



# Discrete valve Sub base porting 4GB1/2/3 Series

• Applicable cylinder bore size: 20 to 100 mm



CAD DATA AVAILABLE.

## Common specifications

Descriptions		
Working fluid		Compressed air
Valve and solenoid type		Pilot operated soft spool valve
Min. working pressure	MPa	0.2 (2-position, 3-position)
Max. working pressure	MPa	0.7
Withstanding pressure	MPa	1.05
Ambient temperature	°C	-5 to 55
Fluid temperature	°C	5 to 55
Manual override		Non-locking/lock common type
Pilot exhaust method	Internal pilot	Main valve/pilot valve common exhaust type
	External pilot	Main valve/pilot valve individual exhaust type
Lubrication	Note 1	Not required
Protection structure	Note 2	Dust proof
Vibration/impact	m/s <sup>2</sup>	50 or less/300 or less
Working environment		Not to be subject to corrosive gas

Note 1. For lubrication, please use turbine oil Class 1 ISOVG32.  
Too much lubrication, intermittent lubrication may cause unstable operation.

Note 2. Not to be subject to water drip, oil etc.  
For DIN terminal box specifications, IP65 (jet-proof type).  
However, applicable code outer diameter and specified tightening torque should be observed.

<Reference> Pressure unit is MPa. Conversion ratio is 1MPa=10.1972kgf/cm<sup>2</sup>.

## Electrical specifications

Descriptions			
Rated voltage	DC	12, 24	
	V AC	100	
Rated voltage fluctuation range		±10%	
Holding current	A	DC24V	0.023 (0.025)
		DC12V	0.046 (0.050)
	Note 3	AC100V	0.010 (0.012)
Power consumption	W	DC24V	0.55(0.6)
		Note 3 DC12V	0.55(0.6)
Apparent power	VA	AC100V	1.0 (1.2)
Heat proof class		B	
Temperature rise	°C	50	
Surge suppressor		Option	
Indicator		(Option) indicator light	

Note 3. For indicator light, refer to the value in ( ).

## Individual specifications

Descriptions		4GB1	4GB2	4GB3
Port size	Port A/B	Rc1/8	Rc1/4	Rc1/4, Rc3/8
	Port P/R1/R2	Rc1/8	Rc1/4	Rc1/4, Rc3/8

Descriptions		4GB1		4GB2		4GB3		
		P → A/B	A/B → R1/R2	P → A/B	A/B → R1/R2	P → A/B	A/B → R1/R2	
Effective sectional area	2-position	mm <sup>2</sup>						
			All ports closed	6.0	6.0	13	13	23
	3-position	ABR connection	6.0	6.5	11	13	19	22
		PAB connection	7.0	6.0	15	11	24	19

Descriptions			4GB1		4GB2		4GB3	
			When ON	When OFF	When ON	When OFF	When ON	When OFF
Response time	2-position	ms						
		Single	12	12	19	19	25	28
	Double	9	-	18	-	24	-	
	3-position	ABR connection	8	15	17	30	23	45

Value of light, surge suppressor is shown. Response time is the value at supply pressure 0.5MPa, 20 °C, not lubricated. The value varies depending on pressure and oil quality.

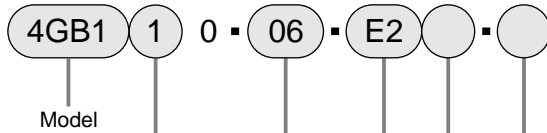
Descriptions			4GB1	4GB2	4GB3	
Mass	2-position	Single	Grommet lead wire	79 (37)	154 (72)	214 (95)
			E-connector	81 (39)	156 (74)	216 (97)
			DIN terminal box	-	176 (94)	236 (117)
		Double	Grommet lead wire	94 (52)	169 (87)	230 (111)
			E-connector	98 (56)	173 (91)	234 (115)
			DIN terminal box	-	213 (131)	274 (155)
	3-position	All ports blocked	Grommet lead wire	95 (53)	180 (98)	239 (120)
			E-connector	99 (57)	184 (102)	243 (124)
			DIN terminal box	-	224 (141)	283 (164)

For no piping adapter, refer to the value in ( ). Value of E-connector is including socket assembly (lead wire 300mm).  
For mass of EJ connector, add 16g/piece to E-connector.

# 4GB1/2/3 Series

Discrete valve: Sub base porting

## How to order



**A Solenoid position**

**B Port size**

**C Electric connection**

Please refer to Page 93 about surge suppressor/indicator light circuit diagram.

**D Options**

**E Voltage**

Model

	4GB1	4GB2	4GB3
4SA/B0	●	●	●
4SA/B1	●	●	●
4GA/B	●	●	●
MN4GA/B	●	●	●
4GA/B (master)	●	●	●
MN3S0/ MN4S0	●	●	●
4TB	●	●	●
4L2-4/ LMFO	●	●	●
4KA/B	●	●	●
4F	●	●	●
PV5/ CMF	●	●	●
3MA/B0	●	●	●
3PA/B	●	●	●
P/M/B	●	●	●
NP/NAP/ NVP	●	●	●
4F**0E	●	●	●
HMV/ HSV	●	●	●
Uniwire system	●	●	●
SKH	●	●	●
PCD/ FS/FD	●	●	●
Discrete	●	●	●
3, 5 port pilot operated valve	●	●	●

Symbol	Descriptions	4GB1	4GB2	4GB3
<b>A Solenoid position</b>				
1	2-position single	●	●	●
2	2-position double	●	●	●
3	3-position all ports closed	●	●	●
4	3-position ABR connection	●	●	●
5	3-position PAB connection	●	●	●

<b>B Port size</b>				
Port	Port A/B	Port P/R1/R2 ②=Rc1/8 ③=Rc1/4 ④=Rc3/8		
06	Rc1/8	②		
08	Rc1/4		③	③
10	Rc3/8			④

<b>C Electric connection</b>					
Blank	Grommet lead wire (300mm)	Note 1	4GB1	4GB2	4GB3
B	DIN terminal box (Pg7) surge suppressor/indicator light			●	●
<b>E-connector (radial/axial)</b>					
E0	Lead wire (300mm)		●	●	●
E00	Lead wire (500mm)		●	●	●
E01	Lead wire (1000mm)		●	●	●
E02	Lead wire (2000mm)		●	●	●
E03	Lead wire (3000mm)		●	●	●
E2	Lead wire (300mm) surge suppressor/indicator light		●	●	●
E20	Lead wire (500mm) surge suppressor/indicator light		●	●	●
E21	Lead wire (1000mm) surge suppressor/indicator light		●	●	●
E22	Lead wire (2000mm) surge suppressor/indicator light		●	●	●
E23	Lead wire (3000mm) surge suppressor/indicator light		●	●	●
E0N	No lead wire (no socket)		●	●	●
E2N	No lead wire, with (no socket) surge suppressor/light		●	●	●
E3	No lead wire (socket/terminal attached) surge suppressor/light		●	●	●
E1	No lead wire (socket/terminal attached)		●	●	●
<b>EJ-connector (socket with cover, radial/axial)</b>					
E01J	Lead wire (1000mm)		●	●	●
E02J	Lead wire (2000mm)		●	●	●
E03J	Lead wire (3000mm)		●	●	●
E21J	Lead wire (1000mm) surge suppressor/indicator light		●	●	●
E22J	Lead wire (2000mm) surge suppressor/indicator light		●	●	●
E23J	Lead wire (3000mm) indicator light		●	●	●

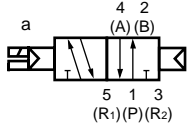
<b>D Option</b>					
Blank	Blank	Note 2	4GB1	4GB2	4GB3
H	Check valve		●	●	●
K	External pilot		●	●	●
A	Ozone/coolant proof		●	●	●
F	Filter incorporated in Port P/A/B		●	●	●

<b>E Voltage</b>					
			4GB1	4GB2	4GB3
1	AC100V (rectified bridge incorporated)		●	●	●
3	DC24V		●	●	●
4	DC12V		●	●	●

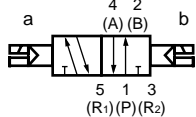
is not available.

## JIS symbol

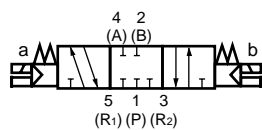
• 5 Port valve  
2-position single



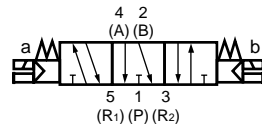
2-position double



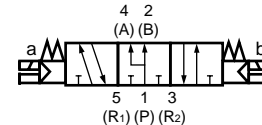
3-position all ports closed



3-position A/B/R connection



3-position P/A/B connection



## Caution for model election

Note 1. AC100V is not available for grommet lead wire specifications.

Note 2. Check valve specifications are not available for 3-position all ports closed and PAB connection.

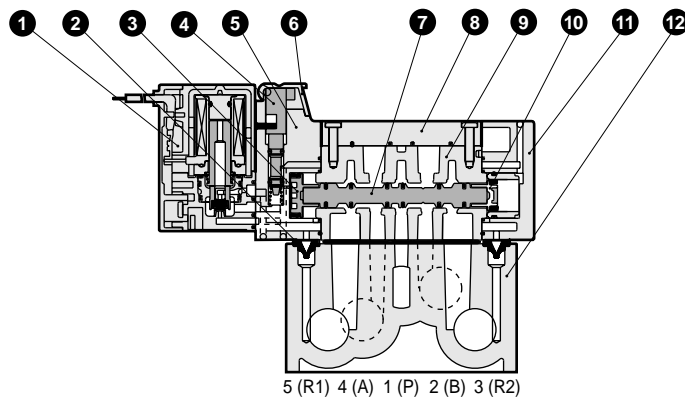
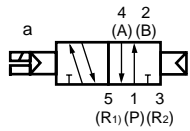
# 4GB1 Series

Discrete valve: Sub base porting

## Internal structure and part list

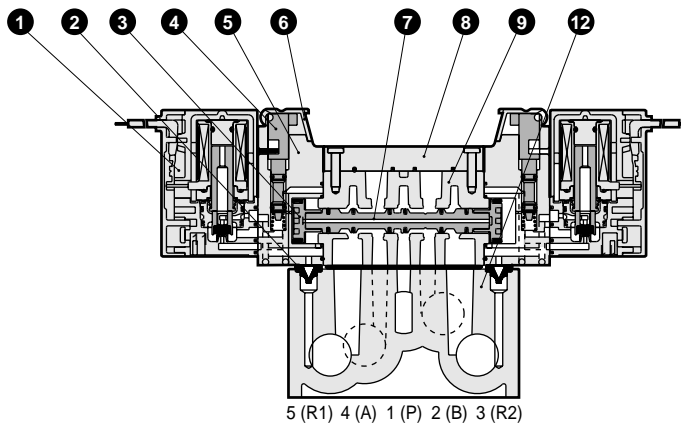
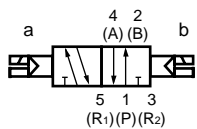
### 4GB110

- 2-position single
- Grommet lead wire(Blank)



### 4GB120

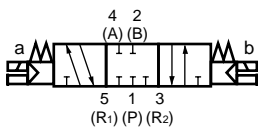
- 2-position double
- Grommet lead wire(Blank)



