

Single valve  
Pilot operated explosion-proof 5-port valve pneumatic valve

# 4F\*\*0E Series

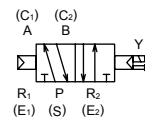
● Cylinder bore size:  $\phi 63$  to  $\phi 250$



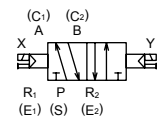
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E  
MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/  
LMF0
- MN3S0  
MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G  
GMF
- PV5  
GMF
- PV5S-0
- 3QR  
3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/  
NVP
- 4F\*0EX
- 4F\*0E**
- HMV  
HSV
- 2QV  
3QV
- SKH
- PCD
- Silencer
- TotAirSys  
(Total Air)
- TotAirSys  
(Gamma)
- Ending

## JIS symbol

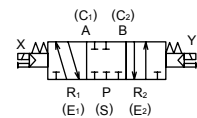
2-position/single



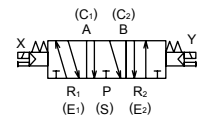
2-position/double



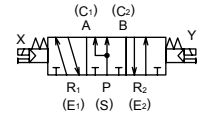
3-position/all ports closed



3-position/ABR connection



3-position/PAB connection



## Common specifications

Descriptions	Content
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	Refer to individual specifications listed below
Proof pressure MPa	1.5 ( $\approx 220$ psi, 15 bar)
Ambient temperature $^{\circ}\text{C}$ (*1)	-10 (14 $^{\circ}\text{F}$ ) 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 (use turbine oil ISO VG32 if lubrication is necessary)
Explosion-proof performance	d2G4
Manual override	Locking
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 ambient temperature indicates the temperature for storage and upon installation, which will differ from the fluid temperature during operation.

## Electrical specifications

Descriptions	Content		
Rated voltage	AC	100 V, 200 V (50/60 Hz)	
	DC	24 V	
Voltage fluctuation range	$\pm 10\%$		
Starting current	AC	100 V	0.186/0.135
		200 V	0.093/0.068
Holding current	A DC	24 V	0.166
		AC	100 V
Power consumption	AC	200 V	0.03/0.025
		A DC	24 V
Thermal class	W DC	100 V	4.5/4
		200 V	4.5/4
Thermal class		A (*1, H)	

\*1: Thermal class H is available as an option. The dimensions are the same as those of A.

## Individual specifications

Descriptions		4F3	4F4	4F5	4F6	4F7		
Min. working pressure MPa	2-position	Single	0.1 ( $\approx 15$ psi, 1 bar)	0.1 ( $\approx 15$ psi, 1 bar)	0.1 ( $\approx 15$ psi, 1 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	
		Double						
	3-position	All ports closed	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)
		A/B/R connection						
P/A/B connection								
Port size *1	Air supply port S, cylinder port C		Rp1/4, Rp3/8	Rc1/4, Rc3/8	Rc3/8, Rc1/2	Rc1/2, Rc3/4	Rc3/4, Rc1	
	Exhaust port E		Rp1/4, Rp3/8	Rc1/4, Rc3/8	Rc3/8, Rc1/2	Rc1/2, Rc3/4	Rc3/4, Rc1	
	Pilot exhaust port (PE)		(Rp1/8)	(Rc1/8)	(Rc1/8)	(Rc1/4)	(Rc1/4)	
Response time *2	ms		100	120	140	400	600	
Weight kg	2-position	Single	0.80	1.16	1.41	2.08	3.62	
		Double	1.24	1.61	1.90	2.58	4.10	
	*3	3-position		1.45	1.78	2.16	2.96	5.12

\*1: NPT threads can also be used for piping port. Contact CKD for details. (However, the external wire inlet is G1/2.)

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

\*3: The weight is the value for TP. For the weight of GP, add  $0.07 \times$  (number of pilot actuators) kg.

### Flow characteristics

Model No.	Solenoid position	Port size	C[dm <sup>3</sup> /(s·bar)]	b	S(mm <sup>2</sup> )		
4F3	2-position	Single	Rp1/4	3.9	0.42	-	
		Double					
	3-position	All ports closed		4.0	0.35		
		A/B/R connection		4.5	0.42		
		P/A/B connection		4.0	0.35		
	2-position	Single		Rp3/8	5.8		0.42
		3-position			All ports closed		4.4
A/B/R connection			5.1		0.46		
3-position	P/A/B connection	4.4	0.42				
	4F4	2-position	Rc1/4 Rc3/8	5.0	0.21	-	
Double							
3-position		All ports closed		4.7	0.24		
		A/B/R connection		5.3	0.29		
		P/A/B connection		5.3	0.29		
4F5	2-position	Rc3/8 Rc1/2	10.0	0.32	-		
						Double	
	3-position		All ports closed	9.7		0.28	
			A/B/R connection	9.8		0.25	
			P/A/B connection				
4F6	2-position	Rc1/2 Rc3/4	18.0	0.31	-		
						Double	
	3-position		All ports closed	15.0		0.23	
			A/B/R connection				
			P/A/B connection				
4F7	2-position	Rc3/4 Rc1	-	-	160		
						Double	
	3-position					All ports closed	
						A/B/R connection	
						P/A/B connection	

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

### Specifications for rechargeable battery

- For use in the rechargeable battery manufacturing process, materials used for air path and sliding section are limited; inquire with CKD for model numbers.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
4TB
4L2-4/LMF0
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3QR
3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0EX
<b>4F*0E</b>
HMV
HSV
2QV
3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# 4F\*\*0E Series

Single valve

## How to order

● Pneumatic explosion-proof 5-port valve

**4F3** **1** **0 E** - **08** - **T** **P** - **P** - **X** - **AC100V**

**A** Model No.

**B** Solenoid position

**C** Port size

**D** External wire pull method

**E** Option

**F** Thermal class

**G** Voltage  
\*1

**A** Model No.

	4F3	4F4	4F5	4F6	4F7

Code	Content	4F3	4F4	4F5	4F6	4F7
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<b>B Solenoid position</b>						
<b>1</b>	2-position single	●	●	●	●	●
<b>2</b>	2-position double	●	●	●	●	●
<b>3</b>	3-position all ports closed	●	●	●	●	●
<b>4</b>	3-position ABR connection	●	●	●	●	●
<b>5</b>	3-position PAB connection	●	●	●	●	●

<b>C Port size</b>						
<b>08</b>	Rp1/4 (for 4F3), Rc1/4	●	●			
<b>10</b>	Rp3/8 (for 4F3), Rc3/8	●	●	●		
<b>15</b>	Rc1/2			●	●	
<b>20</b>	Rc3/4				●	●
<b>25</b>	Rc1					●

<b>D External wire pull method</b>						
<b>G</b>	Pressure proof packing protection pipe screw-in *3	●	●	●	●	●
<b>T</b>	Conduit thread system	●	●	●	●	●

<b>E Option</b>						
<b>Blank</b>	No option	●	●	●	●	●
<b>P</b>	Installation feet L type bracket (for 4F3 2-position single) installation feet U type bracket (for 4F4 to 4F7)	●	●	●	●	●
<b>P1</b>	Installation feet U bracket (for 2/3-position double solenoid)	●				
<b>H</b>	Check valve attached (dedicated for 3-position all ports closed)	●	●	●	●	●
<b>N</b>	Plug attached (for 3-port valve)	●	●	●	●	●
<b>R</b>	Position change of manual override	●				
<b>NC</b>	3-port valve specs plug assembly (C1 (A), E1 (R1))	●	●	●	●	●
<b>NO</b>	3-port valve specs plug assembly (C2 (B), E2 (R2))	●	●	●	●	●

<b>F Thermal class</b>						
<b>Blank</b>	A (standard product)	●	●	●	●	●
<b>X</b>	H (Option)	●	●	●	●	●

<b>G Voltage</b>						
<b>AC100V</b>	100 VAC(50/60 Hz)	●	●	●	●	●
<b>AC200V</b>	200 VAC(50/60 Hz)	●	●	●	●	●
<b>DC24V</b>	24 VDC	●	●	●	●	●
<b>DC12V</b>	12 VDC	●	●	●	●	●
<b>AC110V</b>	110 VAC(50/60 Hz)	●	●	●	●	●
<b>AC220V</b>	220 VAC(50/60 Hz)	●	●	●	●	●

<b>* Other custom order products</b>						
<b>[AC voltage]</b>						
12 V, 24 V, 48 V						
115 V, 120 V, 125 V	●	●	●	●	●	●
127 V, 210 V, 230 V						
240 V, 250 V, 380 V						
<b>[DC voltage]</b>						
45 V, 48 V, 80 V	●	●	●	●	●	●
100 V, 110 V, 125 V						

## ⚠ Precautions for model No. selection

\*1: Only the following voltage products are available as a custom order product. (There are no certifications for other than the listed voltage.)

Voltage	AC[V](50/60 Hz)	12, 24, 48, 115, 120, 125, 127, 210, 230, 240, 250, 380
	DC[V]	45, 48, 80, 100, 110, 125

\*2: Order coils as a pilot actuator assembly.

\*3: In order to ensure explosion-proof specifications, select a cable from the following for use with type G.

