

Core Components

Core Components

2013-2014



- Pneumatic cylinder ■ General purpose valves
- Pneumatic valve ■ Main line component
- FRL•Sensors•Pneumatic auxiliary components•Vacuum components
- Labor saving mechanisms

2013-2014

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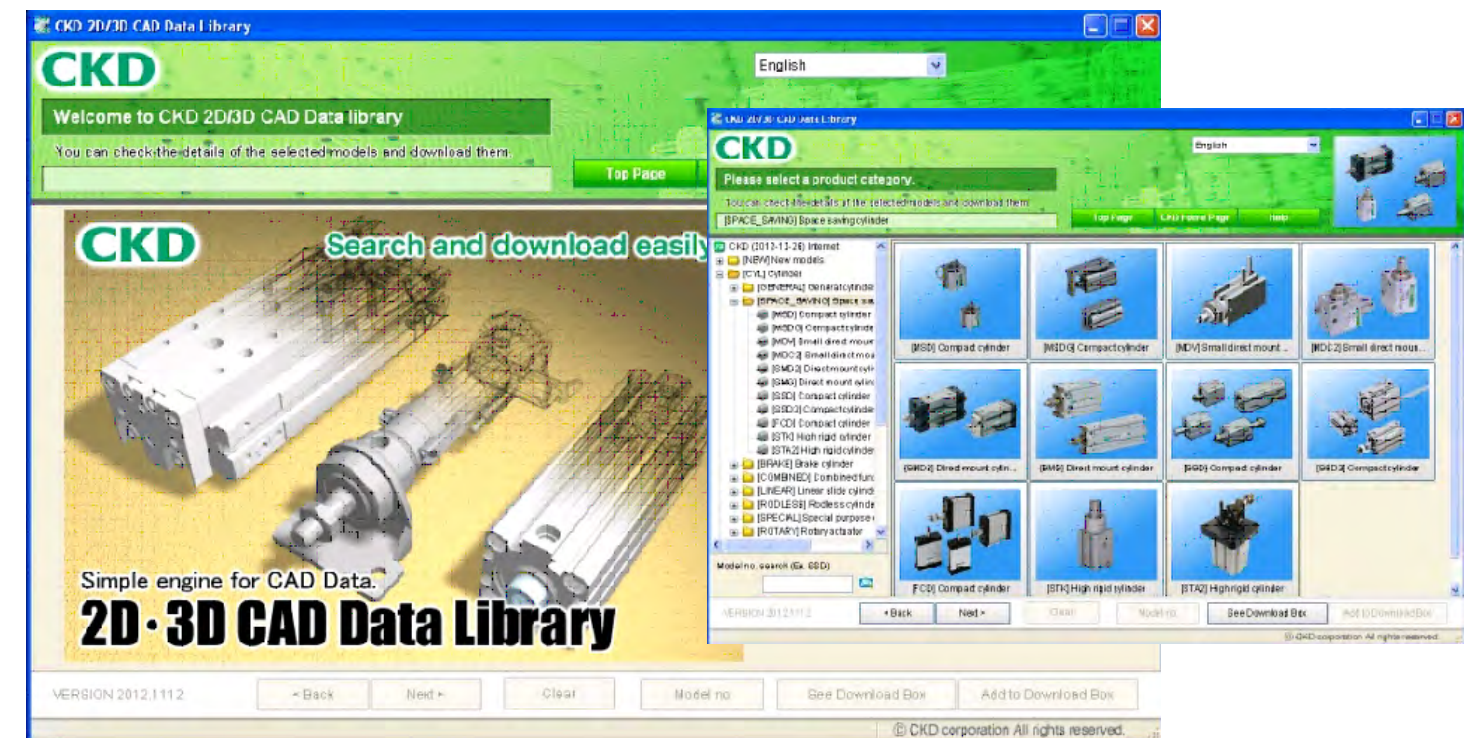
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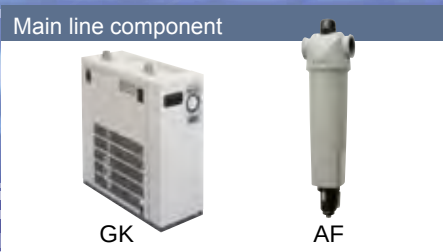
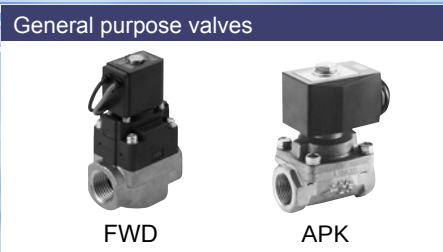
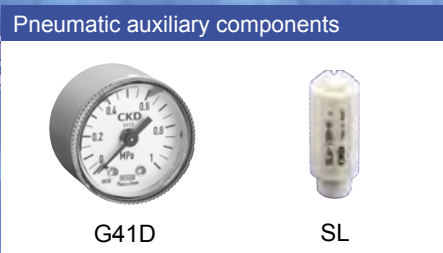
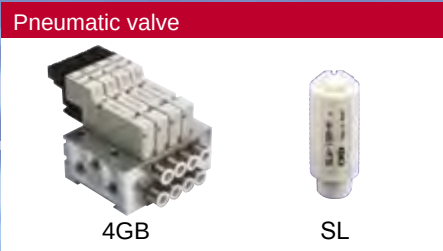
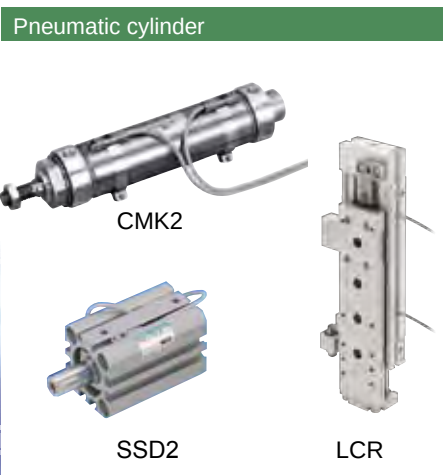
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Selection of
CKD most
common Core
Components



Cost! Delivery! Availability!



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System Selection Guideline

● Theory reference speed: 300 mm/s

Bore size (mm)	Required flow (Q/min) (ANR)	Required composite effective sectional area (mm ²)	Valve		PNEUMATIC AUXILIARY COMPONENTS		Piping
			Single solenoid	Double solenoid	Speed control valve	Silencer	Piping (between cylinder valves)
ø6	3	0.05	4GA110/4GB110	4GA120/4GB120	SC3W-M3-4	SL-M5,SLW-6N	ø4×ø2.5 nylon tube
ø8	5	0.1	4GA110/4GB110	4GA120/4GB120	SC3W-M3-4 SC3W-M5-4	SL-M5,SLW-6N	ø4×ø2.5 nylon tube
ø10	9	0.15	4GA110/4GB110	4GA120/4GB120	SC3W-M5-4	SL-M5,SLW-6N	ø4×ø2.5 nylon tube
ø12	12	0.2	4GA110/4GB110	4GA120/4GB120	SC3W-M5-4	SL-M5,SLW-6N	ø4×ø2.5 nylon tube
ø16	22	0.3	4GA110/4GB110	4GA120/4GB120	SC3W-M5-4	SL-M5,SLW-6N	ø4×ø2.5 nylon tube
ø20	34	0.5	4GA110/4GB110	4GA120/4GB120	SC3W-6-6	SL-M5,SLW-6N	ø6×ø4 nylon tube
ø25	53	0.8	4GA110/4GB110	4GA120/4GB120	SC3W-6-6	SL-M5,SLW-6N	ø6×ø4 nylon tube
ø32	86	1.3	4GA110/4GB110	4GA120/4GB120	SC3W-6-6	SL-M5,SLW-6N	ø6×ø4 nylon tube
ø40	135	2	4GA210/4GB210	4GA220/4GB220	SC3W-6-6	SLW-8A	ø6×ø4 nylon tube
ø50	210	3	4GA210/4GB210	4GA220/4GB220	SC3W-8-8	SLW-8A	ø8×ø5.7 nylon tube
ø63	334	5	4GA210/4GB210	4GA220/4GB220	SC3W-8-8	SLW-8A	ø8×ø5.7 nylon tube

Note: The above table shows theory reference speeds for cylinder bores.

For the range of working piston speeds of each product, refer to the individual specifications for the applicable model.

- ① The cylinder average speed is obtained from the combination of the valve and piping system. It is expressed by the cylinder's piston speed obtained by dividing the stroke by the time the piston rod moved after starting, when the cylinder rod is installed facing upward. When the load factor is 50%, consider the average speed to be the approximate cylinder's piston speed multiplied by 0.5.
- ② The cylinder theory reference speed is the value for when one cylinder moves independently.
- ③ The valve's effective area used in the calculation in the above table is the 2-position value.
- ④ This selection guide is just reference. With the CKD sizing program, confirm conditions to be actually used.

Explanation of technical terms

Theory reference speed: Speed expressed with the following equation below to indicate the cylinder's approximate speed. (This value is approximately equal to the speed at no load. When load is applied, speed drops considerably.)

$$VO = 1920 \times \frac{S}{A} = 2445 \times \frac{S}{D^2} \text{ ——— (1)}$$

VO: Theory reference speed (mm/s)

A: Cylinder cross-sectional area (cm²)

S: Composite effective sectional area of circuit (exhaust air side) (mm²)

D: Cylinder bore (cm)

When expressed as a graph, the theoretical reference speed is a speed in the range where the cylinder moves at a uniform speed, and

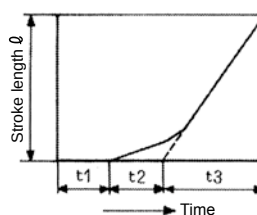
$$VO = \frac{Q}{t_3} \text{ (mm/s)}$$

t1: Time until movement starts

t2: Time of the primary delay

t3: Time during which the cylinder moves at a uniform speed

Q: Stroke length



* t1 and t2 vary depending on the load. They can be ignored when there is no load.

Required flow rate: Momentary flow rate that passes when the cylinder operates at vo speed, is expressed by the equation below. In the table, this is the value when P equals 0.5 MPa. The required flow rate is necessary value to select clean air system components.

$$Q \div \frac{A \cdot vo \cdot (P+0.101) \times 60}{0.101 \times 10^6} \text{ ——— (2)}$$

Q: Required flow (Q/min) (ANR)

P: Supply pressure (MPa)

Required effective area: Composite effective area for the exhaust circuit required for moving the cylinder at vo speed. (Composite effective area of valve, speed control valve, silencer, and piping)

Appropriate standard system: A combination of the optimum valve, speed control valve, silencer, and pipe diameter required to operate the cylinder at vo speed.

Clean Air System Component Selection Guide

Select a component with the maximum flow higher than [required flow] value.

When controlling multiple cylinders with a set of clean air system component, select the clean air system component with [maximum flow rate] higher than [total required flow rates].

■ F•R combination, F•R kit, regulator

Primary pressure 0.7 MPa Set pressure 0.5 MPa

Pressure drop 0.1 MPa

■ Air filter

Primary pressure 0.7 MPa

Pressure drop 0.02 MPa

F•R combination		
Model No.	Connection diameter	Maximum flow Q /min atmospheric (pressure conversion)
C1020-6	NPT1/8	770
C2020-8	NPT1/4	1,750
C3020-10	NPT3/8	2,600
C4020-15	NPT1/2	5,000

F•R kit		
Model No.	Connection diameter	Maximum flow Q /min atmospheric (pressure conversion)
W1000-6	NPT1/8	830
W2000-8	NPT1/4	1,500
W3000-10	NPT3/8	2,430
W4000-15	NPT1/2	4,750

Air filter (F)		
Model No.	Connection diameter	Maximum flow Q /min atmospheric (pressure conversion)
F1000-6	NPT1/8	460
F2000-8	NPT1/4	1,300
F3000-10	NPT3/8	1,500
F4000-15	NPT1/2	3,000
F8000-20	NPT3/4	6,800

Regulator (R)		
Model No.	Connection diameter	Maximum flow Q /min atmospheric (pressure conversion)
R1000-6	NPT1/8	770
R2000-8	NPT1/4	1,750
R3000-10	NPT3/8	2,600
R4000-15	NPT1/2	5,000

Theory Thrust Table (Double Acting Type)

(unit: N)

Tube Inner diameter (mm)	Target model	Operating direction	Push ← 											
			Working pressure MPa											
			0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	LCR	Push	—	—	8.0	11.0	17.0	23.0	28.0	34.0	40.0	—	—	—
		Pull	—	—	6.0	8.0	13.0	17.0	21.0	25.0	30.0	—	—	—
ø8	LCR	Push	—	—	15.0	20.0	30.0	40.0	50.0	60.0	70.0	—	—	—
		Pull	—	—	11.0	15.0	23.0	30.0	38.0	45.0	53.0	—	—	—
ø12	SSD2	Push	—	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10 ²	1.13×10 ²
		Pull	—	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
	LCR	Push	—	—	34.0	45.0	68.0	90.0	1.13×10 ²	1.36×10 ²	1.58×10 ²	—	—	—
		Pull	—	—	25.0	34.0	51.0	68.0	85.0	1.02×10 ²	1.19×10 ²	—	—	—
	STG	Push	—	—	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10 ²	1.13×10 ²
		Pull	—	—	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	STG	Push	—	—	30.2	40.2	60.3	80.4	1.01×10 ²	1.21×10 ²	1.41×10 ²	1.61×10 ²	1.81×10 ²	2.01×10 ²
		Pull	—	—	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10 ²	1.21×10 ²	1.36×10 ²	1.51×10 ²
	SSD2	Push	—	20.1	30.2	40.2	60.3	80.4	1.01×10 ²	1.21×10 ²	1.41×10 ²	1.61×10 ²	1.81×10 ²	2.01×10 ²
		Pull	—	15.1	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10 ²	1.21×10 ²	1.36×10 ²	1.51×10 ²
	LCR	Push	—	—	60.0	80.0	1.21×10 ²	1.61×10 ²	2.01×10 ²	2.41×10 ²	2.81×10 ²	—	—	—
		Pull	—	—	52.0	69.0	1.04×10 ²	1.38×10 ²	1.73×10 ²	2.07×10 ²	2.42×10 ²	—	—	—
ø20	CMK2	Push	—	31.4	47.1	62.8	94.2	1.26×10 ²	1.57×10 ²	1.88×10 ²	2.20×10 ²	2.51×10 ²	2.83×10 ²	3.14×10 ²
		Pull	—	23.6	35.3	47.1	70.7	94.2	1.18×10 ²	1.41×10 ²	1.65×10 ²	1.88×10 ²	2.12×10 ²	2.36×10 ²
	LCR	Push	—	—	94.0	1.26×10 ²	1.88×10 ²	2.51×10 ²	3.14×10 ²	3.77×10 ²	4.40×10 ²	—	—	—
		Pull	—	—	79.0	1.06×10 ²	1.58×10 ²	2.11×10 ²	2.64×10 ²	3.17×10 ²	3.69×10 ²	—	—	—
	STG	Push	—	—	47.1	62.8	94.2	1.26×10 ²	1.57×10 ²	1.88×10 ²	2.20×10 ²	2.51×10 ²	2.83×10 ²	3.14×10 ²
		Pull	—	—	35.3	47.1	70.7	94.2	1.18×10 ²	1.41×10 ²	1.65×10 ²	1.88×10 ²	2.12×10 ²	2.36×10 ²
ø25	CMK2	Push	—	49.1	73.6	98.2	1.47×10 ²	1.96×10 ²	2.45×10 ²	2.95×10 ²	3.44×10 ²	3.93×10 ²	4.42×10 ²	4.91×10 ²
		Pull	—	37.8	56.7	75.6	1.13×10 ²	1.51×10 ²	1.89×10 ²	2.27×10 ²	2.64×10 ²	3.02×10 ²	3.40×10 ²	3.78×10 ²
	LCR	Push	—	—	1.47×10 ²	1.96×10 ²	2.95×10 ²	3.93×10 ²	4.91×10 ²	5.89×10 ²	6.87×10 ²	—	—	—
		Pull	—	—	1.24×10 ²	1.65×10 ²	2.47×10 ²	3.30×10 ²	4.12×10 ²	4.95×10 ²	5.77×10 ²	—	—	—
	STG	Push	—	—	73.6	98.2	1.47×10 ²	1.96×10 ²	2.45×10 ²	2.95×10 ²	3.44×10 ²	3.93×10 ²	4.42×10 ²	4.91×10 ²
		Pull	—	—	56.7	75.6	1.13×10 ²	1.51×10 ²	1.89×10 ²	2.27×10 ²	2.64×10 ²	3.02×10 ²	3.40×10 ²	3.78×10 ²
ø32	SCG	Push	40.2	80.4	1.21×10 ²	1.61×10 ²	2.41×10 ²	3.22×10 ²	4.02×10 ²	4.83×10 ²	5.63×10 ²	6.43×10 ²	7.24×10 ²	8.04×10 ²
		Pull	34.6	69.1	1.04×10 ²	1.38×10 ²	2.07×10 ²	2.76×10 ²	3.46×10 ²	4.15×10 ²	4.84×10 ²	5.53×10 ²	6.22×10 ²	6.91×10 ²
	SSD2	Push	—	80.4	1.21×10 ²	1.61×10 ²	2.41×10 ²	3.22×10 ²	4.02×10 ²	4.83×10 ²	5.63×10 ²	6.43×10 ²	7.24×10 ²	8.04×10 ²
		Pull	—	60.3	90.5	1.21×10 ²	1.81×10 ²	2.41×10 ²	3.02×10 ²	3.62×10 ²	4.22×10 ²	4.83×10 ²	5.43×10 ²	6.03×10 ²
	STG	Push	—	80.4	1.21×10 ²	1.61×10 ²	2.41×10 ²	3.22×10 ²	4.02×10 ²	4.83×10 ²	5.63×10 ²	6.43×10 ²	7.24×10 ²	8.04×10 ²
		Pull	—	60.3	90.5	1.21×10 ²	1.81×10 ²	2.41×10 ²	3.02×10 ²	3.62×10 ²	4.22×10 ²	4.83×10 ²	5.43×10 ²	6.03×10 ²
ø40	SCG	Push	62.8	1.26×10 ²	1.88×10 ²	2.51×10 ²	3.77×10 ²	5.03×10 ²	6.28×10 ²	7.54×10 ²	8.80×10 ²	1.01×10 ³	1.13×10 ³	1.26×10 ³
		Pull	52.8	1.06×10 ²	1.58×10 ²	2.11×10 ²	3.17×10 ²	4.22×10 ²	5.28×10 ²	6.33×10 ²	7.39×10 ²	8.44×10 ²	9.50×10 ²	1.06×10 ³
	SSD2	Push	—	1.26×10 ²	1.88×10 ²	2.51×10 ²	3.77×10 ²	5.03×10 ²	6.28×10 ²	7.54×10 ²	8.80×10 ²	1.01×10 ³	1.13×10 ³	1.26×10 ³
		Pull	—	1.06×10 ²	1.58×10 ²	2.11×10 ²	3.17×10 ²	4.22×10 ²	5.28×10 ²	6.33×10 ²	7.39×10 ²	8.44×10 ²	9.50×10 ²	1.06×10 ³
	CMK2	Push	—	1.26×10 ²	1.88×10 ²	2.51×10 ²	3.77×10 ²	5.03×10 ²	6.28×10 ²	7.54×10 ²	8.80×10 ²	1.01×10 ³	1.13×10 ³	1.26×10 ³
		Pull	—	1.10×10 ²	1.65×10 ²	2.21×10 ²	3.31×10 ²	4.41×10 ²	5.51×10 ²	6.62×10 ²	7.72×10 ²	8.82×10 ²	9.92×10 ²	1.10×10 ³
ø50	SCG	Push	—	1.26×10 ²	1.88×10 ²	2.51×10 ²	3.77×10 ²	5.03×10 ²	6.28×10 ²	7.54×10 ²	8.80×10 ²	1.01×10 ³	1.13×10 ³	1.26×10 ³
		Pull	—	1.06×10 ²	1.58×10 ²	2.11×10 ²	3.17×10 ²	4.22×10 ²	5.28×10 ²	6.33×10 ²	7.39×10 ²	8.44×10 ²	9.50×10 ²	1.06×10 ³
	SSD2	Push	98.2	1.96×10 ²	2.95×10 ²	3.93×10 ²	5.89×10 ²	7.85×10 ²	9.82×10 ²	1.18×10 ³	1.37×10 ³	1.57×10 ³	1.77×10 ³	1.96×10 ³
		Pull	82.5	1.65×10 ²	2.47×10 ²	3.30×10 ²	4.95×10 ²	6.60×10 ²	8.25×10 ²	9.90×10 ²	1.15×10 ³	1.32×10 ³	1.48×10 ³	1.65×10 ³
	STG	Push	—	1.96×10 ²	2.95×10 ²	3.93×10 ²	5.89×10 ²	7.85×10 ²	9.82×10 ²	1.18×10 ³	1.37×10 ³	1.57×10 ³	1.77×10 ³	1.96×10 ³
		Pull	—	1.65×10 ²	2.47×10 ²	3.30×10 ²	4.95×10 ²	6.60×10 ²	8.25×10 ²	9.90×10 ²	1.15×10 ³	1.32×10 ³	1.48×10 ³	1.65×10 ³
ø63	SCG	Push	1.56×10 ²	3.12×10 ²	4.68×10 ²	6.23×10 ²	9.35×10 ²	1.25×10 ³	1.56×10 ³	1.87×10 ³	2.18×10 ³	2.49×10 ³	2.81×10 ³	3.12×10 ³
		Pull	—	2.80×10 ²	4.20×10 ²	5.61×10 ²	8.41×10 ²	1.12×10 ³	1.40×10 ³	1.68×10 ³	1.96×10 ³	2.24×10 ³	2.52×10 ³	2.80×10 ³
	SSD2	Push	—	3.12×10 ²	4.68×10 ²	6.23×10 ²	9.35×10 ²	1.25×10 ³	1.56×10 ³	1.87×10 ³	2.18×10 ³	2.49×10 ³	2.81×10 ³	3.12×10 ³
		Pull	—	2.80×10 ²	4.20×10 ²	5.61×10 ²	8.41×10 ²	1.12×10 ³	1.40×10 ³	1.68×10 ³	1.96×10 ³	2.24×10 ³	2.52×10 ³	2.80×10 ³
	STG	Push	—	3.12×10 ²	4.68×10 ²	6.23×10 ²	9.35×10 ²	1.25×10 ³	1.56×10 ³	1.87×10 ³	2.18×10 ³	2.49×10 ³	2.81×10 ³	3.12×10 ³
		Pull	—	2.80×10 ²	4.20×10 ²	5.61×10 ²	8.41×10 ²	1.12×10 ³	1.40×10 ³	1.68×10 ³	1.96×10 ³	2.24×10 ³	2.52×10 ³	2.80×10 ³

Core Components

Pneumatic cylinder

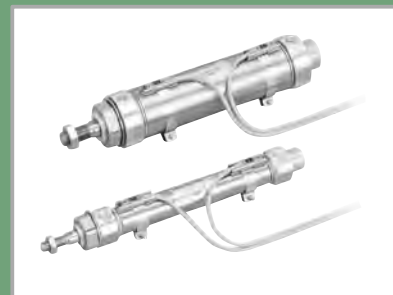
☐ Medium bore size cylinder	CMK2.....	2
☐ Tie rod cylinder	SCG.....	8
☐ Super compact cylinder	SSD2.....	16
☐ Guided cylinder	STG.....	20
☐ Linear slide cylinder	LCR.....	24
☐ Fine speed rotary	SFR•SFRT.....	34
☐ Simplified floating joint	FK.....	40
☐ Compact cylinder	SMD2.....	44
☐ Tie rod type cylinder with brake	JSG.....	48
☐ Rodless cylinder	SRL3.....	60
☐ Cylinder switch	T0, F0, K0.....	68

CMK2 Series

- Bore size: ø20 to ø40

Features

- High corrosion proof and long life
- Caulked type with numerous variations



Catalog No. CB-029SA

How to order

Without switch

CMK2 - 00 - 20 - NN - 100 ——— Y

With switch

CMK2 - 00 - 20 - NN - 100 - T2H - R - Y

A B C D E F G

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type (double)
LS	Axial foot type (single) Note 1
FA	Rod side flange type
FB	Head end flange type
CA	Single clevis type
CC	Single clevis integrated type
CB	Double clevis type (pin and washer pin attached)
TA	Rod side trunnion type
TB	Head end trunnion type

Note 1: The maximum stroke length of the single foot type (LS type) is 50 mm.

B Bore size (mm)	
20	ø20
25	ø25
32	ø32
40	ø40
C Port thread type	
Blank	M5 (ø12 to ø16)
NN	NPT screw (ø20 to ø63)

D Stroke length (mm)	
Bore size	Stroke length
ø20	25, 50, 75, 100, 150, 200, 250, 300
ø25	
ø32	
ø40	

E Switch model No.				
Lead wire straight type	Lead wire radial	Contact	Indicator	Lead wire
T2H*	T2V*	Proximity	One color indicator type	2 wire
T3H*	T3V*			3 wire

*Lead wire length	
Blank	1 m (standard)

F Switch quantity	
R	One on rod end
H	One on head end
D	Two
T	Three

G Accessory	
I	Single knuckle
Y	Double knuckle (pin and washer pin attached)
B2	Double bracket (pin and snap ring attached)

Specifications

Item	CMK2			
Bore size mm	ø20	ø25	ø32	ø40
Actuation	Double acting			
Use fluid	Compressed air			
Maximum working pressure MPa	1.0			
Minimum working pressure MPa	0.1			
Proof pressure MPa	1.6			
Ambient temperature °C	-10 to 60 (No freezing)			
Connection diameter	NPT1/8			
Stroke tolerance mm	+2.0 (up to 200) + 2.4 (over 200) 0 0			
Working piston speed mm/s	50 to 500			
Cushion	Rubber cushion			
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32)			
Permission absorbed energy J	0.166	0.308	0.424	0.639

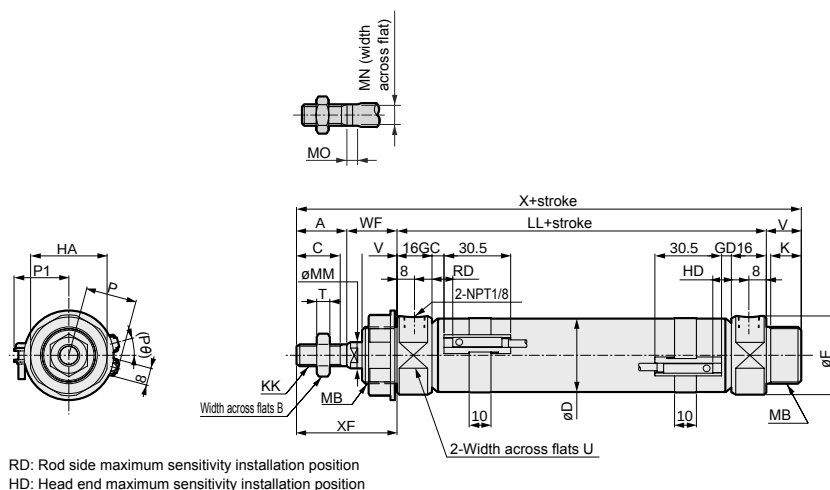
Stroke length

Bore size (mm)	Standard stroke length (mm)	Maximum stroke length (mm)		
ø20	25, 50, 75, 100, 150, 200, 250, 300	300		
ø25				
ø32				
ø40				
Bore size (mm)	Minimum stroke length (mm)	Minimum stroke length of types with switch (mm)		
		Switch quantity		
		1	2	3
ø20	5	10	25	50
ø25				
ø32				
ø40				

Note 1: The maximum stroke length of the single foot type (LS type) is 50 mm.

Dimensions

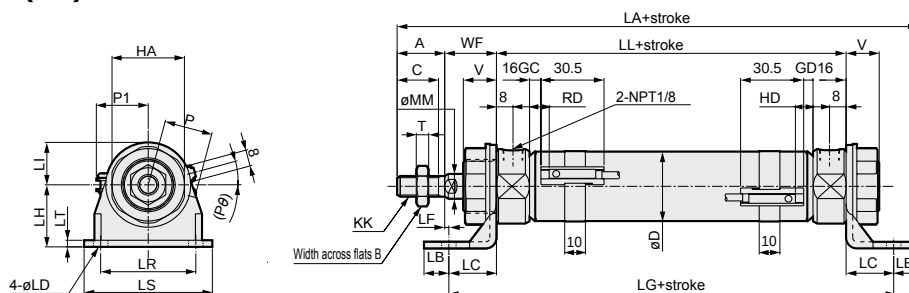
● Basic type (OO)



Symbol	Basic type (OO) basic dimensions																		With switch							
Bore size (mm)	A	B	C	D	F	HA	K	KK	LL	MB	MM	MN	MO	T	U	V	WF	X	XF	GC	GD	RD	HD	P	P1	(P0)°
ø20	20	13	18	21.4	28	26	12	M8×1.0	66	M18×1.5	10	8	5	5	24	14	24	124	44	4.0	3.0	8.0	7.0	17.3	19.5	22
ø25	23	17	20	26.4	32	35	14	M10×1.25	69	M26×1.5	12	10	5	6	30	16	23	131	46	5.5	4.5	9.5	8.5	19.8	22.0	18
ø32	23	17	20	33.6	36	35	14	M10×1.25	69	M26×1.5	12	10	5	6	34	16	23	131	46	5.5	4.5	9.5	8.5	24.3	25.5	15
ø40	25	19	22	41.6	45	35	14	M12×1.5	73	M26×1.5	14	12	6	7	43	16	23	137	48	7.0	6.5	11.5	10.5	28.3	29.5	12

Note: Refer to pages 6 and 7 for accessory dimensions.

● Axial foot type (LB)

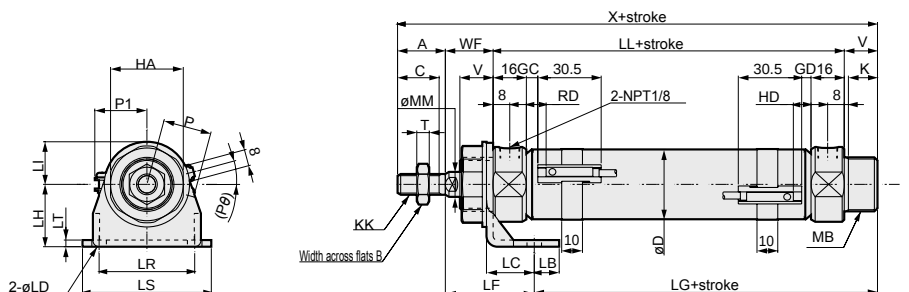


Symbol	Axial foot type (LB) basic dimensions											Mounting dimensions											
Bore size (mm)	A	B	C	D	HA	KK	LL	MM	T	V	WF	LA	LB	LC	LD	LF	LG	LH	LI	LR	LS	LT	
ø20	20	13	18	21.4	26	M8×1.0	66	10	5	14	24	138	10	18	6	6	102	25	15	30	44	3.2	
ø25	23	17	20	26.4	35	M10×1.25	69	12	6	16	23	150	12	23	7	0	115	30	20	46	62	3.2	
ø32	23	17	20	33.6	35	M10×1.25	69	12	6	16	23	150	12	23	7	0	115	30	20	46	62	3.2	
ø40	25	19	22	41.6	35	M12×1.5	73	14	7	16	23	156	12	23	7	0	119	30	20	46	62	3.2	

Note 1: Refer to pages 6 and 7 for accessory dimensions.

Note 2: Refer to the "With switch" column of the Basic type (OO) dimensions.

● Axial foot type (single) (LS)



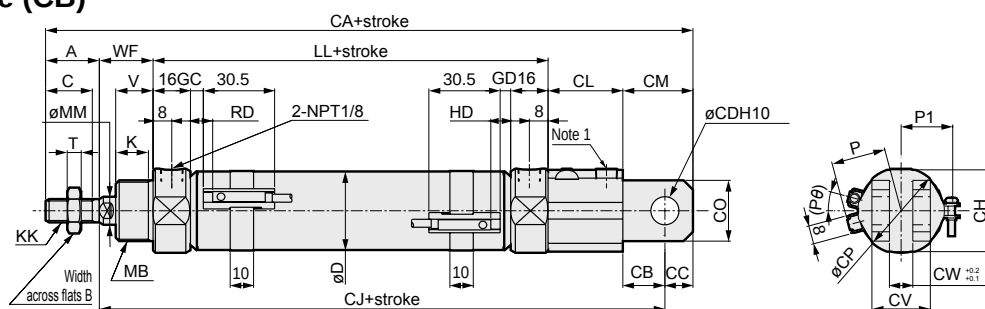
Symbol	Axial foot type (single) (LB) basic dimensions														Mounting dimensions									
Bore size (mm)	A	B	C	D	HA	K	KK	LL	MB	MM	T	V	WF	X	LB	LC	LD	LF	LG	LH	LI	LR	LS	LT
ø20	20	13	18	21.4	26	12	M8×1.0	66	M18×1.5	10	5	14	24	124	10	18	6	38.8	65.2	25	15	30	44	3.2
ø25	23	17	20	26.4	35	14	M10×1.25	69	M26×1.5	12	6	16	23	131	12	23	7	42.8	65.2	30	20	46	62	3.2
ø32	23	17	20	33.6	35	14	M10×1.25	69	M26×1.5	12	6	16	23	131	12	23	7	42.8	65.2	30	20	46	62	3.2
ø40	25	19	22	41.6	35	14	M12×1.5	73	M26×1.5	14	7	16	23	137	12	23	7	42.8	69.2	30	20	46	62	3.2

Note 1: The maximum stroke length is 50.

Note 2: Refer to the "With switch" column of the Basic type (OO) dimensions.

Dimensions

- Double clevis type (CB)

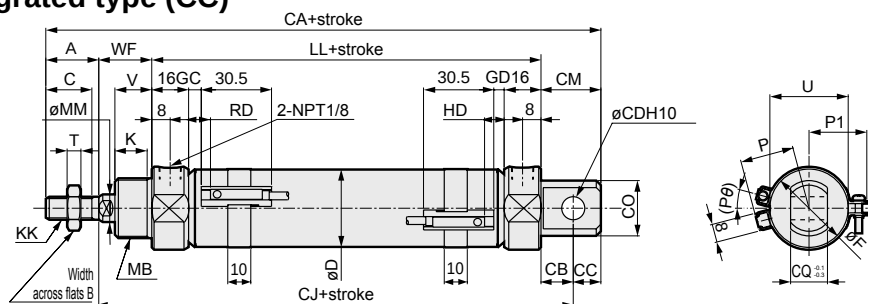


Symbol	Double clevis type (CB) basic dimensions												Mounting dimensions				
Bore size (mm)	A	B	C	D	K	KK	LL	MB	MM	T	V	WF	CA	CB	CC	CD	CH
ø20	20	13	18	21.4	12	M8×1.0	66	M18×1.5	10	5	14	24	165	14	10	10	26
ø25	23	17	20	26.4	14	M10×1.25	69	M26×1.5	12	6	16	23	177	18	12	12	35
ø32	23	17	20	33.6	14	M10×1.25	69	M26×1.5	12	6	16	23	177	18	12	12	35
ø40	25	19	22	41.6	14	M12×1.5	73	M26×1.5	14	7	16	23	183	18	12	12	35
Symbol								With switch									
Bore size (mm)	CJ	CL	CM	CO	CP	CV	CW	GC	GD	RD	HD	P	P1	(PØ)*			
ø20	135	31	24	22	28	19	8	4.0	3.0	8.0	7.0	17.3	19.5	22			
ø25	142	32	30	26	37	25	10	5.5	4.5	9.5	8.5	19.8	22.0	18			
ø32	142	32	30	26	37	25	10	5.5	4.5	9.5	8.5	24.3	25.5	15			
ø40	146	32	30	26	37	25	10	7.0	6.5	11.5	10.5	28.3	29.5	12			

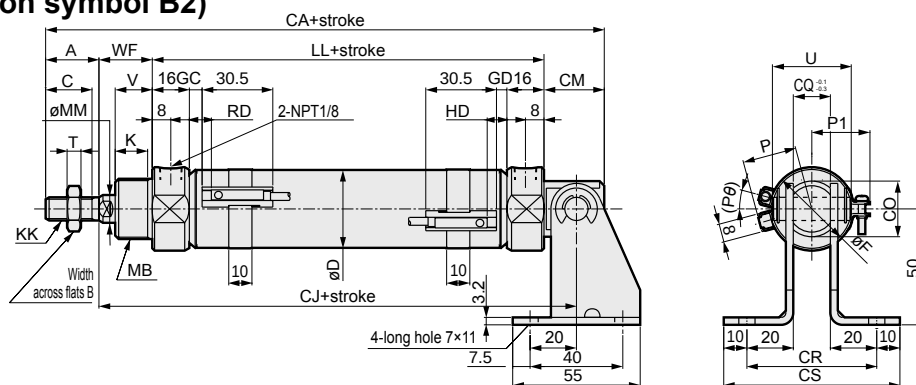
Note 1: Not a piping port.

Note 2: Refer to pages 6 and 7 for accessory dimensions.

● **Single clevis integrated type (CC)**



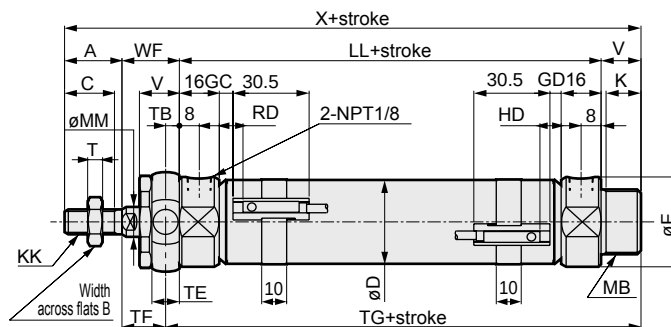
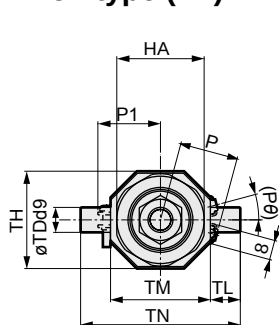
● **Single clevis integrated type (CC) with bracket (option symbol B2)**



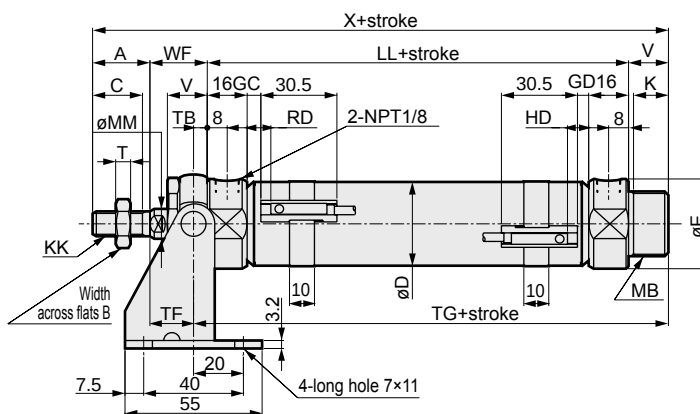
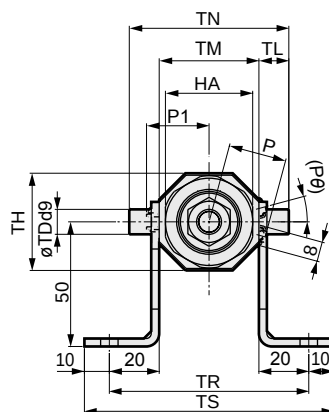
Symbol	Single clevis integrated type (CC) basic dimensions														Mounting dimensions		
Bore size (mm)	A	B	C	D	F	K	KK	LL	MB	MM	T	U	V	WF	CA	CB	CC
ø20	20	13	18	21.4	28	12	M 8×1.0	66	M18×1.5	10	5	24	14	24	131	12	9
ø25	23	17	20	26.4	32	14	M10 × 1.25	69	M26×1.5	12	6	30	16	23	136	12	9
ø32	23	17	20	33.6	36	14	M10 × 1.25	69	M26×1.5	12	6	34	16	23	141	14	12
ø40	25	19	22	41.6	45	14	M12×1.5	73	M26×1.5	14	7	43	16	23	151	16	14
Symbol								With switch									
Bore size (mm)	CD	CJ	CM	CO	CQ	CR	CS	GC	GD	RD	HD	P	P1	(PØ)°			
ø20	8	102	21	22	16	56	76	4.0	3.0	8.0	7.0	17.3	19.5	22			
ø25	8	104	21	24	16	56	76	5.5	4.5	9.5	8.5	19.8	22.0	18			
ø32	10	106	26	24	16	56	76	5.5	4.5	9.5	8.5	24.3	25.5	15			
ø40	12	112	30	30	20	60	80	7.0	6.5	11.5	10.5	28.3	29.5	12			

Note: Refer to pages 6 and 7 for accessory dimensions.

Rod side trunnion type (TA)



Rod side trunnion type (TA) with bracket (option symbol B2)

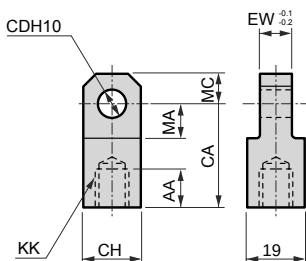


Symbol	Rod side trunnion type (TA) basic dimensions															Mounting dimensions	
Bore size (mm)	A	B	C	D	F	HA	K	KK	LL	MB	MM	T	V	WF	X	TB	TD
ø20	20	13	18	21.4	28	26	12	M8×1.0	66	M18×1.5	10	5	14	24	124	4.5	8
ø25	23	17	20	26.4	32	35	14	M10×1.25	69	M26×1.5	12	6	16	23	131	5.5	10
ø32	23	17	20	33.6	36	35	14	M10×1.25	69	M26×1.5	12	6	16	23	131	5.5	10
ø40	25	19	22	41.6	45	35	14	M12×1.5	73	M26×1.5	14	7	16	23	137	5.5	10
Symbol										With switch						Note: Refer to pages 6 and 7 for accessory dimensions	
Bore size (mm)	TE	TF	TG	TH	TL	TM	TN	TR	TS	GC	GD	RD	HD	P	P1		
ø20	9	19.5	84.5	29.5	8	30	46	70	90	4.0	3.0	8.0	7.0	17.3	19.5	22	
ø25	11	17.5	90.5	39	12	40	64	80	100	5.5	4.5	9.5	8.5	19.8	22.0	18	
ø32	11	17.5	90.5	39	12	40	64	80	100	5.5	4.5	9.5	8.5	24.3	25.5	15	
ø40	11	17.5	94.5	44	9.5	53	72	93	113	7.0	6.5	11.5	10.5	28.3	29.5	12	

Accessory dimensions

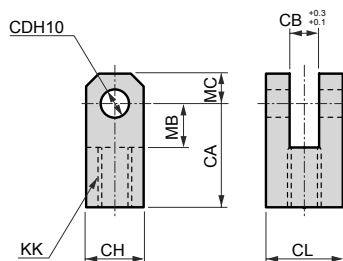
Single knuckle (I)

Material: Steel



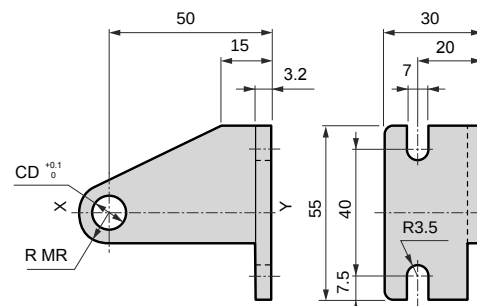
Double knuckle (Y)

Material: Steel



Double bracket (B2)

Material: Steel



Note: Pin and washer pin are attached.

Note: One pair constitutes brackets that are symmetrical across the XY line.

Model No.	Applicable tube Inner diameter (mm)	AA	CA	CD	CH	EW	KK	MA	MC	Mass (g)
M1-I-20	20	14	30	10	19	8	M8×10	13	10	60
M1-I-30	25, 32	16	36	12	25	10	M10×1.25	16	12	106
M1-I-40	40	14	36	12	25	10	M12×1.5	16	12	100

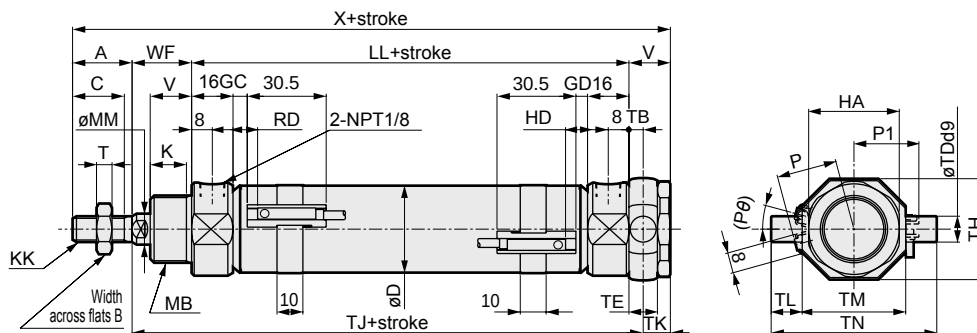
Model No.	Applicable tube Inner diameter (mm)	CA	CB	CD	CH	CL	KK	MA	MC	Mass (g)
M1-Y-20	20	30	8	10	19	19	M8×10	13	10	99
M1-Y-30	25, 32	36	10	12	25	25	M10×1.25	16	12	197
M1-Y-40	40	36	10	12	25	25	M12×1.5	16	12	193

Model No.	Applicable model	Applicable tube Inner diameter (mm)	CD	MR	Mass (g)
M1-B2-20-CC	CMK2-CC	20, 25	8	8	145
M1-B2-30-CC	(single clevis integrated type)	32	10	11	163
M1-B2-40-CC		40	12	11	170
M1-B2-30-CA	CMK2-CA	20	10	11	158
M1-B2-40-CA	(single clevis type)	25, 32, 40	12	11	162
M1-B2-20-TA	CMK2-TA/TB	20	8	8	132
M1-B2-30-TA	(trunnion type)	25, 32, 40	10	11	142

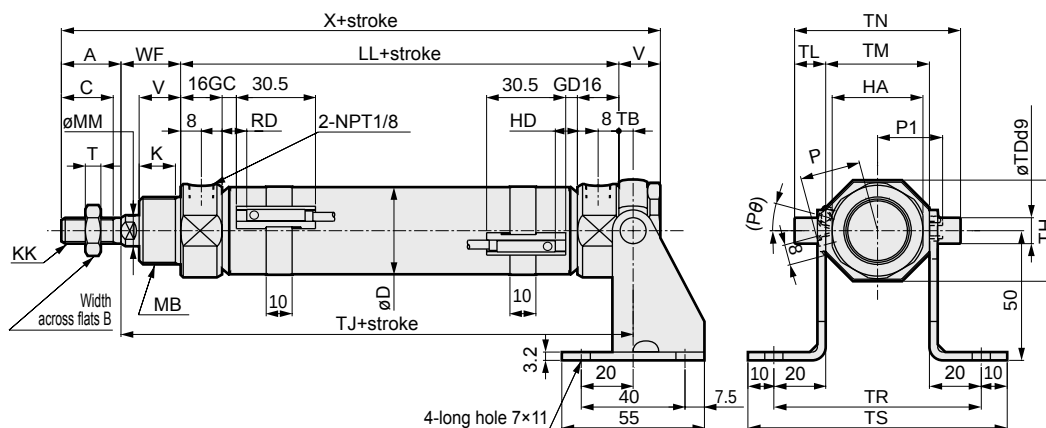
Note: The model No. above include snap rings and pins. One set includes two pieces.
(They are not included for the trunnion type.)

Dimensions

● Head end trunnion type (TB)



● **Head end trunnion type (TB)
with bracket (option symbol B2)**

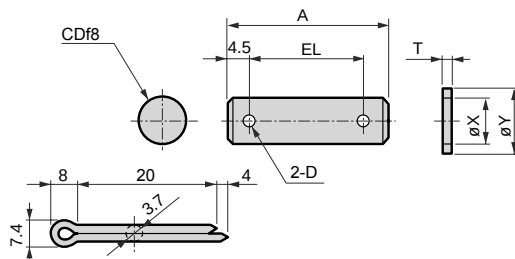


Symbol	Head end trunnion type (TB) basic dimensions														Mounting dimensions		
Bore size (mm)	A	B	C	D	HA	K	KK	LL	MB	MM	T	V	WF	X	TB	TD	
ø20	20	13	18	21.4	26	12	M8×1.0	66	M18×1.5	10	5	14	24	124	4.5	8	
ø25	23	17	20	26.4	35	14	M10×1.25	69	M26×1.5	12	6	16	23	131	5.5	10	
ø32	23	17	20	33.6	35	14	M10×1.25	69	M26×1.5	12	6	16	23	131	5.5	10	
ø40	25	19	22	41.6	35	14	M12×1.5	73	M26×1.5	14	7	16	23	137	5.5	10	
Symbol										With switch							Note: Refer to pages 7 for accessor dimensions.
Bore size (mm)	TE	TH	TJ	TK	TL	TM	TN	TR	TS	GC	GD	RD	HD	P	P1	(Pθ)°	
ø20	9	29.5	94.5	9.5	8	30	46	70	90	4.0	3.0	8.0	7.0	17.3	19.5	22	
ø25	11	39	97.5	10.5	12	40	64	80	100	5.5	4.5	9.5	8.5	19.8	22.0	18	
ø32	11	39	97.5	10.5	12	40	64	80	100	5.5	4.5	9.5	8.5	24.3	25.5	15	
ø40	11	44	101.5	10.5	9.5	53	72	93	113	7.0	6.5	11.5	10.5	28.3	29.5	12	

Accessory dimensions

● Pin for double knuckle (P)

Material: Steel

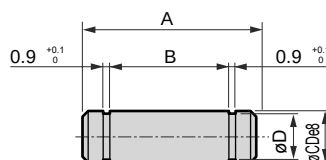


Model No.	Applicable tube Inner diameter (mm)	A	D	CD	EL	T	X	Y	Mass (g)
M1-P-20	20	37	4	10	28	2	10.5	18	29
M1-P-30	25 32 40	46	4	12	37	2.5	13	21	50

Note: A pin and a washer pin are attached to double knuckle products.

● Pin for double bracket (P1) (P2)

Material: Steel

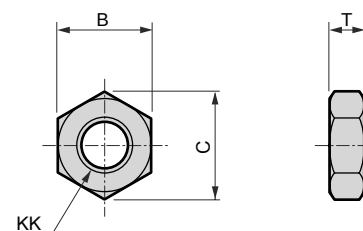


Model No.	Applicable model	Applicable tube Inner diameter (mm)	A	B	CD	D	Snap ring to use	Mass (g)
M1-P1-20	CMK2-CC	20, 25	33	28	8	7	Etype7	13
M1-P1-30		32	33	28	10	9	Etype9	21
M1-P1-40		40	37	32	12	9	Etype9	32
M1-P2-20		20	25	20	10	9	Etype9	16
M1-P2-30	CMK2-CA	25, 32, 40	27	22	12	9	Etype9	24

Note: The pin and snap ring for the bracket are attached to the single clevis integrated type.
(They are not included for the trunnion type.)

- Rod nut (NR)

Material: Steel



Model No.	Applicable tube Inner diameter (mm)	B	C	KK	T	Mass (g)
M1-NR-20	20	13	15	M8×10	5	3.6
M1-NR-30	25, 32	17	19.6	M10×1.25	6	7.8
M1-NR-40	40	19	21.9	M12×1.5	7	10.8

SCG Series

- Bore size: ø32 to ø63

Features

- Eco-friendly
- Easy Installation and adjustment
- Compatible with wide range of applications and environment

RoHS



Catalog No. CB-029SA

How to order

Without switch

SCG - LB - 40 - NN - B - 100 - I

With switch

SCG - LB - 40 - NN - B - 100 - T2H - R - I

A
B
C
D
E
F
G
H

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head end flange type
CA	Single clevis type
CB	Double clevis type (pin and split pin attached)
E Bore size (mm)	
32	ø32
40	ø40
50	ø50
63	ø63
G Port thread type	
Blank	M5 (ø12 to ø16)
NN	NPT screw (ø20 to ø63)
D Cushion	
B	Double side air cushion (basic type)

E Stroke length (mm)				
Bore size	Stroke length Note 2			
ø32	25, 50, 75, 100, 150, 200 250, 300, 350, 400, 450, 500			
ø40				
ø50				
ø63				
F Switch model No.				
Lead wire straight type	Lead wire radial	Contact	Indicator	Lead wire
T2H*	T2V*	Proximity	One color indicator type	2 wire
T3H*	T3V*			3 wire
*Lead wire length				
Blank	1 m (standard)			
G Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			
H Accessory				
I	Single knuckle			
Y	Double knuckle (pin and split pin attached)			
B1	Single bracket			
B2	Double bracket (pin and split pin attached)			

Specifications

Item	SCG			
Bore size mm	ø32	ø40	ø50	ø63
Actuation	Double acting			
Use fluid	Compressed air			
Maximum working pressure MPa	1.0			
Minimum working pressure MPa	0.05			
Proof pressure MPa	1.6			
Ambient temperature °C	-10 to 60 (no freezing)			
Connection diameter	NPT1/8	NPT1/4		NPT3/8
Stroke tolerance mm	^{+1.0} ₀ (up to 360), ^{+1.4} ₀ (361 to 1000), ^{+1.8} ₀ (1001 to 1500)			
Working piston speed mm/s	30 to 1000 (use within the permission absorbed energy range)			
Cushion	Air cushion			
Effective air cushion length mm	8.6	8.6	13.4	13.4
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISO VG32)			
Permission absorbed energy J	2.5	3.7	8.0	14.4

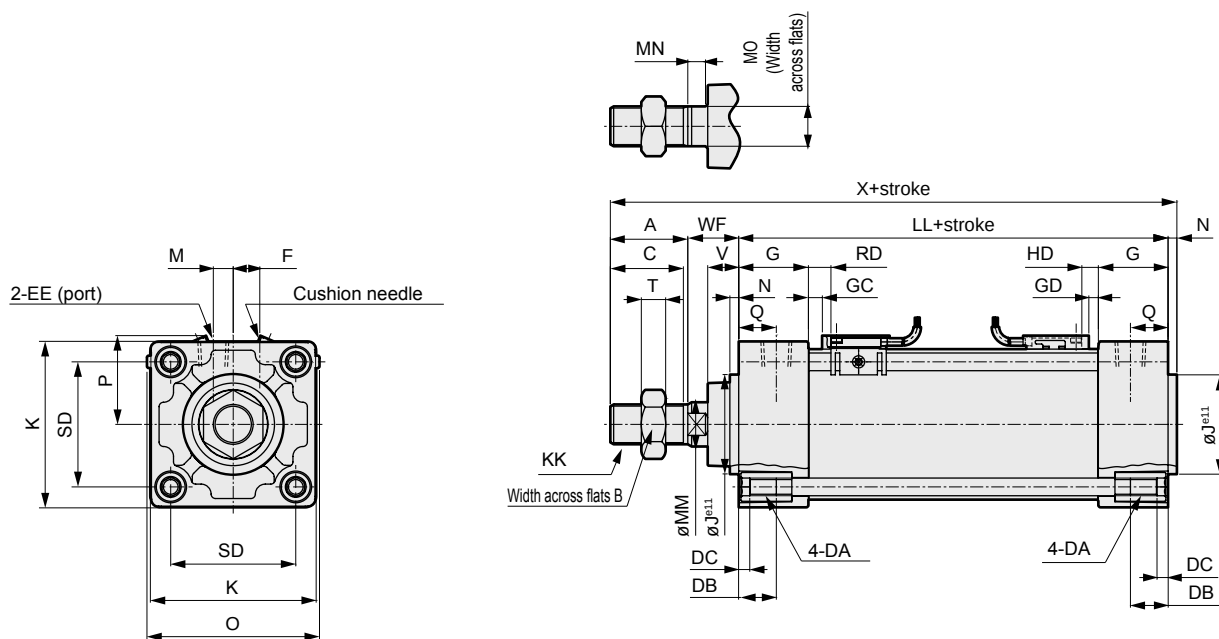
Stroke length

Bore size (mm)	Standard stroke length (mm)
ø32	25, 50, 75, 100, 150 200, 250, 300, 350 400, 450, 500
ø40	
ø50	
ø63	

Note: If the maximum stroke length is exceeded, product specifications may not be met, depending on operating conditions. Consult with CKD in this case.

Dimensions

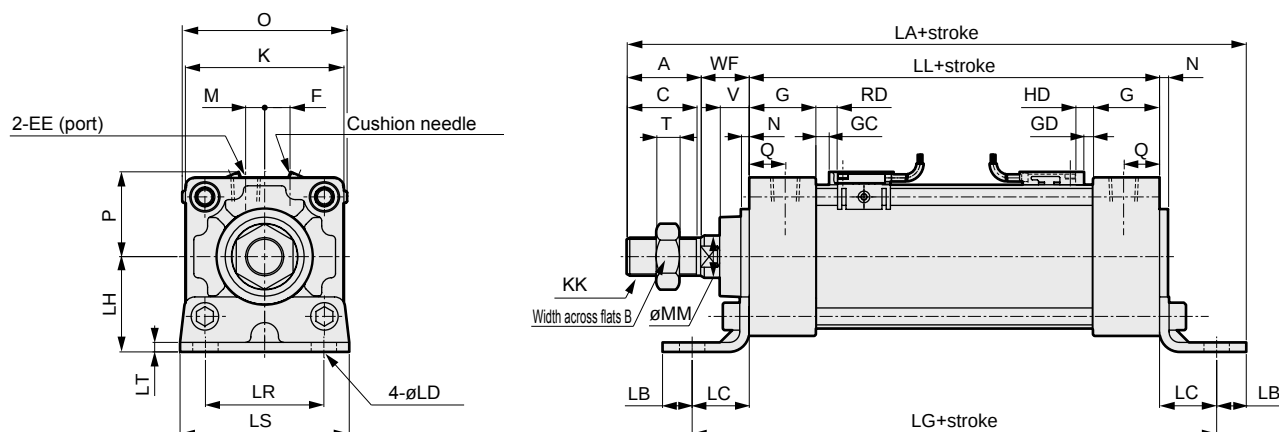
● Basic type (OO)



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
 Note 2: Refer to page 15 for accessory dimensions.

Symbol	Basic type (OO) basic dimensions																			
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	LL	M	MM	MN	MO	N	O	Q
ø32	22	17	19.5	M6	16	5	NPT1/8	6.5	27	30	46	M10X1.25	84	4	12	5.5	10	4	52	13
ø40	30	22	27	M6	16	5	NPT1/4	9	27	35	52	M14X1.5	84	4	16	6	14	4	58	14
ø50	35	27	32	M8	16	5	NPT1/4	10.5	31.5	40	65	M18X1.5	94	5	20	8	17	4	68	15.5
ø63	35	27	32	M8	16	5	NPT3/8	12	31.5	45	75	M18X1.5	94	9	20	8	17	4	78	16.5
Symbol							With switch													
Bore size (mm)	SD	T	V	WF	X	GC		GD		RD		HD		P						
ø32	32.5	6	13	25	135	1		1		5		5		25						
ø40	38	8	13	21	139	1		1		5		5		29						
ø50	46.5	11	14	23	156	2.5		1		6.5		5		34						
ø63	56.5	11	14	23	156	2.5		1		6.5		5		40						

● Axial foot type (LB)



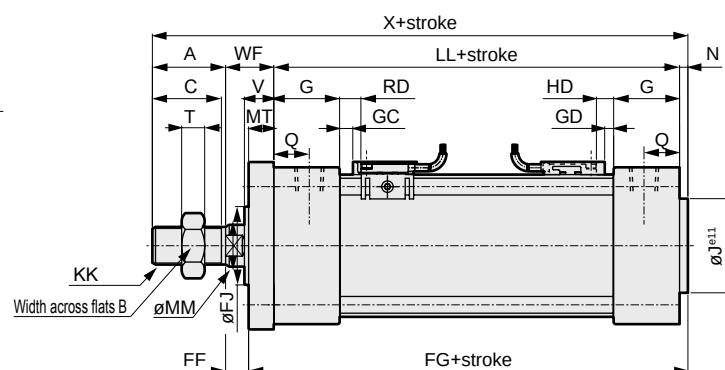
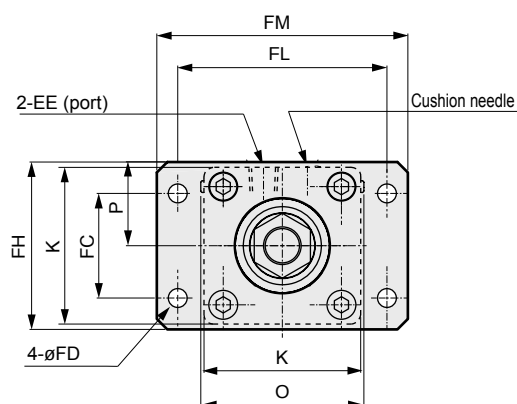
Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Note 2: Refer to page 15 for accessory dimensions.

Symbol	Axial foot type (LB) basic dimensions																	Mounting dimensions
Bore size (mm)	A	B	C	EE	F	G	K	KK	LL	M	MM	N	O	Q	T	V	WF	LA
ø32	22	17	19.5	NPT1/8	6.5	27	46	M10X1.25	84	4	12	4	52	13	6	13	25	162
ø40	30	22	27	NPT1/4	9	27	52	M14X1.5	84	4	16	4	58	14	8	13	21	170
ø50	35	27	32	NPT1/4	10.5	31.5	65	M18X1.5	94	5	20	4	68	15.5	11	14	23	190
ø63	35	27	32	NPT3/8	12	31.5	75	M18X1.5	94	9	20	4	78	16.5	11	14	23	193
Symbol									With switch									
Bore size (mm)	LB	LC	LD	LG	LH	LR	LS	LT	GC	GD	RD	HD	P					
ø32	9	22	7	128	30	32	50	3.2	1	1	5	5	25					
ø40	11	24	9	132	33	38	55	3.2	1	1	5	5	29					
ø50	11	27	9	148	40	46	70	3.2	2.5	1	6.5	5	34					
ø63	14	27	12	148	45	56	80	4.5	2.5	1	6.5	5	40					

Dimensions

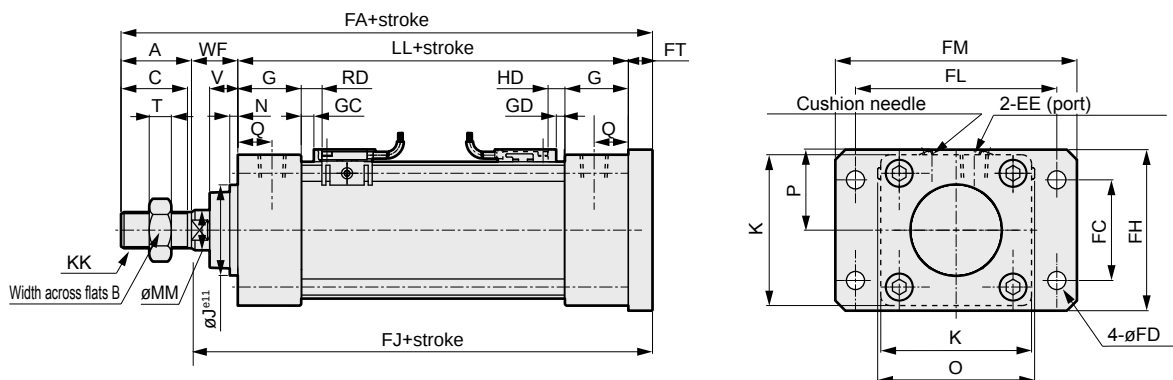
● Rod side flange type (FA)



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
 Note 2: Refer to page 15 for accessory dimensions.

Symbol		Rod side flange type (FA) basic dimensions																	
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	LL	M	MM	N	O	Q	T	V	WF	X
ø32	22	17	19.5	NPT1/8	6.5	27	30	46	M10X1.25	84	4	12	4	52	13	6	13	25	135
ø40	30	22	27	NPT1/4	9	27	35	52	M14X1.5	84	4	16	4	58	14	8	13	21	139
ø50	35	27	32	NPT1/4	10.5	31.5	40	65	M18X1.5	94	5	20	4	68	15.5	11	14	23	156
ø63	35	27	32	NPT3/8	12	31.5	45	75	M18X1.5	94	9	20	4	78	16.5	11	14	23	156
Symbol		Mounting dimensions								With switch									
Bore size (mm)	FC	FD	FF	FG	FJ	MT	FH	FL	FM	GC	GD	RD	HD	P					
ø32	32	7	15	98	29	10	50	64	79	1	1	5	5	25					
ø40	36	9	11	98	30	10	55	72	90	1	1	5	5	29					
ø50	45	9	11	110	38	12	70	90	110	2.5	1	6.5	5	34					
ø63	50	9	11	110	38	12	80	100	120	2.5	1	6.5	5	40					

● Head end flange type (FB)

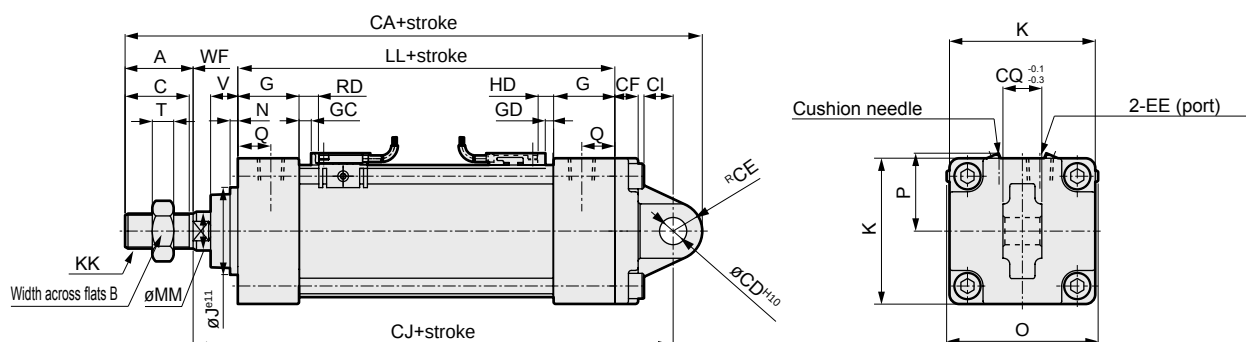


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
 Note 2: Refer to page 15 for accessory dimensions.

Symbol	Head end flange type (FB) basic dimensions																
	A	B	C	EE	F	G	J	K	KK	LL	M	MM	O	Q	T	V	WF
Bore size (mm)	22	17	19.5	NPT1/8	6.5	27	30	46	M10X1.25	84	4	12	52	13	6	13	25
ø32	30	22	27	NPT1/4	9	27	35	52	M14X1.5	84	4	16	58	14	8	13	21
ø40	35	27	32	NPT1/4	10.5	31.5	40	65	M18X1.5	94	5	20	68	15.5	11	14	23
ø50	35	27	32	NPT3/8	12	31.5	45	75	M18X1.5	94	9	20	78	16.5	11	14	23
Symbol	Mounting dimensions								With switch								
	FA	FC	FD	FJ	FL	FM	FT	GC	GD	RD	HD	P					
Bore size (mm)	141	32	7	119	64	79	10	1	1	5	5	25					
ø32	145	36	9	115	72	90	10	1	1	5	5	29					
ø40	164	45	9	129	90	110	12	2.5	1	6.5	5	34					
ø50	164	50	9	129	100	120	12	2.5	1	6.5	5	40					

Dimensions

● Single clevis type (CA)

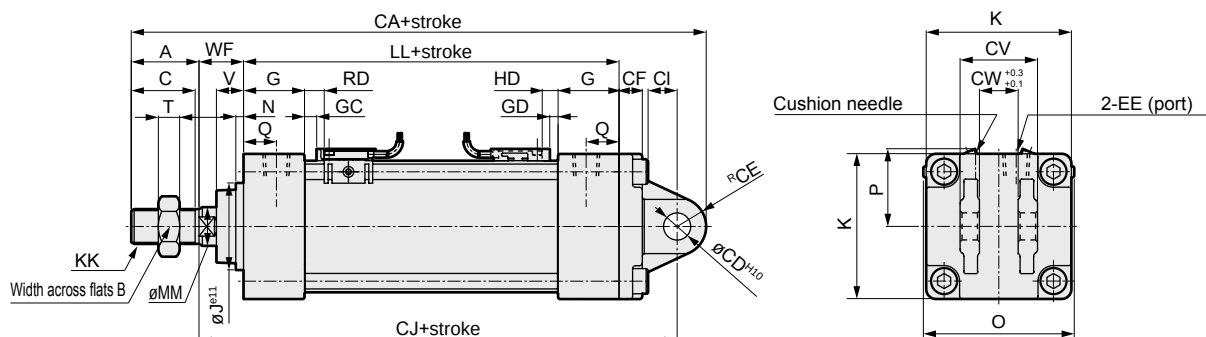


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
 Note 2: Refer to page 15 for accessory dimensions.

Symbol	Single clevis type (CA) basic dimensions																
	A	B	C	EE		F	G	J	K	KK	LL	M	O	Q	T	V	WF
Bore size (mm)																	
ø32	22	17	19.5	NPT1/8		6.5	27	30	46	M10X1.25	84	4	52	13	6	13	25
ø40	30	22	27	NPT1/4		9	27	35	52	M14X1.5	84	4	58	14	8	13	21
ø50	35	27	32	NPT1/4		10.5	31.5	40	65	M18X1.5	94	5	68	15.5	11	14	23
ø63	35	27	32	NPT3/8		12	31.5	45	75	M18X1.5	94	9	78	16.5	11	14	23

Symbol	Mounting dimensions							With switch						
	CA		CD	CE	CF	CI	CJ	CQ	GC	GD		RD	HD	P
Bore size (mm)														
ø32	164.5		10	10.5	9	13	132	14	1	1		5	5	25
ø40	169		10	11	9	13	128	14	1	1		5	5	29
ø50	197		14	15	12	17	147	20	2.5	1		6.5	5	34
ø63	197		14	15	12	17	147	20	2.5	1		6.5	5	40

● Double clevis type (CB)



Note 1: A pin, split pin, and flat washer are included.

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

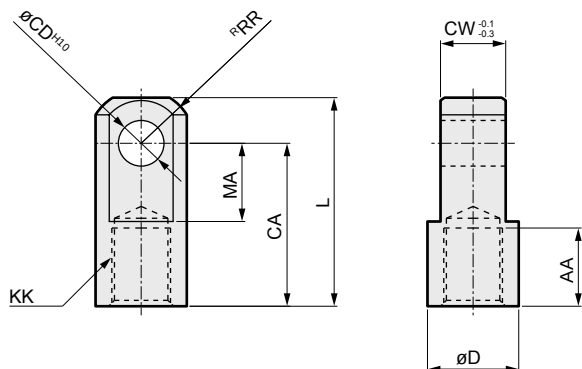
Note 3: Refer to page 15 for accessory dimensions.

Symbol	Double clevis type (CB) basic dimensions																	Mounting dimensions	
	A	B	C	EE	F	G	J	K	KK	LL	M	MM	O	Q	T	V	WF	CA	CD
ø32	22	17	19.5	NPT1/8	6.5	27	30	46	M10X1.25	84	4	12	52	13	6	13	25	164.5	10
ø40	30	22	27	NPT1/4	9	27	35	52	M14X1.5	84	4	16	58	14	8	13	21	169	10
ø50	35	27	32	NPT1/4	10.5	31.5	40	65	M18X1.5	94	5	20	68	15.5	11	14	23	197	14
ø63	35	27	32	NPT3/8	12	31.5	45	75	M18X1.5	94	9	20	78	16.5	11	14	23	197	14
Symbol							With switch												
	CE	CF	CI	CJ	CV	CW	GC		GD		RD		HD		P				
ø32	10.5	9	13	132	28	14	1		1		5		5		25				
ø40	11	9	13	128	28	14	1		1		5		5		29				
ø50	15	12	17	147	40	20	2.5		1		6.5		5		34				
ø63	15	12	17	147	40	20	2.5		1		6.5		5		40				

Accessory dimensions

● Single knuckle (I)

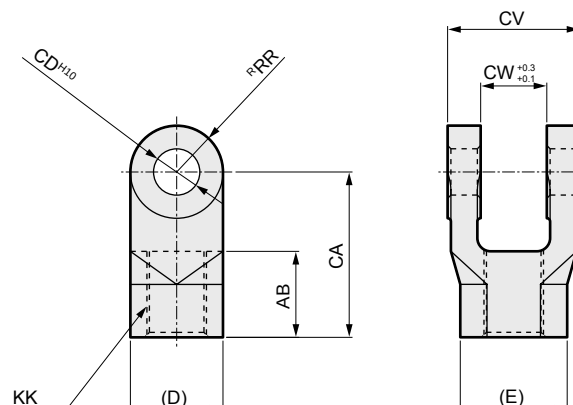
Material: Steel



Model No.	Applicable tube Inner diameter (mm)	AA	CA	CD	CW	D	KK	L	MA	RR	Mass (kg)
SCG-I-32	32	14	30	10	14	20	M10×1.25	40	16	12	0.07
SCG-I-40	40	19	40	10	14	22	M14×1.5	50	19	12.5	0.07
SCG-I-50	50,63	24	50	14	20	28	M18×1.5	64	24	16.5	0.20

● Double knuckle (Y)

Material: Cast iron

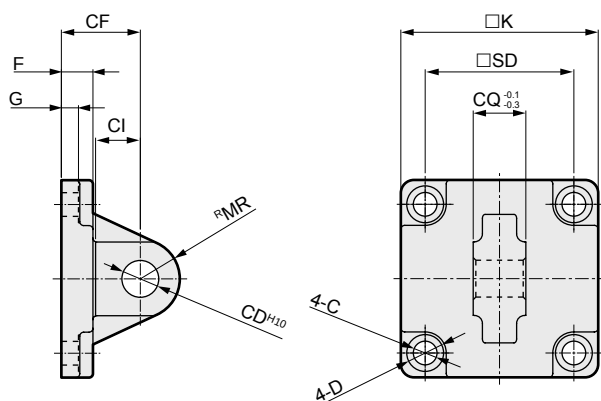


Model No.	Applicable tube Inner diameter (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Mass (kg)
SCG-Y-32	32	14	30	10	28	14	20	23.1	M10×1.25	10	0.10
SCG-Y-40	40	21	40	10	28	14	22	25.4	M14×1.5	11	0.13
SCG-Y-50	50,63	26	50	14	40	20	28	32.3	M18×1.5	14	0.30

Note: A pin, split pin, and flat washer are included.

● Single bracket (B1)

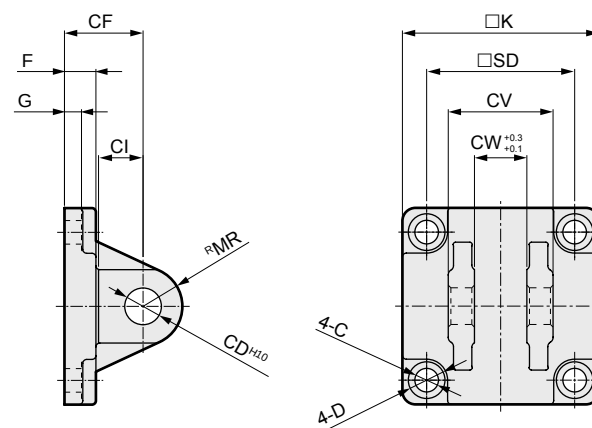
Material: Cast iron



Model No.	Applicable tube Inner diameter (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD	Mass (kg)
SCG-B1-32	32	6.6	10	23	13	14	11	9	4.5	46	10.5	32.5	0.13
SCG-B1-40	40	6.6	10	23	13	14	11	9	4.5	52	11	38	0.16
SCG-B1-50	50	9	14	30	17	20	14	12	6.5	65	15	46.5	0.38
SCG-B1-63	63	9	14	30	17	20	14	12	6.5	75	15	56.5	0.48

● Double bracket (B2)

Material: Cast iron



Model No.	Applicable tube Inner diameter (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD	Mass (kg)
SCG-B2-32	32	6.6	10	23	13	28	14	11	9	4.5	46	10.5	32.5	0.16
SCG-B2-40	40	6.6	10	23	13	28	14	11	9	4.5	52	11	38	0.20
SCG-B2-50	50	9	14	30	17	40	20	14	12	6.5	65	15	46.5	0.46
SCG-B2-63	63	9	14	30	17	40	20	14	12	6.5	75	15	56.5	0.58

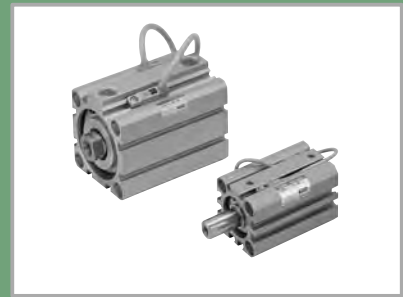
Note: A pin, split pin, and flat washer are included.

SSD2 Series

- Bore size: ø12 to ø63

Features

- Installation on all four faces
- Ample stroke settings • Selective mounting



Catalog No.CC-937A

How to order

Without switch

SSD2 - 12 NN - 5

With switch

 SSD2-L - 12 NN - 10 - T2H - R
 A B C D E F

Symbol	Descriptions
A Model No.	
SSD2	Double acting, single rod type
SSD2-L	Double acting, single rod type with switch
B Bore size (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
C Port thread type	
Blank	M5 (ø12 to ø16)
NN	NPT screw (ø20 to ø63)

Note 1: F type switch is installable only on the piping port of tube bore size ø20 and ø25.

Note 2: Stroke length less than 15 cannot be selected for ø20 F type switch radial lead wires.

Note 3: Switches are shipped with the product. Contact CKD when shipment must be assembled.

D Stroke length (mm)		Applicable bore size (ø)							
		12	16	20	25	32	40	50	63
Standard stroke length	5	●	●	●	●	●	●	●	●
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●
	40			●	●	●	●	●	●
	45			●	●	●	●	●	●
	50			●	●	●	●	●	●

E Switch model No.												
Lead wire straight type	Lead wire radial	Contact	Indicator	Lead wire	Bore size							
					12	16	20	25	32	40	50	63
F2H*	F2V*	Proximity	One color indicator type	2 wire			●	●				
F3H*	F3V*			3 wire			●	●				
T2H*	T2V*	Proximity	One color indicator type	2 wire	●	●	●	●	●	●	●	●
T3H*	T3V*			3 wire	●	●	●	●	●	●	●	●

*Lead wire length

Blank	1 m (standard)
-------	----------------

F Switch quantity

R	One on rod end
H	One on head end
D	Two

Specifications

Item		SSD2 SSD2-L (with switch)								
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	
Actuation		Double acting								
Use fluid		Compressed air								
Maximum working pressure		MPa		1.0						
Minimum working pressure		MPa		0.1					0.05	
Proof pressure		MPa		1.6						
Ambient temperature		°C		-10 to 60 (No freezing)						
Connection diameter		M5				NPT1/8 Note		NPT1/4		
Stroke tolerance		mm		+1.0 0						
Working piston speed		mm/s		50 to 500					50 to 300	
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG32)								
Permission absorbed energy		J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12

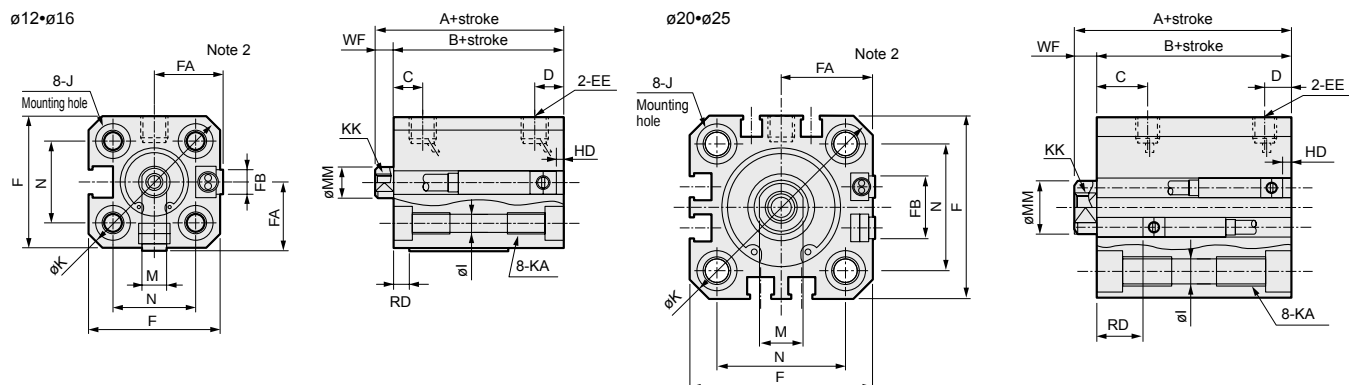
Note: The port size is M5 for the 5 stroke ø32 without switch.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Maximum stroke length (mm)	Minimum stroke length (mm)
ø12	5, 10, 15, 20, 25, 30	30	1
ø16			
ø20	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	50	
ø25			
ø32			
ø40			
ø50			
ø63	10, 15, 20, 25, 30, 35, 40, 45, 50		

Dimensions

● SSD2-L-12 to 25 (with switch)

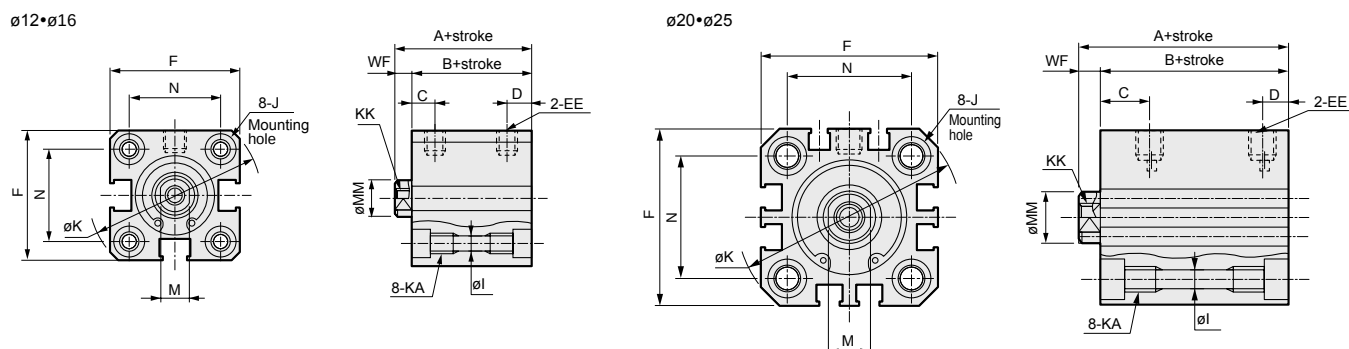


● Notes on switch attaching grooves

Note: Only an F type switch can be used on the piping port side for tube bore size ø20 and ø25.

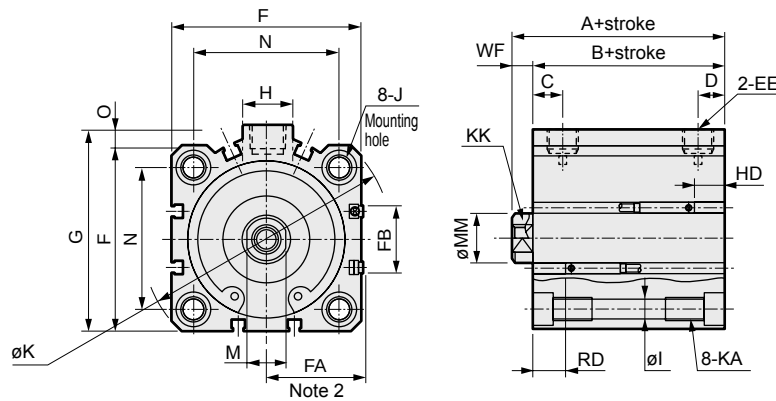
Symbol	Common dimension with switch																
Bore size (mm)	A	B	C	D	EE	F	FA	FB	I	J	K	KA	KK	M	MM	N	WF
ø12	25.5	22	5.5	5.5	M5	25	13 (16.5)	4.5	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	25.5	22	5.5	5.5	M5	29	15 (18.5)	4.5	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	34	29.5	8	5.5	M5	36	18.5 (22)	12.5	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	37.5	32.5	11	6	M5	40	20.5 (24)	13.5	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 11	10	12	28	5
Symbol	Proximity T2H•T2V, T3H•T3V				Proximity F2H•F2V, F3H•F3V				Note 1: HD and RD dimensions for the 5 stroke will differ from these due to manufacturing. Note 2: Dimensions in parentheses for FA are the values for the L type lead wire.								
Bore size (mm)	HD		RD		HD		RD										
ø12	1.5		1.5														
ø16	0		4.5														
ø20	3		7.5		7.5		12										
ø25	4		9.5		8.5		14										

● SSD2-12 to 25 (without switch)

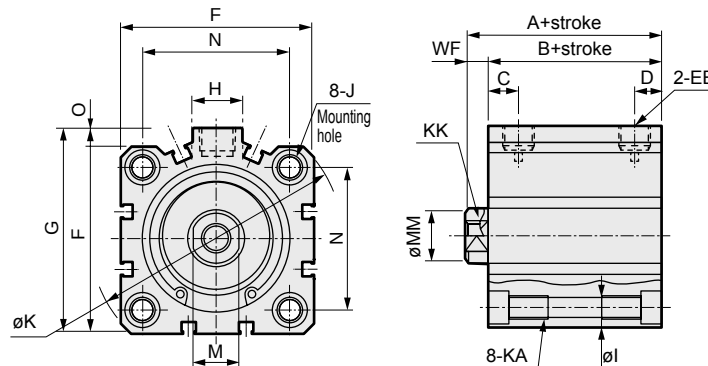


Symbol	Without switch and common dimension															
Bore size (mm)	A	B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF	
ø12	20.5	17	5.5	5.5	M5	25	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5	
ø16	20.5	17	5.5	5.5	M5	29	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5	
ø20	24	19.5	8	5.5	M5	36	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5	
ø25	27.5	22.5	11	6	M5	40	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 11	10	12	28	5	

● SSD2-L-32 to 63 (with switch•T2H/V and T3H/V)



● SSD2-32 to 63 (without switch)



Symbol	Without switch		Common dimension with switch											
Bore size (mm)	A ^{Note 3}	B ^{Note 3}	A	B	C ^{Note 5}	D ^{Note 5}	EE ^{Note 4}	F	FA ^{Note 2}	FB	G	H	I	J
ø32	30 (40)	23 (33)	40	33	8 (10)	8 (5.5)	NPT1/8	45	23 (26.5)	20.5	49.5	12.5	5.5	9 spot face depth 5.5
ø40	36.5 (46.5)	29.5 (39.5)	46.5	39.5	12 (11.5)	8.5 (8)	NPT1/8	52	26.5 (30)	27.5	57	15	5.5	9 spot face depth 5.5
ø50	38.5 (48.5)	30.5 (40.5)	48.5	40.5	10.5	10.5	NPT1/4	64	32.5 (36)	28.5	71	18	6.9	11 spot face depth 6.5
ø63	44 (54)	36 (46)	54	46	13	11	NPT1/4	77	39 (42.5)	28.5	84	23	8.7	14 spot face depth 9
Symbol	Common dimension with switch									Proximity T2H•T2V, T3H•T3V				
Bore size (mm)	K	KA	KK	M	MM	N	O	WF	HD ^{Note 1}	RD ^{Note 1}				
ø32	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7	4	9.5				
ø40	69	M6 depth 11	M8 depth 13	14	16	40	5	7	7	12				
ø50	86	M8 depth 13	M10 depth 15	17	20	50	7	8	7.5	12.5				
ø63	103	M10 depth 25	M10 depth 15	17	20	60	7	8	12.5	13				

Note 1: HD and RD dimensions for the 5 stroke will differ from these due to manufacturing.

Note 2: Dimensions in parentheses for FA are the values for the L type lead wire.

Note 3: Values in parentheses for symbols A and B are for stroke lengths greater than 50.

Note 4: The port size is M5 for the 5 stroke ø32 without switch.

Note 5: Dimensions in parentheses in the C and D columns are values for the 5 stroke with no switch.

MEMO

STG Series

- Bore size: ø12 to ø63

Features

- Eco-friendly
- Improved maintenance
- Compatible with wide range of applications and environment



Catalog No. CB-029SA

How to order

Without switch

STG - M - 32 - NN - 25

With switch

STG - M - 32 - NN - 25 - T2H - R

A B C D E F

Symbol	Descriptions
A Bearing style	
M	Slide bearing
B	Roller bearing
B Bore size (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
C Port thread type	
Blank	M5 (ø12 to ø16)
NN	NPT screw (ø20 to ø63)

Note 1: Switches are shipped with the product. Contact CKD when shipment must be assembled.

D Stroke length (mm)									
Stroke length (mm)		Applicable bore size							
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Standard Stroke length	10	●	●						
	20	●	●	●	●				
	25					●	●	●	●
	30	●	●	●	●				
	40	●	●	●	●				
	50	●	●	●	●	●	●	●	●
	75	●	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●	●
	125			●	●	●	●	●	●
	150			●	●	●	●	●	●
	175			●	●	●	●	●	●
200			●	●	●	●	●	●	

E Switch model No.				
Lead wire straight type	Lead wire radial	Contact	Indicator	Lead wire
T2H*	T2V*	Proximity	One color indicator type	2 wire
T3H*	T3V*			3 wire
*Lead wire length				
Blank	1 m (standard)			
F Switch quantity				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			

Specifications

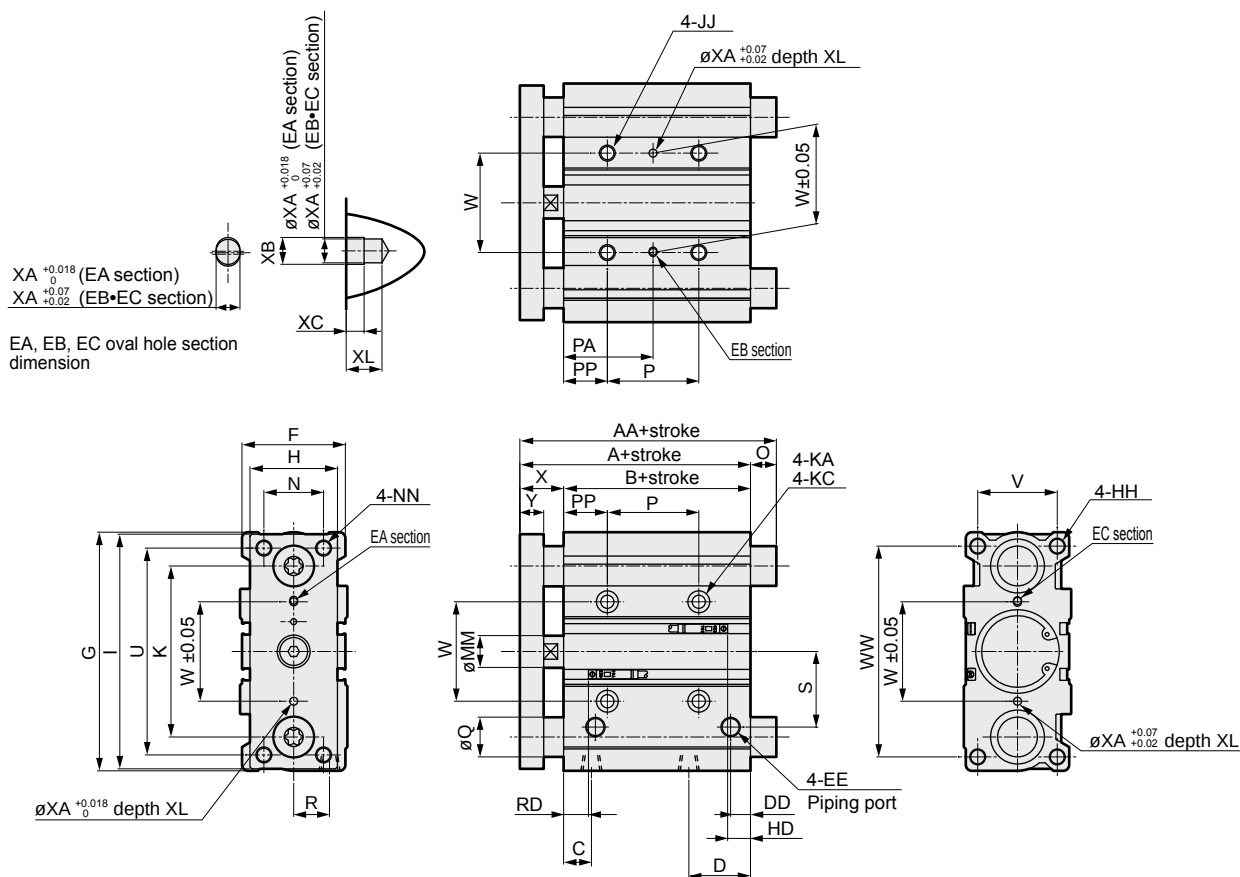
Item	STG-M/B								
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting								
Use fluid	Compressed air								
Maximum working pressure	MPa	1.0							
Minimum working pressure	MPa	0.15				0.1			
Proof pressure	MPa	1.6							
Ambient temperature	°C	-10 to 60 (No freezing)							
Connection diameter		M5		NPT1/8				NPT1/4	
Stroke tolerance	mm	+2.0 0							
Working piston speed	mm/s	50 to 500							50 to 300
Cushion	Rubber cushioned								
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32)								
Permisson absorbed energy	J	0.056	0.088	0.157	0.157	0.401	0.627	0.980	1.560

Stroke length

Bore size	Standard stroke length (mm)	Maximum stroke length (mm)	Minimum stroke length (mm)	Minimum stroke length of types with switch (mm)		
ø12	10, 20, 30, 40, 50, 75, 100	100	10	10 Note		
ø16						
ø20						
ø25	20, 30, 40, 50, 75, 100, 125, 150, 175, 200	200				
ø32						
ø40						
ø50						
ø63						

Note: With 1 or 2 switches.

● STG-32, 40, 50, 63



● STG-M/B common

Symbol	Standard stroke length (mm)			A	B	C	D	DD	EE	F	G	H	HH	I	JJ			
Bore size (mm)																		
ø32	25, 50, 75, 100, 125, 150, 175, 200			59.5	37.5	12.5	30.5	9	NPT1/8	48	112	44	M8 depth 20	110	M8 depth 16			
ø40				66	44	14	31	10	NPT1/8	54	120	44	M8 depth 20	118	M8 depth 16			
ø50				72	44	14	35	11	NPT1/4	64	148	60	M10 depth 22	146	M10 depth 20			
ø63				77	49	16.5	35	15	NPT1/4	78	162	70	M10 depth 22	158	M10 depth 20			
Symbol	K	KA	KC	MM	N	NN	P						PA					
Bore size (mm)							25 or less		Over 25 to 100	Over 100 to 200	25 or less		Over 25 to 100					
ø32	78	6.3 penetrating	11 spot face depth 7.5	16	30	M8 penetrating	24		48		124		33		45			
ø40	86	6.3 penetrating	11 spot face depth 7.5	16	30	M8 penetrating	24		48		124		34		46			
ø50	110	8.6 penetrating	14 spot face depth 9	20	40	M10 penetrating	24		48		124		36		48			
ø63	124	8.6 penetrating	14 spot face depth 9	20	50	M10 penetrating	28		52		128		38		50			
Symbol	PA			PP	R	S	U	V	W	WW	X	Y	RD	HD	XA	XB	XC	XL
Bore size (mm)	Over 100 to 200																	
ø32	83			21	15	34	96	34	42	98	22 $\frac{0}{-0.05}$	12	10	8.5	4	4.5	3	6
ø40	84			22	18	38	104	40	50	106	22 $\frac{0}{-0.05}$	12	13	12	4	4.5	3	6
ø50	86			24	21.5	47	130	46	66	130	28 $\frac{0}{-0.05}$	16	13.5	11.5	5	6	4	8
ø63	88			24	28	55	130	58	80	142	28 $\frac{0}{-0.05}$	16	14	16	5	6	4	8

● STG-M

Symbol	AA		Q	O	
Bore size (mm)	50 or less	Over 50 to 200		50 or less	Over 50 to 200
ø32	79	100	20	19.5	40.5
ø40	79	100	20	13	34
ø50	91	116	25	19	44
ø63	91	116	25	14	39

● STG-B

Symbol	AA			Q	O		
Bore size (mm)	50 or less	Over 50 to 100	Over 100 to 200		50 or less	Over 50 to 100	Over 100 to 200
ø32	79	98	118	16	19.5	38.5	58.5
ø40	79	98	118	16	13	32	52
ø50	91	114	134	20	19	42	62
ø63	91	114	134	20	14	37	57

MEMO

LCR Series

- Bore size: ø6 to ø25

Features

- Aluminum table is adopted to reduce weight by 10%
- Higher rigidity with rigid linear guide and slide table



Catalog No. CB-039A

How to order

Without switch

LCR - 8 - 40

With switch

LCR - 12 - 40 - F2H - R
A B C D

Symbol	Descriptions
A Bore size	
6	ø6
8	ø8
12	ø12
16	ø16
20	ø20
25	ø25
B Stroke length (mm)	
	Bore size (ø)
	6 8 12 16 20 25
10	10
20	20
30	30
40	40
50	50
75	75
100	100
125	125
150	150

Note: Switches are shipped with the product. Contact CKD when shipment must be assembled.

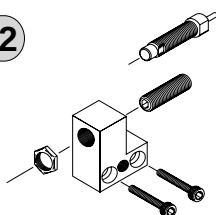
C Switch model No.										
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire	Bore size					
					ø6	ø8	ø12	ø16	ø20	ø25
F2H*	F2V*	Proximity	One color indicator type	2 wire	●	●	●			
F3H*	F3V*			3 wire						
T2H*	T2V*	Proximity	One color indicator type	2 wire				●	●	●
T3H*	T3V*			3 wire						
*Lead wire length										
Blank		1 m (standard)								
D Switch quantity										
R	One on rod end									
H	One on head end									
D	Two									

How to order stopper set

- Stopper section and stopper for adjustable stroke or shock absorber type stopper set
- Used when changing from standard to stopper for adjustable stroke or with shock absorber type stopper

LCR - 12 - S 2 D - S02
A B C D

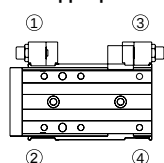
Bore size



Precautions for ordering stopper set

Adjustable stroke lengths shown below apply only for installation at position ① or ②.

Stopper position



—: Not available

Symbol	Descriptions
A Stopper type	
S	Stopper for adjustable stroke
A	Shock absorber type stopper
B Stopper installation position	
1	Stopper position ① or ④
2	Stopper position ② or ③
C Port at stopper section	
Blank	No port
D	With side surface and bottom port
D Adjustable stroke length	
Blank	Adjustable stroke range 5mm
S02	Adjustable stroke range 15mm
S03	Adjustable stroke range 25mm

Note 1: When installed on installation position ① or ②, the adjustable stroke length varies depending on the stroke type. Refer to the table on the right for details.

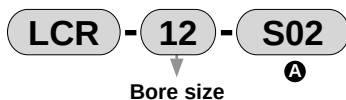
Note 2: "S03" cannot be selected for ø6 and ø8.

Note 3: Not selectable for shock absorber type stopper "A".

Model No. symbol	Option symbol		Discrete stopper for adjustable stroke		
			Adjustable stroke length (mm)		
LCR Series	ø6, ø8	10	S02	—	—
		20 and over	Blank	S02	—
	ø12 to ø25	10	S03	—	—
		20	S02	S03	—
		30 and over	Blank	S02	S03

How to order discrete stopper for adjustable stroke

- Hexagon socket head set screw with urethane
- Used when changing the adjustable stroke range or setting custom stroke length



A Adjustable stroke range	
S01	Single 5 mm (standard)
S02	Single 15 mm
S03	Single 25 mm

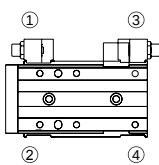
Indicate S01, S02 or S03 for A

Note: S03 is not available for ø6 and ø8. Depending on the type, the incompatible models or adjustable stroke ranges may differ from the above values.

Precautions for ordering discrete stopper

Only when installing a stopper for adjustable stroke or a shock absorber type stopper on installation position ① or ②, the combination shown below may be applied depending on stroke length and adjustable stroke length.

● Stopper position

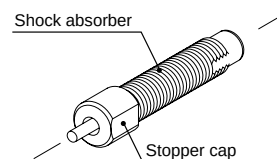


—: Combination not available

Model No. symbol	Option symbol		Discrete stopper for adjustable stroke Adjustable stroke length (mm)			Discrete shock absorber type stopper
	Bore size	Stroke length	-5	-15	-25	
LCR Series - S1, S2, S5, S6 - A1, A2, A5, A6	ø6, ø8	10	S02	—	—	A01
		20 and over	S01	S02	—	
	ø12 to ø25	10	S03	—	—	—
		20	S02	S03	—	—
		30 and over	S01	S02	S03	A01

How to order discrete shock absorber type stoppers

- A set of a shock absorber and a stopper cap
- Used when changing from a stopper for adjustable stroke to a shock absorber type stopper



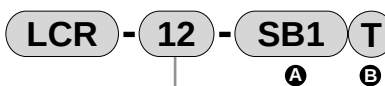
Bore size

Applicable shock absorber model No.

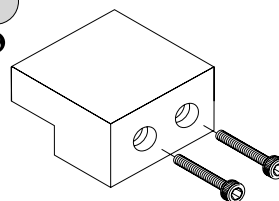
Model	Shock absorber model No.
LCR-6	NCK-00-0.1
LCR-8	NCK-00-0.3
LCR-12	NCK-00-0.3
LCR-16	NCK-00-0.7
LCR-20	NCK-00-1.2
LCR-25	NCK-00-1.2

How to order discrete stopper block model No.

- Used when changing from standard to stopper for adjustable stroke or with shock absorber type stopper



Bore size



A Stopper block	
SB1	ø6 and ø8: for 30 mm stroke or less
	ø12 and ø25: for 50 mm stroke or less
SB2	ø6 and ø8: for 40 mm stroke and over
	ø12 and ø25: for 75 mm stroke and over
B Material	
Blank	Stopper block material: Rolled steel
T	Stopper block material: Alloy steel (nitriding)

Specifications

Item		LCR					
Bore size	mm	ø6	ø8	ø12	ø16	ø20	ø25
Actuation		Double acting					
Use fluid		Compressed air					
Maximum working pressure MPa		0.7					
Minimum working pressure MPa		0.15 (Note 1)					
Proof pressure MPa		1.05					
Ambient temperature °C		-10 to 60 (No freezing)					
Connection	Body side surface	M3	M5			NPT1/8	
diameter	Rear body	—	M3			M5	NPT1/8
Stroke tolerance mm		+2.0 0 (Note 1)					
Working piston speed mm/s		50 to 500 (Note 2)					
Cushion		Rubber cushioned					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG32)					
Permission absorbed energy J		Refer to table 1.					

Note 1: When not using a stopper, a slight gap may exist between the end plate and floating bushing.

Note 2: Use the stopper for adjusting the stroke between 50 and 200 mm/s.

Stroke length

Bore size (mm)	Standard stroke length (mm)
ø6	10, 20, 30, 40, 50
ø8	10, 20, 30, 40, 50, 75
ø12	10, 20, 30, 40, 50, 75, 100
ø16	10, 20, 30, 40, 50, 75, 100, 125
ø20	10, 20, 30, 40, 50, 75, 100, 125, 150
ø25	10, 20, 30, 40, 50, 75, 100, 125, 150

Note: Stroke length other than above is not available.

[Table 1] Permission absorbed energy of LCR

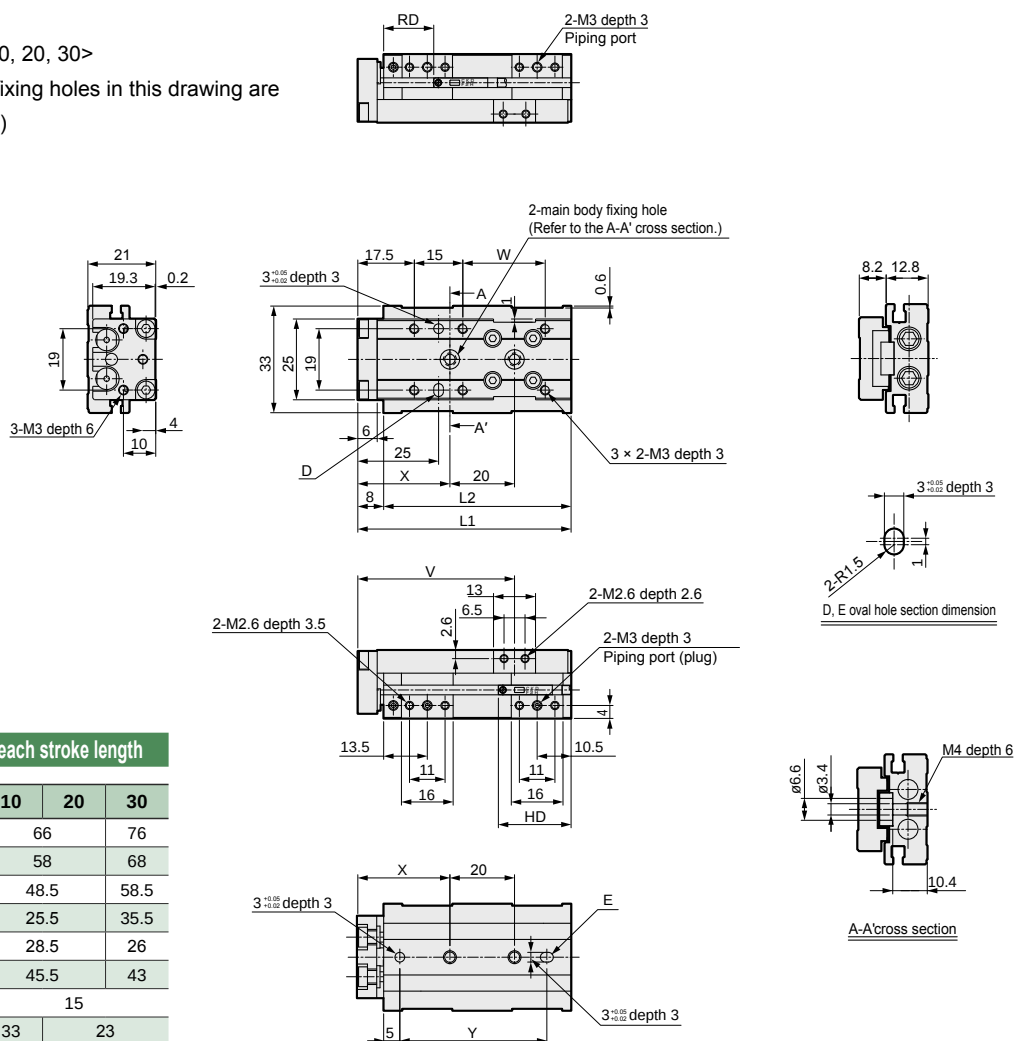
Bore size	Standard (J)	With stopper for adjustable stroke (J)	With shock absorber type stopper (J)
ø6	0.025	0.0032	0.6
ø8	0.058	0.0032	2.1
ø12	0.112	0.014	2.1
ø16	0.176	0.043	5.4
ø20	0.314	0.055	9.7
ø25	0.314	0.14	9.7

Dimensions (bore size: $\phi 6$)

● LCR-6

<stroke length: 10, 20, 30>

(The main body fixing holes in this drawing are for 20 mm stroke)

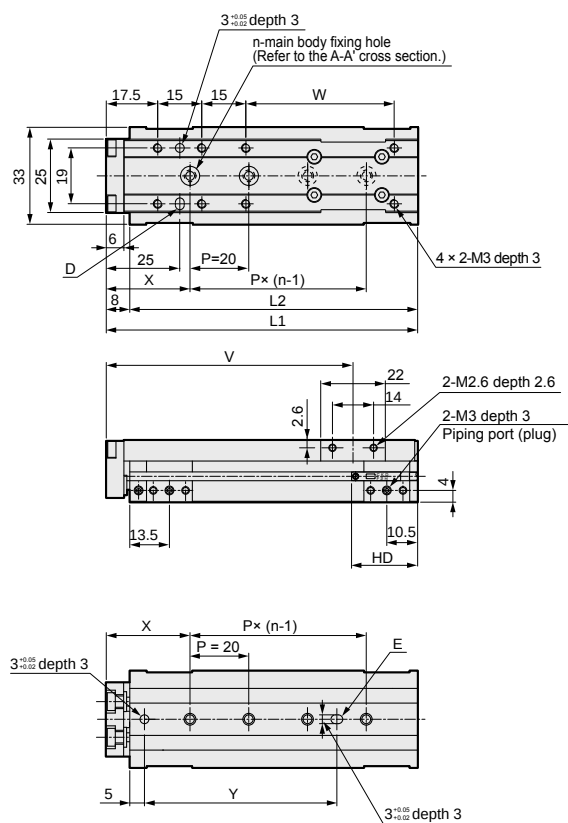


Dimensions table for each stroke length

Stroke length	10	20	30
L1	66	76	
L2	58	68	
V	48.5	58.5	
W	25.5	35.5	
X	28.5	26	
Y	45.5	43	
RD	15		
HD	33	23	

<stroke length: 40, 50>

(The main body fixing holes in this drawing are for 50 mm stroke)



Dimensions table for each stroke length

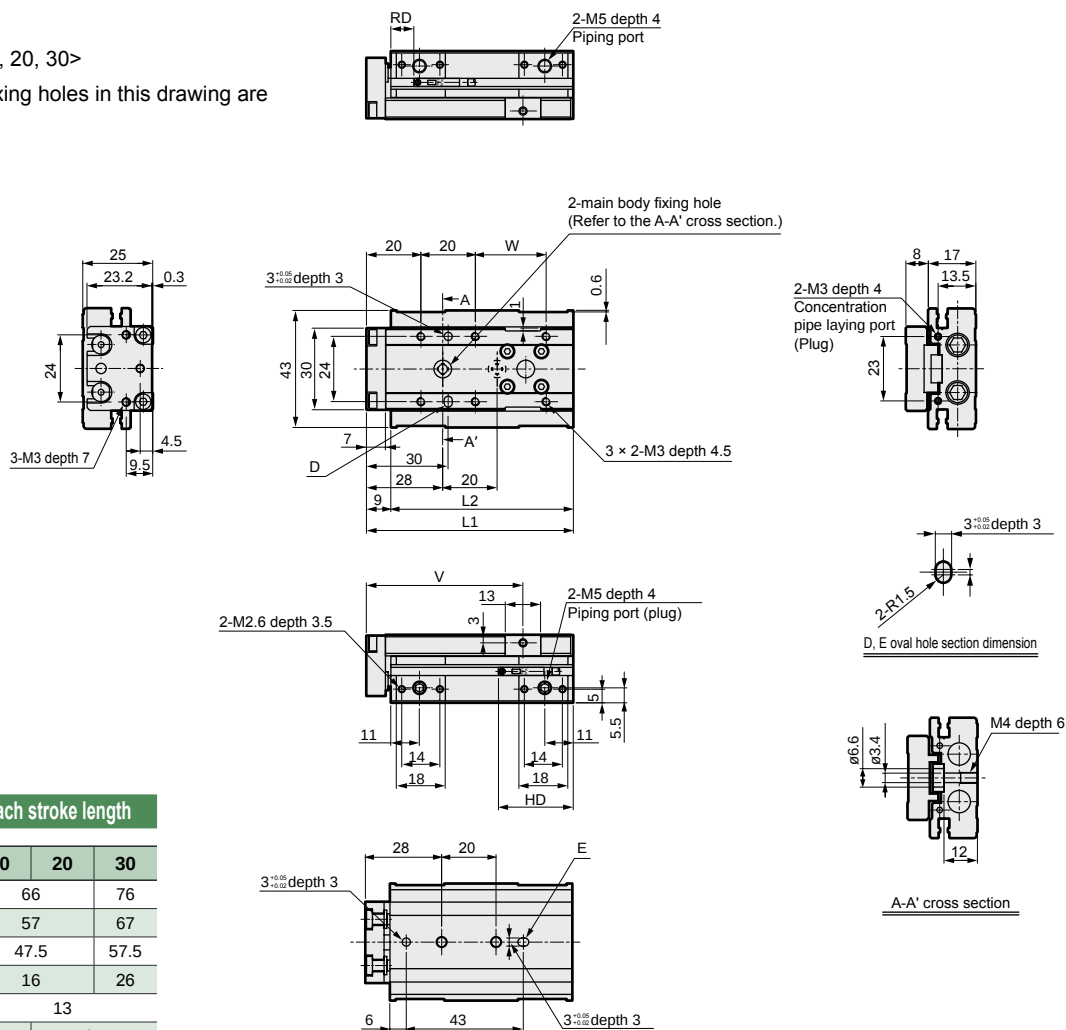
Stroke length	40	50
L1	96	106
L2	88	98
n	3	4
V	74	84
W	40.5	50.5
X	27	28.5
Y	44	65.5
RD	15	
HD	33	

Dimensions (bore size: $\phi 8$)

● LCR-8

<stroke length: 10, 20, 30>

(The main body fixing holes in this drawing are for 30 mm stroke)

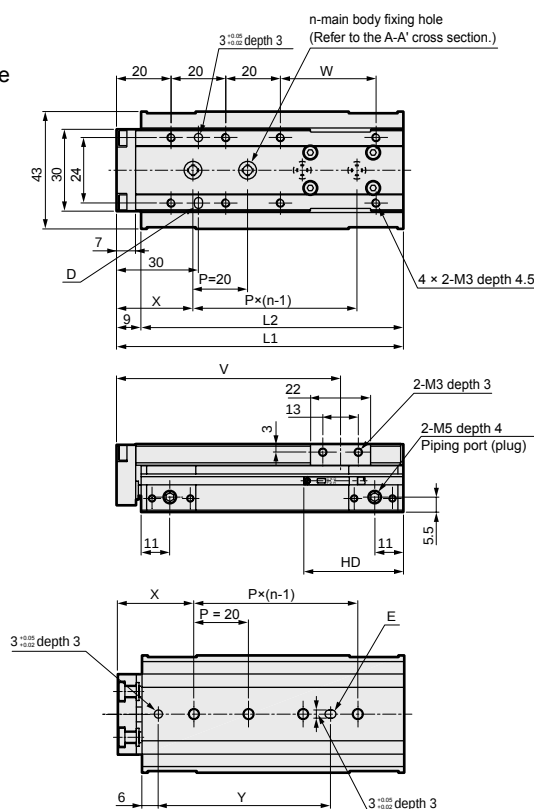


Dimensions table for each stroke length

Stroke length	10	20	30
L1	66	76	
L2	57	67	
V	47.5	57.5	
W	16	26	
RD	13		
HD	34	24	

<stroke length: 40, 50, 75>

(The main body fixing holes in this drawing are for 50 mm stroke)



Dimensions table for each stroke length

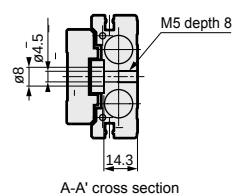
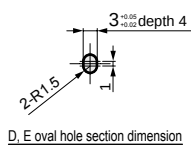
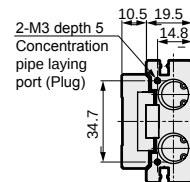
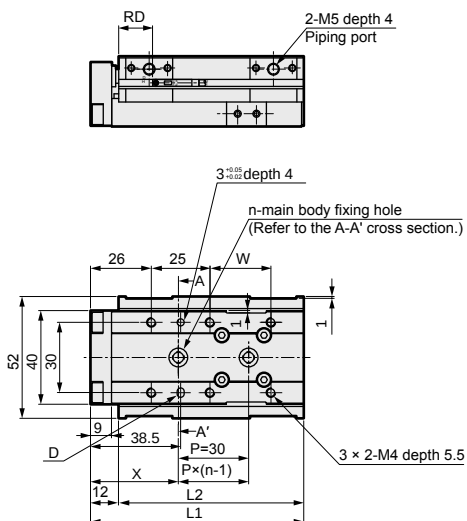
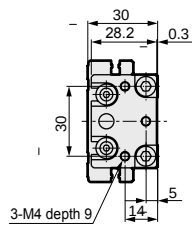
Stroke length	40	50	75
L1	95	105	130
L2	86	96	121
n	3	4	5
V	72	82	107
W	25	35	60
X	26.5	28	25
Y	41.5	63	80
RD	13		
HD	33		

Dimensions (bore size: $\phi 12$)

● LCR-12

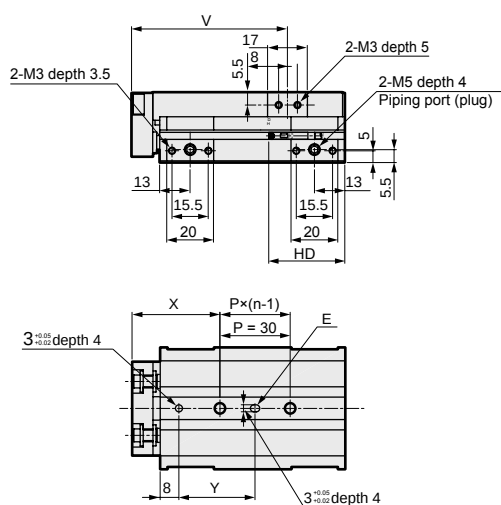
<stroke length: 10, 20, 30, 40, 50>

(The main body fixing holes in this drawing are for 30 mm stroke)



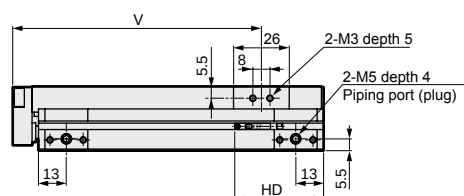
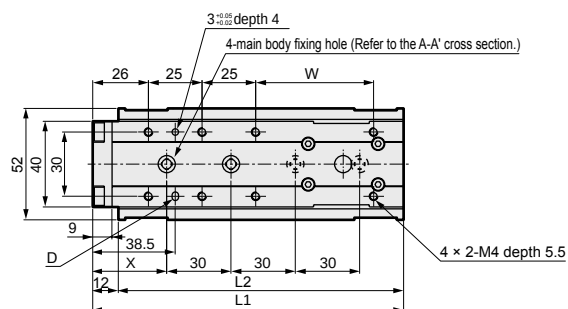
Dimensions table for each stroke length

Stroke length	10	20	30	40	50
L1		91		101	111
L2		79		89	99
n		2		3	
V		66.5		76.5	86.5
W		26		36	46
X		37.5		36	32
Y		32.5		31	57
RD		16.5			
HD	52.5	42.5		32.5	



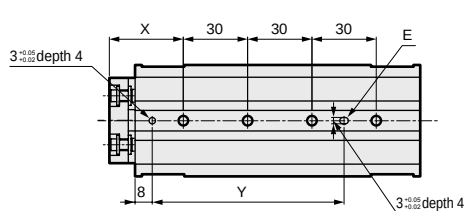
<stroke length: 75, 100>

(The main body fixing holes in this drawing are for 100 mm stroke)



Dimensions table for each stroke length

Stroke length	75	100
L1	145	170
L2	133	158
V	116	141
W	55	80
X	34.5	47
Y	89.5	102
RD		16.5
HD		41.5

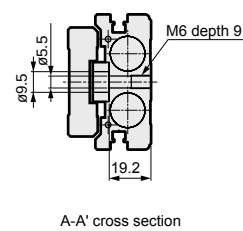
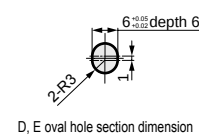
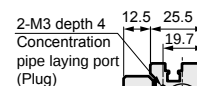
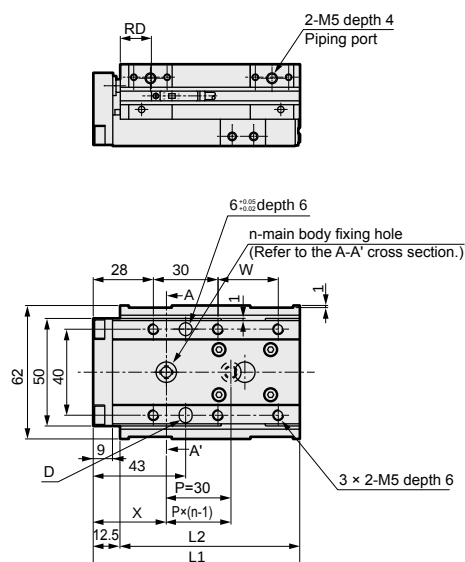
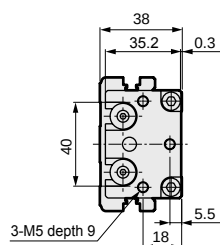


Dimensions (bore size: $\phi 16$)

● LCR-16

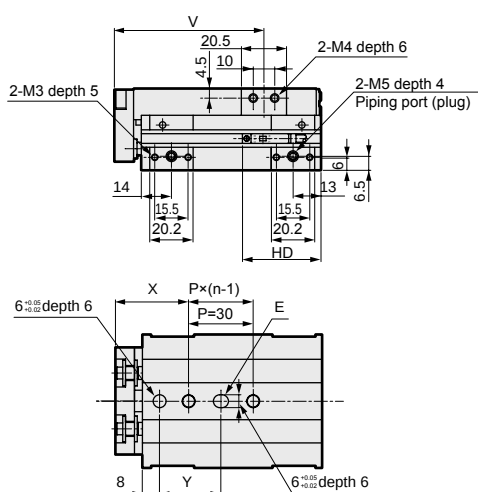
<stroke length: 10, 20, 30, 40, 50>

(The main body fixing holes in this drawing are for 30 mm stroke)



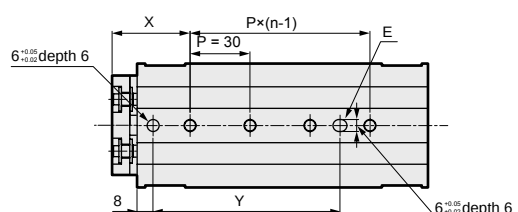
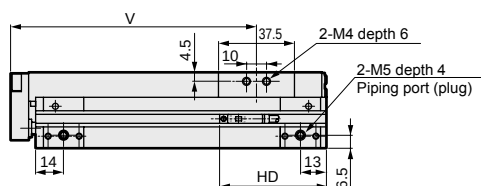
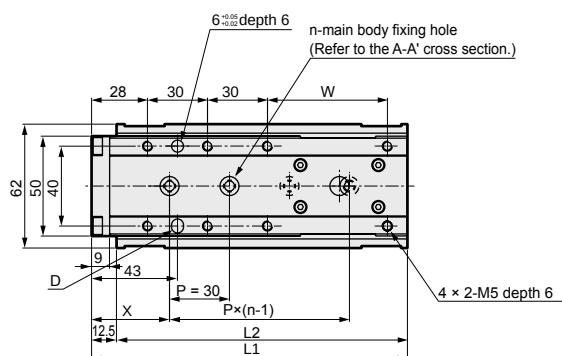
Dimensions table for each stroke length

Stroke length	10	20	30	40	50
L1		96		106	116
L2		83.5		93.5	103.5
n		2		3	
V		69.8		79.8	89.8
W		28		38	48
X		34		45.5	55.5
Y		28.5		40	50
T2/3*	RD	17			
	HD	56.5	46.5	36.5	



<stroke length: 75, 100, 125>

(The main body fixing holes in this drawing are for 75 mm stroke)



Dimensions table for each stroke length

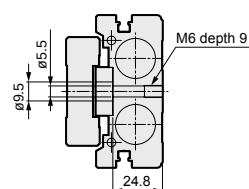
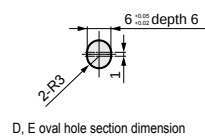
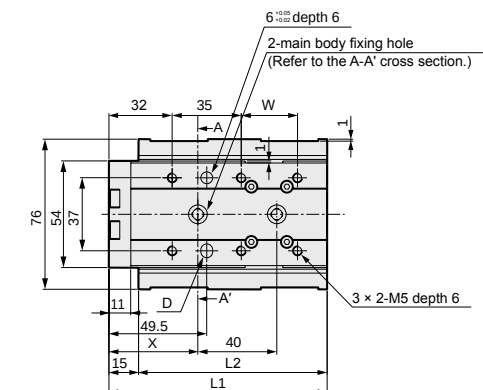
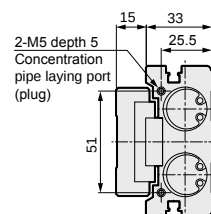
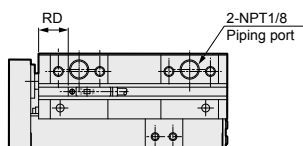
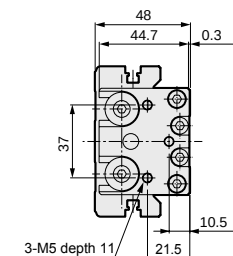
Stroke length	75	100	125
L1	158	183	208
L2	145.5	170.5	195.5
n	4	5	
V	123.3	148.3	173.3
W	60	85	110
X	39	37	49
Y	93.5	121.5	153.5
T2/3*	RD	17	
	HD	53.5	

Dimensions (bore size: $\varnothing 20$)

● LCR-20

<stroke length: 10, 20, 30, 40, 50>

(The main body fixing holes in this drawing are for 30 mm stroke)



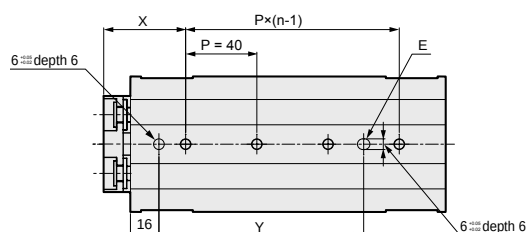
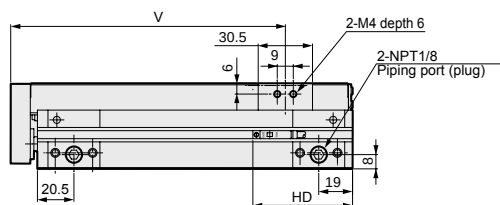
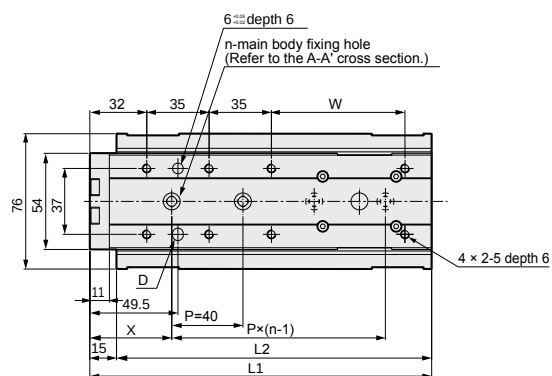
A-A' cross section

Dimensions table for each stroke length

Stroke length	10	20	30	40	50
L1	110.5	120.5	130.5		
L2	95.5	105.5	115.5		
V	78.5	88.5	98.5		
W	28.5	38.5	48.5		
X	45	51	49		
Y	34	40	38		
T2/3*	RD	20.5			
	HD	65	55	45	

<stroke length: 75, 100, 125, 150>

(The main body fixing holes in this drawing are for 100 mm stroke)



Dimensions table for each stroke length

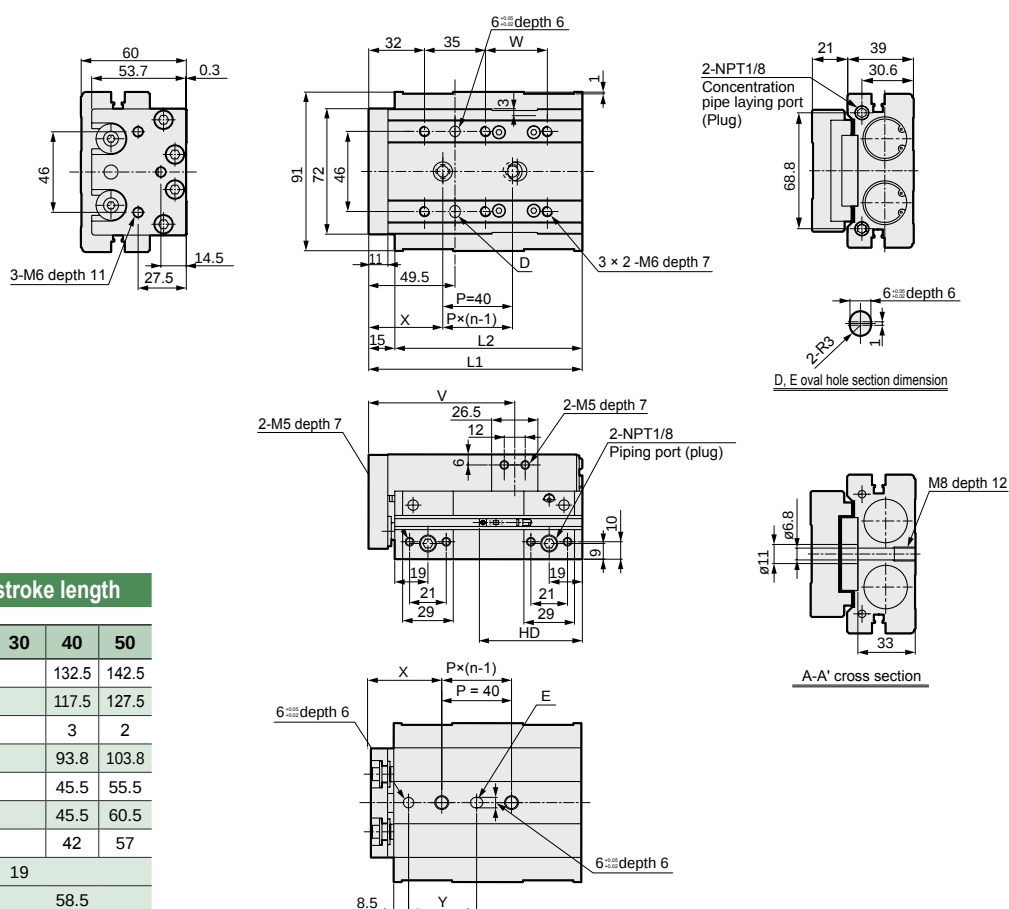
Stroke length	75	100	125	150
L1	167	192	217	242
L2	152	177	202	227
n	3	4	5	
V	129.3	154.3	179.3	204.3
W	50	75	100	125
X	46	53	51	
Y	75	115	122	160
T2/3*	RD	20.5		
	HD	57.5		

Dimensions (bore size: $\varnothing 25$)

● LCR-25

<stroke length: 10, 20, 30, 40, 50>

(The main body fixing holes in this drawing are for 30 mm stroke)

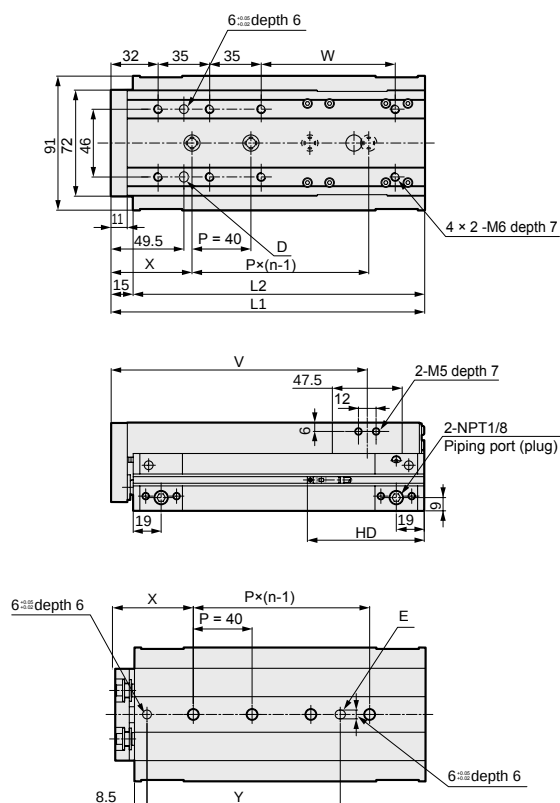


Dimensions table for each stroke length

Stroke length	10	20	30	40	50
L1		122.5		132.5	142.5
L2		107.5		117.5	127.5
n		2		3	2
V		83.8		93.8	103.8
W		35.5		45.5	55.5
X		42.5		45.5	60.5
Y		39		42	57
T2/3*	RD	19			
	HD	78.5	68.5		58.5

<stroke length: 75, 100, 125, 150>

(The main body fixing holes in this drawing are for 100 mm stroke)

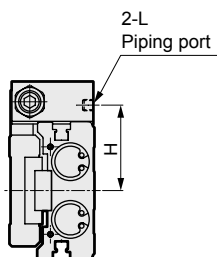
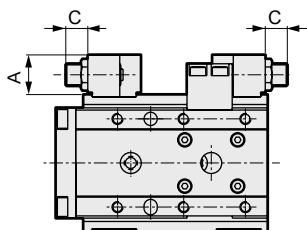
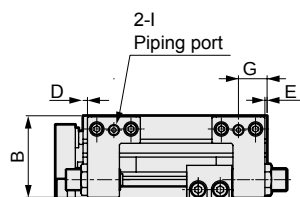


Dimensions table for each stroke length

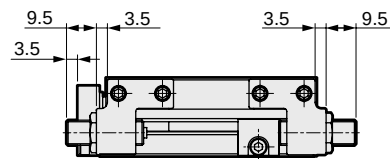
Stroke length	75	100	125	150
L1	188	213	238	263
L2	173	198	223	248
n	3	4		5
V	138.8	163.8	188.8	213.8
W	66	91	116	141
X	60	55	45	60
Y	96.5	131.5	161.5	176.5
T2/3*	RD	19		
	HD	79		

Dimensions

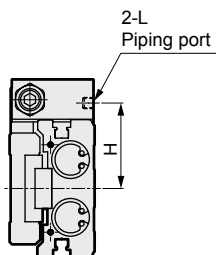
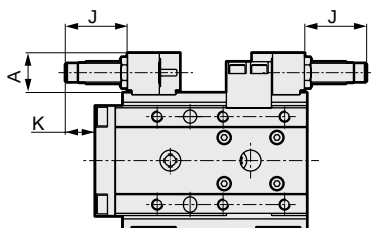
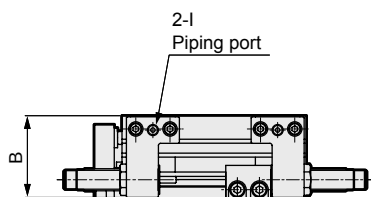
- Reference: When stoppers for adjustable stroke are attached



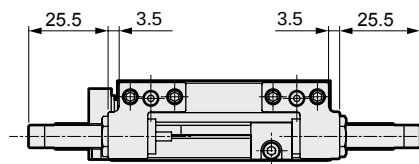
- For ø8



- Reference: When shock absorber type stoppers are attached



- For ø8



Note 1: F, H and L dimensions are applied only when ports are provided at the stopper section (S*-D* and A*-D*).
 Note 2: Adjustable stroke range for stoppers for adjustable stroke is 5 mm on one side.

Dimensions table for each stroke length

Symbol Bore size (mm)	A	B	C	D	E	F	G	H	I	J	K	L	Shock absorber type stopper Adjustable stroke range (single)
ø6	14	19.9	11	4	1	13.5	10.5	24	M3 depth 3	21	9	M3 depth 3	9
ø8	15.6	24.5	9.5	0.5	0.5	11	11	27.3	M5 depth 4	25.5	16	M5 depth 4	13.5
ø12	15.5	29	12	1	1	13	13	31	M5 depth 4	25.5	12.5	M5 depth 4	14.5
ø16	18	37	10	2	1	14	13	38.5	M5 depth 4	28.5	14	M5 depth 4	15
ø20	20.5	45.5	14.5	4	2.5	20.5	19	47	NPT1/8	29.5	10.5	M5 depth 4	13
ø25	20.5	57	11.5	2.5	2.5	19	19	54.5	NPT1/8	26.5	9	M5 depth 4	10

MEMO

SFR•SFRT Series

• Size: 3•10•20

Features

- Original seal structure realizes the industry's smallest air leak
- Smooth actuation with no stick-slip



Catalog No.CC-984

How to order

Without switch

SFR - **10** - **90**

With switch

SFRT - **20** - **180** - **F2S** - **D**

A B C D E

Symbol	Descriptions
A Model No.	
SFR	Shaft type
SFRT	Table type
B Size	
Size	Effective torque (at 0.5 MPa)
3	0.3 [N•m]
10	1.0 [N•m]
20	2.0 [N•m]

C Oscillating angle			
90	90°		
180	180°		
D Switch model No.			
Model	Contact	Indicator	Lead wire
F2S*	Proximity	One color indicator	2 wire
F3S*			3 wire
*Lead wire length			
Blank	1 m (standard)		
E Switch quantity			
R	With one right rotation detector		
L	With one left rotation detector		
D	Two		

Specifications

Item			SFR-3	SFR-10	SFR-20	SFRT-3	SFRT-10	SFRT-20
Size			3	10	20	3	10	20
Effective torque Note 1	90°		0.47	1.44	2.71	0.47	1.44	2.71
	N•m 180°		0.35	1.08	2.03	0.35	1.08	2.03
Use fluid			Compressed air					
Actuation	90°		Vane type					
	180°		Vane and pinion gear type					
Maximum working pressure		MPa	0.7					
Minimum working pressure		MPa	0.1					
Proof pressure		MPa	1.05					
Ambient temperature		°C	0 to 60 (no freezing)					
Connection diameter			M5					
Permission absorbed energy		mJ	0.8	1.7	3.5	1.3	6.3	9.6
Lubrication			Not required (when lubricating, use turbine oil ISOVG32)					
Internal volume		cm³	3.7	9.1	19.4	3.7	9.1	19.4
Product mass	90°	g	70	120	250	200	350	560
	180°	g	120	220	430	230	430	690
Allowable radial load	Note 2	N	40	50	300	40	50	60
Allowable thrust load	Note 2	N	13	16	20	30	60	80
Allowable moment		N•m	—			0.7	0.9	2.9
Oscillating angle adjustment range	90°		—			90°±5°		
	180°		—			180°±5°		
Oscillating time adjustment range		sec/90°	0.07 to 1.5					
Table deflection accuracy		mm	—			0.03		
Backlash (SFR-180 type only) Note 3			1.5° or less.	2.5° or less.	2.5° or less.	—	—	—

Note 1: The effective torque is for when the working pressure is 0.5 MPa.

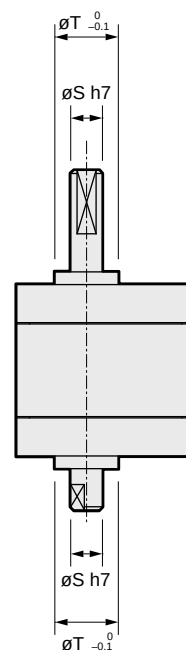
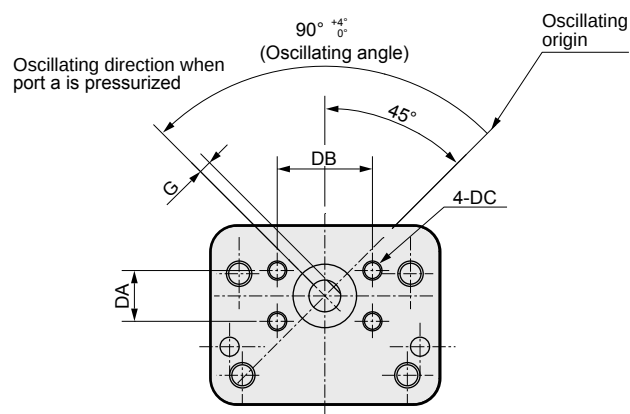
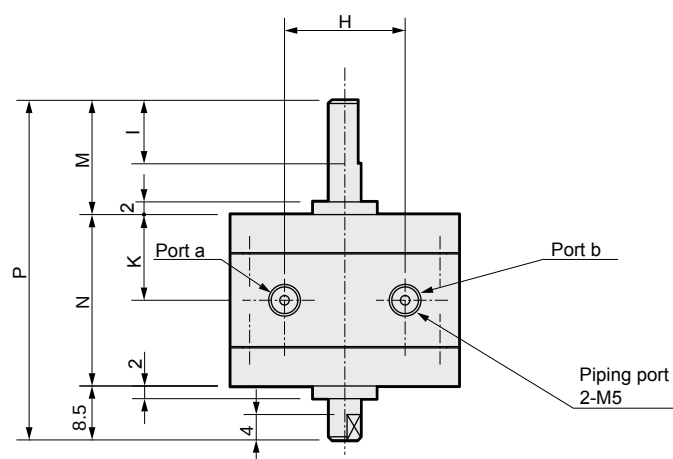
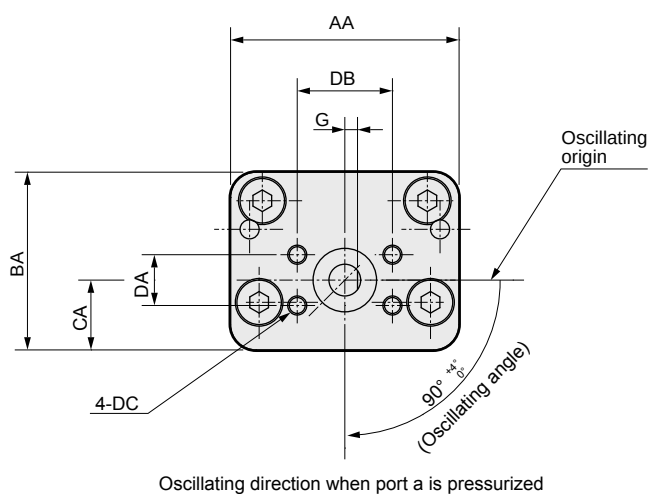
Note 2: The SFR's allowable radial load and allowable thrust load are not dynamic load values.

Note 3: The backlash value is for reference.

* The oscillating angle for the SFR-180° axis type is 190°.

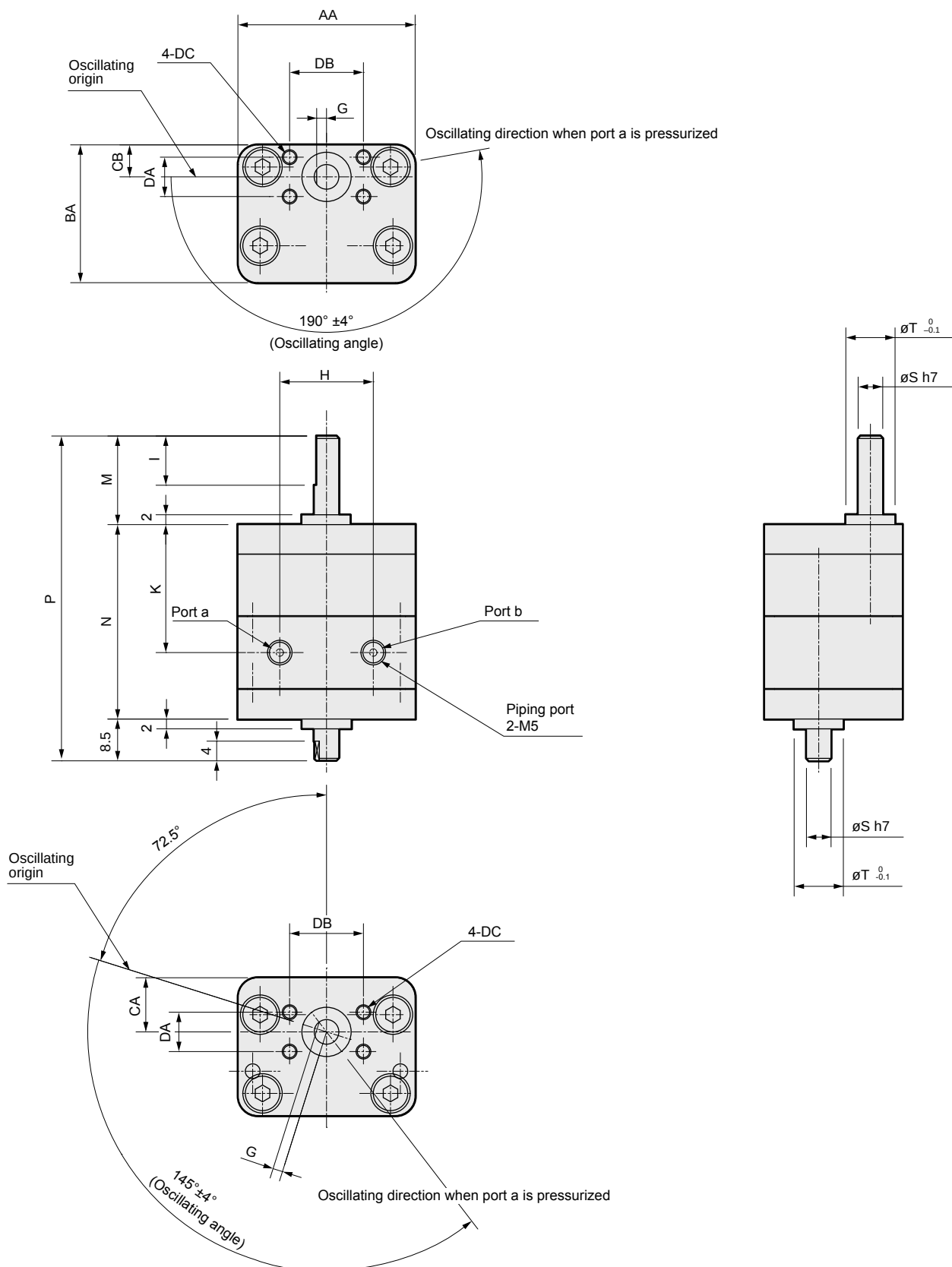
Dimensions

● SFR-□-90



Size	AA	BA	CA	DA	DB	DC	G	H	I	K	M	N	P	S	T
3	36	28	11	8	15	M3 depth 5	2	19	10	13.5	18	27	53.5	5	10
10	44	34	11	12	15	M4 depth 5	2.5	21	10	16	20	32	60.5	6	12
20	58	45	15	14	18	M4 depth 6	3	27	12	20.5	22	41	71.5	8	14

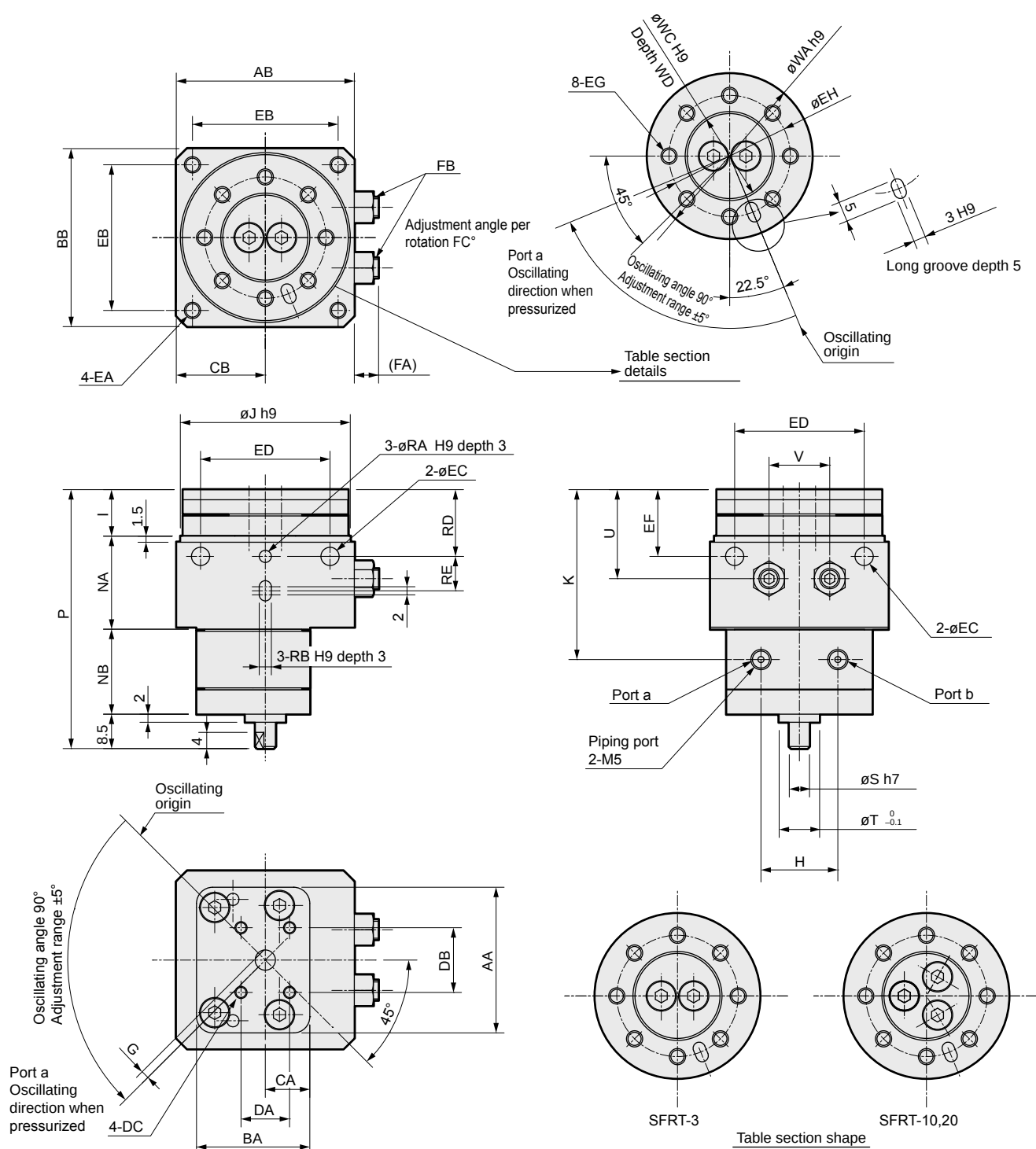
● SFR-□-180



Size	AA	BA	CA	CB	DA	DB	DC	G	H	I	K	M	N	P	S	T
3	36	28	11	6.5	8	15	M3 depth 5	2	19	10	26	18	39.5	66	5	10
10	44	34	11	9	12	15	M4 depth 5	2.5	21	10	31	20	47	75.5	6	12
20	58	45	15	12.5	14	18	M4 depth 6	3	27	12	39	22	59.5	90	8	14

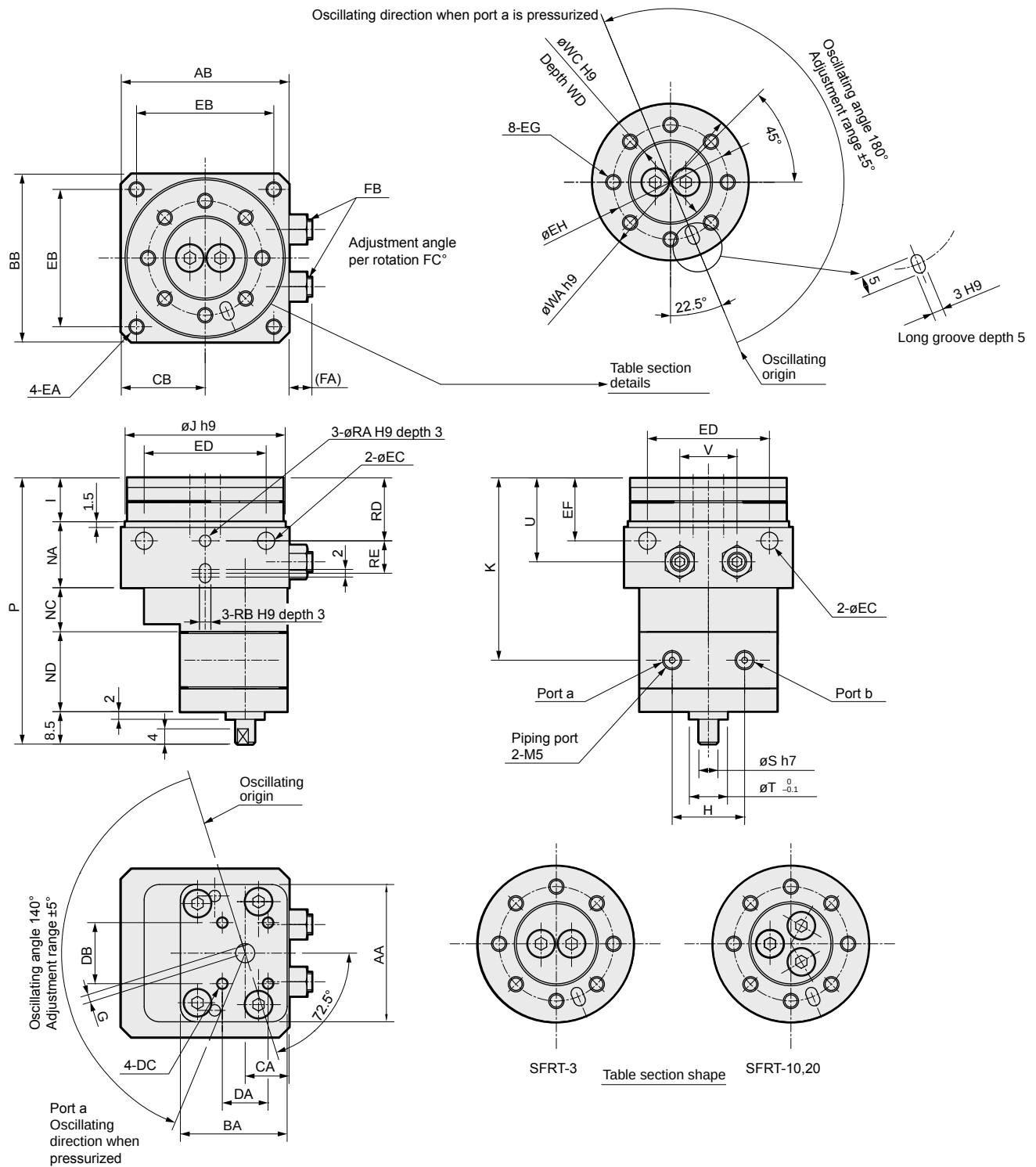
Dimensions

● SFRT-□-90



Size	AA	AB	BA	BB	CA	CB	DA	DB	DC		EA		EB	EC		ED
3	36	44	28	44	11	22	8	15	M3 depth 5		M4 depth 15		36	4.5 penetrating		32
10	44	50	34	50	11	25	12	15	M4 depth 5		M5 depth 15		41	5.5 penetrating		38
20	58	62.5	45	59	15	30	14	18	M4 depth 6		M6 depth 20		48	6.5 penetrating		42
Size	EF	EG		EH	FA	FB		FC	G	H	I	J	K	NA	NB	P
3	16.5	M4 depth 6		30	6	M5×0.8		6.1	2	19	11.5	42	42	23	21	64
10	20.5	M4 depth 6		37	8	M6 × 1		5.4	2.5	21	14.5	48	50	25.5	26	74.5
20	22.5	M5 depth 8		42	11.5	M6 × 1		4.4	3	27	16	53.5	59.5	30.5	33.5	88.5
Size	RA	RB	RD	RE	S	T	U	V	WA	WC	WD					
3	3	3	16.5	8.5	5	10	22	15	41	21	3					
10	4	4	20.5	9	6	12	26.5	21	47	26	3					
20	4	4	22.5	12.5	8	14	31.5	26	52	30	4					

● SFRT-□-180

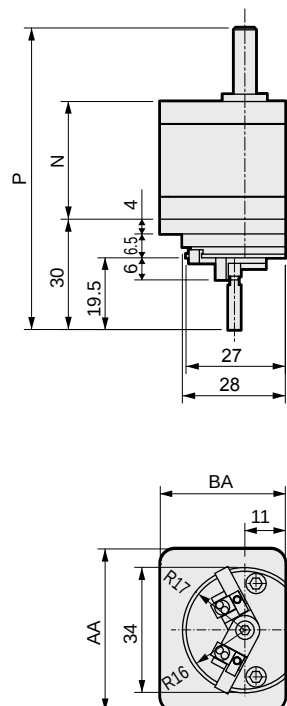


Size	AA	AB	BA	BB	CA	CB	DA	DB	DC		EA		EB	EC		ED
3	36	44	28	44	11	22	8	15	M3 depth 5		M4 depth 15		36	4.5 penetrating		32
10	44	50	34	50	11	25	12	15	M4 depth 5		M5 depth 15		41	5.5 penetrating		38
20	58	62.5	45	59	15	30	14	18	M4 depth 6		M6 depth 20		48	6.5 penetrating		42
Size	EF	EG		EH	FA	FB		FC	G	H	I	J	K	NA	NC	ND
3	16.5	M4 depth 6		30	6	M5×0.8		6.1	2	19	11.5	42	47.8	17.3	11.5	21
10	20.5	M4 depth 6		37	8	M6 × 1		5.4	2.5	21	14.5	48	60.5	21	15	26
20	22.5	M5 depth 8		42	11.5	M6 × 1		4.4	3	27	16	53.5	70.5	24	17.5	33.5
Size	P	RA	RB	RD	RE	S	T	U	V	WA	WC	WD				
3	69.8	3	3	16.5	8.5	5	10	22	15	41	21	3				
10	85	4	4	20.5	9	6	12	26.5	21	47	26	3				
20	99.5	4	4	22.5	12.5	8	14	31.5	26	52	30	4				

Dimensions

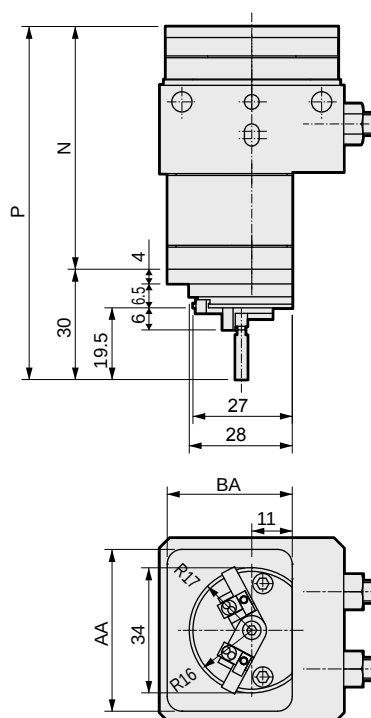
Dimensions with switch

● SFR-□-90



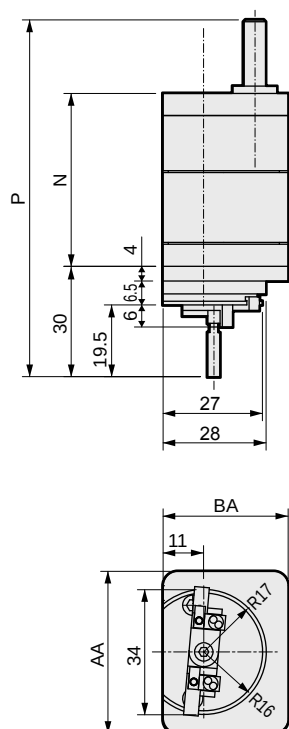
Size	AA	BA	N	P
3	36	28	27	75
10	44	34	32	82
20	58	45	41	93

● SFRT-□-90



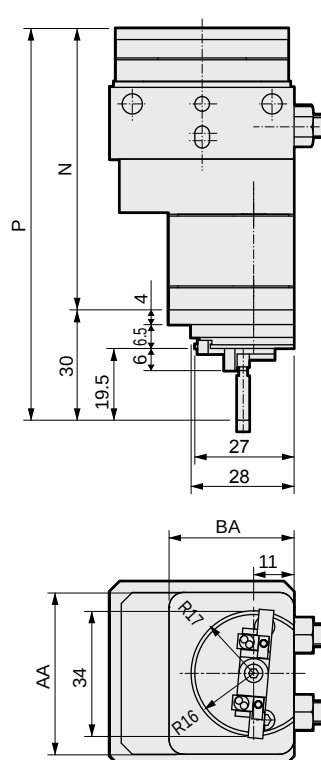
Size	AA	BA	N	P
3	36	28	55.5	85.5
10	44	34	66	96
20	58	45	80	110

● SFR-□-180



Size	AA	BA	N	P
3	36	28	39.5	87.5
10	44	34	47	97
20	58	45	59.5	111.5

● SFRT-□-180



Size	AA	BA	N	P
3	36	28	61.3	91.3
10	44	34	76.5	106.5
20	58	45	91	121

FK Series

- Suitable cylinder diameter: $\phi 6$ to $\phi 100$

Features

- When cylinder is installed, misalignment and parallelism defective are resolved with ease. Simplified floating joint FK
- 8 types of male thread and 13 types of female thread

RoHS

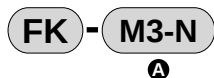
CAD



Catalog No.CB-030SA

How to order

- Simplified floating joint



Symbol	Descriptions	
A Screw size		
M3-N	M3×0.5	Male thread type
M4-N	M4×0.7	
M5-N	M5×0.8	
M6-N	M6×1.0	
M8-N	M8×1.25	
M10-N	M10×1.5	
M16-N	M16×2.0	
M20-N	M20×2.5	
M3	M3×0.5	Female thread type
M4	M4×0.7	
M5	M5×0.8	
M6	M6×1.0	
M8×1.0	M8×1.0	
M8×1.25	M8×1.25	
M10	M10×1.25	
M12	M12×1.5	
M14	M14×1.5	
M16	M16×1.5	
M18	M18×1.5	
M22	M22×1.5	
M26	M26×1.5	

Specifications

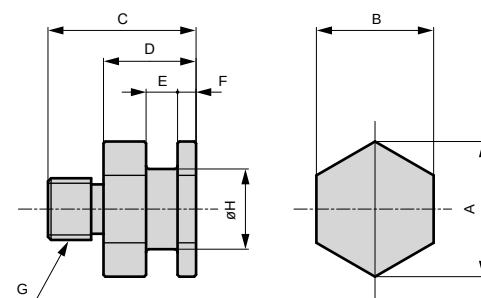
Model No.		Allowable load (N)	Allowable eccentricity (mm)	Backlash amount in thrust direction (mm)
Male thread	Female thread			
FK-M3-N	FK-M3	63	±0.3	0.1 to 0.3
FK-M4-N	FK-M4	110		
FK-M5-N	FK-M5	179		
FK-M6-N	FK-M6	253		
FK-M8-N	FK-M8×1.0	462		
—	FK-M8×1.25	462		
FK-M10-N	FK-M10	734		
—	FK-M12	1069		
—	FK-M14	1466		
FK-M16-N	FK-M16	2003	±0.7	
—	FK-M18	2448		
FK-M20-N	—	3130		
—	FK-M22	3896		
—	FK-M26	6219		

Note 1: Allowable load indicates static load.

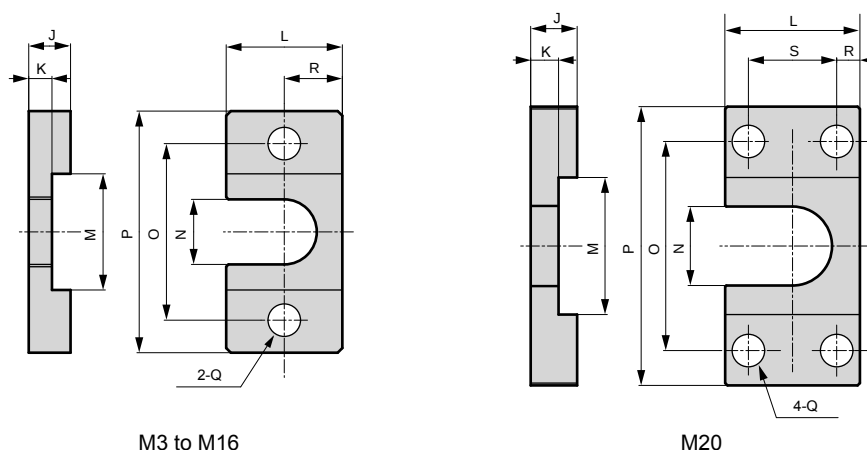
Dimensions

● Bracket (1)

Material: Steel
Surface treatment: Nickel plating



● Bracket (2)



M3 to M16

M20

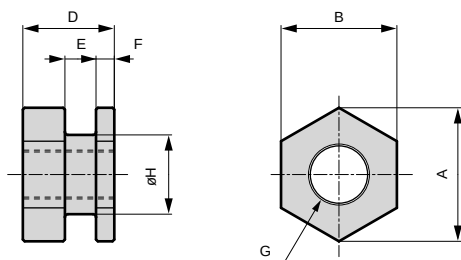
Bracket (1)

Model No.	Applicable cylinder	A	B	C	D	E	F	G	H
FK-M3-N	SSD-12,SSD2-12	11.6	10	15	10	3.1 ^{+0.1} ₀	2	M3×0.5	6
FK-M4-N	SSD-16,SSD2-16	11.6	10	15.5	10	3.1 ^{+0.1} ₀	2	M4×0.7	6
FK-M5-N	SSD-20,SSD2-20,FCD-25	13.9	12	16.5	10	3.1 ^{+0.1} ₀	2	M5×0.8	8
FK-M6-N	SSD-25,SSD2-25,FCD-32	13.9	12	19	10	3.1 ^{+0.1} ₀	2	M6×1.0	8
FK-M8-N	SSD-32,40,SSD2-32,40, FCD-40,50	21.9	19	23	15	5.1 ^{+0.1} ₀	3	M8×1.25	13
FK-M10-N	SSD-50,63,SSD2-50,63, FCD-63	21.9	19	24	15	5.1 ^{+0.1} ₀	3	M10×1.5	13
FK-M16-N	SSD-80,SSD2-80	37	32	31	20	7.1 ^{+0.1} ₀	4	M16×2.0	23
FK-M20-N	SSD-100,SSD2-100	53.1	46	43	28	12.1 ^{+0.1} ₀	7	M20×2.5	32

Bracket (2)

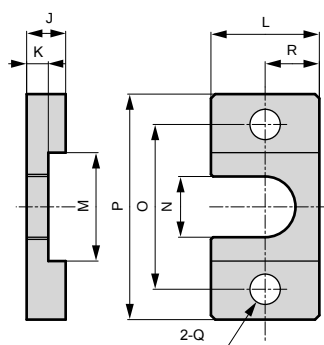
Model No.	Applicable cylinder	J	K	L	M	N	O	P	Q	R	S
FK-M3-N	SSD-12,SSD2-12	6	3 ⁰ _{-0.1}	16	14	7	24	34	4.5	8	—
FK-M4-N	SSD-16,SSD2-16	6	3 ⁰ _{-0.1}	16	14	7	24	34	4.5	8	—
FK-M5-N	SSD-20,SSD2-20,FCD-25	6	3 ⁰ _{-0.1}	19	16	9	26	36	4.5	9.5	—
FK-M6-N	SSD-25,SSD2-25,FCD-32	6	3 ⁰ _{-0.1}	19	16	9	26	36	4.5	9.5	—
FK-M8-N	SSD-32,40,SSD2-32,40, FCD-40,50	9	5 ⁰ _{-0.1}	25	25	14	38	52	7	12.5	—
FK-M10-N	SSD-50,63,SSD2-50,63, FCD-63	9	5 ⁰ _{-0.1}	25	25	14	38	52	7	12.5	—
FK-M16-N	SSD-80,SSD2-80	12	7 ⁰ _{-0.1}	44	42	25	62	85	11	22	—
FK-M20-N	SSD-100,SSD2-100	22	12 ⁰ _{-0.1}	65	59	34	90	120	14	13.5	38

● Bracket (1)

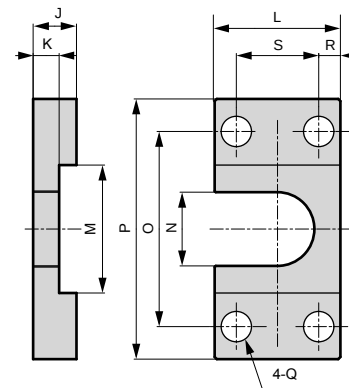


● Bracket (2)

Material: Steel
Surface treatment: Nickeling



M3 to M18



M22 to M26

Bracket (1)

Model No.	Applicable cylinder	A	B	D	E	F	G	H
FK-M3	SCPD2-6,CAT-6,SMD2-6	11.6	10	10	3.1 ^{+0.1} ₀	2	M3×0.5	6
FK-M4	SCPD2-10,CAT-10,SMD2-10	11.6	10	10	3.1 ^{+0.1} ₀	2	M4×0.7	6
FK-M5	SCPD2-16,CAT-15,SMD2-16 SSD-12-N,SSD2-12-N	13.9	12	10	3.1 ^{+0.1} ₀	2	M5×0.8	8
FK-M6	SMD2-20,SSD-16-N	13.9	12	10	3.1 ^{+0.1} ₀	2	M6×1.0	8
FK-M8×1.0	CMK2-20,CMA2-20,JSK2-20,JSM2-20	21.9	19	15	5.1 ^{+0.1} ₀	3	M8×1.0	13
FK-M8×1.25	SMD2-25,SSD-20-N,SSD2-20-N,SCM-20	21.9	19	15	5.1 ^{+0.1} ₀	3	M8×1.25	13
FK-M10	CMK2-25-32,CMA2-30,SMD2-32,SSD-25-N,SSD2-25-N, SCG-32,SCM-25-32,FCD-25-N,JSK2-25-32,JSM2-30	21.9	19	15	5.1 ^{+0.1} ₀	3	M10×1.25	13
FK-M12	CMK2-40,CMA2-40,JSK2-40,JSM2-40	27.7	24	15	5.1 ^{+0.1} ₀	3	M12×1.5	18
FK-M14	SCA2-40,SSD-32-40-N,SSD2-32-40-N,SCG-40, SCM-40,FCD-32-40-N,JSC3-40	27.7	24	15	5.1 ^{+0.1} ₀	3	M14×1.5	18
FK-M16	CAV2-50	37	32	20	7.1 ^{+0.1} ₀	4	M16×1.5	23
FK-M18	SCA2-50-63,SSD-50-63-N,SSD2-50-63-N,SCM-50-63, SCG-50-63,FCD-50-63-N,JSC3-50-63	37	32	20	7.1 ^{+0.1} ₀	4	M18×1.5	23
FK-M22	SCA2-80,SSD-80-N,SSD2-80-N,JSC3-80, SCG-80,SCM-80,CAV2-75-100	53.1	46	28	12.1 ^{+0.1} ₀	7	M22×1.5	32
FK-M26	SCA2-100,SSD-100-N,SSD2-100-N,SCM-100,JSC3-100, SCG-100	53.1	46	28	12.1 ^{+0.1} ₀	7	M26×1.5	32

Bracket (2)

Model No.	Applicable cylinder	J	K	L	M	N	O	P	Q	R	S
FK-M3	SCPD2-6,CAT-6,SMD2-6	6	3 ⁰ _{-0.1}	16	14	7	24	34	4.5	8	—
FK-M4	SCPD2-10,CAT-10,SMD2-10	6	3 ⁰ _{-0.1}	16	14	7	24	34	4.5	8	—
FK-M5	SCPD2-16,CAT-15,SMD2-16 SSD-12-N,SSD2-12-N	6	3 ⁰ _{-0.1}	19	16	9	26	36	4.5	9.5	—
FK-M6	SMD2-20,SSD-16-N,SSD2-16-N	6	3 ⁰ _{-0.1}	19	16	9	26	36	4.5	9.5	—
FK-M8×1.0	CMK2-20,CMA2-20,JSK2-20,JSM2-20	9	5 ⁰ _{-0.1}	25	25	14	38	52	7	12.5	—
FK-M8×1.25	SMD2-25,SSD-20-N,SSD2-20-N,SCM-20	9	5 ⁰ _{-0.1}	25	25	14	38	52	7	12.5	—
FK-M10	CMK2-25-32,CMA2-30,SMD2-32,SSD-25-N,SSD2-25-N, SCG-32,SCM-25-32,FCD-25-N,JSK2-25-32,JSM2-30	9	5 ⁰ _{-0.1}	25	25	14	38	52	7	12.5	—
FK-M12	CMK2-40,CMA2-40	9	5 ⁰ _{-0.1}	32	32	19	50	70	9	16	—
FK-M14	SCA2-40,SSD-32-40-N,SSD2-32-40-N,SCG-40, SCM-40,FCD-32-40-N,JSC3-40	9	5 ⁰ _{-0.1}	32	32	19	50	70	9	16	—
FK-M16	CAV2-50	12	7 ⁰ _{-0.1}	44	42	25	62	85	11	22	—
FK-M18	SCA2-50-63,SSD-50-63-N,SSD2-50-63-N,SCM-50-63, SCG-50-63,FCD-50-63-N,JSC3-50-63	12	7 ⁰ _{-0.1}	44	42	25	62	85	11	22	—
FK-M22	SCA2-80,SSD-80-N,SSD2-80-N,JSC3-80, SCG-80,SCM-80,CAV2-75-100	22	12 ⁰ _{-0.1}	65	59	34	90	120	14	13.5	38
FK-M26	SCA2-100,SSD-100-N,SSD2-100-N,SCM-100,JSC3-100, SCG-100	22	12 ⁰ _{-0.1}	65	59	34	90	120	14	13.5	38

MEMO

SMD2 Series

• Bore size: $\phi 6 \cdot \phi 10 \cdot \phi 16 \cdot \phi 20 \cdot \phi 25 \cdot \phi 32$

Features

- Compact, rectangular
- Built-in detecting switch
- Direct installation possible all four sides



Catalog No. CB-029SA

How to order

Without switch

SMD2 — **DA** — **6** — **15**

With switch

SMD2-L — **DA** — **6** — **15** — **K2H** — **R**

A
B
C
D
E

Symbol	Descriptions
A Mounting style	
DA	Rod end mounting type
DB	Head end mounting type
DC	Rigid mounting type
B Bore size (mm)	
6	$\phi 6$
10	$\phi 10$
16	$\phi 16$
20	$\phi 20$
25	$\phi 25$
32	$\phi 32$
C Port thread type	
NN	NPT thread (only $\phi 32$) custom order

D Switch model No.						
Lead wire straight type	Lead wire radial	Contact	Voltage		Indicator	Lead wire
			AC	DC		
K0H*	K0V*	Reed	●	●	One color indicator type	2 wire
K2H*	K2V*	Proximity	●	●		3 wire
K3H*	K3V*		●	●		

*Lead wire length	
Blank	1m (standard)

E Switch quantity	
R	One on rod end
H	One on head end
D	Two

Specifications

Item		SMD2 SMD2-L (with switch)					
Bore size	mm	ø6	ø10	ø16	ø20	ø25	ø32
Actuation		Double acting					
Use fluid		Compressed air					
Maximum working pressure MPa		0.7					
Minimum working pressure MPa		0.15	0.1				
Proof pressure MPa		1.05					
Ambient temperature °C		-10 to 60 (to be unfrozen)					
Connection diameter		M5					NPT1/8
Stroke tolerance mm		+1.5 0					
Working piston speed mm/s		50 to 500					
Cushion		Rubber cushioned					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG32)					
Permission absorbed energy J		0.005	0.036	0.1	0.1	0.19	0.5

Stroke length

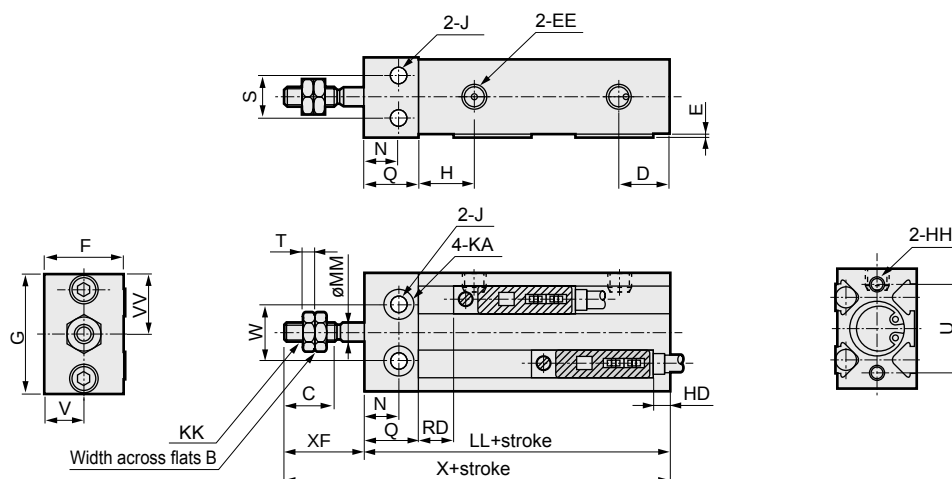
Bore size (mm)	Standard stroke length (mm)	Maximum stroke length (mm)	Minimum stroke length (mm)
ø6	5, 10, 15, 20, 25, 30	60	1
ø10			
ø16			
ø20	5, 10, 15, 20, 25, 30, 40, 50	100	
ø25			
ø32			

Note: The custom stroke length is available by 1mm increment.

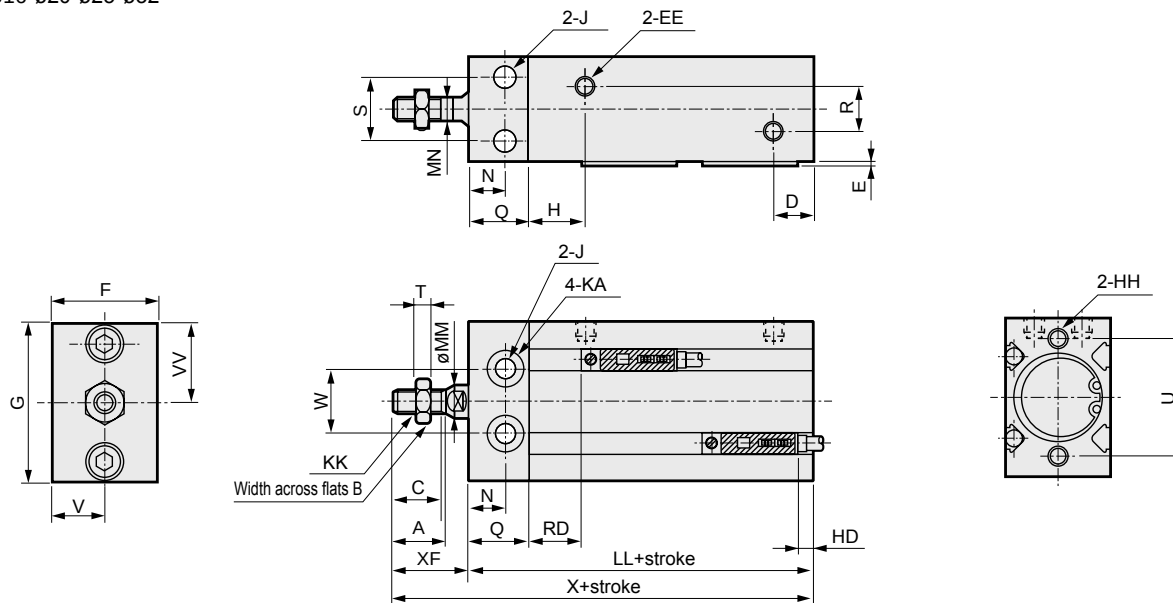
Dimensions

● Double acting/with switch, rod end mounting type SMD2-(L)-DA

ø6•ø10



ø16•ø20•ø25•ø32



Symbol	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U
Bore size (mm)																				
ø6	—	5.5	7	10	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	—	7	11	—	7	1.8	17
ø10	—	7	10	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	—	7	11	—	9	2.4	18
ø16	12.5	8	11	10	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24
ø20	13.5	10	12	10	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30
ø25	17.5	13	15.5	10	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	10	15	13	20	5	38
ø32	21	17	19.5	11	NPT1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 × 1.25	12	10	11	20	17	24	6	48

Symbol Bore size (mm)	V	VV	W	XF	LL		X		With switch								
					Without switch	With switch	Without switch	With switch	E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
										HD	RD	HD	RD	HD	RD	HD	RD
ø6	6.7	11.2	10	13	38	38	51	51	1.0	−2.0	5.0	−3.0	6.0	−5.0	5.0	−6.0	6.0
ø10	7.7	12.2	11	16	41	41	57	57	1.0	0.5	5.5	−1.0	7.0	−2.5	5.5	−4.0	7.0
ø16	10.2	16.2	14	16	40	50	56	66	0.5	1.5	10.0	0.5	11.0	−1.5	10.0	−2.5	11.0
ø20	13.2	20.2	16	19	46	56	65	75	0.5	5.5	12.5	4.5	13.5	2.5	12.5	1.5	13.5
ø25	16.2	25.2	20	23	50	60	73	83	0.5	8.5	12.5	7.5	13.5	5.5	12.5	4.5	13.5
ø32	20.2	31.2	24	27	62	72	89	99	0.5	9.0	19.0	8.0	20.0	6.0	19.0	5.0	20.0

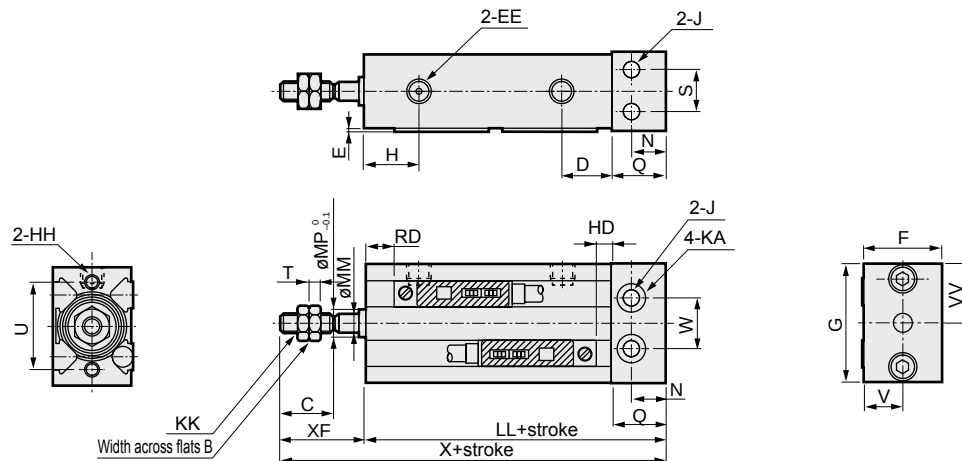
Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.

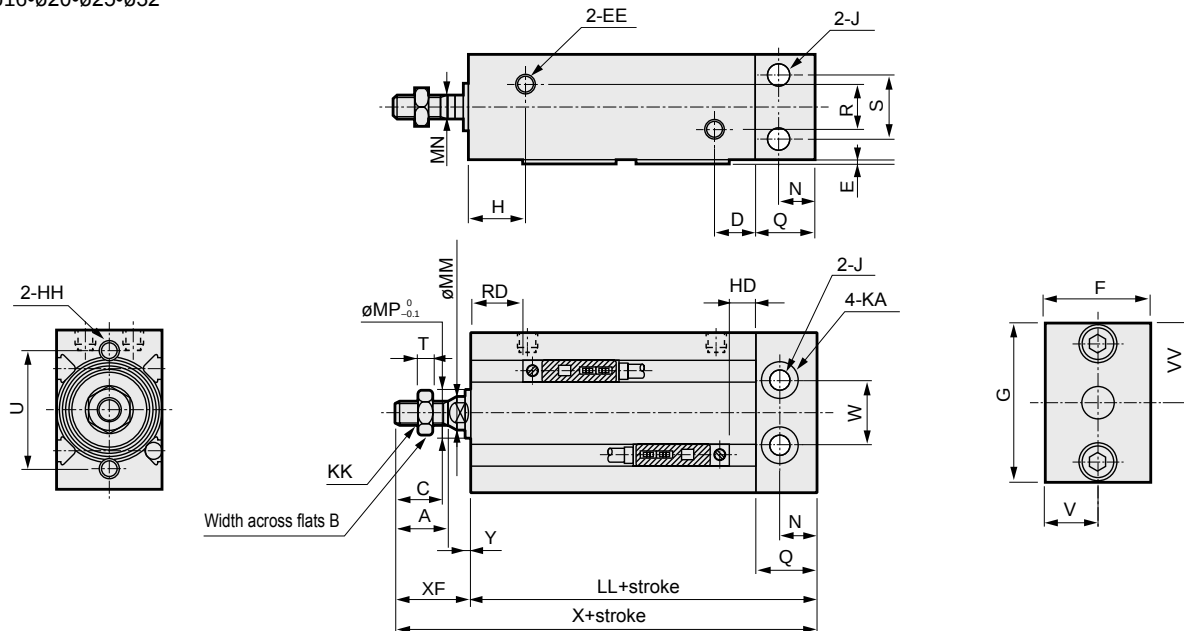
Dimensions

● Double acting/with switch, head end mounting type SMD2-(L)-DB

ø6•ø10



ø16•ø20•ø25•ø32



Symbol	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	MP	N	Q	R	S	T	U
Bore size (mm)																					
ø6	—	5.5	7	10	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	—	5	7	11	—	7	1.8	17
ø10	—	7	10	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	—	6	7	11	—	9	2.4	18
ø16	12.5	8	11	10	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	8	7	15	5	12	3.2	24
ø20	13.5	10	12	10	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	12	9	15	12	16	3.6	30
ø25	17.5	13	15.5	10	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	14	10	15	13	20	5	38
ø32	21	17	19.5	11	NPT1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 × 1.25	12	10	16	11	20	17	24	6	48

Symbol Bore size (mm)	V	VV	W	XF	Y	LL		X		With switch								
						Without switch	With switch	Without switch	With switch	E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
											HD	RD	HD	RD	HD	RD	HD	RD
ø6	6.7	11.2	10	14	1	38	38	52	52	1.0	1.5	5.0	2.5	6.0	1.5	5.0	2.5	6.0
ø10	7.7	12.2	11	17	1	41	41	58	58	1.0	3.5	5.5	4.5	7.0	3.5	5.5	4.5	7.0
ø16	10.2	16.2	14	16	1	40	50	56	66	0.5	5.0	10.0	6.0	11.0	5.0	10.0	6.0	11.0
ø20	13.2	20.2	16	19	1.5	46	56	65	75	0.5	8.5	12.5	9.5	13.5	8.5	12.5	9.5	13.5
ø25	16.2	25.2	20	23	2	50	60	73	83	0.5	11.5	12.5	12.5	13.5	11.5	12.5	12.5	13.5
ø32	20.2	31.2	24	27	2	62	72	89	99	0.5	12.0	19.0	13.5	20.0	12.0	19.0	13.5	20.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.

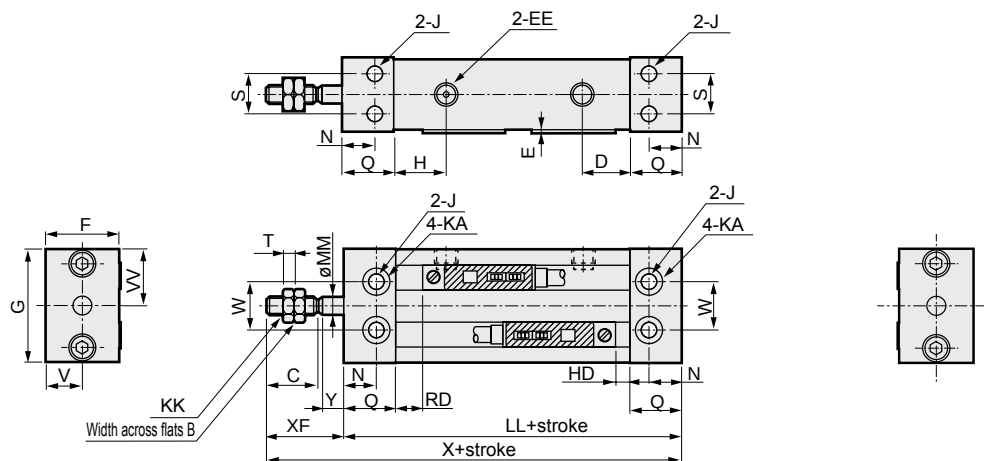
Note 3: For 5, 10 mm stroke cylinders, use K□V switch because K□H switch cannot be installed.

Note 4: For 5 mm stroke cylinder, use K□V switch because K□H switch cannot be installed.

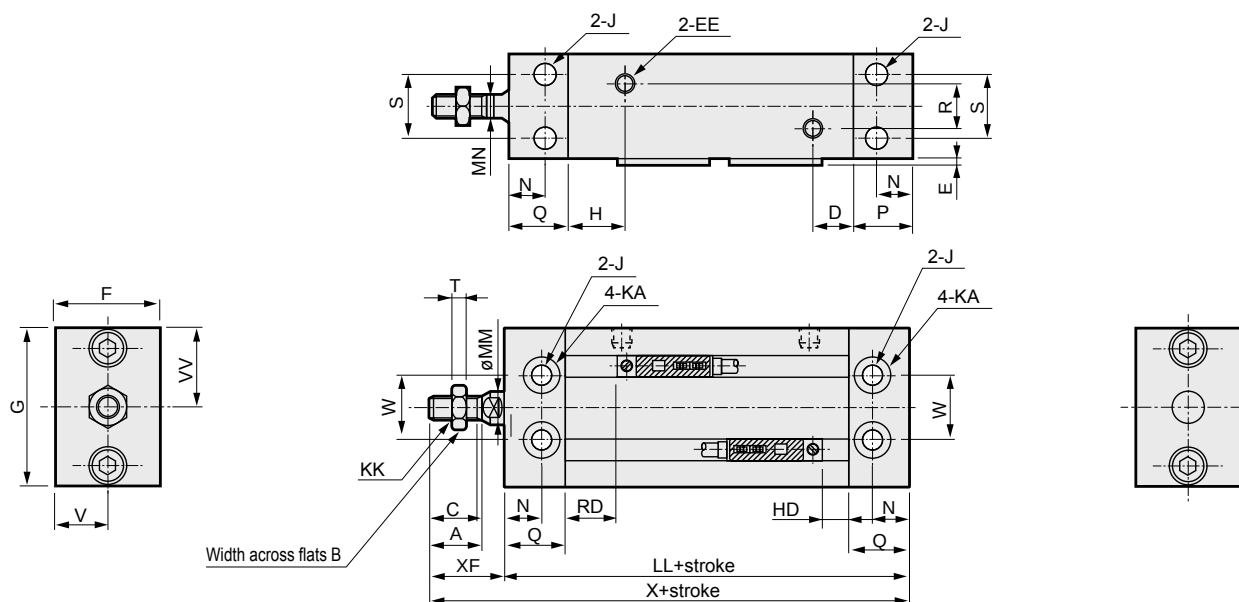
Dimensions

● Double acting/with switch, high rigit mounting type SMD2-(L)-DC

Ø6•Ø10



Ø16•Ø20•Ø25•Ø32



Symbol	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U
Bore size (mm)																				
ø6	—	5.5	7	10	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	—	7	11	—	7	1.8	17
ø10	—	7	10	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	—	7	11	—	9	2.4	18
ø16	12.5	8	11	10	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24
ø20	13.5	10	12	10	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30
ø25	17.5	13	15.5	10	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	10	15	13	20	5	38
ø32	21	17	19.5	11	NPT1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 × 1.25	12	10	11	20	17	24	6	48

Symbol Bore size (mm)	V	VV	W	XF	LL		X		With switch								
					Without switch	With switch	Without switch	With switch	E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
										HD	RD	HD	RD	HD	RD	HD	RD
ø6	6.7	11.2	10	13	49	49	62	62	1.0	1.5	5.0	2.5	6.0	1.5	5.0	2.5	6.0
ø10	7.7	12.2	11	16	52	52	68	68	1.0	3.5	5.5	4.5	7.0	3.5	5.5	4.5	7.0
ø16	10.2	16.2	14	16	55	65	71	81	0.5	5.0	10.0	6.0	11.0	5.0	10.0	6.0	11.0
ø20	13.2	20.2	16	19	61	71	80	90	0.5	8.5	12.5	9.5	13.5	8.5	12.5	9.5	13.5
ø25	16.2	25.2	20	23	65	75	88	98	0.5	11.5	12.5	12.5	13.5	11.5	12.5	12.5	13.5
ø32	20.2	31.2	24	27	82	92	109	119	0.5	12.0	19.0	13.5	20.0	12.0	19.0	13.5	20.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.

Note 3: For 5, 10 mm stroke cylinders, use K□V switch because K□H switch cannot be installed.

Note 4: For 5 mm stroke cylinder, use K□V switch because K□H switch cannot be installed.

JSG Series

• Bore size: $\varnothing 40 \cdot \varnothing 50 \cdot \varnothing 63 \cdot \varnothing 80 \cdot \varnothing 100$

Features

- Space-saving
- Ecological products
- Powerful rod holding force
- Light weight



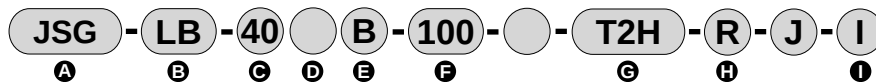
Catalog No. CB-029SA

How to order

Without switch



With switch



Symbol	Descriptions
A Model No.	
JSG	Double acting
B Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head end flange type
CA	Single clevis type
CB	Double clevis type (pin and split pin attached)
TA	Rod side trunnion type
TB	Head end trunnion type
TC	Intermediate trunnion type
C Bore size (mm)	
40	$\varnothing 40$
50	$\varnothing 50$
63	$\varnothing 63$
80	$\varnothing 80$
100	$\varnothing 100$
D Port thread type	
N	NPT thread (custom order)
E Cushion	
B	Double side air cushion (basic type)
D	Double side rubber cushion

Note: The rubber cushion type is longer than the air cushion type.

Stroke length (mm)			
Bore size	Stroke length Note 2	Available stroke length	Intermediate stroke
$\varnothing 40$	1 to 600	800	By 1 mm increment
$\varnothing 50$		1200	
$\varnothing 63$		1400	
$\varnothing 80$	1 to 700	1500	
$\varnothing 100$	1 to 800	1500	

Switch model No.					
Lead wire straight type	Lead wire radial	Contact	Voltage AC DC	Indicator	Lead wire
T0H*	T0V*	Reed	● ●	One color indicator type	2 wire
T2H*	T2V*	Proximity	● ●		3 wire
T3H*	T3V*		● ●		2 wire
T2YD*	—		● ●	For strong magnetic field (AC magnetic field only)	2 wire
T2YDT*	—		● ●		

*Lead wire length	
Blank	1 m (standard)

Switch quantity	
R	One on rod end
H	One on head end
D	Two
T	Three

Accessory	
I	Single knuckle
Y	Double knuckle (pin and split pin attached)
B1	Single bracket
B2	Double bracket (pin and split pin attached)

Specifications

Descriptions		JSG				
Bore size	mm	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting					
Use fluid	Compressed air					
Maximum working pressure	MPa	1.0				
Minimum working pressure	MPa	0.3				
Proof pressure	MPa	1.6				
Ambient temperature	°C	-10 to 60 (no freezing)				
Connection diameter	Brake section	NPT1/8		NPT1/4		NPT3/8
	Cylinder section	NPT1/4		NPT3/8		NPT1/2
Stroke tolerance	Rubber cushioned	+1.4 0 (up to 1000), +1.8 0 (up to 1500)				
	Air cushioned	+1.0 0 (up to 360), +1.4 0 (up to 1000), +1.8 0 (up to 1500)				
Working piston speed	mm/s	50 to 1000 (use within the allowable energy absorption range)				
Cushion	Air cushion or rubber cushion selectable					
Effective air cushion length	mm	8.6	13.4	13.4	15.4	15.4
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISO VG32)					
Stoppage accuracy	mm	±1 (300mm/s loadless)				
Holding force	N	980	1569	2451	3922	6178
Permission absorbed energy	Rubber cushioned	0.9	1.6	1.6	3.3	5.8
	Air cushioned	3.7	8.0	14.4	25.4	45.6

Stroke length

Bore size (mm)	Standard stroke length (mm)	Maximum stroke length (mm)	Custom stroke length (mm)	Minimum stroke length (mm)
$\varnothing 40$	25•50•75•100 150•200•250 300•350•400 450•500	600	800	1
$\varnothing 50$			1200	
$\varnothing 63$		700	1400	
$\varnothing 80$			1500	
$\varnothing 100$		800	1500	

Note 1: The intermediate stroke can be manufactured in 1 mm increments.

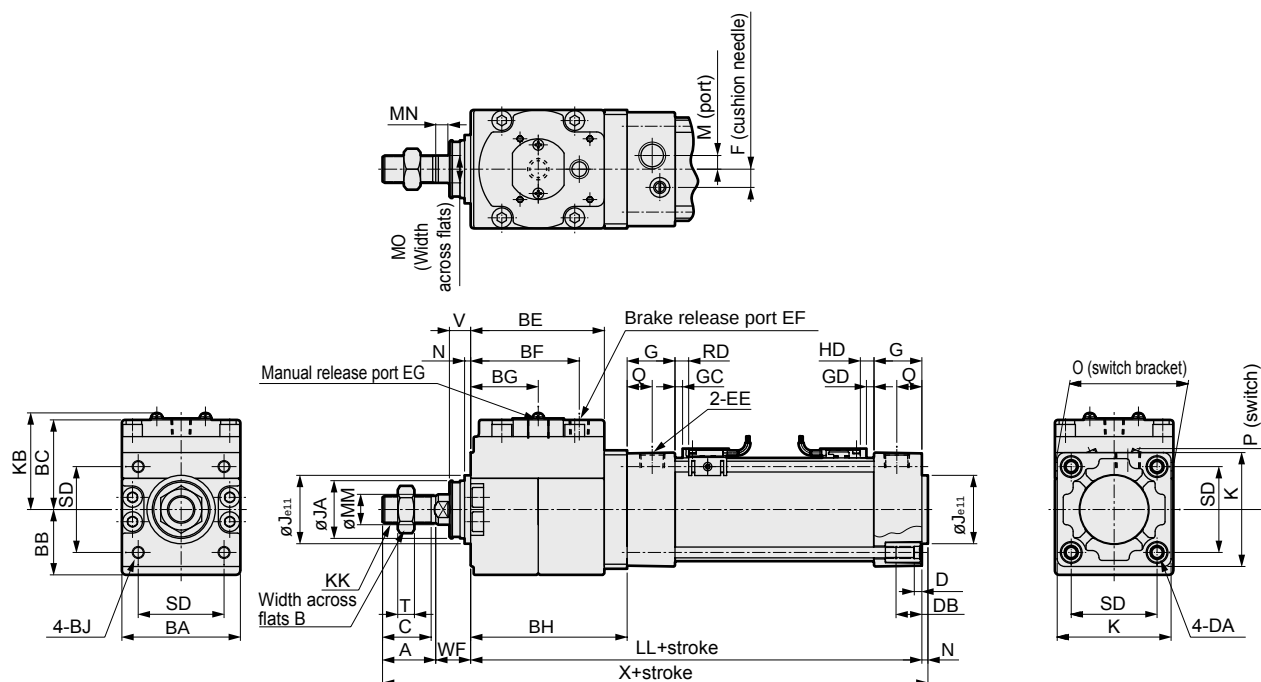
Note 2: If the maximum stroke length is exceeded, product specifications may not be met, depending on operating conditions. Consult with CKD in this case.

Note 3: With bellows, the customizable stroke lengths are as follows.

$\varnothing 40$: 500 mm
 $\varnothing 50$, $\varnothing 63$: 600 mm
 $\varnothing 80$, $\varnothing 100$: 750 mm

Dimensions

● Basic type (OO)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
($\phi 40$: +6 mm, $\phi 50$, $\phi 63$: +8 mm, $\phi 80$, $\phi 100$: +10 mm)

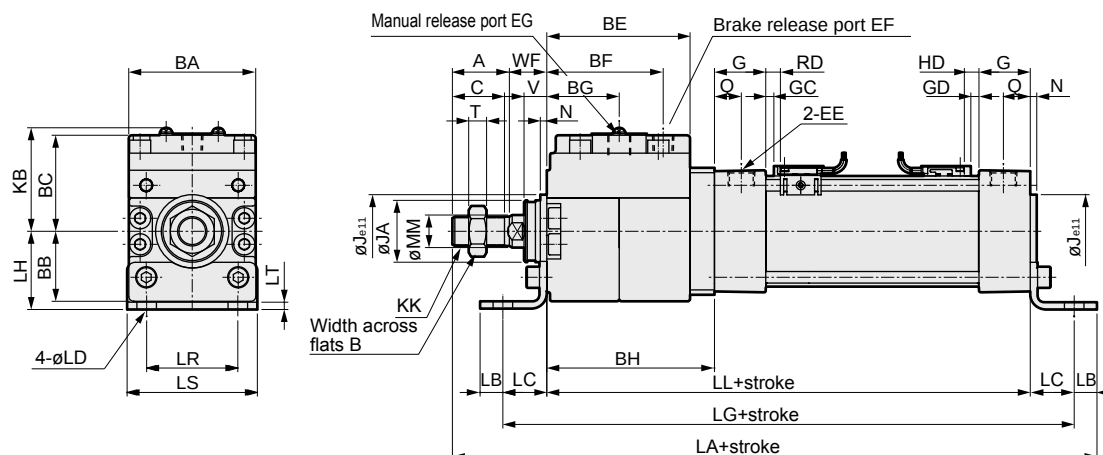
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Basic type (OO) basic dimensions																			
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	BJ	C	DA	DB	DC	EE	EF	EG	F	G	J
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	M6 depth 12	27	M6	16	5	NPT1/4	NPT1/8	M12	9	27	35
ø50	35	27	68	38	54	74	59	39	89	M8 depth 12	32	M8	16	5	NPT1/4	NPT1/8	M12	10.5	31.5	40
ø63	35	27	78	43	59	88	71.5	44.5	103	M8 depth 14	32	M8	16	5	NPT3/8	NPT1/4	M14	12	31.5	45
ø80	40	32	98	53	72.5	108	81.5	54.5	131	M10 depth 16	37	M10	16	5	NPT3/8	NPT1/4	M16	14	38	45
ø100	40	41	118	63	80.5	129	101	65.5	151	M10 depth 18	37	M10	16	5	NPT1/2	NPT3/8	M18	15	38	55

Symbol																	
Bore size (mm)	JA	K	KB	KK	Note 1 LL	M	MM	MN	MO	N	O	Q	SD	T	V	WF	Note 1 X
ø40	31	52	51.1	M14×1.5	161(167)	4	16	6	14	4	57	14	38	8	13	21	216(222)
ø50	38	65	58.6	M18×1.5	183(191)	5	20	7	17	4	68	15.5	46.5	11	14	23	245(253)
ø63	38	75	63.6	M18×1.5	197(205)	9	20	7	17	4	78	16.5	56.5	11	14	23	259(267)
ø80	43	95	77.1	M22×1.5	245(255)	11.5	25	10	22	4	95	19	72	13	20	32	321(331)
ø100	51	114	85.1	M26×1.5	265(275)	17	30	10	27	4	114	19	89	16	20	32	341(351)

Symbol	With switch (T0 ^H _V , T5 ^H _V , T2 ^H _V , T3 ^H _V , T3P ^H _V)				
Bore size (mm)	Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
ø40	1 (4)	1 (4)	5 (8)	5 (8)	29
ø50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ø63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ø80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	—
ø100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	—

● Axial foot type (LB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.

(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)

Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

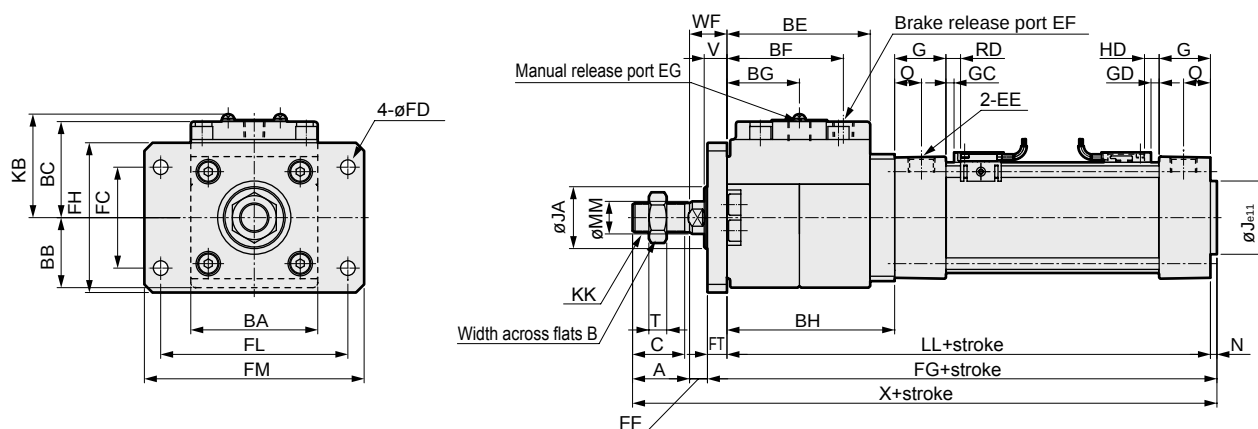
Symbol	Axial foot type (LB) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol							Mounting dimensions								
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 LA	LB	LC	LD	Note 1 LG	LH	LR	LS	LT
ø40	16	4	14	8	13	21	247(253)	11	24	9	209(215)	33	38	55	3.2
ø50	20	4	15.5	11	14	23	279(287)	11	27	9	237(245)	40	46	70	3.2
ø63	20	4	16.5	11	14	23	296(304)	14	27	12	251(259)	48	56	80	4.5
ø80	25	4	19	13	20	32	361(371)	14	30	12	305(315)	55	72	95	4.5
ø100	30	4	19	16	20	32	385(395)	16	32	14	329(339)	65	89	114	6

Symbol	With switch (T0 ^H _V , T5 ^H _V , T2 ^H _V , T3 ^H _V , T3P ^H _V)				
Bore size (mm)	Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
ø40	1 (4)	1 (4)	5 (8)	5 (8)	29
ø50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ø63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ø80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	—
ø100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	—

Dimensions

● Rod side flange type (FA)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
($\phi 40$: +6 mm, $\phi 50$, $\phi 63$: +8 mm, $\phi 80$, $\phi 100$: +10 mm)

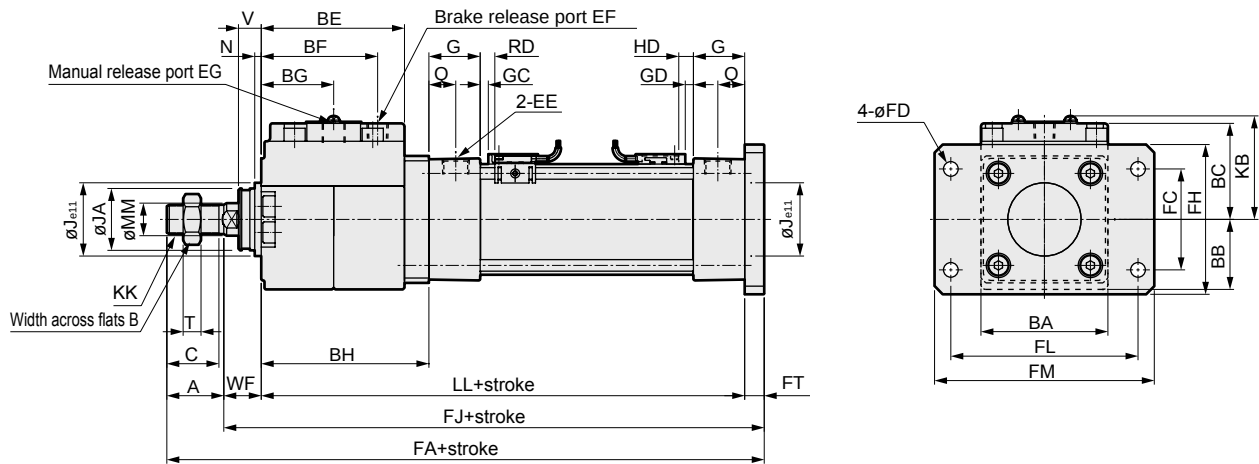
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Rod side flange type (FA) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol								Mounting dimensions							
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 X	FC	FD	FF	Note 1 FG	FH	FL	FM	FT
ø40	16	4	14	8	13	21	216(222)	46	9	11	175(181)	65	83	101	10
ø50	20	4	15.5	11	14	23	245(253)	52	9	11	199(207)	77	100	120	12
ø63	20	4	16.5	11	14	23	259(267)	62	9	11	213(221)	92	115	135	12
ø80	25	4	19	13	20	32	321(331)	63	12	16	265(275)	100	126	153	16
ø100	30	4	19	16	20	32	341(351)	75	14	16	285(295)	120	150	178	16

Symbol	With switch ($T0^H_V$, $T5^H_V$, $T2^H_V$, $T3^H_V$, $T3P^H_V$)				
Bore size (mm)	Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
$\phi 40$	1 (4)	1 (4)	5 (8)	5 (8)	29
$\phi 50$	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
$\phi 63$	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
$\phi 80$	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	—
$\phi 100$	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	—

● Head end flange type (FB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.

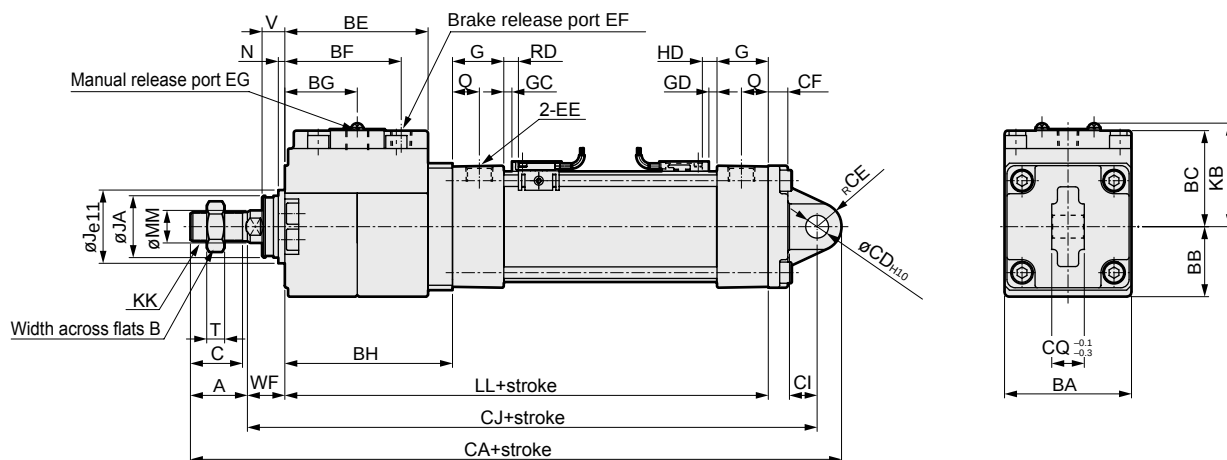
($\phi 40$: +6 mm, $\phi 50$, $\phi 63$: +8 mm, $\phi 80$, $\phi 100$: +10 mm)

Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Head end flange type (FB) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)
Symbol							Mounting dimensions												
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 FA	FC	FD	FH	Note 1 FJ	FL	FM	FT					
ø40	16	4	14	8	13	21	222(228)	46	9	65	192(198)	83	101	10					
ø50	20	4	15.5	11	14	23	253(261)	52	9	77	218(226)	100	120	12					
ø63	20	4	16.5	11	14	23	267(275)	62	9	92	232(240)	115	135	12					
ø80	25	4	19	13	20	32	333(343)	63	12	100	293(303)	126	153	16					
ø100	30	4	19	16	20	32	353(363)	75	14	120	313(323)	150	178	16					
Symbol	With switch (T0 ^H _V , T5 ^H _V , T2 ^H _V , T3 ^H _V , T3P ^H _V)																		
Bore size (mm)	Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P														
ø40	1 (4)	1 (4)	5 (8)	5 (8)	29														
ø50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34														
ø63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40														
ø80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	—														
ø100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	—														

Dimensions

- **Single clevis type (CA)**



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)

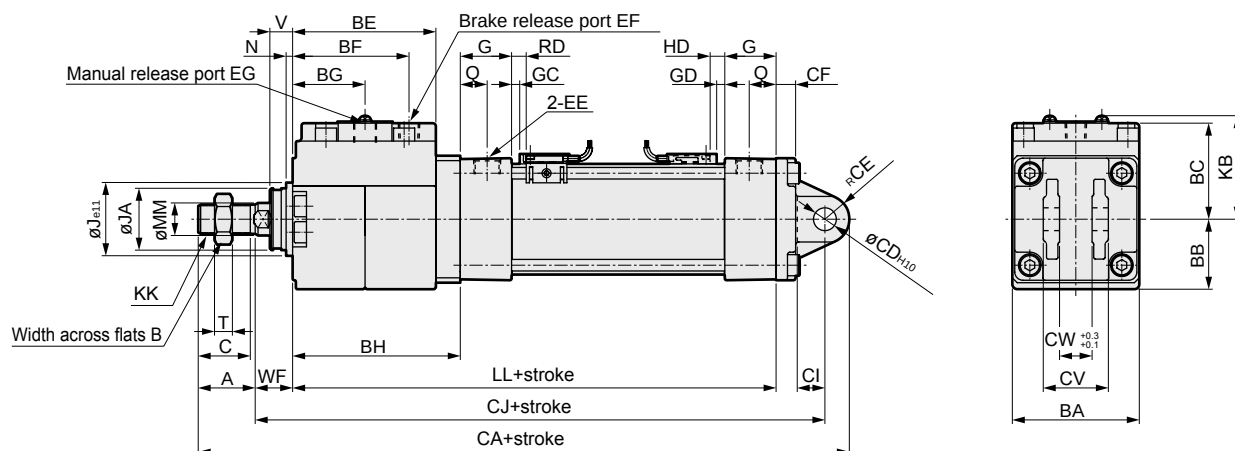
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Single clevis type (CA) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol							Mounting dimensions						
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 CA	CD	CE	CF	CI	Note 1 CJ	CQ
ø40	16	4	14	8	13	21	246(252)	10	11	9	13	205(211)	14
ø50	20	4	15.5	11	14	23	286(294)	14	15	12	17	236(244)	20
ø63	20	4	16.5	11	14	23	300(308)	14	15	12	17	250(258)	20
ø80	25	4	19	13	20	32	382(392)	22	23	15	26	319(329)	30
ø100	30	4	19	16	20	32	402(412)	22	23	15	26	339(349)	30

Symbol	With switch (T0 ^H _V , T5 ^H _V , T2 ^H _V , T3 ^H _V , T3P ^H _V)				
Bore size (mm)	Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
ø40	1 (4)	1 (4)	5 (8)	5 (8)	29
ø50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ø63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ø80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	—
ø100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	—

● Double clevis type (CB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)

Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

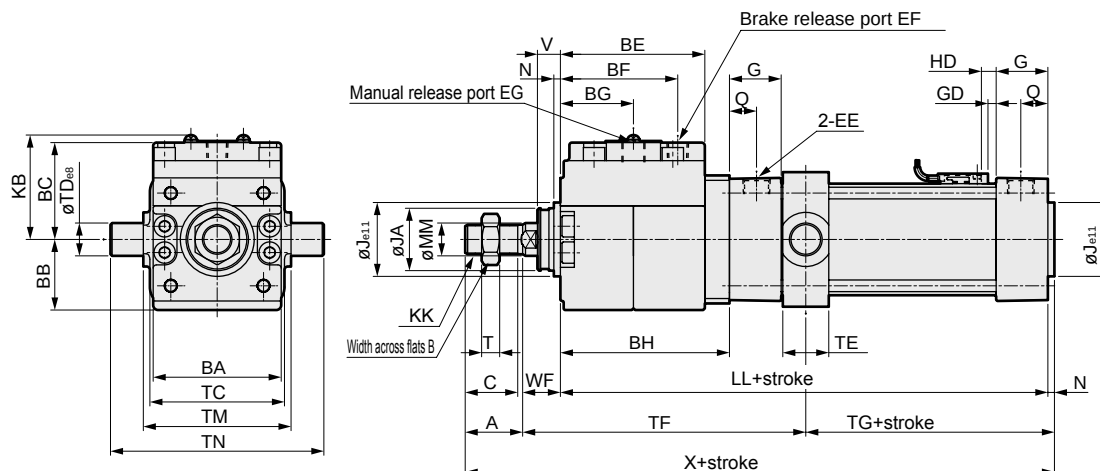
Symbol	Double clevis type (CB) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol							Mounting dimensions											
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 CA	CD	CE	CF	CI	Note 1 CJ	CV	CW				
ø40	16	4	14	8	13	21	246(252)	10	11	9	13	205(211)	28	14				
ø50	20	4	15.5	11	14	23	286(294)	14	15	12	17	236(244)	40	20				
ø63	20	4	16.5	11	14	23	300(308)	14	15	12	17	250(258)	40	20				
ø80	25	4	19	13	20	32	382(392)	22	23	15	26	319(329)	60	30				
ø100	30	4	19	16	20	32	402(412)	22	23	15	26	339(349)	60	30				

Symbol	With switch (T0 ^H _V , T5 ^H _V , T2 ^H _V , T3 ^H _V , T3P ^H _V)								
Bore size (mm)	Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P				
ø40	1 (4)	1 (4)	5 (8)	5 (8)	29				
ø50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34				
ø63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40				
ø80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	—				
ø100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	—				

Dimensions

● Rod side trunnion type (TA)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.

($\phi 40$: +6 mm, $\phi 50$, $\phi 63$: +8 mm, $\phi 80$, $\phi 100$: +10 mm)

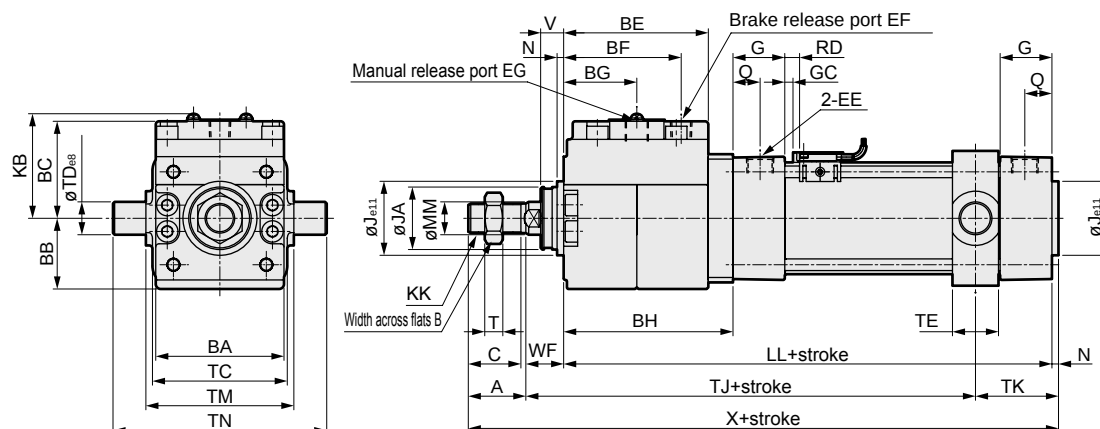
Note 2: Switches can not be installed on the rod end.

Note 3: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Rod side trunnion type (TA) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol											Mounting dimensions					With switch (T0 ^H _V , T5 ^H _V , T2 ^H _V , T3 ^H _V , T3P ^H _V)			
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 X	TC	TD	TE	TF	Note 1 TG	TM	TN	Note 1 GD	Note 1 HD			
ø40	16	4	14	8	13	21	216(222)	57	16	22	137	49(55)	63	95	1 (4)	5 (8)			
ø50	20	4	15.5	11	14	23	245(253)	67	16	22	155.5	54.5(62.5)	75	107	1 (5)	5 (9)			
ø63	20	4	16.5	11	14	23	259(267)	82	20	28	172.5	51.5(59.5)	90	130	1 (5)	5 (9)			
ø80	25	4	19	13	20	32	321(331)	100	20	34	219	62(72)	110	150	2 (7)	6 (11)			
ø100	30	4	19	16	20	32	341(351)	121	25	40	242	59(69)	132	182	2.5 (7.5)	6.5 (11.5)			

● Head end trunnion (TB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)

Note 2: Switches can not be installed on the head end.

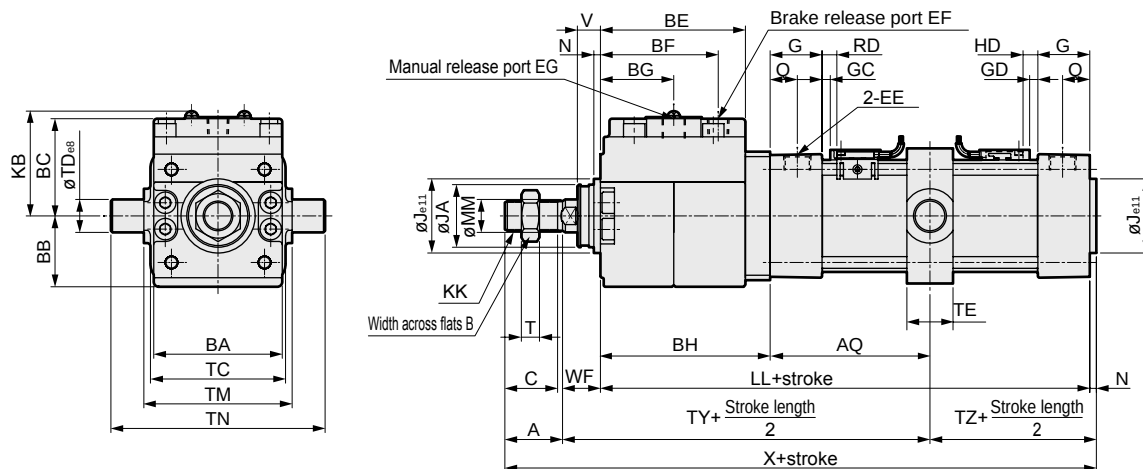
Note 3: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Head end trunnion (TB) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol	Mounting dimensions										With switch (T0 ^H _V , T5 ^H _V , T2 ^H _V , T3 ^H _V , T3P ^H _V)					
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 X	TC	TD	TE	Note 1 TJ	TK	TM	TN	Note 1 GC	Note 1 RD
ø40	16	4	14	8	13	21	216(222)	57	16	22	143(149)	43	63	95	1 (4)	5(8)
ø50	20	4	15.5	11	14	23	245(253)	67	16	22	162.5(170.5)	47.5	75	107	2.5(6.5)	6.5(10.5)
ø63	20	4	16.5	11	14	23	259(267)	82	20	28	173.5(181.5)	50.5	90	130	2.5(6.5)	6.5(10.5)
ø80	25	4	19	13	20	32	321(331)	100	20	34	221(231)	60	110	150	8.5(13.5)	12.5(17.5)
ø100	30	4	19	16	20	32	341(351)	121	25	40	238(248)	63	132	182	8(13)	12(17)

Dimensions

● Intermediate trunnion type (TC)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.

(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)

Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

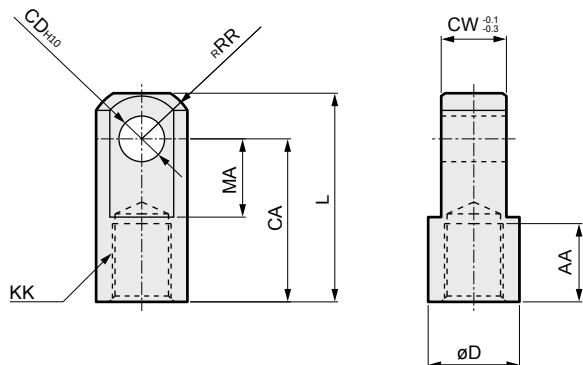
Symbol	Intermediate trunnion type (TC) basic dimensions																		
Bore size (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	NPT1/4	NPT1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	NPT1/4	NPT1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	NPT3/8	NPT1/4	M14	31.5	45	38	63.6	M18×1.5	197(205)
ø80	40	32	98	53	72.5	108	81.5	54.5	131	37	NPT3/8	NPT1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	NPT1/2	NPT3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol								Mounting dimensions							
Bore size (mm)	MM	N	Q	T	V	WF	Note 1 X	TC	TD	TE	TM	TN	Note 1 TY	Note 1 TZ	Note 1 AQ
ø40	16	4	14	8	13	21	216(222)	57	16	22	63	95	140(143)	46(49)	42(45)+ $\frac{\text{Stroke length}}{2}$
ø50	20	4	15.5	11	14	23	245(253)	67	16	22	75	107	159(163)	51(55)	47(51)+ $\frac{\text{Stroke length}}{2}$
ø63	20	4	16.5	11	14	23	259(267)	82	20	28	90	130	173(177)	51(55)	47(51)+ $\frac{\text{Stroke length}}{2}$
ø80	25	4	19	13	20	32	321(331)	100	20	34	110	150	220(225)	61(66)	57(62)+ $\frac{\text{Stroke length}}{2}$
ø100	30	4	19	16	20	32	341(351)	121	25	40	132	182	240(245)	61(66)	57(62)+ $\frac{\text{Stroke length}}{2}$

Symbol	With switch (T0 _V ^H , T5 _V ^H , T2 _V ^H , T3 _V ^H , T3P _V ^H)				
Bore size (mm)	Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
ø40	1 (4)	1 (4)	5 (8)	5 (8)	29
ø50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ø63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ø80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	—
ø100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	—

● Single knuckle (I)

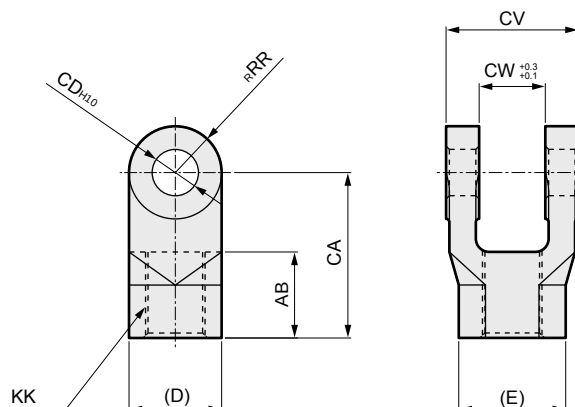
Material: Steel



Model No.	Applicable bore size (mm)	AA	CA	CD	CW	D	KK	L	MA	RR	Mass (kg)
SCG-I-40	40	19	40	10	14	22	M14×1.5	50	19	12.5	0.07
SCG-I-50	50,63	24	50	14	20	28	M18×1.5	64	24	16.5	0.20
SCG-I-80	80	26	60	22	30	40	M22×1.5	80	34	23.5	0.52
SCG-I-100	100	26	60	22	30	40	M26×1.5	80	34	23.5	0.48

● Double knuckle (Y)

Material: Cast iron

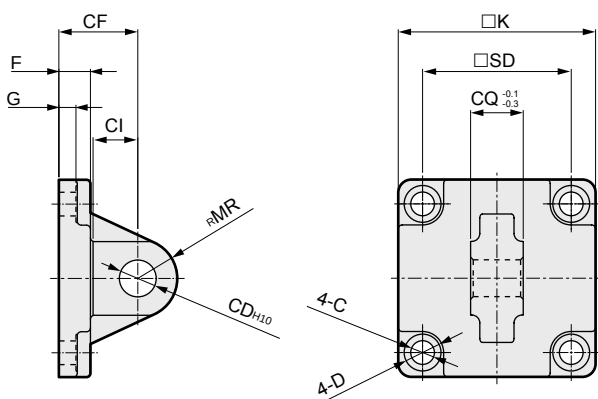


Model No.	Applicable bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Mass (kg)
SCG-Y-40	40	21	40	10	28	14	22	25.4	M14×1.5	11	0.13
SCG-Y-50	50,63	26	50	14	40	20	28	32.3	M18×1.5	14	0.30
SCG-Y-80	80	31	65	22	60	30	40	46.2	M22×1.5	20	0.94
SCG-Y-100	100	31	65	22	60	30	40	46.2	M26×1.5	20	0.92

Note: A pin, split pin, and flat washer are included.

● Single bracket (B1)

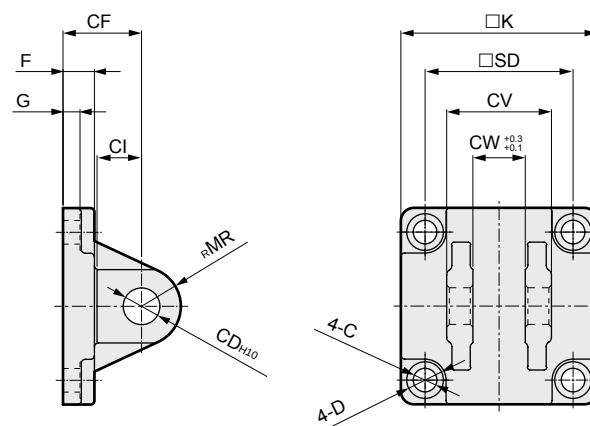
Material: Cast iron



Model No.	Applicable bore size (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD	Mass (kg)
SCG-B1-40	40	6.6	10	23	13	14	11	9	4.5	52	11	38	0.16
SCG-B1-50	50	9	14	30	17	20	14	12	6.5	65	15	46.5	0.38
SCG-B1-63	63	9	14	30	17	20	14	12	6.5	75	15	56.5	0.48
SCG-B1-80	80	11	22	42	26	30	17	15	8.5	95	23	72	1.19
SCG-B1-100	100	11	22	42	26	30	17	15	8.5	114	23	89	1.56

● Double bracket (B2)

Material: Cast iron



Model No.	Applicable bore size (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD	Mass (kg)
SCG-B2-40	40	6.6	10	23	13	28	14	11	9	4.5	52	11	38	0.20
SCG-B2-50	50	9	14	30	17	40	20	14	12	6.5	65	15	46.5	0.46
SCG-B2-63	63	9	14	30	17	40	20	14	12	6.5	75	15	56.5	0.58
SCG-B2-80	80	11	22	42	26	60	30	17	15	8.5	95	23	72	1.52
SCG-B2-100	100	11	22	42	26	60	30	17	15	8.5	114	23	89	1.91

Note: A pin, split pin, and flat washer are included.

MEMO

SRL3 Series

- Bore size: $\varnothing 12 \cdot 16 \cdot 20 \cdot 25 \cdot 32 \cdot 40 \cdot 50 \cdot 63 \cdot 80 \cdot 100$ or equivalent

Features

- Long service life
- Switch mountable
- High-speed operation



Catalog No. CB-029SA

How to order

Without switch

SRL3 - **00** - **12** - **B** - **200** - **B**

With switch

SRL3 - **00** - **12** - **B** - **200** - **M0H** - **R** - **B**

A B C D E F G

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
LB1	Axial foot type ($\varnothing 12$ to $\varnothing 32$ only)

B Bore size (mm)	
12	$\varnothing 12$
16	$\varnothing 16$
20	$\varnothing 20$
25	$\varnothing 25$
32	$\varnothing 32$
40	$\varnothing 40$
50	$\varnothing 50$
63	$\varnothing 63$
80	$\varnothing 80$
100	$\varnothing 100$

C Port thread type	
N	NPT thread ($\varnothing 20$ and over) (custom order)

D Cushion	
B	Both sides cushioned
R	R side cushioned
L	L side cushioned
N	No cushion

E Stroke length (mm)		
Bore size	Stroke length Note 3	Intermediate stroke
$\varnothing 12$ to $\varnothing 100$	1 to 5000	By 1 mm increment

F Switch model No.						
Lead wire straight type	Lead wire radial	Contact	Voltage		Indicator	Lead wire
			AC	DC		
M0H*	M0V*	Reed	●	●	One color indicator type	2 wire
M2H*	M2V*	Proximity		●	2 color indicator	2 wire
—	M2WV*			●	2 color indicator	2 wire
M3H*	M3V*			●	One color indicator type	3 wire
—	M3WV*			●	2 color indicator	3 wire

*Lead wire length	
Blank	1m (standard)

G Switch quantity	
R	One on R side
L	One on L side
D	Two
T	Three
4	Four (If more than 4 switches, indicate number of switches.)

Specifications

Item	SRL3									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting									
Use fluid	Compressed air									
Maximum working pressure MPa	0.7									
Minimum working pressure MPa	0.2			0.1			0.05			
Proof pressure Mpa	1.05									
Ambient temperature °C	5 to 60									
Connection diameter	M5		NPT 1/8		NPT 1/4		NPT 3/8		NPT 1/2	
Stroke tolerance mm	^{+2.0} ₀ (up to 1000), ^{+2.0} ₀ (up to 3000), ^{+2.0} ₀ (up to 5000)									
Working piston speed mm/s	50 to 2000 (standard port piping) (Note)									
Cushion	Air cushion									
Lubrication	Not required (When lubricating, use turbine oil Class one ISOVG32. When first lubricating, lubricate continuously.)									

Note: For common port pipe, working piston speed varies depending on stroke length. Consult with CKD.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Maximum stroke length (mm)	Minimum stroke length (mm)
$\varnothing 12$ or equivalent	200 · 300 400 · 500 600 · 700 800 · 900 1000	5000	1
$\varnothing 16$ or equivalent			
$\varnothing 20$ or equivalent			
$\varnothing 25$ or equivalent			
$\varnothing 32$ or equivalent			
$\varnothing 40$ or equivalent			
$\varnothing 50$ or equivalent			
$\varnothing 63$ or equivalent			
$\varnothing 80$ or equivalent			
$\varnothing 100$ or equivalent			

Note: The intermediate stroke can be manufactured in 1 mm increments.

How to order

● How to order discrete shock absorber

SRL3 - 40 - NCK

Bore size
(section **B** on the previous page)

(Shock absorber 1 pc., shock absorber fixing hex. nut 1 pc.)

(Note) Shock absorber fixing hexagon nut for SRL3-40 is a custom part.

Applicable shock absorber model no.

Model	Shock absorber model no.
SRL3-12	NCK-00-0.3-C
SRL3-16	NCK-00-0.3-C
SRL3-20	NCK-00-0.7-C
SRL3-25	NCK-00-1.2
SRL3-32	NCK-00-2.6
SRL3-40	NCK-00-7
SRL3-50	NCK-00-12
SRL3-63	NCK-00-12
SRL3-80	NCK-00-20
SRL3-100	NCK-00-20

● How to order discrete C mount bracket (for ø12 to ø63)

SRL3 - 40 - C

Bore size
(section **B** on the previous page)

(C mount bracket, mounting bolt 4 pcs.)

● How to order floating joint set

SRL3 - 40 - Y

Bore size
(section **B** on the previous page)

(Mount, mount base, pin, plain washer, pan head machine screw, mounting bolts 4 pcs.)

● How to order discrete intermediate support bracket

00, LB

SRL3 - 40 - L (2 pieces/1 set)

Bore size
(section **B** on the previous page)

LB1

SRL3 - 32 - N (2 pieces/1 set)

Bore size
(section **B** on the previous page)

● How to order adjustable full stroke kit

SRL3 - 40 - A1 (1 set)

Bore size
(section **B** on the previous page)

● How to order expendable parts

SRL3 - 40 K - 200

Bore size
(section **B** on the previous page)

Stroke length
(section **E** on the previous page)

● How to order mounting bracket

SRL3 - LB - 40

Mounting style
(section **A** on the previous page)

Bore size
(section **B** on the previous page)

(Bracket 2 pcs, mounting bolt 4 pcs.)

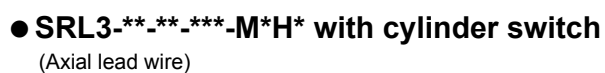
● How to order high adjustment plate set

SRL3 - 40 - U

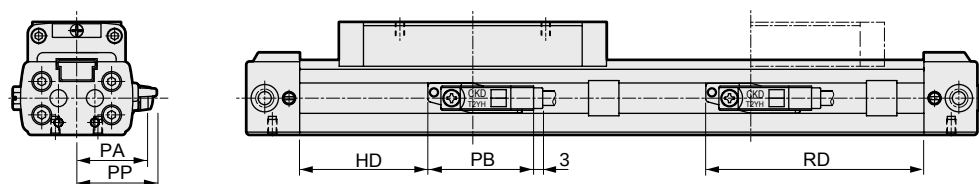
Bore size
(section **B** on the previous page)
(Plate, mounting bolt 4 pcs.)

Dimensions

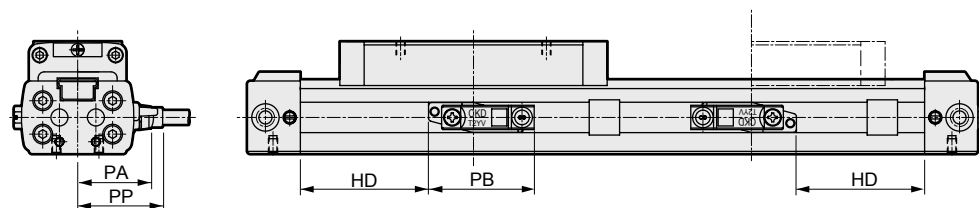
● **SRL3-**-**-***-M*V* with cylinder switch**
(Radial lead wire)



● **SRL3-**-**-***-M*H*** with cylinder switch
(Axial lead wire)



● **SRL3-**-**-***-T*H with cylinder switch (T*W, T*Y, T2YD)**

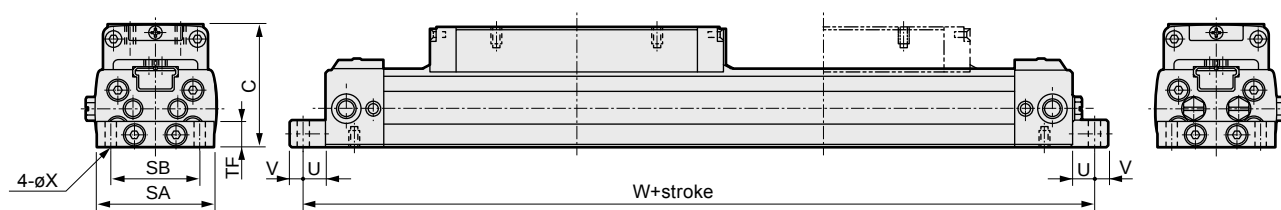


Symbol	A	B	C	DB	DC	E	G	HA	HB	J	KA	L	LL	LA	M	P	PQ	Q	TA	TB	TC	TD	TE
Bore size (mm)																							
ø12 or equivalent	33	10.5	33	10	11	8.5	24	6	14	17.5	59.5	136	139	3	M3 depth 5	119	19	M5	81	42	29	13	M3 depth 5
ø16 or equivalent	37	12	37	14	12	8.5	27	6	14	17.5	66	149	152	3	M3 depth 5	132	21	M5	88	48	32	15	M3 depth 5
ø20 or equivalent	44	14	42	16	16	10.5	31	8.5	18.5	22	74	169	171.5	2.5	M4 depth 6.5	148	24.5	NPT 1/8	100	60	38	18	M4 depth 6

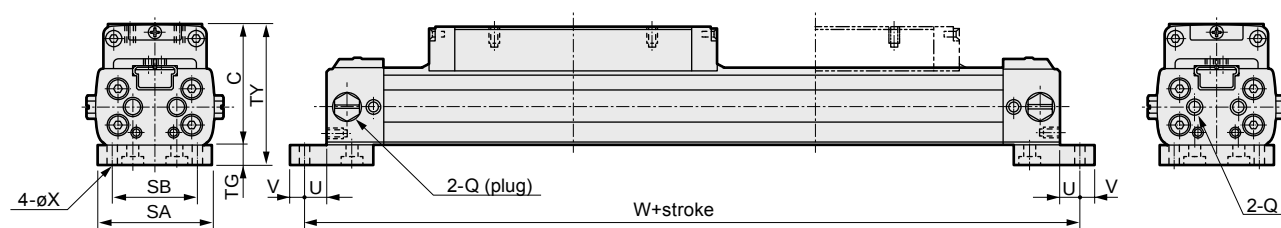
62

Dimensions

● SRL3-LB-12 to 20 with foot bracket



● SRL3-LB1-12 to 20 with foot bracket

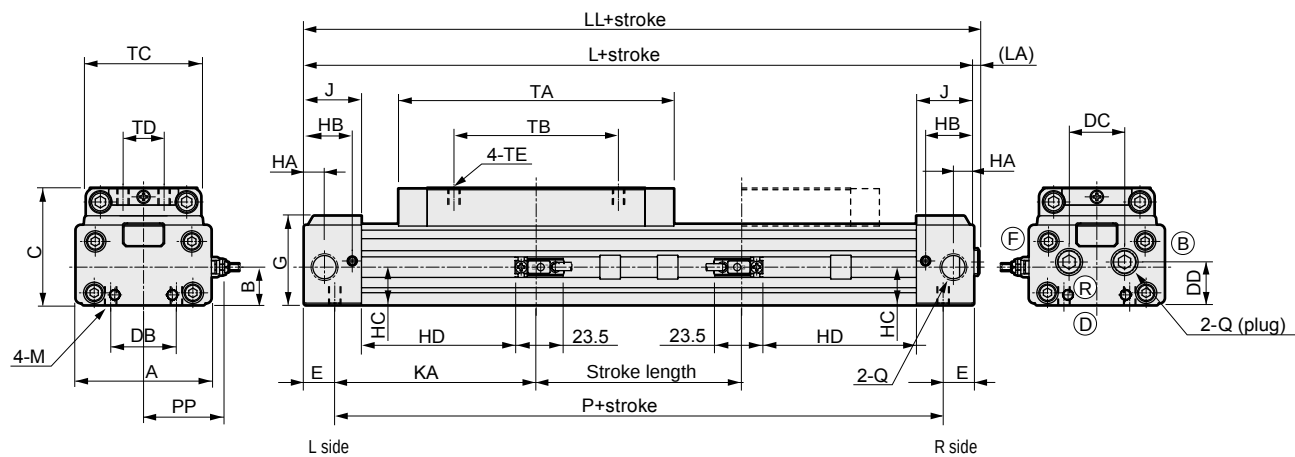


Symbol	With foot bracket (LB)							With foot bracket (LB1)							
Bore size (mm)	SA	SB	TF	U	V	W	X	SA	SB	TG	TY	U	V	W	X
ø12 or equivalent	32	24	8	6	4	148	3.4	32	24	6	39	6	4	148	3.4
ø16 or equivalent	35	26	8	6	4	161	3.4	35	26	6	43	6	4	161	3.4
ø20 or equivalent	43	33	10	6	6	181	4.5	43	33	8	50	6	6	181	4.5

Dimensions

● SRL3-**-**-***-M*V* with cylinder switch

(Radial lead wire)



Symbol	A	B	C	DB	DC	DD	E	G	HA	HB	HC	HE	J	KA	L	LL	LA	M	P	Q	TA	TB	TC	TD	TE
Bore size (mm)																									
ø25 or equivalent	53	17	53	20	26	19	14	40.5	7.5	20	18.9	—	24	81	190	192	2	M6 depth 9	162	NPT 1/8	122	70	48	20	M5 depth 6
ø32 or equivalent	66	18.5	57	32	27	21	15	43.5	10	23.5	21.5	17	28	98	226	228.5	2.5	M6 depth 9	196	NPT 1/4	134	80	56	20	M6 depth 7.5
ø40 or equivalent	80	22	67	36	35	28	17	51.5	13	26	27	22.3	31	105	244	246.5	2.5	M8 depth 12	210	NPT 1/4	148	90	68	30	M6 depth 9
ø50 or equivalent	96	28	82	45	35	35	23	61	15	33	35.3	11	39	106	258	260.5	2.5	M8 depth 12	212	NPT 3/8	152	100	80	30	M8 depth 10.5
ø63 or equivalent	118	35	95	50	39	42	19	74	15	32	43	31	39	129	296	298.5	2.5	M10 depth 15	258	NPT 3/8	168	110	102	40	M8 depth 11.5

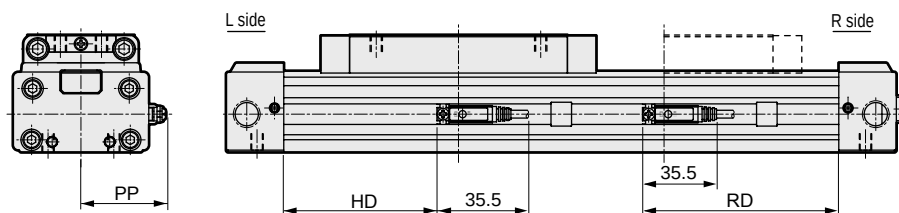
Symbol	With switch																
Bore size (mm)	HD			RD			PA	PB			PP						
	M*	T*Y*	T*W	M*	T*Y*	T*W		T*Y*	T2YD	T*W*	M*V	M*H	T*YV	T*YH	T2YD	T*WV	T*WH
ø25 or equivalent	60	56	52	82	86	90	34.3	35	34	33.5	34.5	34.5	36	33	38.4	30.7	27.2
ø32 or equivalent	74	70	66	96	100	104	41.3	35	34	33.5	41.5	41.5	43	40	45.4	37.7	34.2
ø40 or equivalent	80	76	72	102	106	110	48.3	35	34	33.5	48.5	48.5	50	47	52.4	44.7	41.2
ø50 or equivalent	79	75	71	101	105	109	56.3	35	34	33.5	56.5	56.5	58	55	60.4	52.7	49.2
ø63 or equivalent	98	94	90	120	124	128	67.3	35	34	33.5	67.5	67.5	69	66	71.4	63.7	60.2

Note: Option S is not available for ø25 or equivalent.

Dimensions

● SRL3-**-**-***-M*H* with cylinder switch

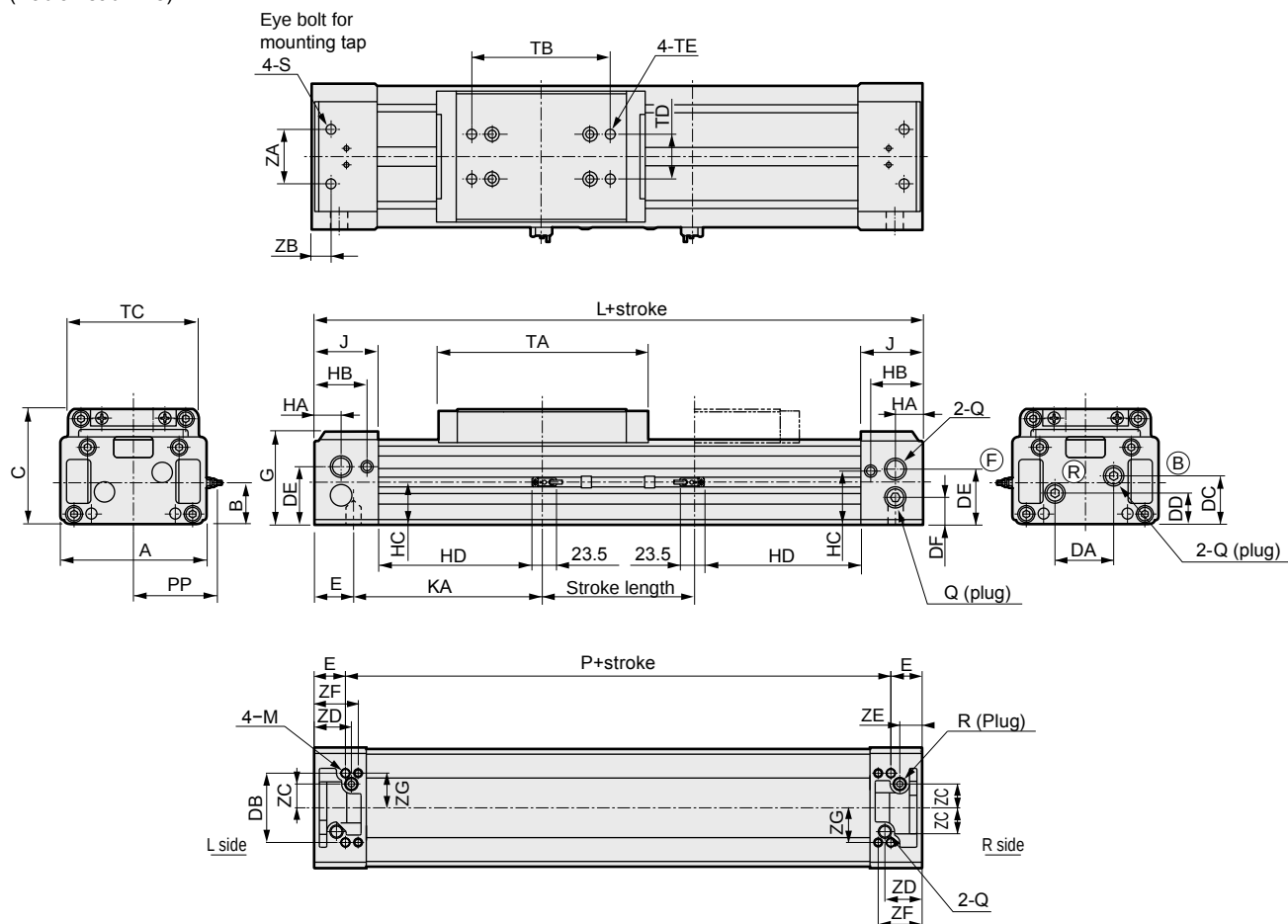
(Axial lead wire)



Symbol	With foot bracket (LB)								With foot bracket (LB1)							
Bore size (mm)	SA	SB	TF	U	V	W	X	XF	SA	SB	TG	TY	U	V	W	X
ø25 or equivalent	52	20	12	9	11	208	7	—	50	20	10	63	9	11	208	7
ø32 or equivalent	64	32	12	9	11	244	7	—	64	32	10	67	9	11	244	7
ø40 or equivalent	80	36	15	11	9	266	9	14 spot face depth 8.6	—	—	—	—	—	—	—	—
ø50 or equivalent	94	45	20	11	9	280	9	14 spot face depth 8.6	—	—	—	—	—	—	—	—
ø63 or equivalent	116	50	25	13	12	322	11	17.5 spot face depth 10.8	—	—	—	—	—	—	—	—

● SRL3-**-**-***-M*V* with cylinder switch

(Radial lead wire)



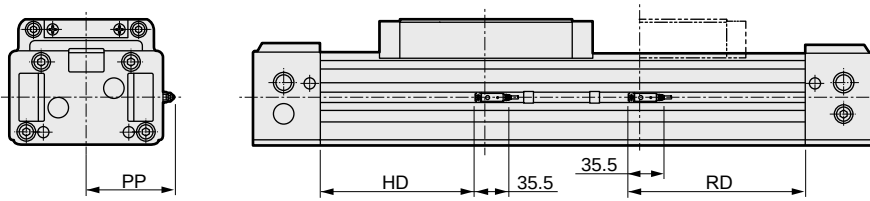
Symbol	A	B	C	DA	DB	DC	DD	DE	DF	E	G	HA	HB	HC	J	KA	L	M	P	Q	R	S
Bore size (mm)																						
ø80 equivalent	162	49	130	64	93	58	38	65	33	42	106	30	59	64.5	70	208	500	M12 depth 18	416	NPT 1/2	NPT 3/8	M12 depth 23
ø100 or equivalent	198	61.5	150	73	108	71.5	47.5	81.5	41.5	43	125	30	69	76.5	80	222	530	M12 depth 18	444	NPT 1/2	NPT 1/2	M12 depth 23

Symbol	TA	TB	TC	TD	TE	ZA	ZB	ZC	ZD	ZE	ZF	ZG	With foot bracket						
Bore size (mm)													SA	SB	TF	U	V	W	X
ø80 equivalent	228	150	146	50	M12 depth 15	60	21	32	50	30	59	46.5	162	134	25	13	12	526	14
ø100 or equivalent	238	160	170	60	M12 depth 15	60	21	36.5	55	30	69	54	198	160	30	15	15	560	14

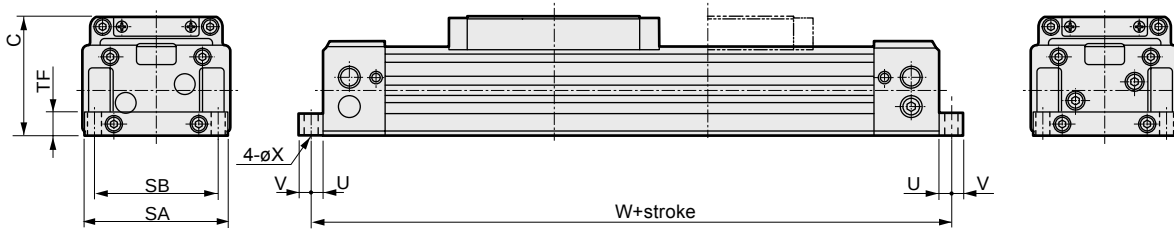
Dimensions

● SRL3-**-**-***-M*H* with cylinder switch

(Axial lead wire)



● SRL3-LB-**-**-*** with foot bracket



Symbol	With switch																
	HD			RD			PA	PB			PP						
	M*	T*Y*	T*W	M*	T*Y*	T*W		T*Y*	T2YD	T*W*	M*V	M*H	T*YV	T*YH	T2YD	T*WV	T*WH
ø80 or equivalent	170	165	161	190	195	199	87.3	35	34	33.5	87.5	87.5	89	86	91.4	83.7	80.2
ø100 or equivalent	175	170	166	195	200	204	105.3	35	34	33.5	105.5	105.5	107	104	109.4	101.7	98.2

MEMO

T Cylinder switch

T series

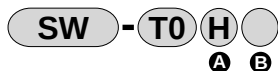


Catalog No. CB-029SA

Features

- Compatible with small and large cylinders

How to order



Symbol	Descriptions
A Lead wire direction	
H	Axial lead wire
V	Radial lead wire
B Lead wire length	
Blank	1m

Specifications

Item	Proximity 2 wire				Proximity 3 wire			
	T1H•T1V	T2H•T2V	T2YH•T2YV T2YC (2 color indicator)	T2WH•T2WV (2 color indicator)	T3H•T3V	T3PH•T3PV (PNP output type)	T3YH•T3YV T3YC (2 color indicator)	T3WH•T3WV (2 color indicator)
Applications	Programmable controller, relay, small solenoid valve				Programmable controller, relay			
Output method	—				NPN output	PNP output	NPN output	NPN output
Power supply voltage	—				10 to 28 VDC			
Impressed voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ± 10%	30 VDC or less			
Load current	5 to 100mA	5 to 20 mA (Note 1)			100mA or less		50mA or less	
Current consumption	—				At 24 VDC 10mA or less	At 24 VDC 12mA or less	10mA or less at 24V DC	
Internal voltage drop	10% of load voltage or less	4V or less			0.5V or less			
Off delay time	—				—			
Light	LED (ON lighting)		Red/green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	
Leak current	1mA or less at 100VAC, 2mA or less at 200VAC	1mA or less			10 μA or less			
Lead wire length Note 6	1m (oil resistance vinyl cable 2-conductor 0.3mm ²)	1m (oil resistant vinyl round code 2-conductor 0.2mm ²)	1m (oil resistant vinyl round code 2-conductor 0.3mm ²)	1m (oil resistant vinyl round code 2-conductor 0.2mm ²)	1m (oil resistance vinyl cab tire code 3-conductor 0.2mm ²)		1m (oil resistant vinyl round code 3-conductor 0.3mm ²)	1m (oil resistant vinyl round code 3-conductor 0.2mm ²)
Maximum shock resistance	980m/s ²							
Insulation resistance	100MΩ and over when measured with a 500VDC megger	20MΩ and over when measured with a 500VDC megger	100MΩ and over when measured with a 500VDC megger	20MΩ and over when measured with a 500VDC megger	20MΩ and over when measured with a 500VDC megger		100MΩ and over when measured with a 500VDC megger	20MΩ and over when measured with a 500VDC megger
Withstand voltage	No abnormal condition when 1500VAC is applied for 1 min		No abnormal condition when 1000VAC is applied for 1 min					
Ambient temperature	-10 to +60°C							
Degree of protection	IEC Standard IP67, JIS C0920 (water-tight type), oil-resistant							
Mass	1m: 33g 3m: 87g 5m: 142g	1m: 18g 3m: 49g 5m: 80g	1m: 33g 3m: 87g 5m: 142g	1m: 18g 3m: 49g 5m: 80g	1m: 18g 3m: 49g 5m: 80g		1m: 33g 3m: 87g 5m: 142g	1m: 18g 3m: 49g 5m: 80g

Item	Reed 2 wire						
	T0H•T0V		T5H•T5V		T8H•T8V		
Applications	Programmable controller, relay		Programmable controller, relay, IC circuit (w/o lamp), small solenoid valve		Programmable controller, relay		
Power supply voltage	—						
Impressed voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220VAC
Load current	5 to 50mA	7 to 20 mA	50mA or less	20mA or less	5 to 50mA	7 to 20 mA	7 to 10mA
Current consumption	—						
Internal voltage drop	3V or less		0V		3V or less		
Light	LED (ON lighting)		Without indicator light		LED (ON lighting)		
Leak current	0mA						
Lead wire length	1m (oil resistant vinyl round code 2-conductor 0.2mm ²)				Note 6	1m (oil resistant vinyl round code 2-conductor 0.3mm ²)	
Maximum shock resistance	294m/s ²						
Insulation resistance	20MΩ and over when measured with a 500VDC megger				100MΩ and over when measured with a 500VDC megger		
Withstand voltage	No abnormal condition when 1000VAC is applied for 1 min				No abnormal condition when 1500VAC is applied for 1 min		
Ambient temperature	-10 to +60°C						
Degree of protection	IEC Standard IP67, JIS C0920 (water-tight type), oil-resistant						
Mass	1m: 18g 3m: 49g 5m: 80g				1m: 33g 3m: 87g 5m: 142g		

Note 1: Above-mentioned load current's maximum value 20mA is for 25°C. The current will be lower than 20 mA if ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C.)

Note 2: T3PH and T3PV switches are available as custom order when installed onto applicable cylinders.

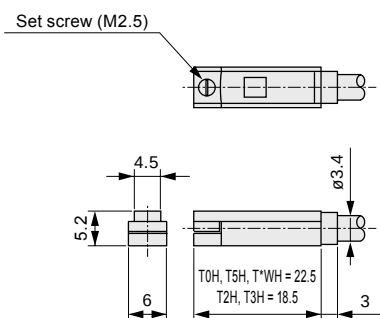
Note 3: The T0/T5 switch can be used with 220 VAC. Consult with CKD for working conditions.

Note 4: The mounted switch may be limited, depending on the cylinder. Contact CKD sales office for details.

Dimensions

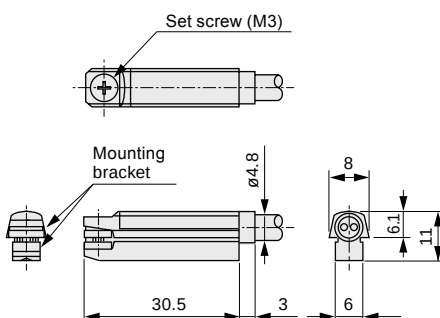
● T*H•T*WH series

(Axial lead wire)



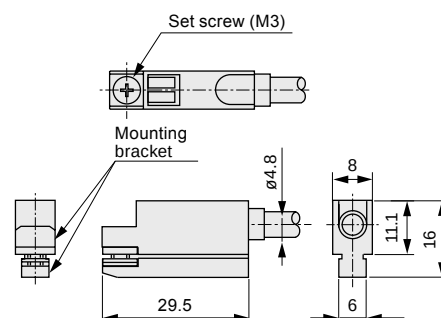
● T*YH•T2JH•T8H series

(Axial lead wire)



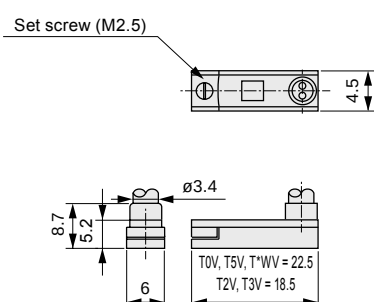
● T1H series

(Axial lead wire)



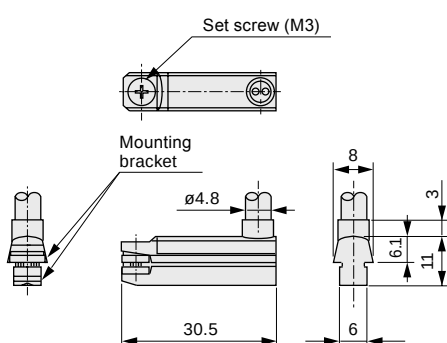
● T*V•T*WV series

(Radial lead wire)



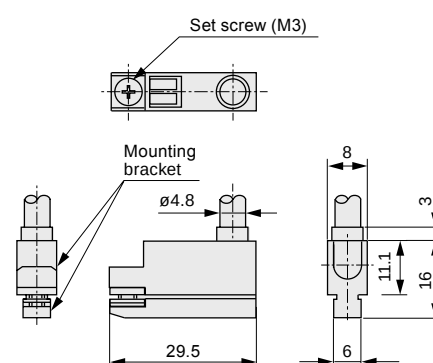
● T*YV•T2JV•T8V series

(Radial lead wire)



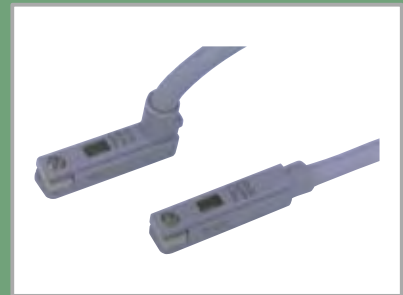
● T1V series

(Radial lead wire)



Internal circuit diagram

● T1H•T1V	● T2H•T2V•T2YH•T2YV•T2WH•T2WV•T2JH•T2JV	● T3H•T3V•T3YH•T3YV•T3WH•T3WV	● T3PH•T3PV
● T0H•T0V•T8H•T8V	● T5H•T5V		

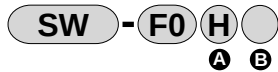


Catalog No. CB-029SA

Features

- Compatible with small and large cylinders

How to order



Symbol	Descriptions
A Lead wire direction	
H	Axial lead wire
V	Radial lead wire
B Lead wire length	
Blank	1m

Specifications

Item	Reed 2 wire	Proximity 2 wire		Proximity 3 wire	Proximity 3 wire
	F0H•V	F2H•V, F2S	F2YH•F2YV	F3H•V, F3S	F3YH•F3YV
Applications	Programmable controller			Programmable controller, relay	
Output method	—			NPN output	
Power supply voltage	—			10 to 28 VDC	
Impressed voltage	24 VDC	10 to 30 VDC	24 VDC ± 10%	30 VDC or less	
Load current	5 to 20 mA (Note 1)			50mA or less	
Current consumption	—			10mA or less at 24V DC	
Internal voltage drop	4V or less			0.5V or less	
Light	Yellow LED (ON lighting)		Red/green LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)
Leak current	1mA or less			10 μA or less	
Lead wire length	1m (oil resistant vinyl round code 2-conductor 0.15mm ²)			1m (oil resistant vinyl round code 3-conductor 0.15mm ²)	
Maximum shock resistance	294m/s ²	980m/s ²			
Insulation resistance	20MΩ and over when measured with a 500VDC megger				
Withstand voltage	There shall be no failure when 1000VAC is applied for 1 minute				
Ambient temperature	-10 to +60°C				
Degree of protection	IEC Standard IP67, JIS C0920 (water-tight type), oil-resistant				
Mass	1m: 10g 3m: 29g			1m: 10g 3m: 29g	

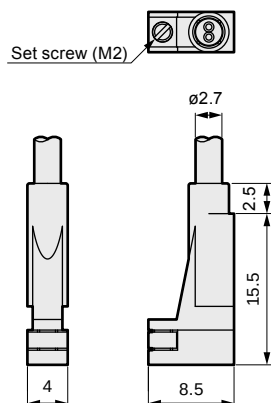
Note 1: The maximum load current 20 mA is applied at 25°C. The current will be lower than 20 mA if ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C.)

Note 2: If two switches are mounted in a single groove on the F2S or F3S to detect both ends, mount them so that each set screw faces away from each other.

Dimensions

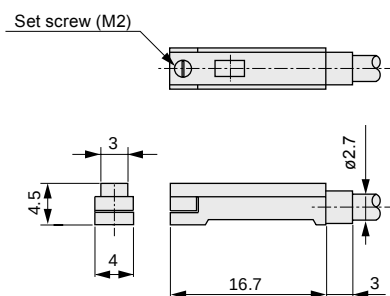
● F*S series

(Vertical lead wire outlet short stroke detection)



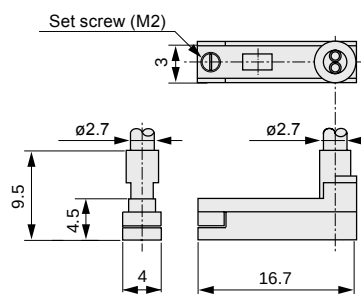
● F*H series

(Axial lead wire)



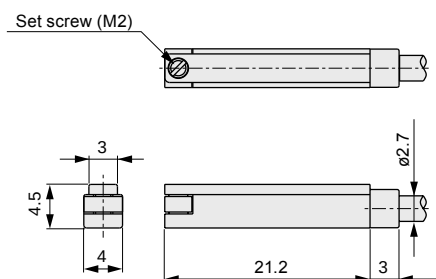
● F*V series

(Radial lead wire)



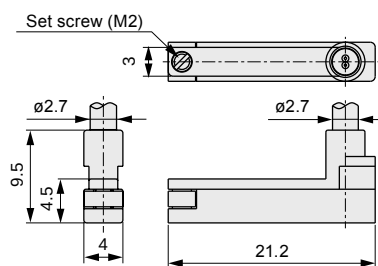
● F*YH series

(Axial lead wire)



● F*YV series

(Radial lead wire)



Internal circuit diagram

● F0H•F0V	● F2S•F2H•F2V•F2YH•F2YV	● F3S•F3H•F3V•F3YH•F3YV

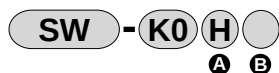


Catalog No. CB-029SA

Features

- Compatible with small and large cylinders

How to order



Symbol	Descriptions
A Lead wire direction	
H	Axial lead wire
V	Radial lead wire
B Lead wire length	
Blank	1m

Specifications

Item	Proximity 2 wire		Proximity 3 wire		
	K2H•K2V	K2YH•K2YV	K3H/V (NPN output type)	K3PH/V (PNP output type)	K3YH/V (2 color indicator type)
Applications	Programmable controller		Programmable controller, relay		
Output method	—		NPN output	PNP output	NPN output
Power supply voltage	—		10 to 28 VDC		
Impressed voltage	10 to 30 VDC		30 VDC or less		
Load current	5 to 20 mA (Note 1)		50mA or less		
Current consumption	—		10mA or less at 24V DC	12mA or less at 24V DC	10mA or less at 24V DC
Internal voltage drop	4V or less		0.5V or less		
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)
Leak current	1mA or less		10 μA or less		
Lead wire length	1m (oil resistant vinyl round code 2-conductor 0.2mm ²)	1m (oil resistant vinyl round code 2-conductor 0.3mm ²)	1m (oil resistant vinyl round code 3-conductor 0.2mm ²)		1m (oil resistant vinyl round code 3-conductor 0.3mm ²)
Maximum shock resistance	980m/s ²				
Insulation resistance	20MΩ and over when measured with a 500VDC megger	100MΩ and over when measured with a 500VDC megger	20MΩ and over when measured with a 500VDC megger		100MΩ and over when measured with a 500VDC megger
Withstand voltage	No abnormal condition when 1000VAC is applied for 1 min				
Ambient temperature	-10 to +60°C				
Degree of protection	IEC Standard IP67, JIS C0920 (water-tight type), oil-resistant				
Mass	1m: 18g 3m: 49g 5m: 80g	1m: 31g 3m: 85g 5m: 139g	1m: 18g 3m: 49g 5m: 80g		1m: 31g 3m: 85g 5m: 142g

Item	Reed 2 wire			
	K0H•K0V		K5H•K5V	
Applications	Programmable controller, relay		Programmable controller, relay, IC circuit (w/o lamp), small solenoid valve	
Power supply voltage	—			
Impressed voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50mA	7 to 20 mA	50mA or less	20mA or less
Current consumption	—			
Internal voltage drop	3V or less		0V	
Light	LED (ON lighting)		—	
Leak current	0mA			
Lead wire length	1m (oil resistant vinyl round code 2-conductor 0.2mm ²)			
Maximum shock resistance	294m/s ²			
Insulation resistance	20MΩ and over when measured with a 500VDC megger			
Withstand voltage	No abnormal condition when 1000VAC is applied for 1 min			
Ambient temperature	−10 to +60°C			
Degree of protection	IEC Standard IP67, JIS C0920 (water-tight type), oil-resistant			
Mass	1m: 18g 3m: 49g 5m: 80g			

Note 1: Above-mentioned load current's maximum value is for 25°C. The current will be lower than 20 mA if ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C.)

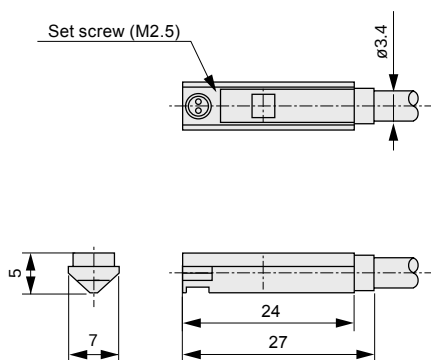
Note 2: Mounting to the K3PH or K3PV cylinder are available as custom order.

Note 3: The K0/K5 switch can be used with 220 VAC. Contact CKD sales office for working conditions.

Dimensions

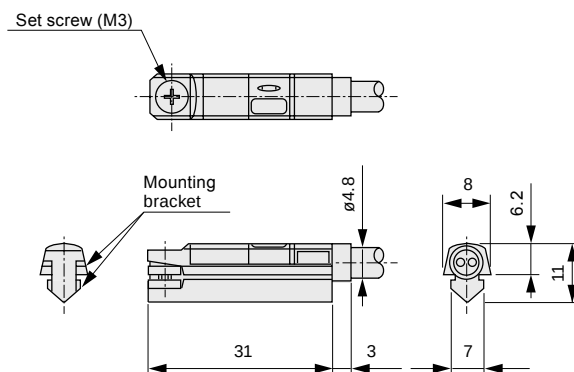
● K*H series

(Axial lead wire)



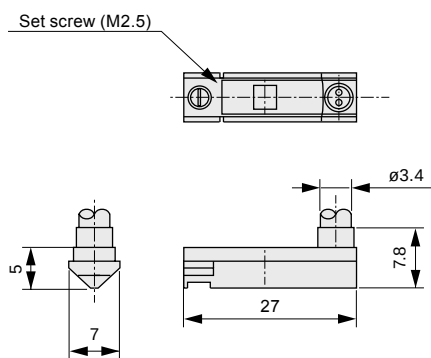
● K*YH series

(2 color indicator type, axial lead wire)



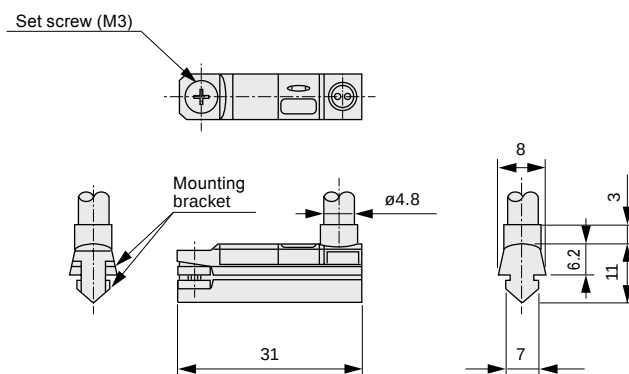
● K*V series

(Radial lead wire)



● K*YV series

(2 color indicator type, radial lead wire)



Internal circuit diagram

● K2H-K2V-K2YH-K2YV	● K3H-K3V-K3YH-K3YV	● K3PH-K3PV
● K0H-K0V	● K5H-K5V	

MEMO

Core Components

Pneumatic valve

□ Three port connection valve discrete valve body porting	3GA1 to 3 76
□ Five port connection valve discrete valve body porting	4GA1 to 3 76
□ Five port connection valve discrete valve sub-base porting	4GB1 to 3 88
□ Five port connection valve discrete valve body porting	4GA4..... 96
□ Five port connection valve discrete valve sub-base porting	4GB4..... 100
□ Individual wiring manifold sub-base porting	M4GB1 to 3 104
□ Reduced wiring manifold sub-base porting	M4GB1 to 3 110
□ Five port plug-in type sub-base porting	W4GB2 122
□ Individual wiring manifold direct porting	MW $\frac{3}{4}$ GA2-R1 126
□ Individual wiring block manifold sub-base porting	MW4GB2-R1 130
□ Reduced wiring manifold direct porting	MW $\frac{3}{4}$ GA2-T1•2•3•5•8.... 134
□ Reduced wiring manifold sub-base side porting	MW4GB2-T1•2•3•5•8..... 150
□ Discrete sub-base side porting	W4GB4 180
□ Individual wiring manifold sub-base side porting	MW4GB4-R1 186
□ Reduced wiring manifold sub-base side porting	MW4GB4-T1•3•6..... 190

Pilot operated type three/five port connection valve discrete valve body porting

RoHS

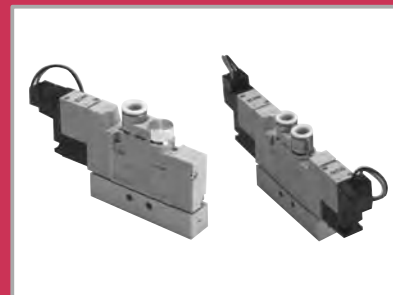
3GA1•2•3/4GA1•2•3 Series

CAD

- Suitable cylinder bore: ø20 to ø100

Features

- Safety function reinforced by detailed response
- Upgraded reliability
- Enhanced ease of use



Catalog No. CB-023SA

How to order

Five port connection valve

4GA1 1 0 - C6N - E2 - 1 - K1

Three port connection valve

3GA1 1 0 - C6N - E2 - 1 - K1

		A Model No.					
Symbol	Descriptions	3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
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				●	●	●
1	2 position single solenoid, normally closed Note 1	●	●	●			
11	2 position single solenoid, normally open Note 1	●	●	●			
C Connection diameter							
Port	A/B port	P•R1•R2 port ①=M5 ②=NPT1/8 ③=NPT1/4					
C4N	5/32 inch dia. push-in fitting	①			①		
C6N	1/4 inch dia. push-in fitting		②			②	
C8N	5/16 inch dia. push-in fitting		②	③		②	③
C10N	3/8 inch dia. push-in fitting			③			③
D Electrical connections							
E connector (radial/lateral common)							
E2	Lead wire (300mm) with surge suppressor and light	●	●	●	●	●	●
E Voltage							
1	AC100V (rectified bridge integrated)	●	●	●	●	●	●
3	24 VDC	●	●	●	●	●	●



Note on model No. selection

Note: For the normally closed type, ports 2(B) and 3(R2) are plugged. For the normally open type, port 4(A) is plugged.
When using the 3GA normally open type, avoid plugging the 5(R1) port.
Otherwise, malfunctioning may occur.

Common specifications

Item	Descriptions
Type of valve / operation method	Pilot operated type soft spool valve
Use fluid	Compressed air
Maximum working pressure MPa	0.7
Minimum working pressure MPa	0.2
Proof pressure MPa	1.05
Ambient temperature °C	-5 to 55 (to be unfrozen)
Fluid temperature °C	5 to 55
Manual override	Locking/non-locking common type
Pilot exhaust method	Main valve, pilot valve common exhaust type
Lubrication Note 1	Not required
Degree of protection Note 2	Dust proof
Vibration/shock m/s ²	50 or less / 300 or less
Use atmosphere	Not permissible to use in environment containing corrosive gas.

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated. Excessive or intermittent lubrication results in unstable operation.

Note 2: Check that water drops or oil, etc., do not come into contact.

Electric specifications

Item	Descriptions
Rated voltage V	DC 24
	AC 100
Rated voltage fluctuation range	±10%
Holding current A	24 VDC 0.025
	100VAC 0.012
Electric power consumption W	24 VDC 0.6
Apparent power VA	100VAC 1.2
Thermal class	B
Temperature rise °C	50
Surge suppressor	Surge suppressor attached
Indicator	With indicator light

Individual specifications

Item		3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
Connection diameter	A•B port	Push-in fitting 5/32 inch dia.	Push-in fitting 1/4 inch dia., 5/16 inch dia.	Push-in fitting 5/16 inch dia., 3/8 inch dia.	Push-in fitting 5/32 inch dia.	Push-in fitting 1/4 inch dia., 5/16 inch dia.	Push-in fitting 5/16 inch dia., 3/8 inch dia.
	P•R1•R2 port	M5	NPT1/8	NPT1/4	M5	NPT1/8	NPT1/4

Item			3GA1		3GA2		3GA3		4GA1		4GA2		4GA3	
			When turned ON	When turned OFF	When turned ON	When turned OFF	When turned ON	When turned OFF	When turned ON	When turned OFF	When turned ON	When turned OFF	When turned ON	When turned OFF
Response time ms	2-position	Single	12	12	19	19	25	28	12	12	19	19	25	28
		Double	—	—	—	—	—	—	9	—	18	—	24	—
	3-position	ABR connection	—	—	—	—	—	—	8	15	17	30	23	45

Note: Values include the light surge suppressor. Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Item				3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
Mass g	2-position	Single	E-connector	60 (46)	117 (87)	164 (122)	60 (46)	122 (92)	173 (131)
		Double	E-connector	—	—	—	77 (63)	139 (109)	191 (145)
	3-position	All ports Block	E-connector	—	—	—	79 (65)	151 (121)	200 (158)

Note: Values in parentheses do not include the piping adapter. The E connector includes the socket assembly with a 300 mm lead.

Flow characteristic

Model No.	Solenoid position		P→A/B		A/B→R1/R2	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
3GA1	2-position		1.2	0.47	0.70	0.39
3GA2			2.4	0.33	2.7	0.28
3GA3			3.4	0.29	3.9	0.27
4GA1	2-position (single/double)		1.2	0.47	0.70	0.39
	3-position	All ports closed	1.1	0.39	0.66	0.29
		ABR connection	1.1	0.33	0.68	0.31
		PAB connection	1.3	0.61	0.67	0.43
4GA2	2-position (single/double)		2.4	0.33	2.7	0.28
	3-position	All ports closed	2.2	0.28	2.4	0.27
		ABR connection	2.3	0.26	2.7	0.32
		PAB connection	2.5	0.38	2.4	0.33
4GA3	2-position (single/double)		3.4	0.29	3.9	0.27
	3-position	All ports closed	3.1	0.27	3.2	0.32
		ABR connection	3.1	0.33	4.0	0.25
		PAB connection	3.5	0.43	3.3	0.39

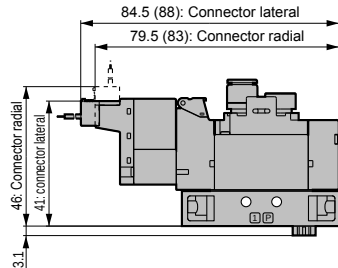
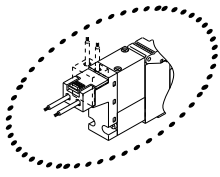
Note 1: Effective area S and sonic conductance C are converted as $S \div 5.0 \times C$.

Note 2: The value for 2 position and ABR connection is the value when a check valve is integrated.

Dimensions

● 3GA110

2-position single solenoid normally closed E connector type (E)

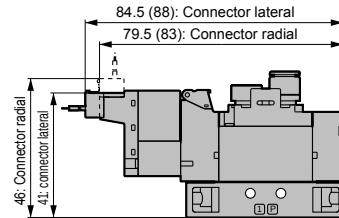
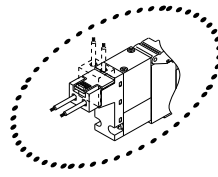


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

● 3GA1110

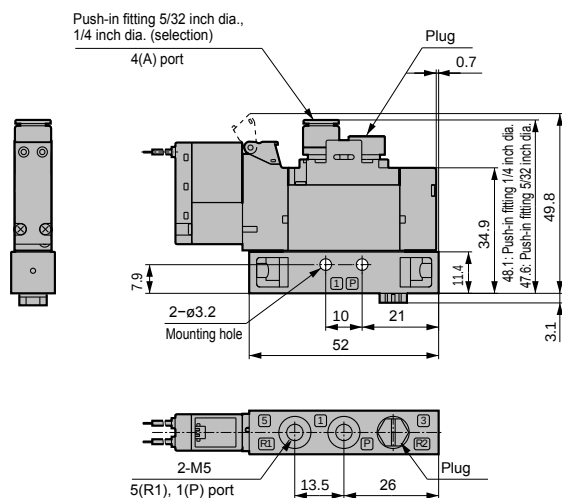
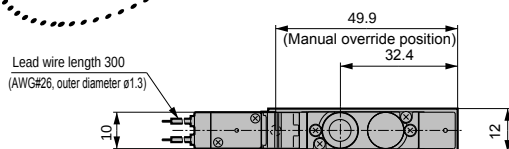
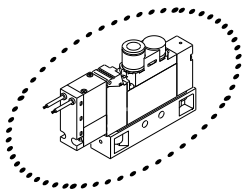
2-position single solenoid normally open E connector type (E)



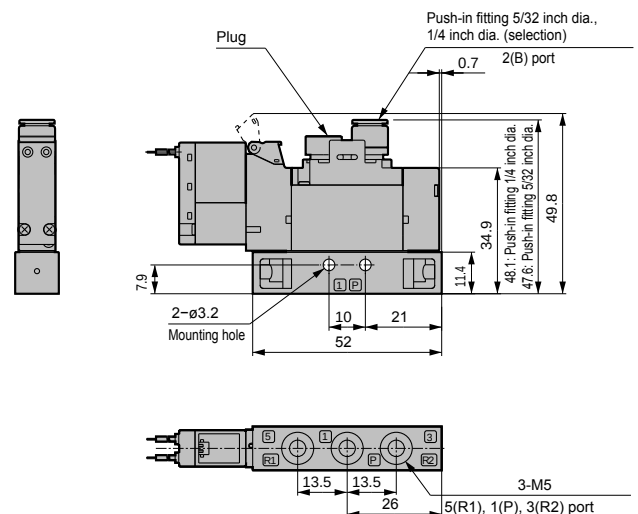
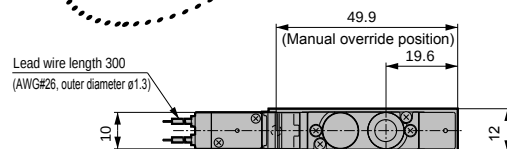
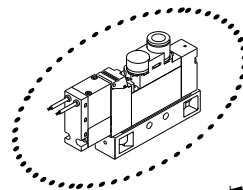
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid normally closed grommet lead wire (blank)

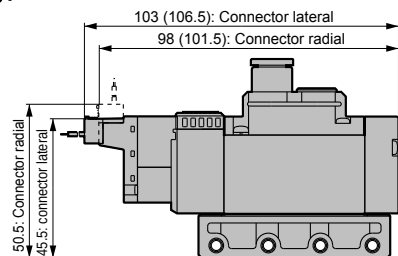
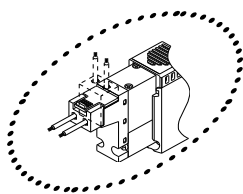


2-position single solenoid normally open grommet lead wire (blank)



● 3GA210

2-position single solenoid normally closed E connector type (E)

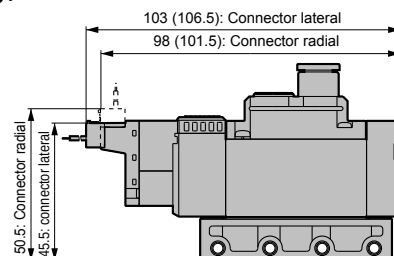
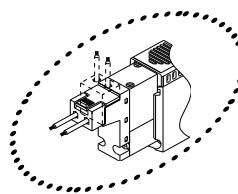


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

● 3GA2110

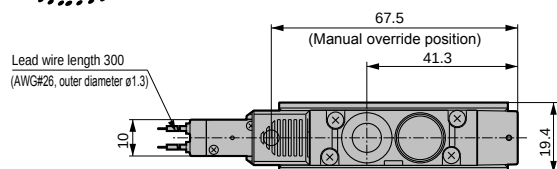
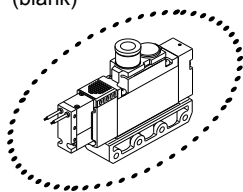
2-position single solenoid normally open E connector type (E)



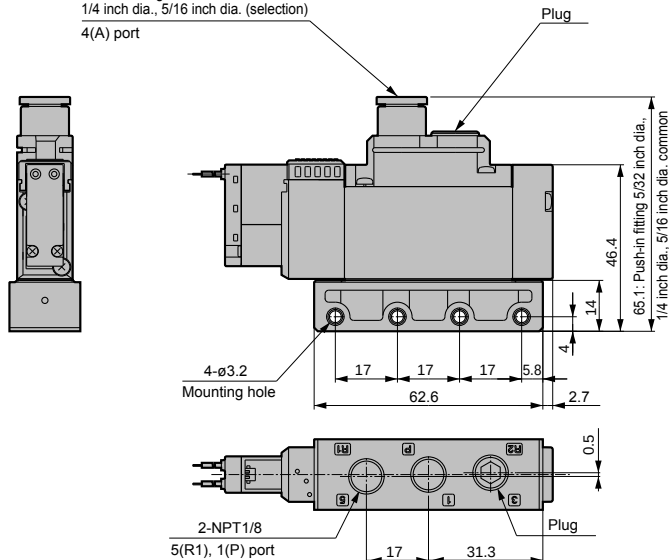
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

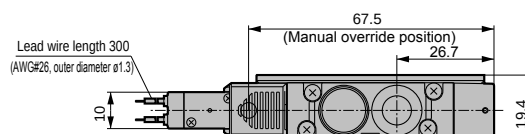
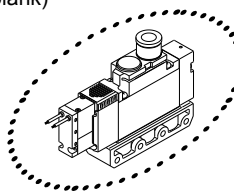
2-position single solenoid normally closed grommet lead wire (blank)



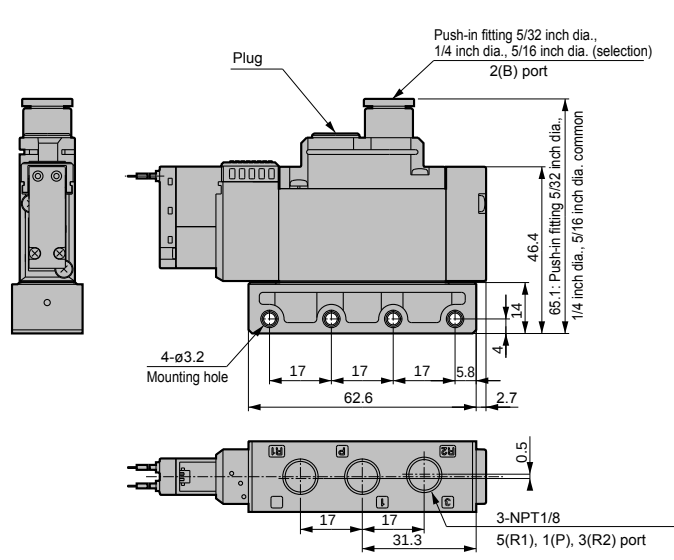
Push-in fitting 5/32 inch dia.,
1/4 inch dia., 5/16 inch dia. (selection)
4(A) port



2-position single solenoid normally open grommet lead wire (blank)

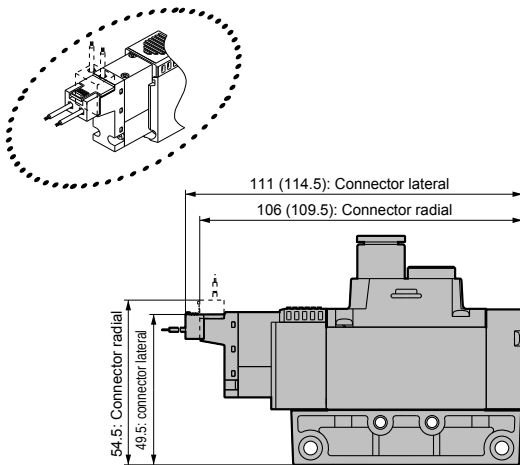


Push-in fitting 5/32 inch dia.,
1/4 inch dia., 5/16 inch dia. (selection)
2(B) port



● 3GA310

2-position single solenoid normally closed E connector type (E)

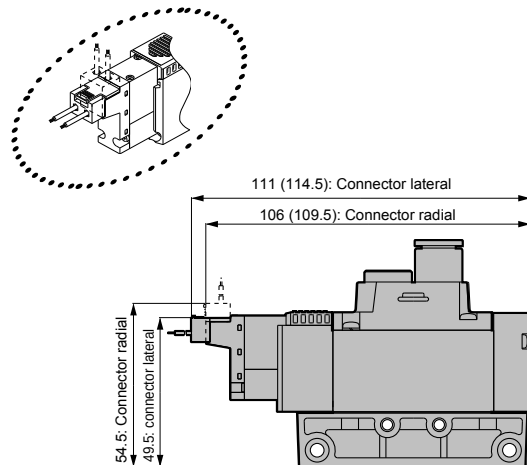


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

● 3GA3110

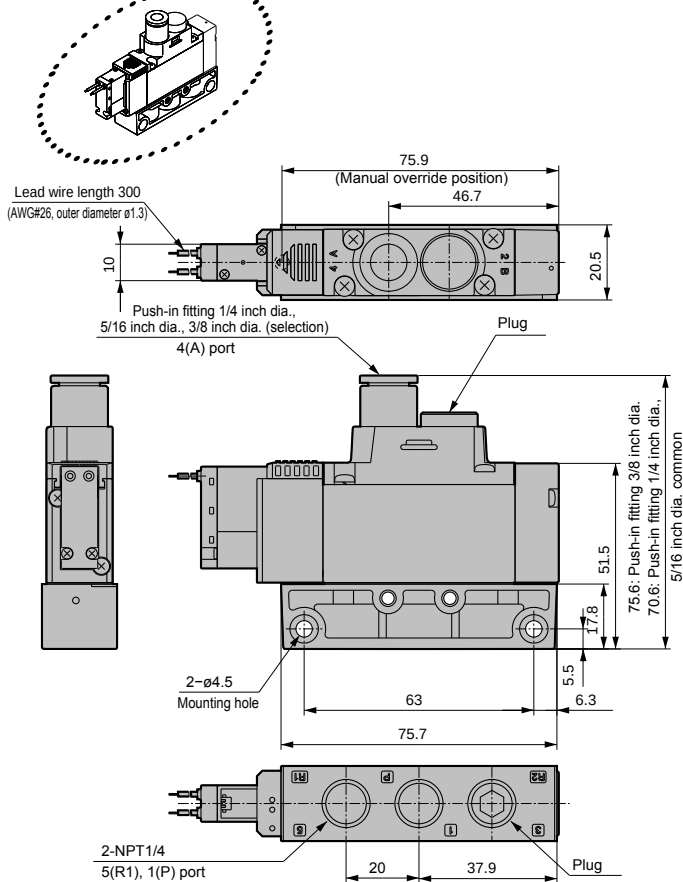
2-position single solenoid normally open E connector type (E)



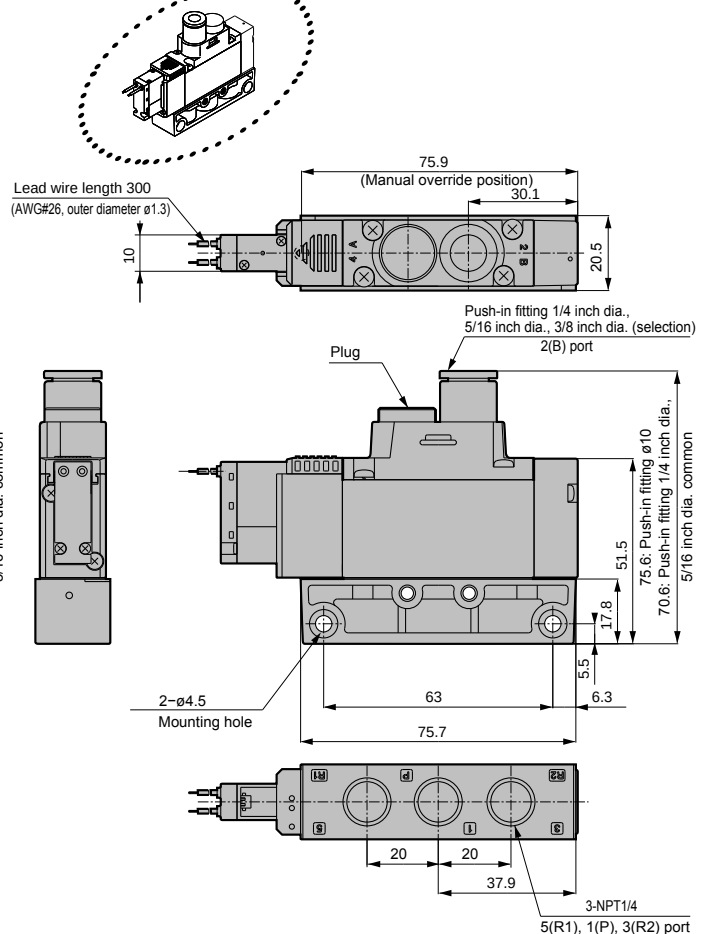
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid normally closed grommet lead wire (blank)



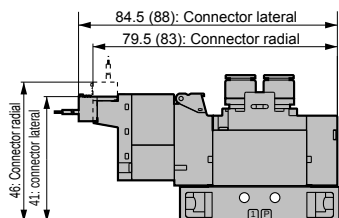
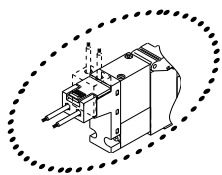
2-position single solenoid normally open grommet lead wire (blank)



Dimensions

● 4GA110

2-position single solenoid E connector type (E)

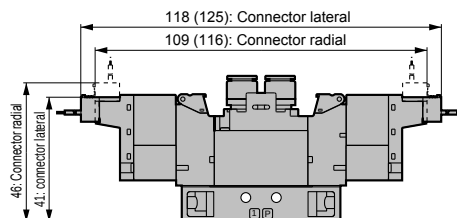
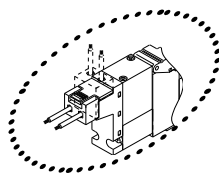


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

● 4GA120

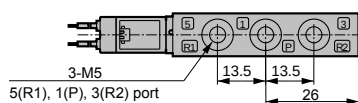
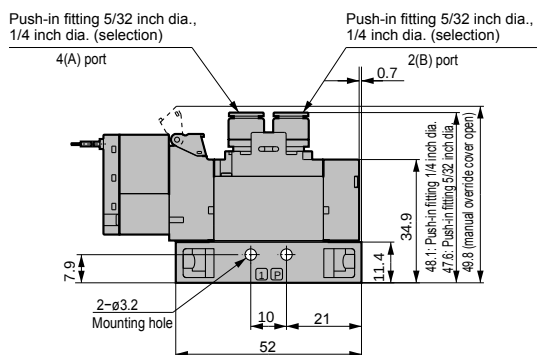
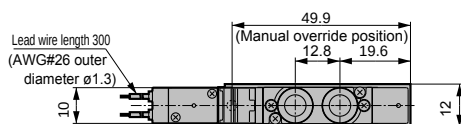
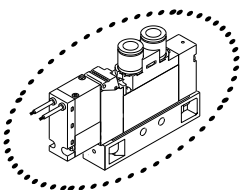
2-position double solenoid E connector type (E)



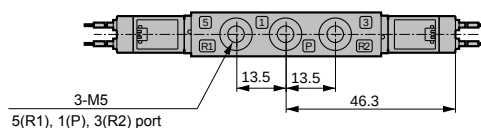
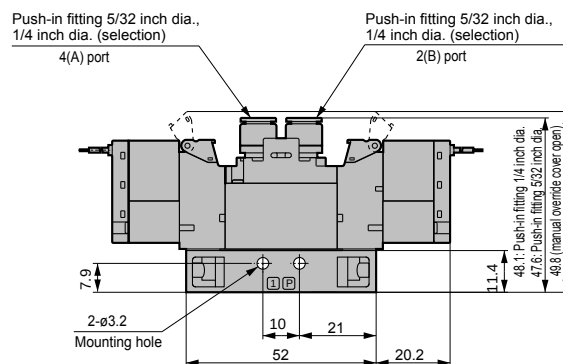
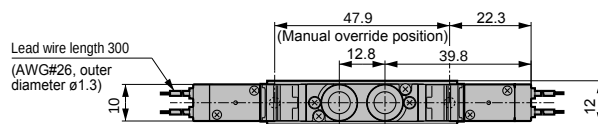
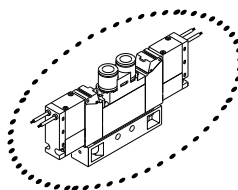
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



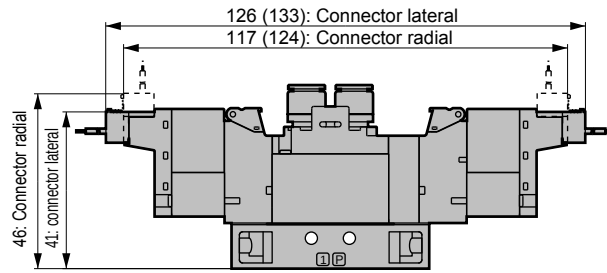
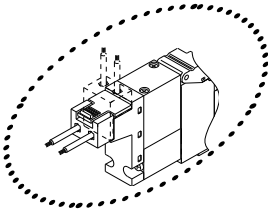
2-position double solenoid grommet lead wire (blank)



Dimensions

● 4GA1³₀

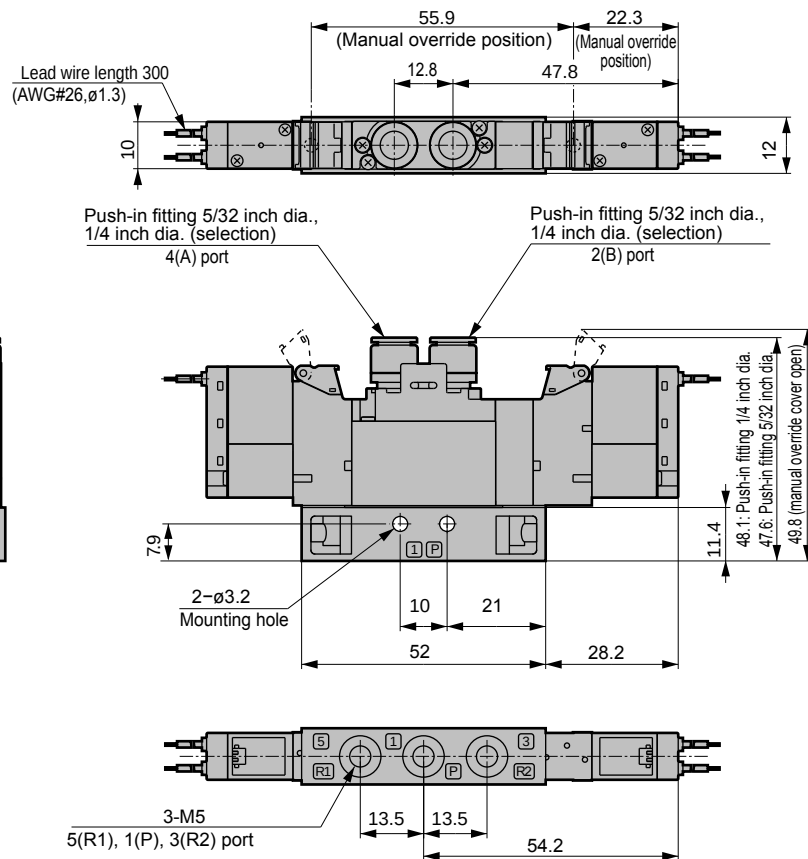
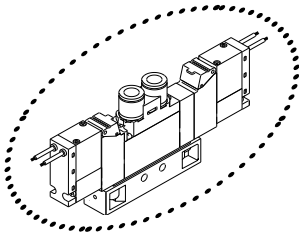
3-position E connector type (E)



Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

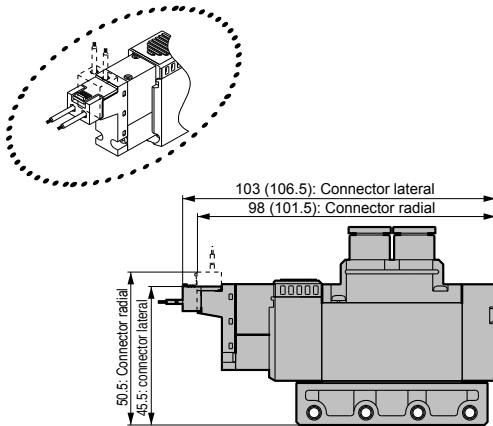
3-position grommet lead wire (blank)



Dimensions

● 4GA210

2-position single solenoid E connector type (E)

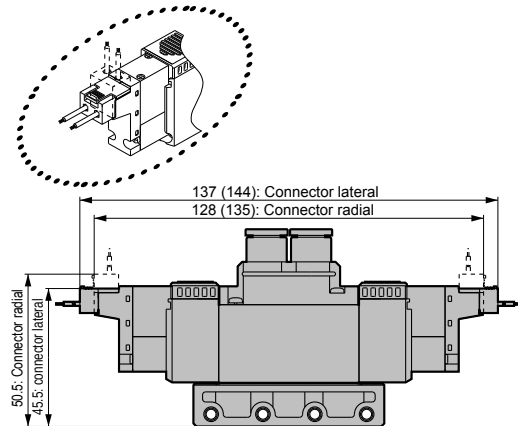


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

● 4GA220

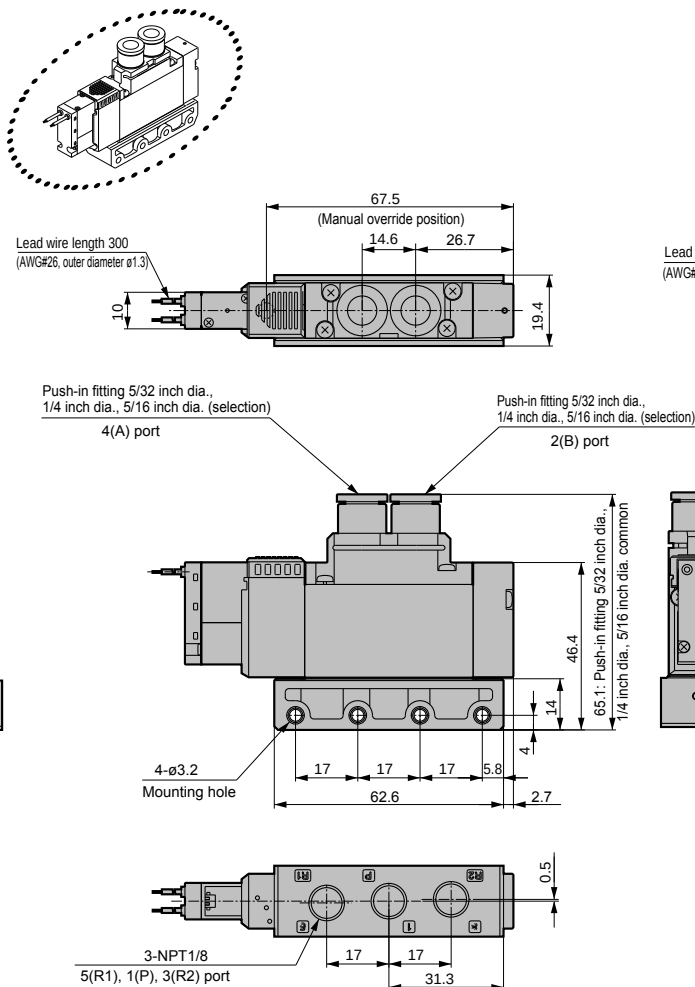
2-position double solenoid E connector type (E)



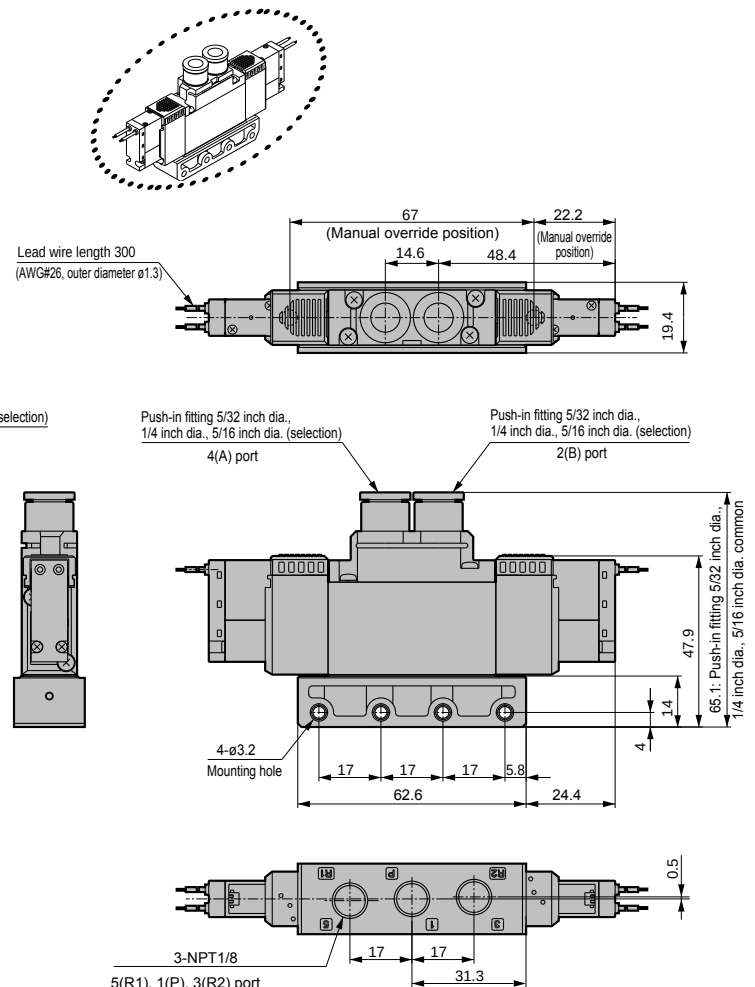
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



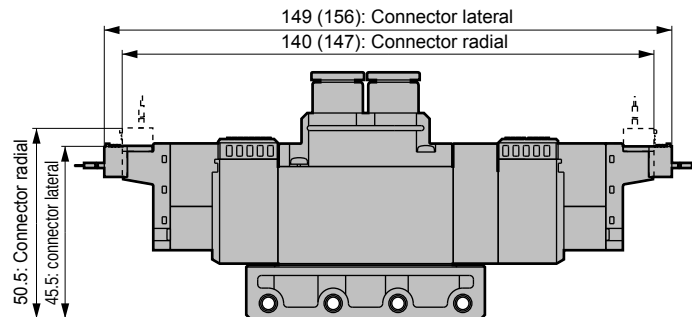
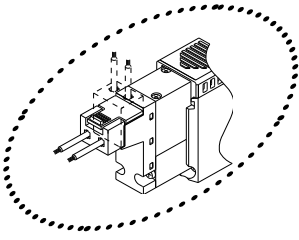
2-position double solenoid grommet lead wire (blank)



Dimensions

● 4GA2³0

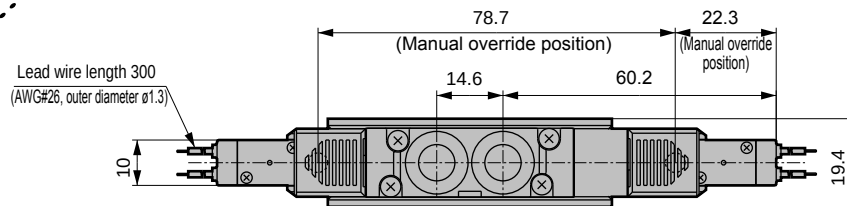
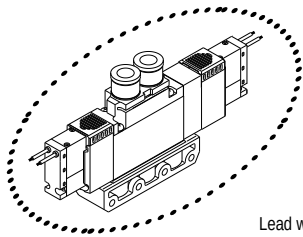
3-position E connector type (E)



Note: Values in () apply for 100 VAC.

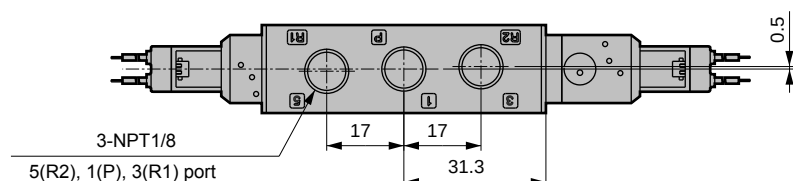
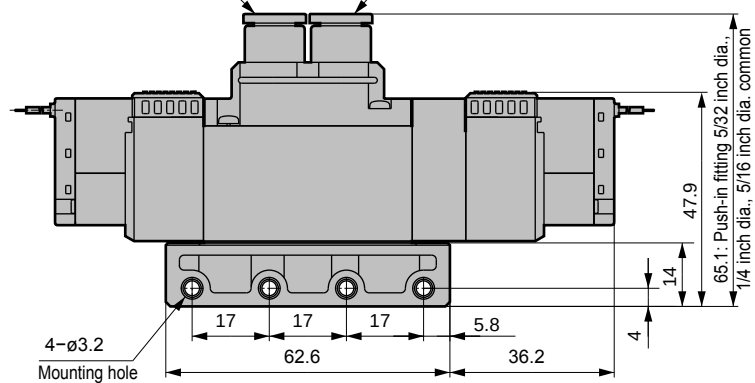
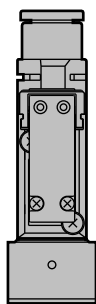
* For other dimensions, refer to the grommet lead wire shown below.

3-position grommet lead wire (blank)



Push-in fitting 5/32 inch dia.,
1/4 inch dia., 5/16 inch dia. (selection)
4(A) port

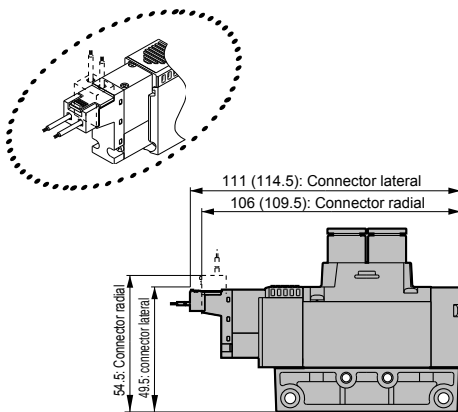
Push-in fitting 5/32 inch dia.,
1/4 inch dia., 5/16 inch dia. (selection)
2(B) port



Dimensions

● 4GA310

2-position single solenoid E connector type (E)

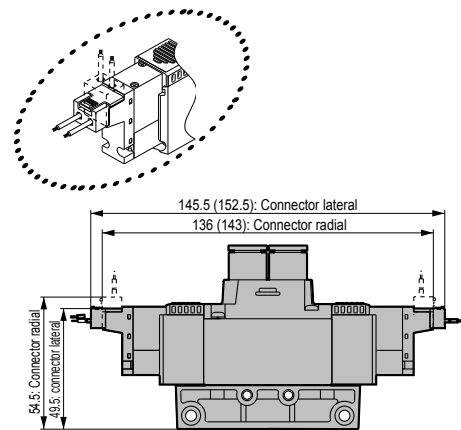


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

● 4GA320

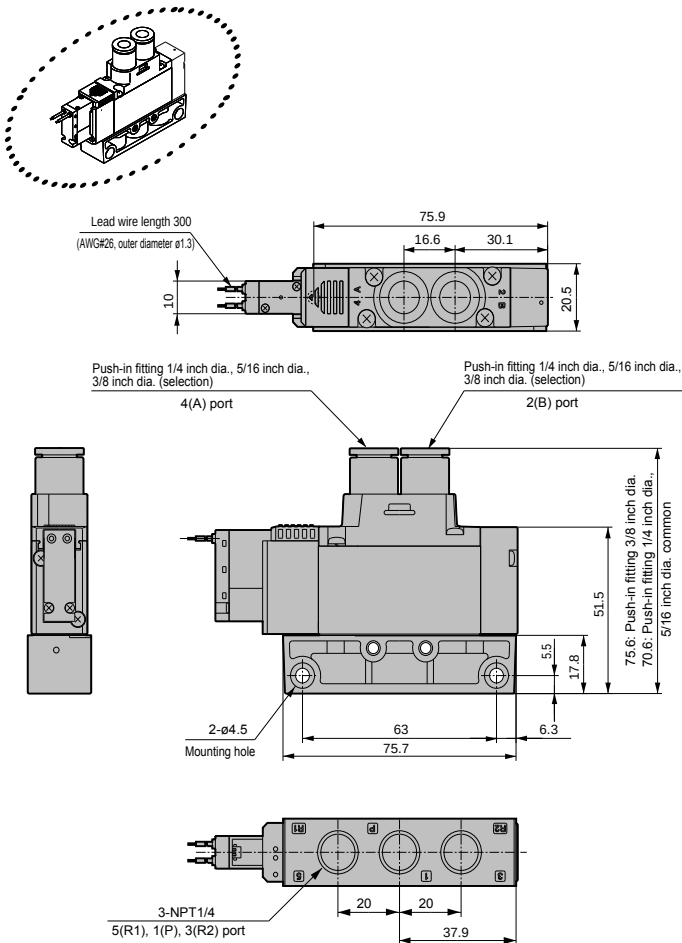
2-position double solenoid E connector type (E)



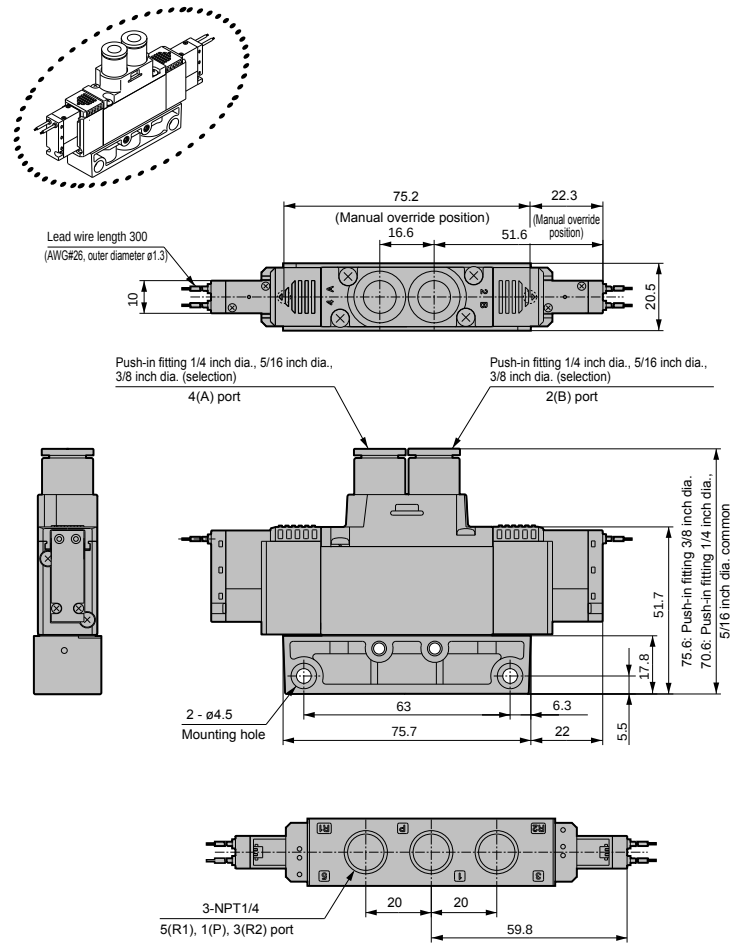
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



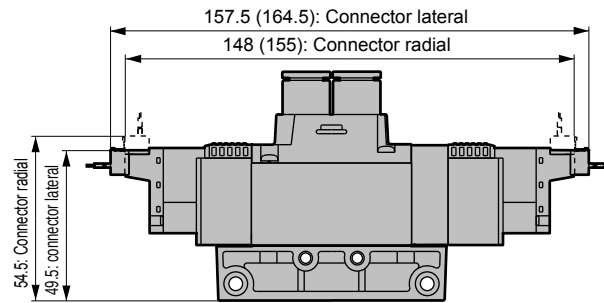
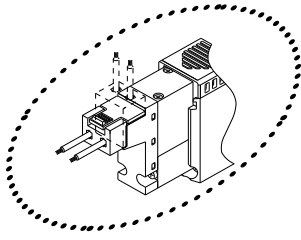
2-position double solenoid grommet lead wire (blank)



Dimensions

● 4GA3³₅0

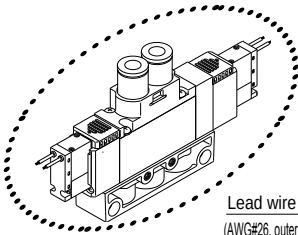
3-position E connector type (E)



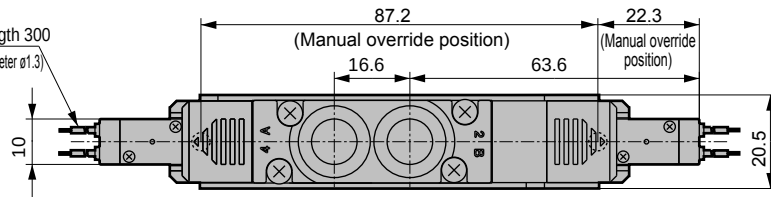
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

3-position grommet lead wire (blank)



Lead wire length 300
(AWG#26, outer diameter ø1.3)

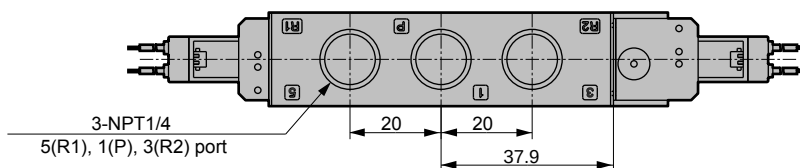
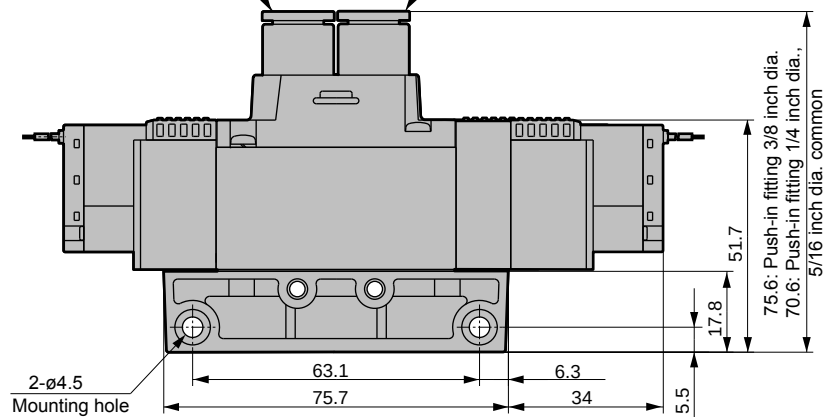
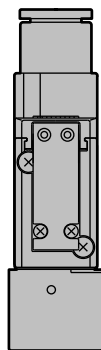


Push-in fitting 1/4 inch dia., 5/16 inch dia.,
3/8 inch dia. (selection)

4(A) port

Push-in fitting 1/4 inch dia., 5/16 inch dia.,
3/8 inch dia. (selection)

2(B) port



MEMO

4GB1•2•3 Series

- Suitable cylinder bore: ø20 to ø100

Features

- Safety function reinforced by detailed response
- Upgraded reliability
- Enhanced ease of use



Catalog No. CB-023SA

How to order

4GB1 - 1 - 0 - 06N - E2 - 1 - K1

A B C D E

		A Model No.		
Symbol	Descriptions	4GB1	4GB2	4GB3
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	●	●	●
C Connection diameter				
Port	A/B port	P•R1•R2 port ①=NPT1/8 ②=NPT1/4 ③=NPT3/8		
06N	NPT1/8	①		
08N	NPT1/4		②	
10N	NPT3/8			③
D Electrical connections				
E connector (radial/lateral common)				
E2	Lead wire (300 mm) with surge suppressor and light	●	●	●
E Voltage				
1	AC100V (rectified bridge integrated)	●	●	●
3	24 VDC	●	●	●

Common specifications

Item		Descriptions
Type of valve / operation method		Pilot operated type soft spool valve
Use fluid		Compressed air
Maximum working pressure	MPa	0.7
Minimum working pressure	MPa	0.2
Proof pressure	MPa	1.05
Ambient temperature	°C	-5 to 55 (to be unfrozen)
Fluid temperature	°C	5 to 55
Manual override		Locking/non-locking common type
Pilot exhaust method	Inside pilot	Main valve, pilot valve common exhaust type
Lubrication	Note 1	Not required
Degree of protection	Note 2	Dust proof
Vibration/shock	m/s ²	50 or less / 300 or less
Use atmosphere		Not permissible to use in environment containing corrosive gas.

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated. Excessive or intermittent lubrication results in unstable operation.

Note 2: Check that water drops or oil, etc., do not come into contact.

Electric specifications

Item		Descriptions
Rated voltage	DC	24
	AC	100
Rated voltage fluctuation range		±10%
Holding current	24 VDC	0.025
	100VAC	0.012
Electric power consumption	24 VDC	0.6
Apparent power	100VAC	1.2
Thermal class		B
Temperature rise		50
Surge suppressor		Surge suppressor attached
Indicator		With indicator light

Individual specifications

Item		4GB1	4GB2	4GB3
Connection diameter	A•B port	NPT1/8	NPT1/4	NPT3/8
	P•R1•R2 port	NPT1/8	NPT1/4	NPT3/8

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

Note: Values include the light surge suppressor. Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Item				4GB1	4GB2	4GB3
Mass g	2-position	Single	E-connector	81 (39)	156 (74)	216 (97)
		Double	E-connector	98 (56)	173 (91)	234 (115)
	3-position	All ports closed	E-connector	99 (57)	184 (102)	243 (124)

Note: Values in parentheses do not include the piping adapter. The E connector includes the socket assembly with a 300 mm lead.

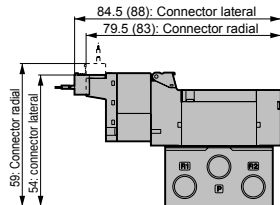
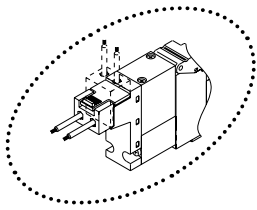
Flow characteristic

Model No.	Solenoid position			P→A/B		A/B→R1/R2	
				C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
4GB1	2-position (single/double)			1.3	0.27	1.2	0.15
	3-position	All ports closed		1.1	0.31	1.1	0.29
		ABR connection		1.1	0.31	1.3	0.29
		PAB connection		1.4	0.30	1.1	0.26
4GB2	2-position (single/double)			2.6	0.20	2.5	0.15
	3-position	All ports closed		2.3	0.32	2.2	0.19
		ABR connection		2.2	0.23	2.4	0.14
		PAB connection		2.4	0.10	2.3	0.24
4GB3	2-position (single/double)			4.3	0.24	4.2	0.18
	3-position	All ports closed		3.3	0.40	3.2	0.35
		ABR connection		3.3	0.36	4.2	0.28
		PAB connection		4.5	0.28	3.4	0.40

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

● 4GB110

2-position single solenoid E connector type (E)

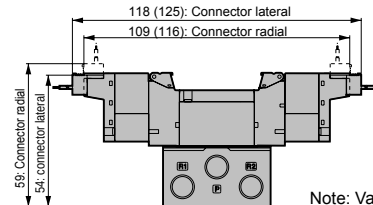
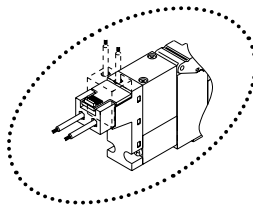


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

● 4GB120

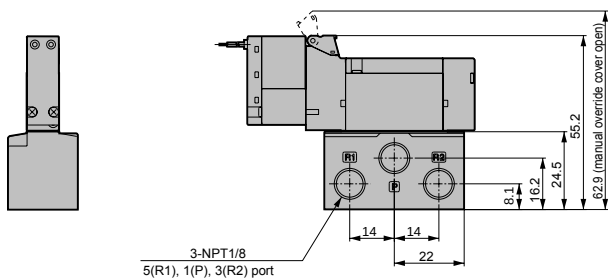
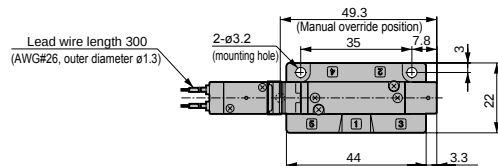
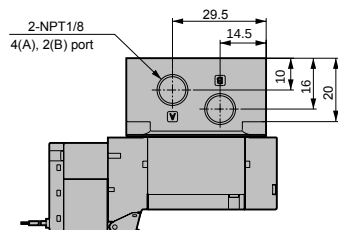
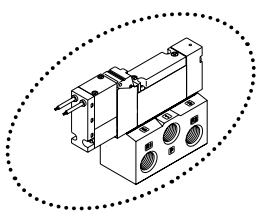
2-position double solenoid E connector type (E)



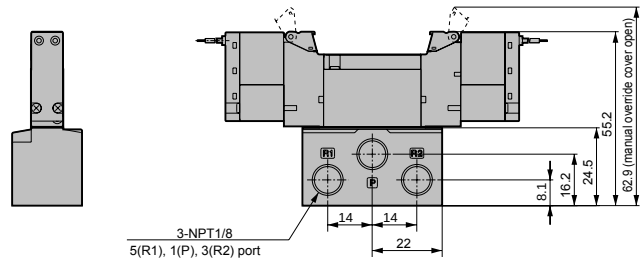
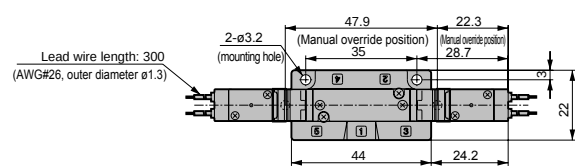
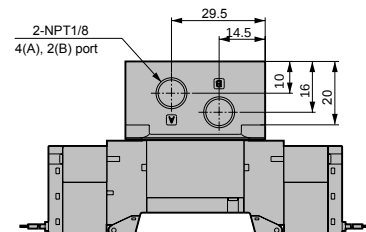
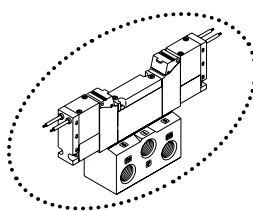
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



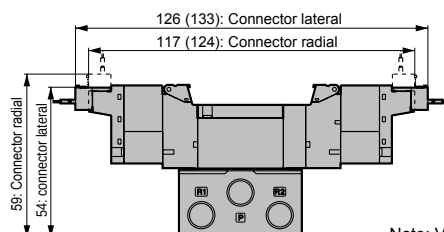
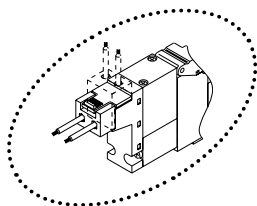
2-position double solenoid grommet lead wire (blank)



Dimensions

● 4GB10

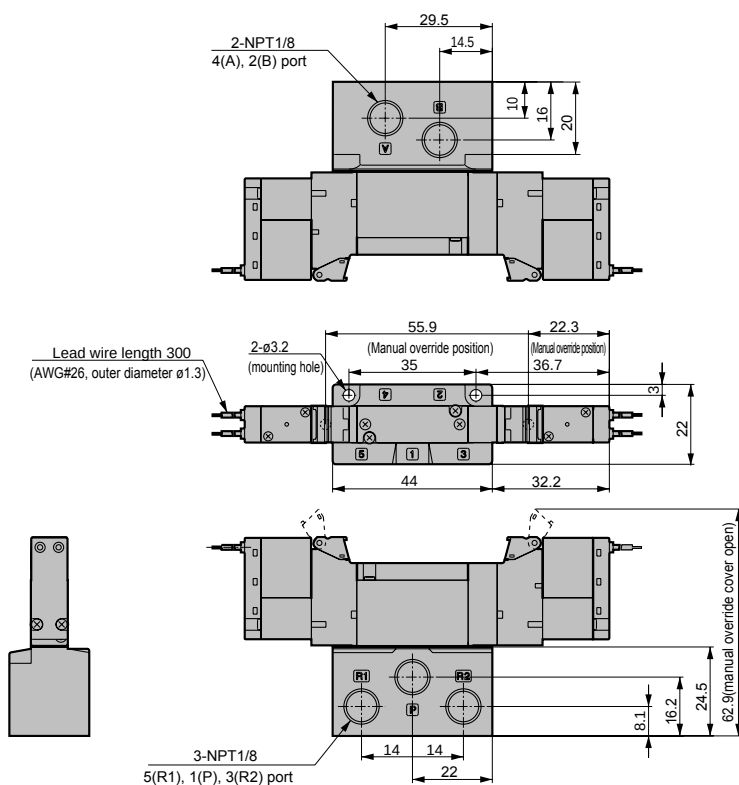
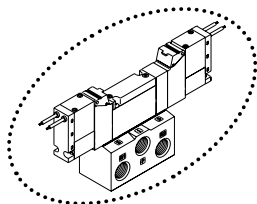
3-position E connector type (E)



Note: Values in () apply for 100 VAC.

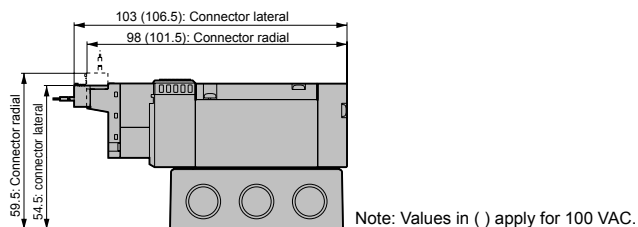
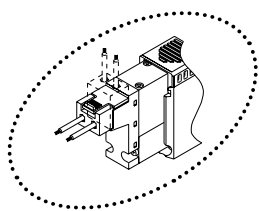
* For other dimensions, refer to the grommet lead wire shown below.

3-position grommet lead wire (blank)



● 4GB210

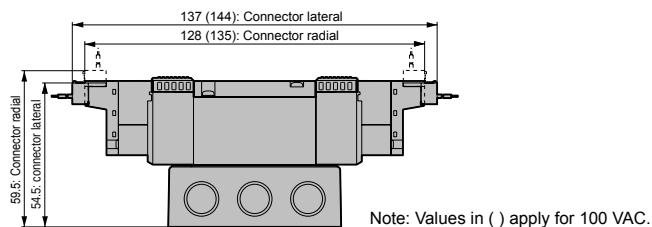
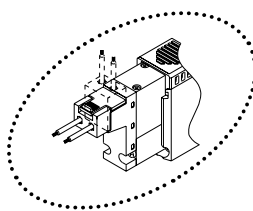
2-position single solenoid E connector type (E)



* For other dimensions, refer to the grommet lead wire shown below.

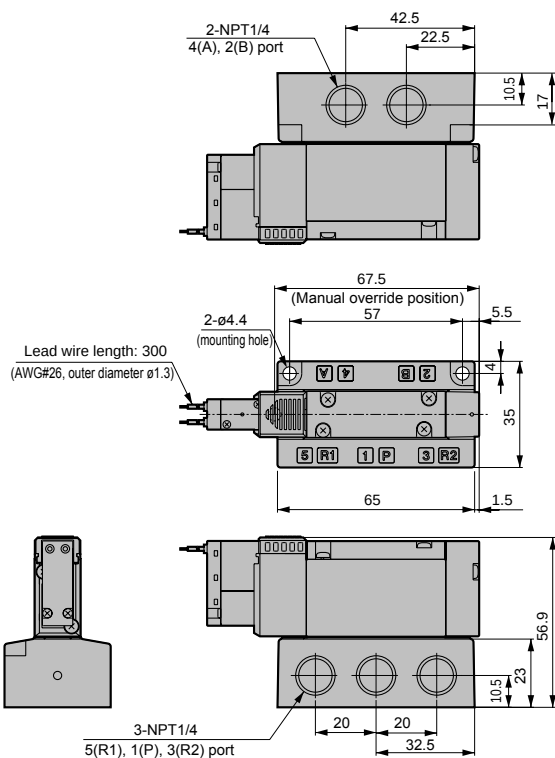
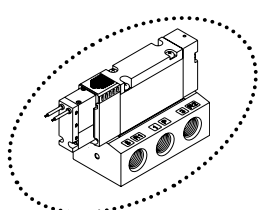
● 4GB220

2-position double solenoid E connector type (E)

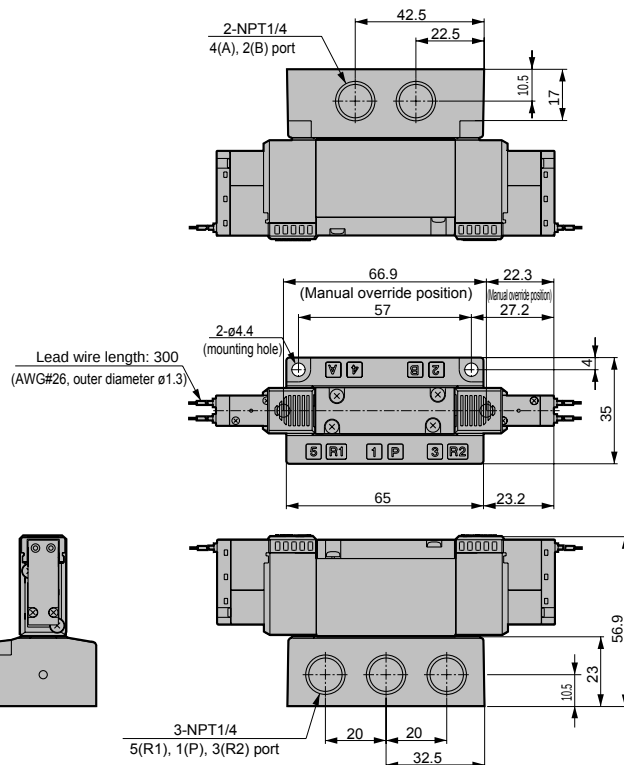
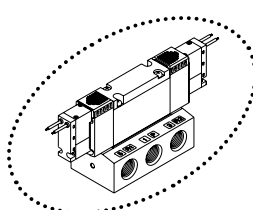


* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



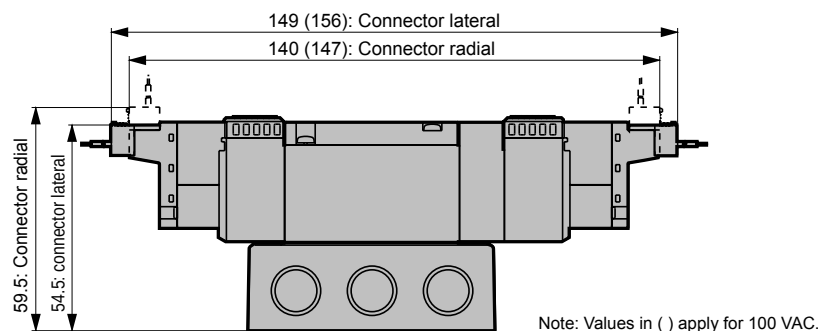
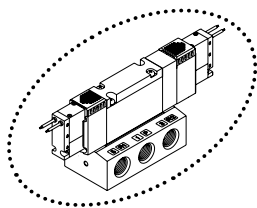
2-position double solenoid grommet lead wire (blank)



Dimensions

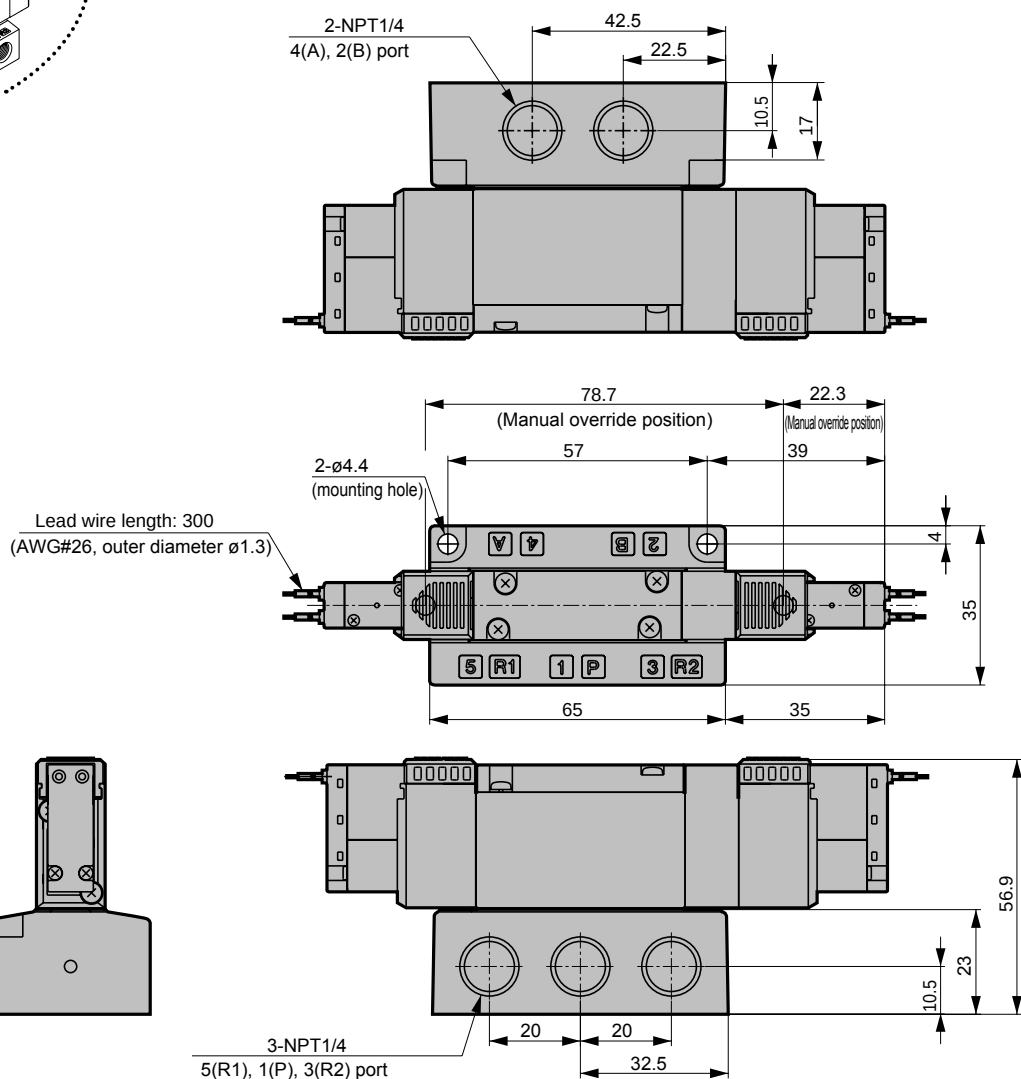
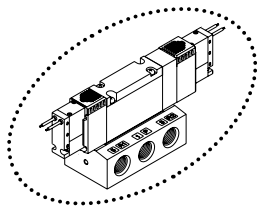
● 4GB20

3-position E connector type (E)



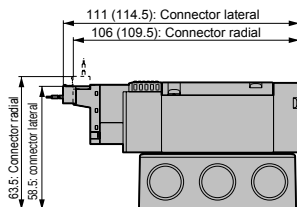
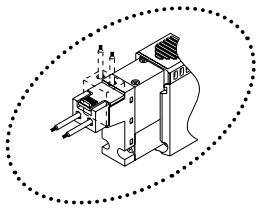
* For other dimensions, refer to the grommet lead wire shown below.

3-position grommet lead wire (blank)



4GB310

2-position single solenoid E connector type (E)

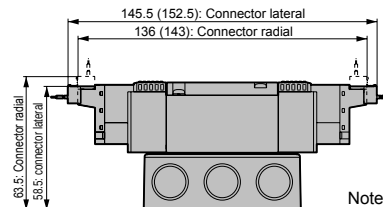
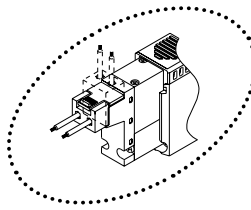


Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

4GB320

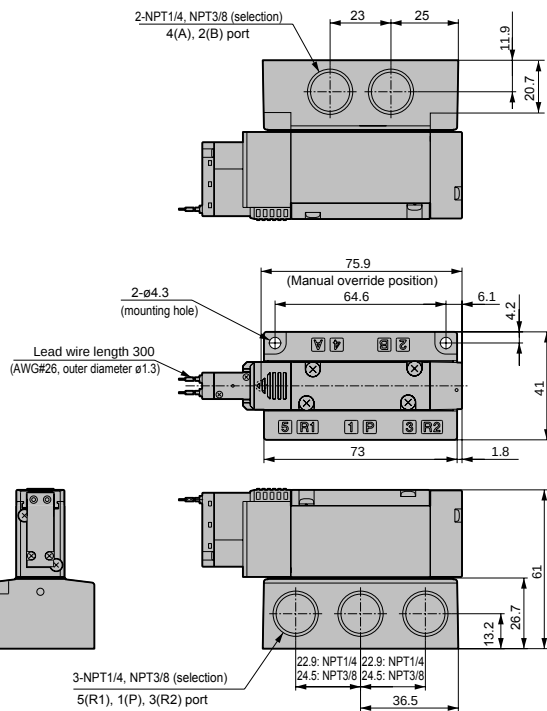
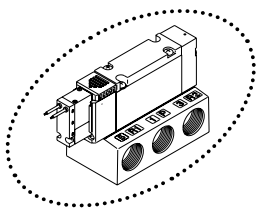
2-position double solenoid E connector type (E)



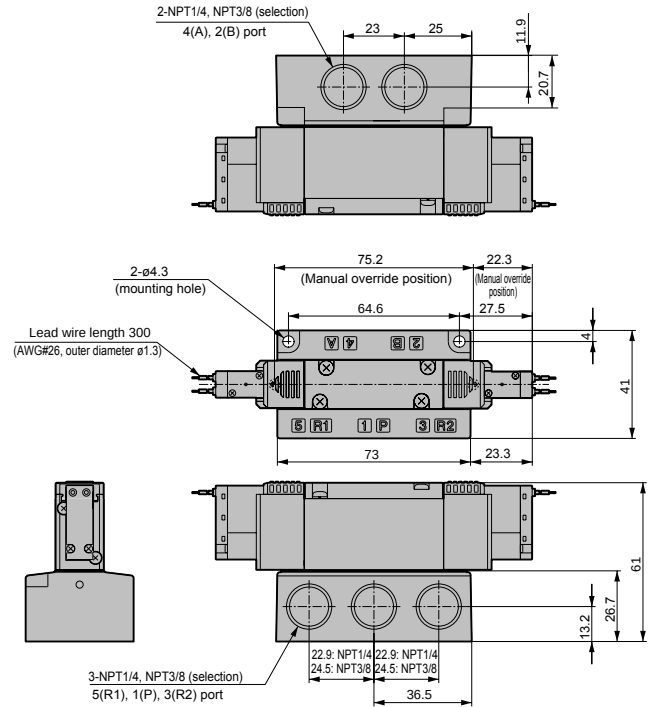
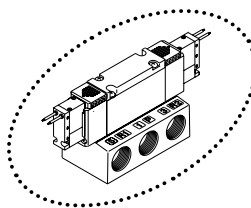
Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



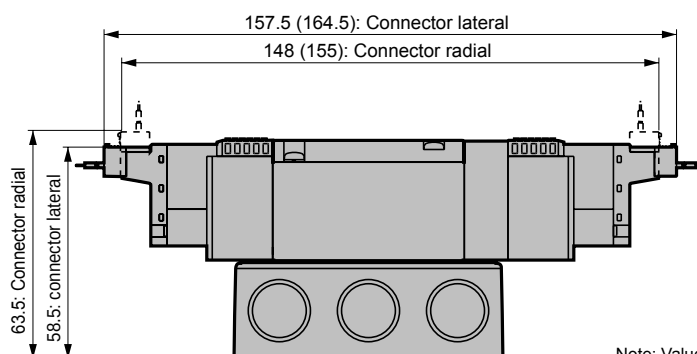
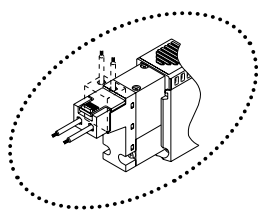
2-position double solenoid grommet lead wire (blank)



Dimensions

● 4GB3³0

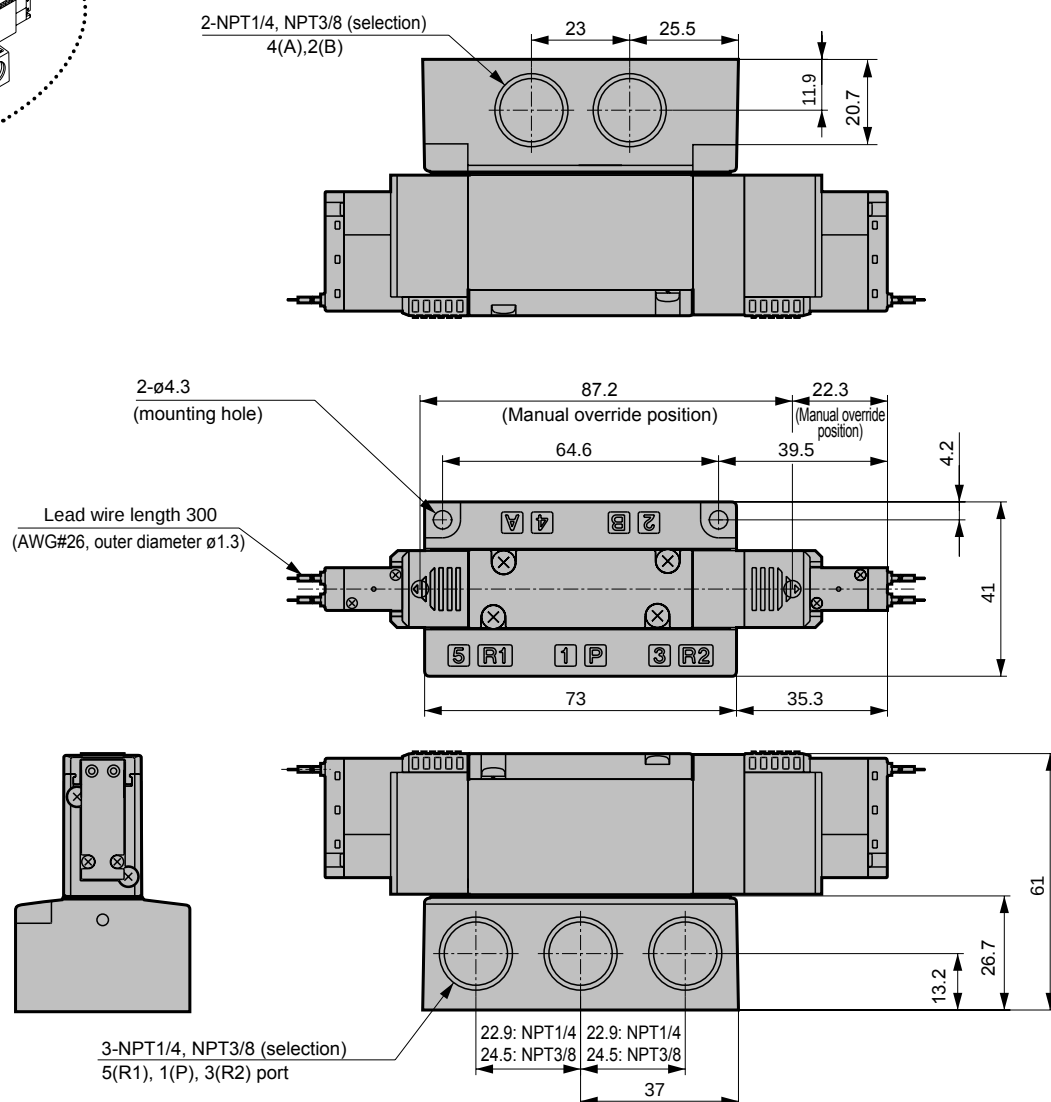
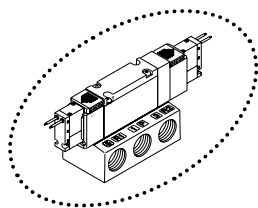
3-position E connector type (E)



Note: Values in () apply for 100 VAC.

* For other dimensions, refer to the grommet lead wire shown below.

3-position grommet lead wire (blank)



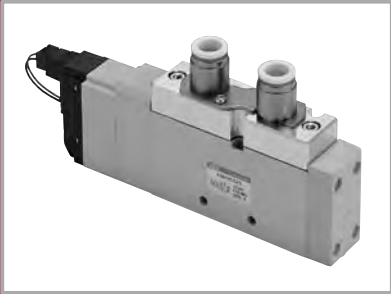
Pilot operated type five port connection valve discrete valve body porting

4GA4 Series

• Suitable cylinder bore: ø100 to ø140

Features

- Large flow rate and long life
- Upgraded operability • Upgraded reliability



Catalog No. CB-023SA

How to order

4GA4 **1** **0** - **C10N** - **E2** - **3** - **K1**
A **B** **C** **D** **E**

Symbol		Descriptions		A Model No.
B Solenoid position				4GA4
1	2-position single			●
2	2-position double			●
C Connection diameter				
Port	A•B port	P•R1•R2 port		
		1/4		
C10N	3/8 inch dia. push-in fitting			●
D Electrical connections		E connector (radial/lateral common)		
E2	Lead wire (300 mm) with surge suppressor and light			●
E Voltage				
3	24 VDC			●

Common specifications

Item	Descriptions	
Type of valve / operation method	Pilot operated type soft spool valve	
Use fluid	Compressed air	
Maximum working pressure	MPa	0.7
Minimum working pressure	MPa	0.2
Proof pressure	MPa	1.05
Ambient temperature	°C	-5 to 55 (to be unfrozen)
Fluid temperature	°C	5 to 55
Manual override	Locking/non-locking common type	
Lubrication	Note 1	Not required
Degree of protection	Note 2	Dust proof
Vibration/shock	m/s ²	50 or less / 300 or less
Use atmosphere	Not permissible to use in environment containing corrosive gas.	

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated. Excessive or intermittent lubrication results in unstable operation.

Note 2: Check that water drops or oil, etc., do not come into contact.

Electric specifications

Item			Descriptions
Rated voltage	V	DC	24
Rated voltage fluctuation range			±10%
Holding current	A	24 VDC	0.042
Electric power consumption	W	24 VDC	1.0
Thermal class			B
Surge suppressor			Surge suppressor attached
Indicator			With indicator light

Individual specifications

Item		4GA4
Connection diameter	A•B port	Push-in fitting 1/2 inch dia.
	P•R1•R2 port	NPT1/4

Item			4GA4	
			When turned ON	When turned OFF
Response time	ms	2-position	Single	40
			Double	40

Note: Values include the light surge suppressor. Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Item			4GA4 E-connector
Mass	g	2-position	Single
			Double

Note: Values in parentheses include setscrews and the gasket. The E connector includes the socket assembly with a 300 mm lead.

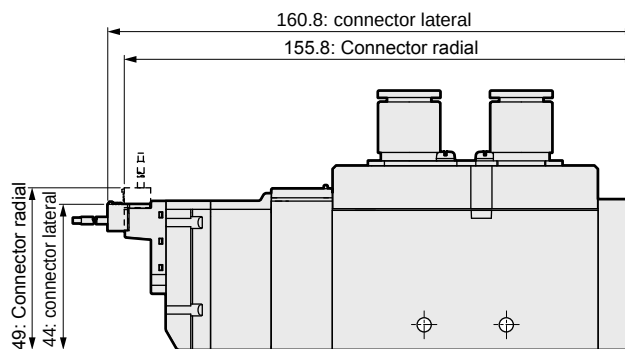
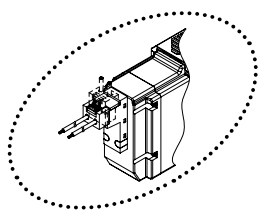
Flow characteristic

Model No.	Solenoid position	P→A/B		A/B→R1/R2	
		C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
4GA4	2-position	8.1	0.40	8.0	0.31

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

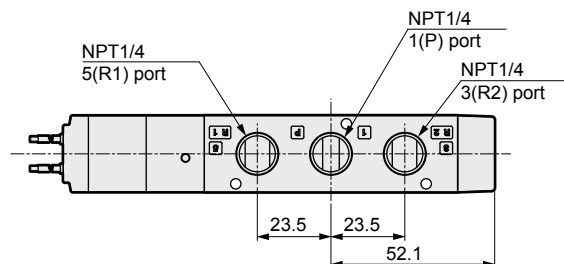
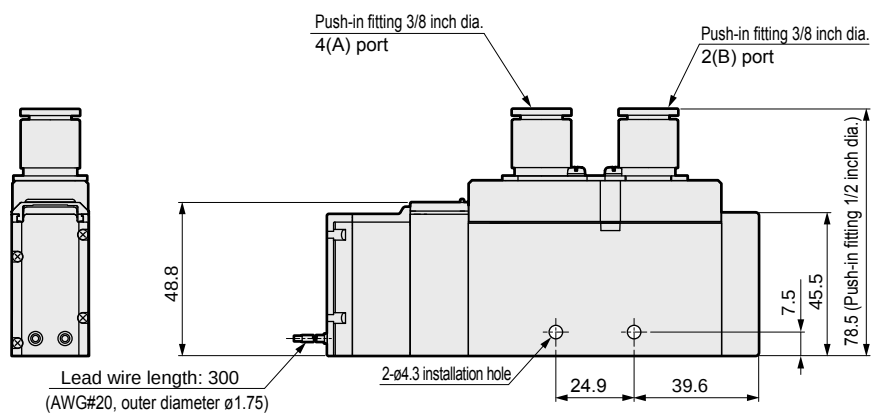
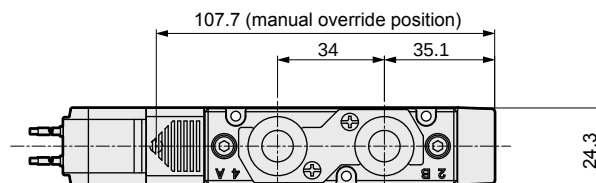
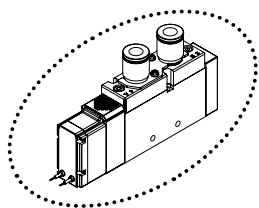
● 4GA410

2-position single solenoid E connector type (E)



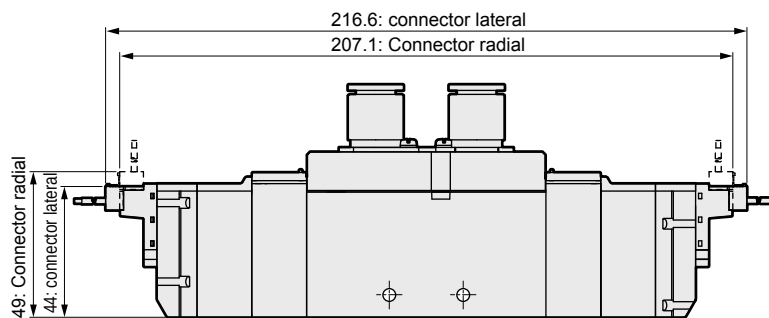
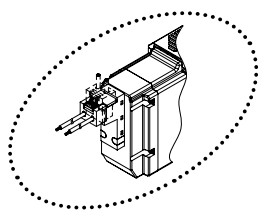
* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



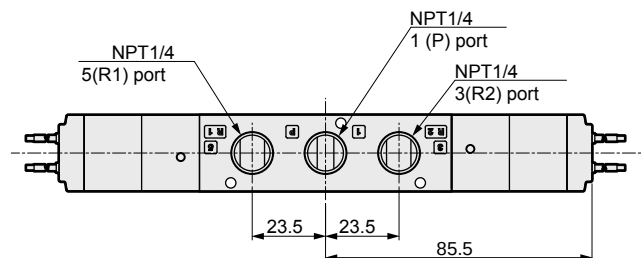
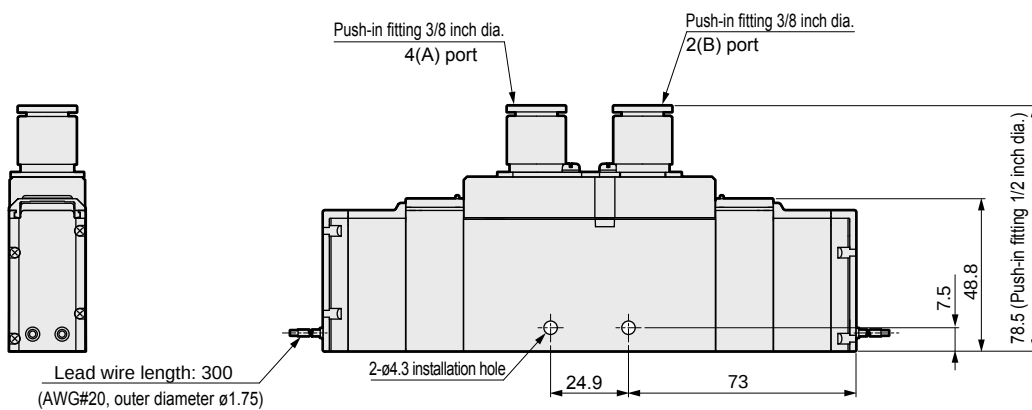
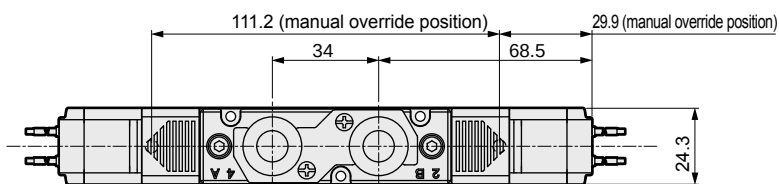
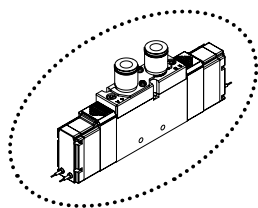
● 4GA420

2-position double solenoid E connector type (E)



* For other dimensions, refer to the grommet lead wire shown below.

2-position double solenoid grommet lead wire (blank)



Pilot operated type five port connection valve discrete valve sub-base porting

RoHS



4GB4 Series

- Suitable cylinder bore: ø125 to ø160

Features

- Large flow rate and long life
- Upgraded operability • Upgraded reliability



Catalog No. CB-023SA

How to order

4GB4 **1** **0** - **15N** - **E2** - **3** -K1
A **B** **C** **D** **E**

		A Model No.
Symbol	Descriptions	4GB4
B Solenoid position		
1	2-position single	●
2	2-position double	●
C Connection diameter		
Port	A•B port	P•R1•R2 port
		NPT1/2
15N	NPT1/2	●
D Electrical connections		
E connector (radial/lateral common)		
E2	Lead wire (300 mm) with surge suppressor and light	●
E Voltage		
3	24 VDC	●

Common specifications

Item	Descriptions	
Type of valve / operation method	Pilot operated type soft spool valve	
Use fluid	Compressed air	
Maximum working pressure	MPa	0.7
Minimum working pressure	MPa	0.2
Proof pressure	MPa	1.05
Ambient temperature	°C	-5 to 55 (to be unfrozen)
Fluid temperature	°C	5 to 55
Manual override	Locking/non-locking common type	
Pilot exhaust method	Inside pilot	Main valve, pilot valve common exhaust type
Lubrication	Note 1	Not required
Degree of protection	Note 2	Dust proof
Vibration/shock	m/s ²	50 or less / 300 or less
Use atmosphere	Not permissible to use in environment containing corrosive gas.	

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated. Excessive or intermittent lubrication results in unstable operation.

Note 2: Check that water drops or oil, etc., do not come into contact.

Electric specifications

Item	Descriptions	
Rated voltage	V	DC
Rated voltage fluctuation range	±10%	
Holding current	A	24 VDC
Electric power consumption	W	24 VDC
Thermal class	B	
Surge suppressor	Surge suppressor attached	
Indicator	With indicator light	

Note 3: Values in parentheses apply when a light is installed.

Individual specifications

Item	4GB4	
Connection diameter	A•B port	NPT1/2
	P•R1•R2 port	NPT1/2

Item			4GB4	
			When turned ON	When turned OFF
Response time	ms	2-position	Single	40
			Double	40

Note: Values include the light surge suppressor. Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Item	4GB4 E-connector	
Mass	g	2-position
		Single
		Double

Note: Values in parentheses do not include the piping adapter. The E connector includes the socket assembly with a 300 mm lead.

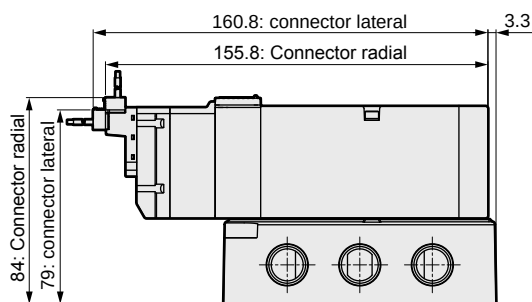
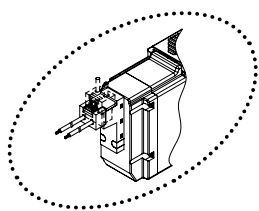
Flow characteristic

Model No.	Solenoid position	P→A/B		A/B→R1/R2	
		C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
4GB4	2-position	11	0.19	13	0.19

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

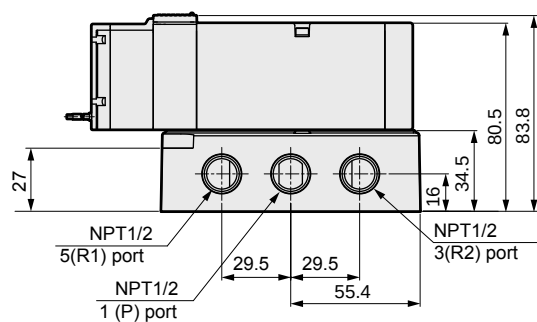
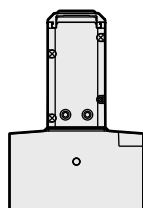
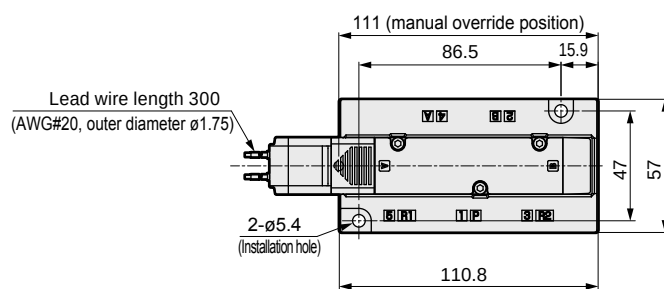
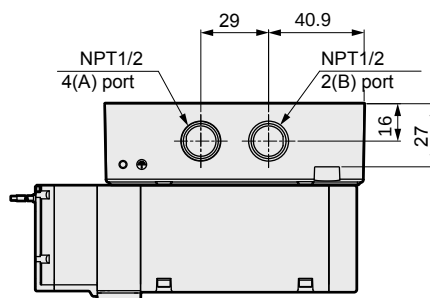
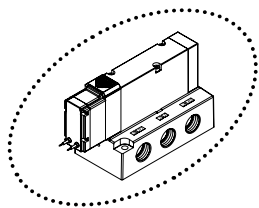
● 4GB410

2-position single solenoid E connector type (E)



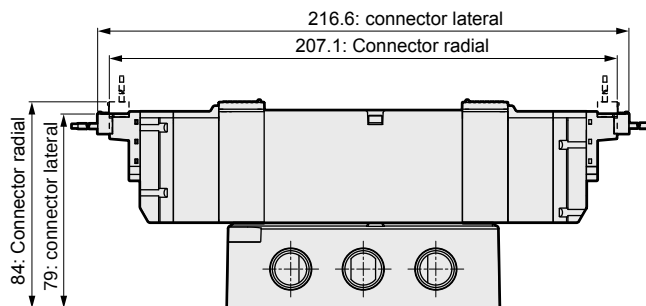
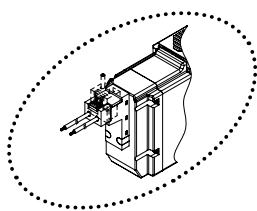
* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



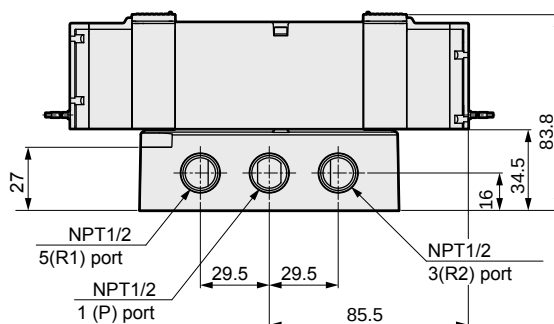
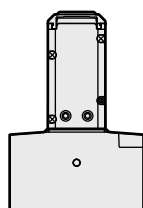
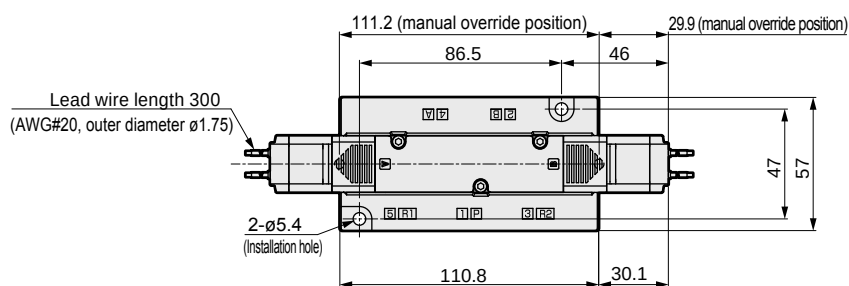
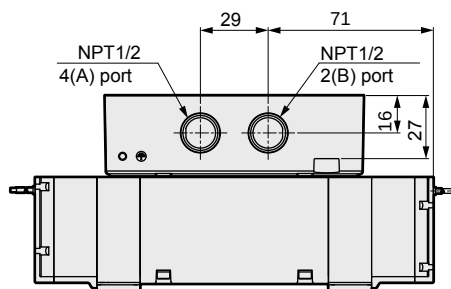
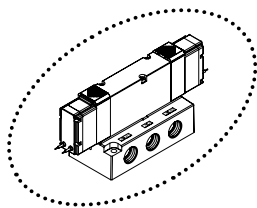
● 4GB420

2-position double solenoid E connector type (E)



* For other dimensions, refer to the grommet lead wire shown below.

2-position double solenoid grommet lead wire (blank)



M4GB1•2•3 Series

- Suitable cylinder bore: $\varnothing 20$ to $\varnothing 100$

Features

- Large flow rate and long life
- Upgraded operability • Upgraded reliability



Catalog No. CB-023SA

How to order

M **4GB1** **1** **0** **-C6N-** **E2** **H** **-** **3** **-** **3** **-K1**
A **B** **C** **D** **E** **F** **G** **H**

Symbol		Descriptions			A Model No.		
B Solenoid position					4GB1	4GB2	4GB3
1	2-position single				●	●	●
2	2-position double				●	●	●
3	3-position all ports closed				●	●	●
4	3-position ABR connection				●	●	●
5	3-position PAB connection				●	●	●
8	Mix manifold				●	●	●
C Connection diameter					P•R1•R2 port		
Port	A•B port	①=NPT1/8 ②=NPT1/4 ③=NPT3/8					
C4N	5/32 inch dia. push-in fitting	①					
C6N	1/4 inch dia. push-in fitting		②				
C8N	5/16 inch dia. push-in fitting		②	③			
C10N	3/8 inch dia. push-in fitting			③			
D Electrical connections							
		E connector (radial/lateral common)					
E2	Lead wire (300 mm) with surge suppressor and light		●	●	●	●	●
E Option							
Blank	None		●	●	●	●	●
H	With exhaust check valve	Note 1	●	●	●	●	●
F Mount type							
Blank	Direct mount type	Note 2	●	●	●	●	●
G Station no.							
3	3 stations		●	●	●	●	●
5	5 stations		●	●	●	●	●
8	8 stations		●	●	●	●	●
H Voltage							
3	24 VDC		●	●	●	●	●

Note 1: The check valve specifications (H) are not available for the 3-position all ports closed or PAB connection.

Note 2: The direct mounting M4GB1 cannot be changed to a DIN rail mounting.

Manifold common specifications

Item		Descriptions
Manifold type		Integrated base
Mounting method		Direct mount
Supply and exhaust method		Common supply and common exhaust (built-in exhaust check valve)
Pilot exhaust method	Inside pilot	Main valve, pilot valve common exhaust (built-in pilot exhaust check valve)
Piping direction		Sub-base side porting
Type of valve / operation method		Pilot operated type soft spool valve
Use fluid		Compressed air
Maximum working pressure	MPa	0.7
Minimum working pressure	MPa	0.2
Proof pressure	MPa	1.05
Ambient temperature	°C	-5 to 55 (to be unfrozen)
Fluid temperature	°C	5 to 55
Manual override		Locking/non-locking common type
Lubrication	Note 1	Not required
Degree of protection	Note 2	Dust proof
Vibration/shock	m/s ²	50 or less / 300 or less
Use atmosphere		Not permissible to use in environment containing corrosive gas.

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated. Excessive or intermittent lubrication results in unstable operation.

Note 2: Check that water drops or oil, etc., do not come into contact.

Electric specifications

Item		Descriptions
Rated voltage	V DC	24
Rated voltage fluctuation range		±10%
Holding current	A 24 VDC	0.025
Electric power consumption	W 24 VDC	0.6
Thermal class		B
Temperature rise		°C 50
Surge suppressor		Surge suppressor attached
Indicator		With indicator light

Individual specifications

Item			M4GB1		M4GB2		M4GB3		
Station no.	Standard (inside pilot)		3, 5, 8 stations						
Connection diameter	A•B port		Push-in fitting 5/32 inch dia.		Push-in fitting 1/4 inch dia., 5/16 inch dia.		Push-in fitting 5/16 inch dia., 3/8 inch dia.		
	P•R1•R2 port		NPT1/8		NPT1/4		NPT3/8		
Manifold base									
Formula for mass (n: station no.) g			Standard	35n+61	36n+115	71n+106	73n+134	113n+170	115n+119

Note: The manifold base mass is the value for screw specifications.

Flow characteristic

Model No.	Solenoid position		P→A/B		A/B→R1/R2	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
M4GB1	2-position (single/double)		1.1	0.22	0.7	0.10
	3-position	All ports closed	0.98	0.22	1.0	0.11
		ABR connection	0.97	0.35	0.68	0.24
		PAB connection	1.1	0.38	0.99	0.22
M4GB2	2-position (single/double)		2.4	0.34	1.7	0.31
	3-position	All ports closed	2.2	0.34	2.4	0.29
		ABR connection	2.2	0.34	1.8	0.27
		PAB connection	2.4	0.29	2.4	0.29
M4GB3	2-position (single/double)		3.5	0.34	2.6	0.27
	3-position	All ports closed	3.1	0.33	3.3	0.22
		ABR connection	3.0	0.30	2.7	0.22
		PAB connection	3.6	0.36	3.3	0.28

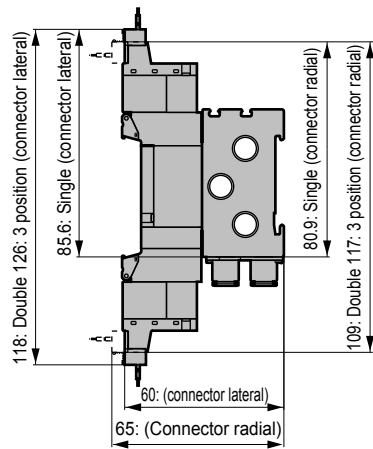
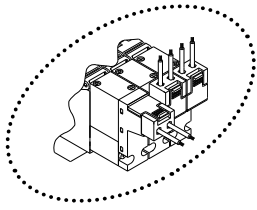
Note 1: Effective area S and sonic conductance C are converted as $S \cong 5.0 \times C$.

Note 2: The value for 2 position and ABR connection is the value when a check valve is integrated.

Dimensions

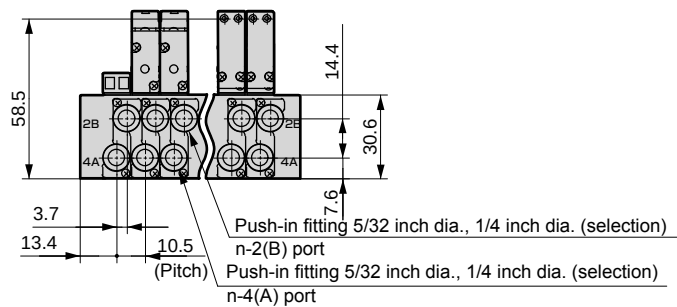
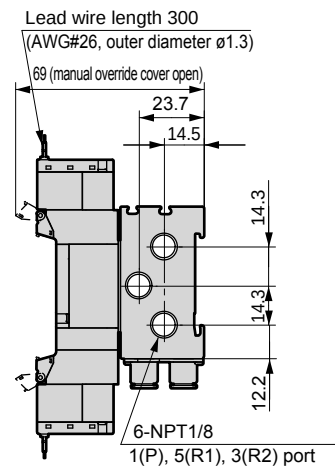
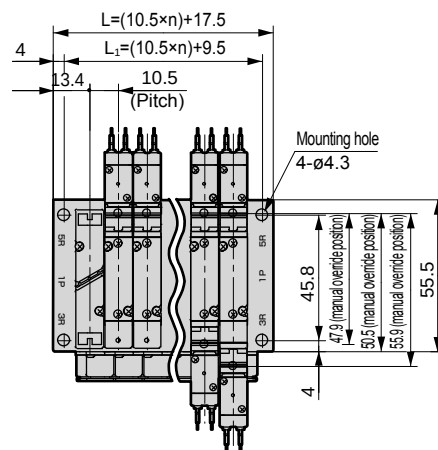
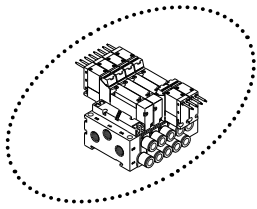
● M4GB1

Individual wiring manifold sub-base porting E connector type (E)



* For other dimensions, refer to the grommet lead wire shown below.

Individual wiring manifold sub-base porting grommet lead wire

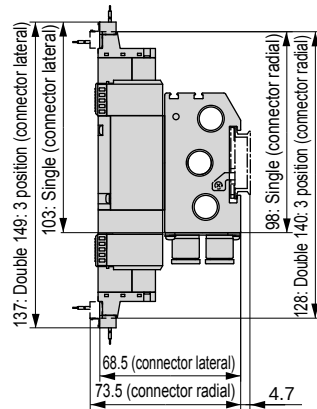
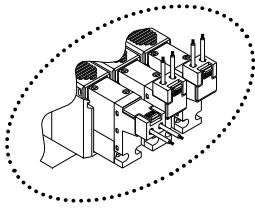


Note: Dedicated to direct mounting.
This cannot be changed to DIN rail specifications.

Station no. (n)	3	5	8
L	49	70	101.5
L ₁	41	62	93.5

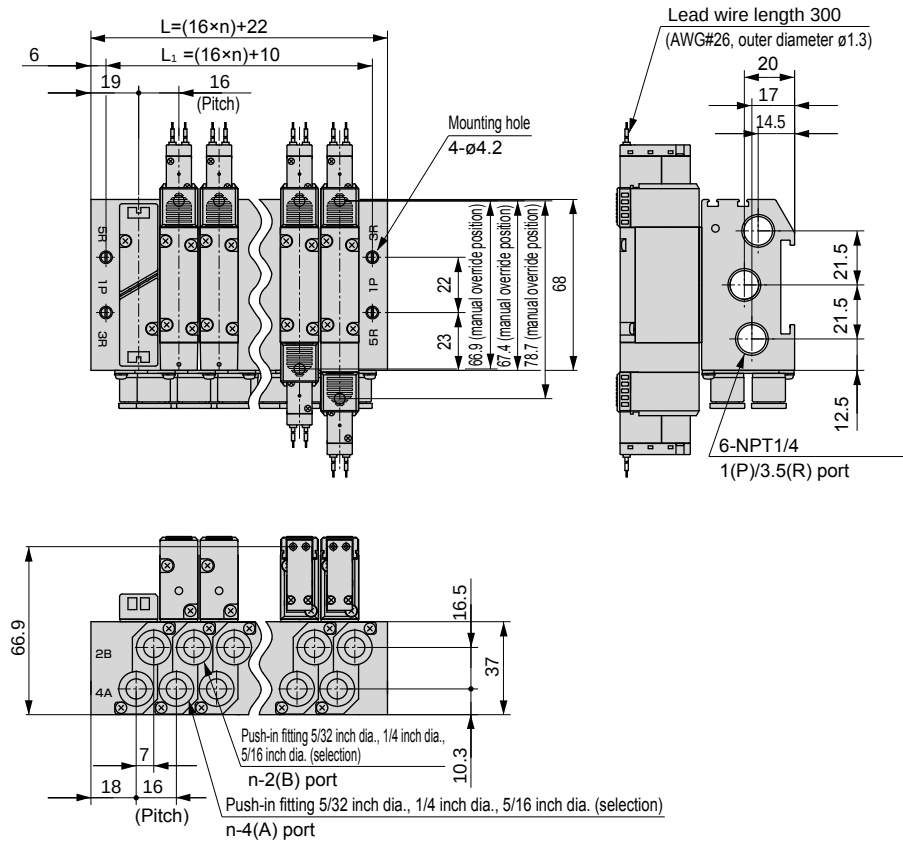
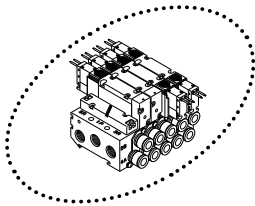
● M4GB2

Individual wiring manifold sub-base porting E connector type (E)



* For other dimensions, refer to the grommet lead wire shown below.

Individual wiring manifold sub-base porting grommet lead wire

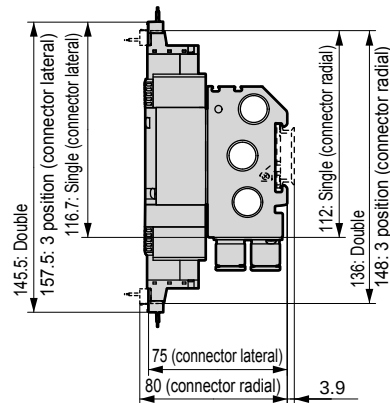
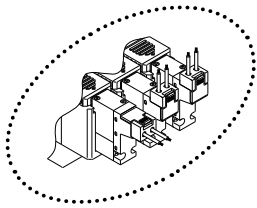


Station no. (n)	3	5	8
L	70	102	150
L ₁	58	90	138

Dimensions

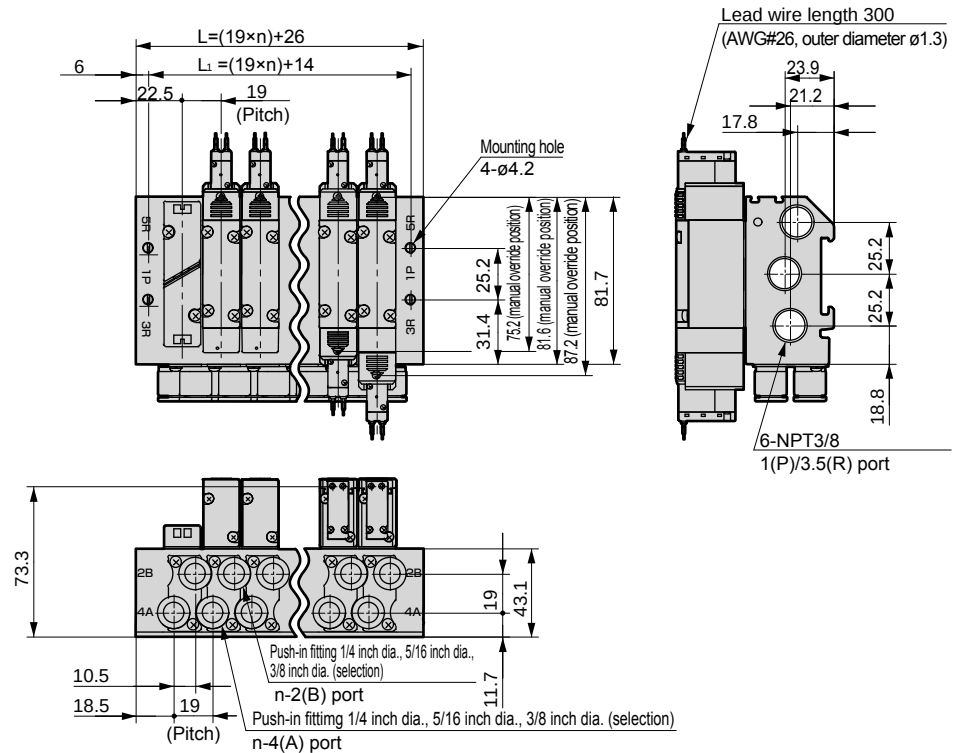
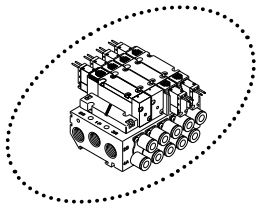
● M4GB3

Individual wiring manifold sub-base porting E connector type (E)



* For other dimensions, refer to the grommet lead wire shown below.

Individual wiring manifold sub-base porting grommet lead wire



Station no. (n)	3	5	8
L	83	121	178
L ₁	71	109	166

M4GB1•2•3-T10 Series

- Suitable cylinder bore: $\varnothing 20$ to $\varnothing 100$

Features

- Large flow rate and long life
- Upgraded operability • Upgraded reliability



Catalog No. CB-023SA

How to order

Manifold model no.

M **4GB1** **1** **0** - **C6N** - **T10** **H** **3** - **3** - **K1**
A **B** **C** **D** **E** **F** **G** **H** **I**

Symbol		Descriptions		A Model No.		
B Solenoid position				4GB1	4GB2	4GB3
1	2-position single			●	●	●
2	2-position double			●	●	●
3	3-position all ports closed			●	●	●
4	3-position ABR connection			●	●	●
5	3-position PAB connection			●	●	●
8	Mix manifold			●	●	●
C Connection diameter				P•R1•R2 port		
Port	A•B port			①=NPT1/8 ②=NPT1/4 ③=NPT3/8		
C4N	5/32 inch dia. push-in fitting			①		
C6N	1/4 inch dia. push-in fitting				②	
C8N	5/16 inch dia. push-in fitting				②	③
C10N	3/8 inch dia. push-in fitting					③
D Reduced wiring (light and surge suppressor provided as standard)						
T10	Common gland (M3 screw)	Left		●	●	●
E Terminal and connector pin array						
Blank	Standard wiring	Note 1		●	●	●
F Option						
Blank	None			●	●	●
H	With exhaust check valve	Note 2		●	●	●
G Mount type						
Blank	Direct mount type			●	●	●
H Station no.						
3	3 stations			●	●	●
5	5 stations			●	●	●
8	8 stations	Note 3		●	●	●
I Voltage						
3	24 VDC			●	●	●

Note 1: Wired based on the type of valve used.

Note 2: The check valve specifications (H) are not available for the 3-position all ports closed or PAB connection.

Note 3: The number of manifold stations is limited by the maximum solenoid points for each of the following wiring specifications on page 89.

Manifold common specifications

Item	Descriptions
Manifold type	Reduced wiring integrated base
Mounting method	Direct mount
Supply and exhaust method	Common supply and common exhaust (built-in exhaust check valve)
Pilot exhaust method	Inside pilot
Piping direction	Sub-base side porting
Type of valve / operation method	Pilot operated type soft spool valve
Use fluid	Compressed air
Maximum working pressure	MPa 0.7
Minimum working pressure	MPa 0.2
Proof pressure	MPa 1.05
Ambient temperature	°C -5 to 55 (to be unfrozen)
Fluid temperature	°C 5 to 55
Manual override	Locking/non-locking common type
Lubrication	Note 1 Not required
Degree of protection	Note 2 Dust proof
Vibration/shock	m/s ² 50 or less / 300 or less
Use atmosphere	Not permissible to use in environment containing corrosive gas.

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated. When lubricated excessively or intermittently, the operation could result in unstable.

Note 2: Check that water drops or oil, etc., do not come into contact.

Electric specifications

Item	Descriptions
Rated voltage	V DC 24
Rated voltage fluctuation range	±10%
Holding current	A 24 VDC 0.025
Electric power consumption	W 24 VDC 0.6
Thermal class	B
Temperature rise	°C 50
Surge suppressor	Standard equipment
Indicator	With indicator light

Manifold individual specifications

Item		M4GB1		M4GB2		M4GB3	
		T10					
		Direct mount					
Station no.	Standard (inside pilot)	3, 5, 8 stations					
Connection diameter	A•B port	Push-in fitting 5/32 inch dia.		Push-in fitting 1/4 inch dia., 5/16 inch dia.		Push-in fitting 5/16 inch dia., 3/8 inch dia.	
	P•R1•R2 port	NPT1/8		NPT1/4		NPT3/8	
Formula for manifold base mass (n: station no.) g	Standard	43n+335	45n+348	80n+398	82n+431	124n+548	126n+582

Note 1: The manifold base mass is the value for screw connections specifications and wiring block.

Note 2: The maximum number of manifold stations is limited by the maximum solenoid points for each of the following wiring specifications shown below.

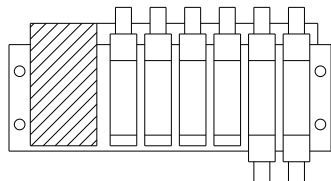
Flow characteristic

Model No.	Solenoid position		P→A/B		A/B→R1/R2	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
M4GB1	2-position (single/double)		1.1	0.22	0.70	0.10
	3-position	All ports closed	0.98	0.22	1.0	0.11
		ABR connection	0.97	0.35	0.68	0.24
		PAB connection	1.1	0.38	0.99	0.22
M4GB2	2-position (single/double)		2.4	0.34	1.7	0.31
	3-position	All ports closed	2.2	0.34	2.4	0.29
		ABR connection	2.2	0.34	1.8	0.27
		PAB connection	2.4	0.29	2.4	0.29
M4GB3	2-position (single/double)		3.5	0.34	2.6	0.27
	3-position	All ports closed	3.1	0.33	3.3	0.22
		ABR connection	3.0	0.30	2.7	0.22
		PAB connection	3.6	0.36	3.3	0.28

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

Note 2: The value for 2 position and ABR connection is the value when a check valve is integrated.

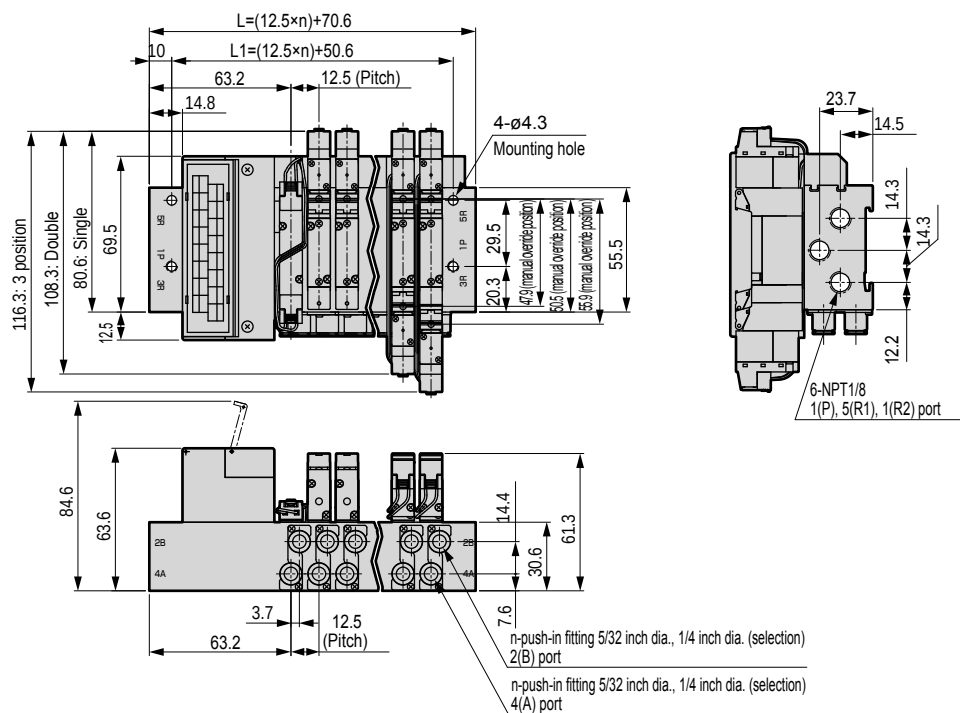
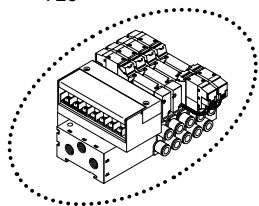
Wiring specifications

Item	T10 common gland type
Connector and gland specifications	M3 screw tightening type, 16 terminals
Maximum solenoid number	14 points
Manifold internal wiring	For details, please contact CKD.
Discrete wiring block position	Left
	a solenoid side  b gland side Wiring block 1st station 2nd station 3rd station ... 6th station

Dimensions

● M4GB1

Reduced wiring manifold sub-base porting common gland
T10

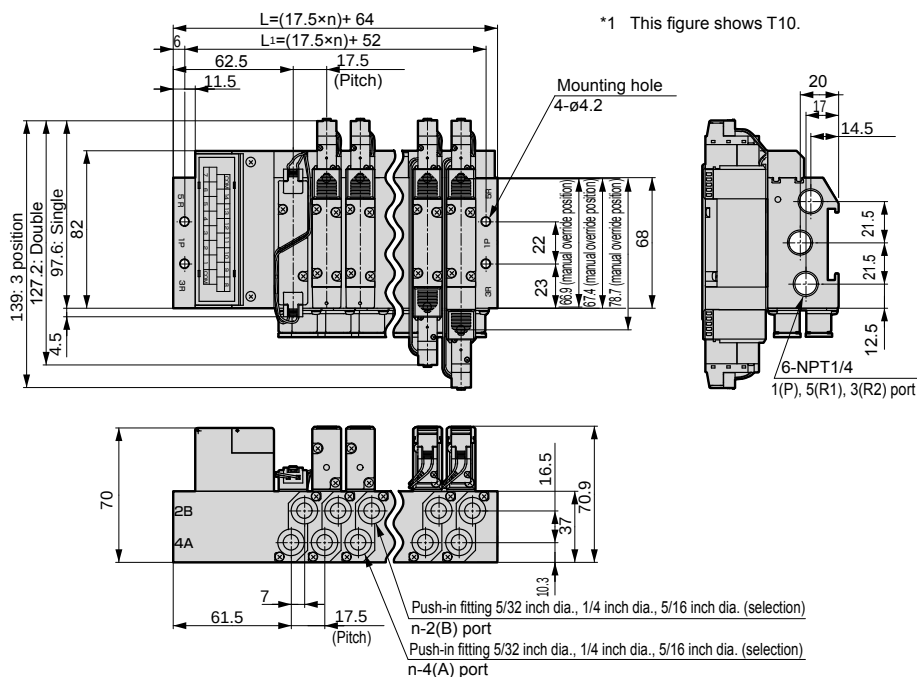
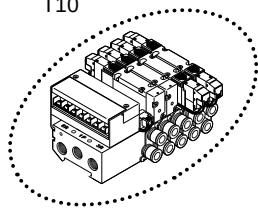


Station no. (n)	3	5	8
L	108.1	133.1	170.6
L ₁	88.1	113.1	150.6

Dimensions

● M4GB2

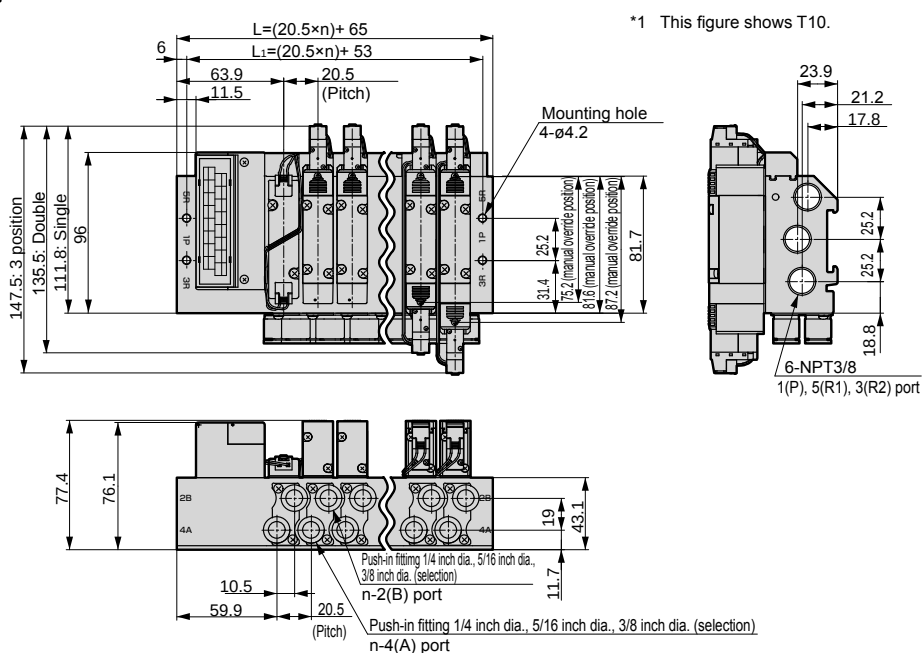
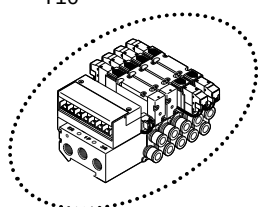
Reduced wiring manifold sub-base porting common gland
T10



Station no. (n)	3	5	8
L	116.5	151.5	204.0
L ₁	104.5	139.5	192.0

● M4GB3

Reduced wiring manifold sub-base porting common gland
T10



Station no. (n)	3	5	8
L	127.4	168.4	229.9
L ₁	115.4	156.4	217.9

How to fill out M4G manifold specifications

For Core Components Catalog

Manifold model no. (example)

M **4** **G** **B** **1** **8** **0** - **C4N** - **T10** **H** - **5** - **3**
 Solenoid valve type Solenoid position Connection diameter Reduced wiring Option Station no. Voltage

Solenoid valve no.	Valve installation position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
4G B 1 1 9 C4N	○	○											2
4G B 1 2 9 C4N			○	○									2
4G B 1 3 9 C4N					○								1
4G B 1 4 9 C4N													
4G B 1 5 9 C4N													
Masking plate (single) 4G1-MPS C4N													
Masking plate (double/3 position) 4G1-MPD C4N													
4G B 1 1 9 C6N													
4G B 1 2 9 C6N													
4G B 1 3 9 C6N													
4G B 1 4 9 C6N													
4G B 1 5 9 C6N													
Masking plate (single) 4G1-MPS C6N													
Masking plate (double/3 position) 4G1-MPD C6N													

M4GB1 Individual wiring manifold specifications

For Core Components Catalog

Issue / /

Your company name

Contact

Purchase order No.

● Contact

● Quantity

Set

● Request date /

Voucher No.

Order No.

● Manifold model no.

M **4** **G** **B** **1** **0** - **E2** **H** - **3** - **3**
Solenoid valve type Solenoid position Connection diameter Electrical connections Other options Station no.* Voltage

* Select 3, 5, or 8 for the station no.

Solenoid valve no.	Valve installation position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
4G B 1 1 9- C4N													
4G B 1 2 9- C4N													
4G B 1 3 9- C4N													
4G B 1 4 9- C4N													
4G B 1 5 9- C4N													
Masking plate 4G1-MP- C4N													
4G B 1 1 9- C6N													
4G B 1 2 9- C6N													
4G B 1 3 9- C6N													
4G B 1 4 9- C6N													
4G B 1 5 9- C6N													
Masking plate 4G1-MP- C6N													

M4GB2 Individual wiring manifold specifications

For Core Components Catalog

Issue / /

Your company name

Contact

Purchase order No.

● Contact

● Quantity

Set

● Request date /

Voucher No.

Order No.

● Manifold model no.

M **4** **G** **B** **2** **0** - **E2** **H** - **3** - **3**
Solenoid valve type Solenoid position Connection diameter Electrical connections Other options Station no.* Voltage

* Select 3, 5, or 8 for the station no.

Solenoid valve no.	Valve installation position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
4G B 2 1 9 C4N													
4G B 2 2 9 C4N													
4G B 2 3 9 C4N													
4G B 2 4 9 C4N													
4G B 2 5 9 C4N													
Masking plate 4G2-MP- C4N													
4G B 2 1 9 C6N													
4G B 2 2 9 C6N													
4G B 2 3 9 C6N													
4G B 2 4 9 C6N													
4G B 2 5 9 C6N													
Masking plate 4G2-MP- C6N													
4G B 2 1 9 C8N													
4G B 2 2 9 C8N													
4G B 2 3 9 C8N													
4G B 2 4 9 C8N													
4G B 2 5 9 C8N													
Masking plate 4G2-MP- C8N													

M4GB3 Individual wiring manifold specifications

For Core Components Catalog

Issue / /

Your company name

Contact

Purchase order No.

● Contact

● Quantity

Set

● Request date /

Voucher No.

Order No.

● Manifold model no.

M **4** **G** **B** **3** **0** - **E2** **H** - **3** - **3**
Solenoid valve type Solenoid position Connection diameter Electrical connections Other options Station no.* Voltage

* Select 3, 5, or 8 for the station no.

Solenoid valve no.	Valve installation position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
4G B 3 1 9- C6N													
4G B 3 2 9- C6N													
4G B 3 3 9- C6N													
4G B 3 4 9- C6N													
4G B 3 5 9- C6N													
Masking plate 4G3-MP- C6N													
4G B 3 1 9- C8N													
4G B 3 2 9- C8N													
4G B 3 3 9- C8N													
4G B 3 4 9- C8N													
4G B 3 5 9- C8N													
Masking plate 4G3-MP- C8N													
4G B 3 1 9- C10N													
4G B 3 2 9- C10N													
4G B 3 3 9- C10N													
4G B 3 4 9- C10N													
4G B 3 5 9- C10N													
Masking plate 4G3-MP- C10N													

M4GB1-T10 Reduced wiring manifold specifications

For Core Components Catalog

Issue / /

Your company name

Contact

Purchase order No.

● Contact

● Quantity

Set

● Request date /

Voucher No.

Order No.

● Manifold model no.

M **4** **G** **B** **1** **0** - **T10** **H** - **3** - **3**
Solenoid valve type Solenoid position Connection diameter Reduced wiring Option Station no.* Voltage

* Select 3, 5, or 8 for the station no.

Solenoid valve no.	Valve installation position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
4G B 1 1 9- C4N													
4G B 1 2 9- C4N													
4G B 1 3 9- C4N													
4G B 1 4 9- C4N													
4G B 1 5 9- C4N													
Masking plate (single) 4G1-MPS- C4N													
Masking plate (double/3 position) 4G1-MPD- C4N													
4G B 1 1 9- C6N													
4G B 1 2 9- C6N													
4G B 1 3 9- C6N													
4G B 1 4 9- C6N													
4G B 1 5 9- C6N													
Masking plate (single) 4G1-MPS- C6N													
Masking plate (double/3 position) 4G1-MPD- C6N													

M4GB2-T10 Reduced wiring manifold specifications

For Core Components Catalog

Issue / /

Your company name

Contact

Purchase order No.

● Contact

● Quantity

Set

● Request date /

Voucher No.

Order No.

● Manifold model no.

M **4** **G** **B** **2** **0** - **T10** **H** - **3** - **3**
Solenoid valve type Solenoid position Connection diameter Reduced wiring Option Station no.* Voltage

* Select 3, 5, or 8 for the station no.

Solenoid valve no.	Valve installation position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
4G B 2 1 9- C4N													
4G B 2 2 9- C4N													
4G B 2 3 9- C4N													
4G B 2 4 9- C4N													
4G B 2 5 9- C4N													
Masking plate (single) 4G2-MPS- C4N													
Masking plate (double/3 position) 4G2-MPD- C4N													
4G B 2 1 9- C6N													
4G B 2 2 9- C6N													
4G B 2 3 9- C6N													
4G B 2 4 9- C6N													
4G B 2 5 9- C6N													
Masking plate (single) 4G2-MPS- C6N													
Masking plate (double/3 position) 4G2-MPD- C6N													
4G B 2 1 9- C8N													
4G B 2 2 9- C8N													
4G B 2 3 9- C8N													
4G B 2 4 9- C8N													
4G B 2 5 9- C8N													
Masking plate (single) 4G2-MPS- C8N													
Masking plate (double/3 position) 4G2-MPD- C8N													

M4GB3-T10 Reduced wiring manifold specifications

For Core Components Catalog

Issue / /

Your company name

Contact

Purchase order No.

● Contact

● Quantity

Set

● Request date /

Voucher No.

Order No.

● Manifold model no.

M **4** **G** **B** **1** **0** - **T10** **H** - **3** - **3**
Solenoid valve type Solenoid position Connection diameter Reduced wiring Option Station no.* Voltage

* Select 3, 5, or 8 for the station no.

Solenoid valve no.	Valve installation position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
4G B 3 1 9-C6N													
4G B 3 2 9-C6N													
4G B 3 3 9-C6N													
4G B 3 4 9-C6N													
4G B 3 5 9-C6N													
Masking plate (single) 4G3-MPS-C6N													
Masking plate (double/3 position) 4G3-MPD-C6N													
4G B 3 1 9-C8N													
4G B 3 2 9-C8N													
4G B 3 3 9-C8N													
4G B 3 4 9-C8N													
4G B 3 5 9-C8N													
Masking plate (single) 4G3-MPS-C8N													
Masking plate (double/3 position) 4G3-MPD-C8N													
4G B 3 1 9-C10N													
4G B 3 2 9-C10N													
4G B 3 3 9-C10N													
4G B 3 4 9-C10N													
4G B 3 5 9-C10N													
Masking plate (single) 4G3-MPS-C10N													
Masking plate (double/3 position) 4G3-MPD-C10N													

MEMO

Discrete sub-base porting

W4GB2 Series

• Applicable cylinder bore size: ø20 to ø80

Features

- IP65 protection structure
- Life 60 million times or more



Catalog No. CB-023SA

How to order

Discrete

W4GB2 1 0-08N-R1 H-3-K1

Discrete solenoid valve

W4GB2 1 9-08N-H-3-K1

Symbol		Descriptions		A Model No.	
B Solenoid position				Discrete	Discrete solenoid valve
1	2-position single			●	●
2	2-position double			●	●
3	3-position all ports closed			●	●
4	3-position ABR connection			●	●
5	3-position PAB connection			●	●
C Connection diameter					
08N	NPT1/4			●	
D Electrical connections (light and surge suppressor provided as standard)					
Blank	Terminal box (cable clamp attached)			●	●
R1	I/O connector (500mm) (custom order)			●	
E Option					
Blank	No option			●	●
M	Non-locking manual override	Note 1		●	●
M7	Manual override with off function	Note 1		●	●
H	Check valve	Note 2		●	●
A	Ozone/coolant proof			●	●
F	P•A•B port filter integrated			●	
F Voltage					
1	AC100V (rectified bridge integrated)			●	
3	24 VDC			●	●
4	12 VDC			●	●



Cautions for model No. selection

Note 1: The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 2: The check valve specifications (H) are not available for the 3-position all port block or PAB connection.

Ozone specifications · Coolant proof specifications

The specification can be selected with E option "A" in How to Order on this page.

For LiB specifications (Catalog No. CC-947A)

• Material for components limited to allow for LiB manufacturing process

** - voltage - P40

Electrical connections

Name	Terminal box	I/O connector
Symbol	Blank	R1
Shape		
Terminal Layout		

Common specifications

Item	W4GB2
Type of valve / operation method	Pilot operated type soft spool valve
Use fluid	Compressed air
Maximum working pressure MPa	0.7
Minimum working pressure MPa	0.2
Proof pressure MPa	1.05
Ambient temperature °C	−5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	Locking/non-locking common type
Lubrication Note 1	Not required
Degree of protection Note 2	Dust/jet-proof (IP65)
Vibration/shock m/s ²	49 or less / 294 or less
Use atmosphere	Not permissible to use in environment containing corrosive gas.

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.

Excessive lubrication will lead to unstable operation.

Note 2: IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test.

Electric specifications

Item		W4GB2
Rated voltage V	DC	12, 24
	AC	100
Rated voltage fluctuation range		±10%
Holding current A	24 VDC	0.025
	12 VDC	0.050
	100VAC	0.012
Electric power consumption W Note 3	24 VDC	0.6
	12 VDC	0.6
Apparent power VA	100VAC	1.2
Thermal class		B

Note 3: Surge suppressor and indicator are provided as standard.

Individual specifications

Item		W4GB2
Connection diameter	A•B port	NPT1/4
	P•R port	NPT1/4

Item			When turned ON	When turned OFF
Response time ms	2-position	Single	22	24
		Double	26	—
	3-position		25	35

Note: Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Item			Terminal box	I/O connector
Mass	g	Single	351	409
		Double	367	424
		3-position	374	431

Flow characteristic

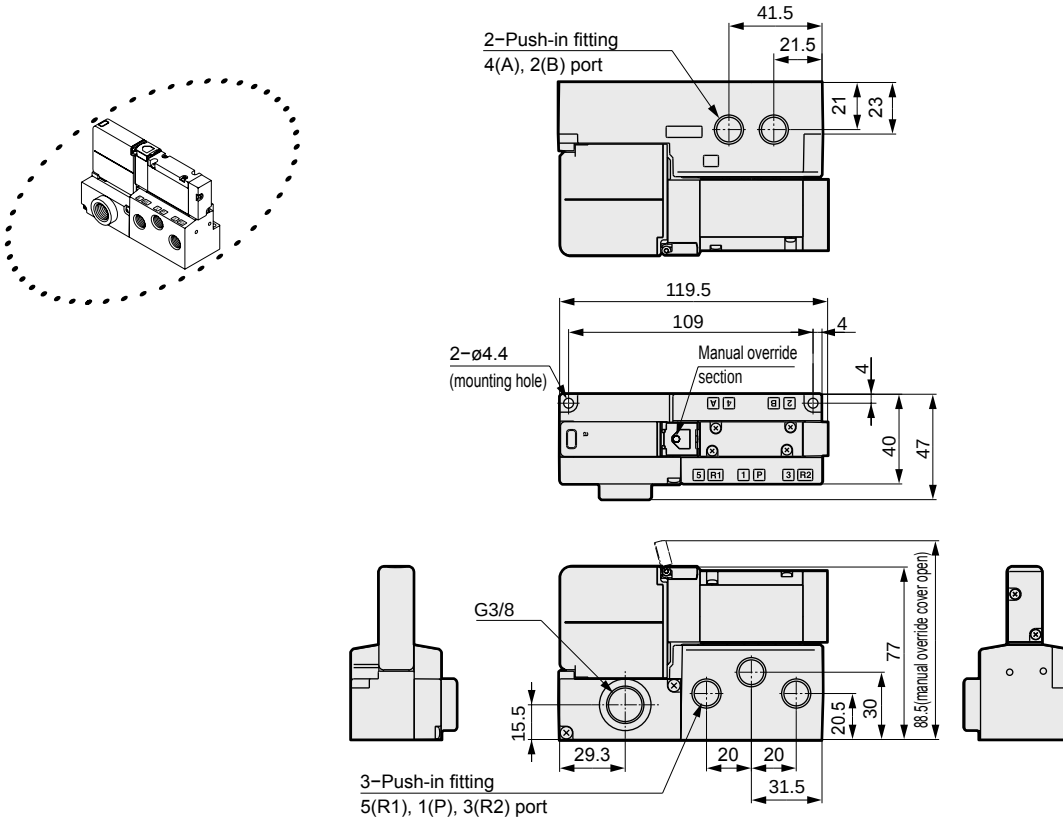
Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm³/(s•bar)]	b	C [dm³/(s•bar)]	b
W4GB2	2-position		2.5	0.27	2.5	0.20
	3-position	All ports closed	2.3	0.32	2.1	0.21
		ABR connection	2.3	0.30	2.2	0.22
		PAB connection	2.4	0.02	2.3	0.19

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

Dimensions

● W4GB210

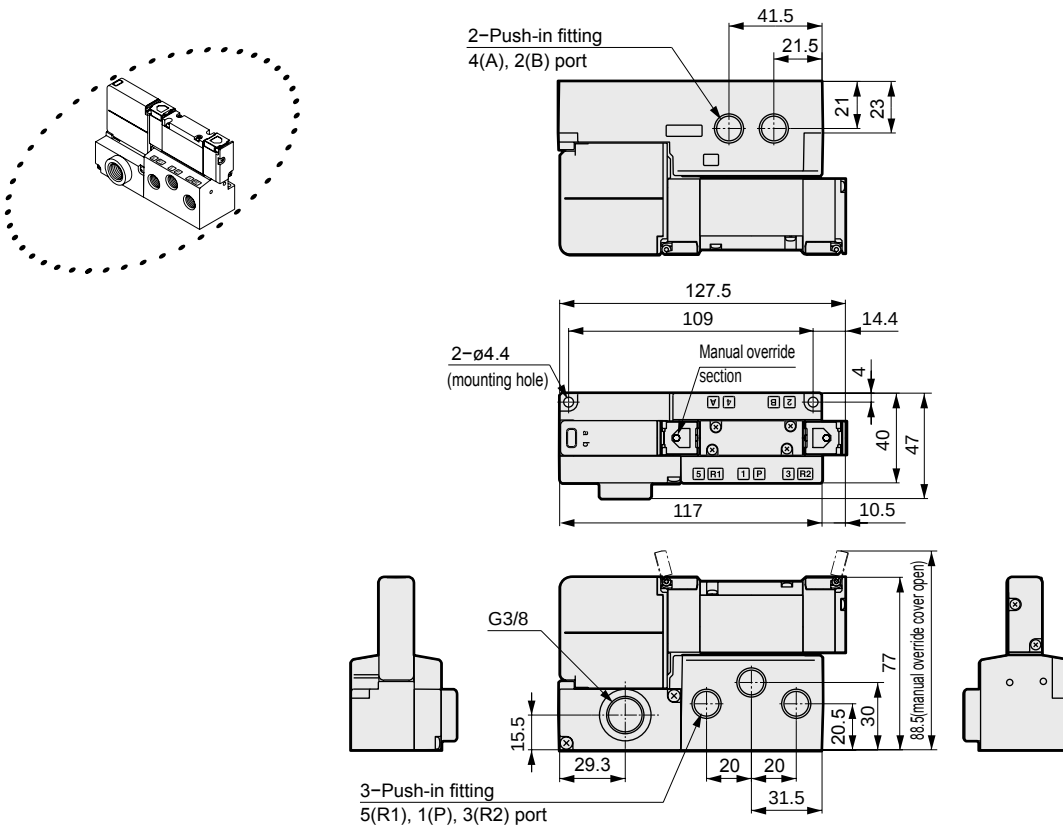
Terminal gland (blank)



Note: For I/O connector (R1), refer to page 125.

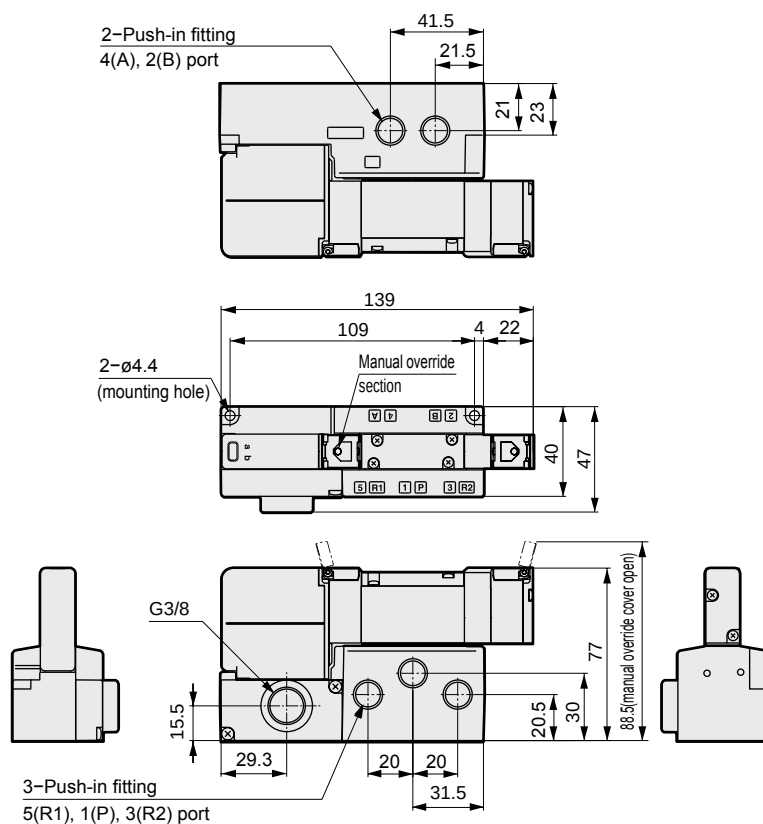
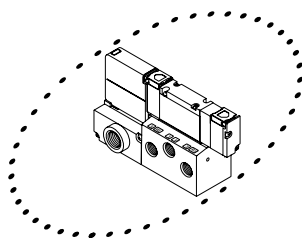
● W4GB220

Terminal gland (blank)

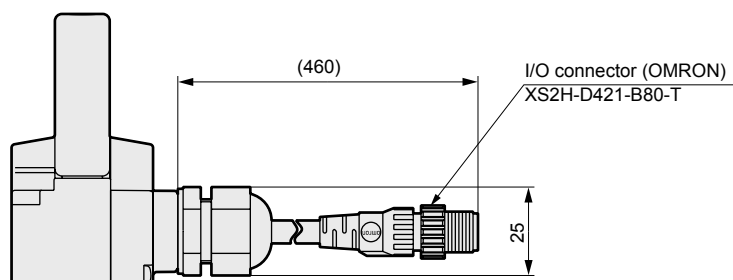
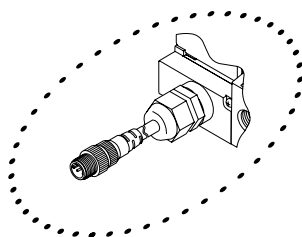


Dimensions

● W4GB2³₄0 Terminal gland (blank)



I/O connector (R1)



MW³₄GA2-R1 Series

- Applicable cylinder bore size: ø20 to ø80

Features

- IP65 protection structure
- Life 60 million times or more



Catalog No. CB-023SA

How to order

- Manifold model No.

MW4GA2 ① 0-C8N-R1 H D-5-3-K1

- Discrete valve block with solenoid valve

NW4GA2 ① 0-C8N-R1 H - -3-K1

- Discrete solenoid valve for manifold mounting

W4GA2 ① 9-C8N- H - -3-K1

A B C D E F G H

A Model No.

Manifold		Discrete valve block with solenoid valve		Discrete solenoid valve	
3-port valve	5-port valve	3-port valve	5-port valve	3-port valve	5-port valve
MW3GA2	MW4GA2	NW3GA2	NW4GA2	W3GA2	W4GA2

Symbol	Descriptions	MW3GA2	MW4GA2	NW3GA2	NW4GA2	W3GA2	W4GA2
⑩ 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		●		●		●
1	2 position single solenoid, normally closed	●		●		●	
11	2 position single solenoid, normally open	●		●		●	
8	Mix manifold (when there are multiple solenoid types)	●	●				

⑪ Connection diameter (A•B port)							
C6N	1/4 inch dia. push-in fitting	●	●	●	●	●	●
C8N	5/16 inch dia. push-in fitting	●	●	●	●	●	●
CXN	Push-in fitting mix	●	●				

⑫ Wiring method (light and surge suppressor provided as standard)							
R1	I/O connector (M12) (500 mm)	●	●	●	●		

⑬ Option							
Blank	No option	●	●	●	●	●	●
M	Non-locking manual override Note 2	●	●	●	●	●	●
M7	Manual override with off function Note 2	●	●	●	●	●	●
H	Check valve Note 3	●	●	●	●	●	●
K	Outside pilot	●	●				
A	Ozone/coolant proof	●	●	●	●	●	●
F	A/B port filter integrated Note 4	●	●	●	●	●	●
Z1	Supply spacer Note 5	●	●				
Z3	Exhaust spacer Note 5	●	●				
Z8	Individual supply spacer with in-stop valve Note 6	●	●				

⑭ Mount type							
Blank	Direct mount type	●	●				
D	DIN rail mount type	●	●				

⑮ Station no.							
2 to 16	2 stations to 16 stations	●	●				

⑯ Voltage							
3	24 VDC	●	●	●	●	●	●
4	12 VDC	●	●	●	●	●	●

is not available.

⚠ Cautions for model No. selection

Fill out "manifold specifications".

Note 1: Specify P•R port size with the supply and exhaust block.

Note 2: The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 3: The check valve specifications (H) are not available for the 3-position all port block or PAB connection.

Note 4: Port P has an integrated filter.

Note 5: Specify the spacer mounting location and quantity in manifold specifications.

Stacked spacer assembly is not available.

Combination with the masking plate is not available.

Note 6: Combination with the outside pilot (K) is not available.

Ozone specifications · Coolant proof specifications

The specification can be selected with ⑬ option "A" in How to Order on this page.

For LiB specifications (Catalog No.CC-947A)

- Material for components limited to allow for LiB manufacturing process

** - voltage - P40

Manifold common specifications

Descriptions	MW3GA2/MW4GA2	
Manifold type	Block manifold	
Supply and exhaust method	Common supply/common exhaust (check valve integrated)	
Pilot exhaust method	Inside pilot	Main valve/pilot valve common exhaust (pilot exhaust check valve integrated)
	Outside pilot	Main valve and pilot valve individual exhaust
Type of valve and operation method	Pilot-operated soft spool valve	
Use fluid	Compressed air	
Maximum working pressure MPa	0.7	
Minimum working pressure MPa	0.2 Note 3	
Proof pressure MPa	1.05	
Ambient temperature °C	-5 to 55 (no freezing)	
Fluid temperature °C	5 to 55	
Manual override	Locking/non-locking common type	
Lubrication Note 1	Not required	
Degree of protection Note 2	Dust/jet-proof (equivalent to IP65)	
Vibration/shock m/s ²	49 or less / 294 or less	
Use atmosphere	Not suitable for use in areas containing corrosive gas	

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.

Excessive lubrication will lead to unstable operation.

Note 2: IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test.

Note 3: The working pressure range is 0 to 0.7 MPa when the outside pilot (option symbol: K) is selected.

Use an outside pilot pressure between 0.2 and 0.7 MPa.

Electric specifications

Descriptions	MW3GA2•MW4GA2	
Rated voltage V	DC	12, 24
Rated voltage fluctuation range	±10%	
Holding current A	24 VDC	0.025
	12 VDC	0.050
Electricpower consumption W Note	24 VDC	0.6
	12 VDC	0.6
Thermal class	B	

Note: Surge suppressor and indicator are provided as standard.

Individual specifications

Descriptions	MW3GA2•MW4GA2	
Maximum station number	16	
Connection diameter	A•B port	Push-in fitting 1/4, 5/16, inch dia.
	P•R port	Push-in fitting 5/16, 3/8, inch dia.

Descriptions			MW3GA2•MW4GA2	
			When turned ON	When turned OFF
Response time ms	2-position	Single	22	24
		Double	26	—
	3-position		25	35

Note: Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Flow characteristics

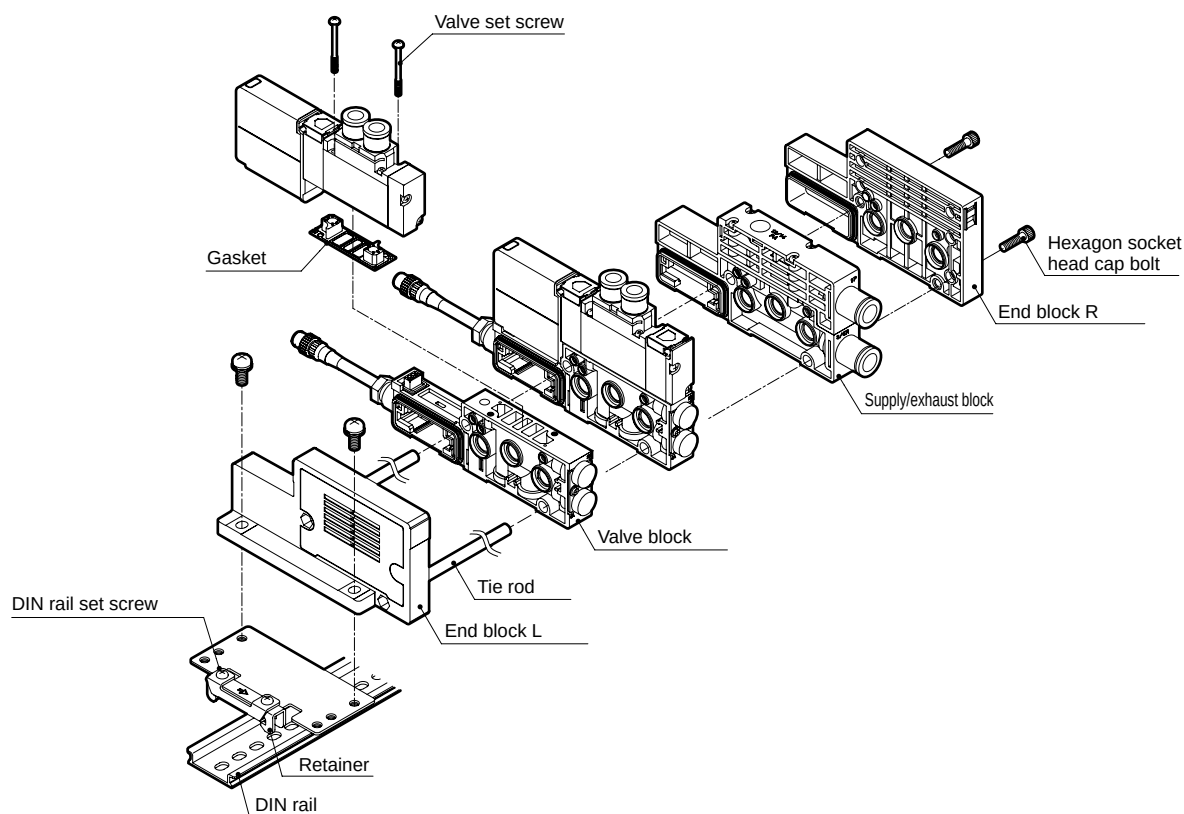
Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm ³ / (s•bar)]	b	C [dm ³ / (s•bar)]	b
MW3GA2 MW4GA2	2-position		2.2	0.35	1.7	0.25
	3-position	All ports closed	2.0	0.36	2.2	0.21
		ABR connection	2.1	0.34	1.7	0.26
		PAB connection	2.3	0.35	2.3	0.27

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

Note 2: Effective sectional area of 2 position and ABR connection is the value when a check valve is integrated.

Mass (for DC) NW4GA2

Parts name	Model No.	Mass (g)
Valve block with solenoid valve	NW3GA210-*-R1*-*	220
	NW3GA2110-*-R1*-*	220
	NW4GA210-*-R1*-*	225
	NW4GA220-*-R1*-*	241
	NW4GA2 ₅ 0-*-R1*-*	248
Valve block with masking plate	NW4GA2-MP-R1	141



Main parts list (refer to page 165 to 172 for details)

No.	Component name	Model no. (example)	No.	Component name	Model no. (example)
1	End block	NW4G2-EL	4	Discrete solenoid valve for manifold mounting	W4GA219-C8N-H-3
2	Discrete valve block	NW4GA2-V-R1	5	Supply/exhaust block	NW4G2-Q-10
3	Discrete valve block with solenoid valve	NW4GA220-C8N-R1H-3	6	End block R	NW4G2-ER

Common

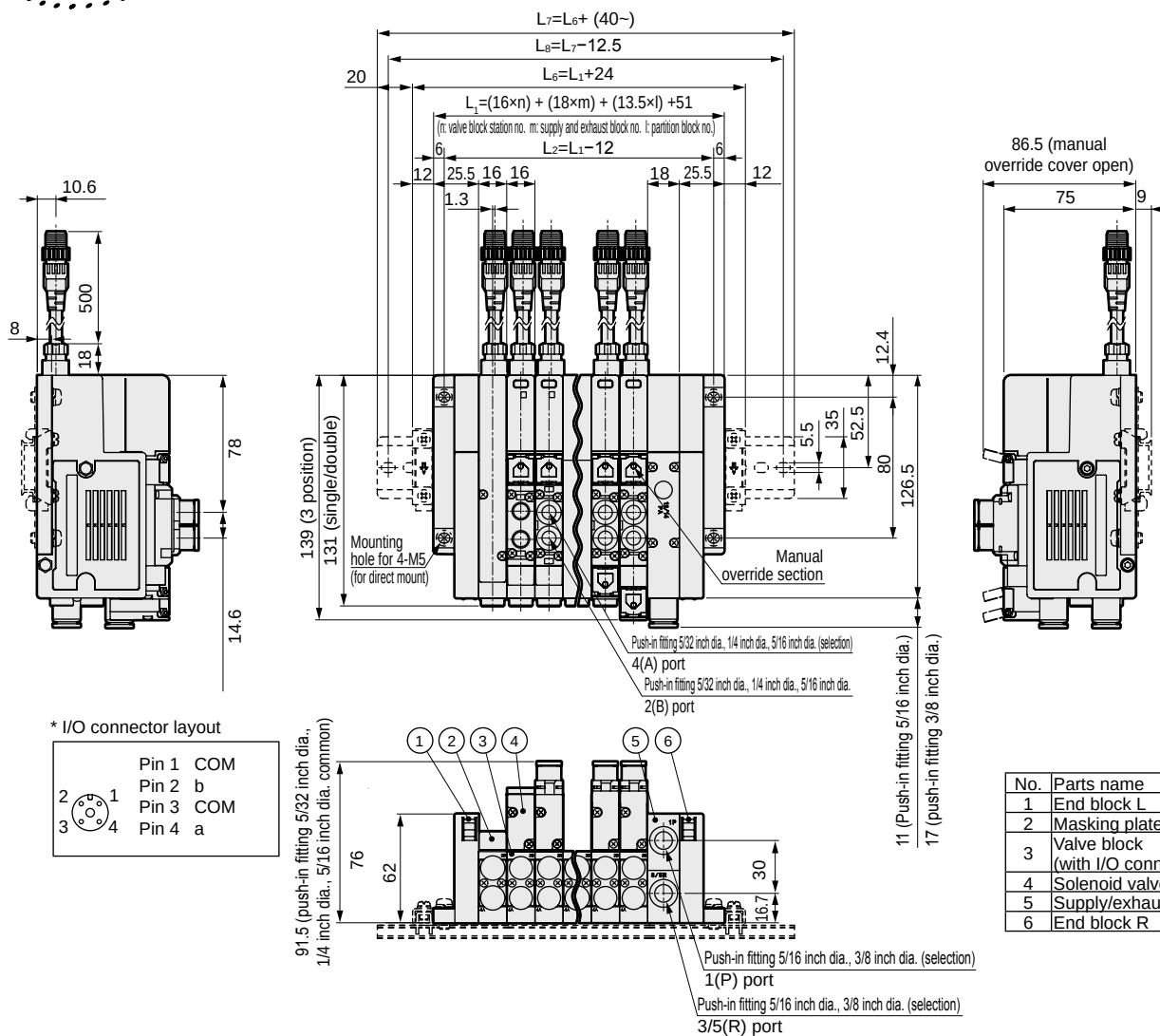
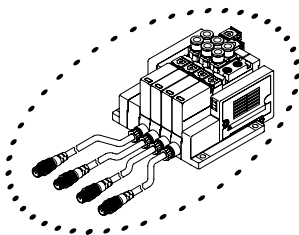
(9)

Parts name	Model No.	Mass	Parts name	Model No.	Mass
Supply/exhaust block	NW4G2-Q-*	137	End block	NW4G2-EL	91
	NW4G2-QK-*	140		NW4G2-EXL	96
	NW4G2-QZ-*	137	Supply spacer	W4G2-P(K)-*	60
	NW4G2-QKZ-*	143	Exhaust spacer	W4G2-R-*. *	60
End block	NW4G2-ER	91	Spacer type pilot check valve	W4G2-PC-M	183
	NW4G2-EXR	96	Individual supply spacer with in-stop valve	W4G2-PIS-*	115

Dimensions

● MW4GA2

I/O connector (R1)



MW4GB2-R1 Series

● Applicable cylinder bore size: ø20 to ø80

Features

- IP65 protection structure
- Easily expanded stations



Catalog No. CB-023SA

How to order

● Manifold model No.

MW4GB2 ① 0 - C8N - R1 H D - 5 - 3 - K1

● Discrete valve block with solenoid valve

NW4GB2 ① 0 - C8N - R1 H ——— 3 - K1

● Discrete solenoid valve for manifold mounting (NW4GB2 and NW4GZ2 Note 1)

W4GB2 ① 9 00 ——— H ——— 3 - K1

A B C D E F G H

⚠ Cautions for model No. selection

Fill out "manifold specifications".

- Note 1: The discrete solenoid valve used with the NW4GZ2 discrete valve block with solenoid valve is the same as that for the W4GB2*9.
- Note 2: A or B port plug specifications (*NC/*NO) are available only for the 2-position single.
- Specify P•R port size with the supply and exhaust block.
- Note 3: Specify the spacer mounting location and quantity in manifold specifications. Stacked spacer assembly is not available. Combination with the masking plate is not available.
- Note 4: The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.
- Note 5: The check valve specifications (H) are not available for the 3-position all port block or PAB connection.
- Note 6: Port P has an integrated filter.
- Note 7: Combination with the outside pilot (K) is not available.

Ozone specifications

Coolant proof specifications

The specification can be selected with ③ option "A" in How to Order on this page.

For LiB specifications (Catalog No.CC-947A)

- Material for components limited to allow for LiB manufacturing process

** - voltage - P40

① Model No.

Manifold	Discrete valve block with solenoid valve	Discrete solenoid valve
MW4GB2	NW4GB2	W4GB2

Symbol	Descriptions	MW4GB2	NW4GB2	W4GB2
③ 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	●	●	●
8	Mix manifold (when there are multiple solenoid types)	●		
④ Connection diameter (A•B port) Note 2				
C6N	1/4 inch dia. push-in fitting	●	●	
C8N	5/16 inch dia. push-in fitting	●	●	
CXN	Push-in fitting mix	●		
⑤ Wiring method (light and surge suppressor provided as standard)				
R1	I/O connector (M12) (500 mm)	●	●	
⑥ Option				
Blank	No option	●	●	●
M	Non-locking manual override Note 4	●	●	●
M7	Manual override with off function Note 4	●	●	●
H	Check valve Note 5	●	●	●
K	Outside pilot	●		
A	Ozone/coolant proof	●	●	●
F	A•B port filter integrated Note 6	●	●	
Z1	Supply spacer Note 3	●		
Z3	Exhaust spacer Note 3	●		
Z6	Spacer type pilot check valve Note 3	●		
Z8	Individual supply spacer with in-stop valve Note 3, 7	●		
⑦ Mount type				
Blank	Direct mount type	●		
D	DIN rail mount type	●		
⑧ Station no.				
2 to 16	2 stations to 16 stations	●		
⑨ Voltage				
3	24 VDC	●	●	●
4	12 VDC	●	●	●

is not available.

Manifold common specifications

Descriptions	MW4GB2	MW4GZ2
Manifold type	Block manifold	
Supply and exhaust method	Common supply/common exhaust (check valve integrated)	
Pilot exhaust method	Inside pilot	Main valve/pilot valve common exhaust (pilot exhaust check valve integrated)
	Outside pilot	Main valve and pilot valve individual exhaust
Piping direction	Sub-base side porting	Sub-base bottom porting
Type of valve and operation method	Pilot-operated soft spool valve	
Use fluid	Compressed air	
Maximum working pressure MPa	0.7	
Minimum working pressure MPa	0.2 Note 3	
Proof pressure MPa	1.05	
Ambient temperature °C	-5 to 55 (no freezing)	
Fluid temperature °C	5 to 55	
Manual override	Locking/non-locking common type	
Lubrication Note 1	Not required	
Degree of protection Note 2	Dust/jet-proof (equivalent to IP65)	
Vibration/shock m/s ²	49 or less / 294 or less	
Use atmosphere	Not suitable for use in areas containing corrosive gas	

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.

Excessive lubrication will lead to unstable operation.

Note 2: IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test.

Note 3: The working pressure range is 0 to 0.7 MPa when the outside pilot (option symbol: K) is selected.

Use an outside pilot pressure between 0.2 and 0.7 MPa.

Note 4: Surge suppressor and indicator are provided as standard.

Electric specifications

Descriptions	M4GB2
Rated voltage V DC	12, 24
Rated voltage fluctuation range	±10%
Holding current A	24 VDC
	12 VDC
Electricpower consumption W Note 4	24 VDC
	12 VDC
Thermal class	B

Individual specifications

Descriptions			MW4GB2•MW4GZ2	
Maximum station number			16	
Connection diameter	A•B port		Push-in fitting 5/32 inch dia., 1/4 inch dia., 5/16 inch dia., NPT1/8	
	P•R port		Push-in fitting 5/16 inch dia., 3/8 inch dia.	

Descriptions			MW4GB2•MW4GZ2	
			When turned ON	When turned OFF
Response time ms	2-position	Single	22	24
		Double	26	—
	3-position		25	35

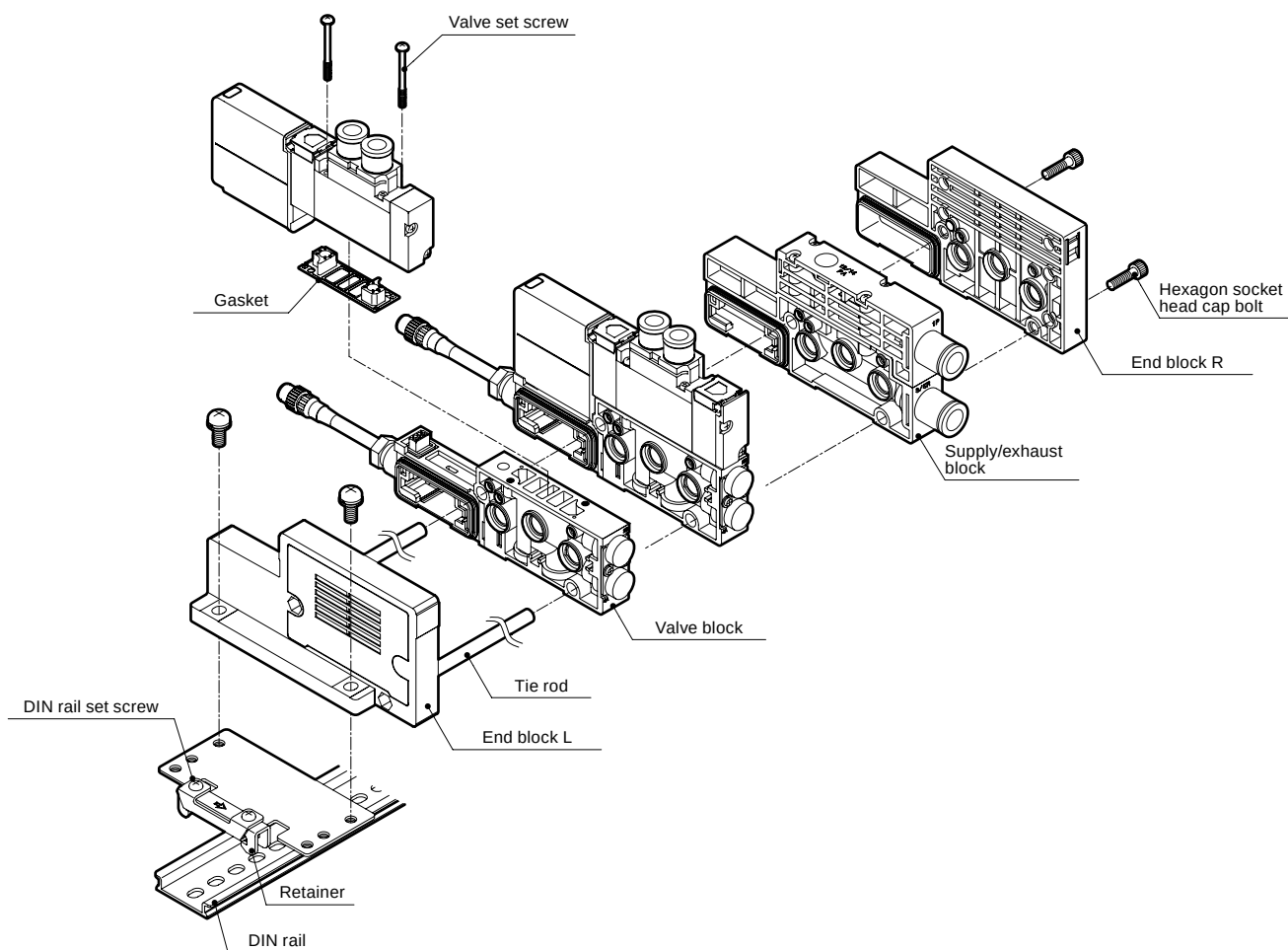
Note: Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Flow characteristics

Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
MW4GB2 MW4GZ2	2-position		2.4	0.36	1.7	0.25
	3-position	All ports closed	2.1	0.37	2.2	0.22
		ABR connection	2.2	0.35	1.7	0.25
		PAB connection	2.3	0.32	2.3	0.24

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

Note 2: Effective sectional area of 2 position and ABR connection is the value when a check valve is integrated.



Main parts list (refer to page 165 to 172 for details)

No.	Component name	Model no. (example)	No.	Component name	Model no. (example)
1	End block	NW4G2-EL	4	Discrete solenoid valve for manifold mounting	W4GB219-00-H-3
2	Discrete valve block	NW4GB2-V-C8N-R1	5	Supply/exhaust block	NW4G2-Q-10
3	Discrete valve block with solenoid valve	NW4GB220-C8N-R1H-3	6	End block R	NW4G2-ER

Mass (for DC)

NW4GB2 (g)		
Parts name	Model No.	Mass
Valve block with solenoid valve	NW4GB210-*-R1*.*	216
	NW4GB220-*-R1*.*	232
	NW4GB2 $\frac{3}{8}$ 0-*-R1*.*	239
Valve block with masking plate	NW4GB2-MP-C8N-R1	152

NW4GZ2 (g)		
Parts name	Model No.	Mass
Valve block with solenoid valve	NW4GZ210-*-R1*.*	216
	NW4GZ220-*-R1*.*	231
	NW4GZ2 $\frac{3}{8}$ 0-*-R1*.*	238
Valve block with masking plate	NW4GZ2-MP-C8N-R1	151

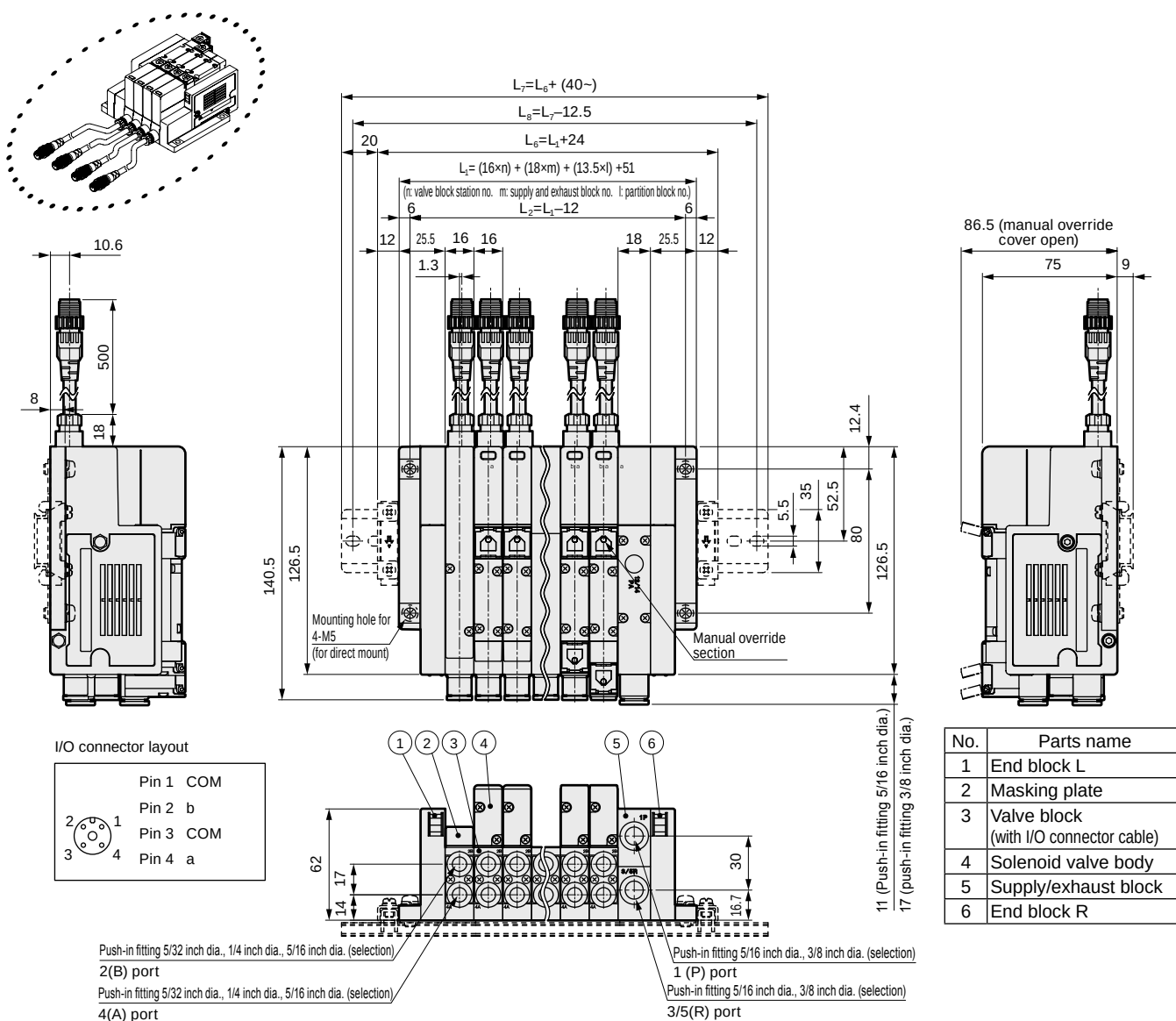
Common (g)		
Parts name	Model No.	Mass
Supply/exhaust block	NW4G2-Q-*	137
	NW4G2-QK-*	140
	NW4G2-QZ-*	137
	NW4G2-QKZ-*	143
End block	NW4G2-ER	91
	NW4G2-EXR	96
	NW4G2-EL	91
	NW4G2-EXL	96
Supply spacer	W4G2-P(K)*	60
Exhaust spacer	W4G2-R*.*	60
Spacer type pilot check valve	W4G2-PC-M	183
Individual supply spacer with in-stop valve	W4G2-PIS-*	115

Pneumatic valve

Dimensions

● MW4GB2

I/O connector (R1)



MW³₄GA2-T1•2•3•5•8 Series

- Applicable cylinder bore size: ø20 to ø80

Features

- IP65 protection structure
- Life 60 million times or more



Catalog No. CB-023SA

How to order

MW³₄GA2-T1•2•3•5 Series

- Manifold model No.

MW4GA2 ① 0 - C8N - T10 W H D - 5 - 3 - K1

- Discrete valve block with solenoid valve

NW4GA2 ① 0 - C8N - W H - 3 - K1

- Discrete solenoid valve for manifold mounting

W4GA2 ① 9 - C8N - H - 3 - K1

A B C D E F G H I J

⚠ Cautions for model No. selection

Fill out "manifold specifications".

Note 1: Specify P•R port size with the supply and exhaust block.

Note 2: When using AC, if the specifications may change, select the valve block with masking plate as a spare block.

Note 3: Specify the spacer mounting location and quantity in manifold specifications.

Stacked spacer assembly is not available.

Combination with the masking plate is not available.

Note 4: Blank... Wired according to the type of installed valve.

W..... All wired for the double solenoid regardless of the type of valve used.

W does not need to be designated when the single solenoid is not mounted.

However, for multi connector T20 and AC voltage, only double wiring is available.

Double wiring will be selected automatically even if "W" is not selected.

Note 5: The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 6: The check valve specifications (H) are not available for the 3-position all port block or PAB connection.

Note 7: Port P has an integrated filter.

Note 8: Combination with the outside pilot (K) is not available.

Ozone specifications

Coolant proof specifications

Ozone specifications can be selected with option "A" in No. ⑥ How to Order on pages 134 and 135.

For LiB specifications (Catalog No.CC-947A)

- Material for components limited to allow for LiB manufacturing process

** - voltage - P40

④ Model No.

Manifold	Discrete valve block with solenoid valve		Discrete solenoid valve	
	3-port valve	5-port valve	3-port valve	5-port valve
	MW3GA2	MW4GA2	NW3GA2	NW4GA2
	W3GA2	W4GA2		

Symbol	Descriptions	MW3GA2	MW4GA2	NW3GA2	NW4GA2	W3GA2	W4GA2
⑤ 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		●		●		●
1	2 position single solenoid, normally closed	●		●		●	
11	2 position single solenoid, normally open	●		●		●	
8	Mix manifold (when there are multiple solenoid types)	●	●				
⑥ Connection diameter (A•B port)							
C6N	1/4 inch dia. push-in fitting	●	●	●	●	●	●
C8N	5/16 inch dia. push-in fitting	●	●	●	●	●	●
CXN	Push-in fitting mix	●	●				
⑦ Electrical connections							
Blank	Connector relay circuit board specifications for DC.			●	●		
2 to 8	Select the AC cable length from page 166.			●	●		
⑧ Reduced wiring (light and surge suppressor provided as standard)							
Refer to the next page for reduced wiring.							
⑨ Terminal and connector pin array							
Blank	Standard wiring	Note 4	●	●	●	●	
W	Double wiring	Note 4	●	●	●	●	
⑩ Option							
Blank	No option		●	●	●	●	●
M	Non-locking manual override	Note 5	●	●	●	●	●
M7	Manual override with off function	Note 5	●	●	●	●	●
H	Check valve	Note 6	●	●	●	●	●
K	Outside pilot		●				
A	Ozone/coolant proof		●	●	●	●	●
F	A•B port filter integrated	Note 7	●	●	●	●	●
Z1	Supply spacer	Note 3	●	●			
Z3	Exhaust spacer	Note 3	●	●			
Z8	Individual supply spacer with in-stop valve	Note 3, 8	●	●			
⑪ Mount type							
Blank	Direct mount type		●	●			
D	DIN rail mount type		●	●			
⑫ Station no.							
2 to 18	2 stations to 18 stations (Differs depending on the reduced wiring connection specifications. Check the individual specifications.)		●	●			
⑬ Voltage							
1	100 VAC (rectified bridge integrated)		●	●	●	●	●
3	24 VDC		●	●	●	●	●
4	12 VDC		●	●	●	●	●

is not available.

MW³GA2-T8 Series

● Manifold model No.

MW4GA2 ① 0 - C8N - T8G1 W H D - 5 - ③ -K1

● Discrete valve block with solenoid valve

NW4GA2 ① 0 - C8N - W H - ③ -K1

● Discrete solenoid valve for manifold mounting

W4GA2 ① 9 - C8N - H - ③ -K1

A B C D E F G H I J

⚠ Cautions for model No. selection

Fill out "manifold specifications".

Note 1: Specify P•R port size with the supply and exhaust block.

Note 2: Specify the spacer mounting location and quantity in manifold specifications.

Stacked spacer assembly is not available.

Combination with the masking plate is not available.

Note 3: BlankWired according to the type of installed valve.

W.....All wired for the double solenoid regardless of the type of valve used.

W does not need to be designated when the single solenoid is not mounted.

Note 4: The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 5: The check valve specifications (H) are not available for the 3-position all port block or PAB connection.

Note 6: Port P has an integrated filter.

Note 7: Designate the input/output block's input/output format (sink/source) and power supply type (slave unit common/external) with the manifold specifications (Page 173).

Note 8: Combination with the outside pilot (K) is not available.

Note 9: 100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

A Model No.					
Manifold		Discrete valve block with solenoid valve		Discrete solenoid valve	
3-port valve	5-port valve	3-port valve	5-port valve	3-port valve	5-port valve
					
MW3GA2	MW4GA2	NW3GA2	NW4GA2	W3GA2	W4GA2

Symbol	Descriptions	M	M	N	N	W	W
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		●		●		●
1	2 position single solenoid, normally closed	●		●		●	
11	2 position single solenoid, normally open	●		●		●	
8	Mix manifold (when there are multiple solenoid types)	●	●				
C Connection diameter (A•B port)							
C6N	1/4 inch dia. push-in fitting	●	●	●	●	●	●
C8N	5/16 inch dia. push-in fitting	●	●	●	●	●	●
CXN	Push-in fitting mix	●	●				
D Electrical connections							
Blank	Connector relay circuit board specifications for DC.			●	●		
E Reduced wiring (light and surge suppressor provided as standard)							
Refer to the next page for reduced wiring.							
F Terminal and connector pin array							
Blank	Standard wiring	Note 3	●	●	●	●	
W	Double wiring	Note 3	●	●	●	●	
G Option							
Blank	No option		●	●	●	●	●
M	Non-locking manual override	Note 4	●	●	●	●	●
M7	Manual override with off function	Note 4	●	●	●	●	●
H	Check valve	Note 5	●	●	●	●	●
K	Outside pilot		●	●			
A	Ozone/coolant proof		●	●	●	●	●
F	A/B port filter integrated	Note 6	●	●	●	●	●
Y**	I/O block (For **, designate the number which indicates the input/output block combination given in Table 1 (Input/output block combination table) on the next page.)	Note 7	●	●			
Z1	Supply spacer	Note 2	●	●			
Z3	Exhaust spacer	Note 2	●	●			
Z8	Individual supply spacer with in-stop valve	Note 2, 8	●	●			
H Mount type							
Blank	Direct mount type		●	●			
D	DIN rail mount type		●	●			
I Station no.							
2 to 16	2 stations to 16 stations (Differs depending on the reduced wiring connection specifications. Check the individual specifications.)		●	●			
J Voltage							
3	24 VDC	Note 9	●	●	●	●	●

is not available.

Manifold common specifications		
Descriptions	MW3GA2-MW4GA2	
Manifold type	Block manifold	
Supply and exhaust method	Common supply/common exhaust (check valve integrated)	
Pilot exhaust method	Inside pilot	Main valve/pilot valve common exhaust (pilot exhaust check valve integrated)
	Outside pilot	Main valve and pilot valve individual exhaust
Piping direction	Valve top direction	
Type of valve and operation method	Pilot-operated soft spool valve	
Use fluid	Compressed air	
Maximum working pressure MPa	0.7	
Minimum working pressure MPa	0.2 Note 4	
Proof pressure MPa	1.05	
Ambient temperature °C	-5 to 55 (no freezing)	
Fluid temperature °C	5 to 55	
Manual override	Locking/non-locking common type	
Lubrication Note 1	Not required	
Degree of protection Note 2	Dust/jet-proof (IP65) Note 3	
Vibration/shock m/s ²	49 or less / 294 or less	
Use atmosphere	Not suitable for use in areas containing corrosive gas	

Electric specifications		
Descriptions	MW3GA2-MW4GA2	
Rated voltage V	DC	12, 24
	AC	100
Rated voltage fluctuation range		±10%
Holding current A	24 VDC	0.025
	12 VDC	0.050
	100 VAC	0.012
Electric power consumption W Note 5	24 VDC	0.6
	12 VDC	0.6
Apparent power VA Note 6	100 VAC	1.2
Thermal class		B

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.
Excessive lubrication will lead to unstable operation.

Note 2: IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test.

Note 3: The D-sub connector (T30) and flat cable connector (T5*) have a dust proof protective structure (equivalent to IP40). Check that water drops or oil, etc., do not come into contact.

Note 4: The working pressure range is 0 to 0.7 MPa when the outside pilot (option symbol: K) is selected. Use an outside pilot pressure between 0.2 and 0.7 MPa.

Note 5: Surge suppressor and indicator are provided as standard.

Note 6: The 100 VAC setting is not available for the multi-connector, D-sub connector or flat cable connector connection specifications.
100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

Individual specifications													
Descriptions		MW3GA2-MW4GA2											
		T10	T20	T30	T51	T53	T8G1 T8D1	T8G2 T8D2	T8G7 T8D7	T8MA	T8M6	T8C1	T8C6
Maximum station number	Standard wiring	18	—	18	18	18	16	18	16	4	8	16	8
	double wiring	9	8	12	9	12	8	16	8	2	4	8	4
Maximum solenoid number		18	16	24	18	24	16	32	16	4	8	16	8
Connection diameter	A•B port	Push-in fitting 5/32 inch dia., 1/4 inch dia., 5/16 inch dia., NPT1/8											
	P•R port	Push-in fitting 5/16 inch dia., 3/8 inch dia.											

Descriptions			MW3GA2-MW4GA2			
			When turned ON		When turned OFF	
Response time ms	2-position	Single	22		24	
		Double	26		—	
	3-position		25		35	

Note: Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Flow characteristics						
Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
MW3GA2 MW4GA2	2-position		2.2	0.35	1.7	0.25
	3-position	All ports closed	2.0	0.36	2.2	0.21
		ABR connection	2.1	0.34	1.7	0.26
		PAB connection	2.3	0.35	2.3	0.27

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

Note 2: Effective sectional area of 2 position and ABR connection is the value when a check valve is integrated.

Reduced wiring specifications					
Descriptions	T10	T20	T30	T51	T53
Type	Common gland M3 screw type	Multi-connector	D-sub connector	20P Flat cable connector Without power supply terminal	26P Flat cable connector Without power supply terminal
Connector	—	RM21WTP-20S by HIROSE ELECTRIC CO. LTD. 20 pins	D-sub connector (female) 25 pins	MIL-C-83503 Standard compliant crimp socket 20 pins	MIL-C-83503 Standard compliant crimp socket 26 pins

Serial transmission slave unit specifications

Descriptions	Network name	CC-Link (Ver1.10)			DeviceNet Note 1			AS-i (Ver2.0)	
	Slave unit model No.	T8G1	T8G2	T8G7	T8D1	T8D2	T8D7	T8MA	T8M6
Communication speed		156K/625K/2.5M/5M/10Mbps			125K/250K/500Kbps			167Kbps	
Power supply voltage	Unit side	24 VDC $\pm$ 10%			24 VDC $\pm$ 10%			30 VDC $\pm$ 2%	
	Valve side	24 VDC + 10%, -5%			24 VDC + 10%, -5%			24 VDC + 10%, -5%	
	Communication side	—			11 to 25 VDC			—	
Current consumption	Unit side	60mA or less	100mA or less	75mA or less Note 2	70mA or less	90mA or less	80mA or less Note 2	60mA or less Note 2	90mA or less Note 2
	Valve side	15 mA or less (when all points are OFF)			15 mA or less (when all points are OFF)			15 mA or less (when all points are OFF)	
	Communication side	—			50mA or less			—	
Number of inputs/output points		0/16	0/32	16/16	0/16	0/32	16/16	4/4 Note 3	8/8 Note 4
Occupied station, occupied point		1 station			2 byte	4 byte	4 byte	1 station	2 station
Operating indication		Power supply/communication state			Power supply/communication state/valve power supply			Power supply/communication state	
Others		—			Consult with CKD for EDS file. Note 5			Profile: 7, F Note 6	

Descriptions	Network name	CompoBus/S	
	Slave unit model No.	T8C1	T8C6
Communication speed		93.75K/750Kbps	
Power supply voltage	Unit side	24 VDC $\pm$ 10% (communication power supply)	
	Valve side	24 VDC + 10%, -5%	
	Communication side	—	
Current consumption	Unit side	50 mA or less Note 2 (communication power supply)	
	Valve side	15 mA or less (when all points are OFF)	
	Communication side	—	
Number of inputs/output points		0/16	8/8
Occupied station, occupied point		—	
Operating indication		Power supply/communication state/valve power supply	
Others		—	

- Note 1: Compatible with other DeviceNet complaint networks (DLNK, etc.).
- Note 2: If the input block's power supply is common with the unit power supply, calculate with the following equation.
 (Current consumed on unit side) = $\square^*$ + (35 mA x number of input blocks) + (total of current consumed in connected sensors)
 $\square^*$ T8G7: 60 mA, T8D7: 80 mA, T8MA: 60 mA, T8M6: 90 mA, T8C6: 50 mA
 Note that the sensors must be selected so that the current consumed on the unit side is 600 mA or less (for T8G7, T8D7), or 250 mA or less (for T8MA, T8M6, T8C6).
- Note 3: When using the 4-point input / 4-point output slave unit (T8MA), all outputs are dedicated for the valve.
- Note 4: Two addresses must be set for the 8-point input / 8-point output type slave unit (T8M6). (The automatic address setting function cannot be used.)
- Note 5: EDS file: Text file of parameters for communicating with each company's master.
- Note 6: Profile: Definition of slave I/O data and parameter meanings when communicating with master. (Defined in AS-i specifications.)

I/O block specifications

• Input block

Model No.	NW4GA2- IN-N-K	NW4GA2- IN-N-B	NW4GA2- IN-P-K	NW4GA2- IN-P-B
Descriptions				
Number of inputs	4 points			
Rated input voltage	24 VDC			
Rated input current	7mA			
ON voltage	15VDC and over (between each input terminal and V)		15VDC and over (between each input terminal and G)	
OFF voltage/OFF current	5 VDC or less (between each input terminal and V)/1.5mA or less		5 VDC or less (between each input terminal and G)/1.5mA or less	
Input type	Sink type		Source type	
Feed power supply	Common with unit power supply	External power supply	Common with unit power supply	External power supply
Operating indication	Power supply/input status			

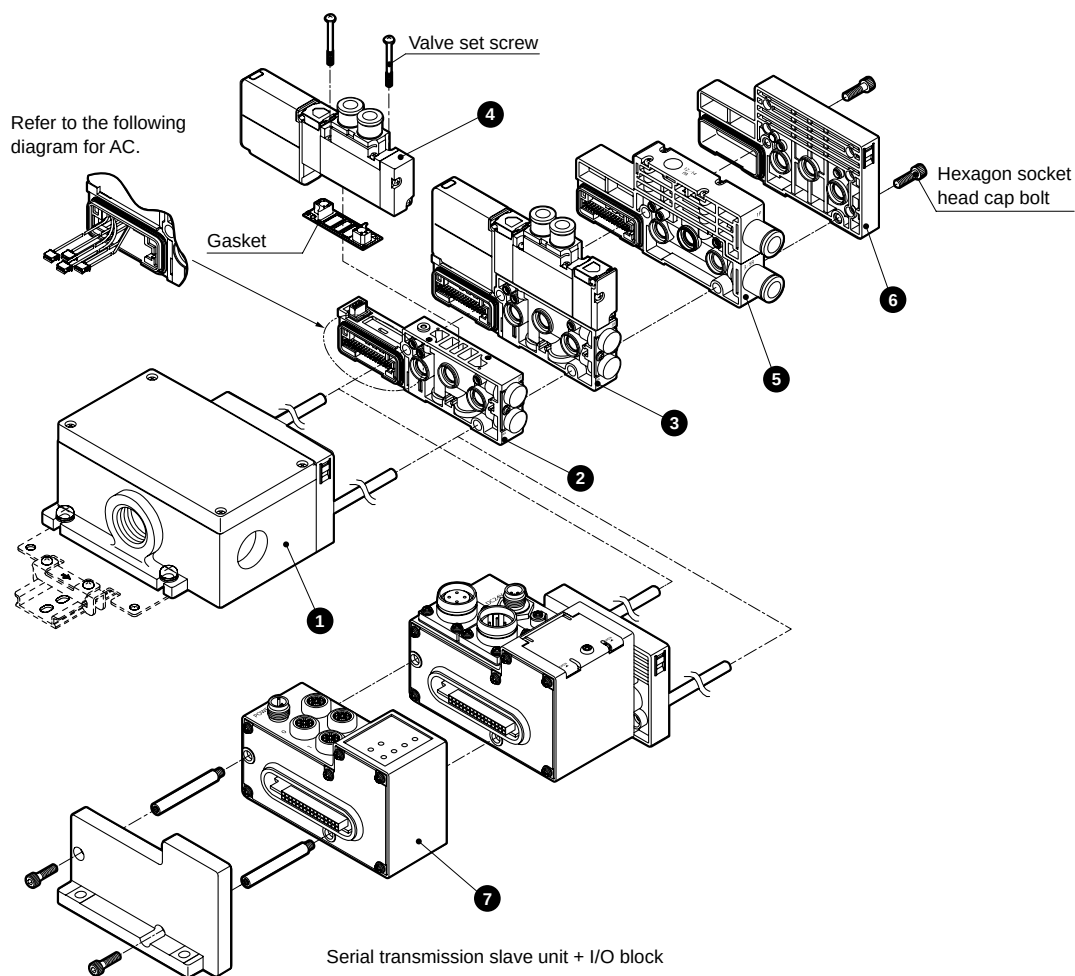
Note: Refer to page 171 for model No.

• Output block

Model No.	NW4GA2-ONT-N-B	NW4GA2-OUT-P-B
Descriptions		
Output points	4 points	
Rated voltage	24 VDC	
Maximum load current	1A/1point (3A/common)	
Residual voltage	1.5V or less	
Type of output	Sink type	Source type
Protection circuit	Over current protection/reverse connection protection	
Fuse	Power supply for external load: 24 VDC, 5A (can be replaced)	
Operating indication	Power supply/output state	

Note: Refer to page 171 for model No.

Manifold components explanation and parts list



Main parts list (refer to page 165 to 172 for details)

No.	Component name	Model No. (example)	No.	Component name	Model No. (example)
1	Wiring block	NW4GA2-T10	5	Supply/exhaust block	NW4G2-Q-10N
2	Discrete valve block	NW4GA2-V1	6	End block R	NW4G2-ER
3	Discrete valve block with solenoid valve	NW4GA220-C8N-H-3	7	I/O block	NW4GA2-IN-N-B
4	Discrete solenoid valve for manifold mounting	W4GA219-C8N-H-3			

Mass (for DC)

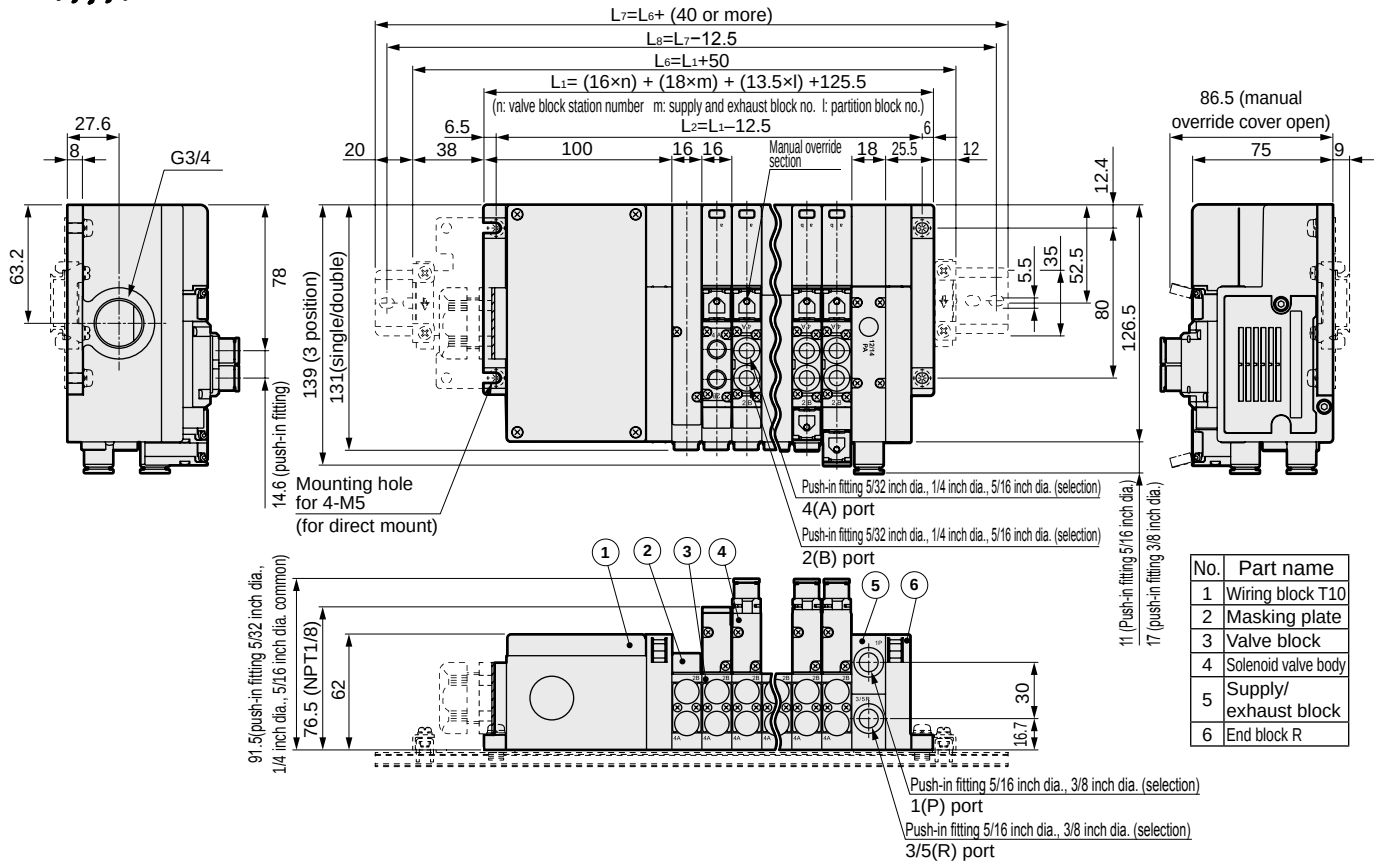
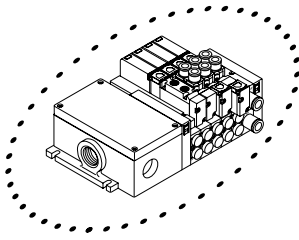
NW4GA2			(g)		
Block type	Mass	Block type	Mass	Block type	Mass
Valve block with solenoid valve	NW3GA210-***	181	Valve block with masking plate	NW4GA2-MP _S	102
	NW3GA2110-***	181	Wiring block (serial transmission slave unit)	NW4GA2-T8*	430
	NW4GA210-***	186	I/O block (serial transmission slave unit)	NW4GA2- ^{IN} _{OUT} - ^N _K - ^B	220
	NW4GA220-***	202			
	NW4GA2 ³ / ₅ 0-***	209			

Common			(g)		
Block type	Mass	Block type	Mass	Block type	Mass
Supply/exhaust block	NW4G2-Q-*	137	Wiring block	NW4G2-T10	423
	NW4G2-QK-*	140		NW4G2-T20	490
	NW4G2-QZ-*	137		NW4G2-T30	370
	NW4G2-QKZ-*	143		NW4G2-T5*	367
End block	NW4G2-ER	91	Supply spacer	W4G2-P(K)-*	60
	NW4G2-EXR	96	Exhaust spacer	W4G2-R-*	60
			Spacer type pilot check valve	W4G2-PC-M	183
			Individual supply spacer with in-stop valve	W4G2-PIS-*	115

Dimensions

● MW4GA2

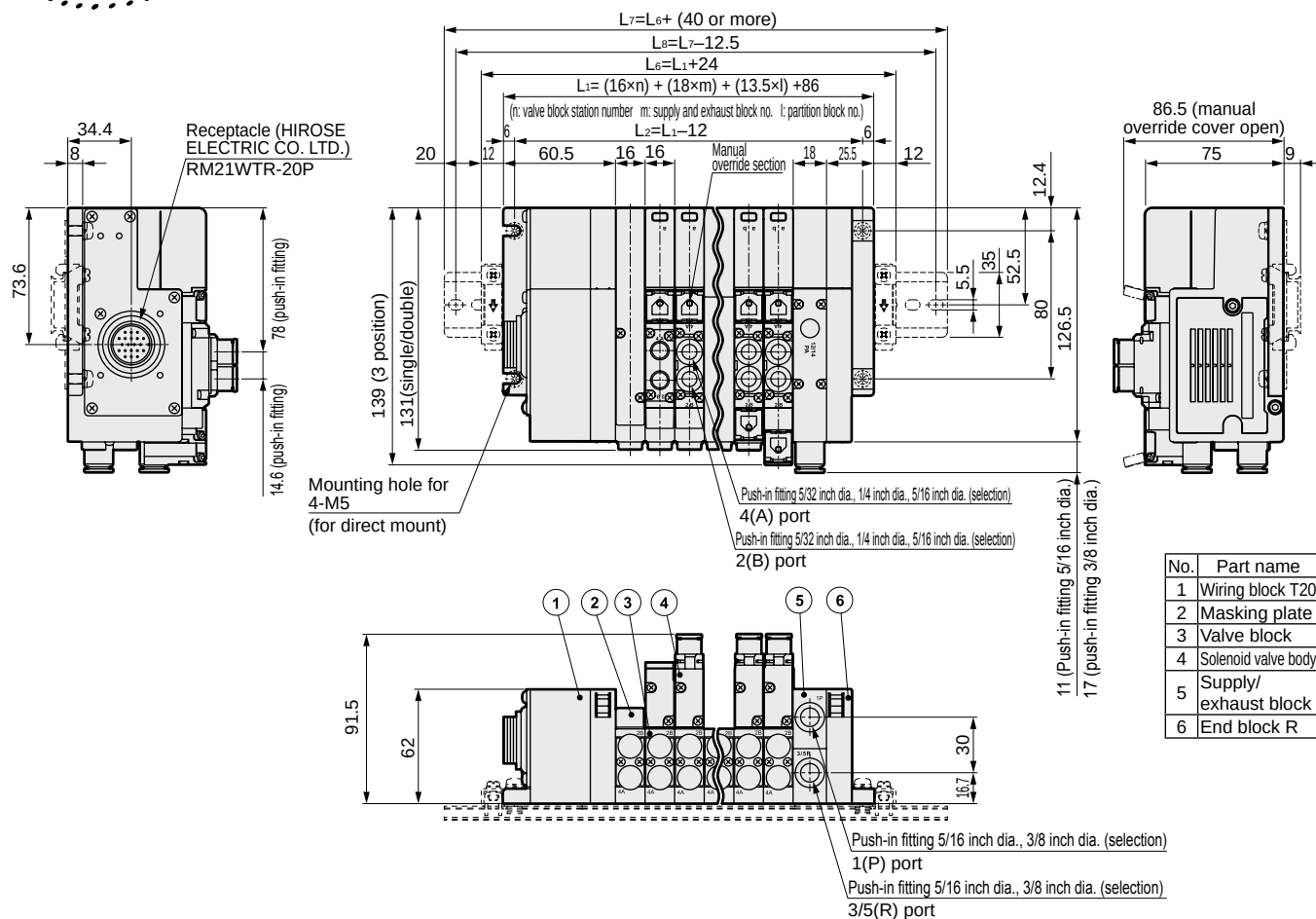
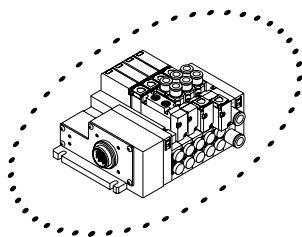
Common gland (T10)



Dimensions

● MW4GA2

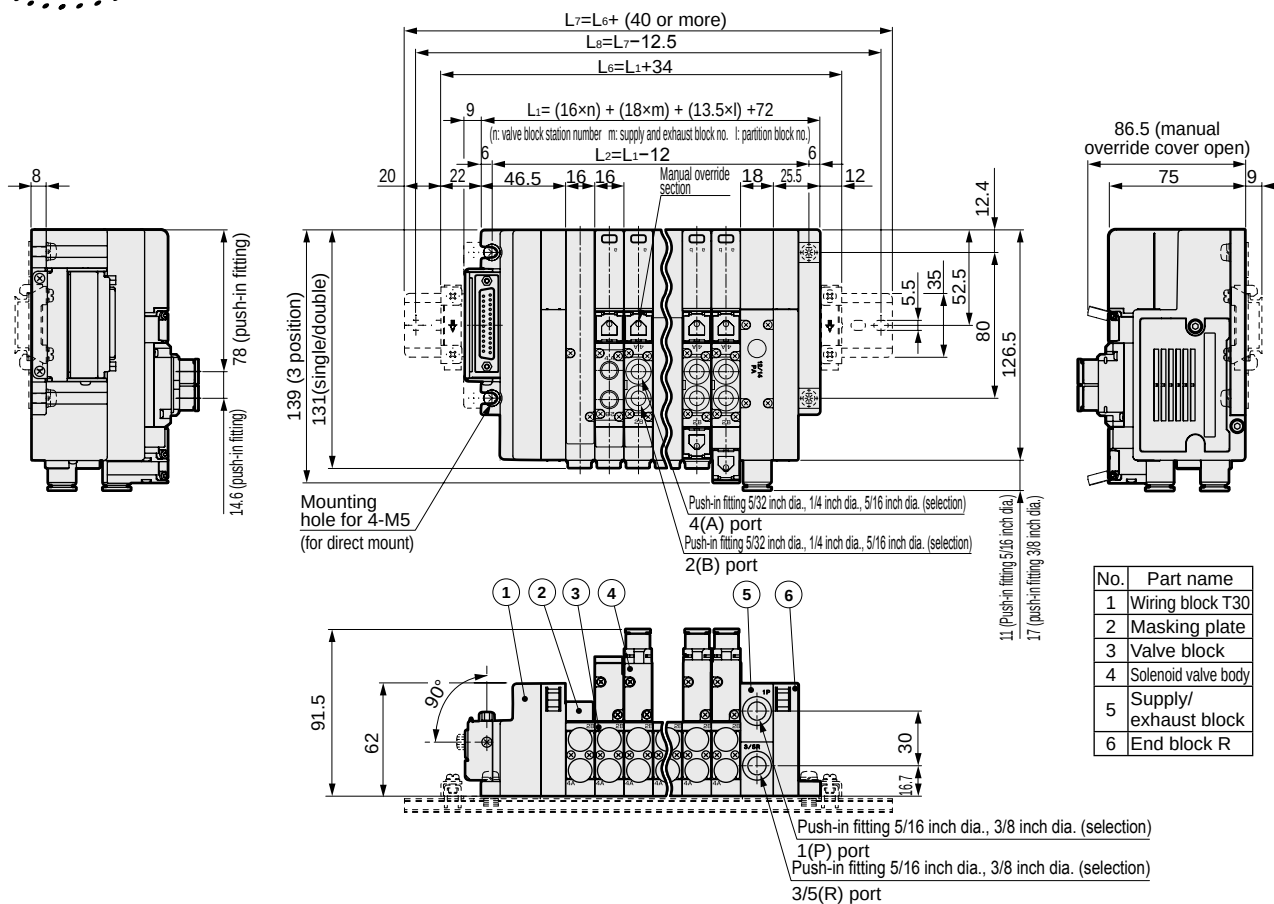
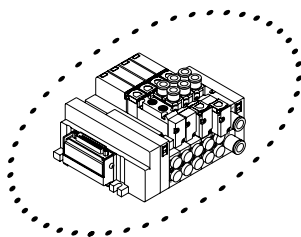
Multi-connector (T20)



Dimensions

● MW4GA2

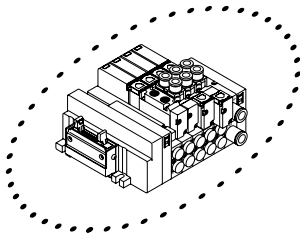
D-sub connector (T30)



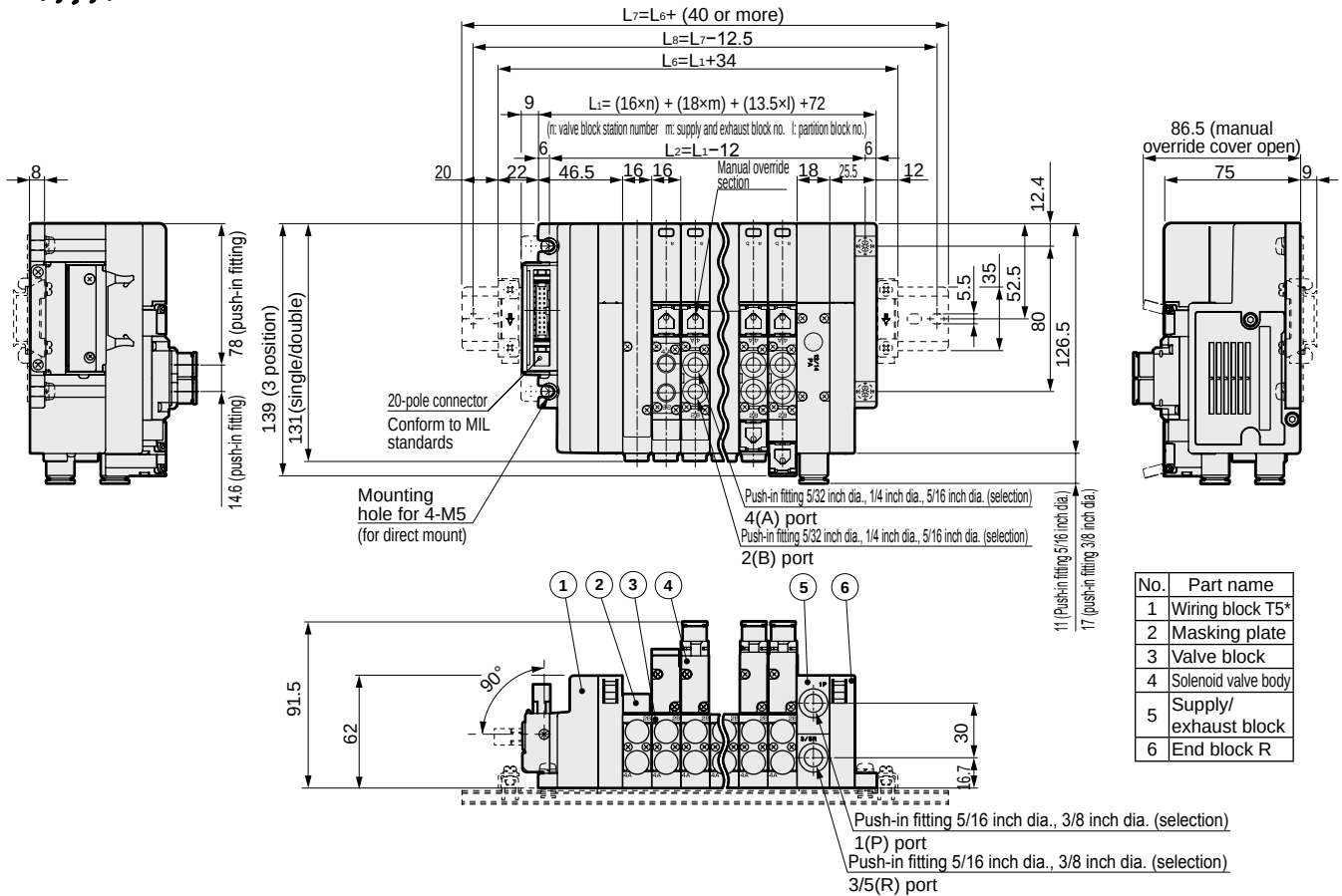
Dimensions

● MW4GA2

Flat cable connector (T5*)



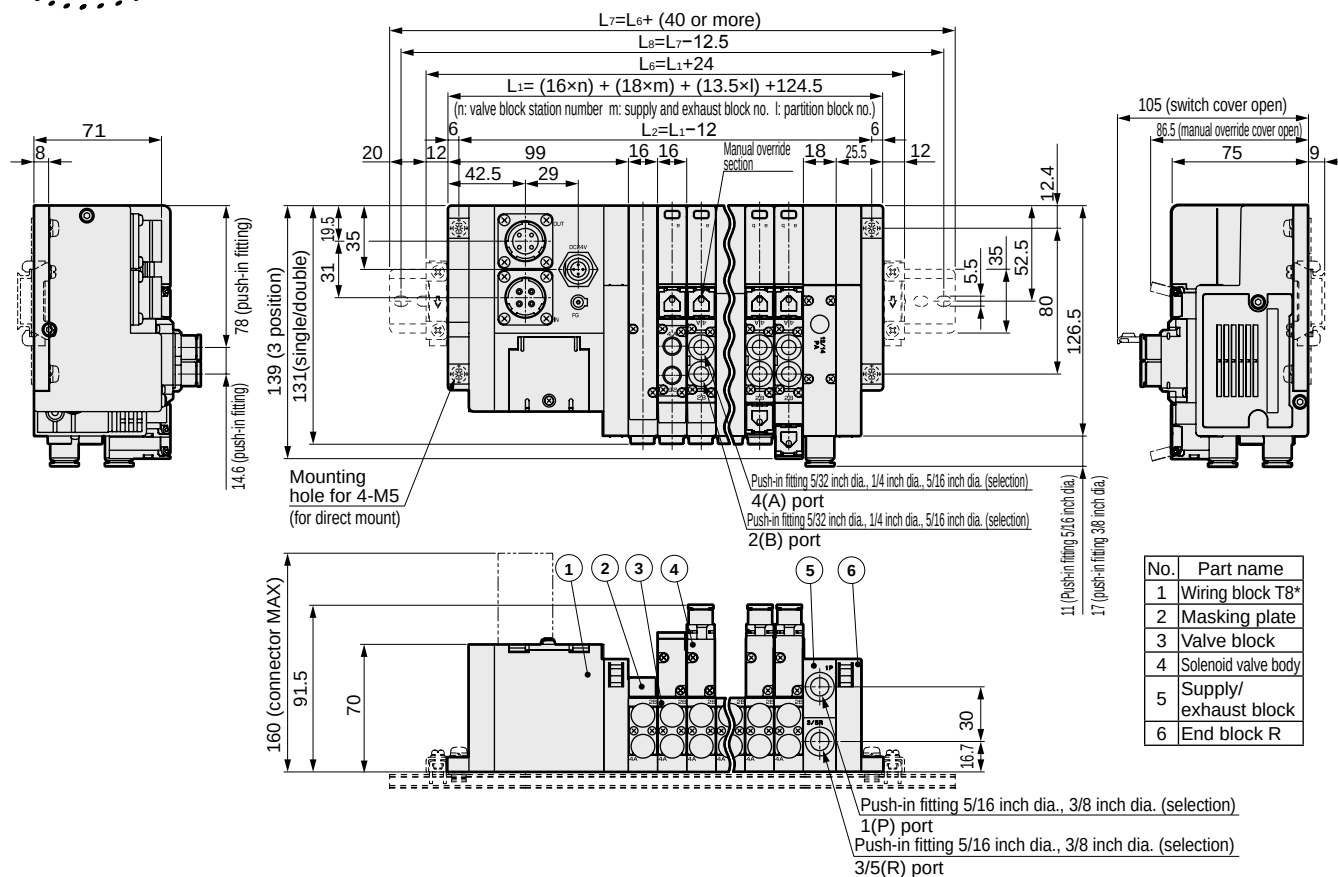
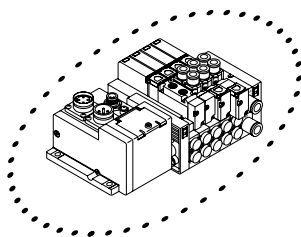
* This figure shows T51 (20 pins).
T53 (26 pins) flat cable connectors are also available.
The dimensions are the same as T51.



Dimensions

● MW4GA2

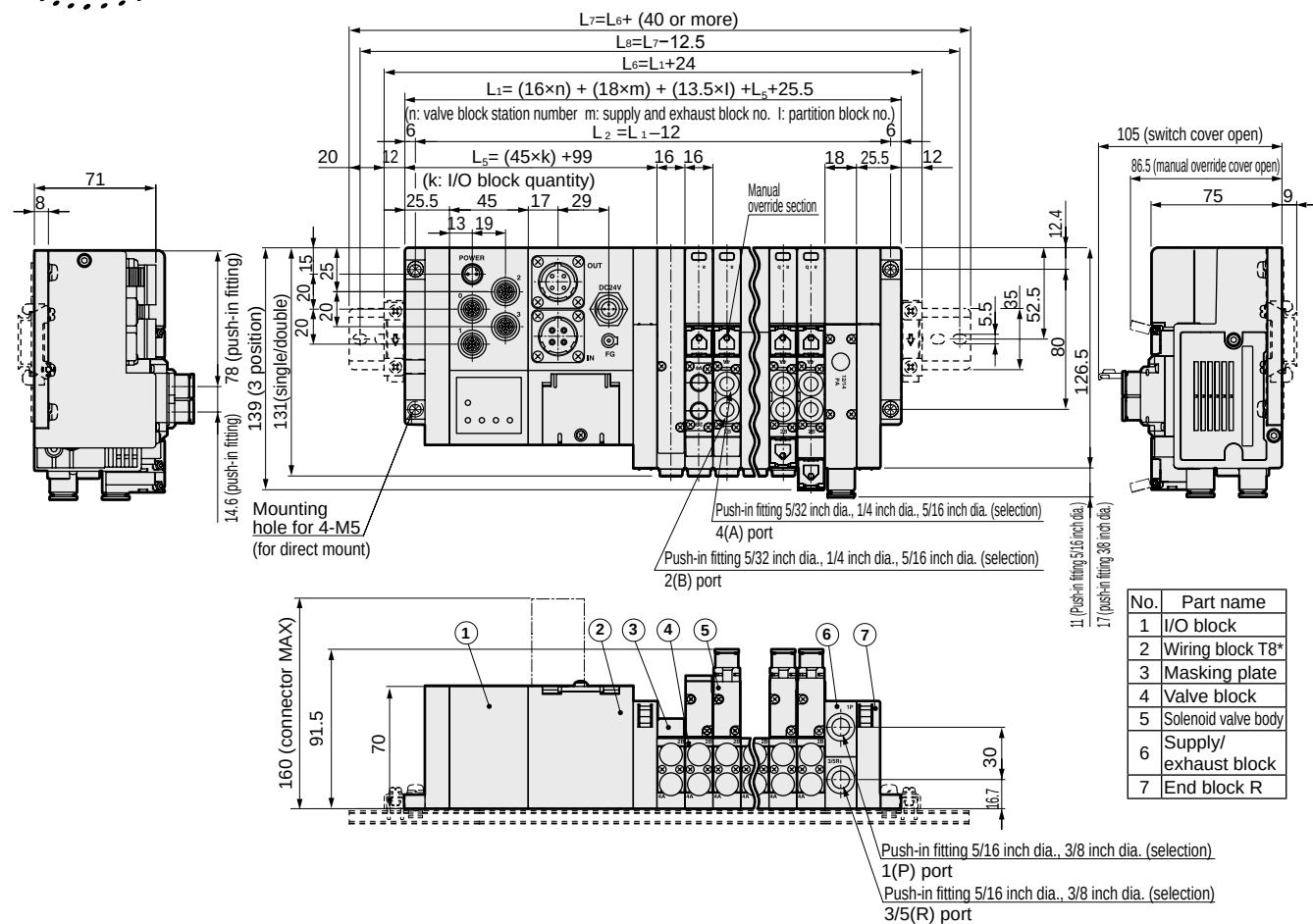
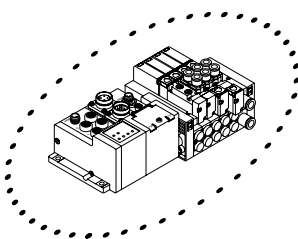
Serial transmission CC-Link (T8G*)



Dimensions

● MW4GA2

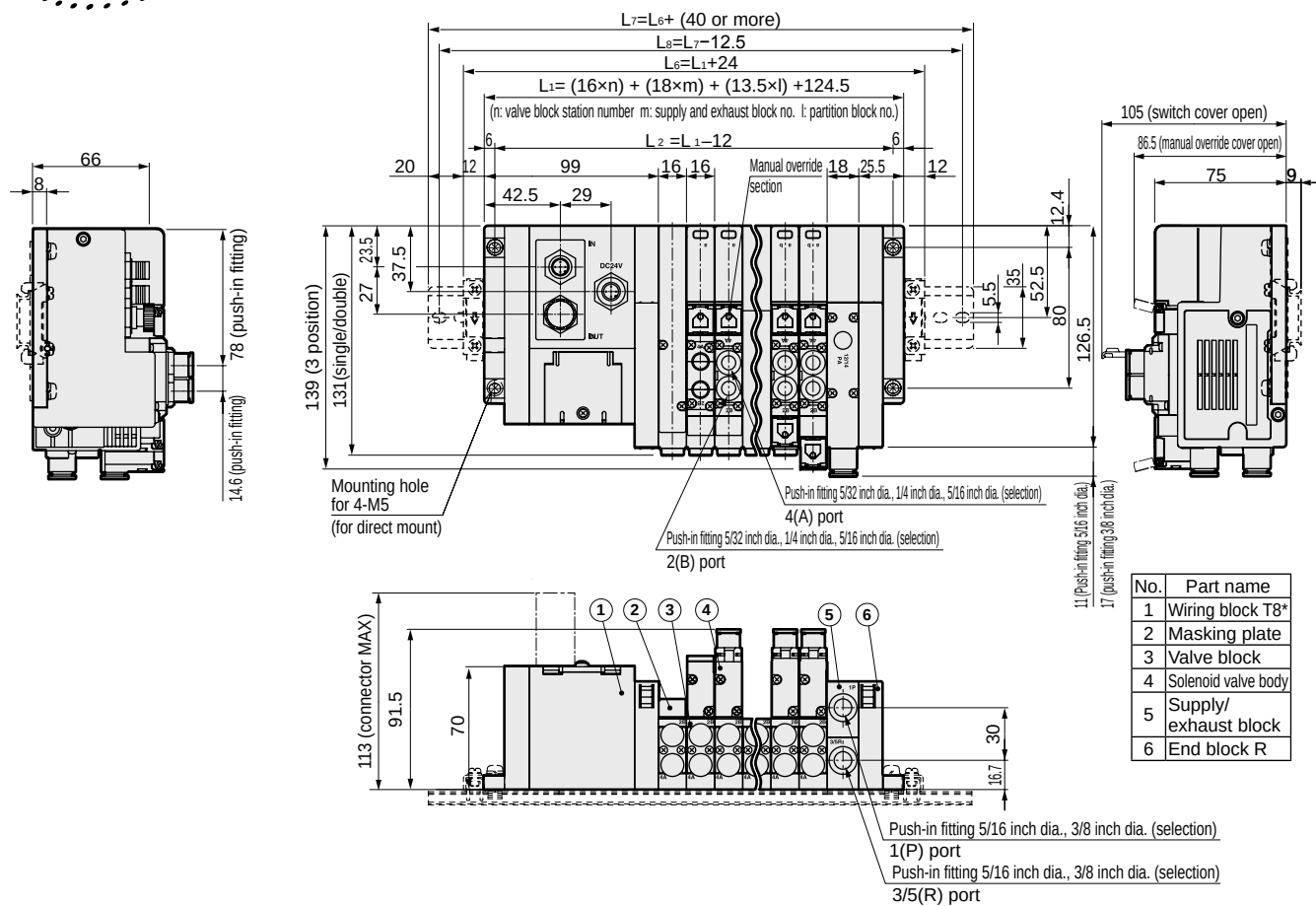
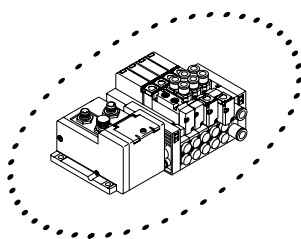
Serial transmission CC-Link (T8G*) + I/O block



Dimensions

● MW4GA2

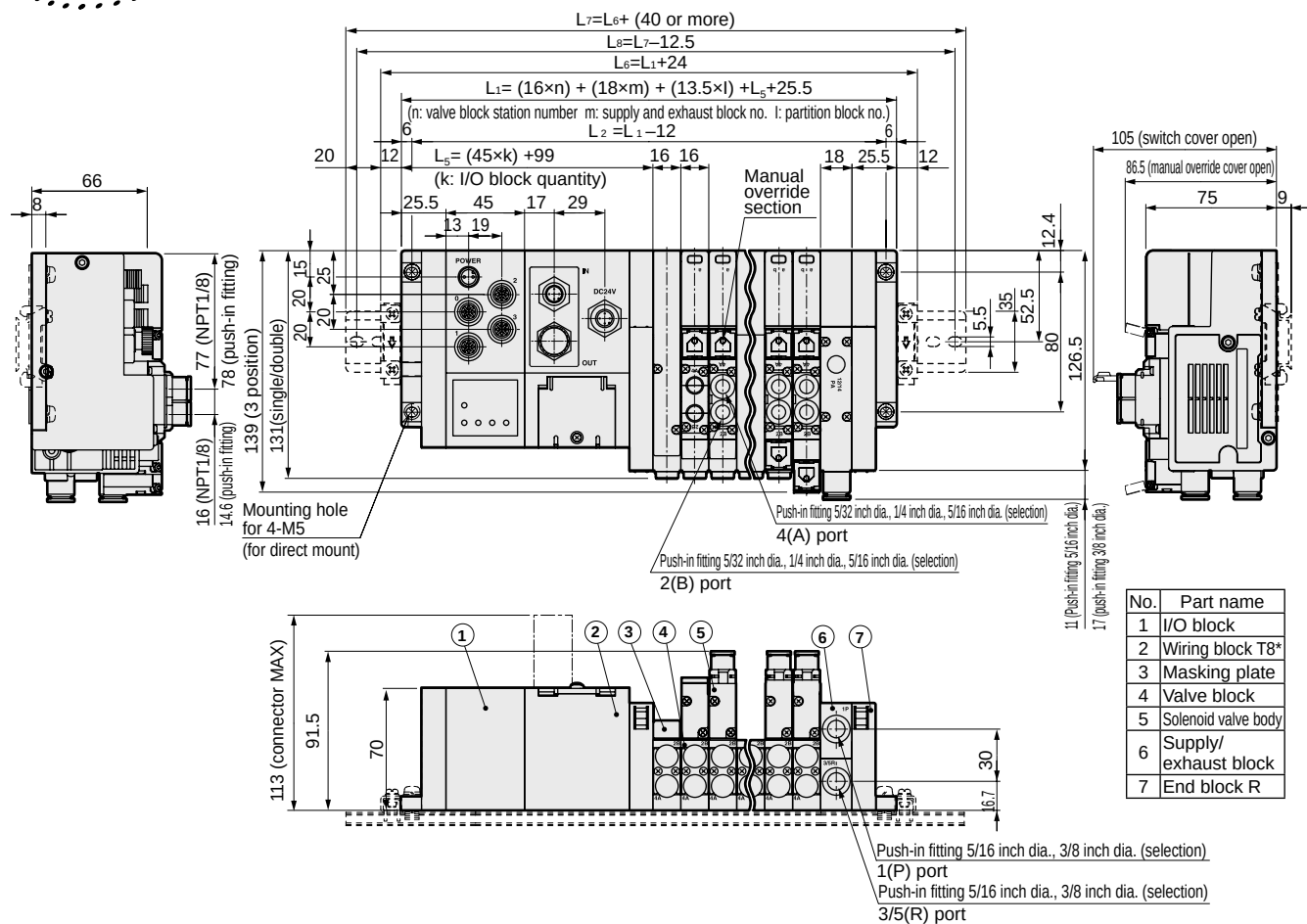
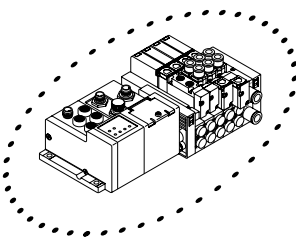
Serial transmission DeviceNet (T8D*)



Dimensions

- MW4GA2
Serial transmission slave unit DeviceNet (T8D*) + I/O block

Serial transmission slave unit DeviceNet (T8D*) + I/O block



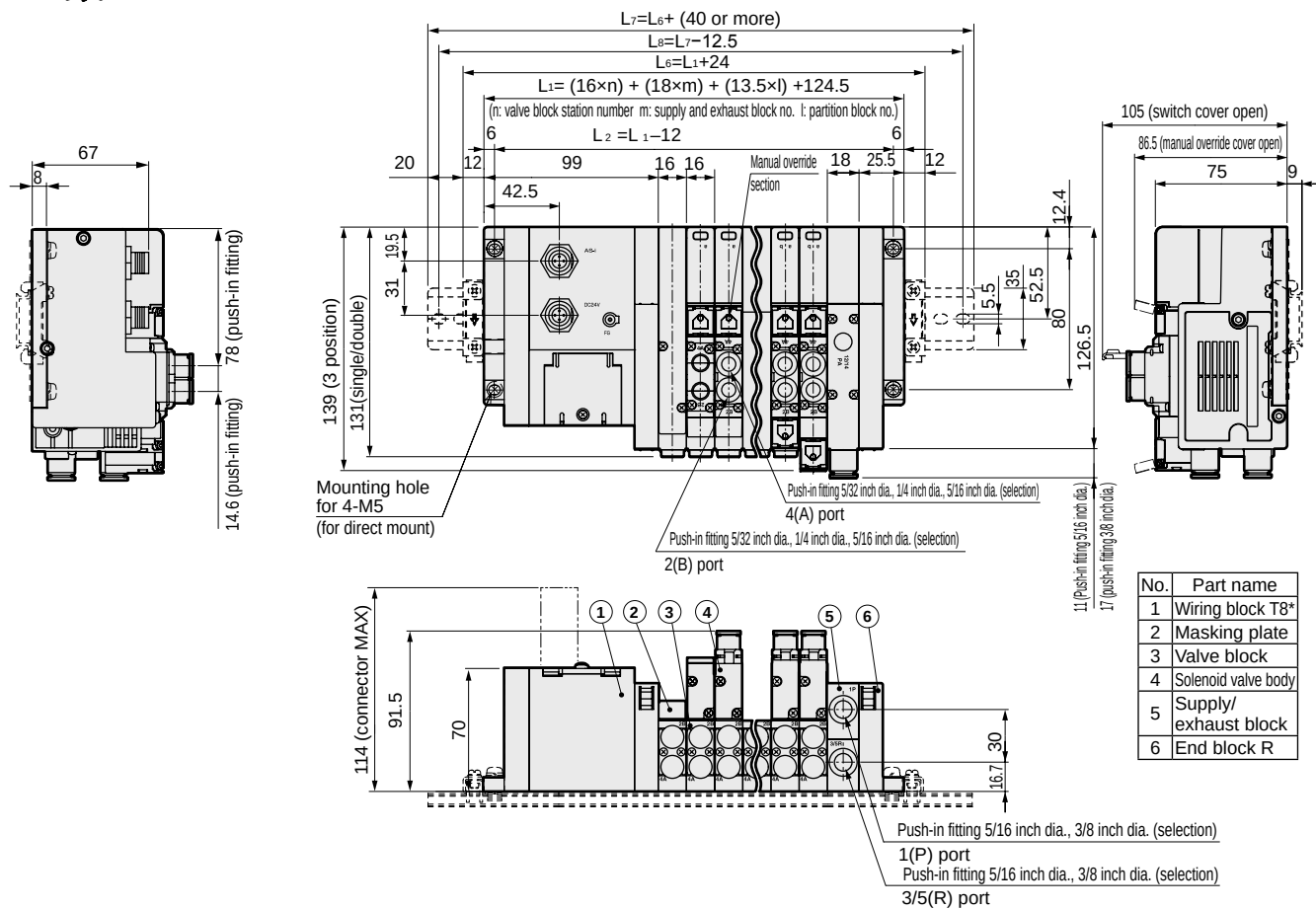
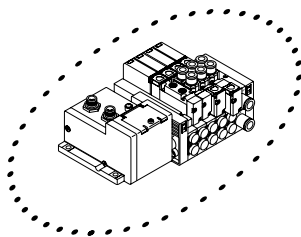
No.	Part name
1	I/O block
2	Wiring block T8*
3	Masking plate
4	Valve block
5	Solenoid valve body
6	Supply/ exhaust block
7	End block R

Dimensions

● MW4GA2

Serial transmission AS-i (T8M*)

Serial transmission CompoBus/S (T8C*)



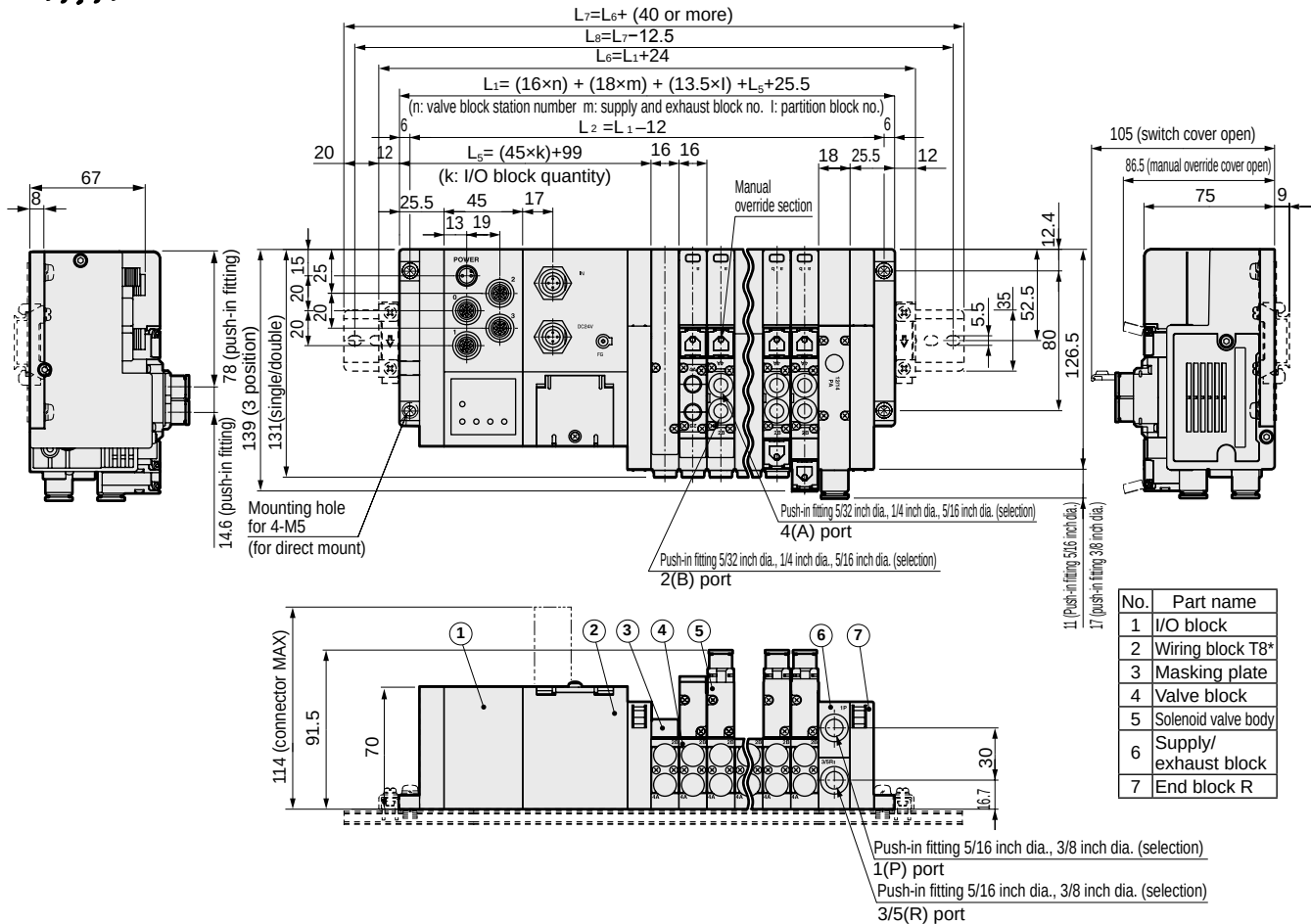
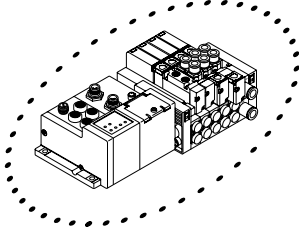
No.	Part name
1	Wiring block T8*
2	Masking plate
3	Valve block
4	Solenoid valve body
5	Supply/exhaust block
6	End block R

Dimensions

●MW4GA2

Serial transmission AS-i (T8M*) + I/O block

Serial transmission CompoBus/S (T8C*) + I/O block



MEMO

MW4GB2-T1•2•3•5•8 Series

● Applicable cylinder bore size: ø20 to ø80

Features

- IP65 protection structure
- Life 60 million times or more

RoHS

CAD

CE



Catalog No. CB-023SA

How to order

MW4GB2-T1•2•3•5 Series

● Manifold model No.

MW4GB2 1 0 - C8N - T10 W H D - 5 - 3 - K1

● Discrete valve block with solenoid valve

NW4GB2 1 0 - C8N - W H - 3 - K1

● Discrete solenoid valve (NW4GB2 and NW4GZ2 Note 1)

W4GB2 1 9 00 H - 3 - K1
A B C D E F G H I J

⚠ Cautions for model No. selection

Fill out "manifold specifications".

Note 1: The discrete solenoid valve used with the NW4GZ2 discrete valve block with solenoid valve is the same as that for the W4GB2*9.

Note 2: A or B port plug specifications (*NC/*NO) are available only for the 2-position single.

Specify P•R port size with the supply and exhaust block.

Note 3: When using AC, if the specifications may change, select the valve block with masking plate as a spare block.

Note 4: Specify the spacer mounting location and quantity in manifold specifications. Stacked spacer assembly is not available. Combination with the masking plate is not available.

Note 5: Blank.....Wired according to the type of installed valve.

W.....All wired for the double solenoid regardless of the type of valve used.

W does not need to be designated when the single solenoid is not mounted.

However, for multi connector T20 and AC voltage, only double wiring is available. Double wiring will be selected automatically even if "W" is not selected.

Note 6: The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 7: The check valve specifications (H) are not available for the 3-position all port block or PAB connection.

Note 8: Port P has an integrated filter.

Note 9: Combination with the outside pilot (K) is not available.

Ozone specifications

Coolant proof specifications

Ozone specifications can be selected with option "A" in No.

Ⓔ for How to Order on pages 150 and 151.

For LiB specifications (Catalog No.CC-947A)

● Material for components limited to allow for LiB manufacturing process

**- voltage - P40

A Model No.

Manifold	Discrete valve block with solenoid valve	Discrete solenoid valve
		
MW4GB2	NW4GB2	W4GB2

Symbol	Descriptions	MW4GB2	NW4GB2	W4GB2
Ⓔ 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	●	●	●
8	Mix manifold (when there are multiple solenoid types)	●		

Ⓔ Connection diameter (A•B port) Note 2				
C6N	1/4 inch dia. push-in fitting	●	●	
C8N	5/16 inch dia. push-in fitting	●	●	
CXN	Push-in fitting mix	●		

Ⓔ Electrical connections				
Blank	Connector relay circuit board specifications for DC.		●	
2 to 8	Select the AC cable length from page 166.		●	

Ⓔ Reduced wiring (light and surge suppressor provided as standard)				
Refer to the next page for reduced wiring.				

Ⓔ Terminal and connector pin array				
Blank	Standard wiring	Note 5	●	●
W	Double wiring	Note 5	●	●

Ⓔ Option				
Blank	No option		●	●
M	Non-locking manual override	Note 6	●	●
M7	Manual override with off function	Note 6	●	●
H	Check valve	Note 7	●	●
K	Outside pilot		●	
A	Ozone/coolant proof		●	●
F	A•B port filter integrated	Note 8	●	●
Z1	Supply spacer	Note 4	●	
Z3	Exhaust spacer	Note 4	●	
Z6	Spacer type pilot check valve	Note 4, 9	●	
Z8	Individual supply spacer with in-stop valve	Note 4, 9	●	

Ⓔ Mount type				
Blank	Direct mount type		●	
D	DIN rail mount type		●	

Ⓔ Station no.				
2 to 18	2 stations to 18 stations (Differs depending on the reduced wiring connection specifications. Check the individual specifications.)		●	

Ⓔ Voltage				
1	100 VAC (rectified bridge integrated)		●	●
3	24 VDC		●	●
4	12 VDC		●	●

is not available.

MW4GB2-T8 Series

• Manifold model No.

MW4GB2 ① 0-C8N - T8G1 W H D - ⑤ - ③ -K1

• Discrete valve block with solenoid valve

NW4GB2 ① 0-C8N - ① W H ——— ③ -K1

• Discrete solenoid valve (NW4GB2 and NW4GZ2 Note 1)

W4GB2 ① 9 ② 00 ——— ③ H ——— ③ -K1

A B C D E F G H I J

⚠ Cautions for model No. selection

Fill out "manifold specifications".

- Note 1: The discrete solenoid valve used with the NW4GZ2 discrete valve block with solenoid valve is the same as that for the W4GB2*9.
- Note 2: A or B port plug specifications (*NC/*NO) are available only for the 2-position single. Specify P•R port size with the supply and exhaust block.
- Note 3: Blank.....Wired according to the type of installed valve.
W.....All wired for the double solenoid regardless of the type of valve used.
W does not need to be designated when the single solenoid is not mounted.
- Note 4: The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.
- Note 5: The check valve specifications (H) are not available for the 3-position all port block or PAB connection.
- Note 6: Port P has an integrated filter.
- Note 7: Designate the input/output block's input/output format (sink/source) and power supply type (slave unit common/external) with the manifold specifications (pages 173 to 178).
- Note 8: Specify the spacer mounting location and quantity in manifold specifications.
Stacked spacer assembly is not available.
Combination with the masking plate is not available.
- Note 9: Combination with the outside pilot (K) is not available.
- Note 10: 100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

A Model No.		
Manifold	Discrete valve block with solenoid valve	Discrete solenoid valve
		
MW4GB2	NW4GB2	W4GB2

Symbol	Descriptions	MW4GB2	NW4GB2	W4GB2
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	●	●	●
8	Mix manifold (when there are multiple solenoid types)	●		
C Connection diameter (A•B port) Note 2				
C6N	1/4 inch dia. push-in fitting	●	●	
C8N	5/16 inch dia. push-in fitting	●	●	
CXN	Push-in fitting mix	●		
D Electrical connections				
Blank	Connector relay circuit board specifications for DC.		●	
E Reduced wiring (light and surge suppressor provided as standard)				
Refer to the next page for reduced wiring.				
F Terminal and connector pin array				
Blank	Standard wiring Note 3	●	●	
W	Double wiring Note 3	●	●	
G Option				
Blank	No option	●	●	●
M	Non-locking manual override Note 4	●	●	●
M7	Manual override with off function Note 4	●	●	●
H	Check valve Note 5	●	●	●
K	Outside pilot	●		
A	Ozone/coolant proof	●	●	●
F	A/B port filter integrated Note 6	●	●	
Y**	I/O block Note 7 (For **, designate the number which indicates the input/output block combination given in Table 1 (Input/output block combination table) on the next page.)	●		
Z1	Supply spacer Note 8	●		
Z3	Exhaust spacer Note 8	●		
Z6	Spacer type pilot check valve Note 8	●		
Z8	Individual supply spacer with in-stop valve Note 8, 9	●		
H Mount type				
Blank	Direct mount type	●		
D	DIN rail mount type	●		
I Station no.				
2 to 18	2 stations to 18 stations (Differs depending on the reduced wiring connection specifications. Check the individual specifications.)	●		
J Voltage				
3	24 VDC Note 10	●	●	●
is not available.				

Manifold common specifications

Descriptions	MW4GB2
Manifold type	Block manifold
Supply and exhaust method	Common supply/common exhaust (check valve integrated)
Pilot exhaust method	Inside pilot Main valve/pilot valve common exhaust (pilot exhaust check valve integrated)
	Outside pilot Main valve and pilot valve individual exhaust
Piping direction	Sub-base side porting Sub-base bottom porting
Type of valve and operation method	Pilot-operated soft spool valve
Use fluid	Compressed air
Maximum working pressure MPa	0.7
Minimum working pressure MPa	0.2 Note 4
Proof pressure MPa	1.05
Ambient temperature °C	-5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	Locking/non-locking common type
Lubrication Note 1	Not required
Degree of protection Note 2	Dust/jet-proof (IP65) Note 3
Vibration/shock m/s ²	49 or less / 294 or less
Use atmosphere	Not suitable for use in areas containing corrosive gas

Electric specifications

Descriptions	M4GB2
Rated voltage V	DC 12, 24
	AC 100
Rated voltage fluctuation range	±10%
Holding current A	24 VDC 0.025
	12 VDC 0.050
	100 VAC 0.012
Electric power consumption W Note 5	24 VDC 0.6
	12 VDC 0.6
Apparent power VA Note 6	100 VAC 1.2
Thermal class	B

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.

Excessive lubrication will lead to unstable operation.

Note 2: IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test.

Note 3: The D-sub connector (T30) and flat cable connector (T5*) have a dust proof protective structure. Check that water drops or oil, etc., do not come into contact.

Note 4: The working pressure range is 0 to 0.7 MPa when the outside pilot (option symbol: K) is selected. Use an outside pilot pressure between 0.2 and 0.7 MPa.

Note 5: Surge suppressor and indicator are provided as standard.

Note 6: The 100 VAC setting is not available for the multi-connector, D-sub connector or flat cable connector connection specifications. 100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

Individual specifications

Descriptions		MW4GB2											
		T10	T20	T30	T51	T53	T8G1 T8D1	T8G2 T8D2	T8G7 T8D7	T8MA	T8M6	T8C1	T8C6
Maximum station number	Standard wiring	18	—	18	18	18	16	18	16	4	8	16	8
	double wiring	9	8	12	9	12	8	16	8	2	4	8	4
Maximum solenoid number		18	16	24	18	24	16	32	16	4	8	16	8
Connection diameter	A•B port	Push-in fitting 5/32 inch dia., 1/4 inch dia., 5/16 inch dia., NPT1/8											
	P•R port	Push-in fitting 5/16 inch dia., 3/8 inch dia.											

Descriptions			MW4GB2	
			When turned ON	When turned OFF
Response time ms	2-position	Single	22	24
		Double	26	—
	3-position		25	35

Note: Response time is the value at an air supply of 0.5 MPa, 20°C, and oil-free. The value will change based on quality of pressure and oil.

Flow characteristics

Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
MW4GB2 MW4GZ2	2-position		2.4	0.36	1.7	0.25
	3-position	All ports closed	2.1	0.37	2.2	0.22
		ABR connection	2.2	0.35	1.7	0.25
		PAB connection	2.3	0.32	2.3	0.24

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

Note 2: Effective sectional area of 2 position and ABR connection is the value when a check valve is integrated.

Reduced wiring specifications

Descriptions	T10	T20	T30	T51	T53
Type	Common gland M3 screw type	Multi-connector	D-sub connector	20P Flat cable connector without power supply terminal	26P Flat cable connector without power supply terminal
Connector	—	RM21WTP-20S by HIROSE ELECTRIC CO. LTD. 20 pins	D-sub connector (female) 25 pins	MIL-C-83503 Standard compliant crimp socket 20 pins	MIL-C-83503 Standard compliant crimp socket 26 pins

Serial transmission slave unit specifications

Descriptions	Network name	CC-Link (Ver1.10)			DeviceNet Note 1			AS-i (Ver2.0)	
	Slave unit model No.	T8G1	T8G2	T8G7	T8D1	T8D2	T8D7	T8MA	T8M6
Communication speed		156K/625K/2.5M/5M/10Mbps			125K/250K/500Kbps			167Kbps	
Power supply voltage	Unit side	24 VDC ± 10%			24 VDC ± 10%			30 VDC ± 2%	
	Valve side	24 VDC + 10%, -5%			24 VDC + 10%, -5%			24 VDC + 10%, -5%	
	Communication side	—			11 to 25 VDC			—	
Current consumption	Unit side	60mA or less	100mA or less	75mA or less Note 2	70mA or less	90mA or less	80mA or less Note 2	60mA or less Note 2	90mA or less Note 2
	Valve side	15 mA or less (when all points are OFF)			15 mA or less (when all points are OFF)			15 mA or less (when all points are OFF)	
	61%	—			50mA or less			—	
Number of inputs/output points		0/16	0/32	16/16	0/16	0/32	16/16	4/4 Note 3	8/8 Note 4
Occupied station, occupied point		1 station			2 byte	4 byte	4 byte	1 station	2 station
Operating indication		Power supply/communication state/valve power supply			Power supply/communication state/valve power supply			Power supply/communication state	
Others		—			Consult with CKD for EDS file. Note 5			Profile: 7, F Note 6	

Descriptions	Network name	CompoBus/S	
	Slave unit model No.	T8C1	T8C6
Communication speed		93.75K/750Kbps	
Power supply voltage	Unit side	24 VDC ± 10% (communication power supply)	
	Valve side	24 VDC + 10%, -5%	
	Communication side	—	
Current consumption	Unit side	50 mA or less Note 2 (communication power supply)	
	Valve side	15 mA or less (when all points are OFF)	
	Communication side	—	
Number of inputs/output points		0/16	8/8
Occupied station, occupied point		—	
Operating indication		Power supply/communication state/valve power supply	
Others		—	

Note 1: Compatible with DeviceNet complaint networks (DLNK, etc.).

Note 2: If the input block's power supply is common with the unit power supply, calculate with the following equation.

(unit side current consumption) = □ + (35mA × input block no.) + (sum of internal current consumption of connected sensors)

□ T8G7: 60 mA, T8D7: 80 mA, T8MA: 60 mA, T8M6: 90 mA, T8C6: 50 mA

However, select a sensor so that unit side current consumption will be 600 mA or less (for T8D7, T8D7), or 250 mA or less (for T8MA, T8M6, T8C6).

Note 3: When using the 4-point input/4-point output slave unit (T8MA), all outputs are dedicated for the valve.

Note 4: Two addresses must be set for the 8-point input/8-point output type slave unit (T8M6). The automatic address setting function cannot be used.

Note 5: EDS file: Text file of parameters for communicating with each company's master.

Note 6: Profile: Definition of slave I/O data and parameter meanings when communicating with master. Defined in AS-i specifications.

I/O block specifications

● Input block

Model No.	NW4GB2-IN-N-K	NW4GB2-IN-N-B	NW4GB2-IN-P-K	NW4GB2-IN-P-B
Descriptions				
Number of inputs	4 points			
Rated input voltage	24 VDC			
Rated input current	7mA			
ON voltage	15 VDC and over (between each input terminal and V)		15 VDC and over (between each input terminal and G)	
OFF voltage/OFF current	5 VDC or less (between each input terminal and V)/1.5mA or less		5 VDC or less (between each input terminal and G)/1.5mA or less	
Input type	Sink type		Source type	
Feed power supply	Common with unit power supply	External power supply	Common with unit power supply	External power supply
Operating indication	Power supply/input status			

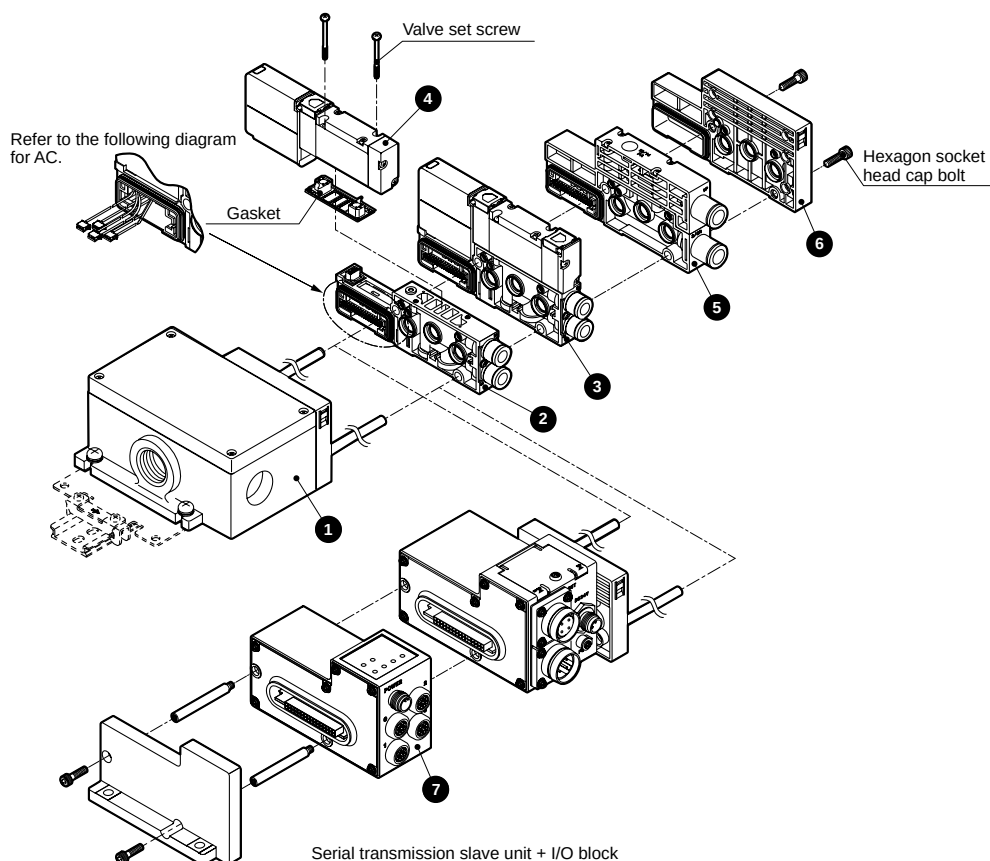
Note: Refer to page 171 for model No.

● Output block

Model No.	NW4GB2-OUT-N-B	NW4GB2-OUT-P-B
Descriptions		
Output points	4 points	
Rated voltage	24 VDC	
Maximum load current	1A/1point (3A/common)	
Residual voltage	1.5V or less	
Type of output	Sink type	Source type
Protection circuit	Over current protection/reverse connection protection	
Fuse	Power supply for external load: 24 VDC, 5A (can be replaced)	
Operating indication	Power supply/output state	

Note: Refer to page 171 for model No.

Manifold components explanation and parts list



Main parts list (refer to page 165 to 172 for details)

No.	Component name	Model No. (example)	No.	Component name	Model No. (example)
1	Wiring block	NW4GB2-T10	5	Supply/exhaust block	NW4G2-Q-10N
2	Discrete valve block	NW4GB2-V1-C8N	6	End block R	NW4G2-ER
3	Discrete valve block with solenoid valve	NW4GB220-C8N-H-3	7	I/O block	NW4GB2-IN-N-B
4	Discrete solenoid valve for manifold mounting	W4GB219-00-H-3			

Reduced wiring volume (DC)

NW4GB2			NW4GZ2			(g)
Block type		Mass	Block type		Mass	
Valve block with solenoid valve	NW4GB210-*.**	177	Valve block with solenoid valve	NW4GB210-*.**	177	
	NW4GB220-*.**	193		NW4GB220-*.**	192	
	NW4GB2 $\frac{3}{5}$ 0-*.**	200		NW4GB2 $\frac{3}{5}$ 0-*.**	199	
Valve block with masking plate	NW4GB2-MP $\frac{3}{5}$ -*	113	Valve block with masking plate	NW4GB2-MP $\frac{3}{5}$ -*	112	
Wiring block (serial transmission slave unit)	NW4GB2-T8*	430	Wiring block (serial transmission slave unit)	NW4GB2-T8*	430	
I/O block (serial transmission slave unit)	NW4GB2- $\frac{IN}{OUT}$ - $\frac{N}{P}$ - $\frac{K}{B}$	220	I/O block (serial transmission slave unit)	NW4GB2- $\frac{IN}{OUT}$ - $\frac{N}{P}$ - $\frac{K}{B}$	220	

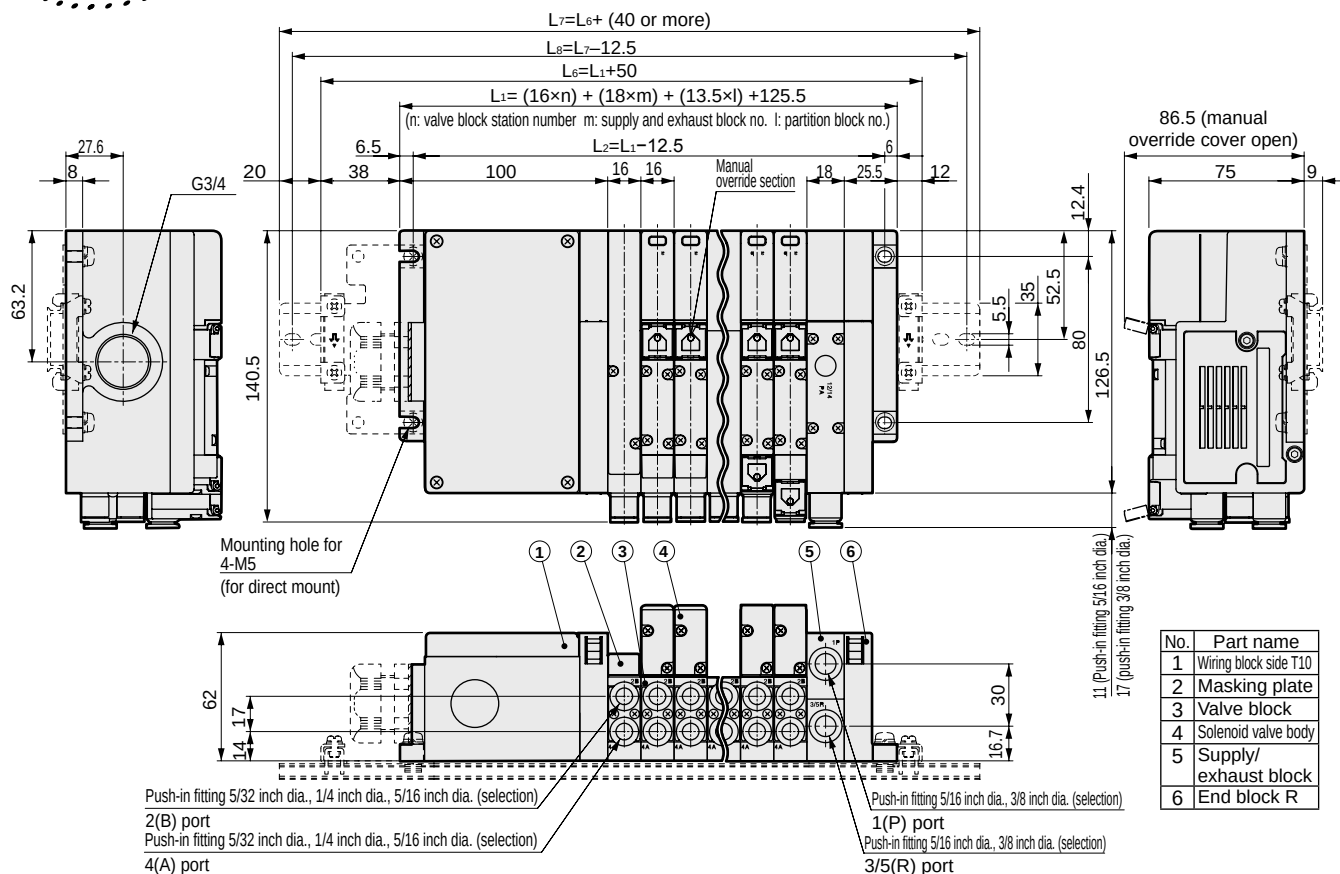
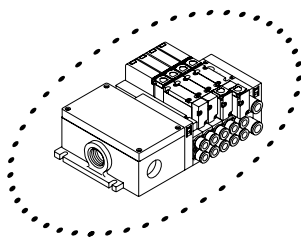
Common

Common			Common			(g)
Block type		Mass	Block type		Mass	
Supply/exhaust block	NW4G2-Q-*	137	Wiring block	NW4G2-T10	423	
	NW4G2-QK-*	140		NW4G2-T20	490	
	NW4G2-QZ-*	137		NW4G2-T30	370	
	NW4G2-QKZ-*	143		NW4G2-T5*	367	
End block	NW4G2-ER	91	Supply spacer	W4G2-P(K)-*	60	
	NW4G2-EXR	96	Exhaust spacer	W4G2-R-*.**	60	
			Spacer type pilot check valve	W4G2-PC-M	183	
			Individual supply spacer with in-stop valve	W4G2-PIS-*	115	

Dimensions

● MW4GB2

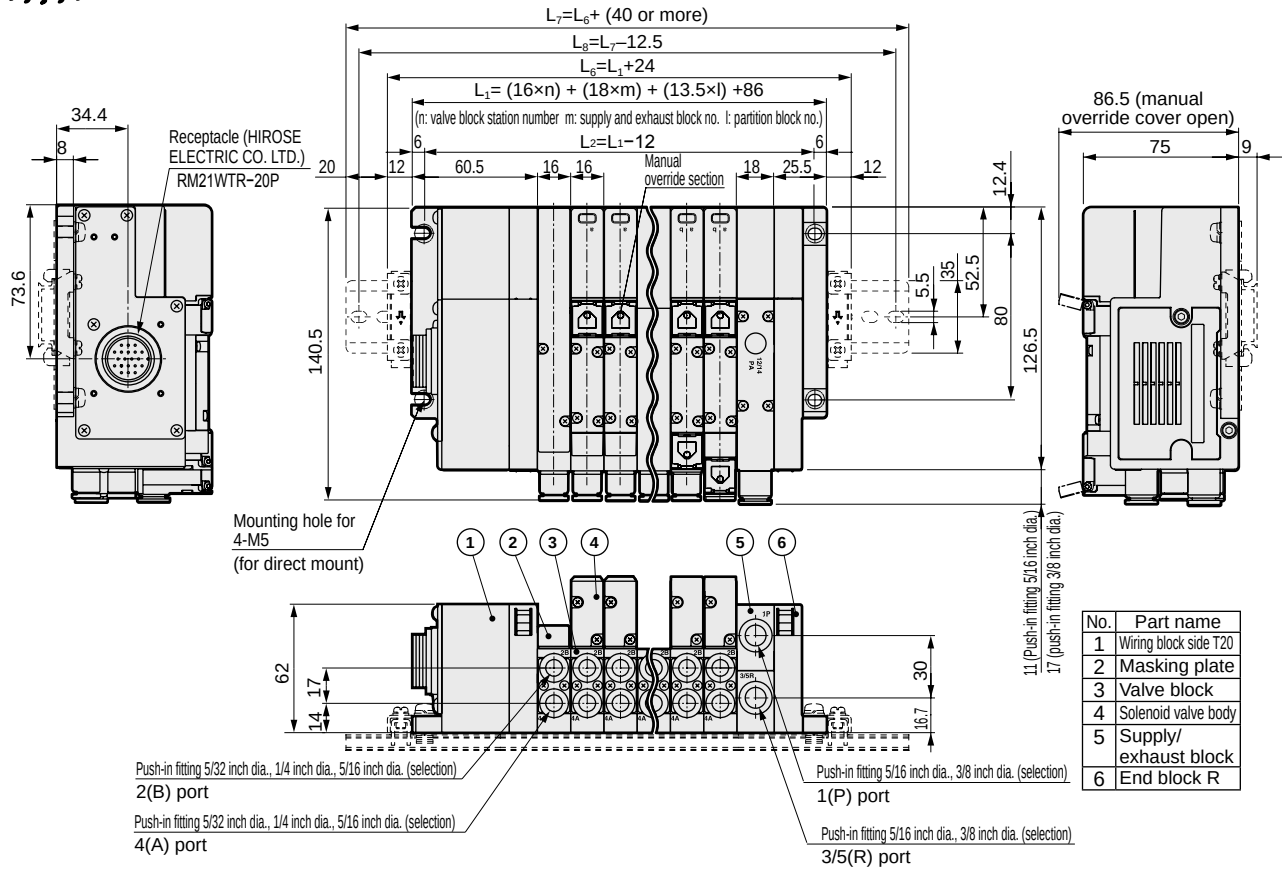
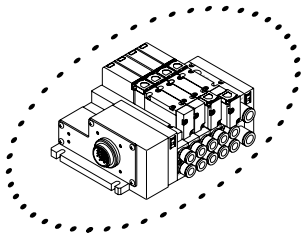
Common gland (T10)



Dimensions

● MW4GB2

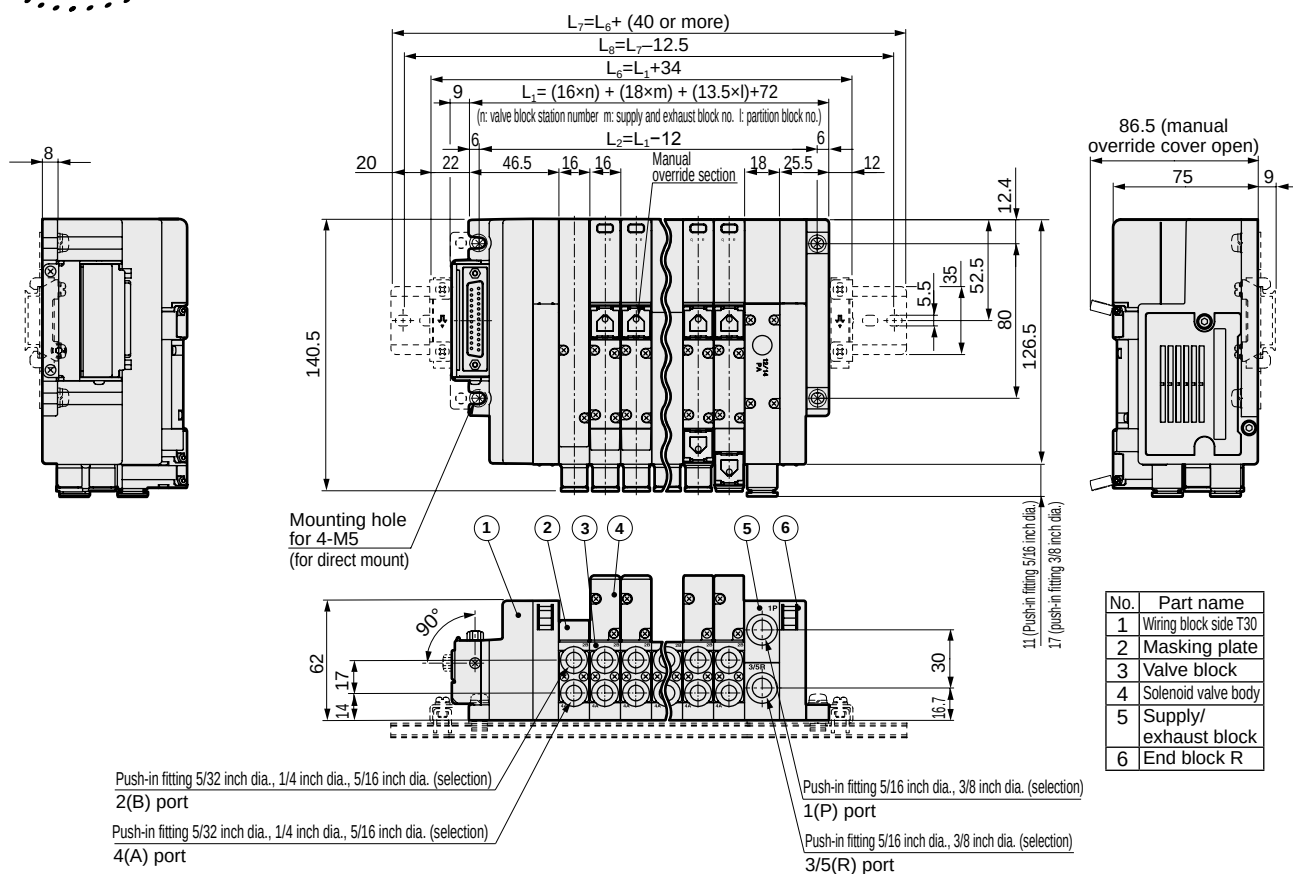
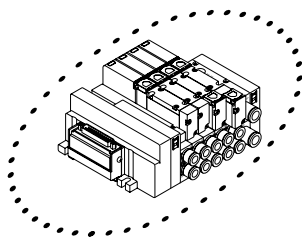
Multi-connector (T20)



Dimensions

● MW4GB2

D-sub connector (T30)



Dimensions

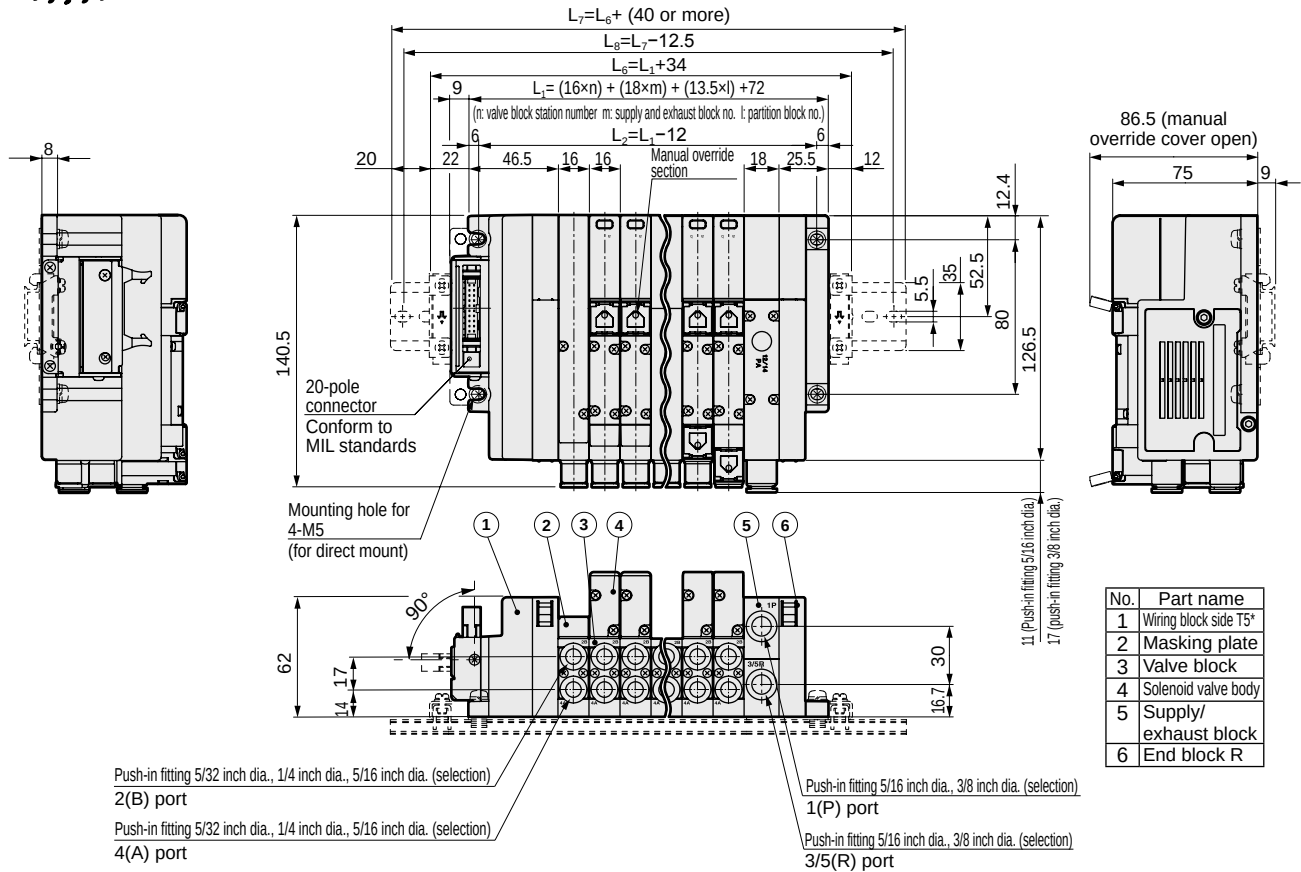
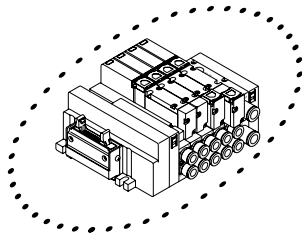
● MW4GB2

Flat cable connector (T5*)

* This figure shows T51.

T53 flat cable connectors are also available.

The dimensions are the same as T51.

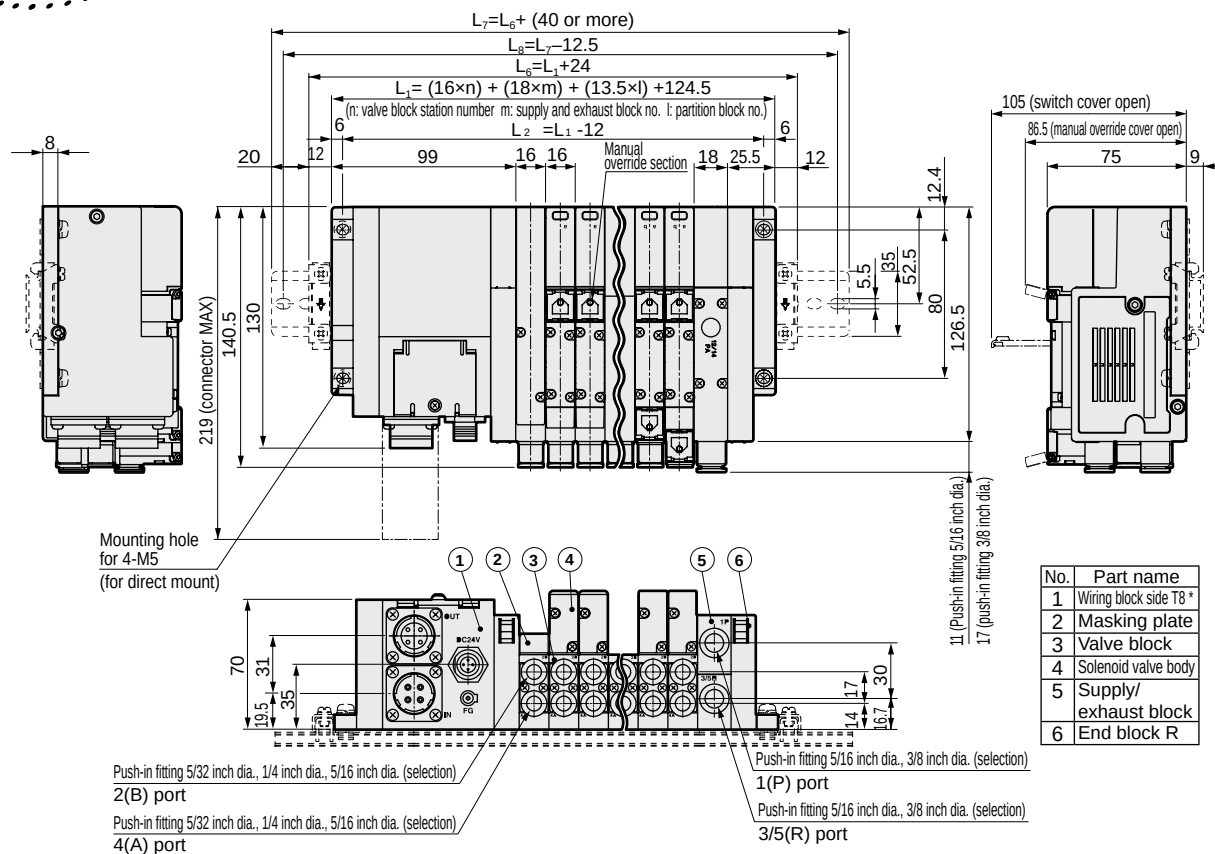
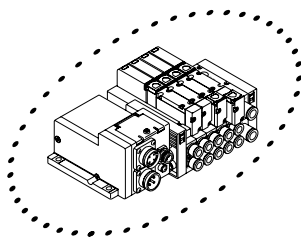


No.	Part name
1	Wiring block side T5*
2	Masking plate
3	Valve block
4	Solenoid valve body
5	Supply/exhaust block
6	End block R

Dimensions

● MW4GB2

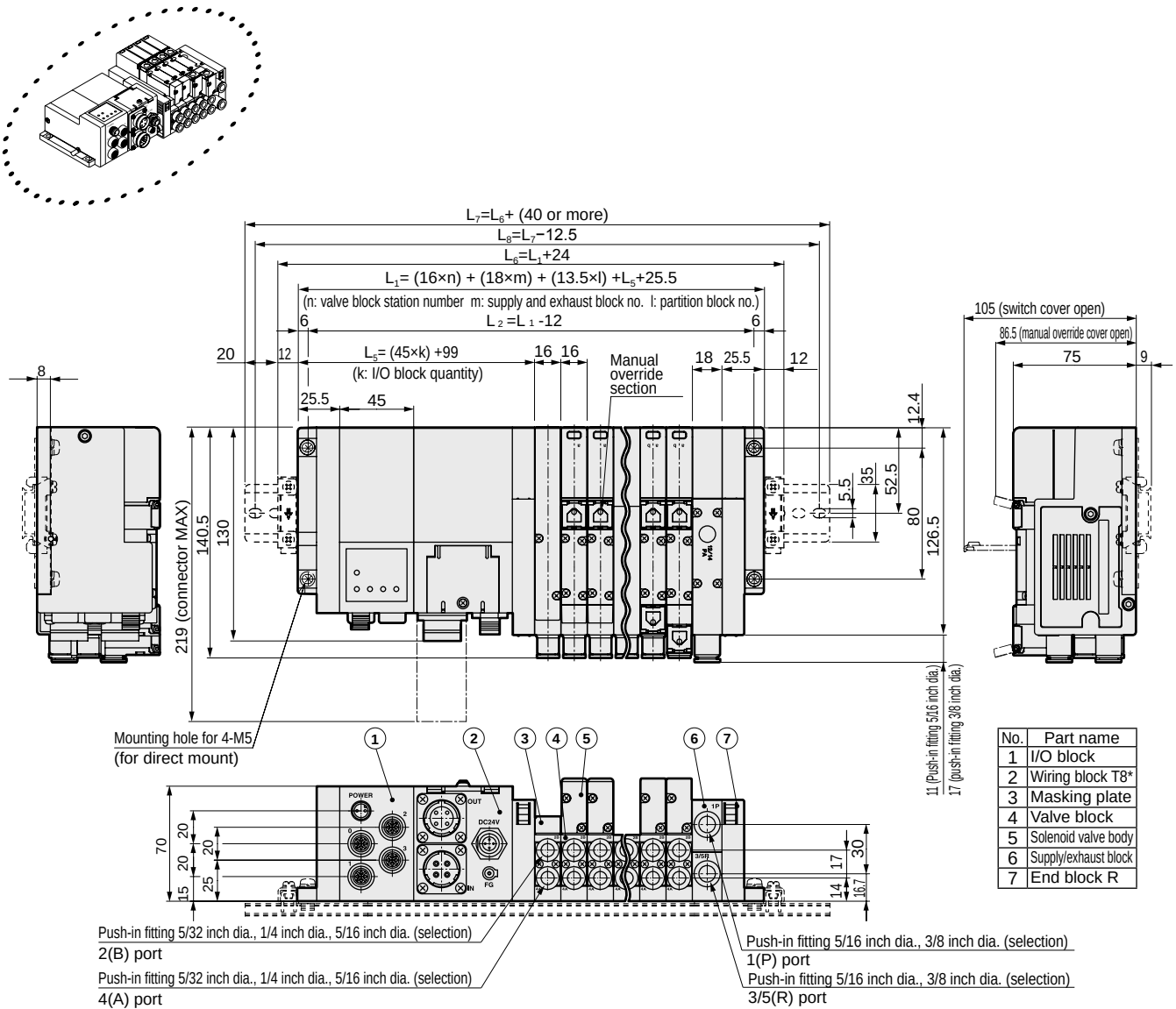
Serial transmission CC-Link (T8G*)



Dimensions

● MW4GB2

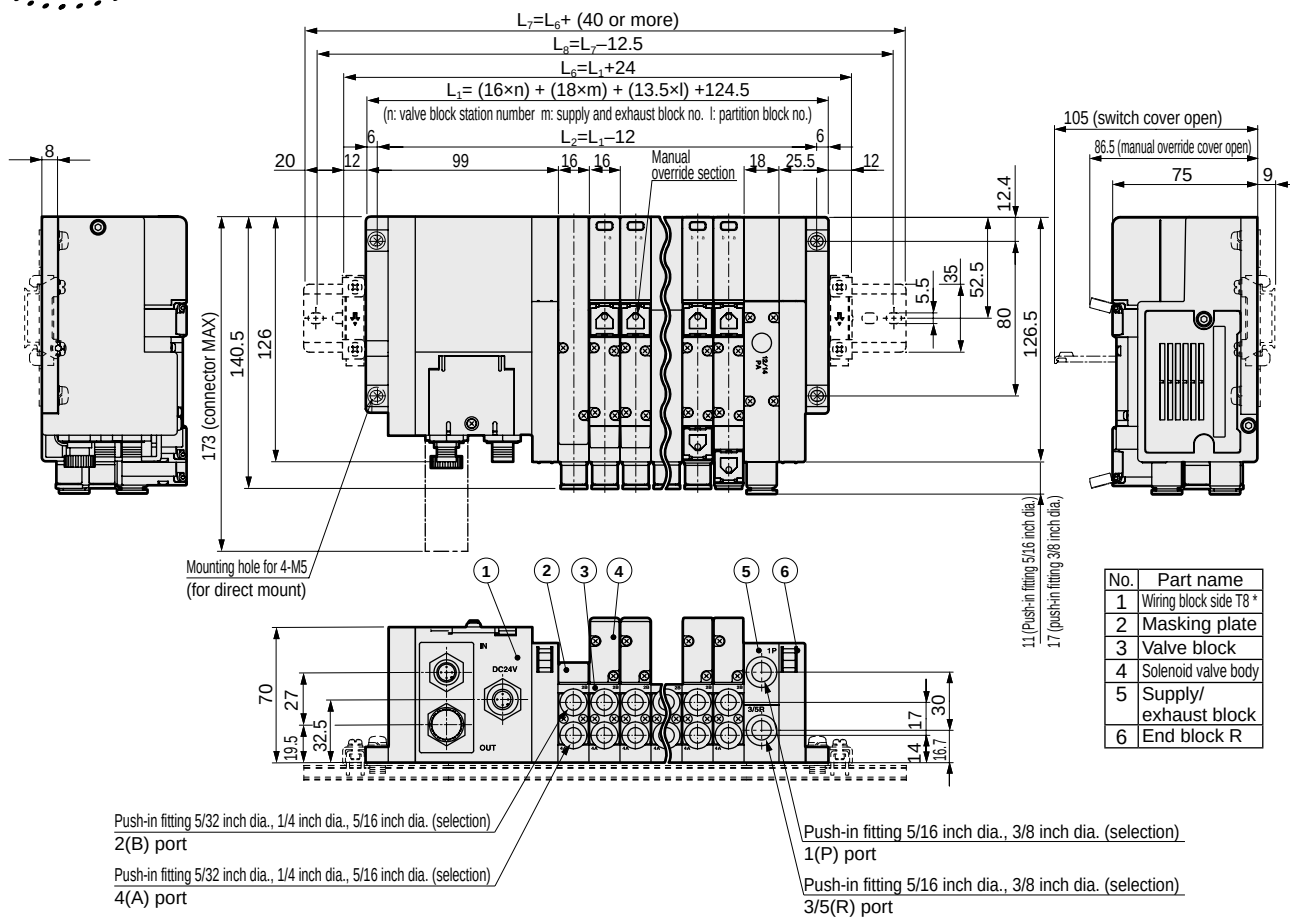
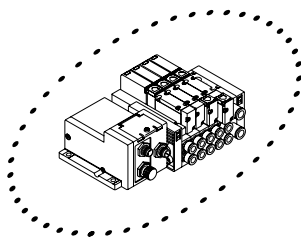
Serial transmission CC-Link (T8G*) + I/O block



Dimensions

● MW4GB2

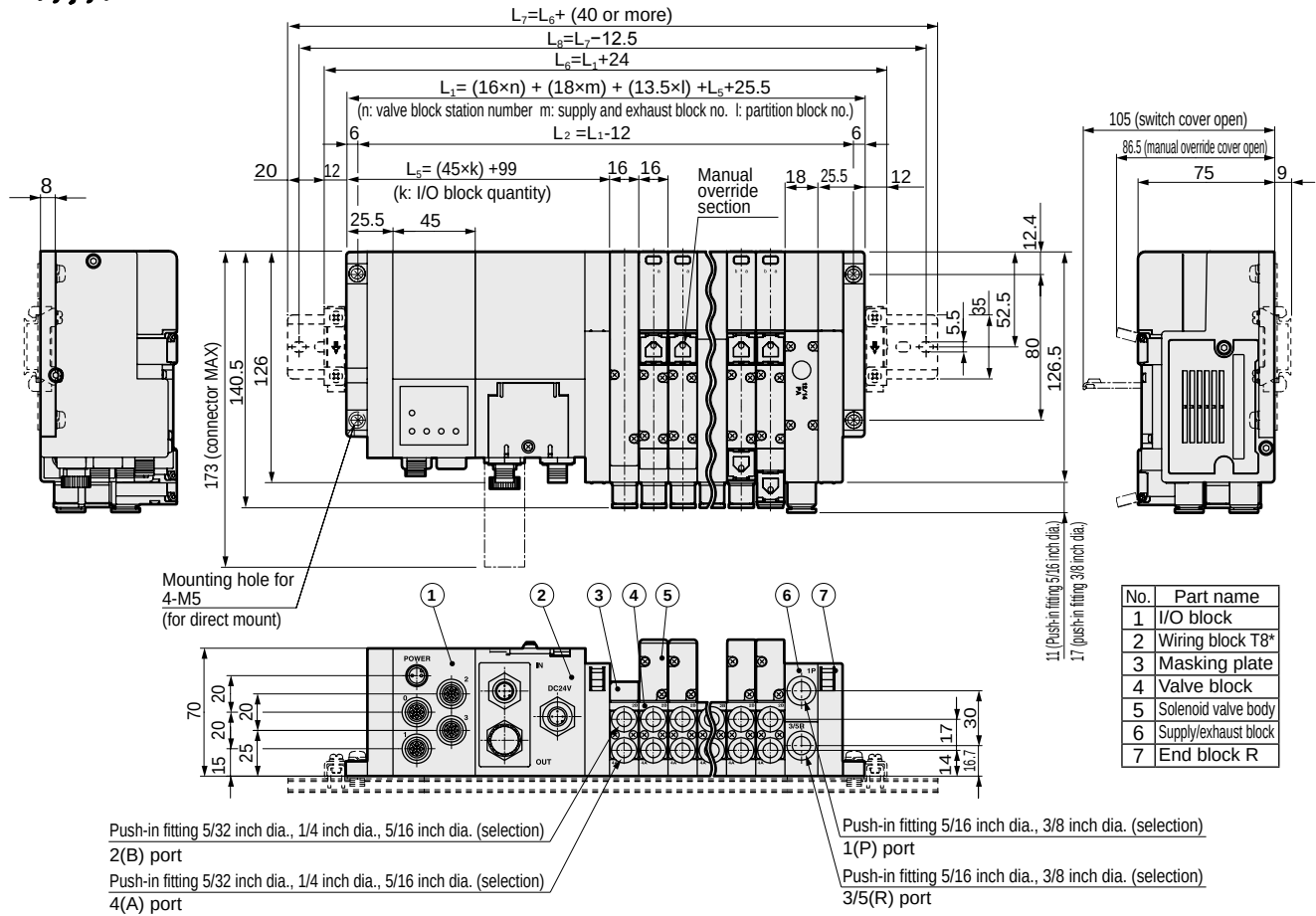
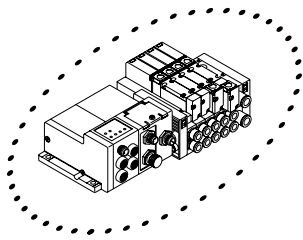
Serial transmission DeviceNet (T8D*)



Dimensions

● MW4GB2

Serial transmission DeviceNet (T8D*) + I/O block

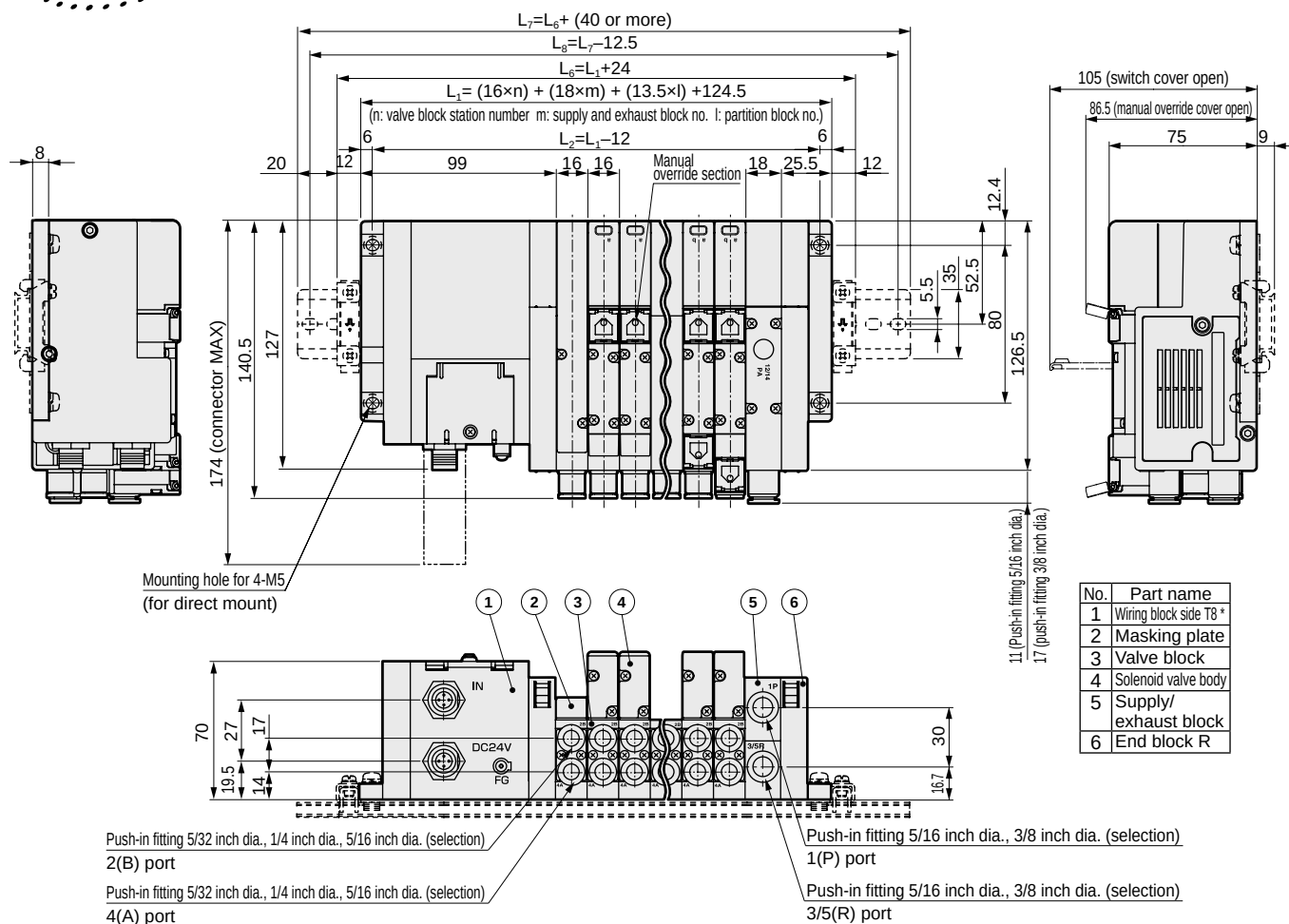
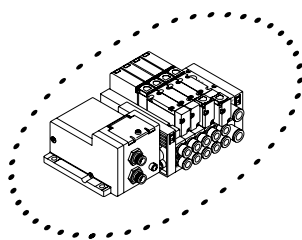


Dimensions

● MW4GB2

Serial transmission AS-i (T8M*)

Serial transmission CompoBus/S (T8C*)

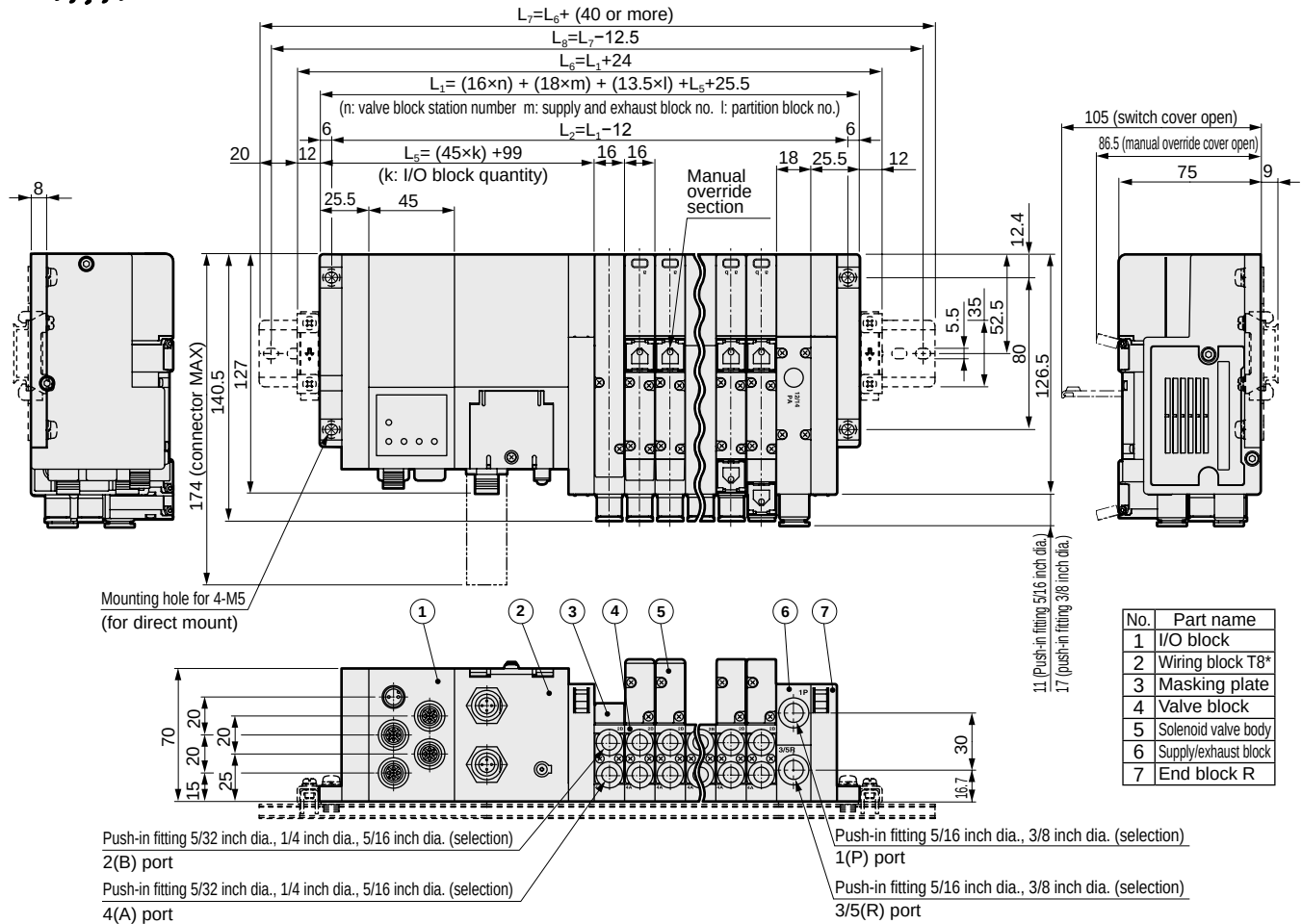
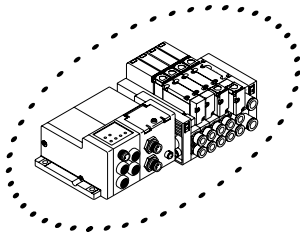


Dimensions

● MW4GB2

Serial transmission AS-i (T8M*) + I/O block

Serial transmission CompoBus/S (T8C*) + I/O block

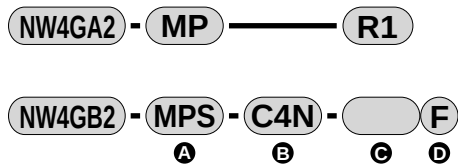


Piping section

A. Discrete valve block with solenoid valve * Two tie-rods are enclosed when the station expanding type is ordered.

This block is assembled with solenoid valve and valve block (separated resin base).

B. Discrete valve block with masking plate



* Two tie-rods are enclosed when the station expanding type is ordered.

Symbol	Descriptions
A Type (Note 1)	
MP	Individual wiring
MPS	Standard wiring (single)
MPD	Double wiring (single)/Double/3 position
B Connection diameter (Note 2)	
C4N	5/32 inch dia. push-in fitting
C6N	1/4 inch dia. push-in fitting
C8N	5/16 inch dia. push-in fitting
C Electrical connections (Note 3)	
Blank	Connector relay circuit board specifications for DC
R1	I/O connector (M12) (500 mm)
2 to 8	Select the cable length for AC by referring to page 166.
D Option	
Blank	No option
F	A•B port filter integrated

Note 1: When using an AC voltage, select MPD as the socket assembly uses double solenoid wiring.

Note 2: Connection diameter indicates the size for A•B port.

The A or B port plug specifications (*NC/NO) are available only for the 2-position single type.

The CL* push-in joint L type (upward) is available only for the 2-position single and double types.

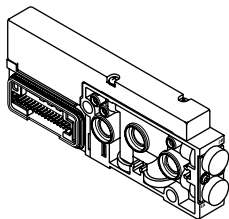
The A port is a long elbow fitting and the B port a short elbow fitting.

Note 3: Designate Blank when selecting a DC voltage, and the length of the socket assembly cable when selecting AC. When ordering the part with the manifold specifications, the cable length does not need to be filled in.

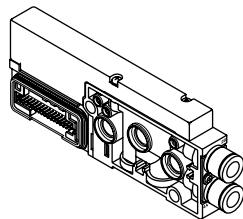
Socket assembly for AC will be wiring for double solenoid.

● <DC>

NW4GA2-MPS

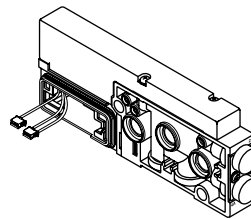


NW4GB2-MPS-C8N

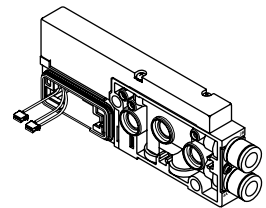


● <AC>

NW4GA2-MPD-2

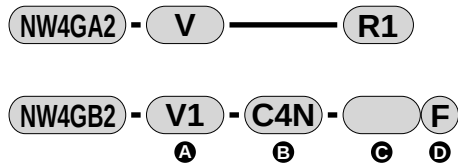


NW4GB2-MPD-C8N-2



Piping section

C. Discrete valve block (discrete only) * Two tie-rods are enclosed when the station expanding type is ordered.



Symbol	Descriptions
A Type (Note 1)	
V	Individual wiring
V1	Standard wiring (single)
V2	Double wiring (single)/Double/3 position
B Connection diameter (Note 2)	
C4N	5/32 inch dia. push-in fitting
C6N	1/4 inch dia. push-in fitting
C8N	5/16 inch dia. push-in fitting
C Electrical connections (Note 3)	
Blank	Connector relay circuit board specifications for DC
R1	I/O connector (M12) (500 mm)
2 to 8	Select the cable length for AC by referring to table below.
D Option	
Blank	No option
F	A•B port filter integrated

Note 1: When using an AC voltage, select V2 as the socket assembly uses double solenoid wiring.

Note 2: Connection diameter indicates the size for A•B port.

The A or B port plug specifications (*NC/NO) are available only for the 2-position single type.

The CL* push-in joint L type (upward) is available only for the 2-position single and double types.

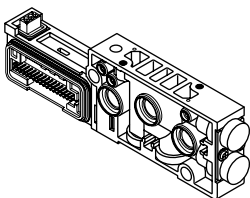
The A port is a long elbow fitting and the B port a short elbow fitting.

Note 3: Designate Blank when selecting a DC voltage, and the length of the socket assembly cable when selecting AC.

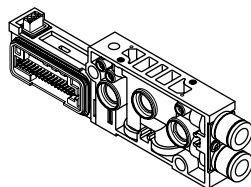
Socket assembly for AC will be wiring for double solenoid.

● <DC>

NW4GA2-V1

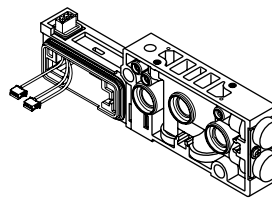


NW4GB2-V2-C8N

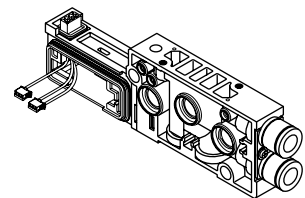


● <AC>

NW4GA2-V2-2



NW4GB2-V2-C8N-2



Valve block cable length for AC

If the total length between the supply/exhaust block and partition block between the wired valve block and wiring block is 63 mm or more (example: two supply/exhaust block stations + two partition block stations), calculate the length W, and designate the longer lead wire closest to the calculated value.

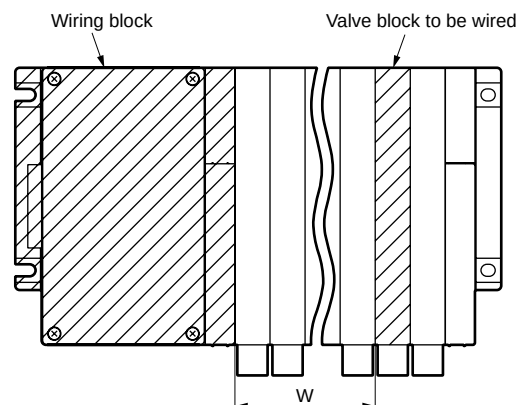
$$W = (23.5 \times n) + (18 \times m) + (13.5 \times l) + 230$$

n: valve block station number m: supply and exhaust block no. l: partition block no.

Consult with CKD if W exceeds 610 mm.

Selection no.	Cable length
2	Socket assembly for 1 to 2 stations (cable length 290 mm) AC
3	Socket assembly for 3 to 4 stations (cable length 330 mm) AC
4	Socket assembly for 5 to 6 stations (cable length 380 mm) AC
5	Socket assembly for 7 to 8 stations (cable length 430 mm) AC
6	Socket assembly for 9 to 10 stations (cable length 480 mm) AC
7	Socket assembly for 11 to 14 stations (cable length 530 mm) AC
8	Socket assembly for 15 to 18 stations (cable length 610 mm) AC

Fig. 1



Piping section

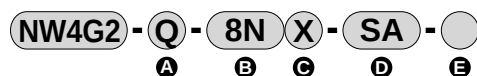
Problems could arise depending on the structure, so the function of each block should be studied in detail before making a selection.

D. Supply/exhaust block * Two tie-rods are enclosed when the station expanding type is ordered.

The supply/exhaust block can be installed at any location next to the valve block.

The number of units is not limited. Install two or more units if combination with a partition block is required, or when the supply/exhaust rate must be increased.

A filter for preventing entry of foreign matter is used in the P port.



Symbol	Descriptions
A Type (Note 1)	
Q	Inside pilot
QK	Outside pilot
QZ	Different kind pressure circuit
QKZ	Outside pilot (PA/PR separate)
B Connection diameter (P/R port) (Note 2)	
8N	5/16 inch dia. push-in fitting
10N	3/8 inch dia. push-in fitting
C Exhaust method (Note 3)	
Blank	Common exhaust
X	Atmospheric release

D Option (partition type) (Note 4)

Blank	No partition
SA	P•R•PA•PR stop
S	P•R stop, PA•PR go

E Voltage

Blank	Connector relay circuit board specifications for DC.
AC	No connector relay circuit board for AC.

Note 1: QZ can not be used as a discrete unit.

Use with another type (Q•QK•QKZ).

Note 2: A filter for preventing entry of foreign matter is used in the P port.

Note 3: The atmosphere opening type (X) is exhausted from the end block.

When designating X, set the atmosphere opening type (EX) for the end block.

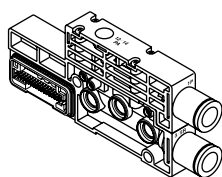
Note 4: Indicate this when setting a partition for the supply/exhaust port. When using a mixed manifold for various pressure supplies, etc., space can be saved in the station direction.

Designate the set position in the manifold specifications so that the left side of the supply/exhaust block comes to the partition side, and the right side comes to the supply/exhaust side.

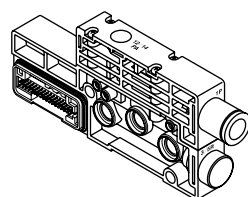
Note 5: Select "AC" when using the individual wiring manifold because the DC connector relay PCB is not required. Use is also possible with "Blank".

● <DC>

NW4G2-Q-10N

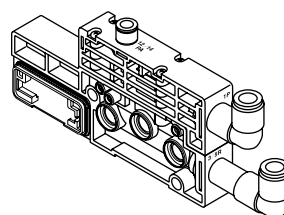


NW4G2-Q-10NX

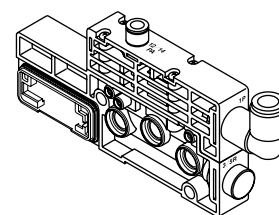


● <AC>

NW4G2-QK-10L-AC



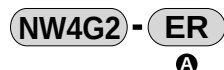
NW4G2-QK-10LX-AC



* Refer to page 168 for the circuit diagram.

E. End block

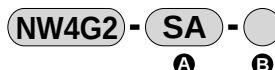
The atmosphere opening type has a built-in exhaust muffler.



Symbol	Descriptions
A Type (Note 1)	
EL	Common exhaust Left
ER	Common exhaust Right
EXL	Atmospheric release Left
EXR	Atmospheric release Right

Note 1: The atmosphere opening type (EX) has a built-in exhaust muffler.

F. Partition block * Two tie-rods are enclosed when the station expanding type is ordered.



Symbol	Descriptions
A Type (Note 1)	
SA	P•R•PA•PR stop
S	P•R stop, PA•PR go
B Voltage	
Blank	Connector relay circuit board specifications for DC.
AC	No connector relay circuit board for AC.

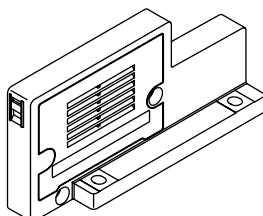
Note 1: With blocks other than SA, the pilot pressure PA•PR passage is not sealed.

Consider this when designing system.

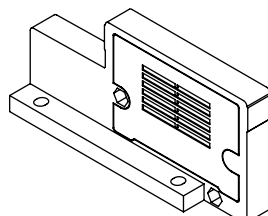
Note 2: Select "AC" when using the individual wiring manifold because the DC connector relay PCB is not required. Use is also possible with "Blank".

● <DC>

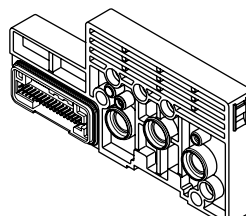
NW4G2-ER



NW4G2-EL

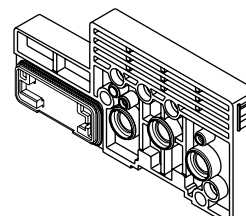


NW4G2-ER

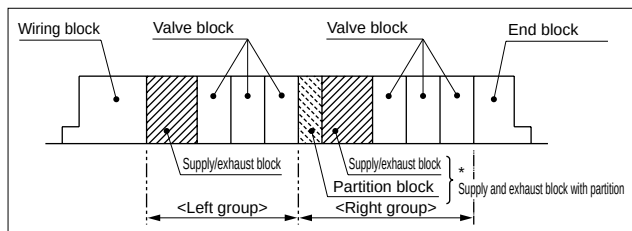


● <AC>

NW4G2-EL



● Notes when configuring manifold



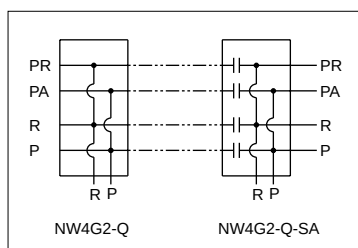
- The difference between inside pilot and outside pilot type is determined by the supply/exhaust block selection. Valve block is identical.
- Various supply pressures, etc., can be mixed by combining the partition block and supply/exhaust block.
- Space in the MF station direction can be reduced by using a supply/exhaust block with partitions which congregate the partition and supply/exhaust functions in the same block.
- Viewed from piping port, install the supply and exhaust block with partition as partition side on the left while supply and exhaust side on the right.

● System configuration by combining blocks

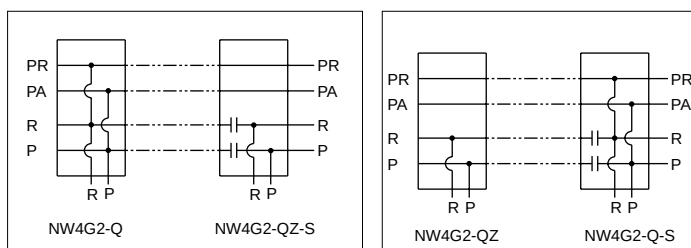
- Various pneumatic systems can be configured by selecting and combining the partition block and supply/exhaust block or supply/exhaust block with partition. Faults may occur depending on the configuration, so sufficiently understand the function of each block before selecting.
- Refer to the following example. (In the example, a supply and exhaust block with partition is used)

Example of configuration of inside pilot type (circuit symbol)

① If supply air pressure is within working pressure and two types (0.2 to 0.7 MPa)



② When supply pressure is within working pressure range (0.2 to 0.7 MPa) and low pressure (0.2 MPa or less) or low vacuum

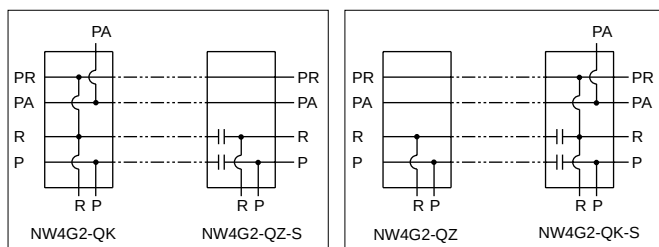


* QZ side is low pressure or low vacuum circuit side.

* When using the low vacuum circuit, the R port is the vacuum side and the P port is atmospheric or pressurized.

Example of configuration of outside pilot type (circuit symbol)

③ If supply air pressure is low (0.2 MPa or less) or low vacuum

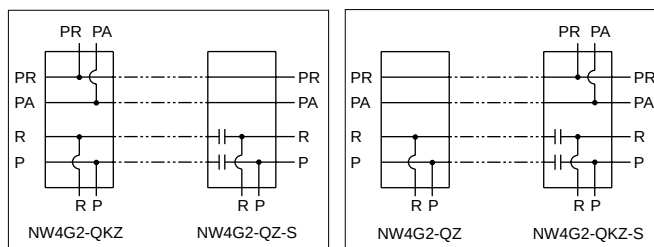


* QK side is located on low pressure circuit side and QZ is located on the low vacuum circuit side as an example.

* When using the low vacuum circuit, the R port is the vacuum side and the P port is atmospheric or pressurized.

* 0.2 to 0.7 MPa is to be supplied to pilot air supply port (PA).

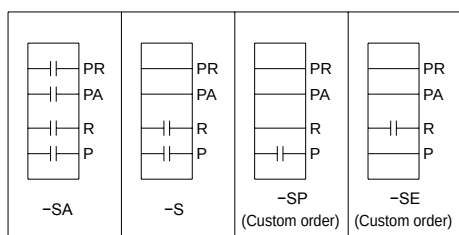
④ If supply air pressure is low vacuum and 2 types



* When using the low vacuum circuit, the R port is the vacuum side and the P port is atmospheric or pressurized.

● Partition specifications (partition block)

* Consult with CKD for products other than standard specifications (-SA, -S). (-SP, -SE)



Piping section

G. Manifold base

Discrete manifold base can be purchased. But the specifications may be limited.
(Manifold specifications are not necessary when only the manifold base is ordered.)

● Body porting

MW4GA2 — **10N** **U** — **R1** — **5** — **3** — **K1**

● Sub-base side porting

NW4GB2 — **C8N** — **10N** **U** — **T10** **W** — **5** — **3** — **K1**
A B C D E F G H I

Symbol	Descriptions
A A•B port size	
C4N	5/32 inch dia. push-in fitting
C6N	1/4 inch dia. push-in fitting
C8N	5/16 inch dia. push-in fitting
B P•R port size	
8N	5/16 inch dia. push-in fitting
10N	3/8 inch dia. push-in fitting
C Exhaust method	
Blank	Common exhaust
X	Atmospheric release
D P•R port supply and exhaust position	
D	Left
U	Right

③ Wiring method Note 1 (light and surge suppressor provided as standard)

R1	Individual wiring I/O cable removal	
T10	Common gland (M3 screw) Left	
T20	Multi connector Left	
T30	D sub-connector Left	
T51	20 pin flat cable connector (without power supply terminal) Left	
T53	26 pin flat cable connector (without power supply terminal) Left	
T8G1	Serial transmission CC-Link	16 points output
T8G2		32 points output
T8G7		16 points input/16 points output
T8C1	Serial transmission CompoBus/S	16 points output
T8C6		8 points input/8 points output
T8D1	Serial transmission DeviceNet	16 points output
T8D2		32 points output
T8D7		16 points input/16 points output
T8MA	Serial transmission AS-i	4 points input/4 points output
T8M6		8 points input/8 points output

⑤ Terminal and connector pin array

W	double wiring
---	---------------

⑥ Option Note 2

Blank	No option
K	Outside pilot
F	A/B port filter integrated Note 5

④ Station no. Note 4

2 to 16	2 stations to 16 stations
---------------	---------------------------------

① Voltage

1	100 VAC (rectified bridge integrated)
3	24 VDC
4	12 VDC

Note 1: 100 VAC is only for the common gland specification.

100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

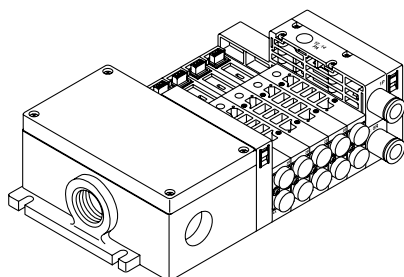
Note 2: The input/output block setting is not available.

Note 3: Port P has an integrated filter.

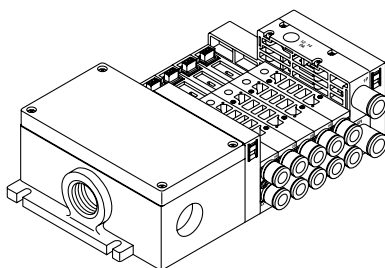
Note 4: Differs depending on the reduced wiring connection specifications.

Note that with the exception of wiring method R1, double wiring is used.

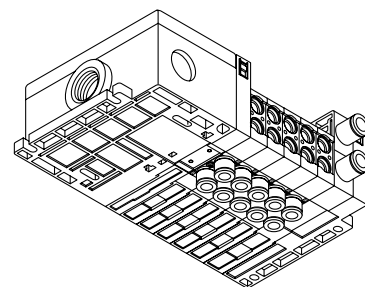
● MW4GA2 (Body porting)



● MW4GB2 (Sub-base side porting)



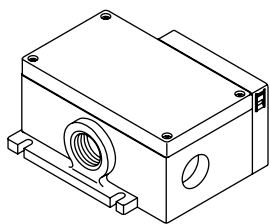
● MW4GZ2 (Sub-base rear poring)



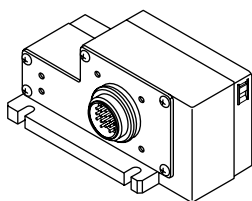
Contact US for details.

Wiring section (Wiring block) * Discrete wiring block can not be ordered.

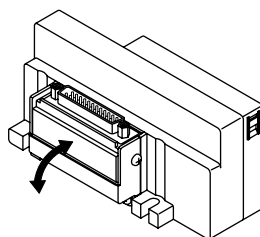
H. Common gland block (T10)
NW4G2-T10



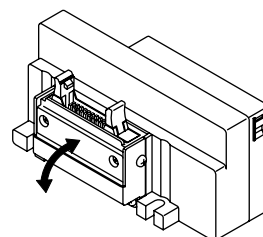
I. Multi connector block (T20)
NW4G2-T20



J. D-sub connector (T30)
NW4G2-T30

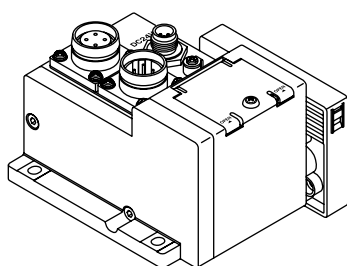


K. Flat cable connector (T5*)
NW4G2-T5*



L. Serial transmission block (When ordering a manifold and combining it with an input/output block, the end block is equipped on the left side of the input/output block as a standard.)

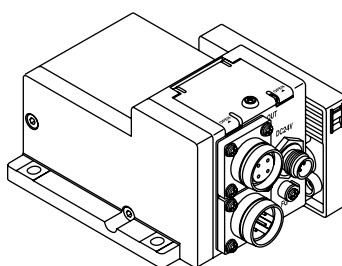
● CC-Link (T8G*)
NW4GA2-T8G*



NW4GA2 - T8G1
A

Symbol	Descriptions
A Type	
T8G1	16 points output
T8G2	32 points output
T8G7	16 points input/ 16 points output

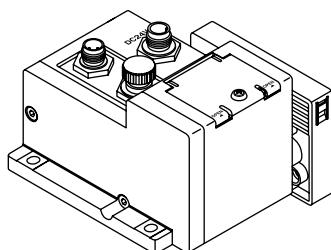
NW4GB2-T8G*



NW4GA2 - T8G1
A

Symbol	Descriptions
A Type	
T8G1	16 points output
T8G2	32 points output
T8G7	16 points input/ 16 points output

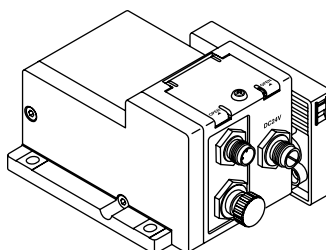
● Device Net (T8D*)
NW4GA2-T8D*



NW4GA2 - T8D1
A

Symbol	Descriptions
A Type	
T8D1	16 points output
T8D2	32 points output
T8D7	16 points input/ 16 points output

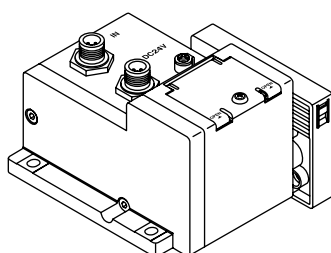
NW4GB2-T8D*



NW4GA2 - T8D1
A

Symbol	Descriptions
A Type	
T8D1	16 points output
T8D2	32 points output
T8D7	16 points input/ 16 points output

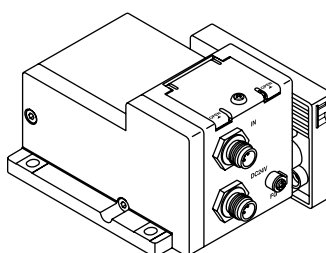
● AS-i (T8M*)
● CompoBus/S (T8C*)
NW4GA2-T8M*
NW4GA2-T8C*



NW4GA2 - T8M6
A

Symbol	Descriptions
A Type	
T8MA	4 points input/ 4 points output
T8M6	8 points input/ 8 points output
T8C1	0 points input/ 16 points output
T8C6	8 points input/ 8 points output

NW4GB2-T8M*
NW4GB2-T8C*



NW4GA2 - T8M6
A

Symbol	Descriptions
A Type	
T8MA	4 points input/ 4 points output
T8M6	8 points input/ 8 points output
T8C1	0 points input/ 16 points output
T8C6	8 points input/ 8 points output

How to order

M. I/O block * Two tie-rods are enclosed when the station expanding type is ordered.

● Top wiring

NW4GA2 - IN - N - K

● Side wiring

NW4GB2 - OUT - N - B
A B C

Symbol	Descriptions
A I/O classification	
IN	Input
OUT	Output

B I/O format

N	Sink
P	Source

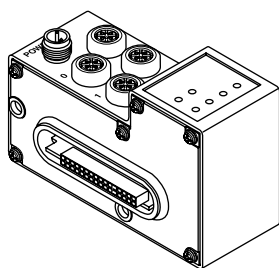
G Type of power supply

K	Common with serial transmission slave unit	Note 1, 2
B	External power	

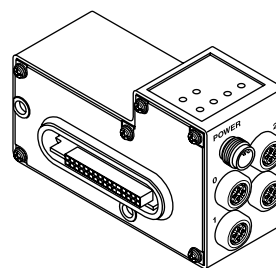
Note 1: Output block is only for external power (B).

Note 2: A waterproof cap is attached on the power connector as a standard when the (K) Common with serial transmission slave unit is selected.

● NW4GA2-^{IN} ^N ^K
^{OUT} ^P ^B

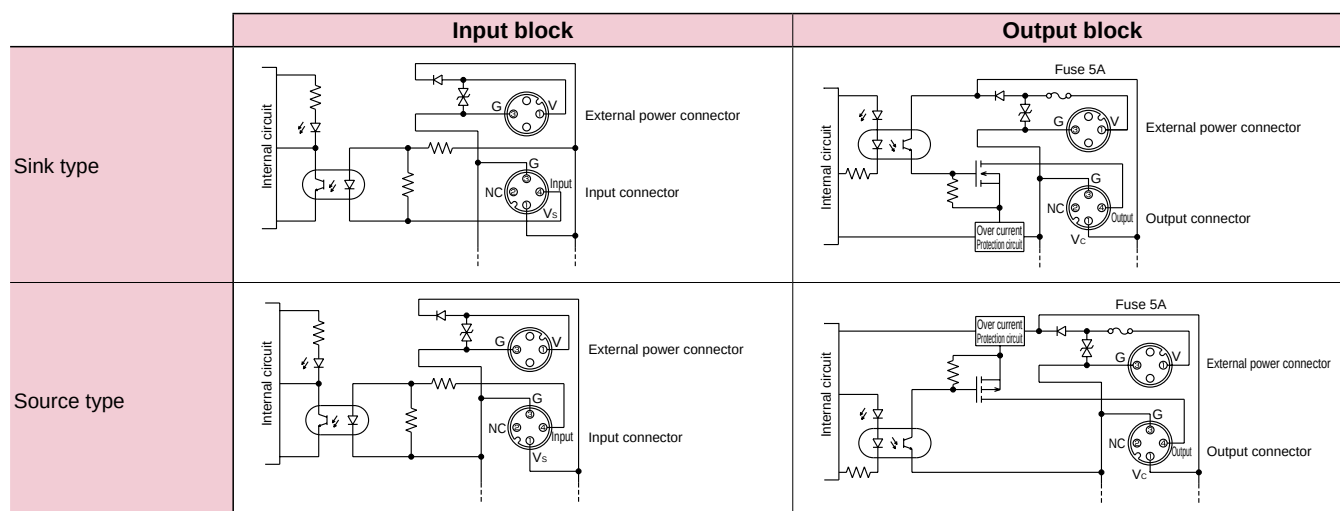


● NW4GB2-^{IN} ^N ^K
^{OUT} ^P ^B



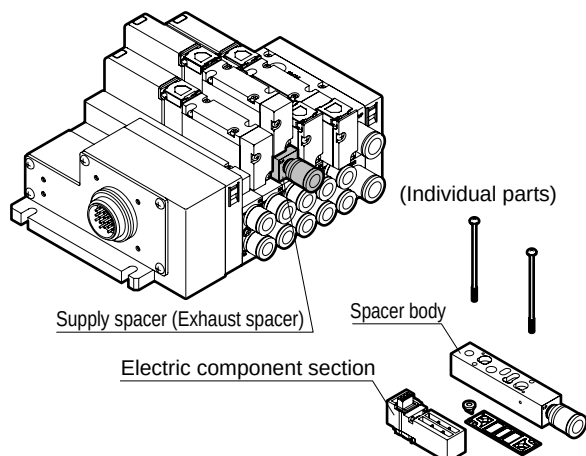
* When ordering a manifold and combining it with an input/output block, the end block is equipped on the left side as a standard.

I/O format (simplified circuit diagram)



Related products

● Supply spacer/exhaust spacer



Specifications

● Supply spacer

Model No.	P→A/B		A/B→R		Mass g
	C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
W4G2-P-*-*	1.8	0.20	1.6	0.15	60

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

● Exhaust spacer

Model No.	P→A/B		A/B→R		Mass g
	C [dm ³ /(s·bar)]	b	C [dm ³ /(s·bar)]	b	
W4G2-P-*-*	1.9	0.20	1.5	0.21	60

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

MW **4** **GA2** **8** **0** **—** **CXN** **—** **T8G7** **W** **HY11** **D** **—** **6** **—** **3**

A Model No. **B** Solenoid position
Solenoid position
2 types or more

C Connection diameter
Connection diameter
2 types or more

E Reduced wiring
Serial transmission (CC-Link)
(16 points input/16 points output)

F Terminal/connector pin array

G Option
Different from the

H Mount type

I Station no.

J Voltage

Preparing the manifold specifications

- Complete from the left with the piping port on the near side, regardless of wiring block.
Indicate the block type selected from the block part components (pages 165 to 172) and the layout instructions.
 - Write the designated total block quantity in the required quantity at the right end of the table.
 - Circle required accessories.
 - Indicate the mounting rail length. (Indicate only when a length other than the standard length is required.)
 - Manifold specifications are provided for each series. Indicate corresponding specifications.
- | | |
|---|----------|
| MW4GA/B (individual wiring body porting, sub-base side porting, sub-base rear porting) | Page 175 |
| MW4GA2 (reduced wiring body porting) | Page 176 |
| MW4GB2 (reduced wiring sub-base side porting) | Page 177 |

- ① Calculate the rail length with the following calculation method.
The obtained length is standard.
- ② When using the standard length, the length (L_7) need not be indicated in specifications.
Indicate the length when using a non-standard length.

● Calculating the DIN rail length

$$L_7' : \frac{L_6 + 40}{12.5} \rightarrow \text{Round up fractions}$$

Rail installation pitch (L_8) = $L_7 - 12.5$

L ₆ ... Manifold length	135 Over to 147.5 or less	147.5 to 160	160 to 172.5	172.5 to 185	185 to 197.5	197.5 to 210	210 to 222.5	222.5 to 235	235 to 247.5	247.5 to 260	260 to 272.5	272.5 to 285	285 to 297.5	297.5 to 310	310 to 322.5	322.5 to 335	335 to 347.5	347.5 to 360	360 to 372.5	372.5 to 385	385 to 397.5	397.5 to 410	410 to 422.5	422.5 to 435	435 to 447.5	447.5 to 460	460 to 472.5	472.5 to 485	
L ₇ ...Rail length	175	175	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400	412.5	425	437.5	450	462.5	475	487.5	500	512.5	525
Pitch L ₈	162.5	187.5	200	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400	412.5	425	437.5	450	462.5	475	487.5	500	512.5

Model No.	Dimensions (mm)	
Reduced wiring Wiring block	T10	175.5
	T20	110
	T30/5*	106
	T8*	148.5

* End block is included in wiring block.

● How to fill out wiring specifications form (AC specifications only)

There is no need to fill this out for standard wiring and double wiring.

(For DC specifications, only standard wiring and double wiring are available.)

● Wiring specifications (example)

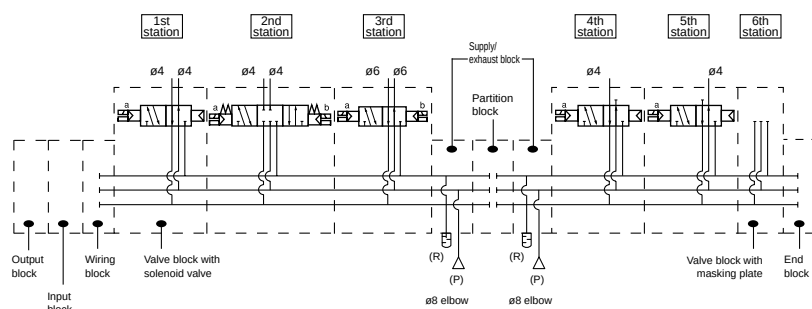
Connector pin No.	Valve No.																							
T10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	a																							
2																								
3			a																					
4			b																					
5		a																						
6		b																						
7				a																				
8																								
9					a																			
10																								
11						a																		
12						b																		
13																								
14																								
15																								
16																								
17																								
18																								
COM																								
COM																								

● Notes on wiring specifications

- Complete this form when using wiring other than standard wiring or double wiring, and enclose with manifold specifications.
This order is processed as a customized order, and requires separate consultation.
- The valve number is the number counting only valve blocks in order from the left facing the port.
This number differs from installation position numbers.
- The valve block with a masking plate is wired beforehand.
"-MPS" is for the a side wiring only. "-MPD" is for both the a and b side wiring.
- A double solenoid or 3-position solenoid valve cannot be assembled onto "-MPS".
Expansion is required when the valve block with a solenoid valve is used.
- Spare wiring for expansion cannot be done beforehand. Install the valve block with masking plate.

Reference circuit diagram

This is references circuit diagram in the previous page manifold model No. (example).



- The [] rack indicates each block's configuration.
- Manifold station numbers are set in order from the left facing the piping port.
(*The I/O block, wiring block, supply/exhaust block, partition block and end block are not included in the number of manifold stations.)
- Select the model No. with the block configuration (pages 165 to 172), individual wiring manifold (pages 126 and 130), and reduced wiring manifold (pages 134, 135, 150, and 151).
- The layout position is set in order from the left facing the piping port.
- When installing both the input and output blocks, the output block is on the left side with piping port facing forward.

● MW4GA/B/2 (individual wiring) block manifold specifications

● Contact	● Quantity	Set	● Request date	/	Issue	/	/
Slip No.			Order No.			Your company name	
						Contact	
						Order no.	

● Manifold model No.

MW **G** **2** **0** - - **R1** - -

A Model No. **B** Solenoid position **C** Connection diameter **D** Wiring Type **E** Option **F** Mount type **G** Station no. **H** Voltage

When completing this form, select the model No. from the "Block configuration" (pages 165 to 172).

Part name	Model No.	Layout																														Quantity	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Valve block with Valve block (P.165)	NW4G: 2 0																																
	NW4G: 2 1																																
	NW4G: 2 2																																
	NW4G: 2 0																																
	NW4G: 2 0																																
	NW4G: 2 0																																
	NW3G: 2 0																																
	NW3G: 2 0																																
Valve block with masking plate (P.165)	NW4G: 2-MP- -R1																																
	NW4G: 2-MP- -R1																																
	NW4G: 2-MP- -R1																																
Supply/exhaust block (P.167)	NW4G2-Q:																																
	NW4G2-Q:																																
	NW4G2-Q:																																
	NW4G2-Q:																																
Partition block (P.167)	NW4G2-S:																																
	NW4G2-S:																																
	NW4G2-S:																																
End block (P.167)	NW4G2-E: L																																
	NW4G2-E: R																																
DIN rail	L _r = (calculation method P.173)																Silencer		Tag plate (attached)		Attached Part												
																	SLW-H8		SLW-H10			A or B											

● MW4GA2 (reduced wiring) block manifold specifications

● Contact	● Quantity	Set	● Request date	/	Issue	/	/
Slip No.			Order No.				

● Manifold model No.	Your company name
Contact	Order no.

MW GA2 0 — — — —

● Model No. ● Solenoid position ● Connection diameter ● Reduced wiring ● Terminal/connector pin array ● Option ● Mount type ● Station no. ● Voltage

When completing this form, select the model No. from the "Block configuration" (pages 165 to 172).

Part name (Page)	Model No.	Layout																														Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
I/O block (P.171)	NW4GA2-IN-																															
	NW4GA2-OUT- -B																															
Wiring block (P.170)	NW4G 2-T (Note 1)																															
Valve block with Valve block (P.165)	NW4GA2 0-																															
	NW4GA2 0-																															
	NW4GA2 0-																															
	NW4GA2 0-																															
	NW4GA2 0-																															
	NW4GA2 0-																															
	NW3GA2 0-																															
	NW3GA2 0-																															
Valve block with Valve block (P.165)	NW4GA2-MPS																															
	NW4GA2-MPD																															
Supply/ exhaust block (P.167)	NW4G2-Q																															
	NW4G2-Q																															
	NW4G2-Q																															
	NW4G2-Q																															
Partition block (P.167)	NW4G2-																															
	NW4G2-																															
	NW4G2-																															
End block (P.167)	NW4G2- R																															
DIN rail	L _r = (calculation method P.173)	Silencer		Tag plate		Cable clamp		Water proof plug		Attached Part																						
		SLW-H8		A	W4G-SCL-18A	W4G-SCL-18B	W4G-XSZ-12																									
		SLW-H10			Applicable cable outer diameter ø14.5 to 16.5	Applicable cable outer diameter ø16.5 to 18.5																										
		Cable with D-sub connector		Multi-connector cable		Multi-connector only																										
		N4T-CABLE-DO	W4G-RMC	W4G2-RM21WTP																												

Note1: Designate the wiring block model No. as shown below.

NW4G2-T

↑ Wiring block type (refer to page 170)
 Blank : For T10•T20•T30•T5*
 A : For T8*

● MW4GB2 (reduced wiring) block manifold specifications

● Contact	● Quantity	Set	● Request date	/	Issue	/	/
Slip No.			Order No.			Your company name	

● Manifold model No.

MW4GB2 0 — — — —

A Model No. **B** Solenoid position **C** Connection diameter **E** Reduced wiring **F** Terminal/connector pin array **G** Option **H** Mount type **I** Station no. **J** Voltage

Contact
Order no.

When completing this form, select the model No. from the "Block configuration" (pages 165 to 172).

Part name (Page)	Model No.	Layout																														Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
I/O block (P.171)	NW4GB2-IN- -																															
	NW4GB2-OUT- -B																															
Wiring block (P.170)	NW4G 2-T (Note 1)																															
Valve block with Valve block (P.165)	NW4GB2 0-																															
	NW4GB2 0-																															
	NW4GB2 0-																															
	NW4GB2 0-																															
	NW4GB2 0-																															
	NW4GB2 0-																															
	NW4GB2 0-																															
	NW4GB2 0-																															
Valve block with Valve block (P.165)	NW4GB2-MPS-																															
	NW4GB2-MPD-																															
Supply/ exhaust block (P.167)	NW4G2-Q - -																															
	NW4G2-Q - -																															
	NW4G2-Q - -																															
	NW4G2-Q - -																															
Partition block (P.167)	NW4G2-																															
	NW4G2-																															
	NW4G2-																															
End block (P.167)	NW4G2- R																															
DIN rail	L ₇ = (calculation method P.173)	Silencer		Tag plate	Cable clamp		Water proof plug		Attached Part																							
		SLW-H8	B		W4G-SCL-18A	W4G-SCL-18B	W4G-XSZ-12																									
		SLW-H10		Applicable cable outer diameter ø14.5 to 16.5	Applicable cable outer diameter ø16.5 to 18.5																											
		Cable with D-sub connector		Multi-connector cable		Multi-connector only																										
		N4T-CABLE-DO		W4G-RMC		W4G2-RM21WTP																										

Note1: Designate the wiring block model no. as shown below.

NW4G2-T

↑ ↑
 Wiring block type
 (refer to page 170)

Blank: For T10, T20, T30, T5*
 B: For T8*

● Common gland type (T10) wiring specifications (AC specifications only)

* Prepare these specifications for applications other than standard wiring or double wiring and enclose with manifold specifications. (This is a custom order.)

* There is no need to fill this out for standard wiring and double wiring. (For DC specifications, only standard wiring and double wiring are available.)

Connector pin No.	Valve No.																							
T10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
5																								
6																								
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8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
COM																								
COM																								

MEMO

W4GB4 Series

- Applicable cylinder bore size: ø63 to ø125

Features

- IP65 protection structure
- Large flow



Catalog No. CB-023SA

How to order

Discrete

W4GB4 3 0 — 10N R1 - MF - 3 -K1

Discrete solenoid valve

W4GB4 1 9-00 — M — 3 -K1

A B C D E F

⚠ Cautions for model No. selection

Note 1: Voltage is only DC specifications for an I/O connector.

Note 2: If you select the non-locking/locking common type with manual override, do not select M or M7.

Note 3: Both lock equipment with non-locking/locking common type with manual override and OFF function are provided. Non-locking/locking common type with manual override and OFF function with lock cannot be selected simultaneously.

Coolant proof specifications

The specification can be selected with **E** option "A" in How to Order on this page.

For LiB specifications (Catalog No.CC-947A)

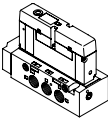
- Material for components limited to allow for LiB manufacturing process

** - voltage - **P40**

Electrical connections

Name	Terminal box	I/O connector (DC)
Symbol	Blank	R1
Shape		
Terminal Layout		

A Model No.

		Discrete	Discrete solenoid valve
			
		W4GB4	W4GB4
Symbol	Descriptions		
③ 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	●	●

G Connection diameter {1(P), 2(B), 4(A) port}

08N	NPT1/4	●	
10N	NPT3/8	●	

D Electrical connections (light and surge suppressor provided as standard)

Blank	Terminal box	●	●
R1	I/O connector (DC, 500 mm) Note 1	●	

E Option

Blank	No option Note 2 (Locking/Non-locking common type with manual override if M or M7 is not selected)	●	●
M	Non-locking manual override (standard)	●	●
M7	Lock with pilot air OFF Note 3	●	●
K	Outside pilot	●	
A	Coolant proof	●	●
F	A•B port filter	●	

G Voltage

1	100 VAC	●	
3	24 VDC	●	●
4	12 VDC	●	●
5	110 VAC	●	

is not available.

Common specifications

Descriptions	W4GB4•W4GZ4
Type of valve and operation method	Pilot-operated soft spool valve
Use fluid	Compressed air
Maximum working pressure MPa	1.0
Minimum working pressure MPa	0.2
Proof pressure MPa	1.50
Ambient temperature °C	–5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	Non-locking (standard)
Lubrication	Not required
Degree of protection	Dust/jet-proof (IP65)
Vibration/shock m/s ²	49 or less / 294 or less
Use atmosphere	Not permissible to use in environment containing corrosive gas.

Electric specifications

Descriptions			W4GB4•W4GZ4
Rated voltage V	AC		100 (50/60Hz) 110 (50/60Hz)
	DC		12,24
Rated voltage fluctuation range			±10%
Starting current A	AC	100V	0.056/0.044
		110V	0.051/0.040
	DC	12V	—
		24V	—
Holding current A	AC	100V	0.028/0.022
		110V	0.025/0.020
	DC	12V	0.100
		24V	0.050
Electricpower consumption W Note	AC	100V	1.8/1.5
		110V	
	DC	12V	1.2
		24V	
Thermal class			B (molded coil)

Note: Surge suppressor and indicator are provided as standard.

Individual specifications

Descriptions	W4GB4	W4GZ4
Connection diameter	P•A•B port	NPT1/4, NPT3/8
	R port	NPT1/4, NPT3/8
	PA•PR port	NPT1/8

Descriptions			W4GB4•W4GZ4	
			When turned ON	When turned OFF
Response time ms	2-position	Single	30	38
		Double	30	—
	3-position	ABR connection	50	58

Note: Response time is the value at supply pressure 0.5MPa, 20°C and oilless. The value will change based on quality of pressure and oil.

Descriptions			Terminal box	I/O connector	
Mass	g	2-position	Single	701	755
			Double	745	799
	3-position		777	831	

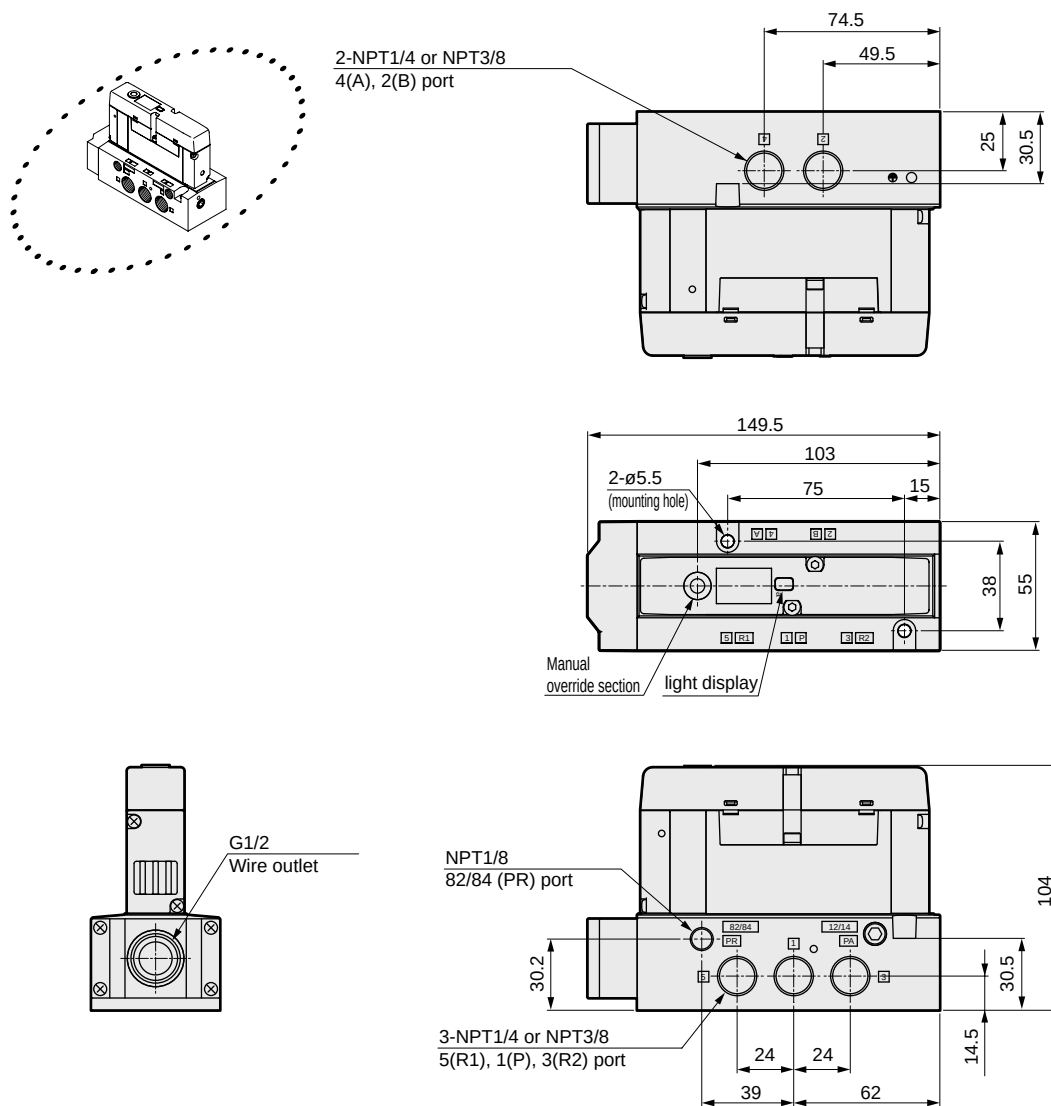
Flow characteristic

Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
W4GB4	2-position		7.7	0.31	7.3	0.16
	3-position	All ports closed	6.6	0.19	6.4	0.21
		ABR connection	6.5	0.15	7.3	0.04
		PAB connection	7.4	0.21	7.1	0.16

Dimensions

● W4GB410 side porting

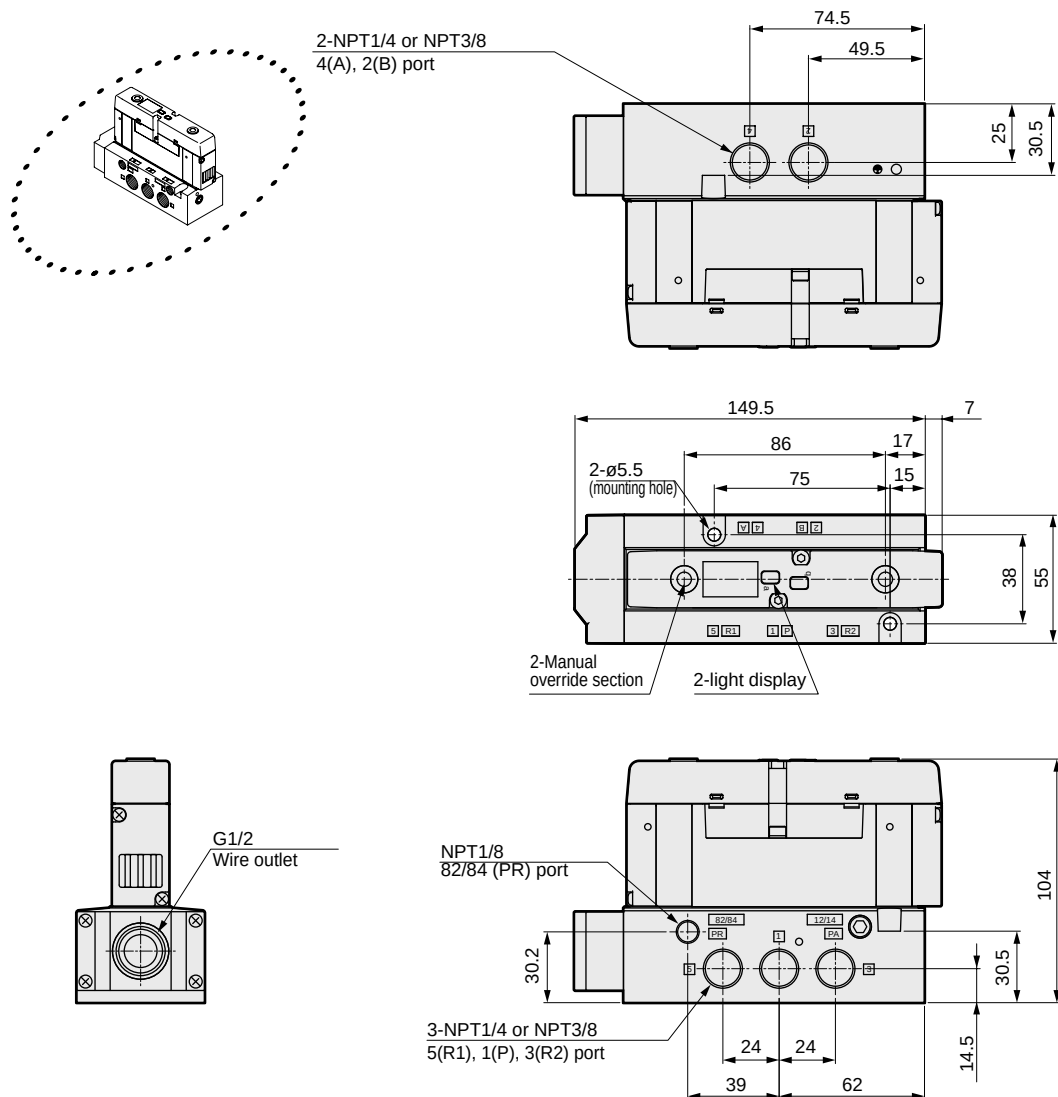
Terminal gland (blank)



Dimensions

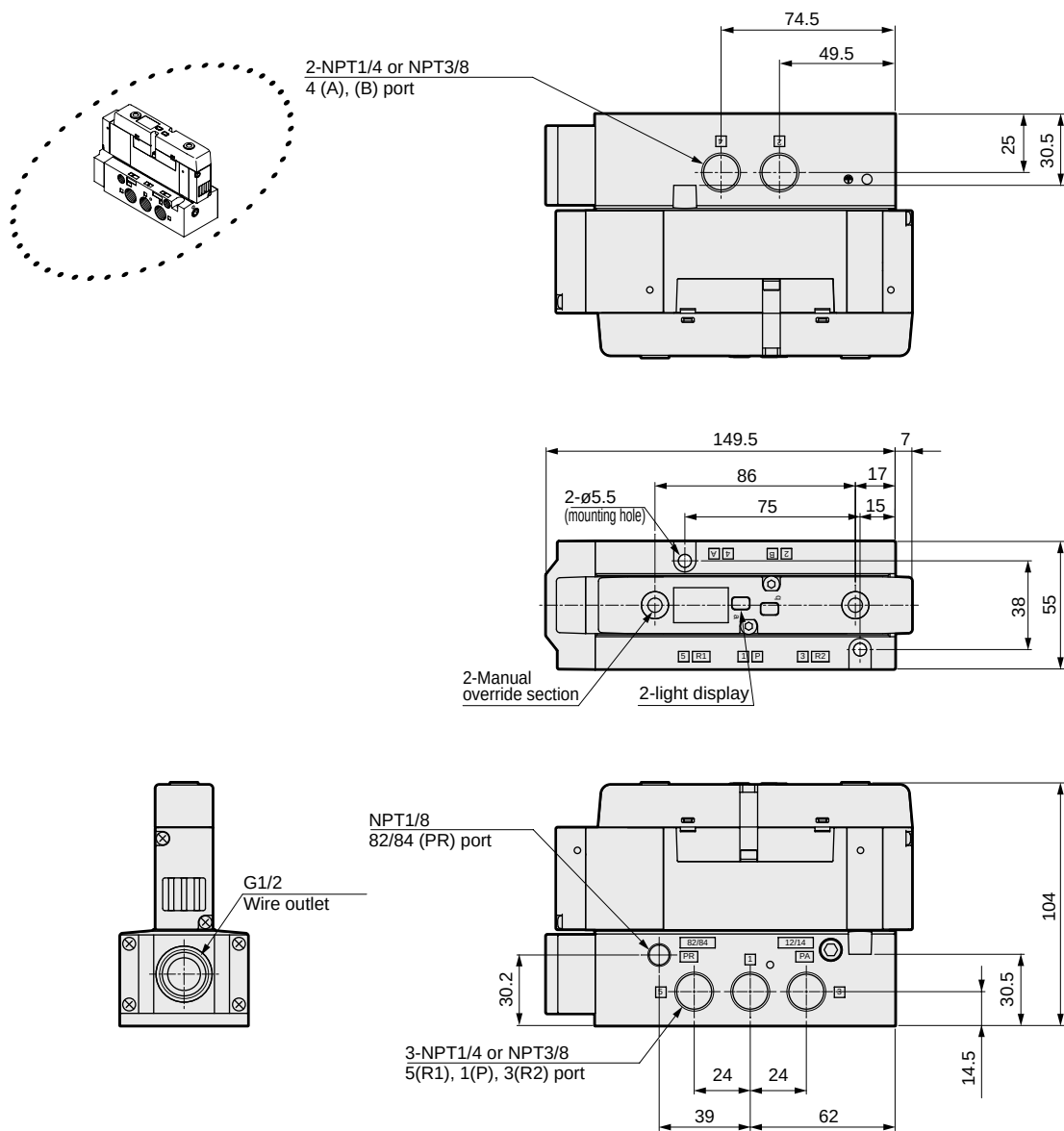
● W4GB420 side porting

Terminal gland (blank)



Dimensions

● W4GB³₄0 side porting Terminal gland (blank)

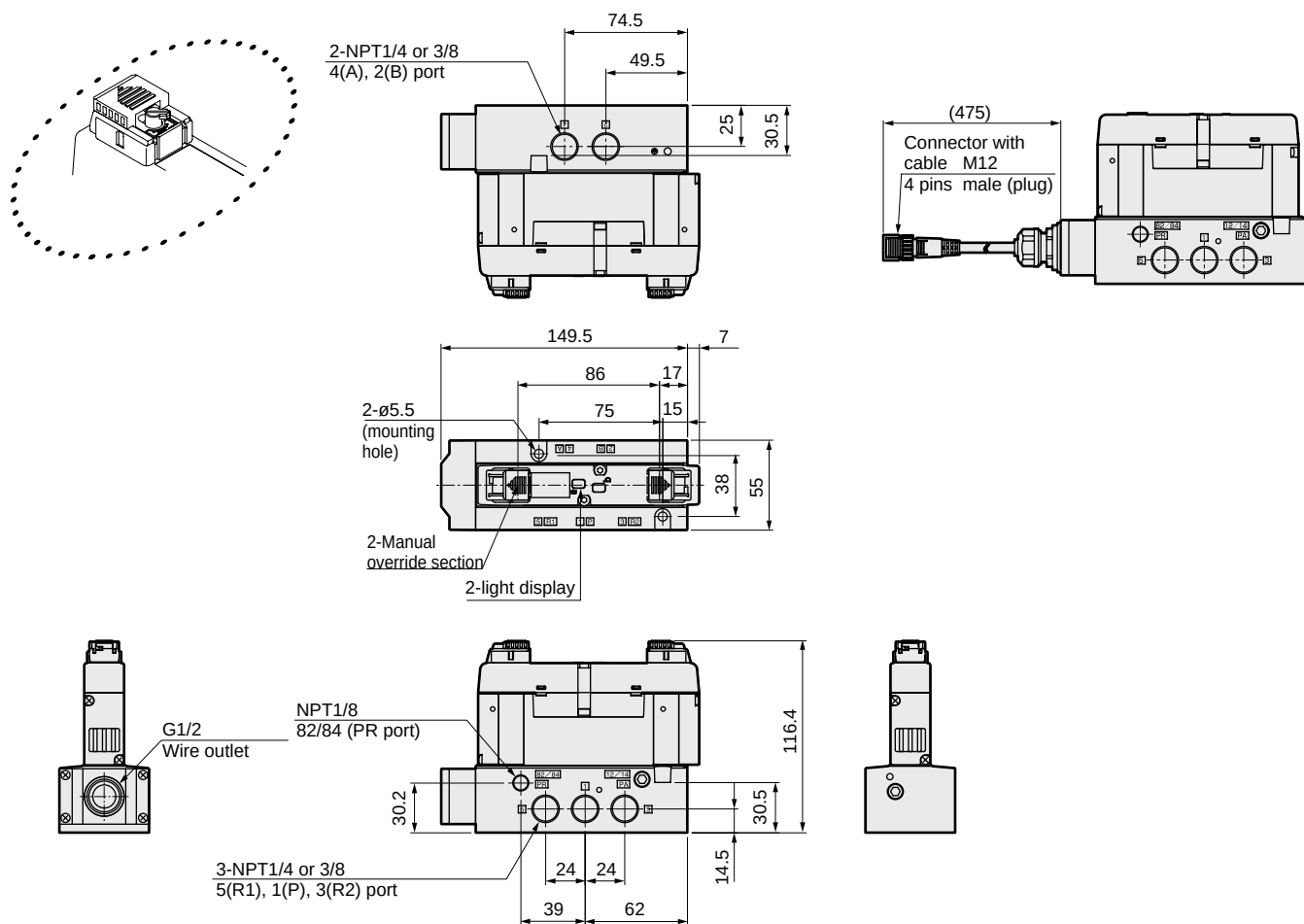


Dimensions

- Locking/non-locking common type with manual override (blank)

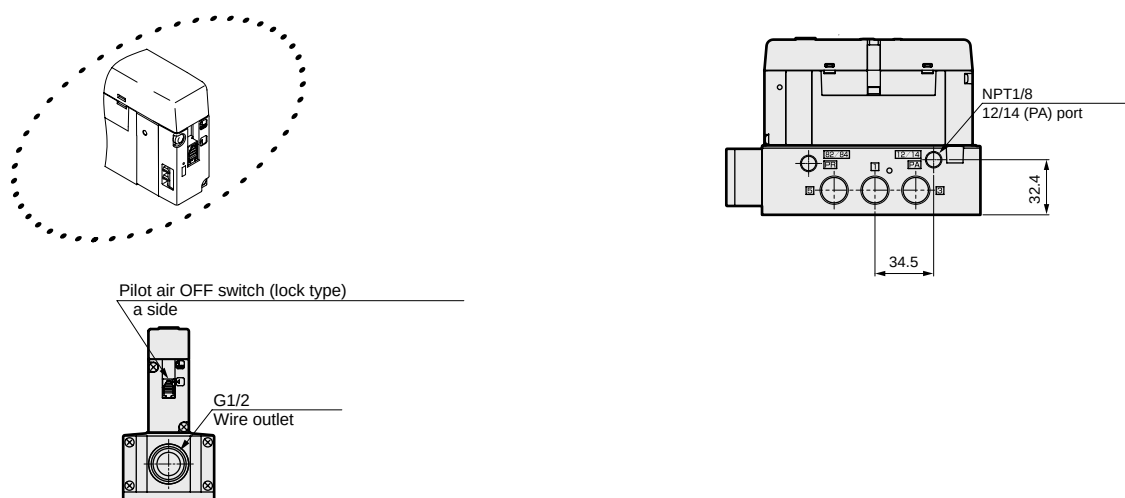
- I/O connector (R1)

Cable: VA-4DBXO5KUG3-CKD276-PG7 (CORRENS)



- With pilot air OFF (M7)

- Outside pilot (K)



MW4GB4-R1 Series

- Applicable cylinder bore size: ø63 to ø125

Features

- IP65 protection structure
- Large flow



Catalog No. CB-023SA

How to order

- Manifold model No.

MW4GB4 **8** **0**-**10N**-**R1** **M** **6**-**3**-**K1**

- Discrete valve block with solenoid valve

NW4GB4 **1** **0**-**10N**-**R1** **M7** — **3**-**K1**

- Discrete solenoid valve

W4GB4 **1** **9**-**00** — **M** — **3**-**K1**

A B C D E F G

⚠ Cautions for model No. selection

Fill out "manifold specifications".

Note 1: If you select the non-locking/locking common type with manual override, do not select M or M7.

Note 2: Both lock equipment with non-locking manual override and pilot air OFF function are provided. Non-locking/locking common type with manual override and OFF function with lock cannot be selected simultaneously.

Note 3: Specify the spacer mounting location and quantity in manifold specifications.
Combination with the masking plate is not available.
The stacked assembly of the spacer is available as a special order.

Note 4: This is internal and outside pilot common.

Note 5: Port P has an integrated filter as standard.

Note 6: This is a custom order.

Coolant proof specifications

The specification can be selected with ⑤ option "A" in How to Order on this page.

For LiB specifications (Catalog No.CC-947A)

- Material for components limited to allow for LiB manufacturing process

** - voltage - **P40**

④ Model No.

Manifold	Discrete valve block with solenoid valve	Discrete solenoid valve
		
MW4GB4	NW4GB4	W4GB4

Symbol	Descriptions	MW4GB4	NW4GB4	W4GB4
⑤ 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	●	●	●
8	Mix manifold (when there are multiple solenoid types)	●		

⑥ Connection diameter {2(B), 4(A) port}				
08N	NPT1/4	●	●	
10N	NPT3/8	●	●	

⑦ Electrical connections (light and surge suppressor provided as standard)				
R1	I/O connector (500 mm)	●	●	

⑧ Option				
Blank	No option (Locking/Non-locking common type with manual override if M or M7 is not selected) Note 1	●	●	●
M	Non-locking manual override (standard)	●	●	●
M7	Lock with pilot air OFF Note 2	●	●	●
Z1	Supply spacer Note 3	●		
Z3	Exhaust spacer Note 3	●		
Z7	Spacer regulator Note 3, 6	●		
K	Outside pilot	●	Note 4	Note 4
A	Coolant proof	●	●	●
F	A/B port filter Note 5	●	●	

⑨ Station no.				
1 to 16	1 station to 16 stations	●		

⑩ Voltage				
3	24 VDC	●	●	●
4	12 VDC	●	●	●

is not available.

Common specifications

Descriptions	MW4GB4	MW4GZ4
Manifold type	Block manifold	
Supply and exhaust method	Common supply and common exhaust	
Pilot exhaust method	Main valve and pilot valve individual exhaust	
Piping direction	Sub-base side porting	Sub-base bottom porting
Type of valve and operation method	Pilot-operated soft spool valve	
Use fluid	Compressed air	
Maximum working pressure MPa	1.0	
Minimum working pressure MPa	0.2 Note 3	
Proof pressure MPa	1.5	
Ambient temperature °C	-5 to 55 (to be unfrozen)	
Fluid temperature °C	5 to 55	
Manual override	Non-locking (standard)	
Lubrication Note 1	Not required	
Degree of protection Note 2	Dust/jet-proof (IP65)	
Vibration/shock m/s ²	49 or less / 294 or less	
Use atmosphere	Not permissible to use in environment containing corrosive gas.	

Note 1: Use the turbine oil Class 1 ISO VG32 if lubricated.

Excessive lubrication will lead to unstable operation.

Note 2: IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test.

Note 3: The working pressure range is 0 to 1.0 MPa when the outside pilot (option symbol: K) is selected. Use an outside pilot pressure between 0.2 and 1.0 MPa.

Note 4: Surge suppressor and indicator are provided as standard.

Electric specifications

Descriptions	MW4GB4•MW4GZ4
Rated voltage V DC	12,24
Rated voltage fluctuation range	±10%
Holding current A	12 VDC 0.100 24 VDC 0.050
Power consumption Note 4 W	12 VDC 1.2 24 VDC 1.2
Thermal class	B (molded coil)
Wiring method	I/O connector (DC)

Individual specifications

Descriptions	MW4GB4	MW4GZ4
Maximum station number	16	
Connection diameter	P port	NPT1/2
	A•B port	NPT1/4, NPT3/8, G1/4, G3/8, NPT1/4, NPT3/8, Push-in fitting 5/16 inch dia.8, 3/8 inch dia., 1/2 inch dia.
	R port	NPT1/2
	PA•PR port	NPT1/8

Descriptions			MW4GB4•MW4GZ4	
			When turned ON	When turned OFF
Response time ms	2-position	Single	30	38
		Double	30	—
	3-position	ABR connection	50	58

Note: Response time is the value at supply pressure 0.5MPa, 20°C and oilless. The value will change based on quality of pressure and oil.

Flow characteristics

Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
W4GB4	2-position		7.4	0.24	7.9	0.30
	3-position	All ports closed	6.4	0.22	7.1	0.32
		ABR connection	6.4	0.17	8.3	0.28
		PAB connection	7.1	0.16	7.4	0.28

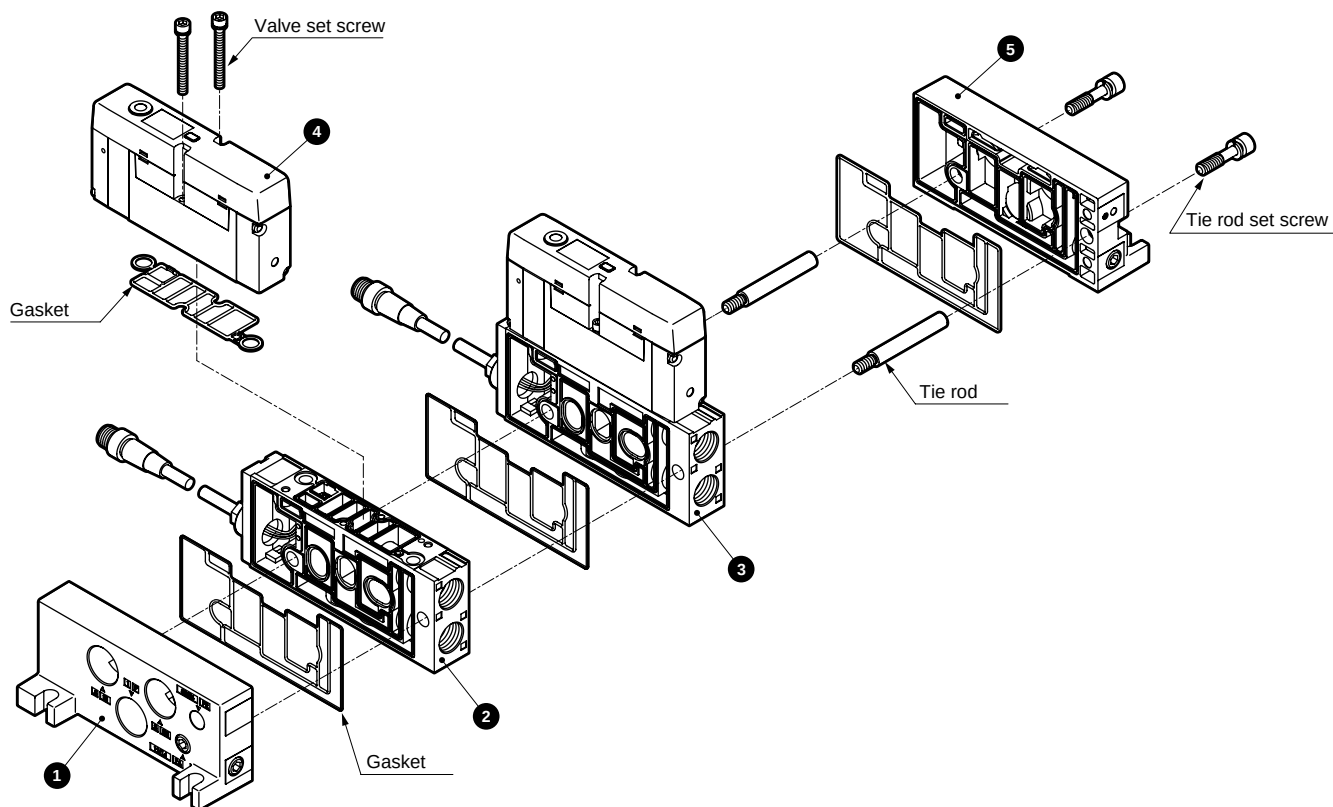
Note 1: Effective area S and sonic conductance C are converted as $S \div 5.0 \times C$.

Note 2: Flow characteristics are for port size NPT3/8.

Manifold components explanation and parts list

● MW4GB4-R1

Individual wiring manifold; sub-base side porting



Main parts list (refer to pages 200 to 205 for details)

No.	Component name	Model no. (example)	No.	Component name	Model no. (example)
1	End block L	NW4G4-EL	4	Discrete solenoid valve	W4GB419-00-M-3
2	Discrete valve block	NW4GB4-V-10N-R1	5	End block R	NW4G4-ER
3	Discrete valve block with solenoid valve	NW4GB410-10N-R1M-3			

Component mass (DC specifications)

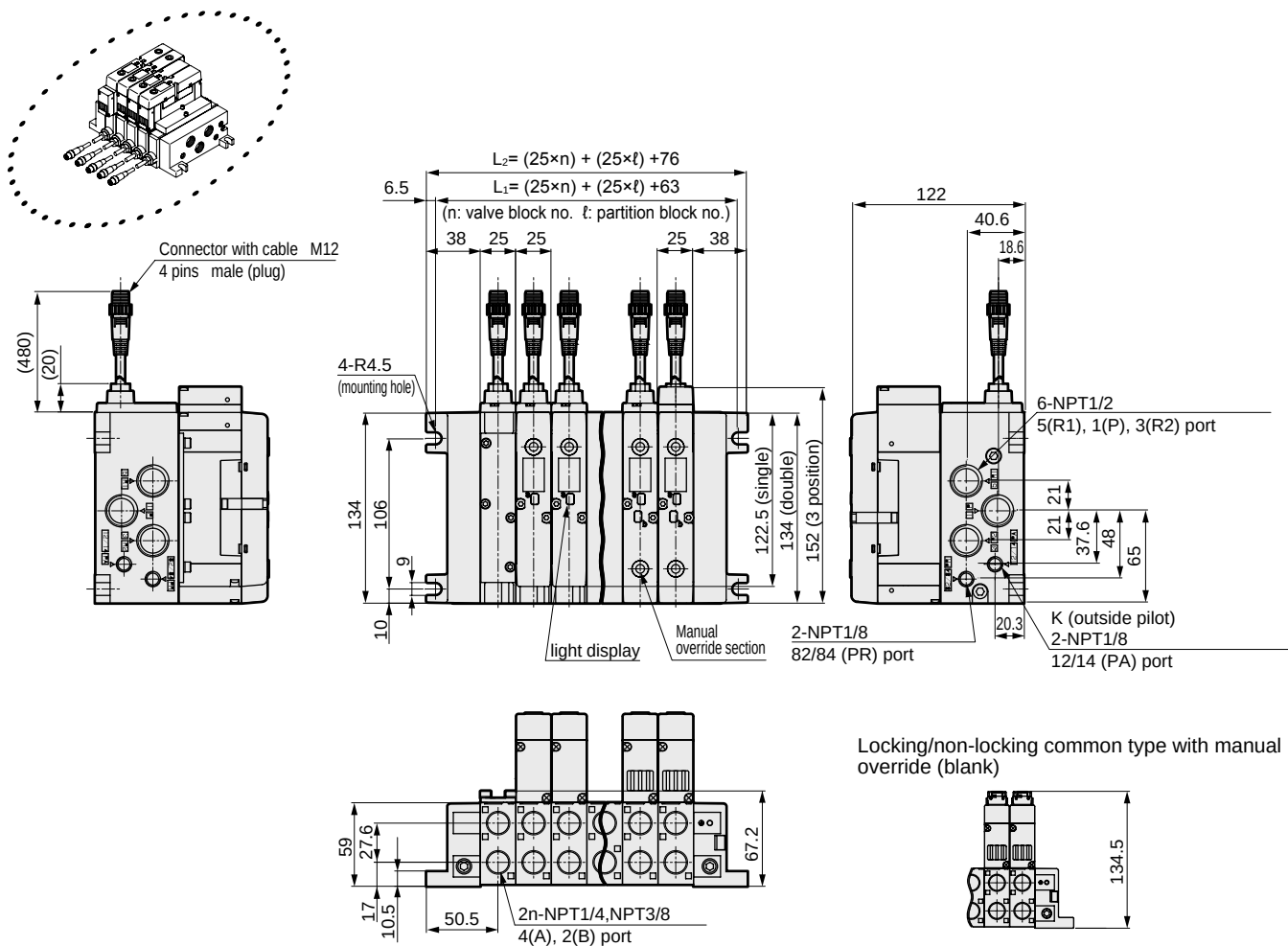
Component name			Mass	Component name			Mass
End block	NW4G4-EL		316	Exhaust spacer	W4G4-R-10		189
	NW4G4-ER		308	Spacer regulator	W4G4-SR-P		460
Discrete valve block with solenoid valve	NW4GB410-10N-R1M-3		584	Tie rod	W4G4-TR-V1 (2 piece set)		16
	NW4GB420-10N-R1M-3		629		W4G4-TR-V2 (2 piece set)		36
	NW4GB430-10N-R1M-3		661		W4G4-TR-V3 (2 piece set)		56
	NW4GZ410-08N-R1M-3		617		W4G4-TR-V4 (2 piece set)		76
	NW4GZ420-08N-R1M-3		662		W4G4-TR-V5 (2 piece set)		96
	NW4GZ430-08N-R1M-3		694		W4G4-TR-V6 (2 piece set)		116
Discrete valve block with masking plate	NW4GB4-MP-10N-R1		415		W4G4-TR-V7 (2 piece set)		136
	NW4GZ4-MP-08N-R1		448		W4G4-TR-V8 (2 piece set)		156
Partition block	NW4G4-SA		360	Tie rod set screw (2 pieces)			16
Supply spacer	W4G4-P-10		187				

Dimensions

● MW4GB4 side porting

I/O connector (R1)

Cable: VA-4DBXO5KUG3-CKD276-PG7 (CORRENS)

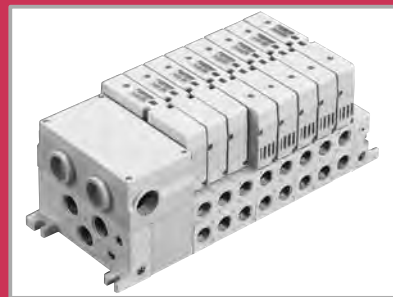


MW4GB4-T1•3•6 Series

• Applicable cylinder bore size: ø63 to ø125

Features

- IP65 protection structure
- Large flow



Catalog No. CB-023SA

How to order

MW4GB4-T1/3 Series

• Manifold model No.

MW4GB4 (8) 0 - (10N) — (T10) (W) (M) - (6) - (3) - K1

• Discrete valve block with solenoid valve

NW4GB4 (1) 0 - (10N) - (1) (M7) — (1) - K1

• Discrete solenoid valve

W4GB4 (1) 9 - 00 — (M) — (3) - K1

A B C D E F G H I

⚠ Cautions for model No. selection

Note 1: This is a custom order.

Note 2: Standard wiring Wired based on the installed valve.

Double wiring Double-solenoid wiring used regardless of installed valve.

Note 3: If you select the non-locking/locking common type with manual override, do not select M or M7.

Note 4: Both lock equipment with non-locking manual override and pilot air OFF function are provided. Non-locking/locking common type with manual override and OFF function with lock cannot be selected simultaneously.

Note 5: Specify the spacer mounting location and quantity in manifold specifications.

Combination with the masking plate is not available.

The stacked assembly of the spacer is available as a special order.

Refer to page 205 for details on supply spacers and exhaust spacers.

Note 6: This is internal and outside pilot common.

Note 7: Port P has an integrated filter as standard.

Note 8: The maximum number of MF stations is 16 with standard wiring and 8 with double wiring.

A Model No.		
Manifold	Discrete valve block with solenoid valve	Discrete solenoid valve
		
MW4GB4	NW4GB4	W4GB4

Symbol	Descriptions	MW	NW	W4	
③ 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	●	●	●	
8	Mixed manifold (when there are multiple solenoid types)	●			
④ Connection diameter {2(B), 4(A) port}					
08N	NPT1/4	●	●		
10N	NPT3/8	●	●		
⑤ Electrical connections					
Blank	Reduced wiring DC specifications		●		
1	Common gland AC specifications 1st to 6th station		●		
2	Common gland AC specifications 7th to 12th station		●		
3	Common gland AC specifications 13th to 16th station		●		
⑥ Wiring method (light and surge suppressor provided as standard)					
Blank	Discrete		●	●	
T10	Common gland	Left	●		
T10R		Right	●		
T30	D-sub connector Note 1	Left	●		
T30R		Right	●		
⑦ Terminal and connector pin array					
Blank	Standard wiring	Note 2	●	●	●
W	Double wiring	Note 2	●	●	
⑧ Option					
Blank	No option (Locking/Non-locking common type with manual override if M or M7 is not selected)	Note 3	●	●	●
M	Non-locking manual override (standard)		●	●	●
M7	Lock with pilot air OFF	Note 4	●	●	●
Z1	Supply spacer	Note 5	●		
Z3	Exhaust spacer	Note 5	●		
Z7	Spacer regulator	Note 1, 5	●		
K	Outside pilot		●	Note 6	Note 6
A	Coolant proof		●	●	●
F	A•B port filter	Note 7	●	●	
⑨ Station no.					
1 to 16	1 station to 16 stations	● Note 8			
⑩ Voltage					
1	100 VAC	●	●	●	
3	24 VDC	●	●	●	
4	12 VDC	●	●	●	
5	110 VAC	●	●	●	

is not available.

How to order

MW4GB4-T6 Series

● Manifold model No.

MW4GB4 (8) 0 - (10N) - (T6G1) (W) (M) - (6) - (3) -K1

● Discrete valve block with solenoid valve

NW4GB4 (1) 0 - (10N) ——— (M7) ——— (3) -K1

● Discrete solenoid valve

W4GB4 (1) 9 - 00 ——— (M) ——— (3) -K1

A

B

C

D

E

F

G

H

! Note on selection guide

Fill out "manifold specifications".

Note 1: W4GB4*9: Plug-in connector

NW4G*4*0: Electric wire for relay (AC)

Connector for relay (DC)

Note 2: Standard wiring Wired based on the installed valve.

Double wiring Double-solenoid wiring used regardless of installed valve.

Note 3: Select either "M" or "M7".

Note 4: Both lock devices with non-locking manual override and pilot air OFF function are provided.

Note 5: Instruct spacer installation position and quantity with the manifold specifications.

Refer to page 205 for the details.

Note 6: This is common for internal and external pilot.

Note 7: For slave unit (OPP2), standard specifications are different from coolant proof specifications.

Option	Slave unit cover material	Specifications
Standard	Polycarbonate	Spatter proof
A	Nylon	Coolant proof

Note 8: A filter to prevent entry of foreign matter is incorporated in end block 1 (P) port as standard.

Note 9: The maximum number of MF stations is 16 with standard wiring and 8 with double wiring.

Note 10: 100/110 VAC and 12 VDC settings are not used for serial transmission connection specifications.

A Model No.		
Manifold	Discrete valve block with solenoid valve	Discrete solenoid valve
		
MW4GB4	NW4GB4	W4GB4

Symbol	Descriptions			
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	●	●	●
8	Mixed manifold (when there are multiple solenoid types)	●		

C Connection diameter {2(B), 4(A) port}				
08N	NPT1/4	●	●	
10N	NPT3/8	●	●	

D Wiring method (light and surge suppressor provided as standard)				
Blank	Discrete		●	●
T6G1	Serial transmission	Left	●	
T6G1R	CC-Link 16 points	Right	●	
T6J1	Serial transmission	Left	●	
T6J1R	UNIWIRED SYSTEM 16 points	Right	●	
T6A1	Serial transmission	Left	●	
T6A1R	UNIWIRED SYSTEM 16 points	Right	●	
T6D1	Serial transmission	Left	●	
T6D1R	Device Net 16 points	Right	●	
T6C1	Serial transmission	Left	●	
T6C1R	CompoBus/S 16 points	Right	●	

E Terminal and connector pin array				
Blank	Standard wiring	Note 1	●	●
W	Double wiring	Note 1	●	●

F Option				
Blank	No option (Locking/Non-locking common type with manual override if M or M7 is not selected)	Note 2	●	●
M	Non-locking manual override (standard)		●	●
M7	Lock with pilot air OFF	Note 3	●	●
Z1	Supply spacer	Note 4	●	
Z3	Exhaust spacer	Note 4	●	
Z7	Spacer regulator	Note 4, 5	●	
K	Outside pilot		●	Note 6
A	Coolant proof	Note 7	●	●
F	A·B port filter	Note 8	●	●

G Station no.				
1 to 16	1 station to 16 stations	Note 9	●	

H Voltage				
3	24 VDC	Note 10	●	●

is not available.

Pneumatic valve

Common specifications

Descriptions	MW4GB4
Manifold type	Block manifold
Supply and exhaust method	Common supply and common exhaust
Pilot exhaust method	Main valve and pilot valve individual exhaust
Piping direction	Sub-base side porting
Type of valve and operation method	Pilot-operated soft spool valve
Use fluid	Compressed air
Maximum working pressure MPa	1.0
Minimum working pressure MPa	0.2 Note 3
Proof pressure MPa	1.5
Ambient temperature °C	-5 to 55 (to be unfrozen)
Fluid temperature °C	5 to 55
Manual override	Non-locking (standard)
Lubrication	Not required
Degree of protection	Dust/jet-proof (IP65)
Vibration/shock m/s ²	49 or less / 294 or less
Use atmosphere	Not permissible to use in environment containing corrosive gas.

Note: Surge suppressor and indicator are provided as standard.

Electric specifications

Item		W4GB4
Rated voltage V	AC	100 (50/60Hz) 110 (50/60Hz)
	DC	12,24
Rated voltage fluctuation range		±10%
Starting current A	AC	100V0.056/0.044
		110V0.051/0.040
	DC	12V—
		24V—
Holding current A	AC	100V0.028/0.022
		110V0.025/0.020
	DC	12V0.100
		24V0.050
Electricpower consumption W	AC	100V1.8/1.5
		110V—
	DC	12V1.2
		24V—
Thermal class		B (molded coil)

Individual specifications

Description		MW4GB4		
		T10(R) Common gland	T30(R) D-sub connector	T6*1(R) Serial transmission
Maximum station number	Standard wiring	16		
	Double wiring	8		
Maximum solenoid number		16		
Connection diameter	P port	NPT1/2		
	A•B port	NPT1/4, NPT3/8, push-in fitting 5/16 inch dia., 3/8 inch dia., 1/2 inch dia.		
	R port	NPT1/2		
	PA•PR port	NPT1/8		

Description			MW4GB4	
			When turned ON	When turned OFF
Response time ms	2-position	Single	30	38
		Double	30	—
	3-position	ABR connection	50	58

Note: Response time is the value at supply pressure 0.5MPa, 20°C and oilless. The value will change based on quality of pressure and oil.

Flow characteristics

Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm ³ /(s•bar)]	b	C [dm ³ /(s•bar)]	b
W4GB4	2-position		7.4	0.24	7.9	0.30
	3-position	All ports closed	6.4	0.22	7.1	0.32
		ABR connection	6.4	0.17	8.3	0.28
		PAB connection	7.1	0.16	7.4	0.28

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

Note 2: Flow characteristics are for connection diameter NPT3/8.

Reduced wiring specifications

Description	T10	T30
Type	Common gland M3 screw type	D-sub connector
Connector	—	D-sub connector 25 pins

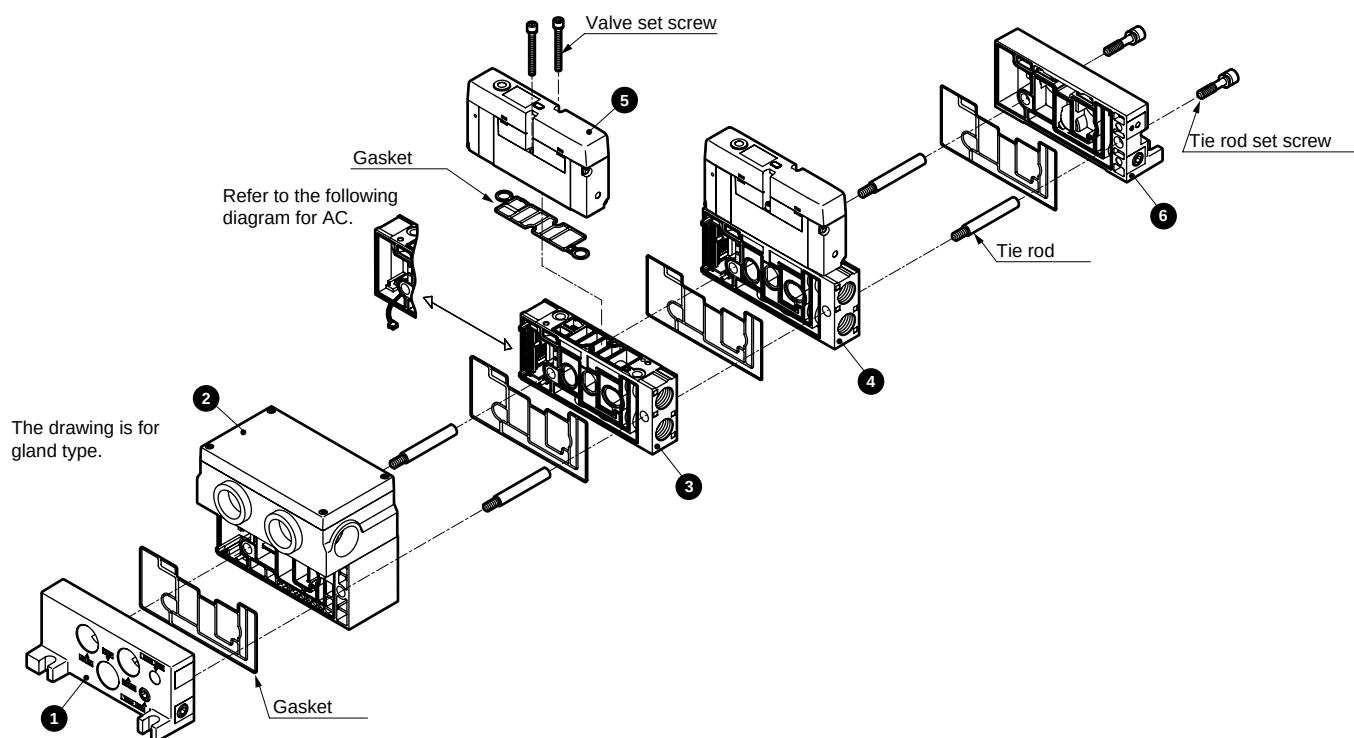
Serial transmission slave unit specifications

Description		T6D1(R)	T6G1(R)	T6A1(R)	T6J1(R)	T6C1(R)
Network name		DeviceNet Note 1, 2	CC-Link ver1.10	UNIWIRED SYSTEM	UNIWIRED H SYSTEM	CompoBus/S
Power supply voltage	Unit side	24 VDC $\pm$ 10%	24 VDC $\pm$ 10%	24 VDC +10%, -5% Common power terminal	24 VDC +10%, -5% Common power terminal	24 VDC $\pm$ 10%
	Valve side	24 VDC +10%, -5%	24 VDC +10%, -5%			24 VDC +10%, -5%
	Communication side	11 to 25 VDC	—			—
Current consumption	Unit side	100mA or less (when all points are ON)	100mA or less (when all points are ON)	200mA or less (when all points are ON) (The current consumption of body is not included.)	150mA or less (when all points are ON) (The current consumption of body is not included.)	60mA or less (when all points are ON)
	Valve side	15mA or less (when all points are OFF)	15mA or less (when all points are OFF)			15mA or less (when all points are OFF)
	Communication side	50mA or less	—			—
Output points		16 points	16 points	16 points	16 points	16 points
Occupied station, occupied point		2 byte	1 station	Output 16 points	Output 16 points	2 node address (8 point mode)

Note 1: Compatible with DeviceNet compliant networks (DLNK, etc.).

Note 2: Contact CKD for EDS file. EDS file: Text file of parameters for communicating with each brand masters.

Manifold components explanation and parts list



Main parts list (refer to pages 200 to 205 for details)

No.	Component name	Model no. (example)	No.	Component name	Model no. (example)
1	End block L	NW4G4-EL	4	Discrete valve block with solenoid valve	NW4GB410-10N-M-3
2	Wiring block	NW4G4-T10	5	Discrete solenoid valve	W4GB419-00-M-3
3	Discrete valve block	NW4GB4-V1-10N	6	End block R	NW4G4-ER

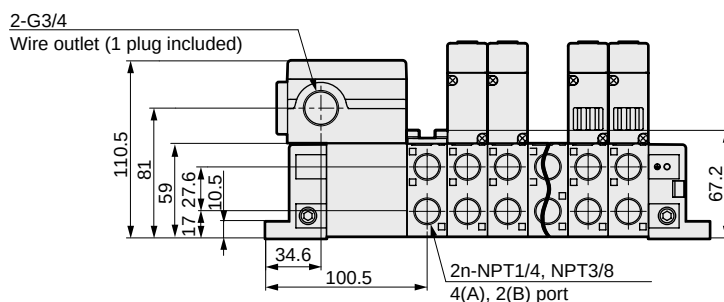
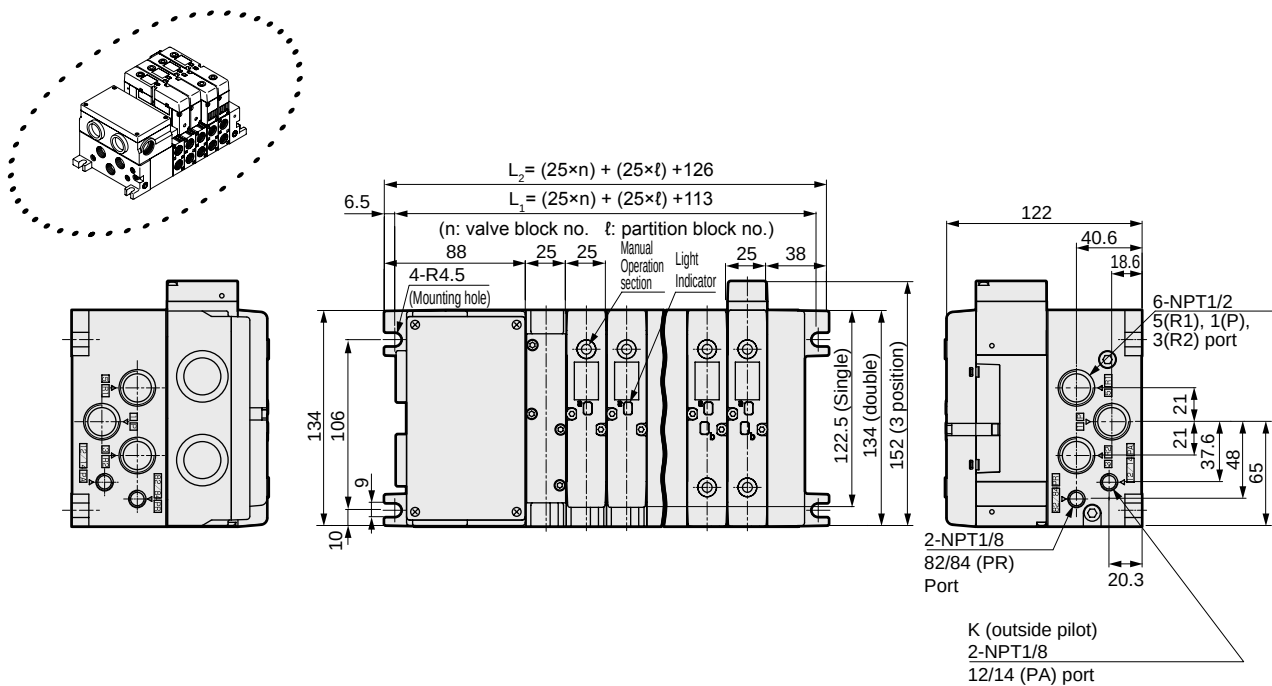
Component mass (DC specifications)

(g)					
Parts name	Model No.	Mass	Parts name	Model No.	Mass
End block	NW4G4-EL	316	Partition block	NW4G4-SA	360
	NW4G4-ER	308	Supply spacer	W4G4-P-10N	187
Valve block with solenoid valve	NW4GB410-10N-M-3	584	Exhaust spacer	W4G4-R-10N	189
	NW4GB420-10N-M-3	629	Spacer regulator	W4G4-SR-P	460
	NW4GB4 $\frac{3}{4}$ 0-10N-M-3	661	Tie rod	W4G4-TR-V1 (2 piece set)	16
	NW4GB410-10N-R1M-3	617		W4G4-TR-V2 (2 piece set)	36
	NW4GB420-10N-M-3	662		W4G4-TR-V3 (2 piece set)	56
	NW4GB4 $\frac{3}{4}$ 0-10N-M-3	694		W4G4-TR-V4 (2 piece set)	76
Valve block with masking plate	NW4GB4-MPD-101	415		W4G4-TR-V5 (2 piece set)	96
	NW4GZ4-MPD-08	448		W4G4-TR-V6 (2 piece set)	116
Wiring block	NW4G4-T10	550		W4G4-TR-V7 (2 piece set)	136
	NW4G4-T30	905		W4G4-TR-V8 (2 piece set)	156
	NW4G4-T6G1	710	Tie rod set screw (2 pieces)	—	16

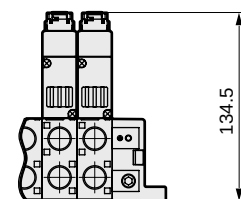
Dimensions

● MW4GB4 side porting

Common gland (T10) left



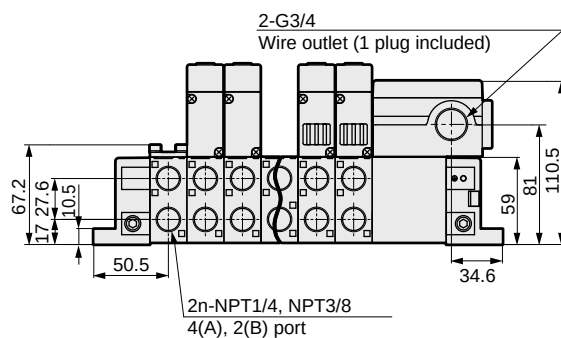
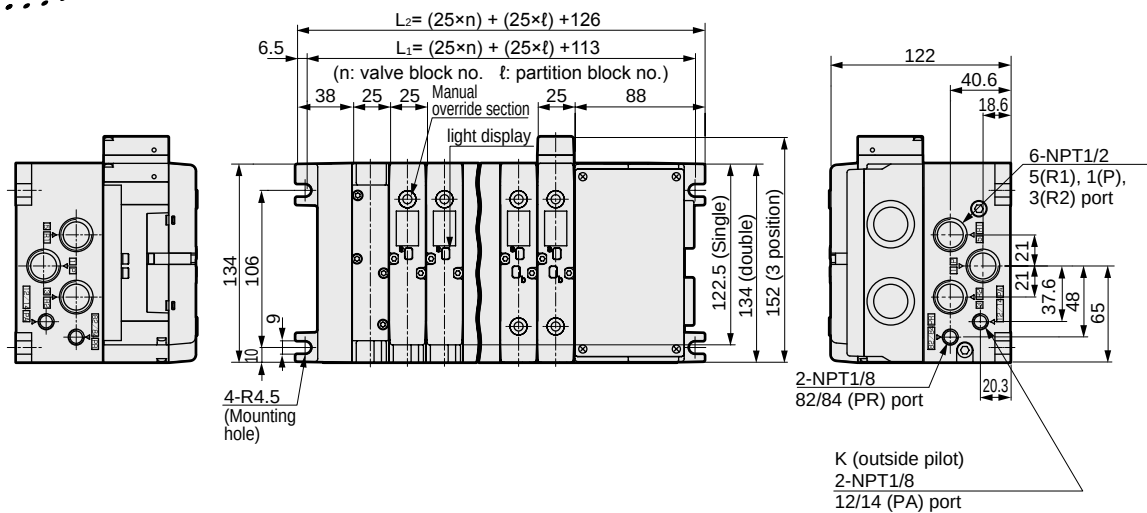
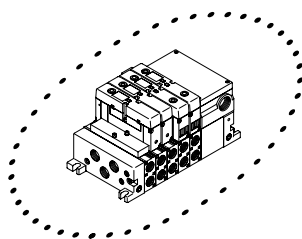
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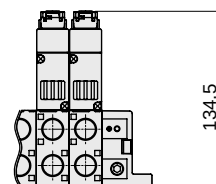
Dimensions

● MW4GB4 side porting

Common gland (T10R) right



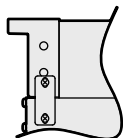
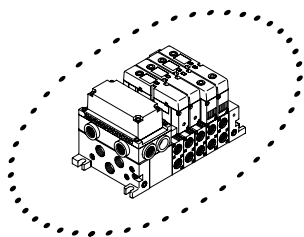
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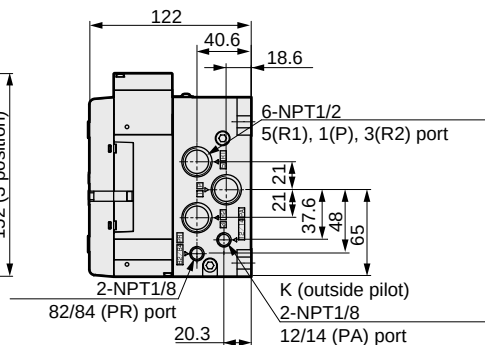
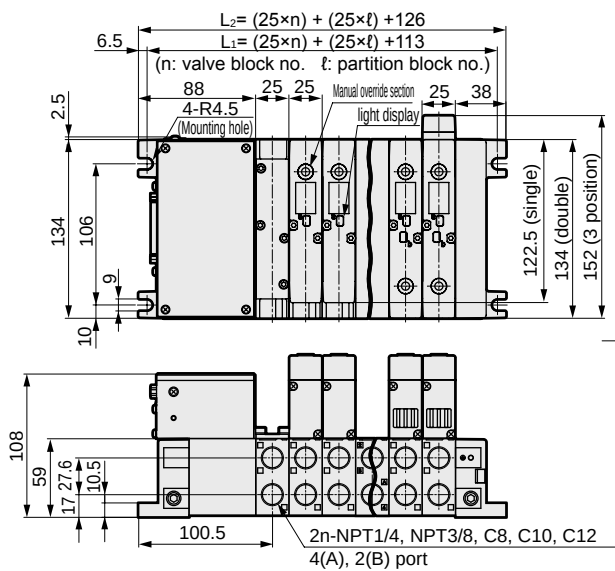
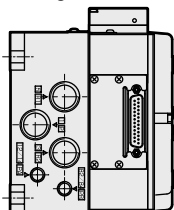
Dimensions

● MW4GB4 side porting

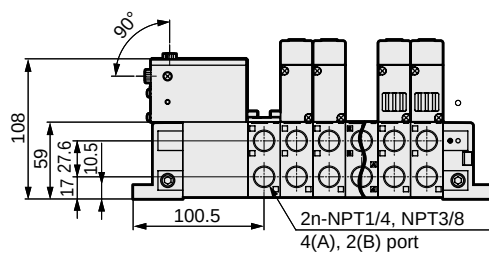
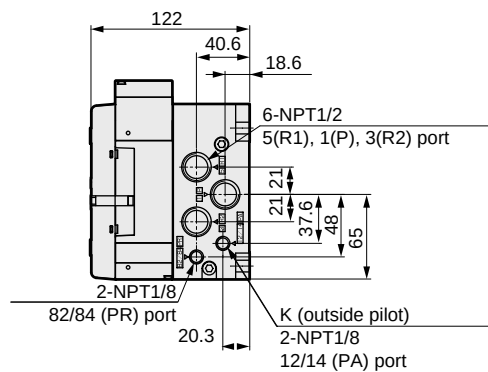
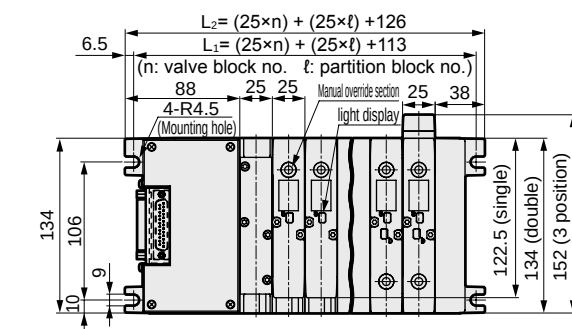
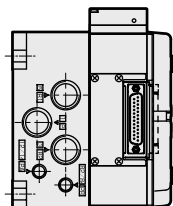
D-sub connector (T30) left (custom order)



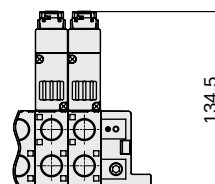
• Voltage: AC



• Voltage: DC



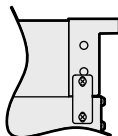
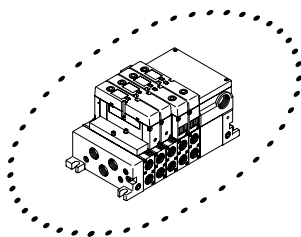
Locking/non-locking common type with manual override (blank)



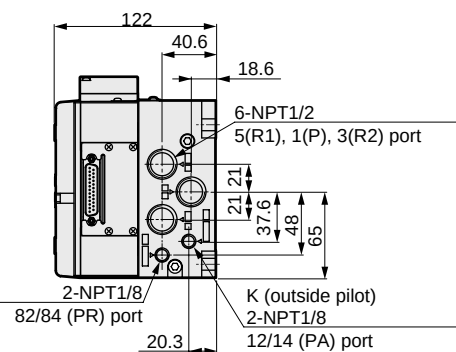
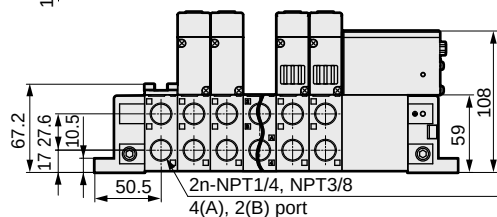
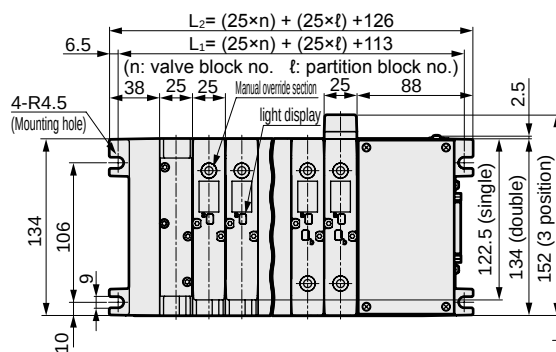
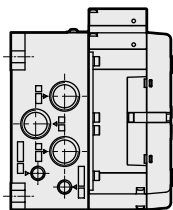
Dimensions

• MW4GB4 side porting

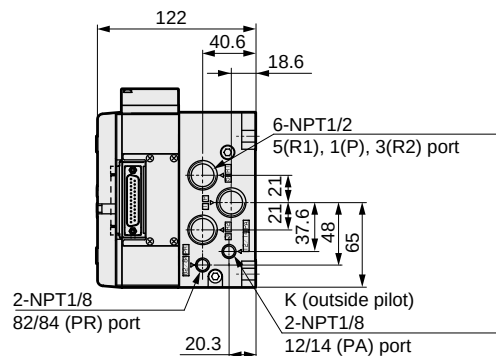
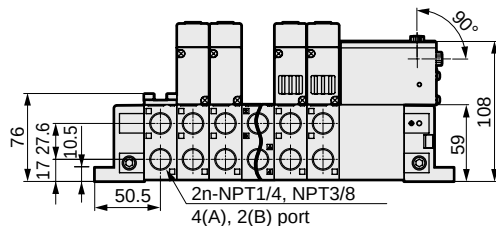
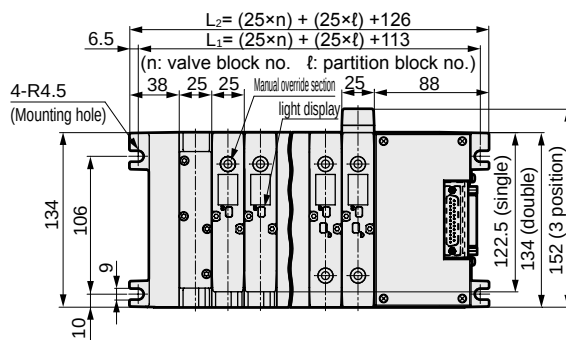
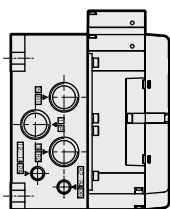
D-sub connector (T30R) right (custom order)



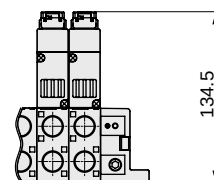
• Voltage: AC



• Voltage: DC



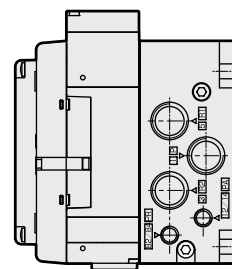
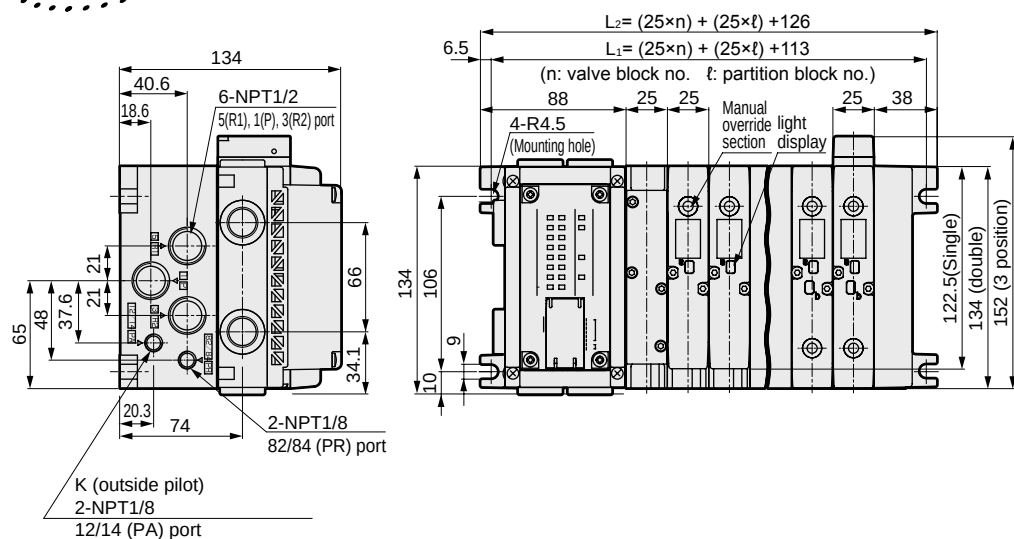
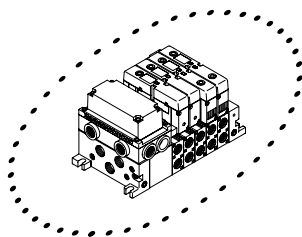
Locking/non-locking common type with manual override (blank)



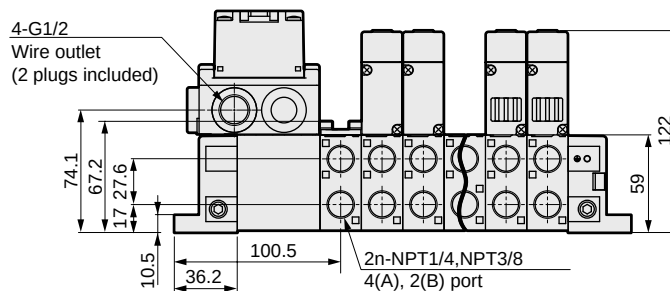
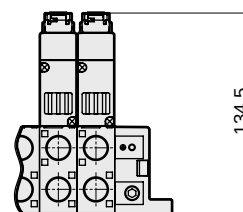
Dimensions

- MW4GB4 side porting

Serial transmission (T6*1) Left

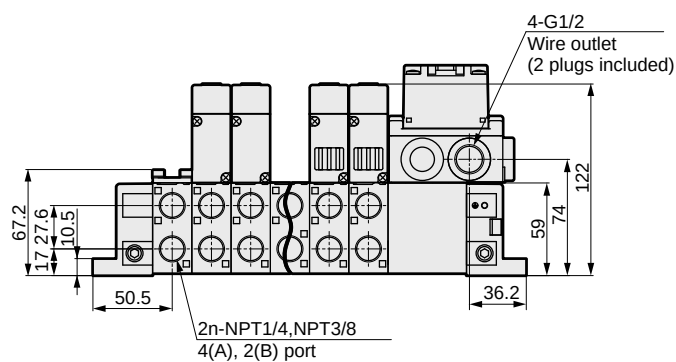
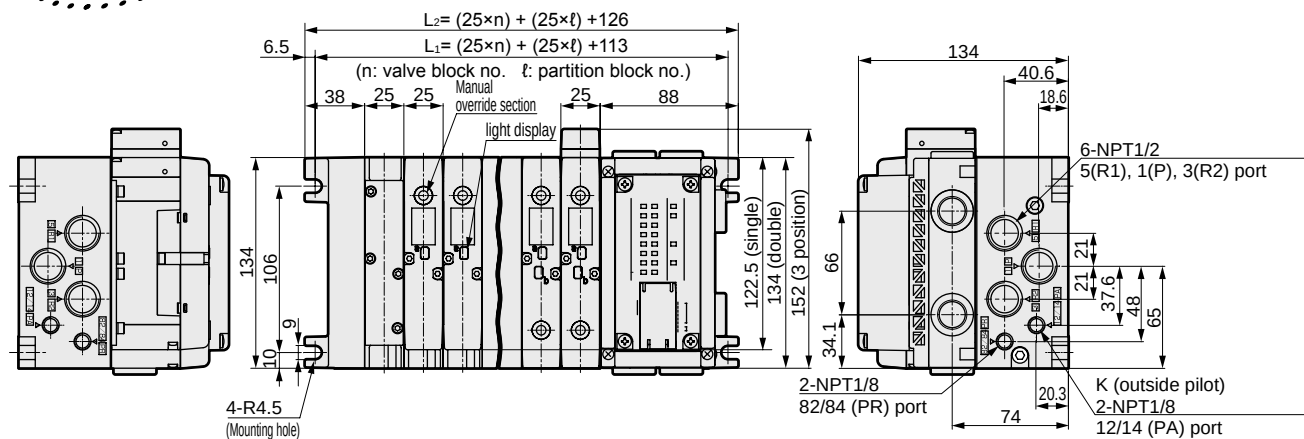
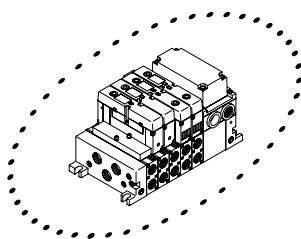


Locking/non-locking common
type with manual override
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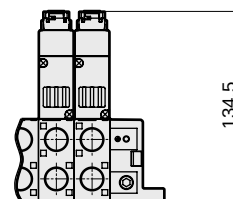


Dimensions

● MW4GB4 side porting Serial transmission (T6*1R) Right



Locking/non-locking common type with manual override (blank)



Piping section

A. Discrete valve block with solenoid valve *Two tie-rods are attached.

This block is assembled with solenoid valve and valve block (separated resin base).

B. Discrete valve block with masking plate* Two tie-rods are attached.

NW4GB4 - **MP** - **10N** - **R1** **F**
A **B** **C** **D** **E**

Symbol	Descriptions
A Model No.	
NW4GB4	Sub-base side porting

B Type	
MP	Individual wiring
MPS	Reduced wiring single standard wiring
MPD	Reduced wiring single double wiring, reduced wiring double 3 position

C Connection diameter {2(B), 4(A) port}		
08N	NPT1/4	
10N	NPT3/8	Note
C8N	5/16 inch dia. push-in fitting	Note
C10N	3/8 inch dia. push-in fitting	Note
C12N	1/2 inch dia. push-in fitting	Note

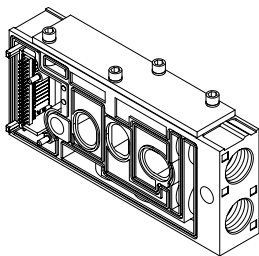
D Electrical connections	
Blank	Reduced wiring DC specifications
R1	I/O connector (DC, 500 mm)
1	Common gland AC specifications 1st to 6th station
2	Common gland AC specifications 7th to 12th station
3	Common gland AC specifications 13th to 16th station

E Option	
Blank	No option
F	A•B port filter

Note: Base back porting is not available.

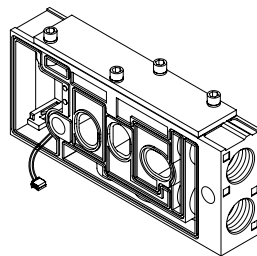
● <DC>

NW4GB

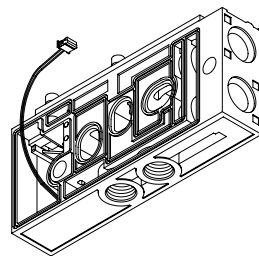


● <AC>

NW4GB



NW4GZ



Piping section

C. Partition block *Two tie-rods are attached.

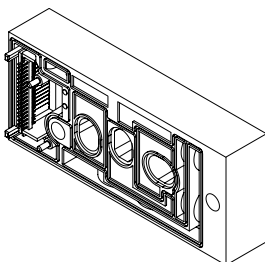
NW4G4 - **SA** - **●**
A **B**

Symbol	Descriptions
A Type	
SA	P•R•PA•PR stop

B Voltage	
Blank	DC
AC	AC

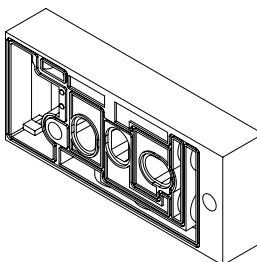
● <DC>

NW4G4-SA



● <AC>

NW4G4-SA-AC



Piping section

D. Discrete valve block (discrete only) *Two tie-rods are attached.

NW4GB4 - **V1** - **10N** - 

Symbol	Descriptions
A Model No.	
NW4GB4	Sub-base side porting

B Type	
V	Individual wiring
V1	Reduced wiring single standard wiring
V2	Reduced wiring single double wiring, reduced wiring double 3 position

C Connection diameter {2(B), 4(A) port}

08N	NPT1/4
10N	NPT3/8 (NW4GB4 only)
C8N	5/16 inch dia. push-in fitting (NW4GB4 only)
C10N	3/8 inch dia. push-in fitting (NW4GB4 only)
C12N	1/2 inch dia. push-in fitting (NW4GB4 only)

D Electrical connections

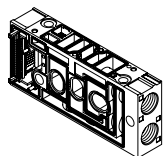
Blank	Reduced wiring DC specifications
R1	I/O connector (DC, 500 mm)
1	Common gland AC specifications 1st to 6th station
2	Common gland AC specifications 7th to 12th station
3	Common gland AC specifications 13th to 16th station

E Option

Blank	No option
F	A•B port filter

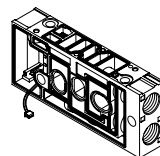
● <DC>

NW4GB

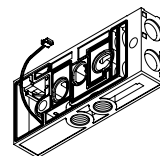


● <AC>

NW4GB



NW4GZ



Pneumatic valve

Piping section

Problems could arise depending on the structure, so the function of each block should be studied in detail before making a selection.

E. End block

The atmosphere opening type has a built-in exhaust muffler.

NW4G4 - **ER** - **K** - 

Symbol	Descriptions
A Type	
EL	Common exhaust piping Left Note 1, 2
ER	Common exhaust piping Right Note 1, 2
EXL	Atmospheric release Left, with silencer box Note 1, 2
EXR	Atmospheric release Right, with silencer box Note 1, 2
ECL	Common exhaust block, with exhaust cleaner Left Note 1, 2
ECR	Common exhaust block, with exhaust cleaner Right Note 1, 2
ENCL	Common exhaust block, no exhaust cleaner Left Note 1, 2
ENCR	Common exhaust block, no exhaust cleaner Right Note 1, 2

B Connection diameter {1(P), 3(R2), 5(R1) port}

N	NPT1/2
---	--------

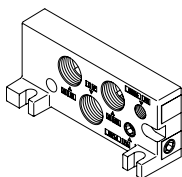
C Option

Blank	No option
K	Outside pilot Note 1

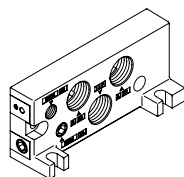
Note 1: Only ER can be selected for EXL, ECL, or ENCL. Only EL can be selected for EXR, ECR, or ENCR.

Note 2: Only EL or ER can be selected for K.

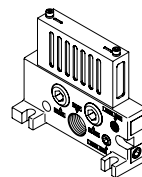
NW4G4-EL



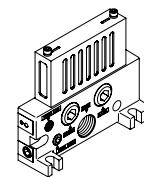
NW4G4-ER



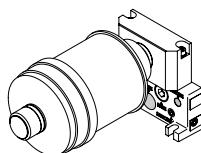
NW4G4-EXL



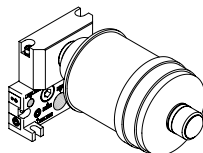
NW4G4-EXR



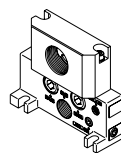
NW4G4-ECL



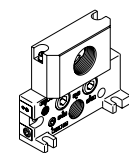
NW4G4-ECR



NW4G4-ENCL



NW4G4-ENCR



● Notes when configuring manifold.

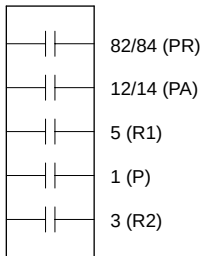
- End block is different for the inside pilot and outside pilot types.
Valve and valve block are the same things.
- To divide a pilot flow path {12/14(PA), 82/84(PR)}, select partition blocks.
A partition plug can only divide a main flow path {1 (P), 5(R1), 3(R2)}.

● Partition specifications

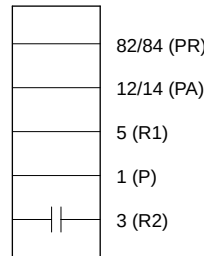
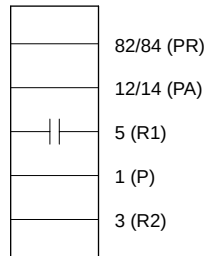
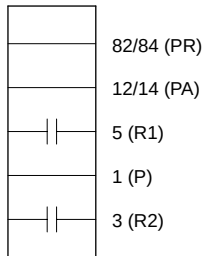
- Various pneumatic systems can be configured by using partition plugs and partition blocks.
Faults may occur depending on the configuration, so sufficiently understand the function before selecting.

① Inside pilot

- Using partition blocks



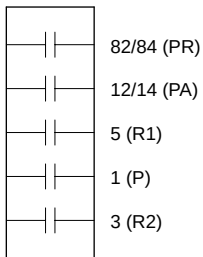
- Using partition plugs



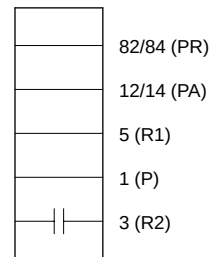
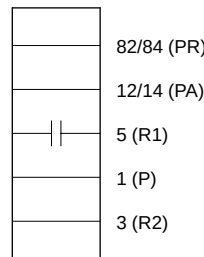
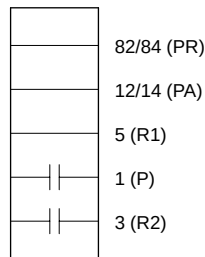
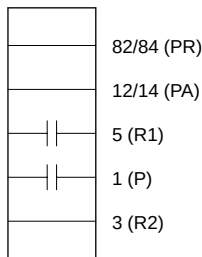
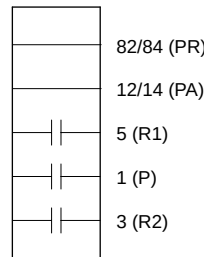
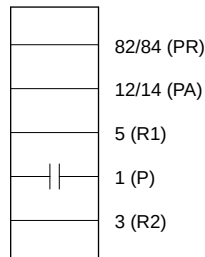
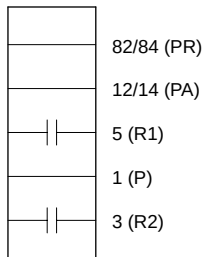
- An inside pilot cannot partition a 1(P) flow path.
This is because the 1(P) flow path and 12/14 (PA) flow path are connected with an end block.

② Outside pilot

- Using partition blocks

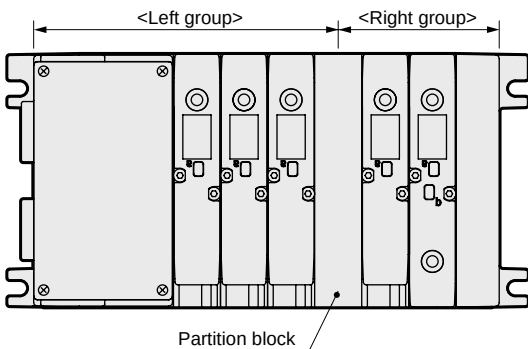


- Using partition plugs



<Partition block>

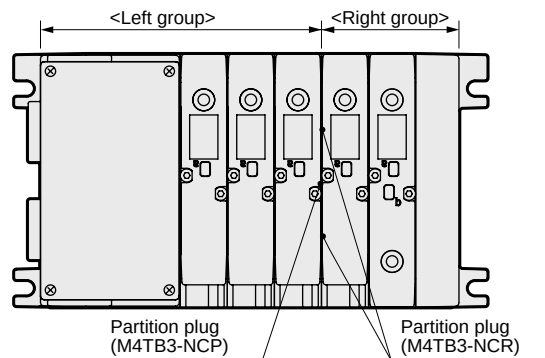
Model No.: NW4G4-SA(-AC)
Refer to page 200



- Partitions intake and exhaust paths and pilot flow paths.
- The block width increases by 25 mm.

<Partition plug>

Model No.: M4TB3-NC
Refer to page 205



- Can be used without increasing the dimensions.
- Can partition main intake and exhaust paths.

F. Manifold base

Discrete manifold base can be purchased. But the specifications may be limited.
(Manifold specifications are not necessary when only the manifold base is ordered.)

● Sub-base side porting

MW4GB4 - **10N** - **R1** - **F** - **5** - **3** - **K1**
A **B** **C** **D** **E** **F** **G** **H**

Symbol	Descriptions
A Model No.	
NW4GB4	Sub-base side porting
B Connection diameter {2(B), 4(A) port}	
08N	NPT1/4
10N	NPT3/8 Note 1
C8N	5/16 inch dia. push-in fitting Note 1
C10N	3/8 inch dia. push-in fitting Note 1
C12N	1/2 inch dia. push-in fitting Note 1
C End block	
Blank	Common exhaust
XU	Atmospheric release silencer box right Note 2, 3
XD	Atmospheric release silencer box left Note 2, 3
CU	Common exhaust block, with exhaust cleaner Right Note 2, 3
CD	Common exhaust block, with exhaust cleaner Left Note 2, 3
EU	Common exhaust block, no exhaust cleaner Right Note 2, 3
ED	Common exhaust block, no exhaust cleaner Left Note 2, 3

D Wiring method

R1	Individual wiring I/O cable removal	Note 4
T10	Common gland	Note 2
T10R	Common gland (right)	Note 2
T30	D-sub connector	Note 2, 5
T30R	D-sub connector (right)	Note 2, 5
T6G1	CC-Link 16 points	Note 2, 6
T6G1R	CC-Link 16 points (right)	Note 2, 6
T6J1	UNIWIRED H SYSTEM 16 points	Note 2, 6
T6J1R	UNIWIRED H SYSTEM 16 points (right)	Note 2, 6
T6A1	UNIWIRED SYSTEM 16 points	Note 2, 6
T6A1R	UNIWIRED SYSTEM 16 points (right)	Note 2, 6
T6D1	DeviceNet 16 points	Note 2, 6
T6D1R	DeviceNet 16 points (right)	Note 2, 6
T6C1	CompoBus/S 16 points	Note 2, 6
T6C1R	CompoBus/S 16 points (right)	Note 2, 6

E Terminal and connector pin array

W	Double wiring
---	---------------

F Option

Blank	No option
K	Outside pilot Note 3
A	Coolant proof Note 7
F	A•B port filter

G Station no.

1 to 8	1 station to 8 stations
--------	-------------------------

H Voltage

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

Note 1: Base back porting is not available.

Note 2: If the wiring method is for the left side, XD, CD, and ED cannot be selected.

If it is for the right side, XU, CU, and EU cannot be selected.

Note 3: Only Blank can be selected for K.

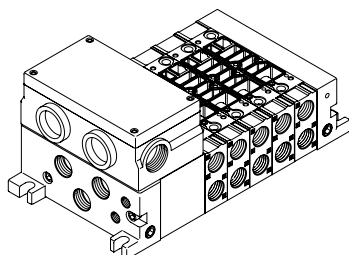
Note 4: For R1, only DC voltage is available.

Note 5: This is a custom order.

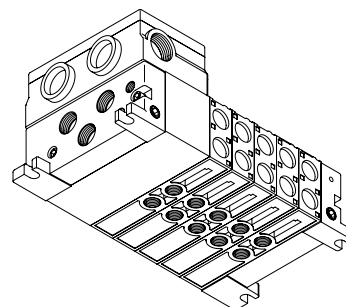
Note 6: For T6*, only 24 VDC voltage is available.

Note 7: For T6*, the slave station (OPP2) differs for standard specifications and coolant proof specifications.

● MW4GB4 (Sub-base side porting)



● MW4GZ4 (Sub-base rear poring)



Contact us for details.

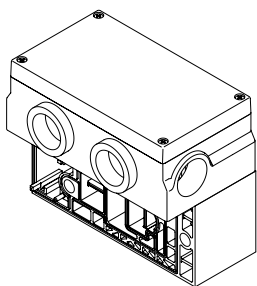
Wiring section (Wiring block) * Discrete wiring blocks are only available for DC specifications.

G. Common gland block (T10)

*Two tie-rods are attached.

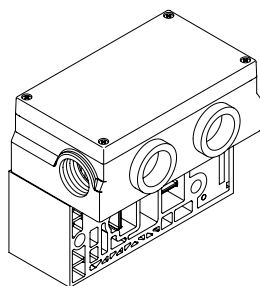
● Left

NW4G4-T10



● Right

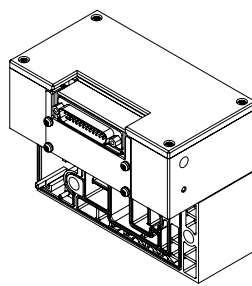
NW4G4-T10R



H. D-sub connector (T30) (custom order)

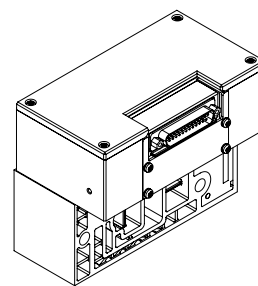
● Left

NW4G4-T30



● Right

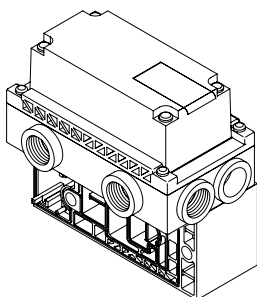
NW4G4-T30R



I. Serial transmission block *Two tie-rods are attached.

● Left

NW4G4-T6*1



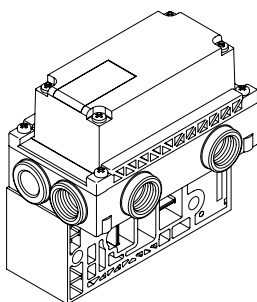
NW4G4 - T6G1 - A
A B

Symbol	Descriptions
A Type	
T6G1	CC-Link 16 points
T6J1	UNIWIRED H SYSTEM 16 points
T6A1	UNIWIRED SYSTEM 16 points
T6D1	Device Net 16 points
T6C1	CompoBus/S 16 points
B Option	
Blank	Standard (spatter proof)
A	Coolant proof Note

Note: The slave unit (OPP2) differs for standard specifications and coolant proof specifications.

● Right

NW4G4-T6*1R

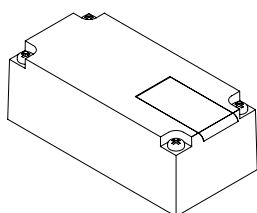


NW4G4 - T6G1R - A
A B

Symbol	Descriptions
A Type	
T6G1R	CC-Link 16 points
T6J1R	UNIWIRED H SYSTEM 16 points
T6A1R	UNIWIRED SYSTEM 16 points
T6D1R	Device Net 16 points
T6C1R	CompoBus/S 16 points
B Option	
Blank	Standard (spatter proof)
A	Coolant proof Note

Note: The slave unit (OPP2) differs for standard specifications and coolant proof specifications.

Discrete serial transmission slave unit model No.



W4G - OPP2 - 1G - A
A B

Coolant proof specifications

Ozone specifications can be selected with option "A" in No. B for How to Order.

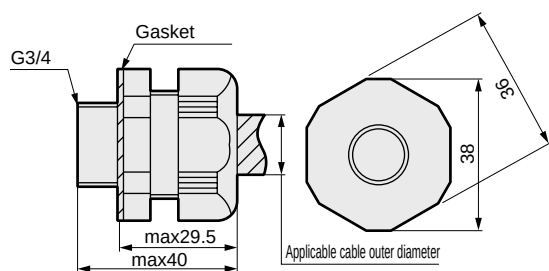
Symbol	Descriptions
A Wiring method	
1G	T6G1 CC-Link 16 points
1J	T6J1 UNIWIRED H SYSTEM 16 points
1A	T6A1 UNIWIRED SYSTEM 16 points
1D	T6D1 Device Net 16 points
1C	T6C1 CompoBus/S 16 points
B Option	
Blank	Standard (spatter proof) (Polycarbonate)
A	Coolant proof (Nylon) Note

Note: The slave unit (OPP2) differs for standard specifications and coolant proof specifications.

Related products

● Cable clamp

T10



(reference value)

Cable clamp body tightening torque : 4.0 to 4.5N·m

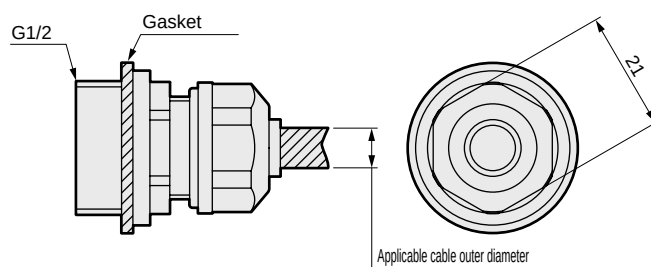
Tightening cap tightening torque : 3.0 to 3.5N·m

W4G - SCL-18A

A

Symbol	Screw size, applicable cable outer diameter
A Type	
SCL-18A	G3/4, ø14.5 to 16.5
SCL-18B	G3/4, ø16.5 to 18.5

T6*



Applicable cable outer diameter

: ø6 to ø8

(reference value)

Cable clamp body tightening torque : 2.0 to 2.4N·m

Tightening cap tightening torque : 0.5 to 0.7N·m

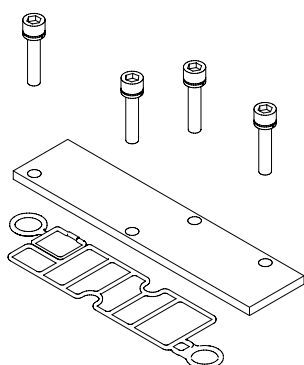
W4G - OA-W1608C1

A

Symbol	Screw size, applicable cable outer diameter
A Type	
OA-W1608C1	G1/2, ø6 to 8

● Masking plate kit

W4G4-MP



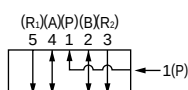
* Kit includes masking plate, gasket, PRR check valve, 4 set screws

● Partition plug

M4TB3-NC



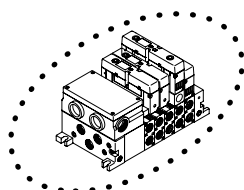
● Individual supply spacer



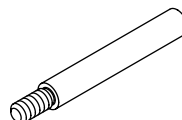
W4G4 - P - 08N

A

Symbol	Descriptions
A Connection diameter {1(P) port}	
08N	NPT1/4
10N	NPT3/8



● Tie rod



W4G4 - TR - V1

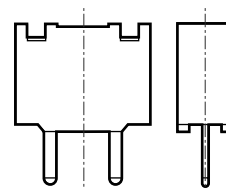
A

Symbol	Descriptions
A Type	
V1	Valve block for 1 station
V2	Valve block for 2 station
V3	Valve block for 3 station
V4	Valve block for 4 station
V5	Valve block for 5 station
V6	Valve block for 6 station
V7	Valve block for 7 station
V8	Valve block for 8 station

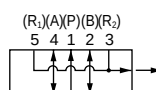
* 2 piece set

● Fuse

4T9-LM20



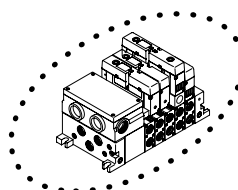
● Individual exhaust spacer



W4G4 - R - 08N

A

Symbol	Descriptions
A Connection diameter {3/5(R) port}	
08N	NPT1/4
10N	NPT3/8



How to fill out manifold specifications

Manifold model no. (example)

MW **4** **GB4** **8** **0-** **10N** **-** **T10** **W** **M** **-** **6** **-** **3**

A Model no. **B** Solenoid position **C** Connection diameter **D** Wiring method **E** Terminal and connector pin array **F** Option **G** Station no. **H** Voltage

2 solenoid position types and over
 Connection diameter NPT3/8
 Common gland left

• When completing this form, select the model No. from the "Block configuration" (pages 200 to 205).

Part name	Model No.	Installation position																Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
End block (P.201)	NW4G4-E L	○																1
	NW4G4-E R									○								1
Wiring block (P.204)	NW4G4-T 10	○																1
Valve block with solenoid valve (P.200)	NW4GB4 1 0- 10N -																	1
	NW4GB4 2 0- 10N -				○	○	○	○										4
	NW4GB4 3 0- 10N -																	1
	NW4GB4 0-																	
	NW4GB4 0-																	
Valve block with masking plate (P.200)	NW4GB4-MP																	
	NW4GB4-MP																	
Partition block (P.200)	NW4G4-SA-																	
Spacer type (P.205)	Individual supply spacer (P.205)																	
	Individual exhaust spacer (P.205)																	
	Spacer regulator (Custom order)																	
Others	Partition plug (P.205) M4TB3-NCP																	
	M4TB3-NCR																	2×
Attachment product	Silencer (resin)	Indicate the quantity in the Quantity field on the right.																
	Cable clamp (P.205) W4G-																	

Preparing the manifold specifications

- Complete from the left with the piping port on the near side, regardless of wiring block.
(Indicate the block type selected from the block part components (pages 200 to 205) and the layout instructions.)
- Write the designated total block quantity in the required quantity at the right end of the table.
- Circle required accessories.
- Manifold specifications are provided for each series. Indicate corresponding specifications.
MW4GB4 sub-base side porting Page 207
- The stacked assembly of the spacer is available as a special order.
Consult with CKD for such requests.

● How to fill out wiring specifications form (T10 AC specifications only)

There is no need to fill this out for standard wiring and double wiring.

● Wiring specifications (example)

*The following example is completed based on the previous page's manifold specifications.

Connector pin or terminal box No.	Valve No.															
T10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		a														
2		b														
3	a															
4																
5			a													
6			b													
7				a												
8				b												
9					a											
10					b											
11						a										
12						b										
13																
14																
15																
16																
COM																
COM																

● Notes on wiring specifications

① Complete this form when using wiring other than standard wiring or double wiring, and enclose with manifold specifications.

This order is processed as a customized order, and requires separate consultation.

② The valve number is the number counting only valve blocks in order from the left facing the port.

This number differs from installation position numbers.

③ The valve block with a masking plate is wired beforehand.

"-MPS" is for the a side wiring only. "-MPD" is for both the a and b side wiring.

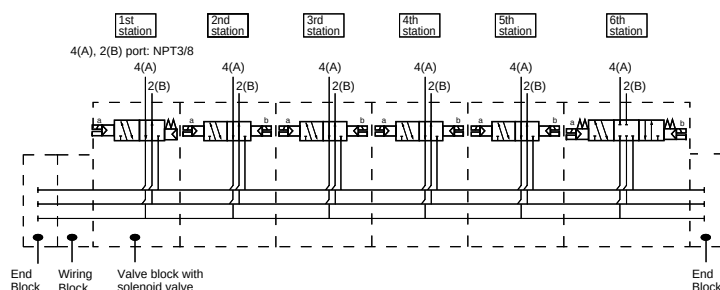
④ A double solenoid or 3-position solenoid valve cannot be assembled onto "-MPS".

Expansion is required when the valve block with a solenoid valve is used.

⑤ Spare wiring for expansion cannot be done beforehand. Install the valve block with masking plate.

Reference circuit diagram

This is references circuit diagram in the previous page manifold model no. (example).



- This [] indicates each block's configuration.
- Manifold station numbers are set in order from the left facing the piping port.
(* Wiring and end blocks are not included in manifold stations.)
- Select the type from the block part configuration (pages 200 to 205), independent wiring and reduced wiring manifolds.
- The layout position is set in order from the left facing the piping port.

● MW4GB4 (reduced wiring) block manifold specifications

● Contact ● Quantity set ● Request date / /

Slip No. Order No.

● Manifold model No.

MW4GB4 0- - - -

A Model no. **B** Solenoid position **C** Connection diameter **D** Wiring method **E** Terminal and connector pin array **F** Option **G** Station no. **H** Voltage

Issue / /

Your company name

Contact

Order no.

● When completing this form, select the model No. from the "Block configuration" (pages 200 to 205).

Part name	Model No.	Installation position																Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
End block (P.201)	NW4G4-E																	
	NW4G4-E																	
Wiring block (P.204)	NW4G4-T																	
Valve block with solenoid valve (P.200)	NW4GB4 0- - -																	
	NW4GB4 0- - -																	
	NW4GB4 0- - -																	
	NW4GB4 0- - -																	
	NW4GB4 0- - -																	
Valve block with masking plate (P.200)	NW4GB4-MP -																	
	NW4GB4-MP -																	
Partition block (P.200)	NW4G4-SA-																	
(P.205) Spacer type	Individual supply spacer (P.205) W4G4-P-																	
	Individual exhaust spacer (P.205) W4G4-R-																	
	Spacer regulator (custom order) W4G4-SR-																	
Others	Partition plug (P.205) M4TB3-NCP																	
	M4TB3-NCR																	2×
Attachment product	Silencer (resin) SLW-15N	Indicate the quantity in the Quantity field on the right.																
	Cable clamp (P.205) W4G-																	

● Wiring specifications (There is no need to fill this out for standard wiring and double wiring.)

Connector pin or terminal box No.	Valve No.															
T10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
COM																
COM																

Core Components

FRL•sensors•pneumatic auxiliary components•vacuum components

□ F.R.L unit variations	210
□ F.R combinations	C1020/C2020/C3020/C4020..... 212
□ Filter, regulators	W1000/W2000/W3000/W4000..... 214
□ Air filters	F1000/F2000/F3000/F4000/F8000..... 218
□ Oil mist filters	M1000/M2000/M3000/M4000/M8000..... 222
□ Regulators	R1000/R2000/R3000/R4000..... 226
□ Residual pressure exhaust-valves	V3000 230
□ Brackets, joiners	B/J..... 231
□ Precision regulators	RPE1000/RP2000 232
□ Digital pressure sensors	PPX 234
□ Small flow rate sensor RAPIFLOW	FSM2..... 236
□ Silencers	SL•SLW 238
□ Pressure gauge with limit marks	G41D 239

F.R.L unit variations

Combination									
Series	Available combinations			Model No.	Connection diameter				Maximum flow m ³ /min (Reference)
	F	R	L		1/8	1/4	3/8	1/2	
	Filter	Regulator	Lubricator		1/8	1/4	3/8	1/2	
● FR combination - P1=0.7MPa - P2=0.5MPa △P2=0.1MPa 	F1000-W	R1000-W		C1020-W	●				0.77
	F2000-W	R2000-W		C2020-W		●			1.75
	F3000-W	R3000-W		C3020-W			●		2.6
	F4000-W	R4000-W		C4020-W				●	5.0

*P1=Primary pressure P2=Secondary pressure △P2=Differential pressure

Filter, regulator							
Series	Application	Model No.	Connection diameter				Maximum flow m ³ /min (Reference)
	W		1/8	1/4	3/8	1/2	
	Filter/ Regulator		1/8	1/4	3/8	1/2	
● Filter, regulator - P1=0.7MPa - P2=0.5MPa △P2=0.1MPa 	●	W1000-W	●				0.83
		W2000-W		●			1.5
		W3000-W			●		2.43
		W4000-W				●	4.75

*P1=Primary pressure P2=Secondary pressure △P2=Differential pressure

Filter								
Series	Application	Model No.	Connection diameter					Maximum flow m ³ /min (Reference)
	F		1/8	1/4	3/8	1/2	3/4	
	Filter							
●Filter P1=0.7MPa △P=0.02MPa 	●	F1000-W	●					0.46
		F2000-W		●				1.3
		F3000-W			●			1.5
		F4000-W				●		3.0
		F8000-W					●	6.4

*P1=Primary pressure P2=Secondary pressure △P2=Differential pressure

Oil mist filter								
Series	Application	Model No.	Connection diameter					Maximum flow m ³ /min (Reference)
	M		1/8	1/4	3/8	1/2	3/4	
	Oil mist Filter							
●Oil mist filter (M type) P1=0.7MPa △P=0.01MPa • Nominal filtration rating: 0.01µm • Secondary oil concentration 0.01mg/m³ 	●	M1000-W	●					0.15
		M2000-W		●				0.25
		M3000-W			●			0.36
		M4000-W				●		0.825
		M8000-W					●	2.6

*P1=Primary pressure P2=Secondary pressure △P2=Differential pressure

Regulator							
Series	Application	Model No.	Connection diameter				Maximum flow m ³ /min (Reference)
	R		1/8	1/4	3/8	1/2	
	Regulator						
● Regulator P1=0.7MPa P2=0.5MPa △P2=0.1MPa 	●	R1000-W	●				0.77
		R2000-W		●			1.75
		R3000-W			●		2.6
		R4000-W				●	5.0
● Precision regulator P1=0.7MPa P2=0.4MPa 	●	RPE1000		●			0.5
		RP2000			●		3.3

*P1=Primary pressure P2=Secondary pressure △P2=Differential pressure

Other related components				
Series	Model No.	Connection diameter		
		1/8	1/4	3/8
● Residual pressure exhaust-valve	V3000-W			●
● Pressure gauge with limit mark	G41D	●	●	

C*020 Series

- Connection diameter: NPT1/8 to 1/2

Features

- Integrated filter and regulator

RoHS

CAD



Catalog No. CB-024SA

How to order

C1020 - **6N** - **W** - **F1**

A **B** **C**

		A Model No.			
Symbol	Descriptions	C1020	C2020	C3020	C4020
B Connection diameter					
6N	NPT1/8	●			
8N	NPT1/4		●		
10N	NPT3/8			●	
15N	NPT1/2				●
C Option					
Blank	With filter and manual drain cock	●	●	●	●
F	Filter with auto-drain (NO type: exhaust without pressurization)			●	●
F1	Filter with auto-drain (NC type: exhaust with pressurization)	●	●		

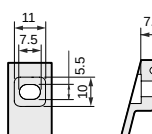
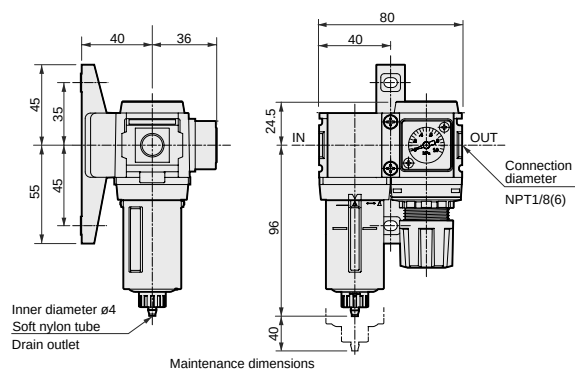
Specifications

Descriptions		C1020-W	C2020-W	C3020-W	C4020-W
Components	Air filter	F1000-W	F2000-W	F3000-W	F4000-W
	Regulator	R1000-W	R2000-W	R3000-W	R4000-W
Use fluid		Compressed air			
Maximum working pressure	MPa	1.0 Note 1, 2			
Proof pressure	MPa	1.5 Note 1			
Operating temperature range	°C	5 to 60			
Nominal filtration rating	μm	5			
Set pressure range	MPa	0.05 to 0.85 Note 1	0.05 to 0.85		
Relief		With relief mechanism			
Drain capacity	cm ³	12	25	45	80
Connection diameter	NPT	1/8	1/4	3/8	1/2
Product mass	kg	0.28	0.64	0.79	1.25
Standard accessories		Pressure gauge, bracket, bowl guard			

Note 1: When using C1020-W series "F1" with an auto-drain, the minimum operating pressure is 0.2 MPa, the maximum operation pressure is 0.7 MPa, and the guaranteed pressure resistance is 1.05 MPa. Set the working flow to less than the maximum working flow.

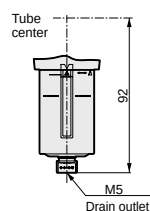
Note 2: When using C2020-W series, the auto-drain's minimum operating pressure for "F1" with an auto-drain is 0.15 MPa.

● C1020-W

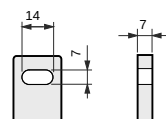
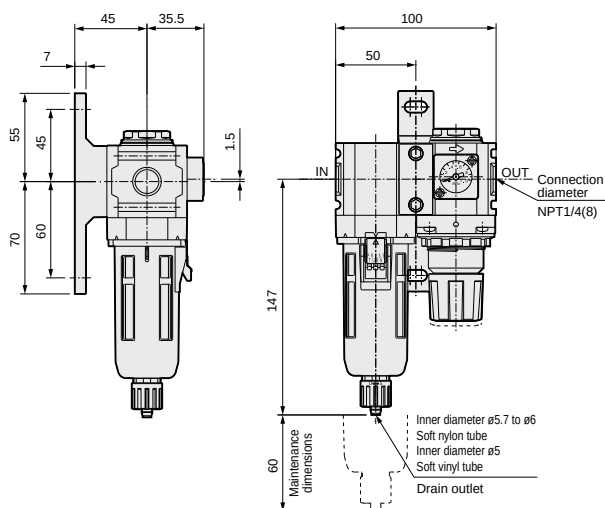


Magnified drawing of bracket section

Option dimensions
With auto-drain (F1)



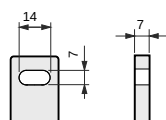
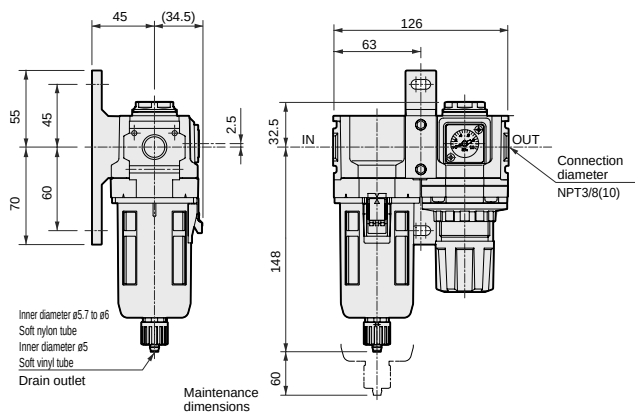
● C2020-W



Magnified drawing of bracket section

● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

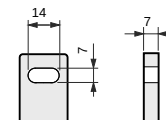
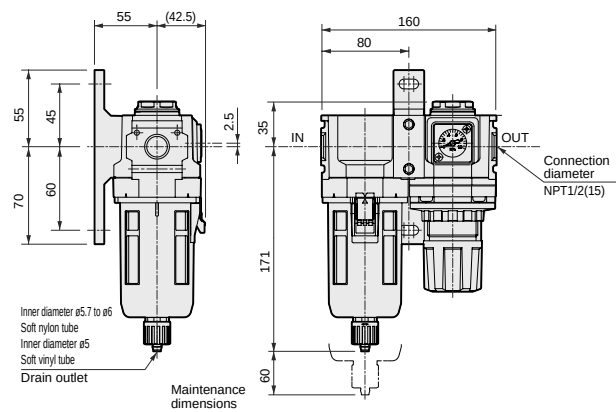
● C3020-W



Magnified drawing of bracket section

● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● C4020-W



Magnified drawing of bracket section

● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

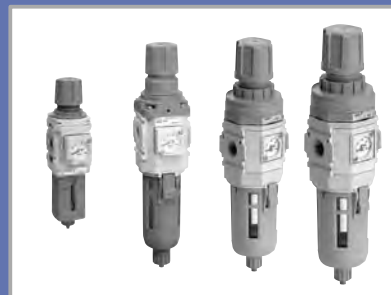
Filter, regulator

W*000 Series

• Connection diameter: NPT1/8 to 1/2

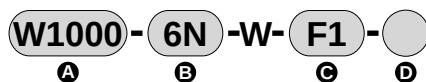
Features

• Integrated filter and regulator



Catalog No. CB-024SA

How to order



Symbol		A Model No.			
		W1000	W2000	W3000	W4000
B Connection diameter					
6N	NPT1/8	●			
8N	NPT1/4		●		
10N	NPT3/8			●	
15N	NPT1/2				●
C Option					
Blank	With manual drain cock	●	●	●	●
F	Auto-drain with manual override (NO type: exhausts without pressurization)			●	●
F1	Auto-drain with manual override (NC type: no exhaust without pressurization)	●	●		
D Attachment (attached)					
Blank	Not attached	●	●	●	●
B3W	L type bracket	●	●	●	●

Specifications

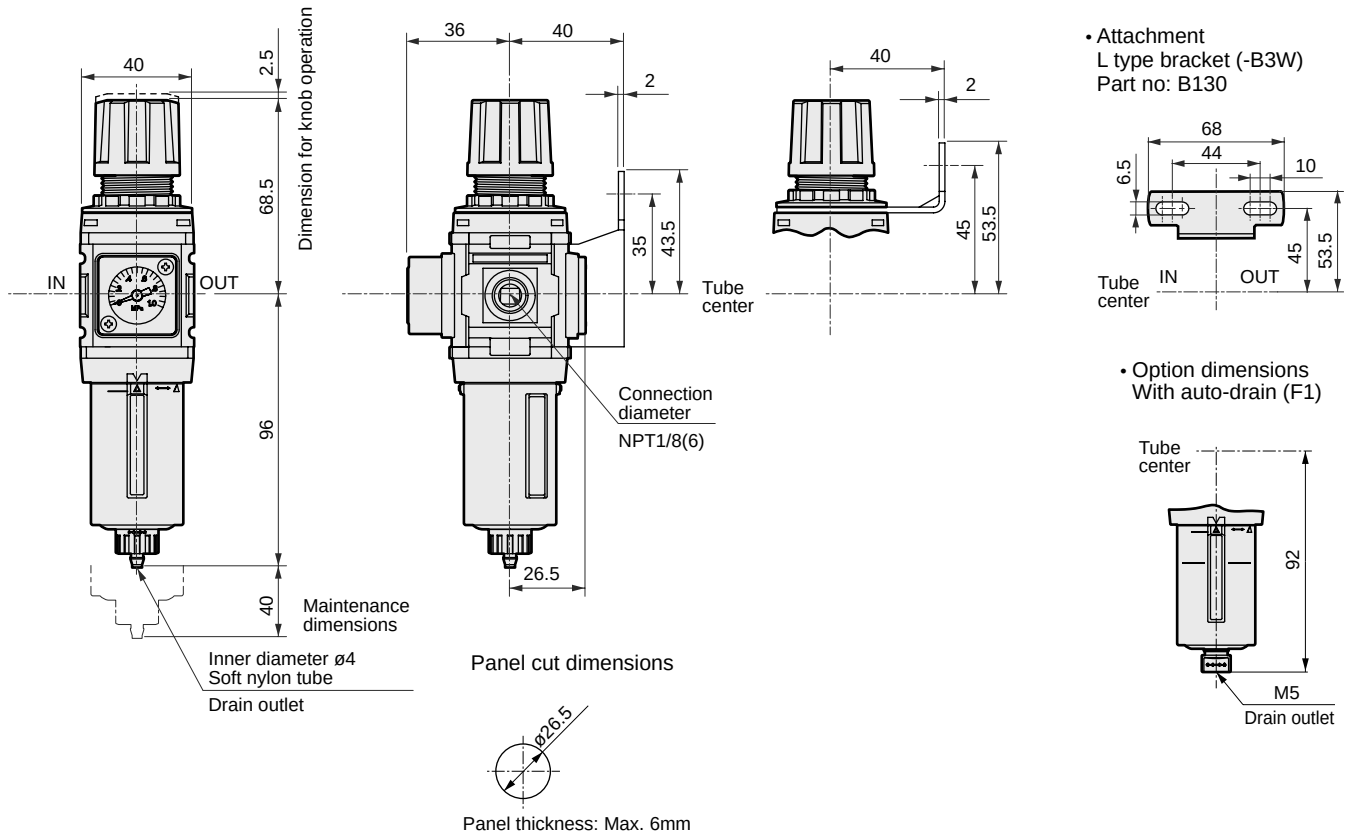
Descriptions	W1000-W	W2000-W	W3000-W	W4000-W
Use fluid	Compressed air			
Maximum working pressure MPa	1.0 Note 1, 2			
Proof pressure MPa	1.5 Note 1			
Operating temperature range °C	5 to 60			
Nominal filtration rating μm	5			
Set pressure range MPa	0.05 to 0.85 Note 1	0.05 to 0.85		
Relief	With relief mechanism			
Drain capacity cm ³	12	25	45	80
Connection diameter NPT	1/8	1/4	3/8	1/2
Product mass kg	0.175	0.40	0.6	0.9
Standard accessories	Pressure gauge, bowl guard			

Note 1: When using W1000-W series "F1" with an auto-drain, the minimum operating pressure is 0.2 MPa, the maximum operation pressure is 0.7 MPa, and the guaranteed pressure resistance is 1.05 MPa. Set the working flow to less than the maximum working flow.

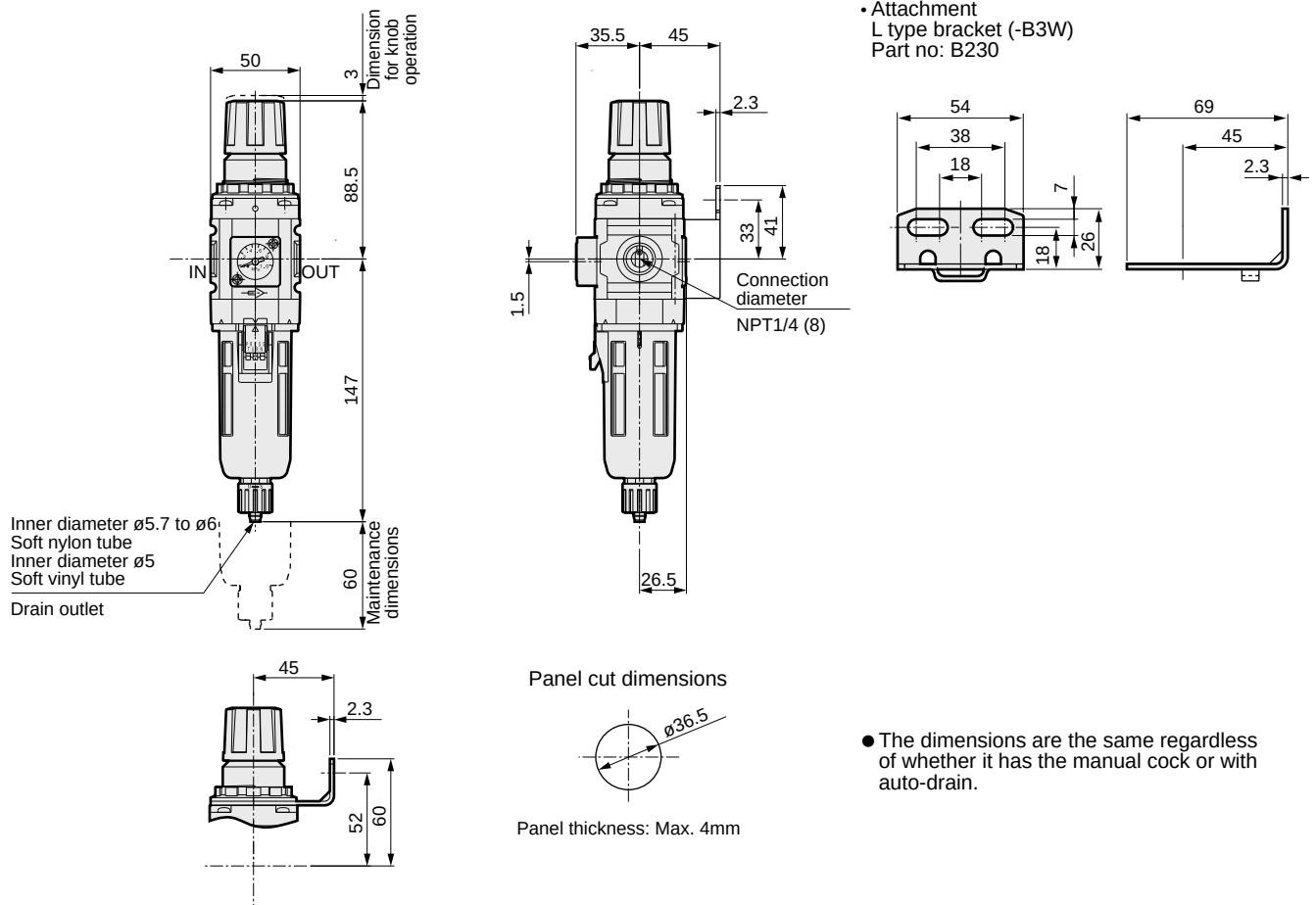
Note 2: When using W2000-W series, the auto-drain's minimum operating pressure for "F1" with an auto-drain is 0.15 MPa.

Dimensions

● W1000-W

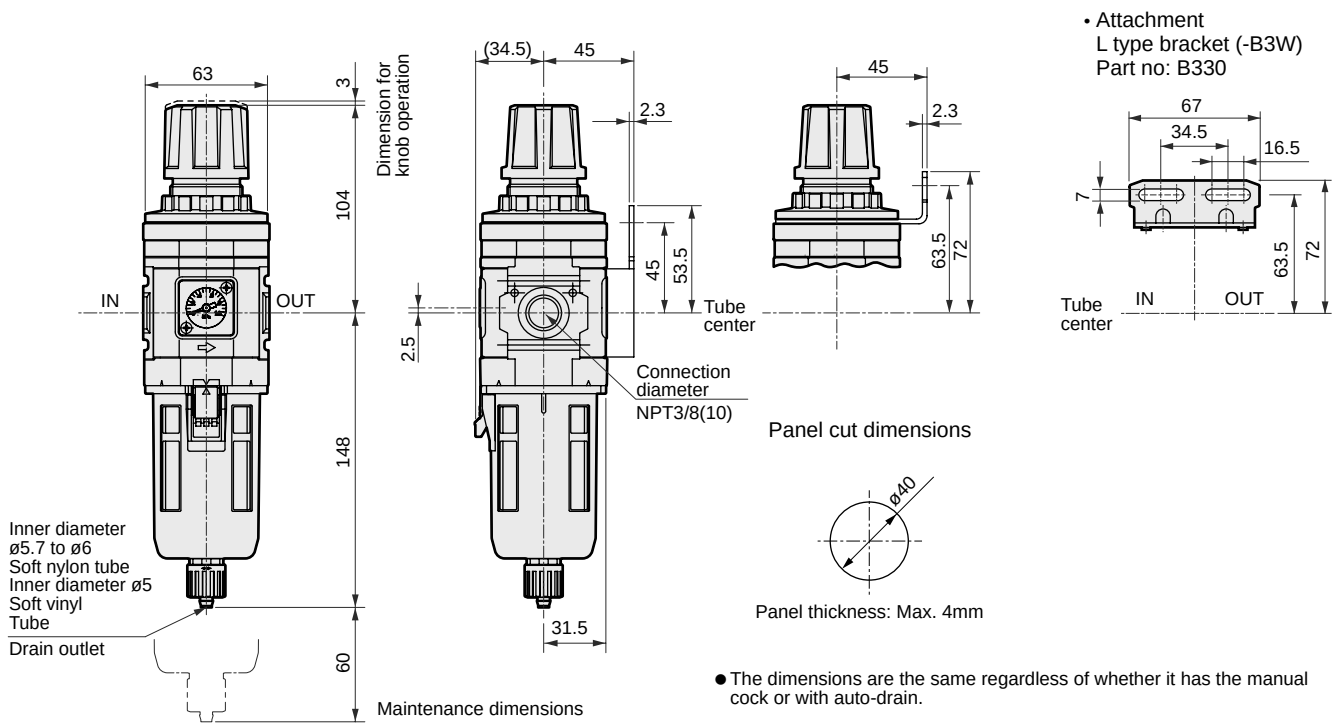


● W2000-W

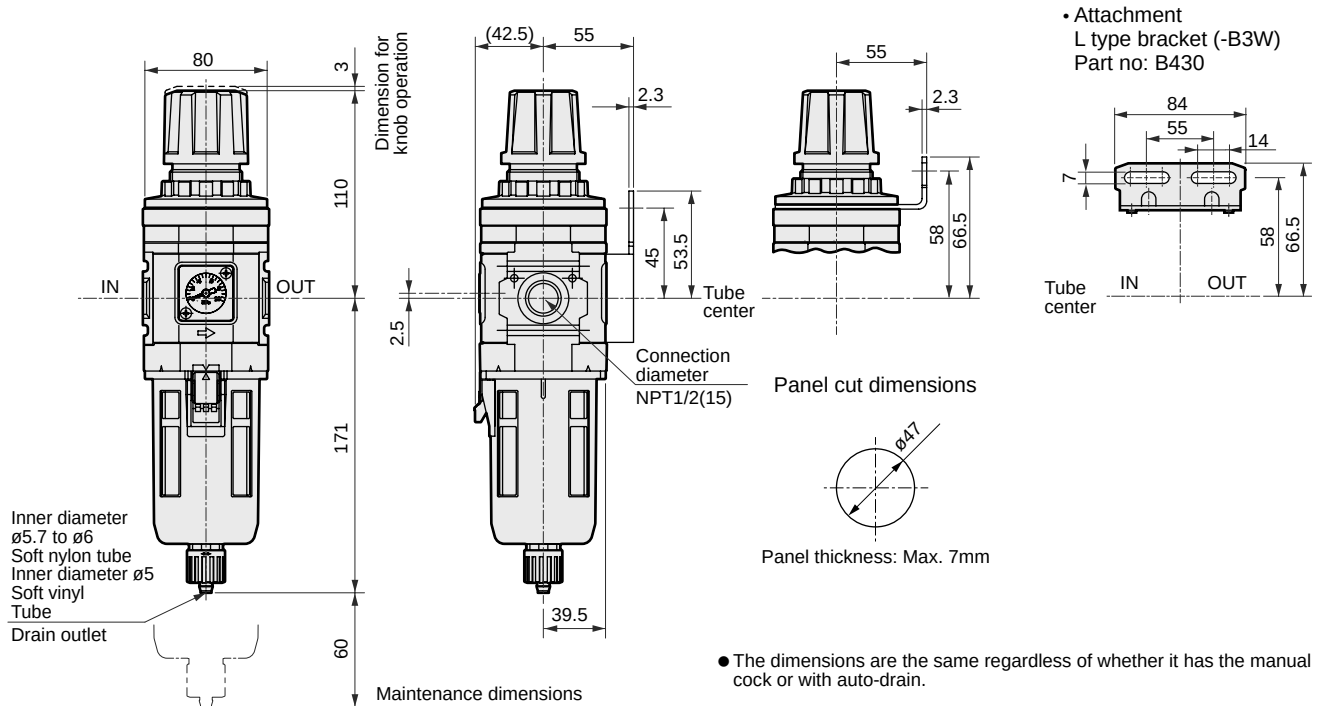


Dimensions

● W3000-W



● W4000-W



Air filter

F*000 Series

• Connection diameter: NPT1/8 to 3/4

Features

• Effectively removes dust and moisture

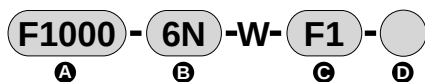
RoHS

CAD



Catalog No. CB-024SA

How to order



		A Model No.				
Symbol	Descriptions	F1000	F2000	F3000	F4000	F8000
B Connection diameter						
6N	NPT1/8	●				
8N	NPT1/4		●			
10N	NPT3/8			●		
15N	NPT1/2				●	
20N	NPT3/4					●
C Option						
Blank	With manual drain cock	●	●	●	●	●
F	Auto-drain with manual override (NO type: exhausts without pressurization)			●	●	●
F1	Auto-drain with manual override (NC type: no exhaust without pressurization)	●	●			
D Attachment (attached)						
Blank	Not attached	●	●	●	●	●
BW	C type bracket	●	●	●	●	●

Specifications

Descriptions	F1000-W	F2000-W	F3000-W	F4000-W	F8000-W
Use fluid	Compressed air				
Maximum working pressure MPa	1.0 Note 2, 3				
Proof pressure MPa	1.5 Note 2				
Operating temperature range °C	5 to 60				
Nominal filtration rating μm	5				
Drain capacity cm ³	12	25	45	80	80 (Note 1)
Connection diameter NPT	1/8	1/4	3/8	1/2	3/4
Product mass kg	0.087	0.24	0.25	0.45	1.16
Standard accessories	Bowl guard				

Note 1: Drainage accumulates up to 170 cm³ only with the manual drain cock.

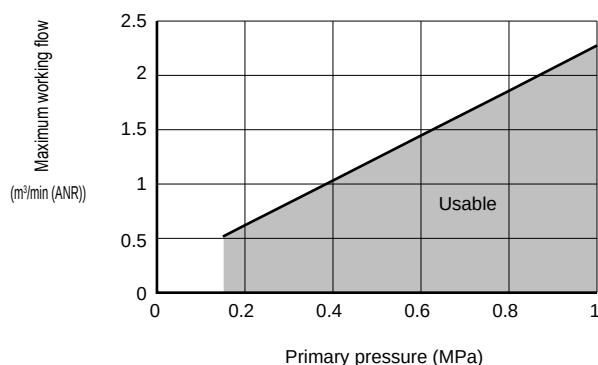
Note 2: When "F1" with an auto-drain is selected for the F1000-W series, minimum operating pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa and the guaranteed pressure resistance is 1.05 MPa. Refer to the maximum processing flow table below for the F1000-W-F1 auto-drain for the maximum working flow. Set the working flow to less than the maximum working flow.

Note 3: When using F2000-W series, the auto-drain's minimum operating pressure for "F1" with an auto-drain is 0.15 MPa.

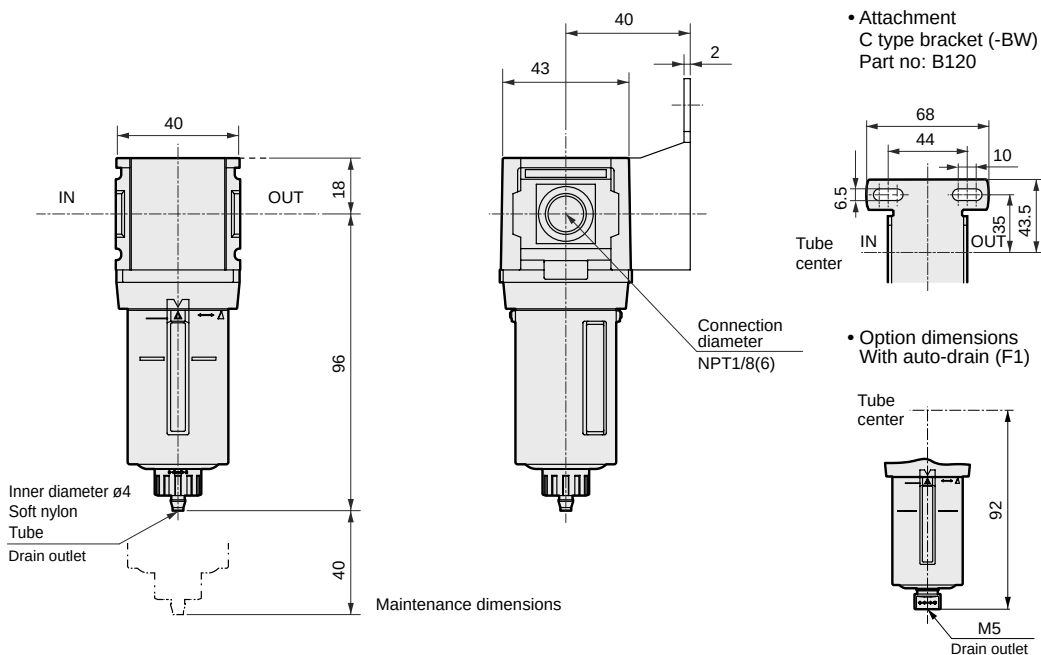
F1000-W-F1 with auto-drain max. working flow (m³/min (ANR))

Primary pressure MPa	0.2	0.3	0.4	0.5	0.6	0.7
Connection diameter						
6	0.185	0.250	0.310	0.375	0.435	0.500

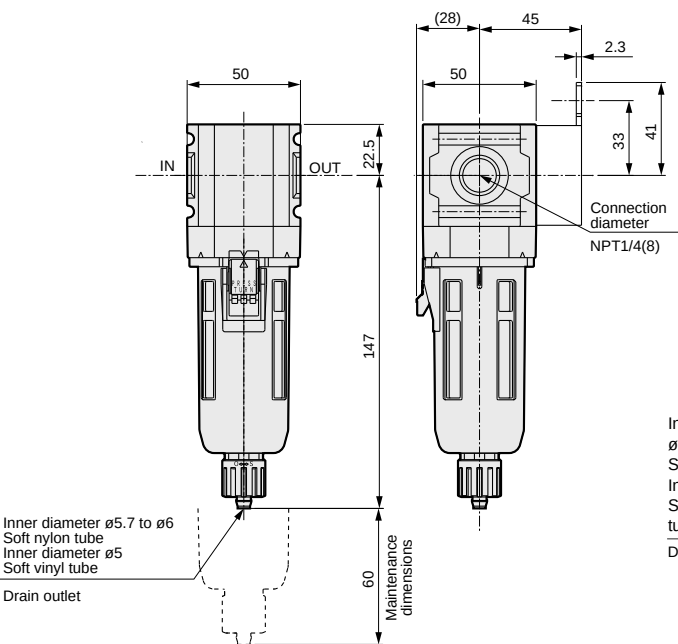
F2000-W-F1 with auto-drain max. working flow



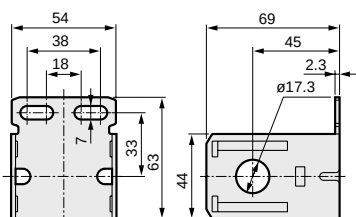
● F1000-W



● F2000-W

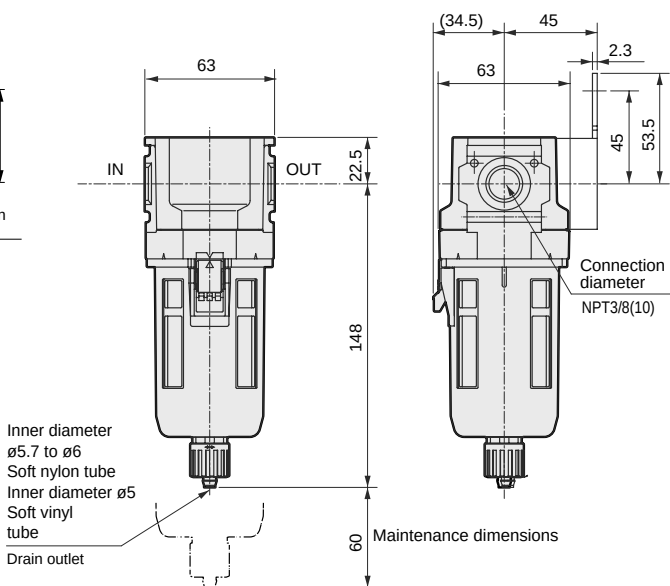


• Attachment
C type bracket (-BW)
Part no: B220

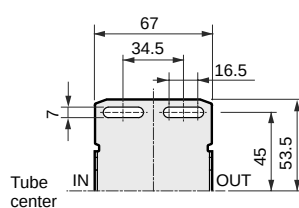


• The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● F3000-W

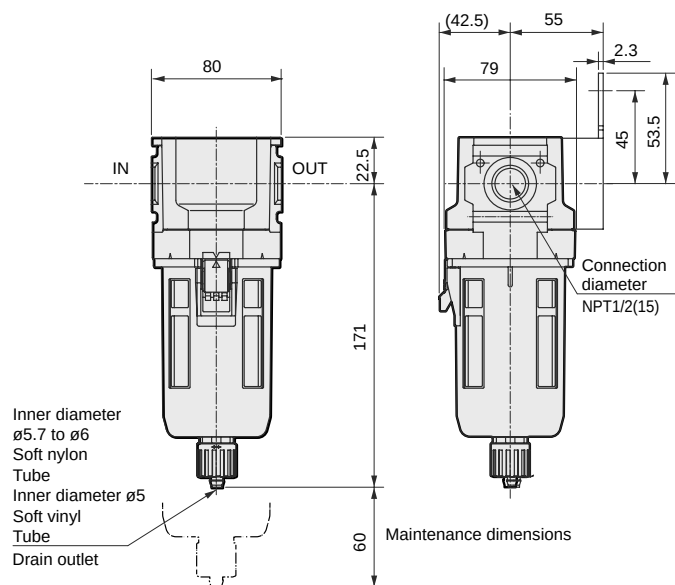


• Attachment
C type bracket (-BW)
Part no: B320

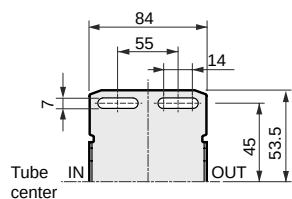


• The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● F4000-W

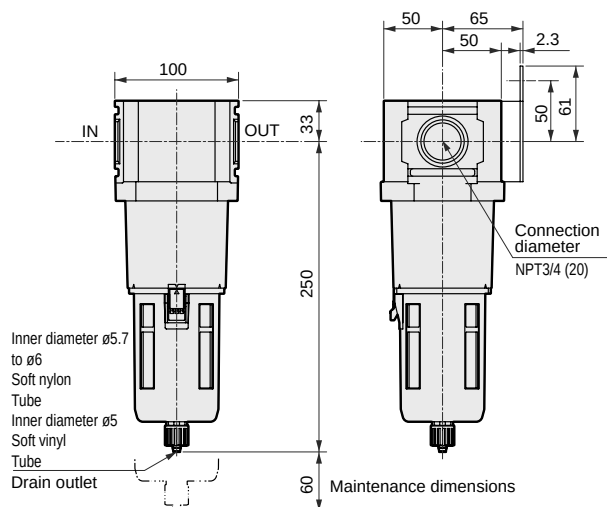


- Attachment
C type bracket (-BW)
Part no: B420

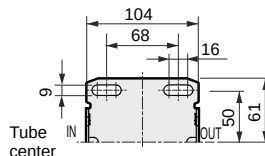


- The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● F8000-W



- Attachment
C type bracket (-BW)
Part no: B820



- The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

M*000 Series

- Connection diameter: NPT1/8 to 3/4

Features

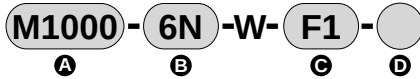
- Ideal for circuits susceptible to oil, including measuring, and instrumentation circuits

RoHS



Catalog No. CB-024SA

How to order



		A Model No.				
Symbol	Descriptions	M1000	M2000	M3000	M4000	M8000
B Connection diameter						
6N	NPT1/8	●				
8N	NPT1/4		●			
10N	NPT3/8			●		
15N	NPT1/2				●	
20N	NPT3/4					●
C Option						
Blank	With manual drain cock	●	●	●	●	●
F1	Auto-drain with manual override (NC type: no exhaust without pressurization)	●	●	●	●	●
D Attachment (attached)						
Blank	Not attached	●	●	●	●	●
BW	C type bracket	●	●	●	●	●

Specifications

Descriptions	M1000-W	M2000-W	M3000-W	M4000-W	M8000-W
Use fluid	Compressed air				
Working pressure range MPa	0.1 to 1.0 Note 4, Note 5				
Proof pressure MPa	1.5 Note 4				
Drain capacity cm ³	3	25	45	80	80
Connection diameter NPT	1/8	1/4	3/8	1/2	3/4
Product mass kg	0.096	0.25	0.28	0.52	1.35
Standard accessories	Bowl guard				

Mantle option name	Blank (M type)
Maximum flow rate Note 1 l/min (ANR) Primary pressure 0.7 MPa at pressure drop 0.01MPa	M1000-□-W 150 Note 4 M2000-□-W 250 M3000-□-W 360 M4000-□-W 825 M8000-□-W 2600
Operating temperature range °C	5 to 60
Nominal filtration rating μm	0.01 (nominal)
Secondary side oil concentration mg/m ³	0.01 or less Note 2
Mantle (element) replacement	1 year (6000 hours) or pressure drop of 0.1MPa

Note 1: Use within the maximum processing flow rate.

If the maximum processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil or drainage, etc., could splatter to the secondary side and result in faults at the terminal.

Note 2: The secondary oil density is the value when the primary oil density is 30 mg/m³ and inlet air temperature is 21°C.

Note 3: The mantle (element) replacement period differs with the odor density in compressed air, and thus cannot be clearly indicated.

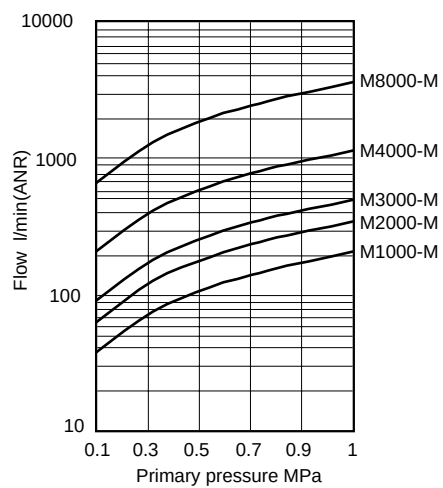
Consider the total period from initial installation to when the smell of oil is confirmed as the effective deodorizing period, and replace at the same time as the M type or replace according to period of use. (e.g. 1000 hours of use at 21°C or confirmation of smell, which ever comes first.)

The primary air temperature must be 30°C or less. The deodorizing effect will drop if the temperature is high, so provide heat dissipation measures.

Note 4: For the M1000-W-F1 with auto-drain, minimum operating pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa and the guaranteed pressure resistance is 1.05 MPa. Refer to the maximum processing flow graph (page 223) for the maximum processing flow.

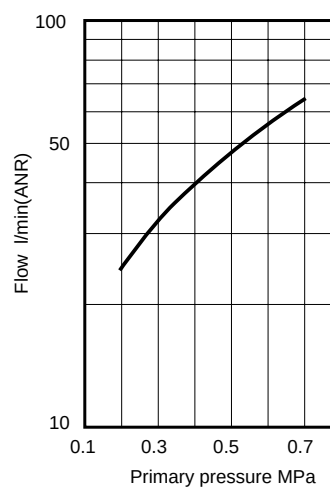
Note 5: The minimum operating pressure is 0.15 MPa for models with auto-drain "F1".

● M*000-W-M



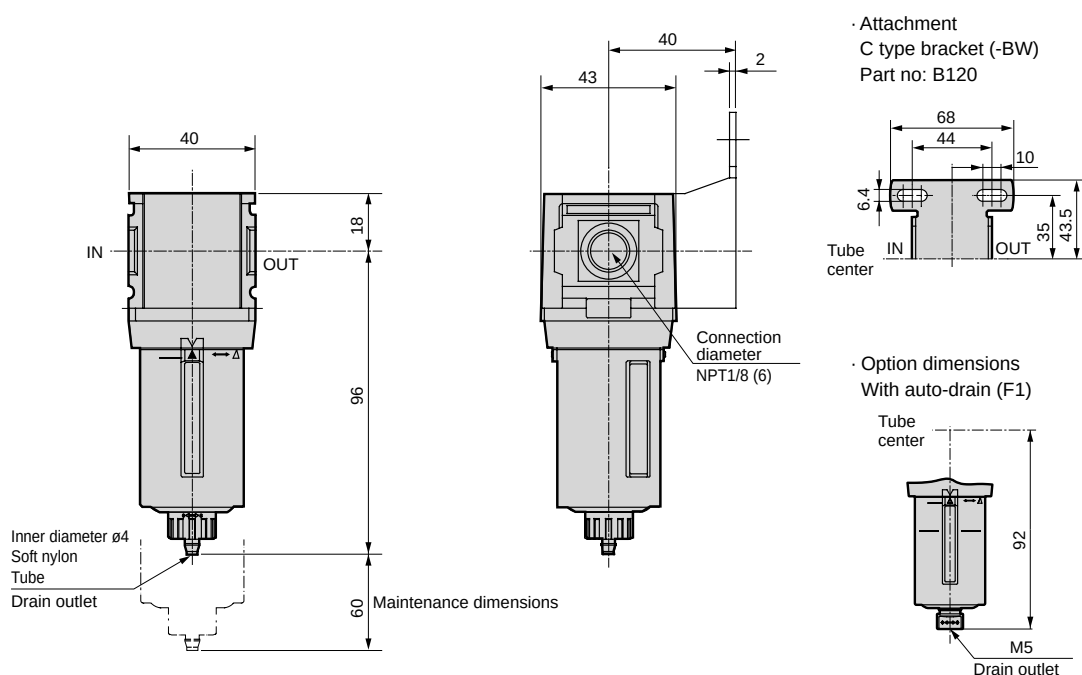
● M1000-W-F1

with auto drain (M type)

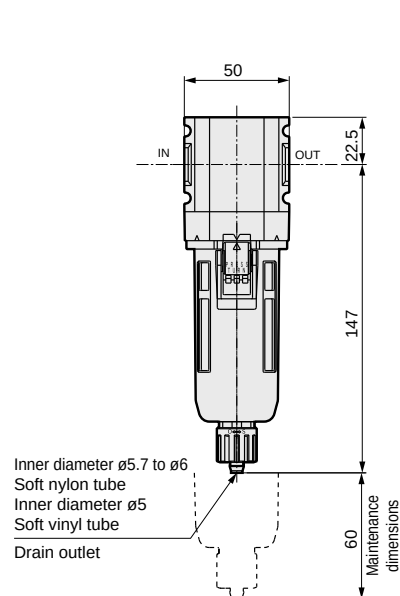


Dimensions

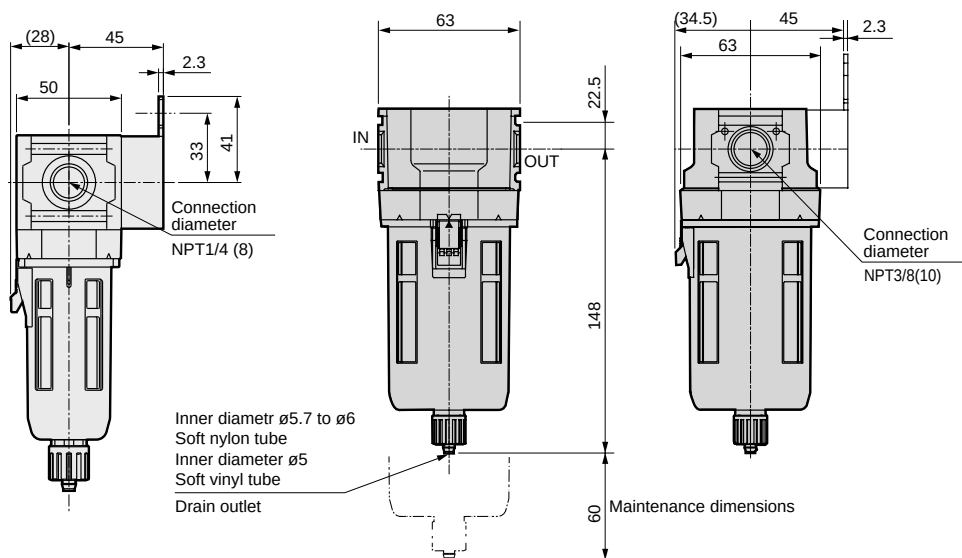
● M1000-W



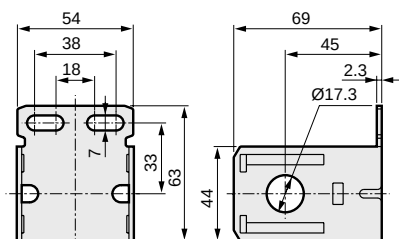
● M2000-W



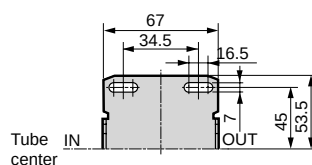
● M3000-W



· Attachment
C type bracket (-BW)
Part no: B220



· Attachment
C type bracket (-BW)
Part no: B320

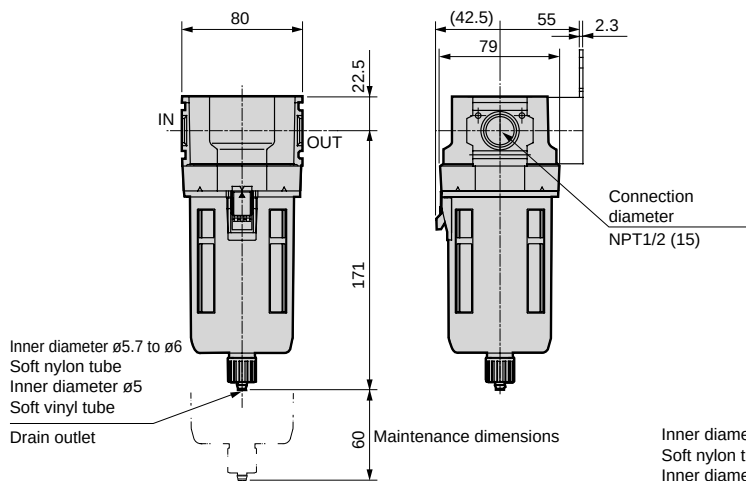


● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

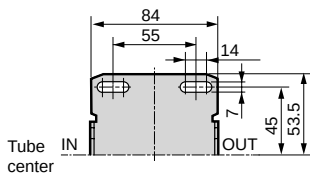
● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

Dimensions

● M4000-W

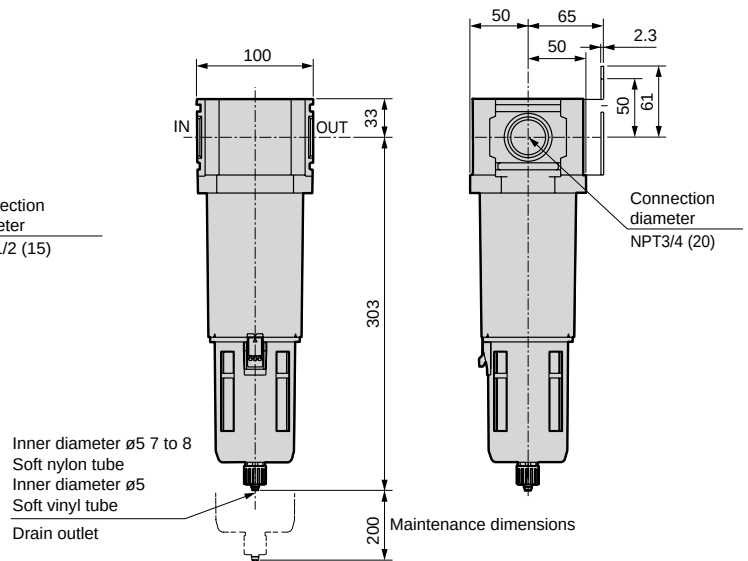


· Attachment
C type bracket (-BW)
Part no: B420

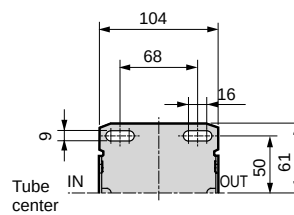


● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● M8000-W



· Attachment
C type bracket (-BW)
Part no: B820



● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

R*000 Series

- Connection diameter: NPT1/8 to 1/2

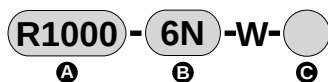
Features

- Integrated pressure gauge and compact



Catalog No. CB-024SA

How to order



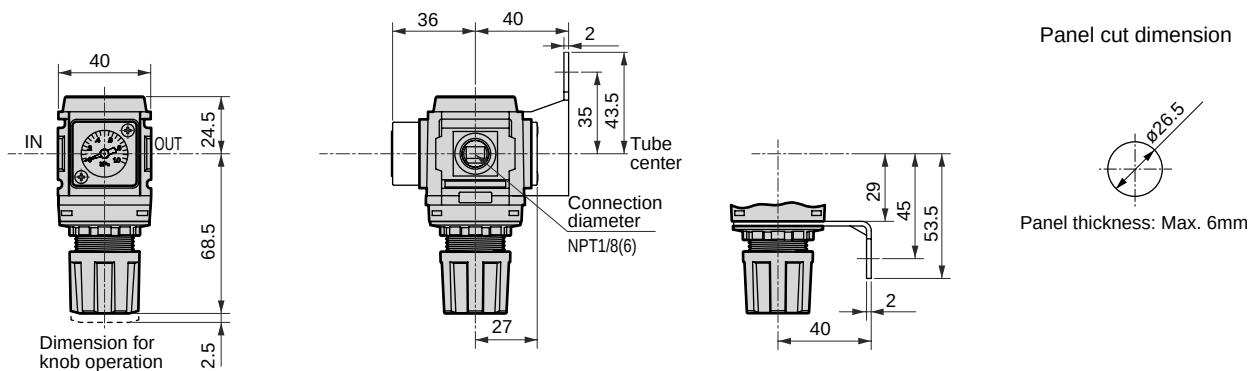
Symbol		A Model No.			
		R1000	R2000	R3000	R4000
B Connection diameter					
6N	NPT1/8	●			
8N	NPT1/4		●		
10N	NPT3/8			●	
15N	NPT1/2				●
C Attachment (attached)					
Blank	Not attached	●	●	●	●
B3W	L type bracket	●	●	●	●

Specifications

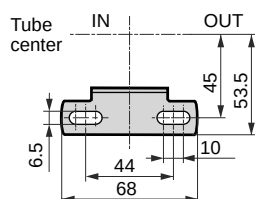
Descriptions	R1000-W	R2000-W	R3000-W	R4000-W
Use fluid	Compressed air			
Maximum working pressure MPa	1.0			
Proof pressure MPa	1.5			
Operating temperature range °C	5 to 60			
Set pressure range MPa	0.05 to 0.85			
Relief	With relief mechanism			
Connection diameter NPT	1/8	1/4	3/8	1/2
Product mass kg	0.16	0.31	0.45	0.7
Standard accessories	Pressure gauge, nut for panel mount			

Dimensions

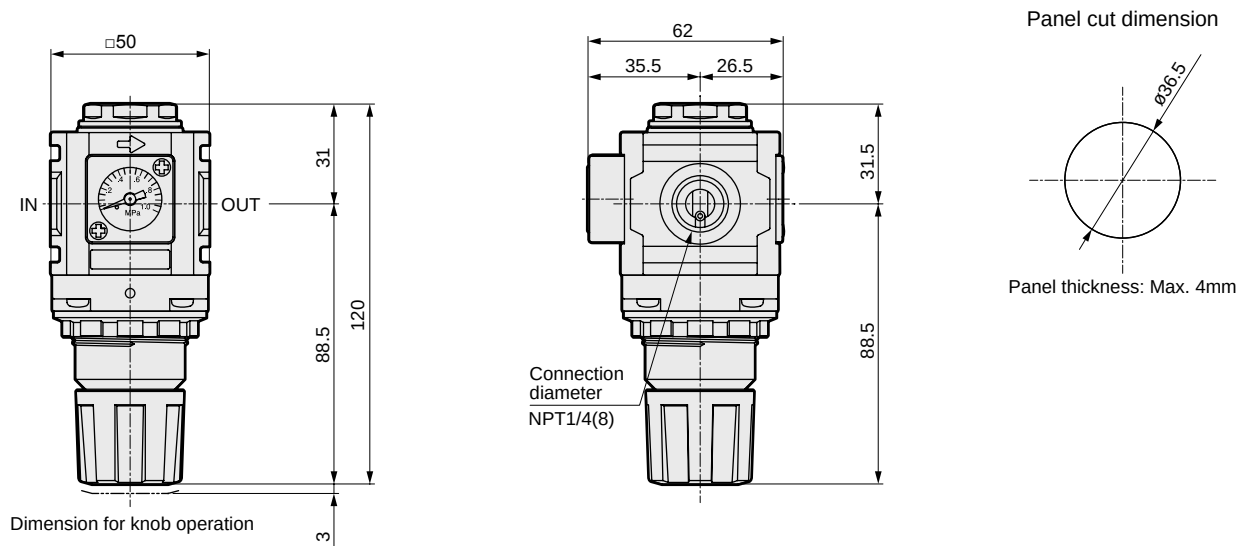
● R1000-W



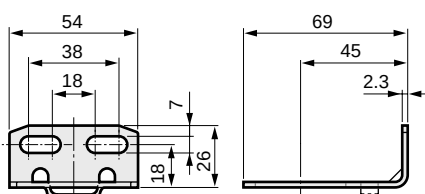
L type bracket (-B3W)
Part no: B130



● R2000-W

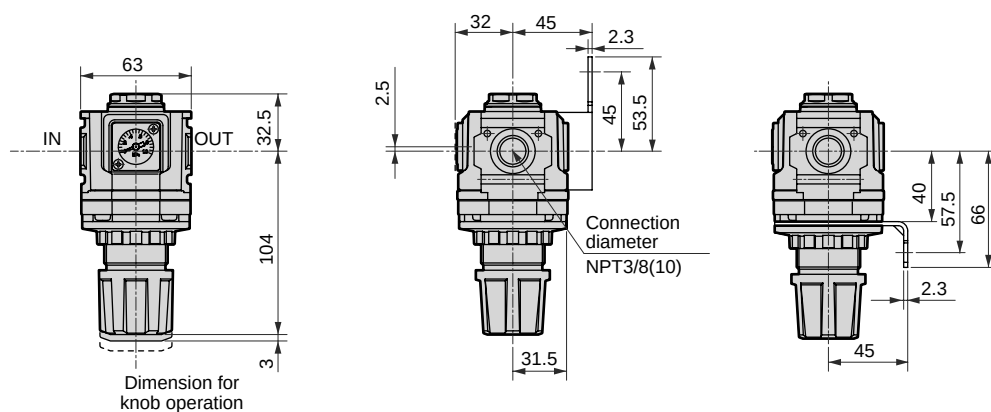


● L type bracket (-B3W)
part no.: B230

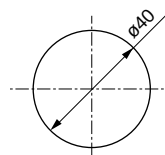


Dimensions

● R3000-W

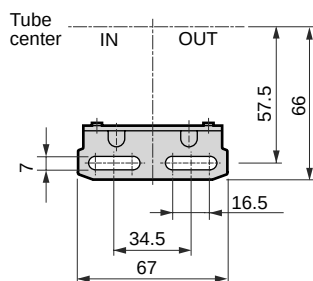


Panel cut dimension

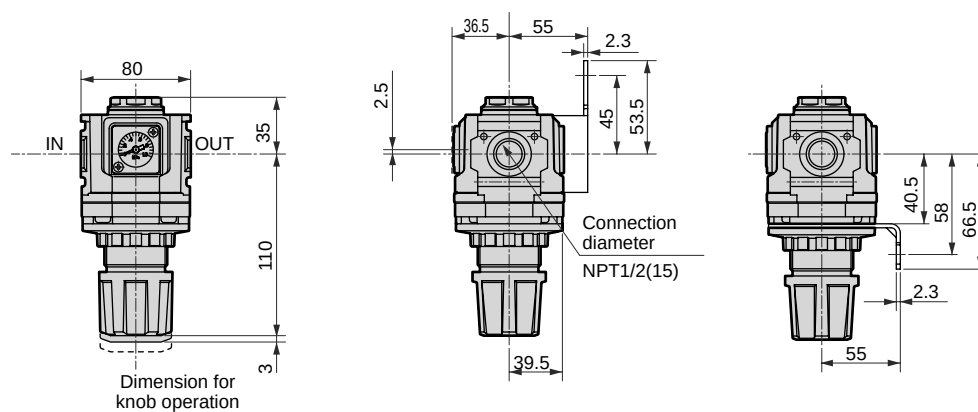


Panel thickness: Max. 7mm

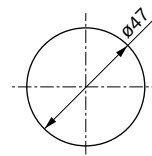
L type bracket (-B3W)
Part no: B330



● R4000-W

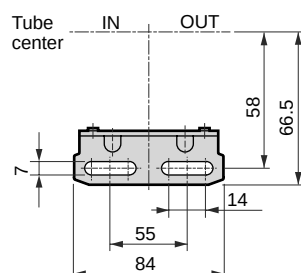


Panel cut dimension



Panel thickness: Max. 7mm

L type bracket (-B3W)
Part no: B430



MEMO

V3000 Series

- Connection diameter: NPT3/8

Features

- 1 action exhaust operation Prevent accidents caused by residual pressure



Catalog No. CB-024SA

How to order

V3000 - **10N** - **W** - **A** **B**

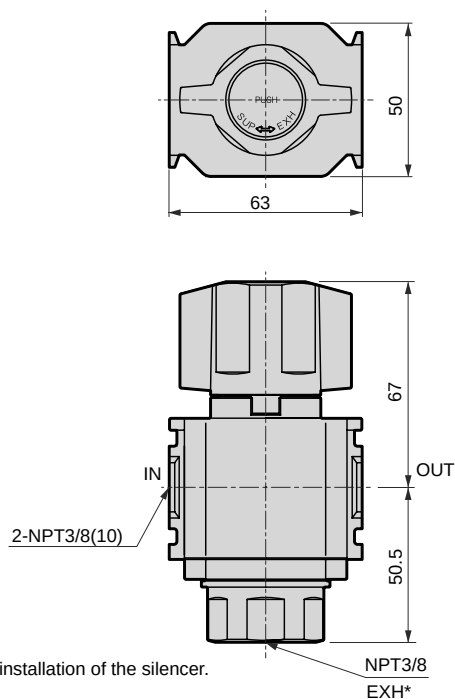
Symbol	Descriptions
A Connection diameter	
10N	NPT3/8
B Attachment (attached)	
Blank	Not attached
BW	C type bracket

Specifications

Descriptions		V3000-10-W
Use fluid		Compressed air
Maximum working pressure MPa		1.0
Proof pressure MPa		1.5
Fluid temperature °C		5 to 60
Operation lever switching angle		90°
Operating force	Pushing force N	80
	Rotational force N·m	2
Valve section leakage cm ³ /min(ANR)		10
External leakage cm ³ /min(ANR)		10
Connection diameter (NPT)	IN-OUT	NPT3/8
	EXH	NPT3/8
Product mass kg		0.25
Effective area {mm ² }	IN/OUT	70
	OUT/EXH	50

Dimensions

● V3000-W



*The EXH port is dedicated for installation of the silencer.



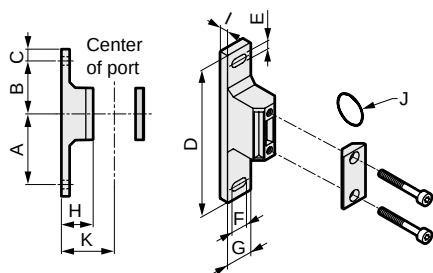
Catalog No. CB-024SA

Features

- T type bracket Securely fixes equipment along with system configuration equipment
- Joiner Used as a fitting for system configuration.

T type bracket set

- Model No.: B110-W, B310-W, B410-W

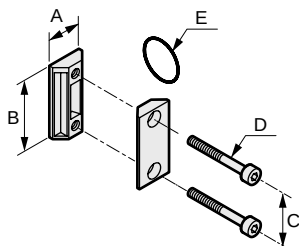


Model No.	Applicable model	A	B	C	D	E	F	G	H	I	J	K
B110-W	1000 Series	45	35	10	100	5.5	7.5	16	25	7.5	JASO-2013	40
B310-W	2000 Series	60	45	10	125	7	14	22	27	7	JISB2401-P21	45
	3000 Series											
B410-W	4000 Series	60	45	10	125	7	14	22	37	7	JISB2401-P21	55

Note: Select B410-W when using the 3000-W Series and 4000-W Series combined.

Joiner set

- Model no.: C1000-J100-W
C4000-J400-W



Model No.	Applicable model	A	B	C	D	E	
C1000-J100-W	1000 Series	10	36	26	M3.5	JASO-2013	
C4000-J400-W	2000 Series	21	44	32	M5	JIS B2401-P21	
	3000 Series						
	4000 Series						

RPE1000 Series

- Connection diameter: NPT1/4

Features

- High performance, energy efficient, compact

RoHS

CAD



Catalog No. CB-024SA

How to order

RPE1000 - 8N - 07 - G10B3
A B C

Symbol	Descriptions
A Connection diameter	
8N	NPT1/4
B Set pressure range	
02	MAX.0.2MPa
04	MAX.0.4MPa
07	MAX.0.7MPa
C Attachment (attached)	
Blank	No attachment
G10	Pressure gauge (G45D-6N-P10)
B3	L type bracket

Specifications

Descriptions	RPE1000-8N-07
Use fluid	Compressed clean air
Maximum working pressure MPa	1.0
Minimum working pressure MPa	Set pressure + 0.1 Note 1
Proof pressure MPa	1.5
Ambient temperature/fluid temperature °C	-5 to 60 (to be unfrozen)
Set pressure range MPa	0.005 to 0.7
Sensitivity	Within 0.1% of full span
Repeatability	Within ±0.5% of full span
Air consumption Note 2 l/min (ANR)	3.4 or less
Connection diameter	NPT1/4
Pressure gauge connection diameter	NPT1/8
Mass g	250 Note 3

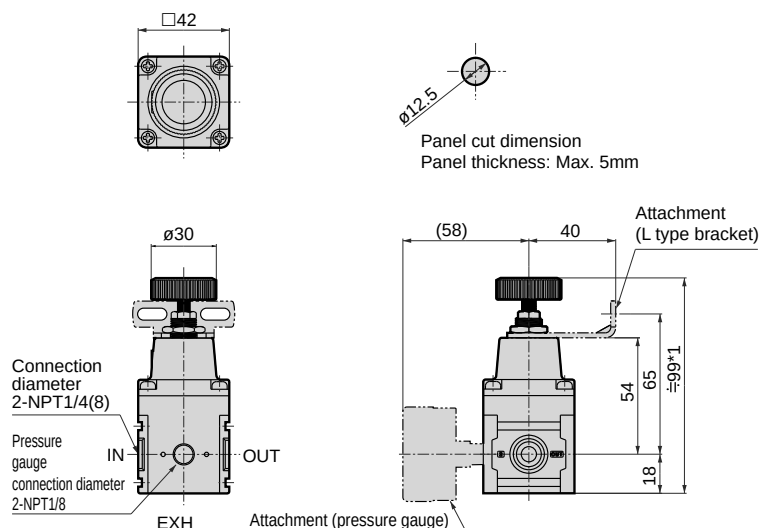
Note 1: The secondary flow rate is assumed to be zero. For RPE1000-8N-07, the pressure is equal to set pressure + 0.2 MPa when the set pressure is 0.3 MPa or greater.

Note 2: The primary pressure is assumed to be 0.7 MPa. Air is constantly discharged into the atmosphere.

Note 3: C attachment weight must be added. Pressure gauge: 74g Bracket: 30g

Dimensions

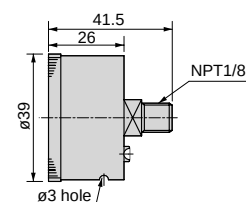
● RPE1000-8N-07



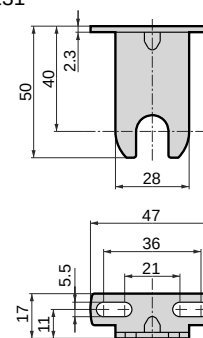
*1: Dimensions when the set pressure is 0 MPa

*2: The pressure gauge and bracket are options.

Pressure gauge
· G45D-6N-P10



L type bracket
· B131



RP2000 Series

- Connection diameter: NPT3/8

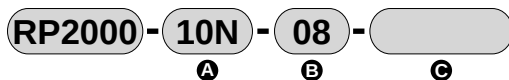
Features

- High performance, long life, large exhaust rate



Catalog No. CB-024SA

How to order



Symbol	Descriptions
A Connection diameter	
10N	NPT3/8
B Set pressure range	
08	MAX.0.85MPa
C Attachment (attached)	
Blank	No attachment
G41D	Pressure gauge (G41D-8NPS15)
B	C type bracket

Note: One R1/8 plug is included with the product.

Specifications

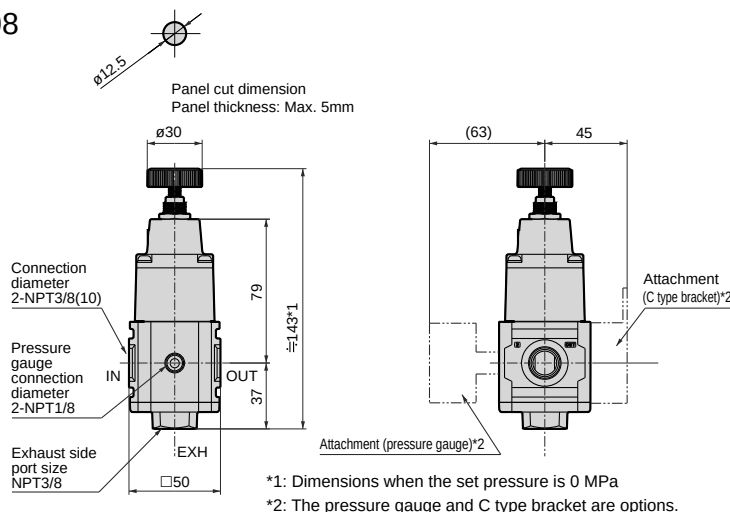
Descriptions	RP2000-10-08
Use fluid	Compressed clean air
Maximum working pressure MPa	1.0
Minimum working pressure MPa	Set pressure + 0.1 Note 1
Proof pressure MPa	1.5
Ambient temperature/fluid temperature °C	-5 to 60 (to be unfrozen)
Set pressure range MPa	0.03 to 0.85
Sensitivity	Within 0.2% of full span
Repeatability	Within ±0.5% of full span
Air consumption ℓ/min (ANR)	5 or less Note 2
Connection diameter	NPT3/8
Exhaust side port size	NPT3/8
Pressure gauge connection diameter	NPT1/8
Mass g	470

Note 1: The secondary flow rate is assumed to be zero.

Note 2: The primary pressure is assumed to be 0.7 MPa, and the set pressure is assumed to be 0.3 MPa. Air is constantly discharged to the atmosphere from the freed port and EXH port. The air consumption is the total consumption of air discharged from the freed port and EXH port. The EXH port discharges no more than 1 ℓ/min (ANR) of air.

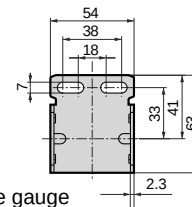
Dimensions

• RP2000-10N-08



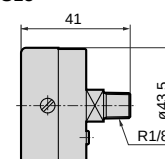
C type bracket

- B220



Pressure gauge

- G41D-8NPS15



PPX Series

● Pressure range: -100.0 to 100.0 kPa, -0.100 to 1.000 MPa

Features

- New user-friendly, high-function digital pressure sensor with dual display to simultaneously check [current value] and [set point] of pressure, 3-color display, copy function of setting details, and 3-mode setting, etc.



Catalog No. CB-024SA

How to order

PPX - R01 N - 6M - -

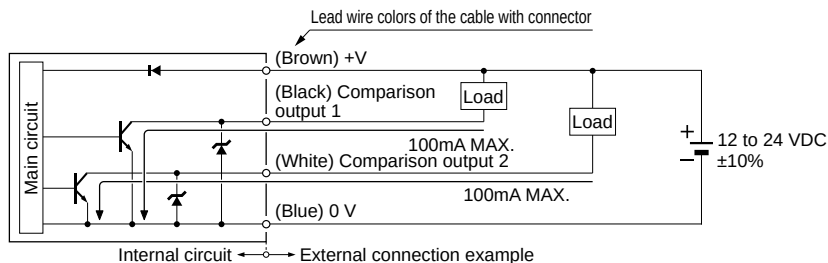
A B C D E

Symbol	Descriptions
A Pressure range	
R01	-100.0 to 100.0 KPa
R10	-0.100 to 1.000 MPa
B Type of output	
N	2 NPN transistor output points (standard type)
C Piping type	
6M	R1/8, M5 female thread
D Connector cable	
Blank	With a 2 m connector cable
E Unit change	
KA	With unit change function

Circuit and connection method

NPN output type

- Standard type

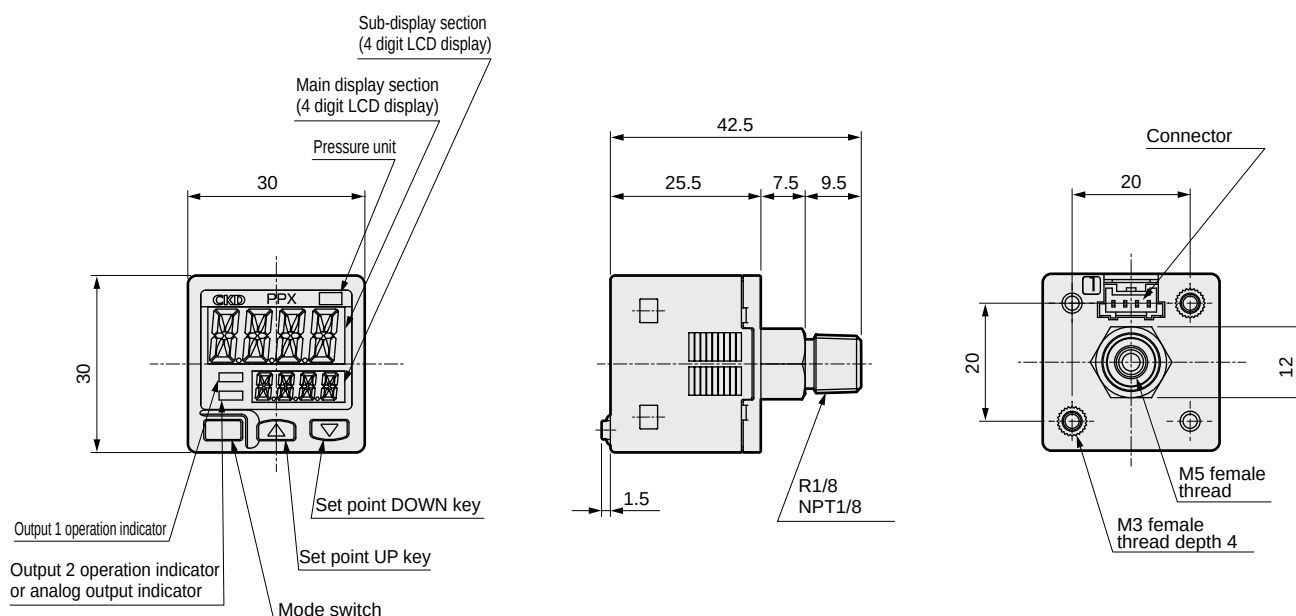


Specifications

Descriptions	Standard type	
	Low pressure PPX-R01□	High pressure PPX-R10□
Applicable fluids	Air, non-corrosive gas	
Rated pressure range	-100.0 to +100.0 kPa	-0.100 to +1.000 MPa
Set pressure range	-100.0 to +100.0 kPa	-0.100 to +1.000 MPa
Minimum display unit	0.1 kPa	0.001 MPa
Withstanding pressure	500 kPa	1.5 MPa
Repeatability	±0.1% F.S. (±2 digits or less)	±0.2% F.S. (±2 digits or less)
Temperature characteristics (+20°C standard)	±0.5% F.S. or less	±1% F.S. or less
Display	4 digits + 4 digits 3-color LCD (display update cycle: select with the 250 ms or 1000 ms key)	
Indicator	Orange LED (comparison output 1 operation indicator, comparison output 2 operation indicator: lights when comparison output is ON)	
Power supply voltage	12 to 24 VDC ± 10% ripple P-P10% or less	
Electricpower consumption	Normal mode: 840 mW or less (35 mA or less current consumption when supply voltage is 24 V) ECO mode: 600 mW or less at STD (25mA or less current consumption when supply voltage is 24 V) FULL mode: 480 mW or less (20mA or less current consumption when supply voltage is 24 V)	
Comparison output (switch output)	<NPN output type> NPN transistor open collector • Maximum current input: 100 mA • Applied voltage: 30 VDC or less (between comparison output and 0 V) • Residual voltage: 2 V or less (at 100 mA inrush current)	
	Output operation: Select NO or NC with keys	
	Output mode: EASY mode/hysteresis mode/window comparator mode	
	Differential travel (hysteresis): Minimum 1 digit (variable)	
	Response time: Select 2.5 ms, 5 ms, 10 ms, 25 ms, 50 ms, 100 ms, 250 ms, 500 ms, 1000 ms, or 5000 ms with keys.	
Environment conditions	Short circuit protection: Equipped	
	Degree of protection: IP40 (IEC)	
	Ambient temperature: -10 to +50°C, Storage: -10 to +60°C	
	Ambient humidity: 35 to 85%RH (no condensation or freezing), Storage: 35 to 85%RH	
	Breakdown voltage: 1000V AC for one minute applied to all charged sections and between cases	
	Insulation resistance: 50 MΩ or over with 500 MVDC for all charged sections and between cases	
	Vibration resistance: 10 to 500 Hz, compound amplitude 3 mm, 2 hrs in each XYZ direction (when panel mounted: resistance 10 to 150 Hz, compound amplitude 0.75 mm, 2 hours in each XYZ direction)	
Connection	Shock resistance: Resistance 100 m/S ² (approx. 10G) 3 times in each XYZ direction	
	Connector connection	
Connection diameter	M5 female thread + R1/8 male thread	
Wire length	When wire is extended, up to 100 mm permissible with 0.3 mm ² or larger cable (less than 10 m when CE Mark-compliant)	

Dimensions

● PPX-R□□-6M-KA



FSM2 Series

- Flow range: 10, 50 ℓ/min (resin body type), 200 ℓ/min (stainless body type), 1000 ℓ/min (aluminum body type)

Features

- High precision, fast response, large flow rate and compact
- Ample functions in pursuit of options and operability

RoHS

CAD



Catalog No. CB-024SA

How to order

FSM2 - NVF **100** - **H04** **1**

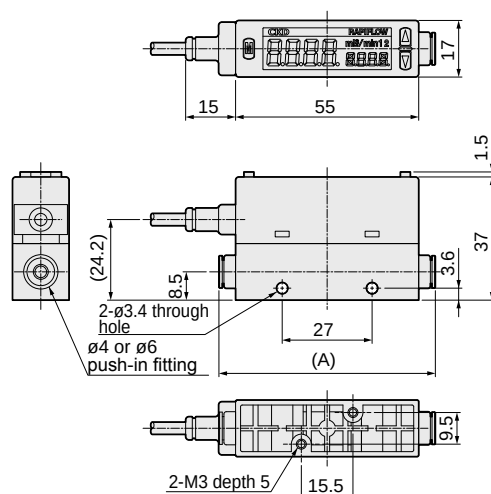
A B

Symbol	Descriptions
A Flow range	
100	10 ℓ/min
500	50 ℓ/min
201	200 ℓ/min
102	1000 ℓ/min

B Connection diameter (body material)		100	500	201	102
H04	Push-in fitting $\phi 4$ (resin)	●			
H06	Push-in fitting $\phi 6$ (resin)		●		
S08	NPT1/4 (stainless)			●	
A15	NPT1/2 (aluminum)				●

Dimensions

- FSM2-NVF□-H04/H061 (full scale flow: 10, 50 ℓ/min)
Connection diameter: Push-in $\phi 4$, $\phi 6$

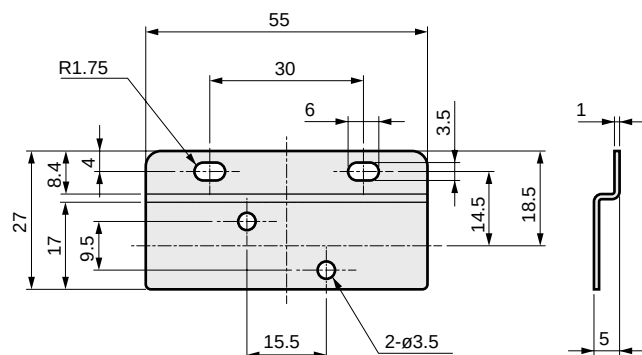


Model No.	Fitting	(A) dimensions
FSM2-NVF100-H041	Push-in fitting $\phi 4$	64
FSM2-NVF500-H061	Push-in fitting $\phi 6$	65

Bracket

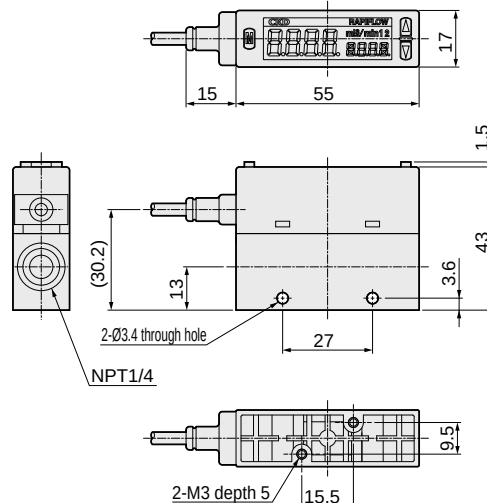
Model No.: FSM2-LB1

(full scale flow: 10, 50, 200 ℓ/min)

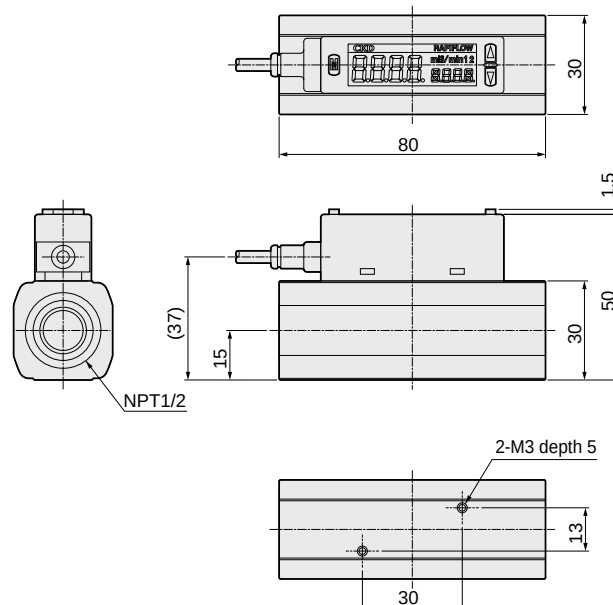


*M3 for fixing (length: 6 mm) 2 set screws included

- FSM2-NVF201-S081 (full scale flow: 200 ℓ/min)
Connection diameter: NPT1/4



- FSM2-NVF102-A151 (full scale flow: 1000 ℓ/min)
Connection diameter: NPT1/2



Specifications

Descriptions				Integrated indicator type FSM2-NVF[*1] – [*2]1			
			Full scale flow	100	500	201	102
Flow range Note 1	*1	100	10 ℓ/min	●			
		500	50 ℓ/min		●		
		201	200 ℓ/min			●	
		102	1000 ℓ/min				●
Connection diameter/ Body material	*2	H04	ø4 push-in fitting/resin	●			
		H06	ø6 push-in fitting/resin		●		
		S08	NPT1/4/stainless			● Air only	
		A15	NPT1/2/aluminum				●
Flow display Note 1, Note 2			Type of display	4 digits + 4 digits 2 color LED			
			Display range	0 to 10.00 ℓ/min	0 to 50.0 ℓ/min	0 to 200 ℓ/min	0 to 1000 ℓ/min
			Display resolution	0.01 ℓ/min	0.1 ℓ/min	1 ℓ/min	1 ℓ/min
Integration Note 3			Display range	99999.99 ℓ	999999.9 ℓ	9999999 ℓ	9999999 ℓ
			Display resolution	0.01 ℓ	0.1 ℓ	1 ℓ	1 ℓ
			Integrated pulse output rate	0.1 ℓ	0.5 ℓ	2 ℓ	10 ℓ
Working conditions	Applicable fluids Note 4			Clean air (JIS B 8392-1:2003-1.1.1 to 5.6.2), compressed air (JIS B 8392-1:2003-1.1.1 to 1.6.2), nitrogen gas			
	Maximum working pressure			0.7 MPa		1.0 MPa	0.7 MPa
	Minimum working pressure			−0.09 MPa			
	Proof pressure			1 MPa		1.5 MPa	1 MPa
	Ambient temperature/humidity			0 to 50°C, 90% RH or less			
	Working fluid temperature			0 to 50 (with no dew condensation)			
Precision	Precision scope of guarantee			3 to 100% F.S.			
	Linearity (display/analog output)			±3%F.S. or less (secondary atmospheric release 25°C)			
	Pressure characteristics			±5%F.S. or less (resin body, aluminum body: −0.09 to 0.7 MPa, stainless body: −0.09 to 1.0 MPa, where reference for secondary atmospheric release)			
	Temperature characteristics			±0.2%F.S./°C or less (15 to 35°C, where 25°C is reference)			
	Reproducibility			±1% F.S. or less			
Response time Note 5			50ms or less				
Output	Switch output			2 point output (NPN open collector output, 50 mA or less, voltage drop 2.4 V or less)			
	Analog output			1 to 5 V voltage output 1 point (connected load impedance 50 kΩ or more)			
Power supply voltage			12 to 24 VDC (10.8 to 26.4 V)				
Current consumption Note 6			50 mA or less				
Lead wire			ø3.7 AWG26 equivalent × 5 conductor (connector), isolator outer diameter ø1.0				
Functions			flow display, flow display peak hold, switch output, analog output, others				
Mounting	Mounting direction			Vertical or lateral as desired			
	Straight piping section			Not required			
Degree of protection			Equivalent to IEC standard IP40				
Protection circuit Note 7			Power supply reverse connection prevention, switch output reverse connection prevention, switch output load short-circuit protection				
EMC directive			Compliant				
Mass (body only) *2			H04	Approx. 50 g			
			H06	Approx. 50 g			
			S08	Approx. 115 g			
			A15	Approx. 155 g			

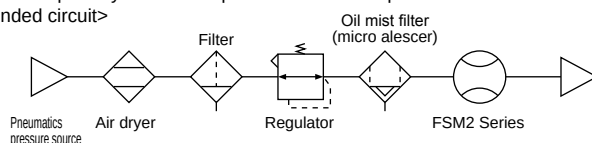
Note 1: Converted to volumetric flow at 20°C 1 barometric pressure (101 kPa)

Note 2: Flow display less than approx. ±1% F.S is zero adjusted.

Note 3: Integrated flow is a calculated (reference) value. It will be reset if power is turned off.

Note 4: Use dry gas that does not contain corrosive elements such as chlorine, sulfur, or acids, and clean gas that does not contain dust or oil mist. When using compressed air, use clean air that complies to JIS B 8392-1:2003 Class 1.1.1 to 1.6.2. Compressed air from the compressor contains drainage (water, oxidized oil, foreign matter, etc.). Install a filter, air dryer (minimum pressure dew point: 10°C or less), and oil mist filter (maximum oil concentration: 0.1 mg/m³) on the primary side of this product to maintain product functions.

<Recommended circuit>



<Recommended components>

Air filter: F Series

Oil mist filter: M Series

Note 5: Response time is set in seven stages from 50 ms or less to 1.5 s.

Note 6: Current for 24 VDC connection with no load connected. Consumed current varies with the load connection.

Note 7: This product's protective circuit is effective only against specific incorrect connections and load short circuits. It does not necessarily provide protection against all incorrect connections.

Silencer small port size type, resin body type

SL•SLW Series

● Port size: M5, R1/8 to R1/2

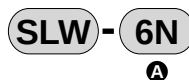
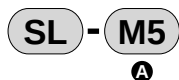
Features

- Large silencing effect
- Flame resistant resin is used for main body (SLW Series)



Catalog No. CB-024SA

How to order



Symbol	Descriptions
A Port size	
M5	M5 × 0.8

Note: Sold in sets of two pieces in a bag.

Symbol	Descriptions
A Port size	
6N	NPT1/8
8N	NPT1/4
10N	NPT3/8
15N	NPT1/2

Specifications

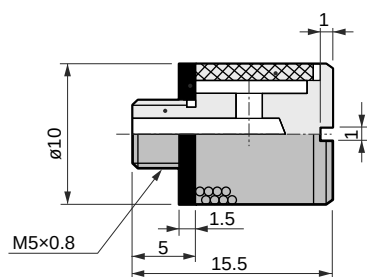
Descriptions	SL-M5	SLW-6A	SLW-8A	SLW-10A	SLW-15A
Use fluid	Compressed air				
Maximum working pressure MPa	1.0				
Minimum working pressure MPa	0				
Proof pressure MPa	1.5				
Fluid temperature °C	5 to 60 (no freezing Note 2)				
Ambient temperature °C	-10 to 60 (no freezing)				
Port size	M5	NPT1/8	NPT1/4	NPT3/8	NPT1/2
Product mass g	5	3.5	7.5	15	21
Applied cylinder tube bore size mm	ø6 to ø15	ø20 to ø80	ø32 to ø80	ø50 to ø100	ø50 to ø100
Damping effect dB	20 and over	30 and over			
Flow rate Note 1 ℓ/min (ANR)	300	650	1300	2000	4850
Effective area mm ²	5	10	20	30	75

Note 1: Flow rate is the atmospheric pressure conversion at 0.5 MPa.

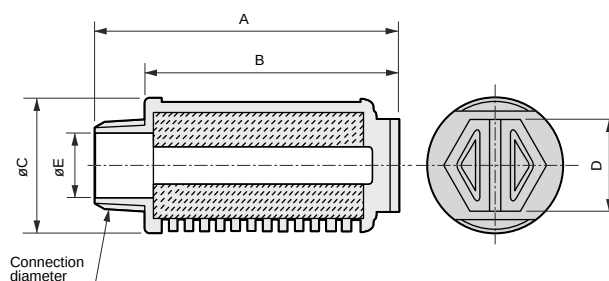
Note 2: Freezing could occur by adiabatic expansion depending on air quality (dew point).

Dimensions

● SL-M5



● SLW-6N•8N•10N•15N



Model No.	A	B	C	D	E	Connection diameter
SLW-6N	34	28	16.5	10	7	R1/8
SLW-8N	44.5	36	20	13	8.5	R1/4
SLW-10N	58.5	48.5	25.5	17	12	R3/8
SLW-15N	71.4	58.4	28	19	15	R1/2

G41D-8N-PS15 Series

- Connection diameter: NPT1/8, NPT1/4

Features

- Easy visual inspection control due to green arrow



Catalog No. CB-024SA

How to order

G41D - **8N** - **PS15**
A B

Symbol	Descriptions
A Connection diameter	
6N	NPT1/8
8N	NPT1/4
B Pressure display	
PS15	0 to 15 Psi

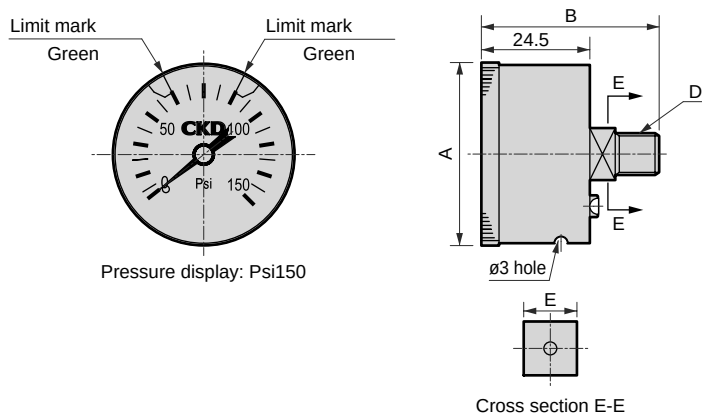
Specifications

Descriptions		G41D
Use fluid		Compressed air
Fluid temperature	°C	5 to 60
Ambient temperature	°C	5 to 60
Precision	Note 1	Equivalent to JIS3
Shape		Back side thread
Display section diameter		ø42
Material	Stud	Brass
	Housing	Stainless steel
	Lens	Polycarbonate
	Mark section	Polyacetal resin
Pressure range	Psi (set range)	0 to 150
Connection diameter		NPT1/8, 1/4
Mass		74

Note 1: The guaranteed display accuracy temperature is 20±15°C.

Dimensions

• G41D



Model No.	A	B	D	E
G41D-6NPS15	ø42	40.5	NPT1/8	12
G41D-8NPS15	ø42	44.5	NPT1/4	14

MEMO

Core Components

General purpose valves

☐ Compact pilot operated solenoid valve for water	FWD..... 242
☐ 2 port direct acting solenoid valve	AB31•AB41..... 244
☐ 3 port direct acting solenoid valve	AG31•AG41..... 248
☐ 2 port pilot kick solenoid valve (piston drive)	APK11..... 252

FWD Series

- NC (normally opened) type
- Connection diameter: NPT3/8 to NPT1/2

Features

- Low power consumption is realized
- Compact and light in weight
- Large flow rate

RoHS



Catalog No. CC-1057A

How to order

FWD11 - **15** **N** - **0** **2C** - **100VAC**
 Model No. **A** **B** **C** **D** **E**

Symbol	Descriptions		
A Connection diameter			
10	3/8		
15	1/2		
B Thread type			
N	NPT		
C Body/sealant combination			
	Body		Seal
0	Brass, PPS		NBR
D Coil option			
2C	Grommet lead wire		
E Rated voltage			
100 VAC	100 VAC	50/60 Hz, 110 VAC	60 Hz
200 VAC	200 VAC	50/60 Hz, 220 VAC	60 Hz
24 VDC	24 VDC		

Specifications

Descriptions	FWD11-10A	FWD11-15A
Use fluid	Water (other than sewage, agricultural water, liquid manure, antifreeze)	
Working pressure differential range MPa	0.02 to 0.7	
Maximum working pressure MPa	0.7	
Withstanding pressure (water pressure) MPa	1.05	
Fluid temperature °C	5 to 60 (no freezing)	
Ambient temperature °C	-10 to 60 (no freezing of fluid)	
Coil heat resistance class	B	
Atmosphere	Place free of corrosive and explosive gases	
Valve structure	Pilot operated poppet structure diaphragm structure	
Valve seat leakage cm ³ /min	0 (water pressure) (Note 1)	
Installation attitude	Free	
Protection property	IPX5	
Connection diameter	NPT3/8	NPT1/2
Orifice diameter mm	15 (Note 2)	
Value of Cv	4.2	6.0
Mass g	320	390
Rated voltage	100 VAC 50/60 Hz, 200 VAC 50/60 Hz, 24 VDC	
Apparent power VA	At holding (50/60 Hz): 5/4, at starting (50/60 Hz): 9/8	
Electricpower consumption W	AC (50/60 Hz): 2.7/2, DC: 4	

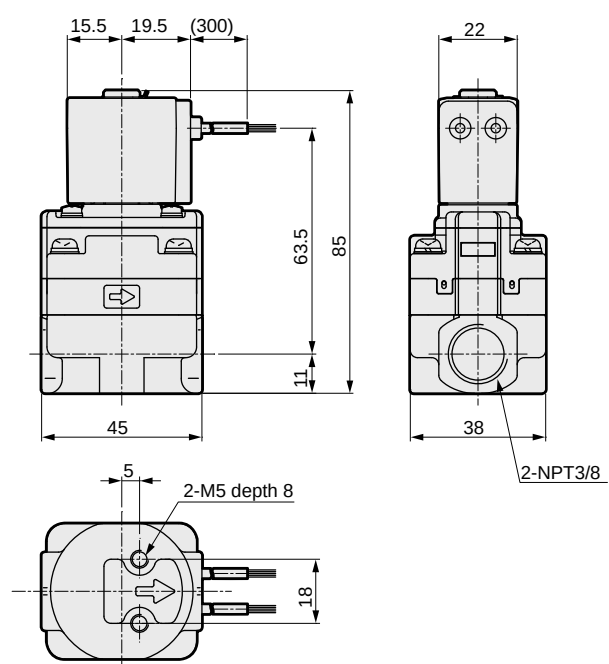
Note1: "Valve-seat leakage 0 cm³/min" means that no water drip leaks for a minute.

Note 2: Orifice diameter refers to the diameter of the valve seat section.

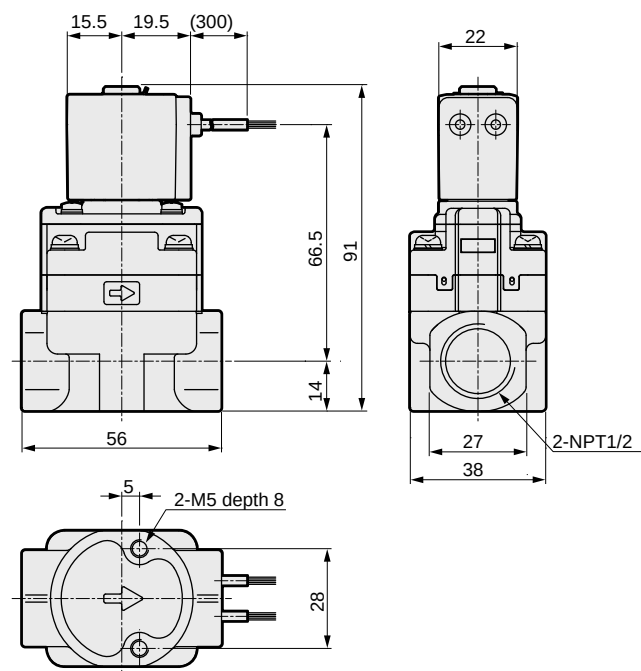
Dimensions

● Grommet lead wire type

FWD11-10N-*2C



FWD11-15N-*2C



2 port direct acting solenoid valve

AB31•41 Series

- NC (normally opened) type
- Connection diameter: NPT1/4 to NPT3/8

Features

- Controls various fluids
- Wide series variations



Catalog No.CB-03-1SA

How to order

NC (normally closed) type

AB31 - **2N** - **3** - **0** **2H** - **100VAC**

A B C D E

AB41

Model No.

					Model no.	
Symbol	Descriptions				AB31	AB41
A Connection diameter						
2N	NPT1/4				●	
3N	NPT3/8					●
B Orifice						
3	ø3				●	
4	ø3.5					●
C Body/sealant combination *1						
		Body	Seal	Remarks		
Blank	Standard	Brass	Nitrile rubber	Air, water, low vacuum, kerosene (up to 60°C)	●	●
D Coil housing						
2H	DIN terminal box with small indicator light (Pg11)				●	●
E Rated voltage*2, 3						
100 VAC	100 VAC				●	●
200 VAC	200 VAC				●	●
24 VDC	24 VDC				●	●



Note on model No. selection

*1: Standard is blank, but enter 0 in C.

*2: 100 VAC coil can be used with 100 VAC 50/60 Hz and 110 VAC 60 Hz. 200 VAC coil can be used with 200 VAC 50/60 Hz and 220 VAC 60 Hz.

*3: Contact CKD for other voltages.

Common specifications

Descriptions	Standard specifications
Use fluid	Air, low vacuum [1.33×10^2 Pa (abs)], water, kerosene
Working pressure differential range MPa	0 to 1.2 (Differs according to type chosen. Please refer to the maximum working pressure differential in the individual specifications.)
Withstanding pressure (water pressure) MPa	25
Fluid temperature (Note 1) °C	−10 to 60
Ambient temperature °C	−20 to 60
Thermal class	B
Atmosphere	Place free of corrosive and explosive gases
Valve structure	Direct acting poppet structure
Valve seat leakage cm^3/min (ANR)	0.2 or less (air)
Installation attitude	Free
Body/sealant material	Brass, nitrile rubber

Note 1: No freezing.

Individual specifications

Descriptions	Connection diameter	Orifice diameter (mm)	Flow characteristic			Maximum working pressure differential (MPa)				Maximum working pressure (MPa)	Rated voltage	Apparent power (VA)				Electric power consumption (W)		Mass (kg)	
			C [dm³/(s·bar)]	b	Value of Cv	Air		Water•kerosene				Holding		Starting		AC 50/60Hz	DC		
						AC	DC	AC	DC			50Hz	60Hz	50Hz	60Hz				
AB31-02	−3	NPT1/4	3.0	1.1	0.52	0.31	1.0	0.5	0.7	0.5	5	100VAC 50/60Hz	12	10	17	14	5.2/3.8	8.1	0.35
AB41-03	−4	NPT3/8	3.5	1.7	0.49	0.42	1.2	0.6	0.9	0.6		200VAC 50/60Hz	18	15	29	24	6.7/5.7	10.4	0.45
												24 VDC							

*1: The port size order number is 02 for NPT1/4(8A) and 03 for NPT3/8(10A).

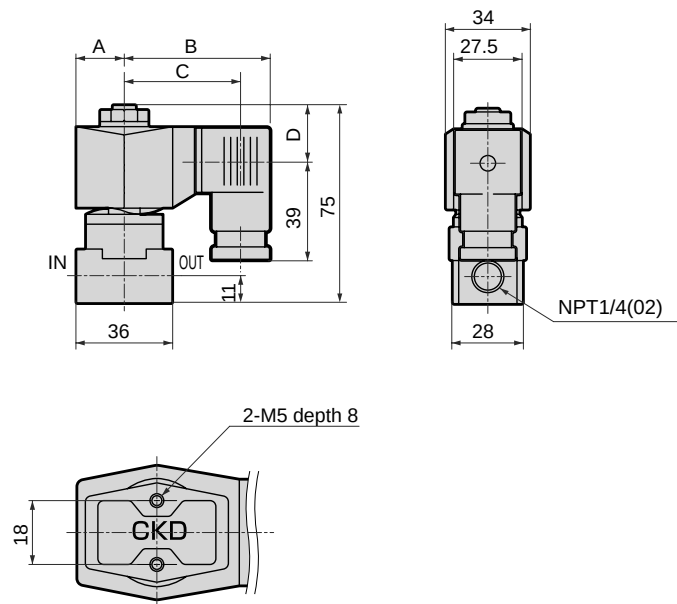
*2: Variation of rated voltage should be within $\pm 10\%$.

*3: When using in low vacuum, vacuum draw the OUT port side.

*4: Effective area S and sonic conductance C are converted as $S \div 5.0 \times C$.

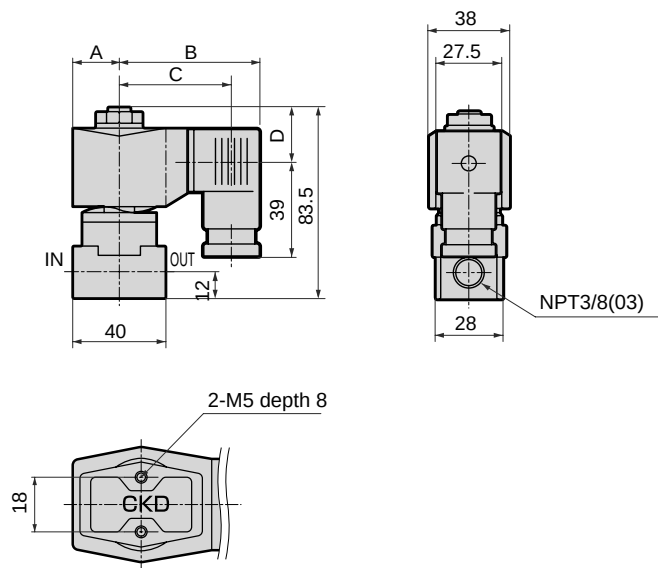
Dimensions

● AB31 series DIN terminal box with small indicator light
AB31-2N-3-02H



Voltage	A	B	C	D
AC	20	62	50.5	20.5
DC	21	63.5	52	20.5

● AB41 series DIN terminal box with small indicator light
AB41-3N-4-02H



Voltage	A	B	C	D
AC	23.5	65.5	54	22
DC	23.5	66	54.5	22

MEMO

3 port direct acting solenoid valve

AG31•41 Series

- Universal type
- Connection diameter: NPT1/4 to NPT3/8

Features

- Controls various fluids
- Wide series variations



Catalog No.CB-03-1SA

How to order

Universal type

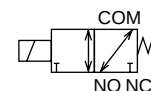
AG31 - **2N** - **2** - **0** **2H** - **100VAC**

A B C D E

AG41

Model No.

JIS symbol



					Model no.	
Symbol	Descriptions				AG31	AG41
A Connection diameter						
2N	NPT1/4				●	
3N	NPT3/8					●
B Orifice						
	AG31		AG41			
	TOP	BODY	TOP	BODY		
1	ø1.5	ø1.5	ø2.0	ø2.0	●	●
2	ø2.0	ø2.0	ø2.3	ø2.3	●	●
C Body/sealant combination *1						
		Body	Seal	Remarks		
Blank	Standard	Brass	Nitrile rubber	Air, water, low vacuum, kerosene (up to 60°C)	●	●
D Coil housing						
2H	DIN terminal box with small indicator light (Pg11)				●	●
E Rated voltage *2, 3						
100 VAC	100 VAC				●	●
200 VAC	200 VAC				●	●
24 VDC	24 VDC				●	●



Note on model No. selection

*1: Standard is blank, but enter 0 in C.

*2: 100 VAC coil can be used with 100 VAC 50/60 Hz and 110 VAC 60 Hz. 200 VAC coil can be used with 200 VAC 50/60 Hz and 220 VAC 60 Hz.

*3: Contact CKD for other voltages.

Common specifications

Descriptions	Standard specifications
Use fluid	Air, low vacuum [1.33×10^2 Pa (abs)], water, kerosene
Working pressure differential range MPa	0 to 1 (Differs according to type chosen. Please refer to the maximum working pressure differential in the individual specifications.)
Maximum working pressure MPa	1
Withstanding pressure (water pressure) MPa	25
Fluid temperature (Note 1) °C	−10 to 60
Ambient temperature °C	−20 to 60
Thermal class	B
Atmosphere	Place free of corrosive and explosive gases
Valve structure	Direct acting poppet structure
Valve seat leakage cm^3/min (ANR)	0.2 or less (air)
Installation attitude	Free
Body/sealant material	Brass, nitrile rubber

Note 1: No freezing.

Individual specifications

Descriptions	Connection diameter	Orifice diameter (mm)		Flow characteristic						Max. working pressure differential (MPa)				Rated voltage	Apparent power (VA)				Electric power consumption (W)		Mass (kg)	
				C [dm³/(s·bar)]		b		Value of Cv		Air		Water-kerosene			Holding		Starting		AC 50/60Hz	DC		
		TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY	AC	DC	AC	DC		50Hz	60Hz	50Hz	60Hz				
AG31	NPT1/4	−02-1	1.5	1.5	0.29	0.29	0.64	0.53	0.09	0.09	0.7	0.7	0.7	0.7	100 VAC 50/60 Hz	14	11	20	16	6/4.2	8.1	0.36
−02-2		2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15	0.4	0.4 (0.35)	0.4	0.4									
AG41	NPT3/8	−03-1	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15	1.0	0.7 (0.45)	1.0	0.7	200 VAC 50/60 Hz	22	17	35	27	8.3/6.2	10.4	0.48
−03-2		2.3	2.3	0.74	0.74	0.66	0.53	0.19	0.19	0.7	0.4 (0.25)	0.7	0.4									

*1: Variation of rated voltage should be within $\pm 10\%$.

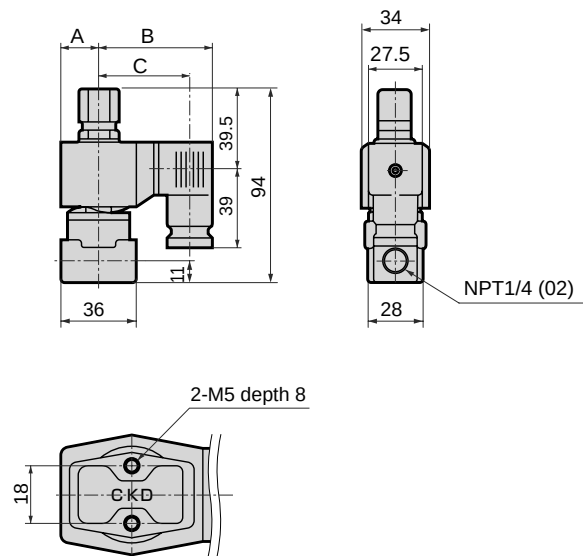
*2: The value in parenthesis indicate the max. working pressure differential of the applied NO port pressure.

*3: Effective area S and sonic conductance C are converted as $S \div 5.0 \times C$.

Dimensions

● AG31 series DIN terminal box with small indicator light

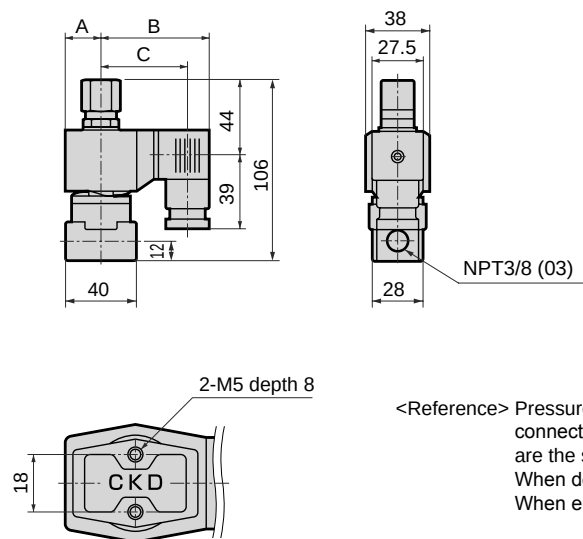
AG31-2N-1 to 2-02H



Voltage	A	B	C
AC	20	62	50.5
DC	21	63.5	52

● AG41 series DIN terminal box with small indicator light

AG41-3N-1 to 2-02H



<Reference> Pressure can be applied from any of the three piping connection ports. Typically, the two orifices (TOP and BODY) are the same values and rated pressure.
 When de-energized: COM→NO or NO→COM
 When energized: COM→NC or NC→COM

Voltage	A	B	C
AC	23.5	65.5	54
DC	23.5	66	54.5

2 port pilot kick solenoid valve (piston drive)

APK11 Series

(ideal for controlling steam and warm water)

- NC (normally opened) type
- Connection diameter: NPT1/4 to NPT1

Features

- Controls various fluids
- Wide series variations

RoHS

CAD



Catalog No.CB-03-1SA

How to order

APK11 - **8** **N** - **C** **4A** - **100VAC**
Model No. **A** **B** **C** **D** **E**

Symbol	Descriptions			
A Connection diameter				
8	NPT1/4			
10	NPT3/8			
15	NPT1/2			
20	NPT3/4			
25	NPT1			
B Thread type				
N	NPT			
C Body/sealant combination				
	Body	Valve seal	O ring	Remarks
C	Bronze	PTFE	Fluoro rubber	Steam (up to 180°C)
D Coil housing				
4A	Open frame type (thermal class H), lead wire			
E Rated voltage*1, 2				
100 VAC	100 VAC			
200 VAC	200 VAC			



Note on model No. selection

*1: 100 VAC coil can be used with 100 VAC 50/60 Hz and 110 VAC 60 Hz. 200 VAC coil can be used with 200 VAC 50/60 Hz and 220 VAC 60 Hz.

*2: Contact CKD for other voltages.

Common specifications

Descriptions	Option specifications
Use fluid	Steam, water, warm water, oil (20 mm ² /s or less)
Working pressure differential range MPa	0 to 1.0 (Differs according to type chosen. Please refer to the maximum working pressure differential in the individual specifications.)
Maximum working pressure MPa	1
Withstanding pressure (water pressure) MPa	4
Fluid temperature °C	5 to 180
Ambient temperature °C	−10 to 60
Thermal class	H
Atmosphere	Place free of corrosive and explosive gases
Valve structure	Pilot kick type poppet piston structure
Valve seat leakage (Note 1) cm ³ /min (ANR)	400 or less (air)
Installation attitude	Limited to vertical position with the coil on top, and horizontal positions (Note 2)
Body/sealant material	Bronze, PTFE

Note 1: This applies at a pneumatic pressure between 0.05 and 1.0 MPa. When using at pressure less than 0.05 MPa, the sealant may be unstable. Contact CKD in this case.

Note 2: For use under 0.05MPa, valve must be installed vertically.

Individual specifications

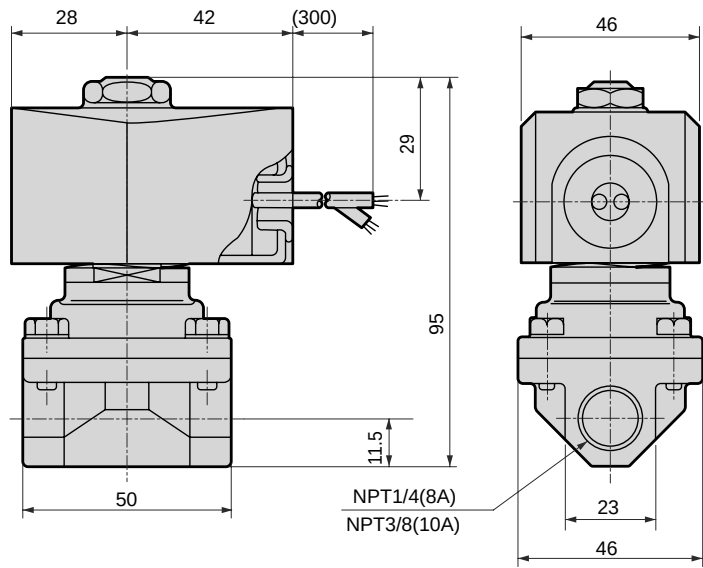
Model No.	Connection diameter	Orifice diameter (mm)	Flow characteristic				Minimum operating pressure differential (MPa)	Max. working pressure differential (MPa)	Rated voltage	Apparent power (VA)				Electric power consumption (W)	Mass (kg)		
			C[dm³/(s·bar)]	b	Value of Cv	S(m³)				Holding		Starting				AC 50/60Hz	
Descriptions								Steam			50Hz	60Hz	50Hz	60Hz			
APK11-8N	NPT1/4	12	9.4	0.41	2.2	—	0		100 VAC 50/60 Hz 200 VAC 50/60 Hz	24	19	61	54	10/8	0.7		
APK11-10N	NPT3/8	12	15	0.37	2.7	—											0.7
APK11-15N	NPT1/2	16	20	0.31	4.5	—										13/11	1.0
APK11-20N	NPT3/4	23	—	—	8.6	162				32	26	123	106	1.3			
APK11-25N	NPT1	28	—	—	12	231								1.7			

*1: Variation of rated voltage should be within ±10%.

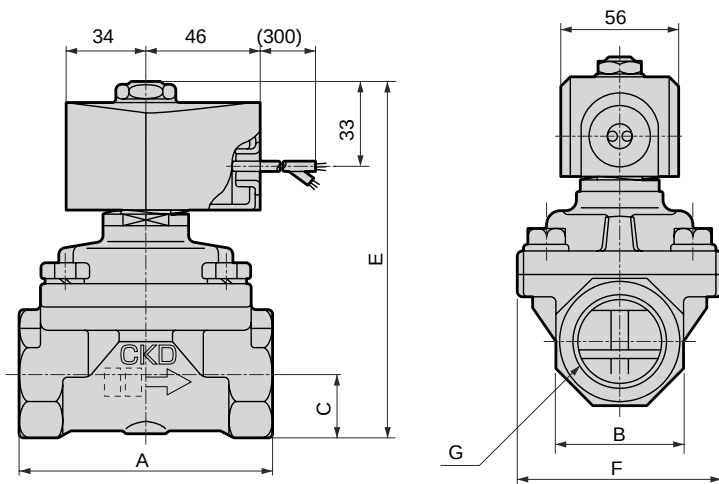
*2: Effective area S and sonic conductance C are converted as $S \div 5.0 \times C$.

Dimensions

● APK11 series open frame lead wire type APK11-8N•10N-C4A



APK11-15N•20N•25N-C4A



Model No.	A	B	C	E	F	G
APK11-15N	71	27	14.5	119.5	50	NPT1/2
APK11-20N	80	32	17.5	126.5	60	NPT3/4
APK11-25N	90	41	21.5	136.5	71	NPT1

Core Components

Main line component

☐ Medium main line filter	AF2000.....256
	AF4000.....258

Medium main line filter

AF2000 Series

- Process air flow rate: 3.7 to 25.8 m³/min (ANR)

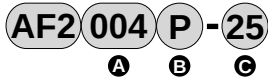
Features

- New material and new structure further low pressure loss, long service life and compactness



Catalog No. CC-972

How to order



Symbol	Descriptions	Applicable No. of units
A Flow code		
004	3.7m ³ /min (ANR)	5 units or less
007	6.6m ³ /min (ANR)	
010	9.6m ³ /min (ANR)	
013	13.2m ³ /min (ANR)	3 units or less
020	19.8m ³ /min (ANR)	
026	25.8m ³ /min (ANR)	2 units or less

B Element type	
P	P type (solid, oil removing filter)
M	M type (high-performance solid, oil removing filter)

C Port size	
25	RC1
40	RC1 ¹ / ₂
50	RC2
65	RC2 ¹ / ₂

Specifications

Item	AF2004□-25	AF2007□-40	AF2010□-40	AF2013□-50	AF2020□-50	AF2026□-65
Process air flow rate Note 1, 2 m ³ /min (ANR)	3.7	6.6	9.6	13.2	19.8	25.8
Use fluid	Compressed air					
Working pressure range MPa	0.1 to 1.0					
Proof pressure MPa	1.5					
Connection diameter NPT	1	1 ¹ / ₂		2		2 ¹ / ₂
Product mass kg	2.6	3.0	4.9	5.6	5.6	11.1
Differential pressure indicator	Standard					
Drain discharger Note 4	Integrated (NO type: exhaust without pressurization)					
Drain outlet NPT	1/8					

Note: Enter the series name in □.

Item	P type	M type
Operating temperature range °C	5 to 60	
Nominal filtration rating μm	1	0.01
Secondary side oil concentration Note 3 mg/m ³	0.6	0.01
Initial pressure drop MPa	0.007	0.01
Normal pressure drop MPa	0.014	0.02

Note 1: Treating air flow rate is the atmospheric pressure conversion value where inlet pressure is 0.7MPa.

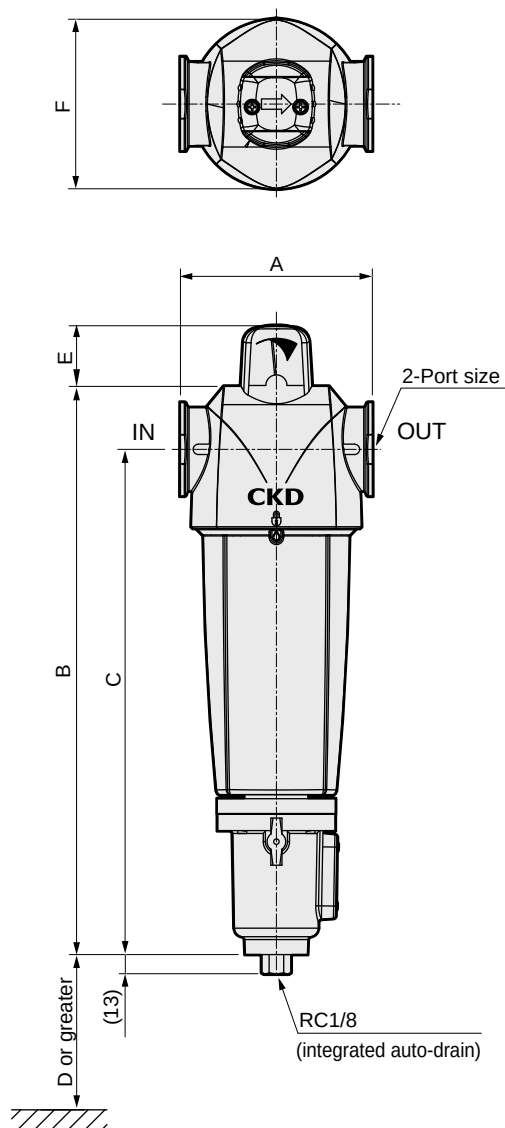
Note 2: ANR shows conditions where 20°C atmospheric pressure and relative humidity 65%.

Note 3: Secondary side oil content density is the value where inlet air temperature is 21°C.

Note 4: The drain discharger is NO type. Initially generated drainage and air are purged until pressure reaches 0.1MPa.

Note 5: Replacement period of the P/M type element is one year or when the differential pressure indicator enters the red range, whichever is earlier.

● AF2004P/M to AF2026P/M



Model No.	Connection diameter	A	B	C	D	E	F
AF2004P/M-25	NPT1	129	383	340	70	43	114
AF2007P/M-40	NPT1½	129	473	430	70	43	114
AF2010P/M-40	NPT1½	170	541	491	100	46	155
AF2013P/M-50	NPT2	170	633	583	100	46	155
AF2020P/M-50	NPT2	170	633	583	100	46	155
AF2026P/M-65	NPT2½	205	750	690	120	49	180

AF4000 Series

- Ideal for solid, oil removing, and odor filtering
- Process air flow rate: 3.7 to 18.8m³/min (ANR) (at 0.7 MPa)



Catalog No.CC-995A

How to order

AF4 **004** **P** - **25** - **GA**
A **B** **C** **D**

Symbol	Descriptions
A Flow code	
004	3.7m ³ /min(ANR)
007	6.2m ³ /min(ANR)
010	10m ³ /min(ANR)
013	13m ³ /min(ANR)
020	18.8m ³ /min(ANR) (S, M, and X only)

B Element type	
P	P type (solid, water droplet filter)
S	S type (solid filter)
M	M type (oil mist filter)
X	X type (odor filter)

C Port size	
25	RC1
40	RC1 ¹ / ₂
50	RC2

D Attachment product

GA	Differential pressure gauge (GA400-8-P02) attached
EL	Element life indicator attached

Notes on selection

The unit's performance may not be attained if used at less than the selected pressure. Always select the model No. with the working pressure.
 If inlet pressure is other than 0.7MPa, multiply treated air flow rate by following coefficient.

Flow rate correction coefficient

Pressure (MPa)	Auxiliary coefficient
0.2	0.36
0.3	0.5
0.4	0.62
0.5	0.75
0.6	0.88
0.7	1.0
0.8	1.13
0.9	1.25
1.0	1.38

Specifications

Item	AF4004□-25	AF4007□-40	AF4010□-40	AF4013□-50	AF4020□-50
Process air flow rate Note 1, 2 m ³ /min (ANR)	3.7	6.2	10	13	18.8
Use fluid	Compressed air				
Working pressure range MPa	0.1 to 1.0				
Operating temperature range °C	5 to 60				
Proof pressure MPa	1.5				
Connection diameter NPT	1	1 ¹ / ₂		2	
Product mass kg	3	3.3	3.7	4.3	6
Element life indicator	Standard equipped on the M type only				
Drain discharger Note 4	DT3000-15-W (excluding the X type)				
Drain outlet	ø5.7 to ø6 nylon tube can be directly connected (excluding the X type).				

Note: Enter the series name in □.

Item		P type	S type	M type	X type
Performance	Processing air conditions	Inlet air pressure MPa	0.7		
		Inlet air temperature °C	32		
		Inlet air dew point °C	—	—	No introduction or occurrence of water droplets
		Inlet oil concentration mg/m ³	—	—	Pressure dew point 10°C
	Nominal filtration rating μm		5	1	0.01
	Secondary side oil concentration Note 3 mg/m ³		—	—	0.003
	Water droplet separation efficiency %		99	—	—
	Element replacement period Note 6	Pressure drop Initial MPa	0.005	0.005	0.01
		Pressure drop MPa	0.02	0.07	0.07
		Period of use	8000 hours or 1 year		

Note 1: Treating air flow rate is the atmospheric pressure conversion value where inlet pressure is 0.7MPa.

Note 2: ANR shows conditions where 20°C atmospheric pressure and relative humidity 65%.

Note 3: Secondary side oil content density is the value where inlet air temperature is 20°C.

Note 4: The drain discharger is NO type. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

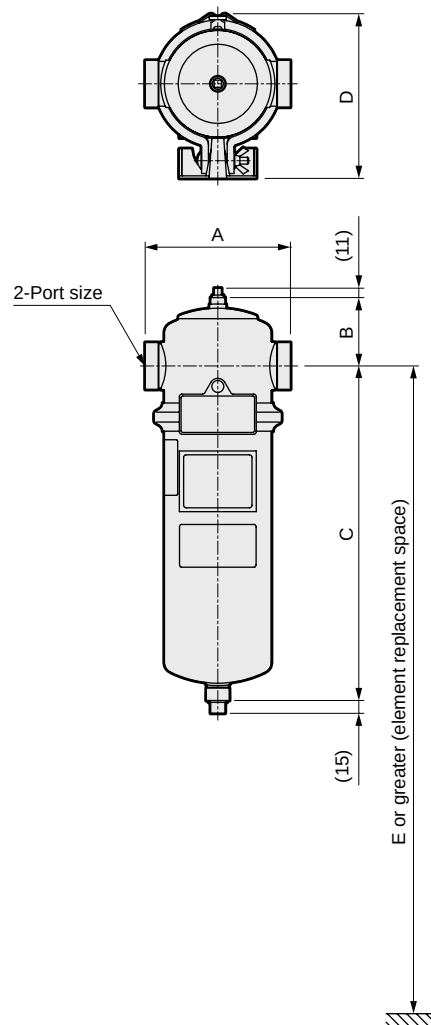
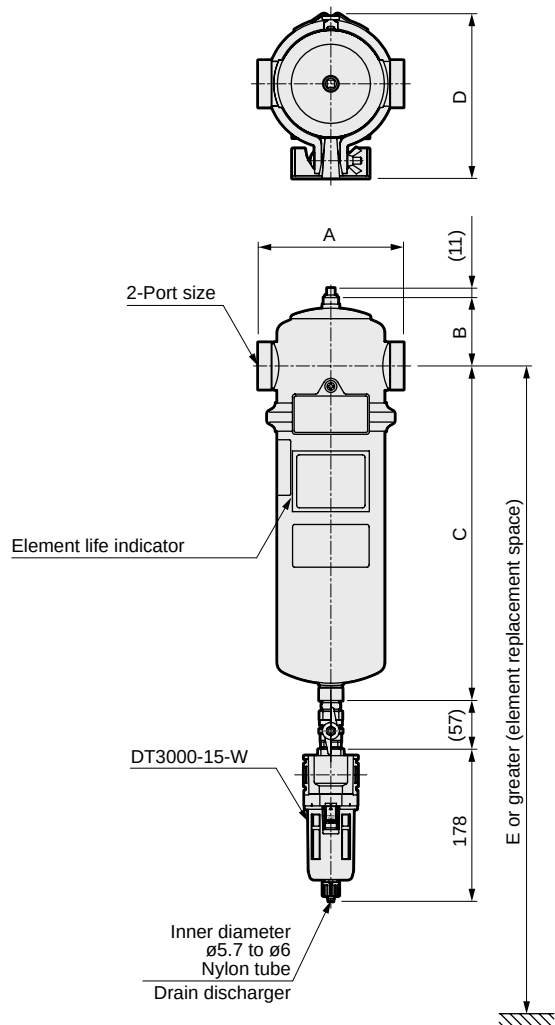
Note 5: Replacement period of the P/S/M element is when the pressure drops or when the period of use expires, whichever is earlier.

Note 6: For the X type, change the element when the period of use expires or when the odor filtering is no longer effective.

Note 7: There is no P type for the AF4020.

● AF4004P/S/M to AF4020S/M

● AF4004X to AF4020X



Model No.	Connection diameter	A	B	C	D	E
AF4004P/S/M/X-25	RC1	160	72.5	209	192.7	570
AF4007P/S/M/X-40	RC1 $\frac{1}{2}$	170	80	283.5	192.7	730
AF4010P/S/M/X-40	RC1 $\frac{1}{2}$	170	80	391.5	192.7	940
AF4013P/S/M/X-50	RC2	173	86.5	478	192.7	1100
AF4020S/M/X-50	RC2	173	86.5	635	192.7	1420

Element life indicator is only equipped on the M type.

Dimension E indicates the space required for maintenance.

Automatic drain and ball valve are attached.

MEMO

Core Components

Labor saving mechanisms

□ ABSODEX (direct drive actuator)

AX4000T 262

AX4000T Series

● Breakdown torque: 45•75N•m

Features

- Compatible function with free driver, actuator, and cable combinations
- Large hollow hole handy for cable wiring and piping, and a variety of options.
- Overseas standards UL/cUL (North America standard), CE (EU standard) compliant
- Safety standard Safe torque off function



Catalog No.CC-995A

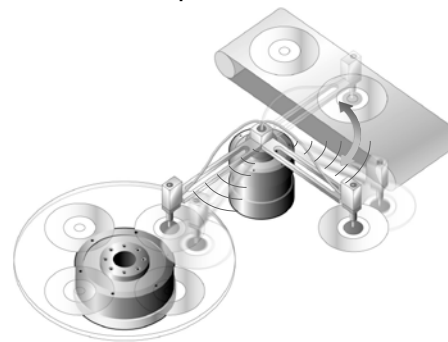
How to order

AX4 **045** **TS** - **DM04** - **U0**
A **B** **C** **D**

Symbol	Descriptions
A Size (breakdown torque)	
009	9 N•m
022	22 N•m
045	45 N•m
075	75 N•m
150	150 N•m
B Driver type	
TS	With TS type driver
C Cable length	
DM04	4 m
D Interface specifications	
U0	Parallel I/O (NPN specifications)

Note: Refer to catalog No.CC-995A for other options.

Application example Index/arm rotation



Specifications

Item		AX4009T	AX4022T	AX4045T	AX4075T	AX4150T
Max. output torque	N•m	9	22	45	75	150
Continuous output torque	N•m	3	7	15	25	50
Max. revolving speed	rpm	240 (Note 1)			140 (Note 1)	100 (Note 1)
Allowable axial load	N	800	3700		20000	
Allowable moment	N•m	40	60	80	200	300
Output shaft moment of inertia	kg•m ²	0.009	0.0206	0.0268	0.1490	0.2120
Allowable load moment of inertia	kg•m ²	0.35 (1.75) (Note 2)	0.60 (3.00) (Note 2)	0.90 (5.00) (Note 2)	5.00 (25.00) (Note 2)	75.00 (Note 2)
Index accuracy (Note 4)	s	±30				
Repeat accuracy (Note 4)	s	±5				
Output shaft friction torque	N•m	0.8	3.5		10.0	
Resolver resolution	P/rev	540672				
Motor insulation class		F type				
Motor withstand voltage		1500 VAC for 1 minute				
Motor insulation resistance		10 MΩ or greater at 500 VDC				
Ambient temperature range		0 to 45°C (0 to 40°C: Note 5)				
Ambient humidity range		20 to 85%RH with no condensation				
Storage temperature range		−20 to 80°C				
Storage humidity range		20 to 90%RH with no condensation				
Atmosphere		Place free of corrosive and explosive gases and dust				
Mass	kg	5.5	12.3	15.0	36.0	44.0
Total mass with brake set	kg	—	16.4	19.3	54.0	63.0
Run out of output shaft (Note 4)	mm	0.03				
Surface run out of output shaft (Note 4)	mm	0.05				
Protection		IP20				

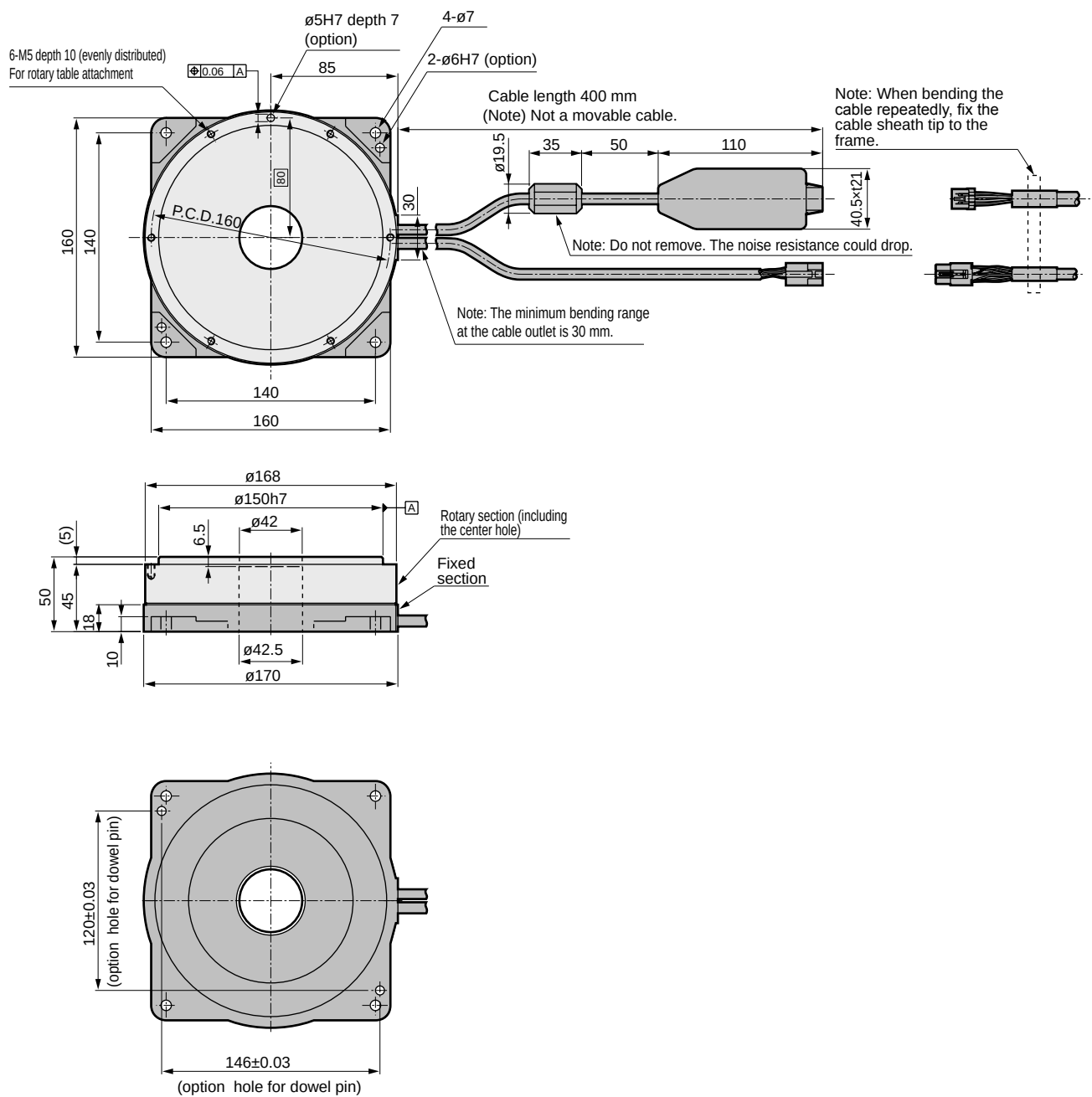
Note 1: For continuous rotary operation, use at 80 rpm or less.

Note 2: In the load conditions up to values in (), set parameter 72 (integral gain magnification) to 0.3 (reference).

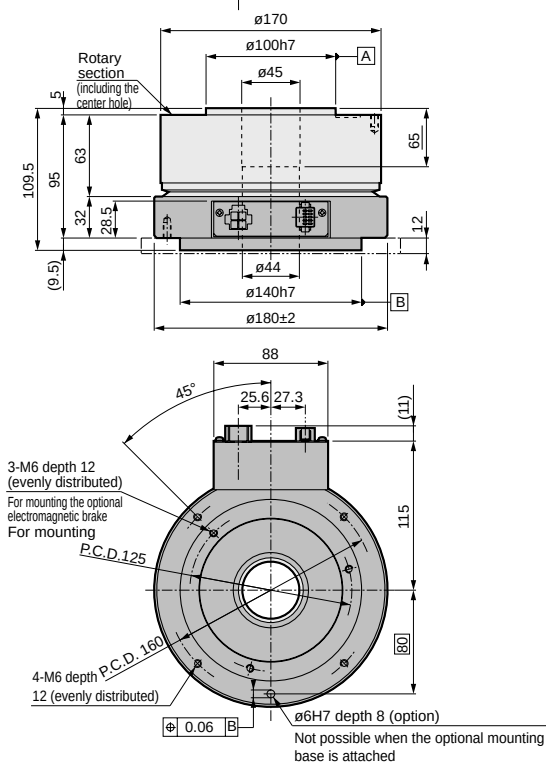
Note 3: Consult with CKD when using continuous rotary operation and parameter 72 (integral gain magnification) together.

Note 4: To use as a UL certified product, the upper temperature limit is 40°C.

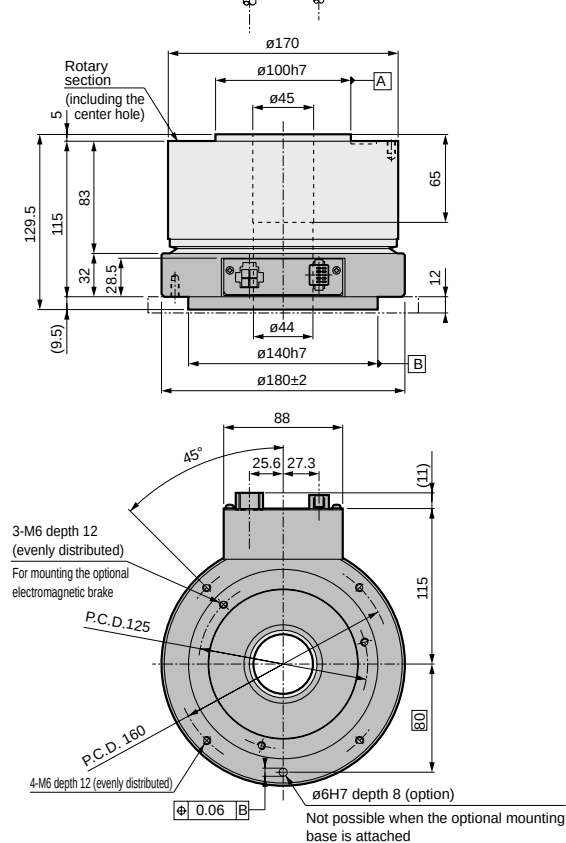
● AX4009T



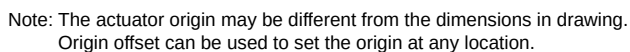
Note: The actuator origin may be different from the dimensions in drawing.
Origin offset can be used to set the origin at any location.



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Labor saving mechanisms



DRIVER SPECIFICATIONS

Descriptions		Model
		TS Type Driver AX9000TS
Power supply voltage	Main power supply	Three-phase 200 VAC $\pm 10\%$ to 230 VAC $\pm 10\%$ (Note 1)
	Control power supply	Single-phase 200 VAC $\pm 10\%$ to 230 VAC $\pm 10\%$
Power frequency		50/60Hz
Rated input current		200 VAC: 1.8 A
Rated output current		1.9 A
Structure		Driver, controller integrated (open type)
Mass		Approx. 1.6 kg
Protection		IP2X (excluding CN4 and CN5)

Note 1: If the main power is turned off while the actuator is rotating, the rotation may continue due to inertia.

Note 2: After the main power is turned off, the motor may be driven by the residual voltage in the driver.

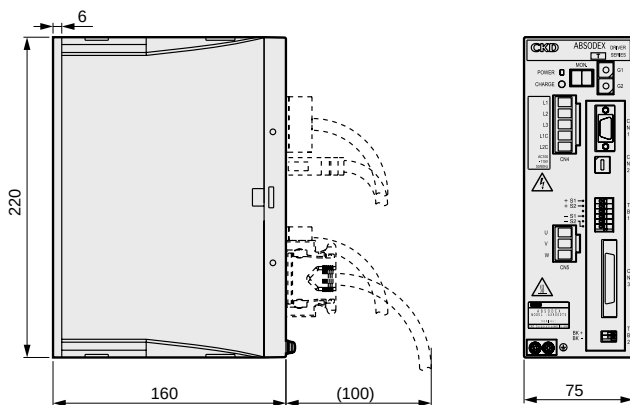
Power Supply and Circuit Breaker Capacities

Actuator Model	Driver Model	Power Supply Capacity (KVA)		Inrush current (A)	Circuit breaker capacity
		Max. value	Rated value	Single-phase/three-phase 200 V	Rated current (A)
AX4045T	AX9000TS	1.5	0.5	56 (Note)	10
AX4075T		2.0	0.8		

Note: The inrush current is a typical value at 230 VAC.

Driver dimensions

• TS Type Driver



Parallel I/O (NPN specifications)

CN3 input signal

Pin no.	Signal	Logic	Decision
1 and 2	External power supply input +24 V $\pm 10\%$		
3 and 4	External power supply input ground		
5	Program number selection input (bit 0)	Positive	Level
6	Program number selection input (bit 1)	Positive	Level
7	Program number selection input (bit 2)	Positive	Level
8	Program number selection input (bit 3)	Positive	Level
9	Program number set input 2nd digit/ program number selection input (bit 4)	Positive	Edge Level
10	Program number set input 1st digit/ program number selection input (bit 5)	Positive	Edge Level
11	Reset input	Positive	Edge
12	Home Positioning Instruction Input	Positive	Edge
13	Start input	Positive	Edge
14	Servo-on input/program stop input	Positive	Level Edge
15	Ready recovery/continuous rotation stop input	Positive	Edge
16	Answer input/ Position deviation counter reset input	Positive	Edge Level
17	Emergency Stop Input	Negative	Level
18	Brake Release Input	Positive	Level

CN3 output signal

Pin no.	Signal	Logic
33	M code output (bit 0)	Positive
34	M code output (bit 1)	Positive
35	M code output (bit 2)	Positive
36	M code output (bit 3)	Positive
37	M code output (bit 4)	Positive
38	M code output (bit 5)	Positive
39	M code output (bit 6)	Positive
40	M code output (bit 7)	Positive
41	In-position output	Positive
42	Positioning completion output	Positive
43	Start input waiting output	Positive
44	Alarm output 1	Negative
45	Alarm output 2	Negative
46	Index intermediate output 1/origin output	Positive
47	Index intermediate output 2/servo state output	Positive
48	Ready output	Positive
49	Segment position strobe output	Positive
50	M code strobe output	Positive

CN3 pulse string input signal

Pin no.	Signal
19	PULSE/UP/A phase
20	-PULSE/-UP/-A phase
21	DIR/DOWN/B phase
22	-DIR/-DOWN/-B phase

CN3 encoder output signal (incremental)

Pin no.	Signal
23	A phase (line driver output)
24	-A phase (line driver output)
25	B phase (line driver output)
26	-B phase (line driver output)
27	Z phase (line driver output)
28	-Z phase (line driver output)



Safety precautions

Always read this section before starting use.

Refer also to the safety precautions provided in the general catalog and series catalog.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices is secured. It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD product is used safely.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.



WARNING

- 1 This product is designed and manufactured as a general industrial machine part.**
It must be handled by an operator having sufficient knowledge and experience in handling.
- 2 Use this product in accordance with specifications.**
This product must be used within its stated specifications. It must not be modified or machined.
This product is intended for use as a general-purpose industrial device or part. It is not intended for use outdoors or for use under the following conditions or environment.
(Note that this product can be used when CKD is consulted prior to use and the customer consents to CKD product specifications. The customer must provide safety measures to avoid risks in the event of problems.)
 - ① Use for special applications including nuclear energy, railway, aircraft, marine vessel, vehicle, medicinal devices, devices or applications coming into contact with beverages or foodstuffs, amusement devices, emergency shutoff circuits, press machine, brake circuits, or for safeguard
 - ② Use for applications where life or assets could be adversely affected, and special safety measures are required.
- 3 Observe corporate standards and regulations, etc., related to the safety of device design and control, etc.**
ISO4414, JIS B 8370 (pneumatic system rules)
JFPS2008 (Principles for pneumatic cylinder selection and use)
Including High Pressure Gas Maintenance Law, Occupational Safety and Sanitation Laws, other safety rules, body standards and regulations, etc.
- 4 Do not handle, pipe, or remove devices before confirming safety.**
 - ① Inspect and service the machine and devices after confirming safety of the entire system related to this product.
 - ② Note that there may be hot or charged sections even after operation is stopped.
 - ③ When inspecting or servicing the device, turn off the energy source (air supply or water supply), and turn off power to the facility.
Discharge any compressed air from the system, and pay attention to possible water leakage and leakage of electricity.
 - ④ When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.
- 5 Observe warnings and cautions on the pages below to prevent accidents.**

■ The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.



DANGER: When a dangerous situation may occur if handling is mistaken leading to fatal or (DANGER) serious injuries, or when there is a high degree of emergency to a warning.



WARNING: When a dangerous situation may occur if handling is mistaken leading to fatal or (WARNING) serious injuries.



CAUTION: When a dangerous situation may occur if handling is mistaken leading to minor injuries (CAUTION) or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation. In any case, important information that must be observed is explained.

Disclaimer

1 Warranty period

"Warranty Period" is one (1) year from the first delivery to the customer.

2 Scope of warranty

In case any defect attributable to CKD is found during the Warranty Period, CKD shall, at its own discretion, repair the defect or replace the relevant product in whole or in part, according to its own judgment.

Note that the following faults are excluded from the warranty term:

- (1) Product abuse/misuse contrary to conditions/environment recommended in its catalogs/specifications.
- (2) Failure due to other causes.
- (3) Use other than original design purposes.
- (4) Third-party repair/modification.
- (5) Faults caused by reason that is unforeseeable with technology put into practical use at the time of delivery.
- (6) Failure attributable to force majeure.

In no event shall CKD be liable for business interruptions, loss of profits, personal injury, costs of delay or for any other special, indirect, incidental or consequential losses, costs or damages.

3 Compatibility confirmation

In no event shall CKD be liable for merchantability or fitness for a particular purpose, notwithstanding any disclosure to CKD of the use to which the product is to be put.

Precautions in Export

1 Security Trade Control

Products in this catalog and their related technology may require approval before export or provision. To contribute to world peace and safety, there may be cases in which approval under the Foreign Exchange and Foreign Trade Control Law is required depending on the country to where the product or related technology is being exported or provided.

The scope of products and related technologies requiring approval are listed in "Export Trade Control Ordinance Appendix Table 1" or "Foreign Exchange Order Appendix Table".

"Export Trade Control Ordinance Appendix Table 1" and "Foreign Exchange Order Appendix Table" contain the following two types of information:

- "List Provisions" indicating items 1 to 15 for each section
- "Catchall Provisions" that do not specify specifications by item, but restrict by application (Item 16)

Scope of products that
require permission
or
related technologies

"List Provisions" indicating items 1 to 15 for each section
(When there is a risk of use in the development of weapons of mass destruction, conventional weapons, etc.)
Listed in "Export Trade Control Ordinance Appendix Table 1" or "Foreign Exchange and Foreign Trade Control Law Appendix Table"

"Catchall Provisions" restricted by application (Item 16)
Listed in "Export Trade Control Ordinance Appendix Table 1" or
"Foreign Exchange and Foreign Trade Control Law Appendix Table"

Application for Approval:

The application is received by the Ministry of Economy, Trade, and Industry, Security Trade Control Review Section or local bureaus of the Ministry of Economy, Trade, and Industry.

2 Products and related technologies in this catalog

Products and related technologies in this catalog are exposed to Catchall Provisions of the Foreign Exchange and Foreign Trade Control Law.

When export or providing products or related technology listed in this catalog, pay sufficient attention to ensure that they are not used for arms or weapons.

3 Contact

Contact your local CKD Sales Office for information on the Security Trade Control of products and related technologies in this technology.

USA



Sales Branch

Time zone difference
from Japan

East coast	Middle West	Mountain	Pacific
-14	-15	-16	-17

Country code for
international calls **1**

※The local time is moved forward an hour with daylight-saving time.

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④	SAN JOSE OFFICE	2700 Augustine Drive, Suite 135, Santa Clara, CA 95054, USA	408-327-9000	408-327-9004

Japanese support is available.

Sales Promotion

● Personal Exhibition



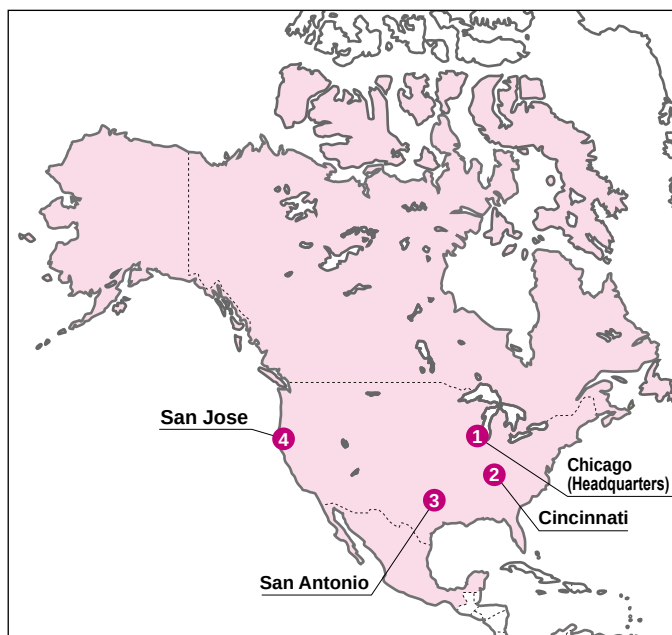
● Exhibition



● Seminar for Distributor



● Catchment area

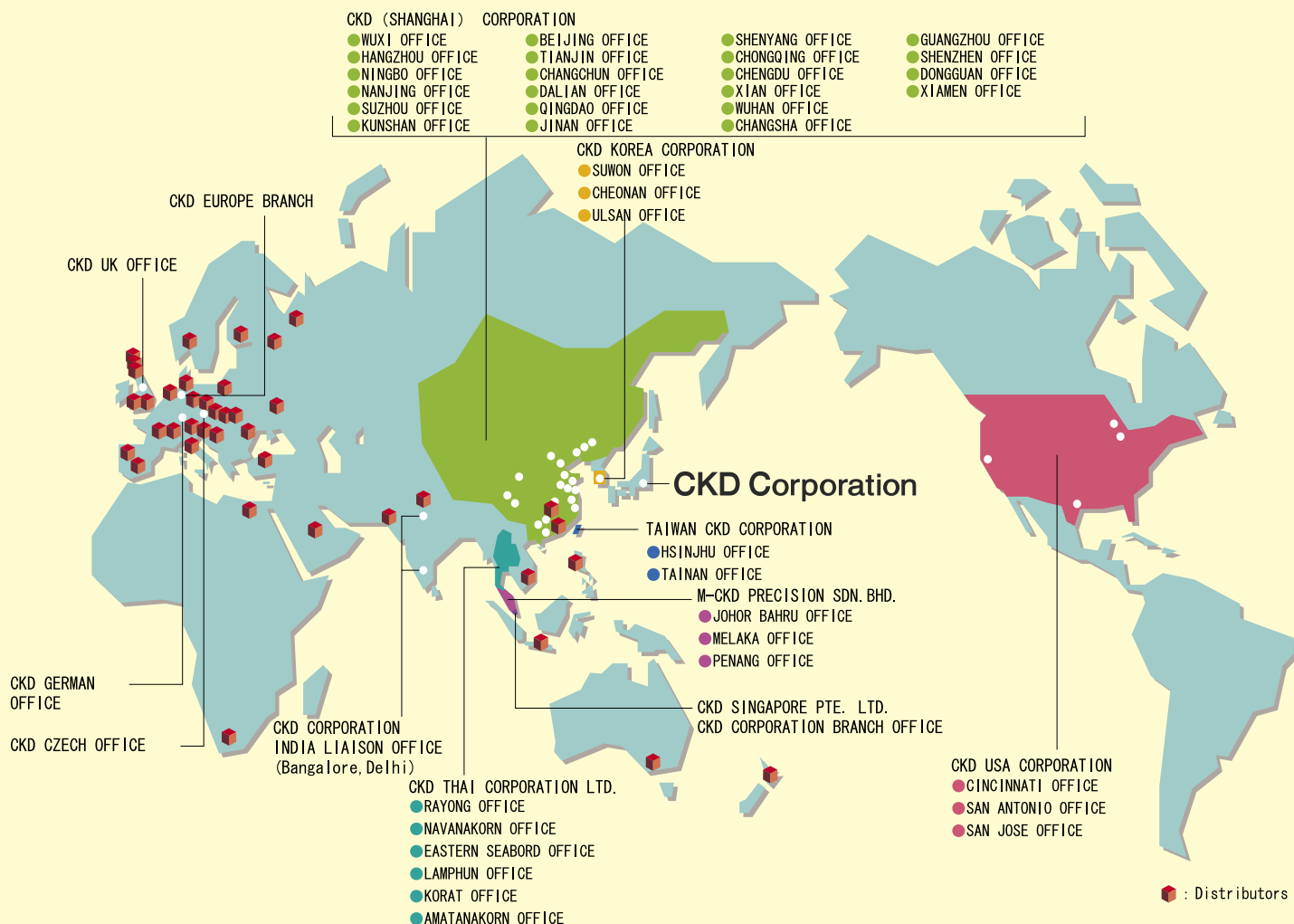


• U.S.A., Canada and Mexico

• Please contact ① Headquarters (Chicago) for support to Canada and Mexico.

● Marketing News





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If the goods and their replicas, or the technology and software in this catalog are to be exported, laws require the exporter to make sure they will never be used for the development or the manufacture of weapons for mass destruction.