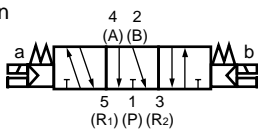
### 4GB140

- 3-position
- Grommet lead wire(Blank)

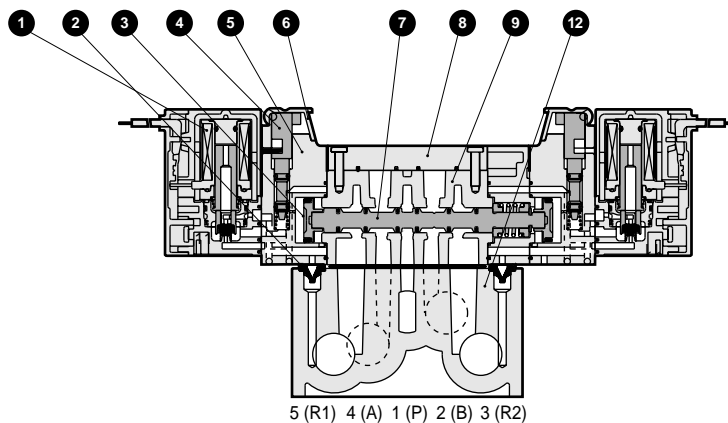
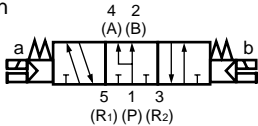
All ports closed



A/B/R connection



P/A/B connection



## Main part list

No.	Parts name	Material
1	Coil assembly	-
2	Pilot exhaust check valve	Nitrile rubber
3	Piston D assembly	-
4	Manual override	Resin
5	Piston room	Resin
6	Protective cover of manual override	Resin
7	Spool assembly	-
8	Plate	Resin
9	Body	Aluminum alloy die casting
10	Piston S assembly	-
11	Cap	Resin
12	Sub base	Aluminum alloy die casting

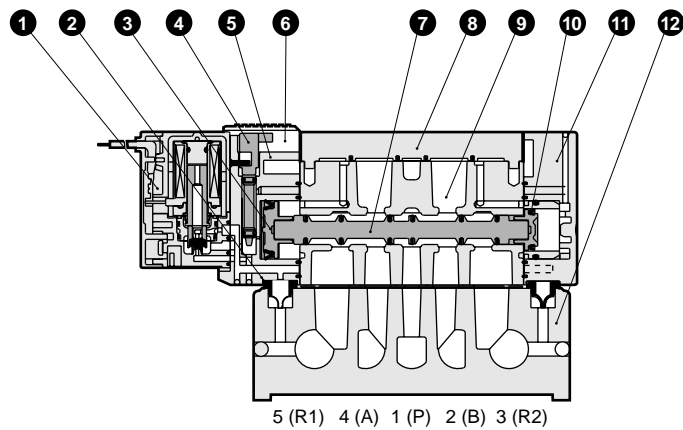
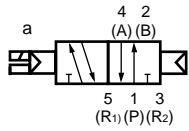
## Repair parts list

No.	Parts name	Material
1	Coil assembly	4G-[Electric connection]- * - COIL- [Voltage] Blank: Standard A: Ozone proof Blank: Grommet lead wire

## Internal structure and part list

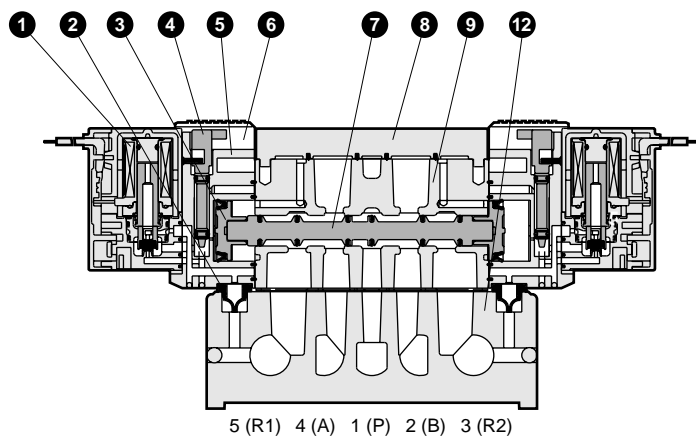
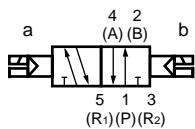
### 4GB210/4GB310

- 2-position single
- Grommet lead wire(Blank)



### 4GB220/4GB320

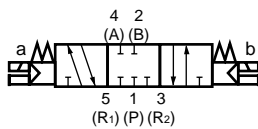
- 2-position double
- Grommet lead wire(Blank)



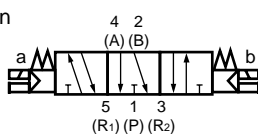
### 4GB2<sup>3</sup>/<sub>5</sub>40/4GB3<sup>3</sup>/<sub>5</sub>40

- 3-position
- Grommet lead wire(Blank)

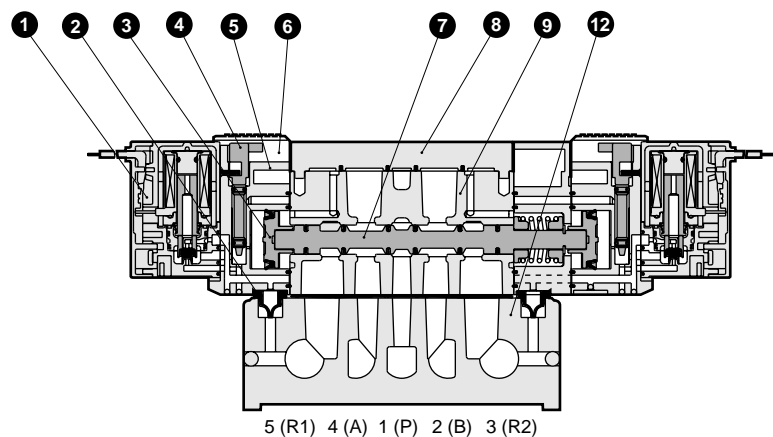
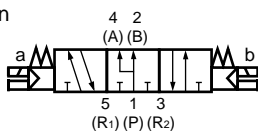
All ports closed



A/B/R connection



P/A/B connection



## Main part list

No.	Parts name	Material
1	Coil assembly	-
2	Pilot exhaust check valve	Nitrile rubber
3	Piston D assembly	-
4	Manual override	Resin
5	Piston room	Resin
6	Protective cover of manual override	Resin
7	Spool assembly	-
8	Plate	Resin
9	Body	Aluminum alloy die casting
10	Piston S assembly	-
11	Cap	Resin
12	Sub base	Aluminum alloy die casting

## Repair parts list

No.	Parts name	Material
1	Coil assembly	4G-[Electric connection]- * - COIL- [Voltage] Blank: Standard A: Ozone proof Blank: Grommet lead wire

4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B (master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH

PCD/  
FS/FD

Discrete

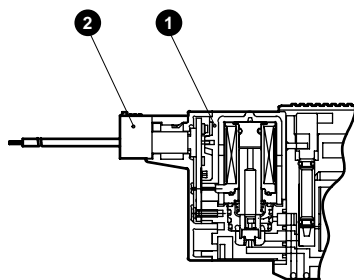
3, 5 port pilot operated valve

# 4GB1/2/3 Series

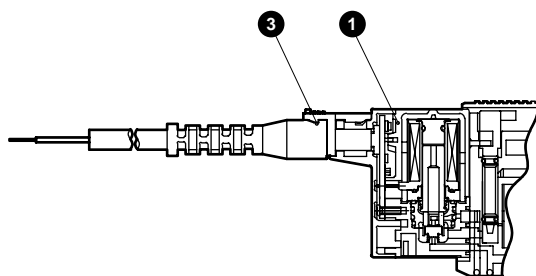
Discrete valve: Sub base porting

## Internal structure and part list

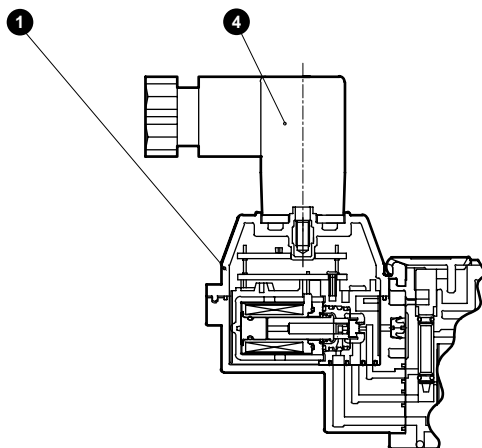
- E-connector type (E\*\*)



- EJ-connector type (E\*\*J)



- DIN terminal box type (B)



### Main part list

No.	Parts name	Material
1	Coil assembly	
2	E-connector socket assembly	-
3	Socket with cover assembly	-
4	DIN terminal box assembly	-


### Repair parts list

No.	Parts name	Material
1	Coil assembly	4G-[Electric connection]- * - COIL- [Voltage] Blank: Standard A: Ozone proof E* : E-connector type E* J: Socket with cover type B : DIN terminal box type When B, DIN terminal box included
2	E-connector socket assembly	4G-SOCKET ASSY-E**-[Voltage]
3	Socket with cover assembly	4G-SOCKET ASSY-E**J
4	DIN terminal box assembly	4G-TERMINAL BOX-[Voltage]

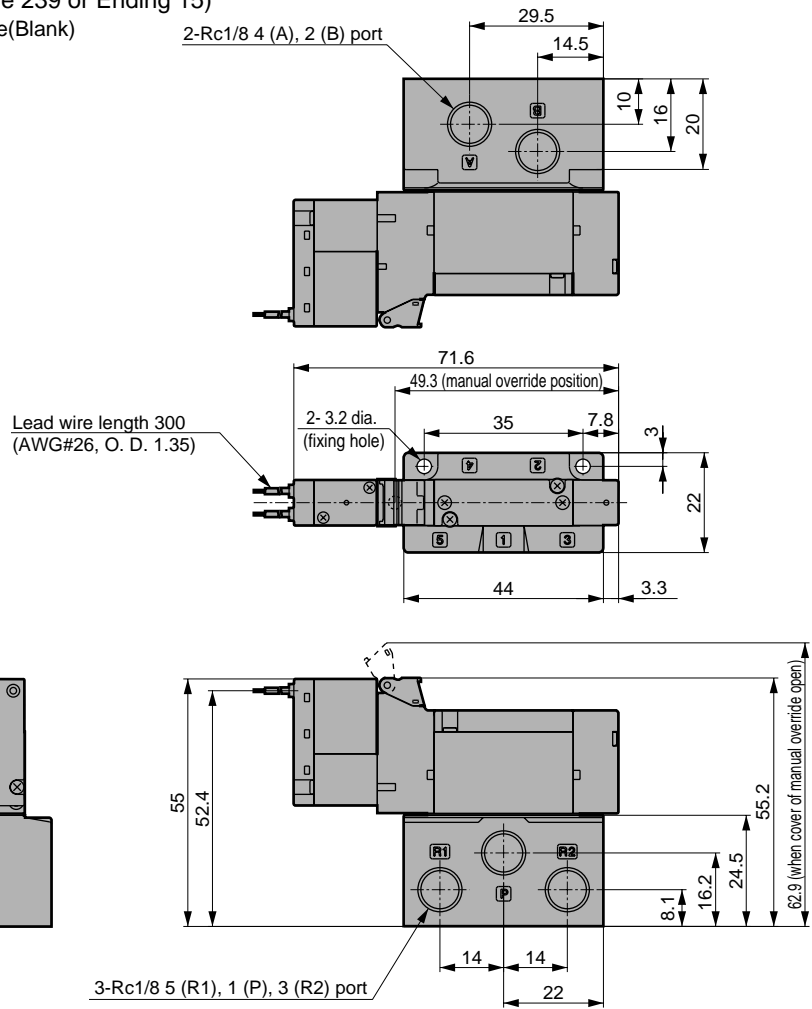
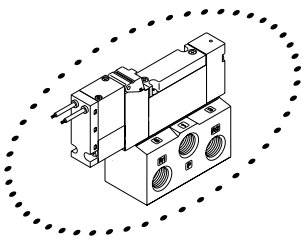
# 4GB1 Series

Discrete valve: Sub base porting

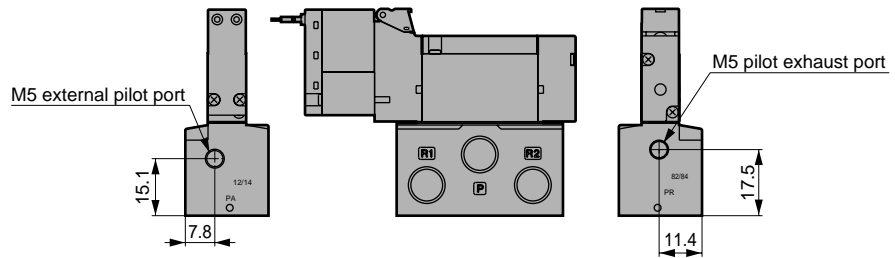
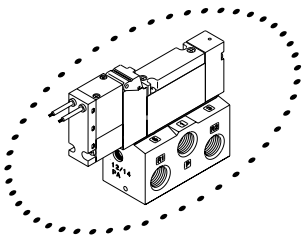
## Dimensions

4GB110  (File name: Page 239 or Ending 15)

- 2-position single grommet lead wire (Blank)

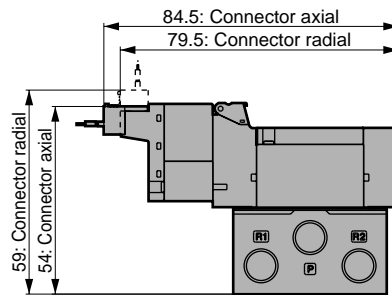
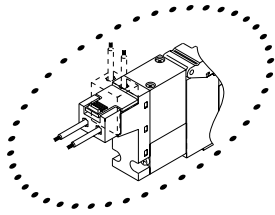


- External pilot (K)



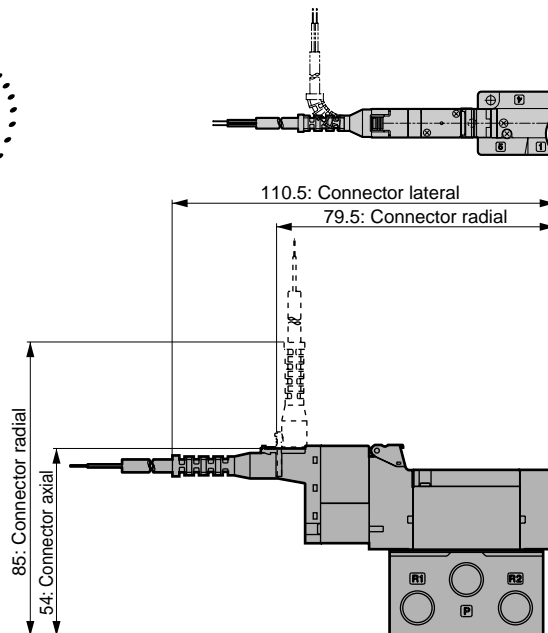
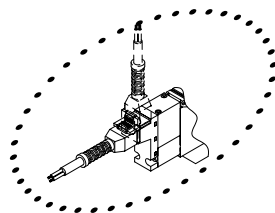
## Dimensions

• E-connector type(E)



Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 3.5mm longer.

• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 3.5mm longer.

4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B  
(master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH


PCD/  
FS/FD

Discrete  
3, 5 port pilot operated valve

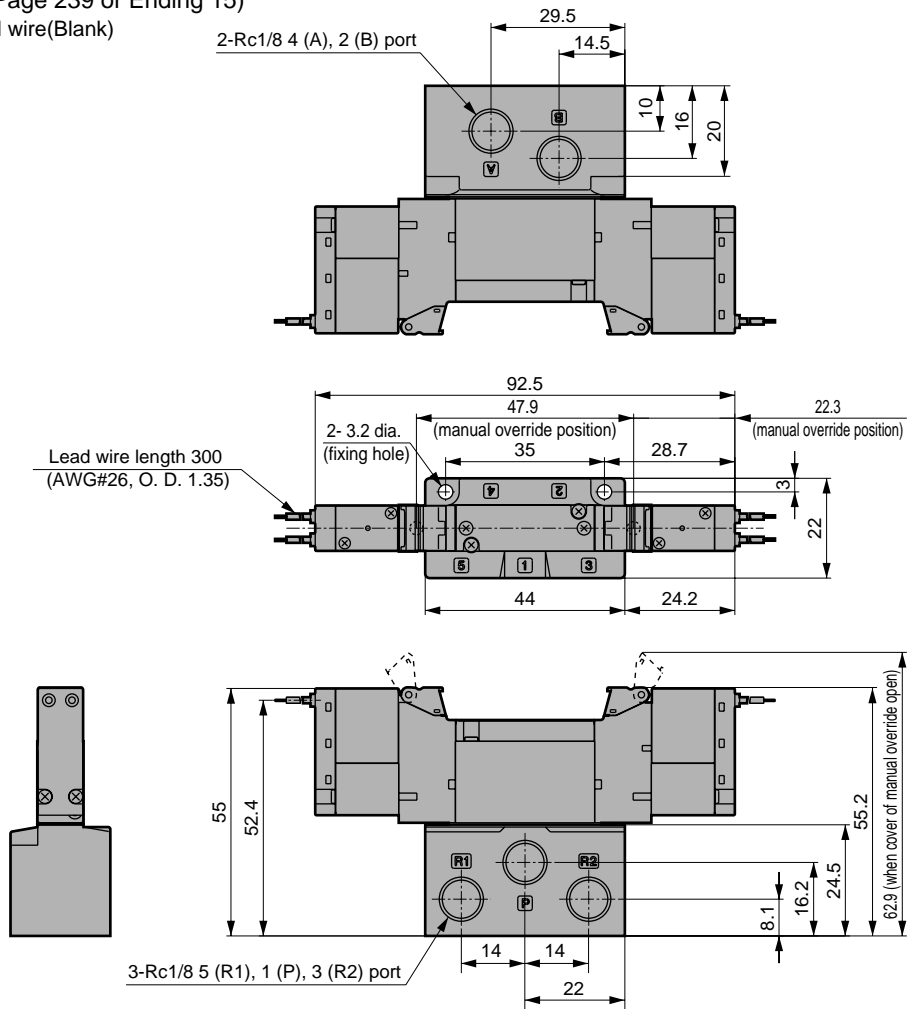
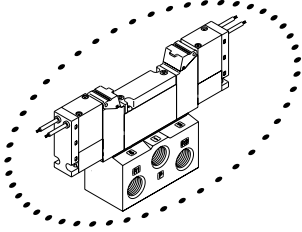
# 4GB1 Series

Discrete valve: Sub base porting

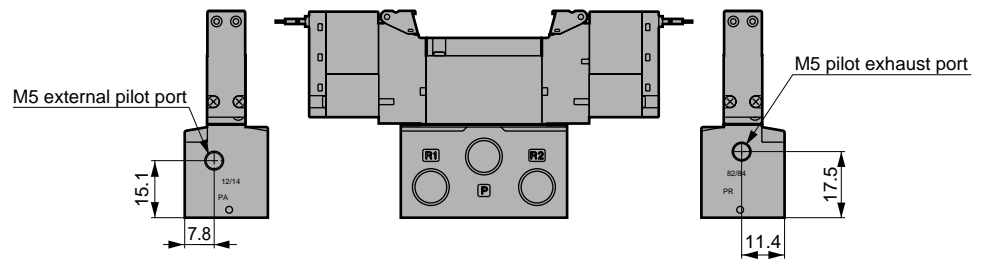
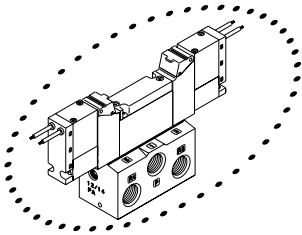
## Dimensions

4GB120  (File name: Page 239 or Ending 15)

• 2-position double grommet lead wire (Blank)



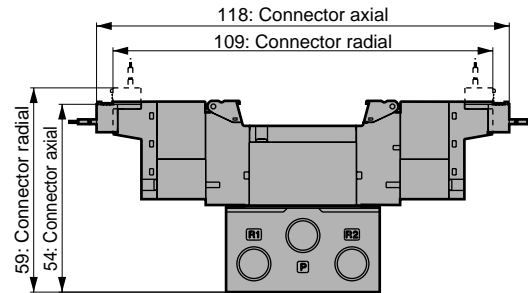
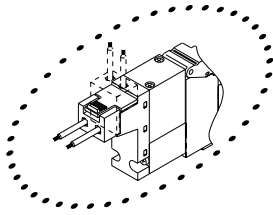
• External pilot(K)





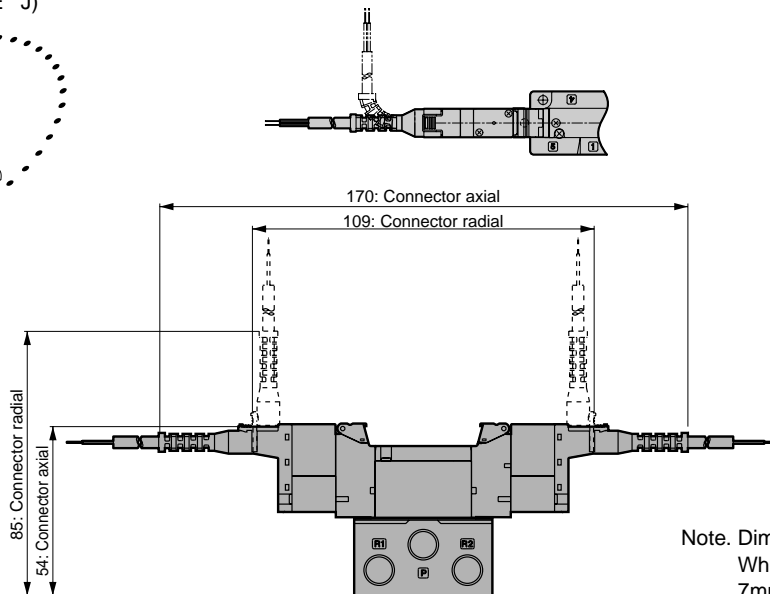
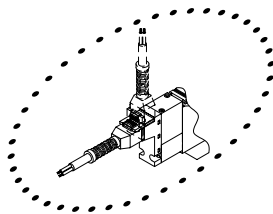
## Dimensions

• E-connector type(E)



Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 7mm longer.

• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 7mm longer.

4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B  
(master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH


PCD/  
FS/FD

Discrete  
3, 5 port pilot operated valve

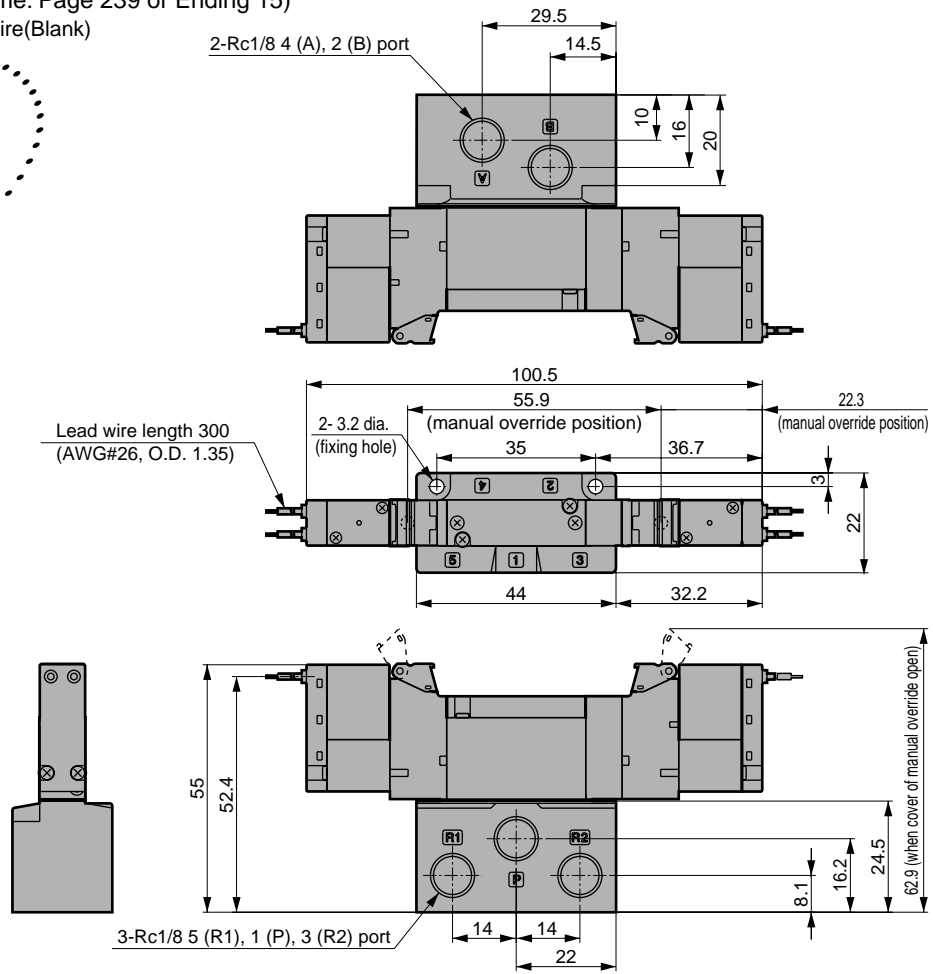
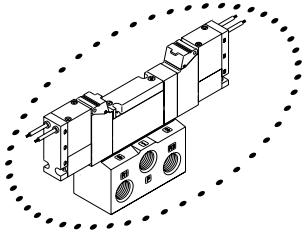
# 4GB1 Series

Discrete valve: Sub base porting

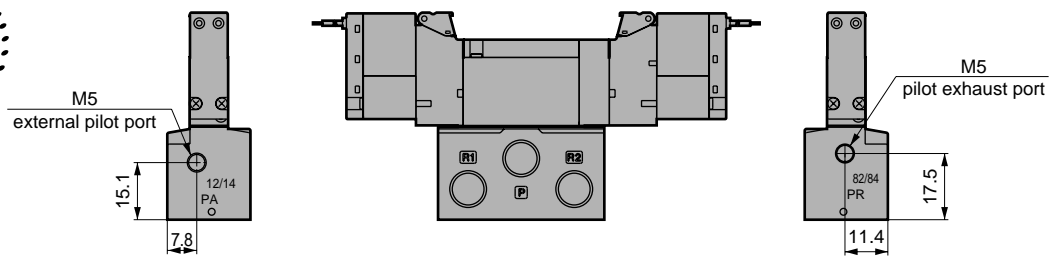
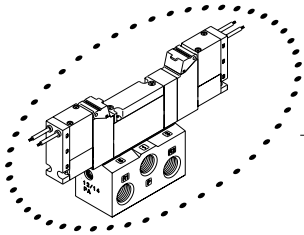
## Dimensions

4GB130  (File name: Page 239 or Ending 15)

• 3-position grommet lead wire (Blank)

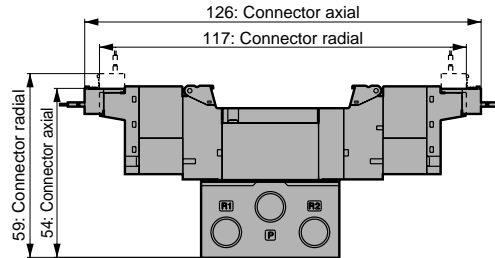
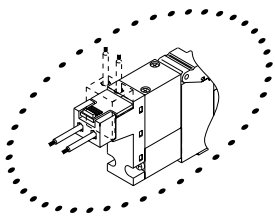


• External pilot (K)



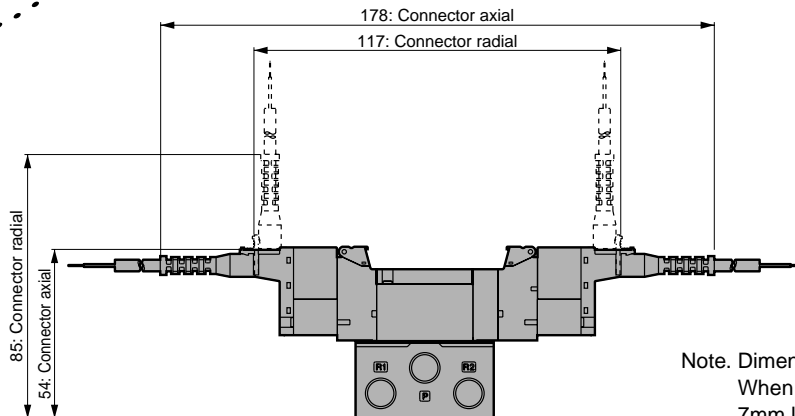
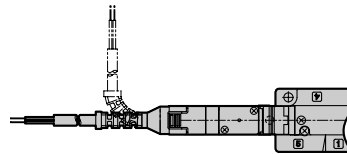
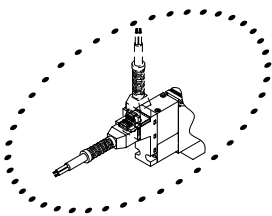
## Dimensions

• E-connector type(E)



Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 7mm longer.

• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 7mm longer.

4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B  
(master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH


PCD/  
FS/FD

Discrete  
3, 5 port pilot operated valve

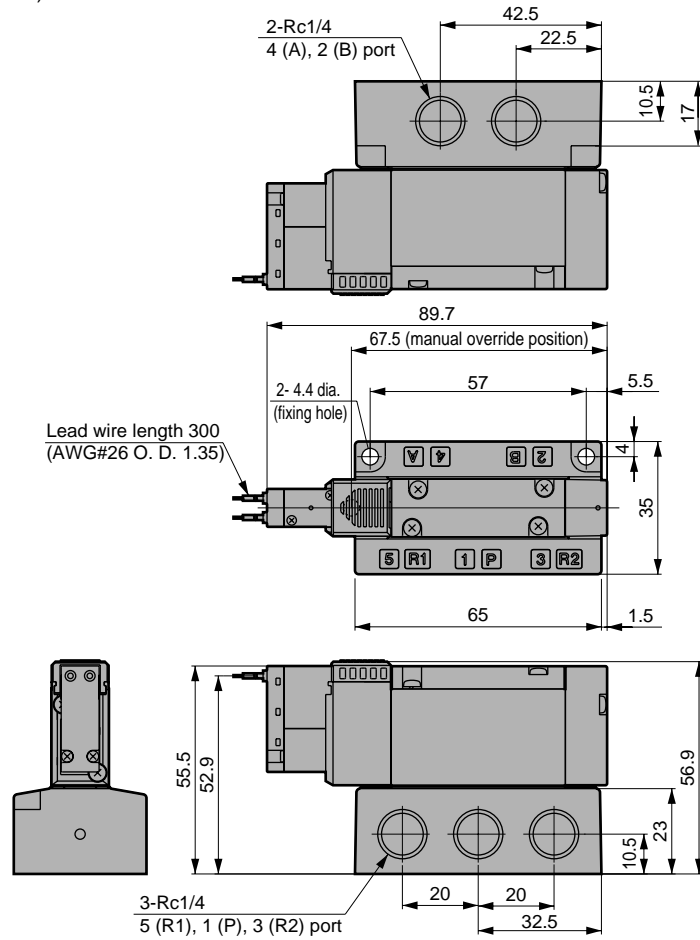
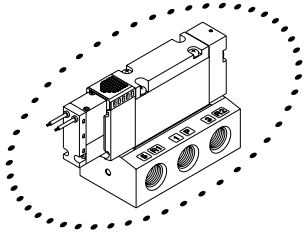
# 4GB2 Series

Discrete valve: Sub base porting

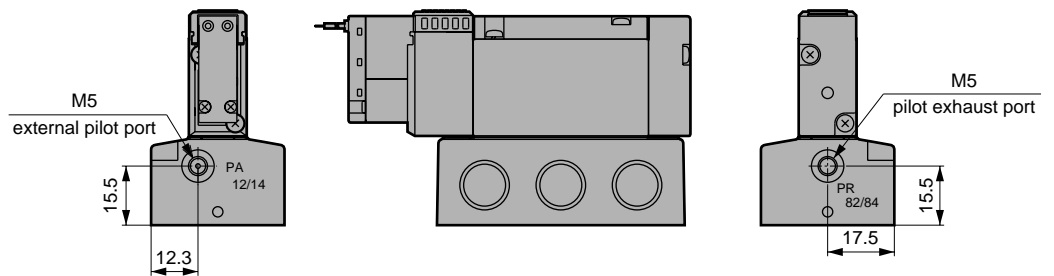
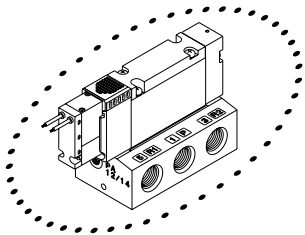
## Dimensions

4GB210  (File name: Page 239 or Ending 15)

- 2-position single grommet lead wire(Blank)

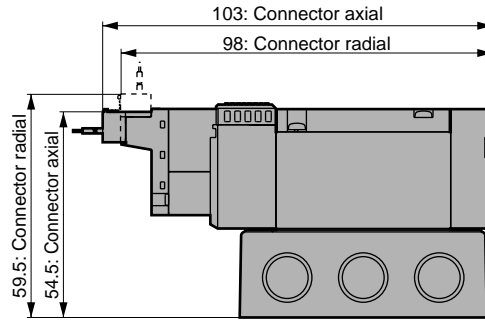
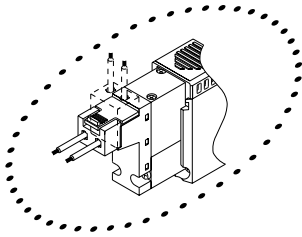


- External pilot(K)



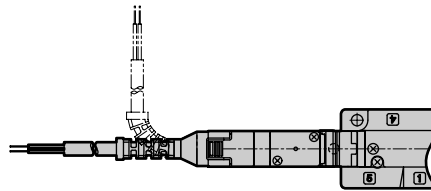
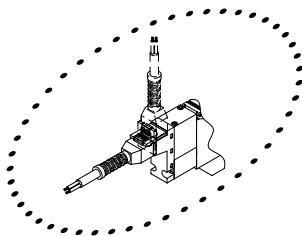
### Dimensions

• E-connector type(E)

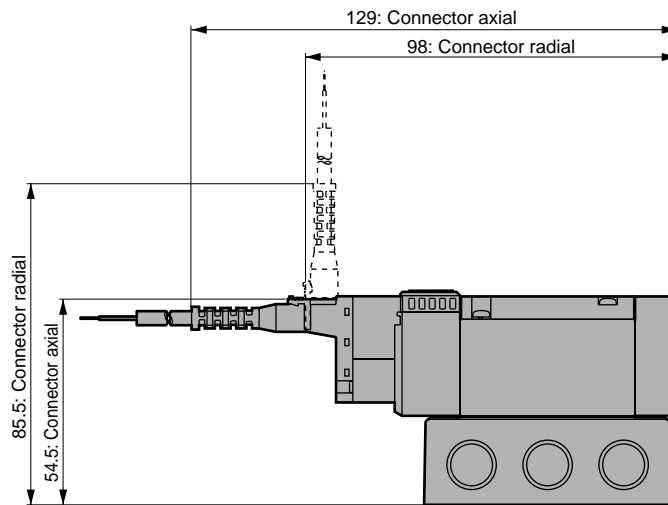


Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 3.5mm longer.

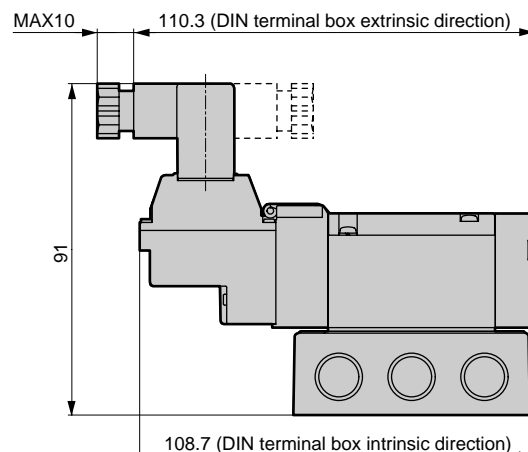
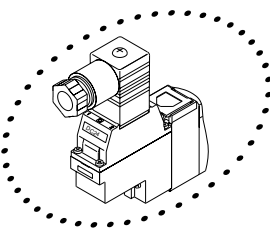
• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 3.5mm longer.



• DIN terminal box type(B)



4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B (master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH


PCD/  
FS/FD

Discrete  
3, 5 port pilot operated valve

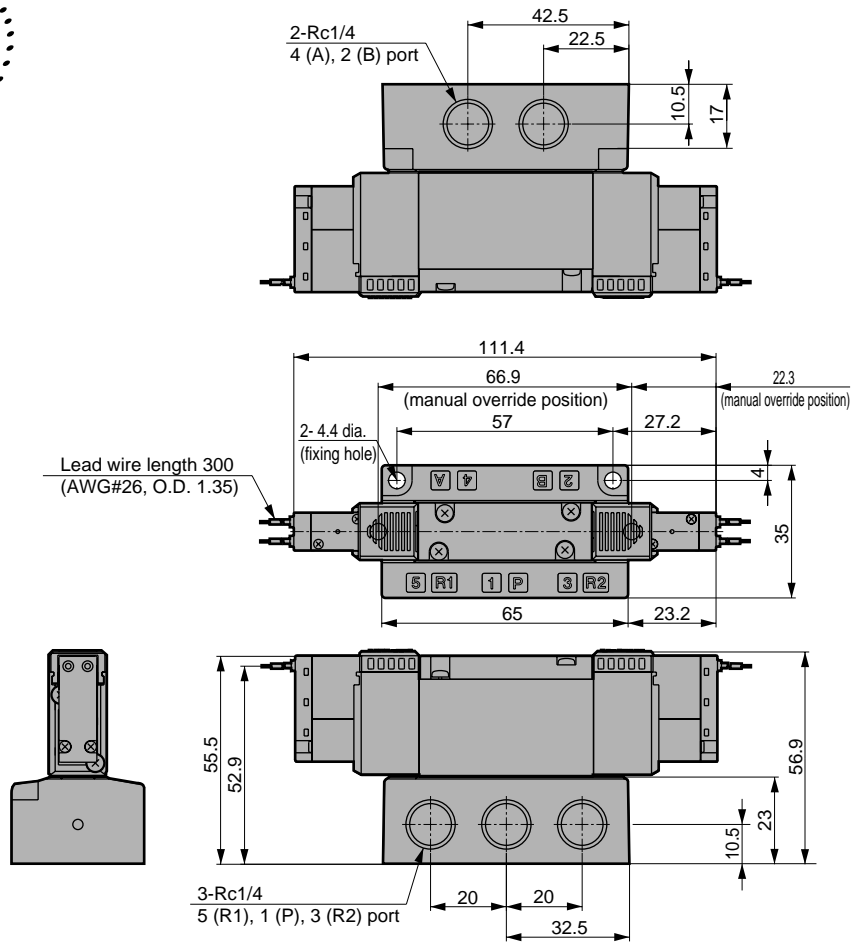
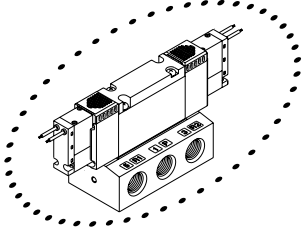
# 4GB2 Series

Discrete valve: Sub base porting

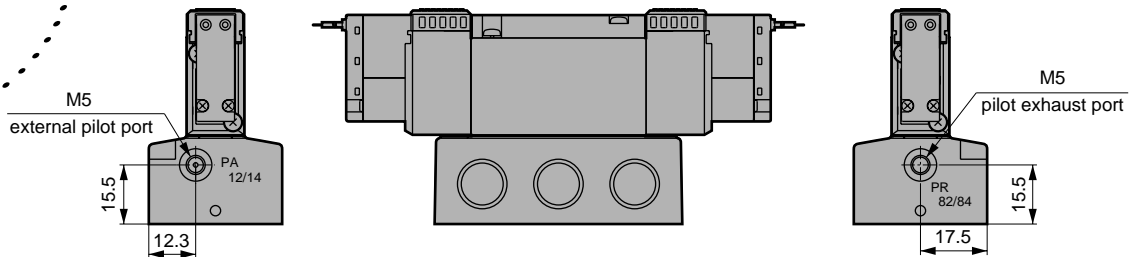
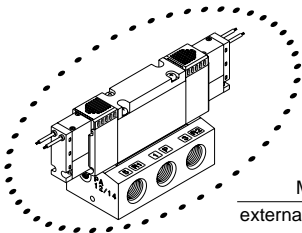
## Dimensions

4GB220  (File name: Page 239 or Ending 15)

- 2-position double grommet lead wire (Blank)

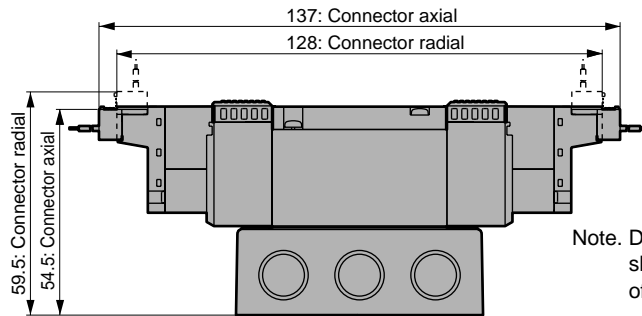
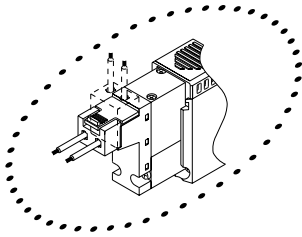


- External pilot (K)



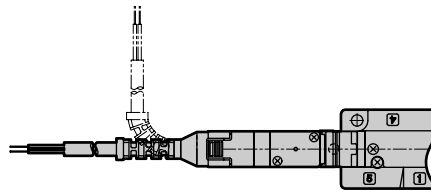
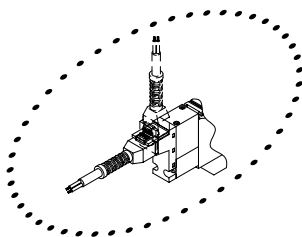
### Dimensions

• E-connector type(E)

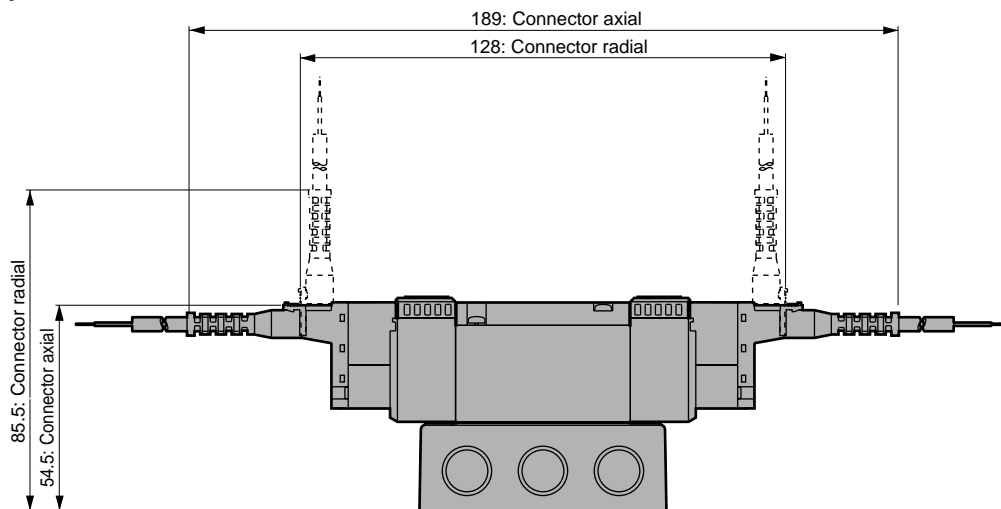


Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.

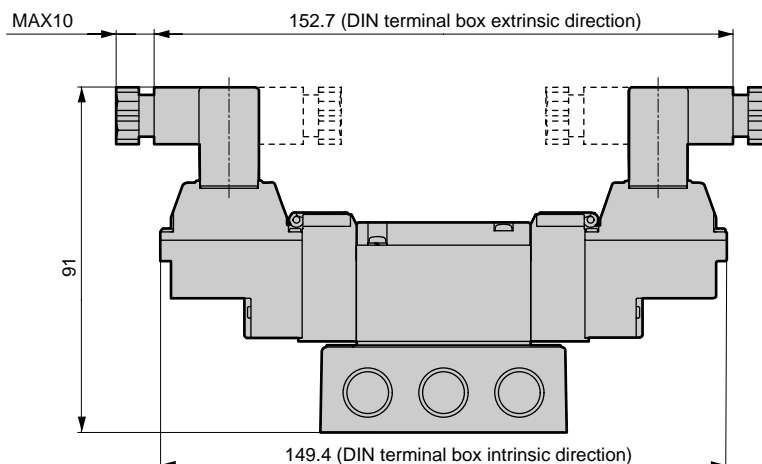
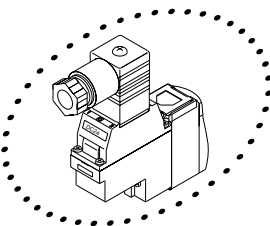
• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.



• DIN terminal box type(B)



4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B (master)

MN3S0/ MN4S0

4TB

4L2-4/ LMF0

4KA/B

4F

PV5/ CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/ NVP

4F\*\*0E

HMV/ HSV

Uniwire system

SKH

PCD/ FS/FD


Discrete

3, 5 port pilot operated valve

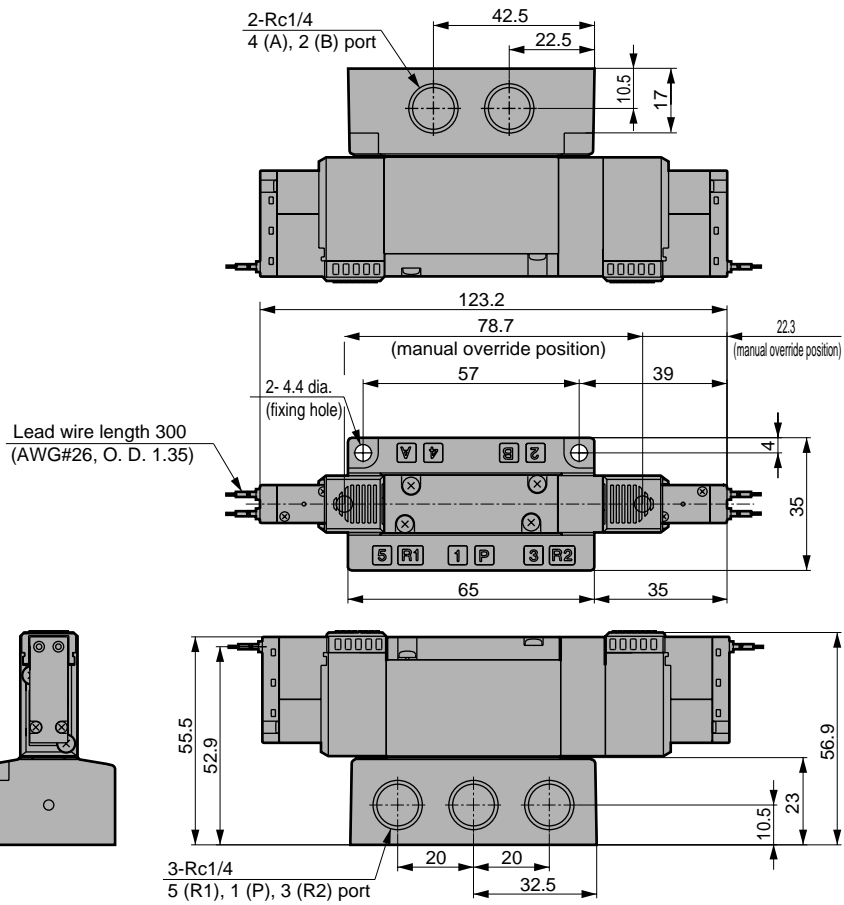
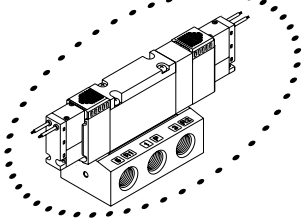
# 4GB2 Series

Discrete valve: Sub base porting

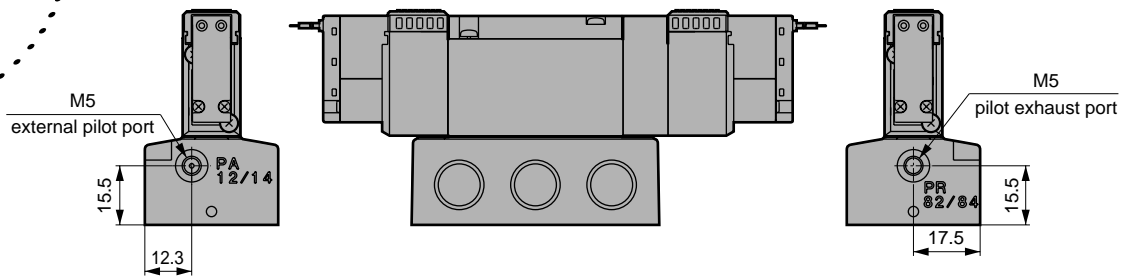
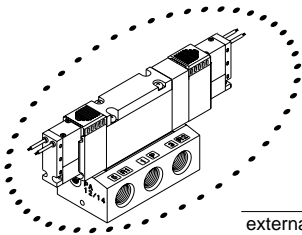
## Dimensions

4GB2<sup>3</sup>/<sub>4</sub>0  (File name: Page 239 or Ending 15)

• 3-position grommet lead wire(Blank)



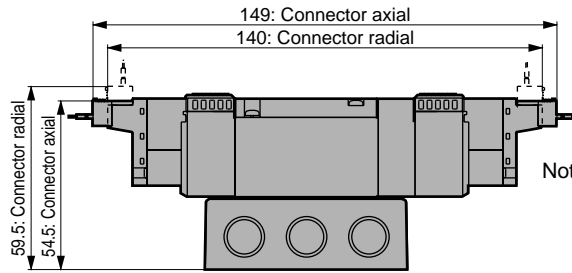
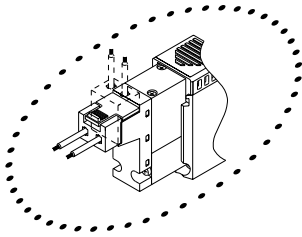
• External pilot(K)





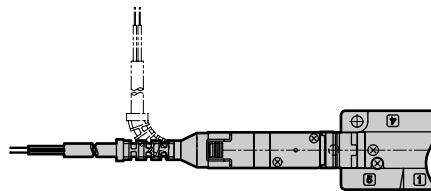
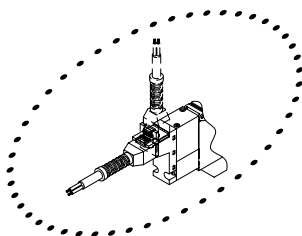
### Dimensions

• E-connector type(E)

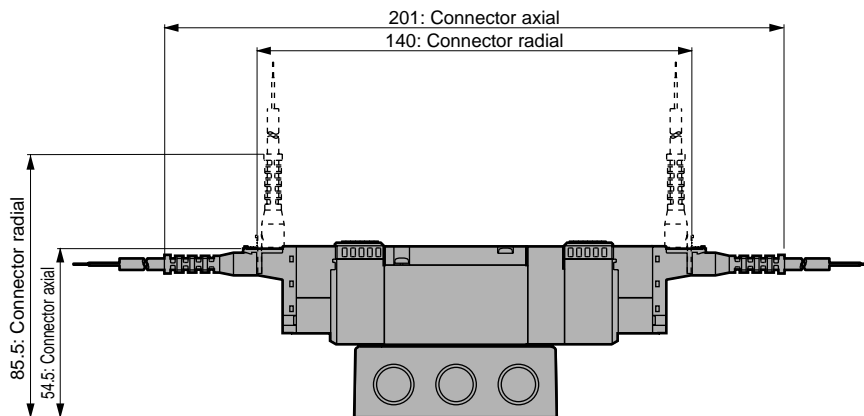


Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.

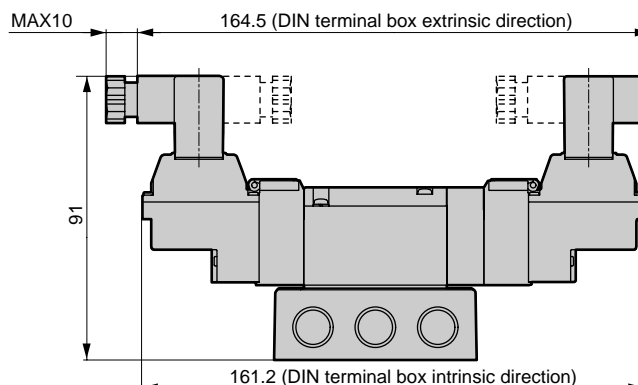
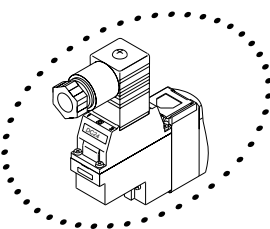
• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.



• DIN terminal box type(B)



4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B  
(master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH

PCD/  
FS/FD


Discrete

3, 5 port pilot operated valve

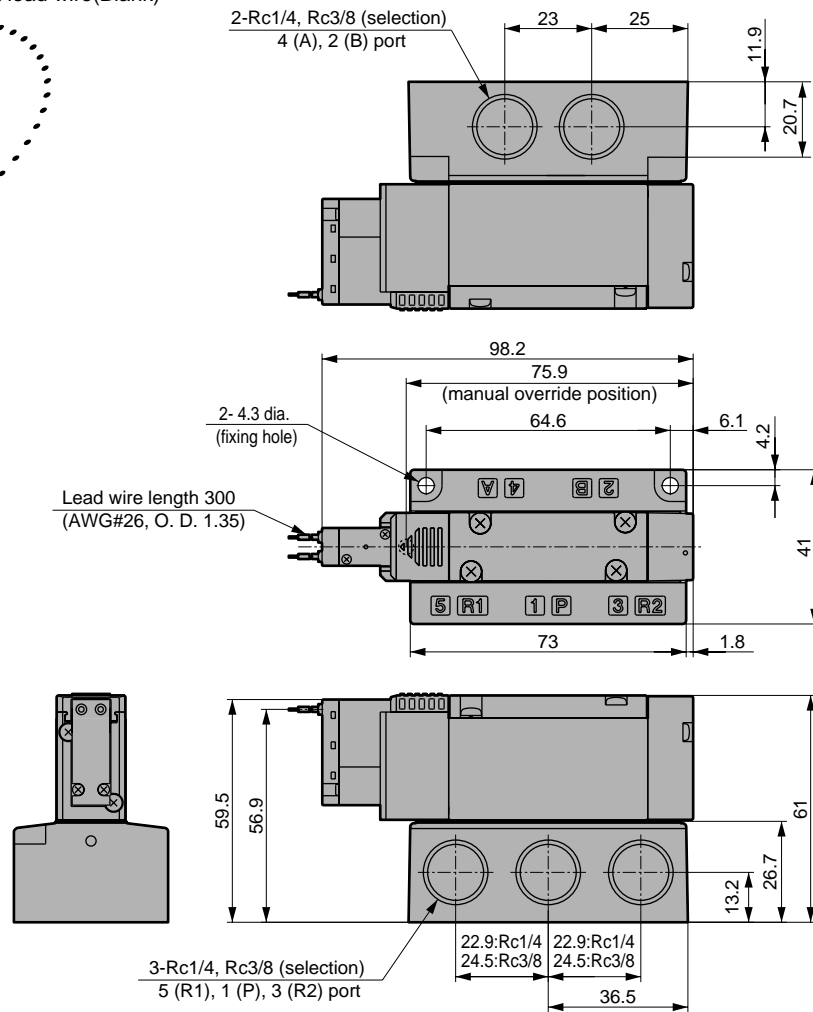
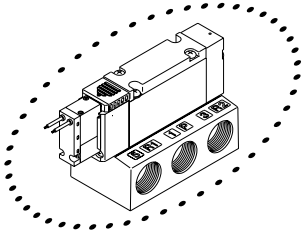
# 4GB3 Series

Discrete valve: Sub base porting

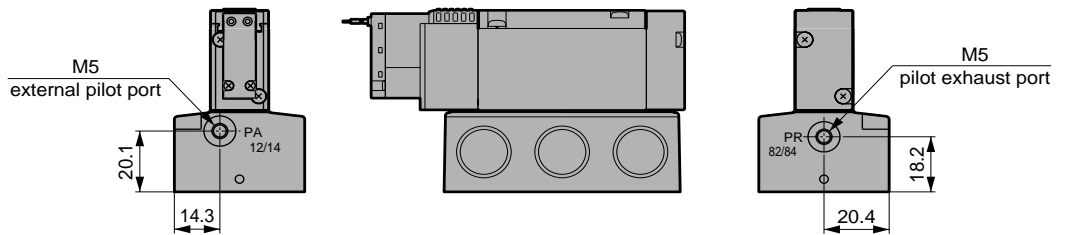
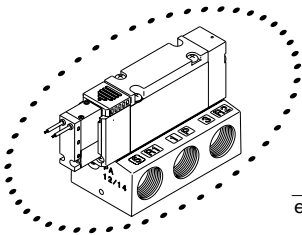
## Dimensions

4GB310  (File name: Page 239 or Ending 15)

• 2-position single grommet lead wire (Blank)

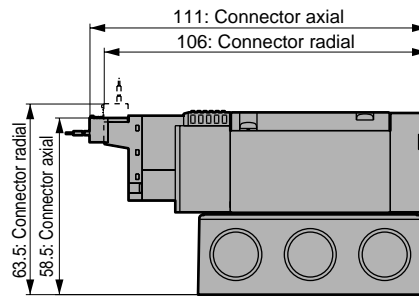
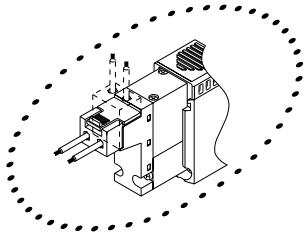


• External pilot(K)



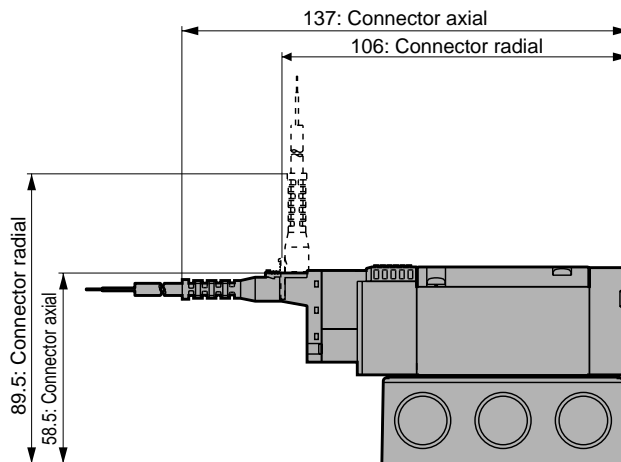
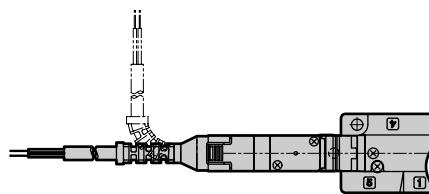
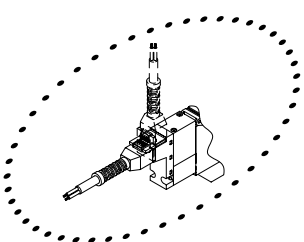
### Dimensions

• E-connector type(E)



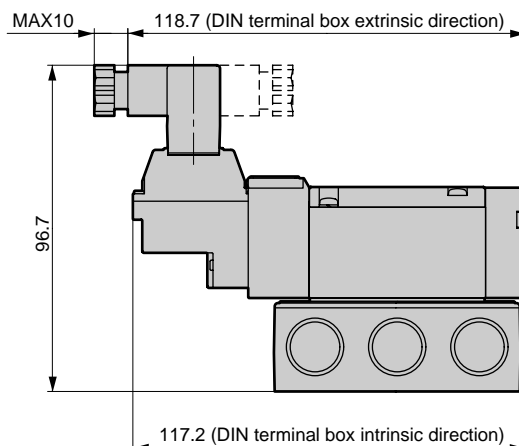
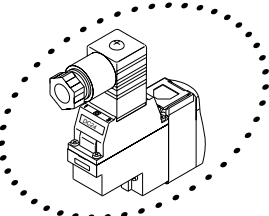
Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 3.5mm longer.

• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown.  
When AC100V, overall length of valve is 3.5mm longer.

• DIN terminal box type(B)



4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B  
(master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH

PCD/  
FS/FD


Discrete

3, 5 port pilot operated valve

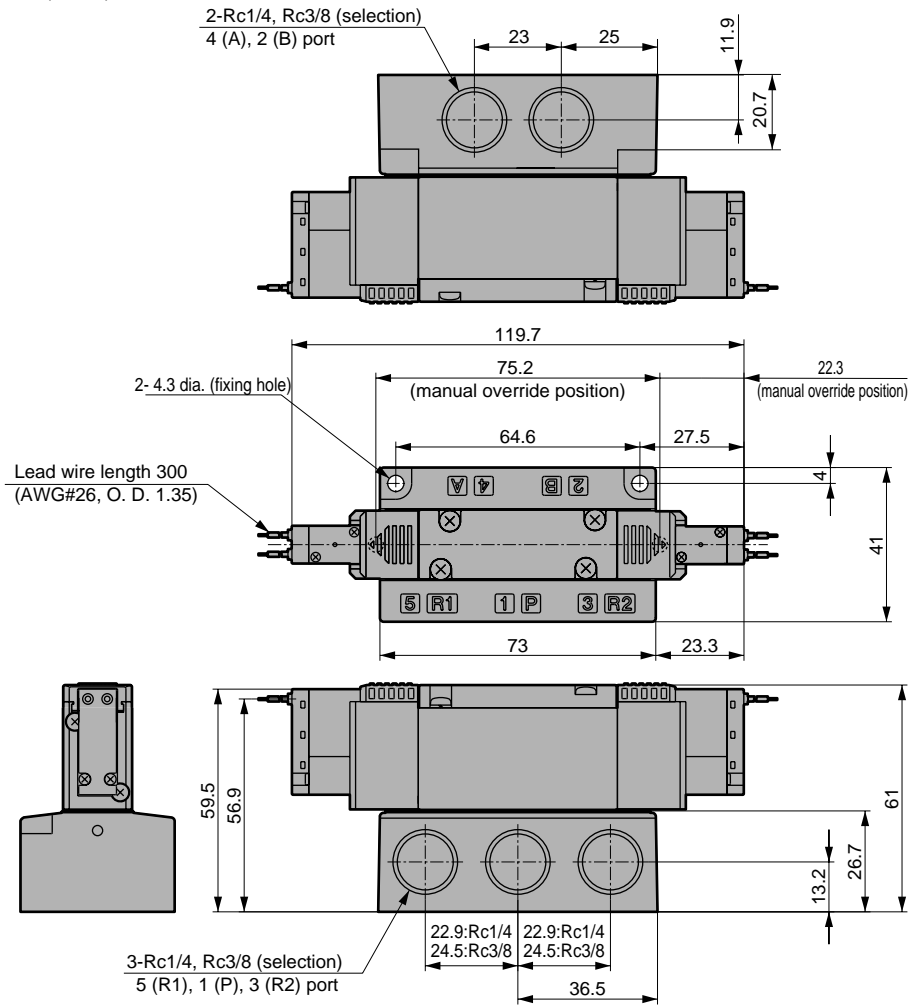
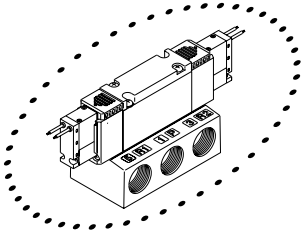
# 4GB3 Series

Discrete valve: Sub base porting

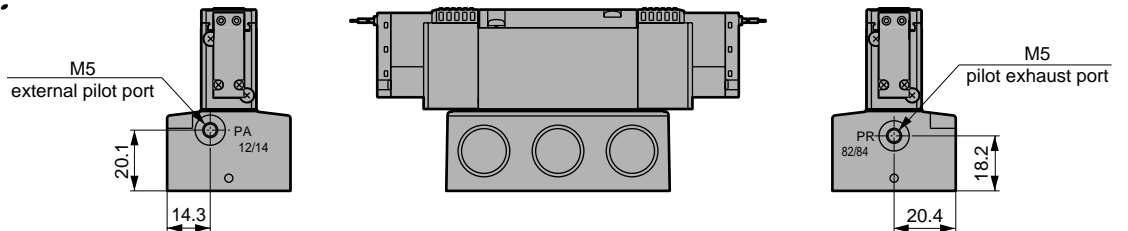
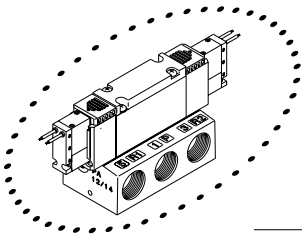
## Dimensions

4GB320  (File name: Page 239 or Ending 15)

• 2-position double grommet lead wire (Blank)

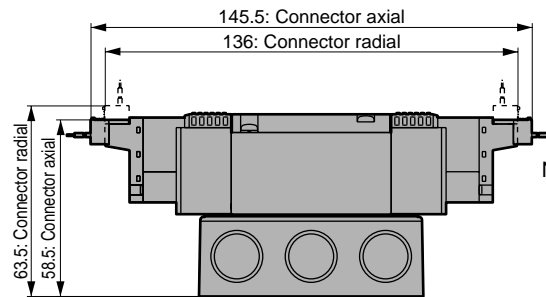
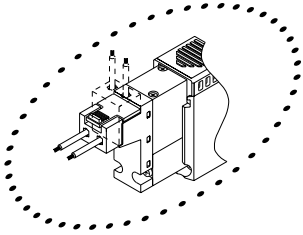


• External pilot(K)



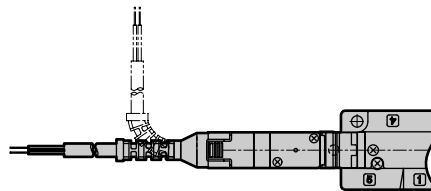
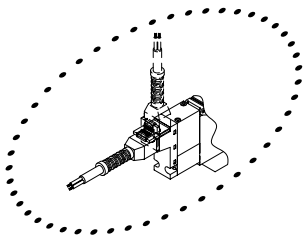
### Dimensions

• E-connector type(E)

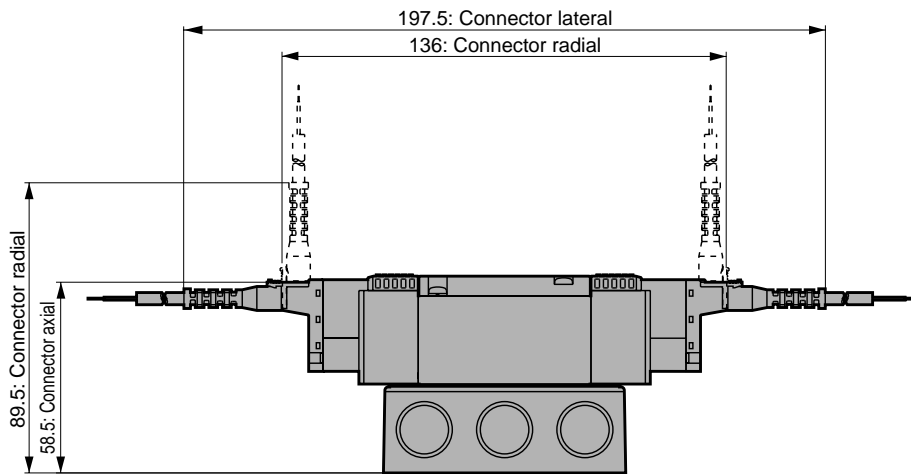


Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.

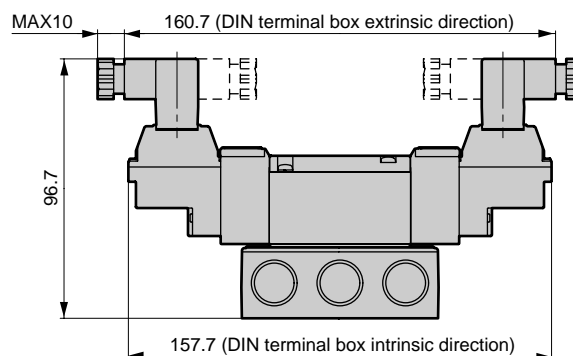
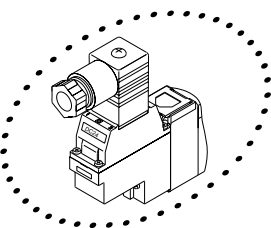
• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.



• DIN terminal box type(B)



4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B (master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH

PCD/  
FS/FD


Discrete

3, 5 port pilot operated valve

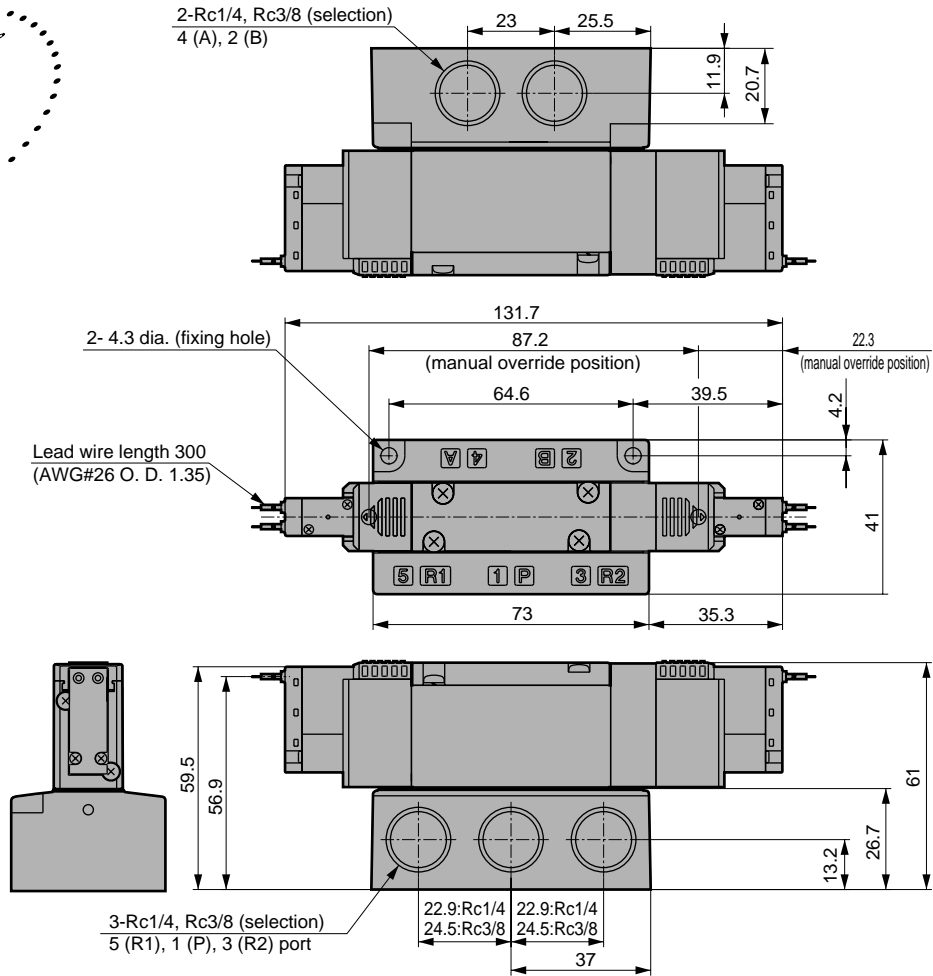
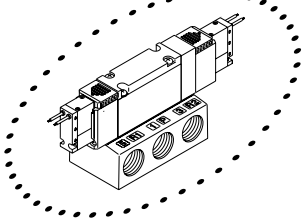
# 4GB3 Series

Discrete valve: Sub base porting

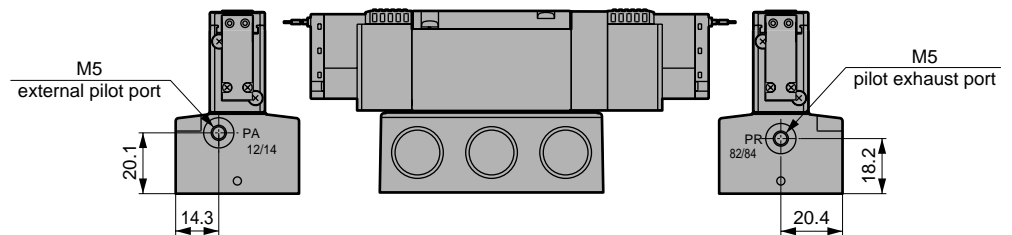
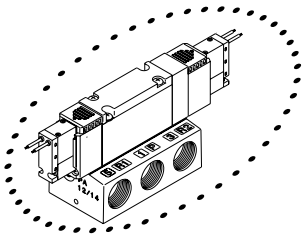
## Dimensions

4GB3<sub>40</sub><sup>3</sup>  (File name: Page 239 or Ending 15)

• 3-position grommet lead wire(Blank)

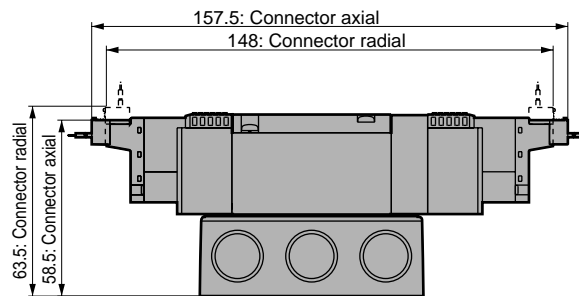
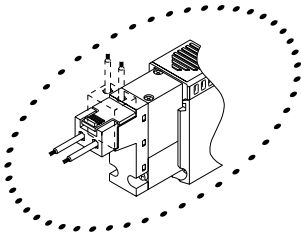


• External pilot(K)



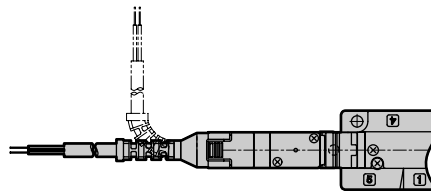
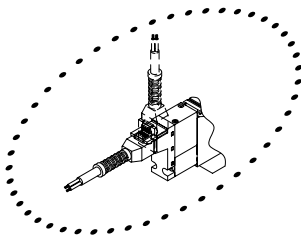
### Dimensions

• E-connector type(E)

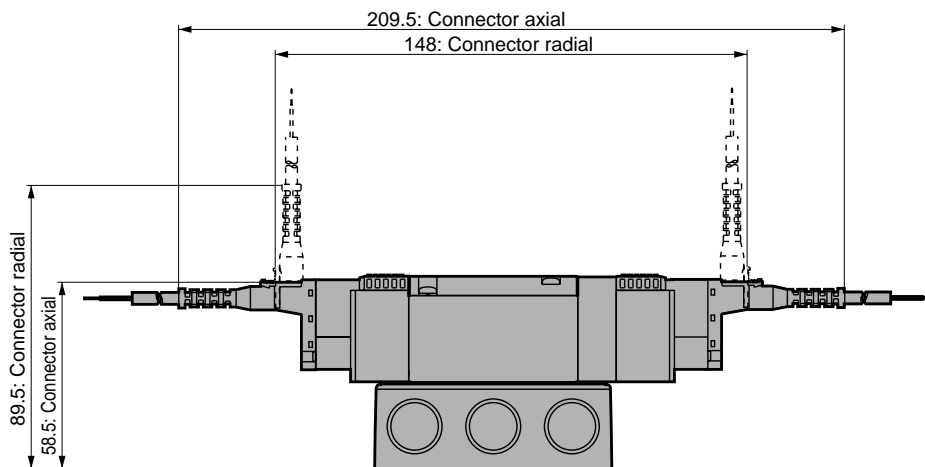


Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.

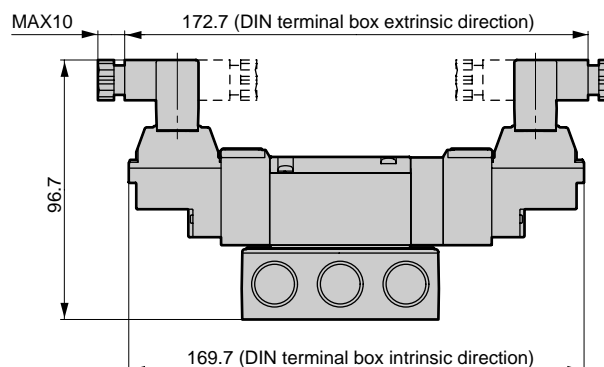
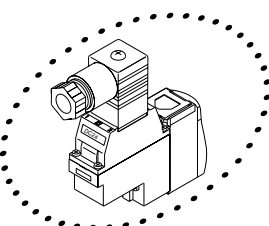
• EJ-connector type(E\*\*J)



Note. Dimensions of DC specifications are shown. When AC100V, overall length of valve is 7mm longer.



• DIN terminal box type(B)



4SA/B0

4SA/B1

**4GA/B**

MN4GA/B

4GA/B (master)

MN3S0/ MN4S0

4TB

4L2-4/ LMF0

4KA/B

4F

PV5/ CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/ NVP

4F\*\*0E

HMV/ HSV

Uniwire system

SKH

PCD/ FS/FD

Discrete  
3, 5 port pilot operated valve