Cable type	No. of cores	Nominal section area	Wire config	Finished outer φ
Polyethylene cable (EV)	2-conductor	2 mm <sup>2</sup>	7/0.6	φ10.5
600 V vinyl insulation vinyl sheath cable (VV)	2-conductor	2 mm <sup>2</sup>	7/0.6	φ10.5
Control vinyl insulation vinyl sheath cable (CVV)	2-conductor	2 mm <sup>2</sup>	7/0.6	φ10.5

## [Example of model No.]

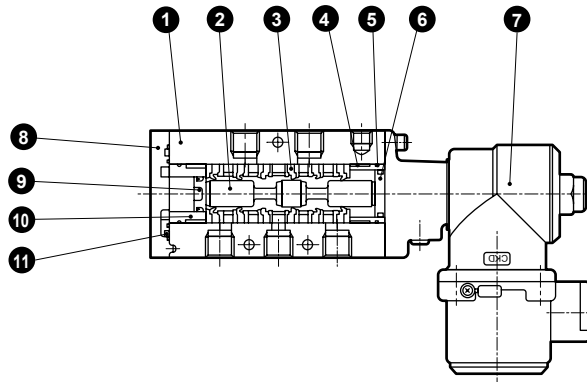
### 4F410E-10-GP-P-X-AC100V

- A** Model No. : Pilot operated explosion-proof 5-port valve
- B** Solenoid position : 2-position single
- C** Port size : Rc3/8
- D** External wire pull method : Pressure proof packing protection pipe screw-in
- E** Option : Installation feet U type bracket
- F** Thermal class : H
- G** Voltage : 100 VAC

## Internal structure and parts list

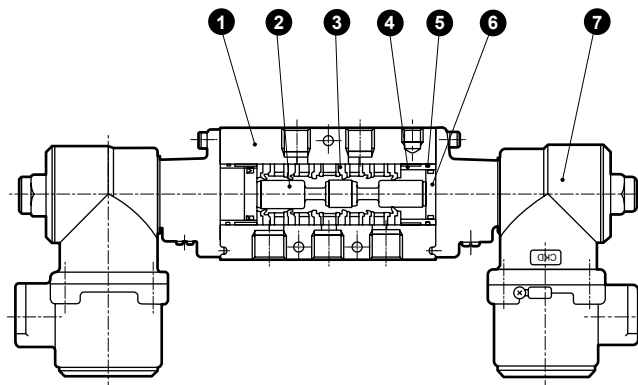
### 4F310E

- 2-position single



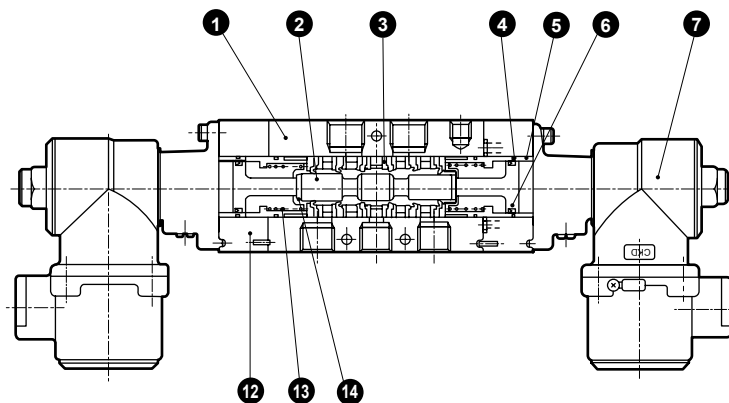
### 4F320E

- 2-position double



### 4F330E/4F340E/4F350E

- 3-position
- All ports closed
- A/B/R connection
- P/A/B connection



## Main parts list

No.	Part name	Material
1	Body	Aluminum alloy die-casting
2	Spool	Aluminum alloy
3	Sealant assembly	-
4	Cylinder (A) (large)	Aluminum alloy
5	O-ring	Nitrile rubber
6	Piston assembly (A) (large)	-
7	Actuator assembly	*1
8	Cap	Aluminum alloy die-casting
9	Piston assembly (B) (small)	-
10	Cylinder (B) (small)	Aluminum alloy
11	Gasket	Nitrile rubber
12	Body block	Aluminum alloy die-casting
13	Spring	Piano wire
14	Spring seat	Stainless steel

## Repair parts list

No./part name	3 6 9	3	6	9
Model No.	Repair parts kit	Sealant Assy	Piston Assy (A) (L)	Piston Assy (B) (S)
4F310E	4F310-K	4F9-106	4F9-104	4F9-103
4F320E	4F320-K		-	-
4F330E	4F330-K		-	-
4F340E			4F9-114	-
4F350E	-	-	-	-

\*1 (Actuator assembly model No.)  
 4F3<sup>1</sup>0E-(D)P-(F)-(G)  
 Select from How to order on page 1684.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMF0
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
<b>4F*0E</b>
HMV HSV
2QV 3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# 4F<sup>4</sup><sub>5/6/7</sub>\*0E Series

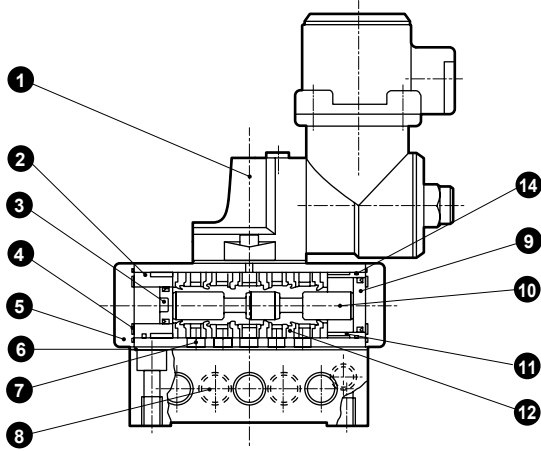
Single valve; sub-plate piping

## Internal structure and parts list

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E  
MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/  
LMF0
- MN3S0  
MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G  
GMF
- PV5  
GMF
- PV5S-0
- 3QR  
3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/  
NVP
- 4F\*0EX
- 4F\*0E**
- HMV  
HSV
- 2QV  
3QV
- SKH
- PCD
- Silencer
- TotAirSys  
(Total Air)
- TotAirSys  
(Gamma)
- Ending

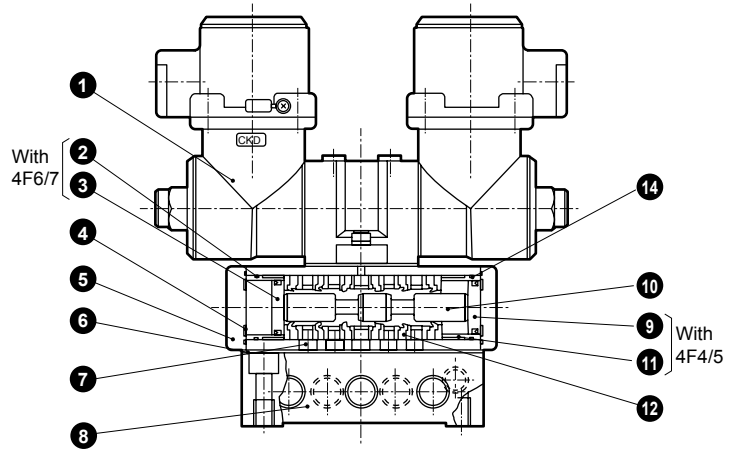
### 4F<sup>4</sup><sub>5/6/7</sub>10E

● 2-position single



### 4F<sup>4</sup><sub>5/6/7</sub>20E

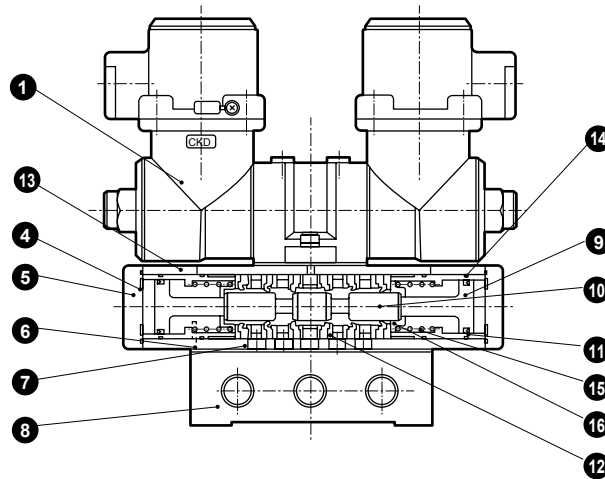
● 2-position double



### 4F<sup>4</sup><sub>5/6/7</sub>30E/4F<sup>4</sup><sub>5/6/7</sub>40E/4F<sup>4</sup><sub>5/6/7</sub>50E

● 3-position

All ports closed  
A/B/R connection  
P/A/B connection



## Main parts list

No.	Part name	Material
1	Actuator assembly	*1
2	Cylinder (B) (small)	Aluminum alloy
3	Piston assembly (B) (small)	-
4	Gasket	Nitrile rubber
5	Cap	Aluminum alloy die-casting
6	Sub-plate gasket	Nitrile rubber
7	Body	Aluminum alloy die-casting
8	Sub-plate	Aluminum alloy die-casting
9	Piston assembly (A) (large)	-
10	Spool	Aluminum alloy
11	Cylinder (A) (large)	Aluminum alloy
12	Sealant assembly	-
13	Body block	Aluminum alloy die-casting
14	O-ring	Nitrile rubber
15	Spring	Piano wire
16	Spring seat	Stainless steel

## Repair parts list

No./part name	9 12 3	9	12	3
	Model No.	Repair parts kit	Piston Assy (A) (L)	Sealant Assy
4F410E	4F410-K		4F9-104	4F9-103
4F420E	4F420-K		4F9-104	-
4F430E	4F430-K		4F9-114	4F9-106
4F440E	4F440-K		4F9-114	-
4F450E	4F450-K		4F9-108	-
4F510E	4F510-K		4F9-108	4F9-109
4F520E	4F520-K		4F9-108	-
4F530E	4F530-K		4F9-115	4F9-107
4F540E	4F540-K		4F9-115	-
4F550E	4F550-K		4F9-115	-
4F610E	4F610-K		4F9-117	4F9-116
4F620E	4F620-K		-	-
4F630E	4F630-K		4F9-122	4F9-118
4F640E	4F640-K		4F9-122	-
4F650E	4F650-K		4F9-122	-
4F710E	4F710-K		4F9-121	4F9-120
4F720E	4F720-K		-	-
4F730E	4F730-K		4F9-123	4F9-119
4F740E	4F740-K		4F9-123	-
4F750E	4F750-K		4F9-123	-

\*1 (Actuator assembly)

4F4<sup>1</sup>/<sub>2</sub>0E-**○**P-**●**F-**◎**

Select from How to order on page 1684.

# MEMO

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMF0
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
<b>4F*0E</b>
HMV HSV
2QV 3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# 4F3\*0E Series

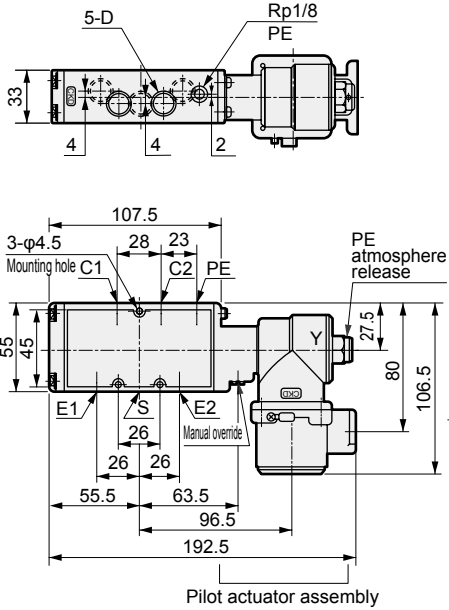
Single valve; body piping

## Dimensions



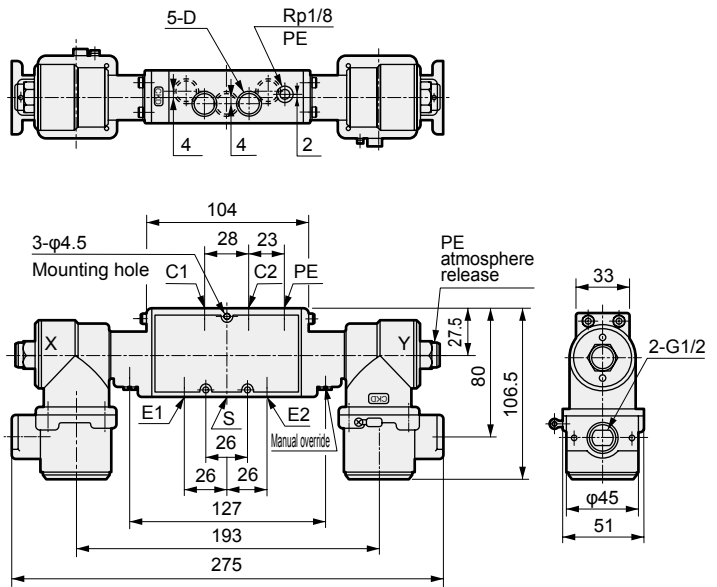
### 4F310E

● 2-position single



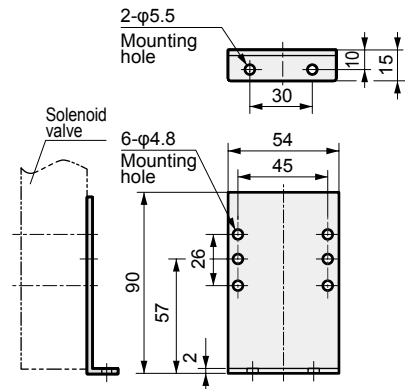
### 4F320E

● 2-position double



Model No.	D
*-08	Rp1/4
*-10	Rp3/8

● L type installation feet (P) dedicated for single  
Material: Cold-rolled steel plates (SPCC)  
Zinc plated



### 4F330E

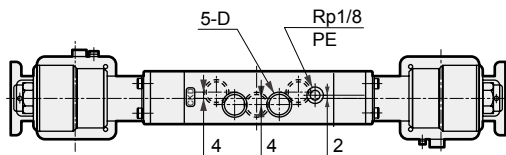
● 3-position all ports closed

### 4F340E

● 3-position A/B/R connection

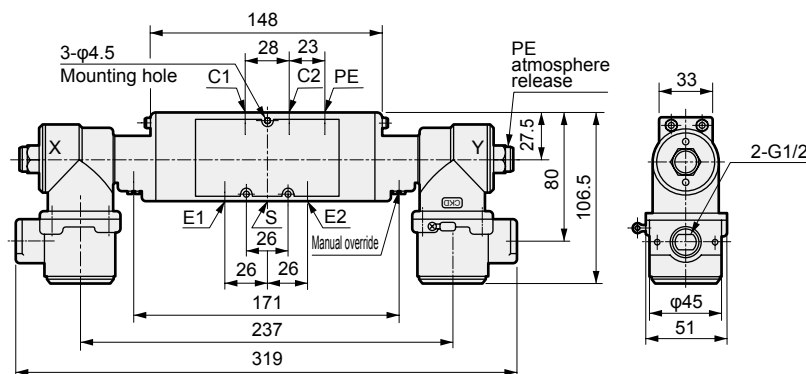
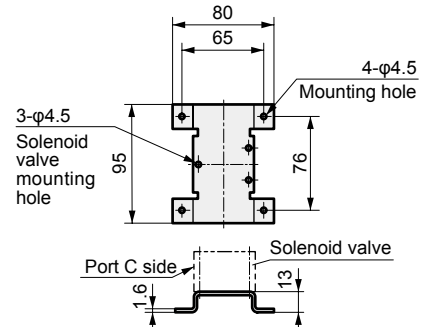
### 4F350E

● 3-position P/A/B connection

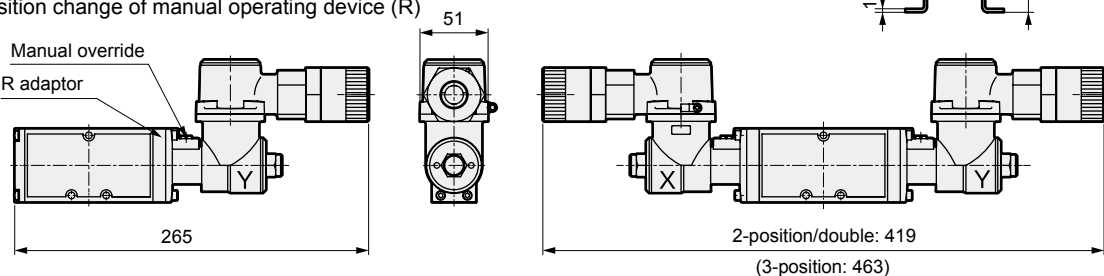


Model No.	D
*-08	Rp1/4
*-10	Rp3/8

● U type installation feet (P1)  
Material: Cold-rolled steel plates (SPCC)  
Zinc plated



● Position change of manual operating device (R)

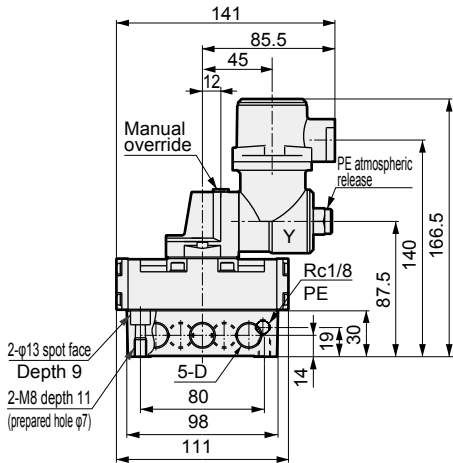
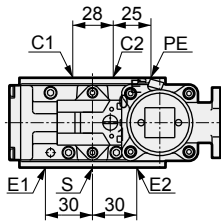


## Dimensions



### 4F410E

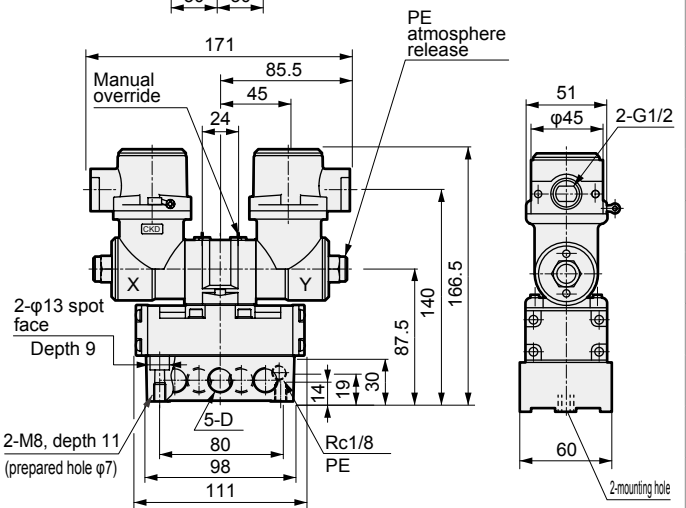
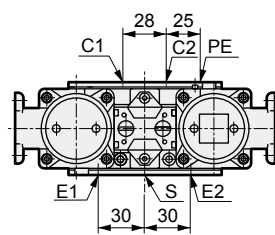
- 2-position single



Model No.	D
*-08	Rc1/4
*-10	Rc3/8

### 4F420E

- 2-position double



### 4F430E

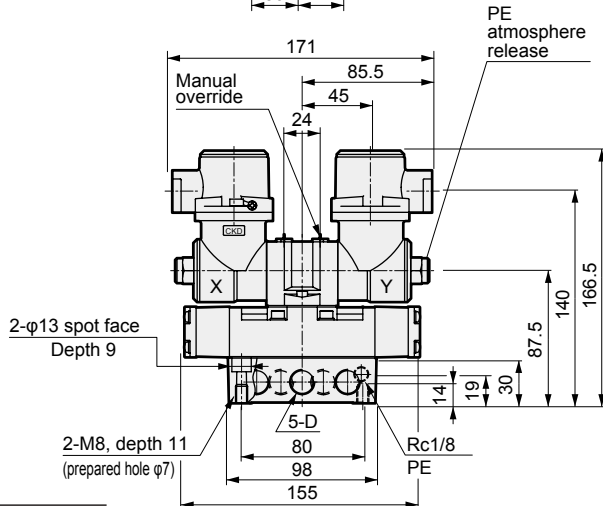
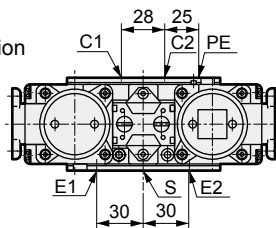
- 3-position all ports closed

### 4F440E

- 3-position A/B/R connection

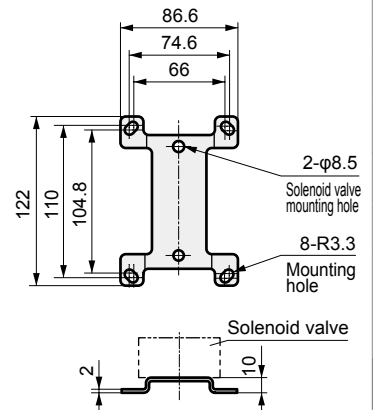
### 4F450E

- 3-position P/A/B connection



Model No.	D
*-08	Rc1/4
*-10	Rc3/8

- U type installation feet (P)  
Material: Hot-rolled steel plates  
Zinc plated



4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMF0
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
<b>4F*0E</b>
HMV HSV
2QV 3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending



# 4F5\*0E Series

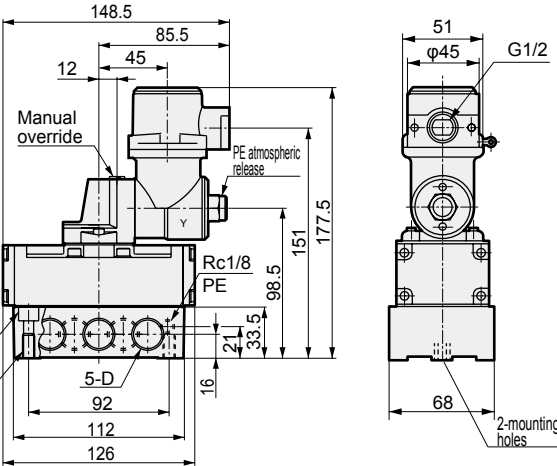
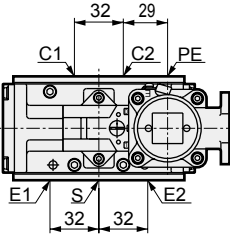
Single valve; sub-plate piping

## Dimensions



### 4F510E

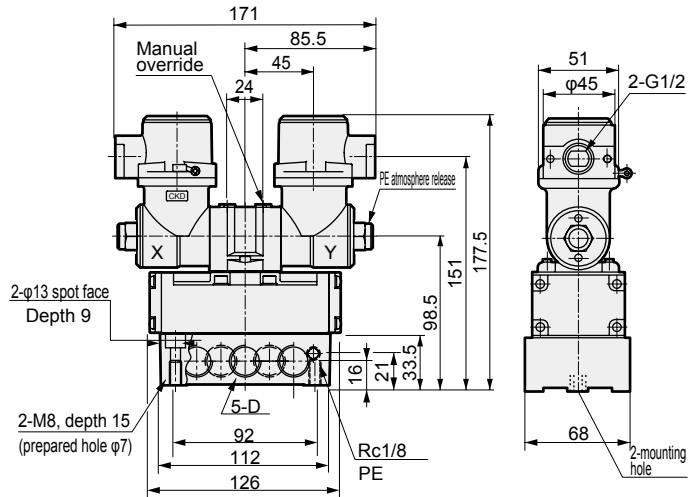
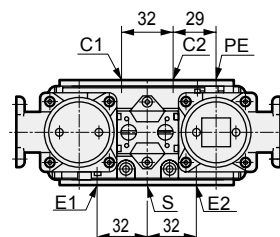
● 2-position single



Model No.	D
*-10	Rc3/8
*-15	Rc1/2

### 4F520E

● 2-position double



### 4F530E

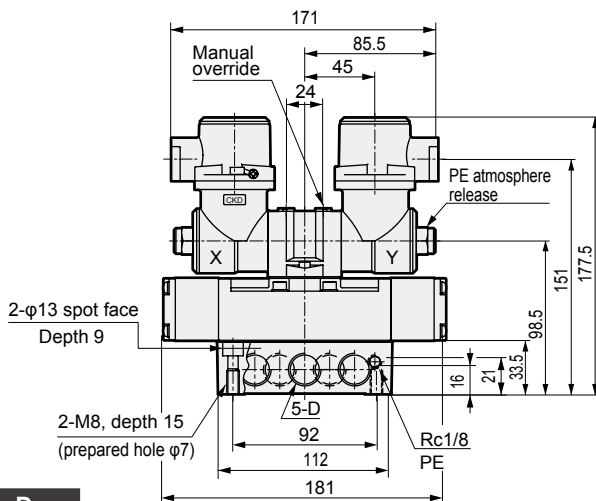
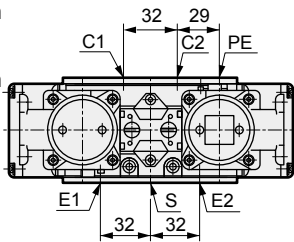
● 3-position all ports closed

### 4F540E

● 3-position A/B/R connection

### 4F550E

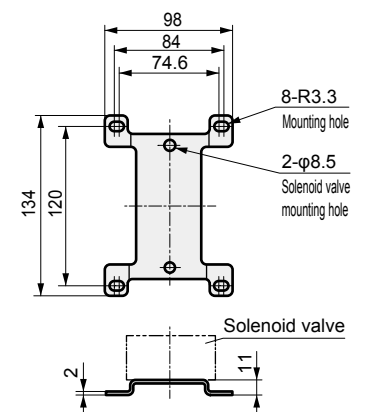
● 3-position P/A/B connection



Model No.	D
*-10	Rc3/8
*-15	Rc1/2

● U type installation feet (P)

Material: Hot-rolled steel plates  
Zinc plated

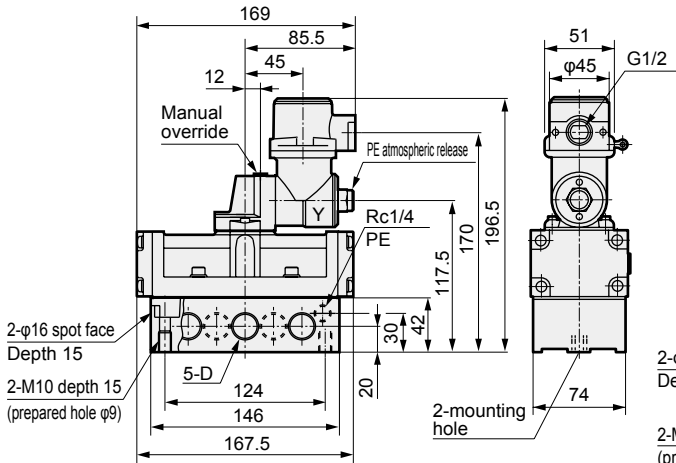
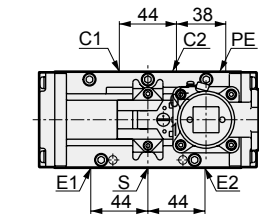


## Dimensions



### 4F610E

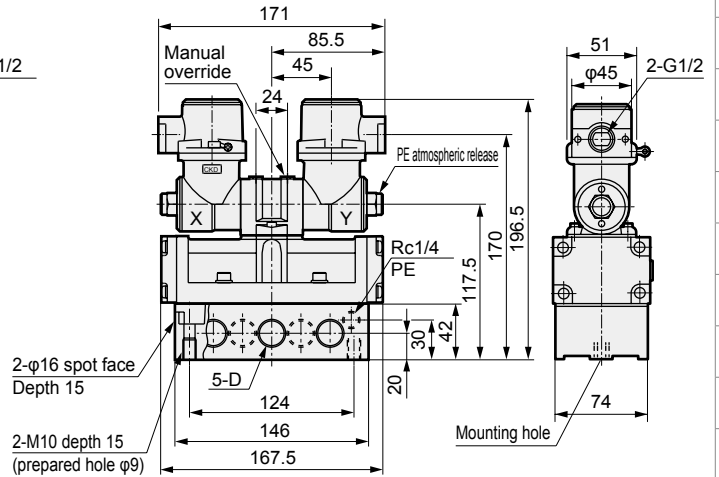
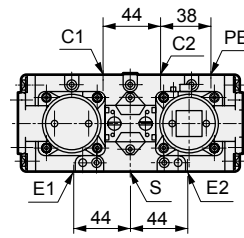
- 2-position single



Model No.	D
*-15	Rc1/2
*-20	Rc3/4

### 4F620E

- 2-position double



### 4F630E

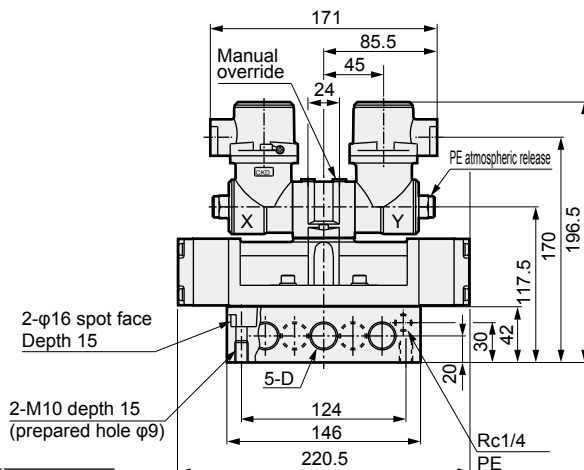
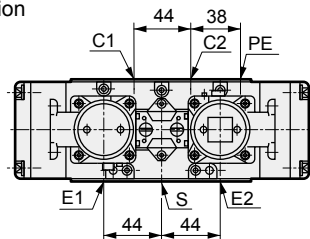
- 3-position all ports closed

### 4F640E

- 3-position A/B/R connection

### 4F650E

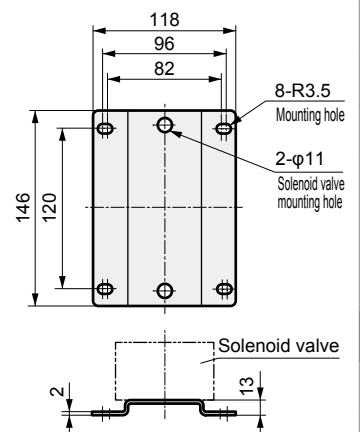
- 3-position P/A/B connection



Model No.	D
*-15	Rc1/2
*-20	Rc3/4

- U type installation feet (P)

Material: Cold-rolled steel plates (SPCC)  
Zinc plated



4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
4TB
4L2-4/LMF0
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3QR
3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0EX
<b>4F*0E</b>
HMV
HSV
2QV
3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# 4F7\*0E Series

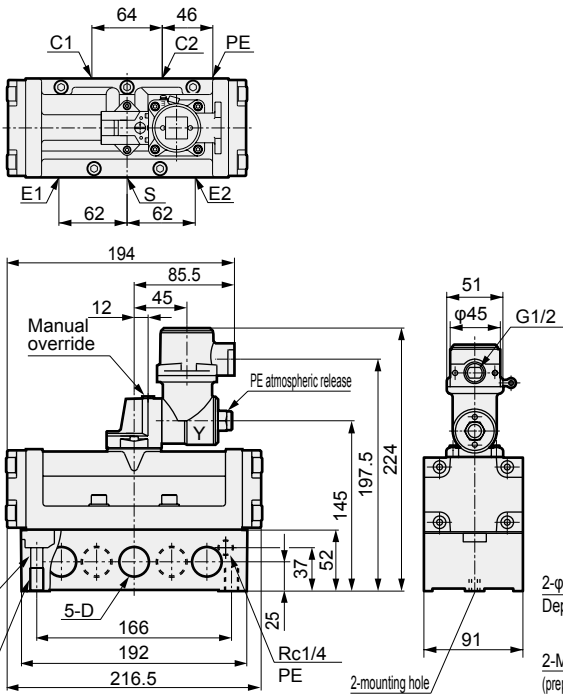
Single valve; sub-plate piping

## Dimensions



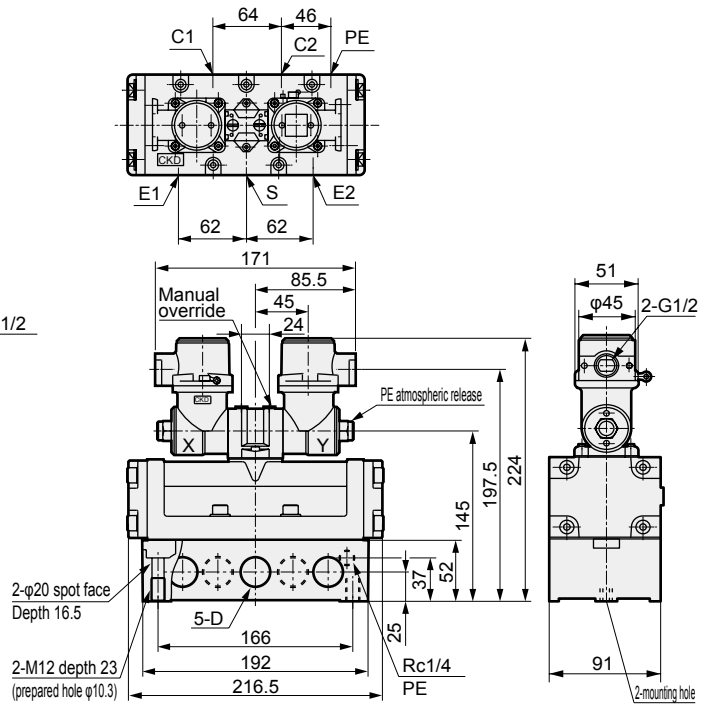
### 4F710E

● 2-position single



### 4F720E

● 2-position double



Model No.	D
*-20	Rc3/4
*-25	Rc1

### 4F730E

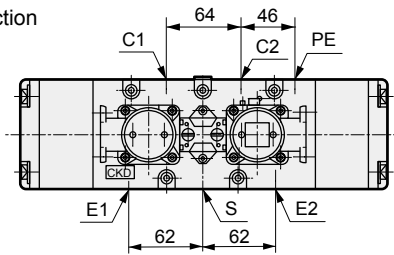
● 3-position all ports closed

### 4F740E

● 3-position A/B/R connection

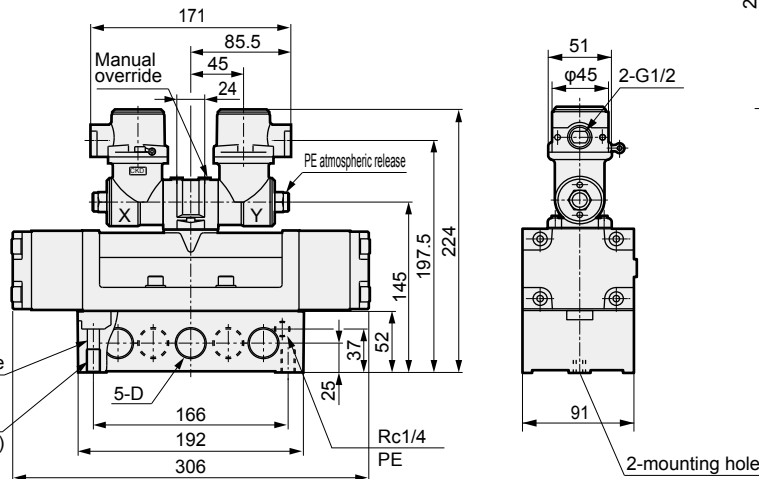
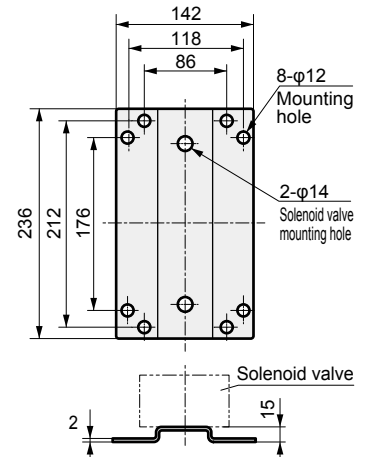
### 4F750E

● 3-position P/A/B connection



● U type installation feet (P)

Material: Cold-rolled steel plates (SPCC)  
Zinc plated

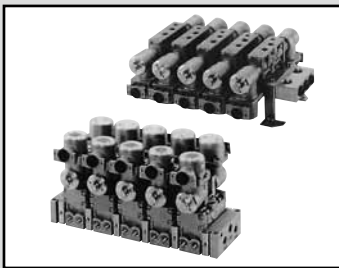


Model No.	D
*-20	Rc3/4
*-25	Rc1

# MEMO

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
<b>4TB</b>
4L2-4/ LMF0
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
<b>4F</b>
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3QR 3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
<b>4F*0E</b>
HMV HSV
2QV 3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

4GA/B  
M4GA/B  
MN4GA/B  
4GA/B (mastr)  
4GD/E  
M4GD/E  
MN4GD/E  
4GA4/B4  
MN3E  
MN4E  
W4GA/B2  
W4GB4  
4TB  
4L2-4/  
LMF0  
MN3S0  
MN4S0  
4SA/B0  
4KA/B  
4KA/B (mastr)  
4F  
4F (mastr)  
PV5G  
GMF  
PV5  
GMF  
PV5S-0  
3QR  
3QB  
MV3QR  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP/  
NVP  
4F\*0EX  
**4F\*0E**  
HMV  
HSV  
2QV  
3QV  
SKH  
PCD  
Silencer  
TotAirSys  
(Total Air)  
TotAirSys  
(Gamma)  
Ending



Individual wiring manifold  
Pilot operated explosion-proof 5-port valve pneumatic valve

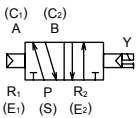
# M4F\*\*0E Series

● Cylinder bore size:  $\phi 63$  to  $\phi 250$

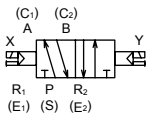


## JIS symbol

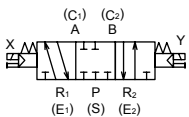
2-position/single



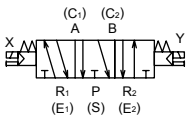
2-position/double



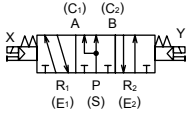
3-position/all ports closed



3-position/ABR connection



3-position/PAB connection



## Common specifications

Descriptions	Content
Manifold method	Manifold integrated
Manifold	Common exhaust Individual exhaust (M4F3)
Station No.	2 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	Refer to Individual specifications listed below
Proof pressure MPa	1.5 ( $\approx 220$ psi, 15 bar)
Ambient temperature $^{\circ}\text{C}$ (*1)	-10 ( $14^{\circ}\text{F}$ ) 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 (use turbine oil ISO VG32 if lubrication is necessary)
Explosion-proof performance	d2G4
Manual override	Locking
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 ambient temperature indicates the temperature for storage and upon installation, which will differ from the fluid temperature during operation.

## Electrical specifications

Descriptions	Content		
Rated voltage	AC	100 V, 200 V (50/60 Hz)	
	DC	24 V	
Voltage fluctuation range	$\pm 10\%$		
Starting current	AC	100 V	0.186/0.135
		200 V	0.093/0.068
A	DC	24 V	0.166
Holding current	AC	100 V	0.06/0.05
		200 V	0.03/0.025
A	DC	24 V	0.166
Power consumption	AC	100 V	4.5/4
		200 V	4.5/4
W	DC	24 V	4
Thermal class	A (*1, H)		

\*1: Thermal class H is available as an option. The dimensions are the same as those of A.

## Individual specifications

Descriptions		M4F3	M4F4	M4F5	M4F6	M4F7	
Min. working pressure MPa	2-position	Single	0.1 ( $\approx 15$ psi, 1 bar)	0.1 ( $\approx 15$ psi, 1 bar)	0.1 ( $\approx 15$ psi, 1 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	
		Double					
	3-position	All ports closed	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.15 ( $\approx 22$ psi, 1.5 bar)	
		A/B/R connection					
	P/A/B connection						
Port size	Common exhaust method	Cylinder port C	Rp1/4, Rp3/8	Rc1/4	Rc3/8	Rc1/2	Rc3/4
		Exhaust port E	Rc1/2	Rc3/8	Rc1/2	Rc3/4	Rc3/4
		Air supply port S	Rc1/2	Rc3/8	Rc1/2	Rc3/4	Rc1
*1	Individual exhaust method	Cylinder port C	Rp1/4, Rp3/8	Rc1/4	Rc3/8	Rc1/2	Rc3/4
		Exhaust port E	Rc1/4, Rc3/8	Rc1/4	Rc3/8	Rc1/2	Rc1/2
		Air supply port S	Rc1/2	Rc3/8	Rc1/2	Rc3/4	Rc1
Response time *2	ms	100	120	140	400	600	
Weight calculation formula	2-position	Single	$1.26 \times n + 0.98$	$1.42 \times n + 0.47$	$1.74 \times n + 0.77$	$3.41 \times n + 1.79$	$4.72 \times n + 1.79$
		Double	$1.80 \times n + 0.98$	$1.86 \times n + 0.47$	$2.22 \times n + 0.77$	$3.91 \times n + 1.79$	$5.20 \times n + 1.79$
	3-position	$1.99 \times n + 0.98$	$2.02 \times n + 0.47$	$2.48 \times n + 0.77$	$4.21 \times n + 1.79$	$6.22 \times n + 1.79$	

\*1: NPT threads can also be used for piping port. Contact CKD for details. (However, the external wire inlet is G1/2.)

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

## Flow characteristics

Model No.	Solenoid position		Port size	C[dm <sup>3</sup> /(s·bar)]	b	S(mm <sup>2</sup> )
4F3	2-position	Single	Rp1/4	3.9	0.42	-
		Double				
	3-position	All ports closed		4.0	0.35	
		A/B/R connection		4.5	0.42	
		P/A/B connection	4.0	0.35		
	2-position	Single	Rp3/8	5.8	0.42	
		Double				
	3-position	All ports closed		4.4	0.42	
A/B/R connection		5.1		0.46		
P/A/B connection		4.4		0.42		
4F4	2-position	Single	Rc1/4	5.0	0.21	-
		Double				
	3-position	All ports closed		4.7	0.24	
		A/B/R connection		5.3	0.29	
		P/A/B connection		5.3	0.29	
4F5	2-position	Single	Rc3/8	10.0	0.32	-
		Double				
	3-position	All ports closed		9.7	0.28	
		A/B/R connection		9.8	0.25	
		P/A/B connection				
4F6	2-position	Single	Rc1/2	18.0	0.31	-
		Double				
	3-position	All ports closed		15.0	0.23	
		A/B/R connection				
		P/A/B connection				
4F7	2-position	Single	Rc3/4	-	-	160
		Double				
	3-position	All ports closed				
		A/B/R connection				
		P/A/B connection				

\*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)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
4TB
4L2-4/LMF0
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3QR
3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0EX
<b>4F*0E</b>
HMV
HSV
2QV
3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

# M4F\*\*0E Series

## Individual wiring manifold

### How to order

● Discrete solenoid valve for manifold (4F3)

**4F3** **1** **0 E** - **08** - **T** **P** - **N** - **X** ————— **AC100V**

\* Purchase the M4F3-GASKET-KIT together.

● Discrete solenoid valve for manifold (4F4 to 7)

**4F4** **1** **9 E** - **00** - **T** **P** ————— **X** ————— **AC100V**

● Manifold

**M** **4F3** **1** **0 E** - **08** - **T** **P** - **N** - **X** - **2** - **C** **L** - **AC100V** —————

**A** Model No.

**I** Installation feet

**J** Voltage \*2

S1 S2 S3 S4 S5 MP

List the number of solenoid valves to be used when using a mix manifold (Refer to page 1697 for an example of how to list the description.)

**A** Model No.

	4F3	4F4	4F5	4F6	4F7

**B** Solenoid position

**C** Port size

**D** External wire pull method

**E** Option

**F** Thermal class

**G** Station No.

**H** Exhaust method

### ⚠ Precautions for model No. selection

\*1: Only the following voltage products are available as a custom order product. (There are no certifications for other than the listed voltage.)

Voltage	AC[V]	12, 24, 48, 115, 120, 125, 127, 210, 230, 240, 250, 380
	DC[V]	12, 45, 48, 80, 100, 110, 125

\*2: In order to ensure explosion-proof specifications, select a cable from the following for use with type G.

Cable	No. of cores	Nominal section area	Wire config	Finished outer φ
Polyethylene cable (EV)	2-conductor	2 mm <sup>2</sup>	7/0.6	φ10.5
600 V vinyl insulation vinyl sheath cable (VV)	2-conductor	2 mm <sup>2</sup>	7/0.6	φ10.5
Control vinyl insulation vinyl sheath cable (CVV)	2-conductor	2 mm <sup>2</sup>	7/0.6	φ10.5

[Example of model No.]

### M4F310E-08-TP-N-7-CL-AC100V

- A** Model No. : Pneumatic explosion-proof 5-port valve manifold
- B** Solenoid position : 2-position single
- C** Port size : Rp1/4
- D** External wire pull method : Conduit screw connection method
- E** Option : Plug attached
- F** Thermal class : A
- G** Station No. : 7 stations
- H** Exhaust method : common exhaust
- I** Installation feet : L type bracket
- J** Voltage : 100 VAC

Code	Content	4F3	4F4	4F5	4F6	4F7
<b>B Solenoid position</b>						
<b>1</b>	2-position single	●	●	●	●	●
<b>2</b>	2-position double	●	●	●	●	●
<b>3</b>	3-position all ports closed	●	●	●	●	●
<b>4</b>	3-position ABR connection	●	●	●	●	●
<b>5</b>	3-position PAB connection	●	●	●	●	●
<b>8</b>	Mix manifold (when there are multiple solenoid positions)	●	●	●	●	●

<b>C Port size</b>						
<b>08</b>	Rp1/4 (for M4F3), Rc1/4	●	●			
<b>10</b>	Rp3/8 (for M4F3), Rc3/8	●		●		
<b>D15</b>	Rc1/2				●	
<b>E20</b>	Rc3/4					●

<b>D External wire pull method</b>						
<b>G</b>	Pressure proof packing protection pipe screw-in *2	●	●	●	●	●
<b>T</b>	Conduit thread system	●	●	●	●	●

<b>E Option</b>						
<b>Blank</b>	No option	●	●	●	●	●
<b>N</b>	Plug attached (for 3-port valve)	●	●	●	●	●
<b>R</b>	Position change of manual override	●				
<b>NC</b>	3-port valve specs plug assembly (C1 (A), E1 (R1))	●	●	●	●	●
<b>NO</b>	3-port valve specs plug assembly (C2 (B), E2 (R2))	●	●	●	●	●

<b>F Thermal class</b>						
<b>Blank</b>	A (standard product)	●	●	●	●	●
<b>X</b>	H (Option)	●	●	●	●	●

<b>G Station No.</b>						
<b>2</b>	2					
<b>to</b>	to	●	●	●	●	●
<b>10</b>	10 stations					

<b>H Exhaust method</b>						
<b>C</b>	Common exhaust	●	●	●	●	●
<b>I</b>	Individual exhaust	●				

<b>I Installation feet</b>						
<b>L</b>	L type bracket (dedicated for single)	●				
<b>U</b>	U type bracket	●				

<b>J Voltage</b>						
<b>AC100V</b>	100 VAC(50/60 Hz)	●	●	●	●	●
<b>AC200V</b>	200 VAC(50/60 Hz)	●	●	●	●	●
<b>DC24V</b>	24 VDC	●	●	●	●	●
<b>DC12V</b>	12 VDC	●	●	●	●	●
<b>AC110V</b>	110 VAC(50/60 Hz)	●	●	●	●	●
<b>AC220V</b>	220 VAC(50/60 Hz)	●	●	●	●	●

<b>* Other custom order products</b>						
[AC voltage]						
12 V, 24 V, 48 V						
115 V, 120 V, 125 V	●	●	●	●	●	●
127 V, 210 V, 230 V						
240 V, 250 V, 380 V						
[DC voltage]						
45 V, 48 V, 80 V						
100 V, 110 V, 125 V	●	●	●	●	●	●

## How to order masking plate kit

**M4F3 - 08 - MP-KIT**

\* Gasket attached (M4F3)  
Gasket/set screw attached (M4F4 to M4F7)

**A Model No.**

A Model No.
M4F3
M4F4
M4F5
M4F6
M4F7

**B Port size**

Code	Content	Model No.
08	Rc1/4	M4F3
10	Rc3/8	
Blank	Rc1/4	M4F4
Blank	Rc3/8	M4F5
D15	Rc1/2	M4F6
E20	Rc3/4	M4F7

## How to order mix manifold

**M 4F3 8 0E - 08 - T P - N - X - 7 - C U - AC100V -**

Mix manifold "8"

\* For How to order other items, refer to the previous page.

S1	S2	S3	S4	S5	MP
2	2	1	1	1	0

S1=1, 6    S2=2, 5  
S3=3        S4=7  
S5=4

### How to fill in form for ordering a mix manifold

- (1) List the quantity for each function (solenoid position) at the end of How to order. The functions and codes are as shown below.

Example: 2-position single → S1

Code	Function (solenoid position)
S1	2-position single
S2	2-position double
S3	3-position all ports closed
S4	3-position A/B/R connection
S5	3-position P/A/B connection
MP	Masking plate

S1	S2	S3	S4	S5	MP
2	2	1	1	1	0

List the quantity

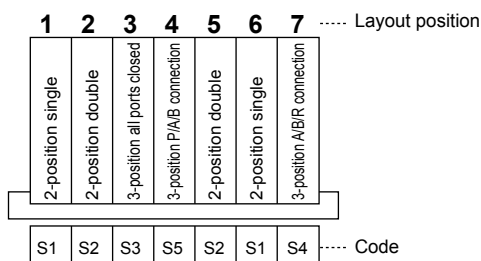
- (2) List the function (solenoid position) and layout position in the field for remarks.

Solenoid position code = ○, ○th station (where the left side is the 1st station when the piping port is facing forward.)

Example: S1 = 1, 6 (1st, 6th stations are 2-position single)

### [Example of model No.]

For 7 stations



- 2-position single (S1) : 2 units (1st station, 6th station)  
 2-position double (S2) : 2 units (2nd station, 5th station)  
 3-position all ports closed (S3) : 1 unit (3rd station)  
 3-position ABR connection (S4) : 1 unit (7th station)  
 3-position PAB connection (S5) : 1 unit (4th station)

↓

M4F380E-08-TP-N-7-CU-AC100V -

S1	S2	S3	S4	S5	MP
2	2	1	1	1	0

S1=1, 6    S2=2, 5    S3=3  
S4=7    S5=4

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
4TB
4L2-4/LMF0
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3QR
3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0EX
<b>4F*0E</b>
HMV
HSV
2QV
3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending



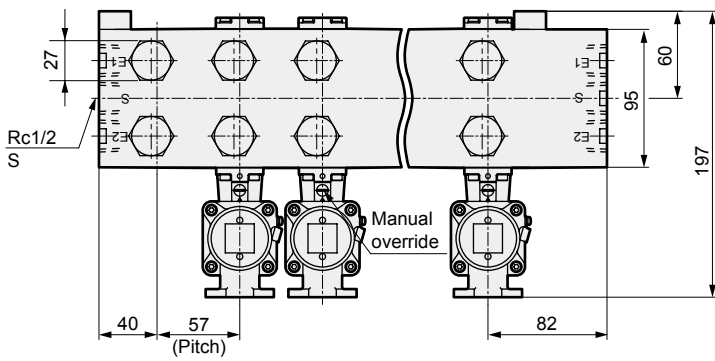
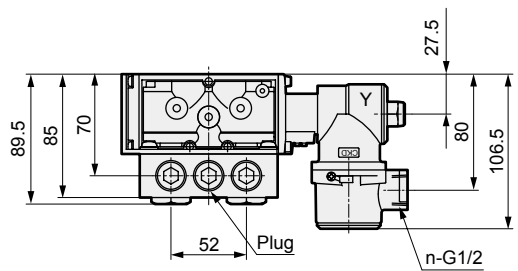
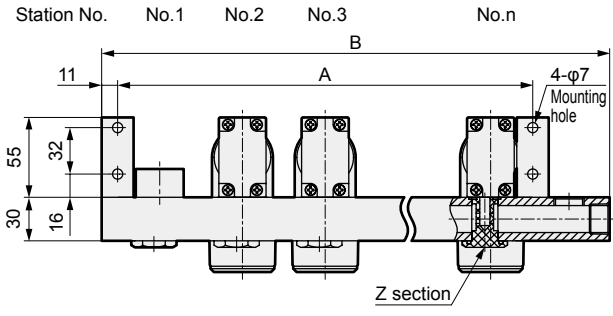
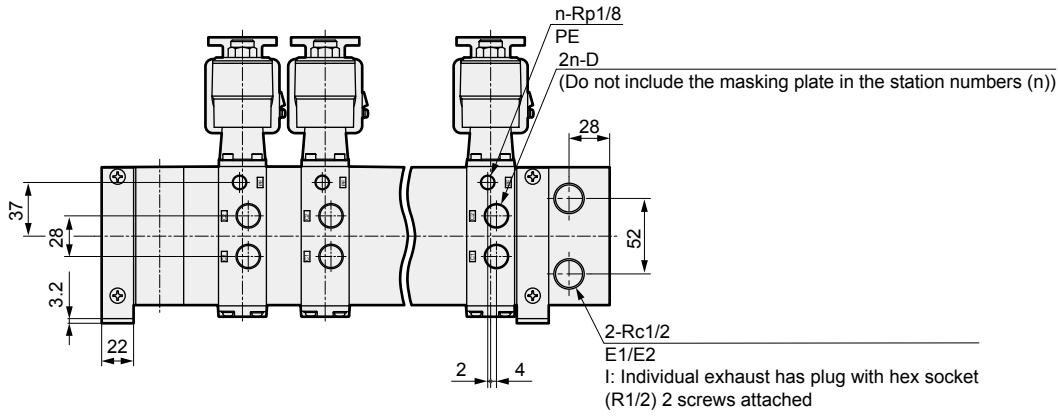
# M4F3\*0E Series

Individual wiring manifold; body piping

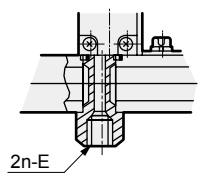
Dimensions 

**M4F310E-08-TP-CL** (common exhaust)  
**M4F310E-10-TP-IL** (individual exhaust)

● With L bracket



I: Z section with individual exhaust



Model No.	D	E	Single model No. for manifold
4F310E-08	Rp1/4	Rc1/4	4F310E 4F320E 4F330E 4F340E 4F350E
4F320E-08			
4F330E-08			
4F340E-08			
4F350E-08			
4F310E-10	Rp3/8	Rc3/8	4F310E 4F320E 4F330E 4F340E 4F350E
4F320E-10			
4F330E-10			
4F340E-10			
4F350E-10			

Station No.	2	3	4	5	6	7	8	9	10
A	115	172	229	286	343	400	457	514	571
B	179	236	293	350	407	464	521	578	635

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/LMF0
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3QR
- 3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/NVP
- 4F\*0EX
- 4F\*0E**
- HMV
- HSV
- 2QV
- 3QV
- SKH
- PCD
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

# M4F3\*0E Series

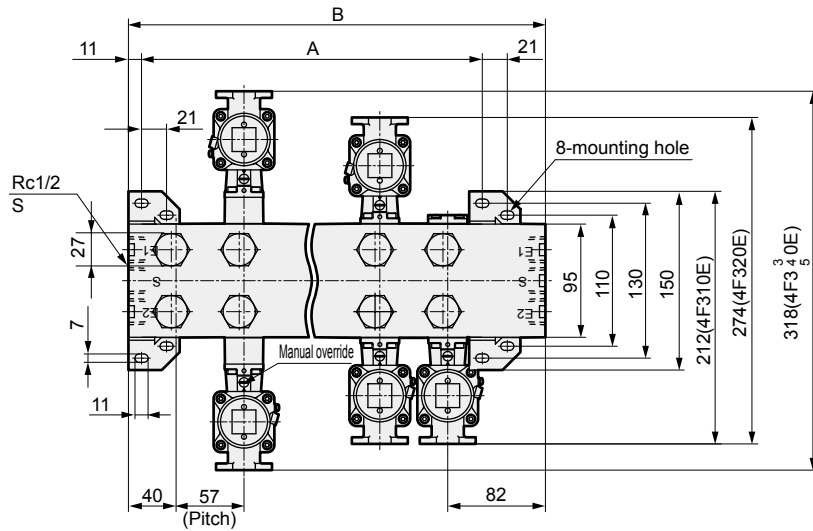
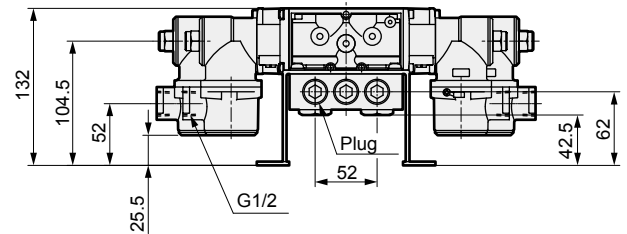
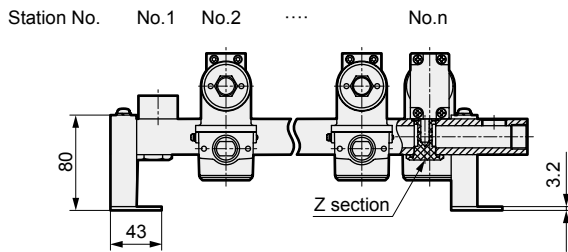
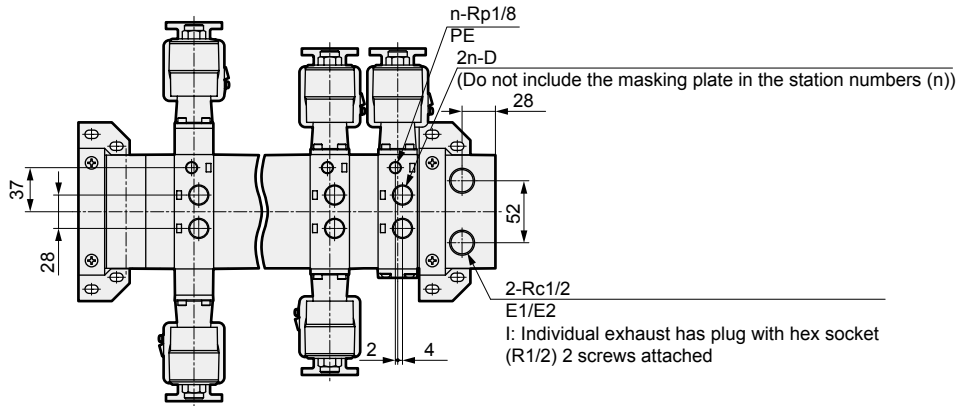
Individual wiring manifold; body piping

## Dimensions

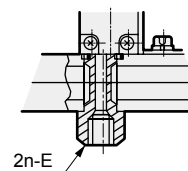


**M4F3\*0E-08-TP-CU** (common exhaust)  
**10-TP-IU** (individual exhaust)

● With U bracket



I: Z section with individual exhaust



Station No.	2	3	4	5	6	7	8	9	10
A	115	172	229	286	343	400	457	514	571
B	179	236	293	350	407	464	521	578	635

Model No.	D	E	Single model No. for manifold
4F310E-08	Rp1/4	Rc1/4	4F310E 4F320E 4F330E 4F340E 4F350E
4F320E-08			
4F330E-08			
4F340E-08			
4F350E-08			
4F310E-10	Rp3/8	Rc3/8	
4F320E-10			
4F330E-10			
4F340E-10			
4F350E-10			

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/LMF0
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3QR
- 3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/NVP
- 4F\*0EX
- 4F\*0E**
- HMV
- HSV
- 2QV
- 3QV
- SKH
- PCD
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

# M4F4/0E/M4F5\*0E Series

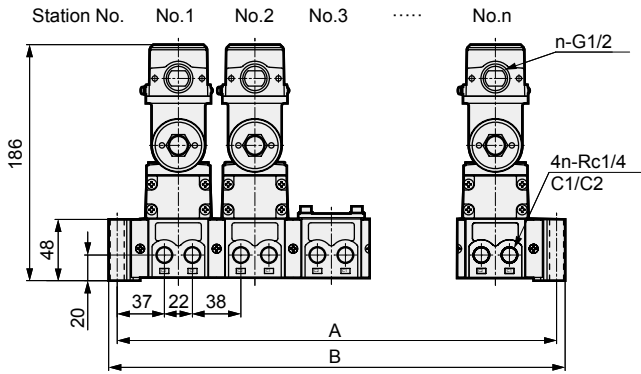
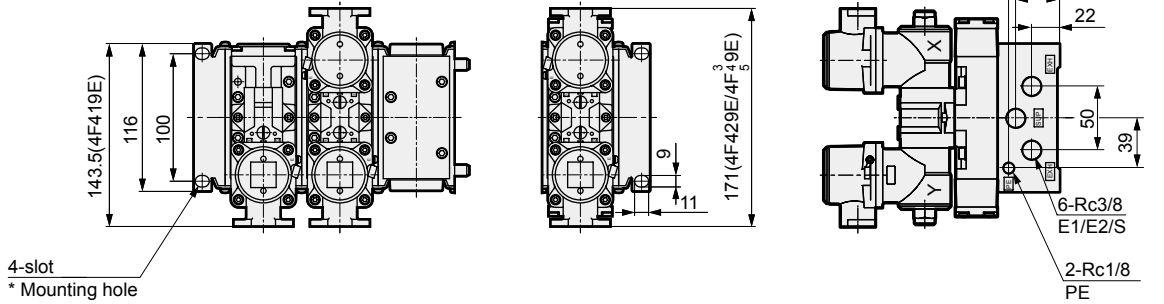
Individual wiring manifold: sub-plate piping



## Dimensions

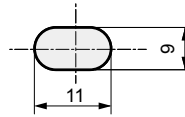
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E  
MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/  
LMF0
- MN3S0  
MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G  
GMF
- PV5  
GMF
- PV5S-0
- 3QR  
3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/  
NVP
- 4F\*0EX
- 4F\*0E**
- HMV  
HSV
- 2QV  
3QV
- SKH
- PCD
- Silencer
- TotAirSys  
(Total Air)
- TotAirSys  
(Gamma)
- Ending

### M4F4\*0E-08-TP-\*C



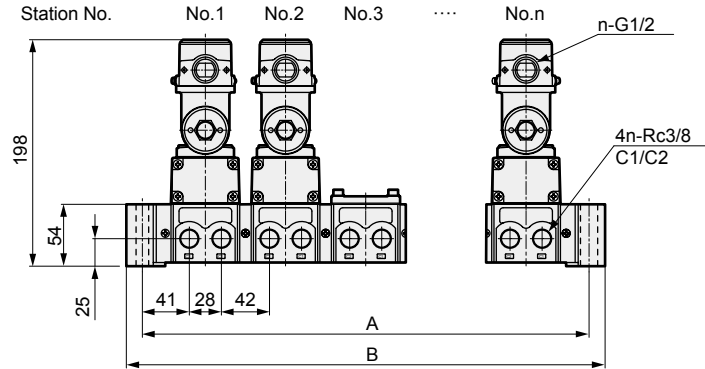
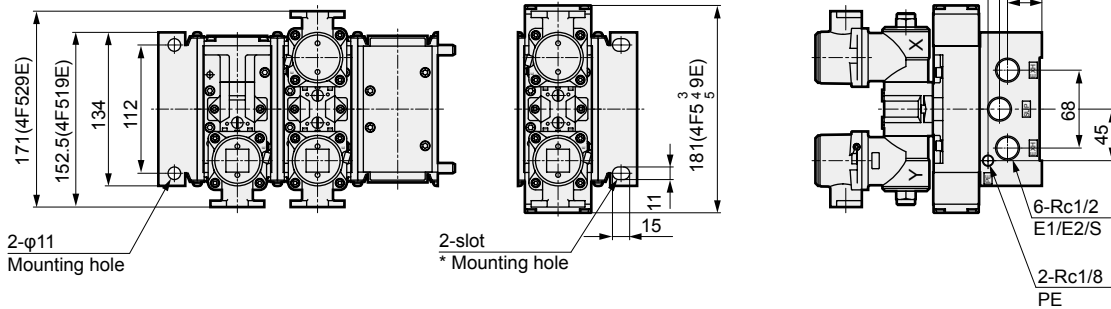
Station No.	2	3	4	5	6	7	8	9	10
<b>A</b>	156	216	276	336	396	456	516	576	636
<b>B</b>	169.4	229.4	289.4	349.4	409.4	469.4	529.4	589.4	649.4

\* Installation hole portion enlarged



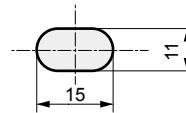
Single model No. for manifold	
Solenoid valve	4F419E, 4F429E, 4F439E 4F449E, 4F459E

### M4F5\*0E-10-TP-\*C



Station No.	2	3	4	5	6	7	8	9	10
<b>A</b>	180	250	320	390	460	530	600	670	740
<b>B</b>	208	278	348	418	488	558	628	698	768

\* Installation hole portion enlarged



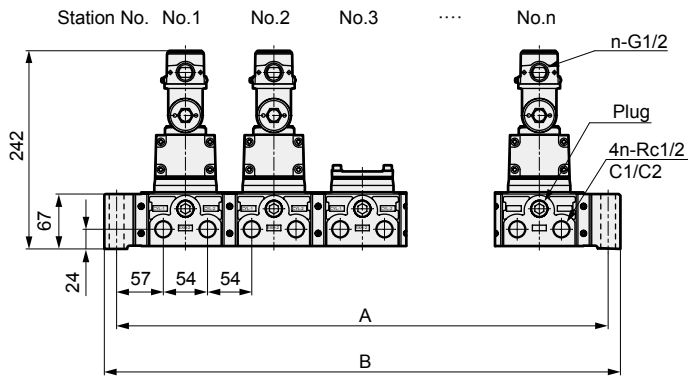
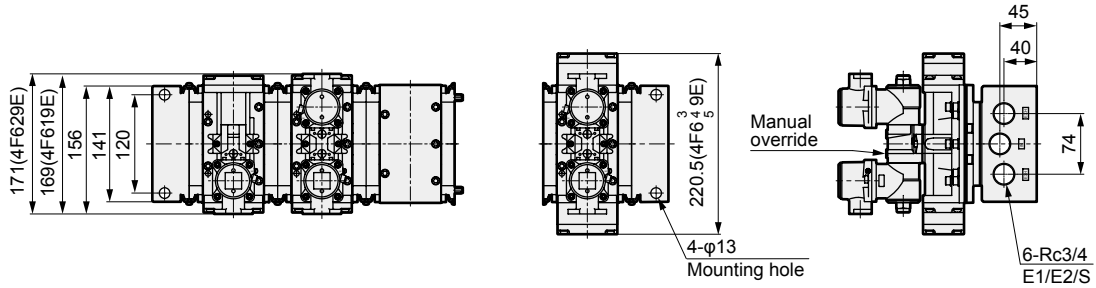
Single model No. for manifold	
Solenoid valve	4F519E, 4F529E, 4F539E 4F549E, 4F559E

# M4F6/0E/M4F7\*0E Series

Individual wiring manifold: sub-plate piping

Dimensions 

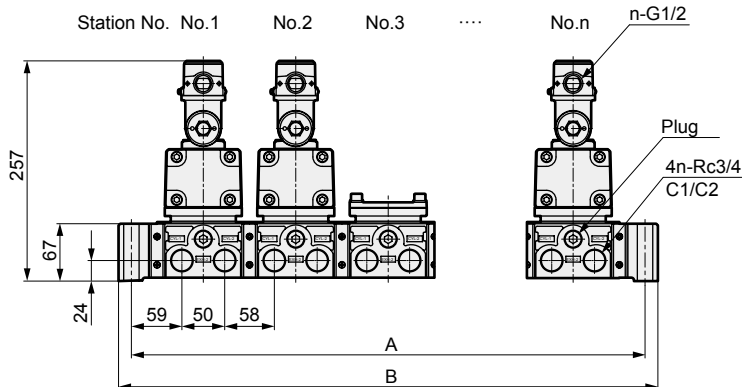
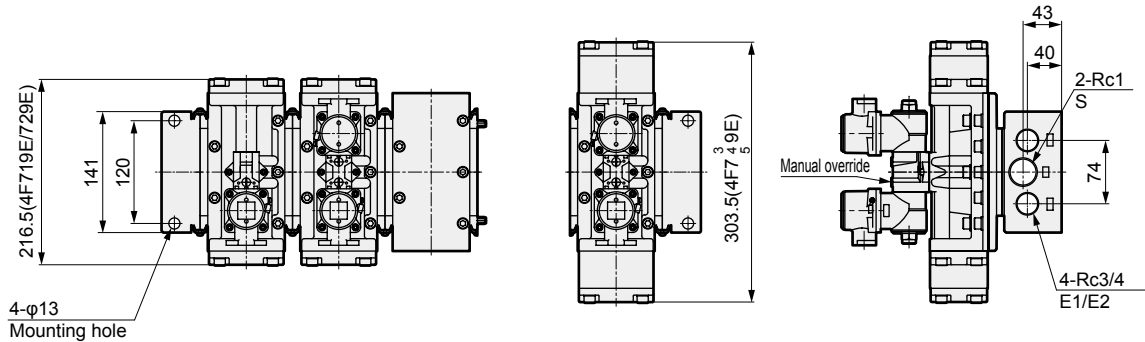
## M4F6\*0E-D15-TP-\* -C



Station No.	2	3	4	5	6	7	8	9	10
A	276	384	492	600	708	816	924	1032	1140
B	306	414	522	630	738	846	954	1062	1170

Single model No. for manifold	
Solenoid valve	4F619E, 4F629E, 4F639E 4F649E, 4F659E

## M4F7\*0E-E20-TP-\* -C



Station No.	2	3	4	5	6	7	8	9	10
A	276	384	492	600	708	816	924	1032	1140
B	306	414	522	630	738	846	954	1062	1170

Single model No. for manifold	
Solenoid valve	4F719E, 4F729E, 4F739E 4F749E, 4F759E

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
4TB
4L2-4/LMF0
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3QR
3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0EX
<b>4F*0E</b>
HMV
HSV
2QV
3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending