



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

# PV5-6R Series

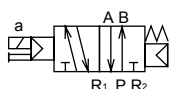
● Cylinder bore size: max.  $\varnothing 100$



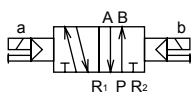
## JIS symbol

● 5-port valve

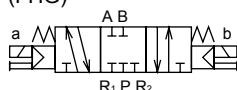
2-position single (FG-S)



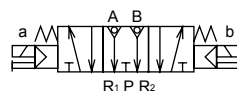
2-position double (FG-D)



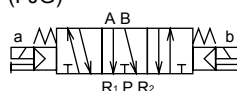
3-position all ports closed (FHG)



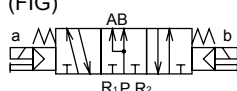
3-position all ports closed Non-leaking (FPG)



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



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



## Common specifications

Item	Description
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0 ( $\approx 150$ psi, 10 bar)
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar) 0.20 ( $\approx 29$ psi, 2 bar) (3-position)
Proof pressure MPa	1.50 ( $\approx 220$ psi, 15 bar)
Ambient temperature $^{\circ}\text{C}$	-5 ( $23^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ ) (no freezing)
Fluid temperature $^{\circ}\text{C}$	5 ( $41^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ )
Lubrication	Not required
Degree of protection	Dust proof/jet proof (IP65 or equivalent)
Leakage $\text{cm}^3/\text{min}$ (A, B $\rightarrow$ R port)	10 (ANR) or less 3-position all ports closed non-leaking only 0.3 (ANR) or less (*1)
Vibration resistance $\text{m/s}^2$	50 or less
Shock resistance $\text{m/s}^2$	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

\*1: The initial value is listed.

## Electrical specifications

Item	Description
Rated voltage V	DC 24
Voltage fluctuation range	$\pm 10\%$
Power consumption W(Current value A)	1.2 (0.050) * Value for models with lamp.
Thermal class	B (molded coil)
Wiring method	I/O connector

## Performance/characteristics by model

Item	PV5-6R
Port size	Rc1/4, Rc3/8
Response time ms	30 (ON), 40 (OFF)
(*2)	30 (when ON), 50 (when neutral)

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication. It depends on the pressure and the lubricant quality.

## Weight

Item	PV5-6R
Weight kg	0.40
(*1)	0.44
	0.46
	1.12

\*1: The weight listed is the weight without the sub-plate.

## Flow characteristics

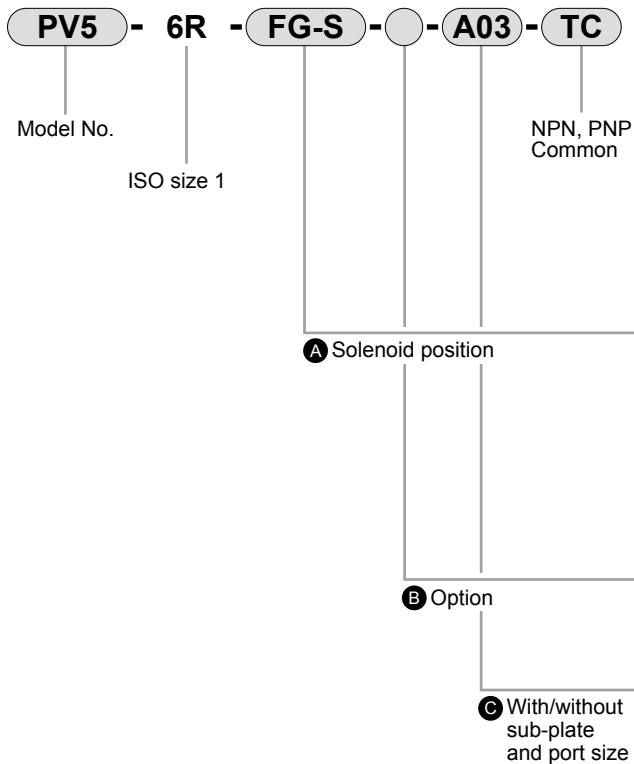
Model No.	Port size	Solenoid position	P $\rightarrow$ A/B		A/B $\rightarrow$ R1/R2	
			C [ $\text{dm}^3/(\text{s}\cdot\text{bar})$ ]	b	C [ $\text{dm}^3/(\text{s}\cdot\text{bar})$ ]	b
PV5-6R	Rc1/4	2-position single	6.1	0.28	6.7	0.20
		2-position double	6.1	0.28	6.7	0.20
		3-position all ports closed	5.2	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 non-leaking	3.4	-	3.0	-

\*1: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

4GA/B  
M4GA/B  
MN4GA/B  
4GA/B (master)  
4GB With sensor  
4GD/E  
M4GD/E  
MN4GD/E  
4GA4/B4  
MN3E  
MN4E  
W4GA/B2  
W4GB4  
MN3S0  
MN4S0  
4SA/B0  
4KA/B  
4KA/B (master)  
4F  
4F (master)  
PV5G  
GMF  
PV5  
GMF  
PV5S-0  
3Q  
MV3QR  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP  
NVP  
4G\*0EJ  
4F\*0EX  
4F\*0E  
HMV  
HSV  
2QV  
3QV  
SKH  
Silencer  
TotAirSys (Total Air)  
TotAirSys (Gamma)  
Ending

## How to order I/O connector

● ISO Size 1



Code	Description	Model No.
<b>A Solenoid position</b>		
FG-S	P pressurized type	2-position single
FG-D		2-position double
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 non-leaking
<b>B Option</b>		
Blank	None	●
A	Coolant proof	●
<b>C With/without sub-plate and port size</b>		
Blank	Without sub-plate	●
A02	Side piping Rc1/4 (Rc3/8 for R port only)	●
A03	Side piping Rc3/8	●

[Example of model No.]

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

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

- A** Solenoid position : P pressurized 2-position single solenoid
- C** Sub-plate port size : side piping Rc3/8

### Remarks

Item	Description
(1) Wiring method	I/O connector (M12) NPN, PNP common type
(2) Rated voltage	24 VDC
(3) Surge suppressor/lamp	Standard with surge suppressor and indicator lamp

\*1: Refer to page 1470 for the circuit diagram with a surge suppressor/lamp.

## ISO size 1 sub-plate specifications and how to order

CB1 - A02

**A** Piping connection method

Code	Type	P/A/B port	R1/R2 port	Weight (kg)
<b>A Piping connection method</b>				
A02	Side piping	Rc1/4	Rc 3/8	0.27
A03		Rc3/8		

### CE marking specifications

\*\* - TC - ST

### Coolant proof specifications

Select option "A" of Item **B** in How to order.

4GA/B  
M4GA/B  
MN4GA/B  
4GA/B (master)  
4GB With sensor  
4GD/E  
M4GD/E  
MN4GD/E  
4GA4/B4  
MN3E  
MN4E  
W4GA/B2  
W4GB4  
MN3S0  
MN4S0  
4SA/B0  
4KA/B  
4KA/B (master)  
4F  
4F (master)  
PV5G  
GMF  
PV5  
GMF  
PV5S-0  
3Q  
MV3QR  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP  
NVP  
4G\*0EJ  
4F\*0EX  
4F\*0E  
H MV  
H SV  
2QV  
3QV  
SKH  
Silencer  
TotAirSys (Total Air)  
TotAirSys (Gamma)  
Ending

# PV5-6R Series

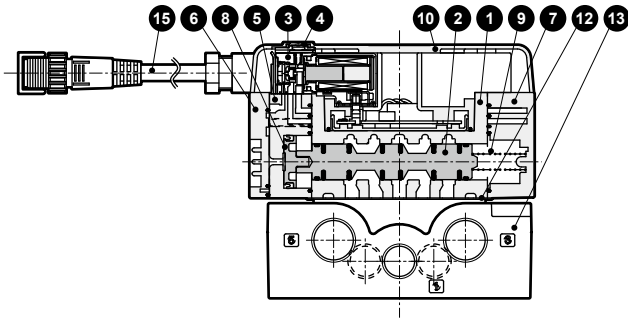
Discrete valve; ISO size 1

Internal structure and parts list: I/O connector

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E MN4E
- W4GA/B2
- W4GB4
- MN3S0 MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5 GMF**
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP NVP
- 4G\*0EJ
- 4F\*0EX
- 4F\*0E
- HMV HSV
- 2QV 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

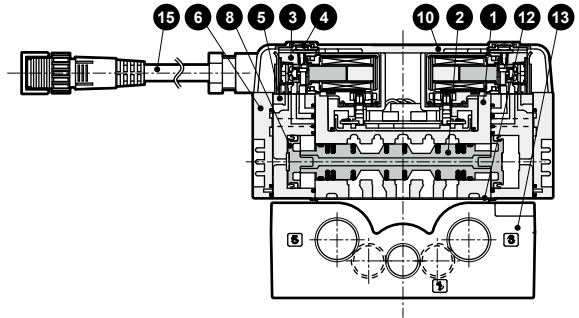
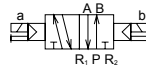
## PV5-6R-FG-S

● 2-position single



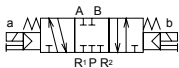
## PV5-6R-FG-D

● 2-position double



## PV5-6R-FHG-D

● 3-position all ports closed



## PV5-6R-FJG-D

● 3-position A/B/R connection



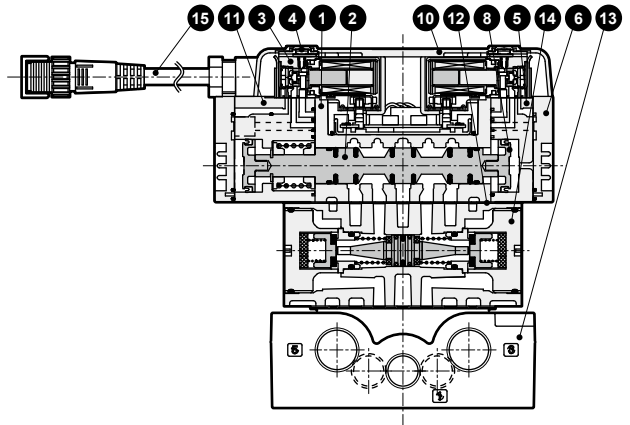
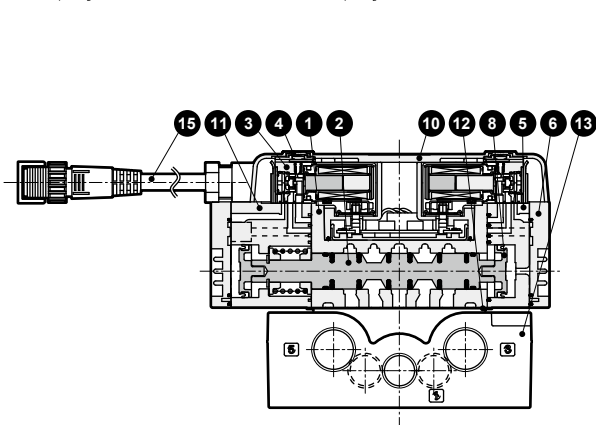
## PV5-6R-FIG-D

● 3-position P/A/B connection



## PV5-6R-FPG-D

● 3-position all ports closed non-leaking



## Main parts list

No.	Part name	Material	No.	Part name	Material
1	Body	Aluminum alloy die-casting	9	Spring S	-
2	Spool assembly	-	10	Wiring cover	Resin
3	Pilot valve	-	11	Pilot valve assembly for 3-position	Resin
4	Manual override	-	12	Gasket	-
5	Pilot valve assembly for double	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

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
<b>PV5G GMF</b>
<b>PV5 GMF</b>
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# PV5-6R Series

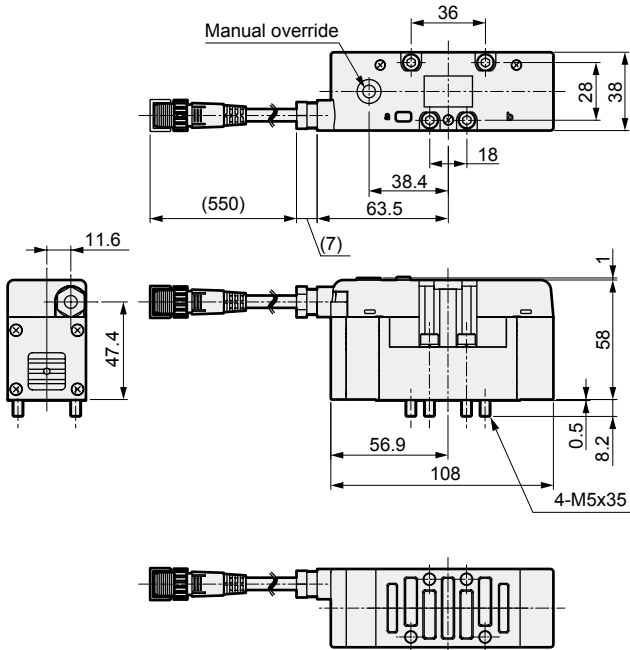
Discrete valve; ISO size 1

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

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E MN4E
- W4GA/B2
- W4GB4
- MN3S0 MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G GMF
- PV5 GMF**
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP NVP
- 4G\*0EJ
- 4F\*0EX
- 4F\*0E
- HMV HSV
- 2QV 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

