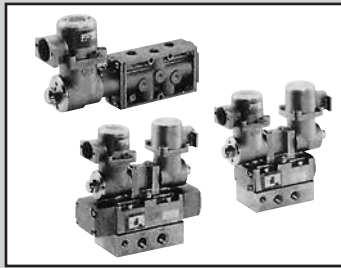


Discrete valve
Pilot operated explosion-proof 5-port valve pneumatic valve

4F**0E Series

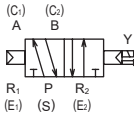
- Japan Conformity Certificate No. Class A: No. T64364 Class H: No. T64363
- China Conformity Certificate No. (CCC) 2020322307002070
- China explosion-proof type (NEPSI) GYB20.2251X
- Cylinder bore size: $\phi 63$ to $\phi 250$



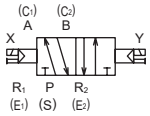
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E MN4E
- W4GA/B2
- W4GB4
- MN3S0 MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G GMF
- PV5 GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E**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

JIS symbol

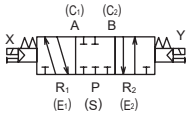
2-position/single



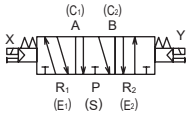
2-position/double



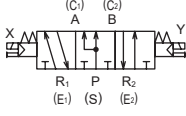
3-position/all ports closed



3-position/ABR connection



3-position/PAB connection



Common specifications

Item	Description
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressureMPa	1.0
Min. working pressureMPa	Refer to Individual specifications listed below
Proof pressure MPa	1.5
Ambient temperature°C (*1)	-10 to 60(no freezing)
Fluid temperature °C	5 to 60
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)
Explosion-proof performance	d2G4
Manual override	Locking
Vibration resistance m/s^2	50 or less
Shock resistance 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

Item	Description		
Rated voltage	AC	100V,200V,110V,220V(50/60Hz)	
	DC	24V, 12V	
Voltage fluctuation range		$\pm 10\%$	
Starting current	AC	100V	0.186/0.135
		200V	0.093/0.068
		110V	0.169/0.123
		220V	0.085/0.061
A	DC	24V	0.166
		12V	0.332
Holding current	AC	100V	0.06/0.05
		200V	0.03/0.025
		110V	0.055/0.045
		220V	0.027/0.023
A	DC	24V	0.166
		12V	0.332
Power consumption	AC	100V	4.5/4.0
		200V	4.5/4.0
		110V	4.5/4.0
		220V	4.5/4.0
W	DC	24V	4.0
		12V	4.0
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

Item		4F3	4F4	4F5	4F6	4F7	
Min. working pressure MPa	2-position	Single	0.1	0.1	0.1	0.15	0.15
		Double					
	3-position	All ports closed	0.15	0.15	0.15	0.15	0.15
		A/B/R 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)	

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

Performance/characteristics by model

Item		4F3	4F4	4F5	4F6	4F7
Response time	ms (*1)	100	120	140	400	600

*1: The response times are values with working pressure of 0.5 MPa, without lubrication, and with the power ON. They depend on the pressure and the lubricant quality.

Weight

Item		4F3	4F4	4F5	4F6	4F7	
Weight kg (*1)	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-position	1.45	1.78	2.16	2.96	5.12	

*1: The weight is the value for TP. For the weight of GP, add 0.07 x (number of pilot actuators) kg.

Flow characteristics

Model No.	Solenoid position		Port size	C[dm ³ /(s·bar)]	b	S(mm ²)
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	
A/B/R connection				5.1	0.46	
3-position	P/A/B connection	4.4	0.42			
	2-position	Single	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		
3-position	P/A/B connection	5.3	0.29			
	2-position	Single	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		
3-position	P/A/B connection	9.8	0.25			
	2-position	Single	Rc1/2 Rc3/4	18.0	0.31	-
		Double				
	3-position	All ports closed		15.0	0.23	
A/B/R connection						
3-position	P/A/B connection	15.0	0.23			
	2-position	Single	Rc3/4 Rc1	-	-	160
		Double				
	3-position	All ports closed		-	-	
A/B/R connection						
3-position	P/A/B connection	4.4	0.42			

*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)
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

4F**0E Series

Discrete valve

How to order

● Pneumatic explosion-proof 5-port valve



A Model No.

B Solenoid position

C Port size

D External wire pull method

E Option

F Thermal class

G Voltage (*1)

H Organizations for explosive-proof certification

A Model No.

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

Code	Description	4F3	4F4	4F5	4F6	4F7
C Port size						
08	Rp1/4 (for 4F3), Rc1/4	●	●			
10	Rp3/8 (for 4F3), Rc3/8	●	●	●		
15	Rc1/2			●	●	
20	Rc3/4				●	●
25	Rc1					●
08N	NPT1/4	●	●			
10N	NPT3/8	●	●	●		
15N	NPT1/2			●	●	
20N	NPT3/4				●	●
25N	NPT1					●
08G	G1/4	●	●			
10G	G3/8	●	●	●		
15G	G1/2			●	●	
20G	G3/4				●	●
25G	G1					●

Code	Description	4F3	4F4	4F5	4F6	4F7
D External wire pull method						
G	Pressure proof packing protection pipe screw-in *3	●	●	●	●	●
T	Conduit thread system	●	●	●	●	●

Code	Description	4F3	4F4	4F5	4F6	4F7
E Option						
Blank	No option	●	●	●	●	●
P	Installation feet L-bracket (for 4F3 2-position single) installation feet U-bracket (for 4F4 to 4F7)	●	●	●	●	●
P1	Installation feet U-bracket (for 2-position double solenoid/3-position)	●				
H	Check valve attached (dedicated for 3-position all ports closed)	●	●	●	●	●
N	Plug included (for 3-port valve)	●	●	●	●	●
R	Position change of manual override	●				
NC	3-port valve specifications plug assembly (C1 (A), E1 (R1) assembly)	●	●	●	●	●
NO	3-port valve specifications plug assembly (C2 (B), E2 (R2) assembly)	●	●	●	●	●

Code	Description	4F3	4F4	4F5	4F6	4F7
F Thermal class						
Blank	A (standard product)	●	●	●	●	●
X	H (Option)	●	●	●	●	●

Code	Description	4F3	4F4	4F5	4F6	4F7
G Voltage						
100 VAC	100 VAC (50/60 Hz)	●	●	●	●	●
200 VAC	200 VAC (50/60 Hz)	●	●	●	●	●
24 VDC	24 VDC	●	●	●	●	●
12 VDC	12 VDC	●	●	●	●	●
110 VAC	110 VAC (50/60 Hz)	●	●	●	●	●
220 VAC	220 VAC (50/60 Hz)	●	●	●	●	●

* Other made-to-order products						
[AC voltage]						
12V,24V,48V,115V,120V,125V		●	●	●	●	●
127V,210V,230V,240V,250V,380V						
[DC voltage]						
45V,48V,80V,100V,110V,125V		●	●	●	●	●

Code	Description	4F3	4F4	4F5	4F6	4F7
H Organizations for explosive-proof certification						
Blank	Japan Certification (TIIS)	●	●	●	●	●
CN	China Compulsory Certificate (CCC)	●	●	●	●	●

⚠ Precautions for model No. selection

*1: Only the following voltage products are available as made to order. (There are no certifications for other than the listed voltage.)

Pressure	AC[V](50/60 Hz)	12, 24, 48, 115, 120, 125, 127, 210, 230, 240, 250, 380
P	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	Number of cores	Nominal section area	Wire strand configuration	Finished outer diameter
Polyethylene cable (EV)	2-conductor	2 mm ²	7/0.6	ø10.5
600 V vinyl insulation vinyl Sheath cable (VV)	2-conductor	2 mm ²	7/0.6	ø10.5
Control vinyl insulation vinyl Sheath cable (CVV)	2-conductor	2 mm ²	7/0.6	ø10.5

[Example of model No.]

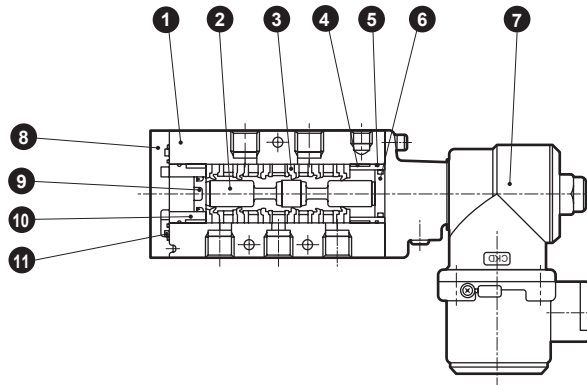
4F410E-10-GP-P-X-AC100V

- 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-bracket
- F** Thermal class : H
- G** Voltage : 100 VAC

Internal structure and parts list

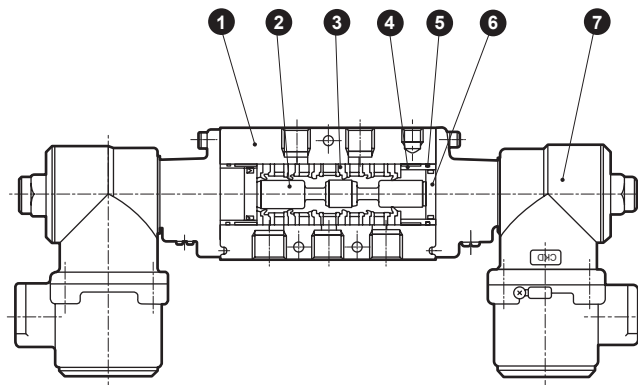
4F310E

● 2-position single



4F320E

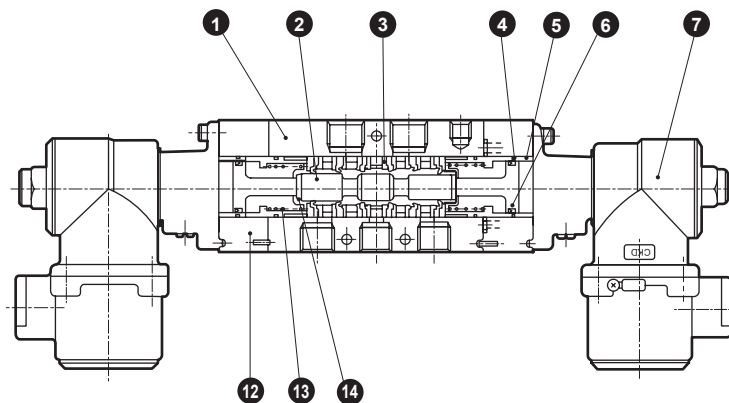
● 2-position double



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.)
4F3¹0E-(D)P-(F)-(G)
Select from How to order on page 1812.

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

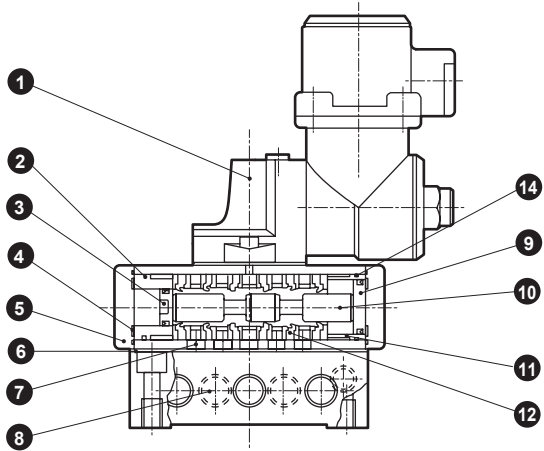
4F⁴₅⁷*0E Series

Discrete valve; sub-plate piping

Internal structure and parts list

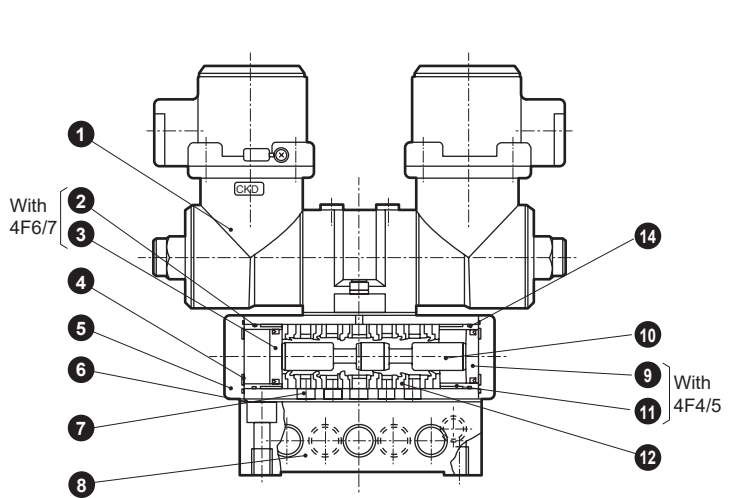
4F⁴₅⁷10E

● 2-position single



4F⁴₅⁷20E

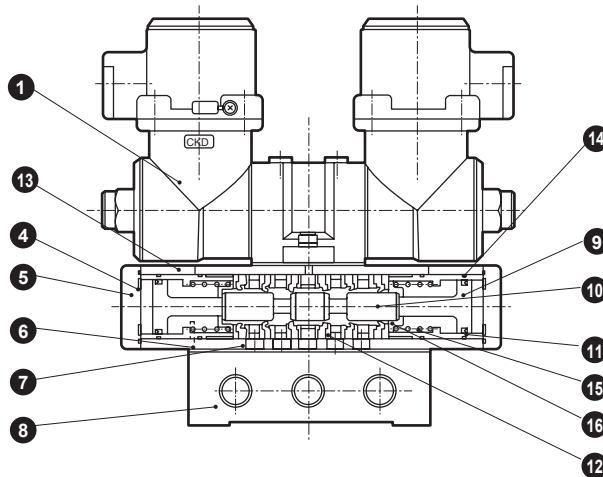
● 2-position double



4F⁴₅⁷30E/4F⁴₅⁷40E/4F⁴₅⁷50E

● 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			-
4F430E	4F430-K		4F9-106	-
4F440E	4F440-K		4F9-114	-
4F450E	4F450-K		4F9-108	-
4F510E	4F510-K		4F9-108	4F9-109
4F520E	4F520-K			-
4F530E	4F530-K		4F9-107	-
4F540E	4F540-K		4F9-115	-
4F550E	4F550-K			-
4F610E	4F610-K		4F9-117	4F9-116
4F620E	4F620-K		-	
4F630E	4F630-K		4F9-118	-
4F640E	4F640-K		4F9-122	-
4F650E	4F650-K			-
4F710E	4F710-K		4F9-121	4F9-120
4F720E	4F720-K		-	
4F730E	4F730-K		4F9-123	-
4F740E	4F740-K			-
4F750E	4F750-K			-

*1 (Actuator assembly)
4F4¹/₂0E-**○**P-**●**F-**◎**
Select from How to order on page 1812.

