖ Silencer box : Selected (D side installation)



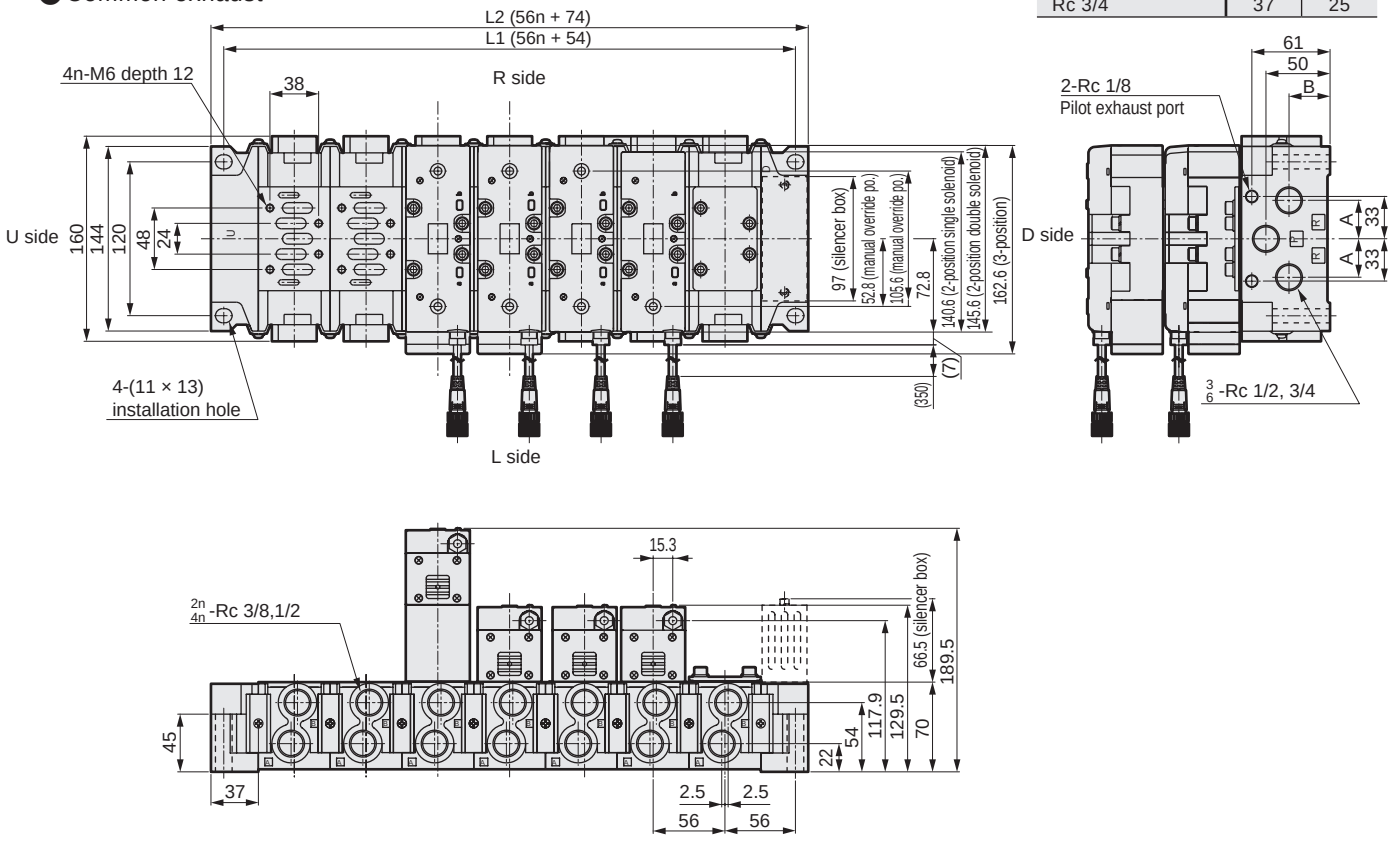
Without control unit

Dimensions: I/O connector type

CMF2

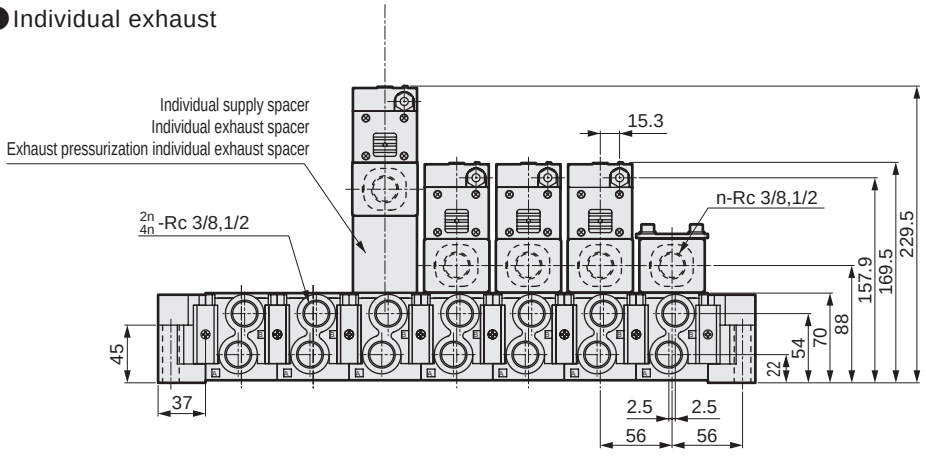
● Common exhaust

P/R port size	A	B
Rc 1/2	30	32
Rc 3/4	37	25



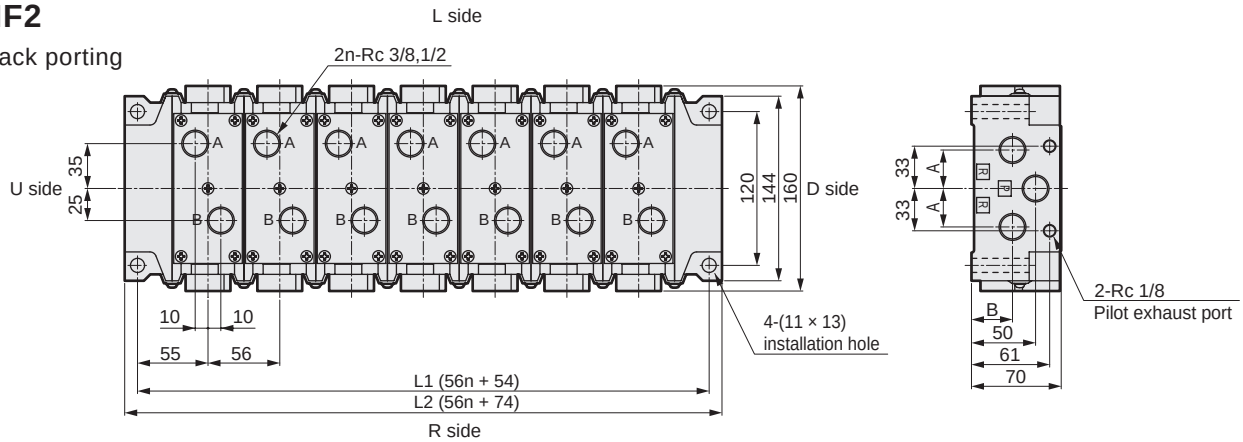
CMF2

● Individual exhaust



CMF2

● Back porting



How to order

●Spacer type regulator

CMF 2 - SR - A - T05 C

Ⓐ Size	
2	ISO size 2

Ⓑ Decompression port position	
P	P port
A	A port
B	B port

Ⓒ Pressure gauge	
T05	MPa display (With limit mark)

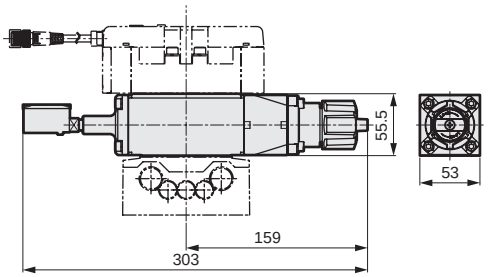
Ⓓ Check valve	
Blank	No
C	Yes

Indicate "no check valve" (blank) for SR-P, and "with check valve" (C) for SR-A and SR-B.

*Note that the pressure gauge direction differs for the **CMF2-SR-A-T05C**.

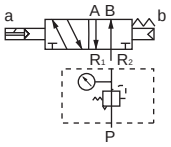
CMF2-SR-P-T05
CMF2-SR-B-T05C

●Spacer type regulator

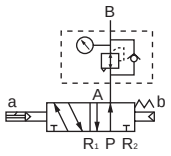


●JIS symbol

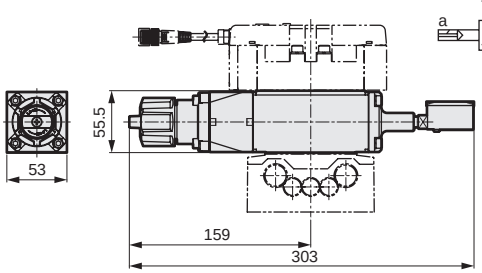
CMF2-SR-P-T05



CMF2-SR-B-T05C

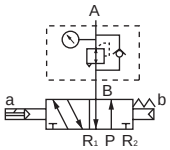


CMF2-SR-A-T05C

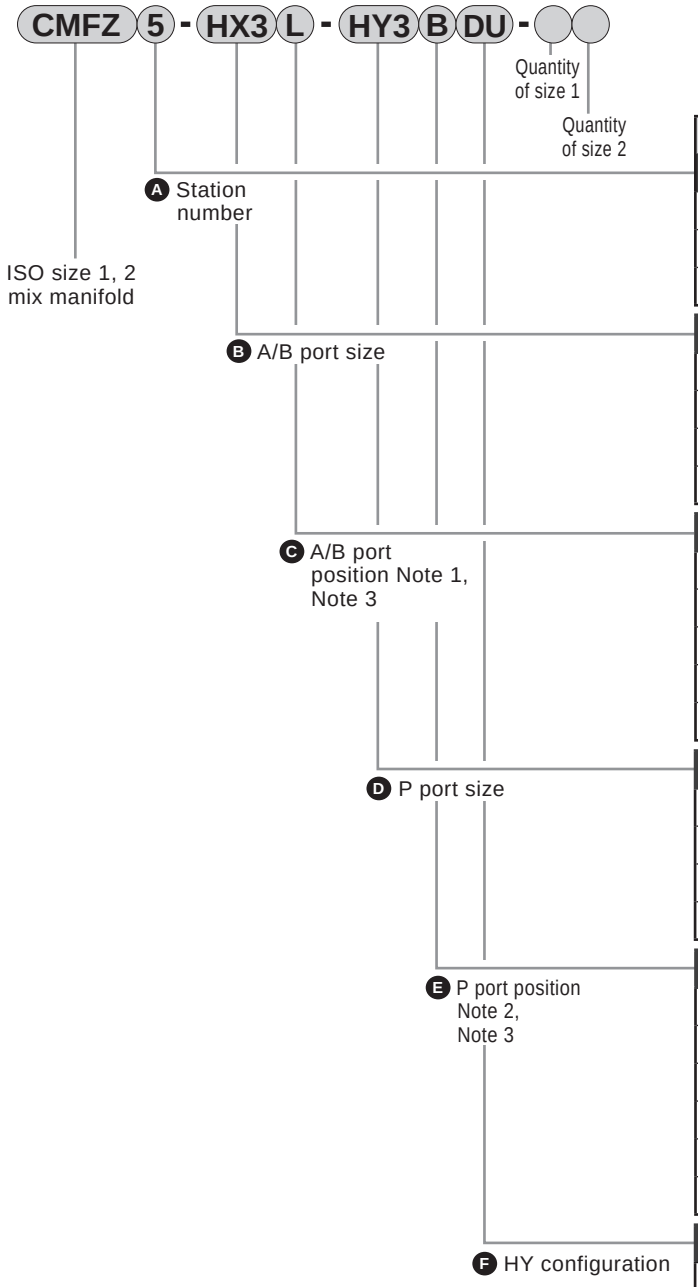


●JIS symbol

CMF2-SR-A-T05C



How to order I/O connector type



Symbol	Descriptions	Model no. CMFZ
A Station number		
2	2 stations	●
to	to	
10	10 stations	
B A/B port size		
HX3	1:02, 2:03	●
HX4	1:02, 2:04	●
HX5	1:03, 2:03	●
HX6	1:03, 2:04	●
C A/B port position		
Blank	Right side	●
L	Left and right sides	●
H	Left side	●
Z	Rear side	●
T	Flexible selection (plug attached)	●
D P port size		
HY3	1:03, 2:04	●
HY4	1:03, 2:06	●
HY5	1:04, 2:04	●
HY6	1:04, 2:06	●
E P port position		
B	Top and bottom	●
D	Bottom	●
U	Top	●
E	P is top, R is bottom.	●
F	P is bottom, R is top.	●
T	Flexible selection (plug attached)	●
F HY configuration.		
DU	The smaller port size is bottom and larger port size is top. 1 is bottom and 2 is top.	●
UD	The smaller port size is top and larger port size is bottom. 1 is top and 2 is bottom.	●

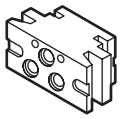
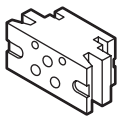
The valve unit must be prepared separately. Refer to pages 37 and 43 for details on ordering the valve. In addition to each model, **Manifold Specifications** on page 65 must be submitted when preparing the manifold with valves.

Note on model no. selection

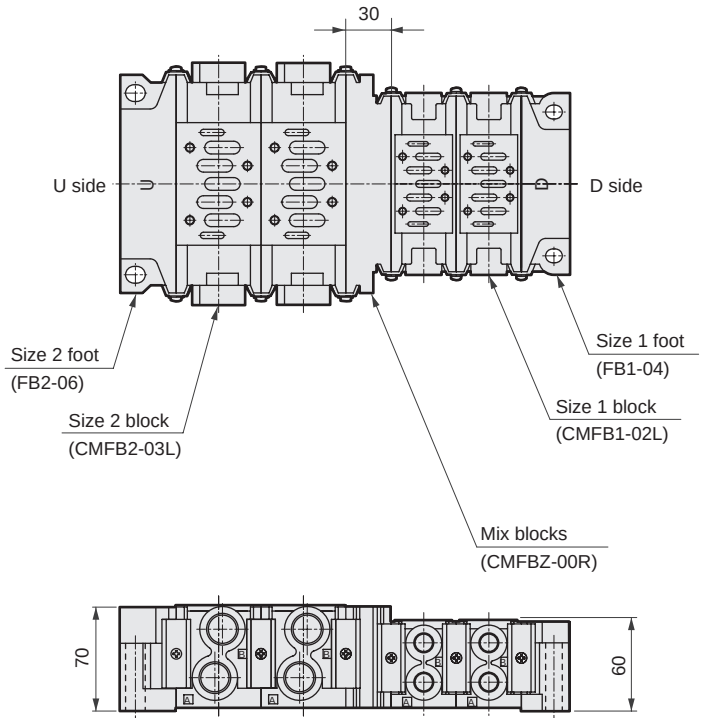
Note 1: C indicates the port position.
Ports will be plugged unless indicated.

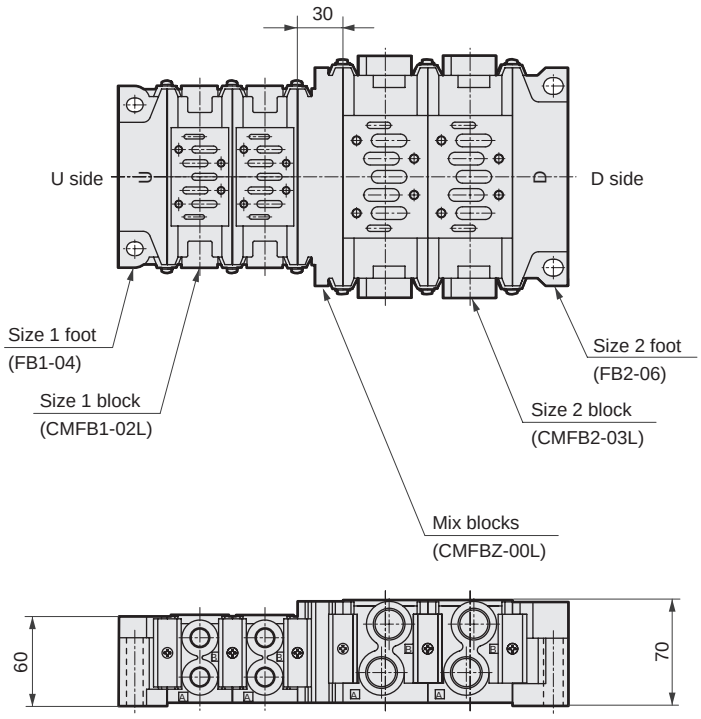
Note 2: E indicates the port position.
The side opposite that designated is plugged.

Note 3: If L is designated for the port position in C, indicate the plug position in manifold specifications.

No	Descriptions	Model no.	Diagram	Remarks
1	ISO size 1, 2 Mix Block	**CMFBZ-00L**		U side size 1 D side size 2 With connecting bracket and O ring
		CMFBZ-00R		U side size 2 D side size 1 With connecting bracket and O ring

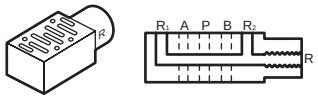
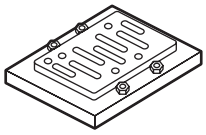
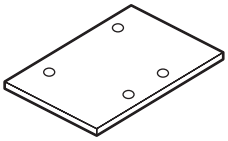
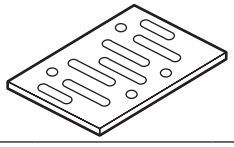
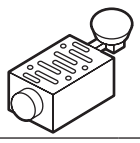
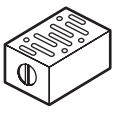
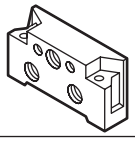
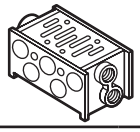
Mix manifold appearance image





* Refer to Page 52, 56 for size 1, 2 foot and block dimensions.

Manifold option

Options	Model no.		Remarks
	ISO size 1	ISO size 2	
1. Individual supply spacer 	CMF1-P-02 (Rc1/4) 03 (Rc3/8)	CMF2-P-03 (Rc3/8) 04 (Rc1/2)	1. Clamp for individual supply port, used for multi-pressure 2. Individual exhaust for exhaust pressurization
2. Individual exhaust spacer 	CMF1-R-02 (Rc1/4) 03 (Rc3/8)	CMF2-R-03 (Rc3/8) 04 (Rc1/2)	1 port exhaust by individual exhaust (back pressure proof)
3. Adaptor 	CU1-00 (FS/FD2 Series, Rc1/4, 3/8) CU1-01 (FS/FD3 Series, Rc1/4, 3/8, 1/2)	CU2-00 (FS/FD3 Series, Rc1/4, 3/8, 1/2) CU2-01 (FS/FD4 Series, Rc1/2, 3/4)	PV5-6R and PV5-8R is installed on the conventional model F^{S2}_{D3} (Custom order)
4. Masking plate 	CM1-00	CM2-00	PV5-6R PV5-8R Discrete masking plate
	CM1-01	CM2-01	Manifold (CMF1, CMF2) P/R1/R2 port Masking plate
5. Base gasket 	PV5G-6-BASE-GASKET	PV5G-8-BASE-GASKET	PV5-6R PV5-8R
6. Set screw 	CMF1-M5X35	CMF2-M6X45	
7. Spacer type regulator 	CMF1-SR-P-T05 CMF1-SR-A-T05C CMF1-SR-B-T05C "How to order" Page 53	CMF2-SR-P-T05 CMF2-SR-A-T05C CMF2-SR-B-T05C "How to order" Page 57	Multi-pressure use
8. Air pilot check valve 	CMF1-PC	CMF2-PC	Cylinder intermediate position holding
9. Foot U side 	FB1-$^{03}_{04}$ U	FB2-$^{04}_{06}$ U	O rings are included with manifold connecting bracket set (× 2), plug, or U side hood.
D side	FB1-$^{03}_{04}$ D	FB2-$^{04}_{06}$ D	
10. Manifold block 	CMFB1-$^{02}_{03}$ T	CMFB2- $^{03}_{04}$ T	Manifold connecting bracket set (× 2), plug and O ring are included.

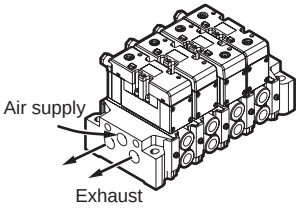
Type of manifold

A wide range of air supply, exhaust, and piping combinations is available.
Select the functions best suited to your application.

1 General use

●Common exhaust method

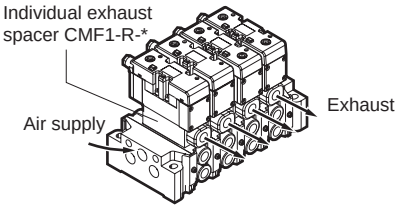
This is the most commonly used method. Each solenoid valve air supply and exhaust are grouped at one position with P (air supply) and R (exhaust) ports passing through the connected manifold block.



2 Application of general use

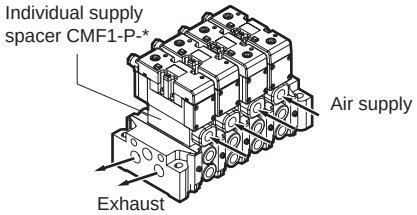
●Individual exhaust method

R1 and 2 (exhaust) ports are independent for each solenoid valve, so the adjacent cylinder will not pop out because of back pressure.
An individual exhaust spacer (CMF1-R-*) can be inserted between the manifold block and valve to enable individual exhaust.



●Individual supply method

P (air supply) ports are independent for each valve, so a different pressure can be supplied to a specific valve in the manifold.
An individual supply spacer (CMF1-P-*) can be inserted between the manifold block and valve to enable individual air supply.



●Individual supply and individual exhaust method

Use this when independent P (air supply) port and R (exhaust) port are to be used only for specific valves in the manifold.
Example: When using an oilless manifold but lubricating a specific valve.
Individual supply (CMF1-P-*) and exhaust (CMF1-R-*) spacers inserted between the manifold block and valve enable individual air supply and exhaust.

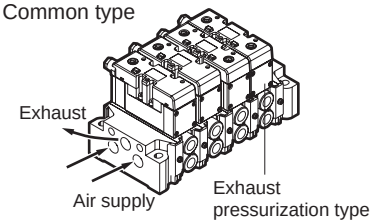
●Multi-pressure air supply method

A masking plate (CM1-01) lies between manifold blocks with different pressures, supplying two pressures, high and low, to one manifold.

3 Special use (exhaust pressurization)

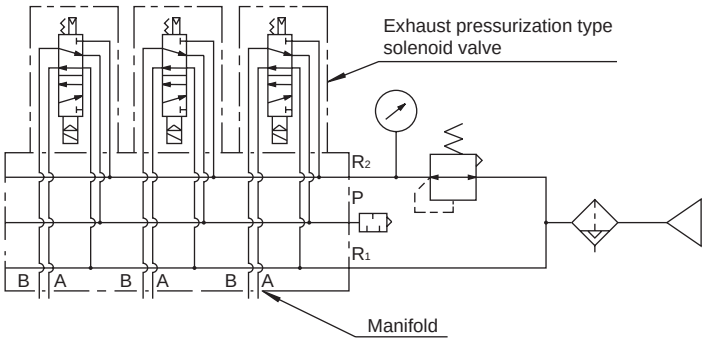
This is suitable for supplying more than one different pressure to one manifold.
Example: To drive two piston cylinders used in a welding machine.

Common type



●Example of exhaust pressurization type

Common type



4 Common descriptions for general and special purpose

●Back porting method

If side porting is not possible, pipes can be connected from either the A or B port, or all pipes can be connected from the bottom of the manifold.

Manifold specifications
ISO size 1 I/O connector type

Issue / /

Your company name

Contact

Order No.

●Contact ●Quantity set ●Request date / /

Slip No.	Order No.

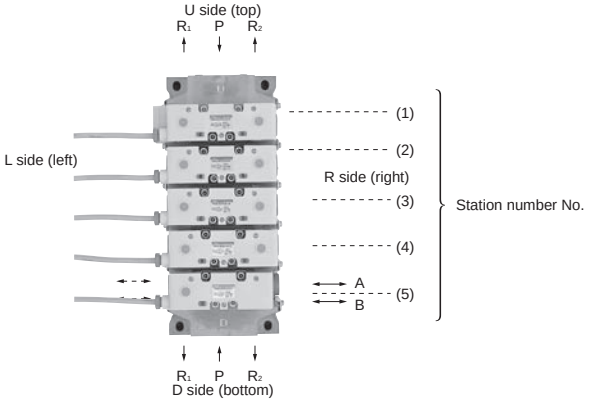
●Manifold model no.

CMF 1 □ - □ □ - □ □ □ - □ - □ -TC

Ⓐ ISO size
Ⓑ Station number
Ⓒ A/B port size
Ⓓ A/B port position
Ⓔ P/R port size
Ⓕ P/R port position
Ⓖ HY configuration
Ⓗ Silencer box
Ⓘ Option

Ⓐ ISO size	Ⓑ Station No.	Ⓒ A/B port size	Ⓓ A/B port position	Ⓔ P/R port size	Ⓕ P/R port position	Ⓖ HY configuration	Ⓗ Silencer box	Ⓘ Option
1 PV5-6R	1 1 station	02 Rc1/4	Blank Right side	03 Rc3/8	B Top and bottom	Blank Other than HY is selected for Ⓔ.	Blank None	Blank None
	to to	03 Rc3/8	L Left/right sides	04 Rc1/2	D Bottom		SB Selected (D side)	A Coolant proof
	10 10 stations	HX1 Rc1/4,Rc3/8 mix	H Left side	HY1 Rc3/8,Rc1/2 mix	U Top	DU Rc 3/8 is bottom, Rc 1/2 is top		
			Z Rear side		E P top, R bottom			
			T Plug attached		F P bottom, R top	UD Rc 3/8 is top, Rc 1/2 is bottom		
					T Plug attached			

Note: Ⓘ is the valve option selected when assembling the manifold.

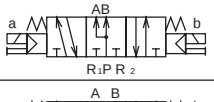
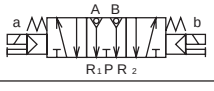


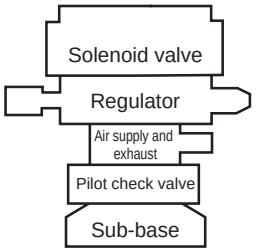
⚠ This applies when rated voltage 24 VDC is used and light and surge suppressor is installed.

★ Indicate left solenoid valve No. (1) to (6) and (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No			1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5-6R											
Plug position should be indicated when L is selected in Ⓓ		R										
		L										
Option	Air supply spacer											
	Exhaust spacer											
	Pilot check valve											
	Spacer type regulator	CMF⁎-SR-P										
		CMF⁎-SR-A										
		CMF⁎-SR-B										
	Flow path shut off plate	Air supply passage shut off										
		Exhaust passage shut off										
	A mixed bore size should be indicated when HX is selected for Ⓒ.	02										
		03										

Solenoid valve type No.

2-position single solenoid		PV5-6R-FG-S-TC	(1)
2-position double solenoid		PV5-6R-FG-D-TC	(2)
3-position all ports block		PV5-6R-FHG-D-TC	(3)
3-position A-B-R connection		PV5-6R-FJG-D-TC	(4)
3-position P-A-B connection		PV5-6R-FIG-D-TC	(5)
3-position all ports block no leakage		PV5-6R-FPG-D-TC	(6)
Masking plate		CM1-00	(9)



Option (spacer) assembly order

Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

Manifold specifications

ISO size 1 I/O connector type (with control unit)

Issue / /

Your company name

Contact

Order No.

●Contact ●Quantity set ●Request date / /

Slip No.	Order No.

●Manifold model no.

CMF 1 □ - □ □ - □ - □ □ □ - □ -TC

Ⓐ ISO size
Ⓑ Station number
Ⓒ A/B port size
Ⓓ A/B port position
Ⓔ Control unit
Ⓕ R port size
Ⓖ R port position
Ⓗ HY configuration
Ⓘ Option

Ⓐ ISO size		Ⓑ Station No.		Ⓒ A/B port size	
1	PV5-6R	3	3 stations	02	Rc1/4
		to	to	03	Rc3/8
		10	10 stations	HX1	Rc1/4, Rc3/8 mix

Ⓓ A/B port position	
Blank	Right side
L	Left/right sides
H	Left side
Z	Rear side
T	Plug attached

Ⓔ Control unit (option)	
A	Filter regulator with auto drain/air release valve
AP	Filter regulator with auto drain, air release valve/pressure switch
M	Filter with manual drain regulator/air release valve
MP	Filter with manual drain regulator, air release valve/pressure switch
F	Filter regulator with auto drain (air release valve plug)
G	Filter with manual drain regulator (air release valve plug)
C	Air release valve

Ⓕ R port size	
03	Rc3/8
04	Rc1/2
HY1	Rc3/8, Rc1/2 mix

Ⓖ R port position	
B	Top and bottom
D	Bottom
U	Top
T	Plug attached

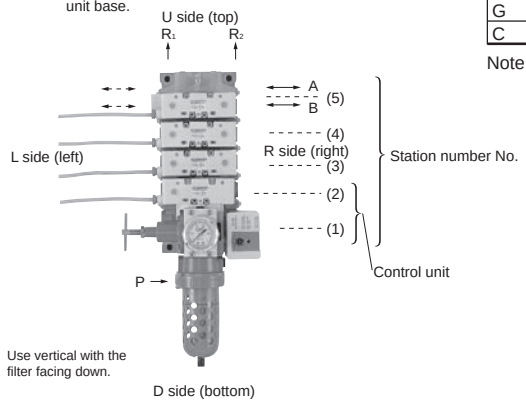
Ⓗ HY configuration	
Blank	Other than HY is selected for Ⓕ.
DU	Rc 3/8 is bottom, Rc 1/2 is top
UD	Rc 3/8 is top, Rc 1/2 is bottom

Note: When using the control unit, select a number of stations including two for the unit base.

Note: The air release valve with the control unit has light and surge suppressor and manual override.

Ⓘ Option	
Blank	None
A	Coolant proof

Note: Ⓘ is the valve option selected when assembling the manifold.

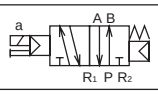
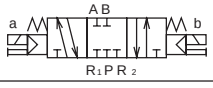
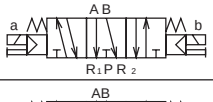


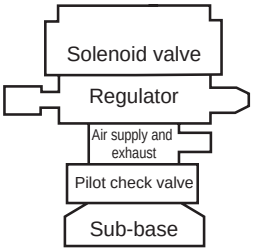
⚠ This applies when rated voltage 24 VDC is used and light and surge suppressor is installed.

★ Indicate left solenoid valve No. (1) to (6) and (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No		1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5-6R										
Plug position should be indicated when L is selected in Ⓓ	R										
	L										
Option: Air supply spacer											
Option: Exhaust spacer											
Option: Pilot check valve											
Option: Spacer type regulator	CMF1-SR-P										
	CMF1-SR-A										
	CMF1-SR-B										
Option: Flow path shut off plate	Air supply passage shut off										
	Exhaust passage shut off										
Option: A mixed bore size should be indicated when HX is selected for Ⓒ.	02										
	03										

Solenoid valve type No.

2-position single solenoid		PV5-6R-FG-S-TC	(1)
2-position double solenoid		PV5-6R-FG-D-TC	(2)
3-position all ports block		PV5-6R-FHG-D-TC	(3)
3-position A-B-R connection		PV5-6R-FJG-D-TC	(4)
3-position P-A-B connection		PV5-6R-FIG-D-TC	(5)
3-position all ports block no leakage		PV5-6R-FPG-D-TC	(6)
Masking plate		CM1-00	(9)



Option (spacer) assembly order

Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

Manifold specifications
ISO size 2 I/O connector type

Issue / /

Your company name

Contact

Order No.

●Contact ●Quantity set ●Request date / /

Slip No.	Order No.

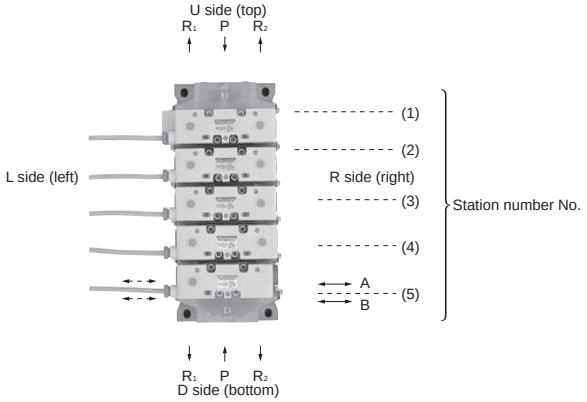
●Manifold model no.

CMF 2 □-□ □-□ □ □-□-□-TC

Ⓐ ISO size
Ⓑ Station number
Ⓒ A/B port size
Ⓓ A/B port position
Ⓔ P/R port size
Ⓕ P/R port position
Ⓖ HY configuration
Ⓗ Silencer box
Ⓘ Option

Ⓐ ISO size	Ⓑ Station No.	Ⓒ A/B port size	Ⓓ A/B port position	Ⓔ P/R port size	Ⓕ P/R port position	Ⓖ HY configuration	Ⓗ Silencer box	Ⓘ Option
2 PV5-8R	1 1 station	03 Rc3/8	Blank Right side	04 Rc1/2	B Top and bottom	Blank Other than HY is selected for Ⓔ.	Blank None	Blank None
	to to	04 Rc1/2	L Left/right sides	06 Rc3/4	D Bottom		SB Selected (D side)	A Coolant proof
	10 10 stations	HX2 Rc3/8,Rc1/2 mix	H Left side	HY2 Rc1/2,Rc3/4 mix	U Top	DU Rc 1/2 is bottom, Rc 3/4 is top		
			Z Rear side		E P top, R bottom			
			T Plug attached		F P bottom, R top	UD Rc 1/2 is top, Rc 3/4 is bottom		
					T Plug attached			

Note: Ⓘ is the valve option selected when assembling the manifold.

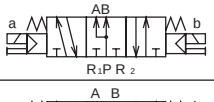


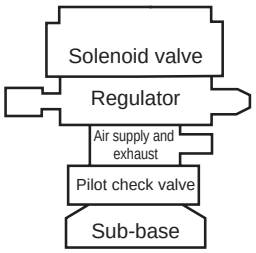
⚠ This applies when rated voltage 24 VDC is used and light and surge suppressor is installed.

★ Indicate left solenoid valve No. (1) to (6) and (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No			1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5-8R											
Plug position should be indicated when L is selected in Ⓓ		R										
		L										
Option	Air supply spacer											
	Exhaust spacer											
	Pilot check valve											
	Spacer type regulator	CMF★-SR-P										
		CMF★-SR-A										
		CMF★-SR-B										
	Flow path shut off plate	Air supply passage shut off										
		Exhaust passage shut off										
	A mixed bore size should be indicated when HX is selected for Ⓒ.	03										
		04										

Solenoid valve type No.

2-position single solenoid		PV5-8R-FG-S-TC	(1)
2-position double solenoid		PV5-8R-FG-D-TC	(2)
3-position all ports block		PV5-8R-FHG-D-TC	(3)
3-position A-B-R connection		PV5-8R-FJG-D-TC	(4)
3-position P-A-B connection		PV5-8R-FIG-D-TC	(5)
3-position all ports block no leakage		PV5-8R-FPG-D-TC	(6)
Masking plate		CM2-00	(9)



Option (spacer) assembly order

Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

Manifold specifications
ISO size 1, 2 mix I/O connector type

Issue / /

Your company name

Contact

Order No.

●Contact ●Quantity set ●Request date / /

Slip No.	Order No.

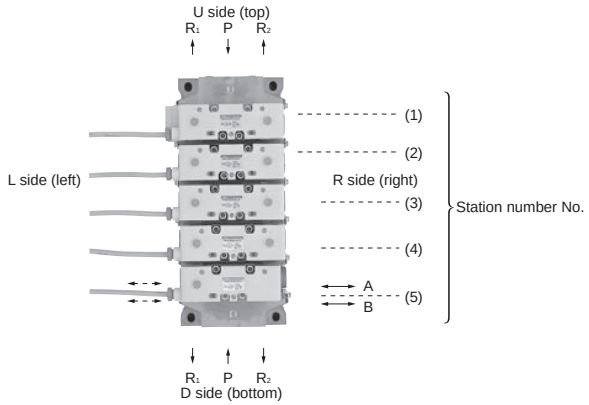
●Manifold model no.

CMF Z □ - □ □ - □ □ □ - □ -TC

Ⓐ ISO size | Ⓑ Station number | Ⓒ A/B port size | Ⓓ A/B port position | Ⓔ P/R port size | Ⓕ P/R port position | Ⓖ HY configuration | Ⓘ Option

Ⓐ ISO size	Ⓑ Station No.	Ⓒ A/B port size	Ⓓ A/B port position	Ⓔ P/R port size	Ⓕ P/R port position	Ⓖ HY configuration	Ⓘ Option
Z Mix of size 1, 2	1 1 station	HX3 1:02 · 2:03	Blank Right side	HY3 1:03 · 2:04	B Top and bottom	DU Size 1 is bottom, Size 2 is top	Blank None
	to to	HX4 1:02 · 2:04	L Left/right sides	HY4 1:03 · 2:06	D Bottom		A Coolant proof
	10 10 stations	HX5 1:03 · 2:03	H Left side	HY5 1:04 · 2:04	U Top	UD Size 1 is top, Size 2 is bottom	
		HX6 1:03 · 2:04	Z Rear side	HY6 1:04 · 2:06	E P top, R bottom		
			T Plug attached		F P bottom, R top		
					T Plug attached		

Note: Ⓘ is the valve option selected when assembling the manifold.



⚠ This applies when rated voltage 24 VDC is used and light and surge suppressor is installed.

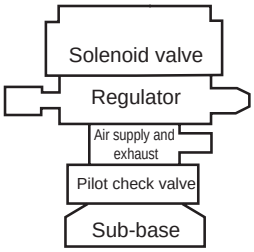
★ Indicate left solenoid valve No. (1) to (6) and (9) in the following solenoid valve No. field when placing an order.
To select an option, circle the field for the relevant option below.

Station number No			1	2	3	4	5	6	7	8	9	10
Solenoid valve type No	PV5-6R											
	PV5-8R											
Plug position should be indicated when L is selected in Ⓓ		R										
		L										
Option	Air supply spacer											
	Exhaust spacer											
	Pilot check valve											
	Spacer type regulator	CMF⋆-SR-P										
		CMF⋆-SR-A										
		CMF⋆-SR-B										
	Flow path shut off plate	Air supply passage shut off										
		Exhaust passage shut off										
	A mixed bore size should be indicated when HX is selected for Ⓒ.	02										
		03										
		04										

Solenoid valve type No.

2-position single solenoid		PV5-*R-FG-S-TC	(1)
2-position double solenoid		PV5-*R-FG-D-TC	(2)
3-position all ports block		PV5-*R-FHG-D-TC	(3)
3-position A-B-R connection		PV5-*R-FJG-D-TC	(4)
3-position P-A-B connection		PV5-*R-FIG-D-TC	(5)
3-position all ports block no leakage		PV5-*R-FPG-D-TC	(6)
Masking plate		CM*-00	(9)

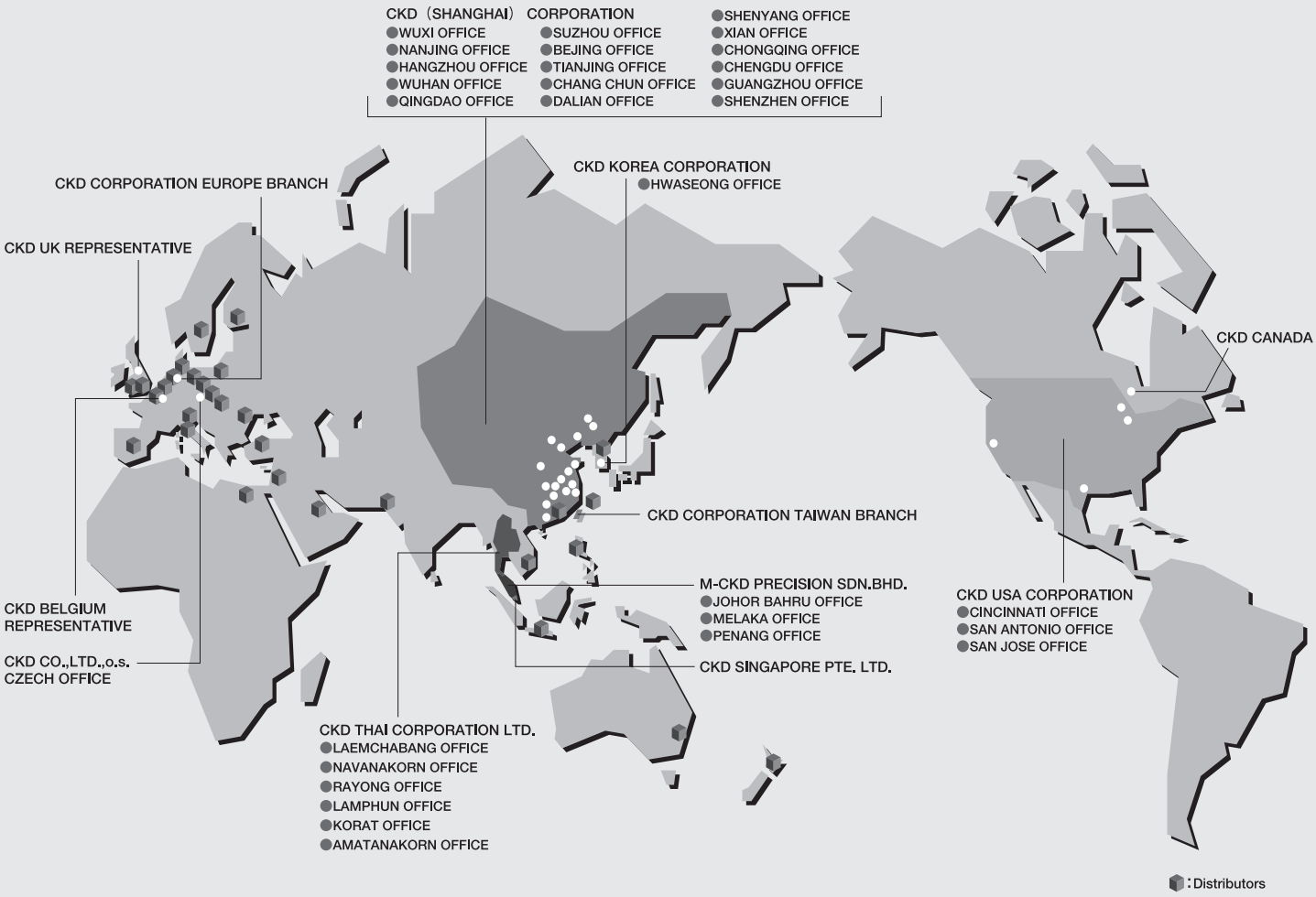
Note: The asterisk (*) is "6"; or "8"; for the solenoid valve, and "1" or "2" for the masking plate and option.



Option (spacer) assembly order

Note: The basic order from the sub-base to the solenoid valve is shown at left. When not using spacers, simply stack up parts excluding those parts.

WORLD-NETWORK



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