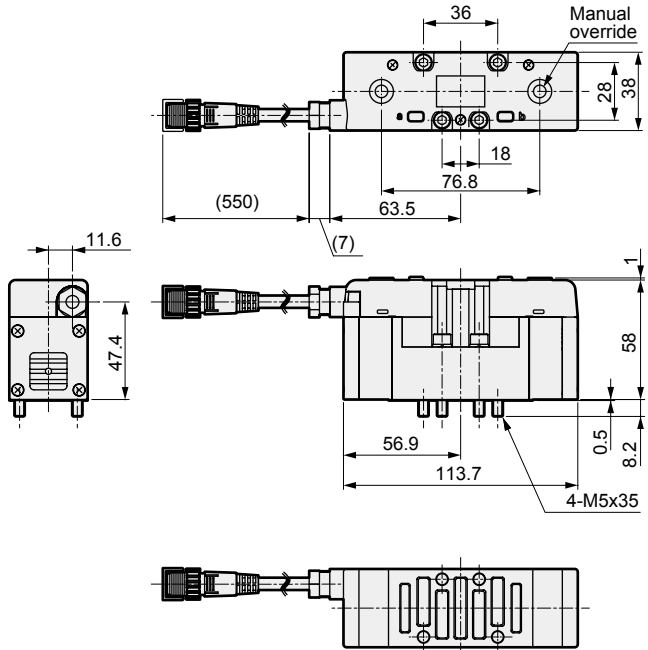
## PV5-6R-FG-S

● 2-position single



## PV5-6R-FG-D

● 2-position double

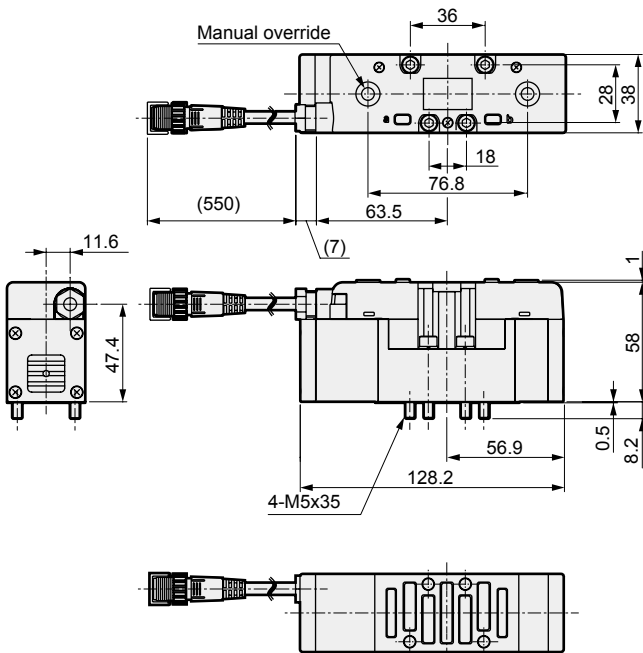


## PV5-6R-FHG-D

## PV5-6R-FJG-D

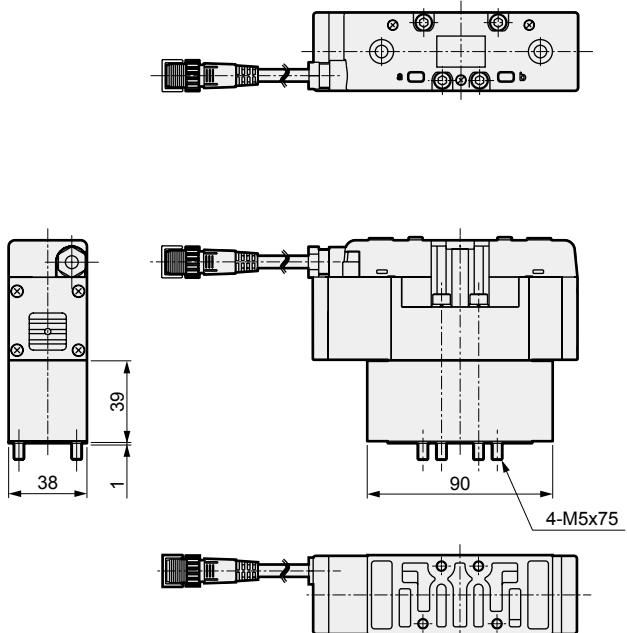
## PV5-6R-FIG-D

● 3-position



## PV5-6R-FPG-D

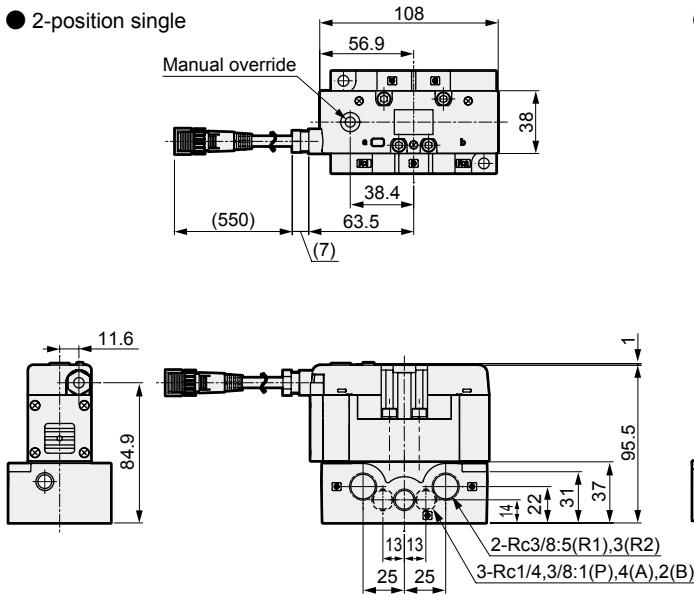
● 3-position/non-leaking



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

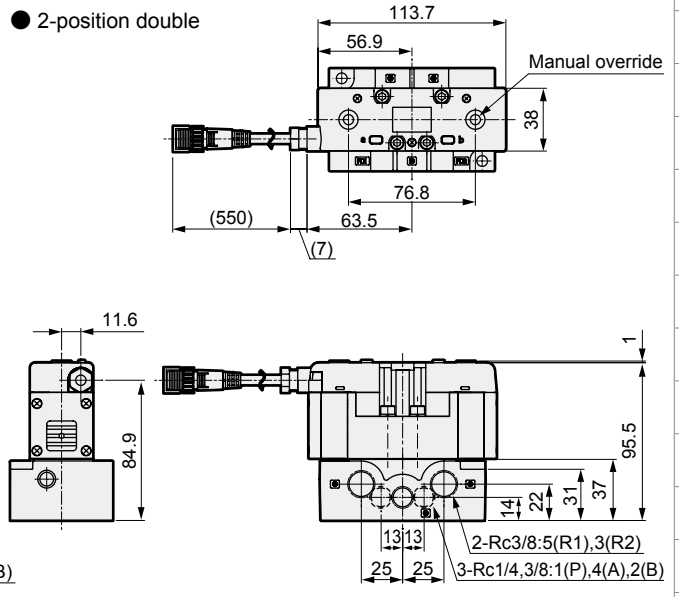
### PV5-6R-FG-S-\*

● 2-position single



### PV5-6R-FG-D-\*

● 2-position double

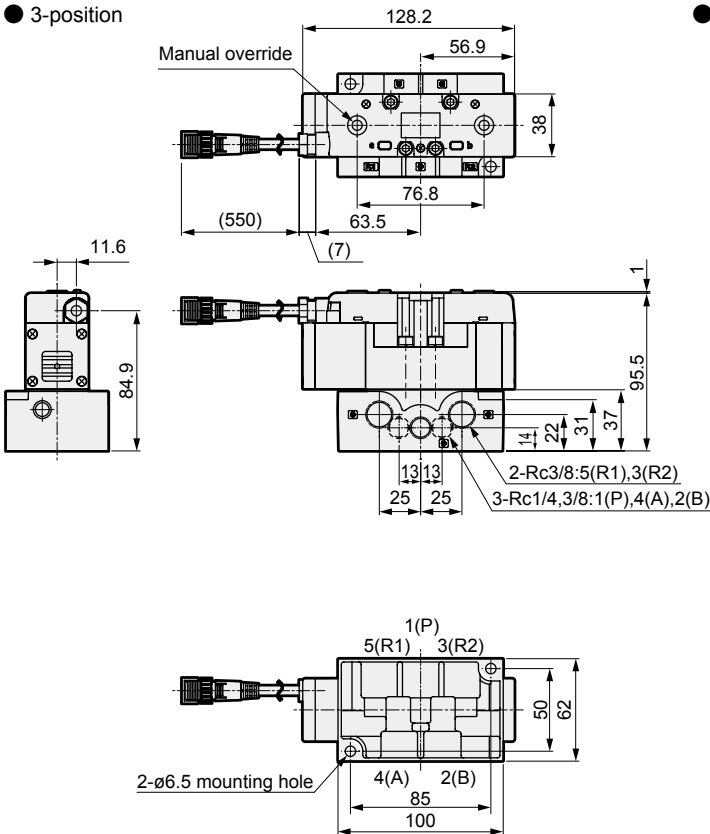


### PV5-6R-FHG-D-\*

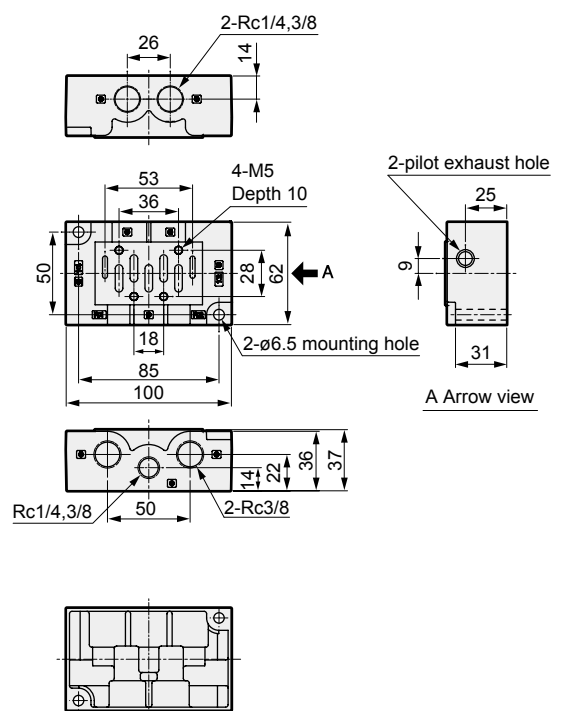
### PV5-6R-FJG-D-\*

### PV5-6R-FIG-D-\*

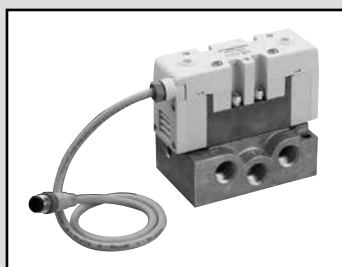
● 3-position



● Sub-plate dimensions



4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4C*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending



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

# PV5-8R Series

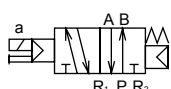
● Cylinder bore size: max.  $\varnothing 160$



## JIS symbol

### ● 5-port valve

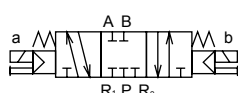
#### 2-position single (FG-S)



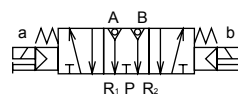
#### 2-position double (FG-D)



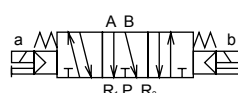
#### 3-position all ports closed (FHG)



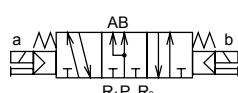
#### 3-position all ports closed Non-leaking (FPG)



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



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



## Common specifications

Item	Description
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0 ( $\approx 150$ psi, 10 bar)
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar) 0.20 ( $\approx 29$ psi, 2 bar) (3-position)
Proof pressure MPa	1.50 ( $\approx 220$ psi, 15 bar)
Ambient temperature $^{\circ}\text{C}$	-5 ( $23^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ ) (no freezing)
Fluid temperature $^{\circ}\text{C}$	5 ( $41^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ )
Lubrication	Not required
Degree of protection	Dust proof/jet proof (IP65 or equivalent)
Leakage $\text{cm}^3/\text{min}$ (A, B $\rightarrow$ R port)	10 (ANR) or less 3-position all ports closed non-leaking only 0.3 (ANR) or less (*1)
Vibration resistance $\text{m/s}^2$	50 or less
Shock resistance $\text{m/s}^2$	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

\*1: The initial value is listed.

## Electrical specifications

Item	Description
Rated voltage V   DC	24
Voltage fluctuation range	$\pm 10\%$
Power consumption W (Current value A)	1.2 (0.050) * Value for models with lamp.
Thermal class	B (molded coil)
Wiring method	I/O connector

## Performance/characteristics by model

Item	PV5-8R	
Port size	Rc3/8, Rc1/2, Rc3/4	
Response time		
ms	2-position Single	40 (ON), 60 (OFF)
	Double	40
(*2)	3-position	40 (when ON), 60 (when neutral)

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication. It depends on the pressure and the lubricant quality.

## Weight

Item	PV5-8R	
Weight	2-position Single	0.62
	Double	0.66
kg	3-position Other than non-leaking	0.69
	All ports closed non-leaking	1.34

\*1: The weight listed is the weight without the sub-plate.

## Flow characteristics

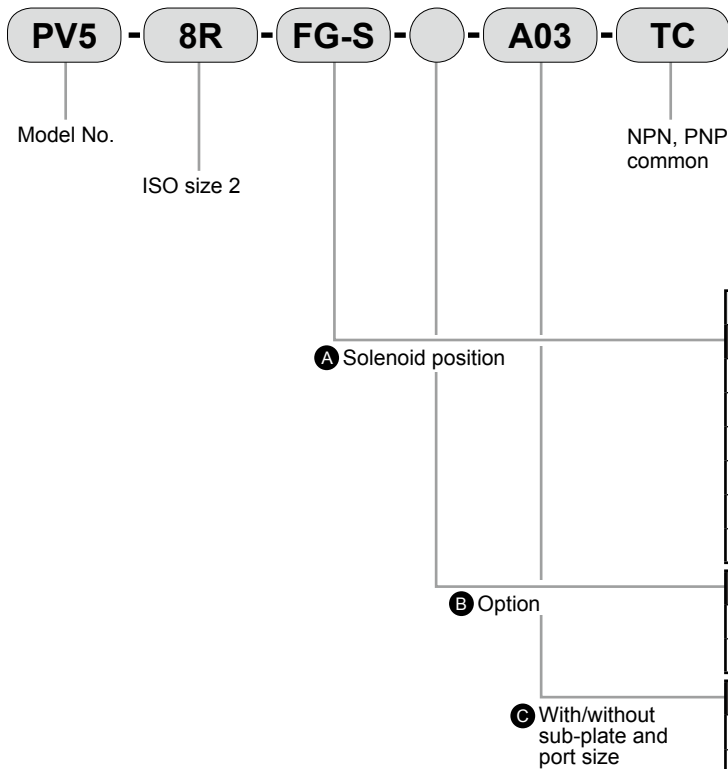
Model No.	Port size	Solenoid position	P $\rightarrow$ A/B		A/B $\rightarrow$ R1/R2	
			C [ $\text{dm}^3/(\text{s}\cdot\text{bar})$ ]	b	C [ $\text{dm}^3/(\text{s}\cdot\text{bar})$ ]	b
PV5-8R	Rc3/8	2-position single	10.7	0.17	13.0	0.19
		2-position double	10.7	0.17	13.0	0.19
		3-position all ports closed	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 non-leaking	6.6	-	6.2	-

\*1: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

4GA/B  
M4GA/B  
MN4GA/B  
4GA/B (master)  
4GB With sensor  
4GD/E  
M4GD/E  
MN4GD/E  
4GA4/B4  
MN3E  
MN4E  
W4GA/B2  
W4GB4  
MN3S0  
MN4S0  
4SA/B0  
4KA/B  
4KA/B (master)  
4F  
4F (master)  
PV5G  
GMF  
PV5  
GMF  
PV5S-0  
3Q  
MV3QR  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP  
NVP  
4G\*0EJ  
4F\*0EX  
4F\*0E  
HMV  
HSV  
2QV  
3QV  
SKH  
Silencer  
TotAirSys (Total Air)  
TotAirSys (Gamma)  
Ending

## How to order I/O connector

● ISO size 2



Code		Description	Model No. PV5-8R
<b>A Solenoid position</b>			
FG-S	P pressurized	2-position single	●
FG-D		2-position double	●
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 non-leaking	●
<b>B Option</b>			
Blank	None		●
A	Coolant proof		●
<b>C With/without sub-plate and port size</b>			
Blank	Without sub-plate		●
A03	Side piping Rc3/8 (Rc1/2 for R port only)		●
A04	Side piping (Rc1/2)		●
A06	Side piping (Rc3/4)		●

[Example of model No.]

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

Model: PV5/ISO size 2 (I/O connector)

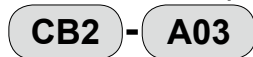
- A** Solenoid position : P pressurized 2-position single solenoid
- C** Sub-plate port size: side piping Rc3/8  
R port Rc1/2

### Remarks

Item	Description
(1) Wiring method	I/O connector (M12) NPN, PNP common
(2) Voltage	24 VDC
(3) Surge suppressor/lamp	Standard with surge suppressor and indicator lamp

\*1: Refer to page 1470 for the circuit diagram with a surge suppressor/lamp.

## ISO size 2 sub-plate specifications and how to order



**A** Piping connection method

Code	Type	P/A/B port	R1/R2 port	Weight (kg)
<b>A Piping connection method</b>				
A03	Side piping	Rc3/8	Rc1/2	0.49
A04		Rc1/2		
A06		Rc3/4	Rc3/4	1.40

### CE marking specifications

\*\* - TC - **ST**

### Coolant proof specifications

Select option "A" of Item **B** in How to order.

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP
- NVP
- 4G\*0EJ
- 4F\*0EX
- 4F\*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending



# PV5-8R Series

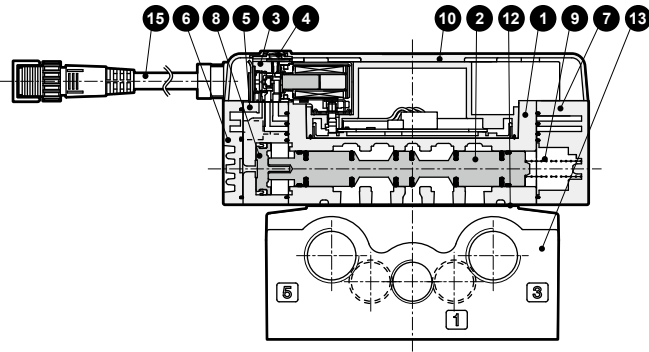
Discrete valve; ISO size 2

Internal structure and parts list: I/O connector

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5 GMF**
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP
- NVP
- 4G\*0EJ
- 4F\*0EX
- 4F\*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

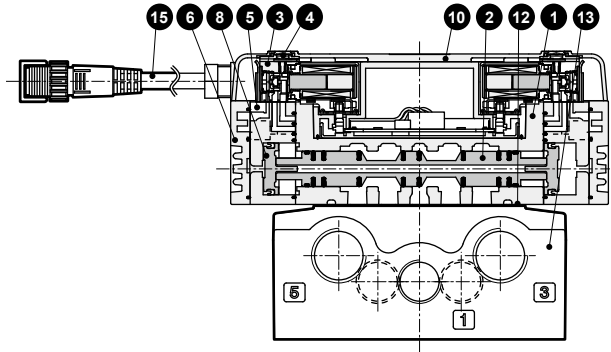
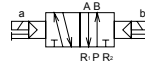
## PV5-8R-FG-S