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)
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

4F3*0E Series

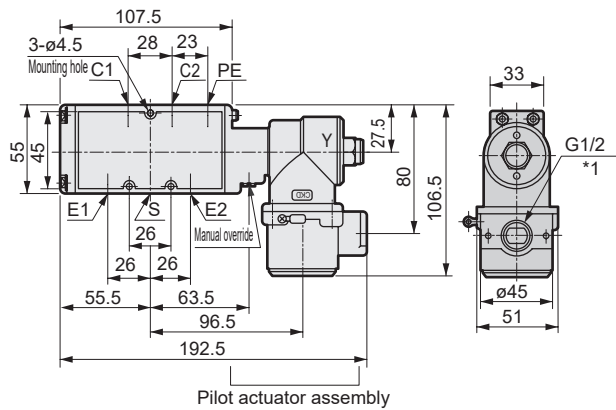
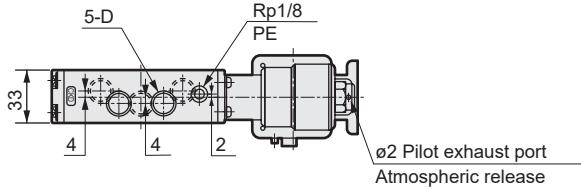
Discrete valve; body piping

Dimensions



4F310E

● 2-position single

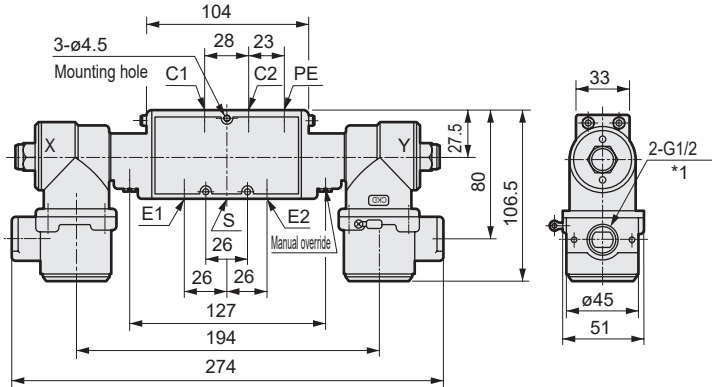
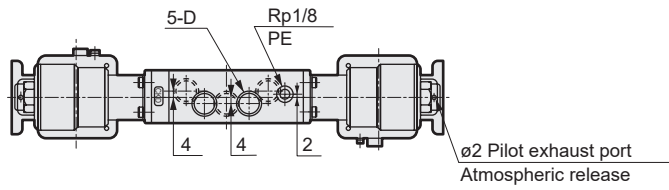


Model No.	D
*-08	Rp1/4
*-10	Rp3/8

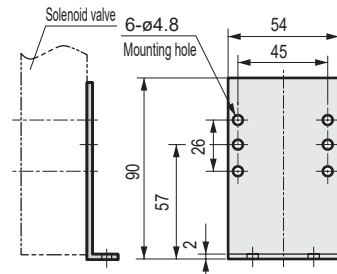
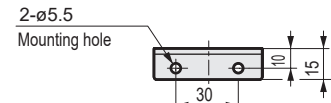
*1 If model No. "-CN", it will be NPT1/2.

4F320E

● 2-position double



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



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

4F330E

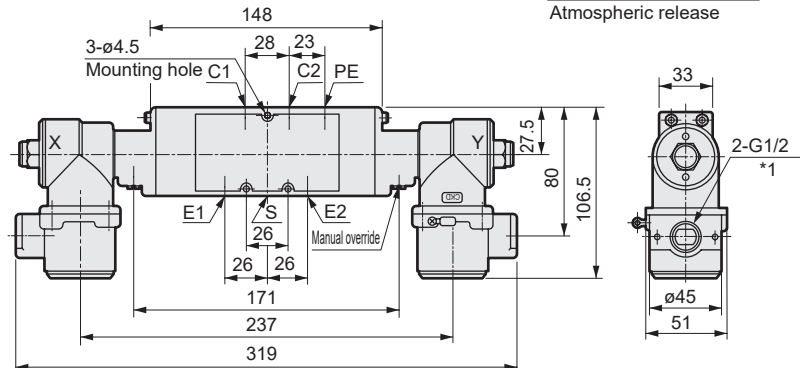
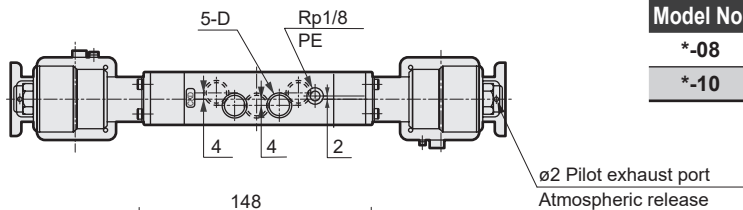
● 3-position all ports closed

4F340E

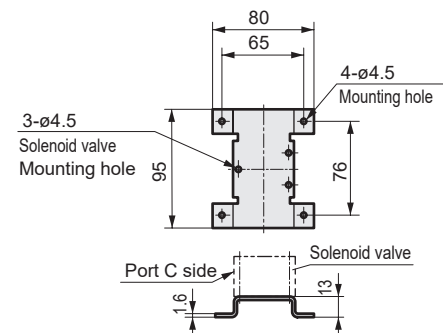
● 3-position A/B/R connection

4F350E

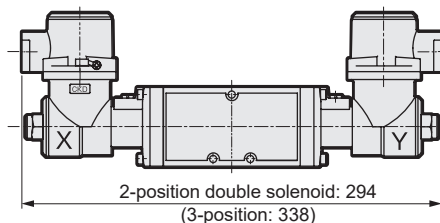
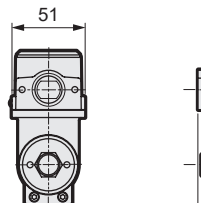
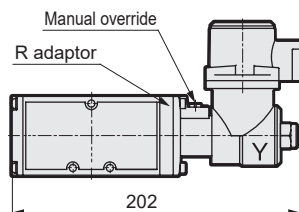
● 3-position P/A/B connection



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



● Position change of manual override(R)

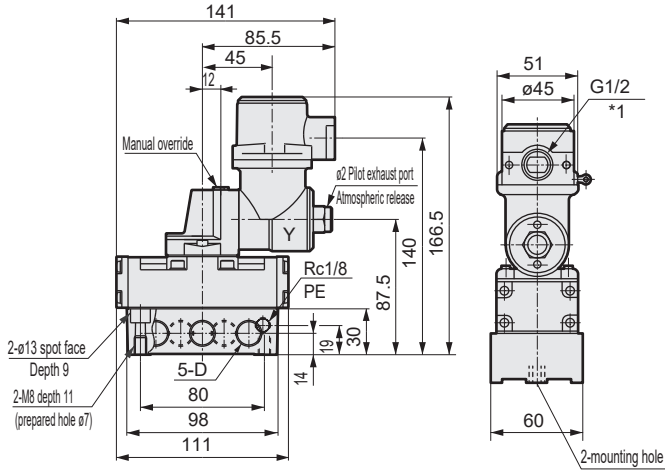
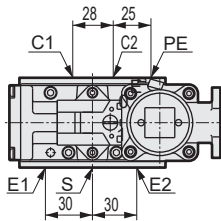


Dimensions



4F410E

● 2-position single

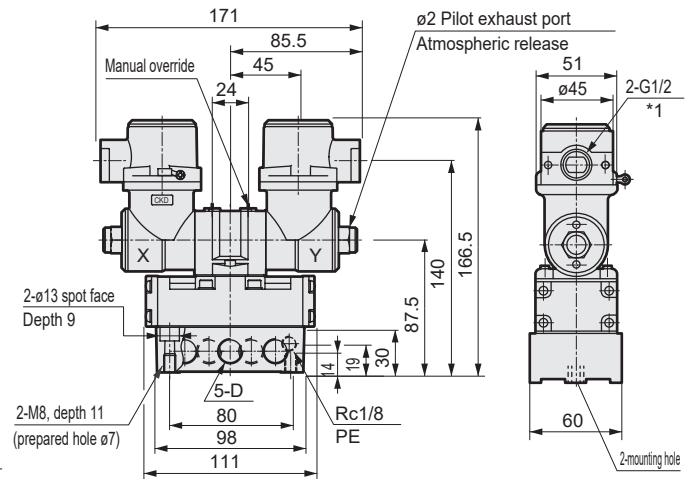
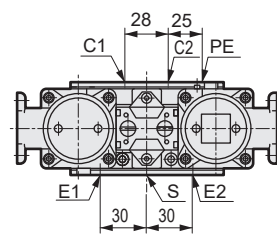


Model No.	D
*-08	Rc1/4
*-10	Rc3/8

*1 If model No. "-CN", it will be NPT1/2.

4F420E

● 2-position double



4F430E

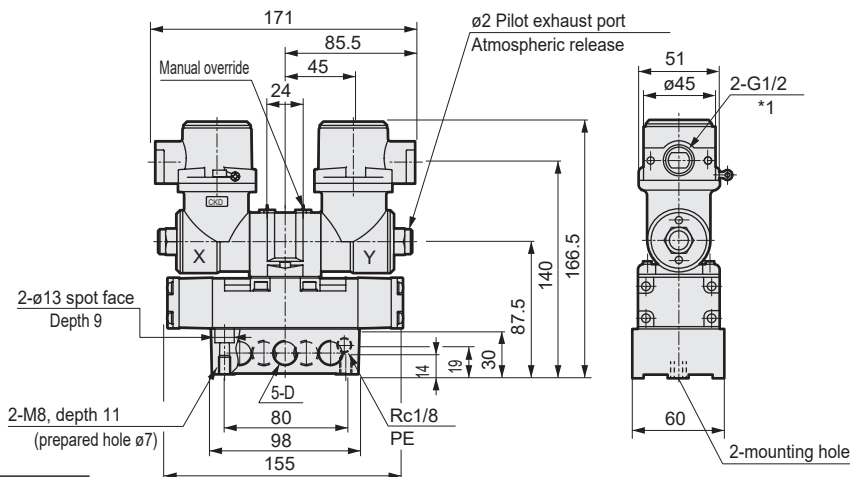
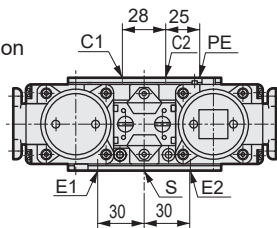
● 3-position all ports closed

4F440E

● 3-position A/B/R connection

4F450E

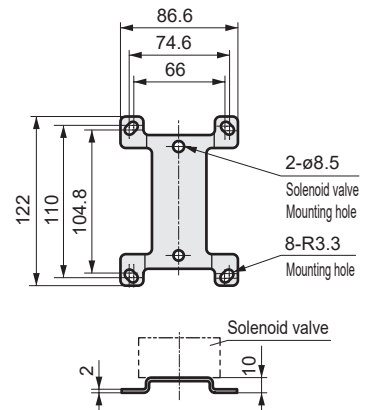
● 3-position P/A/B connection



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

● U type installation feet (P)

Material: Hot-rolled steel sheet Zinc plated treatment



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

4F5*0E Series

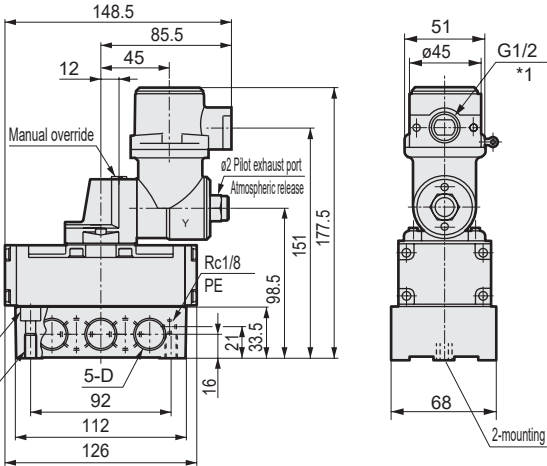
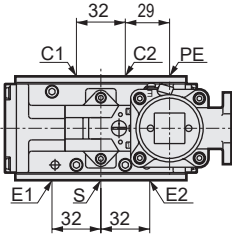
Discrete valve; sub-plate piping

Dimensions



4F510E

● 2-position single

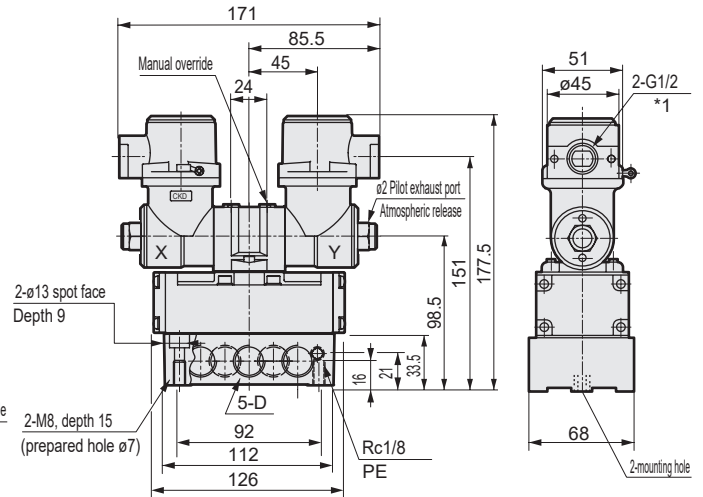
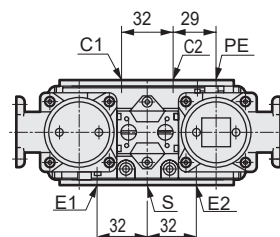


Model No.	D
*-10	Rc3/8
*-15	Rc1/2

*1 If model No. "-CN", it will be NPT1/2.

4F520E

● 2-position double



4F530E

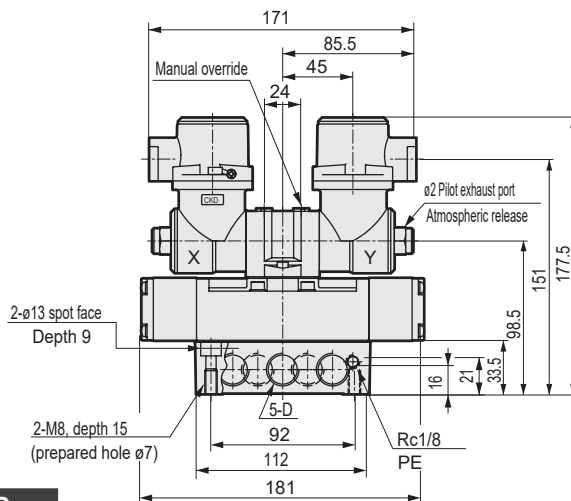
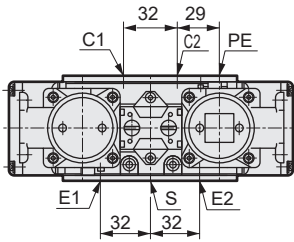
● 3-position all ports closed

4F540E

● 3-position A/B/R connection

4F550E

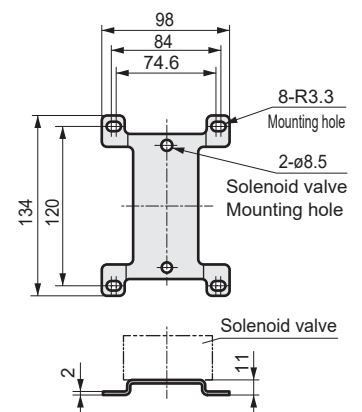
● 3-position P/A/B connection



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

● U type installation feet(P)

Material: Hot-rolled steel sheet Zinc plated treatment

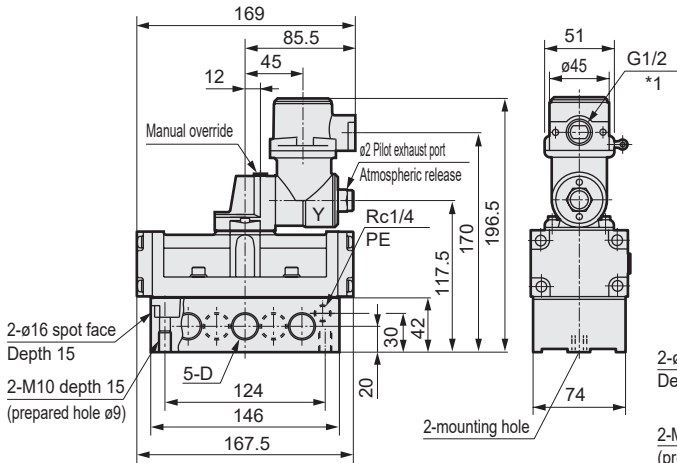
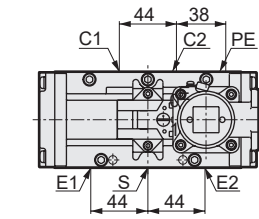


Dimensions



4F610E

● 2-position single

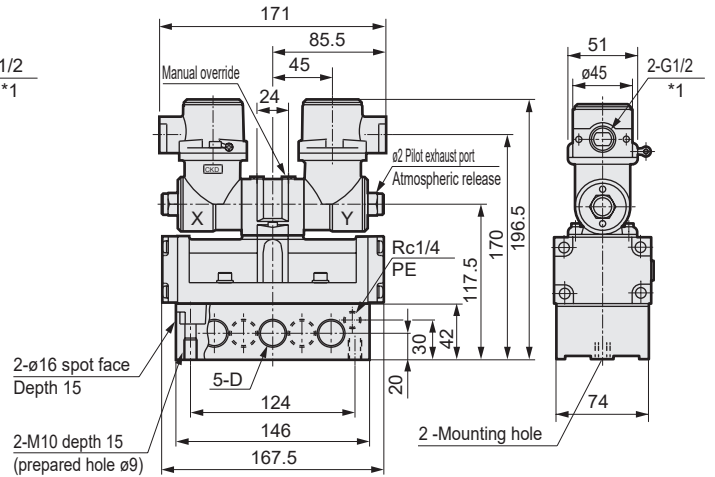
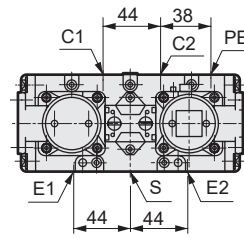


Model No.	D
*-15	Rc1/2
*-20	Rc3/4

*1 If model No. "-CN", it will be NPT1/2.

4F620E

● 2-position double



4F630E

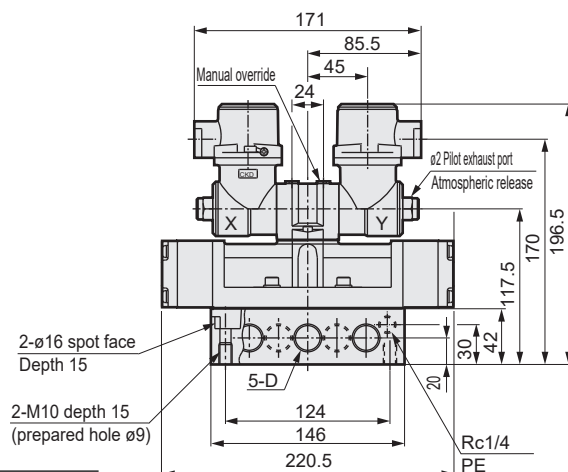
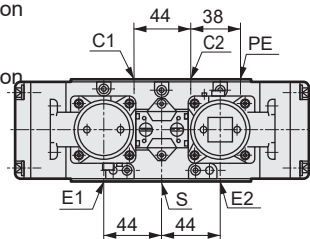
● 3-position all ports closed

4F640E

● 3-position A/B/R connection

4F650E

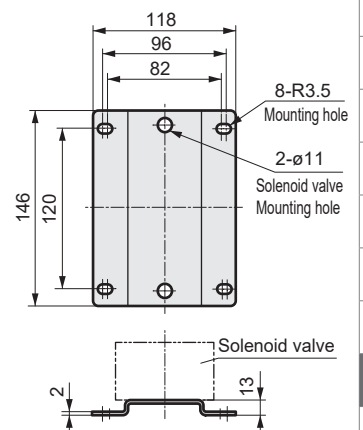
● 3-position P/A/B connection



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)
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

4F7*0E Series

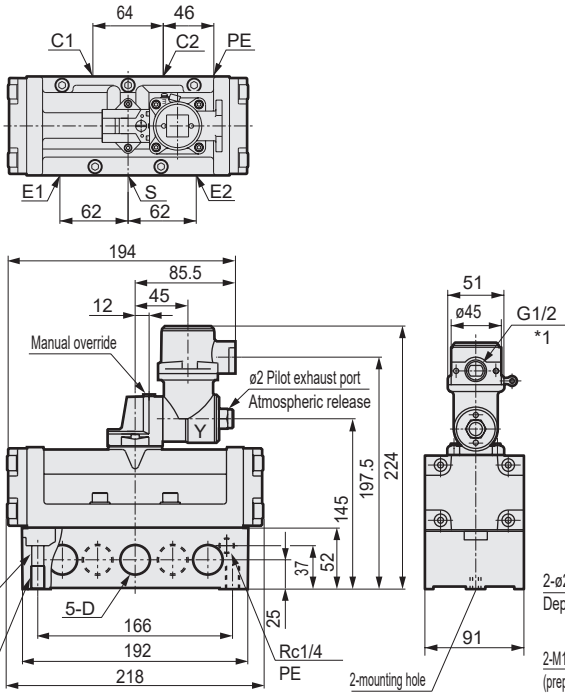
Discrete valve; sub-plate piping



- 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

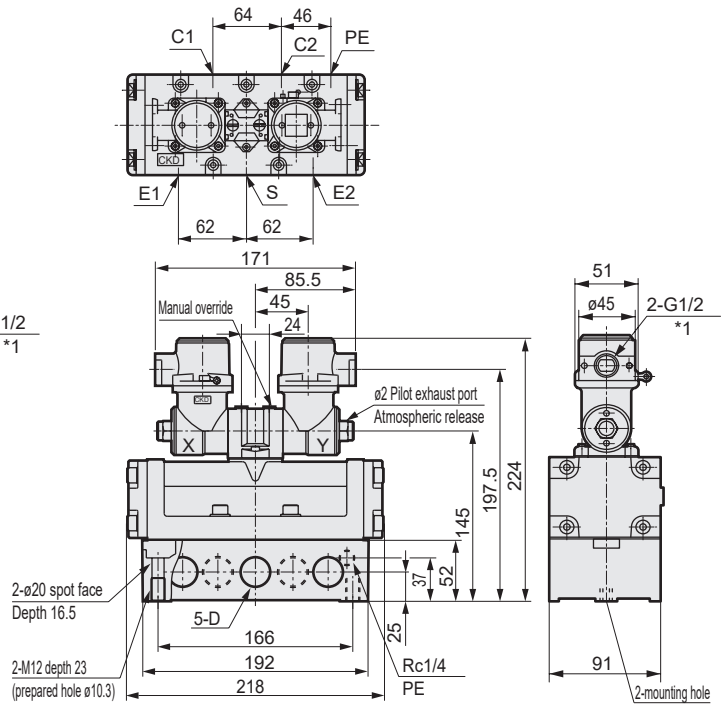
4F710E

● 2-position single



4F720E

● 2-position double



Model No.	D
*-20	Rc3/4
*-25	Rc 1

*1 If model No. "-CN", it will be NPT1/2.

4F730E

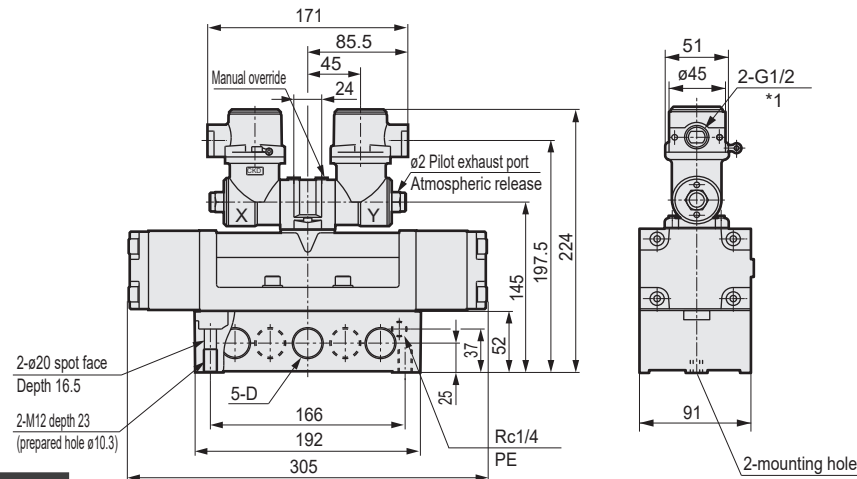
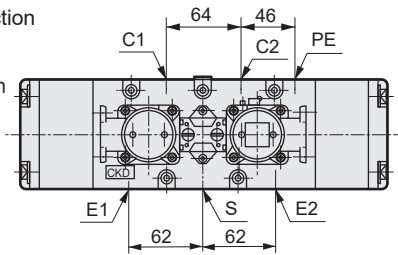
● 3-position all ports closed

4F740E

● 3-position A/B/R connection

4F750E

● 3-position P/A/B connection



Model No.	D
*-20	Rc3/4
*-25	Rc 1

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