● 2-position single



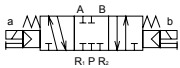
## PV5-8R-FG-D

● 2-position double



## PV5-8R-FHG-D

● 3-position all ports closed



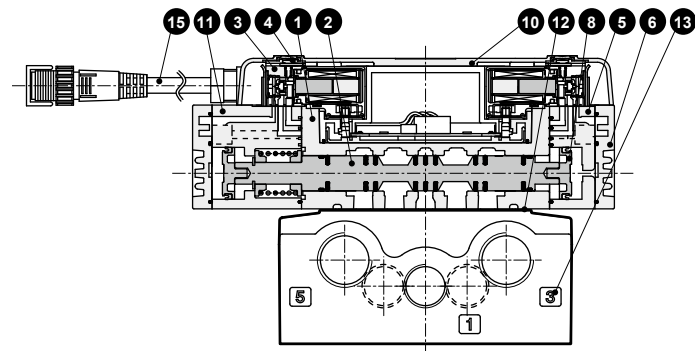
## PV5-8R-FJG-D

● 3-position A/B/R connection



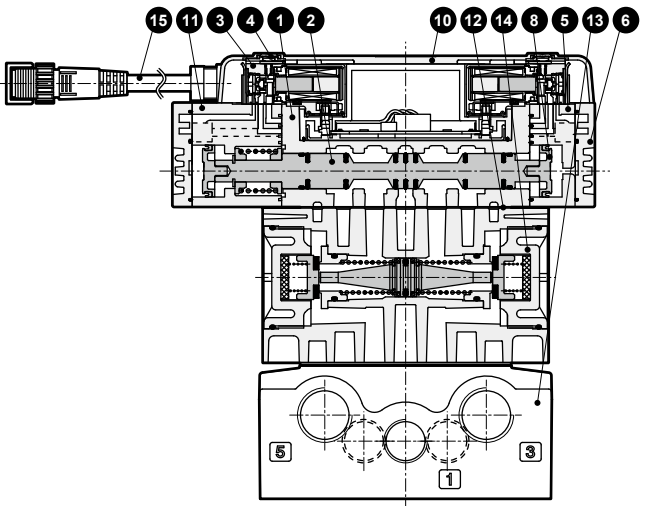
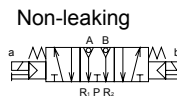
## PV5-8R-FIG-D

● 3-position P/A/B connection



## PV5-8R-FPG-D

● 3-position all ports closed



## Main parts list

No.	Part name	Material	No.	Part name	Material
1	Body	Aluminum alloy die-casting	9	Spring S	-
2	Spool assembly	-	10	Wiring cover	Resin
3	Pilot valve	-	11	Pilot valve assembly for 3-position	Resin
4	Manual override	-	12	Gasket	-
5	Pilot valve assembly for double	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

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
<b>PV5G GMF</b>
<b>PV5 GMF</b>
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# PV5-8R Series

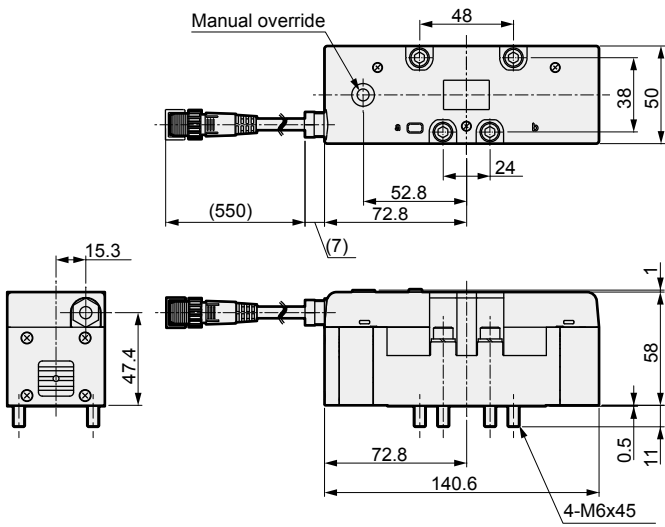
Discrete valve; ISO size 2

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

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E MN4E
- W4GA/B2
- W4GB4
- MN3S0 MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G GMF
- PV5 GMF**
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP NVP
- 4G\*0EJ
- 4F\*0EX
- 4F\*0E
- HMV HSV
- 2QV 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

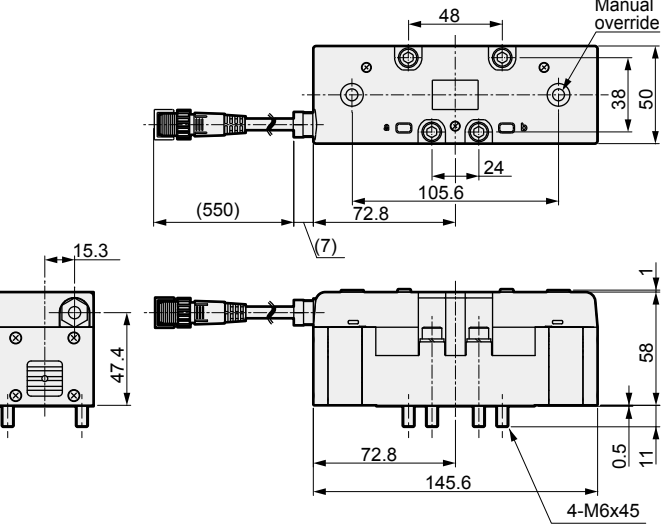
## PV5-8R-FG-S

● 2-position single



## PV5-8R-FG-D

● 2-position double

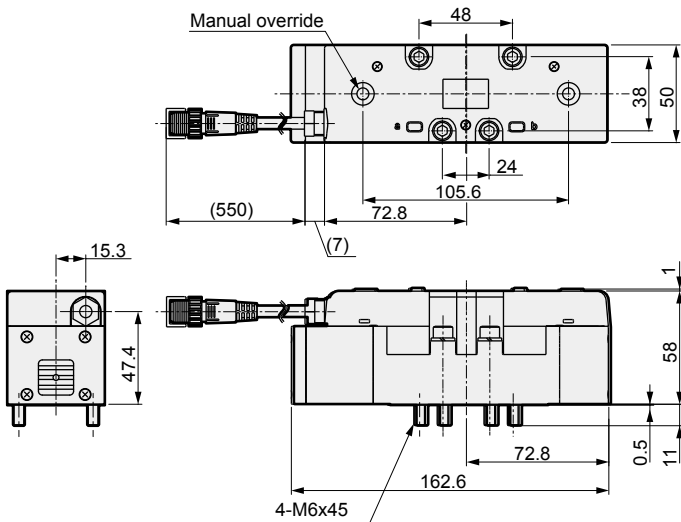


## PV5-8R-FHG-D

## PV5-8R-FJG-D

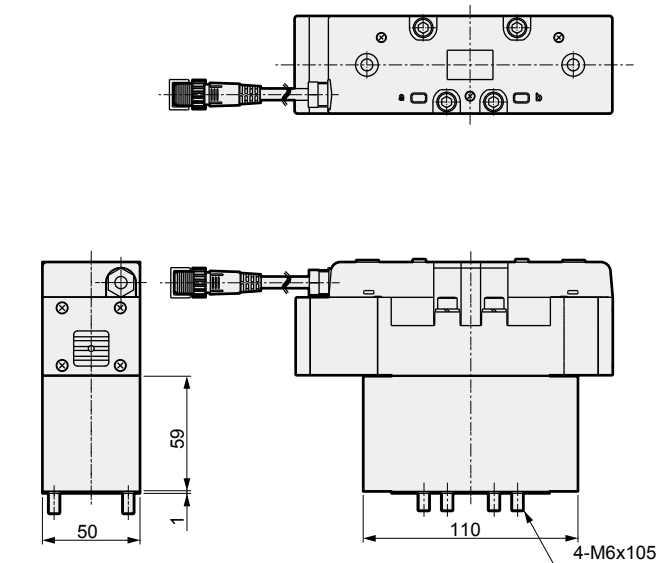
## PV5-8R-FIG-D

● 3-position



## PV5-8R-FPG-D

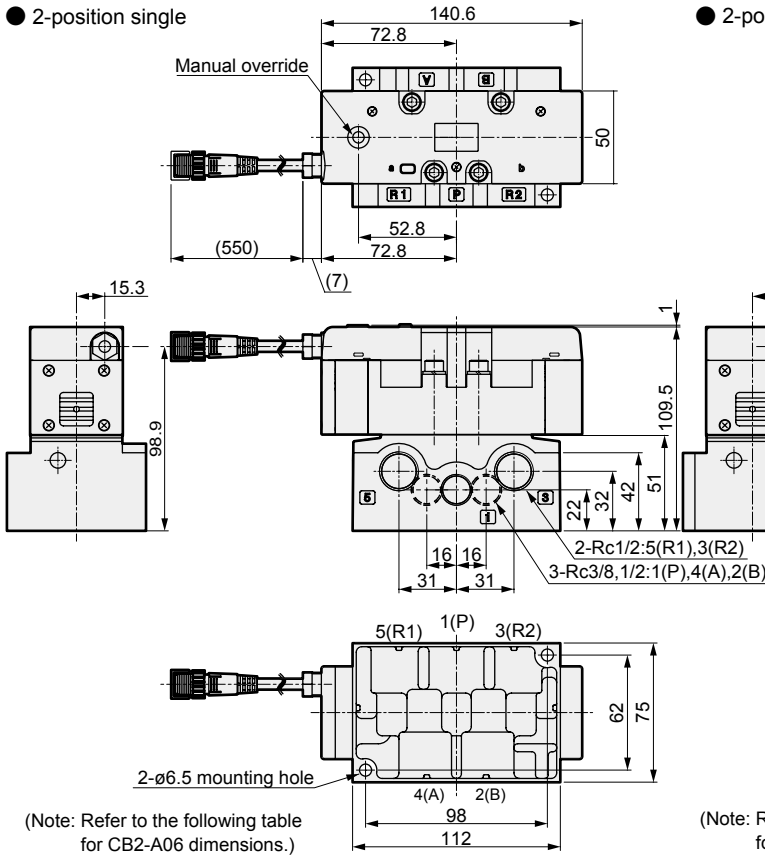
● 3-position/non-leaking



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

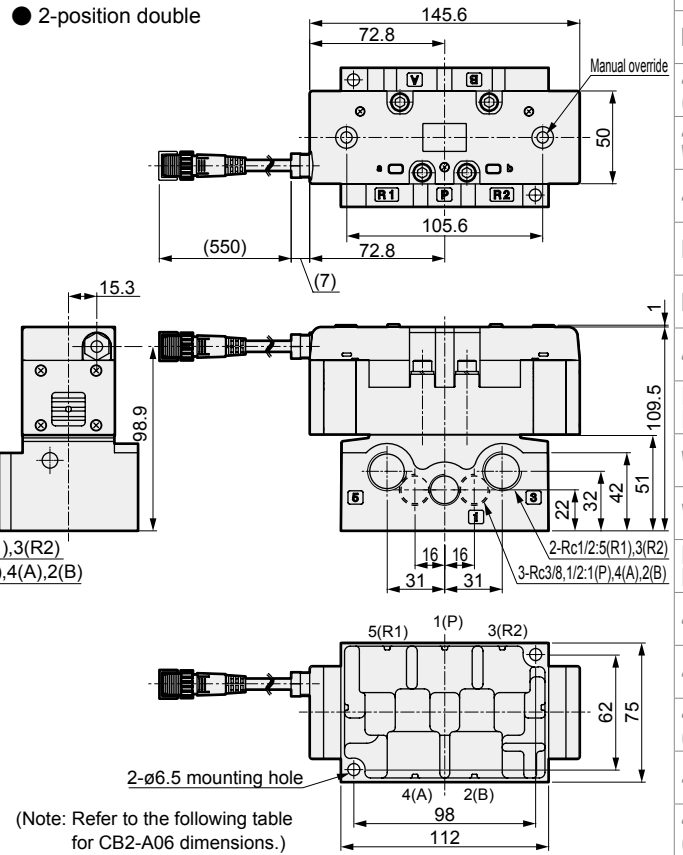
### PV5-8R-FG-S-\*

● 2-position single



### PV5-8R-FG-D-\*

● 2-position double

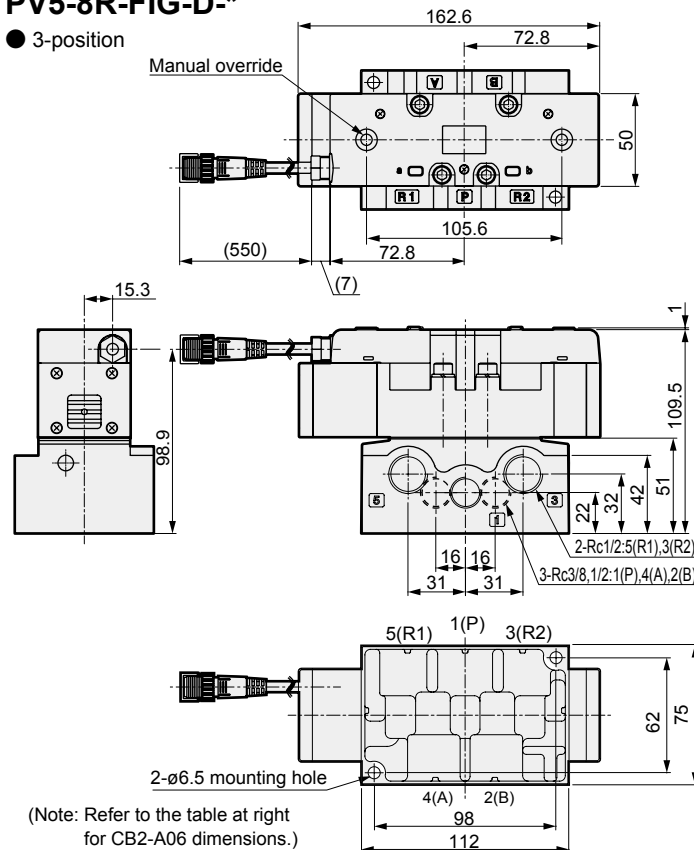


### PV5-8R-FHG-D-\*

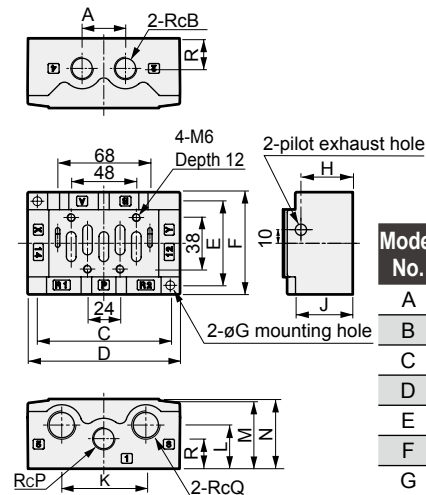
### PV5-8R-FJG-D-\*

### PV5-8R-FIG-D-\*

● 3-position

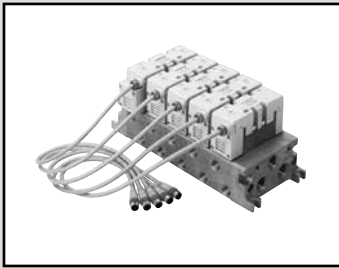


● Sub-plate dimensions (CB2-\*)



Model No.	CB2-03	CB2-04	CB2-06
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	22	30	

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4C*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending



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

# GMF1 Series

● Cylinder bore size: max.  $\varnothing 100$



## Common specifications

Item	Description
Manifold method	Manifold integrated
Manifold	Common supply/common exhaust Common supply/individual exhaust Individual supply/common exhaust Individual supply/individual exhaust Different pressure supply
Station No.	1 to 10 stations
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0 ( $\approx 150$ psi, 10 bar)
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar) 0.20 ( $\approx 29$ psi, 2 bar) (3-position)
Proof pressure MPa	1.50 ( $\approx 220$ psi, 15 bar)
Ambient temperature $^{\circ}\text{C}$	-5 (23 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ ) (no freezing)
Fluid temperature $^{\circ}\text{C}$	5 (41 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ )
Lubrication	Not required
Degree of protection	Dust proof/jet proof (IP65 or equivalent)
Leakage $\text{cm}^3/\text{min}$ (A, B $\rightarrow$ R port)	10 (ANR) or less 3-position all ports closed non-leaking only 0.3 (ANR) or less (*1)
Vibration resistance $\text{m/s}^2$	50 or less
Shock resistance $\text{m/s}^2$	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

\*1: The initial value is listed.

## Electrical specifications

Item	Description
Rated voltage V  DC	24
Voltage fluctuation range	$\pm 10\%$
Power consumption W (Current value A)	1.2 (0.050) * Value for models with a lamp.
Thermal class	B (molded coil)
Wiring method	I/O connector

## Individual specifications

Item		GMF1
Port size	P/R1/R2 port	Rc3/8, Rc1/2
	(*1) A/B port	Rc1/4, Rc3/8

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

## Performance/Characteristics

Item		GMF1	
Response time (*2) ms	2-position	Single	30 (ON), 40 (OFF)
		Double	30
	3-position	30 (when ON), 50 (when neutral)	

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication. It depends on the pressure and the lubricant quality.

## Weight

Manifold base	Station No.	1	2	3	4	5	6	7	8	9	10
		(kg)	1.04	1.50	1.95	2.40	2.85	3.30	3.75	4.20	4.65
Silencer box Added to manifold base assembly (kg)	Model No.	SB									
		0.13									
Spacer	Model No.	P		R		SR		PC			
	(kg)	0.22		0.22		0.64		0.25			

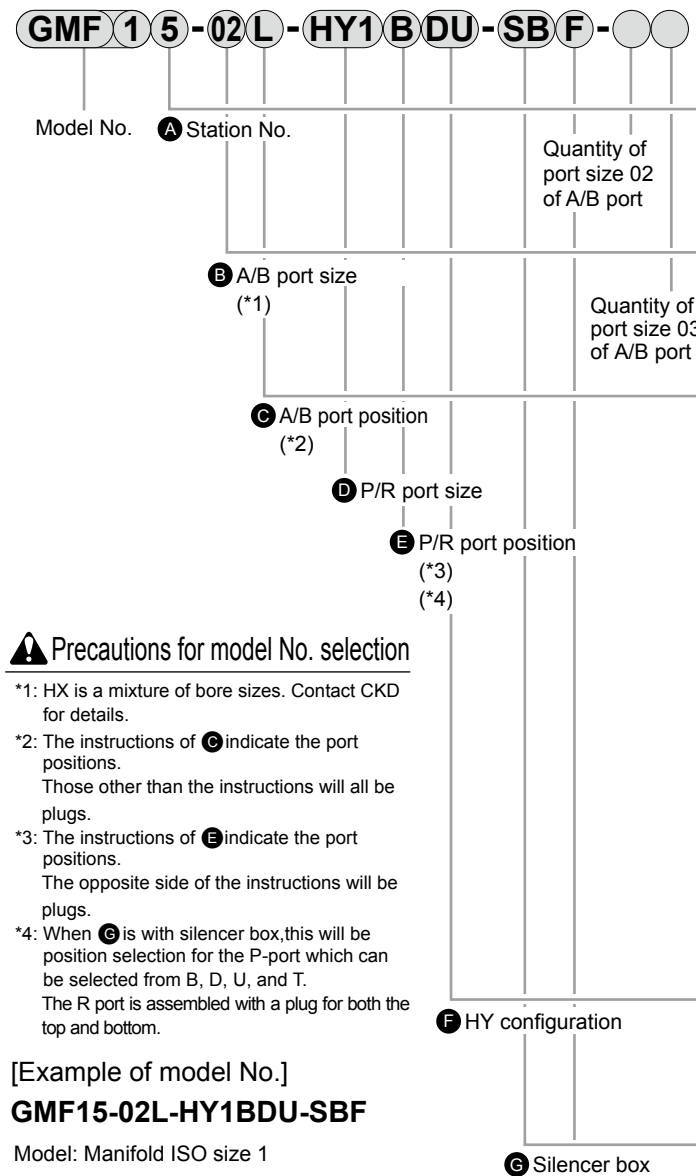
## Flow characteristics

Model No.	Port size	Solenoid position	P $\rightarrow$ A/B		A/B $\rightarrow$ R1/R2	
			C [dm <sup>3</sup> /(s·bar)]	b	C [dm <sup>3</sup> /(s·bar)]	b
GMF1	Rc1/4	2-position single	4.8	0.25	5.2	0.26
		2-position double	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 non-leaking	3.2	-	2.8	-

\*1: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

## How to order I/O connector

● ISO Size 1



### ⚠ Precautions for model No. selection

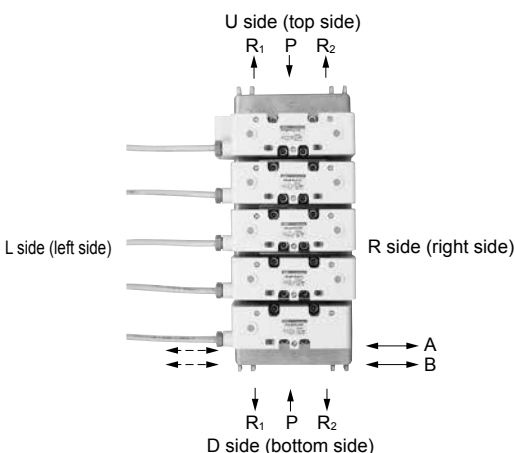
- \*1: HX is a mixture of bore sizes. Contact CKD for details.
- \*2: The instructions of **C** indicate the port positions. Those other than the instructions will all be plugs.
- \*3: The instructions of **E** indicate the port positions. The opposite side of the instructions will be plugs.
- \*4: When **G** is with silencer box, this will be position selection for the P-port which can be selected from B, D, U, and T. The R port is assembled with a plug for both the top and bottom.

[Example of model No.]

### GMF15-02L-HY1BDU-SBF

Model: Manifold ISO size 1

- A** Station No. : 5 stations
- B C** A/B port : Rc1/4 (left and right both sides piping)
- D E F** P/R port : Rc3/8 and Rc1/2 mixture (Rc3/8 for bottom side piping and Rc1/2 for top side piping)
- G** Silencer box : Yes (D side installation)
- H** Option : P/A/B-port filter integrated



Code		Description	Model No.
<b>A Station No.</b>			GMF1
1	1 station	●	
to	to		
10	10 stations		
<b>B A/B port size</b>			GMF1
02	Rc1/4	●	
03	Rc3/8	●	
HX1	Rc1/4 and Rc3/8 mixture	●	
<b>C A/B port position</b>			GMF1
Blank	Right	●	
L	Left and right sides (select position with manifold specifications)	●	
H	Left	●	
Z	Rear side	●	
T	Free selection (plug attached) (rear side not available)	●	
<b>D P/R port size</b>			GMF1
03	Rc3/8	●	
04	Rc1/2	●	
HX1	Rc3/8 and Rc1/2 mixture	●	
<b>E P/R port position</b>			GMF1
B	Top and bottom sides	●	
D	Bottom side	●	
U	Top side	●	
E	P on top, R on bottom	●	
F	P on bottom, R on top	●	
T	Free selection (plug attached)	●	
<b>F HY configuration</b>			GMF1
Blank	When other than HY1 is selected with <b>D</b>	●	
DU	Rc3/8 on bottom, Rc1/2 on top	●	
UD	Rc3/8 on top, Rc1/2 on bottom	●	
<b>G Silencer box</b>			GMF1
Blank	None	●	
SB	Yes (D side installation)	●	
<b>H Option</b>			GMF1
Blank	None	●	
F	P/A/B port filter integrated	●	

The valve body must be prepared separately. For how to order valves, refer to page 1501. For arrangement of manifolds with valve bodies, **the manifold specifications sheet** on page 1524 **will be necessary** in addition to each model No.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4C*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

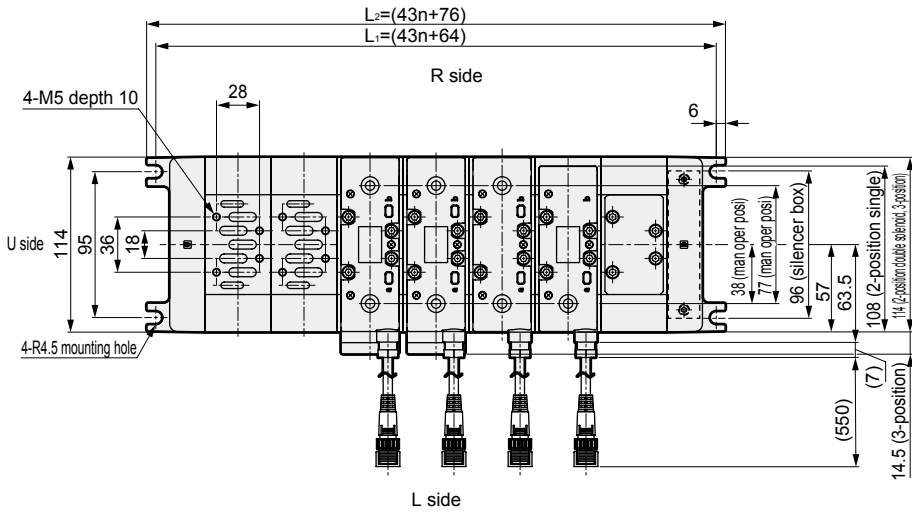
# GMF1 Series

Individual wiring manifold; ISO size 1

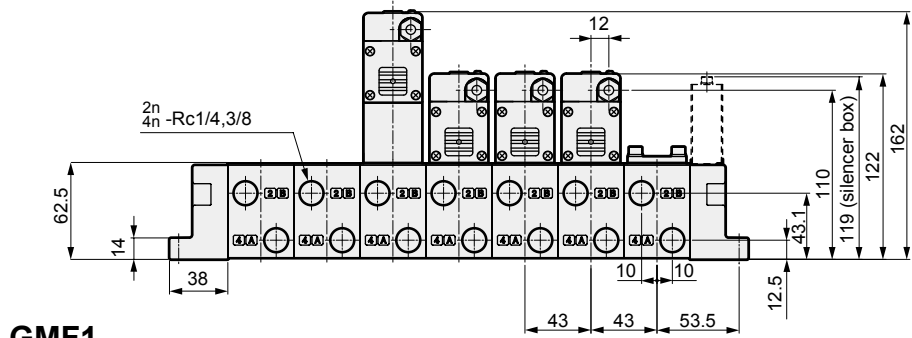
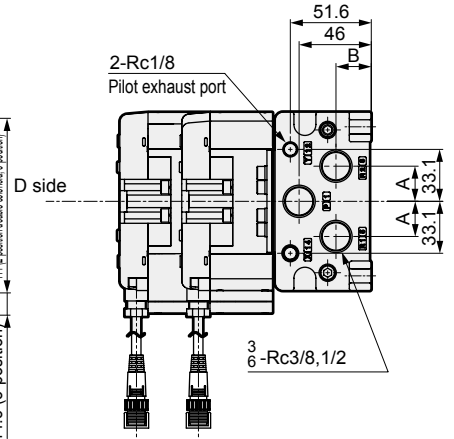
Dimensions: I/O connector

## GMF1

● Common exhaust

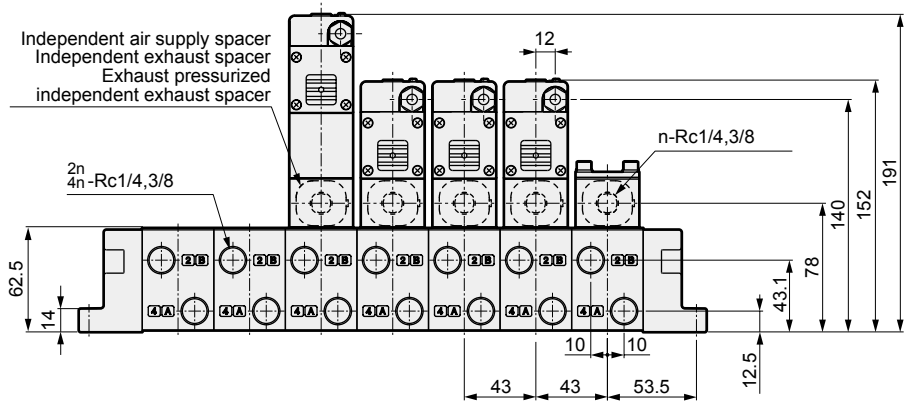


P/R port size	A	B
Rc3/8	18.4	23.5
Rc1/2	22.4	22.5



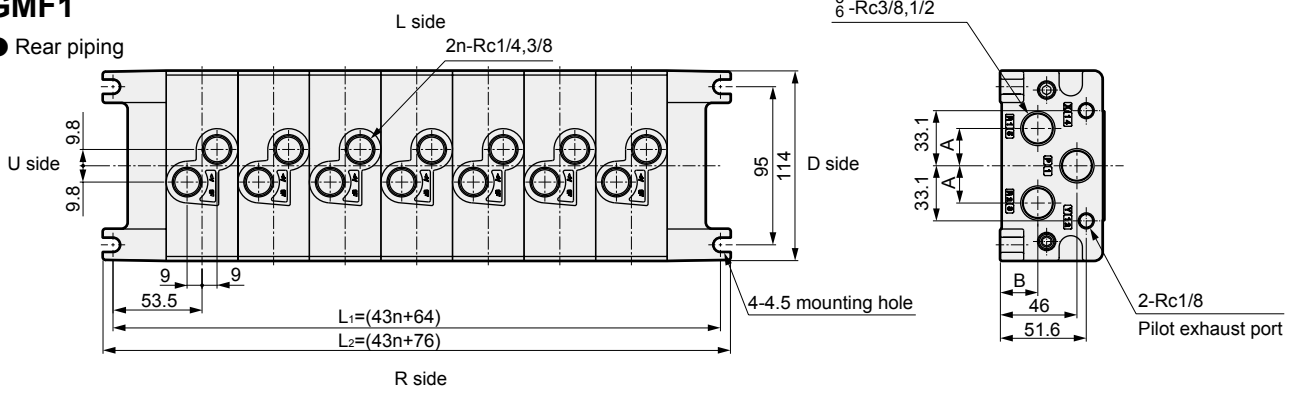
## GMF1

● Individual exhaust



## GMF1

● Rear piping



## How to order

- Spacer regulator

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

A Size	B Press reduction port position	C Pressure gauge	D Check valve
1 ISO size 1	P P port	T05 MPa display (With limit marker)	Blank None
	A A port		C Yes
	B B port		

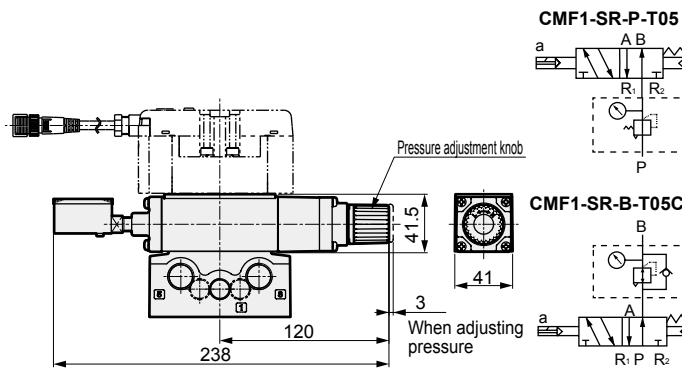
List without check valve (blank) for SR-P and list with check valve (C) for SR-A and SR-B.

\* Note that the direction of the pressure gauge is different with **CMF1-SR-A-T05C**.

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

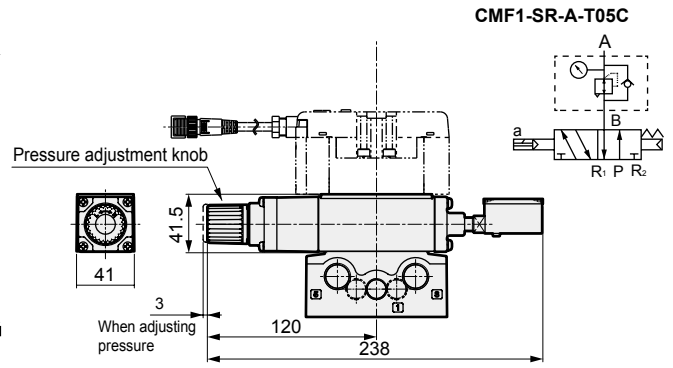
- Spacer regulator

- JIS symbol



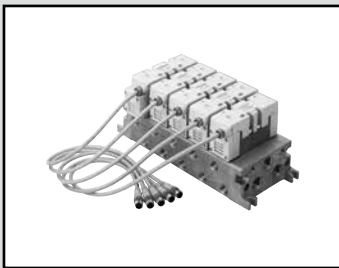
## CMF1-SR-A-T05C

- JIS symbol



4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4C*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending





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

# GMF2 Series

● Cylinder bore size: max.  $\varnothing 160$



## Common specifications

Item	Description
Manifold method	Manifold integrated
Manifold	Common supply/common exhaust    Common supply/individual exhaust Individual supply/common exhaust    Individual supply/individual exhaust Different pressure supply
Station No.	1 to 10 stations
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0 ( $\approx 150$ psi, 10 bar)
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar) 0.20 ( $\approx 29$ psi, 2 bar) (3-position)
Proof pressure MPa	1.50 ( $\approx 220$ psi, 15 bar)
Ambient temperature $^{\circ}\text{C}$	-5 (23 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ ) (no freezing)
Fluid temperature $^{\circ}\text{C}$	5 (41 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ )
Lubrication	Not required
Degree of protection	Dust proof/jet proof (IP65 or equivalent)
Leakage $\text{cm}^3/\text{min}$ (A, B $\rightarrow$ R port)	10 (ANR) or less 3-position all ports closed non-leaking only 0.3 (ANR) or less (*1)
Vibration resistance $\text{m/s}^2$	50 or less
Shock resistance $\text{m/s}^2$	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

\*1: The initial value is listed.

## Electrical specifications

Item	Description
Rated voltage V  DC	24
Voltage fluctuation range	$\pm 10\%$
Power consumption W (Current value A)	1.2 (0.050) * Value for models with lamp.
Thermal class	B (molded coil)
Wiring method	I/O connector

## Individual specifications

Item	GMF1	
Port size	P/R1/R2 port	Rc1/2, Rc3/4
(*1)	A/B port	Rc3/8, Rc1/2

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

## Performance/Characteristics

Item	GMF1	
Response time	2-position	Single    40 (ON), 60 (OFF) Double    40
	3-position	40 (when ON), 60 (when neutral)
(*2) ms		

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication. It depends on the pressure and the lubricant quality.

## Weight

Manifold base	Station No.	1	2	3	4	5	6	7	8	9	10
		(kg)	2.30	3.17	4.04	4.91	5.79	6.66	7.53	8.40	9.27
Silencer box Added to manifold base assembly (kg)	Model No.	SB									
		0.17									
Spacer	Model No.	P		R		SR		PC			
	(kg)	0.41		0.41		1.18		0.54			

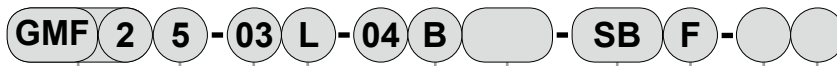
## Flow characteristics

Model No.	Port size	Solenoid position	P $\rightarrow$ A/B		A/B $\rightarrow$ R1/R2	
			c [dm <sup>3</sup> /(s·bar)]	b	c [dm <sup>3</sup> /(s·bar)]	b
GMF2	Rc3/8	2-position single	9.7	0.12	11.0	0.14
		2-position double	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 non-leaking	6.2	-	5.9	-

\*1: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

## How to order I/O connector

● ISO size 2



Model No.

A Station No.

Quantity of port size 03 of A/B port

B A/B port size (\*1)

Quantity of port size 04 of A/B port

C A/B port position (\*2)

D P/R port size

E P/R port position (\*3) (\*4)

F HY configuration

G Silencer box

H Option

### ⚠ Precautions for model No. selection

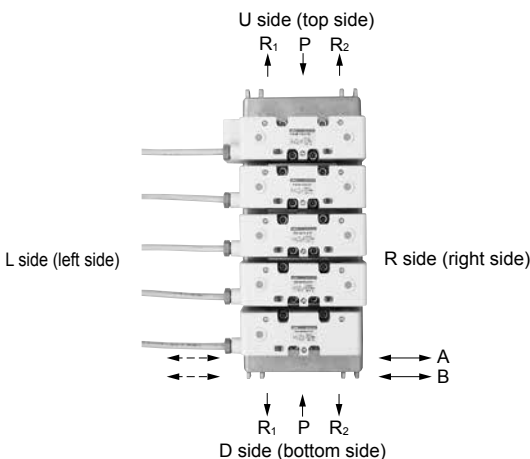
- \*1: HX is a mixture of bore sizes. Contact CKD for details.
- \*2: The instructions of C indicate the port positions. Those other than the instructions will all be plugs.
- \*3: The instructions of E indicate the port positions. The opposite side of the instructions will be plugs.
- \*4: When G is with silencer box, this will be position selection for the P-port which can be selected from B, D, U, and T. The R port is assembled with a plug for both the top and bottom.

[Example of model No.]

**GMF25-03L-04B-SBF**

Model: Manifold ISO size 2

- A Station No. : 5 stations
- B C A/B port : Rc3/8 (left and right both sides piping)
- D E P/R port : Rc1/2 (top and bottom both sides piping)
- G Silencer box: Yes (D side installation)
- H Option : P/A/B port filter integrated



Code		Description	Model No.
			<b>GMF2</b>
<b>A Station No.</b>			
1	1 station		●
to	to		
10	10 stations		
<b>B A/B port size</b>			
03	Rc3/8		●
04	Rc1/2		●
HX2	Rc3/8 and Rc1/2 mixture		●
<b>C A/B port position</b>			
Blank	Right		●
L	Left and right sides (select position with manifold specifications)		●
H	Left		●
Z	Rear side		●
T	Free selection (plug attached) (rear side not available)		●
<b>D P/R port size</b>			
04	Rc1/2		●
06	Rc3/4		●
HY2	Rc1/2 and Rc3/4 mixture		●
<b>E P/R port position</b>			
B	Top and bottom sides		●
D	Bottom side		●
U	Top side		●
E	P on top, R on bottom		●
F	P on bottom, R on top		●
T	Free selection (plug attached)		●
<b>F HY configuration</b>			
Blank	When other than HY2 is selected with D		●
DU	Rc1/2 on bottom, Rc3/4 on top		●
UD	Rc1/2 on top, Rc3/4 on bottom		●
<b>G Silencer box</b>			
Blank	None		●
SB	Yes (D side installation)		●
<b>H Option</b>			
Blank	None		●
F	P/A/B port filter integrated		●

The valve body must be prepared separately. For how to order valves, refer to page 1507. For arrangement of manifolds with valve bodies, **the manifold specifications sheet** on page 1525 **will be necessary** in addition to each model No.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4C*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

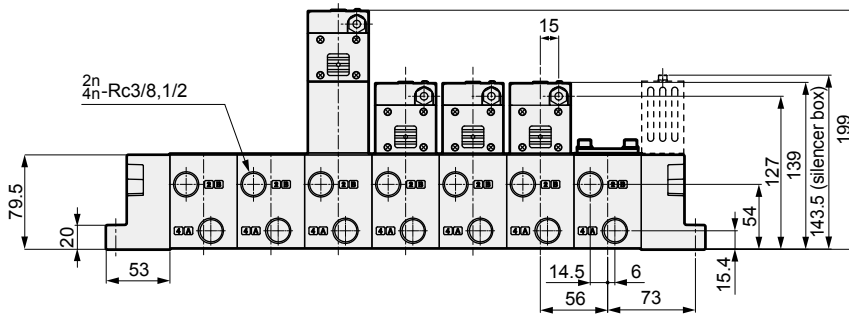
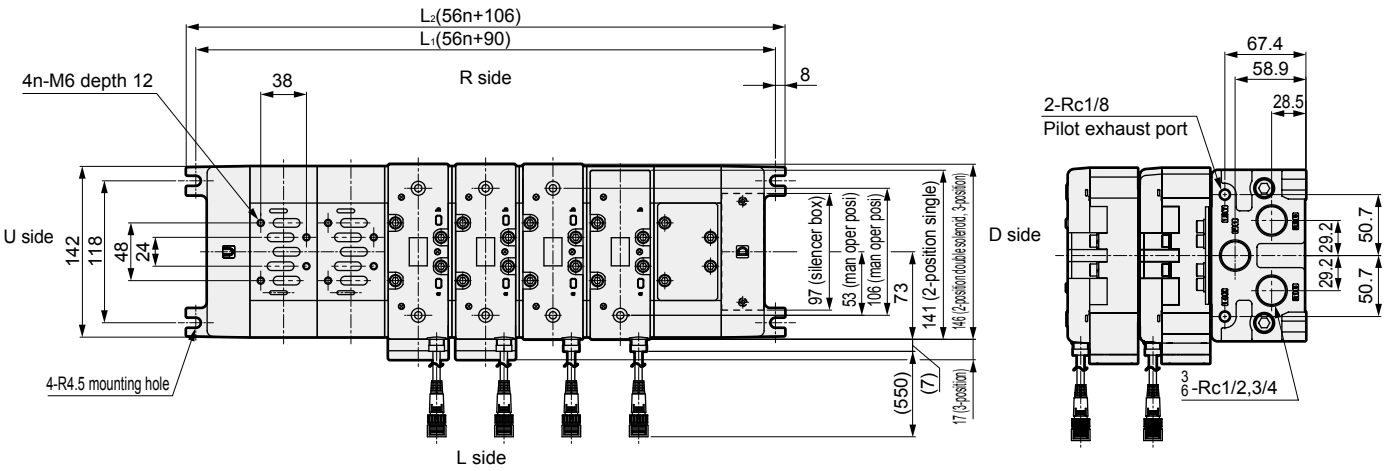
# GMF2 Series

Individual wiring manifold; ISO size 2

Dimensions: I/O connector

## GMF2

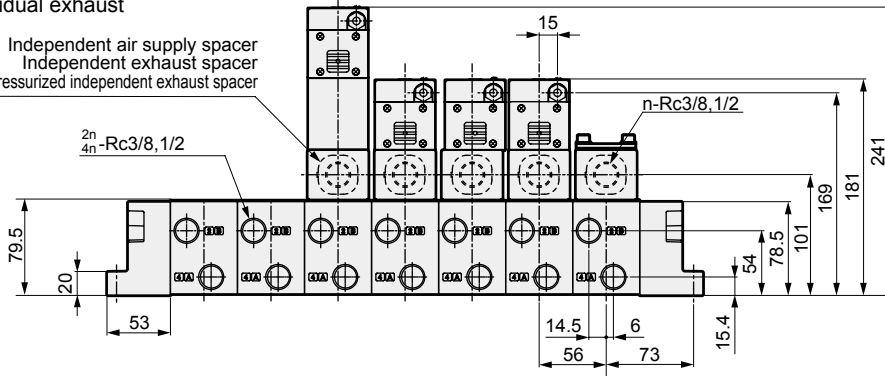
● Common exhaust



## GMF2

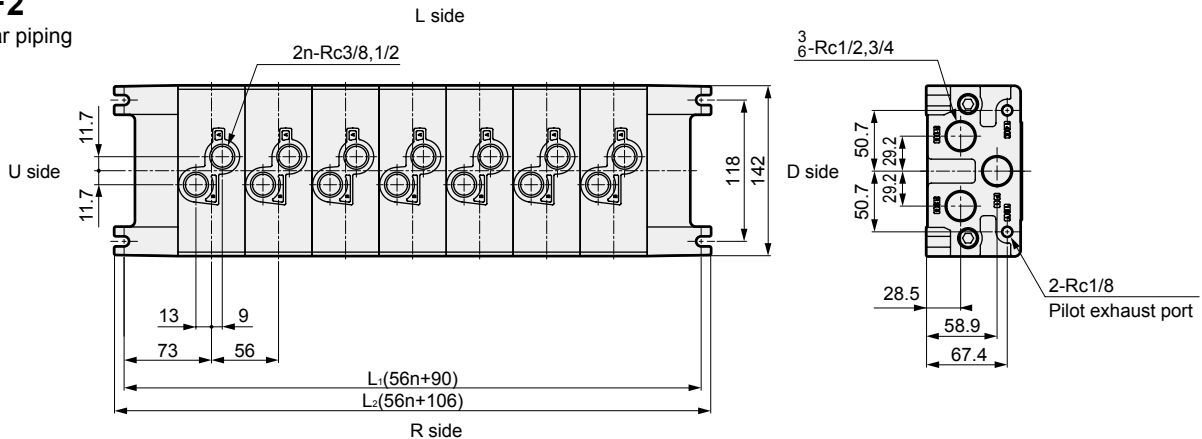
● Individual exhaust

Independent air supply spacer  
Independent exhaust spacer  
Exhaust pressurized independent exhaust spacer



## GMF2

● Rear piping



## How to order

- Spacer regulator

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

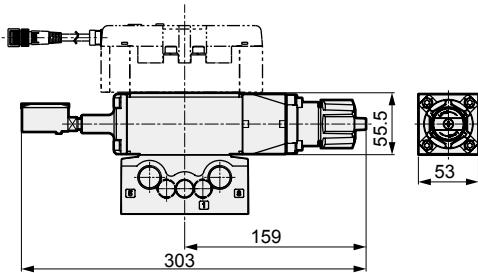
A Size	B Press reduction port position	C Pressure gauge	D Check valve
2   ISO size 2	P P port A A port B B port	T05 MPa display (With limit marker)	Blank None C Yes

SR-P is a check valve  
No (blank), list with  
check valve (C) for  
SR-A and SR-B.

\* Note that the direction of the pressure gauge is different with **CMF2-SR-A-T05C**.

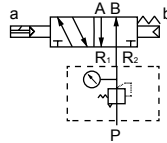
### CMF2-SR-P-T05 CMF2-SR-B-T05C

- Spacer regulator

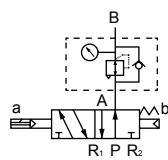


- JIS symbol

CMF2-SR-P-T05



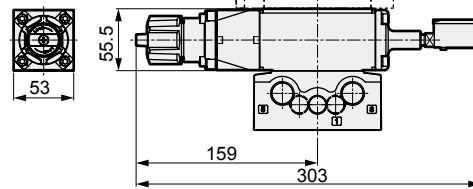
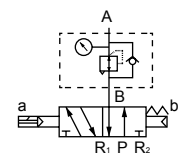
CMF2-SR-B-T05C



### CMF2-SR-A-T05C

- JIS symbol

CMF2-SR-A-T05C



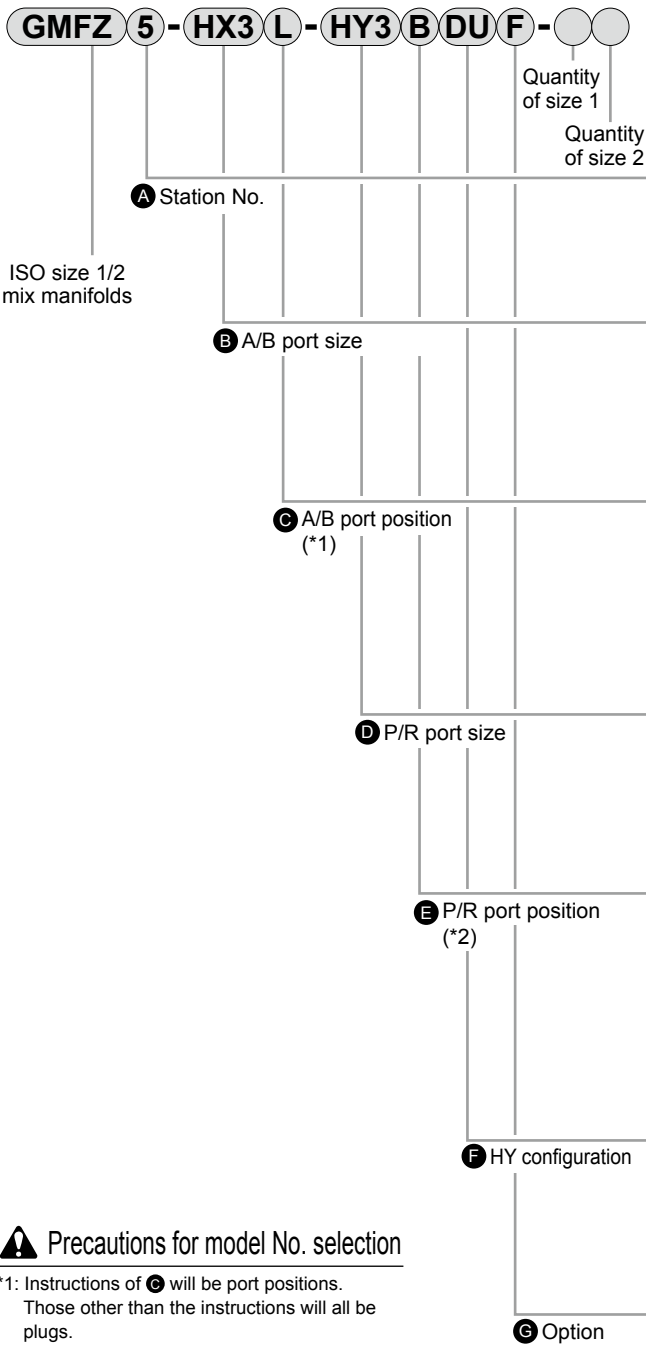
4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4C*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# GMFZ Series

Mix manifold; ISO size 1/2 mixture

## How to order I/O connector

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E  
MN4E
- W4GA/B2
- W4GB4
- MN3S0  
MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G  
GMF
- PV5  
GMF**
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP  
NVP
- 4G\*0EJ
- 4F\*0EX
- 4F\*0E
- HMV  
HSV
- 2QV  
3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending



### ⚠ Precautions for model No. selection

- \*1: Instructions of **C** will be port positions. Those other than the instructions will all be plugs.
- \*2: Instructions of **E** will be port positions. The opposite side of the instructions will be plugs.

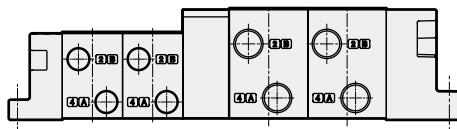
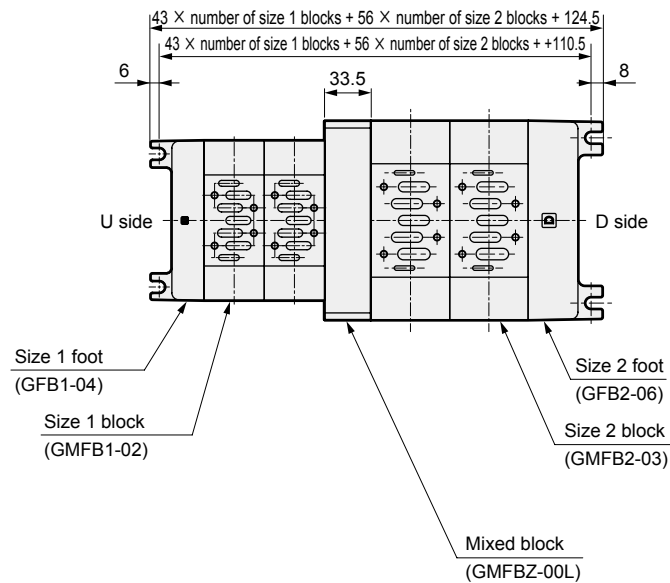
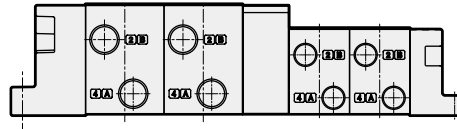
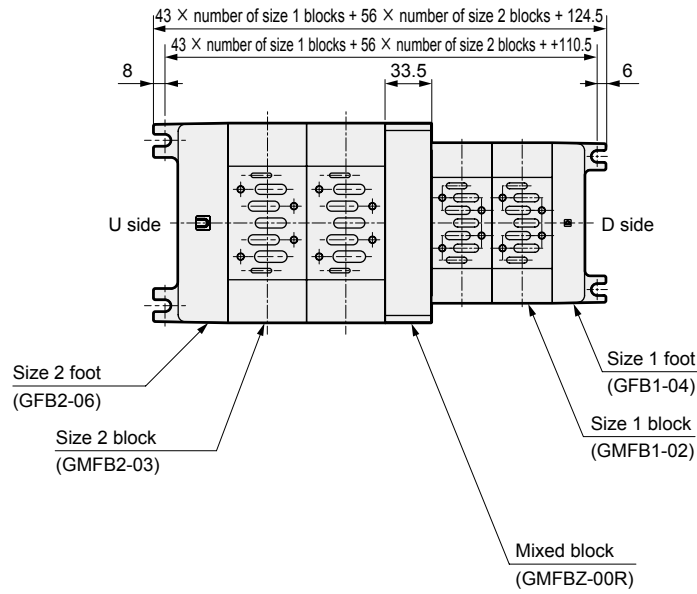
### Model No.

Code	Description	Model No.
<b>A Station No.</b>		
2	2 stations	●
to	to	
10	10 stations	
<b>B A/B port size</b>		
HX3	Size 1: 02/size 2: 03	●
HX4	Size 1: 02/size 2: 04	●
HX5	Size 1: 03/size 2: 03	●
HX6	Size 1: 03/size 2: 04	●
<b>C A/B port position</b>		
Blank	Right	●
L	Left and right sides (select position with manifold specifications)	●
H	Left	●
Z	Rear side	●
T	Free selection (plug attached) (rear side not available)	●
<b>D P/R port size</b>		
HY3	Size 1: 03/size 2: 04	●
HY4	Size 1: 03/size 2: 06	●
HY5	Size 1: 04/size 2: 04	●
HY6	Size 1: 04/size 2: 06	●
<b>B P/R port position</b>		
B	Top and bottom sides	●
D	Bottom side	●
U	Top side	●
E	P on top, R on bottom	●
F	P on bottom, R on top	●
T	Free selection (plug attached)	●
<b>F HY configuration</b>		
DU	Smaller bore size on bottom, larger bore size on top or 1 on bottom, 2 on top	●
UD	Smaller bore size on top, larger bore size on bottom or 1 on top, 2 on bottom	●
<b>G Option</b>		
Blank	None	●
F	P/A/B port filter integrated	●

The valve body must be prepared separately. For how to order valves, refer to pages 1501 and 1507. For arrangement of manifolds with valve bodies, **the manifold specifications sheet** on page 1526 **will be necessary** in addition to each model No.

No	Item	Model No.	Fig.	Remarks
1	ISO sizes 1/2 mix block	GMFBZ-00L		U side size 1 D side size 2 For mixed block With bolts and gasket
		GMFBZ-00R		U side size 2 D side size 1 For mixed block With bolts and gasket

### Mix manifold outline drawing



\* The dimensions for the size 1/2 feet and the types of blocks are as listed on pages 1514 and 1518.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
<b>PV5G GMF</b>
<b>PV5 GMF</b>
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending