CKD

CKD

Simple Choice

Simple Choice

2013–2014

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

2013–2014

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CKD Simple Choice Catalog

CB-044A

Online "Catalog Express"

www.ckd.co.jp/english/kiki/index.htm

With 100's of thousands of product variations, selection can be difficult.

Configurable Online CAD

www.ckd.co.jp/english/kiki/index.htm

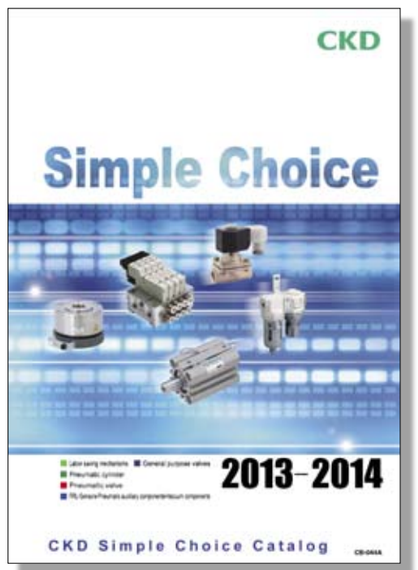
The solution:
Our "Simple Choice" catalog.

■Labor saving mechanisms

■Pneumatic cylinder

■Pneumatic valve

■SELVACS



■FRL•Sensors

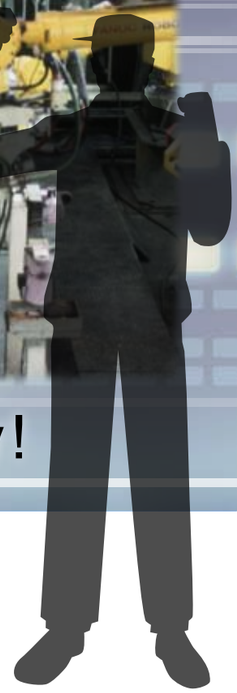
■Pneumatic auxiliary components

■General purpose valves

Selection of CKD most common Components

Friendly to consult

Cost! Delivery! Availability!



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Simple Choice

Labor saving mechanisms

AX4000T

Pneumatic cylinder

CMK2

SSD2

LCR

Pneumatic valve

4GB

FRL•Sensors

C3020

PPX

Pneumatic auxiliary components

G41D

SL

General purpose valves

EXA

FWD

APK

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System Selection Guideline

● Theory reference speed: 300 mm/s

Bore size (mm)	Required flow (ℓ/min) (ANR)	Required composite effective sectional area (mm²)	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-6G	ø4×ø2.5 nylon tube
ø8	5	0.1	4GA110/4GB110	4GA120/4GB120	SC3W-M3-4 SC3W-M5-4	SL-M5,SLW-6G	ø4×ø2.5 nylon tube
ø10	9	0.15	4GA110/4GB110	4GA120/4GB120	SC3W-M5-4	SL-M5,SLW-6G	ø4×ø2.5 nylon tube
ø12	12	0.2	4GA110/4GB110	4GA120/4GB120	SC3W-M5-4	SL-M5,SLW-6G	ø4×ø2.5 nylon tube
ø16	22	0.3	4GA110/4GB110	4GA120/4GB120	SC3W-M5-4	SL-M5,SLW-6G	ø4×ø2.5 nylon tube
ø20	34	0.5	4GA110/4GB110	4GA120/4GB120	SC3W-6-6	SL-M5,SLW-6G	ø6×ø4 nylon tube
ø25	53	0.8	4GA110/4GB110	4GA120/4GB120	SC3W-6-6	SL-M5,SLW-6G	ø6×ø4 nylon tube
ø32	86	1.3	4GA110/4GB110	4GA120/4GB120	SC3W-6-6	SL-M5,SLW-6G	ø6×ø4 nylon tube
ø40	135	2	4GA210/4GB210	4GA220/4GB220	SC3W-6-6	SLW-8G	ø6×ø4 nylon tube
ø50	210	3	4GA210/4GB210	4GA220/4GB220	SC3W-8-8	SLW-8G	ø8×ø5.7 nylon tube
ø63	334	5	4GA210/4GB210	4GA220/4GB220	SC3W-8-8	SLW-8G	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.)

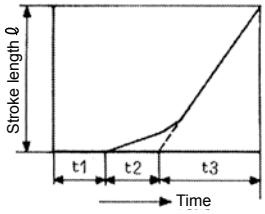
$$VO = 1920\times\frac{S}{A} = 2445\times\frac{S}{D^2} \quad \text{———(1)}$$

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

$$VO = \frac{\ell}{t3} \text{ (mm/s)}$$

t1: Time until movement starts
t2: Time of the primary delay
t3: Time during which the cylinder moves at a uniform speed
ℓ : 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.

$$Q \fallingdotseq \frac{A\,vo\,(P+0.101)\times 60}{0.101\times 10^4} \quad \text{—(2)}$$

Q: Required flow (ℓ/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 max. 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 [max. 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.	Port size	Max. flow ℓ/min (atmospheric pressure conversion)
C1020-6G	G1/8	770
C2020-8G	G1/4	1,750
C3020-10G	G3/8	2,600
C4020-15G	G1/2	5,000

F•R kit

Model No.	Port size	Max. flow ℓ/min (atmospheric pressure conversion)
W1000-6G	G1/8	830
W2000-8G	G1/4	1,500
W3000-10G	G3/8	2,430
W4000-15G	G1/2	4,750

Air filter (F)

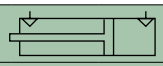
Model No.	Port size	Max. flow ℓ/min (atmospheric pressure conversion)
F1000-6G	G1/8	460
F2000-8G	G1/4	1,300
F3000-10G	G3/8	1,500
F4000-15G	G1/2	3,000
F8000-20G	G3/4	6,800

Regulator (R)

Model No.	Port size	Max. flow ℓ/min (atmospheric pressure conversion)
R1000-6G	G1/8	770
R2000-8G	G1/4	1,750
R3000-10G	G3/8	2,600
R4000-15G	G1/2	5,000

Theory Thrust Table (Double Acting Type)

(unit: N)



Tube Inner diameter (mm)	Target model	Operating direction	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
	STG	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
ø50	SCG	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
	SSD2	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
	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	1.40×10^2	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

Simple Choice

Labor saving mechanisms

☐ **ABSODEX (direct drive actuator)**

AX2000T.....**2**

AX4000T.....**6**

AX4000T, AX400WT.....**10**

TS/TH Driver.....**16**

ABSODEX

AX2000T Series

● Breakdown torque: 6, 12, 18 N•m

Catalog No.CC-995A

Features

- Compatible function with free driver, actuator, and cable combinations
- High speed (Max. rotational speed 300 rpm), small diameter and compact, and large hollow shaft (φ30)
- Breakdown torque: 6, 12, 18 N•m
- Compatible driver: TS type driver

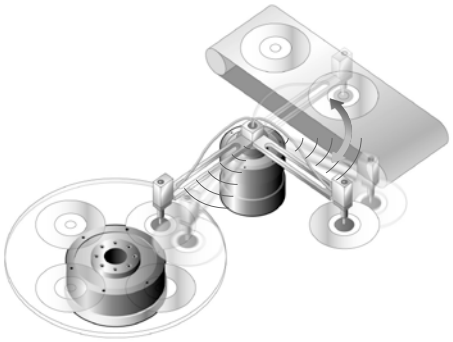
How to order

AX2 **018** (A) **TS** (B) - **DM04** (C) - **U1** (D)

Symbol	Descriptions
Ⓐ Size (breakdown torque)	
006	6 N•m
012	12 N•m
018	18 N•m
Ⓑ Driver type	
TS	With TS type driver
Ⓒ Cable length	
DM04	4 m
Ⓓ Interface specifications	
U1	Parallel I/O (PNP specifications)

Note: Refer to catalog No.CC-995A for other options.

Application example Index/arm rotation



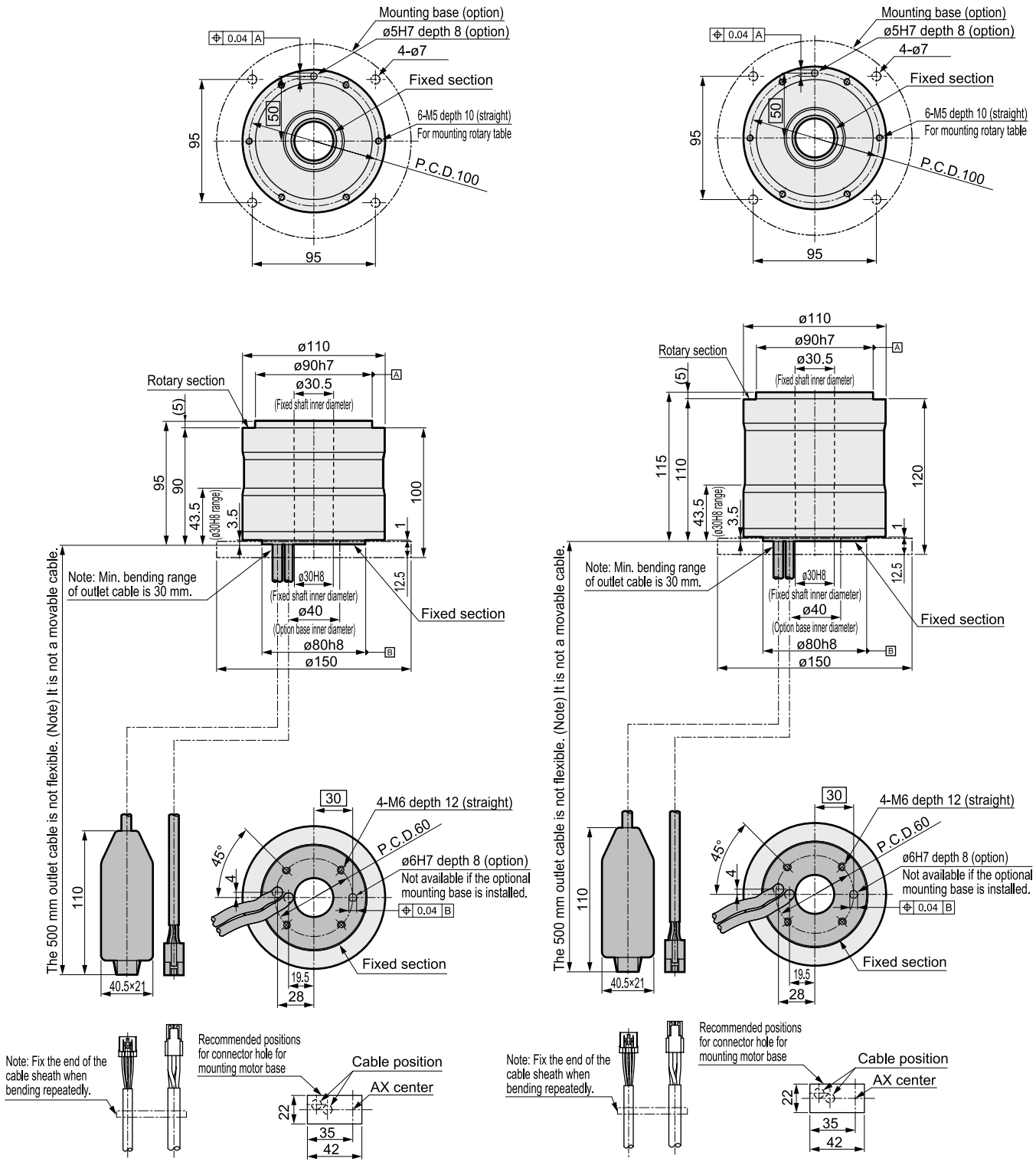
Specifications

Item		AX2006T	AX2012T	AX2018T
Max. output torque	N•m	6	12	18
Continuous output torque	N•m	2	4	6
Max. rotational speed	rpm	300 (Note 1)		
Allowable axial load	N	1000		
Allowable moment load	N•m	40		
Output shaft moment of inertia	kg•m^2	0.00575	0.00695	0.00910
Allowable load inertia Moment	kg•m^2	0.3	0.4	0.5
Index precision (Note 2)	sec.	±30		
Repeatability (Note 2)	sec.	±5		
Output shaft friction torque	N•m	0.6		0.7
Resolver resolution	P/rev	540672		
Motor insulation class		F		
Motor withstanding voltage		1500 VAC for 1 minute		
Motor insulation resistance		10MΩ and over at 500 VDC		
Operating ambient temperature		0 to 45°C (0 to 40°C: Note 3)		
Operating ambient humidity		20 to 85%RH (with no dew condensation)		
Storage ambient temperature		–20 to 80°C		
Storage ambient humidity		20 to 90%RH (with no dew condensation)		
Atmosphere		Free of corrosive and explosive gases and dust		
Weight	kg	4.7	5.8	7.5
Run out of output shaft (Note 2)	mm	0.03		
Surface run out of output shaft (Note 2)	mm	0.03		
Degree of protection		IP20		

Note 1: Use 80 rpm or less during continuous rotary operation.
Note 2: The temperature upper limit is 40°C when the product is being used as a UL certified product.

Dimensions

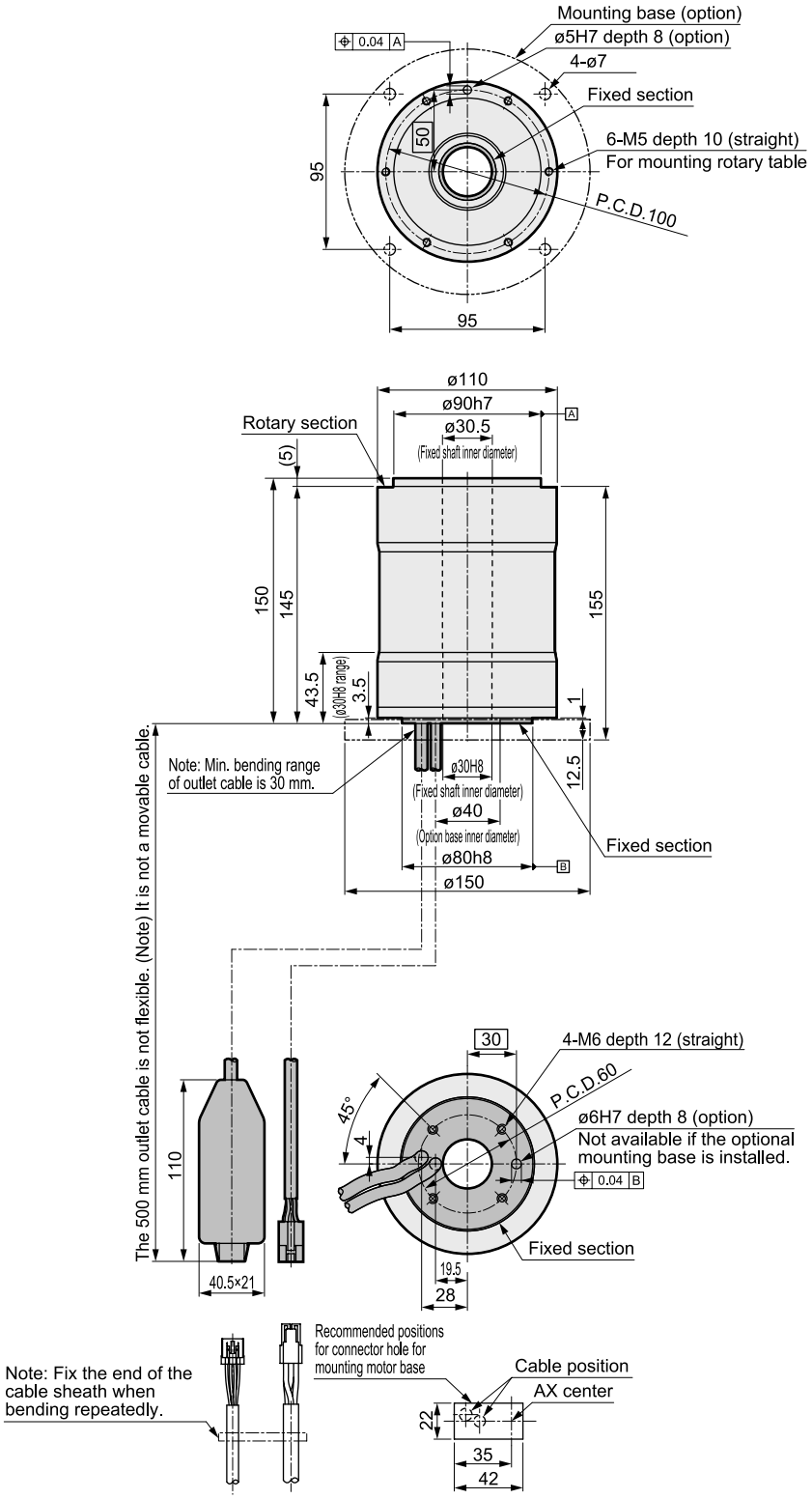
● AX2006T



● AX2012T

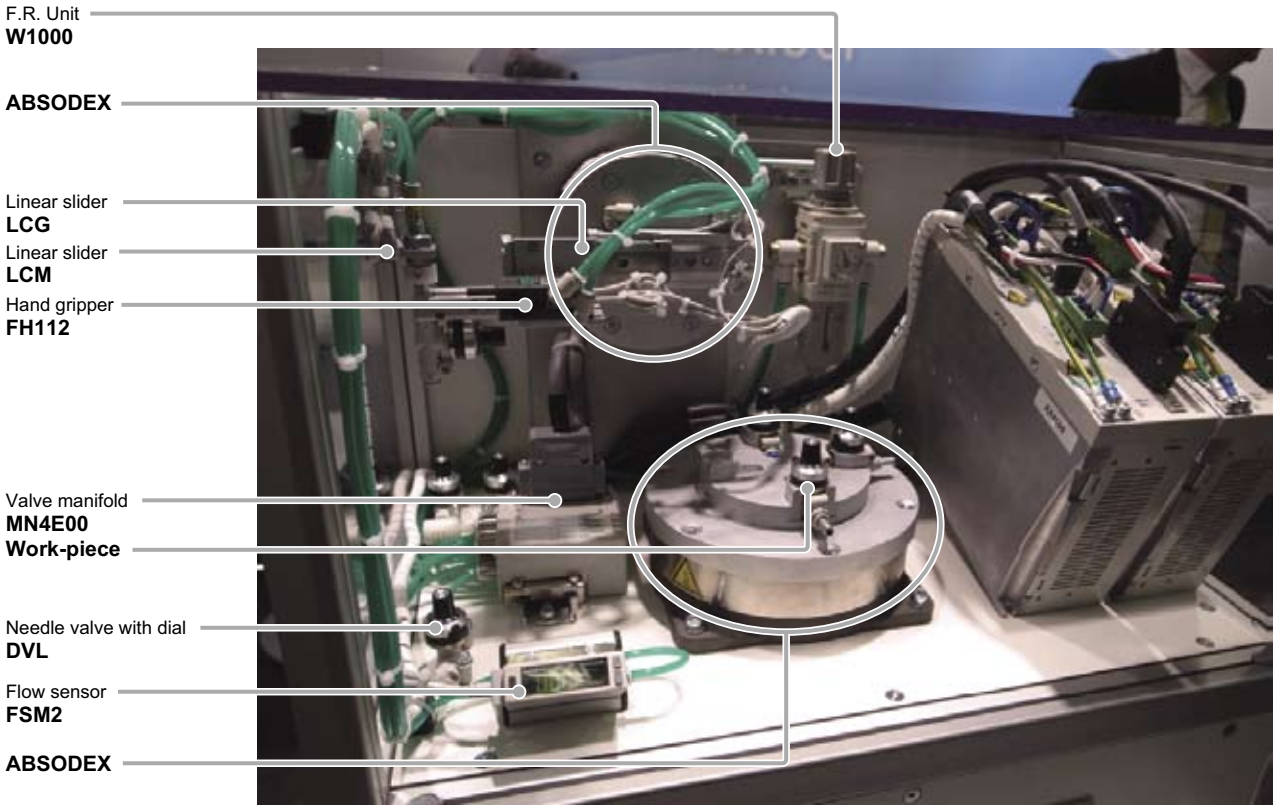
Note 1) The actuator's origin may differ from that in the dimensional drawing.
The origin offset feature enables you to set the origin to any position you choose.

● AX2018T



Note 1) The actuator's origin may differ from that in the dimensional drawing.
The origin offset feature enables you to set the origin to any position you choose.

Application of ABSODEX



We have the new Absodex demo unit shown above.
If you want to see it, please contact CKD Europe Branch Office. (Refer to P.283)

ABSODEX

AX4000T Series

● Breakdown torque: 9/22/45/75/150 N•m

Catalog No.CC-995A

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

How to order

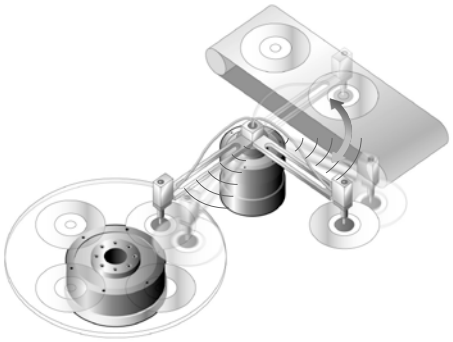
AX4 **045** **TS** - **DM04** - **U1**

Ⓐ Ⓑ Ⓒ Ⓓ

Symbol	Descriptions
Ⓐ Size (breakdown torque)	
009	9 N•m
022	22 N•m
045	45 N•m
075	75 N•m
150	150 N•m
Ⓑ Driver type	
TS	With TS type driver
Ⓒ Cable length	
DM04	4 m
Ⓓ Interface specifications	
U1	Parallel I/O (PNP specifications)

Note: Refer to catalog No.CC-995A for other options.

Application example Index/arm rotation



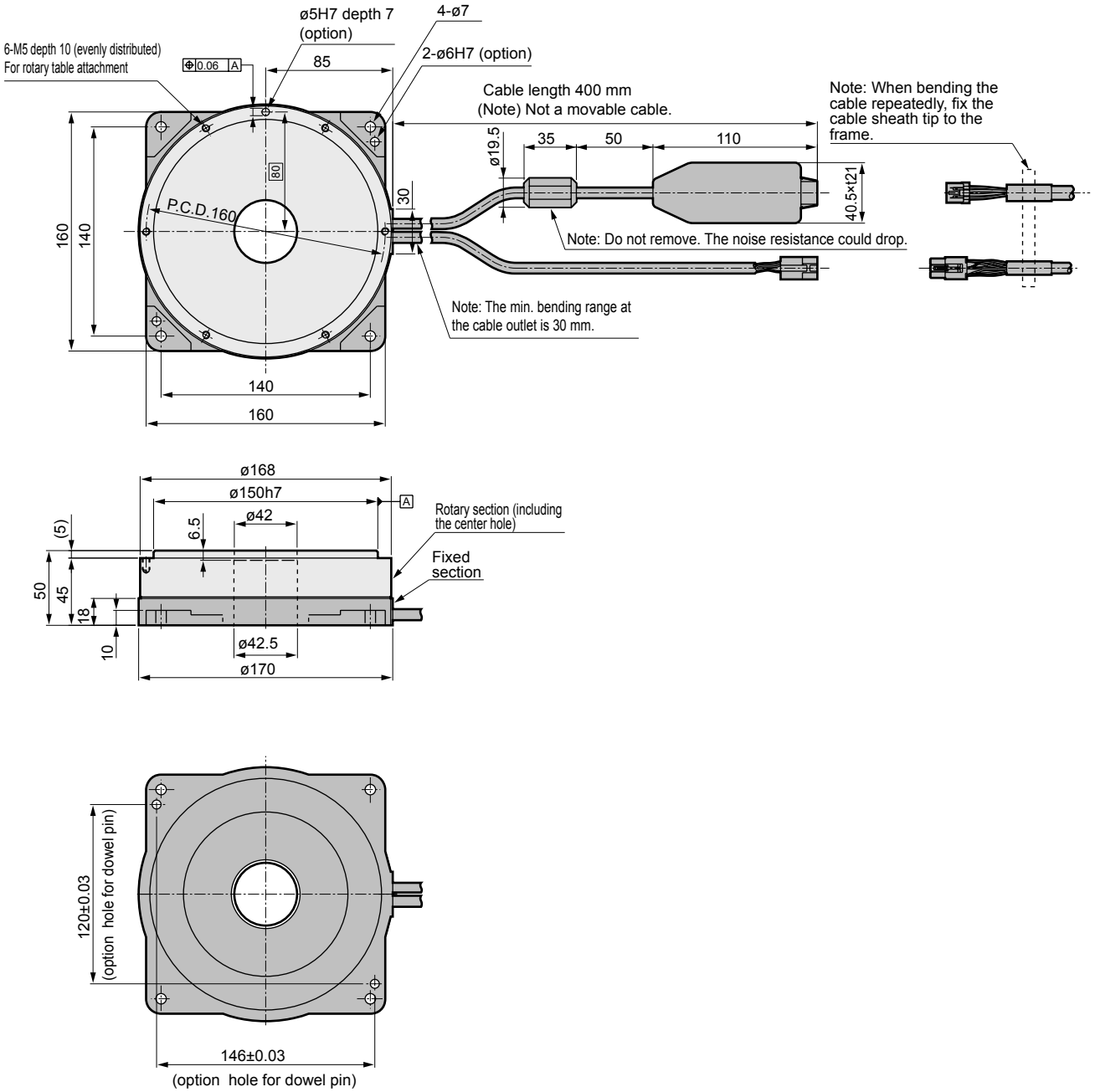
Specifications

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. rotational 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 withstanding voltage		1500 VAC for 1 minute				
Motor insulation resistance		10 MΩ or greater at 500 VDC				
Operating ambient temperature		0 to 45°C (0 to 40°C: Note 5)				
Operating ambient humidity		20 to 85%RH with no condensation				
Storage ambient temperature		–20 to 80°C				
Storage ambient humidity		20 to 90%RH with no condensation				
Atmosphere		Place free of corrosive and explosive gases and dust				
Weight	kg	5.5	12.3	15.0	36.0	44.0
Total weight 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				
Degree of 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.

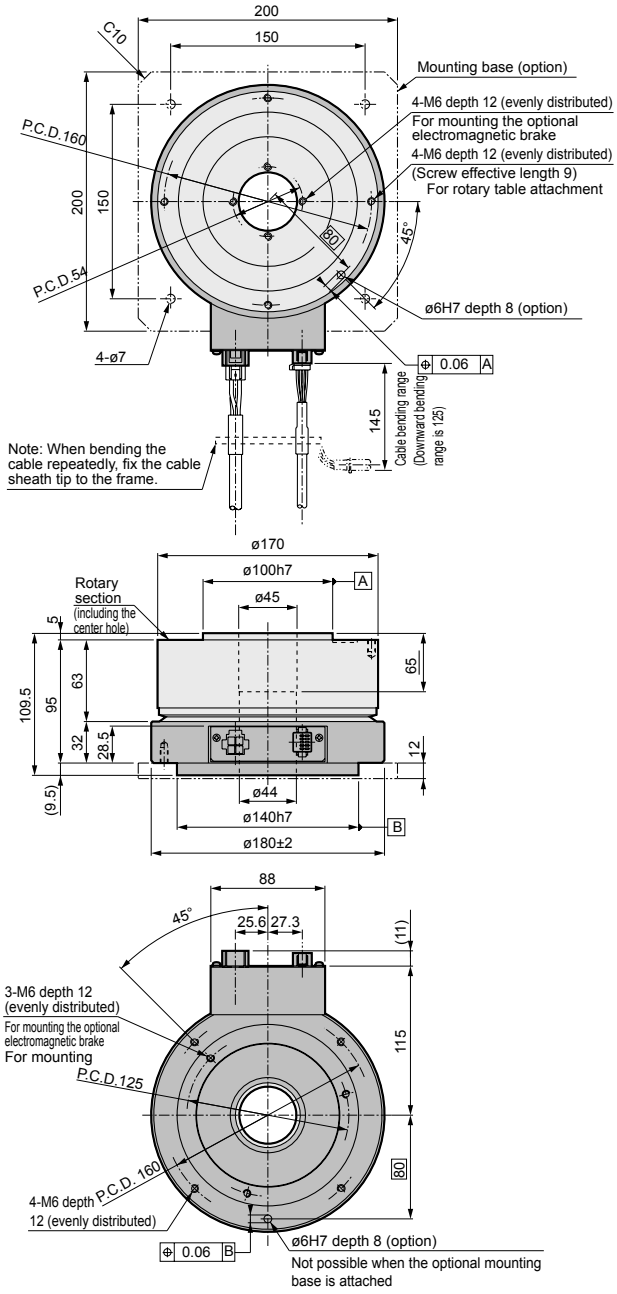
Dimensions

● AX4009T

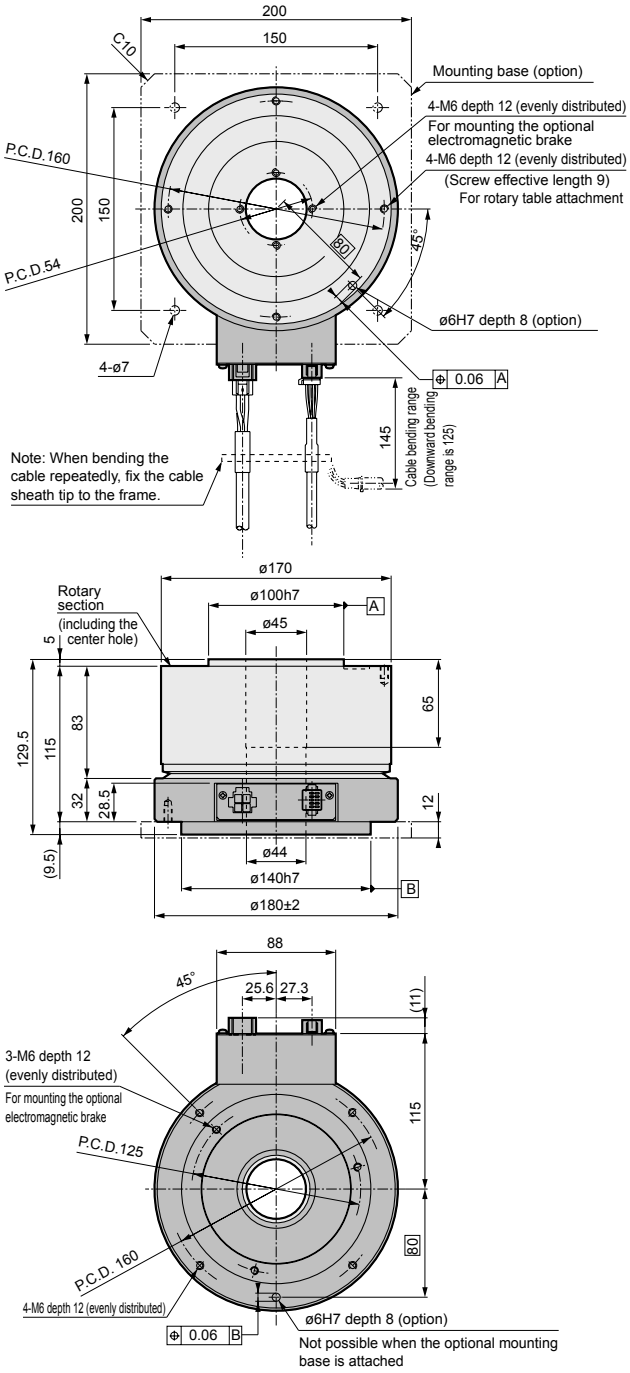


Note: The actuator origin may be different from the dimensions in drawing.
Origin offset can be used to set the origin at any location.

● AX4022T



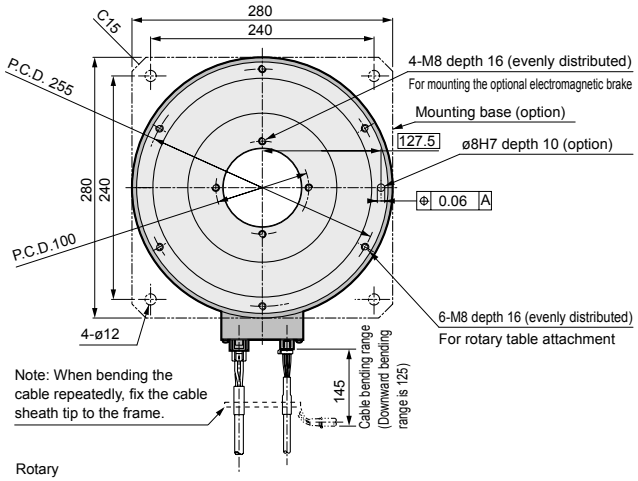
● AX4045T

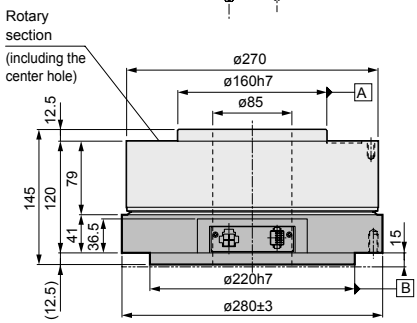


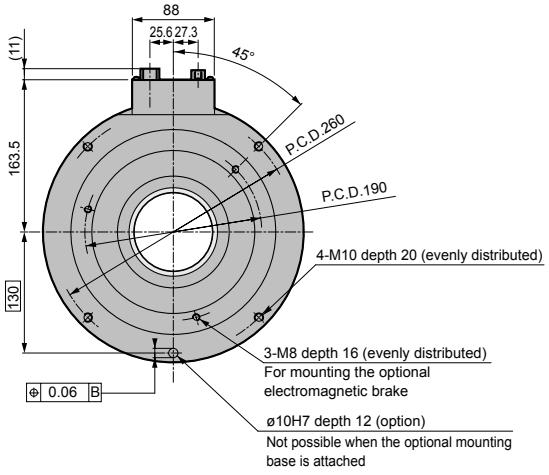
Note: The actuator origin may be different from the dimensions in drawing.
Origin offset can be used to set the origin at any location.

Dimensions

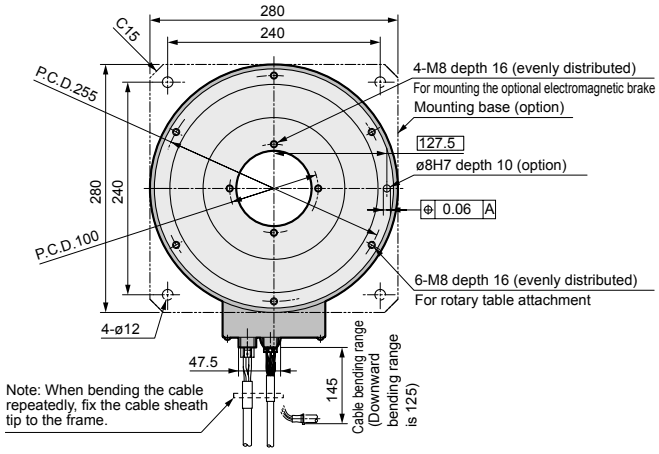
● AX4075T

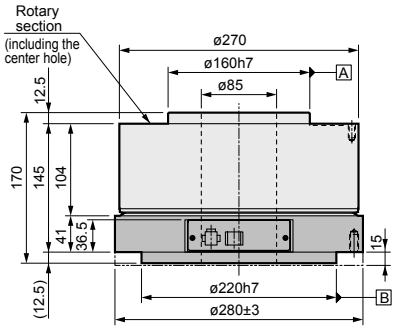


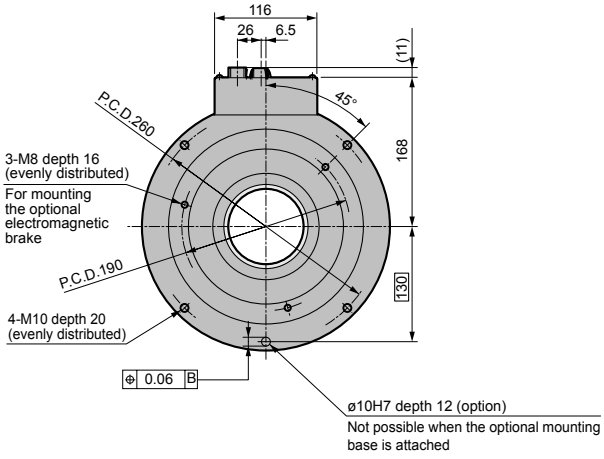




● AX4150T







Note: The actuator origin may be different from the dimensions in drawing.
Origin offset can be used to set the origin at any location.

ABSODEX

AX4000T, AX400WT Series

● Breakdown torque: 300/500/1000 N•m

Catalog No.CC-995A

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

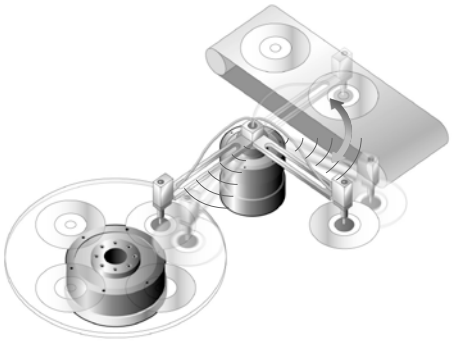
How to order

AX4 **300** (A) **TH** (B) - **DM04** (C) - **U1** (D)

Symbol	Descriptions
Ⓐ Size (breakdown torque)	
300	300 N•m
500	500 N•m
10W	1000 N•m
Ⓑ Driver type	
TH	With TH type driver
Ⓒ Cable length	
DM04	4 m
Ⓓ Interface specifications	
U1	Parallel I/O (PNP specifications)

Note: Refer to catalog No.CC-995A for other options.

Application example Index/arm rotation



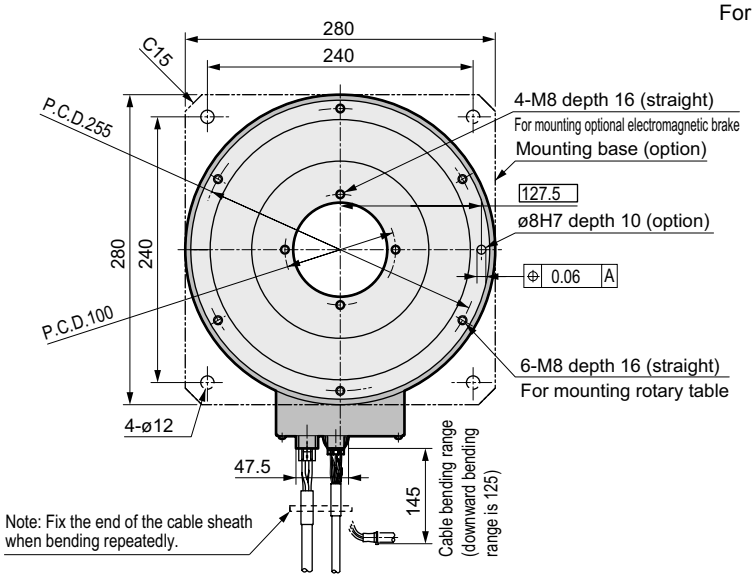
Specifications

Item		AX4300T	AX4500T	AX410WT
Max. output torque	N•m	300	500	1000
Continuous output torque	N•m	100	160	330
Max. rotational speed	rpm	100 (Note 1)	70	30
Allowable axial load	N	20000		
Allowable moment load	N•m	400	500	400
Output shaft moment of inertia	kg•m^2	0.3260	0.7210	2.72
Allowable load inertia Moment	kg•m^2	180.00 (Note 2)	300.00 (Note 2)	600.00
Index precision (Note 3)	sec.	±30		
Repeatability (Note 3)	sec.	±5		
Output shaft friction torque	N•m	10.0	15.0	20.0
Resolver resolution	P/rev	540672		
Motor insulation class		F		
Motor withstanding voltage		1500 VAC for 1 minute		
Motor insulation resistance		10MΩ and over at 500 VDC		
Operating ambient temperature		0 to 45°C (0 to 40°C: Note 4)		
Operating ambient humidity		20 to 85%RH (with no dew condensation)		
Storage ambient temperature		–20 to 80°C		
Storage ambient humidity		20 to 90%RH (with no dew condensation)		
Atmosphere		Free of corrosive and explosive gases and dust		
Weight	kg	66.0	115.0	198
Weight when brake is set	kg	86.0	-	
Run out of output shaft (Note 3)	mm	0.03		
Surface run out of output shaft (Note 3)	mm	0.05		0.08
Degree of protection		IP20		

Note 1: Use 80 rpm or less during continuous rotary operation.
Note 2: When shipped from the factory, the actuator is set to support large moment of inertia.
Note 3: The temperature upper limit is 40°C when the product is being used as a UL certified product.

Dimensions

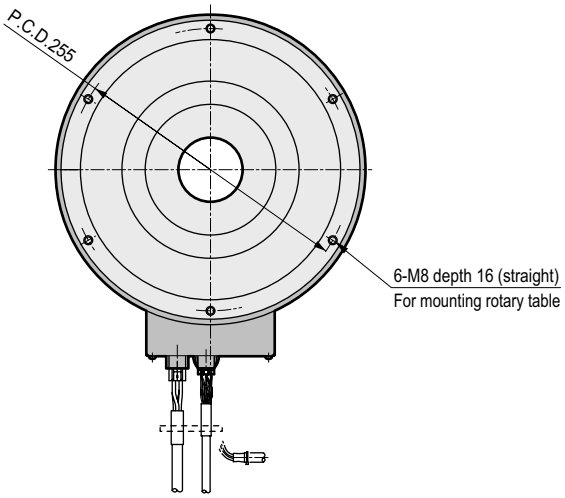
● AX4150T

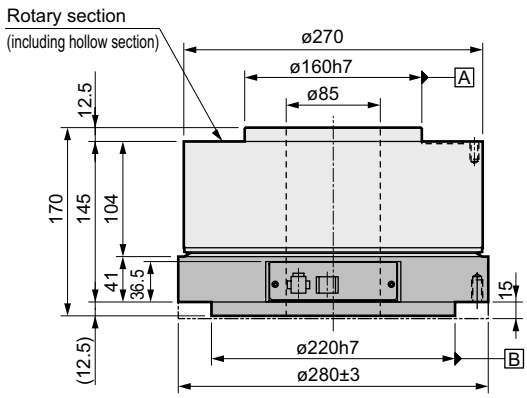


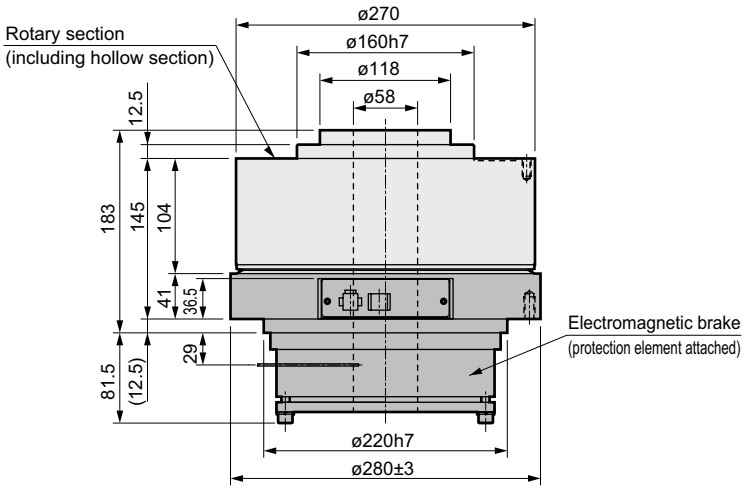
● AX4150T-EB

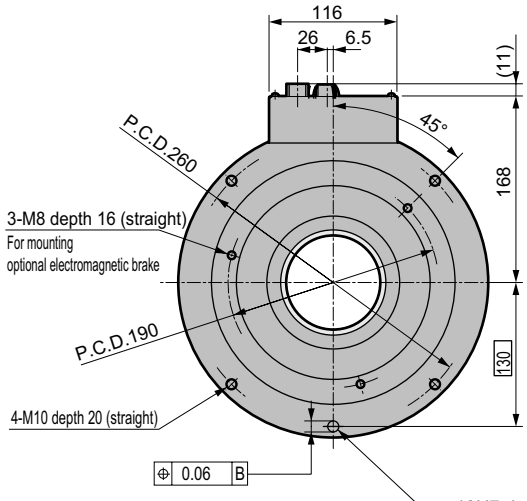
With electromagnetic brake

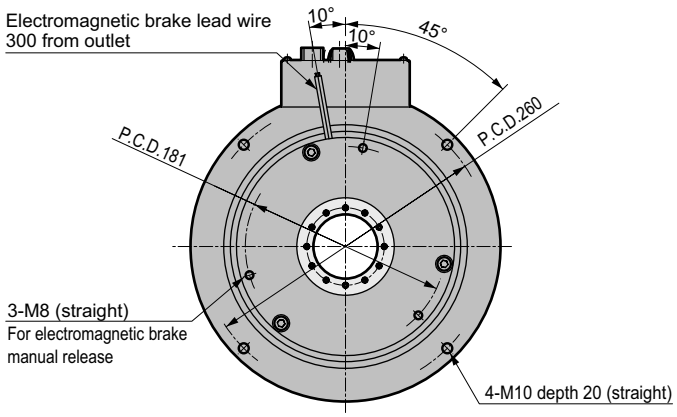
For other options, refer to the drawing on the left.







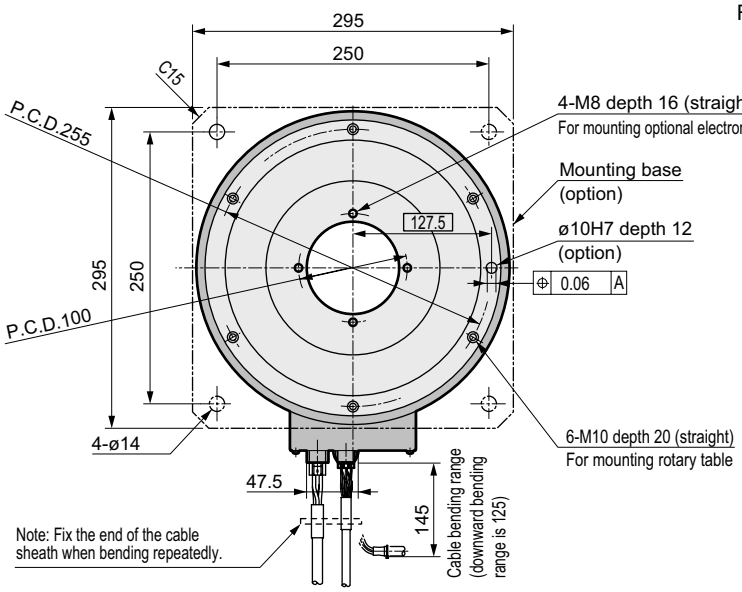




ø10H7 depth 12 (option)
Not available if the optional mounting base is installed.

Note 1) The actuator's origin may differ from that in the dimensional drawing.
The origin offset feature enables you to set the origin to any position you choose.

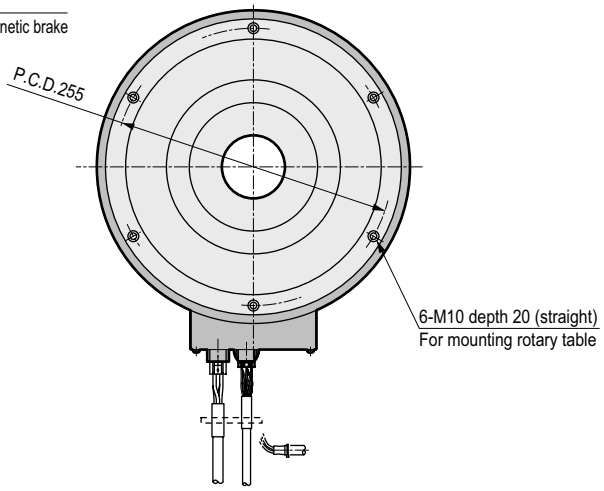
● AX4300T

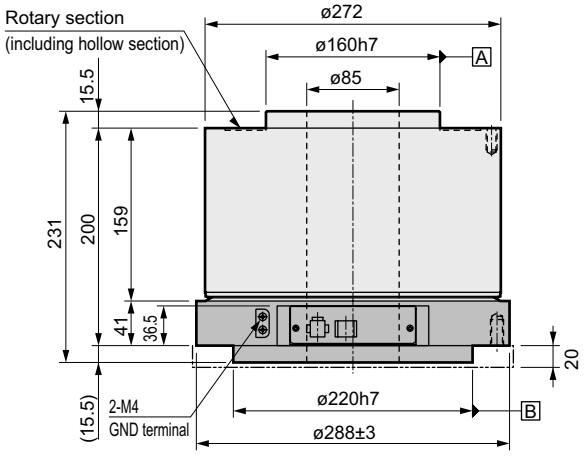


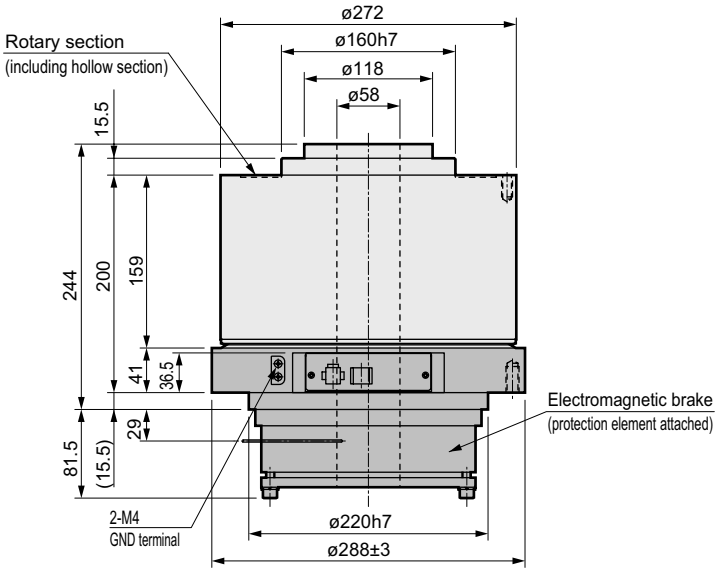
● AX4300T-EB

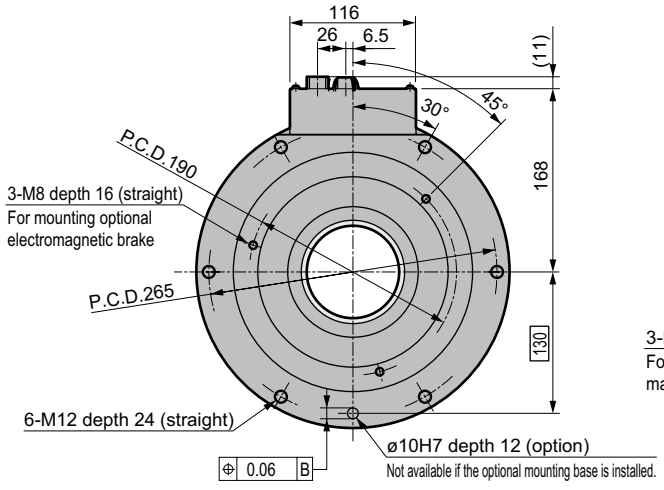
With electromagnetic brake

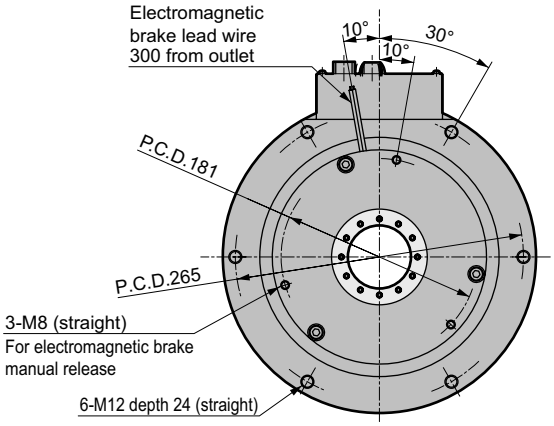
For other options, refer to the drawing on the left.







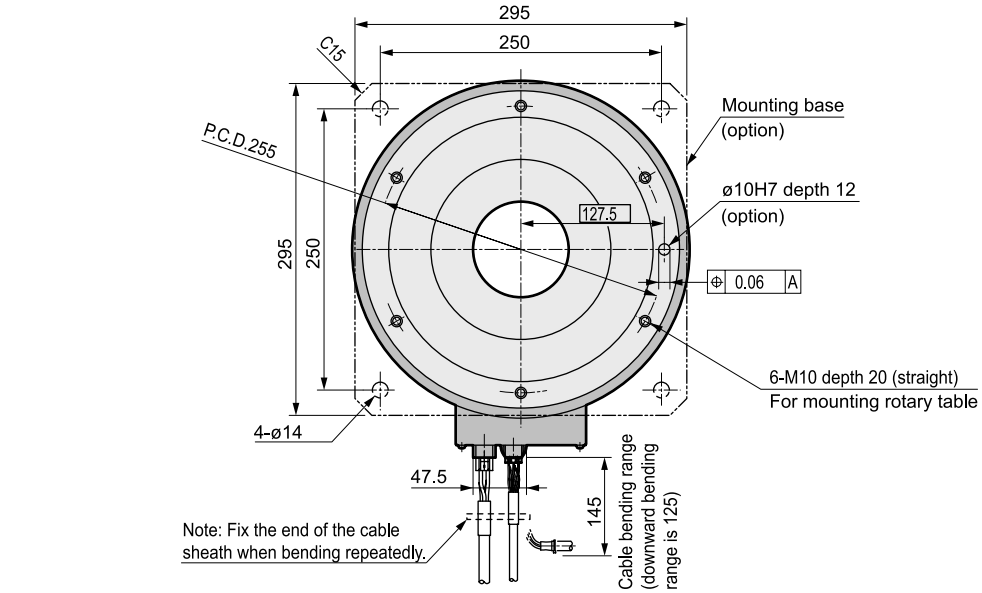


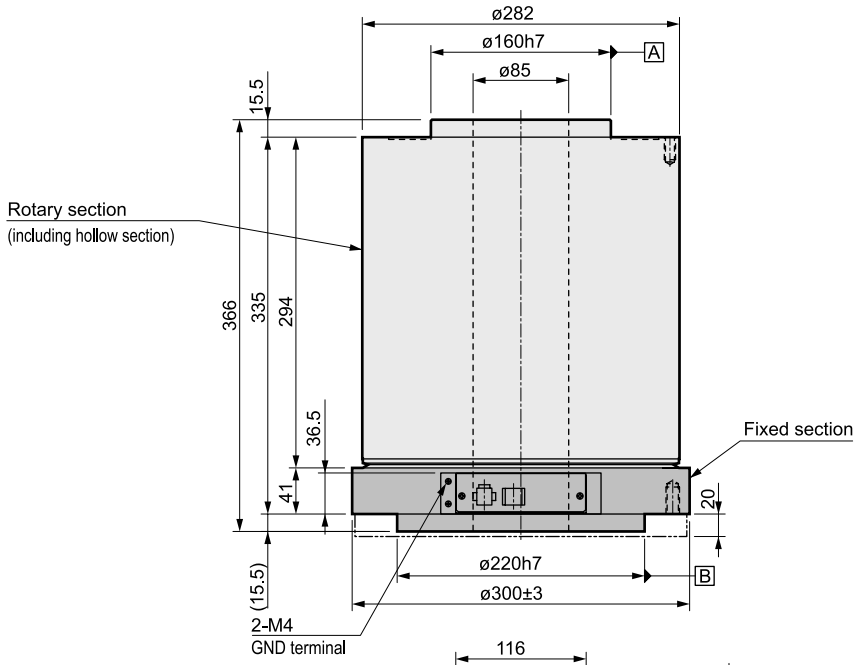


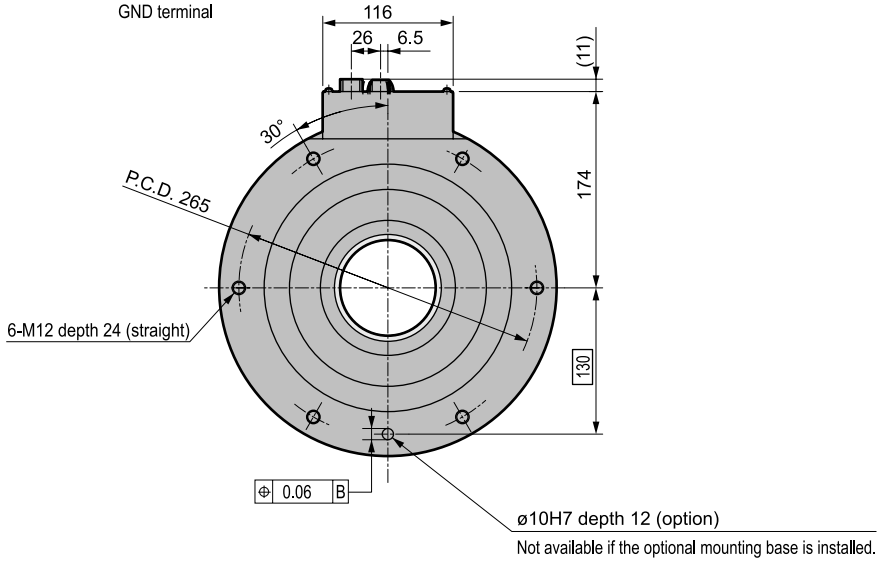
Note 1) The actuator's origin may differ from that in the dimensional drawing.
The origin offset feature enables you to set the origin to any position you choose.

Dimensions

● AX4500T

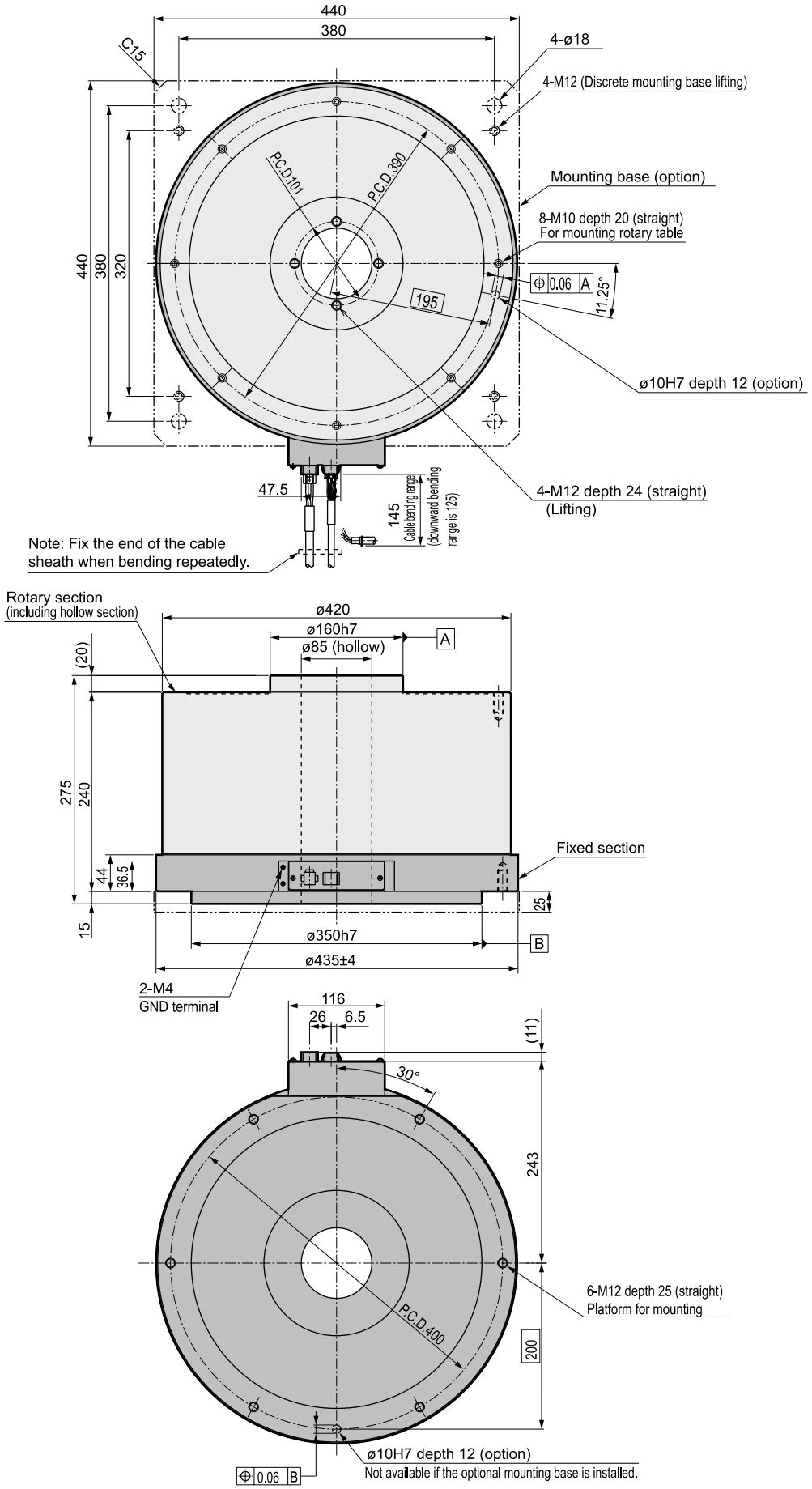






Note 1) The actuator's origin may differ from that in the dimensional drawing.
The origin offset feature enables you to set the origin to any position you choose.

● AX410WT



Note 1) The actuator's origin may differ from that in the dimensional drawing.
The origin offset feature enables you to set the origin to any position you choose.

MEMO

ABSODEX

TS·TH type driver Series

● Interface specifications: Parallel I/O (NPN specifications), Parallel I/O (PNP specifications), CC-Link, PROFIBUS-DP, DeviceNet

RoHS CAD CE

Catalog No.CC-995A

Features

- Power supply separated into main power supply and control power supply
- Wiring method changed from terminal block to connector
- Compact and light (resin body)
- 7 segment LED 2-digit display
- Additional encoder output (parallel I/O only)
- Serial communication option (built into circuit board)
- Additional monitoring feature for positioning and alarms (U2, U3, and U4 options only)

How to order

● 200 VAC to 230 VAC

AX9000TS – U0

AX9000TH – U0

● 100 VAC to 115 VAC

AX9000TS – J1 – U0

Interface specifications
U0: Parallel I/O (NPN)
U1: Parallel I/O (PNP)
U2: CC-Link
U3: PROFIBUS-DP
U4: DeviceNet

Common specifications

Descriptions		Model	
		TS type driver AX9000TS	TH type driver AX9000TH
Power supply voltage	Main power supply	3-phase, 1-phase 200 VAC ± 10% to 230 VAC ± 10% (Note 1) 100 VAC ± 10% to 115 VAC ± 10% (J1 option) (Note 2) (Note 3)	
	Control power supply	200 VAC ± 10% to 230 VAC ± 10% 100 VAC ± 10% to 115 VAC ± 10% (J1 option) (Note 2) (Note 3)	
Power frequency		50/60 Hz	
Rated input current		AC200 V: 1.8 A AC100 V: 2.4 A	AC200 V: 5.0 A
Rated output current		1.9 A	5.0 A
Construction		Integrated driver and controller (open type)	
Operating ambient temperature		0 to 50°C	
Operating ambient humidity		20 to 90%RH (with no dew condensation)	
Storage ambient temperature		–20 to 80°C	
Storage ambient humidity		20 to 90%RH (with no dew condensation)	
Atmosphere		No corrosive gases or powder dust	
Noise resistance		1000 V (P-P), pulse width 1 µs, rising edge 1 ns, impulse noise test, induction noise (capacitive coupling)	
Vibration resistance		4.9m/s^2	
Weight		Approx. 1.6 kg	Approx. 2.1 kg
Degree of protection		IP2X (excluding CN4, CN5)	

Note 1) For models whose breakdown torque is 75 N•m or more, if you are using 1-AC 200 VAC, the calculation of the torque limit is different from the norm. Contact CKD to determine whether the driver can be used.
Note 2) If you connect 200 VAC to 230 VAC to a driver with 100 VAC to 115 VAC power supply voltage specification (-J1 option), the driver's internal circuitry will be damaged.
Note 3) You cannot select "-J1" for models whose breakdown torque is 75 N•m or more.
Note 4) If the main power supply is turned off while the actuator is rotating, the rotation may continue due to momentum.
Note 5) After the main power is turned off, the motor may turn due to the voltage remaining in the driver.

Performance specifications

Descriptions	Descriptions
Control shafts	1 shaft, 540672 pulses/1 rotation
Angle setting unit	° (degrees), pulses, index numbers
Min. angle setting unit	0.001°, 1 pulse
Speed setting unit	sec. rpm
Speed setting	0.01 to 100 s; 0.01 to 300 rpm (Note 1)
Equal divisions	1 to 255
Max. command value	7-digit number input ± 9999999
Timer	0.01 s to 99.99 s
Program language	NC language
Programming method	Data can be set with an interactive terminal or personal computer, etc., using the RS-232C port.
Operation Mode	Auto, MDI, job, single block, servo OFF, pulse string input
Coordinates	Absolute, incremental
Acceleration curve	<5 types> Modified sine (MS), modified constant velocity (MC, MC2), modified trapezoidal (MT), and trapecloid (TR)
Status display	LED power display
Operating indication	7-segments LED display (2 digits)
Communication interface	RS-232C compliant
I/O signals	Refer to the relevant interface specifications page.
Program size	Approx. 6000 characters (256 lines)
Electronic thermal	Actuator overheat protection

Note 1) Max. rotation speed varies depending on the actuator to be connected.

Power supply and circuit breaker capacities

TS Type Driver

Actuator Model	Driver Model	Power supply capacity (KVA)		Inrush current (A)		Breaker capacity
		Max. value	Rated value	1-phase 100 V	1-phase, 3-phase 200 V	Rated current (A)
AX2006T	AX9000TS	0.8	0.5	16 (Note 1)	56 (Note 1)	10
AX1022T, AX2012T, AX2018T AX4009T, AX4022T		1.0	0.5			
AX1045T, AX4045T		1.5	0.5			
AX1075T, AX4075T		2.0	0.8	—		

Note 1) The inrush current values are typical values for AC115 V and AC230 V.

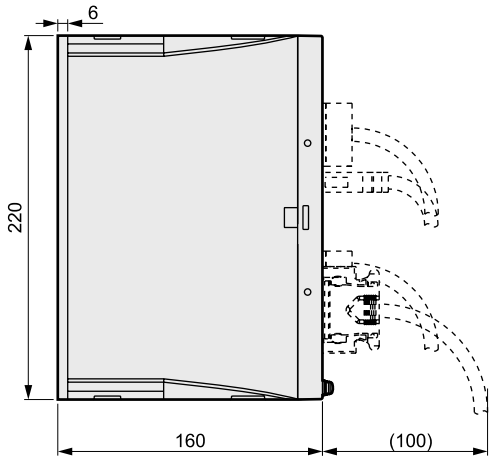
TH Type Driver

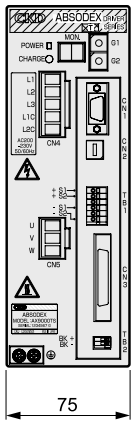
Actuator Model	Driver Model	Power supply capacity (KVA)		Inrush current (A)	Breaker capacity
		Max. value	Rated value	3-phase 200 V	Rated current (A)
AX1150T, AX4150T	AX9000TH	3.0	0.8	56 (Note 1)	20
AX1210T, AX4300T		4.0	1.5		
AX4500T		4.0	2.0		
AX410WT		4.0	2.0		

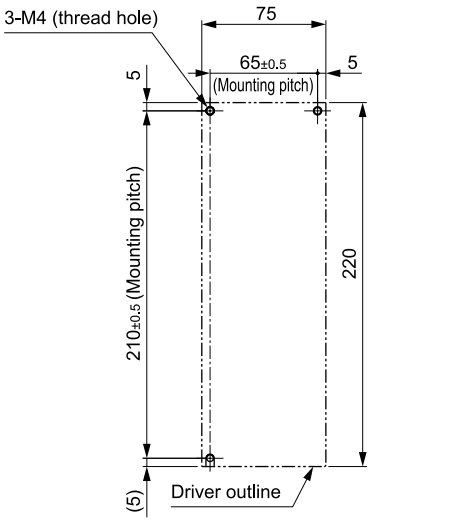
Note 1) The inrush current values is a typical value for AC230 V.

Dimensions

● TS Type Driver

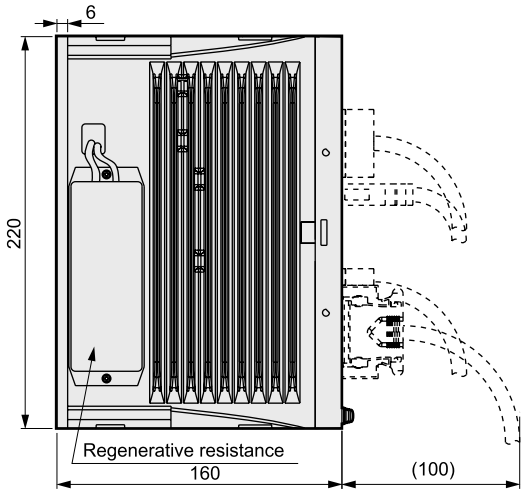


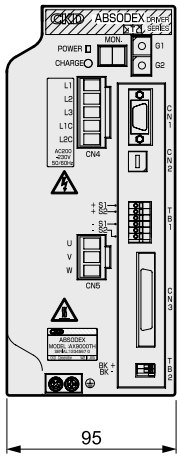


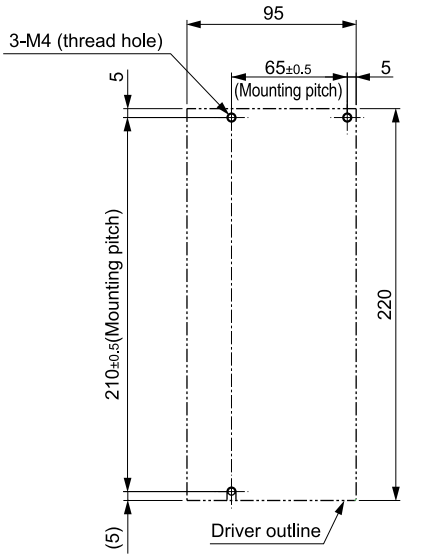


Installation hole machining drawing (Note 1)

● TH Type Driver







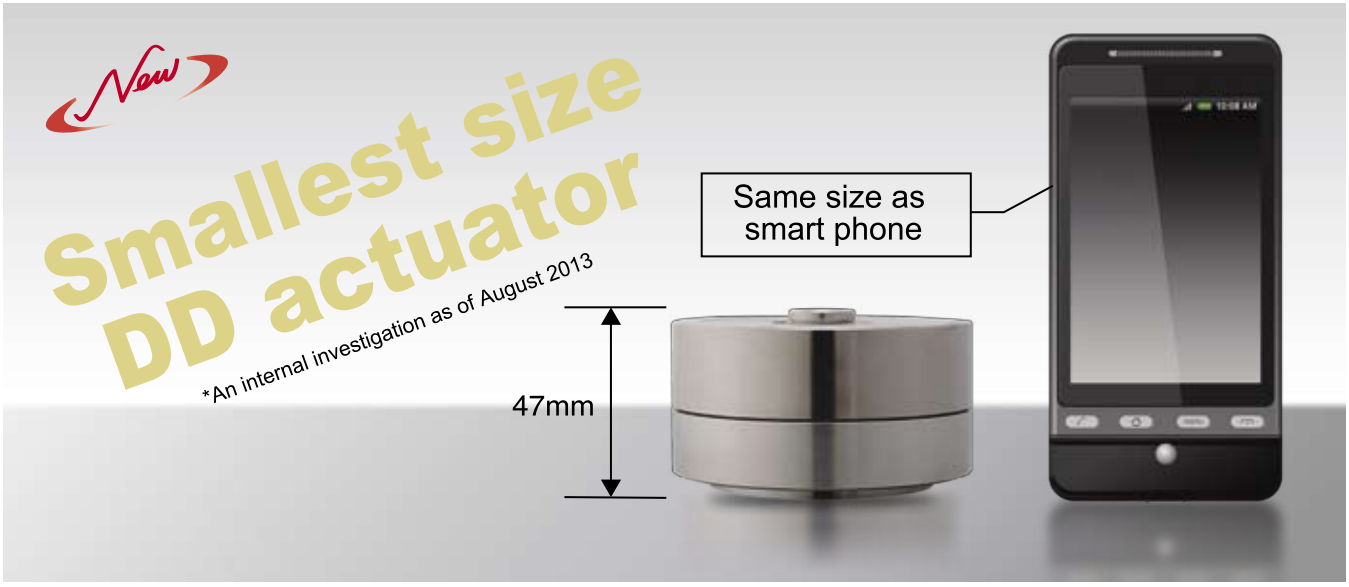
Installation hole machining drawing (Note 1)

Note 1) Mounting pitch is different from the conventional models (AX9000GS/AX9000GH).

ABSODEX

MINI Type AX6000M Series

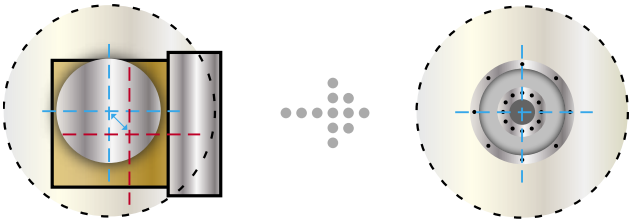
● Breakdown torque: 1.2, 3.0 N•m



Compact body has several usable features!

Space-saving

Smallest size in the market and compact machine design is available due to concentric circle shape (rotation axis and fixed axis are same.)



Electrical actuator with reduction gear

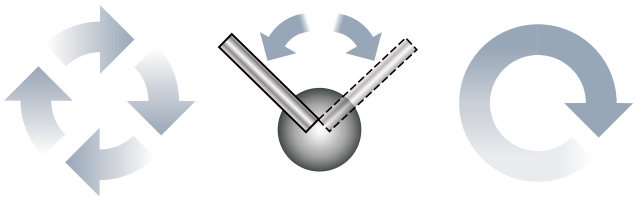
ABSODEX

Flexible

Abundant programming function makes the motion available as you require.

And simple motion setting is available such as automatic point programming.

Amazing simple setting of complicated motion combination!



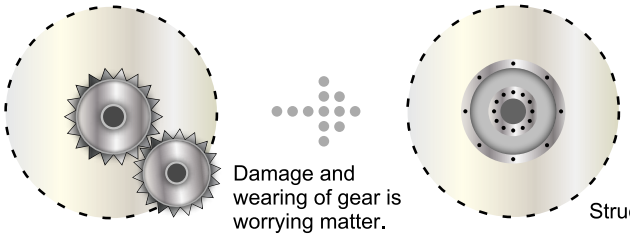
Indexing

Oscillation

Continuous motion

High reliability and maintenance free

Due to Direct drive (without gear) structure, you do not have to worry damage of gear or preciseness change because of gear wearing.



Damage and wearing of gear is worrying matter.

Structure without gear

* Contact CKD for details.

Simple Choice

Pneumatic cylinder

☐ **Medium bore size cylinder** SCM ····· **20**

☐ **Tie rod cylinder** SCG ····· **22**

☐ **Super compact cylinder** SSD2 ····· **30**

☐ **Guided cylinder** STG ····· **34**

☐ **Linear slide cylinder** LCR, LCG ····· **38**

☐ **Fine speed rotary** SFR•SFRT ····· **62**

☐ **Simplified floating joint** NCK ····· **68**

☐ **Free joint** FJ ····· **70**

☐ **Compact cylinder** SMG ····· **74**

☐ **Tie rod type cylinder with brake** JSG ····· **76**

☐ **Rodless cylinder** SRL3 ····· **88**

☐ **Cylinder switch** T0, K0, F0, M0 ····· **96**

Super micro cylinder Double-acting single rod type

SCM Series

● Cylinder bore: ø20 to ø63

Features

- Simple design
- Short overall length
- Easy mounting

Catalog No.: CB-029SA

How to order

Without switch

SCM - LB - 40G B - 100 ——— I

With switch

SCM - LB - 40G B - 100 - T2H - D - Z I

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ

Symbol	Descriptions							
Ⓐ Mounting style								
	Cylinder bore (ø)	20	25	32	40	50	63
00	Basic type	●	●	●	●	●	●
LB	Axial foot type	●	●	●	●	●	●
FA	Rod side flange type	●	●	●	●	●	●
CA	Single clevis type	●	●	●	●	●	●
TA	Rod side trunnion type	●	●	●	●	●	●

Ⓑ Cylinder bore (mm)	
20G	ø20
25G	ø25
32G	ø32
40G	ø40
50G	ø50
63G	ø63

Ⓒ Cushion	
B	Air cushion on both sides
D	Rubber cushion on both sides

Note 1. Mounting hardware will be shipped with the product.
Note 2. "I" and "Y" cannot be selected simultaneously.

Ⓓ Stroke (mm)	
ø20 to ø32	25, 50, 75, 100, 125, 150, 200, 250, 300
ø40 to ø63	

Ⓔ Switch model No.			
Lead wire straight type	**Contact**	**Display**	**Lead wire**
T0H*	Contact	Single color display	2 wire
T2H*	Non-contact		
T3H*			3 wire
***Lead wire length**			
Blank	1m (Standard)		
3	3 m		

Ⓕ Switch quantity	
R	One on Rod-side
H	One on Head-side
D	Two
T	Three

Ⓖ Switch mounting style	
Z	Band type

Ⓗ Accessory								
	Cylinder bore (ø)	20	25	32	40	50	63
I	Single knuckle	●	●	●	●	●	●
Y	Double knuckle (pin and snap ring attached)	●	●	●	●	●	●
B2	Double bracket	●	●	●	●	●	●

Specifications

Item			SCM					
Cylinder bore		mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation			Double acting type					
Working fluid			Compressed air					
Max. working pressure		MPa	1.0					
Min. working pressure		MPa	0.1				0.05	
Proof pressure		MPa	1.6					
Ambient temperature		°C	–10 to 60 (no freezing)					
Port size	With rubber cushion		G1/8				G1/4	
	With air cushion		M5		G1/8		G1/4	
Stroke tolerance mm	With rubber cushion		$^{+1.4}_{0}$ (to 1000)			$^{-1.4}_{0}$ (to 1500)	2.3 (to 1000), $^{2.7}_{0}$ (to 1500)	
	With air cushion		$^{+1.4}_{0}$ (to 1000)			$^{-1.4}_{0}$ (to 1500)	$^{+1.4}_{0}$ (to 1000), $^{1.8}_{0}$ (to 1500)	
Working piston speed		mm/s	30 to 1000 (Operate within the permission absorbed energy.)					
Cushion			Either rubber cushion or air cushion can be selected.					
Effective air cushion length		mm	8.1	8.1	8.6	8.6	13.4	13.4
Lubrication			Not required (Use Turbine oil type 1 ISO VG32 if necessary.)					
Permission absorbed energy J	With rubber cushion		0.1	0.2	0.5	0.9	1.6	1.6
	With air cushion		0.8	1.2	2.5	3.7	8.0	14.4
	No cushion		—	—	—	—	0.057	0.057

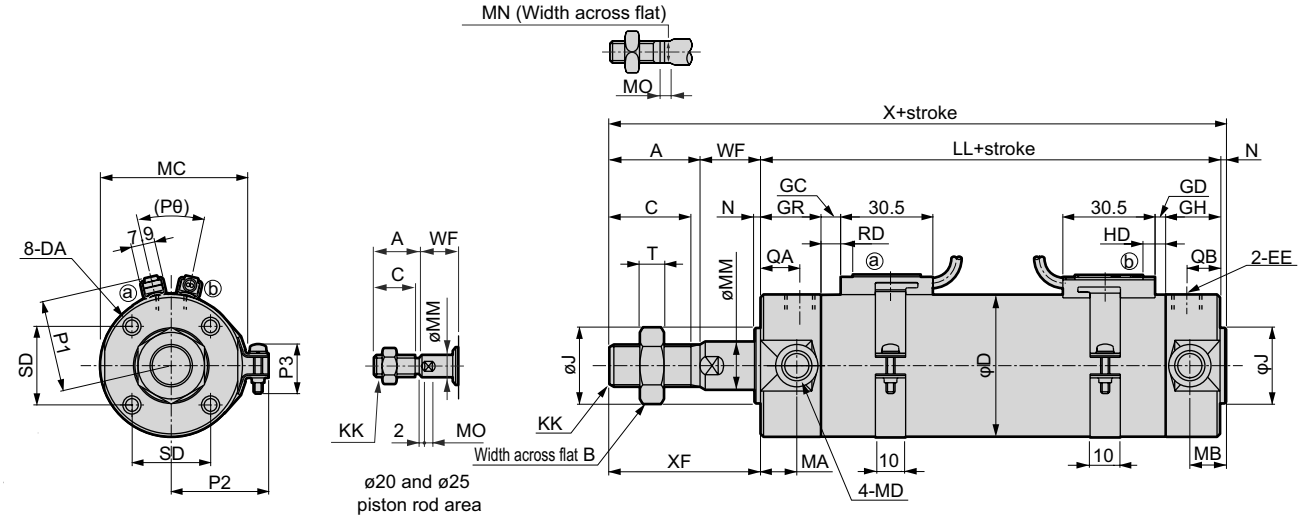
Stroke length

Cylinder bore (mm)	Standard stroke length (mm)	Max. Stroke (mm)	Min. Stroke (mm)	Min. stroke with a switch (mm)				
				Switch quantity				
				1	2	3	4	5
ø 20	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10	10	25	50	75	95
ø 25								
ø 32								
ø 40		1500						
ø 50								
ø 63								

Note 1. "No cushion for permission absorbed energy" means no cushion is provided on the head side when the air cushion code is "R" and on the rod side when it is "H". The figure indicates the permission absorbed energy for these cases.
Note 2. With no cushion, a large volume of energy caused by the external load cannot be absorbed. We recommend using an external absorption device.

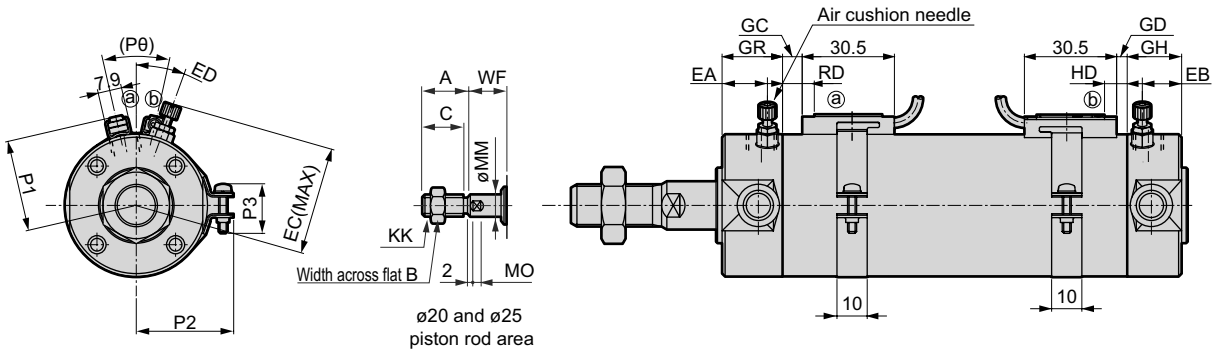
● Basic type (00)

<With rubber cushion>



<With rubber cushion>

Note: Piping ports (EE) vary for ø20 and ø25.
Refer to Table of dimensions of the products with air cushion (EE*).



Note 1: For the external dimensions of the accessories, contact CKD.

Symbol / Cylinder bore (mm)	Switch mounting style: Band type								
	GD	GC	GH	GR	HD	RD	P1	P2	Pθ
	T2, T3				T2, T3				
ø20	3.5	2.5	17	19	7.5	6.5	19.6	21.5	(38°)
ø25	4.5	1.5	17	19	8.5	5.5	22.1	23.9	(34°)
ø32	5.5	2.5	17	19	9.5	6.5	25.6	27.6	(30°)
ø40	7.5	4.5	19	20	11.5	8.5	30.2	32.1	(26°)
ø50	9.0	7.0	22	25	13.0	11.0	35.7	37.4	(22°)
ø63	9.0	7.0	22	25	13.0	11.0	42.7	44.4	(20°)

Symbol / Cylinder bore (mm)	Basic type (00) basic dimensions																
	A	B	C	D	DA	EE (Note)	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	N
ø20	18	13	15.5	26	M4 depth 6.5	G1/8	12	M8	69	11	11	24	M5	8	6	4	2
ø25	22	17	19.5	31	M5 depth 6.5	G1/8	14	M10×1.25	69	11	11	29	M6	10	8	5	2
ø32	22	17	19.5	38	M5 depth 7.5	G1/8	18	M10×1.25	71	11	10	36	M8	12	10	5.5	2
ø40	30	22	27	47	M6 depth 12	G1/8	25	M14×1.5	78	12	10	44	M10	16	14	6	2
ø50	35	27	32	58	M8 depth 16	G1/4	30	M18×1.5	90	13	12	55	M12	20	17	8	2
ø63	35	27	32	72	M10 depth 16	G1/4	32	M18×1.5	90	13	12	69	M14	20	17	8	2

Symbol / Cylinder bore (mm)	Basic type (00) basic dimensions							With rubber cushion				
	QA	QB	SD	T	WF	X	XF	EA	EB	EC	EE*	Eθ
ø20	12	10	14	5	17	106	35	14	12	27	M5	30°
ø25	12	10	16.5	6	18	111	40	14	12	29.5	M5	30°
ø32	12	10	20	6	18	113	40	14	12	32.8	G1/8	25°
ø40	13	12	26	8	20	130	50	15	13	36.6	G1/8	20°
ø50	15	12	32	11	23	150	58	18.5	15.5	43	G1/4	20°
ø63	15	12	38	11	23	150	58	18.5	15.5	50	G1/4	20°

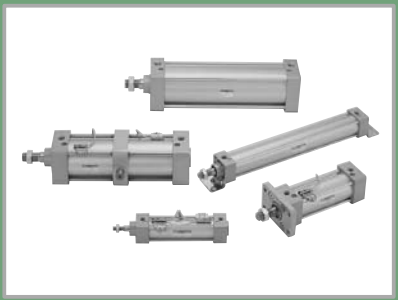
Tie rod type cylinder Double acting, single rod type

SCG Series

● Cylinder bore: ø32 to ø63

RoHS

CAD



Catalog No. CB-029SA

Features

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

How to order

Without switch

SCG - LB - 40 G B - 100 ———— I

With switch

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

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ

Symbol	Descriptions
Ⓐ 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)
Ⓑ Cylinder bore (mm)	
32	ø32
40	ø40
50	ø50
63	ø63
Ⓒ Thread type	
G	G thread (ø32 to ø63)
Ⓓ Cushion	
B	Double side air cushion (basic type)

Ⓔ Stroke length (mm)

Cylinder bore	Stroke length Note 2
ø32	25, 50, 75, 100, 150, 200 250, 300, 350, 400, 450, 500
ø40	
ø50	
ø63	

Ⓕ Switch model No.

Lead wire straight type	Contact	Indicator	Lead wire
T0H*	Contact	Single color display	2 wire
T2H*	Non-contact		
T3H*			3 wire
***Lead wire length**			
Blank	1m (Standard)		
3	3 m		

Ⓖ 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

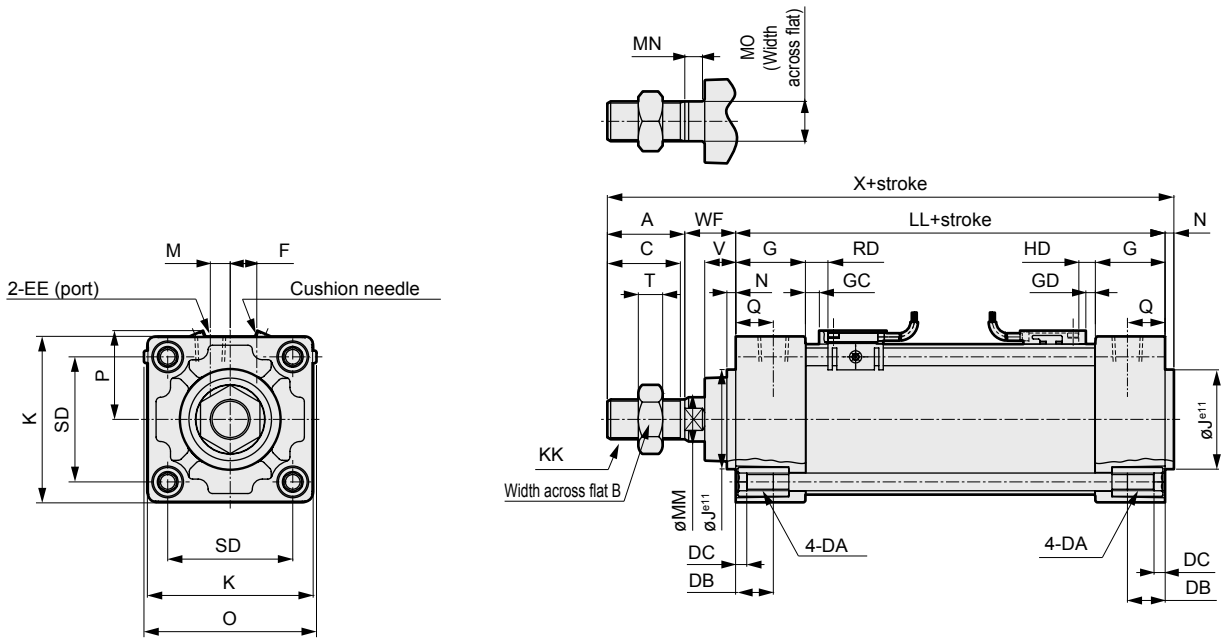
Item	SCG			
Cylinder bore mm	ø32	ø40	ø50	ø63
Actuation	Double acting			
Working fluid	Compressed air			
Max. working pressure MPa	1.0			
Min. working pressure MPa	0.05			
Proof pressure MPa	1.6			
Ambient temperature °C	–10 to 60 (no freezing)			
Port size	G1/8	G1/4		G3/8
Stroke tolerance mm	$^{+1.0}_{0}$ (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

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

Note: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD for details.

● Basic type (00)

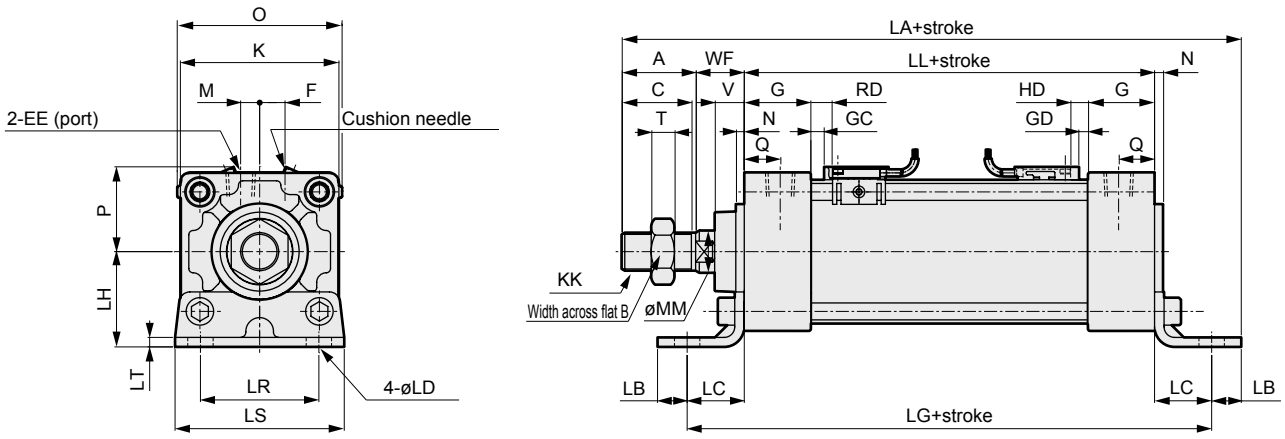


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
Note 2: Refer to page 29 for details of accessories.

Symbol / Cylinder bore (mm)	Basic type (00) basic dimensions																			
	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	G1/8	6.5	27	30	46	M10×1.25	84	4	12	5.5	10	4	52	13
ø40	30	22	27	M6	16	5	G1/4	9	27	35	52	M14×1.5	84	4	16	6	14	4	58	14
ø50	35	27	32	M8	16	5	G1/4	10.5	31.5	40	65	M18×1.5	94	5	20	8	17	4	68	15.5
ø63	35	27	32	M8	16	5	G3/8	12	31.5	45	75	M18×1.5	94	9	20	8	17	4	78	16.5

Symbol / Cylinder bore (mm)						With switch				
	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)

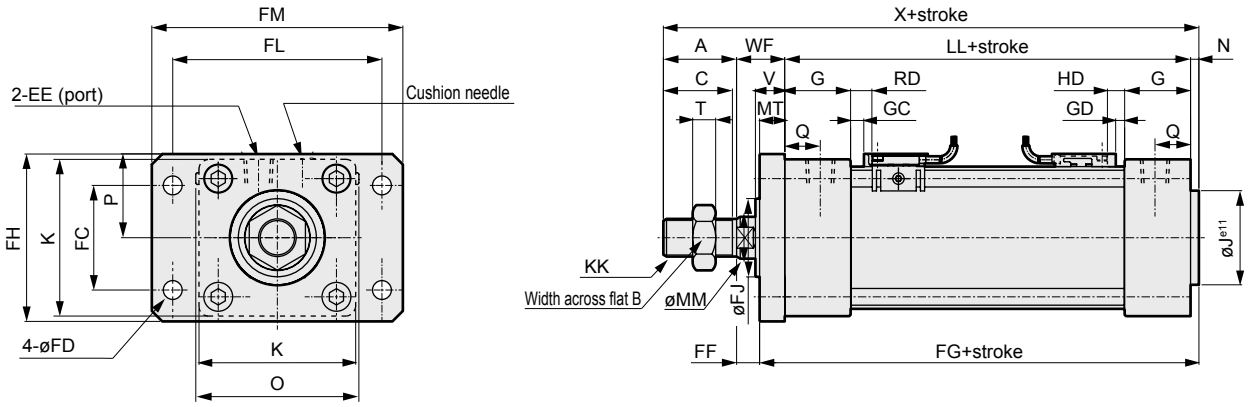


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
Note 2: Refer to page 29 for details of accessories.

Symbol	Axial foot type (LB) basic dimensions																Mounting dimensions
Cylinder bore (mm)	A	B	C	EE	F	G	K	KK	LL	M	MM	N	O	Q	T	V	WF	LA
ø32	22	17	19.5	G1/8	6.5	27	46	M10×1.25	84	4	12	4	52	13	6	13	25	162
ø40	30	22	27	G1/4	9	27	52	M14×1.5	84	4	16	4	58	14	8	13	21	170
ø50	35	27	32	G1/4	10.5	31.5	65	M18×1.5	94	5	20	4	68	15.5	11	14	23	190
ø63	35	27	32	G3/8	12	31.5	75	M18×1.5	94	9	20	4	78	16.5	11	14	23	193

Symbol									With switch				
Cylinder bore (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

● Rod side flange type (FA)

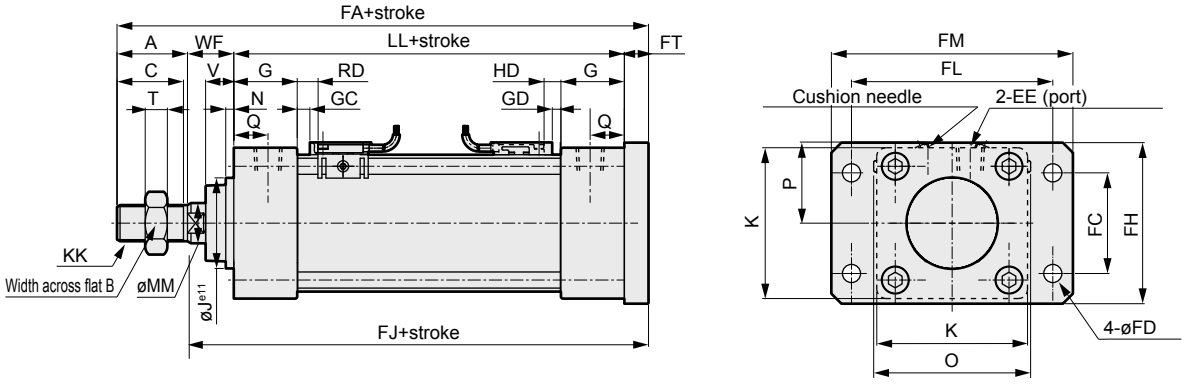


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
Note 2: Refer to page 29 for details of accessories.

Symbol / Cylinder bore (mm)	Rod side flange type (FA) basic dimensions																		
	A	B	C	EE	F	G	J	K	KK	LL	M	MM	N	O	Q	T	V	WF	X
ø32	22	17	19.5	G1/8	6.5	27	30	46	M10×1.25	84	4	12	4	52	13	6	13	25	135
ø40	30	22	27	G1/4	9	27	35	52	M14×1.5	84	4	16	4	58	14	8	13	21	139
ø50	35	27	32	G1/4	10.5	31.5	40	65	M18×1.5	94	5	20	4	68	15.5	11	14	23	156
ø63	35	27	32	G3/8	12	31.5	45	75	M18×1.5	94	9	20	4	78	16.5	11	14	23	156

Symbol / Cylinder bore (mm)	Mounting dimensions								With switch				
	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)

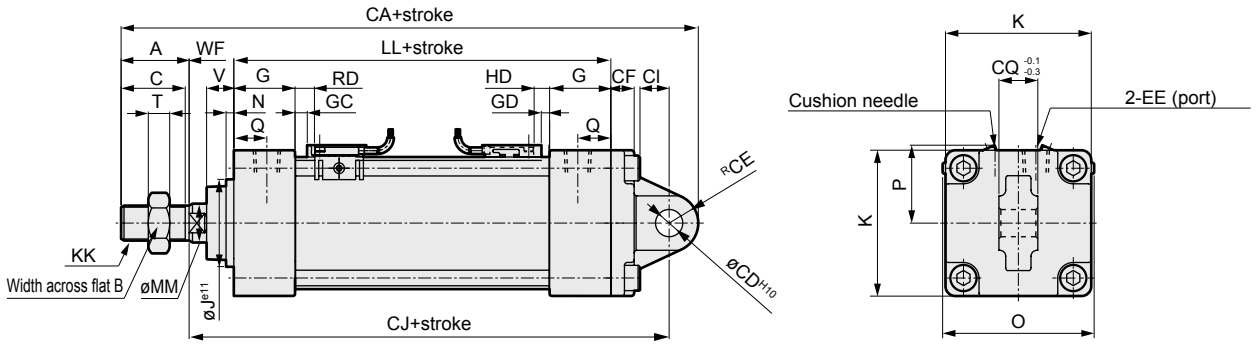


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
Note 2: Refer to page 29 for details of accessories.

Symbol	Head end flange type (FB) basic dimensions																
Cylinder bore (mm)	A	B	C	EE	F	G	J	K	KK	LL	M	MM	O	Q	T	V	WF
ø32	22	17	19.5	G1/8	6.5	27	30	46	M10×1.25	84	4	12	52	13	6	13	25
ø40	30	22	27	G1/4	9	27	35	52	M14×1.5	84	4	16	58	14	8	13	21
ø50	35	27	32	G1/4	10.5	31.5	40	65	M18×1.5	94	5	20	68	15.5	11	14	23
ø63	35	27	32	G3/8	12	31.5	45	75	M18×1.5	94	9	20	78	16.5	11	14	23

Symbol	Mounting dimensions							With switch				
Cylinder bore (mm)	FA	FC	FD	FJ	FL	FM	FT	GC	GD	RD	HD	P
ø32	141	32	7	119	64	79	10	1	1	5	5	25
ø40	145	36	9	115	72	90	10	1	1	5	5	29
ø50	164	45	9	129	90	110	12	2.5	1	6.5	5	34
ø63	164	50	9	129	100	120	12	2.5	1	6.5	5	40

● Single clevis type (CA)

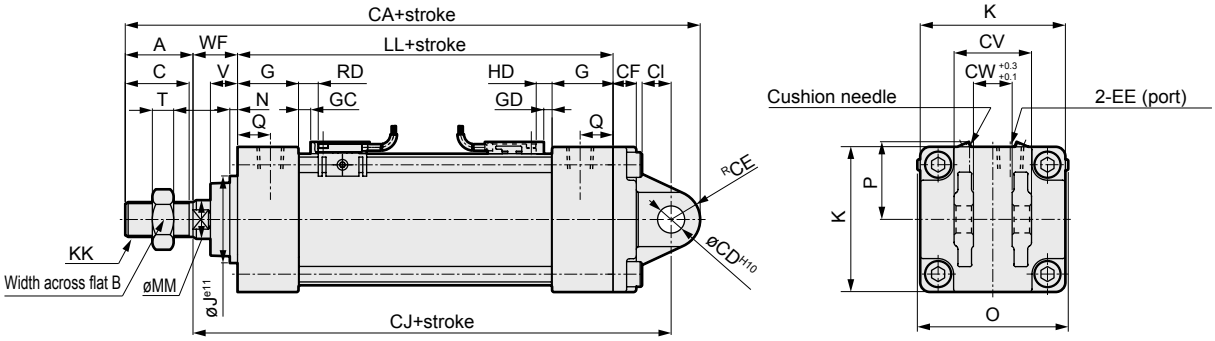


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.
Note 2: Refer to page 29 for details of accessories.

Symbol / Cylinder bore (mm)	Single clevis type (CA) basic dimensions															
	A	B	C	EE	F	G	J	K	KK	LL	M	O	Q	T	V	WF
ø32	22	17	19.5	G1/8	6.5	27	30	46	M10×1.25	84	4	52	13	6	13	25
ø40	30	22	27	G1/4	9	27	35	52	M14×1.5	84	4	58	14	8	13	21
ø50	35	27	32	G1/4	10.5	31.5	40	65	M18×1.5	94	5	68	15.5	11	14	23
ø63	35	27	32	G3/8	12	31.5	45	75	M18×1.5	94	9	78	16.5	11	14	23

Symbol / Cylinder bore (mm)	Mounting dimensions							With switch				
	CA	CD	CE	CF	CI	CJ	CQ	GC	GD	RD	HD	P
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 29 for details of accessories.

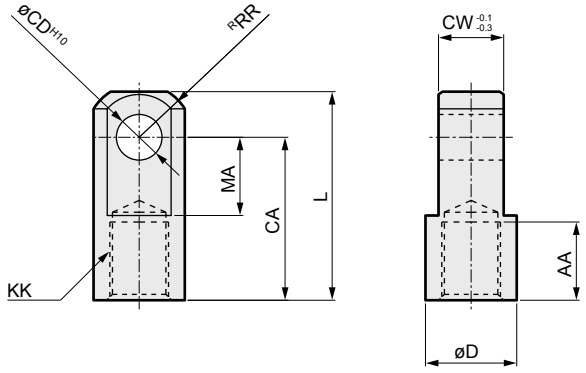
Symbol	Double clevis type (CB) basic dimensions																	Mounting dimensions	
Cylinder bore (mm)	A	B	C	EE	F	G	J	K	KK	LL	M	MM	O	Q	T	V	WF	CA	CD
ø32	22	17	19.5	G1/8	6.5	27	30	46	M10×1.25	84	4	12	52	13	6	13	25	164.5	10
ø40	30	22	27	G1/4	9	27	35	52	M14×1.5	84	4	16	58	14	8	13	21	169	10
ø50	35	27	32	G1/4	10.5	31.5	40	65	M18×1.5	94	5	20	68	15.5	11	14	23	197	14
ø63	35	27	32	G3/8	12	31.5	45	75	M18×1.5	94	9	20	78	16.5	11	14	23	197	14

Symbol							With switch				
Cylinder bore (mm)	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)

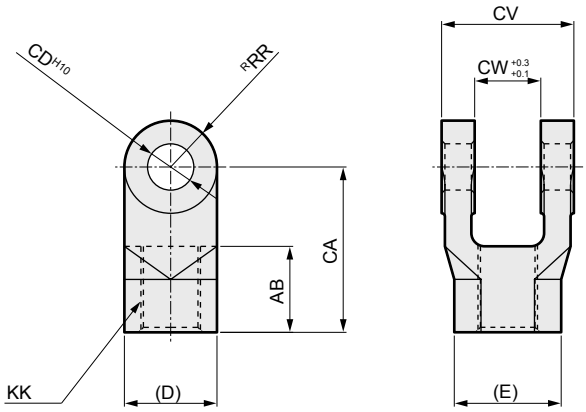
Material: Steel



Model No.	Applicable cylinder bore (mm)	AA	CA	CD	CW	D	KK	L	MA	RR	Weight (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

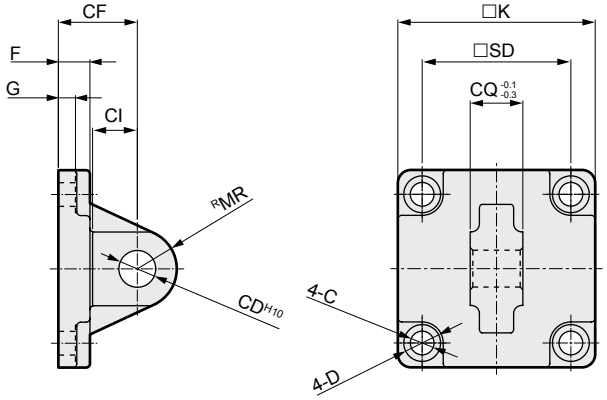


Model No.	Applicable cylinder bore (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Weight (kg)
SCG-Y-32	32	14	30	10	28	14	20	23.1	M10 × 1.25	10	0.10
SCG-Y-40	40	21	40	10	28	14	22	25.4	M14×1.5	11	0.13
SCG-Y-50	50,63	26	50	14	40	20	28	32.3	M18×1.5	14	0.30

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

● Single bracket (B1)

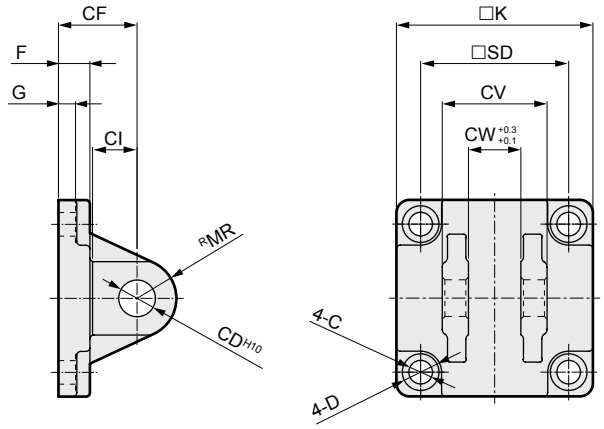
Material: Cast iron



Model No.	Applicable cylinder bore (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD	Weight (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 cylinder bore (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD	Weight (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.

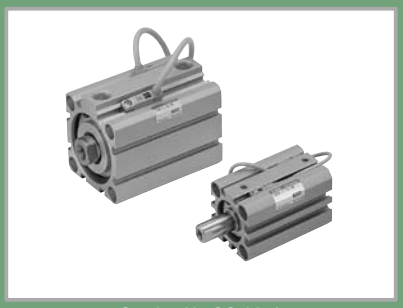
Super compact cylinder Double acting, single rod type

SSD2 Series

● Cylinder bore: 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 G - 5

With switch

SSD2-L - 12 G - 10 - T2H - R

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

Symbol	Descriptions
Ⓐ Model No.	
SSD2	Double acting, single rod type
SSD2-L	Double acting, single rod type with switch

Ⓑ Cylinder bore (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

Ⓒ Thread type	
Blank	M5 (ø12 to ø16)
G	G thread (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.

Ⓓ Stroke length (mm)

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

Ⓔ Switch model No.

Lead wire straight type	Contact	Indicator	Lead wire	Cylinder bore							
				12	16	20	25	32	40	50	63
T0H*	Contact	Single color display	2 wire	●	●	●	●	●	●	●	●
T2H*	Non-contact										
T3H*			3 wire								

***Lead wire length**	
Blank	1 m (standard)

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

Specifications

Item	SSD2 SSD2-L (with switch)							
Cylinder bore mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting							
Working fluid	Compressed air							
Max. working pressure MPa	1.0							
Min. working pressure MPa	0.1							0.05
Proof pressure MPa	1.6							
Ambient temperature °C	–10 to 60 (No freezing)							
Port size	M5				G1/8 Note		G1/4	
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

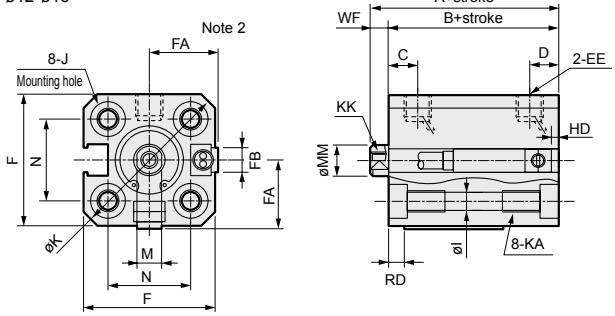
Note: The port size is M5 for the 5 stroke ø32 without switch.

Stroke length

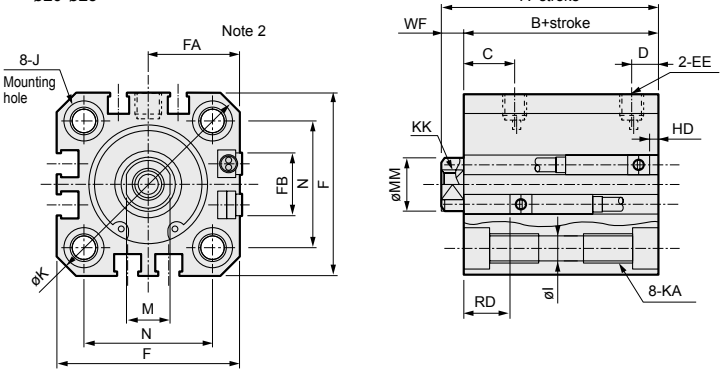
Cylinder bore (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø12	5, 10, 15, 20, 25, 30	30	1
ø16			
ø20	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	50	
ø25			
ø32			
ø40			
ø50	10, 15, 20, 25, 30, 35, 40, 45, 50		
ø63			

● SSD2-L-12 to 25 (with switch)

ø12•ø16



ø20•ø25



● 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.

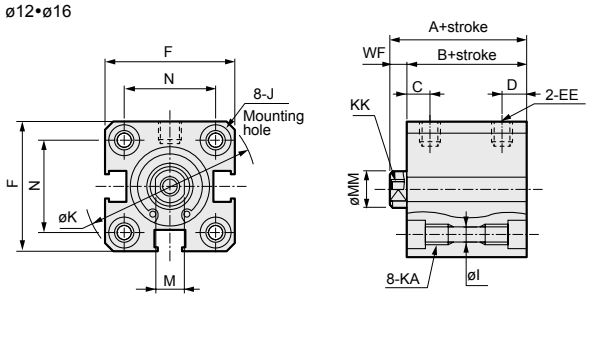
Symbol	Common dimension with switch																
Cylinder bore (mm)	A	B	C	D	EE	F	FA	FB	I	J	K	KA	KK	M	MM	N	WF
ø12	25.5	22	5.5	5.5	M5	25	13 (16.5)	4.5	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	25.5	22	5.5	5.5	M5	29	15 (18.5)	4.5	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 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	
Cylinder bore (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

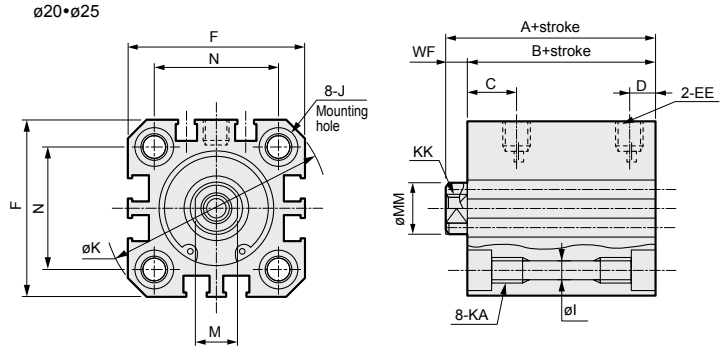
Note 1: HD and RD dimensions for the 5 stroke will differ from these due to manufacturing.
Note 2: Dimensions in parentheses for FA are the values for the L type lead wire.

● SSD2-12 to 25 (without switch)

ø12•ø16

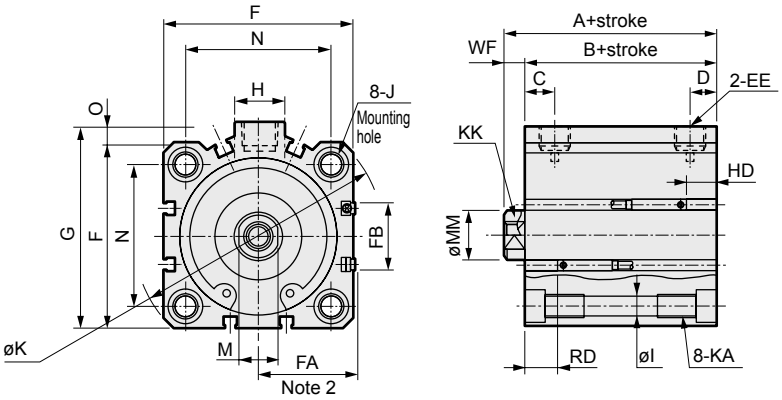


ø20•ø25

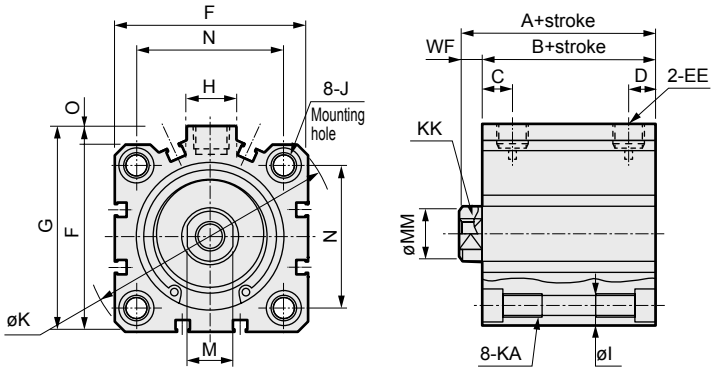


Symbol	Without switch and common dimension														
Cylinder bore (mm)	A	B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	20.5	17	5.5	5.5	M5	25	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	20.5	17	5.5	5.5	M5	29	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	24	19.5	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 dimensions with switch											
Cylinder bore (mm)	A Note 3	B Note 3	A	B	C Note 5	D Note 5	EE	F	FA Note 2	FB	G	H	I	J
ø32	30 (40)	23 (33)	40	33	8 (10)	8 (5.5)	G1/8 Note 4	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)	G1/8	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	G1/4	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	G1/4	77	39 (42.5)	28.5	84	23	8.7	14 spot face depth 9

Symbol	Common dimensions with switch								Proximity T2H•T2V, T3H•T3V	
Cylinder bore (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

Guided cylinder Double acting, single rod type

STG Series

● Cylinder bore: 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 G - 25

With switch

STG - M - 32 G - 25 - T2H - R

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

Symbol	Descriptions
Ⓐ Bearing style	
M	Slide bearing
B	Roller bearing
Ⓑ Cylinder bore (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
Ⓒ Thread type	
Blank	M5 (ø12 to ø16)
G	G thread (ø20 to ø63)

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

Ⓓ Stroke length (mm)

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

Ⓔ Switch model No.

Lead wire straight type	Contact	Indicator	Lead wire
T0H*	Contact	Single color display	2 wire
T2H*	Non-contact		
T3H*			3 wire

***Lead wire length**	
Blank	1 m (standard)
3	3 m

Ⓕ Switch quantity

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

Specifications

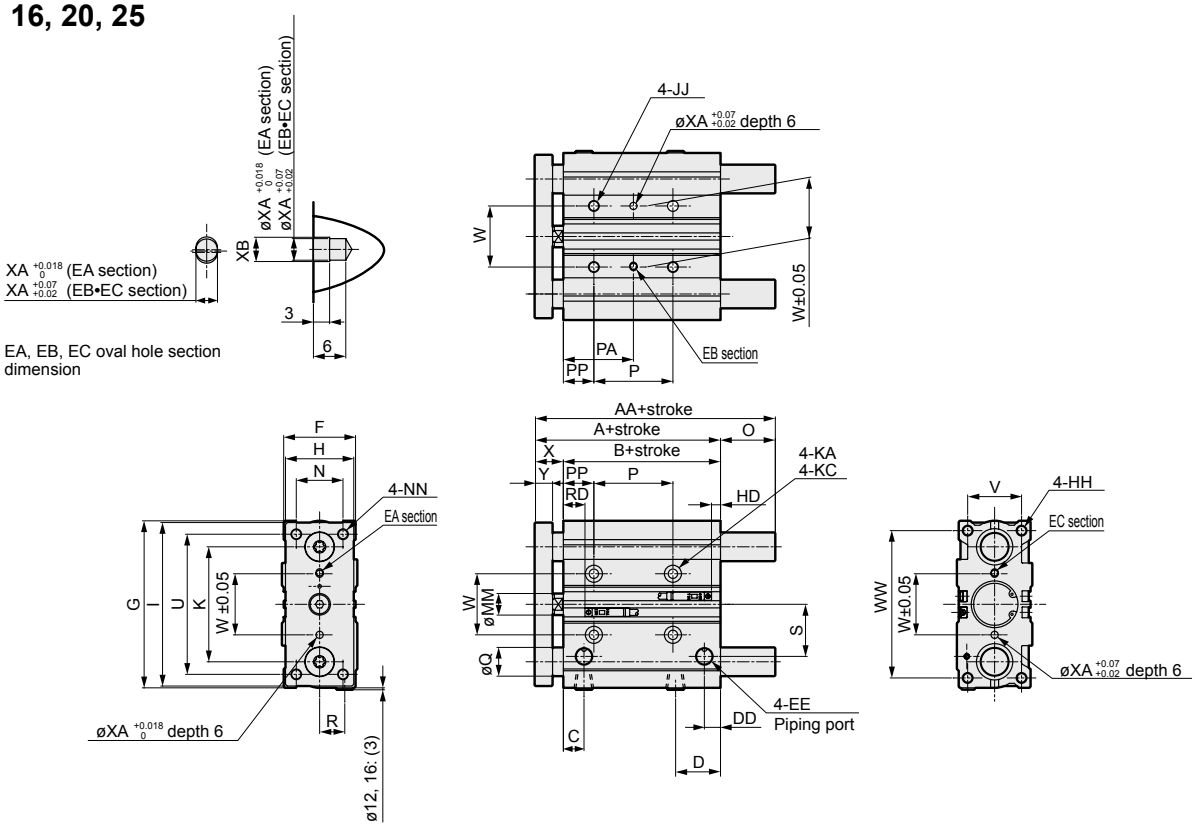
Item	STG-M/B							
Cylinder bore mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting							
Working fluid	Compressed air							
Max. working pressure MPa	1.0							
Min. working pressure MPa	0.15				0.1			
Proof pressure MPa	1.6							
Ambient temperature °C	–10 to 60 (No freezing)							
Port size	M5		G1/8				G1/4	
Stroke tolerance mm	+2.0 0							
Working piston speed mm/s	50 to 500							50 to 300
Cushion	Rubber cushion							
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG32)							
Permission absorbed energy J	0.056	0.088	0.157	0.157	0.401	0.627	0.980	1.560

Stroke length

Cylinder bore	Standard stroke length (mm)	Max.stroke length (mm)	Min. stroke length (mm)	Min. stroke length of types with switch (mm)
ø12	10, 20, 30, 40, 50, 75, 100	100	10	10 Note
ø16				
ø20	20, 30, 40, 50, 75, 100, 125, 150, 175, 200	200		
ø25				
ø32	25, 50, 75, 100, 125, 150, 175, 200			
ø40				
ø50				
ø63				

Note: With 1 or 2 switches.

● STG-12, 16, 20, 25



● STG-M/B common

Symbol / Cylinder bore (mm)	Standard stroke length (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ
ø12	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200	42	29	12	16	7	M5	26	58	22	M4 depth 10	56	M5 depth 10
ø16		46	33	12	18	7.5	M5	30	64	25	M5 depth 12	62	M5 depth 10
ø20	20, 30, 40, 50, 75, 100, 125, 150, 175, 200	53	37	10.5	24.5	8.5	G1/8	36	83	30	M5 depth 13	81	M6 depth 12
ø25		53.5	37.5	11.5	25	9	G1/8	42	93	38	M6 depth 15	91	M6 depth 12

Symbol / Cylinder bore (mm)	K	KA	MM	N	NN	KC	P		
							30 or less	Over 30 to 100	Over 100 to 200
ø12	41	4.3 penetrating	6	14	M4 penetrating	7.5 spot face depth 4.5	20	40	110
ø16	46	4.3 penetrating	8	16	M5 penetrating	8 spot face depth 4.5	24	44	110
ø20	54	5.2 penetrating	10	18	M5 penetrating	9.5 spot face depth 5.5	24	44	120
ø25	64	5.2 penetrating	12	26	M6 penetrating	9.5 spot face depth 5.5	24	44	120

Symbol / Cylinder bore (mm)	PA			PP	R	S	U	V	W	WW	X	Y	RD	HD	XA	XB
	30 or less	Over 30 to 100	Over 100 to 200													
ø12	15	25	60	5	8	17	48	18	23	50	13 0 -1.5	8	5	5	3	3.5
ø16	17	27	60	5	10	18	54	22	24	56	13 0 -1.5	8	4	10	3	3.5
ø20	29	39	77	17	11	25	70	24	28	72	16 0 -2	10	9.5	8.5	3	3.5
ø25	29	39	77	17	14	29	78	30	34	82	16 0 -2	10	10	8.5	4	4.5

● STG-M

Symbol / Cylinder bore (mm)	AA			Q	O		
	50 or less	Over 50 to 100	Over 100		50 or less	Over 50 to 100	Over 100
ø12	42	55	85	8	0	13	43
ø16	46	63	95	10	0	17	49

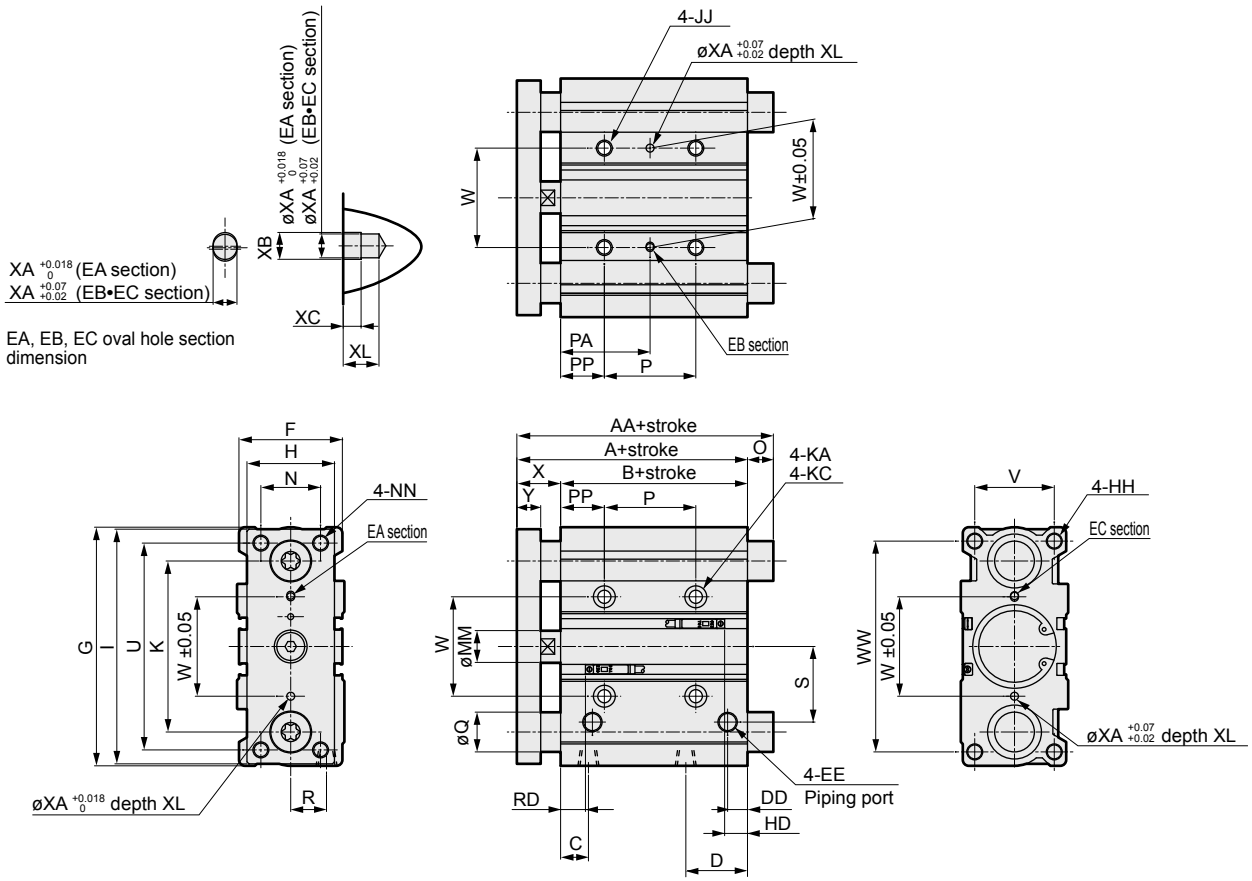
Symbol / Cylinder bore (mm)	AA		Q	O	
	50 or less	Over 50 to 200		50 or less	Over 50 to 200
ø20	53	78	12	0	25
ø25	53.5	84	16	0	30.5

● STG-B

Symbol / Cylinder bore (mm)	AA			Q	O		
	30 or less	Over 30 to 100	Over 100		30 or less	Over 30 to 100	Over 100
ø12	43	55	85	6	1	13	43
ø16	49	65	95	8	3	19	49

Symbol / Cylinder bore (mm)	AA			Q	O		
	30 or less	Over 30 to 100	Over 100 to 200		30 or less	Over 30 to 100	Over 100 to 200
ø20	59	78	100	10	6	25	47
ø25	65	84	103	13	11.5	30.5	49.5

● STG-32, 40, 50, 63



● STG-M/B common

Symbol / Cylinder bore (mm)	Standard stroke length (mm)	A	B	C	D	DD	EE	F	G	H	HH	I	JJ
ø32	25, 50, 75, 100, 125, 150, 175, 200	59.5	37.5	12.5	30.5	9	G1/8	48	112	44	M8 depth 20	110	M8 depth 16
ø40		66	44	14	31	10	G1/8	54	120	44	M8 depth 20	118	M8 depth 16
ø50		72	44	14	35	11	G1/4	64	148	60	M10 depth 22	146	M10 depth 20
ø63		77	49	16.5	35	15	G1/4	78	162	70	M10 depth 22	158	M10 depth 20

Symbol / Cylinder bore (mm)	K	KA	KC	MM	N	NN	P			PA	
							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 / Cylinder bore (mm)	PA	PP	R	S	U	V	W	WW	X	Y	RD	HD	XA	XB	XC	XL
	Over 100 to 200															
ø32	83	21	15	34	96	34	42	98	22 -0 -2	12	10	8.5	4	4.5	3	6
ø40	84	22	18	38	104	40	50	106	22 -0 -2	12	13	12	4	4.5	3	6
ø50	86	24	21.5	47	130	46	66	130	28 -0 -2	16	13.5	11.5	5	6	4	8
ø63	88	24	28	55	130	58	80	142	28 -0 -2	16	14	16	5	6	4	8

● STG-M

Symbol / Cylinder bore (mm)	AA		Q	O	
	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 / Cylinder bore (mm)	AA			Q	O		
	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

Linear slide cylinder Double acting, single rod type

LCR Series

● Cylinder bore: 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

Ⓐ Ⓑ Ⓒ Ⓓ

Symbol	Descriptions
Ⓐ Cylinder bore	
6	ø6
8	ø8
12	ø12
16	ø16
20G	ø20
25G	ø25

Ⓑ Stroke length (mm)		Cylinder bore (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.

Ⓒ Switch model No.									
Axial lead wire	**Contact**	**Indicator**	**Lead wire**	**Cylinder bore**					
				ø6	**ø8**	**ø12**	**ø16**	**ø20**	**ø25**
T0H*	Contact	Single color display	2 wire				●	●	●
T2H*	Non-contact								
T3H*			3 wire						
***Lead wire length**									
Blank	1 m (standard)								

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

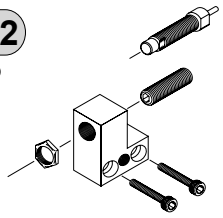
How to order stopper set

- 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

Ⓐ Ⓑ Ⓒ Ⓓ

Cylinder bore



Symbol	Descriptions
Ⓐ Stopper type	
S	Stopper for adjustable stroke
A	Shock absorber type stopper

Ⓑ Stopper installation position	**Note 1**
1	Stopper position ① or ④
2	Stopper position ② or ③

Ⓒ Port at stopper section	
Blank	No port
D	With side surface and bottom port

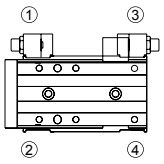
Ⓓ Adjustable stroke length	**Note 2, Note 3**
Blank	Adjustable stroke range 5mm
S02	Adjustable stroke range 15mm
S03	Adjustable stroke range 25mm

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".

Precautions for ordering stopper set

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

● Stopper position

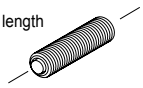


—: Not available

Model No.	Option symbol		Discrete stopper for adjustable stroke		
			Adjustable stroke length (mm)		
	Cylinder bore	Stroke length	–5	–15	–25
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



LCR - 12 - S02 (Ⓐ)

Cylinder bore

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

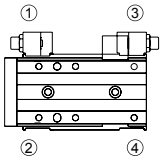
Indicate S01, S02 or S03 for Ⓐ.

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

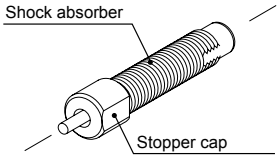
Model No.	Option symbol		Discrete stopper for adjustable stroke Adjustable stroke length (mm)			Discrete shock absorber type stopper
	Cylinder bore	Stroke length	–5	–15	–25	
LCR Series - S1, S2, S5, S6 - A1, A2, A5, A6	ø6, ø8	10	S02	—	—	—
		20 and over	S01	S02	—	A01
	ø12 to ø25	10	S03	—	—	—
		20	S02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

LCR - 12 - A01

Cylinder bore



Applicable shock absorber model No.

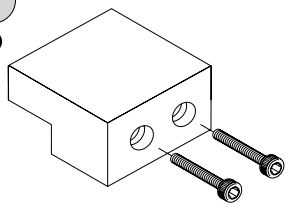
Model	Shock absorber model No.
LCR-6	NCK-00-0.1
LCR-8	NCK-00-0.3
LCR-12	NCK-00-0.3
LCR-16	NCK-00-0.7
LCR-20	NCK-00-1.2
LCR-25	NCK-00-1.2

How to order discrete stopper block model No.

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

LCR - 12 - SB1 (Ⓐ) T (Ⓑ)

Cylinder bore



Ⓐ 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

Ⓑ Material	
Blank	Stopper block material: Rolled steel
T	Stopper block material: Alloy steel (nitriding)

Specifications

Item		LCR					
Cylinder bore mm		ø6	ø8	ø12	ø16	ø20	ø25
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure MPa		0.7					
Min. working pressure MPa		0.15 (Note 1)					
Proof pressure MPa		1.05					
Ambient temperature °C		–10 to 60 (No freezing)					
Port size	Body side surface	M3	M5		G1/8		
	Rear body	—	M3		M5	G1/8	
Stroke tolerance mm		+2.0 0 (Note 1)					
Working piston speed mm/s		50 to 500 (Note 2)					
Cushion		Rubber cushion					
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

Cylinder bore (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.

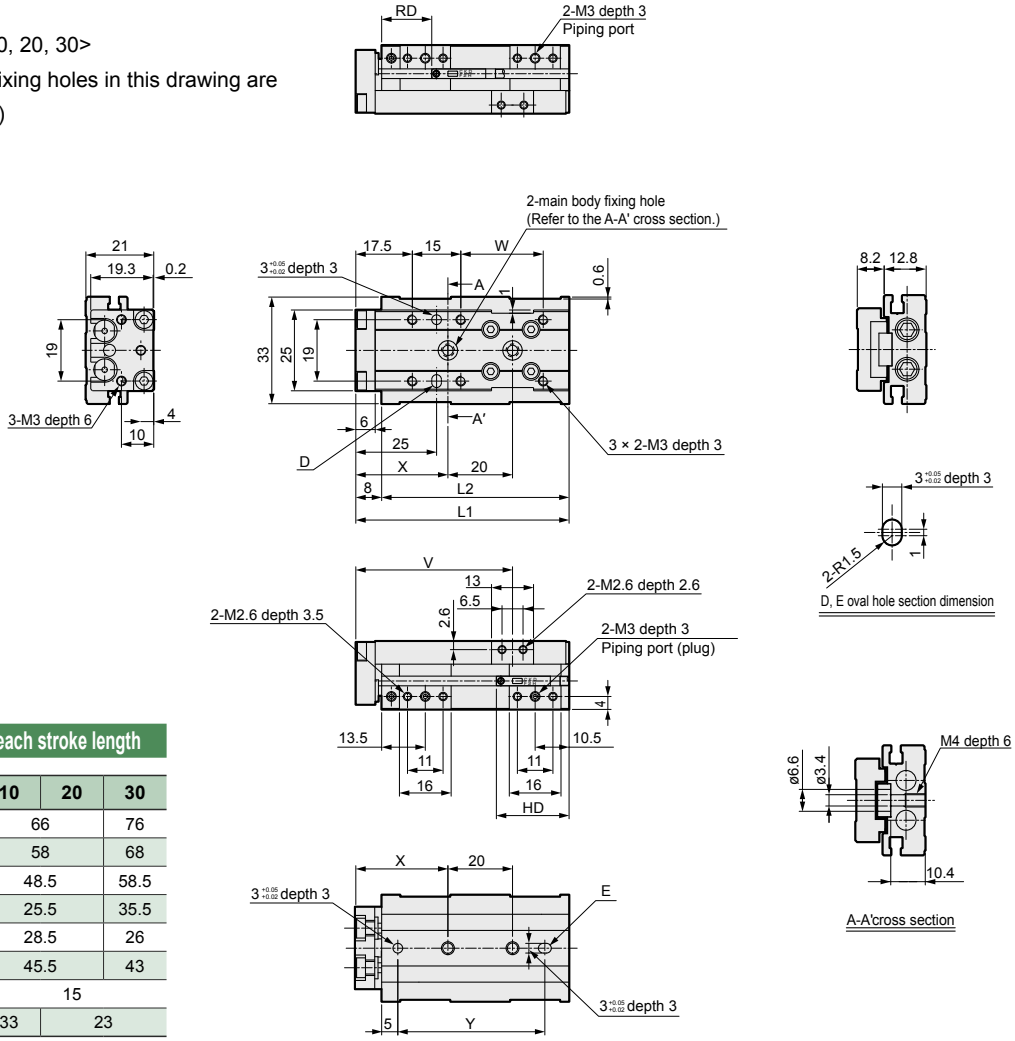
[Table 1] Permission absorbed energy of LCR

Cylinder bore	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

● LCR-6

<stroke length: 10, 20, 30>

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

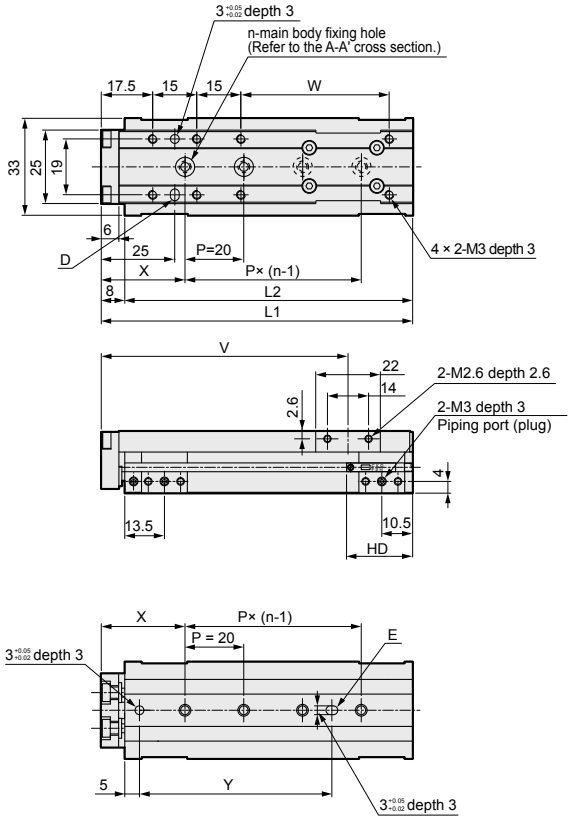


Dimensions table for each stroke length

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

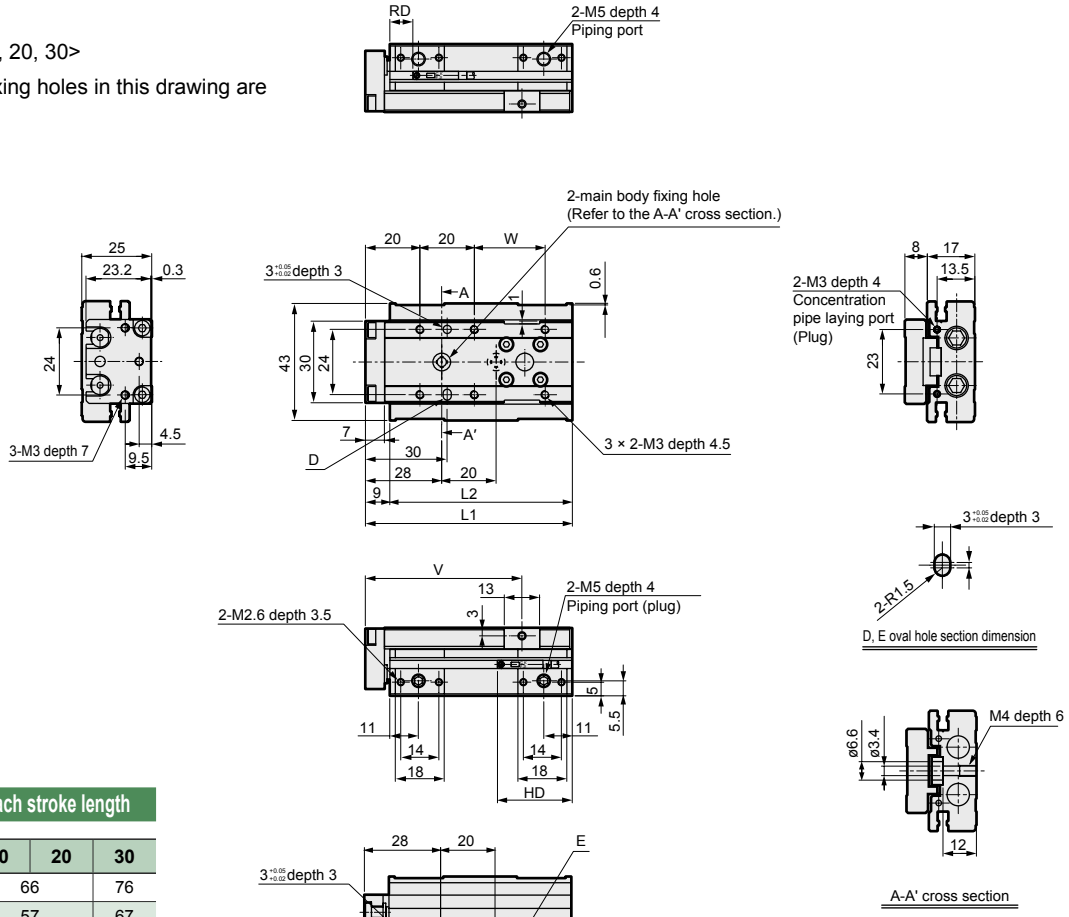
Stroke length	40	50
L1	96	106
L2	88	98
n	3	4
V	74	84
W	40.5	50.5
X	27	28.5
Y	44	65.5
RD	15	
HD	33	

Dimensions (cylinder bore: ø8)

● LCR-8

<stroke length: 10, 20, 30>

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

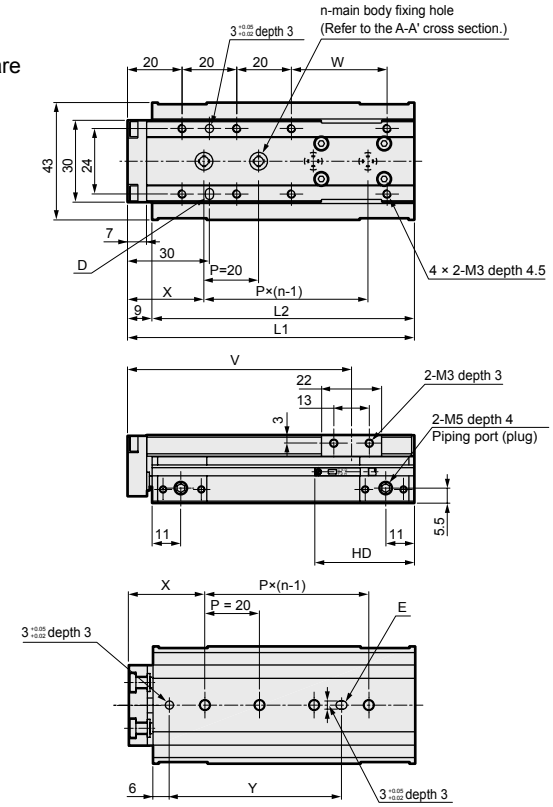


Dimensions table for each stroke length

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)



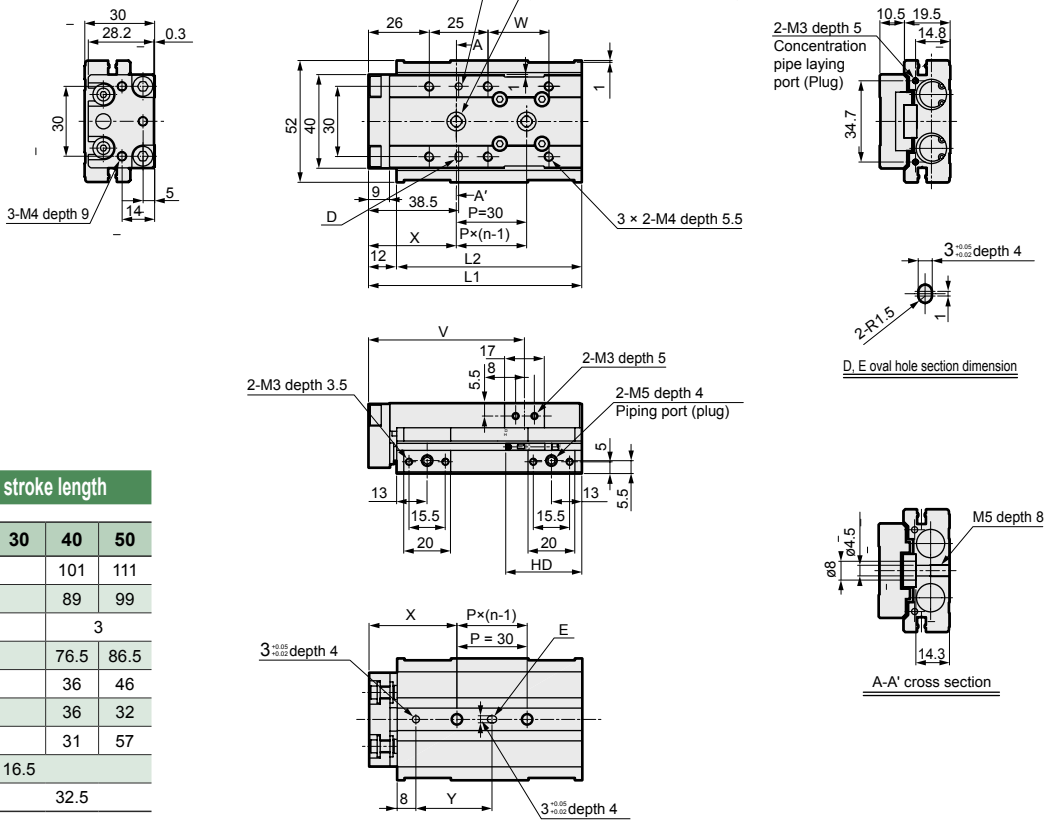
Dimensions table for each stroke length

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		

● LCR-12

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

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

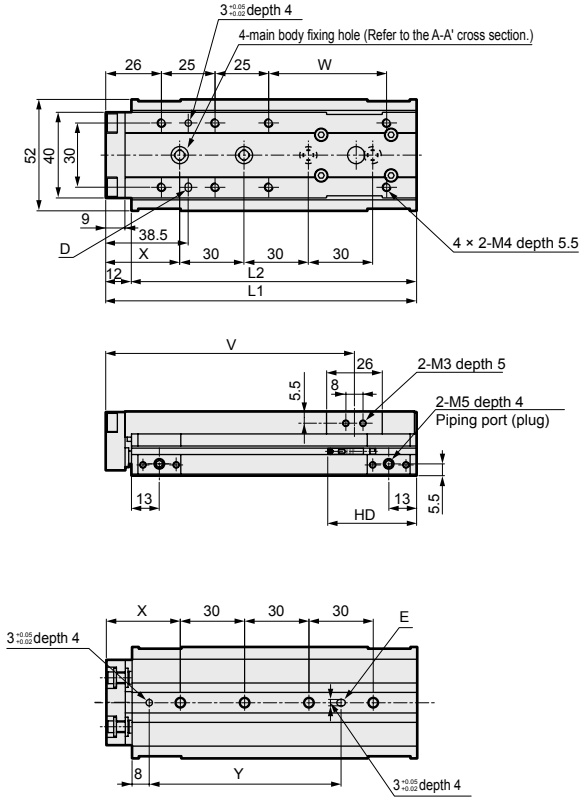


Dimensions table for each stroke length

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

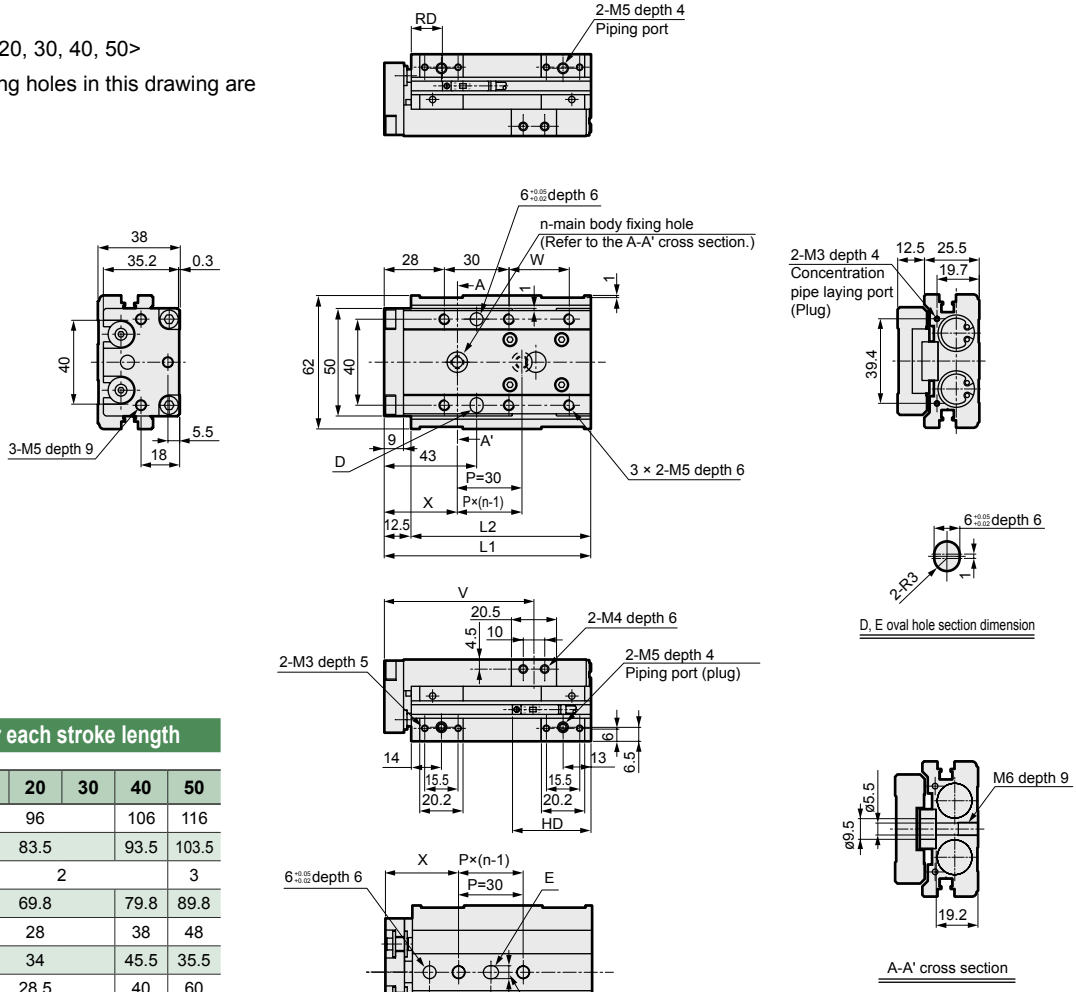
Stroke length	75	100
L1	145	170
L2	133	158
V	116	141
W	55	80
X	34.5	47
Y	89.5	102
RD	16.5	
HD	41.5	

Dimensions (cylinder bore: ø16)

● LCR-16

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

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

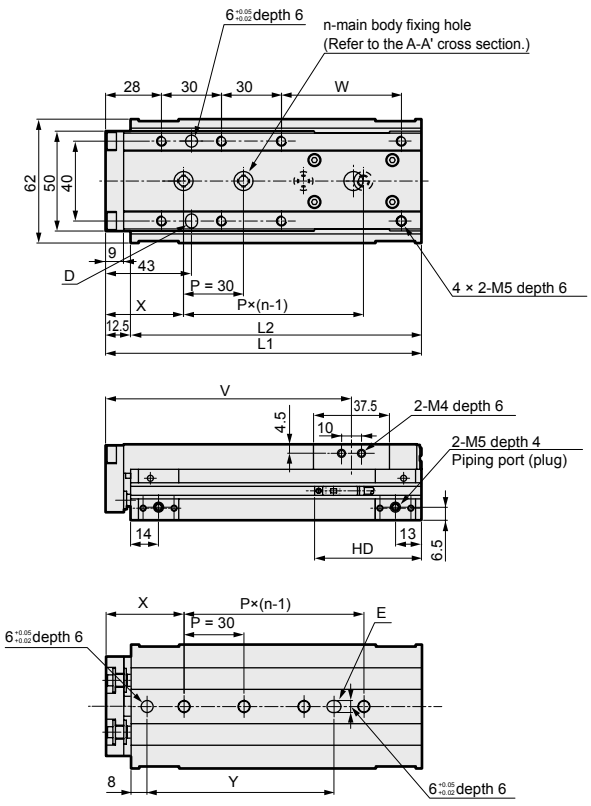


Dimensions table for each stroke length

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	35.5
Y		28.5			40	60
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)

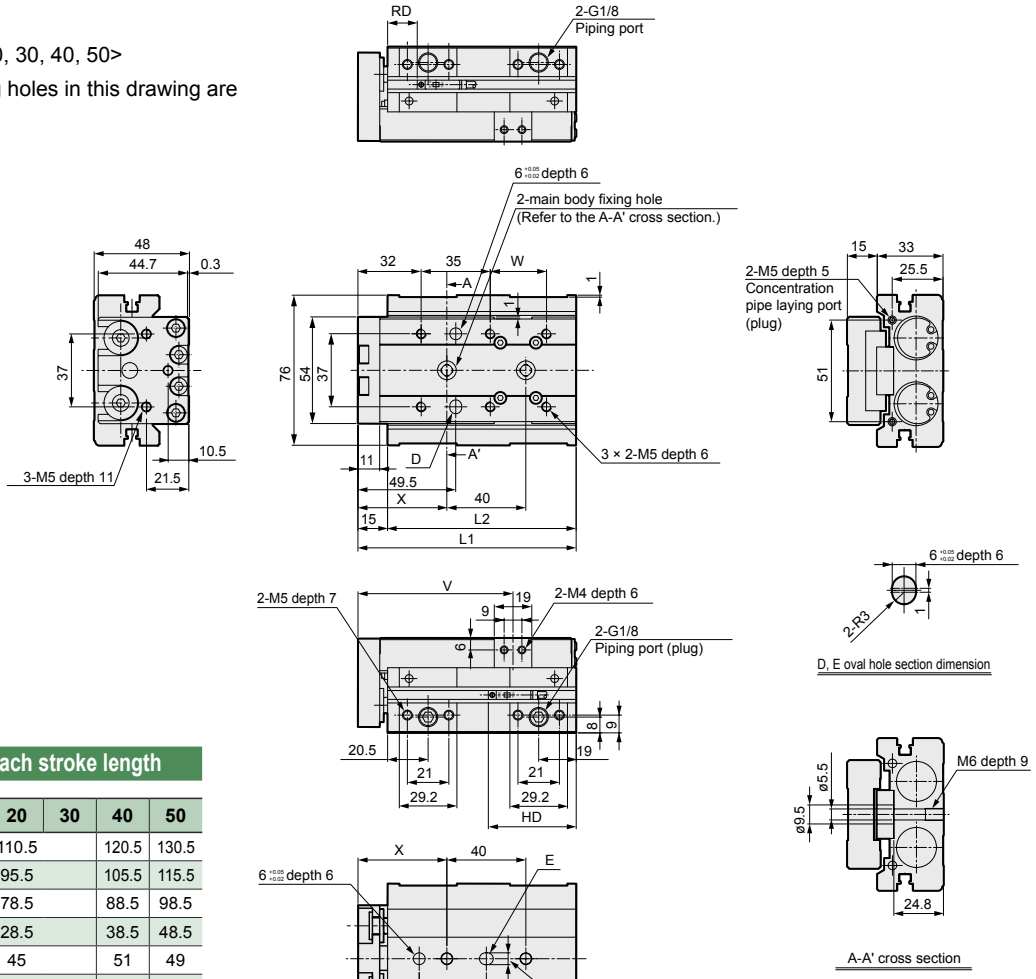


Dimensions table for each stroke length

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	133.5
T2/3*	RD	17		
	HD	53.5		

● LCR-20

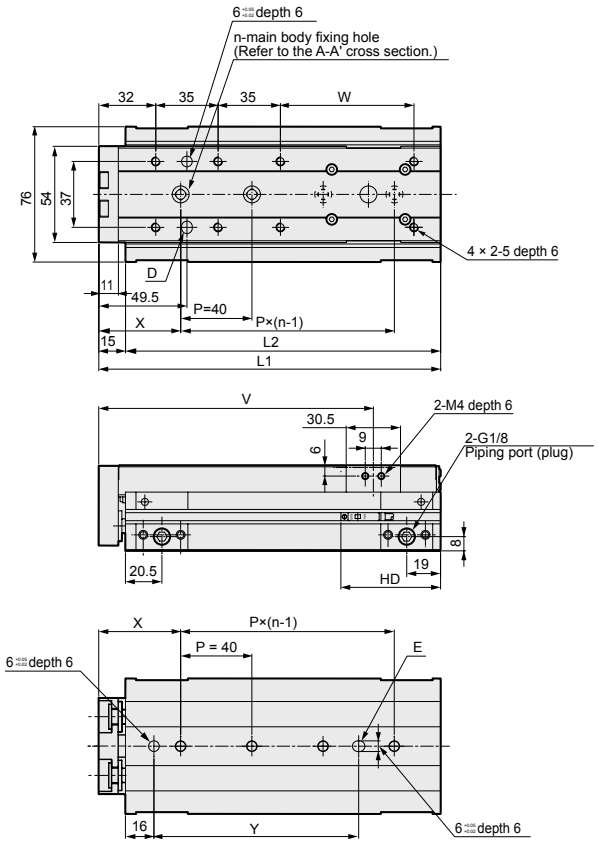
<stroke length: 10, 20, 30, 40, 50>
(The main body fixing holes in this drawing are for 30 mm stroke)



Dimensions table for each stroke length

Stroke length		10	20	30	40	50
L1		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

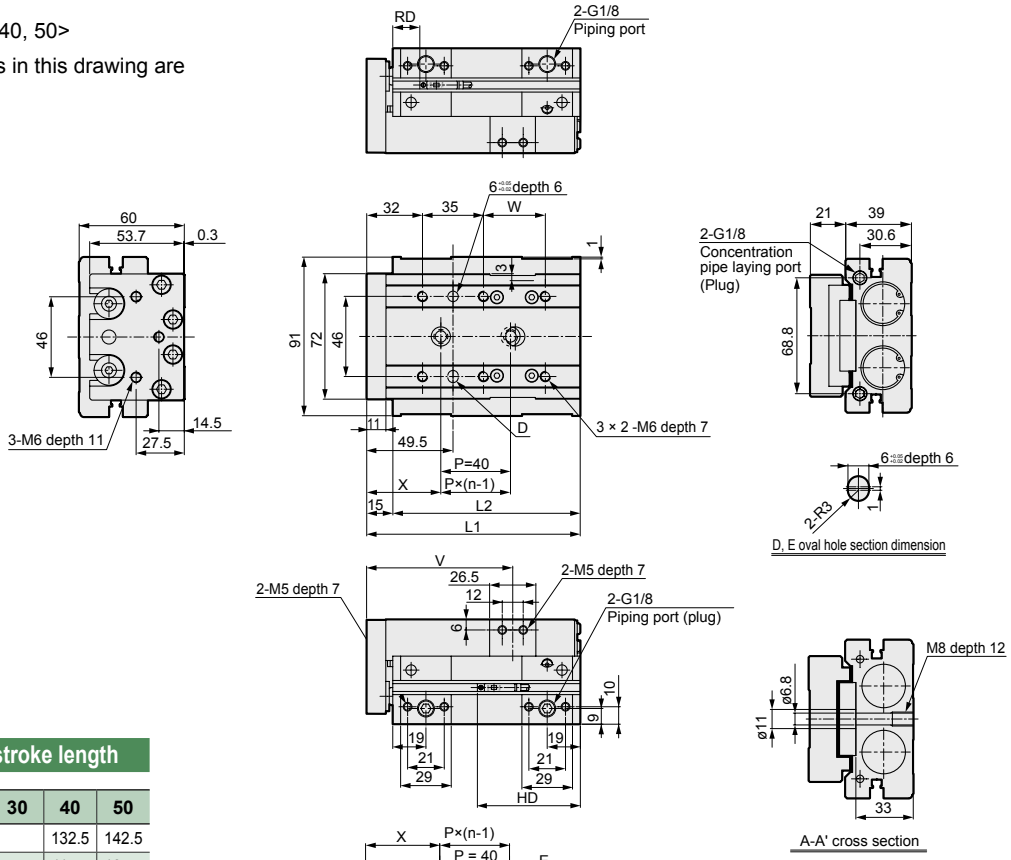
Stroke length		75	100	125	150
L1		167	192	217	242
L2		152	177	202	227
n		3	4		5
V		129.3	154.3	179.3	204.3
W		50	75	100	125
X		46		53	51
Y		75	115	122	160
T2/3*	RD	20.5			
	HD	57.5			

Dimensions (cylinder bore: ø25)

● LCR-25

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

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

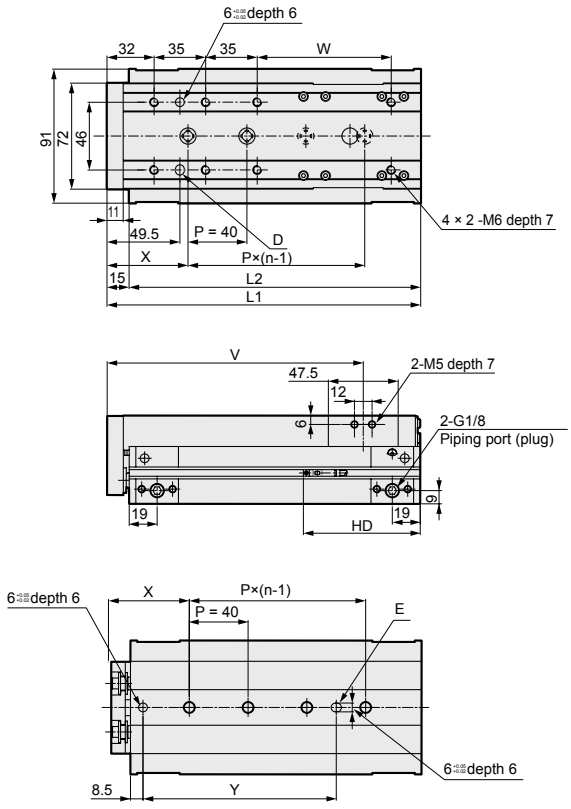


Dimensions table for each stroke length

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)

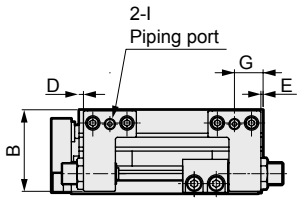


Dimensions table for each stroke length

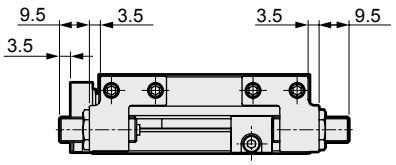
Stroke length		75	100	125	150
L1		188	213	238	263
L2		173	198	223	248
n		3	4	5	
V		138.8	163.8	188.8	213.8
W		66	91	116	141
X		60	55	45	60
Y		96.5	131.5	161.5	176.5
T2/3*	RD	19			
	HD	79			

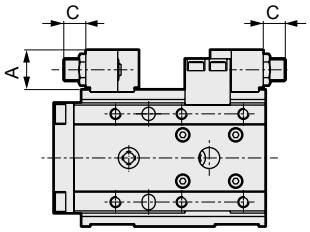
Dimensions

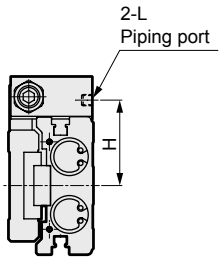
● Reference: When stoppers for adjustable stroke are attached



• For ø8

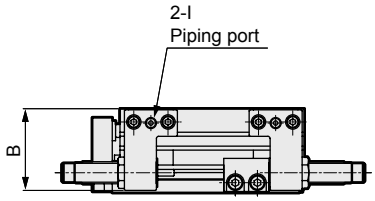


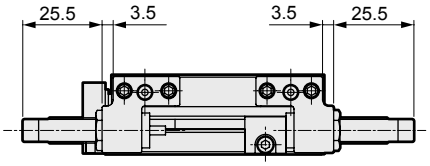


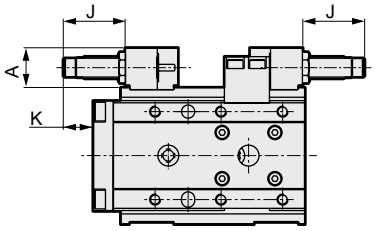


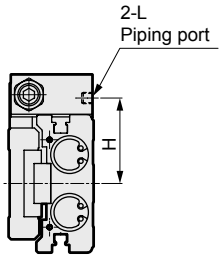
● Reference: When shock absorber type stoppers are attached

• 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

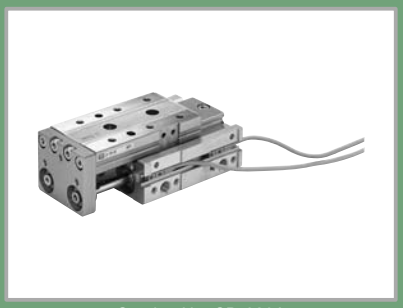
Symbol / Cylinder bore (mm)	A	B	C	D	E	F	G	H	I	J	K	L	Shock absorber type stopper Adjustable stroke range (single)
ø6	14	19.9	11	4	1	13.5	10.5	24	M3 depth 3	21	9	M3 depth 3	9
ø8	15.6	24.5	9.5	0.5	0.5	11	11	27.3	M5 depth 4	25.5	16	M5 depth 4	13.5
ø12	15.5	29	12	1	1	13	13	31	M5 depth 4	25.5	12.5	M5 depth 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	G1/8	29.5	10.5	M5 depth 4	13
ø25	20.5	57	11.5	2.5	2.5	19	19	54.5	G1/8	26.5	9	M5 depth 4	10

MEMO

Linear slide cylinder Double acting single rod type

LCG Series

● Cylinder bore: ø6, ø8, ø12, ø16, ø20, ø25



Catalog No. CB-029A

How to order

Without switch

LCG - 8 - 40 ——— S5

With switch

LCG - 12 - 40 - F2H - R - A1DT

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Symbol	Descriptions
Ⓐ Cylinder bore	
6	ø6
8	ø8
12	ø12
16	ø16
20G	ø20
25G	ø25

Ⓑ Stroke length (mm)		Cylinder bore (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.

Ⓒ Switch model No.									
Axial lead wire	Contact	Indicator	Lead wire	Cylinder bore					
				ø6	ø8	ø12	ø16	ø20	ø25
F2H*	Proximity	1 color indicator type	2-wire	●	●	●			
F3H*			3-wire						
T0H*	Reed	1 color indicator type	2-wire				●	●	●
T2H*	Proximity	1 color indicator type	2-wire						
T3H*			3-wire						

***Lead wire length**	
Blank	1 m (standard)
3	3 m

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

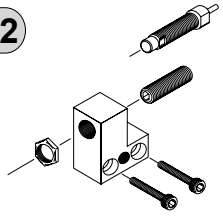
How to order stopper set

● 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

LCG - 12 - S 2 D - S02

Ⓐ Ⓑ Ⓒ

Cylinder bore



Symbol	Descriptions
Ⓐ Stopper type	
S	Stopper for adjustable stroke
A	Shock absorber type stopper

Ⓑ Stopper installation position	
1	Stopper position ① or ④
2	Stopper position ② or ③

Ⓒ Port at stopper section	
Blank	No port
D	Side surface and bottom port presence

Precautions for ordering stopper set

S01 is included in the stopper for adjustable stroke parts for the stopper for adjustable stroke set.
Only when installed on installation position (1), (2), add the right part according to stroke length and adjustable stroke length.

— : Not available

Model no.	Option symbol		Discrete stopper for adjustable stroke		
			Adjustable stroke length (mm)		
	Cylinder bore	Stroke length	-5	-15	-25
LCG Series	ø6, ø8	10	S02	—	—
		20 and over	Additional not required	S02	—
	ø12 to ø25	10	S03	—	—
		20	S02	S03	—
		30 and over	Additional not required	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

LCG - 12 - S02
(A)
Cylinder bore

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

Indicate S01, S02, S03 for Ⓐ.
Note: S03 is not available for ø6, ø8.
Depending on the type, the incompatible models or adjustable stroke ranges may differ from the above values.

Cautions when purchasing discrete stopper

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

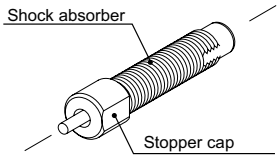
— : Not available

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

How to order discrete shock absorber type stopper

● Shock absorber and stopper cap set
● Used when changing from stopper for adjustable stroke to shock absorber type stopper

LCG - 12 - A01
Cylinder bore



Applicable shock absorber model No.

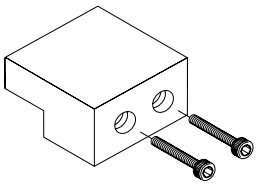
Model	Shock absorber model No.
LCG-6	NCK-00-0.1
LCG-8	NCK-00-0.3
LCG-12	NCK-00-0.3
LCG-16	NCK-00-0.7
LCG-20	NCK-00-1.2
LCG-25	NCK-00-1.2

Note: Some models may not be available depending on the type. Refer to page 49 for the stroke adjustment range of the shock absorber type stopper.

How to order discrete stopper block model No.

● Use when changing from standard to stopper for adjustable stroke or with shock absorber stopper

LCG - 12 - SB1 T
(A) (B)
Cylinder bore



Ⓐ Stopper block	
SB1	ø6, ø8: 30 stroke or less
	ø12 to ø25: 50 stroke or less
SB2	ø6, ø8: 40 stroke and over
	ø12 to ø25: 75 stroke and over

Ⓑ Material	
Blank	Stopper block material: Rolled steel
T	Stopper block material: Alloy steel (nitriding)

Specifications

Descriptions		LCG					
Cylinder bore mm		ø6	ø8	ø12	ø16	ø20	ø25
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure MPa		0.7					
Min. working pressure MPa		0.15 (Note 1)					
Proof pressure MPa		1					
Ambient temperature °C		–10 to 60 (no freezing) (Note 2)					
Port size	Body side surface	M3		M5		G1/8	
	Rear body	M3				M5	G1/8
Stroke tolerance mm		+2.0 0 (Note 3)					
Working piston speed mm/s		50 to 500 (Note 4)					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG32)					
Permission absorbed energy J		Refer to the table 1.					

Note 1: 0.2MPa when using shock absorber type stopper with 6 mm diameter.
Note 2: For 6 mm bore cylinder, when using switches, max. ambient temperature is 50°C (45°C when installing on an iron plate).
Note 3: When not using a stopper, a slight gap may exist between the end plate and floating bushing.
Note 4: Use the stopper for adjusting the stroke between 50 and 200 mm/s.

Stroke length

Cylinder bore (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

Cylinder bore	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

Cylinder weight

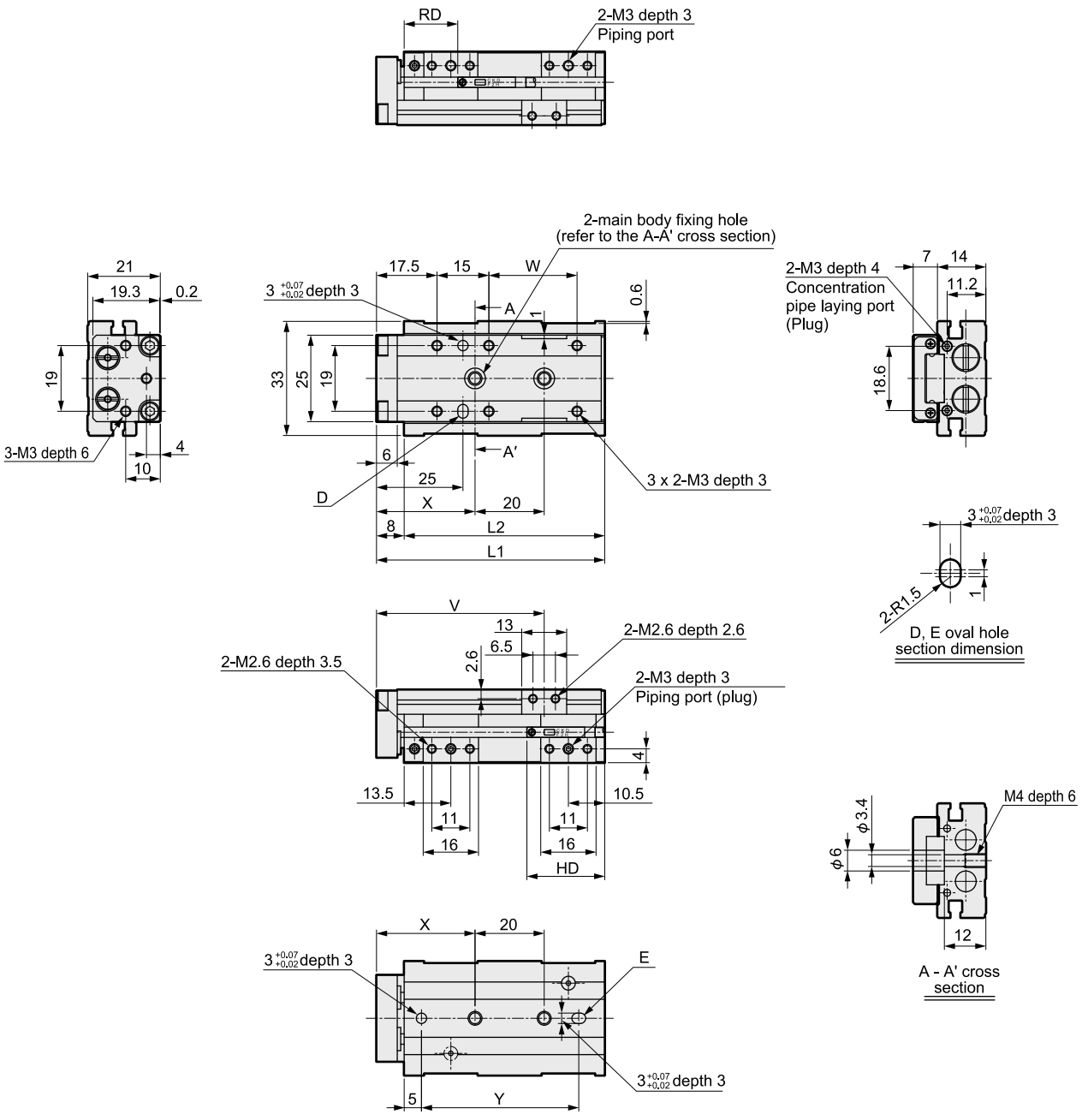
● Basic type (Unit: g)

Cylinder bore (mm)	Basic type stroke length (mm)								
	10	20	30	40	50	75	100	125	150
ø6	150	150	180	220	240	—	—	—	—
ø8	210	210	250	320	350	440	—	—	—
ø12	480	480	480	530	590	770	920	—	—
ø16	730	730	730	810	890	1,220	1,410	1,620	—
ø20	1,260	1,260	1,260	1,380	1,500	1,920	2,210	2,510	2,800
ø25	2,070	2,070	2,070	2,230	2,430	3,240	3,660	4,080	4,530

● LCG-6

Stroke length: 10, 20, 30

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



Dimensions table per stroke length

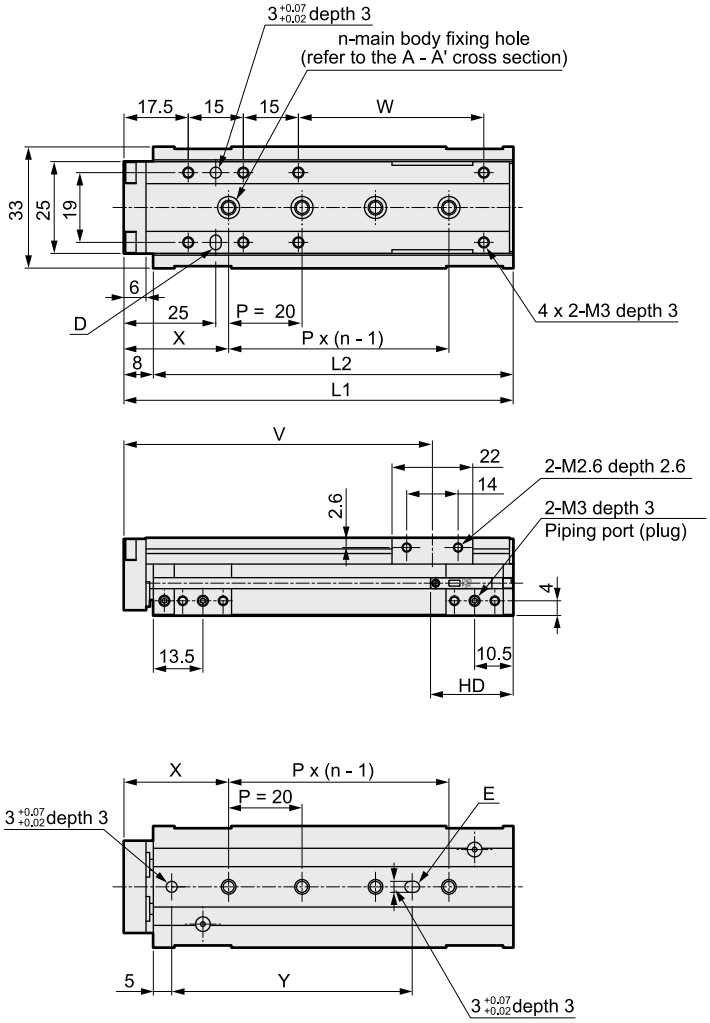
Stroke length	10	20	30
L1	66		76
L2	58		68
V	48.5		58.5
W	25.5		35.5
X	28.5		26
Y	45.5		43
RD	25.5	15.5	
HD	22.5		

Dimensions (cylinder bore: ø6)

● LCG-6

Stroke length: 40, 50

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



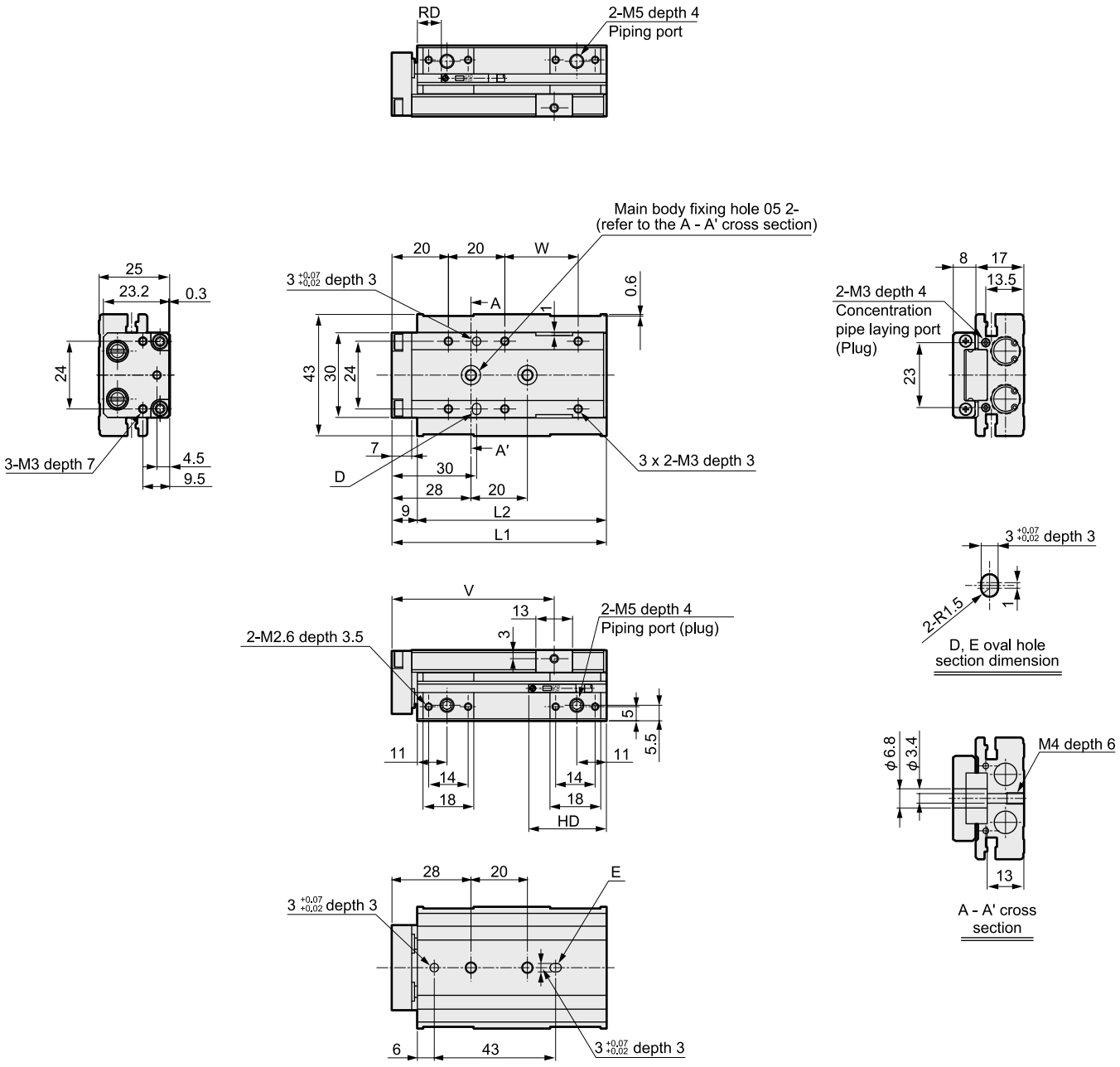
Dimensions table per stroke length

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	25.5	
HD	22.5	

● LCG-8

Stroke length: 10, 20, 30

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



Dimensions table per stroke length

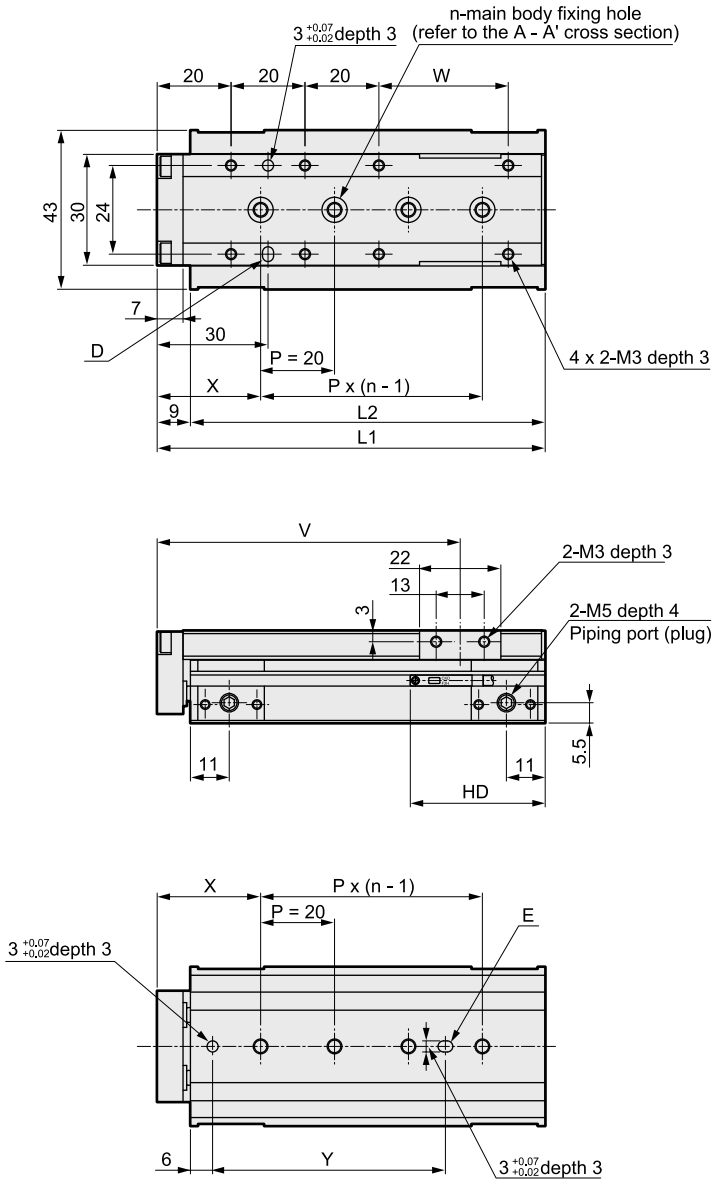
Stroke length	10	20	30
L1	66		76
L2	57		67
V	47.5		57.5
W	16		26
RD	24	14	
HD	23		

Dimensions (cylinder bore: ø8)

● LCG-8

Stroke length: 40, 50, 75

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



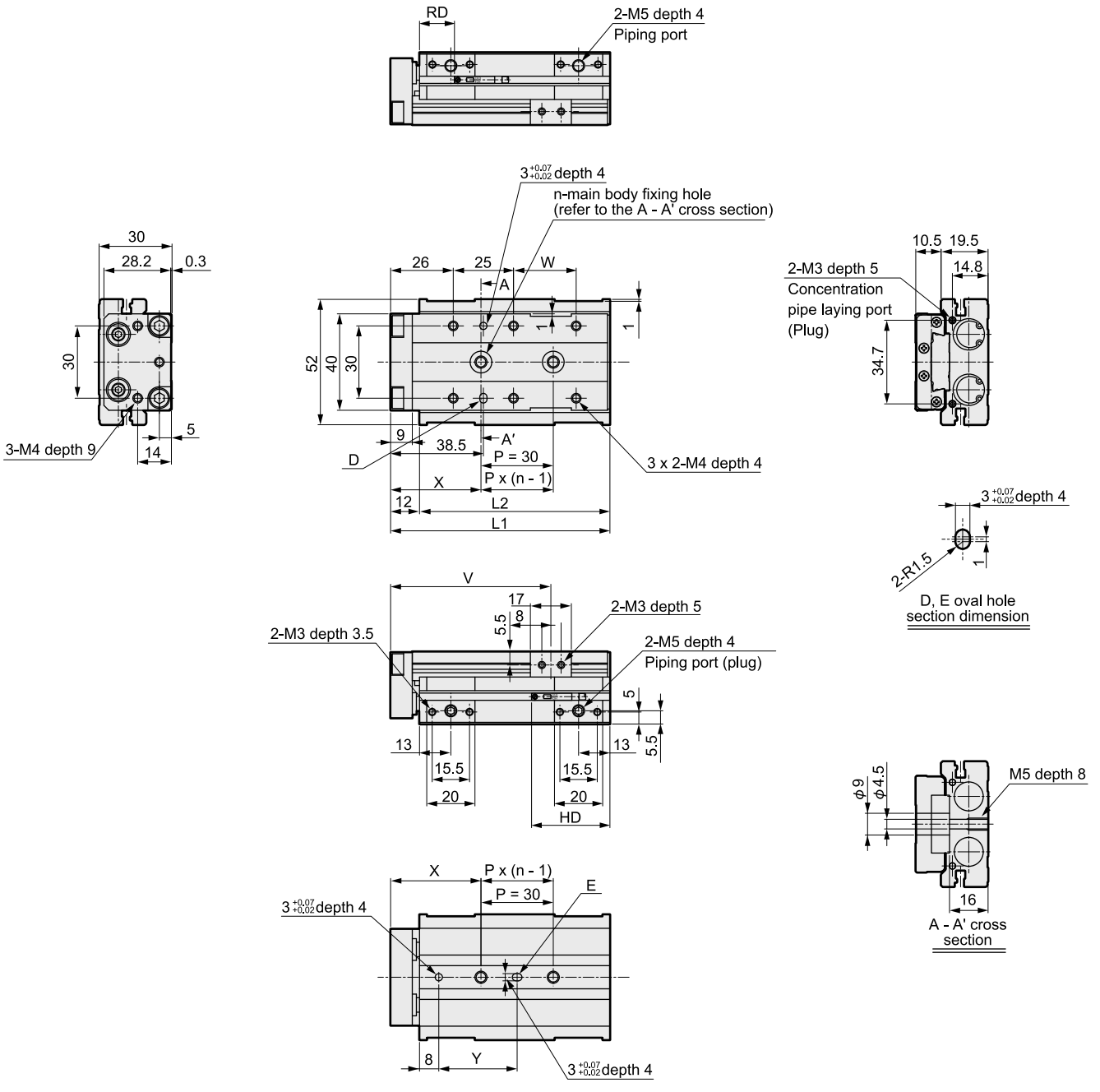
Dimensions table per stroke length

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	14		
HD	32		

● LCG-12

Stroke length: 10, 20, 30, 40, 50

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



Dimensions table per stroke length

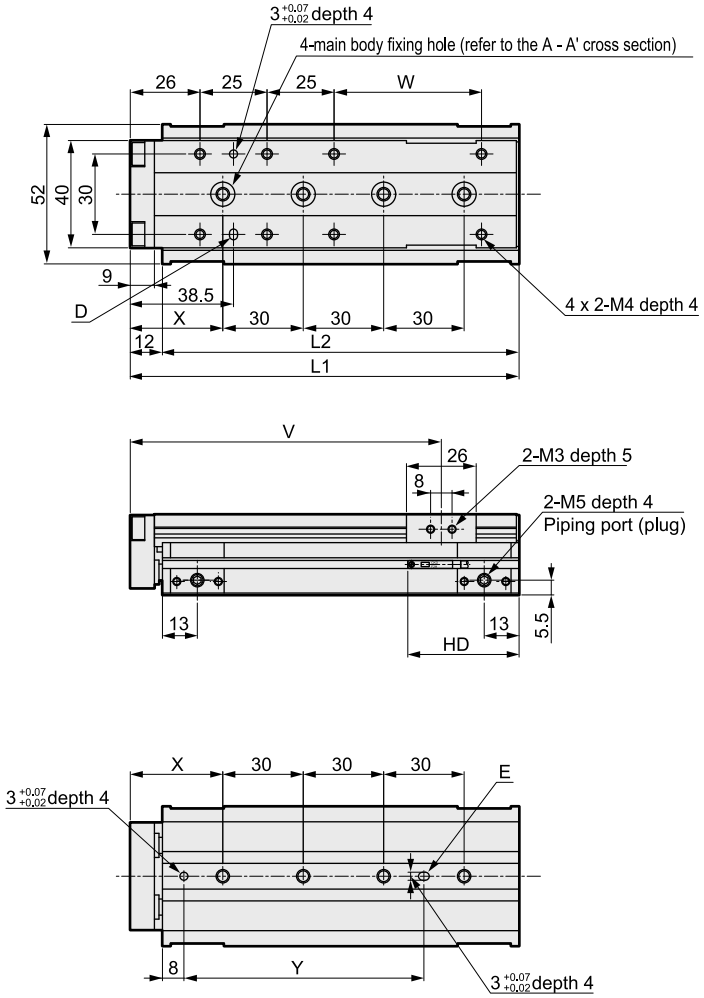
Stroke length	10	20	30	40	50
L1	91			101	111
L2	79			89	99
n	2			3	
V	66.5			76.5	86.5
W	26			36	46
X	37.5			36	32
Y	32.5			31	57
RD	41.5	31.5	21.5		
HD	27				

Dimensions (cylinder bore: ø12)

● LCG-12

Stroke length: 75,100

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



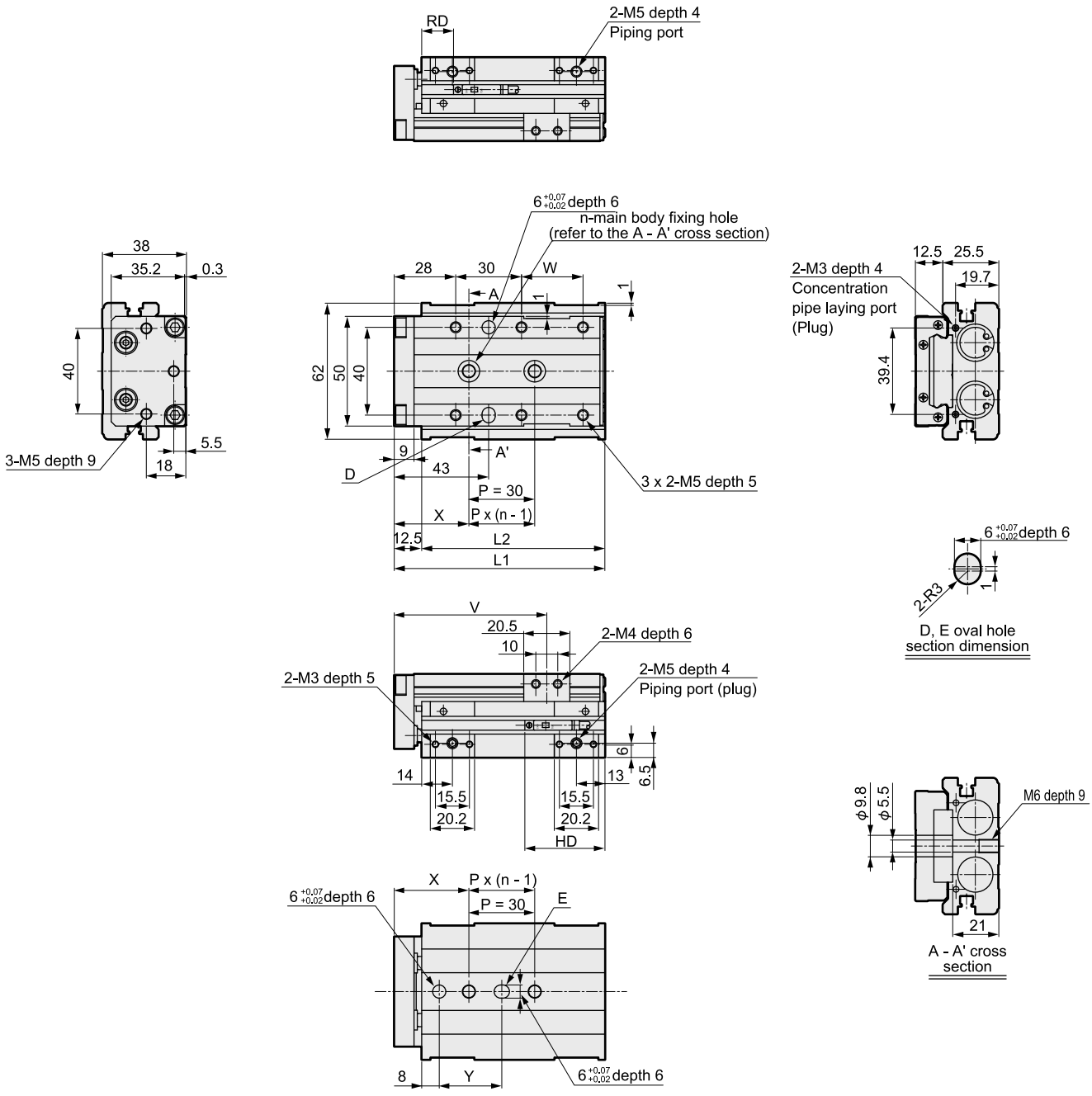
Dimensions table per stroke length

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	21.5	
HD	36	

● LCG-16

Stroke length: 10, 20, 30, 40, 50

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



Dimensions table per stroke length

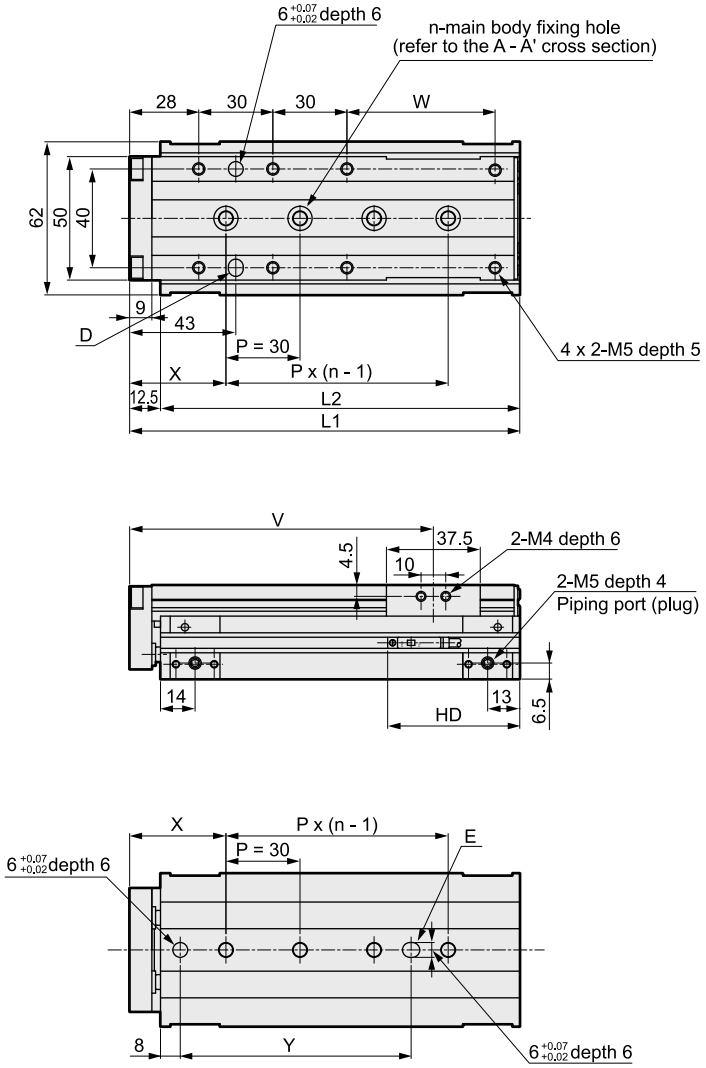
Stroke length		10	20	30	40	50
L1		96			106	116
L2		83.5			93.5	103.5
n		2				3
V		69.8			79.8	89.8
W		28			38	48
X		34			45.5	35.5
Y		28.5			40	60
T0/5* T2/3*	RD	37	27	17		
	HD	36.5				
T2/3W*	RD	39.5	29.5	19.5		
	HD	34				

Dimensions (cylinder bore: ø16)

● LCG-16

Stroke length: 75,100,125

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



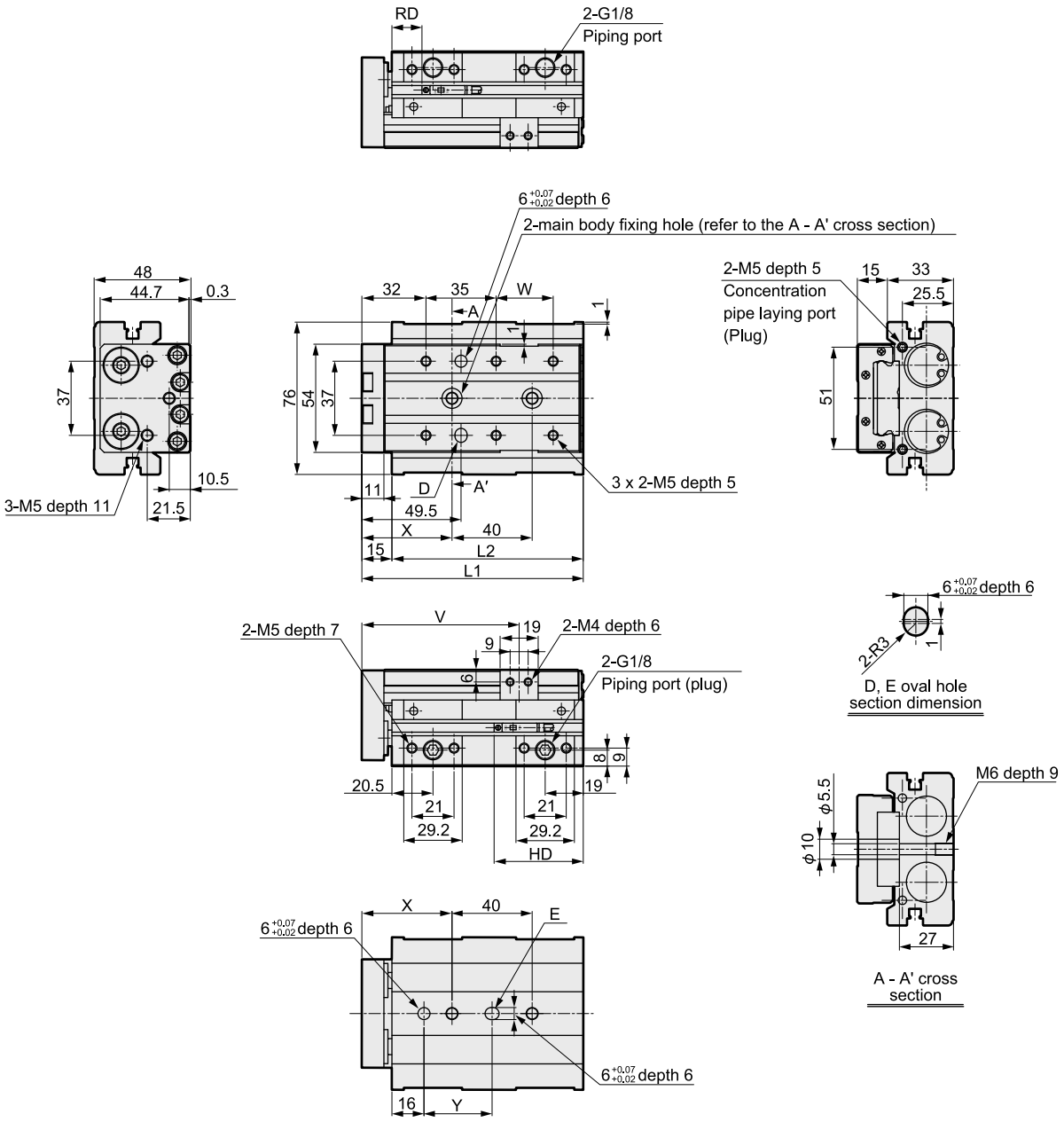
Dimensions table per stroke length

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	133.5
T0/5* T2/3*	RD	17		
	HD	53.5		
T2/3W*	RD	19.5		
	HD	51		

● LCG-20

Stroke length: 10, 20, 30, 40, 50

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



Dimensions table per stroke length

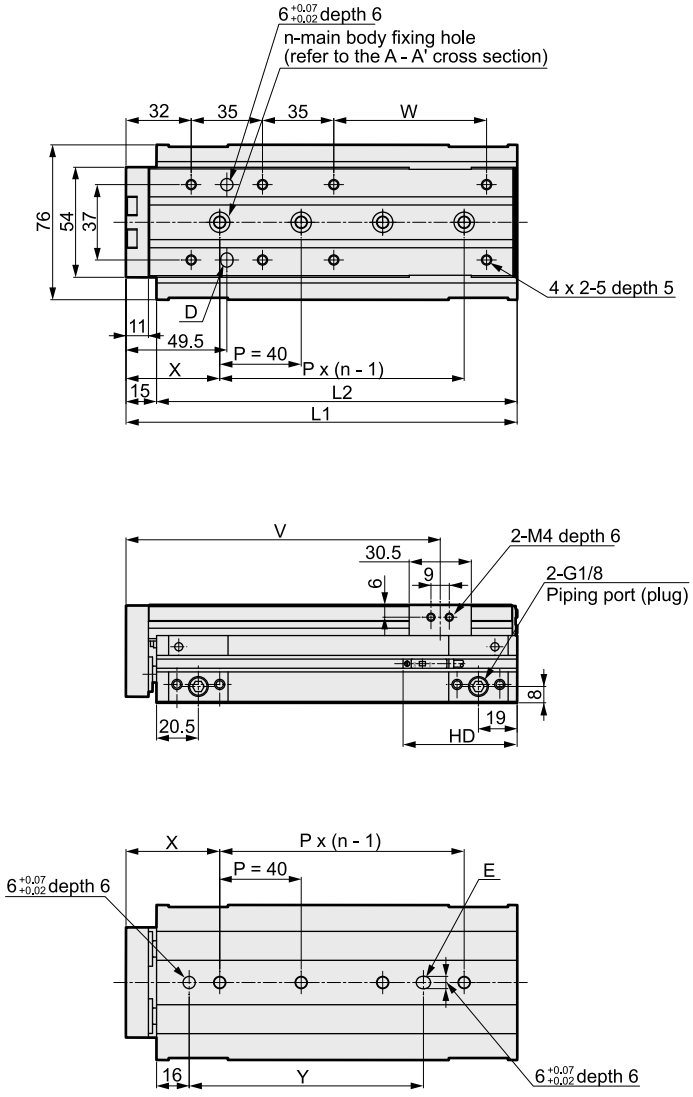
Stroke length		10	20	30	40	50
L1		110.5			120.5	130.5
L2		95.5			105.5	115.5
V		78.5			88.5	98.5
W		28.5			38.5	48.5
X		45			51	49
Y		34			40	38
T0/5* T2/3*	RD	36	26	16		
	HD	49.5				
T2/3W*	RD	38.5	28.5	18.5		
	HD	47				

Dimensions (cylinder bore: ø20)

● LCG-20

Stroke length: 75,100,125,150

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



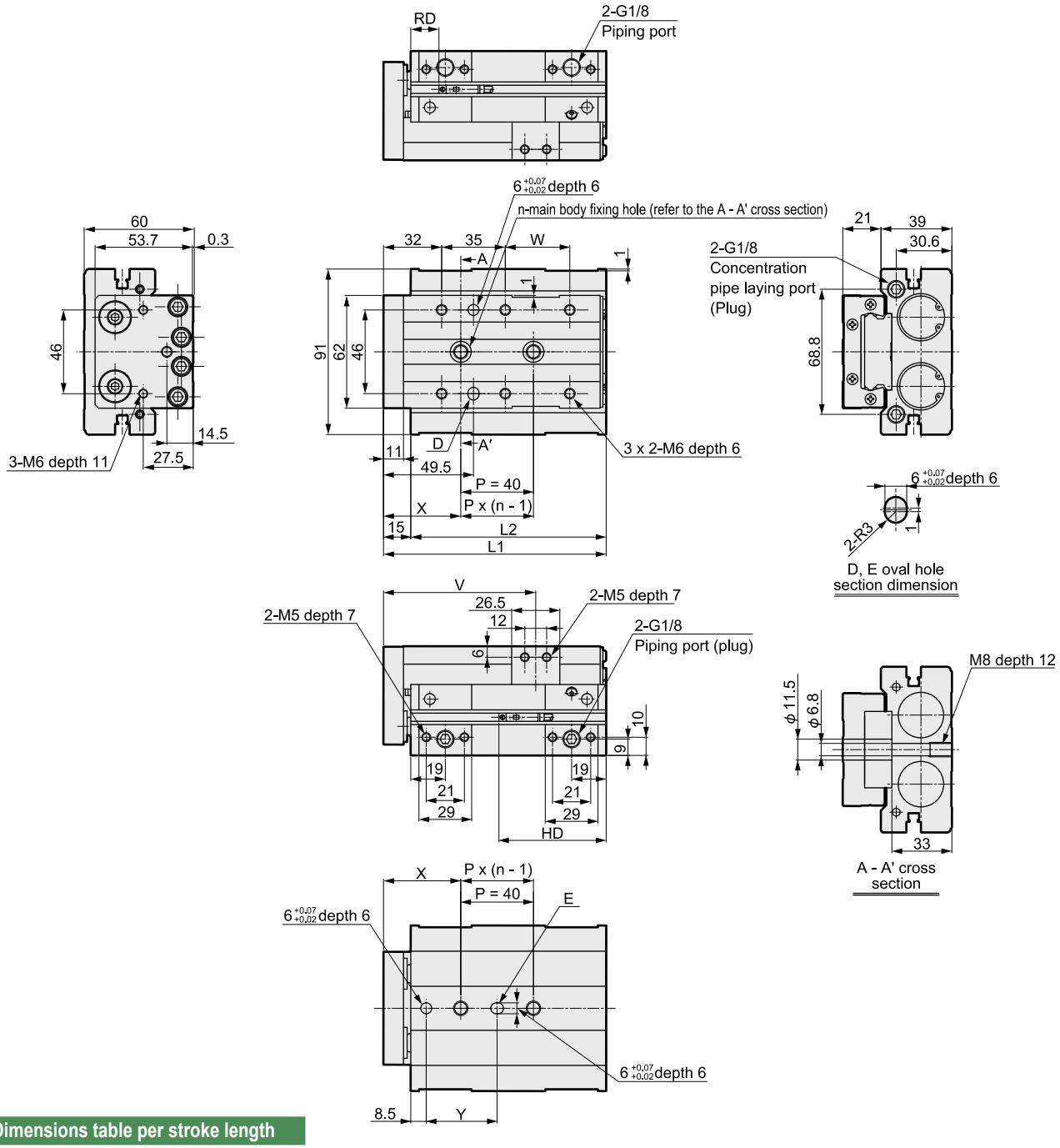
Dimensions table per stroke length

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
T0/5* T2/3*	RD	16			
	HD	61			
T2/3W*	RD	18.5			
	HD	58.5			

● LCG-25

Stroke length: 10, 20, 30, 40, 50

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



Dimensions table per stroke length

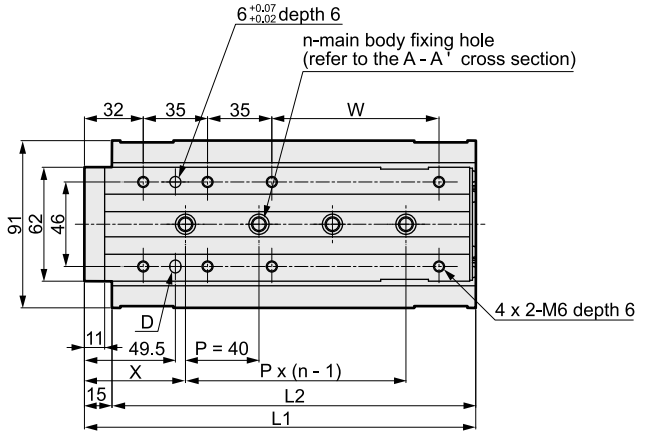
Stroke length		10	20	30	40	50
L1		122.5			132.5	142.5
L2		107.5			117.5	127.5
n		2			3	2
V		83.8			93.8	103.8
W		35.5			45.5	55.5
X		42.5			45.5	60.5
Y		39			42	57
T0/5* T2/3*	RD	38.5	28.5	18.5		
	HD	59				
T2/3W*	RD	41	31	21		
	HD	56.5				

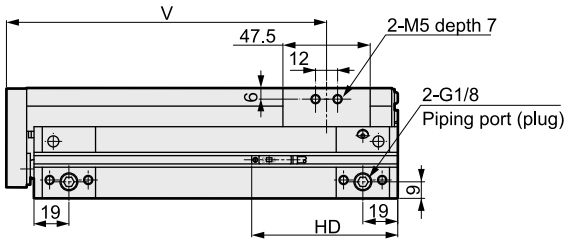
Dimensions (cylinder bore: ø25)

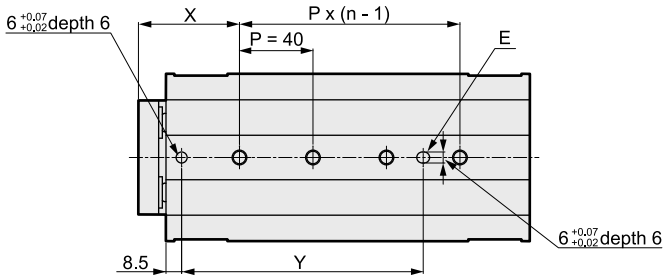
● LCG-25

Stroke length: 75, 100, 125, 150

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







Dimensions table per 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
T0/5* T2/3*	RD	18.5			
	HD	79.5			
T2/3W*	RD	21			
	HD	77			

Fine speed rotary Axis type, table type

SFR•SFRT Series

RoHS

● 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

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Symbol	Descriptions
Ⓐ Model No.	
SFR	Shaft type
SFRT	Table type

Ⓑ Size	
Size	**Effective torque (at 0.5 MPa)**
3	0.3 [N•m]
10	1.0 [N•m]
20	2.0 [N•m]

Ⓒ Oscillating angle	
90	90°
180	180°

Ⓓ Switch			
Model	**Contact**	**Indicator**	**Lead wire**
F2S*	Proximity	One color indicator	2 wire
F3S*			3 wire
***Lead wire length**			
Blank	1 m (standard)		
3	3 m		

Ⓔ Switch quantity	
R	With one right rotation detector
L	With one left rotation detector
D	Two

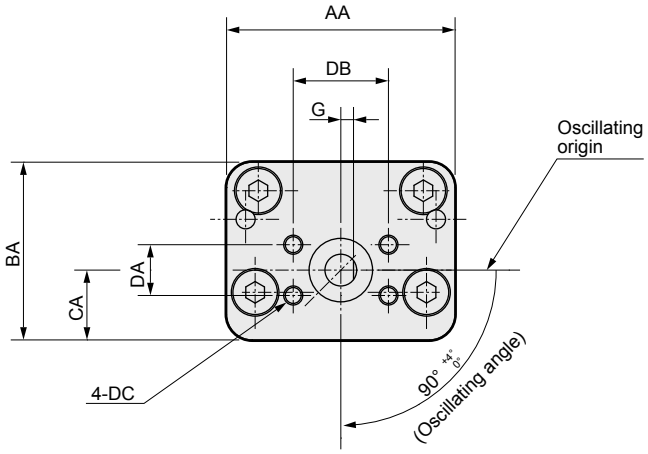
Specifications

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
Working fluid			Compressed air					
Actuation	90°		Vane type					
	180°		Vane and pinion gear type					
Max. working pressure		MPa	0.7					
Min. working pressure		MPa	0.1					
Proof pressure		MPa	1.05					
Ambient temperature		°C	0 to 60 (no freezing)					
Port size			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		cm^3	3.7	9.1	19.4	3.7	9.1	19.4
Weight	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.	—	—	—

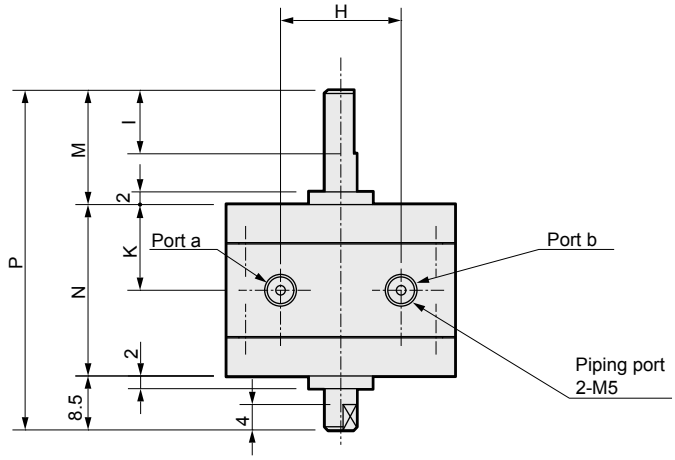
Note 1: The effective torque is for when the working pressure is 0.5 MPa.
Note 2: The SFR's allowable radial load and allowable thrust load are not dynamic load values.
Note 3: The backlash value is for reference.
* The oscillating angle for the SFR-180° axis type is 190°.

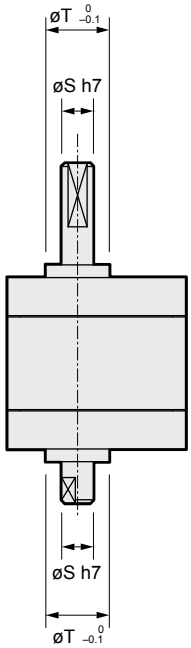
Dimensions

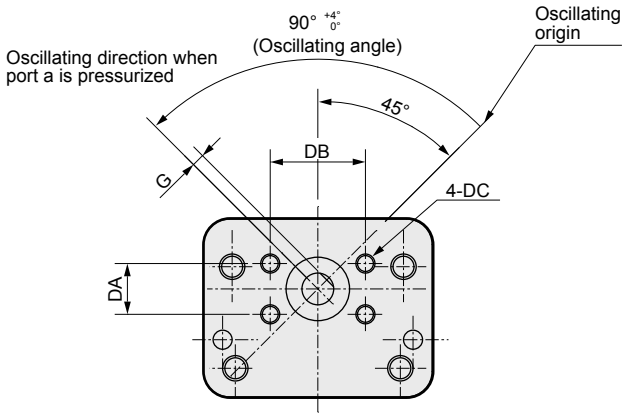
● SFR-□ -90



Oscillating direction when port a is pressurized

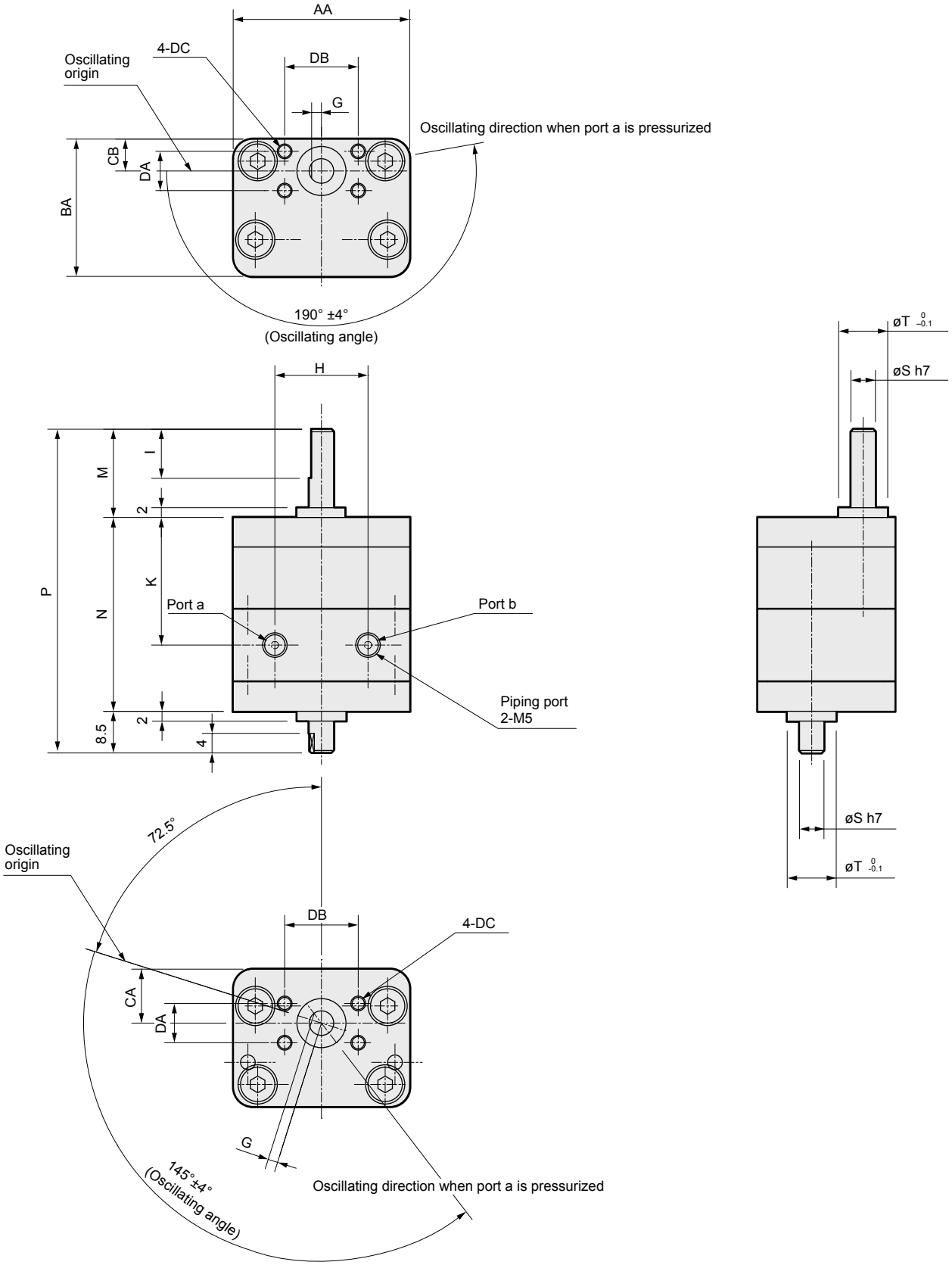






Size	AA	BA	CA	DA	DB	DC	G	H	I	K	M	N	P	S	T
3	36	28	11	8	15	M3 depth 5	2	19	10	13.5	18	27	53.5	5	10
10	44	34	11	12	15	M4 depth 5	2.5	21	10	16	20	32	60.5	6	12
20	58	45	15	14	18	M4 depth 6	3	27	12	20.5	22	41	71.5	8	14

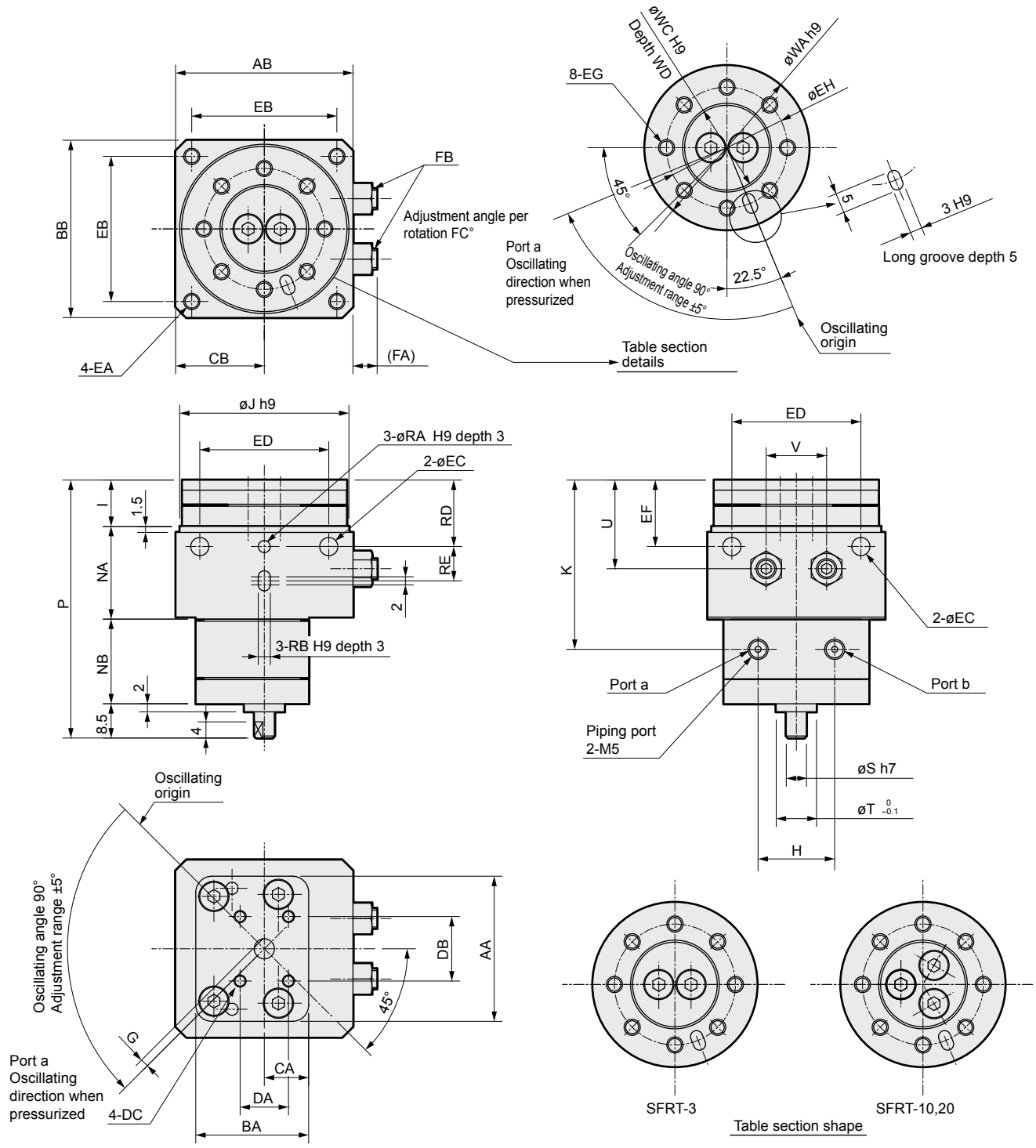
● SFR-□-180



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

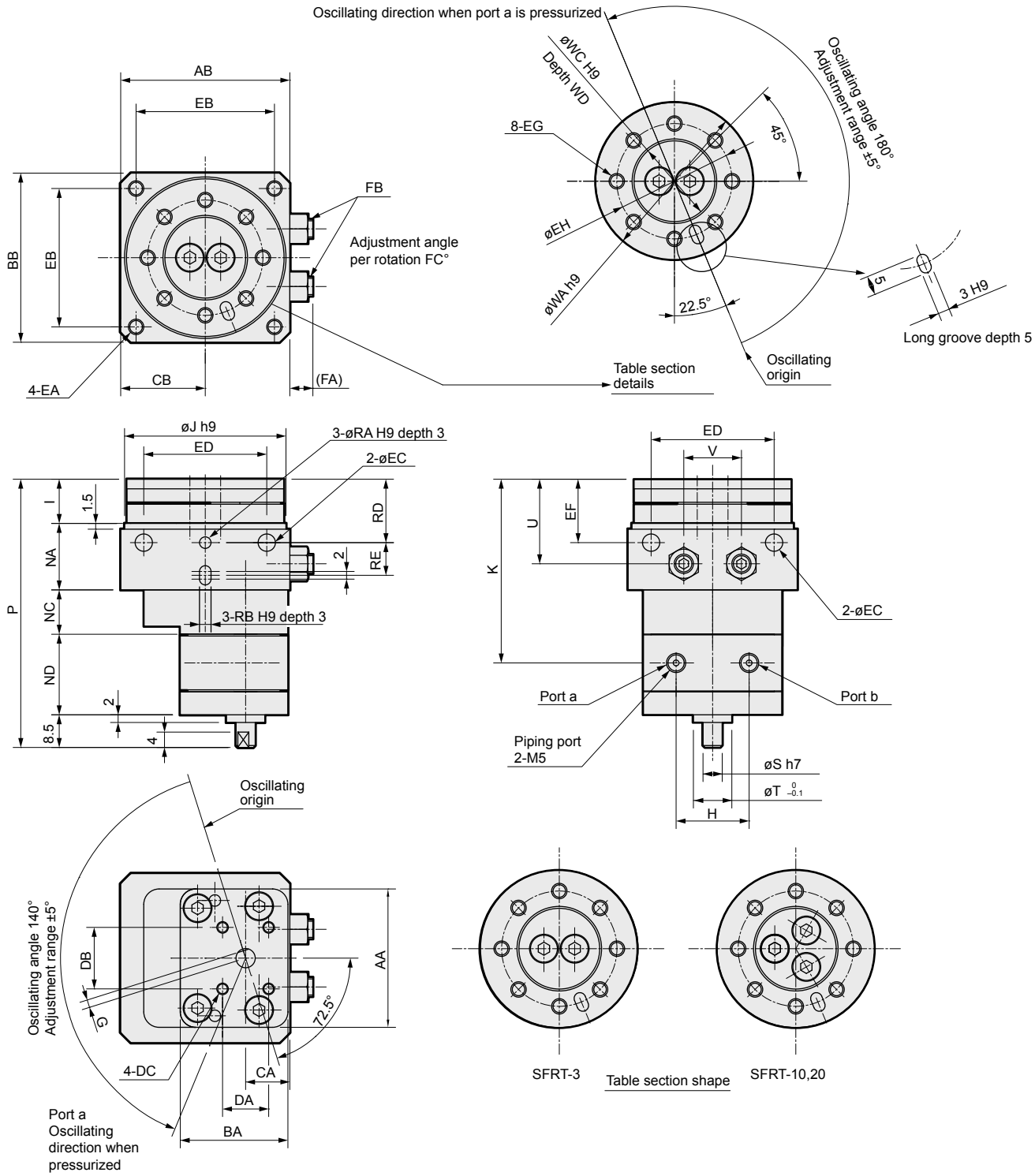


Size	AA	AB	BA	BB	CA	CB	DA	DB	DC	EA	EB	EC	ED
3	36	44	28	44	11	22	8	15	M3 depth 5	M4 depth 15	36	4.5 penetrating	32
10	44	50	34	50	11	25	12	15	M4 depth 5	M5 depth 15	41	5.5 penetrating	38
20	58	62.5	45	59	15	30	14	18	M4 depth 6	M6 depth 20	48	6.5 penetrating	42

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

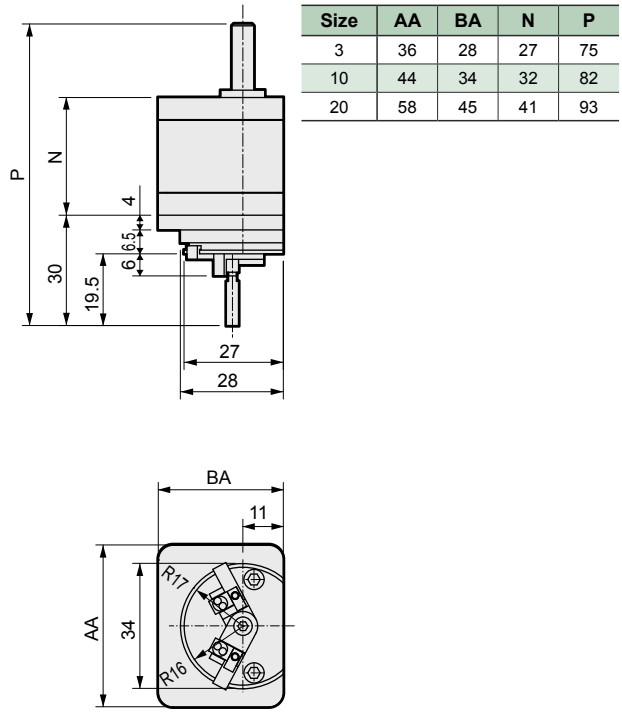
Size	EF	EG	EH	FA	FB	FC	G	H	I	J	K	NA	NC	ND
3	16.5	M4 depth 6	30	6	M5×0.8	6.1	2	19	11.5	42	47.8	17.3	11.5	21
10	20.5	M4 depth 6	37	8	M6 × 1	5.4	2.5	21	14.5	48	60.5	21	15	26
20	22.5	M5 depth 8	42	11.5	M6 × 1	4.4	3	27	16	53.5	70.5	24	17.5	33.5

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

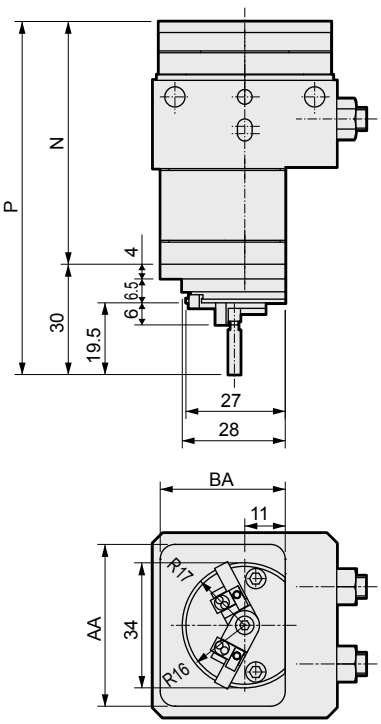
Dimensions with switch

● SFR-□-90



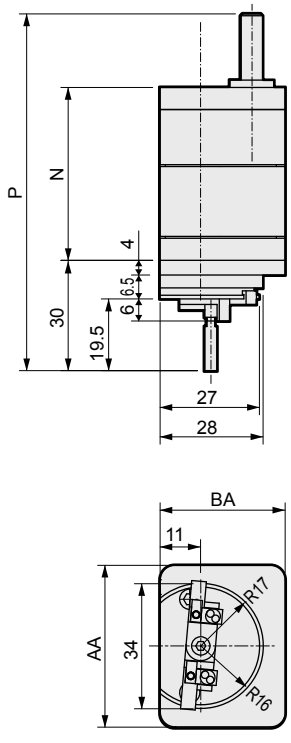
Size	AA	BA	N	P
3	36	28	27	75
10	44	34	32	82
20	58	45	41	93

● SFRT-□-90



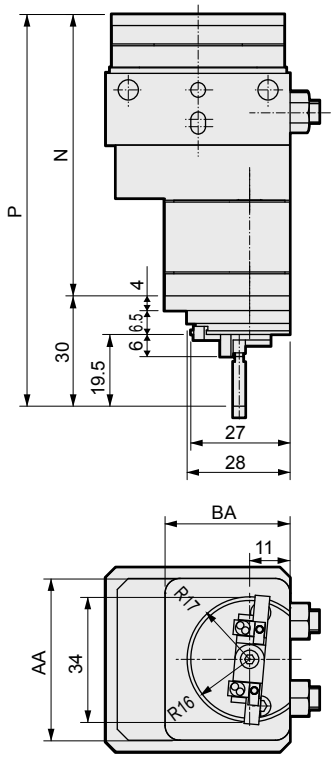
Size	AA	BA	N	P
3	36	28	55.5	85.5
10	44	34	66	96
20	58	45	80	110

● 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

Shock absorber

NCK Series

● Max. energy absorption: 1-200 J

RoHS

CAD

Catalog No.: CB-030SA

Features

- Best for the impact absorption of thrust and low speed energy
- Simple design & compact size
- Linear stop is achieved by a slit orifice

How to order

NCK - 00 - 0.7 - N1

Ⓐ Ⓑ Ⓒ

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
Ⓑ Series (Max. energy value)	
0.1	1 J
0.3	3 J
0.7	7 J
1.2	12 J
2.6	26 J
7	70 J
12	120 J
20	200 J
Ⓒ Option	
N1	With stop nut

How to order options

Stop nut + Hexagon nut (one each)

NCK - 0.7 - N1

Hexagon nut (1)

NCK - 0.7 - NT

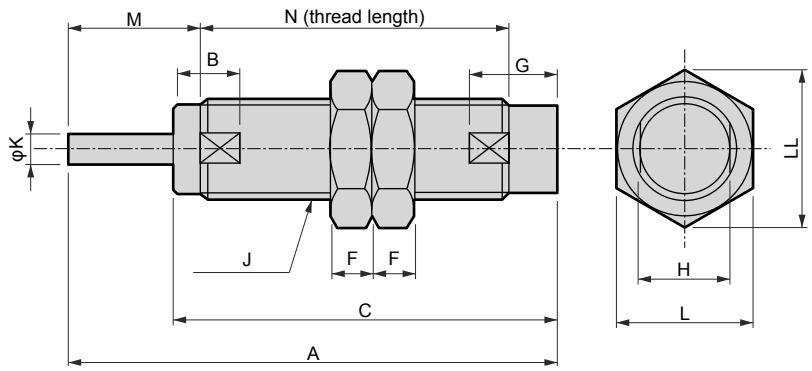
Code	Series (Max. energy value)
0.1	1 J
0.3	3 J
0.7	7 J
1.2	12 J
2.6	26 J
7	70 J
12	120 J
20	200 J

Specifications

Item			NCK							
Series			0.1	0.3	0.7	1.2	2.6	7	12	20
Type			Without adjuster Spring return type							
Max. energy absorption		J	1	3	7	12	26	70	120	200
Stroke length		mm	4.5	6	8	10	15	20	25	30
Max. energy absorption per hour		kJ/h	4.8	6.3	12.6	21.6	39.0	84.0	86.4	108.0
Max. colliding speed		m/s	1.0	1.5		2.0		2.5	3.0	
Max. repetition frequency		impact/min	80	35	30		25	20	12	9
Ambient temperature		°C	–10 to 80							
Max. load (drag)		N	536	1180	2050	2800	4080	8140	11150	15680
Required strength for mounting		N	1610	3540	6150	8400	12300	24400	33500	47000
Return time		S	0.3 or less					0.4 or less		0.5 or less
Weight		kg	0.009	0.012	0.02	0.04	0.07	0.2	0.3	0.45
Return Spring force	When extended	N	3.0		2.0	2.9	5.9	9.8	16.3	
	When compressed	N	4.6		4.3	5.9	11.8	21.6	33.3	33.9

Dimensions

● Standard (NCK-**-**)

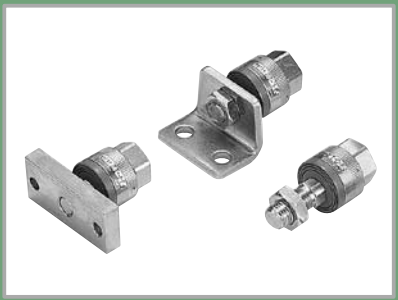


Symbol / Model No.	Basic type (00)											
	A	B	C	F	G	H	J	K	L	LL	M	N
NCK-00-0.1	34.5	4	29.5	4	7.5	7	M8 × 0.75	2.8	12	13.9	6	23
NCK-00-0.3	45.5	7.5	39	4	8	7	M8 × 0.75	2.8	12	13.9	11	29.0
NCK-00-0.7	50	7.5	41.5	4	9	9	M10 × 1.0	3	14	16.2	13	31
NCK-00-1.2	57.5	8.5	47	5	11	11	M12 × 1.0	3.5	17	19.6	15	35.5
NCK-00-2.6	86	10.5	70.5	5.5	14	13	M14 × 1.5	5	19	21.9	20	58
NCK-00-7	98.5	12.5	78	8	18	19	M20 × 1.5	6	27	31.2	25	63.5
NCK-00-12	129	15.5	103.5	10	23	24	M25 × 1.5	8	32	37	30	87
NCK-00-20	141	15.5	110.5	10	25	24	M27 × 1.5	8	32	37	35	92

Floating joint

FJ Series

● Applicable cylinder bore: ø12 to ø63



Catalog No.: CB-030SA

Features

- The design eliminates any alignment or parallelism problems when mounting the cylinder, to achieve smooth operation of the rod.
- Three types are provided: Basic type, Flange type, and Foot type.

How to order

FJ - 0 - 3
(A) (B)

Symbol	Descriptions
(A) Mounting style	
0	Basic type
L	Foot type
F	Flange type

(B) Nominal diameter of thread × pitch				
Mounting		O	L	F
5	M5 × 0.8	●		
6	M6 × 1.0	●		
8	M8 × 1.0	●	●	●
8-1.25	M8 × 1.25	●	●	●
10	M10 × 1.25	●	●	●
12-1.25	M12 × 1.25	●	●	●
12	M12 × 1.5	●	●	●
14	M14 × 1.5	●	●	●
18	M18 × 1.5	●	●	●

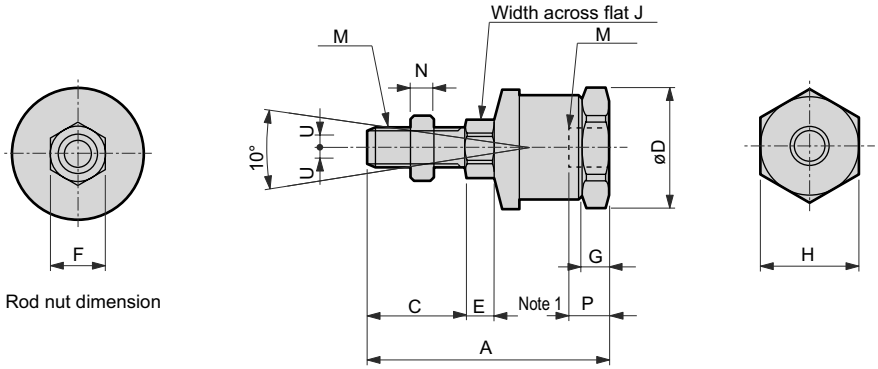
Specifications

Item / Model No.	Nominal diameter of thread × pitch	Max. working tension and compression kN			Allowable eccentricity (mm)	Oscillating angle	Ambient temperature
		Basic type	Flange type	Foot type			
FJ-*-5	M5 × 0.8	0.121	—	—	0.5	±5°	–10 - 60°C
6	M6 × 1.0	1.08	—	—	0.75		
8	M8 × 1.0	1.08	1.08	1.08	0.75		
8-1.25	M8 × 1.25	1.08	1.08	1.08	0.75		
10	M10 × 1.25	2.45	2.45	2.45	0.75		
12-1.25	M12 × 1.25	2.45	2.45	2.45	0.75		
12	M12 × 1.5	2.45	2.45	2.45	0.75		
14	M14 × 1.5	5.88	5.88	5.88	1.0		
18	M18 × 1.5	10.8	10.8	10.8	1.5		

Note 1. Max. working tension and compression shows static load.
Note 2. FJ-8-1.25 and FJ-12-1.25 are optional products.

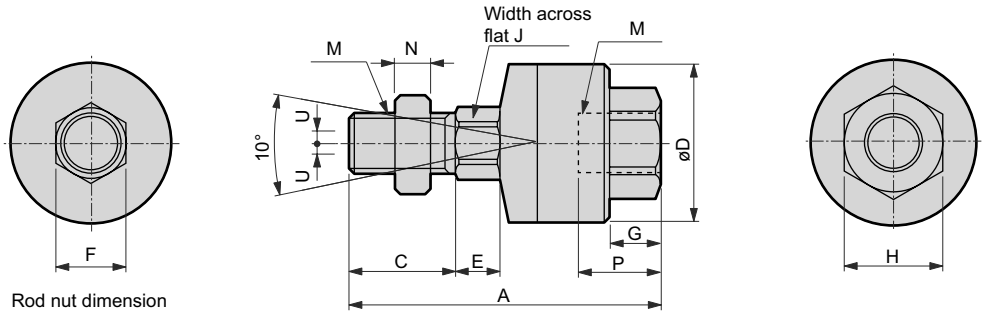
Dimensions: Basic type

● FJ-0-5



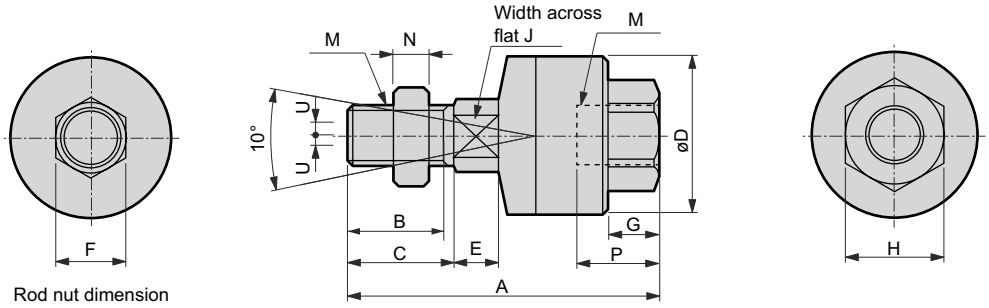
Rod nut dimension

● FJ-0-6, 8, and 10



Rod nut dimension

● FJ-0-12 to 18

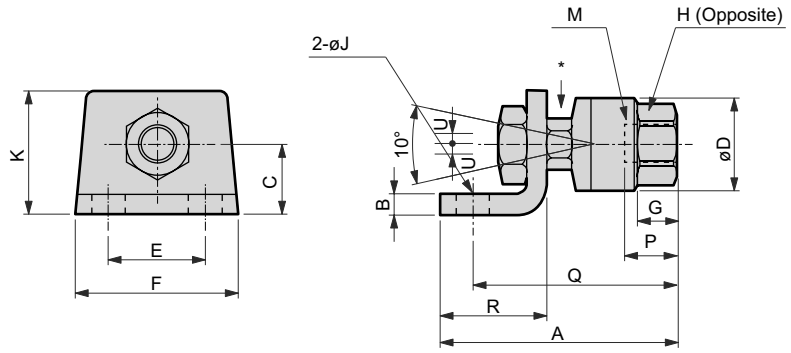


Rod nut dimension

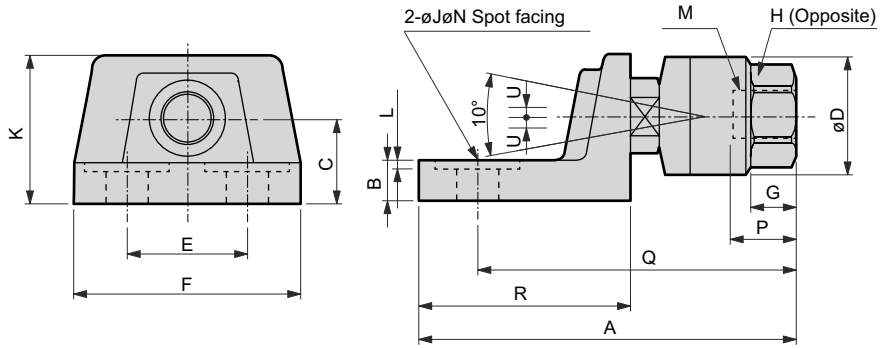
Note 1. For FJ-*-5, strictly observe the screw-in depth (P).

Model No.	Applicable cylinders	M		A	B	C	D	E	F	G	H	J	N	P Note 1	Allowable eccentricity U	Max. working tension and compression kN	Weight kg
		Nominal diameter	Pitch														
FJ-0-5	SCP-16, SSD2-12-N, SSD-12-N, SMD2-16	5	0.8	31.6	--	12	15.5	4	8	3.5	14	7	3.2	6	0.5	0.121	0.022
6	SSD2-16-N, SSD-16-N, SMD2-20	6	1.0	45.4	--	15.8	21	4	10	9	17	10	3.6	12	0.75	1.08	0.057
8	CMA2, CMK2, CKV-20, JSK2, JSM2-20	8	1.0	48.4	--	18.8	21	4	13	9	17	10	5	12	0.75	1.08	0.061
8-1.25	SMD2-25, SSD2-20-N, SSD-20-N, SCM-20	8	1.25	48.4	--	18.8	21	4	13	9	17	10	5	12	0.75	1.08	0.061
10	CMA2-30, SMD2-32, CMK2, SCG, CKV2-25/32, FCD-25-N, SSD2-25-N, SSD-25-N, SCM-25/32, JSK2-25/32, JSM2-30	10	1.25	56.2	--	22	24	7	17	10	19	12	6	12	0.75	2.45	0.092
12	CMA2, CMK2, CKV2-40, JSK2, JSM2-40	12	1.5	58	20.5	23	27	6	19	10	21	12	7	11.8	0.75	2.45	0.12
12-1.25	—	12	1.25	58	20.5	23	27	6	19	10	21	12	7	11.8	0.75	2.45	0.12
14	SCG-40, SCA2-40, FCD-32, 40-N, SSD2-32, 40-N, SSD-32, 40-N, SCM-40, JSC3-40	14	1.5	68.5	20	22	32	7	22	13	27	14	8	16.5	1.0	5.88	0.22
18	SCG-50/63, SCA2-50/63, FCD-50, 63-N, SSD2-50, 63-N, SSD-50, 63-N, SCM-50/63, JSC3-50/63	18	1.5	84.2	26	29	43	11	27	14	27	18	11	16.9	1.5	10.8	0.41

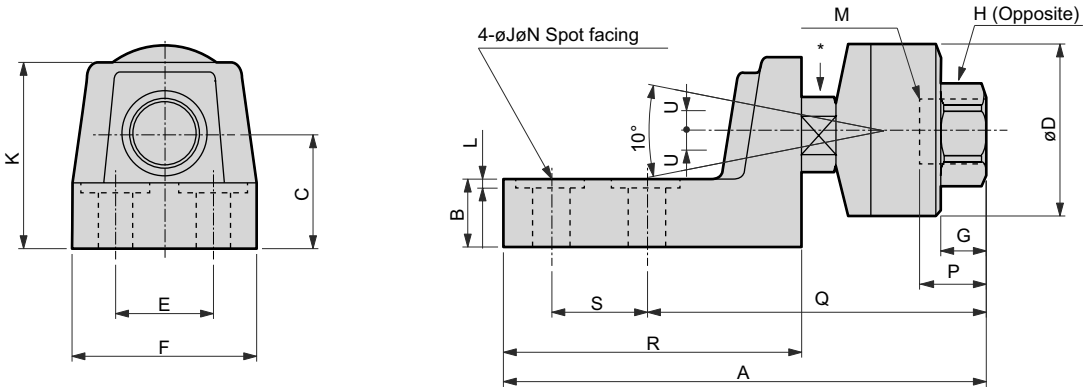
● FJ-L-8 to 12 (* area of FJ-12, width across quadrangular flats)



● FJ-L-14

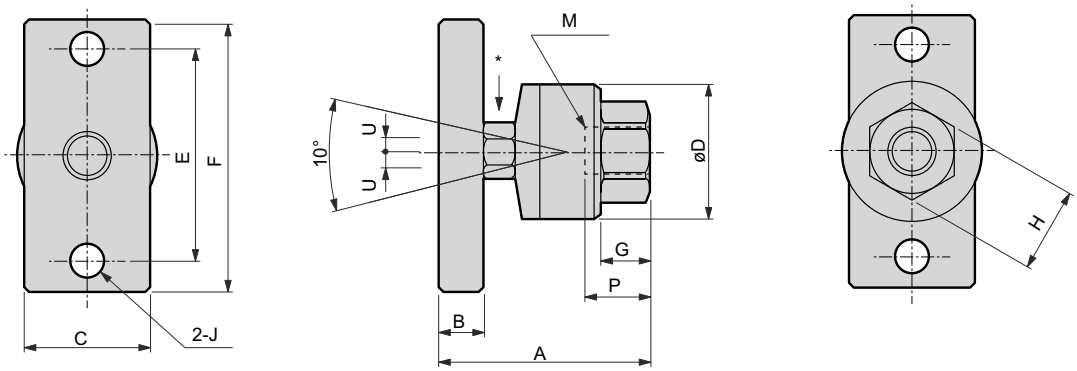


● FJ-L-8 (* area, width across quadrangular flats)

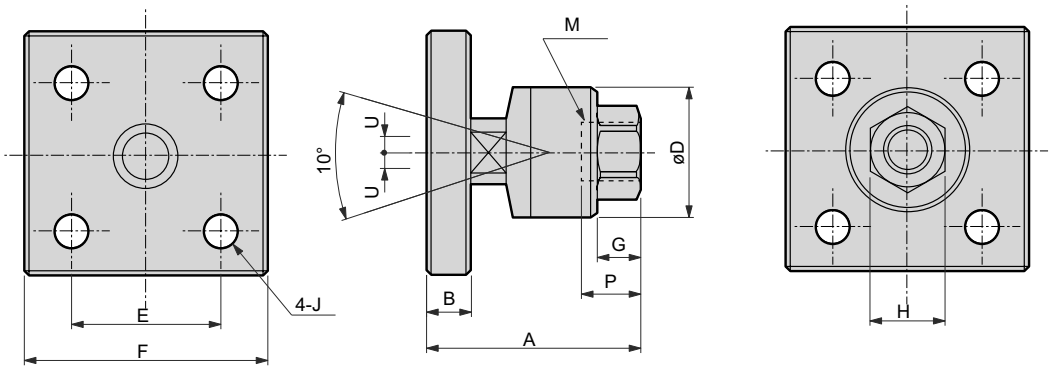


Model No.	Applicable cylinders	M		A	B	C	D	E	F	G	H	J	K	L	N	P	Q	R	S	Allowable eccentricity	Max. working tension and compression	Weight
		Nominal diameter	Pitch																	U	kN	kg
FJ-L-8	CMA2, CMK2, CKV-20, JSK2, JSM2-20	8	1.0	54.6	3.2	15	21	26	44	9	17	9	25	—	—	12	45.6	25	—	0.75	1.08	0.1
8-1.25	SMD2-25, SSD2-20-N, SSD-20-N, SCM-20	8	1.25	54.6	3.2	15	21	26	44	9	17	9	25	—	—	12	45.6	25	—	0.75	1.08	0.1
10	CMA2-30, SMD2-32, CMK2, SCG, CKV2-25/32, FCD-25-N, SSD2-25-N, SSD-25-N, SCM-25/32, JSK2-25/32, JSM2-30	10	1.25	64.5	5	19	24	26	44	10	19	9	32	—	—	12	54.5	30	—	0.75	2.45	0.18
12	CMA2, CMK2, CKV2-40, JSK2, JSM2-40	12	1.5	64.6	5	19	27	26	44	10	21	9	32	—	—	11.8	54.6	30	—	0.75	2.45	0.19
12-1.25	—	12	1.25	64.6	5	19	27	26	44	10	21	9	32	—	—	11.8	54.6	30	—	0.75	2.45	0.19
14	SCG-40, SCA2-40, FCD-32, 40-N, SSD2-32, 40-N, SSD-32, 40-N, SCM-40, JSC3-40	14	1.5	95.5	10	22	32	32	60	13	27	11	38	1.5	23	16.6	79.5	50	—	1.0	5.88	0.43
18	SCG-50/63, SCA2-50/63, FCD-50, 63-N, SSD2-50, 63-N, SSD-50, 63-N, SCM-50/63, JSC3-50/63	18	1.5	140.2	14	28	43	32	60	14	27	11	46	1.5	23	16.9	93.1	85	32	1.5	10.8	1.1

● FJ-L-8 to 14 (* area of FJ-12 and FJ-14, width across quadrangular flats)



● FJ-F-18



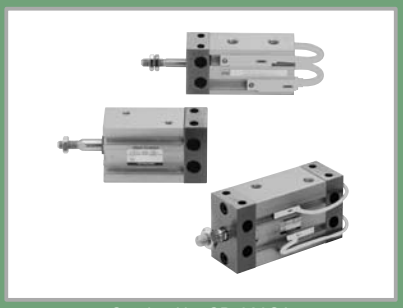
Model No.	Applicable cylinders	M		A	B	C	D	E	F	G	H	J	P	Allowable eccentricity	Max. working tension and compression kN	Weight kg
		Nominal diameter	Pitch											U		
FJ-F-8	CMA2, CMK2, CKV-20, JSK2, JSM2-20	8	1.0	35.6	6	19	21	40	52	9	17	6.6	12	0.75	1.08	0.11
8-1.25	SMD2-25, SSD2-20-N, SSD-20-N, SCM-20	8	1.25	35.6	6	19	21	40	52	9	17	6.6	12	0.75	1.08	0.11
10	CMA2-30, SMD2-32, CMK2, SCG, CKV2-25/32, FCD-25-N, SSD2-25-N, SSD-25-N, SCM-25/32, JSK2-25/32, JSM2-30	10	1.25	43.2	9	25	24	44	56	10	19	6.6	12	0.75	2.45	0.18
12	CMA2, CMK2, CKV2-40, JSK2, JSM2-40	12	1.5	43.6	9	25	27	44	56	10	21	6.6	11.8	0.75	2.45	0.19
12-1.25	—	12	1.25	43.6	9	25	27	44	56	10	21	6.6	11.8	0.75	2.45	0.19
14	SCG-40, SCA2-40, FCD-32, 40-N, SSD2-32, 40-N, SSD-32, 40-N, SCM-40, JSC3-40	14	1.5	57.5	12	32	32	60	80	13	27	11	16.5	1.0	5.88	0.56
18	SCG-50/63, SCA2-50/63, FCD-50, 63-N, SSD2-50, 63-N, SSD-50, 63-N, SCM-50/63, JSC3-50/63	18	1.5	71.2	16	--	43	50	75	14	27	11	16.9	1.5	10.8	1.1

Compact cylinder Double acting, single rod type

SMG Series

● Cylinder bore: ø6•ø10•ø16•ø20•ø25•ø32

RoHS CAD



Catalog No. CB-029SA

Features

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

How to order

Without switch

SMG — DA - 32 G - 15

With switch

SMG-L — DA - 32 G - 15 - K2H - R

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Symbol	Descriptions
Ⓐ Mounting style	
DA	Rod end mounting type
DB	Head end mounting type
DC	Rigid mounting type
Ⓑ Cylinder bore (mm)	
6	ø6
10	ø10
16	ø16
20	ø20
25	ø25
32	ø32
Ⓒ Port thread type	
G	G thread (only ø32) custom order

Ⓓ Switch

Lead wire straight type	Contact	Voltage AC	Voltage DC	Indicator	Lead wire
K0H*	Reed	●	●	One color indicator type	2 wire
K2H*	Proximity		●		
K3H*			●		3 wire

*Lead wire length	
Blank	1 m (standard)
3	3 m

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

Specifications

Item	SMG / SMG-L (with switch)					
Cylinder bore mm	ø6	ø10	ø16	ø20	ø25	ø32
Actuation	Double acting					
Working fluid	Compressed air					
Max. working pressure MPa	0.7					
Min. working pressure MPa	0.12	0.06		0.05		
Proof pressure Mpa	1.05					
Ambient temperature °C	–10 to 60 (no freezing)					
Port size	M5					G1/8
Stroke tolerance mm	+1.5 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	0.012	0.036	0.1	0.1	0.19	0.5

Stroke length

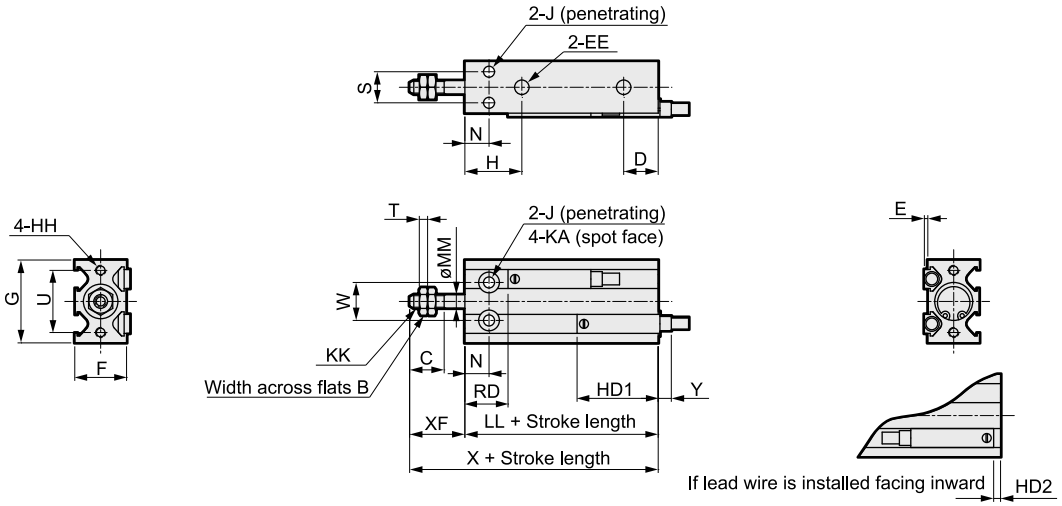
Cylinder bore (mm)	Standard stroke length (mm)	Min. stroke length (mm)
ø6	5, 10, 15, 20, 25, 30, 40, 50, 60	5
ø10		
ø16		
ø20	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100	
ø25		
ø32		

Note: The custom stroke length is available by 5mm increment.

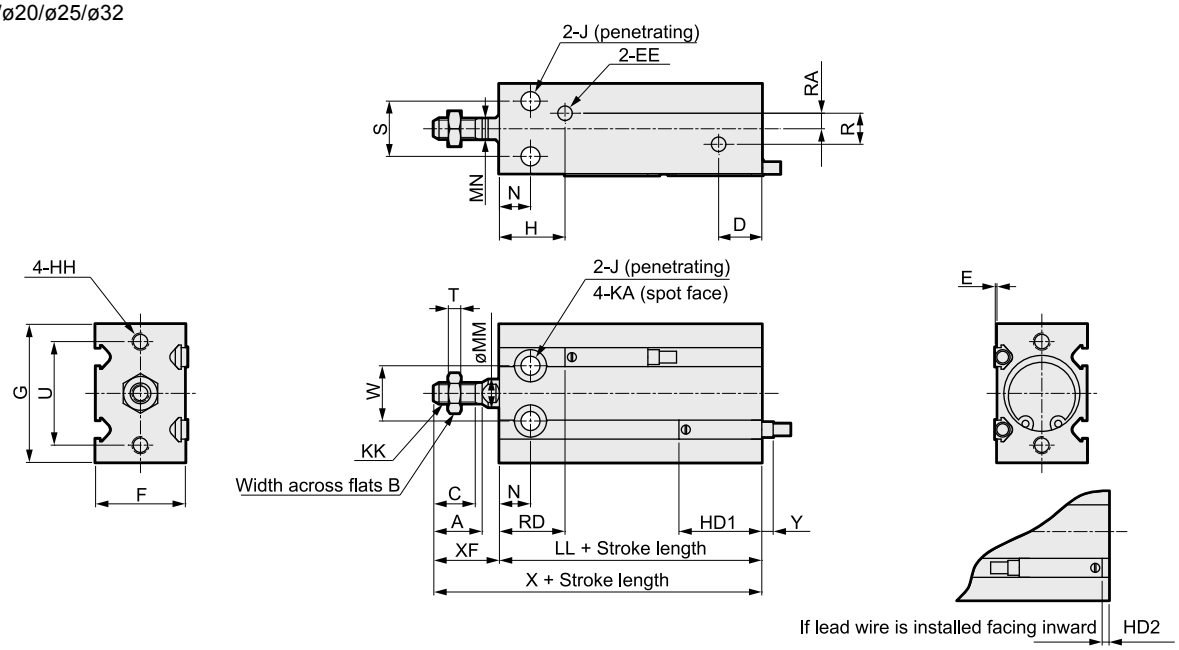
Dimensions

● Double acting SMG- (L)

ø6/10



ø16/ø20/ø25/ø32



Symbol / Cylinder bore (mm)	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N	R	RA	S
ø6	−	5.5	7	10	M5	13	22	15	M3 depth 5	3.2	6 depth 4.8	M3	3	−	7	−	-	7
ø10	−	7	10	10	M5	15	24	16.5	M3 depth 5	3.2	6 depth 5	M4	4	−	7	−	−	9
ø16	12.5	8	11	11.5	M5	20	32	(Note 1) 16.5	M4 depth 6	4.5	7.5 depth 6.5	M5	6	5	7	4	2	12
ø20	14	10	12	12.5	M5	26	40	19	M5 depth 8	5.5	9 depth 8	M6	8	6	9	9	4.5	16
ø25	18	13	15.5	13	M5	32	50	21.5	M5 depth 8	5.5	9 depth 9	M8	10	8	10	9	4.5	20
ø32	22	17	19.5	12.5	G1/8	40	62	23	M6 depth 9	6.6	11 depth 11.5	M10 × 1.25	12	10	11	13.5	4.5	24

Symbol / Cylinder bore (mm)	T	U	W	XF	LL		X		E		HD1	HD2	RD	Y (Note 2)
					w/o switch	w/ switch	w/o switch	w/ switch	K0/5	K2/3, K3P				
ø6	1.8	17	10	13	33	33	46	46	0.5	1	20	1	13	7
ø10	2.4	18	11	16	36	36	52	52	0.5	1	23.5	4.5	12.5	3.5
ø16	3.2	25	14	16	30	40	46	56	0	0.5	24.5	5.5	15.5	2.5
ø20	3.6	30	16	19	36	46	55	65	0	0.5	27	8	19	0
ø25	5	38	20	23	40	50	63	73	0	0.5	29	10	21	-2
ø32	6	48	24	27	42	52	69	79	0	0.5	30.5	11.5	21.5	-3.5

Note 1: 14.5 if 5stroke length without switch
Note 2: Y dimension refers to projecting length from the edge of the switch's body. (negative dimension is the retracting length from the body's edge)
Note 3: When calculating LL+stroke length and X + stroke length of custom stroke, do not add the value of custom stroke. Add the standard stroke value above.
(ex. When custom stroke is 35mm, use standard stroke 40mm and calculate.)

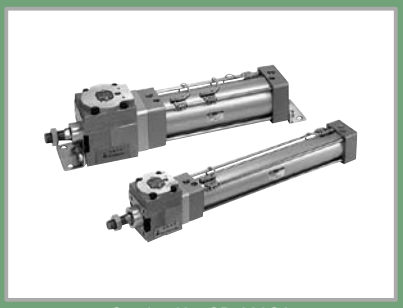
Tie rod type cylinder with brake Double acting, single rod type

JSG Series

● Cylinder bore: ø40•ø50•ø63•ø80•ø100

RoHS

CAD



Catalog No. CB-029SA

Features

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

How to order

Without switch

JSG - LB - 40 G B - 100 - ○ ——— J - I

With switch

JSG - LB - 40 G B - 100 - ○ - T2H - R - J - I

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ

Symbol	Descriptions
Ⓐ Model No.	
JSG	Double acting
Ⓑ 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
Ⓒ Cylinder bore (mm)	
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
Ⓓ Thread type	
G	G thread (custom order)
Ⓔ 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)

Cylinder bore	Stroke length Note 2	Available stroke length	Intermediate stroke
ø40	1 to 600	800	By 1 mm increment
ø50		1200	
ø63			
ø80	1 to 700	1400	
ø100	1 to 800	1500	

Ⓖ Switch

Lead wire straight type	Lead wire radial	Contact	Voltage AC	Voltage DC	Indicator	Lead wire
T0H*	T0V*	Reed	●	●	One color indicator type	2 wire
T2H*	T2V*	Proximity		●		
T3H*	T3V*			●		3 wire
***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

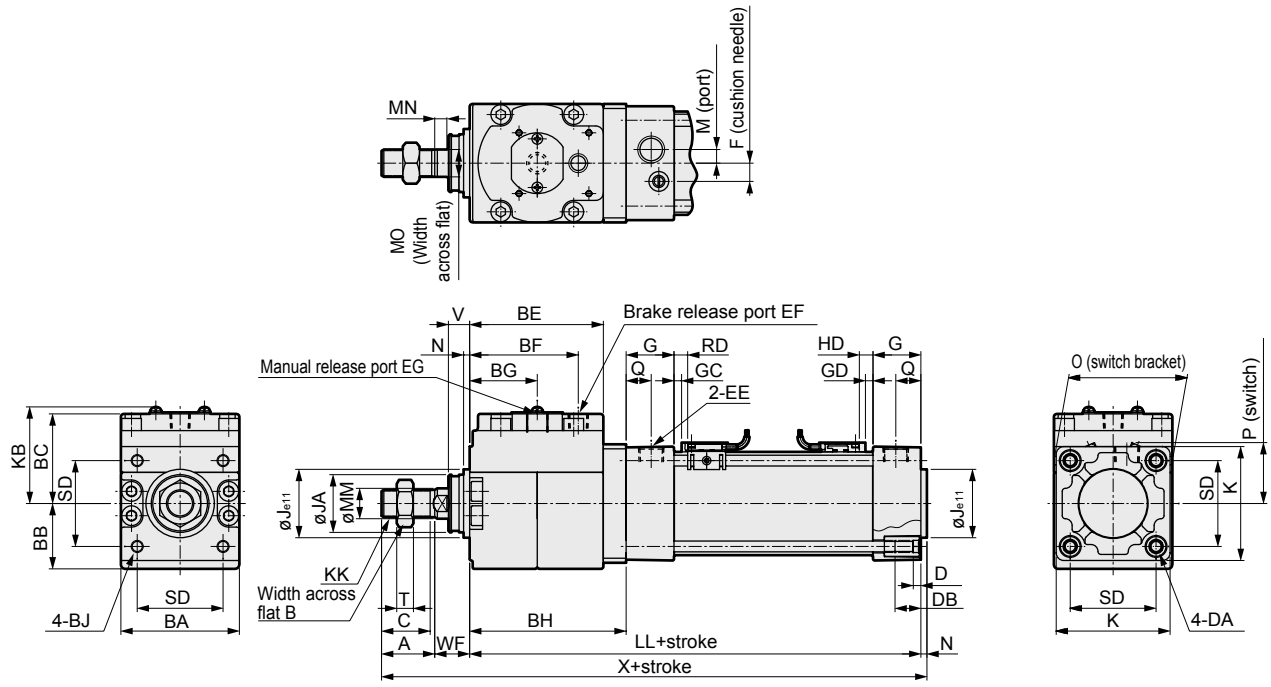
Descriptions		JSG				
Cylinder bore mm		ø40	ø50	ø63	ø80	ø100
Actuation		Double acting				
Working fluid		Compressed air				
Max. working pressure MPa		1.0				
Min. working pressure MPa		0.3				
Proof pressure MPa		1.6				
Ambient temperature °C		–10 to 60 (no freezing)				
Port size	Brake section	G1/8		G1/4		G3/8
	Cylinder section	G1/4		G3/8		G1/2
Stroke tolerance mm	With rubber cushion	$^{+1.4}_{0}$ (up to 1000), $^{+1.8}_{0}$ (up to 1500)				
	With air cushion	$^{+1.0}_{0}$ (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 permission absorbed energy 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 J	With rubber cushion	0.9	1.6	1.6	3.3	5.8
	With air cushion	3.7	8.0	14.4	25.4	45.6

Stroke length

Cylinder bore (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Custom stroke length (mm)	Min. stroke length (mm)
ø40	25•50•75•100 150•200•250 300•350•400 450•500	600	800	1
ø50			1200	
ø63				
ø80		700	1400	
ø100		800	1500	

Note 1: The intermediate stroke can be manufactured in 1 mm increments.
Note 2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD for details.
Note 3: With bellows, the customizable stroke lengths are as follows.
ø40: 500 mm
ø50, ø63: 600 mm
ø80, ø100: 750 mm

● Basic type (00)



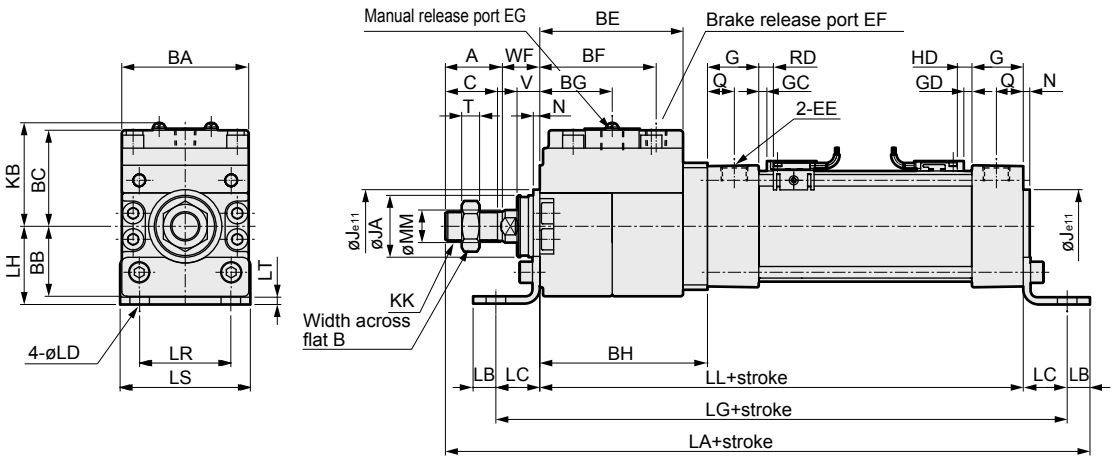
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol / Cylinder bore (mm)	Basic type (00) basic dimensions																			
	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	G1/4	G1/8	M12	9	27	35
ø50	35	27	68	38	54	74	59	39	89	M8 depth 12	32	M8	16	5	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	14	38	45
ø100	40	41	118	63	80.5	129	101	65.5	151	M10 depth 18	37	M10	16	5	G1/2	G3/8	M18	15	38	55

Symbol / Cylinder bore (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 / Cylinder bore (mm)	With switch ($T0^{H}_{V}$, $T5^{H}_{V}$, $T2^{H}_{V}$, $T3^{H}_{V}$, $T3P^{H}_{V}$)				
	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)



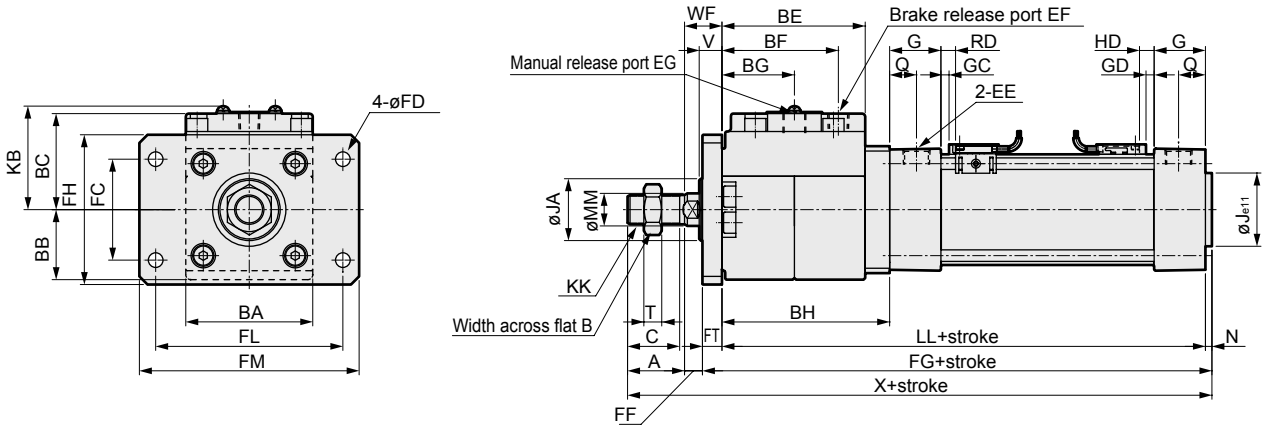
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol / Cylinder bore (mm)	Axial foot type (LB) basic dimensions																		
	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	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol / Cylinder bore (mm)							Mounting dimensions								
	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 / Cylinder bore (mm)	With switch ($T0^{H}_{V}$, $T5^{H}_{V}$, $T2^{H}_{V}$, $T3^{H}_{V}$, $T3P^{H}_{V}$)				
	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)	—

● Rod side flange type (FA)



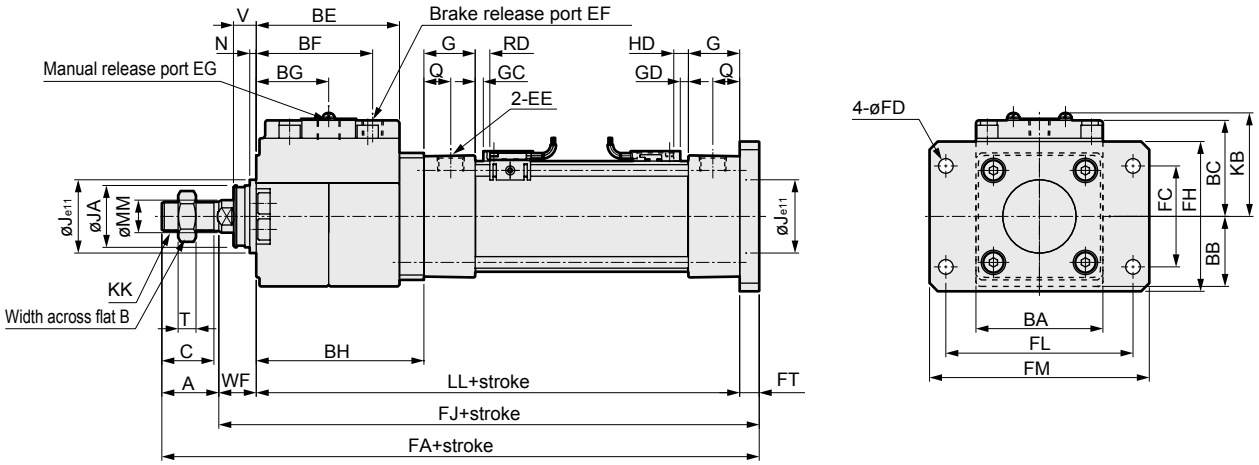
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Rod side flange type (FA) basic dimensions																		
Cylinder bore (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	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol								Mounting dimensions							
Cylinder bore (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$^{H}_{V}$)				
Cylinder bore (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)	—

● Head end flange type (FB)



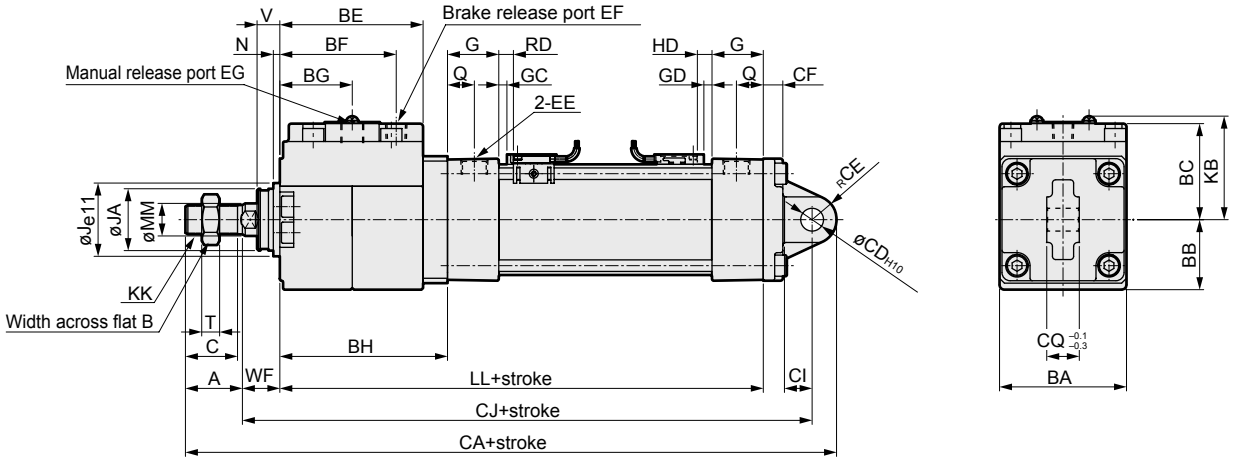
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol / Cylinder bore (mm)	Head end flange type (FB) basic dimensions																		
	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	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol / Cylinder bore (mm)							Mounting dimensions							
	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 / Cylinder bore (mm)	With switch ($T0^{H}_{V}$, $T5^{H}_{V}$, $T2^{H}_{V}$, $T3^{H}_{V}$, $T3P^{H}_{V}$)				
	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 clevis type (CA)



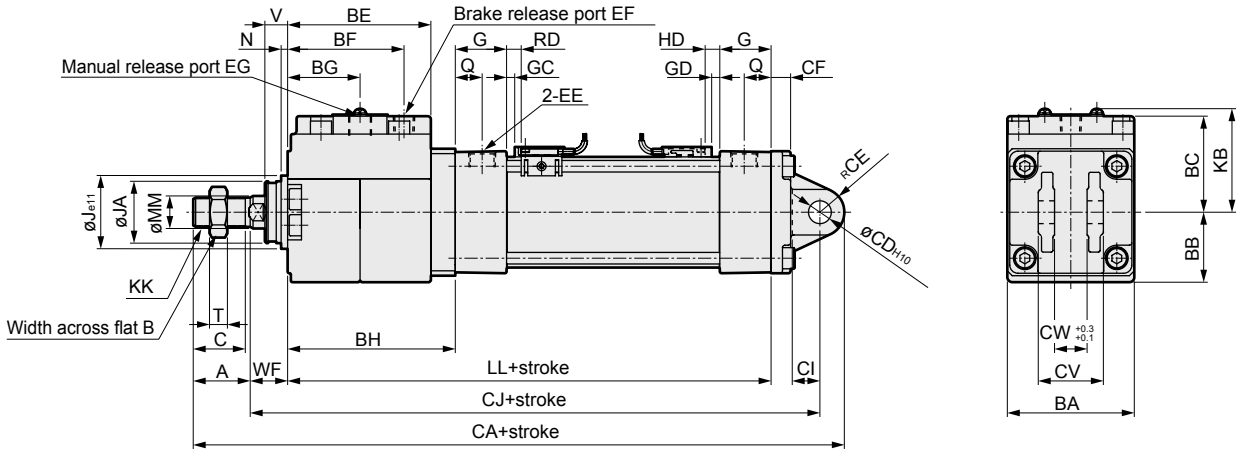
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol / Cylinder bore (mm)	Single clevis type (CA) basic dimensions																		
	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	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol / Cylinder bore (mm)							Mounting dimensions						
	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 / Cylinder bore (mm)	With switch ($T0^{H}_{V}$, $T5^{H}_{V}$, $T2^{H}_{V}$, $T3^{H}_{V}$, $T3P^{H}_{V}$)				
	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)



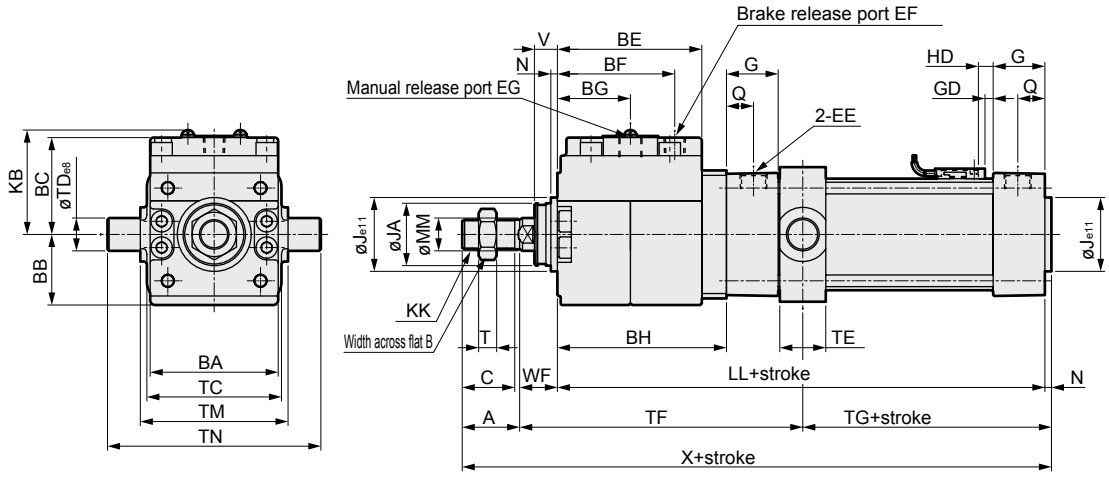
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol / Cylinder bore (mm)	Double clevis type (CB) basic dimensions																		
	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	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol / Cylinder bore (mm)							Mounting dimensions							
	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 / Cylinder bore (mm)	With switch ($T0^{H}_{V}$, $T5^{H}_{V}$, $T2^{H}_{V}$, $T3^{H}_{V}$, $T3P^{H}_{V}$)				
	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)	—

● Rod side trunnion type (TA)

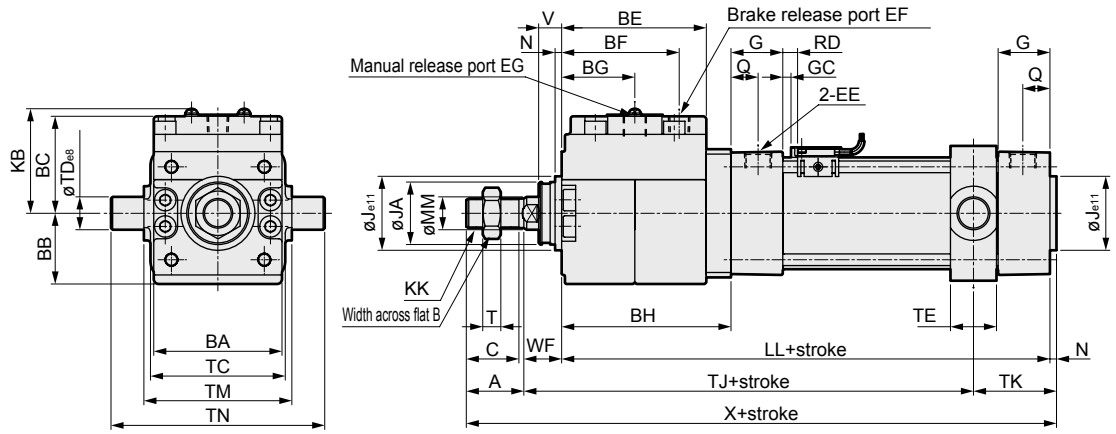


Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: Switches can not be installed on the rod end.
Note 3: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Rod side trunnion type (TA) basic dimensions																		
Cylinder bore (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	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	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$^{H}_{V}$)	
Cylinder bore (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)

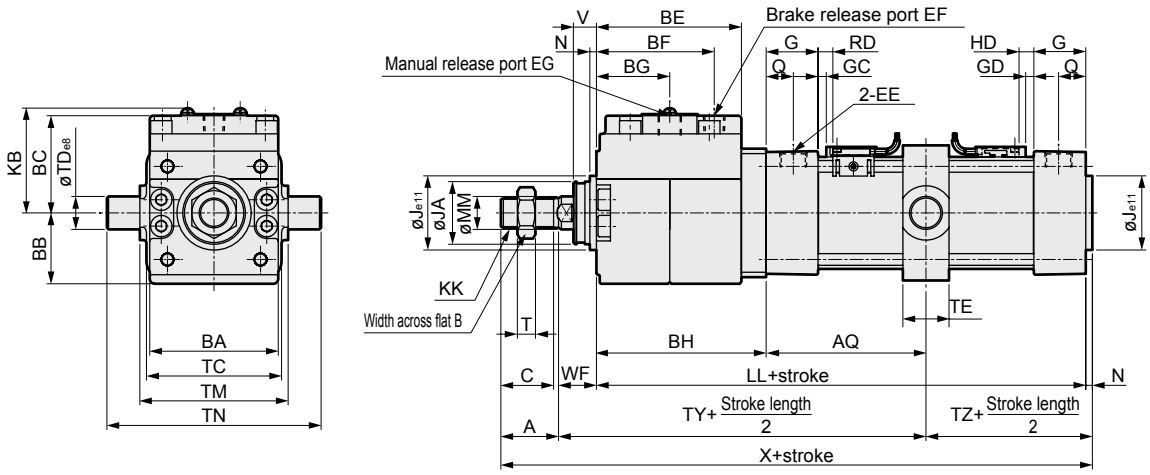


Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm)
Note 2: Switches can not be installed on the head end.
Note 3: RD and HD dimensions in dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.

Symbol	Head end trunnion (TB) basic dimensions																		
Cylinder bore (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	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	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	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	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$^{H}_{V}$)	
Cylinder bore (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)

● 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.

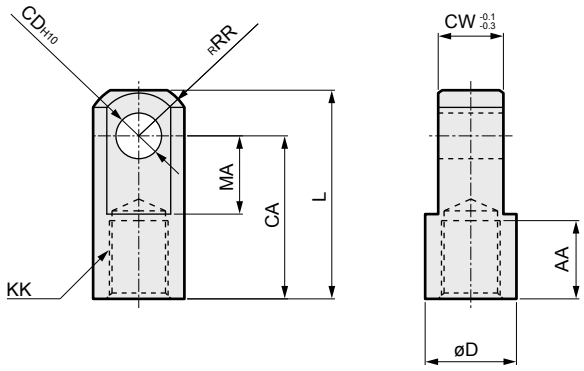
Symbol	Intermediate trunnion type (TC) basic dimensions																		
Cylinder bore (mm)	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ø40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	G1/4	G1/8	M12	27	35	31	51.1	M14×1.5	161(167)
ø50	35	27	68	38	54	74	59	39	89	32	G1/4	G1/8	M12	31.5	40	38	58.6	M18×1.5	183(191)
ø63	35	27	78	43	59	88	71.5	44.5	103	32	G3/8	G1/4	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	G3/8	G1/4	M16	38	45	43	77.1	M22×1.5	245(255)
ø100	40	41	118	63	80.5	129	101	65.5	151	37	G1/2	G3/8	M18	38	55	51	85.1	M26×1.5	265(275)

Symbol								Mounting dimensions							
Cylinder bore (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)+Stroke length/2
ø50	20	4	15.5	11	14	23	245(253)	67	16	22	75	107	159(163)	51(55)	47(51)+Stroke length/2
ø63	20	4	16.5	11	14	23	259(267)	82	20	28	90	130	173(177)	51(55)	47(51)+Stroke length/2
ø80	25	4	19	13	20	32	321(331)	100	20	34	110	150	220(225)	61(66)	57(62)+Stroke length/2
ø100	30	4	19	16	20	32	341(351)	121	25	40	132	182	240(245)	61(66)	57(62)+Stroke length/2

Symbol	With switch (T0$^{H}_{V}$, T5$^{H}_{V}$, T2$^{H}_{V}$, T3$^{H}_{V}$, T3P$^{H}_{V}$)				
Cylinder bore (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)

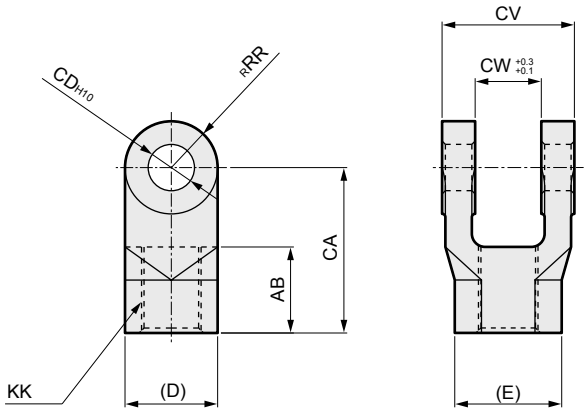
Material: Steel



Model No.	Applicable Cylinder bore (mm)	AA	CA	CD	CW	D	KK	L	MA	RR	Weight (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

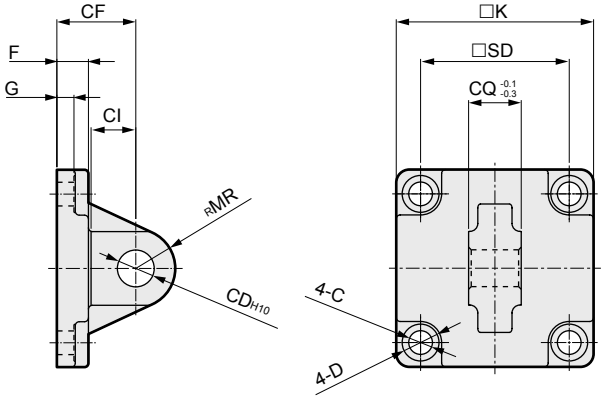


Model No.	Applicable Cylinder bore (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Weight (kg)
SCG-Y-40	40	21	40	10	28	14	22	25.4	M14×1.5	11	0.13
SCG-Y-50	50,63	26	50	14	40	20	28	32.3	M18×1.5	14	0.30
SCG-Y-80	80	31	65	22	60	30	40	46.2	M22×1.5	20	0.94
SCG-Y-100	100	31	65	22	60	30	40	46.2	M26×1.5	20	0.92

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

● Single bracket (B1)

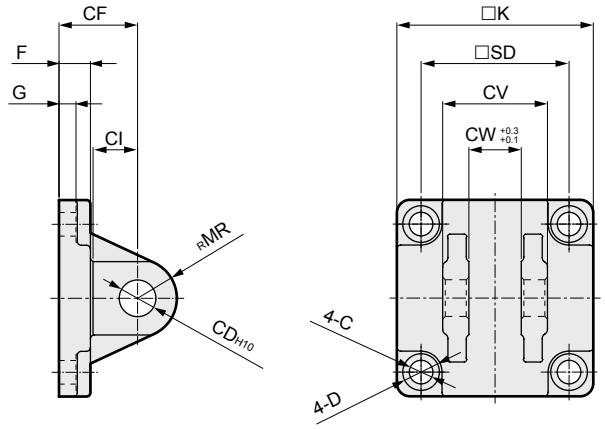
Material: Cast iron



Model No.	Applicable Cylinder bore (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD	Weight (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 Cylinder bore (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD	Weight (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

Rodless cylinder Double acting

SRL3 Series

● Cylinder bore: ø12•16•20•25•32•40•50•63•80•100 or equivalent

Features

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

Catalog No. CB-029SA

How to order

Without switch

SRL3 - 00 - 20 G B - 200 ——— B

With switch

SRL3 - 00 - 20 G B - 200 - M0H - R - B

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
LB1	Axial foot type (ø12 to ø32 only)
Ⓑ Cylinder bore (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
Ⓒ Thread type	
G	G thread (ø20 and over) (custom order)
Ⓓ Cushion	
B	Both sides cushion
R	R side cushion
L	L side cushion
N	No cushion

Ⓔ Stroke length (mm)		
Cylinder bore	**Stroke length Note 3**	**Intermediate stroke**
ø12 to ø100	1 to 5000	By 1 mm increment

Ⓕ Switch

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		●		
M3H*	M3V*			●		

***Lead wire length**	
Blank	1 m (standard)
3	3 m

Ⓖ 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									
Cylinder bore mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting									
Working fluid	Compressed air									
Max. working pressure MPa	0.7									
Min. working pressure MPa	0.2				0.1			0.05		
Proof pressure Mpa	1.05									
Ambient temperature °C	5 to 60									
Port size	M5		G1/8		G1/4		G3/8		G1/2	
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. Contact to CKD.

Stroke length

Cylinder bore (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø12 or equivalent	200 · 300 400 · 500 600 · 700 800 · 900 1000	5000	1
ø16 or equivalent			
ø20 or equivalent			
ø25 or equivalent			
ø32 or equivalent			
ø40 or equivalent			
ø50 or equivalent			
ø63 or equivalent			
ø80 or equivalent			
ø100 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

Cylinder bore
(section Ⓑ on the previous page)

(Shock absorber 1pc., 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

Cylinder bore
(section Ⓑ on the previous page)

(C mount bracket, mounting bolt 4 pcs.)

● **How to order floating joint set**

SRL3 - 40 - Y

Cylinder bore
(section Ⓑ 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)

Cylinder bore
(section Ⓑ on the previous page)

LB1

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

Cylinder bore
(section Ⓑ on the previous page)

● **How to order adjustable full stroke kit**

SRL3 - 40 - A1 (1 set)

Cylinder bore
(section Ⓑ on the previous page)

● **How to order expendable parts**

SRL3 - 40 K - 200

Cylinder bore (section Ⓑ on the previous page)

Stroke length (section Ⓔ on the previous page)

● **How to order mounting bracket**

SRL3 - LB - 40

Mounting style (section Ⓐ on the previous page)

Cylinder bore (section Ⓑ on the previous page)

(Bracket 2 pcs, mounting bolt 4 pcs.)

● **How to order high adjustment plate set**

SRL3 - 40 - U

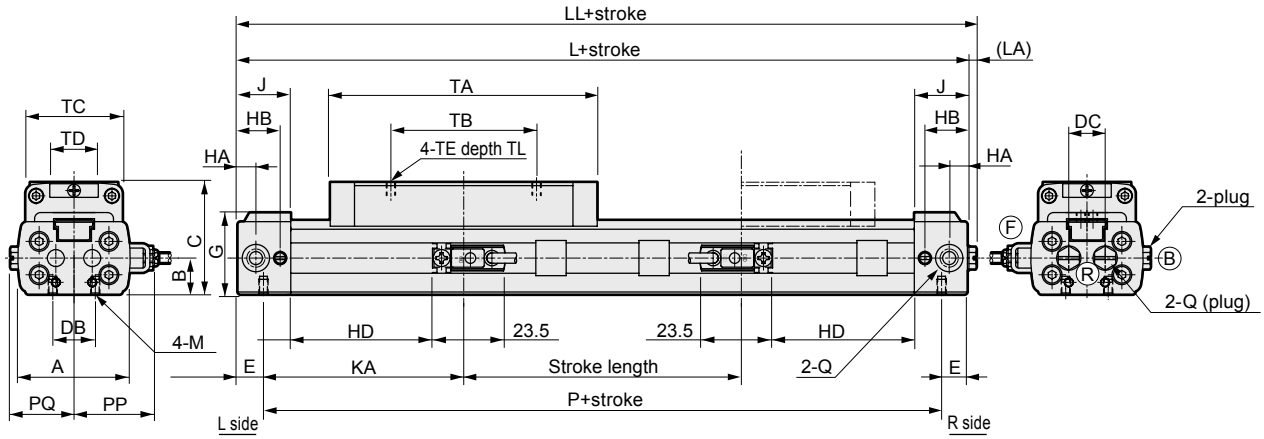
Cylinder bore
(section Ⓑ on the previous page)

(Plate, mounting bolt 4 pcs.)

Dimensions

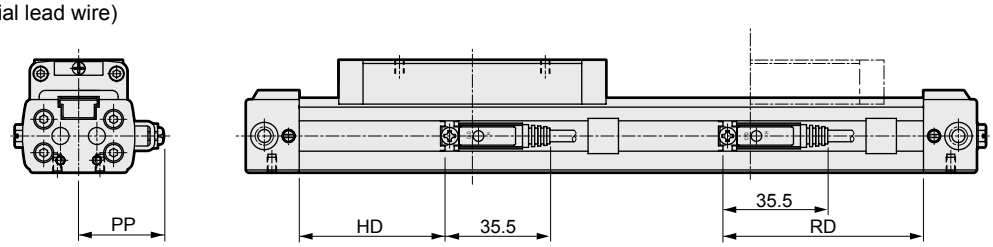
● SRL3-**-**-***-M*V* with cylinder switch

(Radial lead wire)

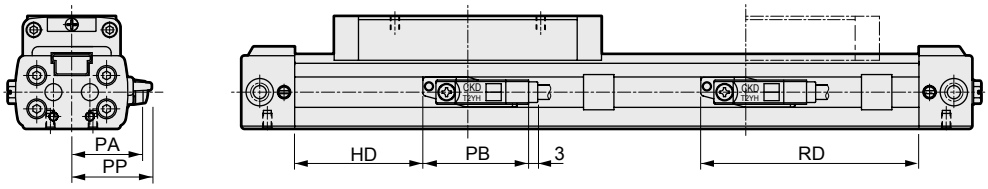


● SRL3-**-**-***-M*H* with cylinder switch

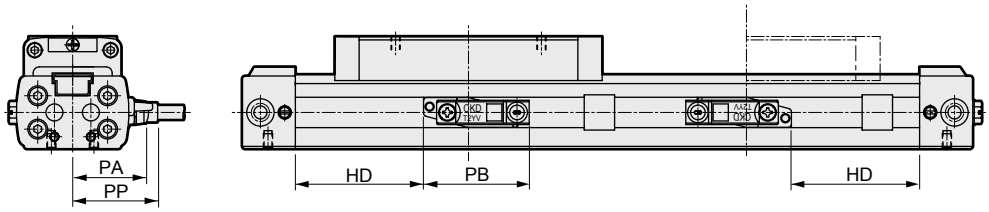
(Axial lead wire)



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



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

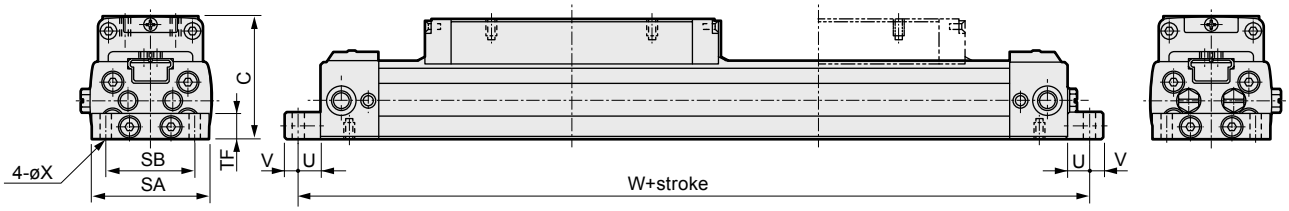


RD: Max. sensitive position HD: Max. sensitive position

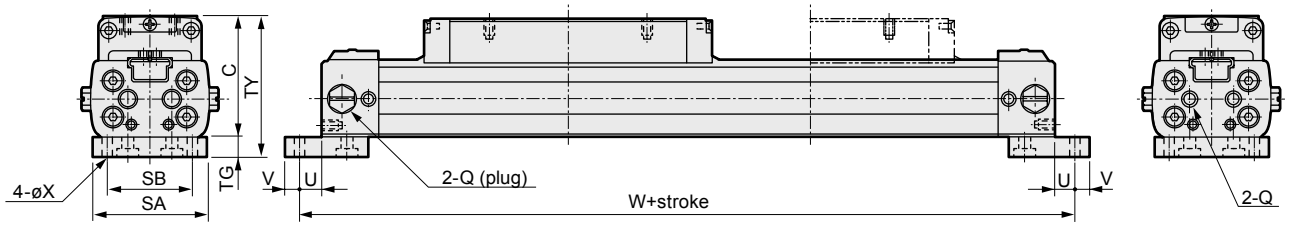
Symbol / Cylinder bore (mm)	A	B	C	DB	DC	E	G	HA	HB	J	KA	L	LL	LA	M	P	PQ	Q	TA	TB	TC	TD	TE
ø12 or equivalent	33	10.5	33	10	11	8.5	24	6	14	17.5	59.5	136	139	3	M3 depth 5	119	19	M5	81	42	29	13	M3 depth 5
ø16 or equivalent	37	12	37	14	12	8.5	27	6	14	17.5	66	149	152	3	M3 depth 5	132	21	M5	88	48	32	15	M3 depth 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	G1/8	100	60	38	18	M4 depth 6

Symbol / Cylinder bore (mm)	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
ø12 or equivalent	40.5	36	32	60.5	65	69	24.3	35	34	33.5	24.5	24.5	26	23	28.4	20.7	17.2
ø16 or equivalent	47	42	38	67	72	76	26.3	35	34	33.5	26.5	26.5	28	25	30.4	22.7	19.2
ø20 or equivalent	52.5	48	44	72.5	77	81	29.3	35	34	33.5	29.5	29.5	31	28	33.4	25.7	22.2

● SRL3-LB-12 to 20 with foot bracket



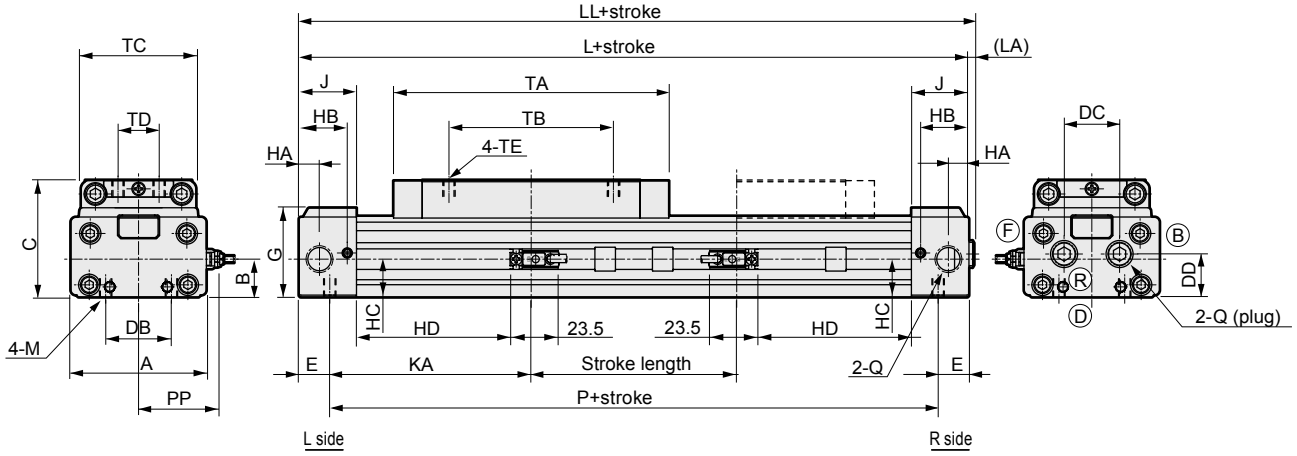
● SRL3-LB1-12 to 20 with foot bracket



Symbol / Cylinder bore (mm)	With foot bracket (LB)							With foot bracket (LB1)							
	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

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

(Radial lead wire)



Symbol / Cylinder bore (mm)	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
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	G1/8	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	G1/4	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	G1/4	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	G3/8	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	G3/8	168	110	102	40	M8 depth 11.5

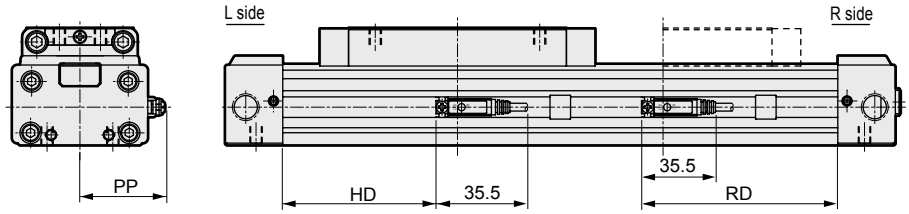
Symbol / Cylinder bore (mm)	With switch																
	HD			RD			PA	PB			PP						
	M*	T*Y*	T*W	M*	T*Y*	T*W		T*Y*	T2YD	T*W*	M*V	M*H	T*YV	T*YH	T2YD	T*WV	T*WH
ø25 or equivalent	60	56	52	82	86	90	34.3	35	34	33.5	34.5	34.5	36	33	38.4	30.7	27.2
ø32 or equivalent	74	70	66	96	100	104	41.3	35	34	33.5	41.5	41.5	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)

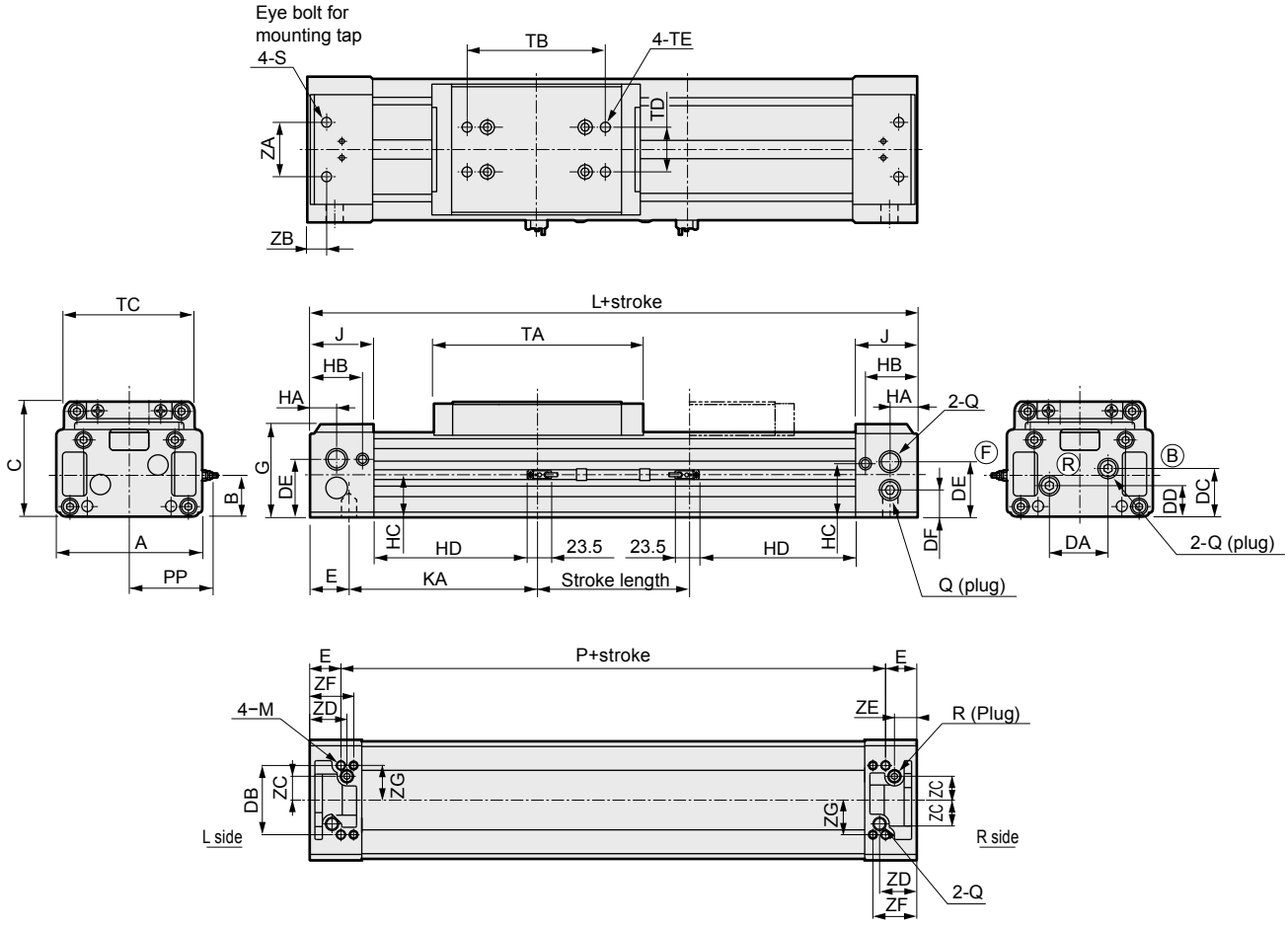


Symbol / Cylinder bore (mm)	With foot bracket (LB)								With foot bracket (LB1)							
	SA	SB	TF	U	V	W	X	XF	SA	SB	TG	TY	U	V	W	X
ø25 or equivalent	52	20	12	9	11	208	7	—	50	20	10	63	9	11	208	7
ø32 or equivalent	64	32	12	9	11	244	7	—	64	32	10	67	9	11	244	7
ø40 or equivalent	80	36	15	11	9	266	9	14 spot 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

CAD

(Radial lead wire)

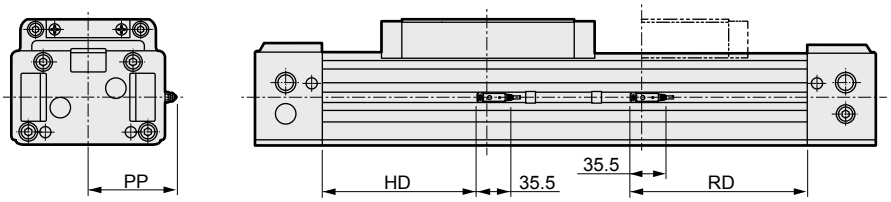


Symbol / Cylinder bore (mm)	A	B	C	DA	DB	DC	DD	DE	DF	E	G	HA	HB	HC	J	KA	L	M	P	Q	R	S
ø80 equivalent	162	49	130	64	93	58	38	65	33	42	106	30	59	64.5	70	208	500	M12 depth 18	416	G1/2	G3/8	M12 depth 23
ø100 or equivalent	198	61.5	150	73	108	71.5	47.5	81.5	41.5	43	125	30	69	76.5	80	222	530	M12 depth 18	444	G1/2	G1/2	M12 depth 23

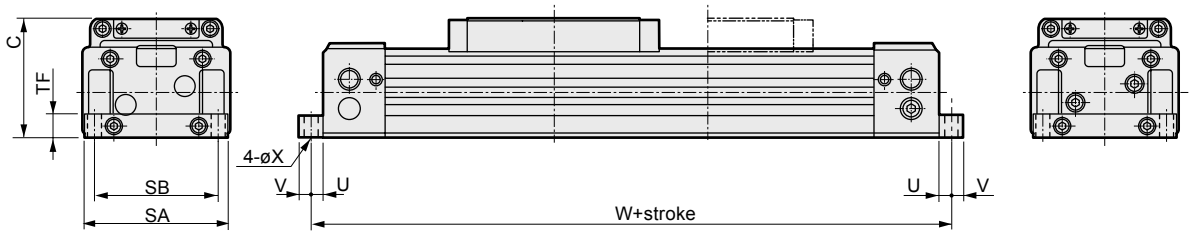
Symbol / Cylinder bore (mm)	TA	TB	TC	TD	TE	ZA	ZB	ZC	ZD	ZE	ZF	ZG	With foot bracket						
													SA	SB	TF	U	V	W	X
ø80 equivalent	228	150	146	50	M12 depth 15	60	21	32	50	30	59	46.5	162	134	25	13	12	526	14
ø100 or equivalent	238	160	170	60	M12 depth 15	60	21	36.5	55	30	69	54	198	160	30	15	15	560	14

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

(Axial lead wire)



● SRL3-LB-**-*** with foot bracket



Symbol / Cylinder bore (mm)	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

RoHS CAD CE

Features

- Compatible with small and large cylinders

Catalog No. CB-029SA

How to order

SW - T0 H ( )
Ⓐ Ⓑ Ⓒ

Symbol	Descriptions
Ⓐ Switch	
T0	2 wire reed 1 color indicator
T2	2 wire proximity 1 color indicator
T3	3 wire proximity 1 color indicator

Ⓑ Lead wire direction	
H	Axial lead wire
V	Radial lead wire

Ⓒ Lead wire length	
Blank	1 m
3	3 m

Specifications

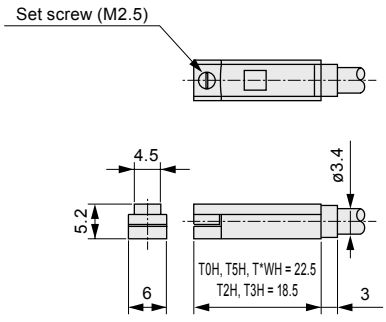
Item	Proximity 2 wire				Proximity 3 wire			
	T1H•T1V	T2H•T2V	T2YH•T2YV T2YC (2 color indicator)	T2WH•T2WV (2 color indicator)	T3H•T3V	T3PH•T3PV (PNP output type)	T3YH•T3YV T3YC (2 color indicator)	T3WH•T3WV (2 color indicator)
Applications	Programmable controller, relay, small solenoid valve	Programmable controller			Programmable controller, relay			
Output method	—				NPN output	PNP output	NPN output	NPN output
Power supply voltage	—				10 to 28 VDC			
Load 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 (Lighting/ON)		Red/green LED (Lighting/ON)	Red/green LED (Lighting/ON)	LED (Lighting/ON)	Yellow LED (Lighting/ON)	Red/green LED (Lighting/ON)	
Leakage 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 Cabtire cable 2-conductor 0.3mm²)	1m (oil resistant vinyl round code 2-conductor 0.2mm²)	1m (oil resistant vinyl round code 2-conductor 0.3mm²)	1m (oil resistant vinyl round code 2-conductor 0.2mm²)	1m (oil resistance vinyl cab tire code 3-conductor 0.2mm²)		1m (oil resistant vinyl round code 3-conductor 0.3mm²)	1m (oil resistant vinyl round code 3-conductor 0.2mm²)
Max. shock resistance	980m/s²							
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							
Weight	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	—						
Load 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 (Lighting/ON)		Without indicator light		LED (Lighting/ON)		
Leakage current	0mA						
Lead wire length	1m (oil resistant vinyl round code 2-conductor 0.2mm²) Note 6				1m (oil resistant vinyl round code 2-conductor 0.3mm²)		
Max. shock resistance	294m/s²						
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						
Weight	1m: 18g 3m: 49g 5m: 80g				1m: 33g 3m: 87g 5m: 142g		

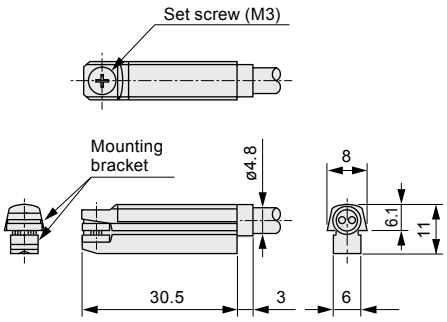
Note 1: Above-mentioned load current's max. value 20mA is for 25˚C. The current will be less than 20 mA if ambient temperature around the switch is more than 25˚C. (5 to 10 mA at 60˚C.)
Note 2: T3PH and T3PV switches are available as custom order when installed onto applicable cylinders.
Note 3: The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.
Note 4: The mounted switch may be limited, depending on the cylinder. Contact CKD for details.

Dimensions

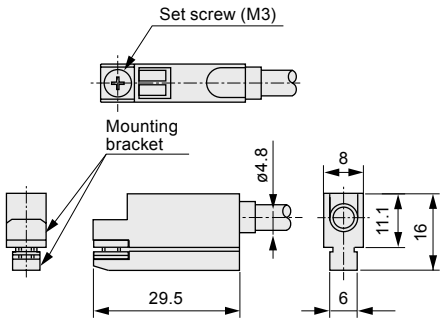
● T*H•T*WH series
(Axial lead wire)



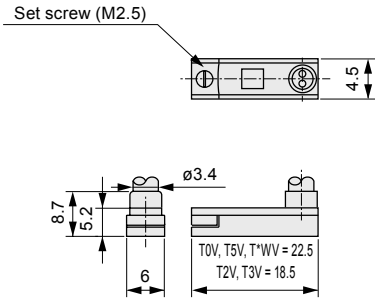
● T*YH•T2JH•T8H series
(Axial lead wire)



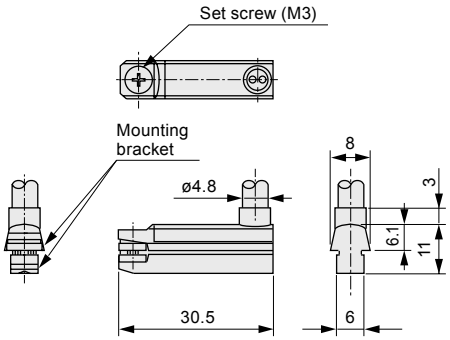
● T1H series
(Axial lead wire)



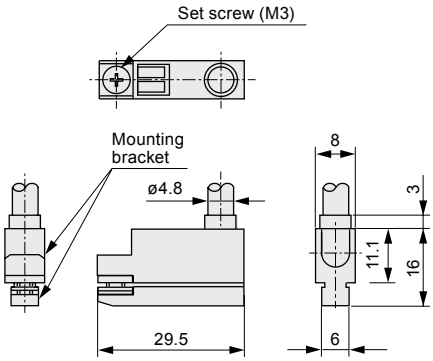
● T*V•T*WV series
(Radial lead wire)



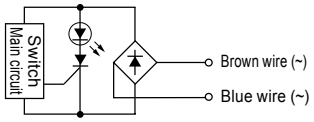
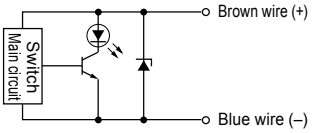
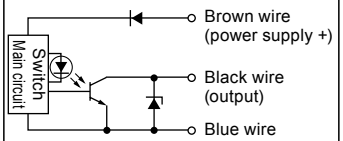
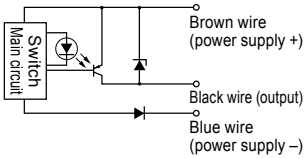
● T*YV•T2JV•T8V series
(Radial lead wire)

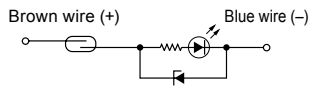
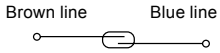


● T1V series
(Radial lead wire)



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
	

K cylinder switch

K series

Features

• Compatible with small and large cylinders

Catalog No. CB-029SA

How to order

SW - K0 H ○
Ⓐ Ⓑ Ⓒ

Symbol	Descriptions
Ⓐ Switch	
K0	2 wire reed 1 color indicator
K2	2 wire proximity 1 color indicator
K3	3 wire proximity 1 color indicator

Ⓑ Lead wire direction	
H	Axial lead wire
V	Radial lead wire

Ⓒ Lead wire length	
Blank	1 m
3	3 m

Specifications

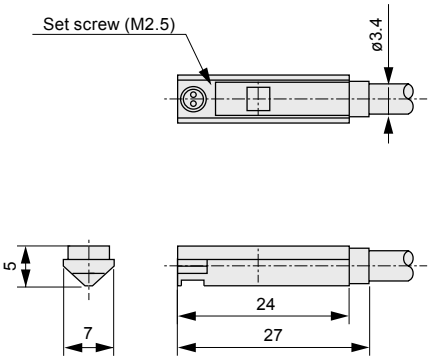
Item	Proximity 2 wire		Proximity 3 wire		
	K2H•K2V	K2YH•K2YV	K3H/V (NPN output type)	K3PH/V (PNP output type)	K3YH/V (2 color indicator type)
Applications	Programmable controller		Programmable controller, relay		
Output method	—		NPN output	PNP output	NPN output
Power supply voltage	—		10 to 28 VDC		
Load 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 (Lighting/ON)	Red/green LED (Lighting/ON)	LED (Lighting/ON)	Yellow LED (Lighting/ON)	Red/green LED (Lighting/ON)
Leakage 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)
Max. 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				
Weight	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	—			
Load 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 (Lighting/ON)		—	
Leakage current	0mA			
Lead wire length	1m (oil resistant vinyl round code 2-conductor 0.2mm^2)			
Max. 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			
Weight	1m: 18g 3m: 49g 5m: 80g			

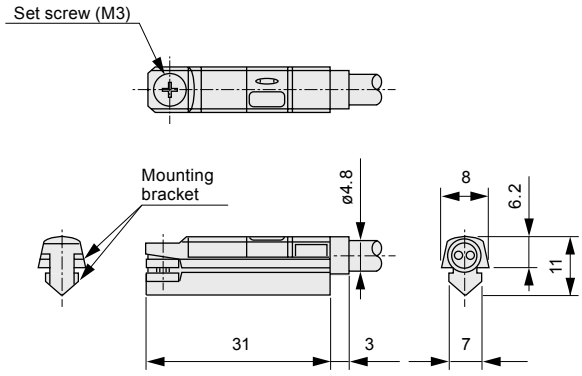
Note 1: Above-mentioned load current's max. value is for 25°C. The current will be less than 20 mA if ambient temperature around the switch is more than 25°C. (5 to 10 mA at 60°C.)
Note 2: Mounting to the K3PH or K3PV cylinder are available as custom order.
Note 3: The K0/K5 switch can be used with 220 VAC. Contact CKD for working conditions.

Dimensions

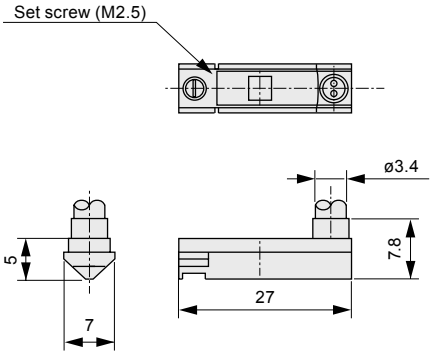
● K*H series
(Axial lead wire)



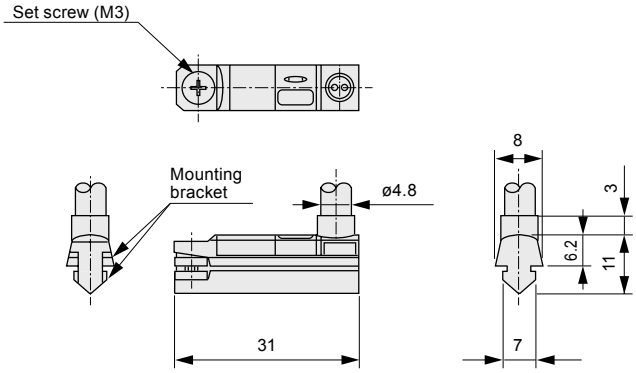
● K*YH series
(2 color indicator type, axial lead wire)



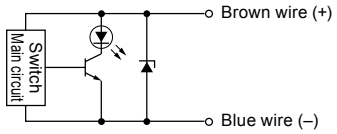
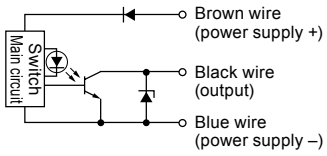
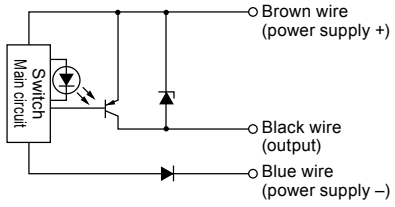
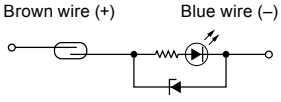
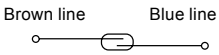
● K*V series
(Radial lead wire)



● K*YV series
(2 color indicator type, radial lead wire)



Internal circuit diagram

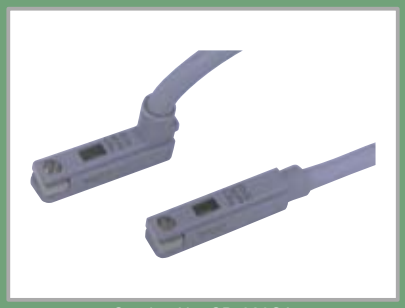
● K2H•K2V•K2YH•K2YV	● K3H•K3V•K3YH•K3YV	● K3PH•K3PV
		
● K0H•K0V	● K5H•K5V	
		

F cylinder switch

F series

Features

• Compatible with small and large cylinders



Catalog No. CB-029SA

How to order

SW - F0 H ○

Ⓐ Ⓑ Ⓒ

Symbol	Descriptions
Ⓐ Switch	
F0	2 wire reed 1 color indicator
F2	2 wire proximity 1 color indicator
F3	3 wire proximity 1 color indicator

Ⓑ Lead wire direction	
H	Axial lead wire
V	Radial lead wire

Ⓒ Lead wire length	
Blank	1 m
3	3 m

Specifications

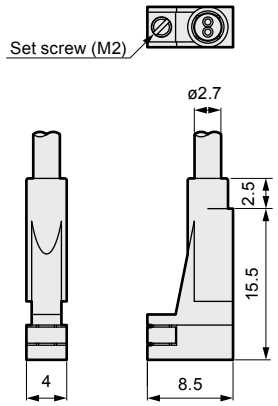
Item	Reed 2 wire	Proximity 2 wire		Proximity 3 wire	Proximity 3 wire
	F0H•V	F2H•V, F2S	F2YH•F2YV	F3H•V, F3S	F3YH•F3YV
Applications	Programmable controller			Programmable controller, relay	
Output method	—			NPN output	
Power supply voltage	—			10 to 28 VDC	
Load voltage	24 VDC	10 to 30 VDC	24 VDC ± 10%	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 (Lighting/ON)		Red/green LED (Lighting/ON)	Yellow LED (Lighting/ON)	Red/green LED (Lighting/ON)
Leakage 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)	
Max. 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				
Weight	1m: 10g 3m: 29g			1m: 10g 3m: 29g	

Note 1: The max. load current 20 mA is applied at 25°C. The current will be less than 20 mA if ambient temperature around the switch is more 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

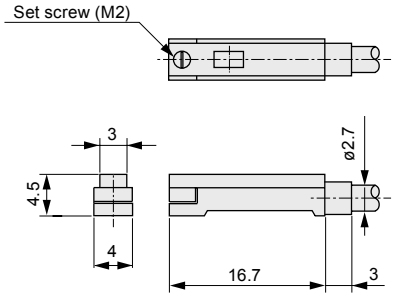
● F*S series

(Vertical lead wire outlet short stroke detection)



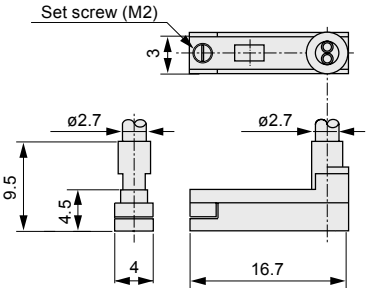
● F*H series

(Axial lead wire)



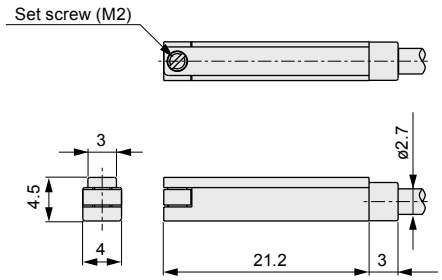
● F*V series

(Radial lead wire)



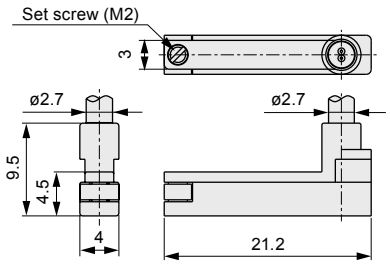
● F*YH series

(Axial lead wire)

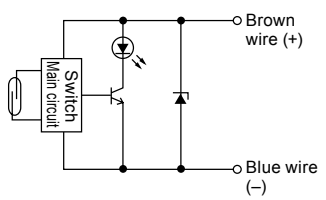
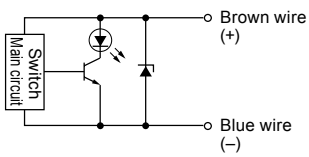
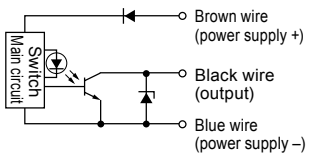


● F*YV series

(Radial lead wire)



Internal circuit diagram

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

M Cylinder switch

M series

RoHS CAD CE

Features

• Compatible with small and large cylinders

Catalog No. CB-029SA

How to order

SW - M0 H ○

Ⓐ Ⓑ Ⓒ

Symbol	Descriptions
Ⓐ Switch	
M0	2 wire reed 1 color indicator
M2	2 wire proximity 1 color indicator
M3	3 wire proximity 1 color indicator

Ⓑ Lead wire direction	
H	Axial lead wire
V	Radial lead wire

Ⓒ Lead wire length	
Blank	1 m
3	3 m

Specifications

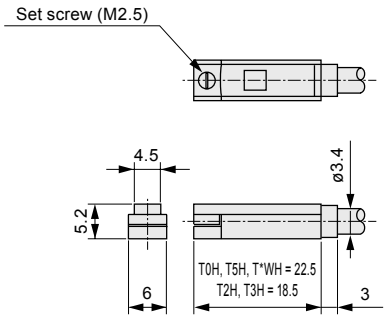
Item	Proximity 2 wire				Proximity 3 wire			
	M1H•M1V	M2H•M2V	M2YH•M2YV M2YC (2 color indicator)	M2WH•M2WV (2 color indicator)	M3H•M3V	M3PH•M3PV (PNP output type)	M3YH•M3YV M3YC (2 color indicator)	M3WH•M3WV (2 color indicator)
Applications	Programmable controller, relay, small solenoid valve	Programmable controller			Programmable controller, relay			
Output method	—				NPN output	PNP output	NPN output	NPN output
Power supply voltage	—				10 to 28 VDC			
Load 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 (Lighting/ON)		Red/green LED (Lighting/ON)	Red/green LED (Lighting/ON)	LED (Lighting/ON)	Yellow LED (Lighting/ON)	Red/green LED (Lighting/ON)	
Leakage 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 resistant vinyl Cabtire cable 2-conductor 0.3mm²)	1m (oil resistant vinyl round code 2-conductor 0.2mm²)	1m (oil resistant vinyl round code 2-conductor 0.3mm²)	1m (oil resistant vinyl round code 2-conductor 0.2mm²)	1m (oil resistant vinyl cab tire code 3-conductor 0.2mm²)		1m (oil resistant vinyl round code 3-conductor 0.3mm²)	1m (oil resistant vinyl round code 3-conductor 0.2mm²)
Max. shock resistance	980m/s²							
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							
Weight	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						
	M0H•M0V		M5H•M5V		M8H•M8V		
Applications	Programmable controller, relay		Programmable controller, relay, IC circuit (w/o lamp), small solenoid valve		Programmable controller, relay		
Power supply voltage	—						
Load 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 (Lighting/ON)		Without indicator light		LED (Lighting/ON)		
Leakage current	0mA						
Lead wire length	1m (oil resistant vinyl round code 2-conductor 0.2mm²) Note 6				1m (oil resistant vinyl round code 2-conductor 0.3mm²)		
Max. shock resistance	294m/s²						
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						
Weight	1m: 18g 3m: 49g 5m: 80g				1m: 33g 3m: 87g 5m: 142g		

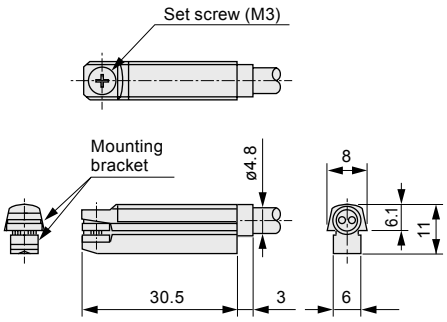
Note 1: Above-mentioned load current's max. value 20mA is for 25˚C. The current will be less than 20 mA if ambient temperature around the switch is more than 25˚C. (5 to 10 mA at 60˚C.)
Note 2: M3PH and M3PV switches are available as custom order when installed onto applicable cylinders.
Note 3: The M0/M5 switch can be used with 220 VAC. Contact CKD for working conditions.
Note 4: The mounted switch may be limited, depending on the cylinder. Contact CKD for details.

Dimensions

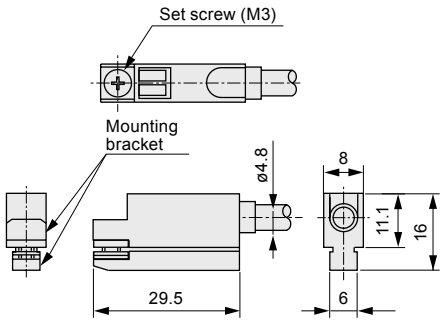
● M*H•M*WH series
(Axial lead wire)



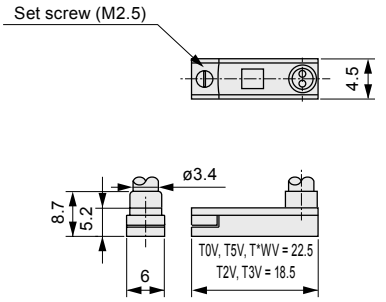
● M*YH•M2JH•M8H series
(Axial lead wire)



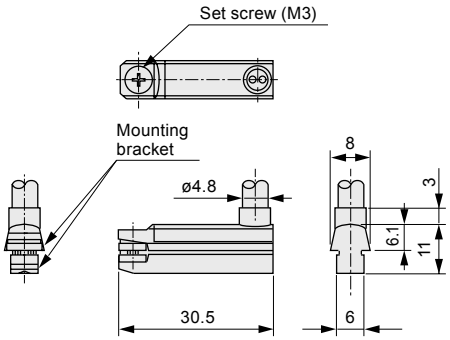
● M1H series
(Axial lead wire)



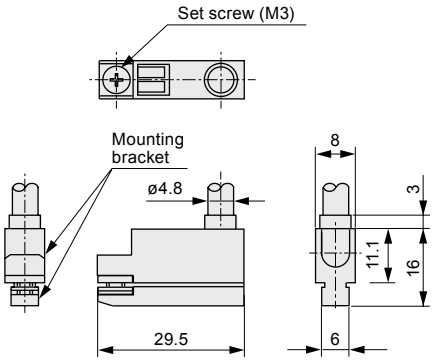
● M*V•M*WV series
(Radial lead wire)



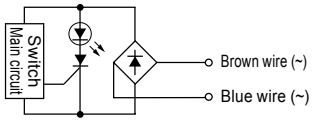
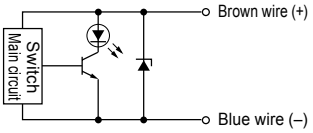
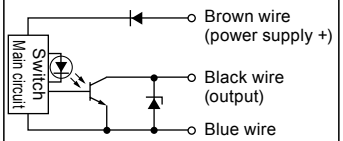
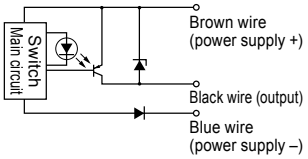
● M*YV•M2JV•M8V series
(Radial lead wire)

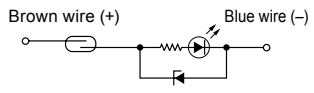
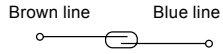


● M1V series
(Radial lead wire)



Internal circuit diagram

● M1H•M1V	● M2H•M2V•M2YH•M2YV•M2WH•M2WV•M2JH•M2JV	● M3H•M3V•M3YH•M3YV•M3WH•M3WV	● M3PH•M3PV
			

● M0H•M0V•M8H•M8V	● M5H•M5V
	

MEMO

Simple Choice

Pneumatic valve

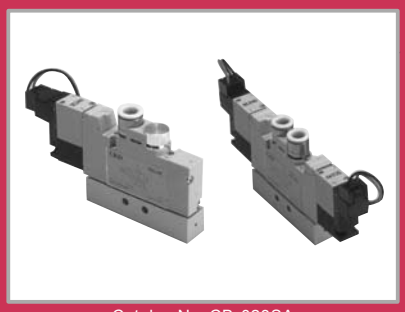
☐ 3 port connection valve discrete valve body porting — 3GA1 to 3 106
☐ 5 port connection valve discrete valve body porting — 4GA1 to 3 106
☐ 5 port connection valve discrete valve sub-base porting — 4GB1 to 3 118
☐ 5 port connection valve discrete valve body porting — 4GA4 126
☐ 5 port connection valve discrete valve sub-base porting — 4GB4 130
☐ Reduced wiring block manifold direct porting — MN4GA1●2-T10 134
☐ Reduced wiring block manifold sub-base porting — MN4GB1●2-T10 138
☐ Individual wiring manifold sub-base porting — M4GB1 to 3 150
☐ Reduced wiring manifold sub-base porting — M4GB1 to 3 162
☐ Five port plug-in type sub-base porting — W4GB2 166
☐ Discrete valve body porting — AKA1 to 4 172
☐ Discrete valve sub-plate porting — AKB1 to 4 178
☐ Discrete valve body porting and sub-plate porting — 3QRA, 3QRB 184
☐ Individual wiring manifold, body porting and sub-plate porting — M3QRA, M3QRB 184
☐ Reduced wiring block manifold Pilot operated 3, 4 port valve — MN4E0 184
☐ 3 port solenoid valve with spool position detection — SNP 200

Pilot operated type 3/5 port connection valve discrete valve body porting

3GA1•2•3/4GA1•2•3 Series

● Applicable cylinder bore: ø20 to ø100

RoHS CAD CE



Catalog No. CB-023SA

Features

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

How to order

5 port connection valve

4GA1 1 0 - C6 - E2 - 1 -K2

3 port connection valve

3GA1 1 0 - C6 - E2 - 1 -K2

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

		Ⓐ Model No.					
Symbol	Descriptions	3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
Ⓑ 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	●	●	●			
Ⓒ Port size							
Port	**A/B port**	**P•R1•R2 port ①=M5 ②=G1/8 ③=G1/4**					
C4	ø4 push-in fitting	①			①		
C6	ø6 push-in fitting		②			②	
C8	ø8 push-in fitting		②	③		②	③
C10	ø10 push-in fitting			③			③
06G	G1/8		②			②	
08G	G1/4			③			③
Ⓓ Electrical connections							
	E connector (radial/lateral common)						
E2	Lead wire (300mm) with surge suppressor and light	●	●	●	●	●	●
B	DIN terminal box		●	●		●	●
Ⓔ Voltage							
1	100 VAC (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
Valve type / operation method		Pilot operated type soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. 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
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
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: Avoid any water drops or oil.

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
Current 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
Port size	A•B port	Push-in fitting ø4	Push-in fitting ø6, ø8	Push-in fitting ø8, ø10	Push-in fitting ø4	Push-in fitting ø6, ø8	Push-in fitting ø8, ø10
	P•R1•R2 port	M5	G1/8	G1/4	M5	G1/8	G1/4

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
Weight 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.

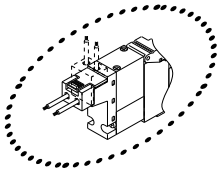
Flow characteristic

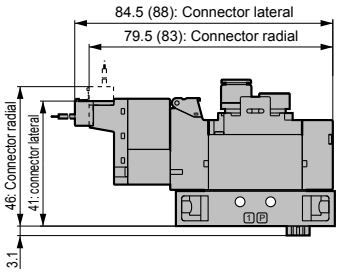
Model No.	Solenoid position		P→A/B		A/B→R1/R2	
			C [dm^3/(s•bar)]	b	C [dm^3/(s•bar)]	b
3GA1	2-position		1.2	0.47	0.70	0.39
3GA2			2.4	0.33	2.7	0.28
3GA3			3.4	0.29	3.9	0.27
4GA1	2-position (single/double)		1.2	0.47	0.70	0.39
	3-position	All ports closed	1.1	0.39	0.66	0.29
		ABR connection	1.1	0.33	0.68	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 ≒ 5.0×C.
Note 2: The value for 2 position and ABR connection is the value when a check valve is integrated.

● 3GA110

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



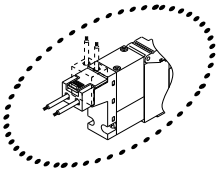


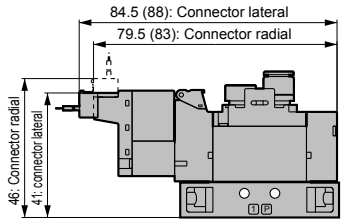
Note: Values in ( ) apply for 100 VAC.

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

● 3GA1110

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

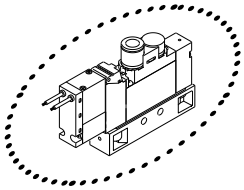


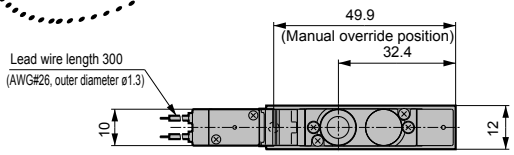


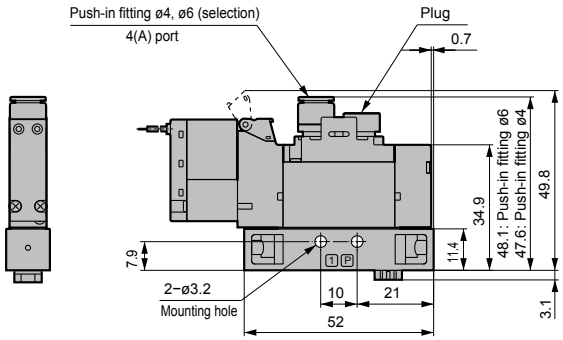
Note: Values in ( ) apply for 100 VAC.

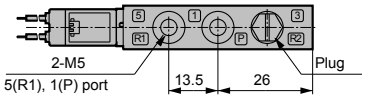
* For other dimensions, refer to the grommet lead wire shown below.

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

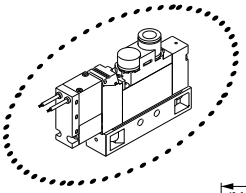


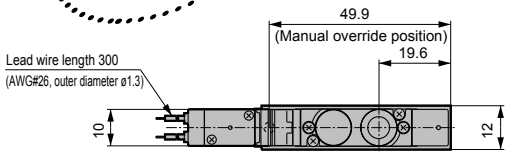


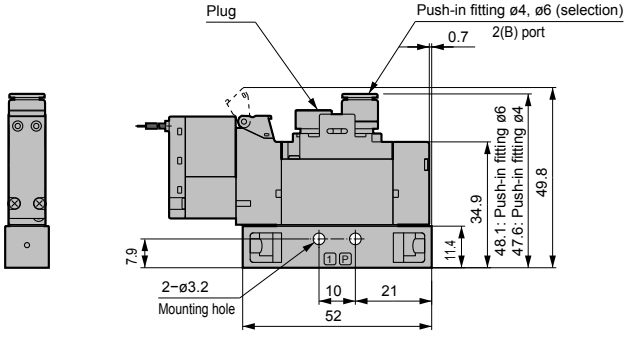


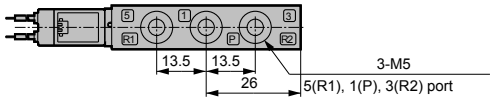


2-position single solenoid normally open grommet lead wire (blank)



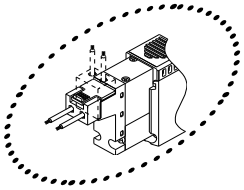


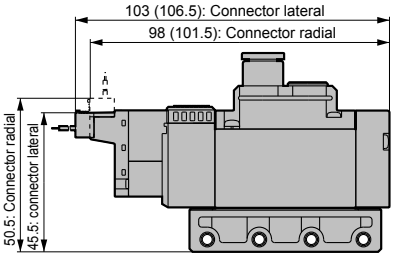




● 3GA210

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



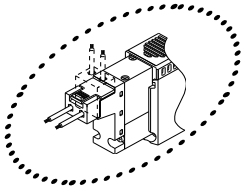


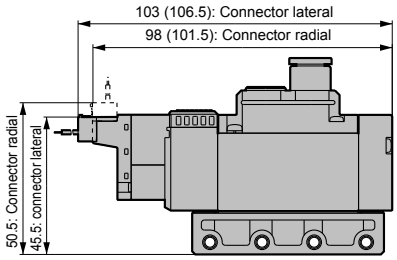
Note: Values in ( ) apply for 100 VAC.

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

● 3GA2110

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

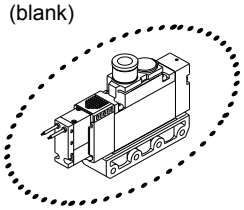


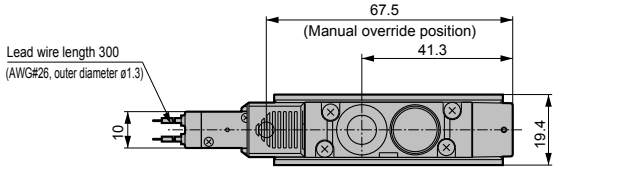


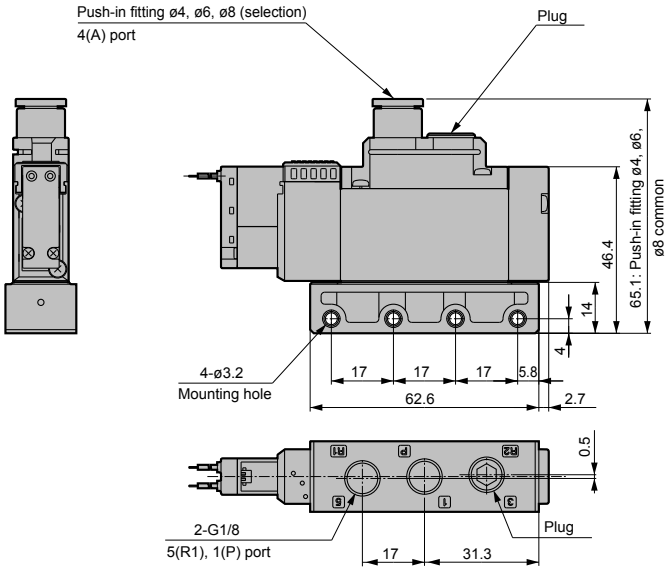
Note: Values in ( ) apply for 100 VAC.

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

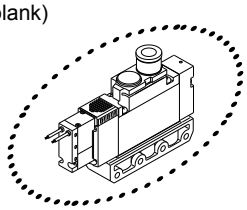
2-position single solenoid normally closed grommet lead wire (blank)

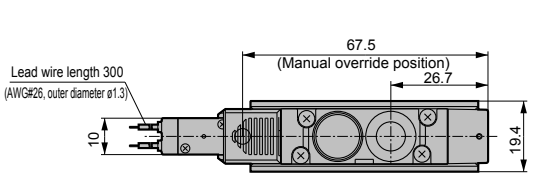


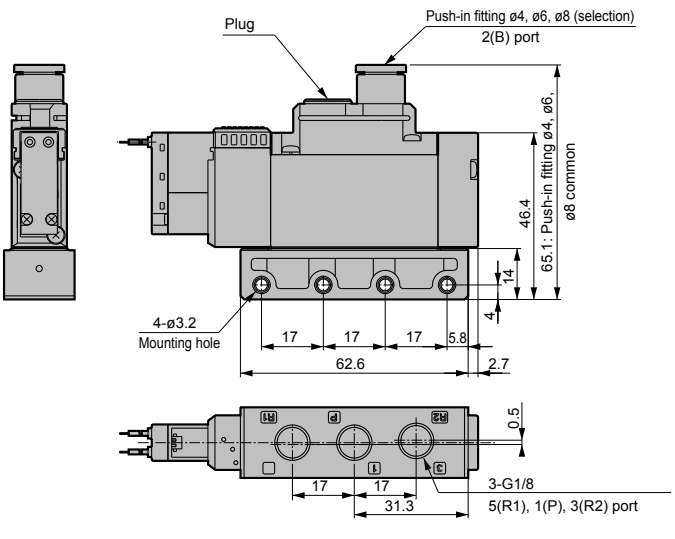




2-position single solenoid normally open grommet lead wire (blank)

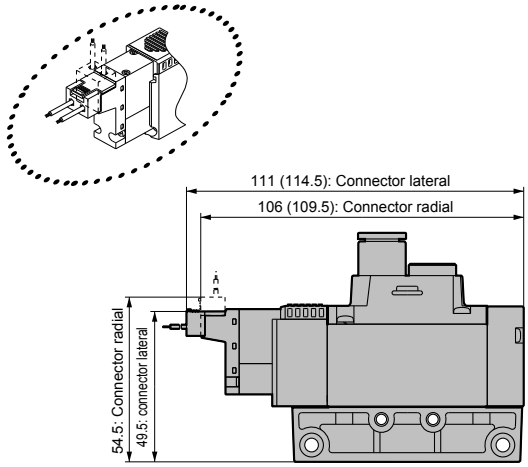






● 3GA310

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

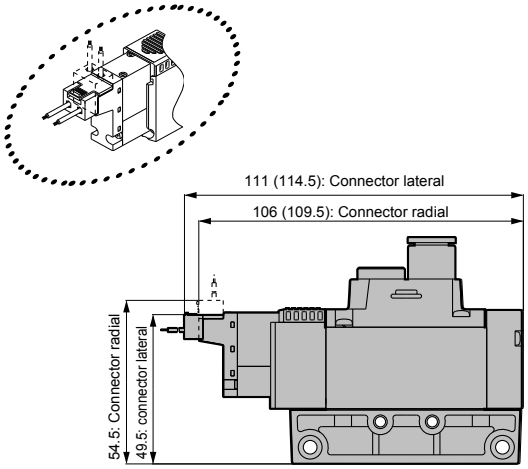


Note: Values in ( ) apply for 100 VAC.

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

● 3GA3110

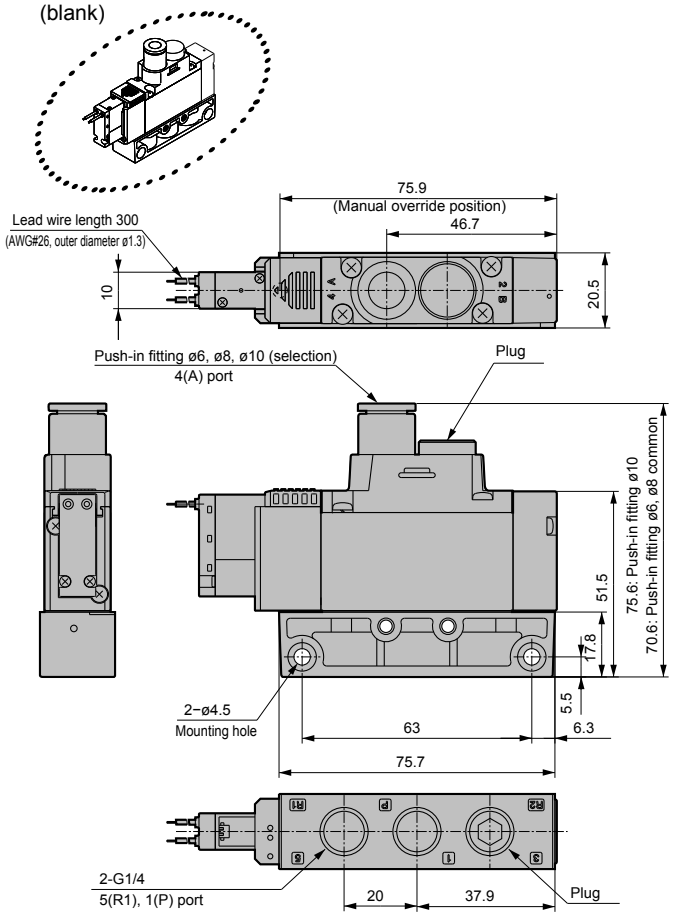
2-position single solenoid normally open E connector type (E)



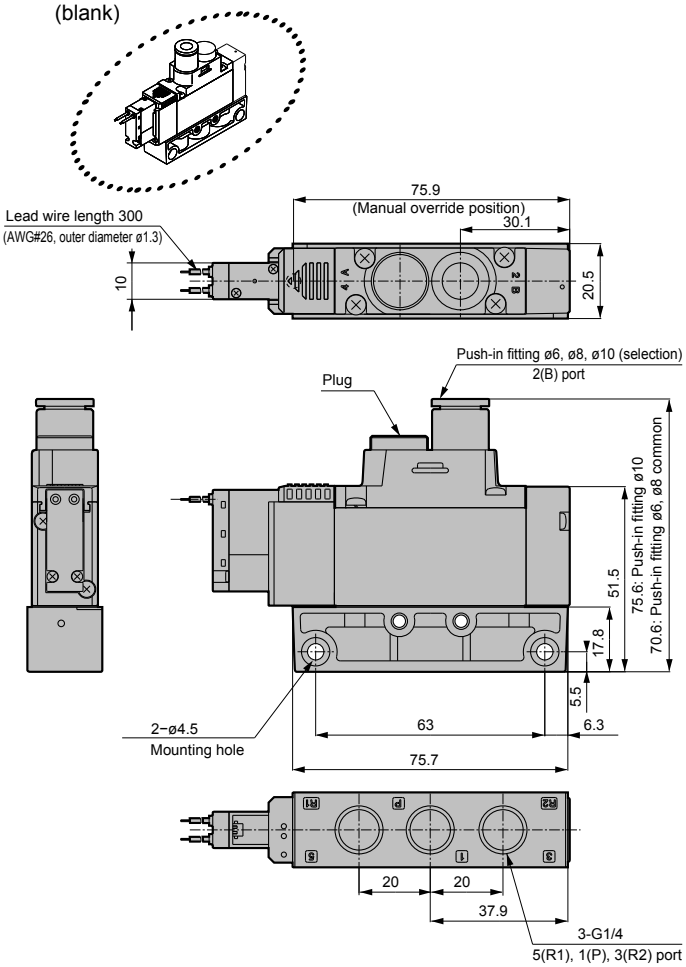
Note: Values in ( ) apply for 100 VAC.

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

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

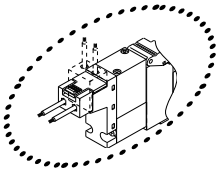


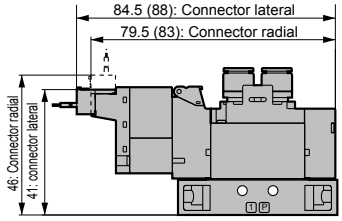
2-position single solenoid normally open grommet lead wire (blank)



● 4GA110

2-position single solenoid E connector type (E)



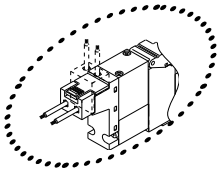


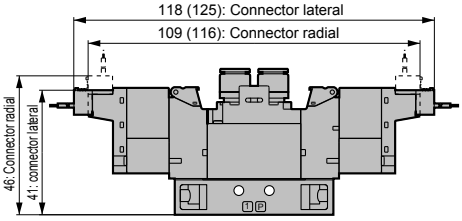
Note: Values in ( ) apply for 100 VAC.

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

● 4GA120

2-position double solenoid E connector type (E)

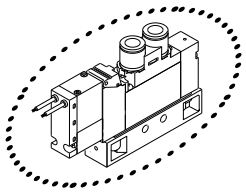


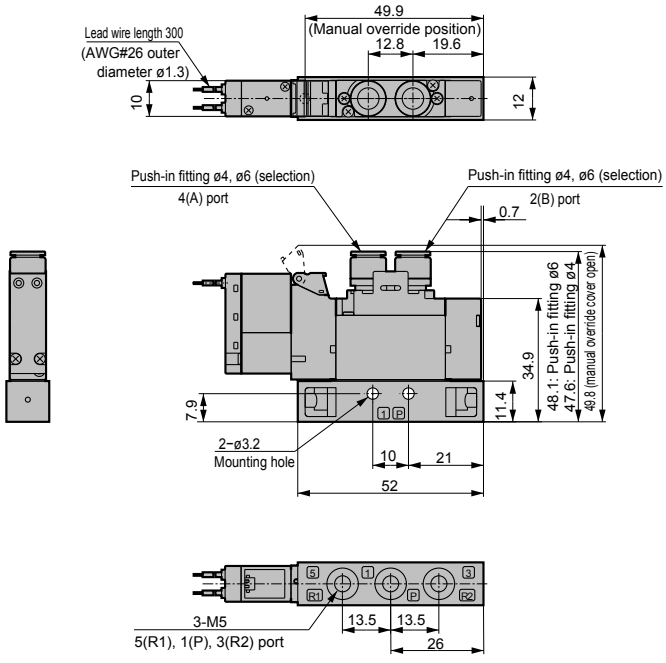


Note: Values in ( ) apply for 100 VAC.

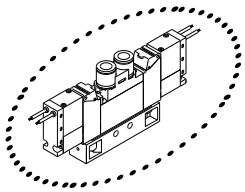
* For other dimensions, refer to the grommet lead wire shown below.

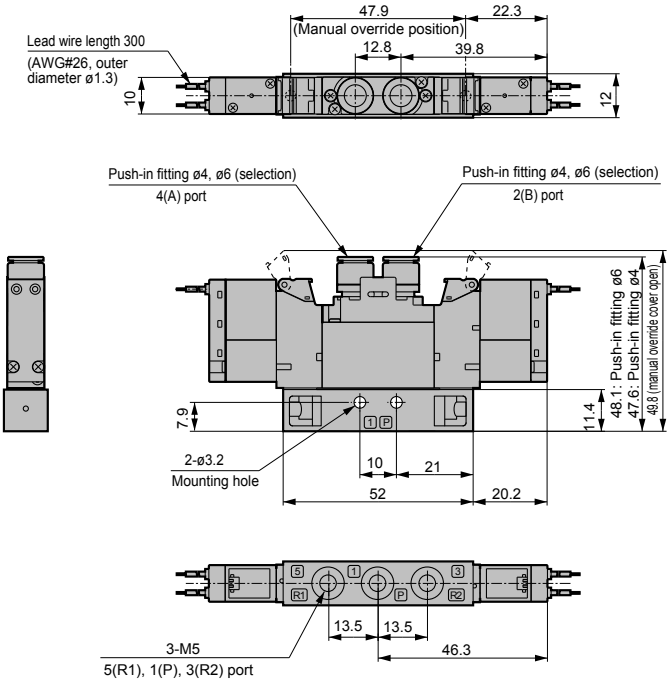
2-position single solenoid grommet lead wire (blank)





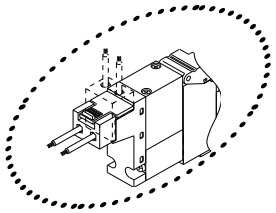
2-position double solenoid grommet lead wire (blank)

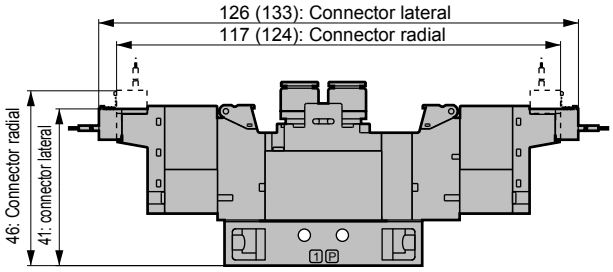




● 4GA1$^{3}_{5}$0

3-position E connector type (E)

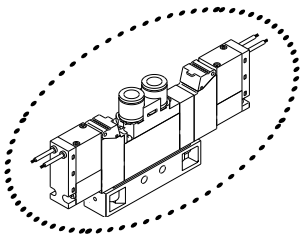


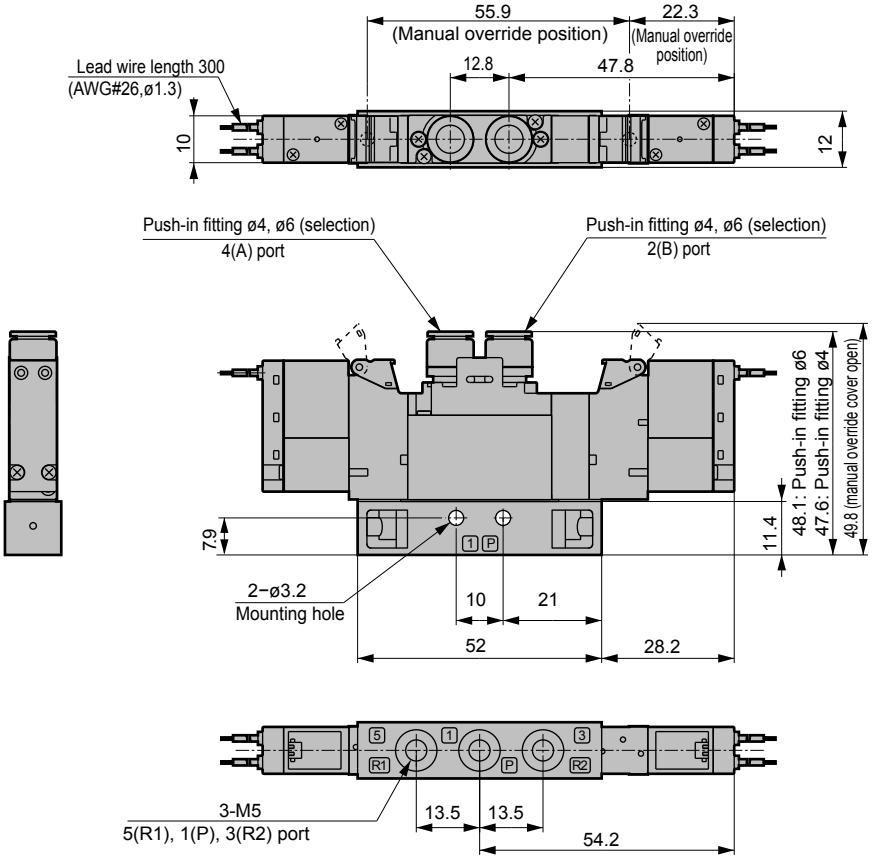


Note: Values in ( ) apply for 100 VAC.

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

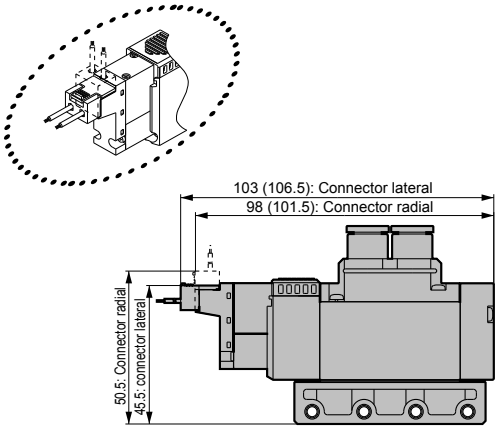
3-position grommet lead wire (blank)





● 4GA210

2-position single solenoid E connector type (E)

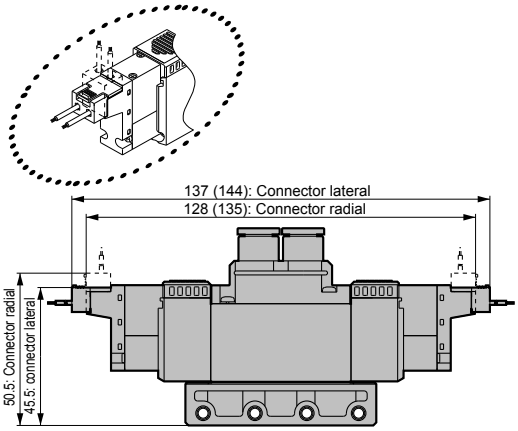


Note: Values in ( ) apply for 100 VAC.

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

● 4GA220

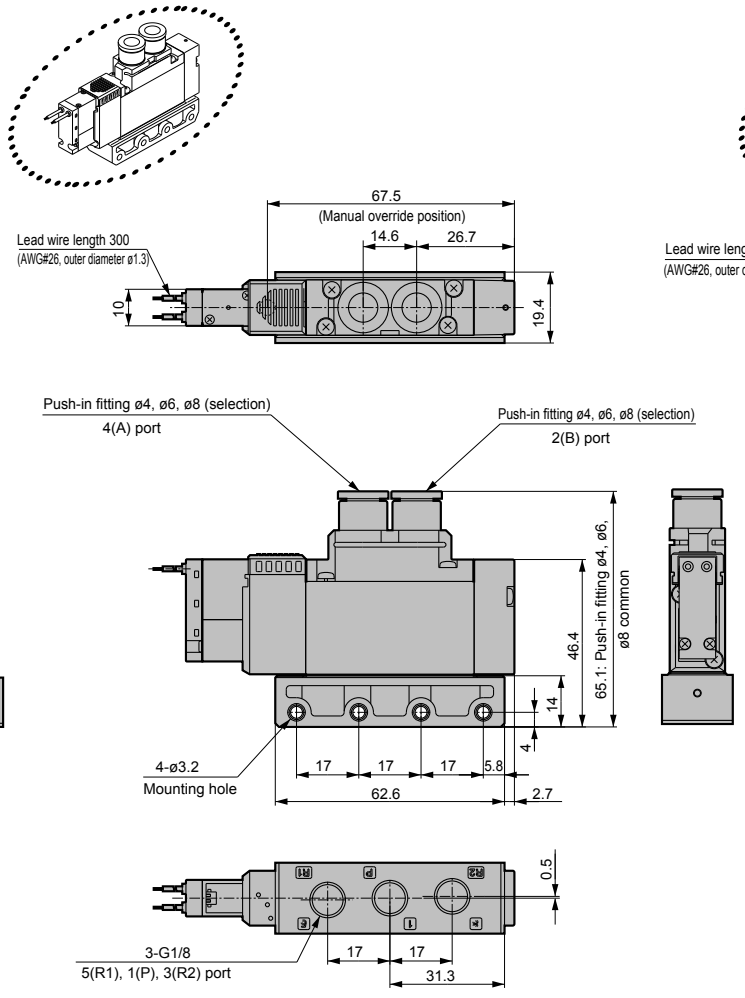
2-position double solenoid E connector type (E)



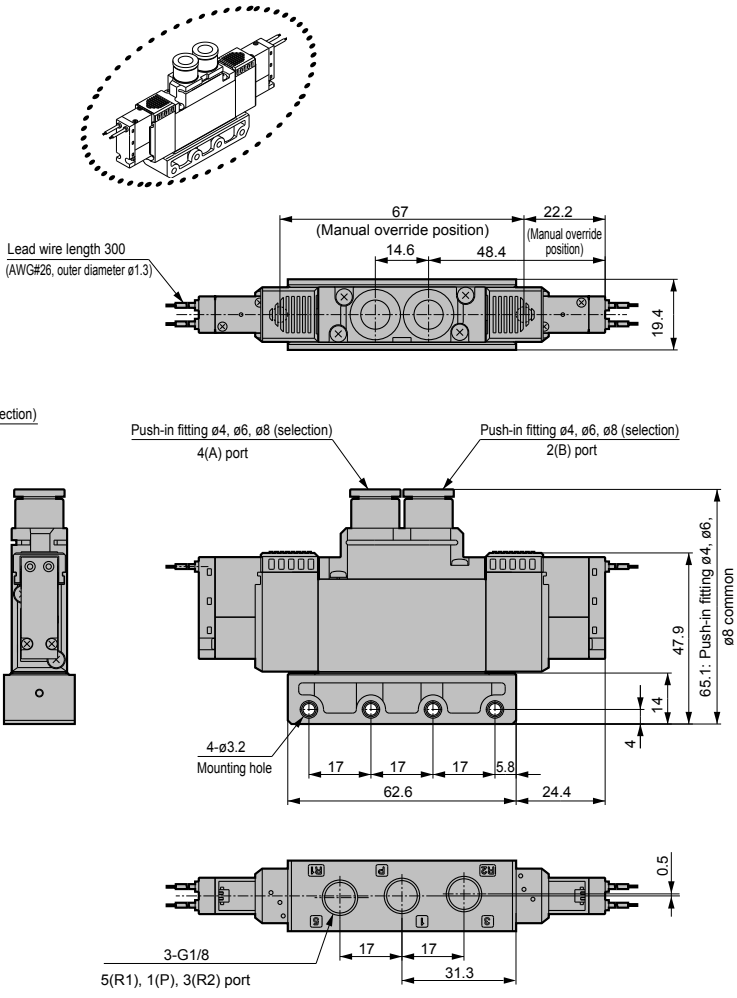
Note: Values in ( ) apply for 100 VAC.

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

2-position single solenoid grommet lead wire (blank)

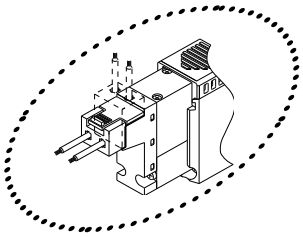


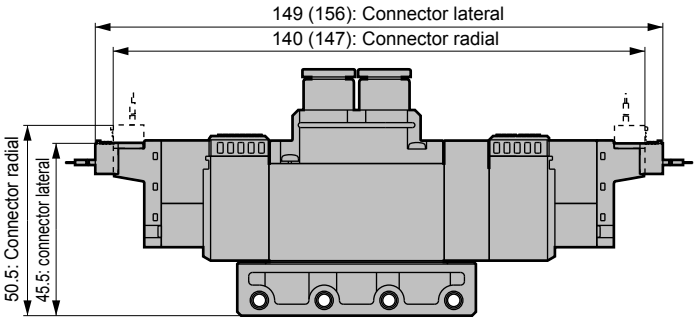
2-position double solenoid grommet lead wire (blank)



● 4GA2$^{3}_{5}$0

3-position E connector type (E)

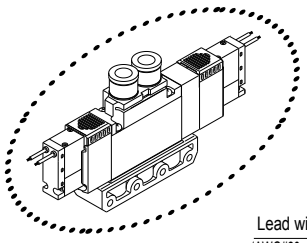


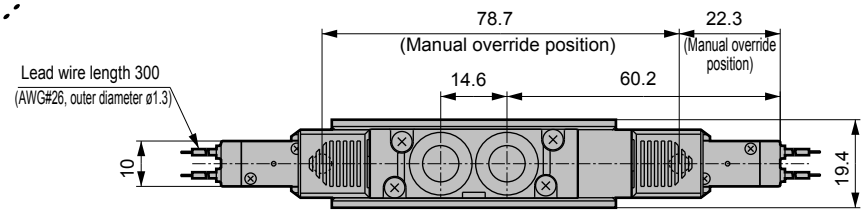


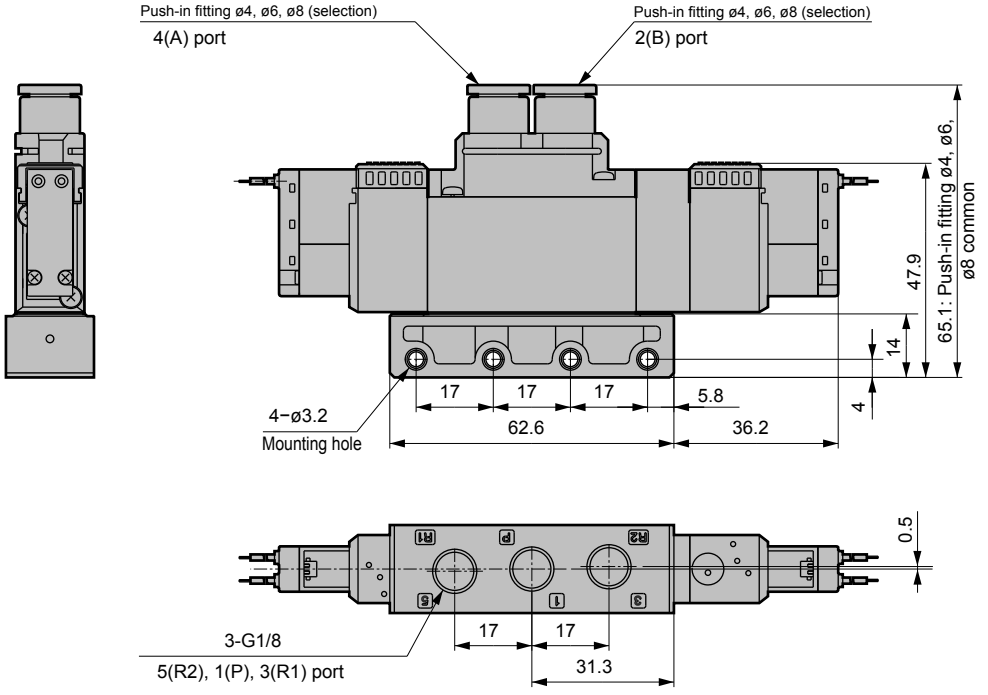
Note: Values in ( ) apply for 100 VAC.

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

3-position grommet lead wire (blank)

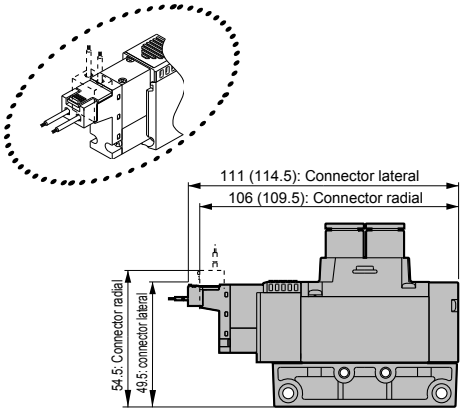






● 4GA310

2-position single solenoid E connector type (E)

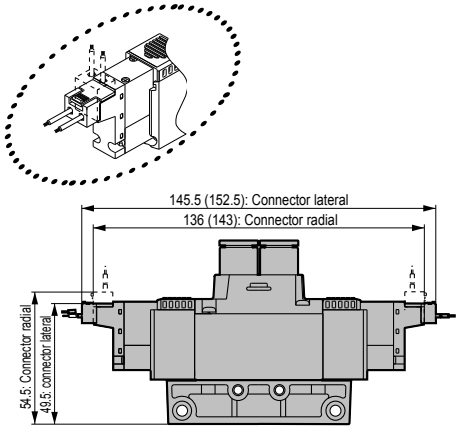


Note: Values in ( ) apply for 100 VAC.

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

● 4GA320

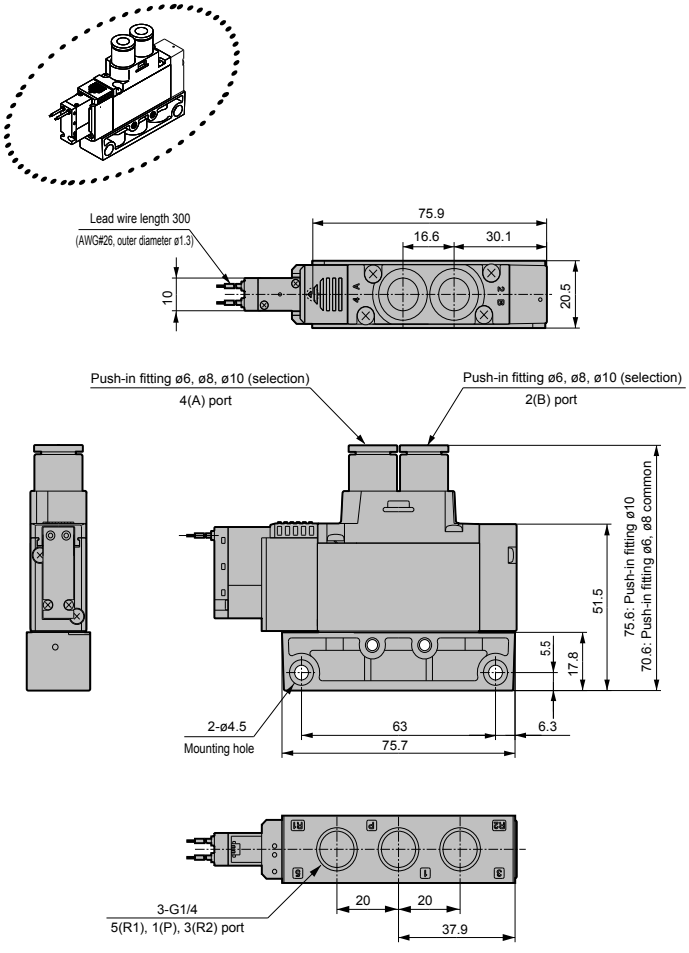
2-position double solenoid E connector type (E)



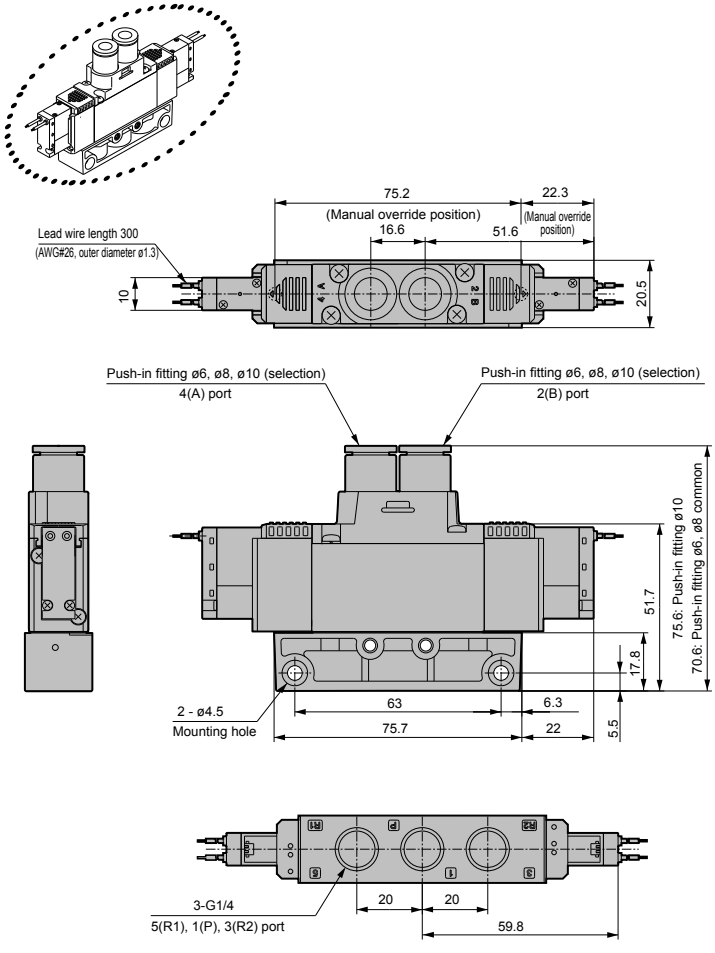
Note: Values in ( ) apply for 100 VAC.

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

2-position single solenoid grommet lead wire (blank)

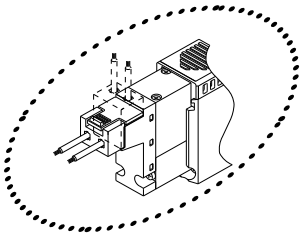


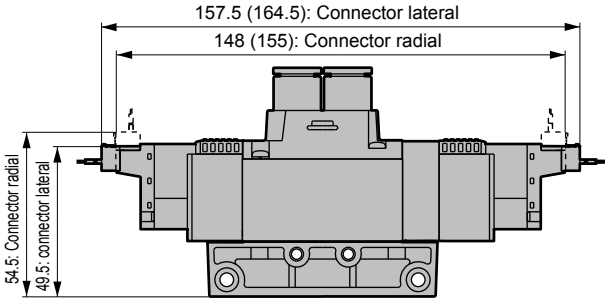
2-position double solenoid grommet lead wire (blank)



● 4GA3$^{3}_{5}$0

3-position E connector type (E)

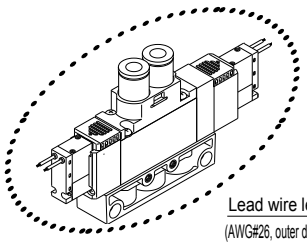


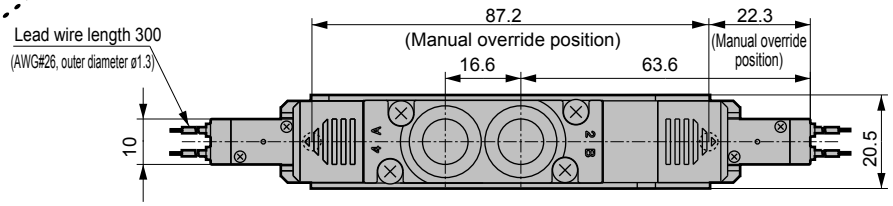


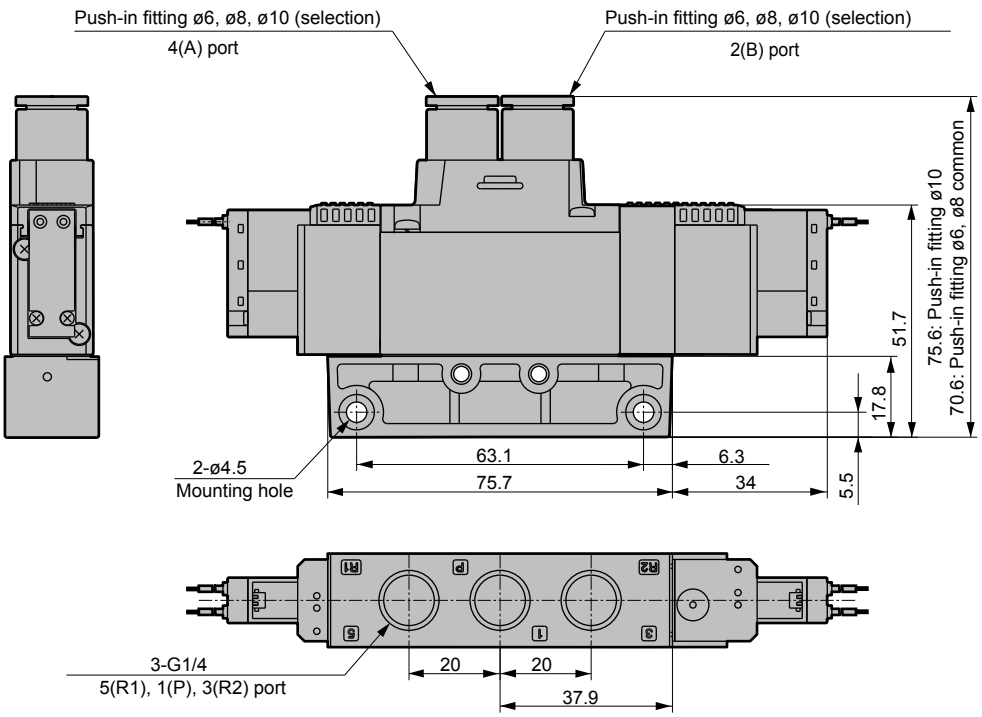
Note: Values in ( ) apply for 100 VAC.

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

3-position grommet lead wire (blank)







MEMO

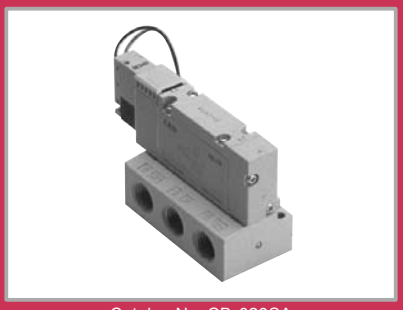
Pilot operated type 5 port connection valve discrete valve sub-base porting

4GB1•2•3 Series

● Applicable 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 - 06 - E2 - 1 - K2

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Symbol	Descriptions	Ⓐ Model No. 4GB1	4GB2	4GB3
Ⓑ 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	●	●	●
Ⓒ Port size				
Port	**A/B port**	**P•R1•R2 port ①=G1/8 ②=G1/4 ③=G3/8**		
06G	G1/8	①		
08G	G1/4		②	
10G	G3/8			③
Ⓓ Electrical connections				
	E connector (radial/lateral common)			
E2	Lead wire (300 mm) with surge suppressor and light	●	●	●
B	DIN Terminal box		●	●
Ⓔ Voltage				
1	100 VAC (rectified bridge integrated)	●	●	●
3	24 VDC	●	●	●

Common specifications

Item		Descriptions
Valve type / operation method		Pilot operated type soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. 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
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
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: Avoid any water drops or oil.

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
Current 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		4GB1	4GB2	4GB3
Port size	A•B port	G1/8	G1/4	G3/8
	P•R1•R2 port	G1/8	G1/4	G3/8

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
Weight 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.

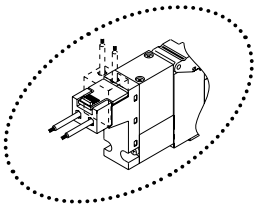
Flow characteristic

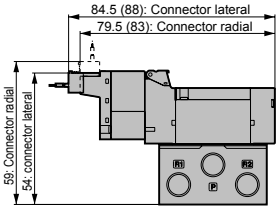
Model No.	Solenoid position		P→A/B		A/B→R1/R2	
			C [dm^3/(s•bar)]	b	C [dm^3/(s•bar)]	b
4GB1	2-position (single/double)		1.3	0.27	1.2	0.15
	3-position	All ports closed	1.1	0.31	1.1	0.29
		ABR connection	1.1	0.31	1.3	0.29
		PAB connection	1.4	0.30	1.1	0.26
4GB2	2-position (single/double)		2.6	0.20	2.5	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 ≒ 5.0×C.

● 4GB110

2-position single solenoid E connector type (E)



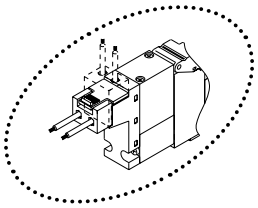


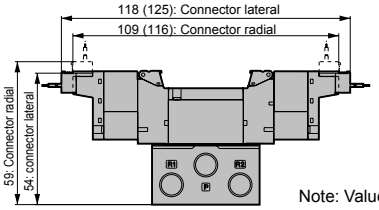
Note: Values in ( ) apply for 100 VAC.

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

● 4GB120

2-position double solenoid E connector type (E)

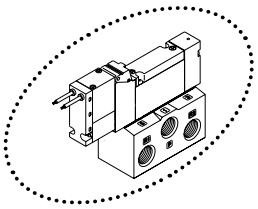


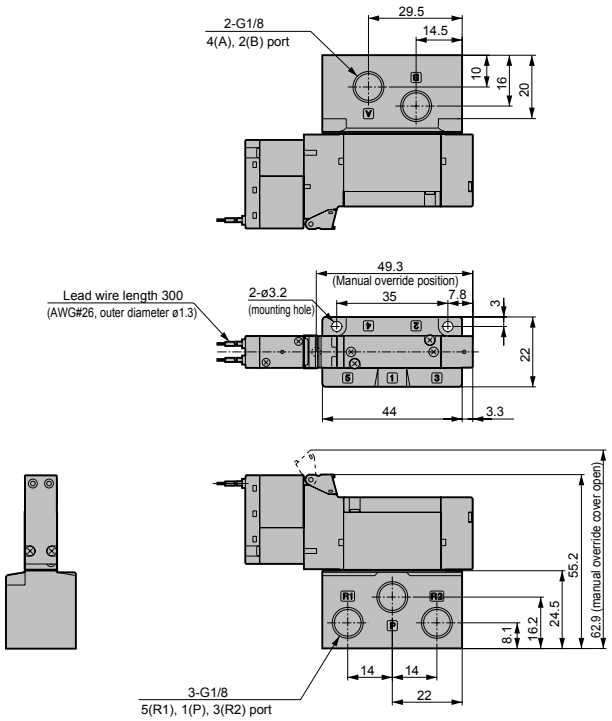


Note: Values in ( ) apply for 100 VAC.

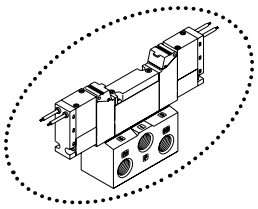
* For other dimensions, refer to the grommet lead wire shown below.

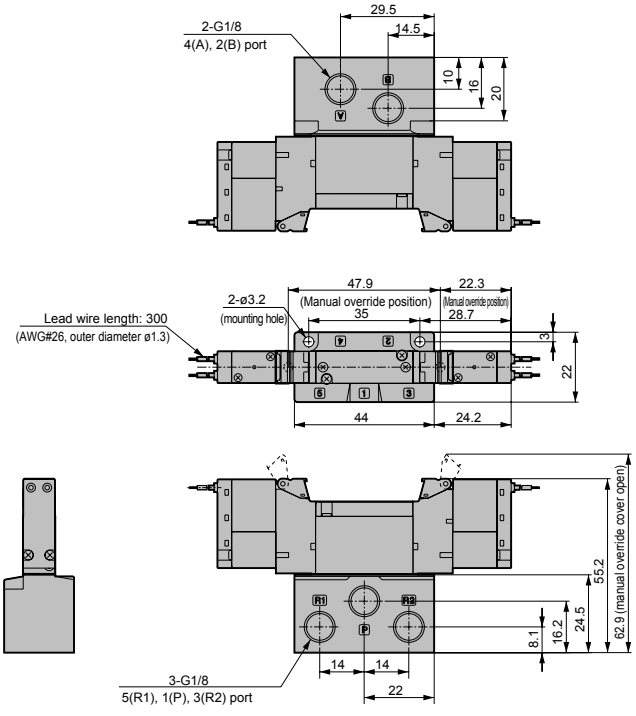
2-position single solenoid grommet lead wire (blank)





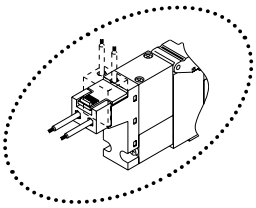
2-position double solenoid grommet lead wire (blank)

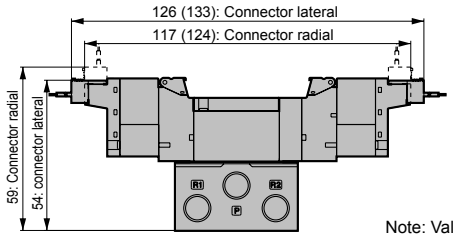




● 4GB1[3/4/5]0

3-position E connector type (E)

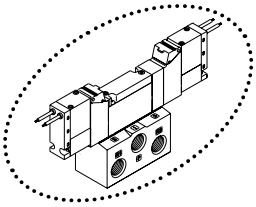


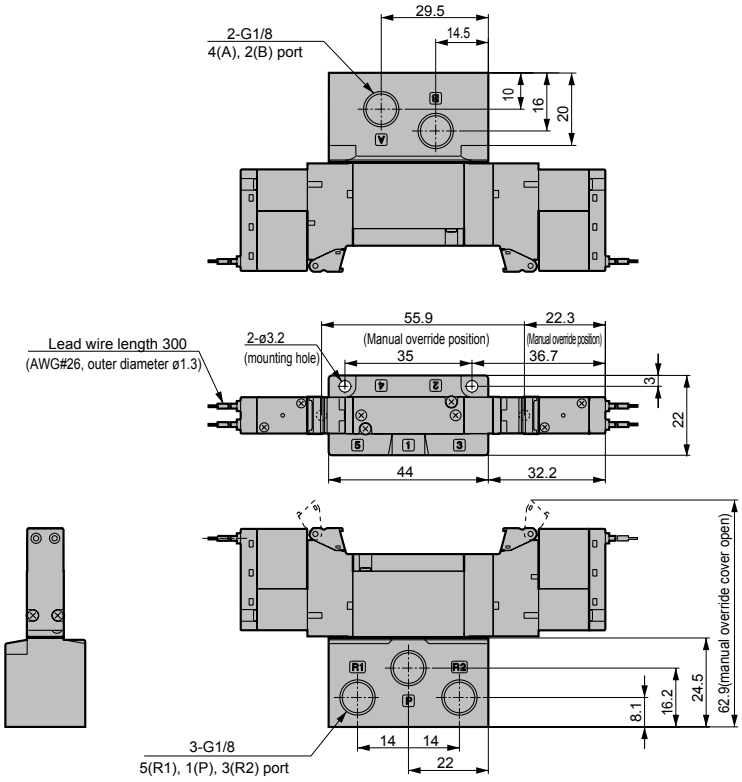


Note: Values in ( ) apply for 100 VAC.

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

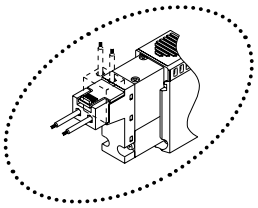
3-position grommet lead wire (blank)

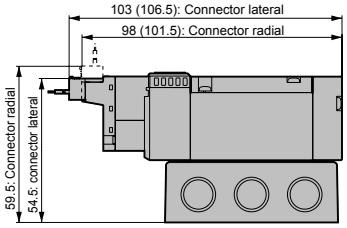




● 4GB210

2-position single solenoid E connector type (E)



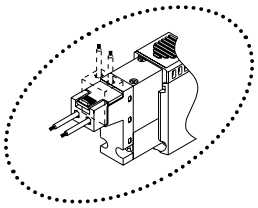


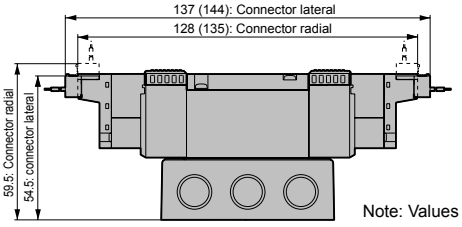
Note: Values in ( ) apply for 100 VAC.

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

● 4GB220

2-position double solenoid E connector type (E)

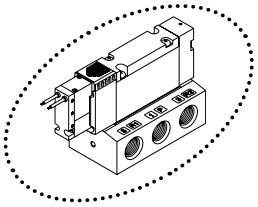


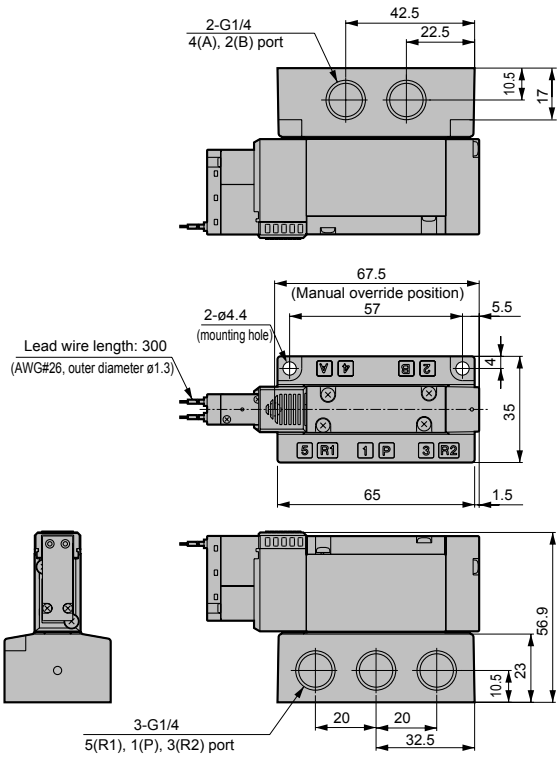


Note: Values in ( ) apply for 100 VAC.

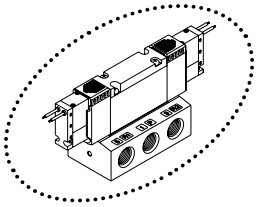
* For other dimensions, refer to the grommet lead wire shown below.

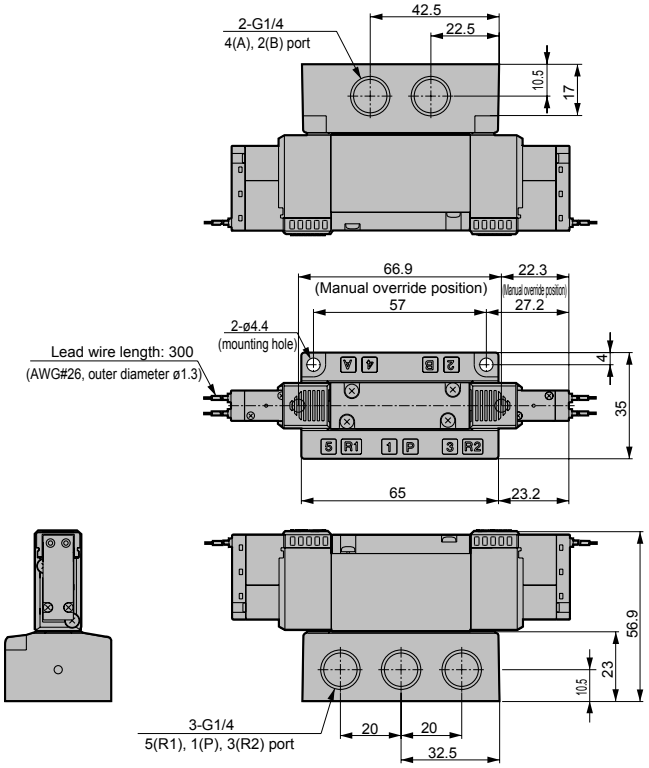
2-position single solenoid grommet lead wire (blank)





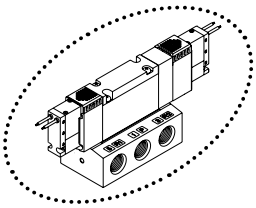
2-position double solenoid grommet lead wire (blank)

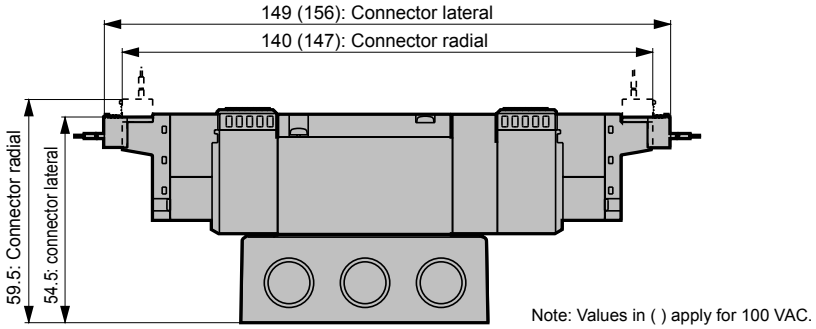




● 4GB2$^{3}_{5}$0

3-position E connector type (E)

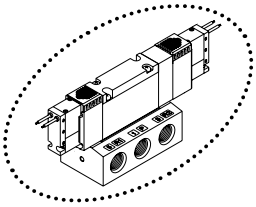


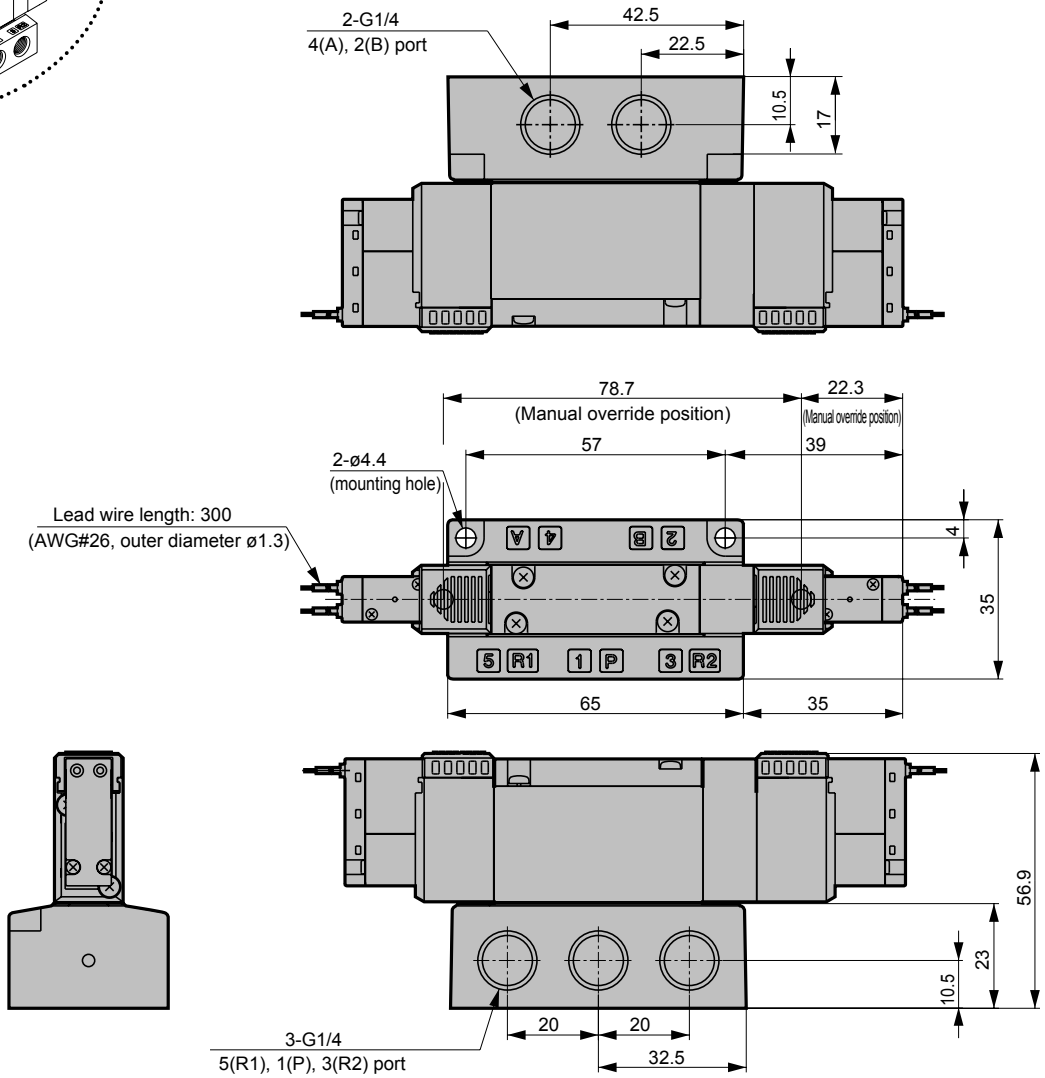


Note: Values in ( ) apply for 100 VAC.

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

3-position grommet lead wire (blank)

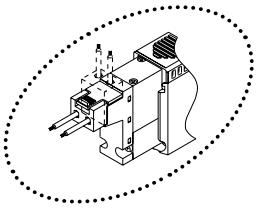


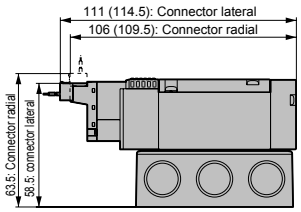


Dimensions

● 4GB310

2-position single solenoid E connector type (E)



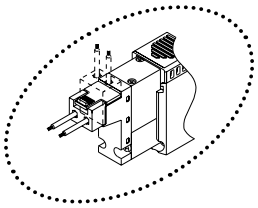


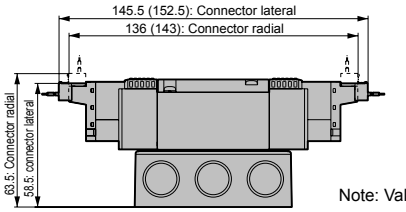
Note: Values in ( ) apply for 100 VAC.

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

● 4GB320

2-position double solenoid E connector type (E)

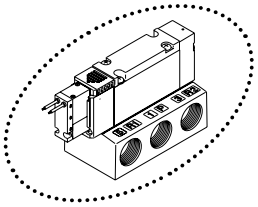


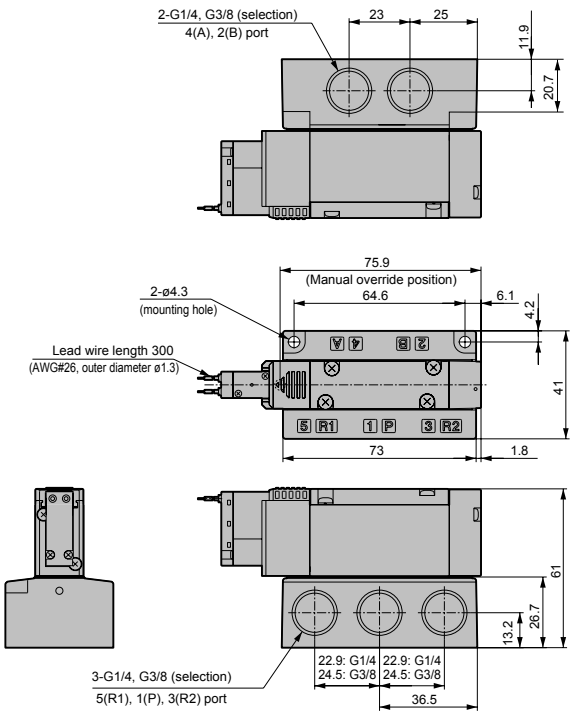


Note: Values in ( ) apply for 100 VAC.

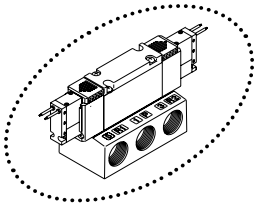
* For other dimensions, refer to the grommet lead wire shown below.

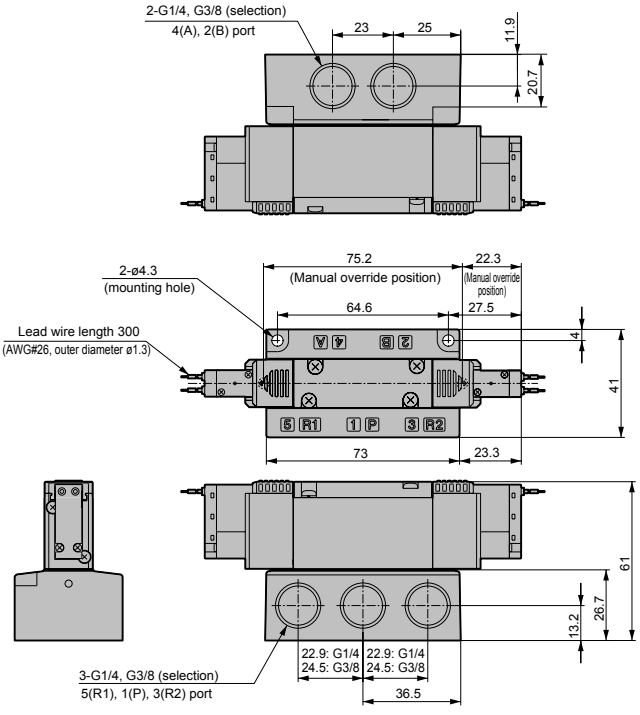
2-position single solenoid grommet lead wire (blank)





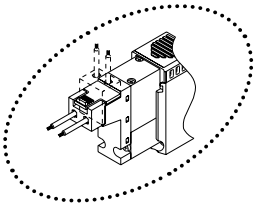
2-position double solenoid grommet lead wire (blank)

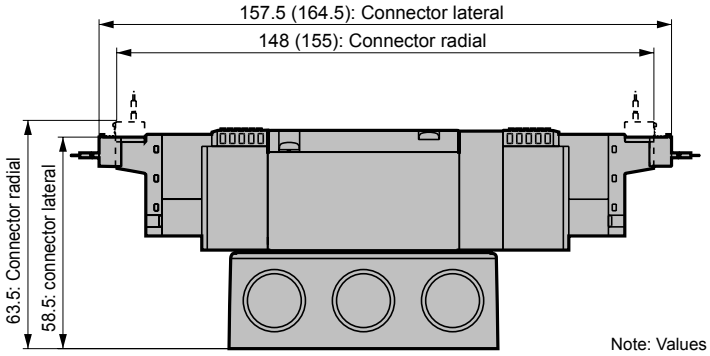




● 4GB3$^{3}_{5}$0

3-position E connector type (E)

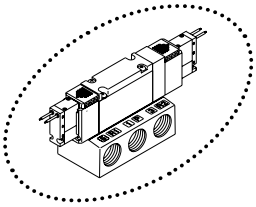


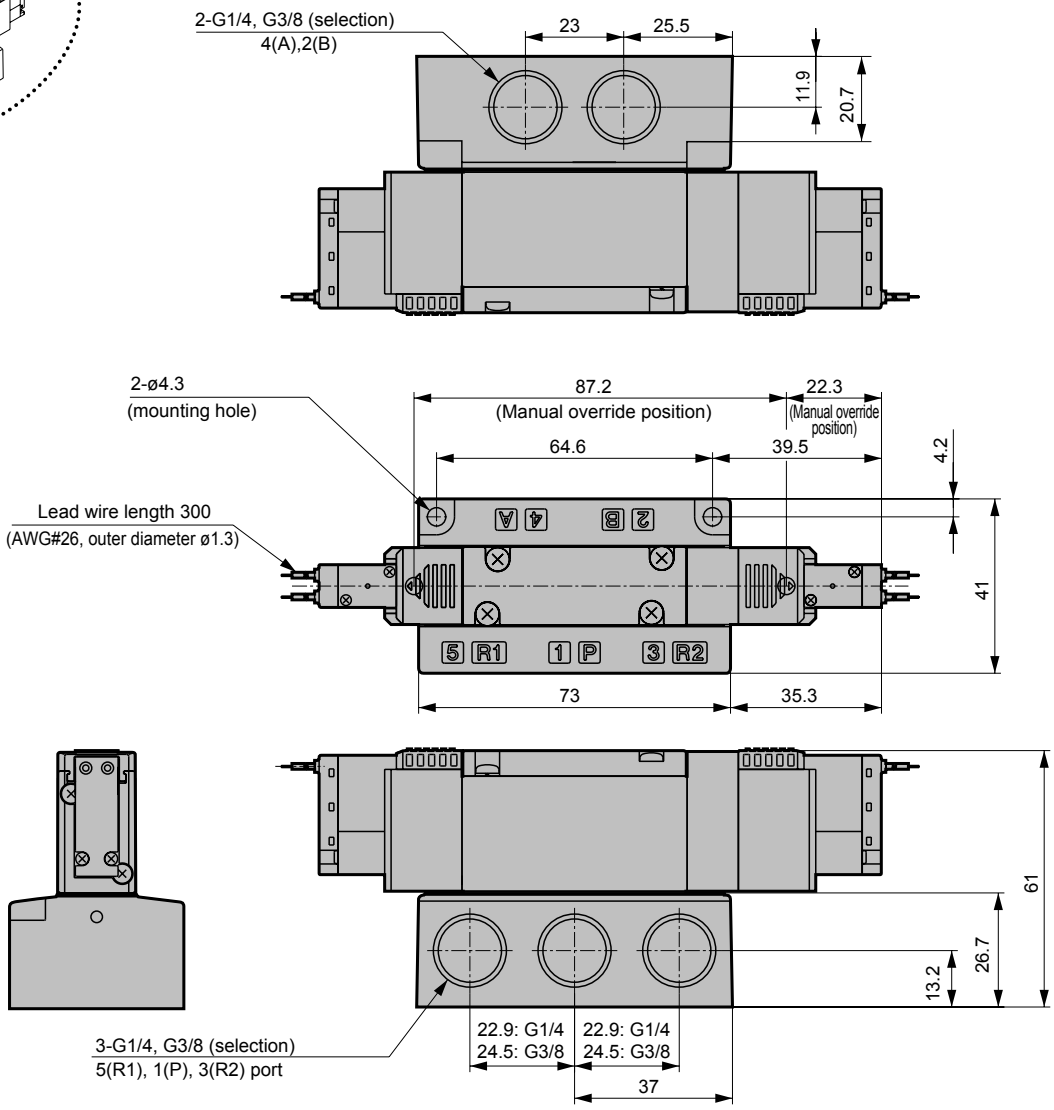


Note: Values in ( ) apply for 100 VAC.

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

3-position grommet lead wire (blank)





Pilot operated type 5 port connection valve discrete valve body porting

4GA4 Series

● Applicable cylinder bore: ø100 to ø140

Features

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

Catalog No. CB-023SA

How to order

4GA4 (A) 1 (B) 0 - C10 (C) - E2 (D) - 3 (E) -K2

Symbol	Descriptions	Ⓐ Model No. 4GA4
Ⓑ Solenoid position		
1	2-position single	●
2	2-position double	●
3	3-position all ports closed	●
4	3-position A/B/R connection	●
5	3-position P/A/B connection	●

Ⓒ Port size		
Port	**A•B port**	**P•R1•R2 port 1/4**
C10	ø10 push-in fitting	●
10G	G3/8	●

Ⓓ Electrical connections		
	E connector (radial/lateral common)	
E2	Lead wire (300 mm) with surge suppressor and light	●
B	DIN Terminal box	●

Ⓔ Voltage		
3	24 VDC	●

Common specifications

Item		Descriptions
Valve type / operation method		Pilot operated type soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. 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 proof
Vibration/shock	m/s^2	50 or less / 300 or less
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: Avoid any water drops or oil.

Electric specifications

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

Individual specifications

Item		4GA4
Port size	A•B port	ø10 Push-in fitting or G3/8
	P•R1•R2 port	G1/4

Item			4GA4	
			When turned ON	When turned OFF
Response time ms	2-position	Single	40	40
		Double	40	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
Weight g	2-position	Single	313 (322)
		Double	377 (386)

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

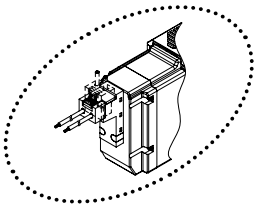
Flow characteristic

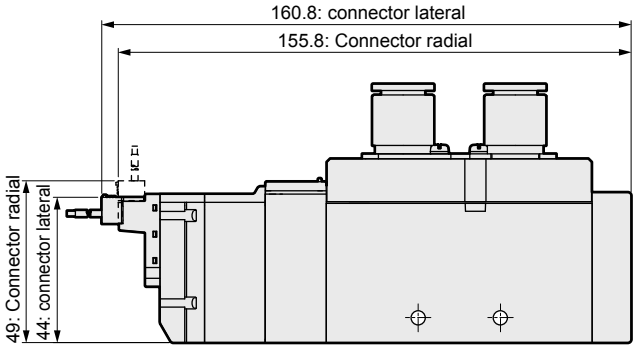
Model No.	Solenoid position	P→A/B		A/B→R1/R2	
		C [dm^3/(s•bar)]	b	C [dm^3/(s•bar)]	b
4GA4	2-position	8.1	0.40	8.0	0.31

Note: Effective area S and sonic conductance C are converted as S ≒ 5.0×C.

● 4GA410

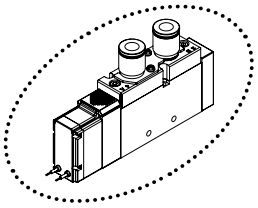
2-position single solenoid E connector type (E)

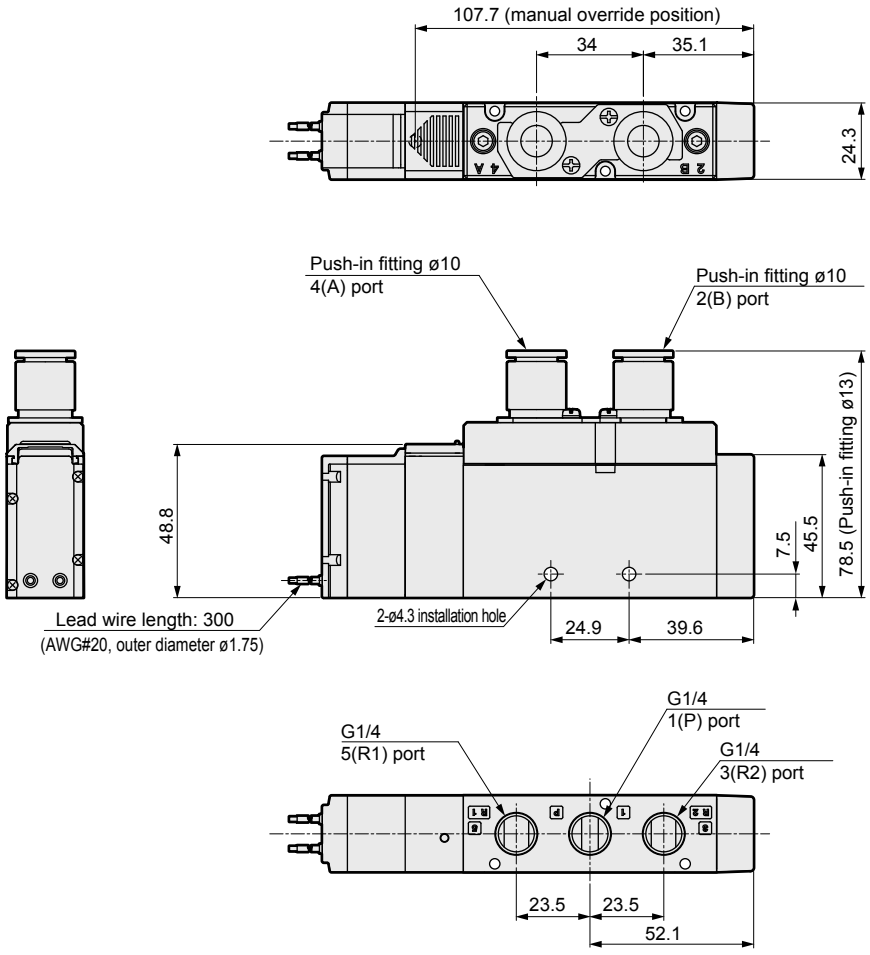




* For other dimensions, refer to the grommet lead wire shown below.

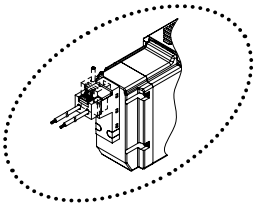
2-position single solenoid grommet lead wire (blank)

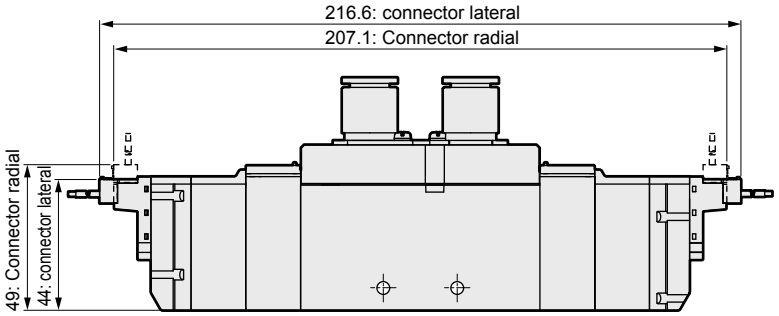




● 4GA420

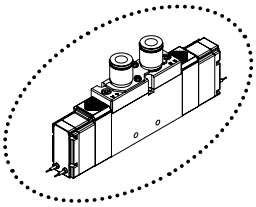
2-position double solenoid E connector type (E)

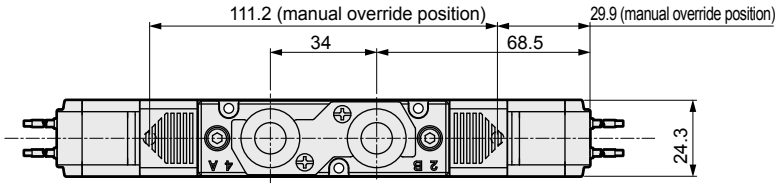


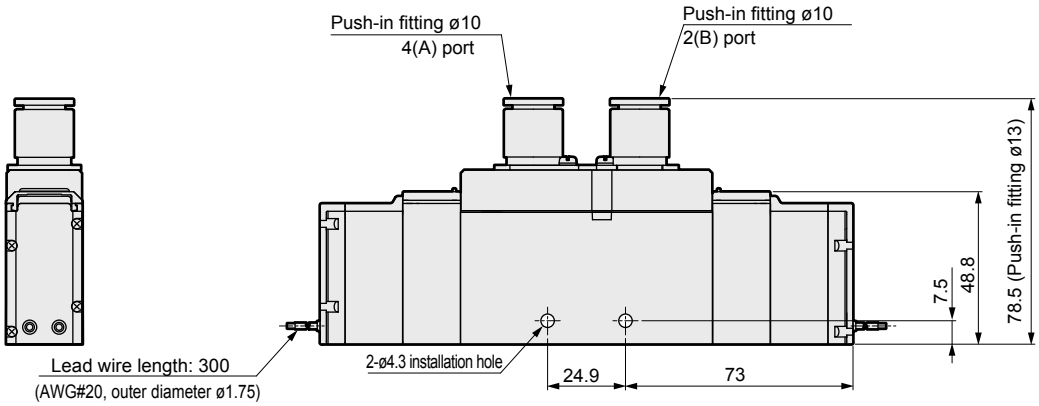


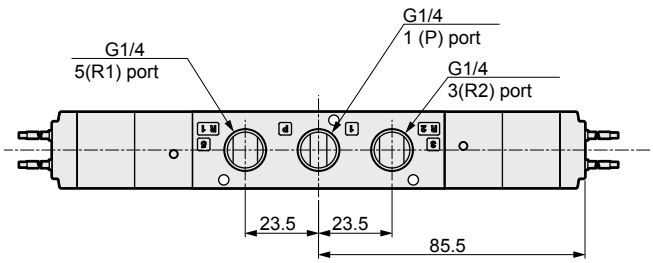
* For other dimensions, refer to the grommet lead wire shown below.

2-position double solenoid grommet lead wire (blank)









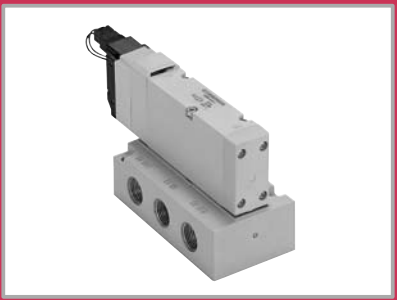
Pilot operated type 5 port connection valve discrete valve sub-base porting

4GB4 Series

● Applicable cylinder bore: ø125 to ø160

Features

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



Catalog No. CB-023SA

How to order

4GB4 (A) 1 (B) 0 - 15G (C) - E2 (D) - 3 (E) -K2

		Ⓐ Model No.
Symbol	Descriptions	4GB4
Ⓑ Solenoid position		
1	2-position single	●
2	2-position double	●
3	3-position all ports closed	●
4	3-position A/B/R connection	●
5	3-position P/A/B connection	●

Ⓒ Port size		
Port	A•B port	P•R1•R2 port
		G1/2
15G	G1/2	●

Ⓓ Electrical connections		
	E connector (radial/lateral common)	
E2	Lead wire (300 mm) with surge suppressor and light	●
B	DIN terminal box	●

Ⓔ Voltage		
3	24 VDC	●

Common specifications

Item		Descriptions
Valve type / operation method		Pilot operated type soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. 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
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
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: Avoid any water drops or oil.

Electric specifications

Item		Descriptions
Rated voltage V	DC	24
Rated voltage fluctuation range		±10%
Holding current Note 3 A	24 VDC	0.042
Current consumption Note 3 W	24 VDC	1.0
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
Port size	A•B port	G1/2
	P•R1•R2 port	G1/2

Item			4GB4	
			When turned ON	When turned OFF
Response time ms	2-position	Single	40	40
		Double	40	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
Weight g	2-position	Single	566 (259)
		Double	626 (319)

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

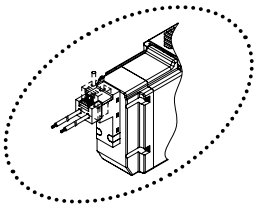
Flow characteristic

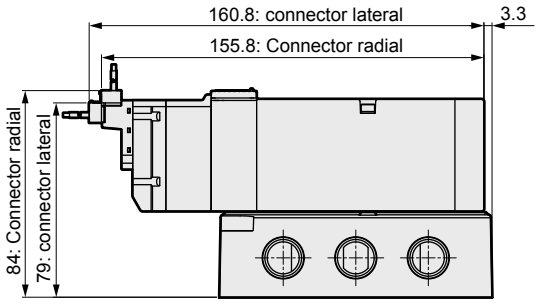
Model No.	Solenoid position	P→A/B		A/B→R1/R2	
		C [dm^3/(s•bar)]	b	C [dm^3/(s•bar)]	b
4GB4	2-position	11	0.19	13	0.19

Note: Effective area S and sonic conductance C are converted as S ≒ 5.0×C.

● 4GB410

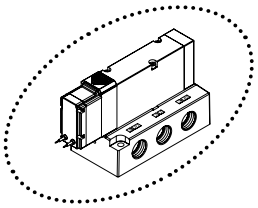
2-position single solenoid E connector type (E)

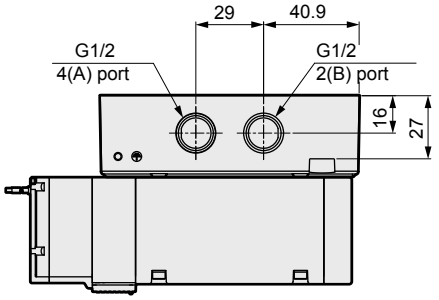


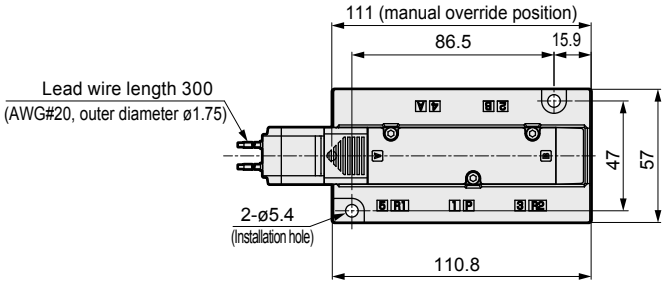


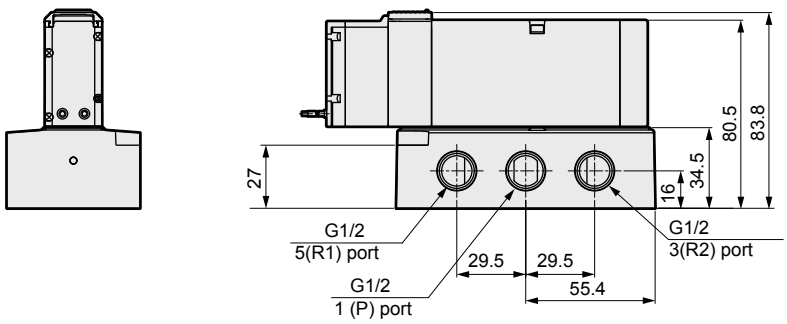
* For other dimensions, refer to the grommet lead wire shown below.

2-position single solenoid grommet lead wire (blank)



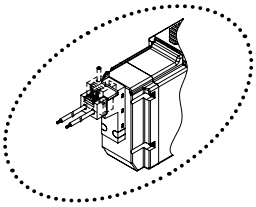


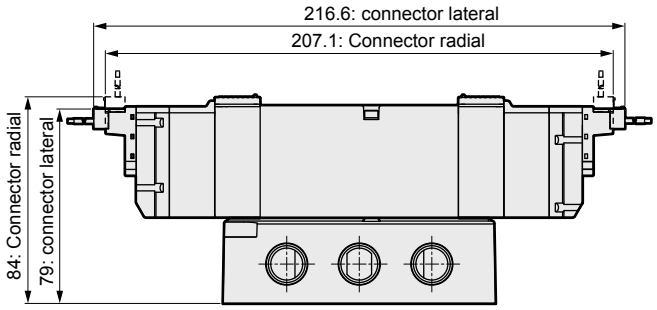




● 4GB420

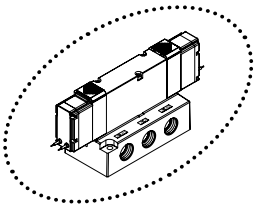
2-position double solenoid E connector type (E)

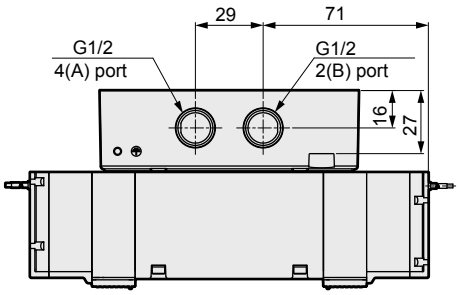


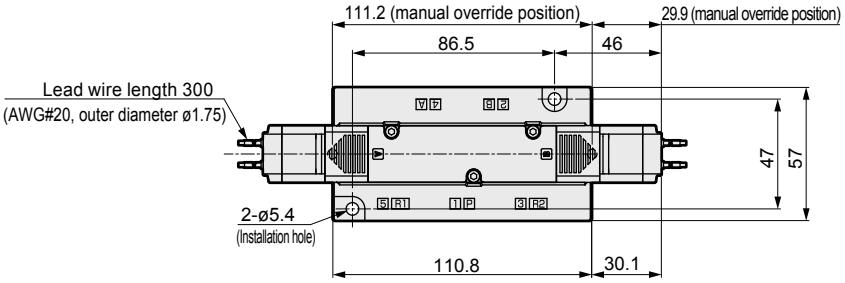


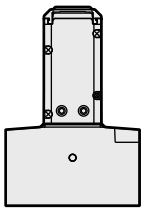
* For other dimensions, refer to the grommet lead wire shown below.

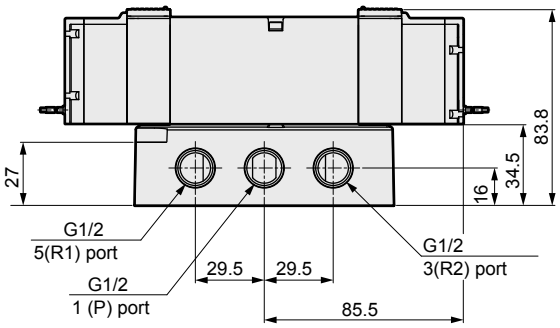
2-position double solenoid grommet lead wire (blank)











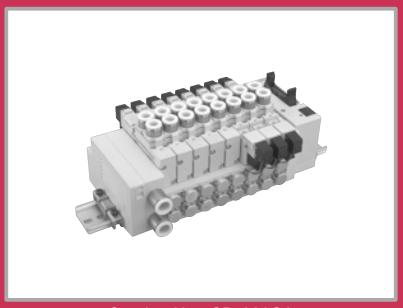
Reduced wiring block manifold: Base piping

MN4GA1•2-T10 Series

● Applicable cylinder bore: ø20 to ø80

Features

- High flow rate and long service life
- Improved operability
- Improved reliability



Catalog No.: CB-023SA

How to order

Manifold model No.

MN4GA1 ① 0 - C6 - T10 ○ H - 7 - 3
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ

Symbol	Descriptions		Ⓐ Model No. Manifold 5 port valve MN4GA1	Ⓐ Model No. Manifold 5 port valve MN4GA2
Ⓑ 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		●	●
Ⓒ Port size (ports A & B)				
C4	ø4 push-in fitting		●	●
C6	ø6 push-in fitting		●	●
C8	ø8 push-in fitting			●
Ⓓ Reduced wiring (light and surge suppressor provided as standard)				
T10	Common gland block (M3 screw)	Left version	●	●
T30	D sub-connector	Left version	●	●
Ⓔ Terminal and connector pin arrangement type				
Blank	Standard wiring	Note 1	●	●
Ⓕ Option				
Blank	None		●	●
H	With Exhaust malfunction prevention valve	Note 2	●	●
Ⓖ Station no.				
1 to 14	1 station to 14 station	Note 3	●	●
Ⓗ 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 P/A/B connection.
Note 3. Please note that the max. station number is also restricted with the max. number of solenoids specified in Individual specifications.

Manifold common specifications

Item		Descriptions
Manifold type		Block manifold
Mounting method		DIN rail mounting type
Supply and exhaust method		Centralized charging / Centralized exhaust (With Internal exhaust malfunction prevention valve)
Pilot exhaust method		Centralized exhaust with Main valve & pilot valve (With Internal pilot exhaust check valve)
Piping direction		Lateral at the base
Valve type/operation method		Pilot soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. 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 device		Common to both Non-locking and Locking types
Lubrication	Note 1.	Not required
Degree of protection	Note 2.	Dust-proof
Vibration/Impact	m/s^2	50 or less / 300 or less
Atmosphere		Not allowed to be used in the corrosive gases.

Note 1. Use Turbine oil type 1 ISO VG32 if necessary. Excessive or intermittent lubrication may cause unstable operation.
Note 2. Dust-proof construction. Not a drip-proof construction. Avoid any water drops or oil.

Electrical specification

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

Individual specifications

Item		MN4GA1		MN4GA2	
		T10	T30	T10	T30
Max. station number	Standard wiring	14 station	24 station	14 station	20 station
Max. solenoid number		14 solenoids	24 solenoids	14 solenoids	24 solenoids
Port size	Ports A & B	Push-in fitting ø4, ø6		Push-in fitting ø4, ø6, ø8	
	Ports P & R	Push-in fitting ø6, ø8		Push-in fitting ø8, ø10	

Flow characteristic

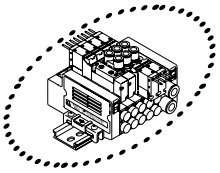
Model number	Solenoid position		P to A/B		A/B to R	
			C [$dm^3/(s \cdot bar)$]	b	C [$dm^3/(s \cdot bar)$]	b
MN4GA1	2 position (single, double)		1.0	0.30	0.72	0.26
	3 position	All ports closed	0.96	0.32	1.0	0.23
		ABR connection	0.96	0.29	0.71	0.30
		PAB connection	1.1	0.31	1.0	0.22
MN4GA2	2 position (single, double)		2.4	0.35	1.7	0.19
	3 position	All ports closed	2.2	0.38	2.2	0.24
		ABR connection	2.2	0.38	1.7	0.20
		PAB connection	2.3	0.29	2.2	0.24

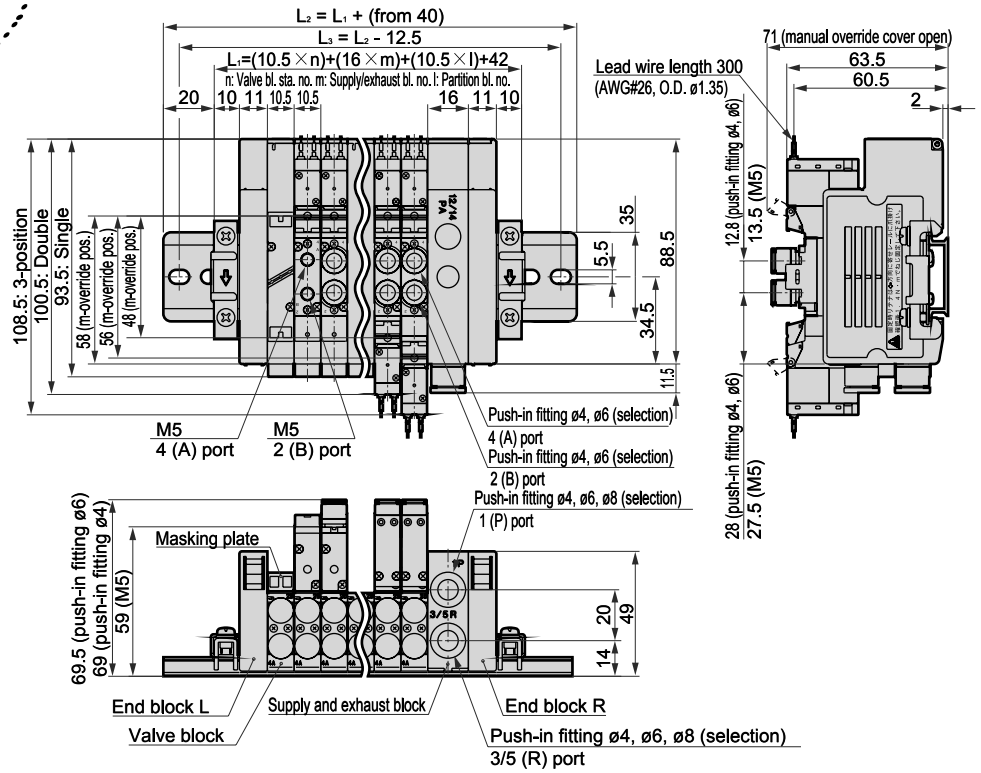
Note 1. Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.
Note 2. The value for 2 position and ABR connection is the value when a check valve is integrated.

● MN4GA1

Common gland (M3 screw) Left (T10)

Note 1: The push-in fitting type (T11) is also available.
Dimensions are the same as T10.
Note 2: The A or B port is a blank plug for MN3GA1.
The type with two 3 port valves has the same dimensions as the double type.

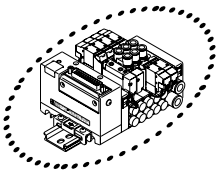


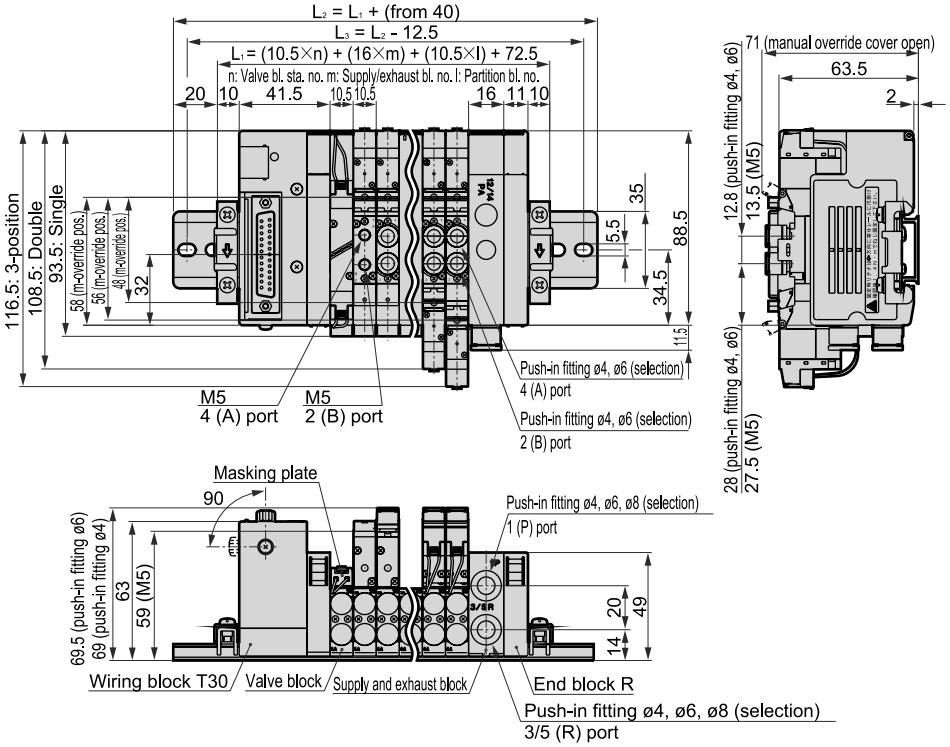


● MN4GA2

Common gland (M3 screw) Right (T10R)

Note: The A or B port is a blank plug for MN3GA1. The type with two 3 port valves has the same dimensions as the double type.

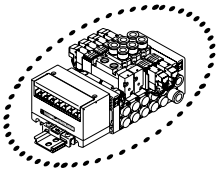


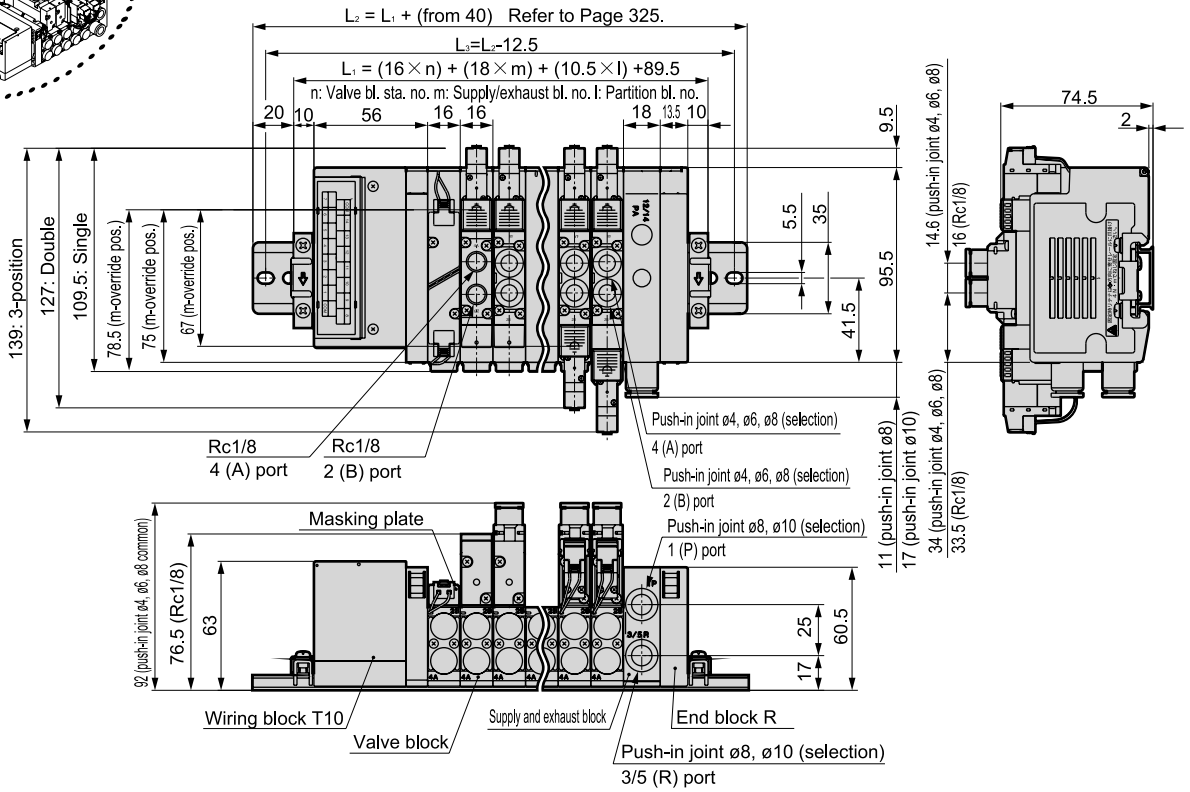


● MN4GA2

Common gland (M3 screw) Left (T10)

Note 1: The push-in fitting type (T11) is also available.
Dimensions are the same as T10.
Note 2: The A or B port is a blank plug for MN3GA2.
The type with two 3 port valves has the same dimensions as the double type.

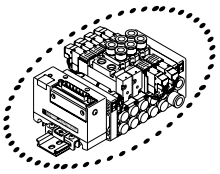


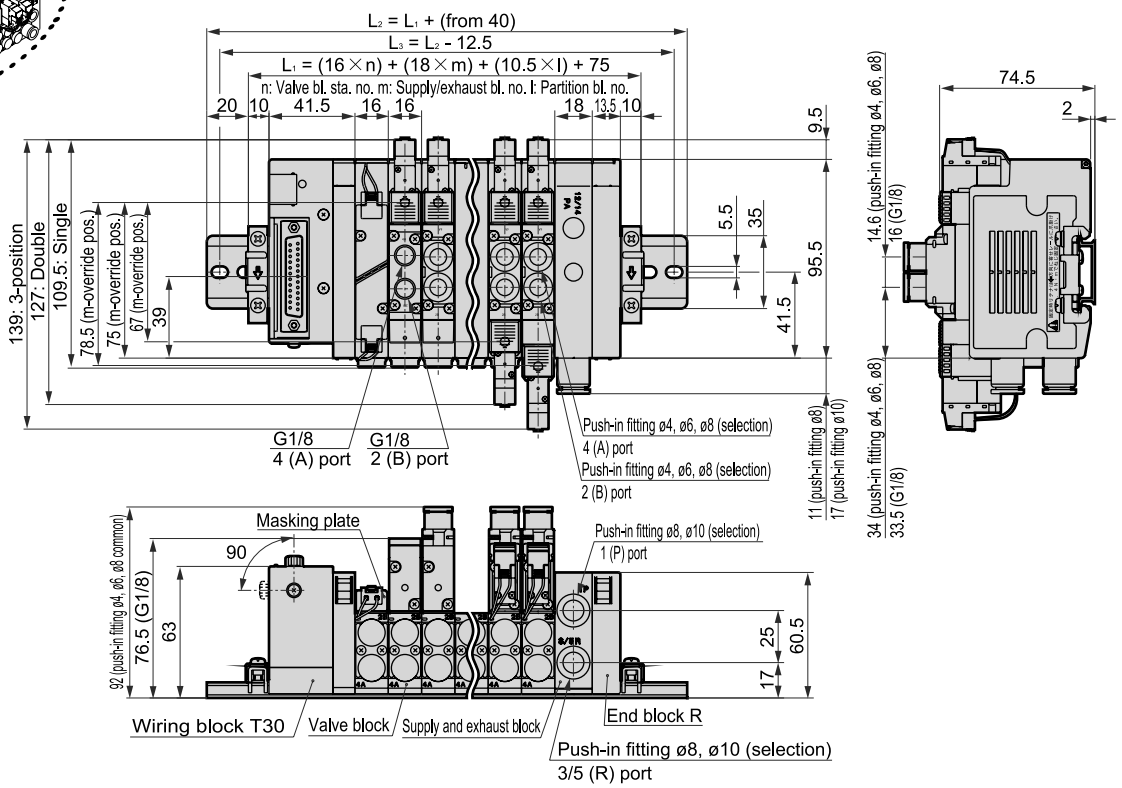


● MN4GA2

Common gland (M3 screw) Right (T10R)

Note: The A or B port is a blank plug for MN3GA2. The type with two 3 port valves has the same dimensions as the double type.





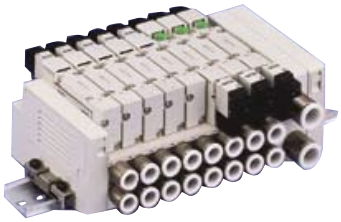
Reduced wiring block manifold: Base piping

MN4GB1•2-T10 Series

● Applicable cylinder bore: ø20 to ø80

Features

- High flow rate and long service life
- Improved operability
- Improved reliability



Catalog No.: CB-023SA

How to order

Manifold model No.

MN4GB1 ① 0 - C6 - T10 ( ) H - 7 - 3

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ

Symbol	Descriptions		Ⓐ type model No. Manifold 5 port valve MN4GB1	MN4GB2
Ⓑ 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		●	●
Ⓒ Port size (ports A & B)				
C4	ø4 push-in fitting		●	●
C6	ø6 push-in fitting		●	●
C8	ø8 push-in fitting			●
Ⓓ Reduced wiring (light and surge suppressor provided as standard)				
T10	Common gland block (M3 screw)	Left version	●	●
T30	D sub-connector	Left version	●	●
Ⓔ Terminal and connector pin arrangement type				
Blank	Standard wiring	Note 1	●	●
Ⓕ Option				
Blank	None		●	●
H	With Exhaust malfunction prevention valve	Note 2	●	●
Ⓖ Station No.				
1 to 14	1 station to 14 station	Note 3	●	●
Ⓗ 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 P/A/B connection.
Note 3. Please note that the max. station number is also restricted with the max. number of solenoids specified in Individual specifications.

Common manifold specification

Item		Descriptions
Manifold type		Block manifold
Mounting method		DIN rail mounting type
Supply and exhaust method		Centralized charging / Centralized exhaust (With Internal exhaust malfunction prevention valve)
Pilot exhaust method		Centralized exhaust with Main valve & pilot valve (With Internal pilot exhaust check valve)
Piping direction		Lateral at the base
Valve type/operation method		Pilot soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. 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 device		Common to both Non-locking and Locking types
Lubrication	Note 1.	Not required
Degree of protection	Note 2.	Dust-proof
Vibration/Impact	m/s^2	50 or less / 300 or less
Atmosphere		Not allowed to be used in the corrosive gases.

Note 1. Use Turbine oil type 1 ISO VG32 if necessary. Excessive or intermittent lubrication may cause unstable operation.
Note 2. Dust-proof construction. Not a drip-proof construction. Avoid any water drops or oil.

Electrical specification

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

Individual specifications

Item		MN4GB1		MN4GB2	
		T10	T30	T10	T30
Max. station number	Standard wiring	14 station	24 station	14 station	20 station
Max. solenoid number		14 solenoids	24 solenoids	14 solenoids	24 solenoids
Port size	Ports A & B	Push-in fitting ø4, ø6		Push-in fitting ø4, ø6, ø8	
	Ports P & R	Push-in fitting ø6, ø8		Push-in fitting ø8, ø10	

Flow characteristic

Model number	Solenoid position		P to A/B		A/B to R	
			C [$dm^3/(s \cdot bar)$]	b	C [$dm^3/(s \cdot bar)$]	b
MN4GB1	2 position (single, double)		1.0	0.30	0.72	0.26
	3 position	All ports closed	0.96	0.32	1.0	0.23
		ABR connection	0.96	0.29	0.71	0.30
		PAB connection	1.1	0.31	1.0	0.22
MN4GB2	2 position (single, double)		2.4	0.35	1.7	0.19
	3 position	All ports closed	2.2	0.38	2.2	0.24
		ABR connection	2.2	0.38	1.7	0.20
		PAB connection	2.3	0.29	2.2	0.24

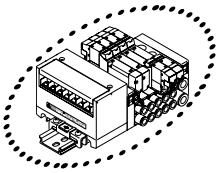
Note 1. Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.
Note 2. The value for 2 position and ABR connection is the value when a check valve is integrated.

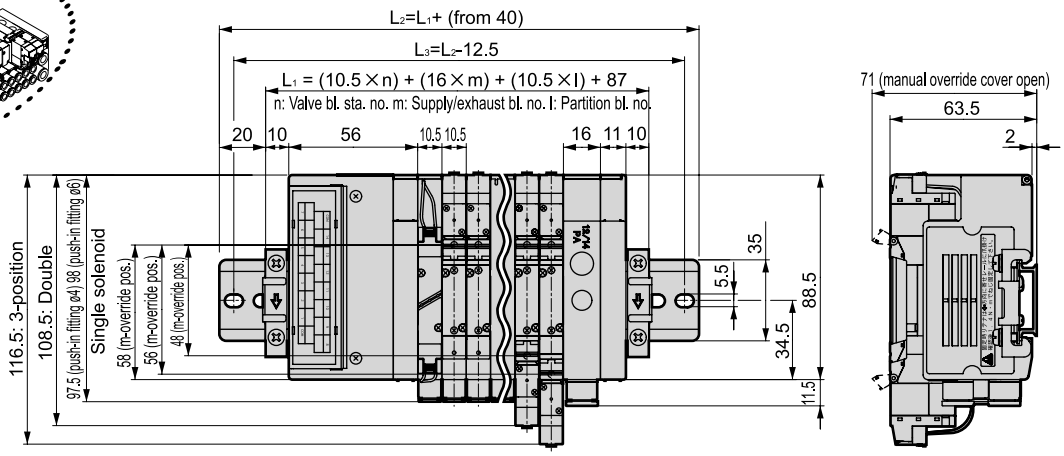
● MN4GB1

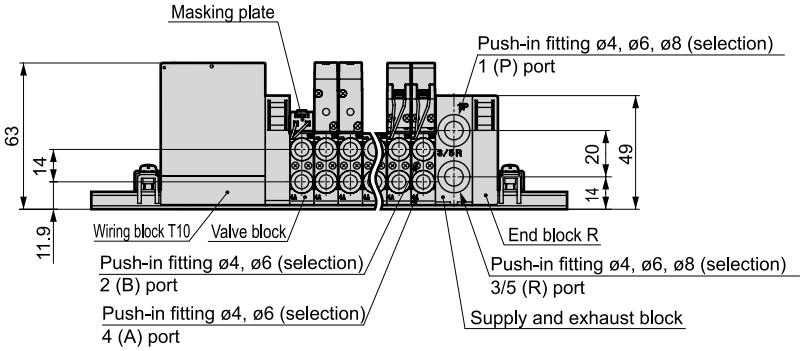
Note : The type with two 3-port valves has the same dimensions as the double type.

Common gland (M3 screw) Left (T10)

Note : The push-in fitting type (T11) is also available.
Dimensions are the same as T10.



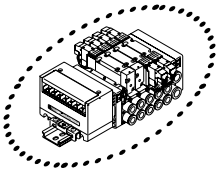


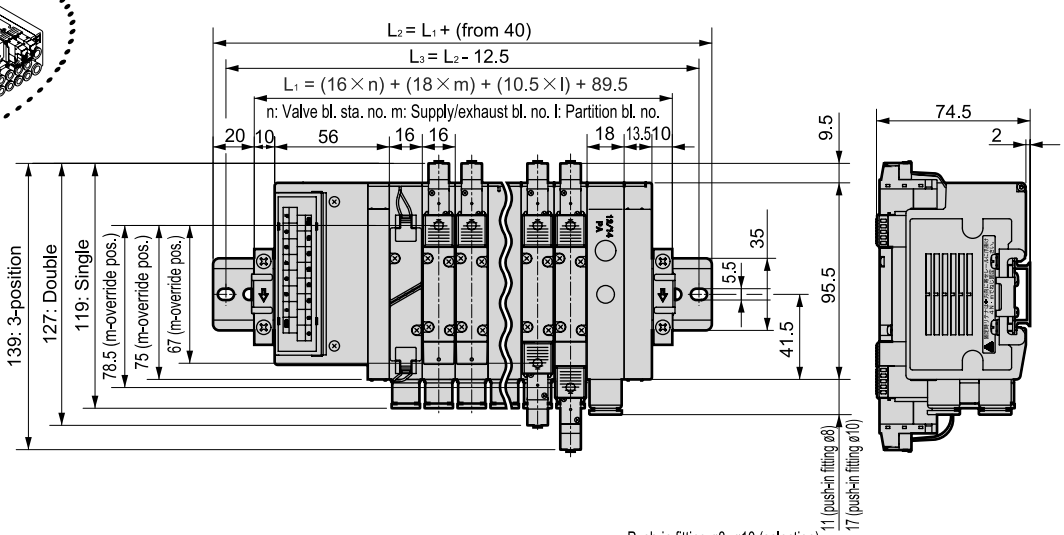


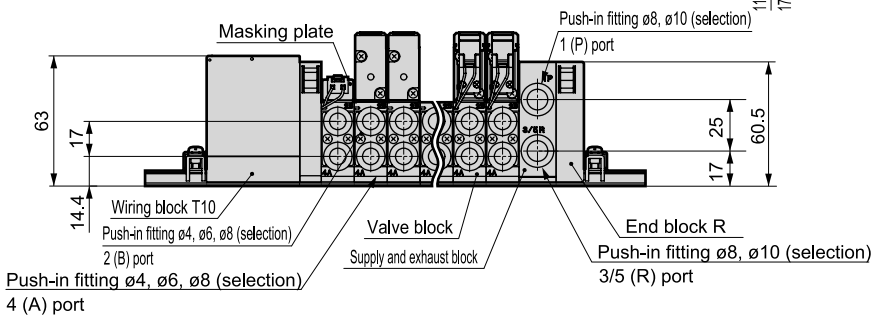
● MN4GB2

Common gland (M3 screw) Left (T10)

Note: The push-in fitting type (T11) is also available.
Dimensions are the same as T10.



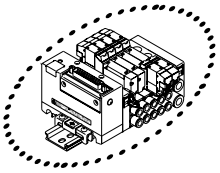


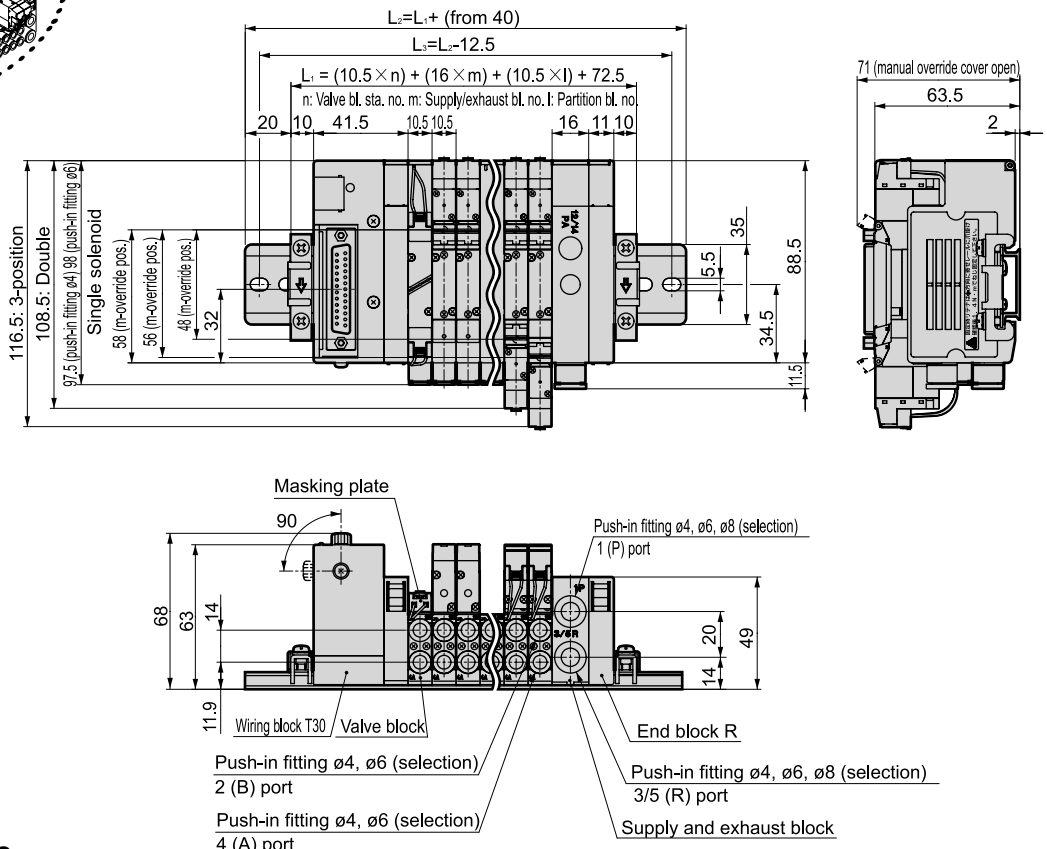


● MN4GB1

D sub-connector Left (T30)

Note: The type with two 3-port valves has the same dimensions as the double type.

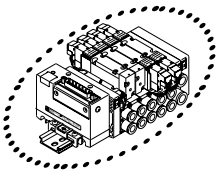


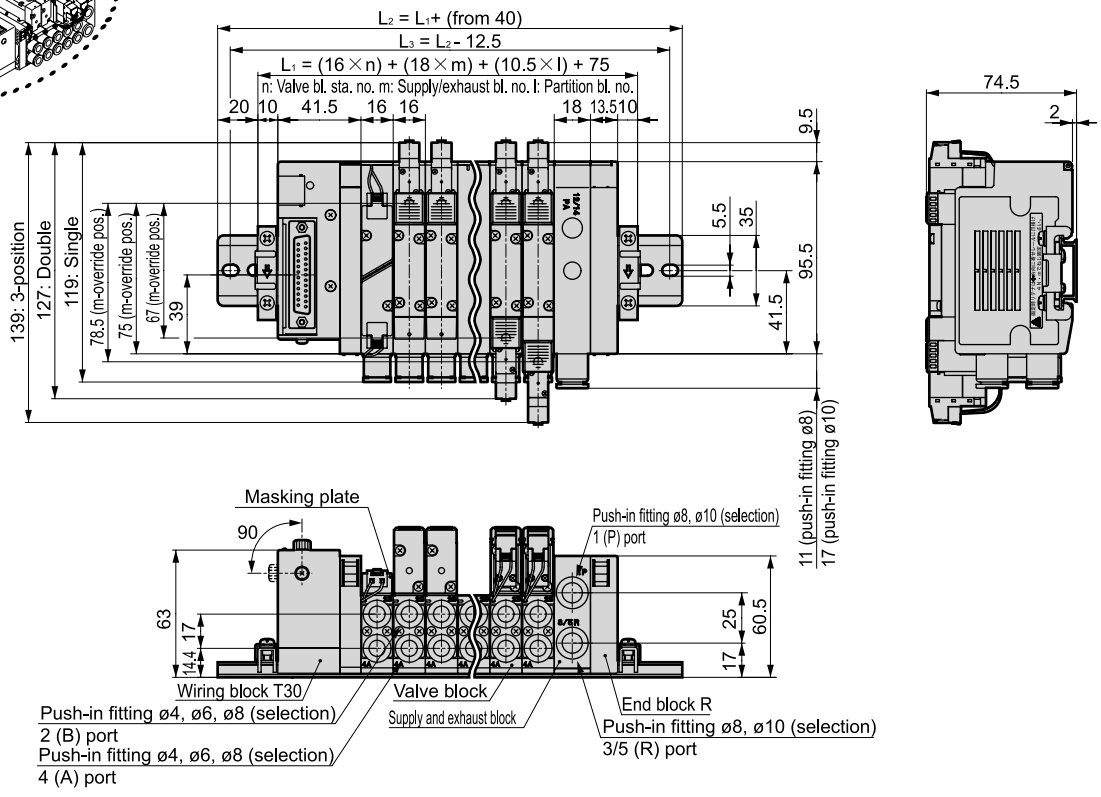


● MN4GB2

D sub-connector Left (T30)

Note: The type with two 3-port valves has the same dimensions as the double type.





How to fill out block manifold MN4G series manifold specification sheet

● Manifold model no. (example)

MN 4 GA1 8 0- CX - T50 W H - 8 - 3

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Electric connection (Reduced wiring) Ⓔ Terminal/connector pin array (Note: Indicate for reduced wiring.) Ⓕ Option Ⓖ Station number Ⓗ Voltage

When completing this form, select the type from the "Block configurations".

Part name	Model no.	Layout 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	Qty.
Wiring block	N4G1-T 50	○																														1
Valve block with solenoid valve	N4GA1 1 0- C4		○	○																												2
	N4GA1 2 0- C6					○																										1
	N4GA1 3 0- C4				○																											1
	N4GA1 0-																															
	N4GA1 0-																															
	N4GA1 0-																															
	N3GA1 1 0- C4									○	○	○																				3
	N3GA1 0-																															
Valve block with masking plate	N4GA1-MP																															
	N4GA1-MPS																															
	N4GA1-MPD						○																									1
Supply and exhaust block	N4G1-Q - 8L							○					○																			2
	N4G1-Q -																															
	N4G1-Q -																															
Partition block	N4G1-S A								○																							1
	N4G1-S																															
	N4G1-S																															
End block	N4G1-E R													○																		1
	N4G1-E																															

Mounting rail	Blanking plug						Silencer				Tag plate (attached)		Accessories
L2= (Refer to the following page on how to calculate length)	GWP4-B		GWP6-B		GWP8-B		SLW-H6		SLW-H8		A	○	
	Cable with D sub-connector		N4T-CABLE-D0*-*				Push-in fitting tube remover (Standard)		☑ Not required (Check)				

Check if the tube remover (standard accessory) is not required.

Circuit diagrams for the above manifold models (examples) are provided on the following page as reference.

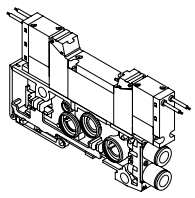
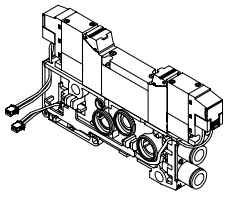
Preparing the manifold specifications

- Complete from the left end, with the piping port facing forward.
  (Indicate the block type selected from the block configurations and the layout instructions.)
- Indicate the total number of blocks designated in the required quantity on the right of the table.
- Circle the required accessories.
- Indicate the mounting rail length.(Indicate only when a length other than the standard length is required.)
- Manifold specifications are available for individual series, so fill out corresponding specifications.

● Block manifold configuration

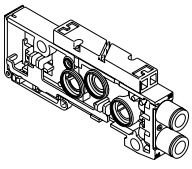
Discrete valve block with solenoid valve

• For Individually wired base piping • For Wiring-saving base piping

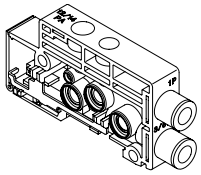
Discrete valve block with masking plate

• Base piping



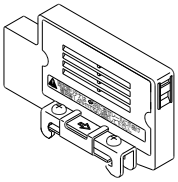
Supply and exhaust block

• Internal pilot

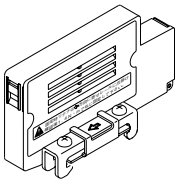


End-block

• Left

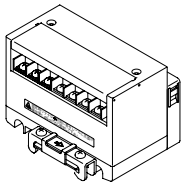


• Right



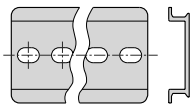
Common gland block T10

• M3

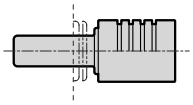


Accessories

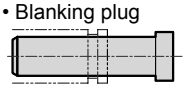
• Mounting rail



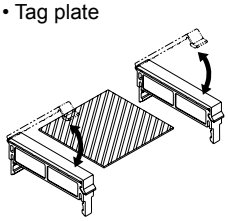
• Silencer



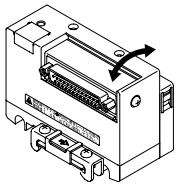
• Blanking plug



• Tag plate



D sub-connector T30



Mounting rail length (L2)

(1) Calculate the rail length with the following calculation method.
The obtained length is the standard length.
(2) When using the standard length, the length (L2) need not be indicated in specifications. Indicate the length when using a non-standard length.

● Calculating the mounting rail length

Manifold length (L1) = (A × Valve block Qty.) + (B × Supply/exhaust block Qty.) + (C × Partition block Qty.) + D (Wiring block) + E (Mix block)

Mounting rail length (L2) = L2' x 12.5 A/B/C/D/E indicates length (width) of each block.

$$L2' : \frac{L1 + 40}{12.5} \rightarrow \text{round up at the decimal point}$$

Rail mount pitch (L3) = L2 - 12.5

Block length (width) dimensions table (mm)

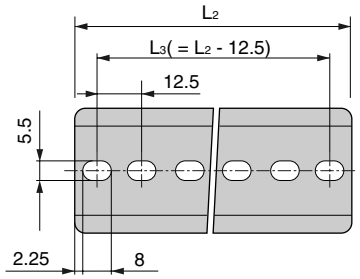
			MN4GA/B1	MN4GA/B2	MN4G1/2MIX	
					MN4GA/B1	MN4GA/B2
A	Valve block		10.5	16	10.5	16
B	Supply and exhaust block		16	18	16	18
C	Partition block		10.5	10.5	10.5	10.5
D	Individual wiring		42	47	44.5	
	Wiring block for reduced wiring	T10/T11	87	89.5	89.5	
		T10R/T11R	87	89.5	87	
		T30/T5*	72.5	75	75	
		T30R/T5*R	72.5	75	72.5	
		T6*	144	146.5	146.5	
		T7*	67.5	70	70	
E	Mix block				16	

* End block is included in wiring block.

● DIN rail length quick reference

L1: Manifold length	47.5 or less	47.5 to 60	60 to 72.5	72.5 to 85	85 to 97.5	97.5 to 110	110 to 122.5	122.5 to 135	135 to 147.5	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
L2: Rail length	87.5	100	112.5	125	137.5	150	162.5	175	187.5	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
Pitch L3	75	87.5	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5

Note 1: If L1 exceeds the value in this table, calculate using "Calculating the mounting rail length."



MN4GA1 block manifold specifications

● Contact ● Quantity set ● Request date

Issue / /

Slip No.	Order No.

Your company name

Contact

Order No.

● Manifold model no.

MN ☐ **GA1** ☐ **0-** ☐ **-** ☐ ☐ ☐ **-** ☐ **-** ☐

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Electric connection (Reduced wiring) Ⓔ Terminal/connector pin array (Note: Indicate for reduced wiring.) Ⓕ Option Ⓖ Station number Ⓗ Voltage

When completing this form, select the type from the "Block part components".

Part name	Model no.	Layout 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	Qty.
Wiring block	**N4G1-T** ☐																															
Valve block with solenoid valve	**N4GA1** ☐ **0-** ☐																															
	N4GA1 ☐ **0-** ☐																															
	N4GA1 ☐ **0-** ☐																															
	N4GA1 ☐ **0-** ☐																															
	N4GA1 ☐ **0-** ☐																															
	N4GA1 ☐ **0-** ☐																															
	N3GA1 ☐ **0-** ☐																															
	N3GA1 ☐ **0-** ☐																															
Valve block with masking plate	**N4GA1-MP**																															
	N4GA1-MPS																															
	N4GA1-MPD																															
Air supply spacer	**4G1-P-** ☐																															
	4G1-P- ☐																															
Supply and exhaust block	**N4G1-Q** ☐ **-** ☐																															
	N4G1-Q ☐ **-** ☐																															
	N4G1-Q ☐ **-** ☐																															
Partition block	**N4G1-S** ☐																															
	N4G1-S ☐																															
	N4G1-S ☐																															
End block	**N4G1-E** ☐																															
	N4G1-E ☐																															

Mounting rail		Blanking plug						Silencer				Tag plate (attached)		Accessories
	L2= ☐	**GWP4-B**		**GWP6-B**		**GWP8-B**		**SLW-H6**		**SLW-H8**		**A**		
		Cable with D sub-connector		N4T-CABLE-D0*-*				Push-in fitting tube remover (Standard) ☐ Not required (Check)						

MN4GB1 block manifold specifications

● Contact ● Quantity set ● Request date

Issue / /

Slip No.	Order No.

Your company name

Contact

Order No.

● Manifold model no.

MN4GB1 ☐ 0- ☐ - ☐ ☐ ☐ - ☐ - ☐

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Electric connection (Reduced wiring) Ⓔ Terminal/connector pin array (Note: Indicate for reduced wiring.) Ⓕ Option Ⓖ Station number Ⓗ Voltage

When completing this form, select the type from the "Block part components".

Part name	Model no.	Layout 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	Qty.
Wiring block	N4G1-T ☐																															
Valve block with solenoid valve	N4GB1 ☐ 0- ☐																															
	N4GB1 ☐ 0- ☐																															
	N4GB1 ☐ 0- ☐																															
	N4GB1 ☐ 0- ☐																															
	N4GB1 ☐ 0- ☐																															
	N4GB1 ☐ 0- ☐																															
	N3GB1 ☐ 0- ☐																															
	N3GB1 ☐ 0- ☐																															
Valve block with masking plate	N4GB1-MP- ☐																															
	N4GB1-MPS- ☐																															
	N4GB1-MPD- ☐																															
Air supply spacer	4G1-P- ☐																															
	4G1-P- ☐																															
Supply and exhaust block	N4G1-Q ☐ - ☐																															
	N4G1-Q ☐ - ☐																															
	N4G1-Q ☐ - ☐																															
Partition block	N4G1-S ☐																															
	N4G1-S ☐																															
	N4G1-S ☐																															
End block	N4G1-E ☐																															
	N4G1-E ☐																															
Mounting rail	L2= ☐	Blanking plug																Silencer									Tag plate (attached)					Acces-sories
		GWP4-B ☐				GWP6-B ☐				GWP8-B ☐								SLW-H6 ☐				SLW-H8 ☐					B1 ☐		B2 ☐		
		Cable with D sub-connector				N4T-CABLE-D0*-*												☐ Push-in fitting tube remover (Standard) ☐ Not required (Check)														

Pneumatic valve

MN4GA2 block manifold specifications

● Contact ● Quantity set ● Request date

Slip No.	Order No.

Issue / /

Your company name

Contact

Order No.

● Manifold model no.

MN [ ] GA2 [ ] 0- [ ] - [ ] [ ] [ ] - [ ] - [ ]

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Electric connection (Reduced wiring) Ⓔ Terminal/connector pin array (Note: Indicate for reduced wiring.) Ⓕ Option Ⓖ Station number Ⓗ Voltage

When completing this form, select the type from the "Block part components".

Part name	Model no.	Layout 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	Qty.
Wiring block	**N4G2-T** [ ]																															
Valve block with solenoid valve	**N4GA2** [ ] **0-** [ ]																															
	N4GA2 [ ] **0-** [ ]																															
	N4GA2 [ ] **0-** [ ]																															
	N4GA2 [ ] **0-** [ ]																															
	N4GA2 [ ] **0-** [ ]																															
	N4GA2 [ ] **0-** [ ]																															
	N3GA2 [ ] **0-** [ ]																															
	N3GA2 [ ] **0-** [ ]																															
Valve block with masking plate	**N4GA2-MP**																															
	N4GA2-MPS																															
	N4GA2-MPD																															
Air supply spacer	**4G2-P-** [ ]																															
	4G2-P- [ ]																															
Supply and exhaust block	**N4G2-Q** [ ] - [ ]																															
	N4G2-Q [ ] - [ ]																															
	N4G2-Q [ ] - [ ]																															
Partition block	**N4G2-S** [ ]																															
	N4G2-S [ ]																															
	N4G2-S [ ]																															
End block	**N4G2-E** [ ]																															
	N4G2-E [ ]																															

Mounting rail		Blanking plug				Silencer		Tag plate (attached)		Accessories
	L2= [ ]	**GWP4-B**		**GWP8-B**		**SLW-H8**		**A**		
		GWP6-B		**GWP10-B**		**SLW-H10**				
		Cable with D sub-connector		N4T-CABLE-D0*-*						

MN4GB2 block manifold specifications

● Contact ● Quantity set ● Request date

Issue / /

Slip No.	Order No.

Your company name

Contact

Order No.

● Manifold model no.

MN4GB2 ☐ 0- ☐ - ☐ ☐ ☐ - ☐ - ☐

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Electric connection (Reduced wiring) Ⓔ Terminal/connector pin array (Note: Indicate for reduced wiring.) Ⓕ Option Ⓖ Station number Ⓗ Voltage

When completing this form, select the type from the "Block part components".

Part name	Model no.	Layout 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	Qty.
Wiring block	N4G2-T ☐																															
Valve block with solenoid valve	N4GB2 ☐ 0- ☐																															
	N4GB2 ☐ 0- ☐																															
	N4GB2 ☐ 0- ☐																															
	N4GB2 ☐ 0- ☐																															
	N4GB2 ☐ 0- ☐																															
	N4GB2 ☐ 0- ☐																															
	N3GB2 ☐ 0- ☐																															
	N3GB2 ☐ 0- ☐																															
Valve block with masking plate	N4GB2-MP - ☐																															
	N4GB2-MPS- ☐																															
	N4GB2-MPD- ☐																															
Air supply spacer	4G2-P- ☐																															
	4G2-P- ☐																															
Supply and exhaust block	N4G2-Q ☐ - ☐																															
	N4G2-Q ☐ - ☐																															
	N4G2-Q ☐ - ☐																															
Partition block	N4G2-S ☐																															
	N4G2-S ☐																															
	N4G2-S ☐																															
End block	N4G2-E ☐																															
	N4G2-E ☐																															
Mounting rail	L2= ☐	Blanking plug: GWP4-B ☐ GWP8-B ☐ GWP6-B ☐ GWP10-B ☐ Cable with D sub-connector N4T-CABLE-D0*-*																Silencer: SLW-H8 ☐ SLW-H10 ☐								Tag plate (attached): B ☐							Acces-sories

Common gland type (T10/T11) wiring specifications

* Prepare these specifications for applications other than standard wiring or double wiring and enclose with manifold specifications.
* Not required for standard wiring and double wiring.

Connector pin No.		Valve No.																							
T10 ☐	**T11** ☐	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	1																								
2	2																								
3	3																								
4	4																								
5	5																								
6	6																								
7	7																								
8	8																								
9	9																								
10	10																								
11	11																								
12	12																								
13	13																								
14	14																								
COM	15																								
COM	16																								
	17																								
	18																								
	19																								
	20																								
	21																								
	22																								
	23																								
	24																								
	COM																								
	COM																								

D sub-connector type (T30) wiring specifications

* Prepare these specifications for applications other than standard wiring or double wiring and enclose with manifold specifications.
* Not required for standard wiring and double wiring.

Connector pin No.	Valve No.																								
T30 ☐	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																								
14																								
2																								
15																								
3																								
16																								
4																								
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24																								
12																								
25																								
13 (COM)																								

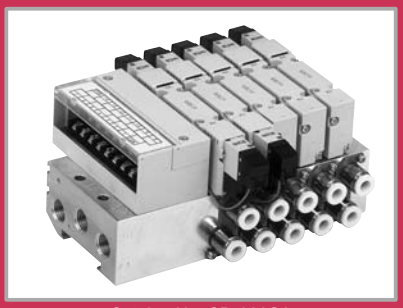
MEMO

Reduced wiring manifold sub-base porting direct mount type

M4GB1•2•3-T10 Series

RoHS CAD CE

● Applicable cylinder bore: ø20 to ø100



Catalog No. CB-023SA

Features

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

How to order

Manifold model no.

M 4GB1 1 0- C6 - T10 H - 3 - 3 -K2

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ

Symbol	Descriptions		Ⓐ Model No. 4GB1	4GB2	4GB3
Ⓑ 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		●	●	●
Ⓒ Port size					
	A•B port		P•R1•R2 port ①=G1/8 ②=G1/4 ③=G3/8		
C4	ø4 push-in fitting		①		
C6	ø6 push-in fitting			②	
C8	ø8 push-in fitting			②	③
C10	ø10 push-in fitting				③
Ⓓ Reduced wiring (light and surge suppressor provided as standard)					
T10	Common gland (M3 screw)	Left	●	●	●
Ⓔ Terminal and connector pin array					
Blank	Standard wiring	Note 1	●	●	●
Ⓕ Option					
Blank	None		●	●	●
H	With exhaust check valve	Note 2	●	●	●
Ⓖ Mount type					
Blank	Direct mount type		●	●	●
Ⓗ Station no.					
3	3 stations		●	●	●
5	5 stations		●	●	●
8	8 stations	Note 3	●	●	●
Ⓘ 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 max. solenoid points for each of the following wiring specifications.

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	Main valve, pilot valve common exhaust (built-in pilot exhaust check valve)
Piping direction		Sub-base side porting
Valve type / operation method		Pilot operated type soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. 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 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: Avoid any water drops or oil.

Electric specifications

Item			Descriptions
Rated voltage	V	DC	24
Rated voltage fluctuation range			±10%
Holding current	A	24 VDC	0.025
Current 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					
Port size	A•B port	Push-in fitting ø4		Push-in fitting ø6, ø8		Push-in fitting ø8, ø10	
	P•R1•R2 port	G1/8		G1/4		G3/8	
Formula for manifold base weight (n: station no.) g	Standard	43n+335	45n+348	80n+398	82n+431	124n+548	126n+582

Note 1: The manifold base weight is the value for screw connections specifications and wiring block.
Note 2: The max. number of manifold stations is limited by the max. solenoid points for each of the following wiring specifications shown below.

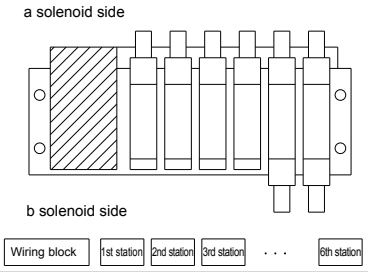
Flow characteristic

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 ≒ 5.0×C.
Note 2: The value for 2 position and ABR connection is the value when a check valve is integrated.

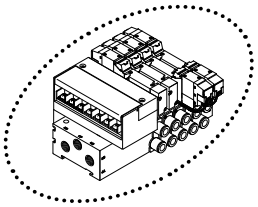
Wiring specifications

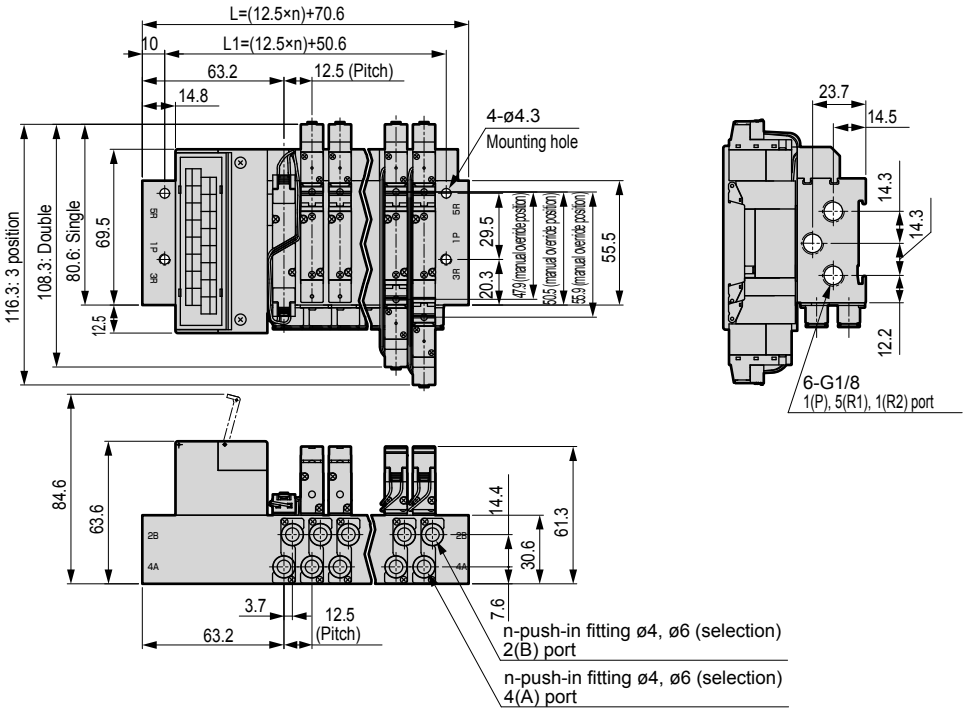
Item	T10 common gland type
Connector and gland specifications	M3 screw tightening type, 16 terminals
Max. solenoid number	14 points
Discrete wiring block position	Left



● M4GB1

Reduced wiring manifold sub-base porting common gland
T10

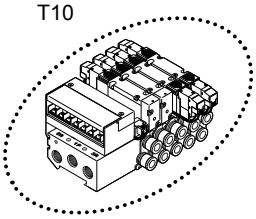


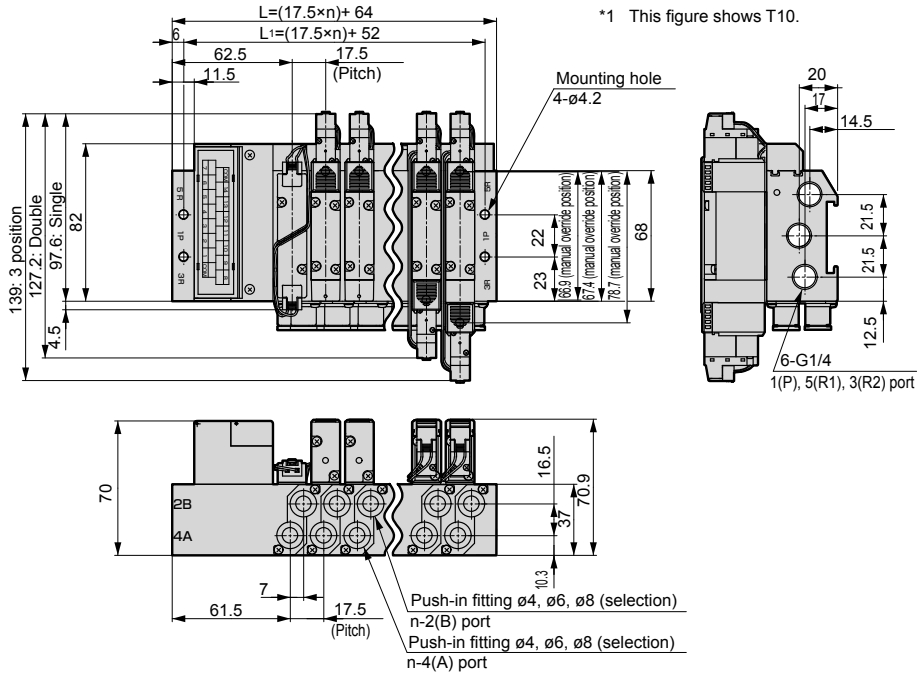


Station no. (n)	3	5	8
L	108.1	133.1	170.6
L_1	88.1	113.1	150.6

● M4GB2

Reduced wiring manifold sub-base porting common gland
T10

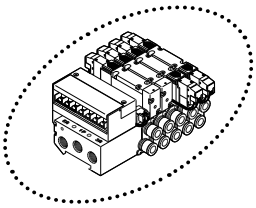


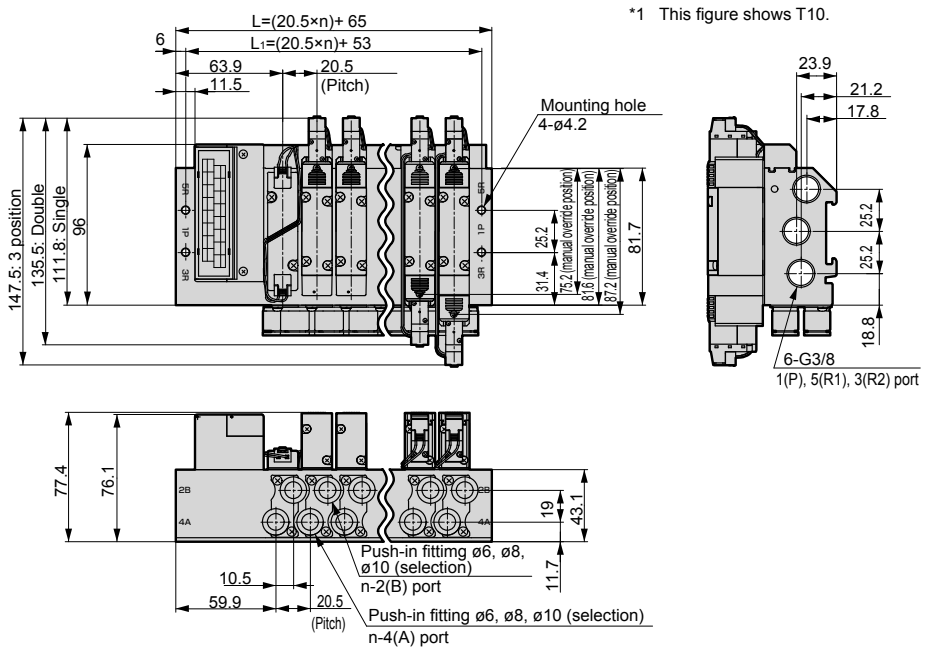


Station no. (n)	3	5	8
L	116.5	151.5	204.0
L_1	104.5	139.5	192.0

● 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 Simple Choice Catalog

Manifold model no. (example)

M 4 G B 1 8 0- C4 - T10 H - 5 - 3

Solenoid valve type	Solenoid position	Port size	Reduced wiring	Option	Station no.	Voltage

Solenoid valve no.	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
4G B 1 1 9- C4	○	○											2
4G B 1 2 9- C4			○	○									2
4G B 1 3 9- C4					○								1
4G B 1 4 9- C4													
4G B 1 5 9- C4													
Masking plate (single) 4G1-MPS- C4													
Masking plate (double/3 position) 4G1-MPD- C4													
4G B 1 1 9- C6													
4G B 1 2 9- C6													
4G B 1 3 9- C6													
4G B 1 4 9- C6													
4G B 1 5 9- C6													
Masking plate (single) 4G1-MPS- C6													
Masking plate (double/3 position) 4G1-MPD- C6													

● M4GB1 Individual wiring manifold specifications

For Simple Choice 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] - [3/5/8] - 3

Solenoid valve type	Solenoid position	Port size	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- C4													
4G B 1 2 9- C4													
4G B 1 3 9- C4													
4G B 1 4 9- C4													
4G B 1 5 9- C4													
Masking plate 4G1-MP- C4													
4G B 1 1 9- C6													
4G B 1 2 9- C6													
4G B 1 3 9- C6													
4G B 1 4 9- C6													
4G B 1 5 9- C6													
Masking plate 4G1-MP- C6													

● M4GB2 Individual wiring manifold specifications

For Simple Choice 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 [ ] - [3/5/8] - 3

Solenoid valve type	Solenoid position	Port size	Electrical connections	Other options	Station no.*	Voltage

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

Solenoid valve no.	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
4G B 2 1 9- C4													
4G B 2 2 9- C4													
4G B 2 3 9- C4													
4G B 2 4 9- C4													
4G B 2 5 9- C4													
Masking plate 4G2-MP- C4													
4G B 2 1 9- C6													
4G B 2 2 9- C6													
4G B 2 3 9- C6													
4G B 2 4 9- C6													
4G B 2 5 9- C6													
Masking plate 4G2-MP- C6													
4G B 2 1 9- C8													
4G B 2 2 9- C8													
4G B 2 3 9- C8													
4G B 2 4 9- C8													
4G B 2 5 9- C8													
Masking plate 4G2-MP- C8													

● M4GB3 Individual wiring manifold specifications

For Simple Choice 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 [ ] - [3/5/8] - 3

Solenoid valve type	Solenoid position	Port size	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- C6													
4G B 3 2 9- C6													
4G B 3 3 9- C6													
4G B 3 4 9- C6													
4G B 3 5 9- C6													
Masking plate 4G3-MP- C6													
4G B 3 1 9- C8													
4G B 3 2 9- C8													
4G B 3 3 9- C8													
4G B 3 4 9- C8													
4G B 3 5 9- C8													
Masking plate 4G3-MP- C8													
4G B 3 1 9- C10													
4G B 3 2 9- C10													
4G B 3 3 9- C10													
4G B 3 4 9- C10													
4G B 3 5 9- C10													
Masking plate 4G3-MP- C10													

● M4GB1-T10 Reduced wiring manifold specifications

For Simple Choice 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 - [3/5/8] - 3

Solenoid valve type	Solenoid position	Port size	Reduced wiring	Option	Station no.*	Voltage

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

Solenoid valve no.	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
4G B 1 1 9- C4													
4G B 1 2 9- C4													
4G B 1 3 9- C4													
4G B 1 4 9- C4													
4G B 1 5 9- C4													
Masking plate (single) 4G1-MPS- C4													
Masking plate (double/3 position) 4G1-MPD- C4													
4G B 1 1 9- C6													
4G B 1 2 9- C6													
4G B 1 3 9- C6													
4G B 1 4 9- C6													
4G B 1 5 9- C6													
Masking plate (single) 4G1-MPS- C6													
Masking plate (double/3 position) 4G1-MPD- C6													

● M4GB2-T10 Reduced wiring manifold specifications

For Simple Choice 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 - [3/5/8] - 3

Solenoid valve type	Solenoid position	Port size	Reduced wiring	Option	Station no.*	Voltage

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

Solenoid valve no.	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
4G B 2 1 9- C4													
4G B 2 2 9- C4													
4G B 2 3 9- C4													
4G B 2 4 9- C4													
4G B 2 5 9- C4													
Masking plate (single) 4G2-MPS- C4													
Masking plate (double/3 position) 4G2-MPD- C4													
4G B 2 1 9- C6													
4G B 2 2 9- C6													
4G B 2 3 9- C6													
4G B 2 4 9- C6													
4G B 2 5 9- C6													
Masking plate (single) 4G2-MPS- C6													
Masking plate (double/3 position) 4G2-MPD- C6													
4G B 2 1 9- C8													
4G B 2 2 9- C8													
4G B 2 3 9- C8													
4G B 2 4 9- C8													
4G B 2 5 9- C8													
Masking plate (single) 4G2-MPS- C8													
Masking plate (double/3 position) 4G2-MPD- C8													

● M4GB3-T10 Reduced wiring manifold specifications

For Simple Choice 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 - [3/5/8] - 3

Solenoid valve type	Solenoid position	Port size	Reduced wiring	Option	Station no.*	Voltage

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

Solenoid valve no.	Valve installation position 1	2	3	4	5	6	7	8	9	10	11	12	Quantity
4G B 3 1 9- C6													
4G B 3 2 9- C6													
4G B 3 3 9- C6													
4G B 3 4 9- C6													
4G B 3 5 9- C6													
Masking plate (single) 4G3-MPS- C6													
Masking plate (double/3 position) 4G3-MPD- C6													
4G B 3 1 9- C8													
4G B 3 2 9- C8													
4G B 3 3 9- C8													
4G B 3 4 9- C8													
4G B 3 5 9- C8													
Masking plate (single) 4G3-MPS- C8													
Masking plate (double/3 position) 4G3-MPD- C8													
4G B 3 1 9- C10													
4G B 3 2 9- C10													
4G B 3 3 9- C10													
4G B 3 4 9- C10													
4G B 3 5 9- C10													
Masking plate (single) 4G3-MPS- C10													
Masking plate (double/3 position) 4G3-MPD- C10													

MEMO

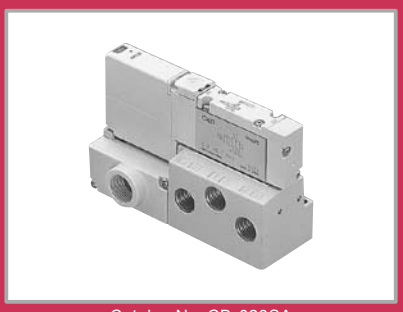
Discrete sub-base porting

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 - C6 - R1 H - 3 -K2

Discrete solenoid valve

W4GB2 1 9 - C6 —— H - 3 -K2

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

Symbol	Descriptions		Ⓐ Model No. Discrete	Ⓐ Model No. Discrete solenoid valve
Ⓑ 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		●	●
Ⓒ Port size				
C6	ø6 push-in fitting		●	
C8	ø8 push-in fitting		●	
Ⓓ Electrical connections (light and surge suppressor provided as standard)				
Blank	Terminal box (cable clamp attached)		●	●
R1	I/O connector (500mm) (custom order)		●	
Ⓔ 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		●	
Ⓕ Voltage				
1	100 VAC (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

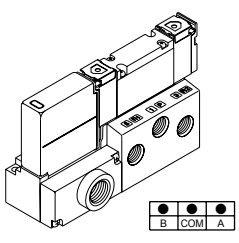
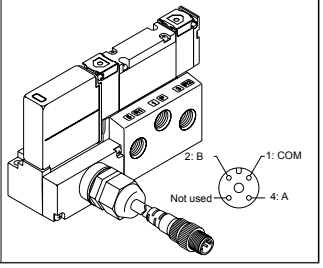
The specification can be selected with Ⓔ option "A" in How to Order on this page.

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
Valve type / operation method	Pilot operated type soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. 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
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
Current 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
Port size	A•B port	G1/4
	P•R port	G1/4

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
Weight g	2-position	Single	351	409
		Double	367	424
	3-position		374	431

Flow characteristic

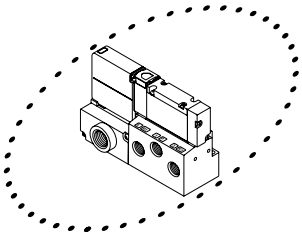
Model No.	Solenoid position		P→A/B		A/B→R	
			C [dm^3/(s•bar)]	b	C [dm^3/(s•bar)]	b
W4GB2	2-position		2.5	0.27	2.5	0.20
	3-position	All ports closed	2.3	0.32	2.1	0.21
		ABR connection	2.3	0.30	2.2	0.22
		PAB connection	2.4	0.02	2.3	0.19

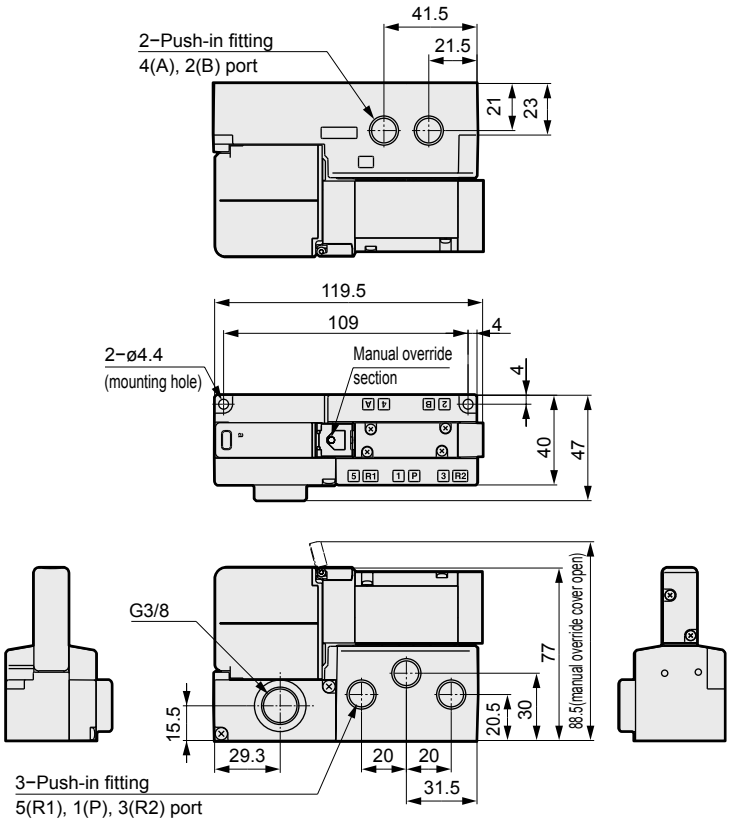
Note: Effective area S and sonic conductance C are converted as S ≒ 5.0×C.

Dimensions

● W4GB210

Terminal gland (blank)





● W4GB220

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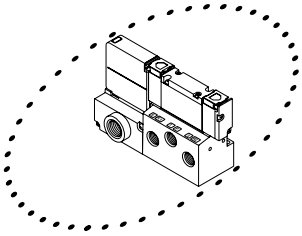
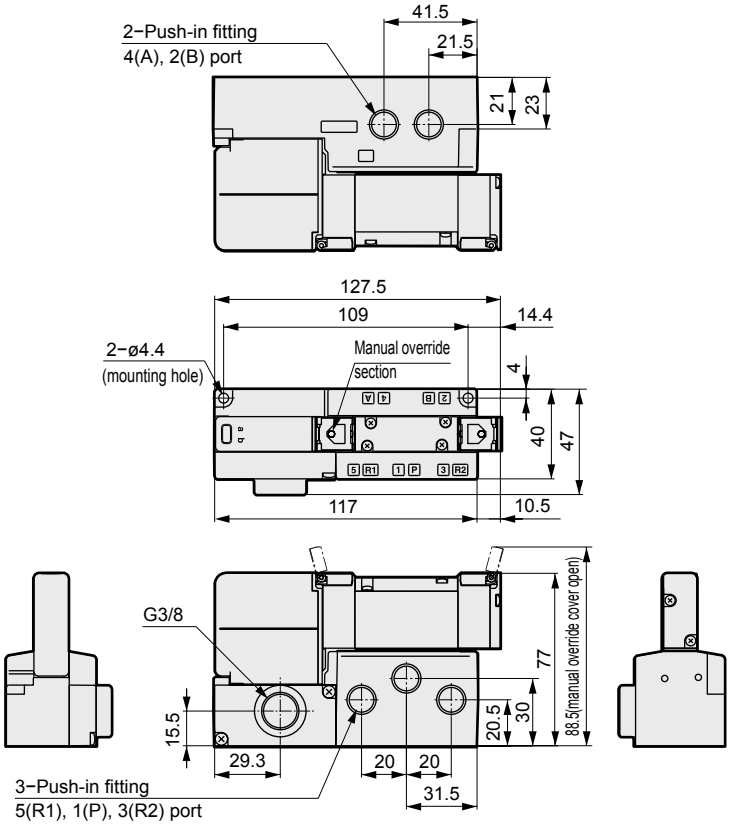
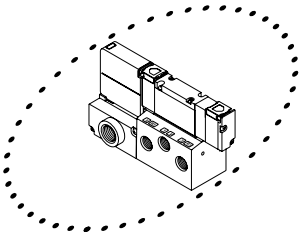
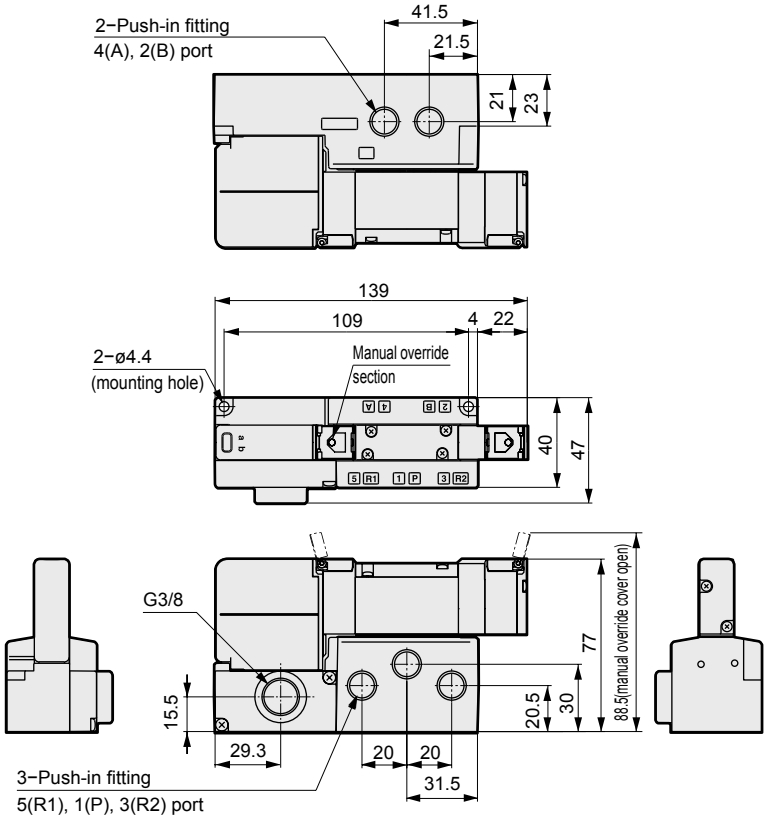


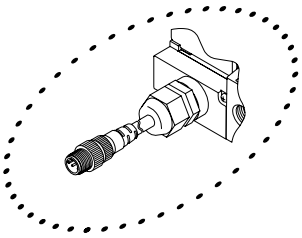


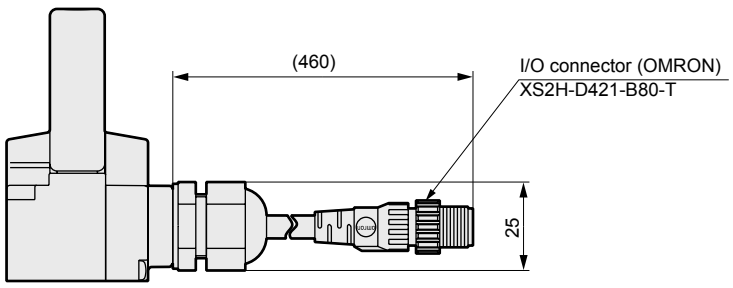
● W4GB2$^{3}_{4}$^{5}0
Terminal gland (blank)





I/O connector (R1)





Discrete sub-base side porting

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 — 10G R1 - MF - 3 - K2

● Discrete solenoid valve

W4GB4 1 9 - 00 — M — 3 - K2

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

⚠ 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 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.

Coolant proof specifications

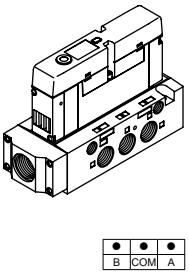
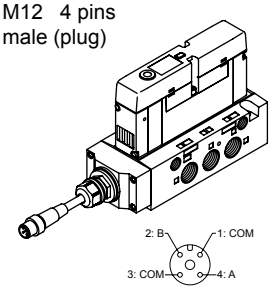
The specification can be selected with Ⓔ option "A" in How to Order on this page.

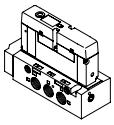
For LiB specifications (Catalog No.CC-947A)

● 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		M12 4 pins male (plug) 
Terminal Layout		

Symbol	Descriptions	Ⓐ Model No. Discrete W4GB4	Ⓐ Model No. Discrete solenoid valve W4GB4
			
Ⓑ 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	●	●
Ⓒ Port size {1(P), 2(B), 4(A) port}			
08G	G1/4	●	
10G	G3/8	●	
Ⓓ Electrical connections (light and surge suppressor provided as standard)			
Blank	Terminal box	●	●
R1	I/O connector (DC, 500 mm) Note 1	●	
Ⓔ 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	●	
Ⓕ Voltage			
1	100 VAC	●	
3	24 VDC	●	●
4	12 VDC	●	●
5	110 VAC	●	

is not available.

Common specifications

Descriptions		W4GB4•W4GZ4
Valve type and operation method		Pilot-operated soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	1.0
Min. 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
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
Current consumption Note	W	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
Port size	P•A•B port	G1/4, G3/8	
	R port	G1/4, G3/8	G1/4
	PA•PR port	G1/8	G1/8

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.

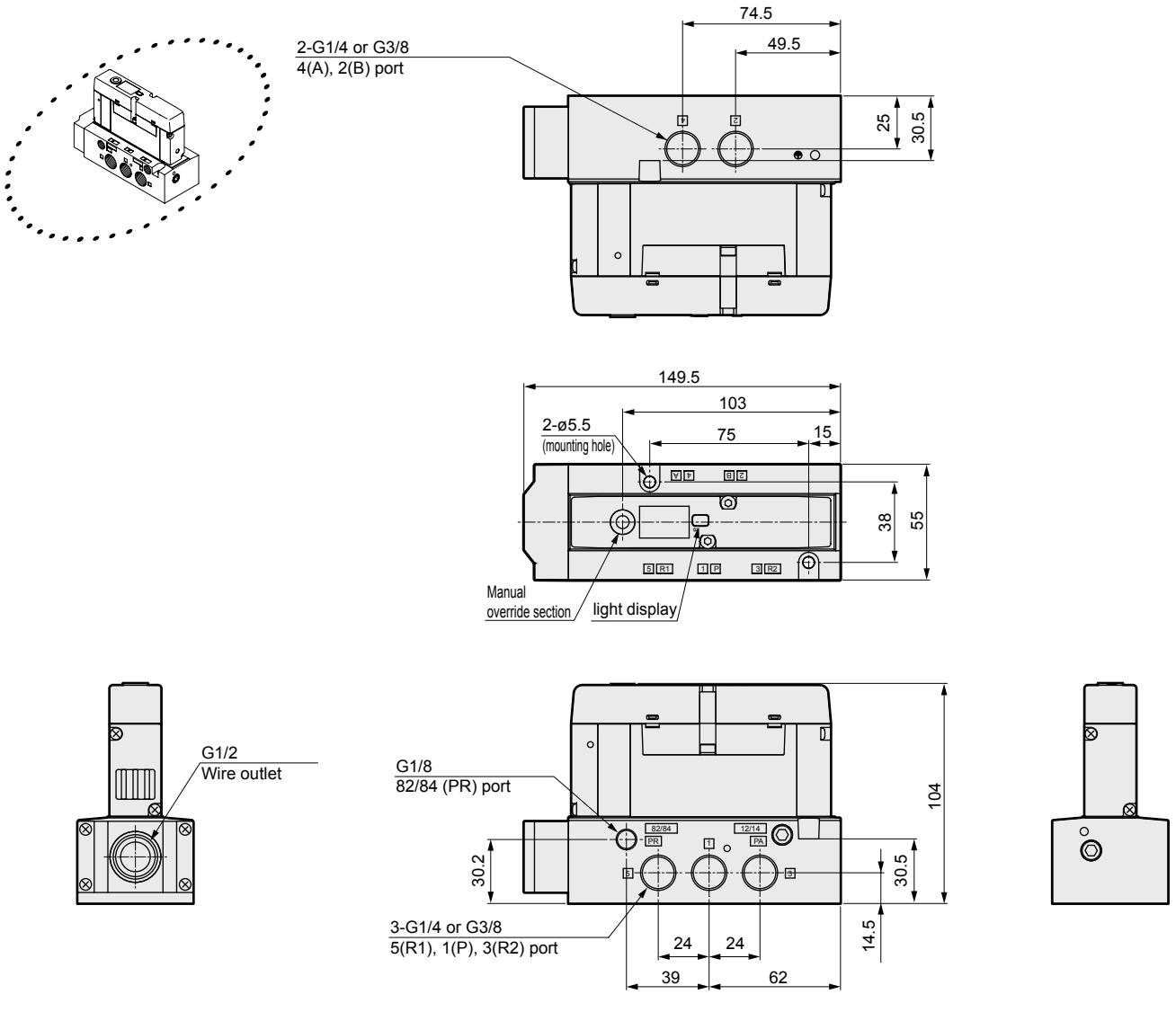
Descriptions			Terminal box	I/O connector
Weight g	2-position	Single	701	755
		Double	745	799
	3-position		777	831

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

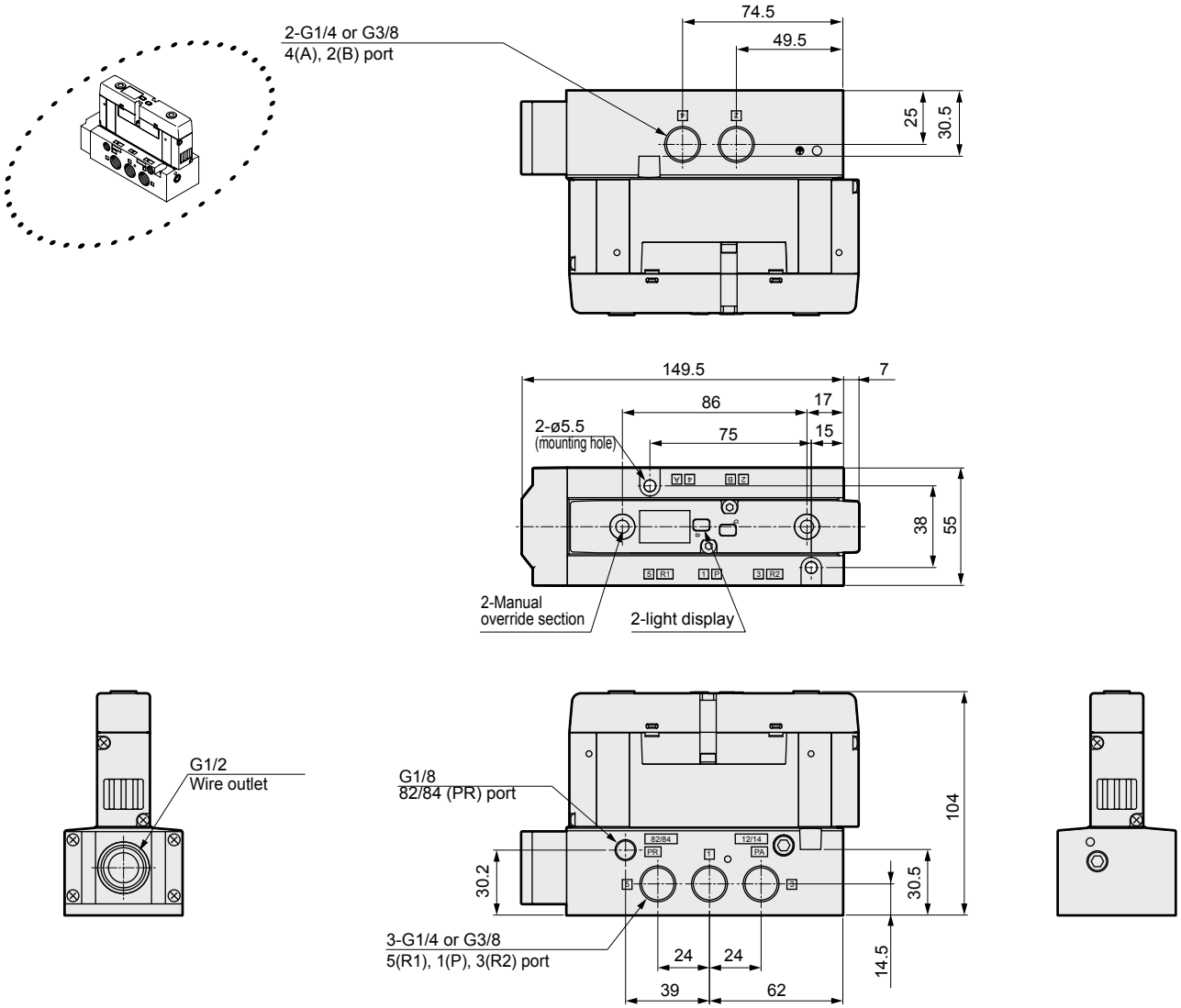
● W4GB410 side porting

Terminal gland (blank)



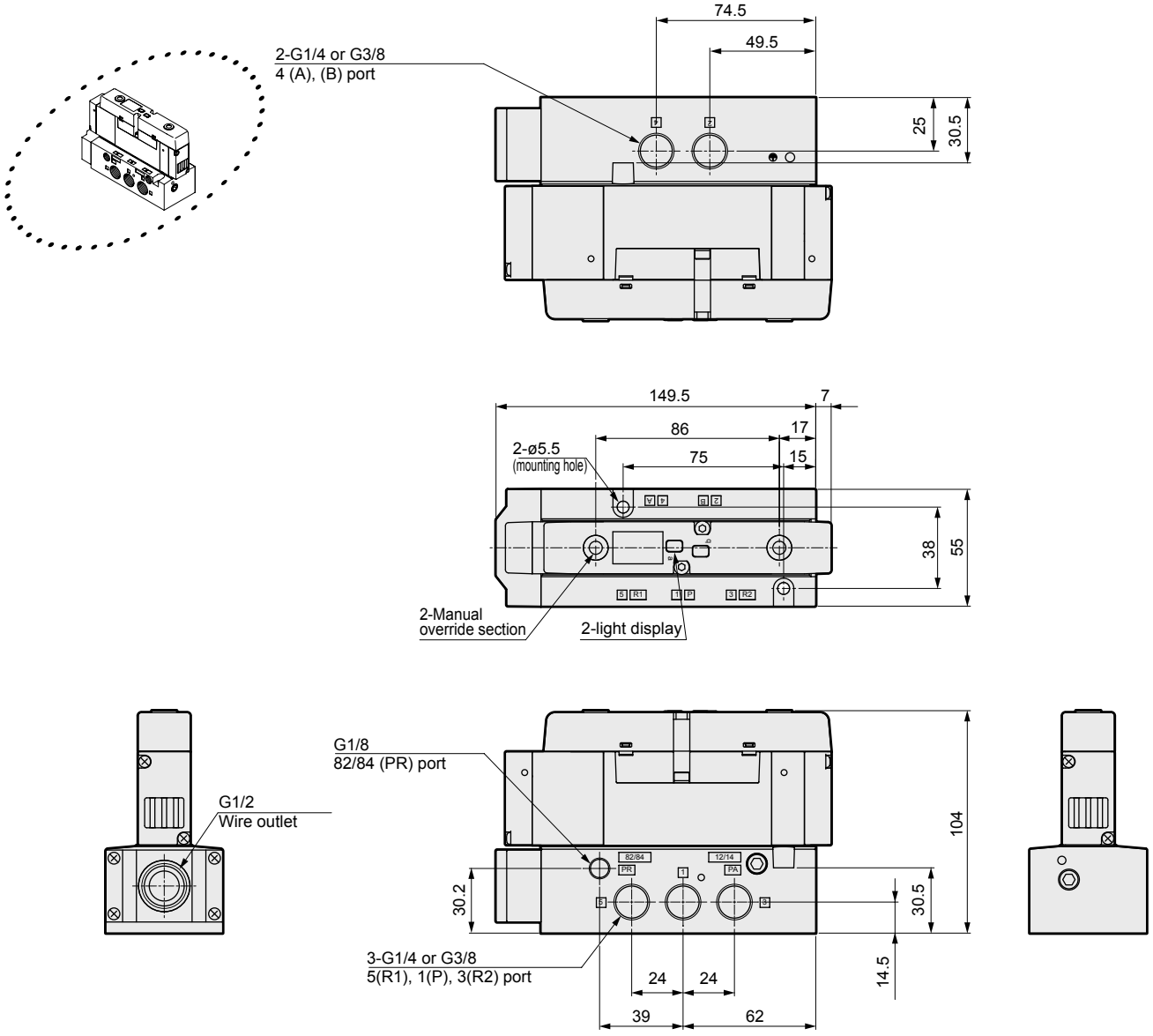
● W4GB420 side porting

Terminal gland (blank)



● W4GB$^{3}_{4}$^{5}0 side porting

Terminal gland (blank)



MEMO

Discrete valve body porting 3, 5 port pilot operated valve pneumatic valve

4KA1/2/3/4 Series

● Applicable cylinder bore size: ø20 to ø160

Catalog No. CB-023SA

How to order

5 port connection valve

4KA1 (A) 1 (B) 0 - 06G (C) - B (D) - DC24V (E)

Symbol	Descriptions	Ⓐ Model No. 3KA1	4KA1	4KA2	4KA3	4KA4
Ⓑ Solenoid position						
1	2-position single solenoid		●	●	●	●
2	2-position double solenoid	●	●	●	●	●
3	3-position all ports closed		●	●	●	●
4	3-position A/B/R connection		●	●	●	●
5	3-position P/A/B connection		●	●	●	●
1	2-position single solenoid normally closed	●				
11	2-position single solenoid normally open	●				

Ⓒ Port size						
Port	**P/A/B port**	**R1•R2 port ①=M5 ②=G1/8 ③=G1/4 ④=G3/8**				
M5	M5	①	①			
06G	G1/8			②		
08G	G1/4				③	
10G	G3/8					④

Ⓓ Electric connection						
Grommet lead wire						
Blank	Grommet lead wire (300 mm)	●	●	●	●	●
Small terminal box						
B	No lead wire	●	●	●	●	●

Ⓔ Voltage									
DC24V	24 VDC	Standard	●	●	●	●	●	●	
AC220V	220 VAC 50/60Hz	Option	●	●	●	●	●	●	

Common specifications

Descriptions		
Valve type/operation method		Pilot operated soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.70
Min. working pressure	MPa	Refer to the following individual specifications.
Proof pressure	MPa	1.05
Ambient temperature	°C	–5 to 50 (no freezing)
Fluid temperature	°C	5 to 50
Lubrication		Not required
Degree of protection		Dust proof
Vibration/impact	m/s^2	50 or less / 300 or less
Atmosphere		Containing corrosive gas is impermissible.

Electric specifications

Descriptions			3KA1●4KA1/2	4KA3/4
Rated voltage V	AC		100, 200 (50/60 Hz)	
	DC		24	
Rated voltage fluctuation range			±10%	
Starting current A	AC	100 V	0.056/0.044	0.046/0.042
	AC	200 V	0.028/0.022	0.023/0.021
	DC	24 V	—	
Holding current A	AC	100 V	0.028/0.022	0.023/0.021
	AC	200 V	0.014/0.011	
	DC	24 V	0.075	
Current consumption W Value in ( ) are with indicator light	AC	100 V	1.8 / 1.4 (1.8 / 1.5)	1.6 / 1.3 (1.8 / 1.5)
	AC	200 V	1.8 / 1.4 (1.8 / 1.5)	1.6 / 1.3 (1.8 / 1.5)
	DC	24 V	1.8 (2.0)	
Thermal class			B (molded coil)	
Temperature rise °C			43	30

Note: The 100 VAC 50/60 Hz rated voltage can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

Individual specifications

Descriptions			4KA1	4KA2	4KA3	4KA4
Min. working pressure MPa	2-position	Single	0.15	0.15	0.15	0.15
		Double		0.10	0.10	0.10
	3-position		0.20	0.20	0.20	0.20
Port size Note 1	P/A/B port		M5 Push-in fitting ø4, ø6	G1/8 Push-in fitting ø6, ø8	G1/4 Push-in fitting ø8, ø10	G3/8 Push-in fitting ø10, ø12
	R1/R2 port		M5	G1/8	G1/4	G3/8
Response time Note 2 ms	2-position		30 or less	30 or less	30 or less	30 or less
	3-position		60 or less	60 or less	60 or less	60 or less
Weight g	2-position	Single	70	115	214	325
		Double	110	155	315	435
	3-position		120	170	354	505

Note 1: G threads and G threads are available for the piping port threads. Contact CKD for details.
Note 2: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.

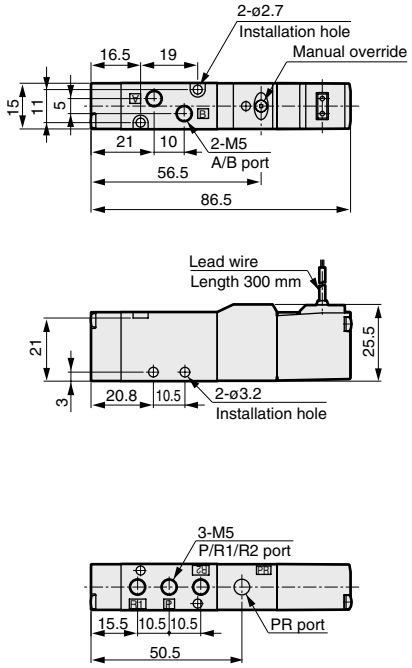
Flow characteristic

Model No.	Solenoid position		C (dm^3/ (s·bar))	b
3KA1	2-position		0.65	0.37
4KA1	2-position		0.65	0.37
	3-position	All ports closed	0.60	0.32
		A/B/R connection	0.68	0.39
		P/A/B connection	0.61	0.36
4KA2	2-position		2.6	0.43
	3-position	All ports closed	2.3	0.43
		A/B/R connection	2.9	0.34
		P/A/B connection	2.3	0.42
4KA3	2-position		5.6	0.49
	3-position	All ports closed	4.1	0.60
		A/B/R connection	4.1	0.62
		P/A/B connection	4.2	0.68
4KA4	2-position		9.8	0.49
	3-position	All ports closed	8.2	0.54
		A/B/R connection	11	0.50
		P/A/B connection	8.4	0.54

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.
Flow characteristics are the value when port size is M5 (4KA1), G1/8 (4KA2), G1/4 (4KA3) and G3/8 (4KA4).

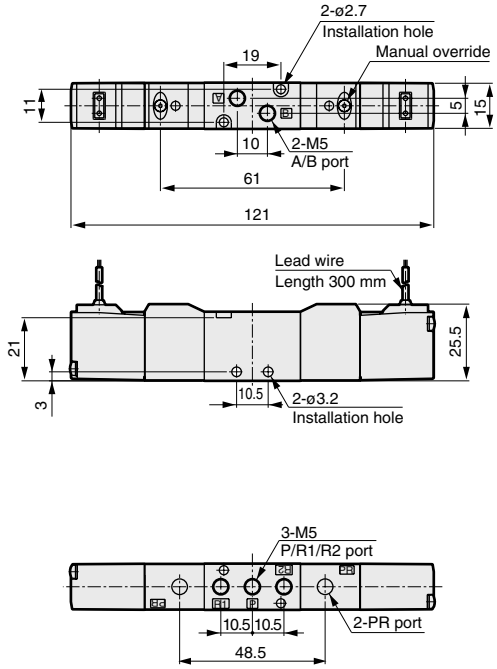
● 4KA110 CAD

2-position single solenoid: Grommet lead wire



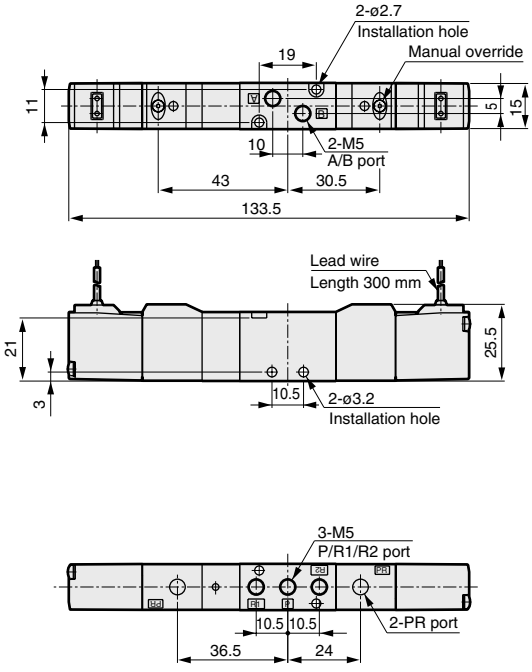
● 4KA120 CAD

2-position double solenoid: Grommet lead wire

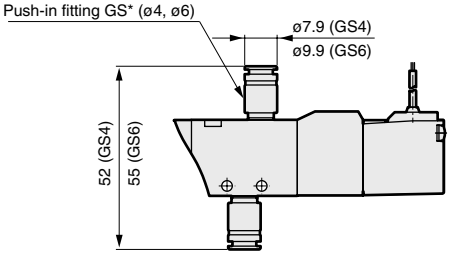


● 4KA1 3/5 40 CAD

3-position: Grommet lead wire

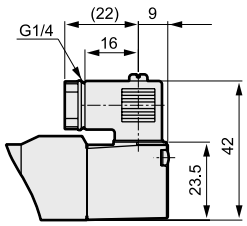


ø4/ø6 push-in fitting: (GS4, GS6)



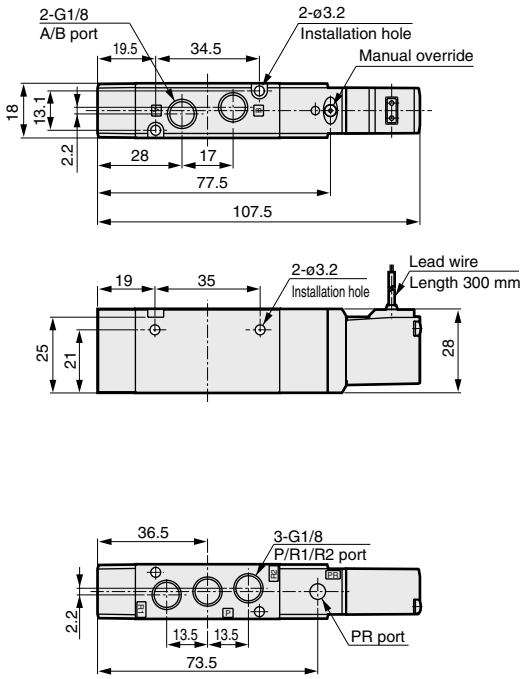
Small terminal box: (B <without indicator light>)

Without indicator light



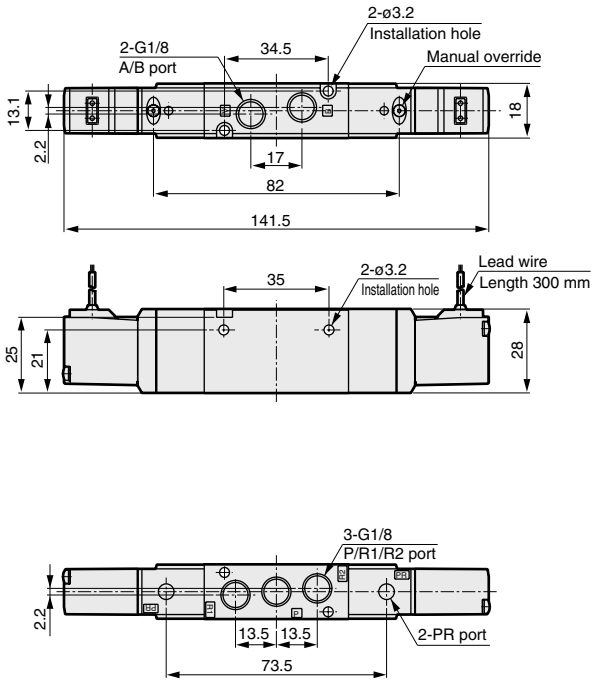
● 4KA210 CAD

2-position single solenoid: Grommet lead wire

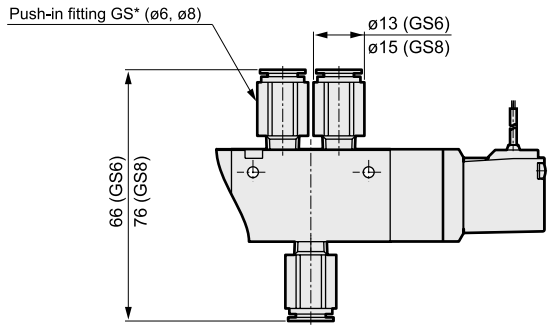


● 4KA220 CAD

2-position double solenoid: Grommet lead wire

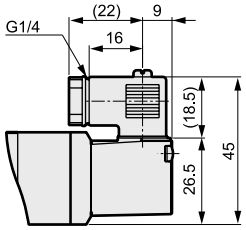


ø6/ø8 push-in fitting: (GS6, GS8)



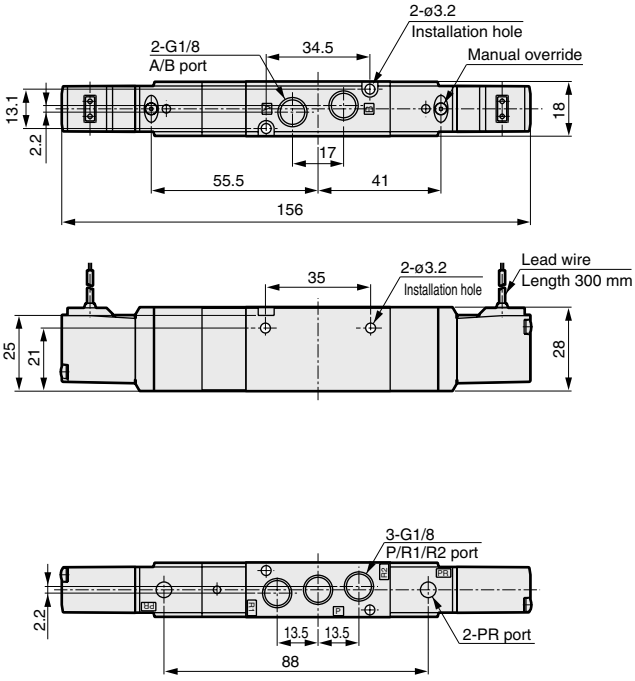
Small terminal box: (B <without indicator light>)

Without indicator light



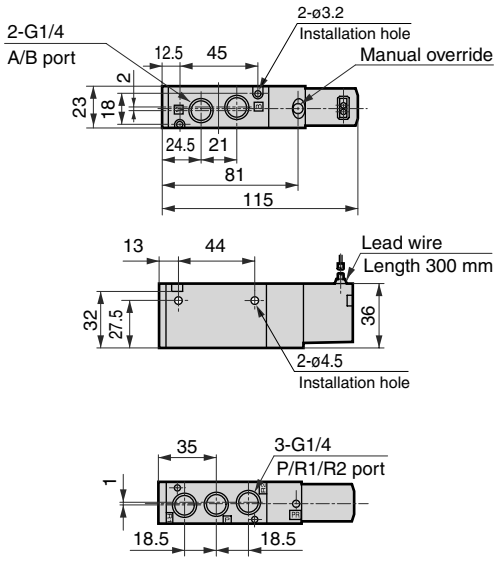
● 4KA2 $^{3}_{5}$ 40 CAD

3-position: Grommet lead wire



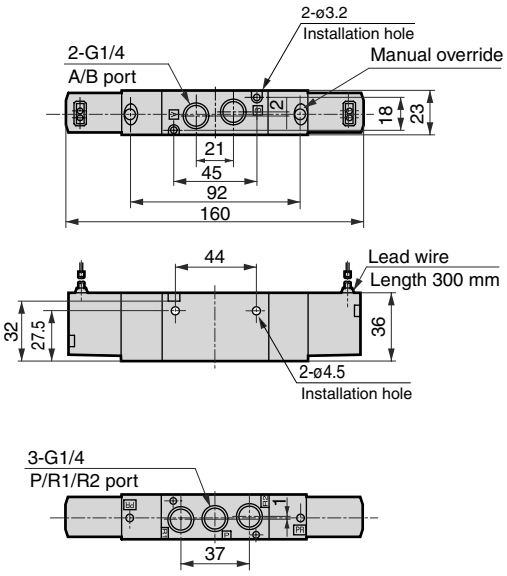
● 4KA310 CAD

2-position single solenoid: Grommet lead wire



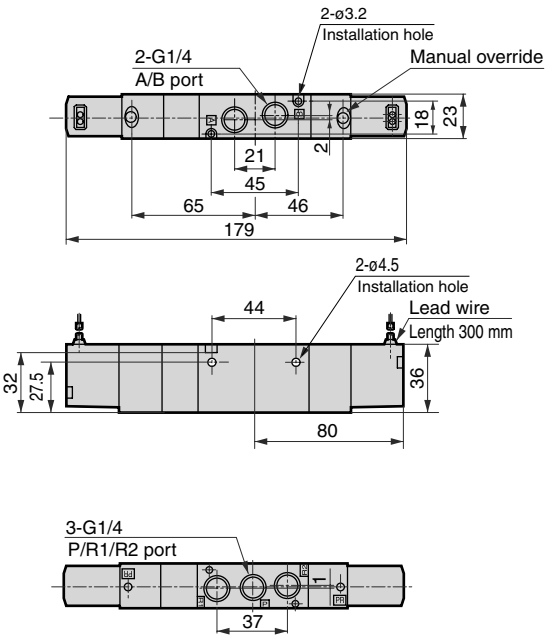
● 4KA320 CAD

2-position double solenoid: Grommet lead wire

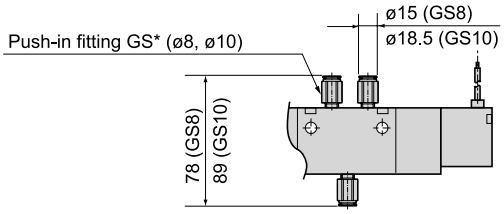


● 4KA3$^{3}_{5}$40 CAD

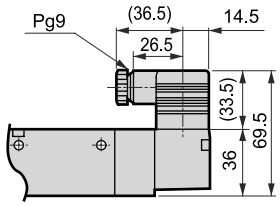
3-position: Grommet lead wire



ø8/ø10 push-in fitting: (GS8, GS10)

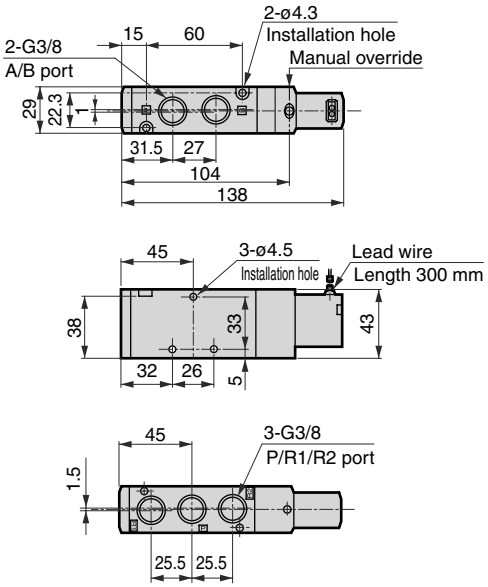


Terminal box: (B)



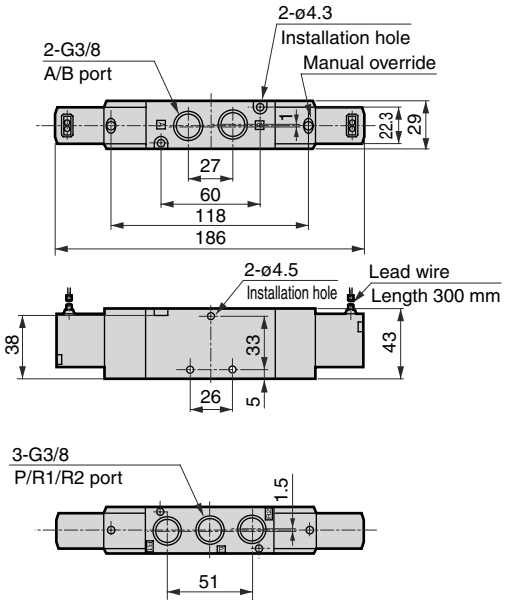
● 4KA410 CAD

2-position single solenoid: Grommet lead wire

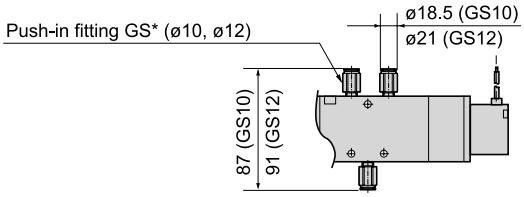


● 4KA420 CAD

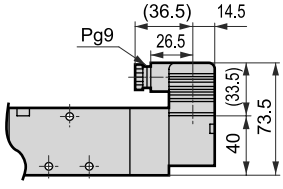
2-position double solenoid: Grommet lead wire



ø10/ø12 push-in fitting: (GS10, GS12)

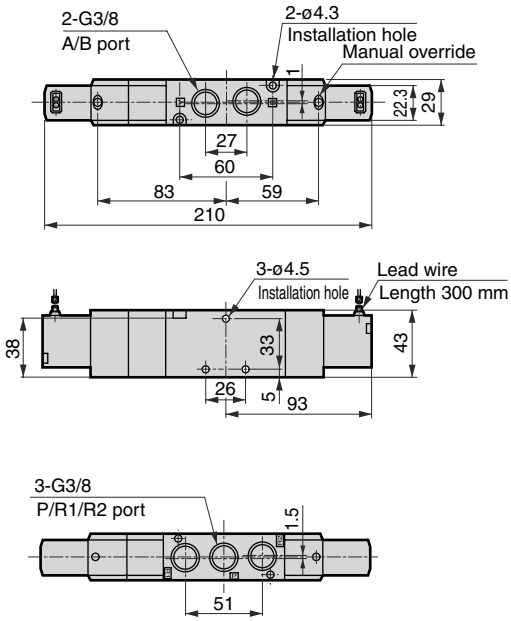


Terminal box: (B)



● 4KA4$^{3}_{5}$40 CAD

3-position: Grommet lead wire



Discrete valve Sub-plate porting 5 port pilot operated valve pneumatic valve

4KB1/2/3/4 Series

● Applicable cylinder bore size: ø20 to ø160

Catalog No. CB-023SA

How to order

5 port connection valve

4KB1 (Ⓐ) 1 (Ⓑ) 0 - 06G (Ⓒ) - B (Ⓓ) - DC24V (Ⓔ)

Symbol	Descriptions		Ⓐ Model No. 4KB1	4KB2	4KB3	4KB4
Ⓑ Solenoid position						
1	2-position single solenoid		●	●	●	●
2	2-position double solenoid		●	●	●	●
3	3-position all ports closed		●	●	●	●
4	3-position A/B/R connection		●	●	●	●
5	3-position P/A/B connection		●	●	●	●
Ⓒ Port size						
Port	**P/A/B port**		**R1•R2 port ①=G1/8 ②=G1/4 ③=G3/8 ④=G1/2**			
06G	G1/8		①	②		
08G	G1/4			②	②	
10G	G3/8				③	③
15G	G1/2					④
Ⓓ Electric connection						
Grommet lead wire						
Blank	Grommet lead wire (300 mm)		●	●	●	●
Small terminal box						
B	No lead wire		●	●	●	●
Ⓔ Voltage						
DC24V	24 VDC	Standard	●	●	●	●
AC220V	220 VAC 50/60Hz	Option	●	●	●	●

Common specifications

Descriptions		
Valve type/operation method		Pilot operated soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.70
Min. working pressure	MPa	Refer to the following individual specifications.
Proof pressure	MPa	1.05
Ambient temperature	°C	–5 to 50 (no freezing)
Fluid temperature	°C	5 to 50
Lubrication		Not required
Degree of protection		Dust proof
Vibration/impact	m/s^2	50 or less / 300 or less
Atmosphere		Containing corrosive gas is impermissible.

Note 1: The working pressure range is 0 to 0.7 MPa when the external pilot (option symbol: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electric specifications

Descriptions			4KB1/2	4KB3/4
Rated voltage V	AC		100, 200 (50/60 Hz)	
	DV		24	
Rated voltage fluctuation range			±10%	
Starting current A	AC	100 V	0.056/0.044	0.046/0.042
	AC	200 V	0.028/0.022	0.023/0.021
	DC	24 V	—	
Holding current A	AC	100 V	0.028/0.022	0.023/0.021
	AC	200 V	0.014/0.011	
	DC	24 V	0.075	
Current consumption W Value in ( ) are with indicator light	AC	100 V	1.8 / 1.4 (1.8 / 1.5)	1.6 / 1.3 (1.8 / 1.5)
	AC	200 V	1.8 / 1.4 (1.8 / 1.5)	1.6 / 1.3 (1.8 / 1.5)
	DC	24 V	1.8 (2.0)	
Thermal class			B (molded coil)	
Temperature rise °C			43	30

Note: The 100 VAC 50/60 Hz rated voltage can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

Individual specifications

Descriptions			4KB1	4KB2	4KB3	4KB4
Min. working pressure MPa	2-position	Single	0.15	0.15	0.15	0.15
		Double		0.10	0.10	0.10
	3-position		0.20	0.20	0.20	0.20
Port size Note 1	P/A/B port		G1/8	G1/8, G1/4	G1/4, G3/8	G3/8, G1/2
	R1/R2 port		G1/8	G1/4	G1/4, G3/8	G3/8, G1/2
Response time Note 2 ms	2-position		30 or less	30 or less	30 or less	30 or less
	3-position		60 or less	60 or less	60 or less	60 or less
Weight g	2-position	Single	100	200	335	555
		Double	140	245	442	655
	3-position		150	255	474	730

Note 1: G threads and G threads are available for the piping port threads. Contact CKD for details.
Note 2: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.

Flow characteristic

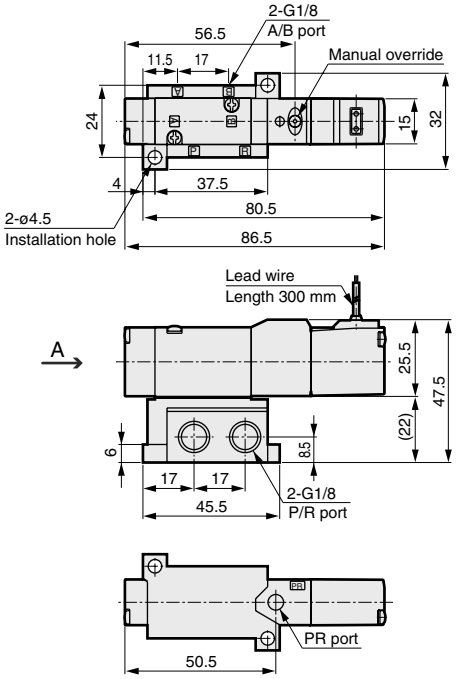
Model No.	Solenoid position		C (dm^3/ (s·bar))	b
4KB1	2-position		0.89	0.44
	3-position	All ports closed	0.63	0.50
		A/B/R connection	1.2	0.29
		P/A/B connection	0.75	0.39
4KB2	2-position		2.7	0.24
	3-position	All ports closed	2.4	0.29
		A/B/R connection	3.0	0.27
		P/A/B connection	2.4	0.34
4KB3	2-position		6.3	0.26
	3-position	All ports closed	5.6	0.27
		A/B/R connection	6.6	0.20
		P/A/B connection	5.9	0.27
4KB4	2-position		12	0.24
	3-position	All ports closed	11	0.27
		A/B/R connection	13	0.21
		P/A/B connection	10	0.22

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.

CAD

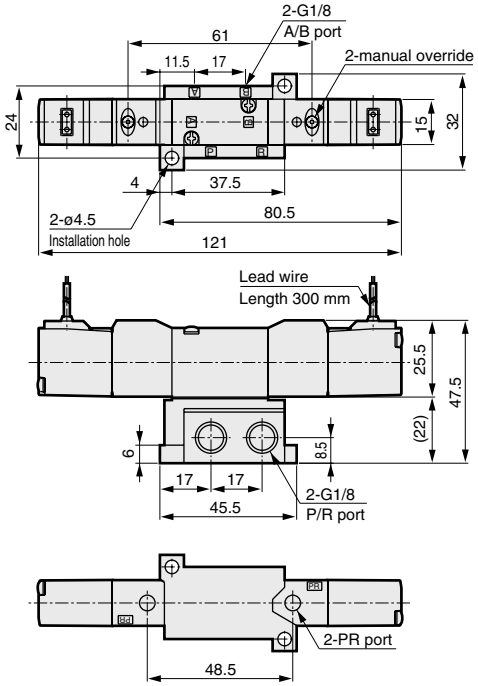
● 4KB110

2-position single solenoid: Grommet lead wire



● 4KB120

2-position double solenoid: Grommet lead wire

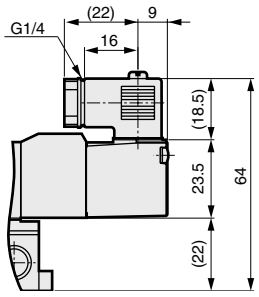


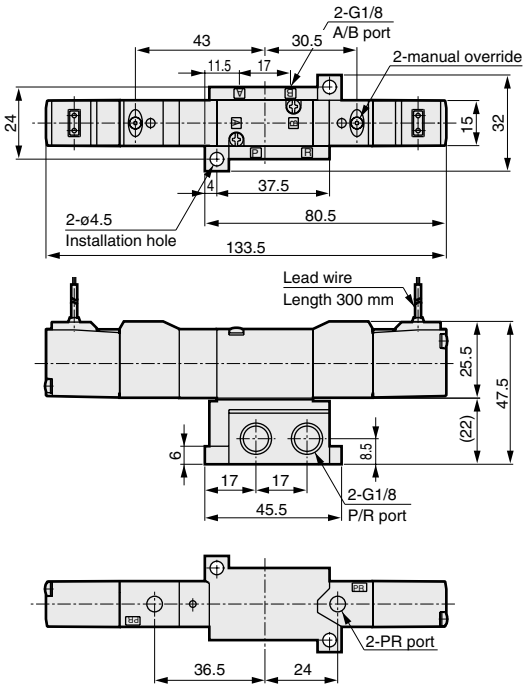
● 4KB1$^{3}_{5}$40

3-position: Grommet lead wire

Small terminal box: (B <without indicator light>)

Without indicator light

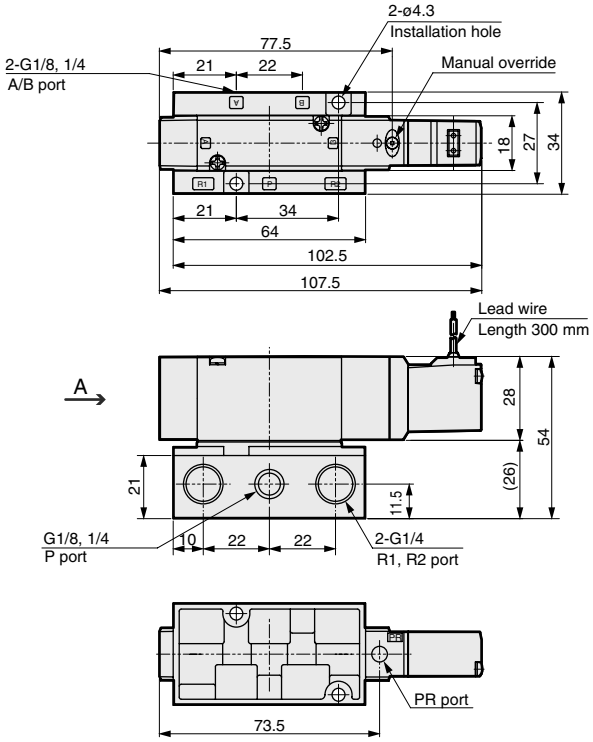




CAD

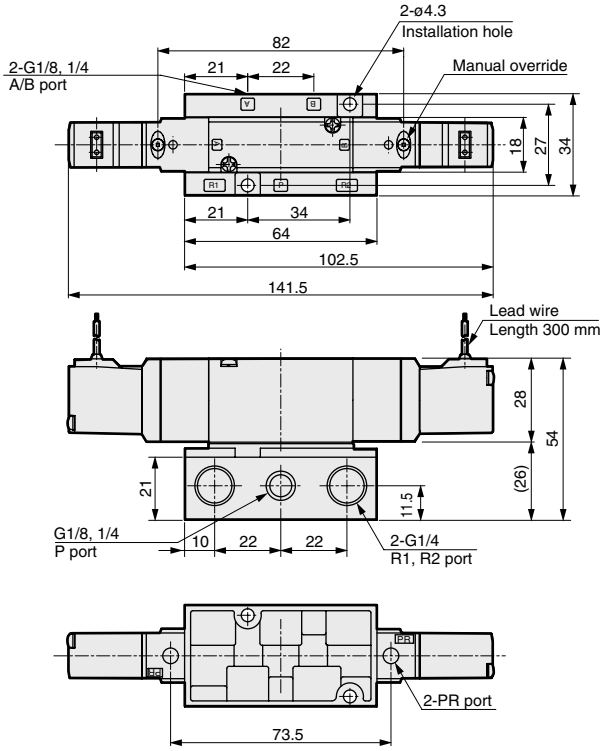
● 4KB210

2-position single solenoid: Grommet lead wire



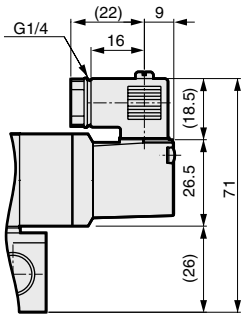
● 4KB220

2-position double solenoid: Grommet lead wire



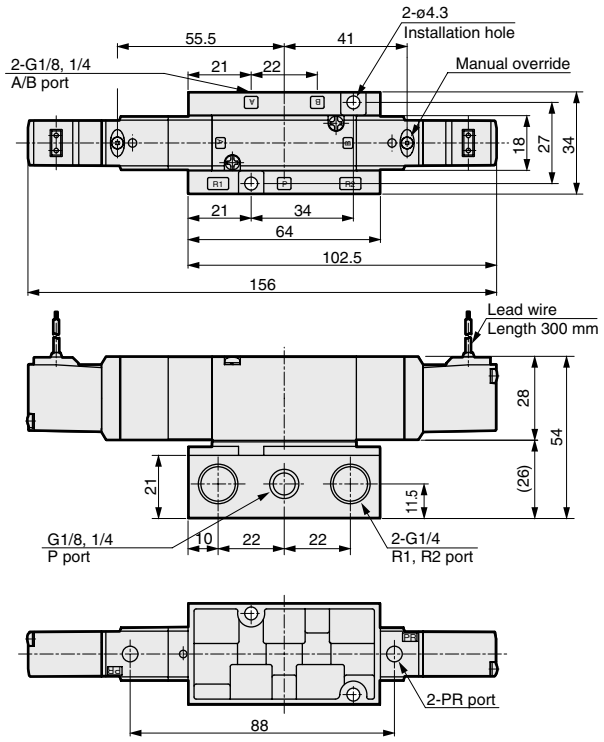
Small terminal box: (B <without indicator light>)

Without indicator light



● 4KB2$^{3}_{5}$40

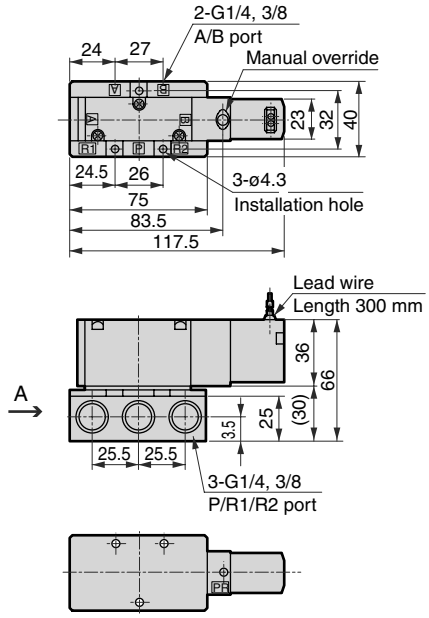
3-position: Grommet lead wire



CAD

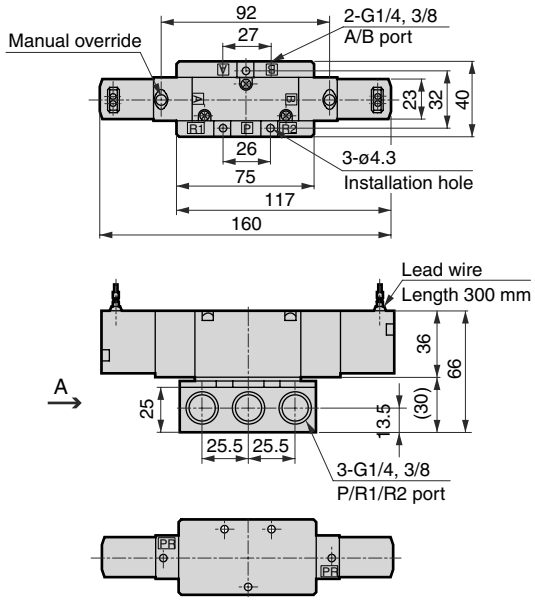
● 4KB310

2-position single solenoid: Grommet lead wire



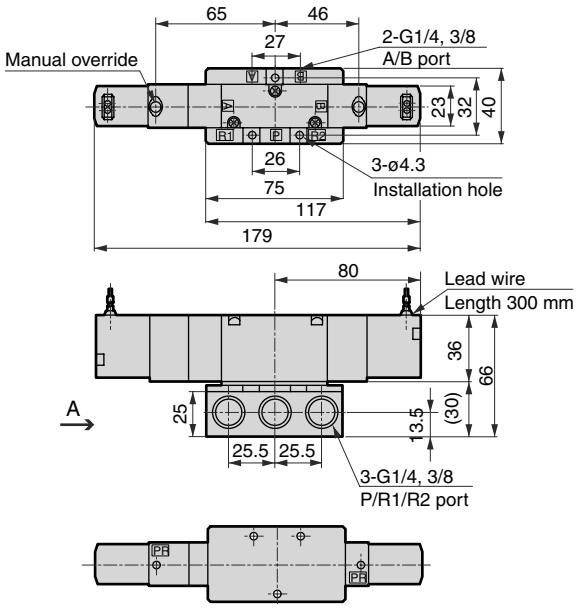
● 4KB320

2-position double solenoid: Grommet lead wire



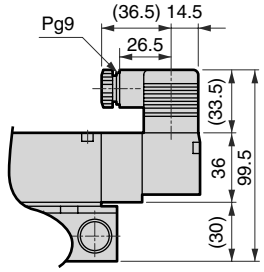
● 4KB3$^{3}_{5}$40

3-position: Grommet lead wire



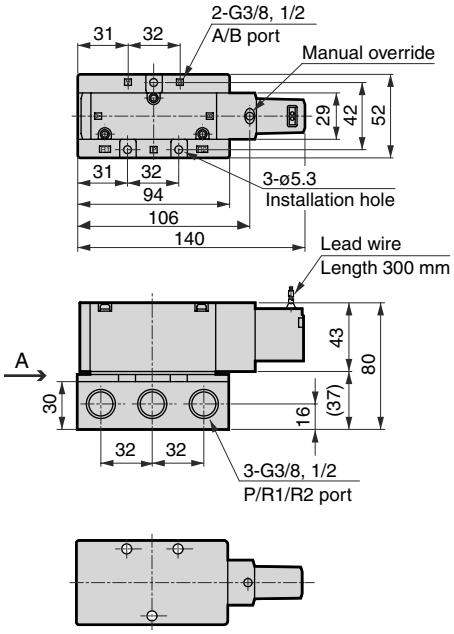
Terminal box: (B, L, LS)

Without indicator light



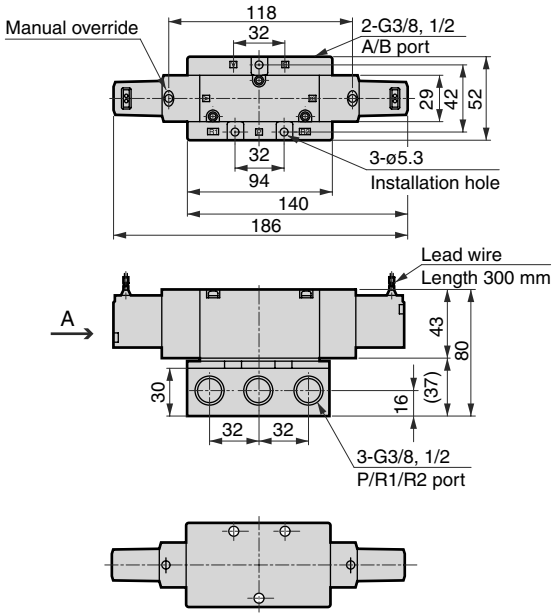
● 4KB410

2-position single solenoid: Grommet lead wire



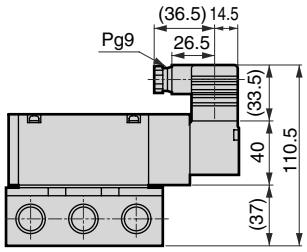
● 4KB420

2-position double solenoid: Grommet lead wire



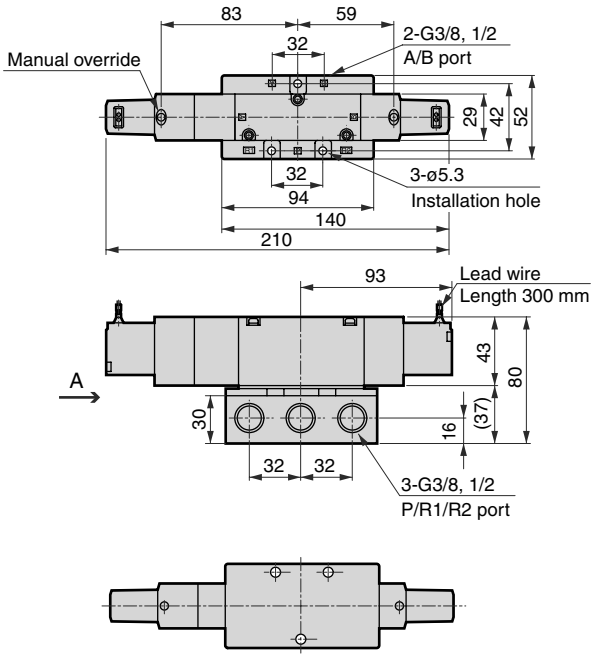
Terminal box: (B)

Without indicator light



● 4KB4$^{3}_{5}$40

3-position: Grommet lead wire



3 port direct acting valve Discrete valve body porting and sub-plate porting

3QRA·3QRB Series

Individual wiring manifold, body porting and sub-plate porting

M3QRA·M3QRB Series

● Applicable cylinder bore size: ø16 to ø40

Catalog No. CB-023SA

How to order

● Discrete solenoid valve

3QRB1 1 0 - M5 - D2 ○ —— 3

● Discrete solenoid valve

3QRB1 1 9 - 00 - D2 ○ —— 3

● Manifold

M3QRA1 1 0 - M5 - C2 ○ - 8 - 3

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

		Ⓐ Model No.			
		Discrete		Manifold	
		Body porting	Sub plate porting	Body porting	Sub plate porting
Symbol	Descriptions	3QRA1	3QRB1	M3QRA1	M3QRB1
Ⓑ Solenoid position					
1	2-position single solenoid (self reset)	●	●	●	●
8	Mix manifold Note 2			●	●
Ⓒ Port size					
M5	M5	●	●	●	●
Ⓓ Electric connection					
	Grommet lead wire				
Blank	Grommet lead wire (300 mm) Note 1	●	●	●	●
Ⓔ Flow					
Blank	Standard 2W	●	●	●	●
Ⓕ Station number					
2 to 20	2-station to 20-station			●	●
Ⓖ Voltage					
3	24 VDC	●	●	●	●

Common specifications

Descriptions		Descriptions
Valve type / operation method		Direct acting poppet valve
Working fluid		Compressed air and low vacuum
Max. working pressure	MPa	0.70
Min. working pressure	MPa	Low vacuum: -100KPa
Proof pressure	Mpa	1.05 (low vacuum: -101 KPa)
Max. working pressure differential	MPa	0.70
Ambient temperature	°C	–5 to 50 (no freezing)
Fluid temperature	°C	5 to 50
Lubrication		Not available *
Degree of protection		Dust proof
Vibration/shock	m/s^2	50 or less/300 or less
Atmosphere		Containing corrosive gas is impermissible.

* Lubrication will deteriorate the performance.

Electric specifications

Descriptions			Standard specifications	Large flow rate specifications H
Rated voltage	V	DC	24	
Rated energization			Intermittent *1	Continuous
Voltage fluctuation range			±10%	
Starting current	A	24 VDC	—	0.13
		12 VDC	—	0.27
Holding current	A	24 VDC	0.08	0.10
		12 VDC	0.17	0.20
Current consumption		W	2.0	2.4 *2
Thermal class			B	

*1: 5 min for continuous energizing, 50% or less for energization ratio
*2: 3.2 W for 20 ms after start.

Individual specifications

Descriptions		3QRA1	3QRB1	M3QRA1	M3QRB1
Port size	Port 1	M5		G1/8	
	Port 2			M5	
	Port 3			G1/8	
Response time Note 1 ON/OFF	ms	4±1/1.5±1			
Weight	g	24	27	19 (discrete solenoid valve)	

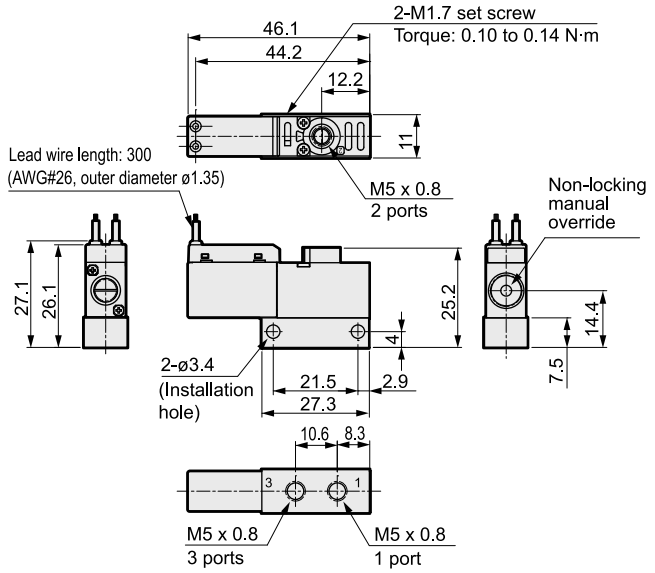
Note 1: Response time is the value for continuous operation under the condition of 0.5 MPa supply pressure and 20°C.

Flow characteristics

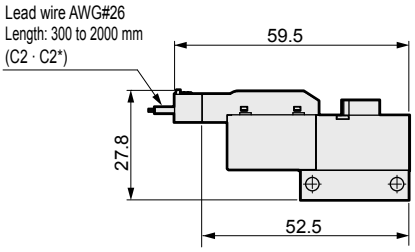
Model no.	Option	Port 1 → 2		Port 2 → 1		Port 2 → 3		Port 3 → 2	
		C [$dm^3/(s \cdot bar)$]	S (references) [mm^2]	C [$dm^3/(s \cdot bar)$]	S (references) [mm^2]	C [$dm^3/(s \cdot bar)$]	S (references) [mm^2]	C [$dm^3/(s \cdot bar)$]	S (references) [mm^2]
3QRA1	Blank	0.30	1.5	0.32	1.6	0.32	1.6	0.30	1.5
	H	0.36	1.8	0.38	1.9	0.38	1.9	0.36	1.8
3QRB1	Blank	0.30	1.5	0.34	1.7	0.36	1.8	0.34	1.7
	H	0.36	1.8	0.40	2.0	0.40	2.0	0.40	2.0
M3QRA1	Blank	0.30	1.5	0.32	1.6	0.32	1.6	0.30	1.5
	H	0.36	1.8	0.38	1.9	0.38	1.9	0.36	1.8
M3QRB1	Blank	0.30	1.5	0.34	1.7	0.36	1.8	0.34	1.7
	H	0.36	1.8	0.40	2.0	0.40	2.0	0.40	2.0

● 3QRA110-M5

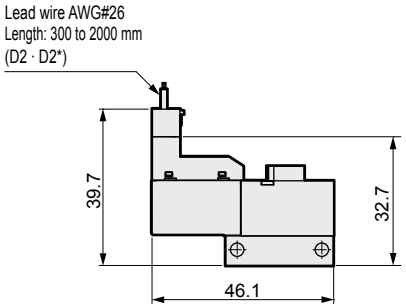
2-position single solenoid: Grommet lead wire



C-connector (C2·C3)

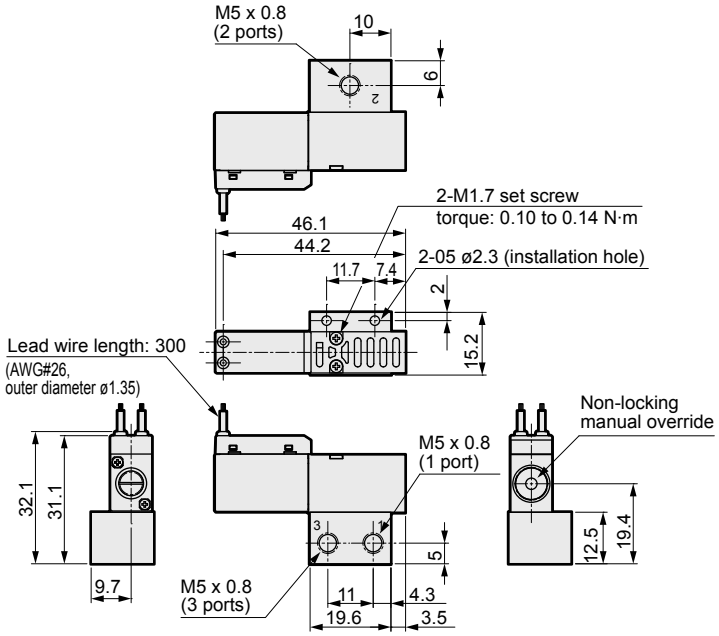


D-connector (D2·D3)

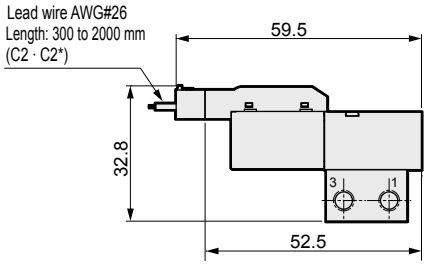


● 3QRB110-M5

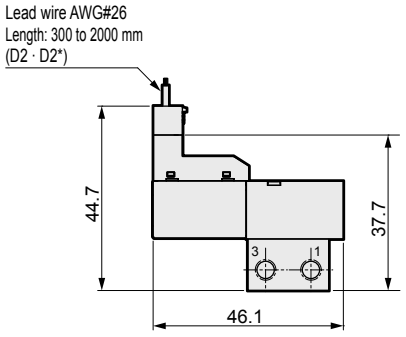
2-position single solenoid: Grommet lead wire



C-connector (C2·C3)

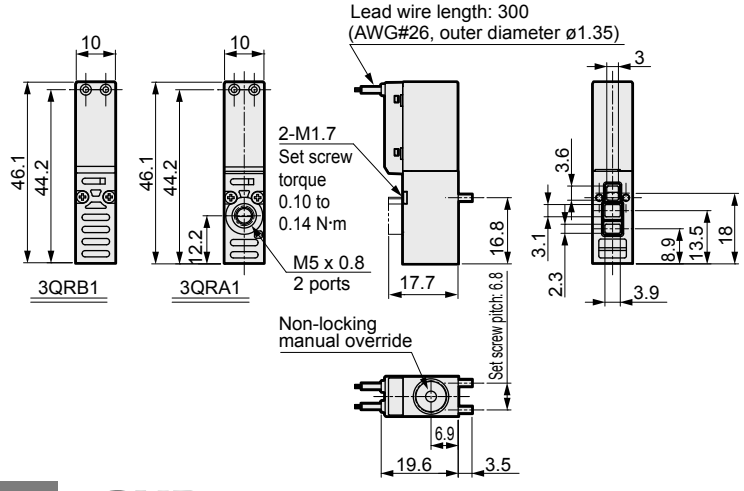


D-connector (D2·D3)

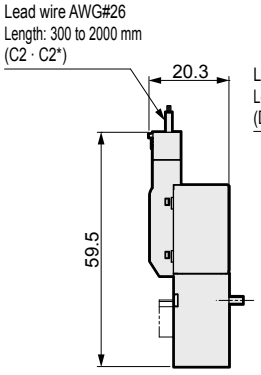


● 3QRA/B119-00 (discrete solenoid valve)

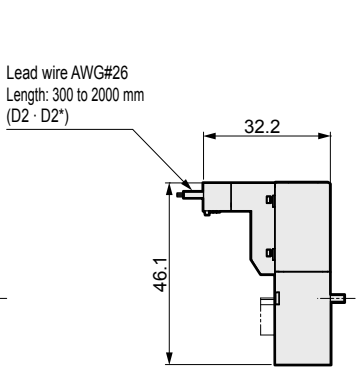
2-position single solenoid: Grommet lead wire



C-connector (C2·C3)

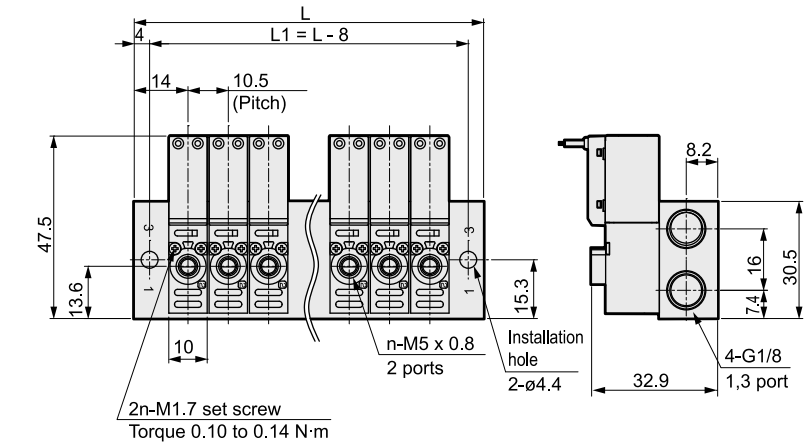


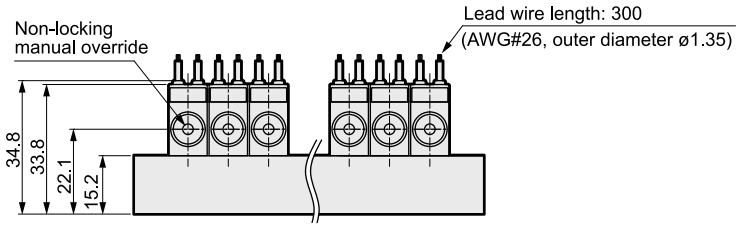
D-connector (D2·D3)



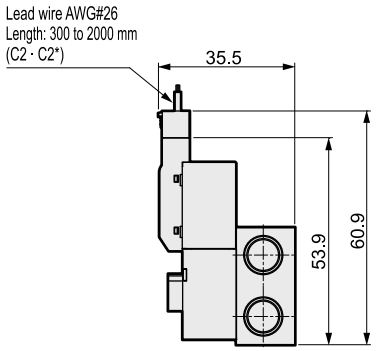
● M3QRA110-M5

2-position single solenoid: Grommet lead wire

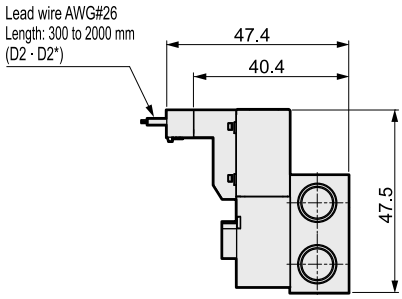




C-connector (C2·C3)

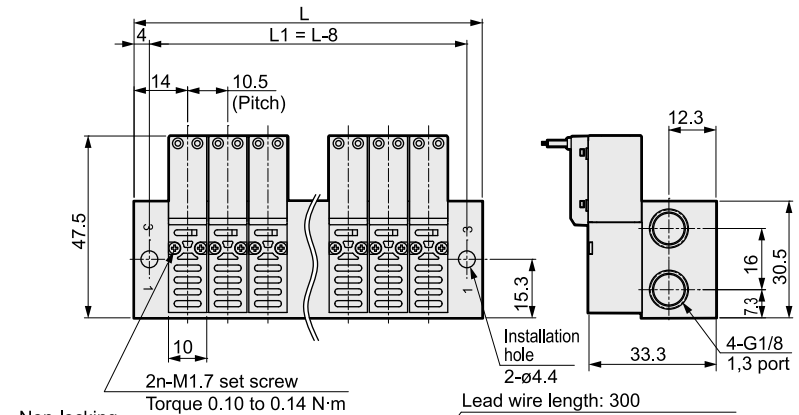


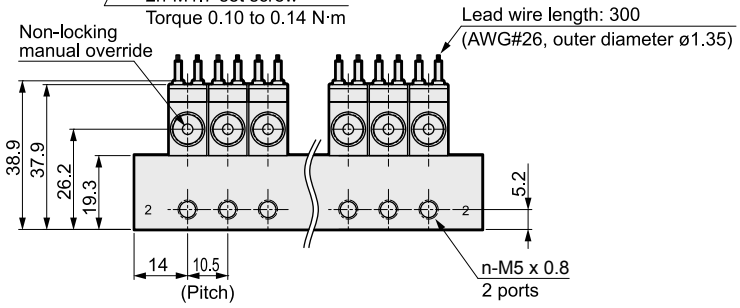
D-connector (D2·D3)



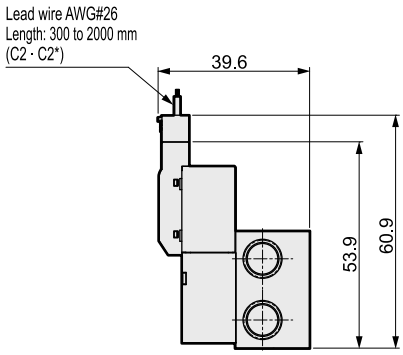
● M3QRB110-M5

2-position single solenoid: Grommet lead wire

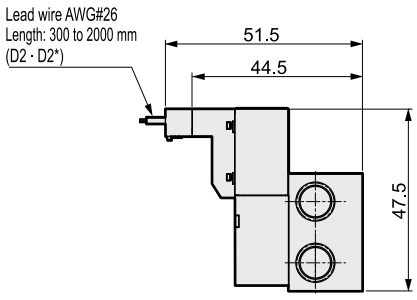




C-connector (C2·C3)



C-connector (C2·C3)



Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	38.5	49.0	59.5	70.0	80.5	91.0	101.5	112.0	122.5	133.0	143.5	154.0	164.5	175.0	185.5	196.0	206.5	217.0	227.5
L1	30.5	41.0	51.5	62.0	72.5	83.0	93.5	104.0	114.5	125.0	135.5	146.0	156.5	167.0	177.5	188.0	198.5	209.0	219.5

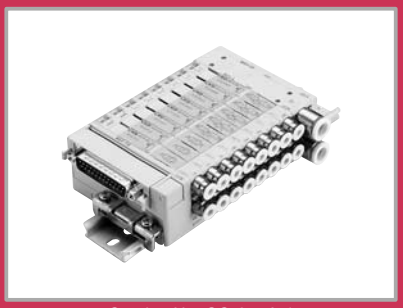
Reduced wiring block manifold Pilot operated 3, 4 port valve

MN4E0 Series

● Applicable cylinder bore size: ø12, 16, 20, 25, 32

Features

• Compact & space saving



Catalog No. CC-945A-1

Common specifications

Descriptions	MN4E0
Manifold method	Block manifold
Manifold type	Common supply and common exhaust check valve integrated Note 1
Working fluid	Compressed air
Valve type / operation method	Pilot operated soft spool valve
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2
Proof pressure MPa	1.05
Ambient temperature °C	5 to 55
Fluid temperature °C	5 to 55
Lubrication	Not required
Degree of protection	Dust proof
Vibration/shock m/s^2	50 or less/300 or less
Atmosphere	Containing corrosive gas is not permissible.
Manual override	Common for locking, non-locking type

Note 1: Check valve blocks the back pressure from adjacent air devices, etc. However, the structure does not let the pressure seal be held continuously, so do not use for puroposes other than a back pressure block.

Electric specifications

Descriptions		MN4E0
Rated voltage V		12, 24 DC
Rated voltage fluctuation range		±10% (+ 10% and-5% using with serial transmission for)
Rated current A	DC24V	0.025 (0.013) Note 2
	DC12V	0.05 (0.025) Note 2
Current consumption W	DC24V	0.6 (0.3) Note 2
	DC12V	
Thermal class		B
Surge protective circuit		With surge suppressor
Indicator		LED

Note 2: Values in parentheses indicate low exoergic/energy saving circuit integrated type type.
When using the valve block with individual power supply function (AUX) or type with low exoergic, energy-saving circuit, energizing is limited to the plus common.

Individual specifications

Descriptions	Port	3 port valve	4 port valve	Two 3 port valve integrated type Note 2
Port size	A/B port	ø1.8, ø4, ø6 push in fitting, M5, fiber tube		
	P/R port	ø6, ø8 push-in fitting		
	External pilot port	ø6 push-in fitting		—
Response time Note 1 ms	2-position single solenoid	20 or less	20 or less	12 or less
	Double solenoid	12 or less	12 or less	—
	3-position	—	20 or less	—

Note 1: Response time is for the 0.5MPa pressure, pre-lubricating type.
Note 2: With Two 3 port valve integrated type, the main pressure is used to operate the valving element, and cannot be used with the external pilot. Check that the supply air flow is sufficient so that the supply pressure does not drop below the min. working pressure due to the operation of the connected load (air operated valve), etc.

Slave unit specifications

Descriptions		T6C1 T6C0	T6G1 Note 1	T6A1 T6A0	T6J1 T6J0	T6E1 T6E0	T7D1 Note 2 T7D2	T7G1 Note 1 T7G2	T7N1 T7N2
Power supply voltage	Unit side	DC24V±10%		DC24V			DC24V±10%		
	Valve side	24 VDC + 10%-5%		+ 10%-5%			24 VDC + 10%-5%		
	Communication side	—		—			11 to 25 VDC	—	
Current consumption	Unit side	T6C1: 60mA or less T6C0: 40mA or less (when all points output ON)	100mA or less (when all points output ON)	100mA or less (when all points output ON) Note that current consumption of valve is not included.		60mA or less (when all points output ON) Note that current consumption of valve is not included.	T7D1: 60mA or less T7D2: 85mA or less (when all points output ON)	T7G1: 65mA or less T7G2: 90mA or less (when all points output ON)	T7N1: 40mA or less T7N2: 50mA or less (when all points output ON)
	Valve side	15mA or less (when all points OFF)					15mA or less (when all points OFF)		
	Communication side	—		—			50mA or less	—	
Output points		T6C1: 16 points T6C0: 8 points	16 points	T6A1: 16 points T6A0: 8 points	T6J1: 16 points T6J0: 8 points	T6E1: 16 points T6E0: 8 points	T7D1: 16 points T7D2: 32 points	T7G1: 16 points T7G2: 32 points	T7N1: 16 points T7N2: 32 points
Occupied station		T6C1: 2 node address (8 points mode) T6C0: 1 node address (8 points mode)	1 station	T6A1: Output 16 points T6A0: Output 8 points	T6J1: Output 16 points T6J0: Output 8 points	T6E1: FAN-in: 3 T6E0: FAN-in: 3 Note 3	T7D1: 2 byte T7D2: 4 byte	T7G1: 1 station T7G2: 1 station	T7N1: output 16 points T7N2: output 32 points

Note 1: CC-Link is ver.1.10.
Note 2: Contact CKD for EDS file. (EDS file: Text file of parameters for communicating with each company's master)
Note 3: FAN-in indicates input capacity from a D-G line. (This is required when counting the connected units)

Weight

Wiring block (g)		D sub-connector type T30	Flat cable connector type T5*	Intermediate wiring block			Serial transmission	
				TM1A	TM1C	TM52	T6*	T7*
		67	59	32	32	34	205	128
Supply and exhaust block (g)		Q/QZ	QK	QKZ		QX		QKX
	Fitting side	64	69	79		56		61
	Fitting top	90	94	98		62		66
Valve block (g)		2-position single solenoid	2-position double solenoid	3-position		Two 3 port valves integrated type		—
	Fitting side	47.5	52	53.5		52		—
	Fitting top	54.5	59	60.5		59		—
End block (g)		ER/EL	—	—		—		—
		40	—	—		—		—
DIN rail (g)		—	—	—		—		—
		0.9g/mm	—	—		—		—
Regulator block (G) Note 1		—	—	—		—		—
		124	—	—		—		—

Note 1: The values may differ slightly depending on the regulator block specifications.

Max. number of stations energized by manifold

Descriptions		Descriptions	Double solenoid (Double wiring)	Single solenoid	Mix Manifold (Solenoid number)
D sub-connector type (25 pin)	T30	D sub-connector type Left	12 stations	24 stations	24 points
	T30R	D sub-connector type Right	12 stations	24 stations	24 points
Flat cable Connector type	T50	20 pin flat cable connector Left (with power supply terminal)	8 stations	16 stations	16 points
	T50R	20 pin flat cable connector Right (with power supply terminal)	8 stations	16 stations	16 points
	T51	20 pin flat cable connector Left (without power supply terminal)	9 stations	18 stations	18 points
	T51R	20 pin flat cable connector Right (without power supply terminal)	9 stations	18 stations	18 points
	T52	10 pin flat cable connector Left (without power supply terminal)	4 stations	8 stations	8 points
	T52R	10 pin flat cable connector Right (without power supply terminal)	4 stations	8 stations	8 points
	T53	26 pin flat cable connector Left (without power supply terminal)	12 stations	24 stations	24 points
	T53R	26 pin flat cable connector Right (without power supply terminal)	12 stations	24 stations	24 points
Intermediate electric Block type	TM1A	RITS connector 6P x 2 pcs. Note 1	5 stations	10 stations	10 points
	TM1C	RITS connector 6P Note 1	2 stations	5 stations	5 points
	TM52	10 pin flat cable connector	4 stations	8 stations	8 points
Serial transmission type (With unit)	T6A0	UNIWIRE SYSTEM8 points	4 stations	8 stations	8 points
	T6A1	UNIWIRE SYSTEM16 points	8 stations	16 stations	16 points
	T6C0	OMRON CompoBus/S 8 points	4 stations	8 stations	8 points
	T6C1	OMRON CompoBus/S 16 points	8 stations	16 stations	16 points
	T6E0	SUNX S-LINK 8 points	4 stations	8 stations	8 points
	T6E1	SUNX S-LINK 16 points	8 stations	16 stations	16 points
	T6J0	UNIWIRE H system 8 points	4 stations	8 stations	8 points
	T6J1	UNIWIRE H system 16 points	8 stations	16 stations	16 points
	T6G1	CC-Link 16 points	8 stations	16 stations	16 points
Serial transmission type (Close contact type)	T7D1	DeviceNet 16 points	8 stations	16 stations	16 points
	T7D2	DeviceNet 32 points	16 stations	32 stations	32 points
	T7G1	CC-Link 16 points	8 stations	16 stations	16 points
	T7G2	CC-Link 32 points	16 stations	32 stations	32 points
	T7N1	S-LINK V 16 points	8 stations	16 stations	16 points
	T7N2	S-LINK V 32 points	16 stations	32 stations	32 points

Note 1: RITS connector 6P (1473562-6) Taiko Electronics Amp Co., LTD

Flow characteristics

			C (dm^3/ (s•bar))	b
3 port valve	2-position		0.54	0.12
4 port valve	2-position		0.54	0.12
	3-position	All ports closed	0.50	0.08
		A/B/R connection	0.54	0.12
		P/A/B connection	0.50	0.11
2 port valve integrated type	2-position		0.50	0.16

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.

Manifold model no. how to indicate D-sub/flat cable connector

● Discrete valve block

N 3 E0 66 0- C4 —— M D2 ( ) F —— 3

● Block manifold

M N 4 E0 1 0- C4 - R - M T53 D2 W F - 5 - 3

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ Ⓙ

* Complete manifold specification (page 197)

Symbol	Descriptions		Type: Block manifold	Type: Valve Discrete block
Ⓐ Valve type				
4	4 port valve, 3, 4 ports valve mix		●	●
Ⓑ Solenoid position (Note 10)				
1	3 port valve	Single NC self reset type (Differential pressure spring return)	●	●
11	3 port valve	Single NO self resetting type (Differential pressure spring return)	●	●
2	3 port valve	Double NC self holding type	●	●
21	3 port valve	Double NO self holding type	●	●
66	Two 3 port valves integrated type (Note 1)	A side valve: NC self resetting type / B side valve: NC self resetting type (Differential pressure return)	●	●
66S	Two 3 port valves integrated type (Note 1)	A side valve: NC self resetting type / B side valve: NC self resetting type (Differential pressure spring return)	●	●
67	Two 3 port valves integrated type (Note 1)	A side valve: NC self resetting type / B side valve: NO self resetting type (Differential pressure return)	●	●
67S	Two 3 port valves integrated type (Note 1)	A side valve: NC self resetting type / B side valve: NO self resetting type (Differential pressure spring return)	●	●
76	Two 3 port valves integrated type (Note 1)	A side valve: NO self resetting type / B side valve: NC self resetting type (Differential pressure return)	●	●
76S	Two 3 port valves integrated type (Note 1)	A side valve: NO self resetting type / B side valve: NC self resetting type (Differential pressure spring return)	●	●
77	Two 3 port valves integrated type (Note 1)	A side valve: NO self resetting type / B side valve: NO self resetting type (Differential pressure return)	●	●
77S	Two 3 port valves integrated type (Note 1)	A side valve: NO self resetting type / B side valve: NO self resetting type (Differential pressure spring return)	●	●
1	4 port valve	2-position single solenoid self resetting type (Differential pressure spring return)	●	●
2	4 port valve	2-position double solenoid self holding type	●	●
3	4 port valve	3-position all ports closed	●	●
4	4 port valve	3-position A/B/R connection	●	●
5	4 port valve	3-position P/A/B connection	●	●
8	Mix manifold		●	
Ⓒ Port size				
C4	ø4 push-in fitting, Side		●	●
C6	ø6 push-in fitting, Side		●	●
M5	M5 female thread (with non-rotating)		●	●
Ⓓ Pressure adjustment				
Blank	Without regulator block mounted manifold			
Ⓔ Manual override				
Blank	Locking, common non-locking type (with manual cover)		●	●
Ⓕ Wiring method				
Refer to the following page.			●	
Ⓖ Terminal and connector pin array				
Blank	Standard wiring		●	●
Ⓗ Option				
E	Low exoergic, power saving circuit integrated type (Note 2)		●	●
U	Built-in indivitual power supply function (AUX) type (Note 2, 3)		●	●
A	Ozone proof		●	●
F	A/B port filter integrated (note 4)		●	●
Ⓘ Station number				
1 to 24	1 station to 24 station (note 5)		●	
Ⓙ Voltage				
3	24 VDC		●	●
Ⓙ Wiring method				
T30	25 pin D sub-connector Left		●	
Blank	For reduced wiring valve block			●

is not available.

⚠ Note on model no. selection

Note 1: Two 3 port valve integrated type can not be used in external pilot type.
Contact CKD for other working conditions.
Note 2: Energizing is limited to the plus common. Of "E" and "U" can not be selected same time.
Note 3: "U" can not be selected for individual wiring is selected.
Note 4: A filter (for preventing entry of foreign matter) is incorporated in the supply/ exhaust block's P port.
Note 5: Differs based on specifications.
Note 6: Dummy blocks counts as a station.

Ozone specifications

Ozone specifications can be selected with Ⓗ option "A" in How to Order on page 190.

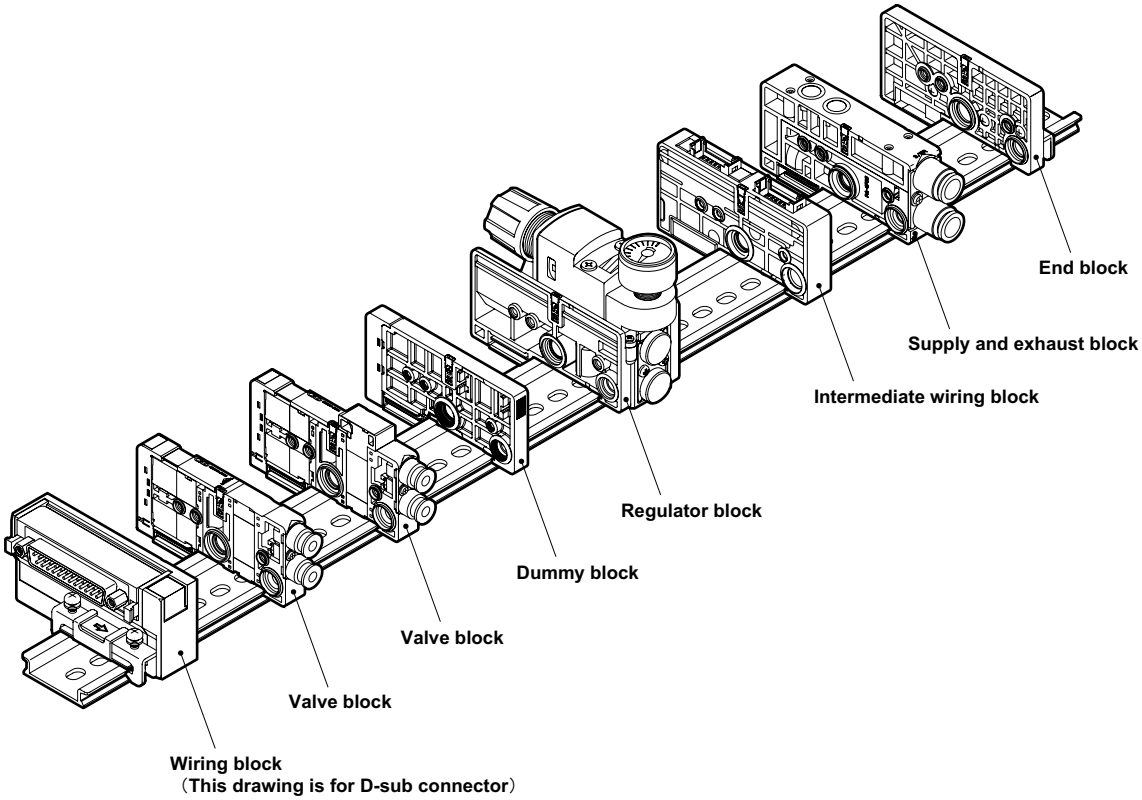
Clean room specifications

(Catalog No.CB-033S)

● Dust generation preventing structure for use in cleanrooms

** -Voltage- P70

Manifold components explanation and parts list



Example of main component model no.

Parts name	Model no. (example)	Parts name	Model no. (example)
Wiring block	N4E0-T30	End block	N4E0-ER
Regulator block	N4E0-RA-RL	Supply and exhaust block	N4E0-Q-8
Valve block	N4E020-C4-3	Dummy block	N4E0-MPD
	N4E030-C4-3		

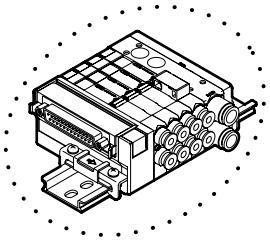
List of related parts

Parts name	Model no. (example)	Parts name	Model no. (example)
Cartridge type push-in fitting and related parts	N4E0-JOINT-C18	Cartridge type push-in fitting and related parts	N4E0-JOINT-CF
	N4E0-JOINT-C4		N4E0-JOINT-CPG
	N4E0-JOINT-C6		
	N4E0-JOINT-CL18		
	N4E0-JOINT-CL4		
	N4E0-JOINT-CL6		

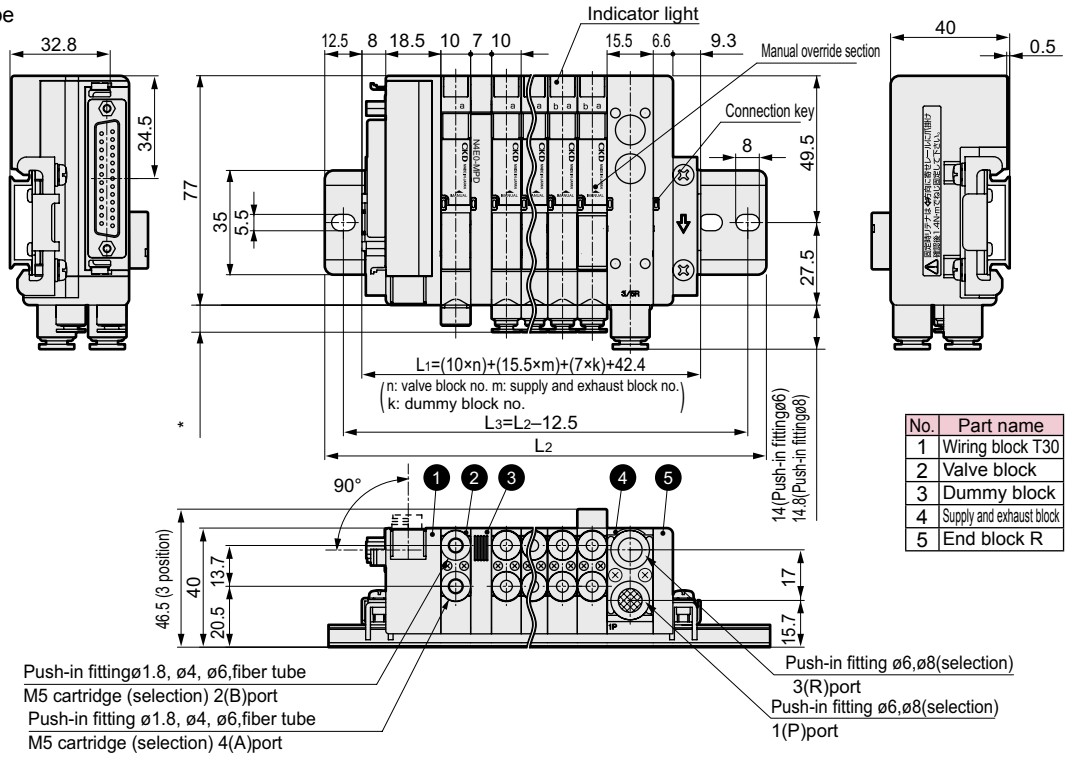
Dimensions

● MN4E0*-*-T30*-*-*

D sub-connector (T30) type



* The d sub-connector can be faced to the top or bottom.
* Refer to 190 Page for a connector section direction switchover method.



No.	Part name
1	Wiring block T30
2	Valve block
3	Dummy block
4	Supply and exhaust block
5	End block R

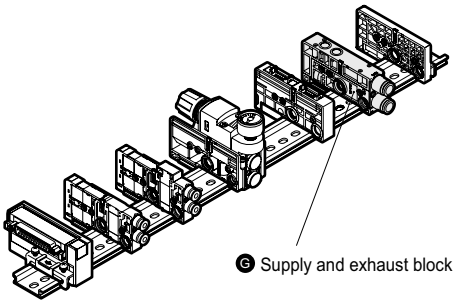
*Fitting dimensions		
Push-in fitting	ø1.8	5.5
	ø4	9.1
	ø6	10.7
Fiber tube		8.5
M5 female thread		6.9

Piping section

G. Supply and exhaust block

- This block can be installed at any position adjacent to the valve block. Generally, the block is installed on the right with the A/B (cylinder) port facing forward
- Supply the air for the type with two 3-port valves with Q-6* and 8*. (Can not be used for external pilot type.)

N4E0 - Q - 8 - SA - C
Ⓐ Ⓑ Ⓒ Ⓓ



Symbol	Descriptions
Ⓐ Type (Note 1)	
Q	Internal pilot
QK	External pilot
QZ	Multi-pressure circuit (P and R only)
QKZ	Multi-pressure circuit, external pilot (P, R, PA or PR separate)
QX	Atmospheric release (with silencer)
QKX	External pilot and atmospheric release (With silencer)

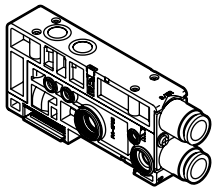
Ⓑ Port size (P/R port) (Note 2)	
6	ø6 push-in fitting
8	ø8 push-in fitting

Ⓒ Option (Note 3)	
Blank	Without partition
S	P/R stop, PA/PR through
SA	P/R/PA/PR stop

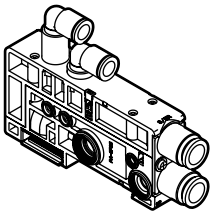
Ⓓ Wiring methods	
Blank	With internal wiring circuit
C	Without internal wiring circuit Note 4

Note 1: *Individual wiring is available for the valve block of your choice (N3E0 and N4E0 only) in combination.
Note 2: A filter for preventing entry of foreign matter is used in the P port.
Note 3: The manifold port is faced forward to shield the flow path between the supply/exhaust block and block on the right side.
Option symbol
S : Shields the 1(P) and 3(R) flow paths.
SA1 : Shields the 1(P), 3(R), 12/14(PA), 82/84(PR) flow paths.
Note 4: When using the wiring block with a [left + right] or [intermediate + right] combination, arrange the supply/exhaust block "without internal wiring circuit" between the left control station and right control station.

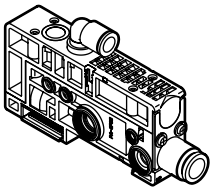
Q-8/QZ-8



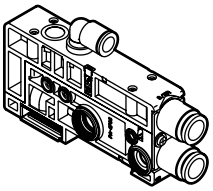
QKZ-8



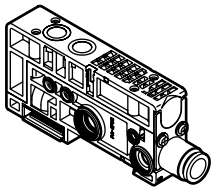
QKX-8



QK-8



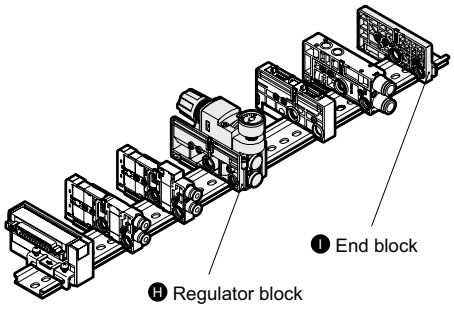
QX-8/QXZ-8

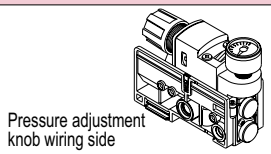
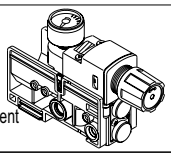


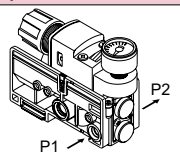
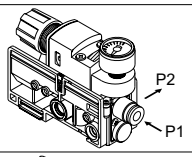
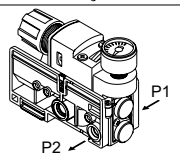
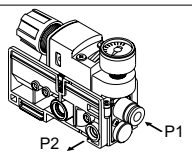
G. Regulator block

● **Discrete regulator block**

N4E0 - RA - FR - C8 - A
Ⓐ Ⓑ Ⓒ Ⓓ



Symbol	Descriptions
Ⓐ Pressure adjustment knob direction	
RA	 Pressure adjustment knob wiring side
RB	 Pressure adjustment knob port side

Ⓑ Port size (P/R port) (Note 2)	
LR	
LR	
RL	
FL	

Ⓒ fitting port size	
Blank	Plug (for air supply/pressure adjustment direction LR and RL)
C6	ø6 push-in fitting (for air supply/pressure adjustment direction FR and FL)
C8	ø8 push-in fitting (for air supply/pressure adjustment direction FR and FL)

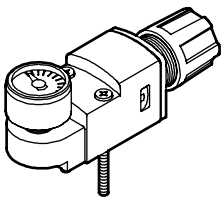
Ⓓ Option	
Blank	None
A	Ozone resistant

⚠ Cautions on model no. selection

Note 1: The manifold with regulator block requires more than one supply/exhaust block for the pilot air.
Note 2: Consult with CKD when using the regulator block independently for external pressure control other than the manifold.
Note 3: The elbow fitting (CL6, CL8) cannot be selected when the pressure adjustment knob direction RB is selected.

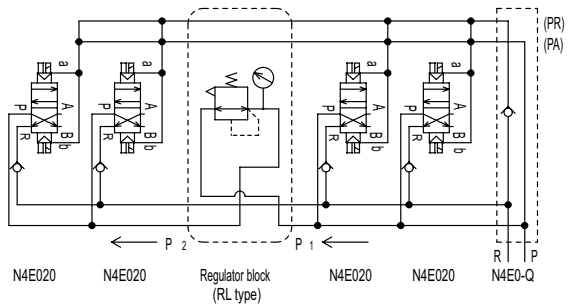
● **Discrete regulator model no.**

RB500-00 M



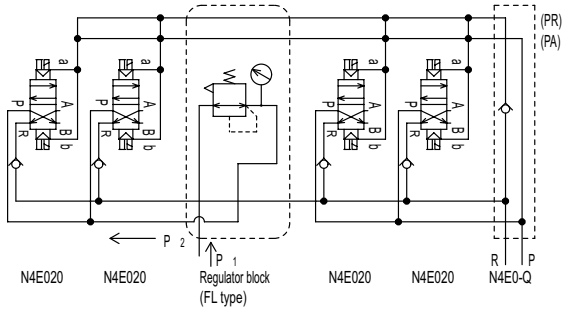
Applications (Contact CKD for other use)

Example 1: Decompression of internal main pressure



*How to depressurize air supply pressure (P=P1) directly from supply/exhaust block.

Example 2: Decompression of external main pressure



*How to depressurize air supply pressure (P≠P1) directly from regulator block.

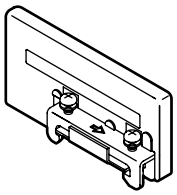
I. End block (right side installation)

● **Installed on the right or left when the piping port is facing forward.**

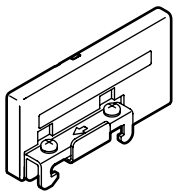
N4E0 - ER
Ⓐ

Symbol	Descriptions
Ⓐ Type	
EL	Left side installation
ER	Right side installation

N4E0-EL



N4E0-ER



G. Related products

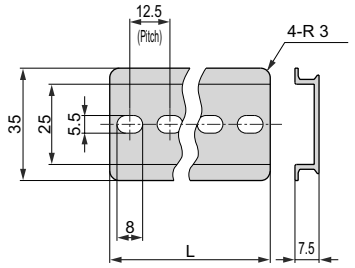
● **Push-in cartridge fitting**

N4E00 –JOINT– C4

For valve block and supply/exhaust block PA port.
Can not be used on P, R ports on the supply and exhaust block.

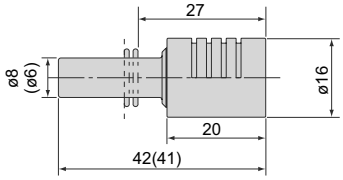
● **Mounting rail**

N4G-BAA (length)



● **Silencer (attachment)**

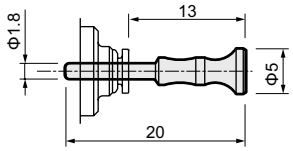
SLW-H8/SLW-H6



* () inside is H6.
Effective sectional area 9mm2

● **Blanking plug (attachment)**

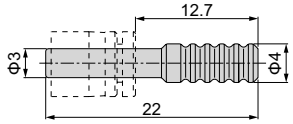
PG-P2-B (ø1.8)



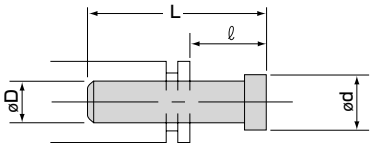
N4E0 –JOINT– C4

For valve block and supply/exhaust block PA port.
Can not be used on P, R ports on the supply and exhaust block.

N4E00-fitting-PP 3MW (ø3)



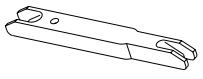
(ø4, ø6, ø8)



Model no.	D	L	ℓ	d
GWP4-B	ø4	27	19	6
GWP6-B	ø6	29	19	8
GWP8-B	ø8	33	14	10

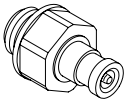
● **Push-in fitting tube remover**

N4E0-EOT18-4 (ø1.8, ø3, ø4)
N4S0-EOT4-6 (ø3, ø4, ø6)



● **ø1.8 barbed fitting (10 piece/1 set)**

N4E0 –JOINT– PTN2-M5



Symbol	Dimensions
PTN2-M3	Barbed fitting M3 threaded type
PTN2-M5	Barbed fitting M5 threaded type
PTN2-6	Barbed fitting R1/8

* Contact to CKD for fiber tube.

Symbol	Dimensions
Ⓐ A•B port size	
C18	ø1.8 fiber tube Cartridge fitting
C3	ø3 for tube Cartridge fitting
C4	ø4 for tube Push-in cartridge fitting
CL18	Short L type for ø1.8 fiber tube Cartridge fitting
CL3	ø3 for tube short L type Cartridge fitting
CL4	ø4 for tube short L type Push-in cartridge fitting
CLL18	ø1.8 fiber tube length L type Cartridge fitting
CLL3	ø3 for tube short LL type Cartridge fitting
CLL4	ø4 for tube long L type Push-in cartridge fitting
CPG	Plug cartridge
CP	Fitting fixing plate (machine screw attached for end plate mount)
CM3	M3 cartridge fitting
CMB	Plug cartridge for M5 (fitting non-rotating plate for M5 for fixing: CMP is necessary.)
CMP	Fitting non-rotating plate for M5 (Machine screw attached for end plate mount)

Symbol	Dimensions
Ⓐ A•B port size	
CF	ø1.8 barbed Cartridge fitting
C18	ø1.8 fiber tube Cartridge fitting
C4	ø4 for tube Push-in cartridge fitting
C6	ø6 for tube Push-in cartridge fitting
CL18	Short L type for Φ1.8 fiber tube Cartridge fitting
CL4	ø4 for tube short L type Push-in cartridge fitting
CL6	ø6 for tube short L type Push-in cartridge fitting
CLL18	ø1.8 fiber tube length L type Cartridge fitting
CLL4	ø4 for tube long L type Push-in cartridge fitting
CLL6	Φ6 for tube long L type Push-in cartridge fitting
CPG	Plug cartridge
CP	Fitting fixing plate (machine screw attached for end plate mount)
CM5	M5 cartridge fitting (fitting non-rotating plate for M5 for fixing: CMP is necessary.)
CMB	Plug cartridge for M5 (fitting non-rotating plate for M5 for fixing: CMP is necessary.)
CMP	Fitting non-rotating plate for M5 (Machine screw attached for end plate mount)

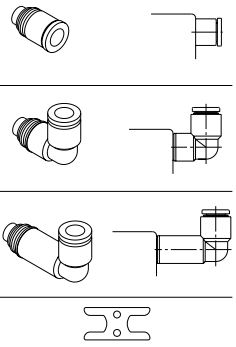
I. Related products

● **Push-in cartridge fitting for supply and exhaust block**

N4E0 – Q – JOINT – 8

Use the above valve block fitting for the pilot pressure supply (for PA)

Symbol	Descriptions
6	Push-in fitting for ø6 tube
8	Push-in fitting for ø8 tube
6L	Push-in fitting for ø6 tube short L type
8L	Push-in fitting for ø8 tube short L type
6LL	Push-in fitting for ø6 tube long L type
8LL	Push-in fitting for ø8 tube long L type
P	Fitting fixing plate (machine screw for plate mount attached)



*Contact to CKD for fiber tube.

● **Push-in cartridge fitting for supply and exhaust block**

N4E0 - SOCKET- D - 300

Ⓐ Ⓑ

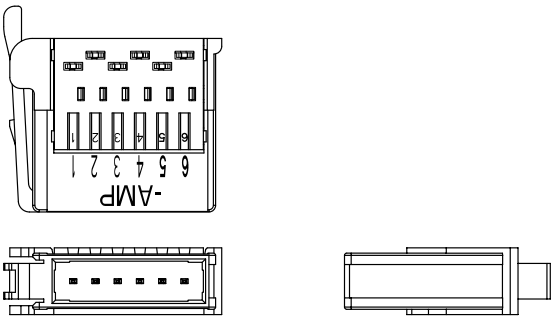
Symbol	Descriptions
Ⓐ Type	
S	2-wire (single solenoid)
D	3-wire (double solenoid)
Ⓑ Lead wire length	
300	300mm
500	500mm
1000	1000mm
2000	2000mm
3000	3000mm

Note 1: The type without lead is 3MO-SOCKET-SET.
(Electric wire diameter subject to contact 3 piece attached and: AWG#26 to 28)

● **Wiring block TM1 connector (RITS connector 6P)**

N4E0-TM-CONNECTOR

Tyco Electronics Amp Co., Ltd. RITS connector 6P (part no. 1473562-6)



• Applicable wire (stannum plated recommended wire)

COATING finish diameter	Reference wire cross-sectional area	Wire number/wire diameter
mm	mm^2	wire/mm
ø1.0 to 1.15	ø0.2 to 0.3	To 60/0.08

• Contact the following company for detailed specifications on the applicable wire
*TYCO ELECTRONICS AMP K.K. Sales department
TEL 004-884-8058 URL http: //www.amp.com/japan/
• Dedicated caulking tool 1596114-1

How to order D-sub-cable with connector

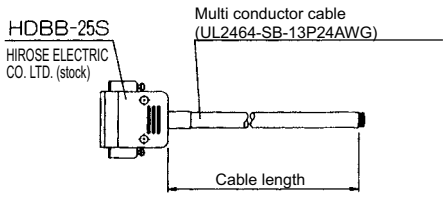
N4T – CABLE – D Ⓐ0 Ⓐ0 – Ⓐ1 Ⓑ

*Pneumatic valves each model
Compatible with D-sub connector T30/T31

Symbol	Model: N4T
Ⓐ User side connection method	
0	Only cut
1	With round terminal for M3.5 screw
Ⓑ Lead wire length	
1	1m
3	3m
5	5m

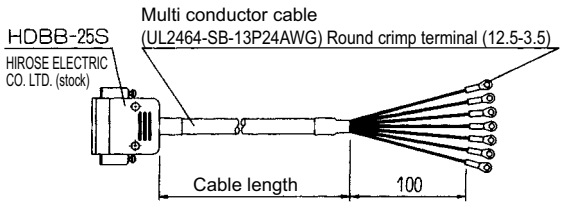
Correspondence of D-sub connector terminal No. and conductor

● N4T-CABLE-D00-Ⓑ



D sub-connector terminal no.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Insulator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark type	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 points	2 points	2 points
	Mark color	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
D sub-connector terminal no.		**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	
Conductor I.D.	Insulator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark type	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Mark color	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	

● N4T-CABLE-D01-Ⓑ



D sub-connector terminal no.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Insulator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark type	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 point	2 point	2 point
	Mark color	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
Mark tube no.		1	2	3	4	5	6	7	8	9	10	11	12	13
D sub-connector terminal no.		**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	
Conductor I.D.	Insulator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark type	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Mark color	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	
Mark tube no.		14	15	16	17	18	19	20	21	22	23	24	25	

*Up to 24 points available. Cut off any excessive points and use.

How to fill out MN4E0 series manifold specification sheet

● Example of manifold model no.(Select mix manifold when selecting dummy block. A dummy block count as a station)

MN 4 E0 8 0 - CX – R – M – T50R W F – 8 – 3

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Pressure adjustment Ⓔ Manual override Ⓕ Wiring Method Ⓖ Terminal and Connector pin Array Ⓗ Option Ⓘ Station number Ⓙ Voltage

• When completing this form, select the type from the "Block configurations"
• Complete from the left end, with the piping port facing forward, regardless of the wiring block method.

Part name	Model no.	Layout 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 31 32 33 34 35 36	Quantity
Wiring block	N4E0-T 50R	○ at 15	1
	N4E0-T		
Individual wiring mix position designation (10mm only)*		○ ○	2
Valve block 7 mm pitch	N E00 0-	Specify individual wiring	
	N E00 0-		
	N E00 0-	Station no. :10th station	
	N E00 0-		
Valve block 10 mm pitch	N 3 E0 1 0- C6	○ ○	2
	N 4 E0 1 0- C4	○ at 5	1
	N 4 E0 2 0- C4	○ at 6, ○ at 9	2
	N 4 E0 3 0- C4	○ at 11 12 13	3
Dummy block	N4E0-MPS		
	N4E0-MPD	○ ○ at 7 8	2
Supply and exhaust block	N4E0-Q Z-8-S	○ at 10	1
	N4E0-Q-8	○ at 14	1
	N4E0-Q - - - -		
Regulator block	N4E0-R A-FL-C8	○ at 4	1
	N4E0-R - - -		
	N4E0-R - - -		
End block	N4E0-E L	○ at 1	1
	N4E0-E		
Mounting rail	L2= (Fill in an integral multiple of 12.5)		

Attached parts

Blanking plug (push-in fitting)												Silencer				Push-in fitting tube remover □ Not required (check)
ϕ1.8		ϕ3		ϕ4		ϕ6		ϕ8				ϕ6		ϕ8		

Φ1.8 for tube barbed threaded fitting (10 piece/1 set)						Cable with D-sub connector
N4E0-JOINT-PTN2-M3		N4E0-JOINT-PTN2-M5		N4E0-JOINT-PTN2-6		N4T-CABLE-D0 -

Socket assembly for electric supply (individual wiring and AUX)				Wiring block TM1 connector	
N4E0-SOCKET- -		3M0-SOCKET-SET		N4E0-TM-CONNECTOR	

Preparing the manifold specifications

- Complete from the left end, with the piping port facing forward, regardless of the wiring block method. (Indicate the block type selected from the block parts connection (pages 192 to 195) and the layout instructions.)
- Write the total block quantity designated for the required quantity at the right end.
- Indicate the quantity of required accessories.
- Indicate the mounting rail length. (Indicate only when a length other than the standard length is required.)

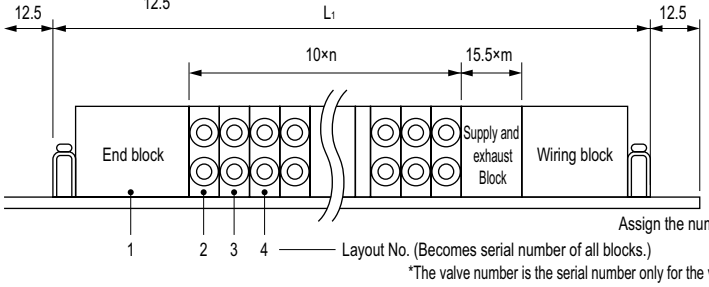
Obtaining the DIN rail length

Obtain the mounting rail length and pitch based on the manifold length (L1) with the following calculation formula. The rail length obtained here is the standard length, and does not need to be indicated in the specifications. Indicate the length in the specifications only when different from the standard length.

Manifold length L_1 = (Valve Block 7×□) + (Valve Block 10×□) + (Dummy Block 7×□) + (Supply and exhaust block 15.5×□) + (Regulator block 30×□) + (Wiring block (Includes end block) □ ·····Select from table to the right

Mounting rail length L_2 = L_2' x 12.5

$L_2' = \frac{L_1+25}{12.5}$ → Integer round up decimal point rail mount pitch $L_3 = L_2-12.5$

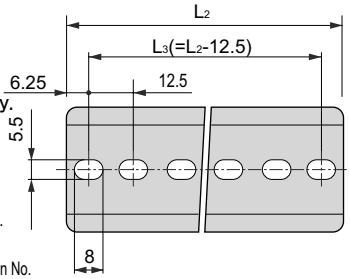


Layout No. (Becomes serial number of all blocks.)

Assign the numbers from the left with the port facing forward.

*The valve number is the serial number only for the valve block and is different from the layout position No.

n1 : 7mm valve block qty.
n2 : 10mm valve block qty.
m : Supply and exhaust block qty.
l : Regulator block qty.
k : Dummy block qty.



Wiring block depth dimensions table

Wiring block		Dimension (mm)
T30/T30R	Left or right wiring block	42.4
T5*/T5*R	Left or right wiring block	42.4
TM*	Intermediate wiring block	43.2
TM*x	2 intermediate wiring block x 2 piece	55.2
TM*+T3*/T5*	Intermediate wiring block+left or right wiring block	54.4
T30/T5*+T30R/T5*	Rleft wiring block+right wiring block	53.6
T6*	Serial transmission slave unit	115.6
T7*	Serial transmission slave unit (close contact type)	73.1

How to fill out MN4E0 series manifold specification sheet

• Contact	• Quantity set	• Request date month day
Slip No.		Order No.

Issue / /

Your company name

Contact

Order no.

• Example of manifold model no.(Select mix manifold when selecting dummy block. A dummy block count as a station)

7/10mm mix manifold

MN □ EX0 – □ – □ – □ □ □ □ – □ – □

7mm manifold

MN □ E00 □ 0 – □ – □ – □ □ □ □ – □ – □

10mm manifold

MN □ E0 □ 0 – □ – □ – □ □ □ □ – □ – □

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Pressure adjustment Ⓔ Manual override Ⓕ Wiring method Ⓖ Terminal and connector pin array Ⓗ Option Ⓘ Station no Ⓙ Voltage

• When completing this form, select the type from the “Block configurations” (pages 192 to 195)
• Complete from the left end, with the piping port facing forward, regardless of the wiring block method.

Part name	Model no.	Layout (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 31 32 33 34 35 36)	Quantity
Wiring block	N4E0-T □		
	N4E0-T □		
Individual wiring mix position designation (10mm only)*			
Valve block 7mm pitch	N□E00□0-□		
	N□E00□0-□		
	N□E00□0-□		
	N□E00□0-□		
Valve block 10mm pitch	N□ E0□0-□		
	N□ E0□0-□		
	N□ E0□0-□		
	N□ E0□0-□		
Dummy block	N4E0-MPS		
	N4E0-MPD		
Supply and exhaust block	N4E0-Q□-□-□-□		
	N4E0-Q□-□-□-□		
	N4E0-Q□-□-□-□		
Regulator block	N4E0-R□-□-□		
	N4E0-R□-□-□		
	N4E0-R□-□-□		
End block	N4E0-E □		
	N4E0-E □		
Mounting rail	L2= □ (Fill in an integral multiple of 12.5)		

Attached Part

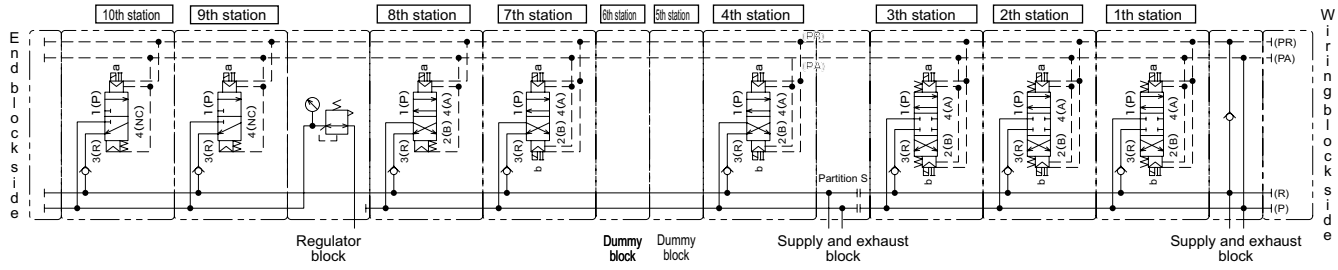
Blanking plug (push-in fitting)										Silencer				Push-in fitting tube remover ☐ Not required (check)
φ1.8		φ3		φ4		φ6		φ8		φ6		φ8		

Φ1.8 for tube barbed threaded fitting (10 piece/1 set)						D-sub-cable with connector
N4E0-JOINT-PTN2-M3		N4E0-JOINT-PTN2-M5		N4E0-JOINT-PTN2-6		N4T-CABLE-D0□-□

Socket assembly for electric supply (individual wiring and AUX)				Wiring block TM1 connector	
N4E0-SOCKET-□-□		3M0-SOCKET-SET		N4E0-TM-CONNECTOR	

*The total number of individual wiring point is 16 points for the wiring connection method T** and individual wiring mixed method.
If TX is selected for the wiring connection method, individual wiring cannot be selected.

Reference circuit diagram
This is the circuit diagram from the manifold (example) on the previous page.



MEMO

3 Port Solenoid Valve with Spool Position Detection

SNP Series

●Applicable cylinder bore size: ø63 to ø125

Catalog No. CC-1080A

Features

- Reliable detection of open and close status by spool position detecting.
- Two safety cut off by modular connection!

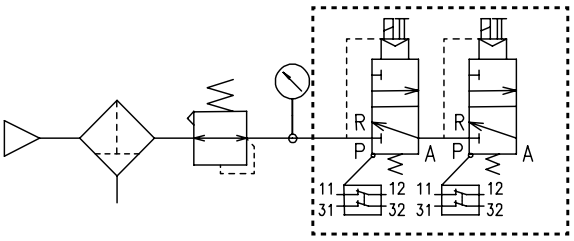
How to order

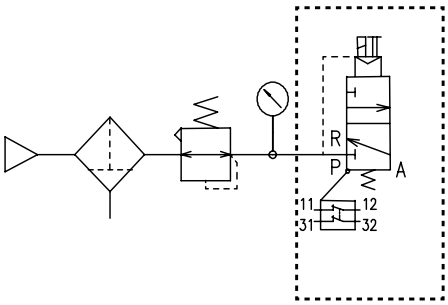
SNP - 1R - 15G - 0 2HS L B3 S1 - 1

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ

Symbol	Descriptions
Ⓐ Station no.	
1R	Single unit (terminal box facing right)
1L	Single unit (terminal box facing left)
2	2 stations (2 station module)
Ⓑ Port size	
10G	G3/8
15G	G1/2
20G	G3/4
Ⓒ Sealant	
0	NBR
Ⓓ Coil option	
2G	DIN terminal box
2HS	DIN terminal box with light and surge suppressor
2J	DIN terminal box (M12-4P connector)
2KS	DIN terminal box with light and surge suppressor (M12-4P connector)

Ⓔ Limit switch	
L	Pg13.5 (D4N-1B31 : OMRON)
M	M12-4P Connector (D4N-9B31 : OMRON)
Ⓕ Bracket	
Blank	No options
B3	With bracket (2000Series, 3000Series)
B4	With bracket (4000Series)
B8	With bracket (8000Series)
Ⓖ Silencer	
Blank	No options
S1	Sintering metal
S2	Resin
Ⓗ Voltage	
1	100VAC 50Hz/60Hz/110VAC 60Hz
2	200VAC 50Hz/60Hz/220VAC 60Hz
3	24VDC





Specifications

Model	SNP		
Port size	G3/8	G1/2	G3/4
Actuation	NC (normally closed) type		
Fluid pressure supply port	P port		
Working fluid	Compressed air		
Withstanding pressure MPa	1.05		
Working pressure range MPa	0.2 to 0.7		
Fluid temperature °C	5 to 60		
Ambient temperature °C	–5 to 60		
Weight kg	0.8 (1.7) *1		1.8 (3.7) *1
Orifice mm	14.8 equivalent		25.4 equivalent
Valve seat leakage	1 or less (pneumatic 0.2 to 0.7MPa)		
Valve structure	Internal pilot operated poppet valve structure		
Mounting attitude	Free		

*1: Values in parentheses refer to weight when modular connection is used.

Electric specifications

Descriptions		SNP	
Rated voltage (*2)		100VAC (50/60Hz)/ 110VAC (60Hz), 200VAC (50/60Hz)/220VAC (60Hz), 24VDC	
Apparent power (VA)	Holding	3.6 (50Hz), 2.8 (60Hz)	
	Starting	11 (50Hz), 9 (60Hz)	
Current consumption (W)	AC	1.9 (50Hz), 1.5 (60Hz)	
	DC	2.0	
Thermal class		B	
Degree of protection (IEC standards 529)		DIN terminal box (Pg9)	IPX5
		DIN terminal box (M12-4P connector)	

*2: Allowable voltage range should be within ±10% of rated voltage.
*3: Contact CKD regarding reliability data (B10).

Limit switch specification

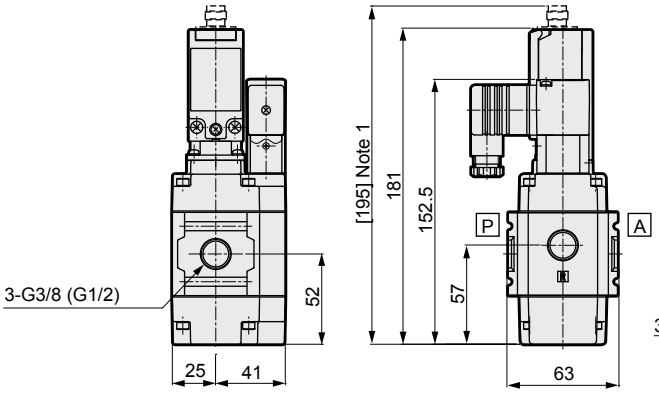
Manufacturer's model no.	D4N-1B31	D4N-9B31
Terminal	Pg13.5	M12-4Pconnector
Contact resistance	25mΩ or more	
Min. applicable load	5VDC 1mA resistance load	
Rated insulation voltage V	300	
Insulation resistance MΩ	100	
Appliance classes	Class Ⅱ	
Degree of pollution(working environment)	3 (EN60947-5-1)	
Limited short circuit current A	100	

* Refer to the manufacturer's catalog for details.

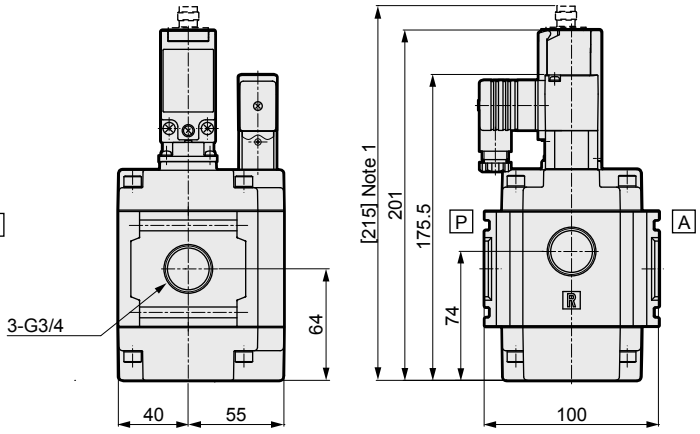
Flow characteristics

Model no.		P→A		A→R	
		C [dm3/(s·bar)]	S (mm2)	C [dm3/(s·bar)]	S (mm2)
Discrete valve	SNP-10A	13	64	14	70
	SNP-15A	15	76	16	80
	SNP-20A	34	170	36	180
2 stations	SNP-10A	10	50	14	70
	SNP-15A	12	59	16	80
	SNP-20A	26	130	36	180

● SNP-1L-10G/15G (Discrete component)

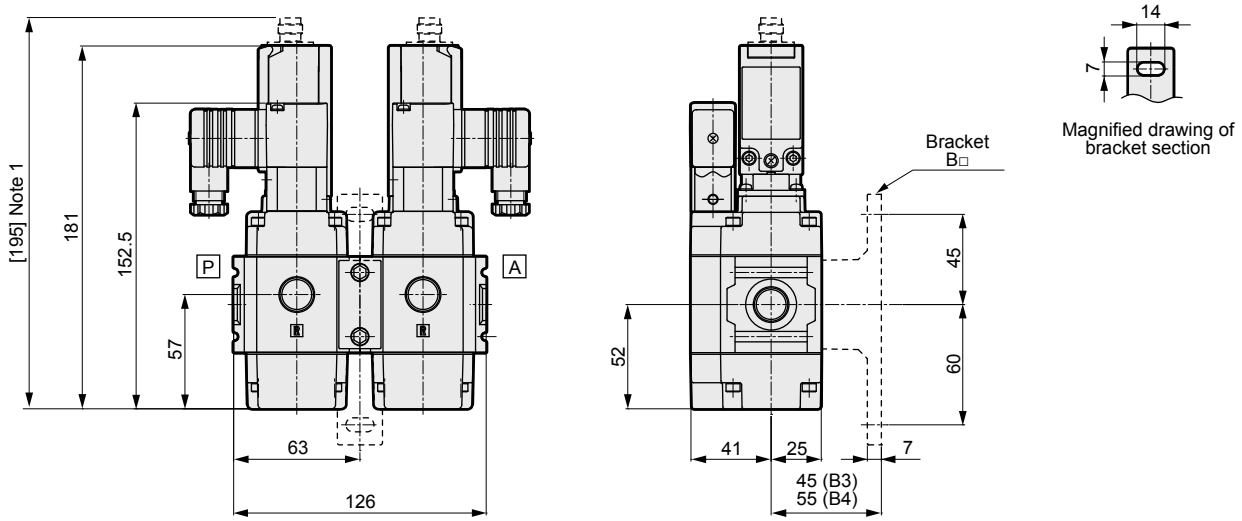


● SNP-1L-20G (Discrete component)



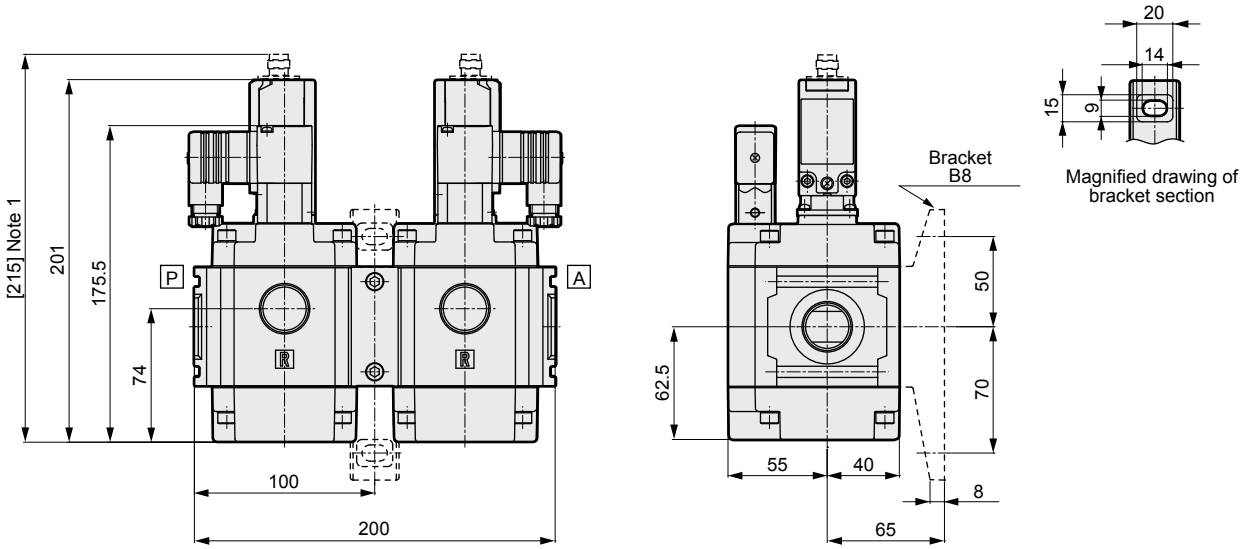
Note 1: Dimensions in parentheses refer to dimensions when M12-4P connector (M) is selected.
Note 2: For 1R, the terminal box and limit switch wiring section will face right.

● SNP-2-10G/15G (2 stations)

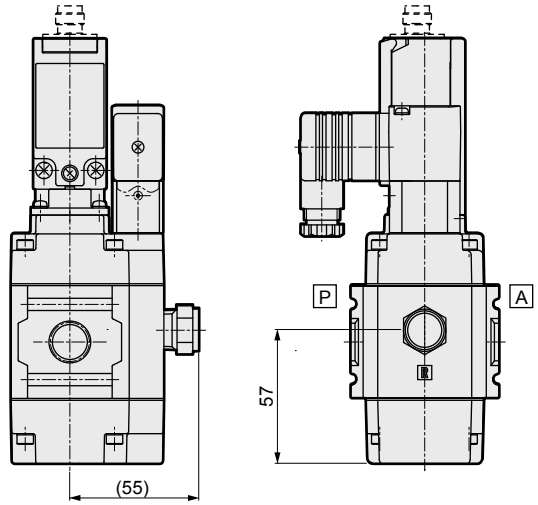


Note 1: Dimension in parentheses refers to dimension when M12-4P connector (M) is selected.

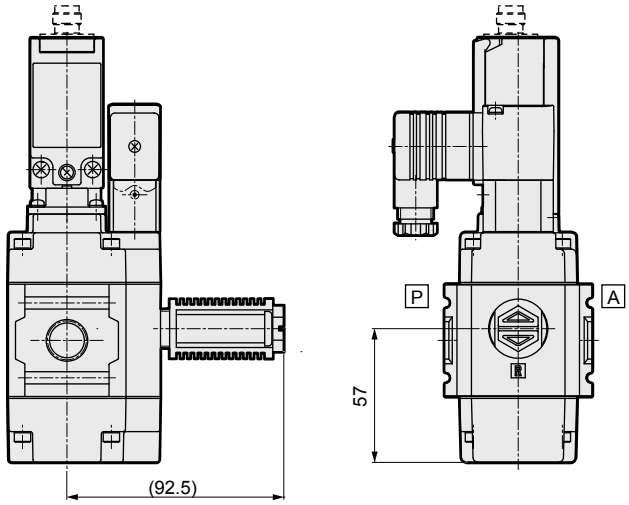
● SNP-2-20G (2 stations)



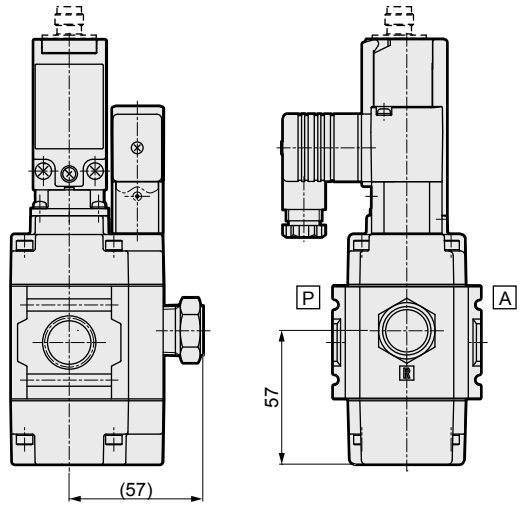
● SNP-1L-10G-*S1



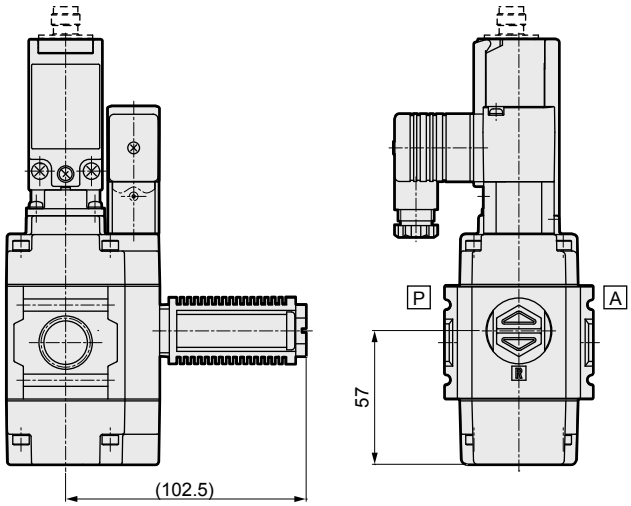
● SNP-1L-10G-*S2



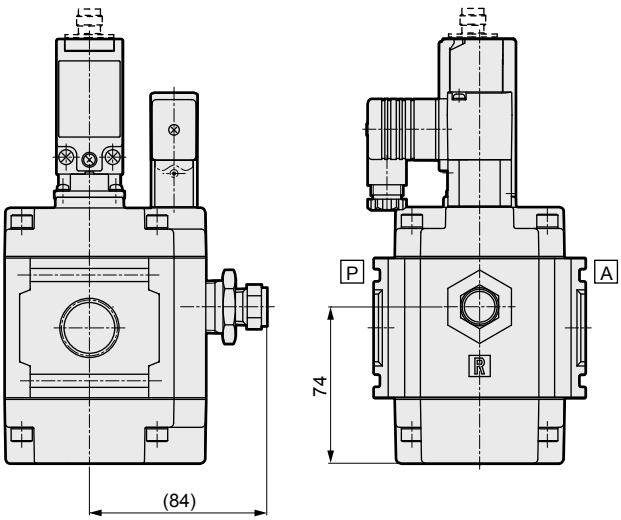
● SNP-1L-15G-*S1



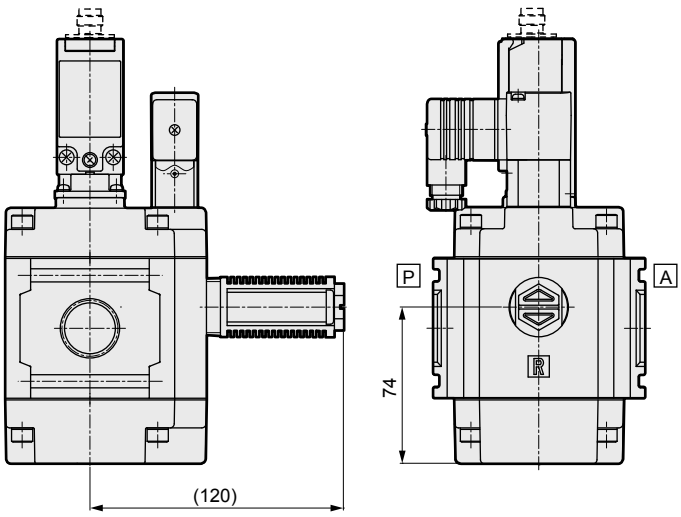
● SNP-1L-15G-*S2



● SNP-1L-15G-*S1



● SNP-1L-15G-*S2



MEMO

Simple Choice

FRL•sensors•pneumatic auxiliary components•vacuum components

☐ F.R.L unit variation		206
☐ F.R combination	C1020/C2020/C3020/C4020	208
☐ Filter, regulator	W1000/W2000/W3000/W4000	210
☐ Air filter	F1000/F2000/F3000/F4000/F8000	214
☐ Oil mist filter	M1000/M2000/M3000/M4000/M8000	218
☐ Regulator	R1000/R2000/R3000/R4000	222
☐ Residual pressure exhaust-valve	V3000	226
☐ Bracket, joiner	B/J	227
☐ Precision regulator	RPE1000/RP2000	228
☐ Digital pressure sensor	PPX	230
☐ Small mechanical pressure switch	APS	232
☐ Speed controller with dial	DSC	234
☐ Needle valve with dial	DVL	236
☐ Quick exhaust valve	2QV/3QV	238
☐ Small flow rate sensor RAPIFLOW	FSM2	242
☐ Pressure gauge with limit mark	G41D	244, 250
☐ Small size flow controller	FCM	246
☐ Silencer	SL•SLW	254

F.R.L unit variations

Combination

Series	Available combinations F Filter	R Regulator	L Lubricator	Model No.	Port size 1/8	1/4	3/8	1/2	Max. flow m^3/min (Reference)
● 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 W Filter/ Regulator	Model No.	Port size 1/8	1/4	3/8	1/2	Max. flow m^3/min (Reference)
● 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 F Filter	Model No.	Port size 1/8	1/4	3/8	1/2	3/4	Max. flow m^3/min (Reference)
● 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 M Oil mist Filter	Model No.	Port size 1/8	1/4	3/8	1/2	3/4	Max. flow m^3/min (Reference)
● Oil mist filter (M type) P1=0.7MPa △P=0.01MPa • Nominal filtration rating: 0.01μm • Secondary oil concentration 0.01mg/m^3	●	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 R Regulator	Model No.	Port size 1/8	1/4	3/8	1/2	Max. flow m^3/min (Reference)
● 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		●			0.4
		RP2000			●		3.3

*P1=Primary pressure P2=Secondary pressure △P2=Differential pressure

Other related components

Series	Model No.	Port size 1/8	1/4	3/8
● Residual pressure exhaust-valve	V3000-W			●
● Pressure gauge with limit mark	G41D	●	●	

MEMO

F.R combination

C*020 Series

● Port size: G1/8 to 1/2

Features

• Integrated filter and regulator

Catalog No. CB-024SA

How to order

C1020 (A) - 6G (B) -W- F1 (C)

Symbol	Descriptions	Ⓐ Model No. C1020	C2020	C3020	C4020
Ⓑ Port size					
6G	G1/8	●			
8G	G1/4		●		
10G	G3/8			●	
15G	G1/2				●
Ⓒ 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)	●	●		

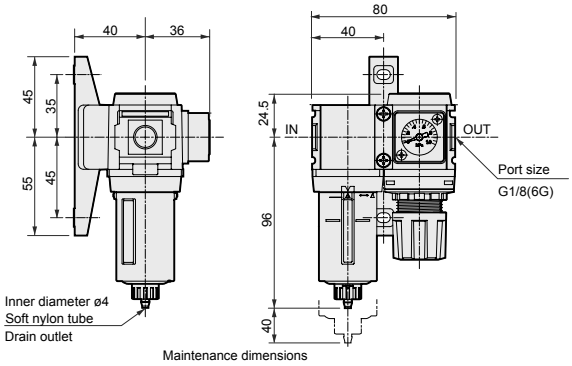
Specifications

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
Working fluid		Compressed air			
Max. working pressure	MPa	1.0 Note 1			
Proof pressure	MPa	1.5			
Ambient temperature	°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
Port size	G	1/8	1/4	3/8	1/2
Weight	kg	0.28	0.64	0.79	1.25
Standard accessories		Pressure gauge, bracket, bowl guard			

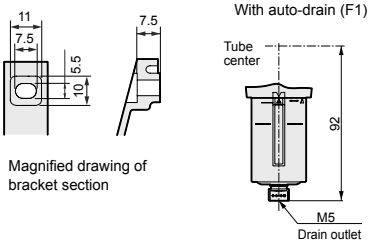
Note 1: When using C1020-W series "F1" with an auto-drain, the min. operating pressure is 0.2 MPa, the max. operation pressure is 0.7 MPa, and the guaranteed pressure resistance is 1.05 MPa. Set the working flow to less than the max. working flow.
Note 2: When using C2020-W series, the auto-drain's min. operating pressure for "F1" with an auto-drain is 0.15 MPa.
Note 3: The auto-drain min. operating pressure for "F" with an auto-drain is 0-1 MPa.
Initially generated drainage and air are purged until pressure reaches 0-1 MPa.
Note 4: When using the "F1" with auto-drain, use the C2020-W series at less than the max. flow rate.

Dimensions

● C1020-W

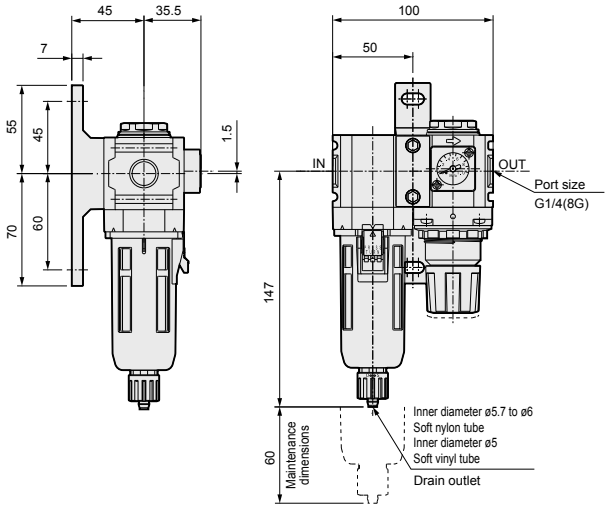


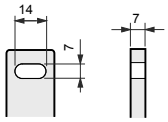
· Option dimensions
With auto-drain (F1)



Magnified drawing of
bracket section

● C2020-W

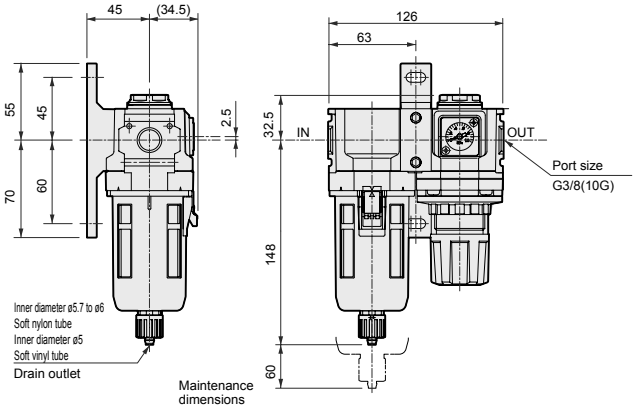


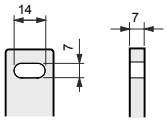


Magnified drawing of
bracket section

● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● C3020-W

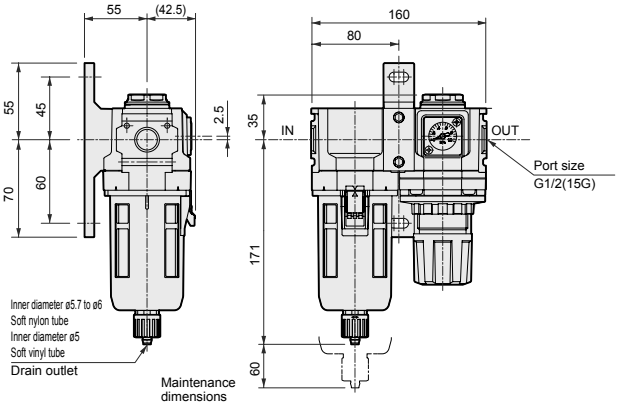


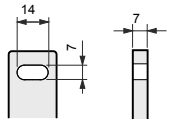


Magnified drawing of
bracket section

● 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

● Port size: G1/8 to 1/2

Features

• Integrated filter and regulator

Catalog No. CB-024SA

How to order

W1000 - 6G -W- F1 - ○

Ⓐ Ⓑ Ⓒ Ⓓ

Symbol	Descriptions	Ⓐ Model No. W1000	W2000	W3000	W4000
Ⓑ Port size					
6G	G1/8	●			
8G	G1/4		●		
10G	G3/8			●	
15G	G1/2				●
Ⓒ 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)	●	●		
Ⓓ Attachment (attached)					
Blank	Not attached	●	●	●	●
B3W	L type bracket	●	●	●	●

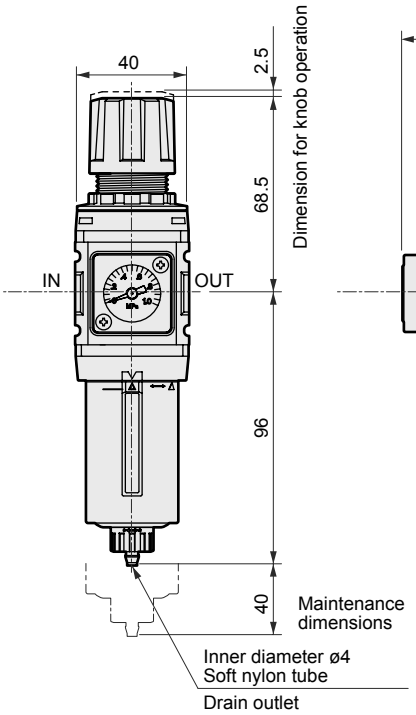
Specifications

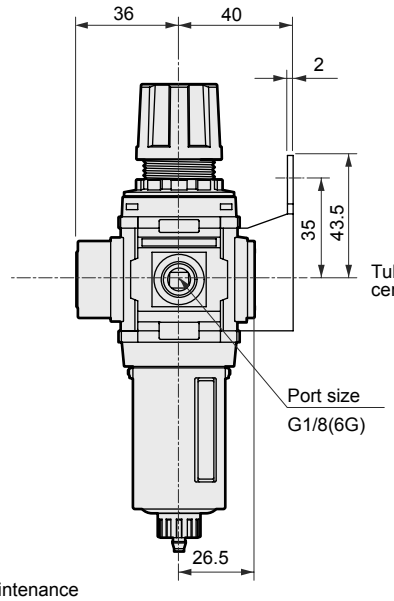
Descriptions	W1000-W	W2000-W	W3000-W	W4000-W
Working fluid	Compressed air			
Max. working pressure MPa	1.0 Note 1, 2, 3			
Proof pressure MPa	1.5			
Ambient temperature °C	5 to 60			
Nominal filtration rating μm	5			
Set pressure range MPa	0.05 to 0.85 Note 1	0.05 to 0.85		
Relief	With relief mechanism			
Drain capacity cm^3	12	25	45	80
Port size G	1/8	1/4	3/8	1/2
Weight kg	0.175	0.40	0.6	0.9
Standard accessories	Pressure gauge, bowl guard			

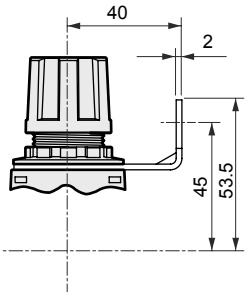
Note 1: When using W1000-W series "F1" with an auto-drain, the min. operating pressure is 0.2 MPa, the max. operation pressure is 0.7 MPa, and the guaranteed pressure resistance is 1.05 MPa. Set the working flow to less than the max. working flow.
Note 2: When using W2000-W series, the auto-drain's min. operating pressure for "F1" with an auto-drain is 0.15 MPa.
Note 3: The auto-drain min. operating pressure for "F" with an auto-drain is 0-1 MPa.
Initially generated drainage and air are purged until pressure reaches 0-1 MPa.
Note 4: When using the "F1" with auto-drain, use the C2020-W series at less than the max. flow rate.

Dimensions

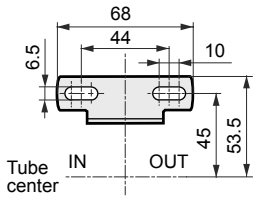
● W1000-W



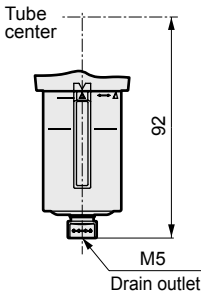




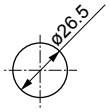
• Attachment
L type bracket (-B3W)
Part no: B130



• Option dimensions
With auto-drain (F1)

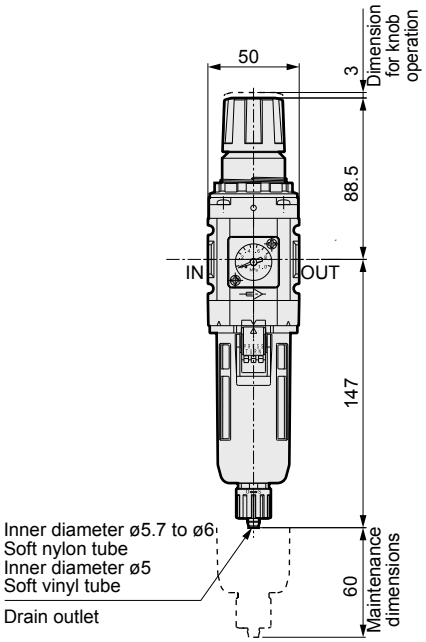


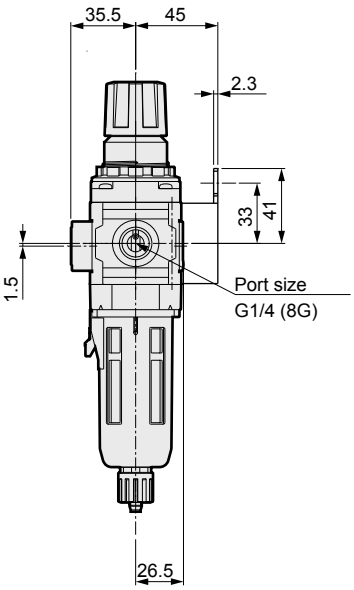
Panel cut dimensions



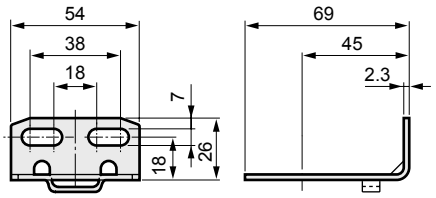
Panel thickness: Max. 6mm

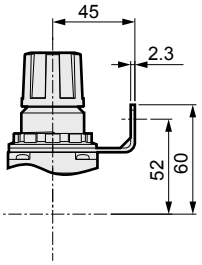
● W2000-W



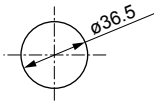


• Attachment
L type bracket (-B3W)
Part no: B230





Panel cut dimensions

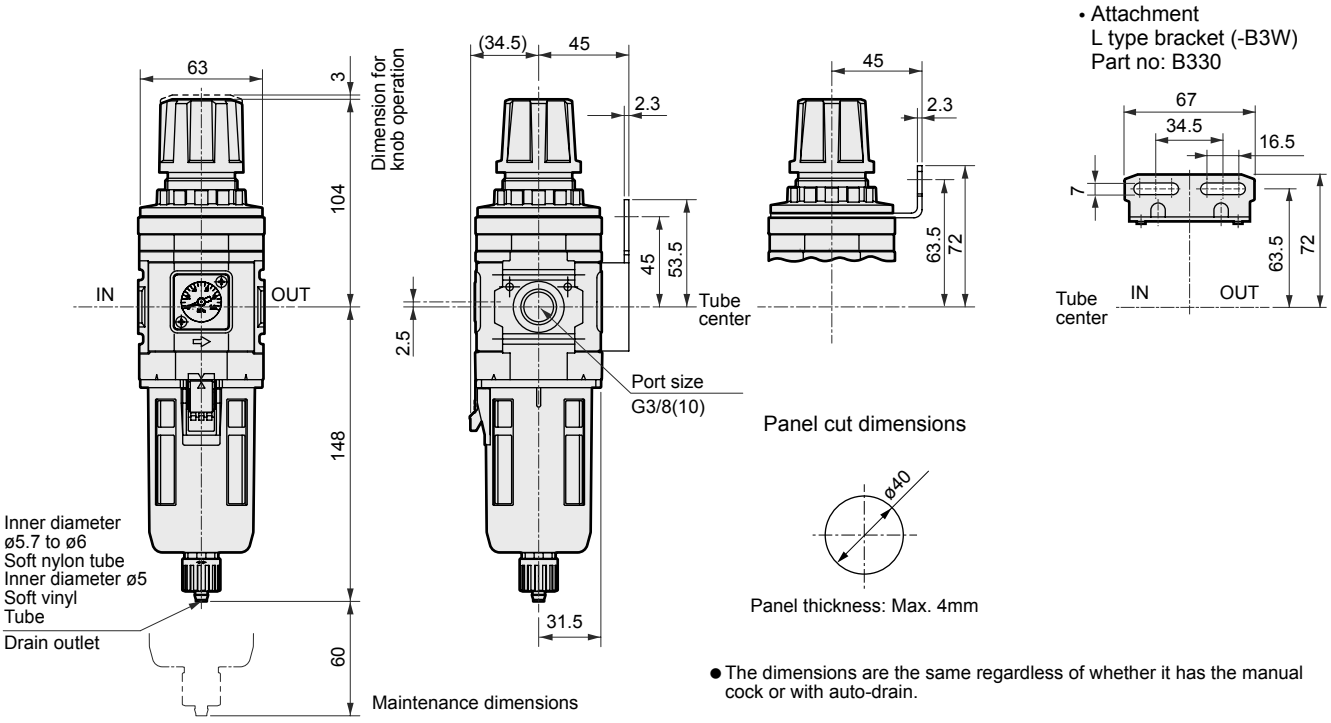


Panel thickness: Max. 4mm

● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

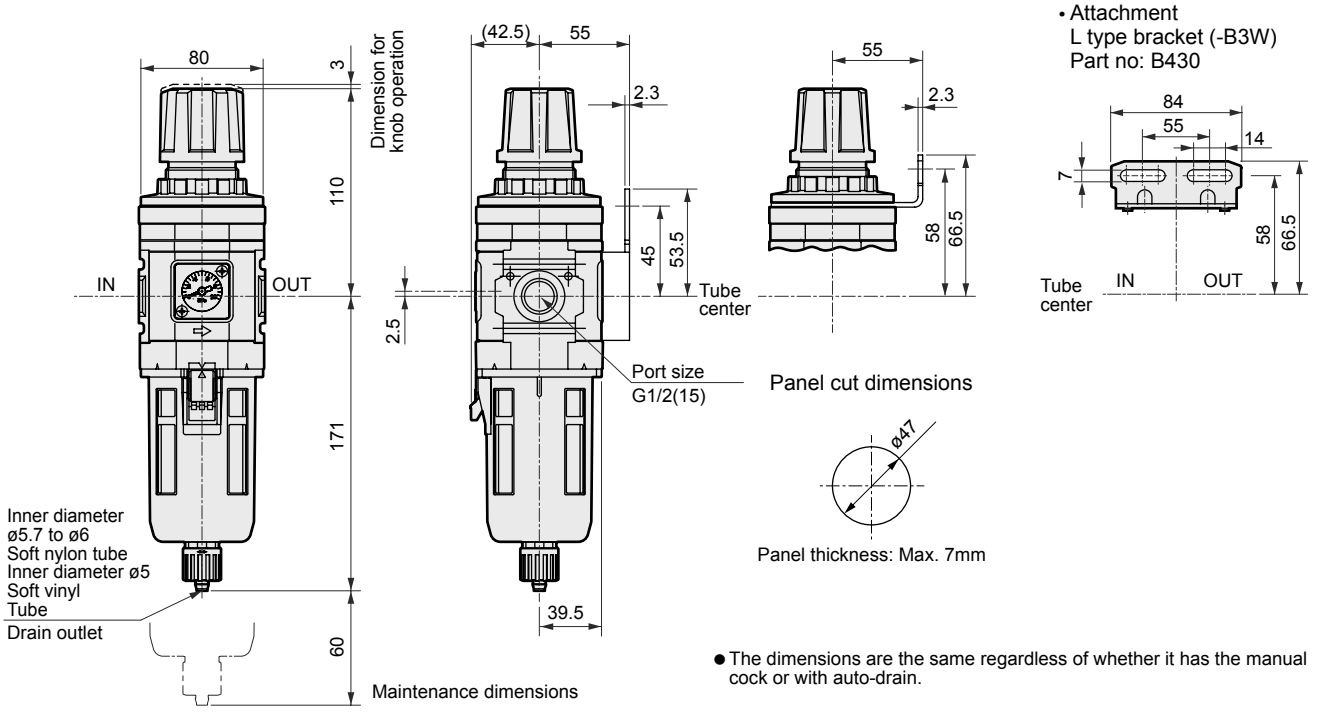
Dimensions

● W3000-W



● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● W4000-W



● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

MEMO

Air filter

F*000 Series

● Port size: G1/8 to 3/4

Features

• Effectively removes dust and moisture

Catalog No. CB-024SA

How to order

F1000 - 6G -W- F1 - ○

Ⓐ Ⓑ Ⓒ Ⓓ

Symbol	Descriptions	Ⓐ Model No. F1000	F2000	F3000	F4000	F8000
Ⓑ Port size						
6G	G1/8	●				
8G	G1/4		●			
10G	G3/8			●		
15G	G1/2				●	
20G	G3/4					●
Ⓒ 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)	●	●			
Ⓓ Attachment (attached)						
Blank	Not attached	●	●	●	●	●
BW	C type bracket	●	●	●	●	●

Specifications

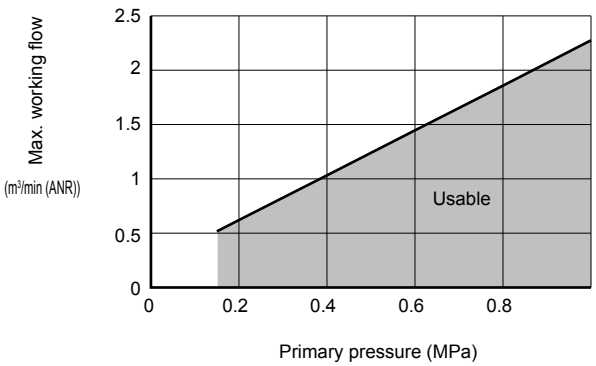
Descriptions	F1000-W	F2000-W	F3000-W	F4000-W	F8000-W
Working fluid	Compressed air				
Max. working pressure MPa	1.0 Note 2, 3, 4				
Proof pressure MPa	1.5				
Ambient temperature °C	5 to 60				
Nominal filtration rating μm	5				
Drain capacity cm^3	12	25	45	80	80 (Note 1)
Port size G	1/8	1/4	3/8	1/2	3/4
Weight kg	0.087	0.24	0.25	0.45	1.16
Standard accessories	Bowl guard				

Note 1: Drainage accumulates up to 170 cm^3 only with the manual drain cock.
Note 2: When "F1" with an auto-drain is selected for the F1000-W series, min. operating pressure is 0.2 MPa, max. operation pressure is 0.7 MPa and the guaranteed pressure resistance is 1.05 MPa. Refer to the max. processing flow table below for the F1000-W-F1 auto-drain for the max. working flow. Set the working flow to less than the max. working flow.
Note 3: When using F2000-W series, the auto-drain's min. operating pressure for "F1" with an auto-drain is 0.15 MPa.
Note 4: The auto-drain min. operating pressure for "F" with an auto-drain is 0-1 MPa.
Initially generated drainage and air are purged until pressure reaches 0-1 MPa.

F1000-W-F1 with auto-drain max. working flow (m^3/min (ANR))

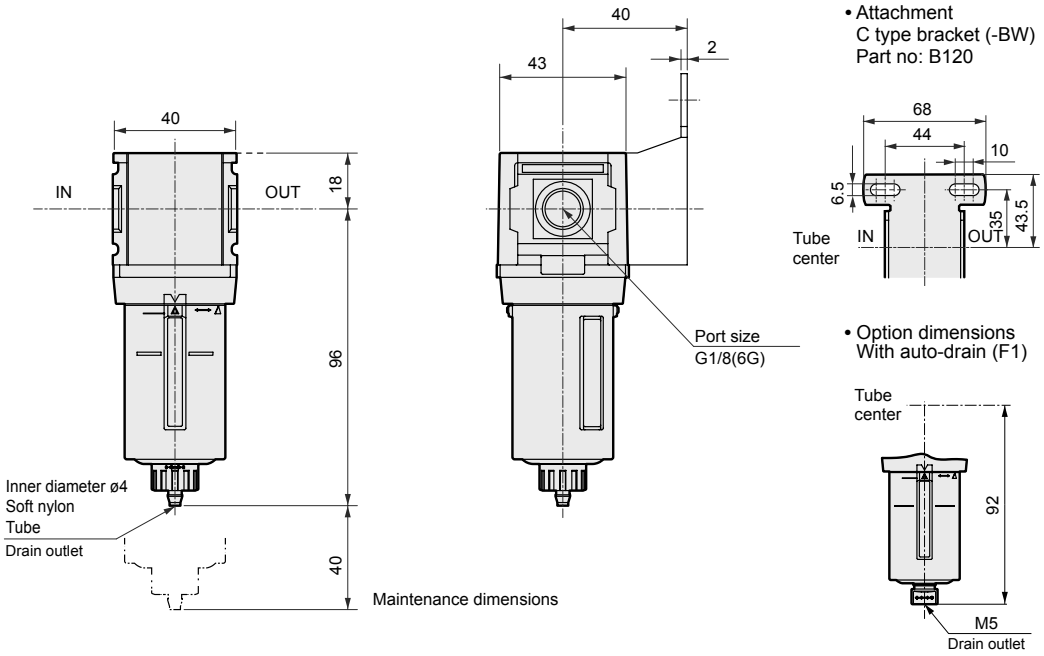
Primary pressure MPa / Port size	0.2	0.3	0.4	0.5	0.6	0.7
6	0.185	0.250	0.310	0.375	0.435	0.500

F2000-W-F1with auto-drain max. working flow

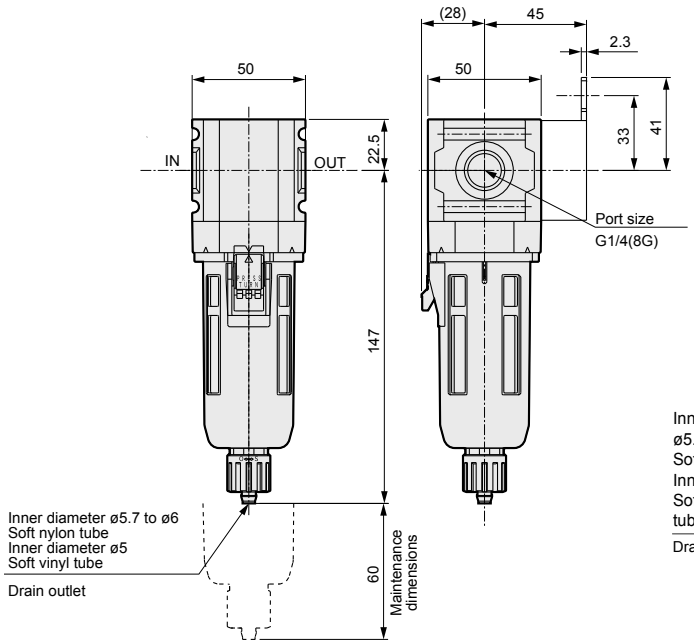


Dimensions

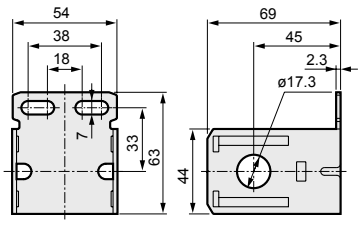
● F1000-W



● F2000-W

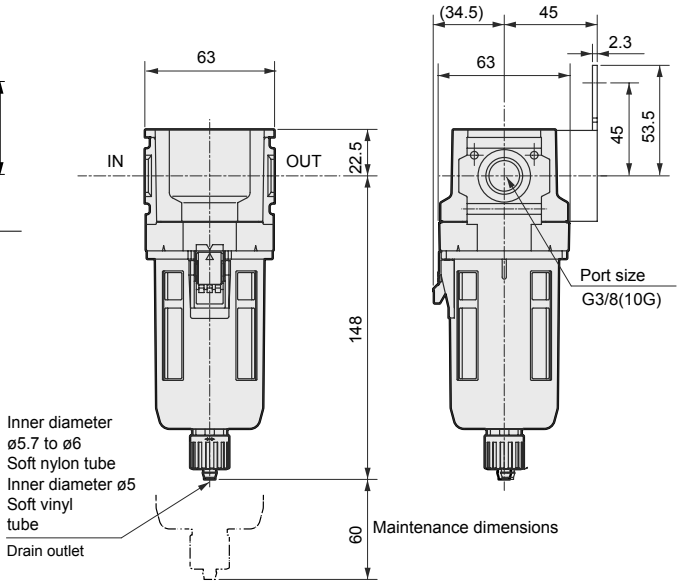


• Attachment
C type bracket (-BW)
Part no: B220

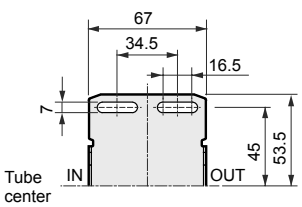


● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● F3000-W



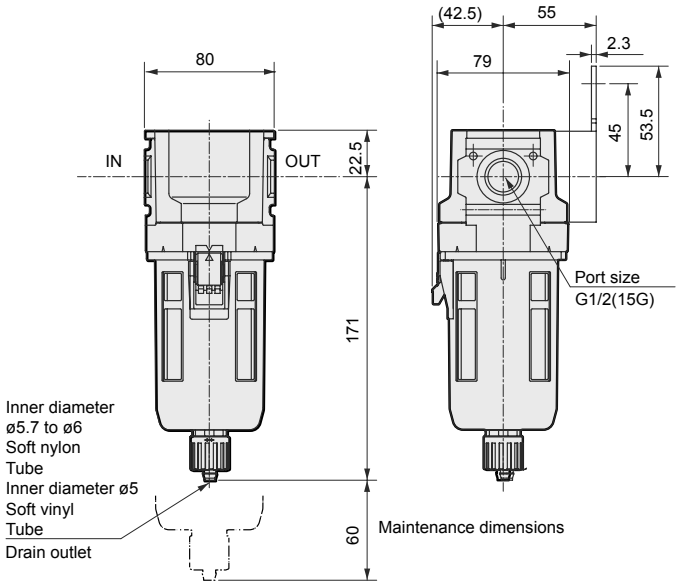
• Attachment
C type bracket (-BW)
Part no: B320



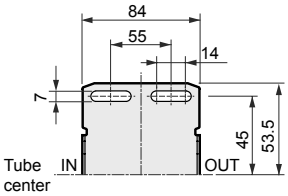
● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

Dimensions

● F4000-W

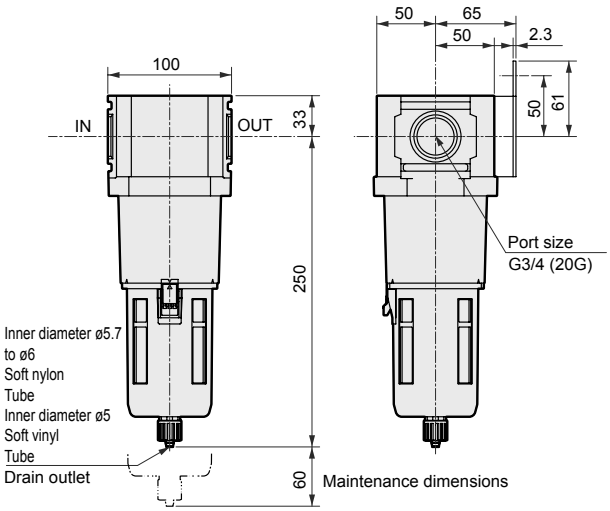


• Attachment
C type bracket (-BW)
Part no: B420

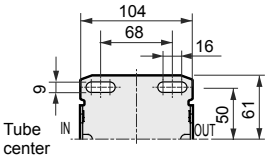


● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● 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.

MEMO

Oil mist filter

M*000 Series

● Port size: G1/8 to 3/4

Features

• Ideal for circuits susceptible to oil, including measuring, and instrumentation circuits

Catalog No. CB-024SA

How to order

M1000 (A) - 6G (B) -W- F1 (C) - ○ (D)

		Ⓐ Model No.				
Symbol	Descriptions	M1000	M2000	M3000	M4000	M8000
Ⓑ Port size						
6G	G1/8	●				
8G	G1/4		●			
10G	G3/8			●		
15G	G1/2				●	
20G	G3/4					●
Ⓒ Option						
Blank	With manual drain cock	●	●	●	●	●
F1	Auto-drain with manual override (NC type: no exhaust without pressurization)	●	●	●	●	●
Ⓓ Attachment (attached)						
Blank	Not attached	●	●	●	●	●
BW	C type bracket	●	●	●	●	●

Specifications

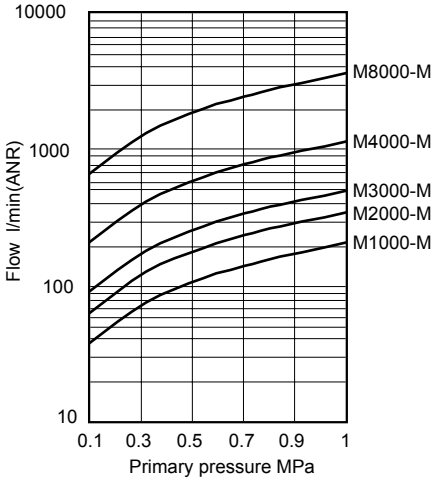
Descriptions		M1000-W	M2000-W	M3000-W	M4000-W	M8000-W
Working fluid		Compressed air				
Working pressure range	MPa	0.1 to 1.0 Note 4, Note 5				
Proof pressure	MPa	1.5 Note 4				
Drain capacity	cm^3	3	25	45	80	80
Port size	G	1/8	1/4	3/8	1/2	3/4
Weight	kg	0.096	0.25	0.28	0.52	1.35
Standard accessories		Bowl guard				

Mantle option name		Blank (M type)
Max. 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
Ambient temperature	°C	5 to 60
Nominal filtration rating	μm	0.01 (nominal)
Secondary side oil concentration	mg/m^3	0.01 or less 0.1 or less after oil saturation Note 2
Mantle (element) replacement		1 year (6000 hours) or pressure drop of 0.1MPa

Note 1: Use within the max. processing flow rate.
If the max. 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/m^3 and inlet air temperature is 21°C.
Note 3: For the M1000-W-F1 with auto-drain, min. operating pressure is 0.2 MPa, max. operation pressure is 0.7 MPa and the guaranteed pressure resistance is 1.05 MPa. Refer to the max. processing flow graph (page 219) for the max. processing flow.
Note 4: The min. operating pressure is 0.15 MPa for models with auto-drain "F1".

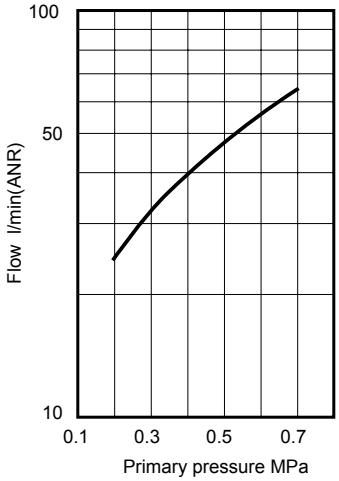
Flow characteristic (Max. flow rate)

● M*000-W-M



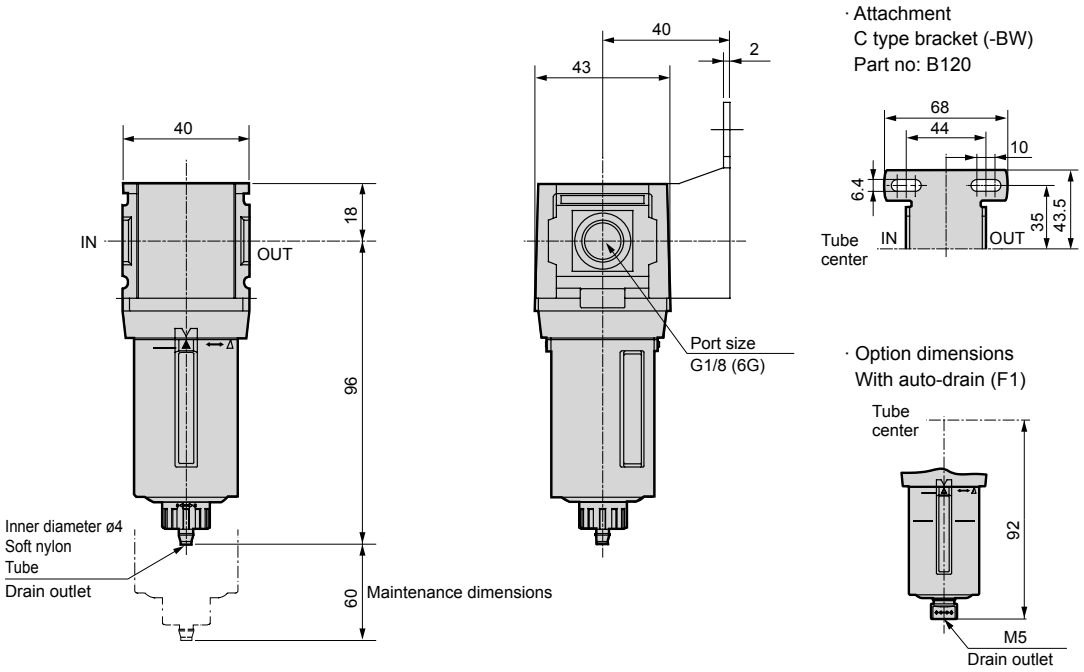
● M1000-W-F1

with auto drain (M type)

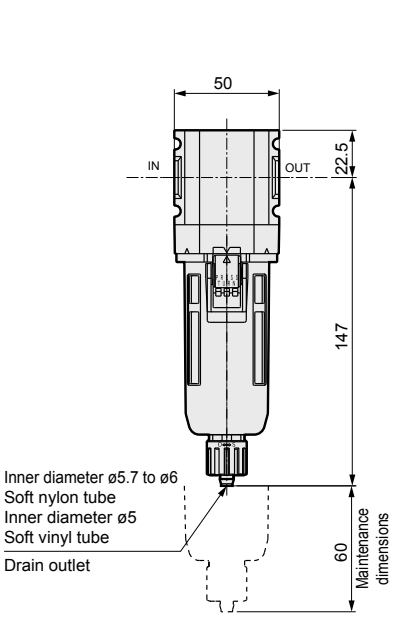


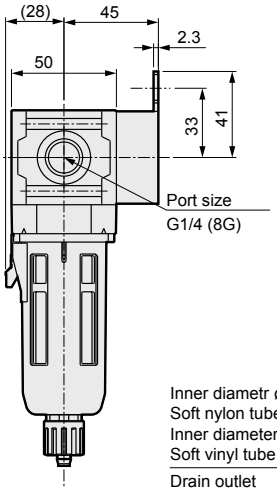
Dimensions

● M1000-W

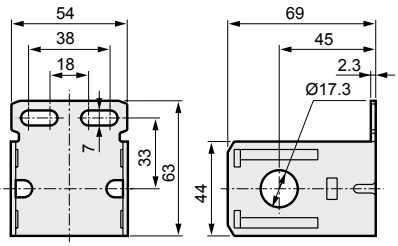


● M2000-W



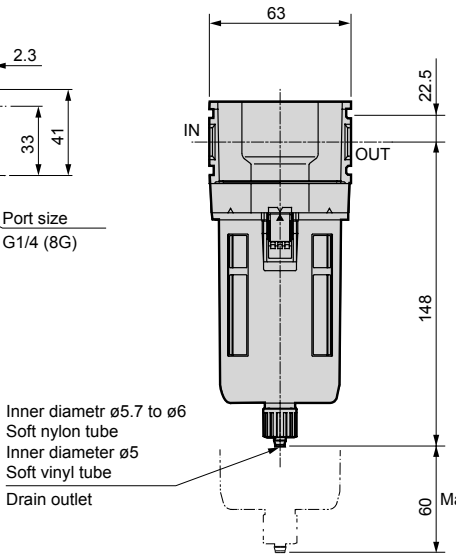


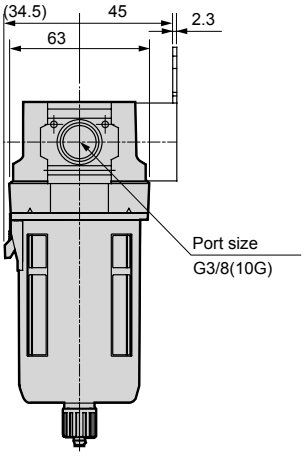
· Attachment
C type bracket (-BW)
Part no: B220



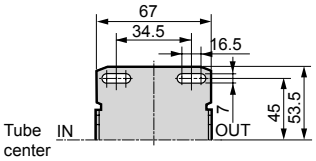
● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● M3000-W





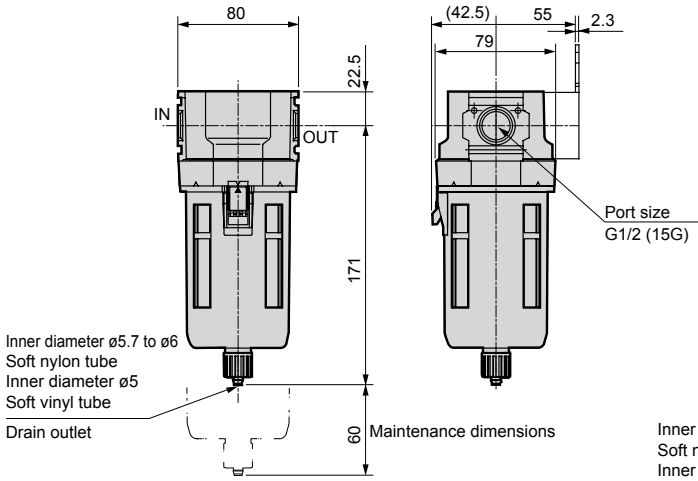
· Attachment
C type bracket (-BW)
Part no: B320



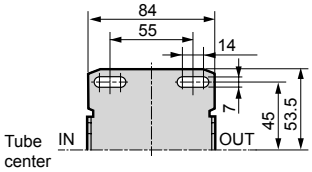
● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

Dimensions

● M4000-W

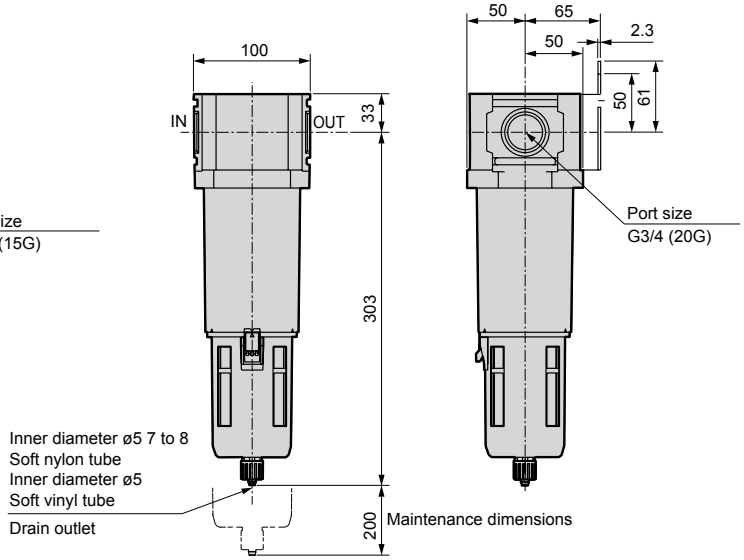


· Attachment
C type bracket (-BW)
Part no: B420

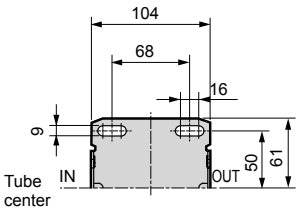


● The dimensions are the same regardless of whether it has the manual cock or with auto-drain.

● 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.

Regulator

R*000 Series

● Port size: G1/8 to 1/2

Features

• Integrated pressure gauge and compact

Catalog No. CB-024SA

How to order

R1000 (A) - 6G (B) -W- ○ (C)

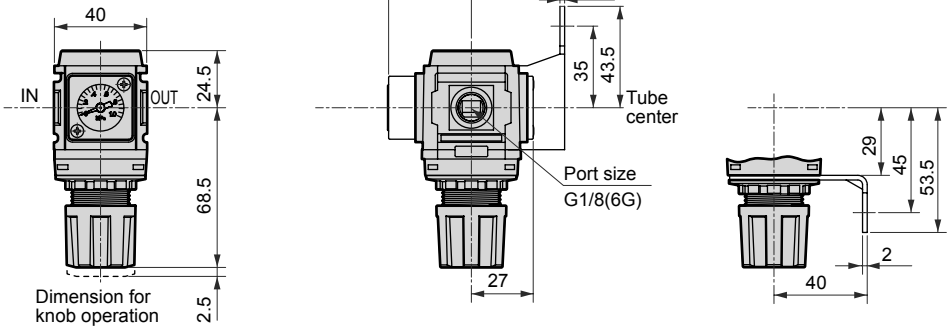
		Ⓐ Model No.			
Symbol	Descriptions	R1000	R2000	R3000	R4000
Ⓑ Port size					
6G	G1/8	●			
8G	G1/4		●		
10G	G3/8			●	
15G	G1/2				●
Ⓒ Attachment (attached)					
Blank	Not attached	●	●	●	●
B3W	L type bracket	●	●	●	●

Specifications

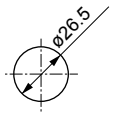
Descriptions		R1000-W	R2000-W	R3000-W	R4000-W
Working fluid		Compressed air			
Max. working pressure	MPa	1.0			
Proof pressure	MPa	1.5			
Ambient temperature	°C	5 to 60			
Set pressure range	MPa	0.05 to 0.85			
Relief		With relief mechanism			
Port size	G	1/8	1/4	3/8	1/2
Weight	kg	0.16	0.31	0.45	0.7
Standard accessories		Pressure gauge, nut for panel mount			

Dimensions

● R1000-W

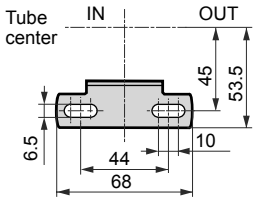


Panel cut dimension

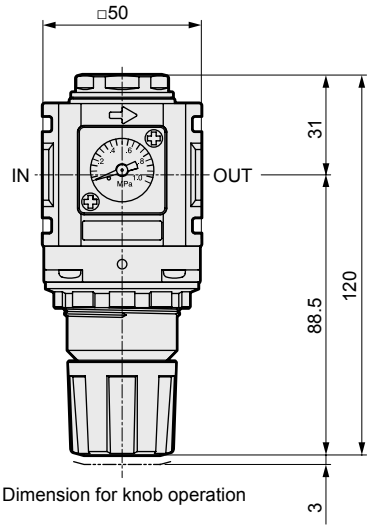


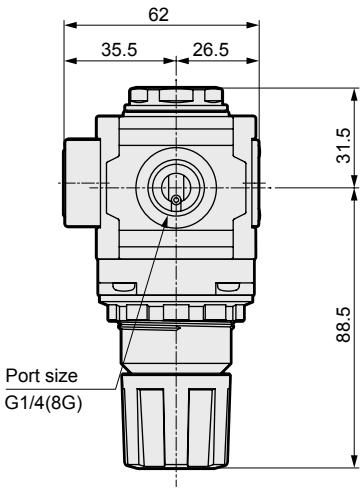
Panel thickness: Max. 6mm

L type bracket (-B3W)
Part no: B130

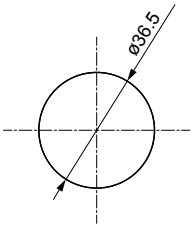


● R2000-W



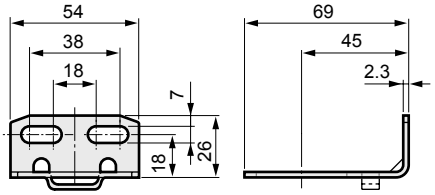


Panel cut dimension



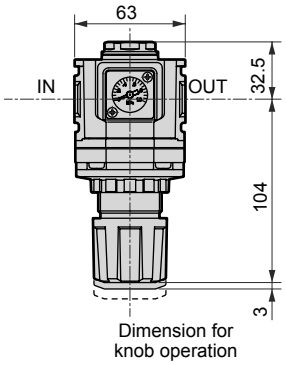
Panel thickness: Max. 4mm

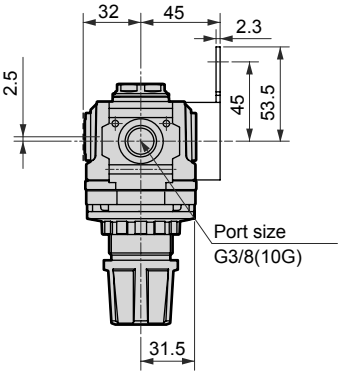
● L type bracket (-B3W)
part no.: B230

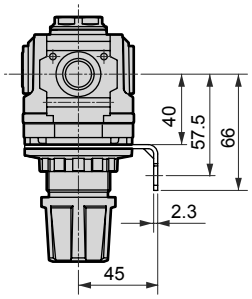


Dimensions

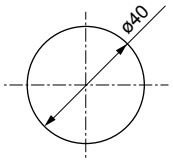
● R3000-W





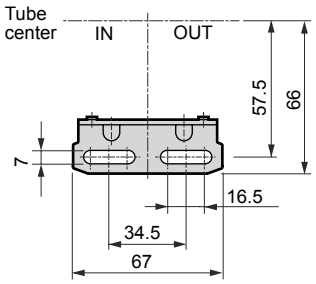


Panel cut dimension

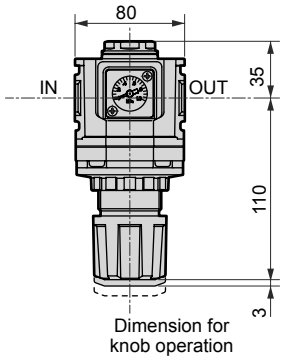


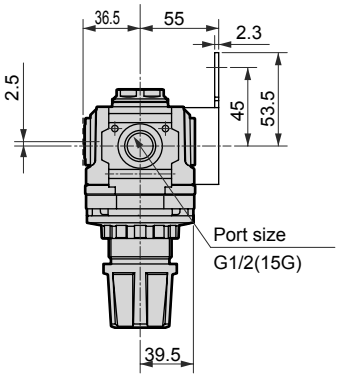
Panel thickness: Max. 7mm

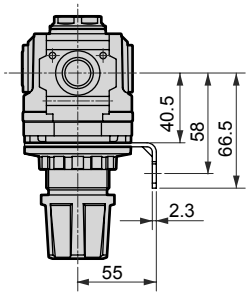
L type bracket (-B3W)
Part no: B330



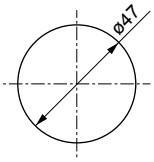
● R4000-W





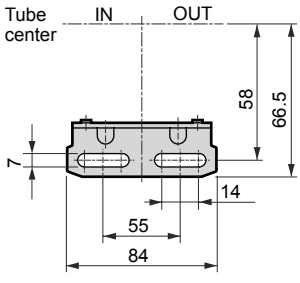


Panel cut dimension



Panel thickness: Max. 7mm

L type bracket (-B3W)
Part no: B430



MEMO

Residual pressure exhaust-valve

V3000 Series

● Port size: G3/8

Features

• 1 action exhaust operation Prevent accidents caused by residual pressure

Catalog No. CB-024SA

How to order

V3000 - 10G (A) -W- ( ) (B)

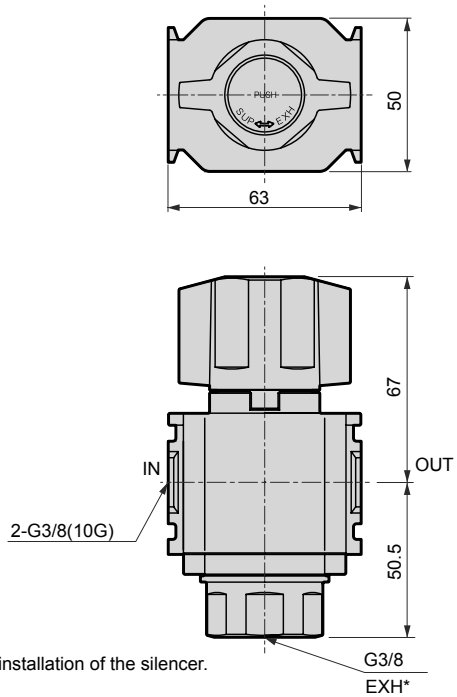
Symbol	Descriptions
Ⓐ Port size	
10G	G3/8
Ⓑ Attachment (attached)	
Blank	Not attached
BW	C type bracket

Specifications

Descriptions		V3000-W
Working fluid		Compressed air
Max. 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
Port size (G)	IN-OUT	G3/8
	EXH	G3/8
Weight 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.

T type bracket/joiner

B/J Series

RoHS

CAD

● Applications

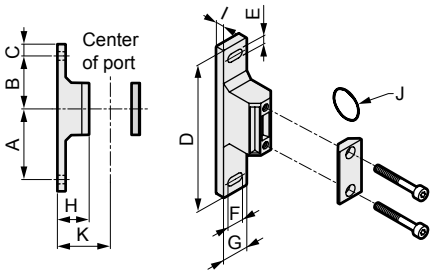
Catalog No. CB-024SA

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

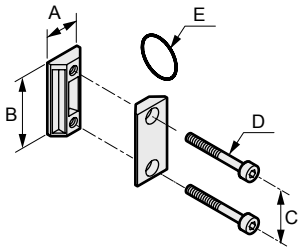


Model No.	Applicable model	A	B	C	D	E	F	G	H	I	J	K
B110-W	1000 Series	45	35	10	100	5.5	7.5	16	25	7.5	JASO-2013	40
B310-W	2000 Series 3000 Series	60	45	10	125	7	14	22	27	7	JISB2401-P21	45
B410-W	4000 Series	60	45	10	125	7	14	22	37	7	JISB2401-P21	55

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	JAS0-2013	
C4000-J400-W	2000 Series 3000 Series 4000 Series	21	44	32	M5	JIS B2401-P21	

Precision regulator

RPE1000 Series

● Port size: G1/4

RoHS

CAD

Catalog No. CB-024SA

Features

• High performance, energy efficient, compact

How to order

RPE1000 - 8G - 07 - ○

Ⓐ Ⓑ Ⓒ

Symbol	Descriptions
Ⓐ Port size	
8G	G1/4
Ⓑ Set pressure range	
07	MAX.0.7MPa
Ⓒ Attachment (attached)	
Blank	No attachment
B3	L type bracket

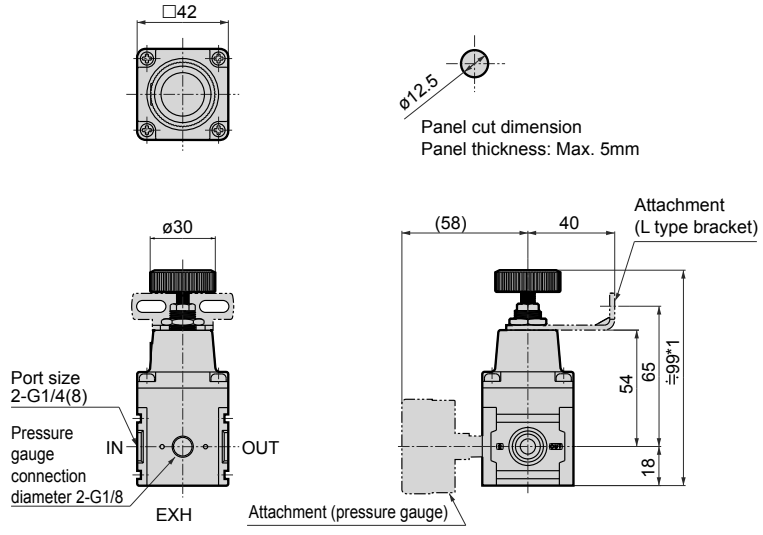
Specifications

Descriptions	RPE1000-8N-07
Working fluid	Compressed clean air
Max. working pressure MPa	1.0
Min. working pressure MPa	Set pressure + 0.1 Note 1
Proof pressure MPa	1.5
Ambient temperature/fluid temperature °C	–5 to 60 (no freezing)
Set pressure range MPa	0.01 to 0.7
Sensitivity	Within 0.2% of full span
Repeatability	Within ±0.5% of full span
Air consumption Note 2 ℓ/min (ANR)	0.2 or less
Port size	G1/4
Pressure gauge connection diameter	G1/8
Weight g	250 Note 3

Note 1: The secondary flow rate is assumed to be zero.
Note 2: The primary pressure is assumed to be 0.7 MPa. Air is constantly discharged into the atmosphere.
Note 3: Ⓒ attachment weight must be added. Pressure gauge: 74g Bracket: 30g

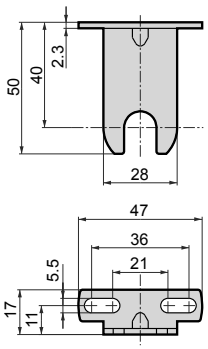
Dimensions

● RP1000-8G-02



*1: Dimensions when the set pressure is 0 MPa
*2: The pressure gauge and bracket are options.

L type bracket
· B131



Precision regulator

RP2000 Series

● Port size: G3/8

RoHS

CAD

Catalog No. CB-024SA

Features

• High performance, long life, large exhaust rate

How to order

RP2000 - 10G - 08 - ( )

Ⓐ Ⓑ Ⓒ

Symbol	Descriptions
Ⓐ Port size	
10G	G3/8
Ⓑ Set pressure range	
08	MAX.0.85MPa
Ⓒ Attachment (attached)	
Blank	No attachment
B	C type bracket

Note: One R1/8 plug is included with the product.

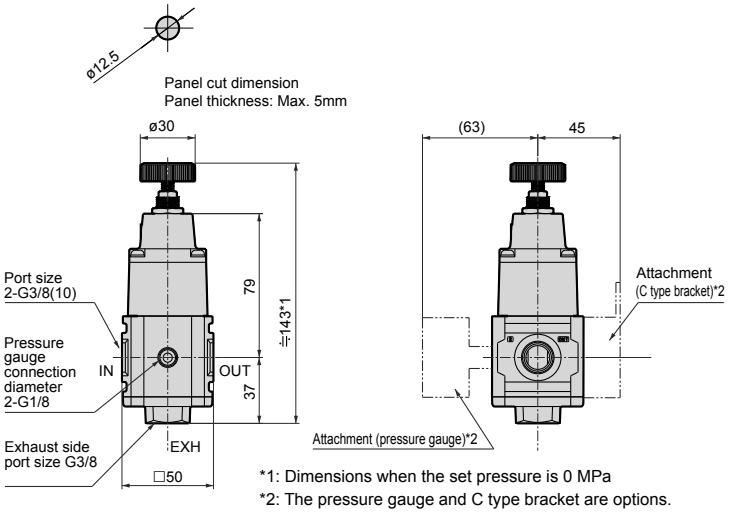
Specifications

Descriptions	RP2000-10-08
Working fluid	Compressed clean air
Max. working pressure MPa	1.0
Min. working pressure MPa	Set pressure + 0.1 Note 1
Proof pressure MPa	1.5
Ambient temperature/fluid temperature °C	–5 to 60 (no freezing)
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
Port size	G3/8
Exhaust side port size	G3/8
Pressure gauge connection diameter	G1/8
Weight 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

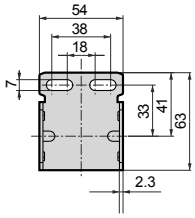
● RP2000-10-08



*1: Dimensions when the set pressure is 0 MPa
*2: The pressure gauge and C type bracket are options.

C type bracket

· B220



Digital pressure sensor

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

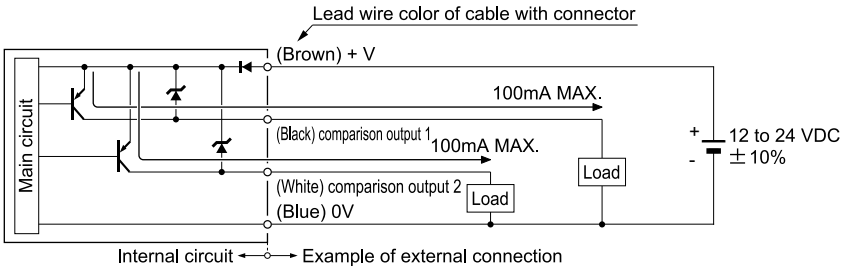
How to order

PPX - R01 (A) P (B) - 6M (C) - ( ) (D) - ( ) (E)

Symbol	Descriptions
Ⓐ Pressure range	
R01	−100.0 to 100.0 KPa
R10	−0.100 to 1.000 MPa
Ⓑ Type of output	
P	2 PNP transistor output points
Ⓒ Piping type	
6M	R1/8, M5 female thread
Ⓓ Connector cable	
Blank	With a 2 m connector cable
Ⓔ Unit change	
KA	With unit change function

Circuit and connection method

PNP output type

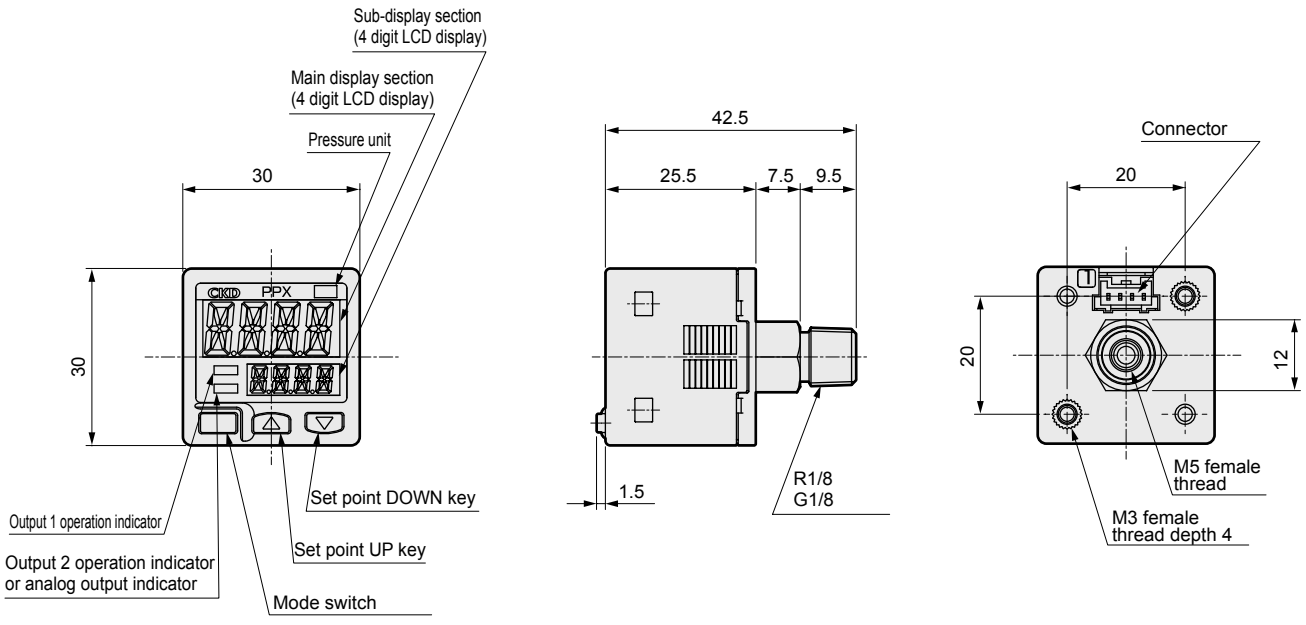


Specifications

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
Min. 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	
Current 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)		<PNP output type> PNP transistor open collector • Max. 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)	Min. 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.	
	Short circuit protection	Equipped	
Environment conditions	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)	
	Shock resistance	Resistance 100 m/S^2 (approx. 10G) 3 times in each XYZ direction	
Connection		Connector connection	
Port size		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



Compact mechanical pressure switch

APS Series

● Port size: Rc1/8

Features

• General purpose discrete specifications

Catalog No.: CC-962

How to order

APS - 6D (A) -W- ( ) (B)

Symbol	Descriptions
Ⓐ Piping port position, port size, scale direction	
6D	Bottom; 1/8; Vertical

Ⓑ Option	
Blank	None
1	DIN rail bracket attached

Specification

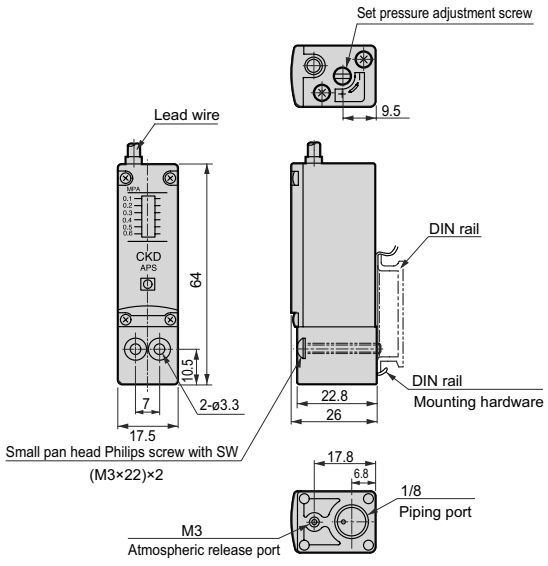
Item		APS-W
Working fluid		Compressed air
Max. working pressure	MPa	1.0
Set pressure range	MPa	0.1 - 0.6
Hysteresis	MPa	0.08 or less
Repeatability	MPa	±0.02 or less
Contact configuration		1a Note 1.
Wiring		Lead wire (oil resistant vinyl cabtire cable 2-conductor 0.2 mm^2)
Ambient temperature/fluid temperature		5 - 60°C
Degree of protection	Note 2.	Equivalent to IP65

Note 1. The contact turns on if air pressure exceeding the scale setting pressure is applied.
Note 2. This should be mounted vertically. If water gets sucked in from the atmospheric pressure intake port from the bottom, extend the opening using an optional joint with a tube so that no water comes in. This port can not be used outdoors.

Electrical specification		
Load voltage	12/24 V DC	100 V AC
Load current	5-50 mA	7-20 mA
Internal voltage drop	3 V or less	
Lamp	LED (on lighting)	
Max. shock resistance	294 m/s^2	
Insulation resistance	20 MΩ or more with 500 V DC megger	
Dielectric strength	No abnormality after application of AC1000V for 1 minute.	

Dimensions

• APS-6D-W



MEMO

Speed control valve with adjusting dial

DSC Series

● Port size: R1/8, R1/4

Catalog No.: CC-1021

Features

- Needle speed is digitally indicated.
- Cylinder speed can be formed into a specific form.
- Flow characteristics in proportion to number of needle turn.
- Improved operability of the needle lock with a push-and-lock type knob.

How to order

DSC - 6 - 6
(A) (B)

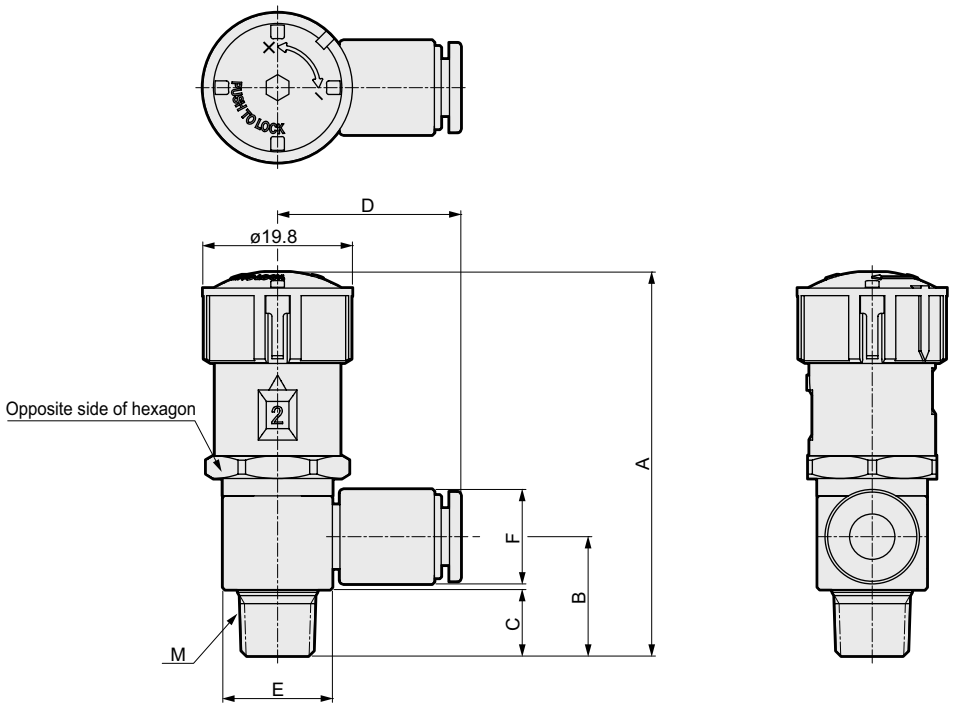
Symbol	Descriptions
(A) Port size	
6	R1/8
8	R1/4
(B) Applicable tube O.D.	
6	ø6
8	ø8

Specification

Item			DSC-6		DSC-8
Applicable tube O.D.		mm	ø6	ø8	ø8
Working fluid			Compressed air		
Max. working pressure		MPa	1.0		
Min. working pressure		MPa	0.05		
Proof pressure		MPa	1.5		
Fluid temperature		°C	5 to 60 (No freezing. Note 2.)		
Operating ambient temperature		°C	0 to 60 (No freezing)		
Port size			R 1/8		R 1/4
Weight		g	34	35	46
Needle control range			1-10 turns		
Free flow	Flow rate	L/min (ANR)	270	270	530
	Effective sectional area	mm^2	4	4	8
Controlled flow (Standard flow rate)	Flow rate	L/min (ANR)	200	200	400
	Effective sectional area	mm^2	3	3	6
Controlled flow (Low flow rate)	Flow rate	L/min (ANR)	60		130
	Effective sectional area	mm^2	0.9		2

Note 1. The flow rate is a value converted for the pressure of 0.5 MPa at the atmospheric pressure.
Note 2. Freezing may occur due to adiabatic expansion depending on the air quality (dew point).

Dimensions



Model No.	M	Applicable tube O.D.	A		B	C	D	E	F	Opposite side of hexagon
			Locked	Adjustment						
DSC-6-6	R1/8	ø6	51	54	15.7	8.7	24.5	14.5	12.5	17
DSC-6-8		ø8			15.4		26		14.5	
DSC-8-8	R1/4	ø8	55.5	58.5	19.0	11.7	27.5	18	14.5	17

Needle valve with adjusting dial

DVL Series

●Applicable tube O.D.: ø4 to ø12

RoHS

CAD

Catalog No.: CC-860

Features

- Linear flow characteristic.
- Visible control of flow rates.
- Use as a speed control valve.
- Unrestricted installation.

How to order

DVL - S - 06 - H66 - 020

Ⓐ Ⓑ Ⓒ Ⓓ

Symbol	Descriptions
Ⓐ Control method (oil removing)	
S	Check valve type
Ⓑ Body size	
06	1/8 thread equivalent
08	1/4 thread equivalent
10	3/8 thread equivalent
Ⓒ Applicable tube O.D.	
H44	ø4
H66	ø6
H88	ø8
H1010	ø10
H1212	ø12

Ⓓ Flow rate type	
020	18 l/min (ANR)
080	80 l/min (ANR)
160	160 l/min (ANR)
240	240 l/min (ANR)
400	440 l/min (ANR)

Combination of Body size, Applicable tube O.D., and Flow rate type

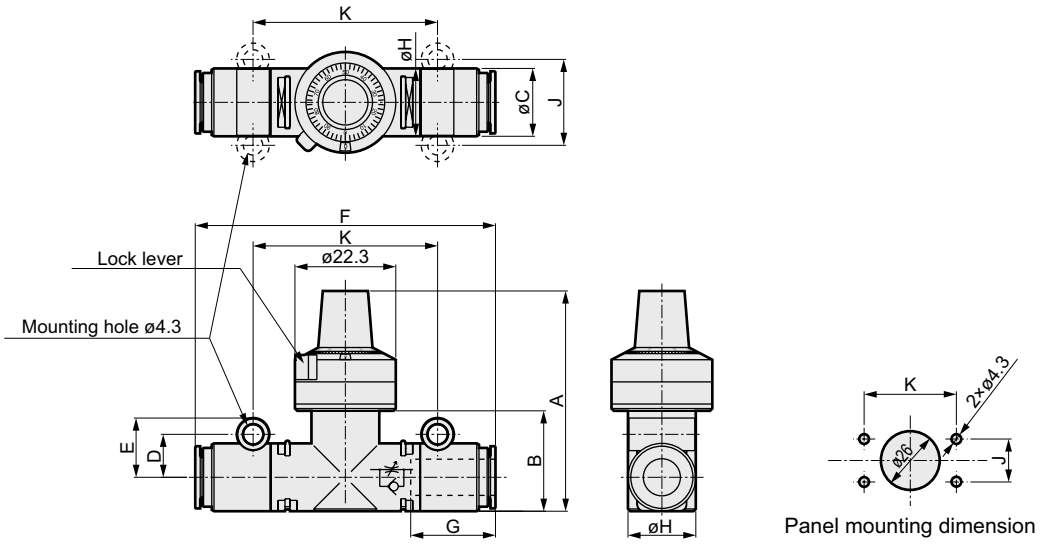
	Ⓑ Body size						
	06		08		10		
Ⓒ Applicable tube O.D. / Ⓓ Flow rate type	H44	H66	H66	H88	H88	H1010	H1212
020	●	●					
080	●	●					
160		●					
240			●	●			
400					●	●	●

Specification

Item			DVL-S-06					DVL-S-08		DVL-S-10		
			020		080		160	240		400		
Applicable tube O.D.		mm	ø4	ø6	ø4	ø6	ø6	ø6	ø8	ø8	ø10	ø12
Working fluid			Compressed air									
Max. working pressure		MPa	1.0									
Min. working pressure		MPa	0.1 (Note 3)									
Proof pressure		MPa	1.5									
Fluid temperature		°C	5 to 60 (No freezing. Note 2)									
Ambient temperature		°C	0 to 60 (No freezing)									
Weight		g	54	48	54	48	48	60	61	82	86	88
Needle control range			1-12 turns					1-13 turns				
Free flow	Flow rate	L/min (ANR)	170	300	170	300	300	400	550	900	1100	1200
	Effective sectional area	mm^2	2.5	4.5	2.5	4.5	4.5	6	8	13.5	16.5	18
Controlled flow	Flow rate	L/min (ANR)	18		80		160	240		440		
	Effective sectional area	mm^2	0.15		1.2		2.4	3.6		6.6		

Note 1. Flow rate is the atmospheric pressure conversion at 0.5 MPa.
Note 2. Freezing may occur due to adiabatic expansion depending on the air quality (dew point).
Note 3. Evacuating up to -100 kPa is possible only in the direction of free flow. (Needle control is not allowed)

Dimensions



Model No.	Applicable tube O.D.	A	B	C	D	E	F	H	J	K	G (How far the tube is inserted)
DVL-S-06-H44-*	ø4	45.5	17	12	8.1	11.6	55	12	16.2	30.8	12.9
DVL-S-06-H66-*	ø6						49.5				13.7
DVL-S-08-H66-*	ø6	50	22.5	13	9.5	13.1	64	15	19	41	18
DVL-S-08-H88-*	ø8			15			66.5				19
DVL-S-10-H88-*	ø8	58	29		11.5	15.5	71	20	23	47	
DVL-S-10-H1010-*	ø10			18		15.1	75				21
DVL-S-10-H1212-*	ø12			20.4			79				22

Quick exhaust valve

2QV/3QV Series

●Applicable tube O.D.: Push-in fitting ø4, ø6, ø8, ø10, ø12, G1/8 to R1/2

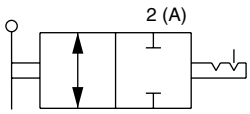
Catalog No. CB-024SA

How to order

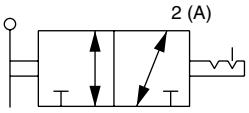
2 QV - 04-04
Ⓐ Ⓑ

	Symbol	Descriptions	Bracket *
	Ⓐ Valve type		
	2	2 way valve	
	3	3 way valve	
	Ⓑ Applicable tube O.D. (P port) - (A port)		
		IN side - OUT side	
Standard	04-04	Push-in fitting ø4 - Push-in fitting ø4	2QV-P1
Standard	06-06	Push-in fitting ø6 - Push-in fitting ø6	2QV-P1
Standard	08S-08S	Push-in fitting ø8 - Push-in fitting ø8	2QV-P1
Standard	08-08	Push-in fitting ø8 - Push-in fitting ø8	2QV-P2
Standard	10-10	Push-in fitting ø10 - Push-in fitting ø10	2QV-P2
Standard	12-12	Push-in fitting ø12 - Push-in fitting ø12	2QV-P2
Option	6A-04	R1/8 - Push-in fitting ø4	2QV-P1
Option	6A-06	R1/8 - Push-in fitting ø6	2QV-P1
Option	8A-06	R1/4 - Push-in fitting ø6	2QV-P1
Option	8A-08S	R1/4 - Push-in fitting ø8	2QV-P1
Option	10A-08	R3/8 - Push-in fitting ø8	2QV-P2
Option	10A-10	R3/8 - Push-in fitting ø10	2QV-P2
Option	15A-10	R1/2 - Push-in fitting ø10	2QV-P2
Option	15A-12	R1/2 - Push-in fitting ø12	2QV-P2
Option	04-6A	Push-in fitting ø4 - R1/8	2QV-P1
Option	06-6A	Push-in fitting ø6 - R1/8	2QV-P1
Option	06-8A	Push-in fitting ø6 - R1/4	2QV-P1
Option	08S-8A	Push-in fitting ø8 - R1/4	2QV-P1
Option	08-10A	Push-in fitting ø8 - R3/8	2QV-P2
Option	10-10A	Push-in fitting ø10 - R3/8	2QV-P2
Option	10-15A	Push-in fitting ø10 - R1/2	2QV-P2
Option	12-15A	Push-in fitting ø12- R1/2	2QV-P2
Option	6A-6A	R1/8 - R1/8	2QV-P1
Option	8A-8A	R1/4 - R1/4	2QV-P1
Option	10A-10A	R3/8 - R3/8	2QV-P2
Option	15A-15A	R1/2 - R1/2	2QV-P2

JIS symbol



2QV



3QV

Specifications

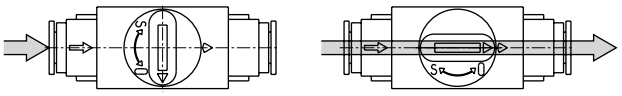
Descriptions		2QV/3QV
Working fluid		Air
Max. working pressure	MPa	1.0
Min. working pressure	kPa	–100 (Note 1)
Proof pressure	MPa	1.5
Fluid temperature	°C	0 to 60
Ambient temperature	°C	0 to 60
Switching angle	γ	90
Applicable tube		Soft nylon tube (tube F-15**) Urethane tube (tube U-95**, NU-**)
Mounting attitude		Any

Note 1: When using urethane tube (U-95**, NU-**) at vacuum, use an insert ring.
Note 2: Lubricant is used, so oil-prohibited specifications are not available.

Operational explanation

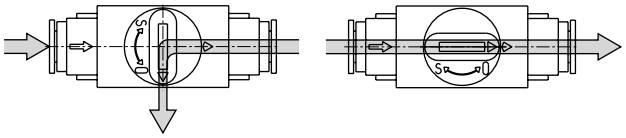
2 port valve (2QV Series)

(closed state) (open state)



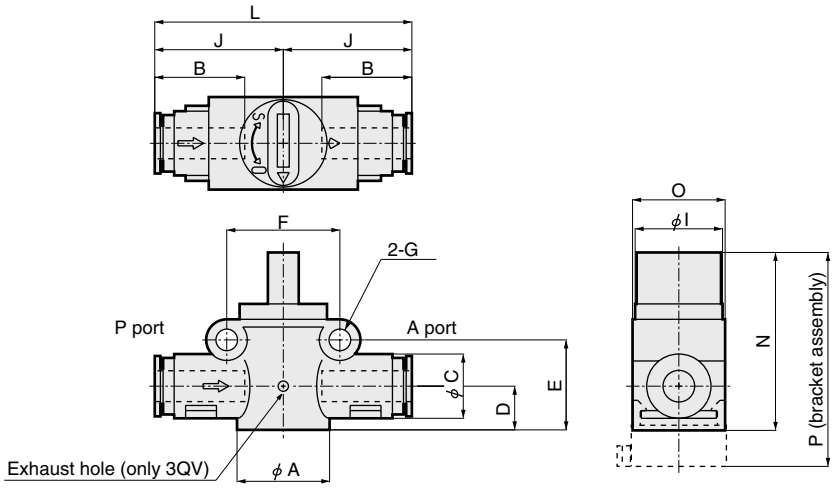
3 port valve (3QV Series)

(closed state) (open state)



● Applicable tube O.D.

P port (push-in fitting)●A port (push-in fitting)

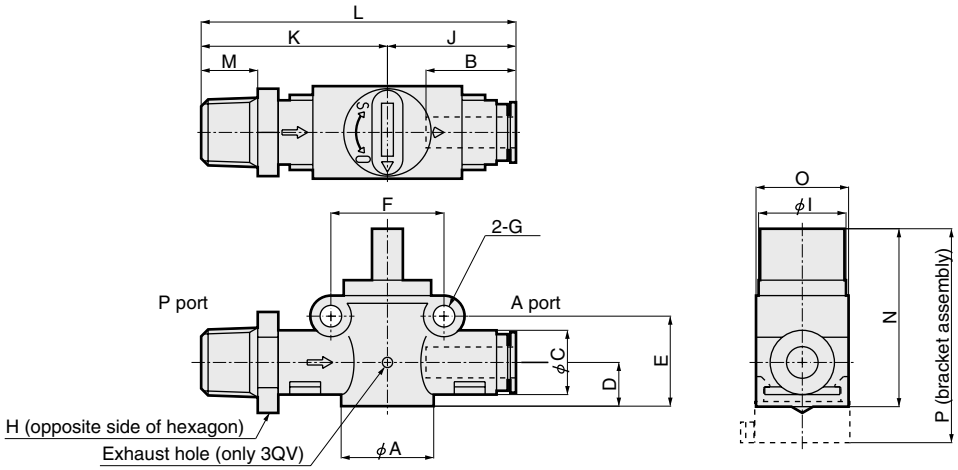


Applicable tube O.D. (mm)		Model no.	A	B	C	D	E	F	G	I	J	L	N	O	P	Weight (g)	Effective sectional area (mm²)	
P port	A port																P→A	A→R
ø4	ø4	⅔QV-04-04	18	16	12.5	8.5	17.5	22	4.2	17	25	50	34.5	18	41.5	20	4.2	1.8
ø6	ø6	⅔QV-06-06		17.5												21	9.3	
ø8	ø8	⅔QV-08S-08S		19	14.5						26.5	53				23	10.2	
ø8	ø8	⅔QV-08-08	22	19	17.5	10.7	22.8	26.5	4.2	17	31.5	63	39.8	22	46.8	34	17.5	4.0
ø10	ø10	⅔QV-10-10		21.5												35	22.5	
ø12	ø12	⅔QV-12-12		23	20						33	66				38	22.5	

* Tolerance of effective sectional area is ±10%.

● Applicable tube O.D.

P port (male thread)●A port (push-in fitting)

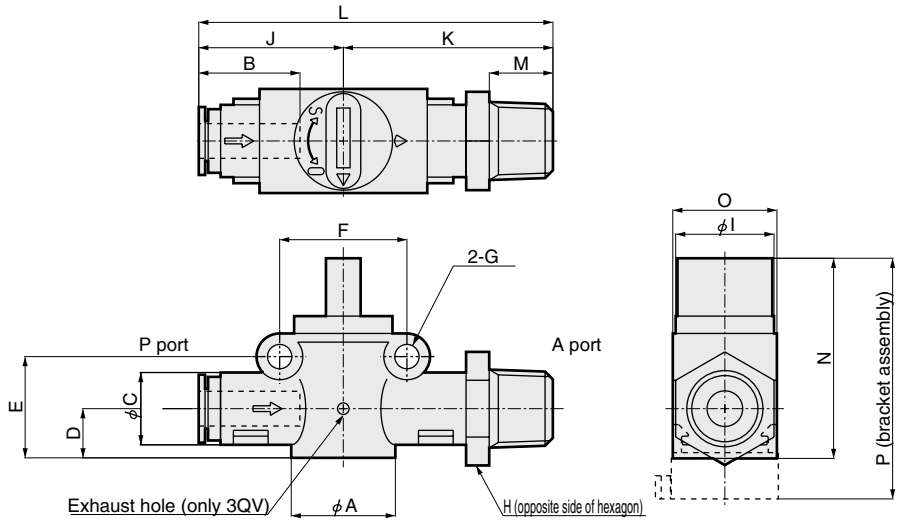


Port thread R	Applicable tube O.D. (mm)	Model no.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight (g)	Effective sectional area (mm²)	
P port	A port																			P→A	A→R
1/8	ø4	⅔QV-6A-04	18	16	12.5	8.5	17.5	22	4.2	14	17	25	33.5	58.5	8	34.5	18	41.5	26	4.2	1.8
1/8	ø6	⅔QV-6A-06		17.5															32	9.3	
1/4	ø6	⅔QV-8A-06								17			38	63	11				35	9.3	
1/4	ø8	⅔QV-8A-08S		19	14.5							26.5		64.5					40	10.2	
3/8	ø8	⅔QV-10A-08	22	19	17.5	10.7	22.8	26.5	4.2	17	17	31.5	44.5	76	12	39.8	22	46.8	57	16.3	4.0
3/8	ø10	⅔QV-10A-10		21.5						19									63	21.4	
1/2	ø10	⅔QV-15A-10								22			47.5	79	15				76	21.4	
1/2	ø12	⅔QV-15A-12		23	20.0							33	49	82					85	21.4	

* Tolerance of effective sectional area is ±10%.

● Applicable tube O.D.

P port (push-in fitting)●A port (male thread)

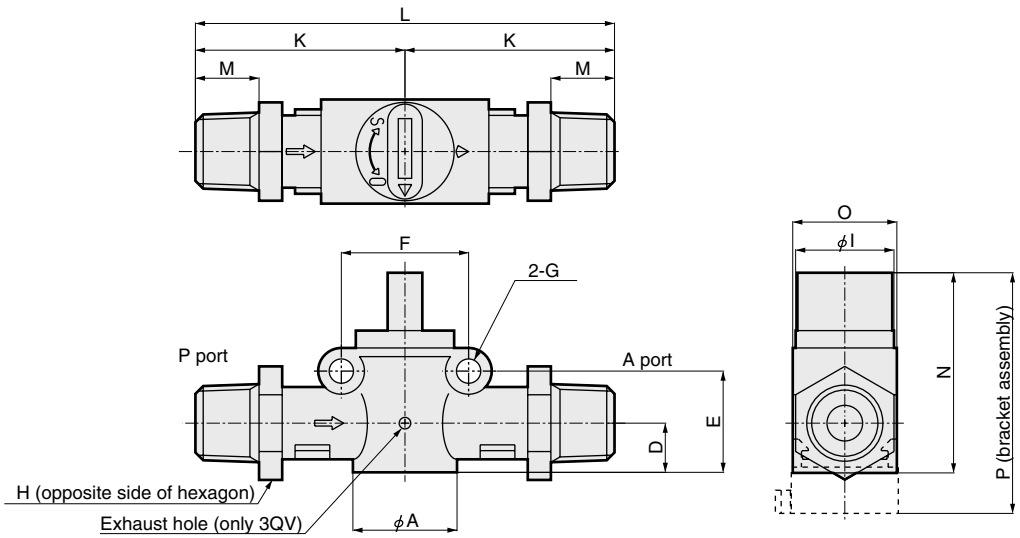


Applicable tube O.D. (mm)	Port thread R	Model no.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight (g)	Effective sectional area (mm²)	
P port	A port																			P→A	A→R
ø4	1/8	⅔QV-04-6A	18	16	12.5	8.5	17.5	22	4.2	14	17	25	33.5	58.5	8	34.5	18	41.5	26	3.5	1.8
ø6	1/8	⅔QV-06-6A		17.5															32	9.3	
ø6	1/4	⅔QV-06-8A								17			38	63	11				35	9.3	
ø8	1/4	⅔QV-08S-8A		19	14.5							26.5		64.5					40	10.2	
ø8	3/8	⅔QV-08-10A	22	19	17.5	10.7	22.8	26.5	4.2	17	17	31.5	44.5	76	12	39.8	22	46.8	57	15.8	4.0
ø10	3/8	⅔QV-10-10A		21.5						19									63	21.4	
ø10	1/2	⅔QV-10-15A								22			47.5	79	15				76	21.4	
ø12	1/2	⅔QV-12-15A		23	20.0							33	49	82					85	21.4	

* Tolerance of effective sectional area is ±10%.

● Applicable tube O.D.

P port (male thread)●A port (male thread)

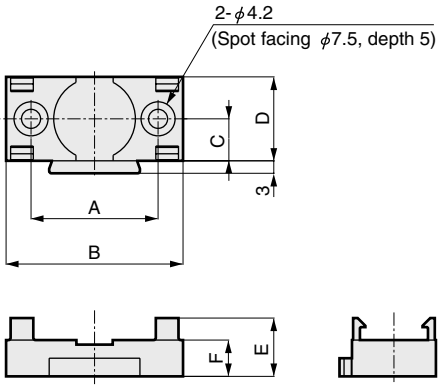


Port thread R		Model no.	A	D	E	F	G	H	I	K	L	M	N	O	P	Weight (g)	Effective sectional area (mm²)	
P port	A port																P→A	A→R
1/8	1/8	⅔QV-6A-6A	18	8.5	17.5	22	4.2	14	17	33.5	67	8	34.5	18	41.5	42	9.5	1.8
1/4	1/4	⅔QV-8A-8A						17		38	76	11				48	9.5	
3/8	3/8	⅔QV-10A-10A	22	10.7	22.8	26.5	4.2	19	17	44.5	89	12	39.8	22	46.8	90	21.4	4.0
1/2	1/2	⅔QV-15A-15A						22		47.5	95	15				116	21.4	

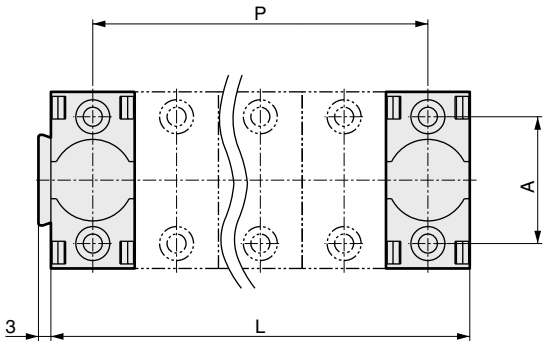
* Tolerance of effective sectional area is ±10%.

Dimensions

Bracket



Manifold mounting pitch dimension



Model no.	A	B	C	D	E	F	P	L	Subject dimension A
2QV-P1	28	39	9.25	18.5	13	8	D x (n - 1)	D x n	18
2QV-P2	32	44	11.25	22.5	12.5	8			22

n = station number

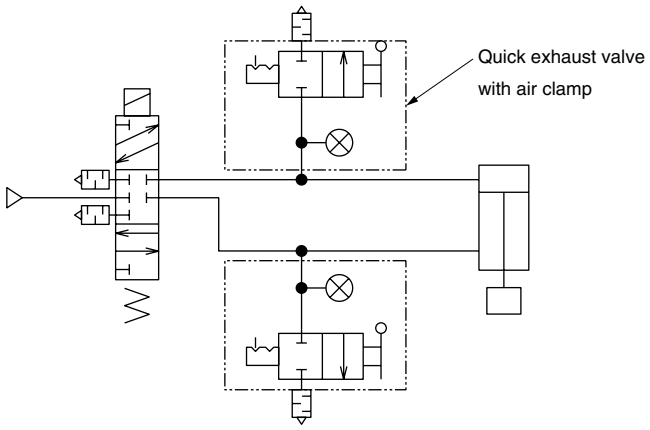
Introduction of custom order

A quick valve with air lamp is available as a customized order part. Contact CKD for details.
Note: Note that the 12 diameter type is not available.

Specifications

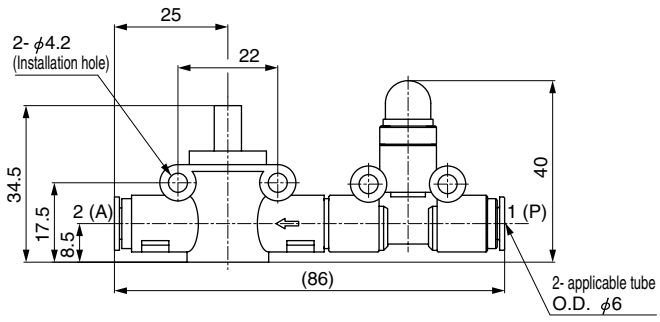
Descriptions		Air lamp
Working fluid		Air
Working pressure range	MPa	0.05 to 0.8
Fluid temperature	°C	0 to 60
Ambient temperature	°C	0 to 60
Display color		Red, green

Applications
· Cylinder residual pressure exhaust

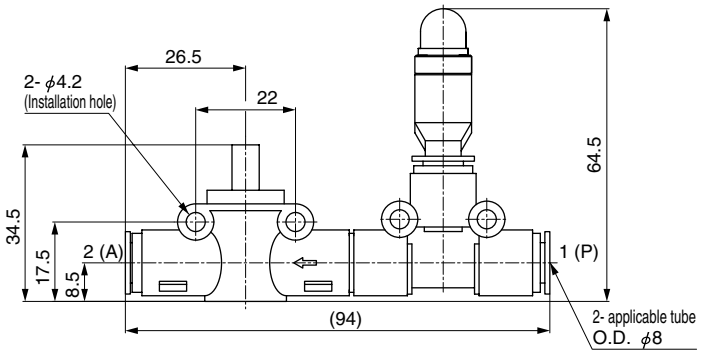


Example of assembly

2QV-06-06 with air lamp



2QV-08S-08 with air lamp



Types 3QV-06 to 10 with air lamps are also available. Contact CKD for details.

Small size flow sensor RAPIFLOW

FSM2 Series

● Flow range: 10, 50 ℓ/min (resin body type), 200 ℓ/min (stainless body type), 1000 ℓ/min (aluminum body type)

RoHS CAD CE

Catalog No. CB-024SA

Features

- High precision, fast response, large flow rate and compact
- Ample functions in pursuit of options and operability

How to order

FSM2 - NVF 100 - H04 1

Ⓐ Ⓑ

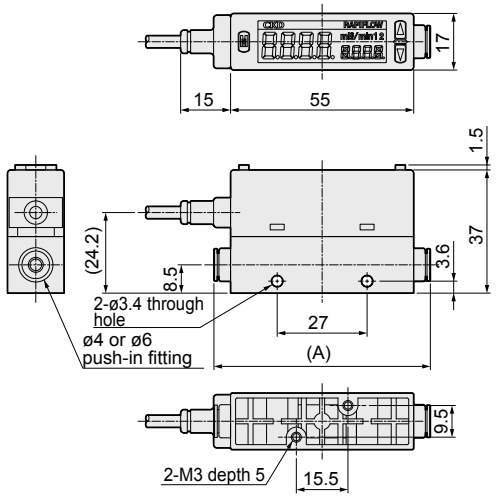
Symbol	Descriptions
Ⓐ Flow range	
100	10 ℓ/min
500	50 ℓ/min
201	200 ℓ/min
102	1000 ℓ/min

Ⓑ Port size (body material)		100	500	201	102
H04	Push-in fitting ø4 (resin)	●			
H06	Push-in fitting ø6 (resin)		●		

Dimensions

● FSM2-NVF□-H04/H061 (full scale flow: 10, 50 ℓ/min)

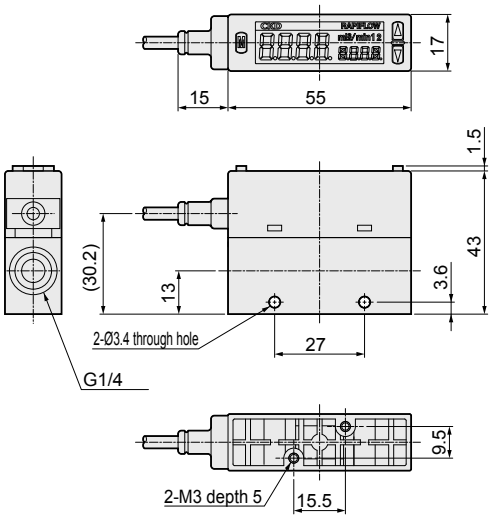
Port size: Push-in ø4, ø6



Model No.	Fitting	(A) dimensions
FSM2-NVF100-H041	Push-in fitting ø4	64
FSM2-NVF500-H061	Push-in fitting ø6	65

● FSM2-NVF201-S081 (full scale flow: 200 ℓ/min)

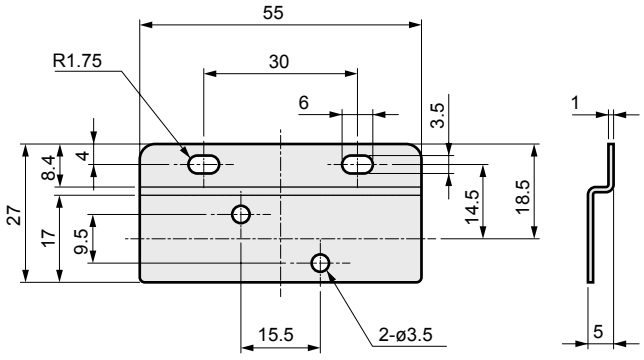
Port size: G1/4



● Bracket

Model No.: FSM2-LB1

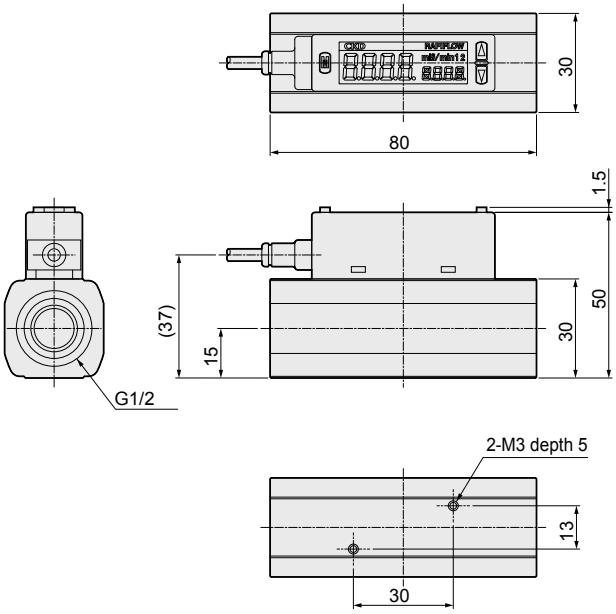
(full scale flow: 10, 50, 200 ℓ/min)



*M3 for fixing (length: 6 mm) 2 set screws included

● FSM2-NVF102-A151 (full scale flow: 1000 ℓ/min)

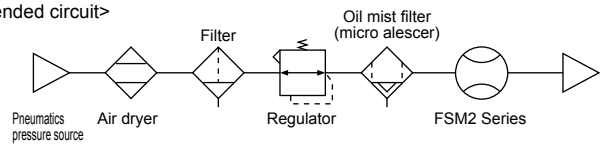
Port size: G1/2



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				●
Port size/ Body material	*2	H04	ø4 push-in fitting/resin	●			
		H06	ø6 push-in fitting/resin		●		
		S08	G1/4/stainless			● Air only	
		A15	G1/2/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			
	Max. working pressure			0.7 MPa		1.0 MPa	0.7 MPa
	Min. working pressure			–0.09 MPa			
	Proof pressure			1 MPa		1.5 MPa	1 MPa
	Ambient temperature/Ambient humidity			0 to 50°C, 90% RH or less			
	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 (PNP 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			
Weight (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 (min. pressure dew point: 10°C or less), and oil mist filter (max. oil concentration: 0.1 mg/m^3) 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.

Pressure gauge with limit mark

G41D-8-P10 Series

RoHS

● Port size: R1/8, R1/4

Catalog No. CB-024SA

Features

• Easy visual inspection control due to green arrow

How to order

G41D - 8 - P10

Ⓐ Ⓑ

Symbol	Descriptions
Ⓐ Port size	
6	R1/8
8	R1/4
Ⓑ Pressure display	
P10	1.0 MPa

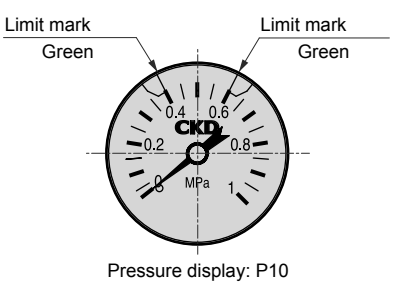
Specifications

Descriptions		G41D
Working fluid		Compressed air
Fluid temperature °C		5 to 60
Ambient temperature °C		5 to 60
Precision Note 1		Equivalent to JIS2.5
Shape		Back side thread
Display section diameter		ø39
Material	Stud	Brass
	Housing	Steel sheet + paint (white)
	Lens	Polyamide resin
	Mark section	Polyacetal resin
Pressure range Psi (set range)		0 to 150
Port size		R1/8, 1/4
Weight g		74

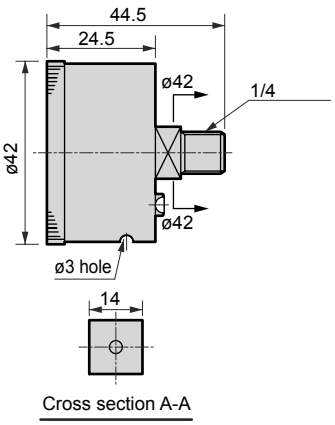
Note 1: The guaranteed display accuracy temperature is 20±15°C.

Dimensions

● G41D



Pressure display: P10



Cross section A-A

MEMO

Small size flow controller

FCM Series

- Air, nitrogen, argon, oxygen, city gas, methane, propane (flow rate range: 0.5 to 100 ℓ/min.)
- Hydrogen, helium (flow rate range: 0 to 20 ℓ/min.)

Catalog No. CB-024SA

How to order

FCM - 9500 AI - H6 0 AP R 1 B T

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ

Symbol	Descriptions								
Ⓐ Flow rate range									
Type			AI	AR	O2	LN	C1	C3
9500	Standard model	0 to 0.5 ℓ/min.	●	●	●	●	●	●
0001		0 to 1 ℓ/min.	●	●	●	●	●	●
0002		0 to 2 ℓ/min.	●	●	●	●	●	●
0005		0 to 5 ℓ/min.	●	●	●	●	●	●
0010		0 to 10 ℓ/min.	●	●	●	●	●	●
0020		0 to 20 ℓ/min.	●	●				
0050		0 to 50 ℓ/min.	●	●				
0100		0 to 100 ℓ/min. (only resin body)	●					
L9500	Low pressure differential model (Only stainless steel)	0 to 0.5 ℓ/min.	●		●	●	●	●
L0001		0 to 1 ℓ/min.	●		●	●	●	●
L0002		0 to 2 ℓ/min.	●		●	●	●	●
L0005		0 to 5 ℓ/min.	●		●	●	●	●
L0010		0 to 10 ℓ/min.	●		●	●	●	●

Ⓑ Working fluid	
AI	Compressed air, nitrogen gas

Ⓒ Port, body material							
Type		AI	AR	O2	LN	C1	C3
H6	Push-in (ø6), resin body (Excluding flow rate range; 0050, 0100)	●					
H8	Push-in (ø8), resin body	●					

Ⓓ Input specifications	
0	Analog 0-10 VDC
1	Analog 0-5 VDC
2	Analog 4-20mADC
P	Parallel 10bit

Ⓔ Output specifications	
AP	1-5V analog error (PNP)
SP	Switch (PNP), error (PNP)

Ⓕ Display direction	
Blank	Positive direction
R	Reverse direction

Ⓖ Cable	
Blank	None
1	1m
3	3m

Ⓗ Bracket	
Blank	None
B	With bracket

Ⓘ Traceability	
Blank	None
T	Traceability Certificate, system diagram, inspection results included
K	Inspection results included

Pressure

Standard differential pressure / operating differential pressure Note 4, 5

(Standard model)

			Flow rate range *1							
			9500	0001	0002	0005	0010	0020	0050	0100
Applicable fluids*2	AI	Standard differential pressure (kPa)	50	100	100	100	100	150	200	300
		Operating differential pressure (kPa)	20 to 150	50 to 200	50 to 250	50 to 250	50 to 250	100 to 300	150 to 300	250 to 350

(Low pressure differential model)

			Flow rate range *1				
			L9500	L0001	L0002	L0005	L0010
Applicable fluids *2	AI/O2 LN/C1 C3	Standard differential pressure (kPa)	20	20	20	20	20
		Operating differential pressure (kPa)	5 to 50	5 to 50	5 to 50	5 to 50	10 to 50

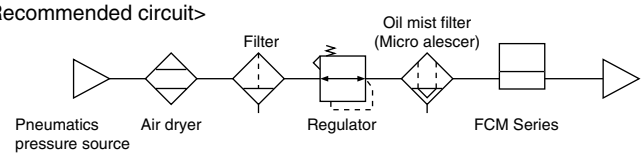
Display/integration

		Flow rate range *1							
		9500 L9500	0001 L0001	0002 L0002	0005 L0005	0010 L0010	0020	0050	0100
Flow display	Display range	0 to 500m ℓ/min.	0.00 to 1.00 ℓ/min.	0.00 to 2.00 ℓ/min.	0.00 to 5.00 ℓ/min.	0.0 to 10.0 ℓ/min.	0.0 to 20.0 ℓ/min.	0.0 to 50.0 ℓ/min.	0 to 100 ℓ/min.
	Display resolution	1mℓ/min	0.01ℓ/min	0.01 ℓ/min	0.01 ℓ/min	0.1 ℓ/min	0.1 ℓ/min	0.1 ℓ/min	1 ℓ/min
Function of integration	Display range	999999mℓ	9999.99ℓ	9999.99ℓ	9999.99ℓ	99999.9ℓ	99999.9ℓ	99999.9ℓ	999999ℓ
	Display resolution	1mℓ	0.01ℓ	0.01ℓ	0.01ℓ	0.1ℓ	0.1ℓ	0.1ℓ	1ℓ
	Pulse output rate	5mℓ	0.01ℓ	0.02ℓ	0.05ℓ	0.1ℓ	0.2ℓ	0.5ℓ	1ℓ

Specifications

Descriptions				FCM- (*1) (*2) - (*3) (*4) (*5)						
Valve drive method				Proportional solenoid valve When not energized: Closed						
				Flow range	AI (air, nitrogen)	AR (argon)	O2 (oxygen)	LN (city gas)	C1 (methane)	C3 (propane)
Full scale flow Note 1	*1	Standard model	9500	0 to 500m ℓ/min.	●	●	●	●	●	●
			0001	0 to 1 ℓ/min.	●	●	●	●	●	●
			0002	0 to 2 ℓ/min.	●	●	●	●	●	●
			0005	0 to 5 ℓ/min.	●	●	●	●	●	●
			0010	0 to 10 ℓ/min.	●	●	●	●	●	●
			0020	0 to 20 ℓ/min.	●	●				
			0050	0 to 50 ℓ/min.	●	●				
			100	0 to 100 ℓ/min. (only resin)	●					
		Low pressure differential model (Only stainless steel)	L9500	0 to 500m ℓ/min.	●		●	●	●	●
			L0001	0 to 1 ℓ/min.	●		●	●	●	●
			L0002	0 to 2 ℓ/min.	●		●	●	●	●
			L0005	0 to 5 ℓ/min.	●		●	●	●	●
			L0010	0 to 10 ℓ/min.	●		●	●	●	●
Applicable fluids Note 2	*2		AI	Compressed air, nitrogen	●					
Port size/Body material	*3		H6	ø6 push-in, resin (excluding 50, 100 ℓ/min)	●					
			H8	ø8 push-in, resin	●					
Control	Control range				3 to 100%F.S.					
	Responsiveness	*1	9500 to 0020, L9500 to L0010		Within 0.5sec. at setting ±5%F.S. (TYP)					
			0050 to 0100		Within 1sec. at setting ±5%F.S. (TYP)					
	Precision				±3%F.S. or less					
	Repeatability				±1%F.S. or less					
	Temperature characteristics				±0.1%F.S./°C or less (25°C reference)					
	Pressure characteristics				±1%F.S. or less per 98kPa (standard differential pressure reference)					
Pressure	Standard differential pressure Note 4				Refer to the separate table					
	Operating differential pressure range Note 5				Refer to the separate table					
	Withstanding pressure	*3	H6/H8 (resin body)		490kPa					
			8A/UF (SUS body)		980kPa					
Ambient temperature / humidity					0 to 50°C, 90%RH or less (no dew)					
I/O	Input signal/ pre-set input	*4	0		0 to 10 VDC (6.7 Ω) / 4 points (2 bit)					
			1		0 to 5 VDC (10 Ω) / 4 points (2 bit)					
			2		4 to 20 VDC (250 Ω) / 4 points (2 bit)					
			P		Parallel 10bit / None					
	Output signal	*5	AP		Analog output: 1-5V (connected load impedance 500kΩ and over) Error output: PNP open collector output, 50mA or less, voltage drop 2.4V or less					
			SP		Switch output: PNP open collector output, 50mA or less, voltage drop 2.4V or less Error output: PNP open collector output, 50mA or less, voltage drop 2.4V or less					
Flow display	Display method				3-digit 7-segment LED, Display precision: control precision ±1 digit					
	Display range, display resolution				Refer to the separate table					
Function of integration					Refer to the separate table					
Power supply	Power supply voltage				24 VDC ±10% (safety power supply with ripple ratio 2% or less)					
	Current consumption				250mA or less					
Installation attitude					Free					
Wet area material		*3	H6/H8 (resin body)		Polyamide resin, fluoro rubber, stainless steel, alumina, silicone, solder					
			8A/UF (SUS body)		Stainless steel, fluoro rubber, alumina, silicone, solder					
Weight		*3	H6/H8 (resin body)		Approx. 200g					
			8A/UF (SUS body)		Approx. 480g					
Degree of protection					IEC standards IP40					
Protective circuit				Note 6	Power supply reverse connection prevention, switch output reverse connection prevention, switch output load short-circuit protection					
EMC directive					EN55011, EN61000-6-2, EN61000-4-2/3/4/6/8					

<Recommended circuit>

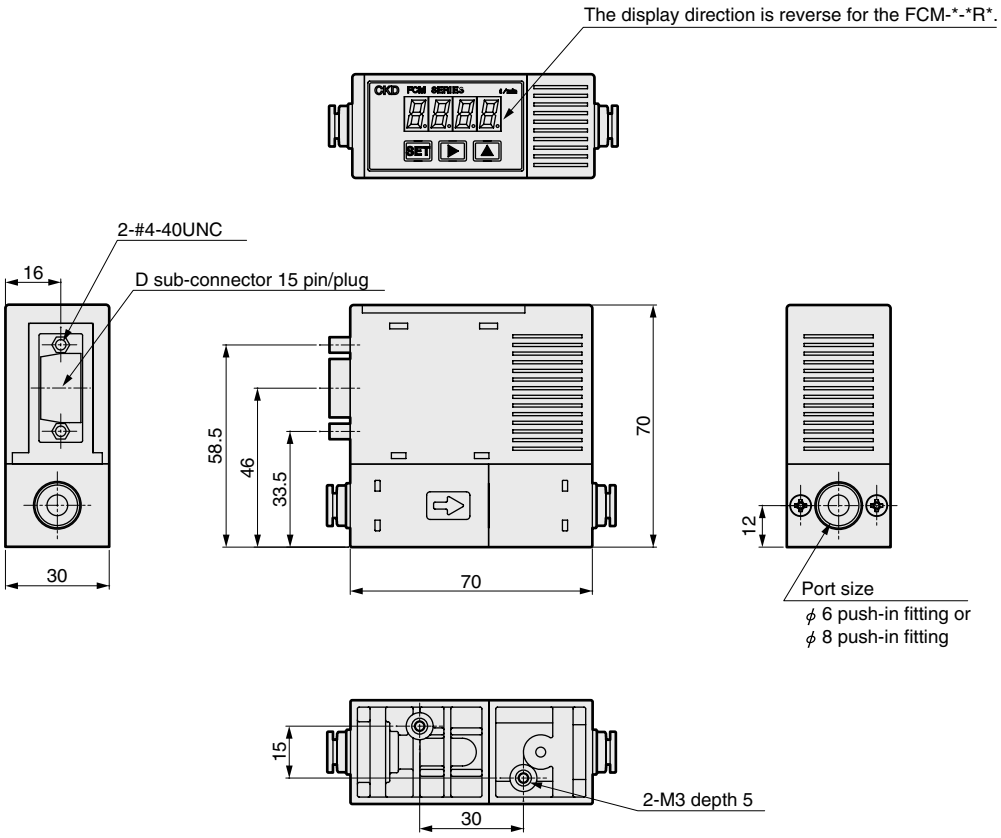


<Recommended component>
Air filter: F Series
Oil mist filter: M Series

Dimensions

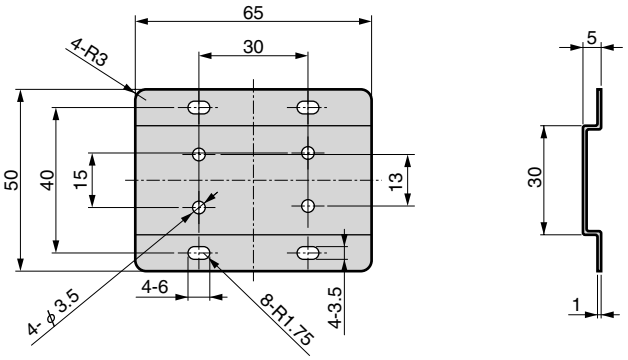
● FCM-*-H8/H6*

Body material: Resin, port size: ø6, ø8



Bracket (floor installation type)

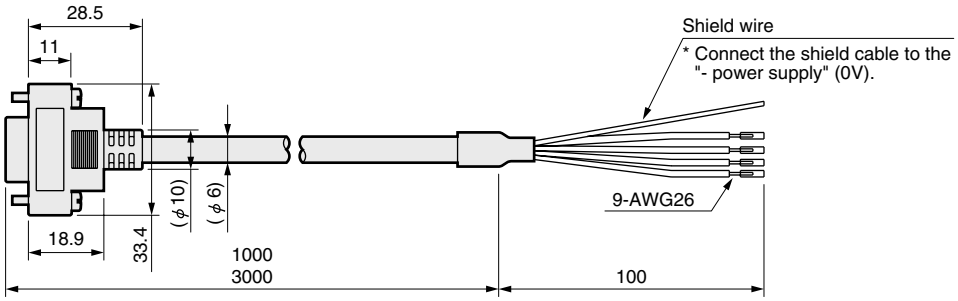
● Discrete model no.: FCM-LB1



Cable optional dimensions

● Discrete option model no.: FCM-AC1, AC3

9-conductor cable for analog input type

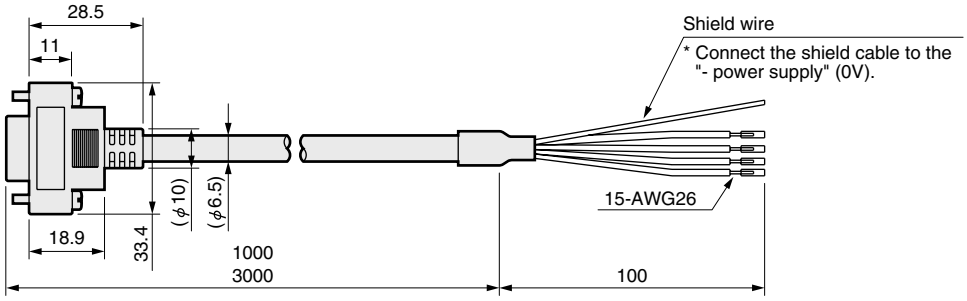


D-sub socket pin No.	1	2	3	4	5	6	7	8	9	10	11			12	13		14	15
Isolator color	Brown	Orange	Yellow	—	Red	—	—	—	—	Gray	White			—	Green		Blue	Black
Name	Pre-set input signal		Integration reset signal	Vacant	Power supply +	Vacant	Vacant	Vacant	Vacant	Common	Input signal			Vacant	Analog output	Switch output	Error output	Power supply- (0V)
Input type	Bit 1	Bit 2			+24VDC						0-10 VDC	0-5 VDC	4-20 mADC	Vacant	1-5VDC	NPN or PNP output	NPN or PNP output	

Note: The No. 1 pin common is common for the preset input and integration reset signal (No. 1 to 3 pins).

● Discrete option model no.: FCM-PC1, PC3

15-conductor cable for parallel input type



D-sub socket pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15
Isolator color	Brown	Orange	Yellow	Purple	Red	Light blue	Pink	White (with black line)	Red (with black line)	Gray	White	Green (with black line)	Green		Blue	Black
Name	Parallel input signal				Power supply +	Parallel input signal				Common	Parallel input signal		Analog output	Switch output	Error output	Power supply- (0V)
Input type	Bit 1	Bit 2	Bit 3	Bit 4	+24VDC	Bit 5	Bit 6	Bit 7	Bit 8		Bit 9	Bit 10	1-5VDC	NPN or PNP output	NPN or PNP output	

Note: The No. 10 pin common is common for the parallel input signals (No. 1 to 4, 6 to 9, 11, 12 pins).

Digital electro-pneumatic regulator

EVD Series

RoHS

CE

Catalog No. CB-024SA

Features

- Compact, high-function, digital control

Specifications

Descriptions		EVD-1100-*08* Analog type (* 0/1/2)	EVD-1100-P08* Parallel type	EVD-1500-*08* Analog type (* 0/1/2)	EVD-1500-P08* Parallel type	EVD-1900-*08* Analog type (* 0/1/2)	EVD-1900-P08* Parallel type
Working fluid		Clean compressed air (ISO 1.3.2 or equivalent)					
Max. working pressure		160kPa		700kPa		1000kPa	
Min. working pressure		Control pressure + 50kPa		Control pressure + 100kPa			
Withstanding pressure	Inlet side	240kPa		1050kPa		1500kPa	
	Output side	150kPa		750kPa		1350kPa	
Control pressure range Note 1		0 to 100kPa		0 to 500kPa		0 to 900kPa	
Power supply voltage		24 VDC 10% (safety power supply with ripple ratio 1% or less)					
Current consumption		0.15A or less (power supply rush current 0.6A or less when power turned ON)					
Input signal (Input impedance)		0-10 VDC (6.7kΩ) 0-5 VDC (10kΩ) 4-20mADC (250Ω)	10bit	0-10 VDC (6.7kΩ) 0-5 VDC (10kΩ) 4-20mADC (250Ω)	10bit	0-10 VDC (6.7kΩ) 0-5 VDC (10kΩ) 4-20mADC (250Ω)	10bit
Pre-set input		8 point	None	8 point	None	8 point	None
Output signal Note 2		Switch output: NPN or PNP open collector output, 30 V or less, 50 mA or less, voltage drop of 2.4 V or less, PLC and relay compatible					
Error output signal		NPN or PNP open collector output, 30 V or less, 50 mA or less, voltage drop of 2.4 V or less, PLC and relay compatible					
Direct memory setting		1 to 100kPa (Min. setting width 1 kPa/set resolution 1 kPa)		5 to 500kPa (Min. setting width 1 kPa/set resolution 1 kPa)		9 to 900kPa (Min. setting width 1 kPa/set resolution 2 kPa)	
Pressure display	Display method	7 segment LED 3-digit, display precision: 2%F.S. or less					
	Display range	0 to 100kPa		0 to 500kPa		0 to 900kPa	
	Display resolution	1kPa		1kPa		1kPa	
Hysteresis Note 3		0.5%F.S. or less					
Linearity Note 3		±0.3%F.S. or less					
Resolution Note 3		0.2%F.S. or less					
Repeatability Note 3		0.3%F.S. or less					
Temperature characteristics	Zero point variation	0.15%F.S./°C or less					
	Span variation	0.07%F.S./°C or less					
Max. flow rate (ANR) Note 4		60ℓ/min		400ℓ/min			
Step response Note 5	Loadless	0.2sec. or less					
Mechanical vibration proof		98m/s^2 or less					
Ambient temperature		5 to 50°C					
Fluid temperature		5 to 50°C					
Port size		G1/4					
Installation attitude		Free					
Weight (body)		250g					
Protective circuit		Power supply reverse connection prevention, switch output reverse connection prevention, switch output load short-circuit protection					

Note 1: 1% F.S. or less residual pressure remains when the input signal is 0%. (EVD-1100: 1kPa, EVD-1500: 5kPa, EVD-1900: 9kPa)
Note 2: Either analog output or switch output is selected.
Note 3: The above characters apply for a control pressure of 10 to 90% when power supply voltage is 24 VDC, working pressure is EVD-1100, max. control pressure is +50 kPa/EVD-1500 or 1900, and max. control pressure is +100 kPa.
The secondary side is limited to a closed circuit. Pressure could fluctuate when using for applications such as blowing.
Note 4: The above apply when working pressure is max. and control pressure is max.
Note 5: The above apply when working pressure is max. and the step rate is 50% F.S. 100% F.S.
50% F.S. 60% F.S.
50% F.S. 40% F.S.

How to order

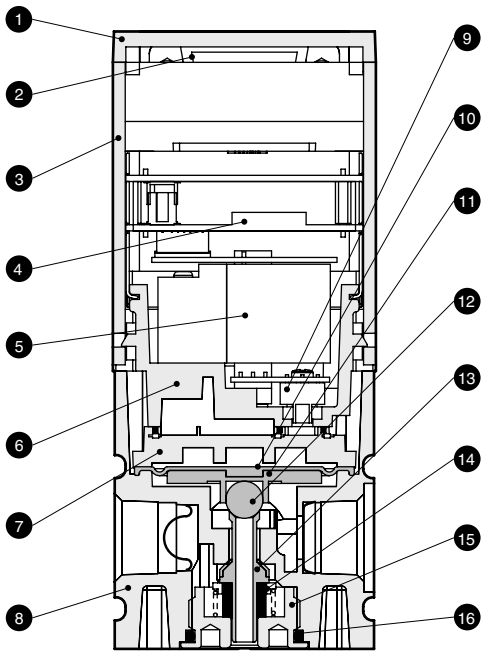
EVD-1 **500** - **0** **08** **AP** - **C1B1** - **3**
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

● Discrete option (cable and bracket) model no.

EVD- **C1**
Ⓔ Option

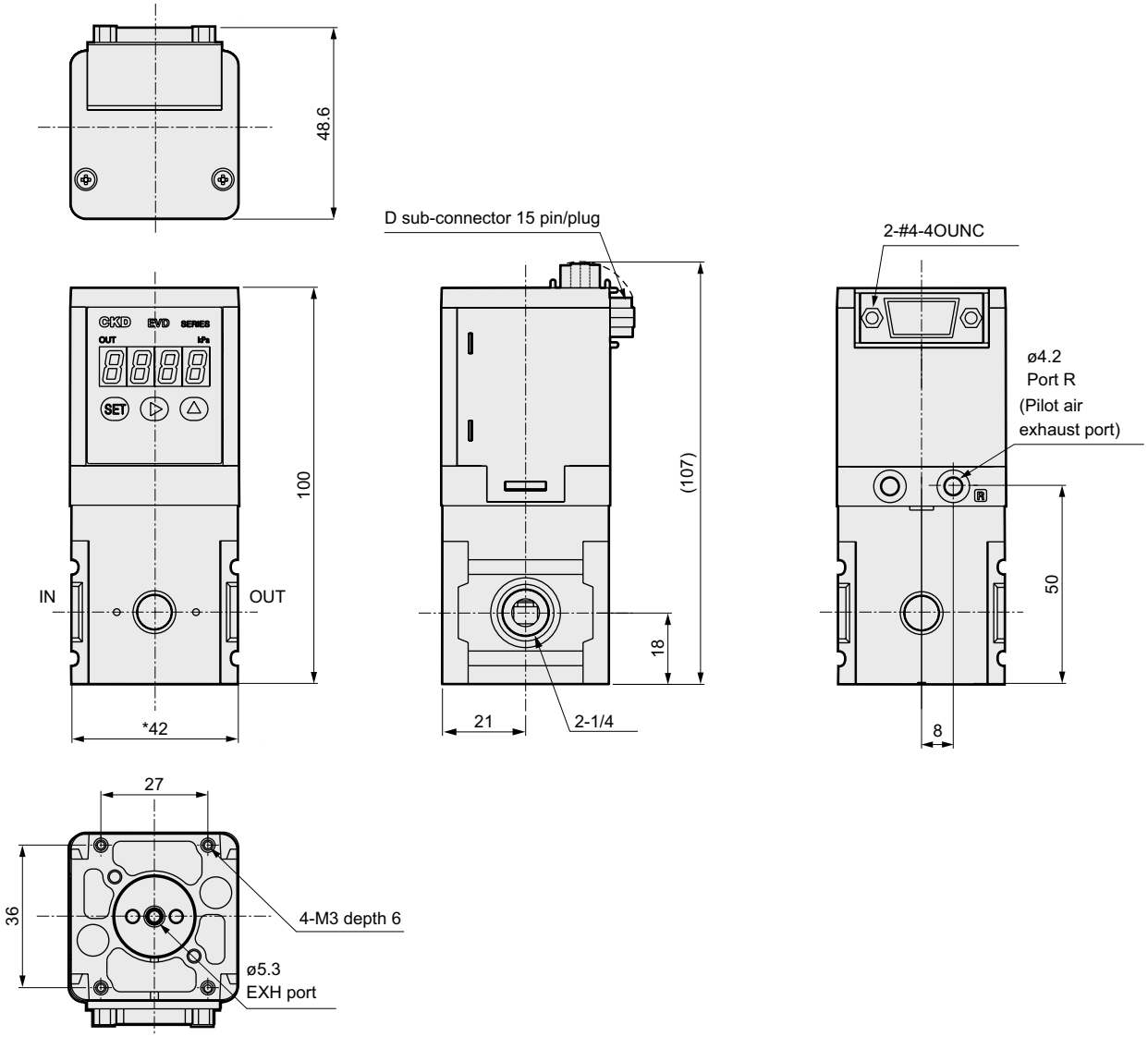
Symbol	Descriptions
Ⓐ Pressure specifications	
100	100kPa
500	500kPa
900	900kPa
Ⓑ Input specifications	
0	0-10VDC
1	0-5VDC
2	4-20mADC
P	Parallel 10bit
Ⓒ Port size	
08	G1/4
Ⓓ Output specifications	
AP	1-5V analog, error (PNP)
SP	Switch (PNP), error (PNP)
Ⓔ Option	
Cable option	
Blank	None
C1	Analog 9-core, cable 1 m
C3	Analog 9-core, cable 3 m
P1	Parallel 15-core, cable 1 m
P3	Parallel 15-core, cable 3 m
Bracket option attached	
Blank	None
B1	B type bracket floor installation type
L1	L type bracket wall installation type
Ⓕ Power supply voltage	
3	24 VDC

Internal structure and parts list



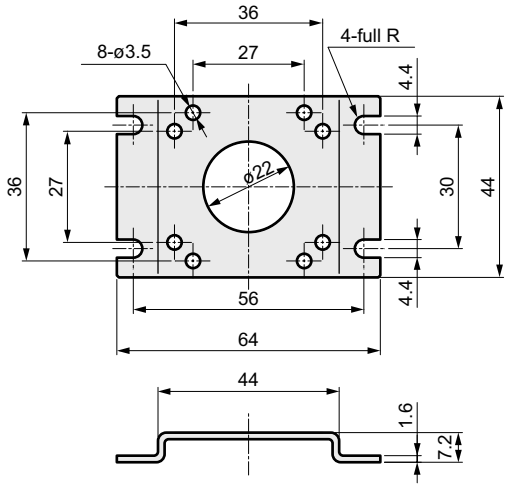
No.	Parts name	Material
1	Cover	PBT resin
2	D sub-connector	—
3	Housing	ABS resin
4	Controller circuit board	—
5	3 way valve	—
6	Valve base	Polyphenylene sulfide resin
7	Pilot chamber	Polyphenylene sulfide resin
8	Body	Aluminum alloy die-casting
9	Pressure sensor	—
10	Diaphragm	Special nitrile rubber
11	Relief seat	Aluminum alloy
12	Steel ball (exhaust valve)	Stainless steel
13	Valve	Special nitrile rubber, stainless steel
14	Bottom rubber	Silicon rubber
15	Bottom plug	Brass, electroless nickeling
16	O ring	Fluoro rubber

Dimensions

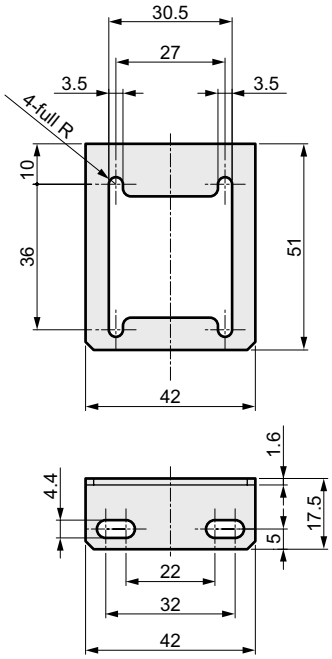


Optional dimensions

● B type bracket (-B1): Floor installation type



● L type bracket (-L1): Wall installation type



MEMO

Silencer small port size type, resin body type

SL•SLW Series

● Port size: M5, R1/8 to R1/2

Catalog No. CB-024SA

Features

- Large silencing effect
- Flame resistant resin is used for main body (SLW Series)

How to order

SL - M5
Ⓐ

Symbol	Descriptions
Ⓐ Port size	
M5	M5 × 0.8

Note: Sold in sets of two pieces in a bag.

SLW - 6G
Ⓐ

Symbol	Descriptions
Ⓐ Thread size	
6G	G1/8
8G	G1/4
10G	G3/8
15G	G1/2

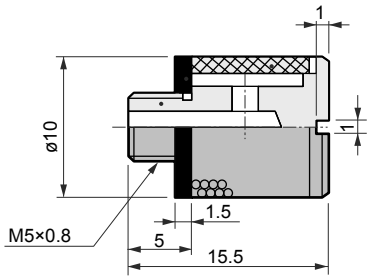
Specifications

Descriptions	SL-M5	SLW-6G	SLW-8G	SLW-10G	SLW-15G
Working fluid	Compressed air				
Max. working pressure MPa	1.0				
Min. 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	G1/8	G1/4	G3/8	G1/2
Weight 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 more	30 and more			
Flow rate Note 1 ℓ/min (ANR)	300	650	1300	2000	4850
Effective area mm^2	5	10	20	30	75

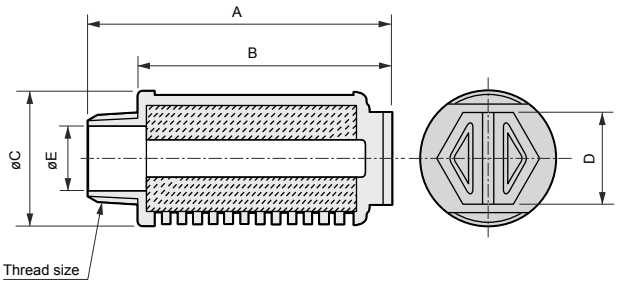
Note 1: Flow rate is the atmospheric pressure conversion at 0.5 MPa.
Note 2: Freezing could occur by adiabatic expansion depending on air quality (dew point).

Dimensions

● SL-M5



● SLW-6G•8G•10G•15G



Model No.	A	B	C	D	E	Thread size
SLW-6G	34	28	16.5	10	7	R1/8
SLW-8G	44.5	36	20	13	8.5	R1/4
SLW-10G	58.5	48.5	25.5	17	12	R3/8
SLW-15G	71.4	58.4	28	19	15	R1/2

Simple Choice

General purpose valves

☐ 2 port pilot operated solenoid valve EXA..... 256

☐ Compact pilot operated solenoid valve for water FWD..... 258

☐ 2 port direct acting solenoid valve AB31•AB41..... 260

☐ 3 port direct acting solenoid valve AG31•AG41..... 264

☐ 2 port pilot kick solenoid valve (diaphragm drive) ADK11..... 268

☐ 2 port pilot kick solenoid valve (piston drive) APK11..... 270

☐ Integrated water unit WXU..... 273

2 port pilot operated solenoid valve for compressed air

EXA Series

● NC (normally closed) ● Port size: Push-in fitting ø6, ø8

Catalog No. CC-1007A

Features

- Large flow rate, low power consumption
- Compact, light weight
- Easy piping

How to order

EXA - C6 - 0 2C ( ) - 3

Model No. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Symbol	Descriptions
Ⓐ Applicable tube O.D.	
C6	ø6
C8	ø8
Ⓑ Sealant material	
0	H-NBR
Ⓒ Coil option	
2C	Standard/lead wire (without indicator light and surge suppressor)
2HS	DIN terminal box (Pg7), with indicator light (inside terminal box) and surge suppressor
Ⓓ Option	
Blank	–
B	With mounting plate
Ⓔ Voltage	
3	24 VDC

Specifications

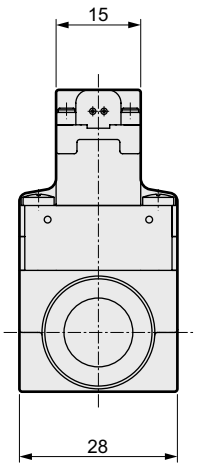
Descriptions	EXA-C6	EXA-C8
Working fluid	Compressed air	
Operating pressure differential MPa	0.01 to 0.7	
Max. working pressure MPa	0.7	
Proof pressure (water pressure) MPa	1.05	
Fluid temperature °C	0 to 55 (no freezing)	
Ambient temperature °C	–5 to 55	
Atmosphere	Avoid corrosive gas, explosive gas and water	
Valve structure	Pilot operated diaphragm type	
Internal leakage cm^3/min	2 or less	
External leakage cm^3/min	2 or less	
Mounting orientation	Free	
Port size	Push-in fitting ø6	Push-in fitting ø8
C [$dm^3/(s•bar)$]	1.6	3.0
b	0.45	0.33
Weight g	56	57
Electrical specifications		
Rated voltage	24 VDC Note 1	
Power consumption W DC	0.6	
Thermal class	B	
Degree of protection (IEC: 529)	Lead wire type: IPX0	

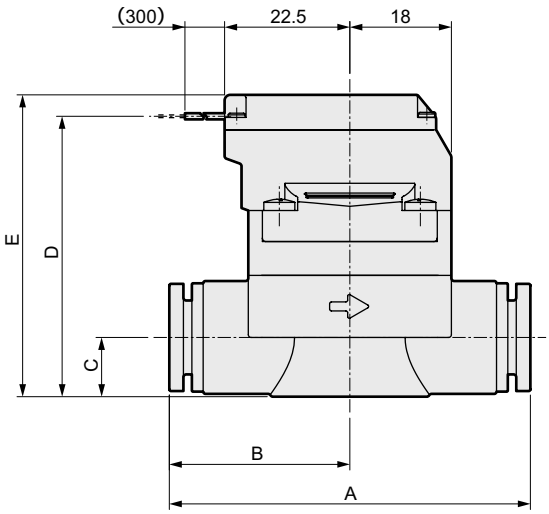
Note1: Voltage fluctuation range is ±10%.

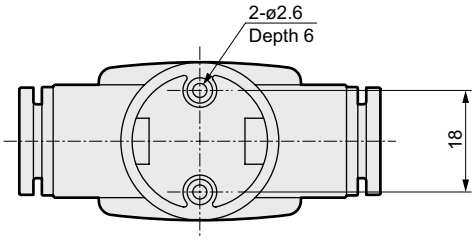
Dimensions

● Lead wire type

EXA-*-*2C



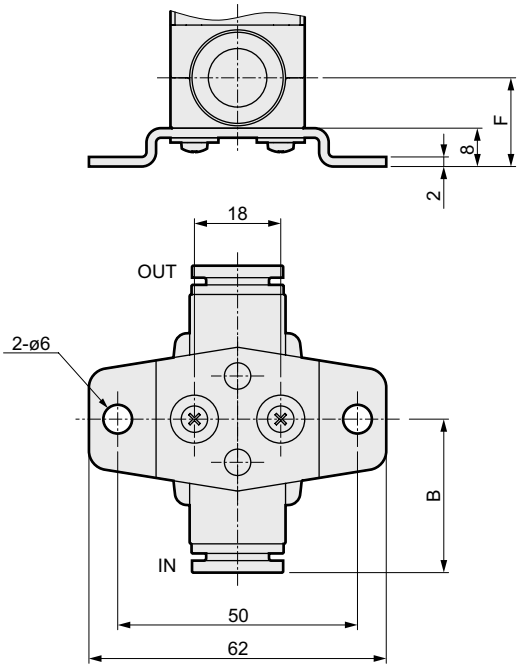




Model no.	A	B	C	D	E
EXA-C6	52	28	8	45	48.5
EXA-C8	53	28.5	8	45	48.5

● With mounting plate

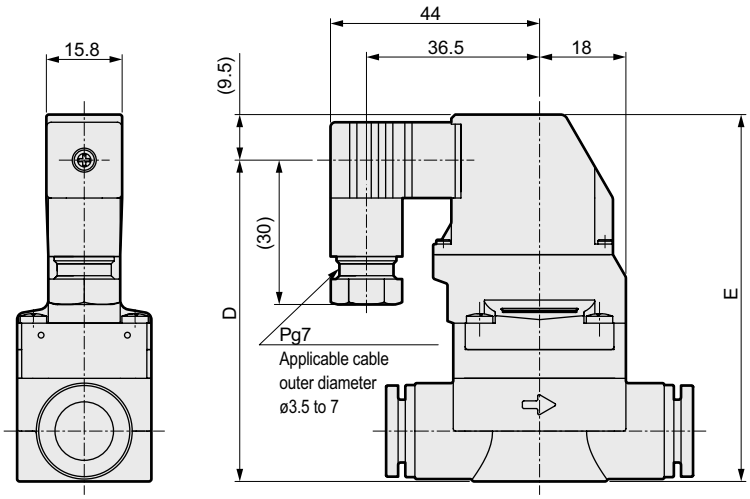
EXA-*-**B



Model no.	B	F
EXA-C6	28	16
EXA-C8	28.5	16

● DIN terminal box (Pg7)

EXA-*-*2HS



Model no.	D	E
EXA-C6	62	71.5
EXA-C8	62	71.5

Compact pilot operated solenoid valve for water

FWD Series

● NC (normally opened) type ● Port size: G3/8 to G1/2

RoHS CAD CE

Catalog No.CC-1057A

Features

- Low power consumption is realized
- Compact and light in weight
- Large flow rate

How to order

FWD11 - 15 G - 0 2C - AC100V

Model No. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Symbol	Descriptions	
Ⓐ Port size		
10	3/8	
15	1/2	
Ⓑ Thread type		
G	G	
Ⓒ Body/sealant combination		
	Body	**Seal**
0	Brass, PPS	NBR
Ⓓ Coil option		
2C	Grommet lead wire	
2HS	D2N terminal box + small light (pg11) + surge suppressor	
Ⓔ Rated voltage		
AC100V	100 VAC 50/60 Hz, 110 VAC 60 Hz	
AC200V	200 VAC 50/60 Hz, 220 VAC 60 Hz	
DC24V	24 VDC	

Specifications

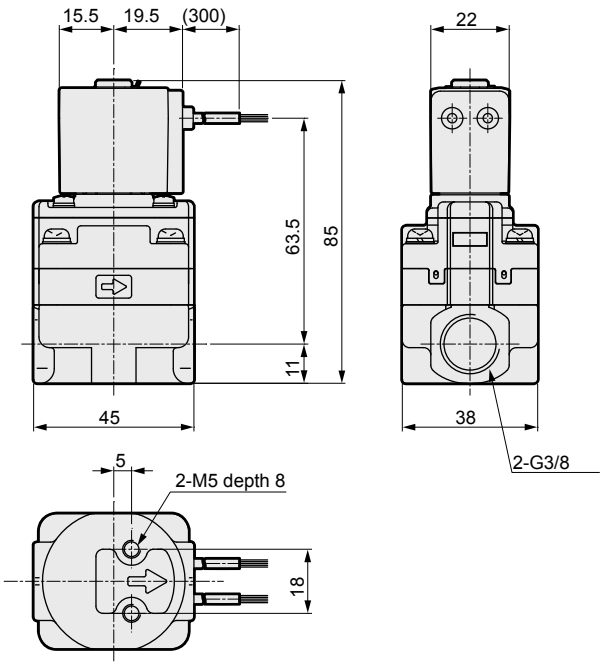
Descriptions	FWD11-10G	FWD11-15G
Working fluid	Water (other than sewage, agricultural water, liquid manure, antifreeze)	
Working pressure differential MPa	0.02 to 0.7	
Max. working pressure MPa	0.7	
Resist pressure (water pressure) MPa	1.05	
Fluid temperature °C	5 to 60 (no freezing)	
Ambient temperature °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	
Port size	G3/8	G1/2
Orifice diameter mm	15 (Note 2)	
Cv value	4.2	6.0
Weight 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	
Current consumption W	AC (50/60 Hz): 2.7/2, DC: 4	

Note1: "Valve-seat leakage 0 cm^3/min" means that no water drip leaks for a minute.
Note 2: Orifice diameter refers to the diameter of the valve seat section.

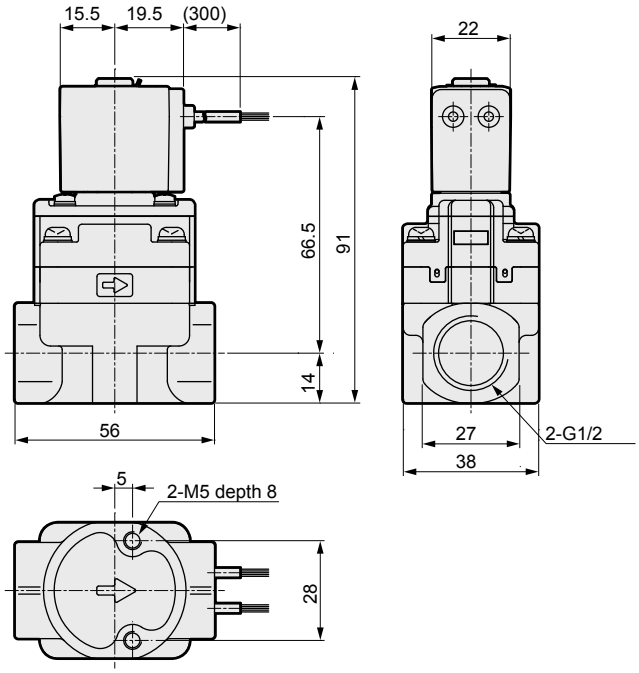
Dimensions

● Grommet lead wire type

FWD11-10G-*2C

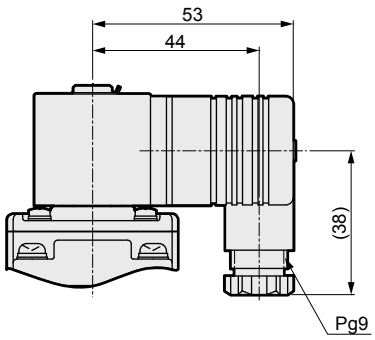


FWD11-15G-*2C



● DIN terminal box

FWD11-**-*2HS



2 port direct acting solenoid valve

AB31•41 Series

●NC (normally opened) type ●Port size: G1/4 to G3/8

RoHS CAD CE

Catalog No.CB-03-1SA

Features

- Controls various fluids
- Wide series variations

How to order

NC (normally closed) type

AB31 - 2 - 3 - 0 - 2H - AC100V
(A) (B) (C) (D) (E)

AB41

Model No.

Symbol	Descriptions	Body	Seal	Remarks	Model no. AB31	Model no. AB41
Ⓐ Port size						
2G	G1/4				●	
3G	G3/8					●
Ⓑ Orifice						
3	ø3				●	●
4	ø3.5				●	●
5	ø4					●
Ⓒ Body/sealant combination *1						
Blank	Standard	Brass	Nitrile rubber	Air, water, low vacuum, kerosene (up to 60°C)	●	●
Ⓓ Coil housing						
2H	DIN terminal box with small indicator light (Pg11)				●	●
Ⓔ Rated voltage*2, 3						
AC100V	100 VAC				●	●
AC200V	200 VAC				●	●
DC24V	24 VDC				●	●

Note on model No. selection

*1: Standard is blank, but enter 0 in Ⓒ.
*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
Working fluid	Air, low vacuum [1.33×10^{2}Pa (abs)], water, kerosene
Working pressure differential MPa	0 to 1.2 (Differs according to type chosen. Please refer to the max. working pressure differential in the individual specifications.)
Resist 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.

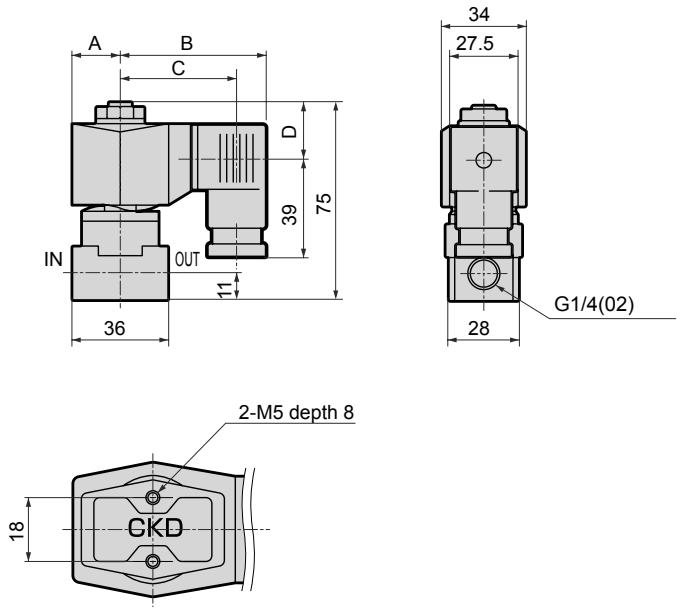
Individual specifications

Descriptions / Model No.	Port size	Orifice diameter (mm)	Flow characteristic C [dm^3/(s•bar)]	Flow characteristic b	Flow characteristic Value of Cv	Max. working pressure differential (MPa) Air AC	Air DC	Water•kerosene AC	Water•kerosene DC	Max. working pressure (MPa)	Rated voltage	Apparent power (VA) Holding 50Hz	Holding 60Hz	Starting 50Hz	Starting 60Hz	Current consumption (W) AC 50/60Hz	Current consumption (W) DC	Weight (kg)
AB31-02-3G	G1/4	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
AB31-02-4G		3.5	1.7	0.49	0.42	0.6	0.4	0.5	0.4									
AB41-03-3G	G3/8	3.0	1.1	0.52	0.31	1.5	0.9	1.3	0.9		200VAC 50/60Hz	18	15	29	24	6.7/5.7	10.4	0.45
AB41-03-4G		3.5	1.7	0.49	0.42	1.2	0.6	0.9	0.6									
AB41-03-5G		4.0	2.1	0.48	0.54	1.0	0.5	0.7	0.5		24 VDC							

*1: The port size order number is 02 for G1/4(8A) and 03 for G3/8(10A).
*2: Variation of rated voltage should be within ±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 ≒ 5.0×C.

● AB31 series DIN terminal box with small indicator light

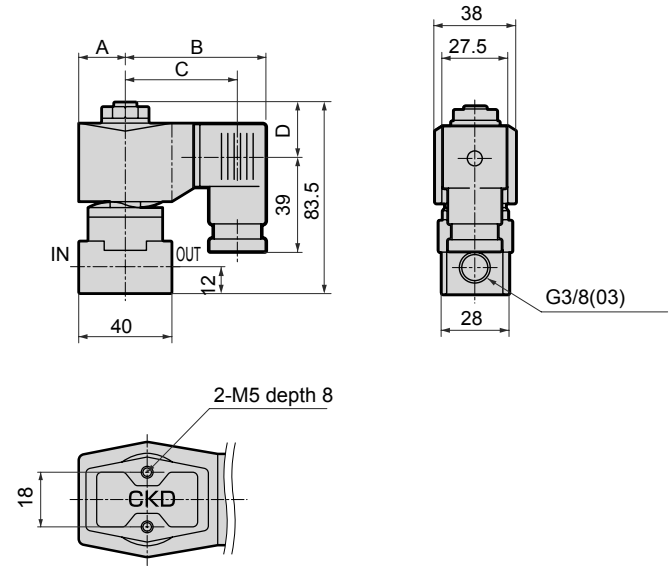
AB31-2G-$\frac{3}{4}$-02H



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

AB41-3G-$\frac{3}{5}$-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 ●Port size: G1/4 to G3/8

RoHS CAD CE

Catalog No.CB-03-1SA

Features

- Controls various fluids
- Wide series variations

How to order

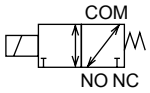
Universal type

AG31 - 2 - 2 - 0 - 2H - AC100V
(A) (B) (C) (D) (E)

AG41

Model No.

JIS symbol



Symbol	Descriptions	Model no. AG31	Model no. AG41
(A) Port size			
2G	G1/4	●	
3G	G3/8		●

(B) Orifice	AG31 TOP	AG31 BODY	AG41 TOP	AG41 BODY	AG31	AG41
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	AG31	AG41
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			
AC100V	100 VAC	●	●
AC200V	200 VAC	●	●
DC24V	24 VDC	●	●

Note on model No. selection

*1: Standard is blank, but enter 0 in Ⓒ.
*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
Working fluid	Air, low vacuum [1.33×10^{2}Pa (abs)], water, kerosene
Working pressure differential MPa	0 to 1 (Differs according to type chosen. Please refer to the max. working pressure differential in the individual specifications.)
Max. working pressure MPa	1
Resist 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.

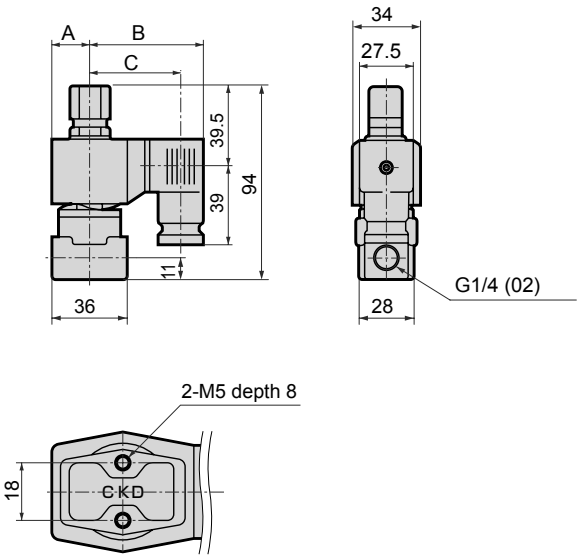
Individual specifications

Descriptions		Port size	Orifice diameter (mm)		Flow characteristic						Max. working pressure differential (MPa)				Rated voltage	Apparent power (VA)				Current consumption (W)		Weight (kg)
					C [dm^3/(s•bar)]		b		Value of Cv		Air		Water•kerosene			Holding		Starting		AC 50/60Hz	DC	
Model No.			TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY	AC	DC	AC	DC		50Hz	60Hz	50Hz	60Hz			
AG31	–02-1G	G1/4	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 200 VAC 50/60 Hz 24 VDC	14	11	20	16	6/4.2	8.1	0.36
	–02-2G		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	–03-1G	G3/8	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		22	17	35	27	8.3/6.2	10.4	0.48
	–03-2G		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 ±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 ≒ 5.0×C.

● AG31 series DIN terminal box with small indicator light

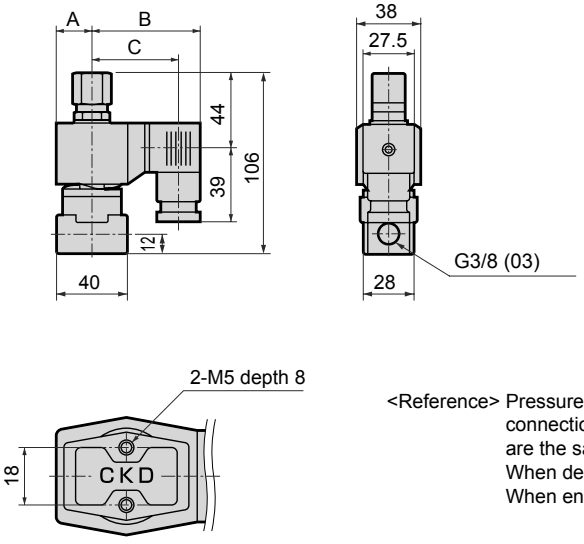
AG31-2G-1 to 2-02H



Voltage	A	B	C
AC	20	62	50.5
DC	21	63.5	52

● AG41 series DIN terminal box with small indicator light

AG41-3G-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

MEMO

2 port pilot kick solenoid valve (Diaphragm structure)

ADK11 Series (suitable for controlling water or air)

RoHS CAD CE

● NC (Normally closed) type ● Port size: G1/4 - G1

Catalog No.CB-03-1S

Features

- Capable to control various fluids
- Variety in series and numerous variations

How to order

ADK11 - 25 G - 0 2H - AC100V

Model No. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Symbol	Descriptions				
Ⓐ Port size					
8	1/4				
10	3/8				
15	1/2				
20	3/4				
25	1				
Ⓑ Thread type					
G	G				
Ⓒ Body/sealant combination					
		Body	Valve seal	O-ring	Remarks
0	Standard	Bronze	Nitrile rubber	Nitrile	Water or air (up to 60°C)
Ⓓ Coil housing					
2H	Option	DIN terminal box with small lamps (Pg. 11)			
Ⓔ Rated voltage *1, *2					
AC100V	100 V AC				
AC200V	200 V AC				
DC24V	24 V DC				

Note on model No. selection

*1. 100 V AC coil can be used with either 100 V AC 50/60 Hz or 110 V AC 60 Hz. 200 V AC coil can be used with either 200 V AC 50/60 Hz or 220 V AC 60 Hz.
*2. For voltages other than above, contact us.

Common specification

Item	Standard specification
Working fluid	Air/Low vacuum (1.33 × 10^3 Pa (abs)), water/paraffin/oil (50 mm^2/s or less)
Operating pressure difference range MPa	0-1.0 (Varies depending on the type. For the max. pressure difference, refer to the Individual specifications.)
Max. working pressure MPa	2
Resist pressure (water pressure) MPa	4
Fluid temperature (Note 1) °C	–10 to 60
Ambient temperature °C	–10 to 60
Thermal class	B
Atmosphere	No corrosive or explosive gases permitted.
Valve construction	Pilot-kick type poppet valve (diaphragm driven)
Valve seat leakage (Note 2) cm^3/min (ANR)	1 or less (air)
Mounting position	No restriction
Body and seal materials	Bronze and nitrile rubber

Note 1. No freezing.
Note 2. The value is for the air pressure of 0.02-1.0 MPa. When used at 0.02 MPa or less, the seal may become unstable. Contact CKD for details.

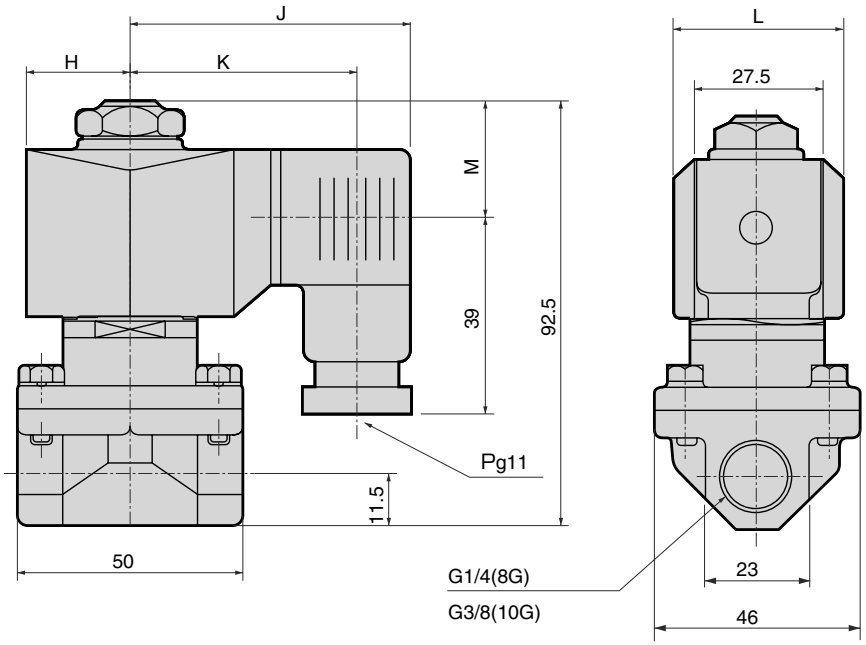
Individual specifications

Item / Model number	Port size	Orifice diameter (mm)	Flow characteristic C [dm^3/(s•bar)]	b	Cv value	S (mm^2)	Min. working pressure (MPa)	Max. working pressure differential (MPa) Air AC	Air DC	Water, paraffin oil AC	Water, paraffin oil DC	Oil (50 mm^2/s) AC	Oil (50 mm^2/s) DC	Rated voltage	Apparent power (VA) Stand-by 50 Hz	Stand-by 60 Hz	Starting 50 Hz	Starting 60 Hz	Current consumption (W) AC 50/60 Hz	Current consumption (W) DC	Weight (kg)
ADK11-8G	G1/4	12	9.2	036	2.0	-	0	1	0.7	1	0.7	0.7	0.6	100 V AC 50/60 Hz 200 V AC 50/60 Hz 24 V DC	24	19	61	54	10/8	10.4	0.65
ADK11-10G	G3/8	12	11	0.46	2.4	-															0.65
ADK11-15G	G1/2	16	20	0.31	4.5	-			0.6		0.6	0.6	0.5		25	21	84	75	10/8.5	14	0.9
ADK11-20G	G3/4	23	-	-	8.6	162															1.0
ADK11-25G	G1	28	-	-	12.0	231															1.4

*1. The fluctuation of voltage should be within ±10% of the rated voltage.
*2. For those cases when the pressure is 0.02 MPa or lower, consider using AB71 series.
*3. When this is used at low vacuum, the Out port side should be evacuated.
*4. Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.

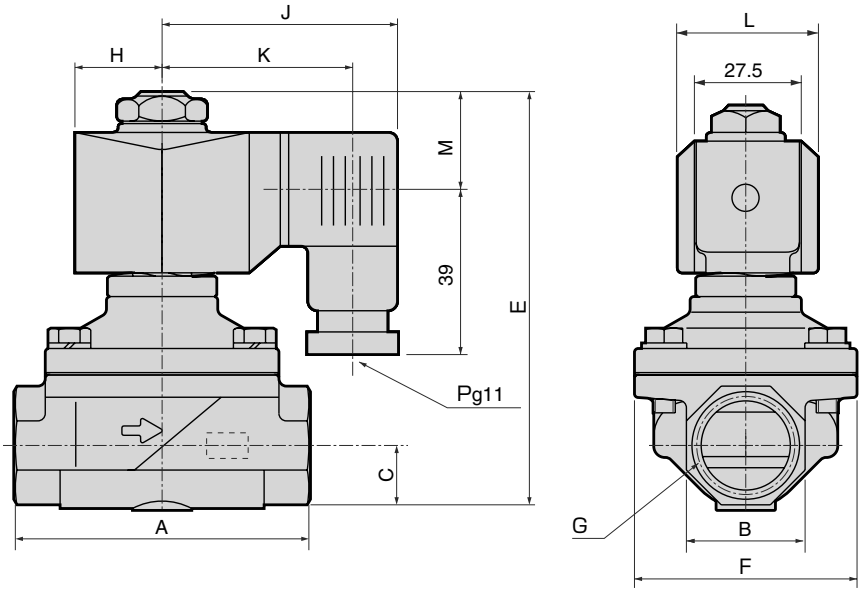
● ADK11 Series DIN terminal box with small lamp

ADK11-8G•10G-02H



Model No.	H	J	K	L	M
ADK11-8G/10G-AC	23.5	65.5	54	38	22
ADK11-8G/10G-DC	23.5	66	54.5	38	22

ADK11-15G/20G/25G-02H



Model No.	A	B	C	E	F	G	H	J	K	L	M
ADK11-15G-AC	71	27	14.5	102	50	G1/2	23.5	65.5	54	38	22
ADK11-15G-DC	71	27	14.5	102	50	G1/2	28	72	60.5	46	22
ADK11-20G-AC	80	32	17.5	108.5	60	G3/4	23.5	65.5	54	38	22
ADK11-20G-DC	80	32	17.5	108.5	60	G3/4	28	72	60.5	46	22
ADK11-25G-AC	90	41	21.5	118	71	G1	23.5	65.5	54	38	22
ADK11-25G-DC	90	41	21.5	118	71	G1	28	72	60.5	46	22

2 port pilot kick solenoid valve (piston drive)

APK11 Series (ideal for controlling steam and warm water)

● NC (normally opened) type ● Port size: G1/4 to G1

RoHS CAD CE

Catalog No.CB-03-1SA

Features

- Controls various fluids
- Wide series variations

How to order

APK11 - 8 (A) G (B) - C (C) 4A (D) - AC100V (E)

Model No.

Symbol	Descriptions
Ⓐ Port size	
8	G1/4
10	G3/8
15	G1/2
20	G3/4
25	G1
Ⓑ Thread type	
G	G

Ⓒ Body/sealant combination

	Body	Valve seal	O ring	Remarks
C	Bronze	PTFE	Fluoro rubber	Steam (up to 180°C)

Ⓓ Coil housing	
4A	Open frame type (thermal class H), lead wire

Ⓔ Rated voltage*1, 2	
AC100V	100 VAC
AC200V	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
Working fluid	Steam, water, warm water, oil (20 mm^2/s or less)
Working pressure differential MPa	0 to 1.0 (Differs according to type chosen. Please refer to the max. working pressure differential in the individual specifications.)
Max. working pressure MPa	1
Resist 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.

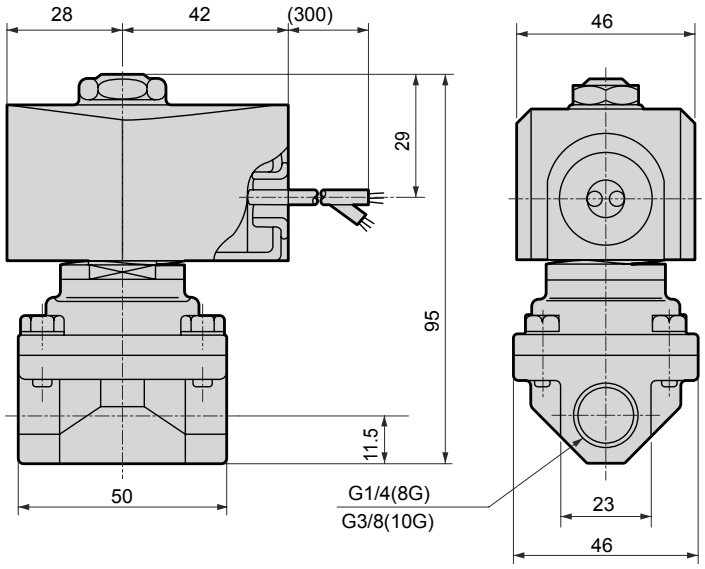
Individual specifications

Model No. / Descriptions	Port size	Orifice diameter (mm)	Flow characteristic C[$dm^3/(s\cdot bar)$]	b	Cv value	S(m^3)	Min. operating pressure differential (MPa)	Max. working pressure differential (MPa) Steam	Max. working pressure differential (MPa) AC	Rated voltage	Apparent power (VA) Holding 50Hz	Apparent power (VA) Holding 60Hz	Apparent power (VA) Starting 50Hz	Apparent power (VA) Starting 60Hz	Current consumption (W) AC 50/60Hz	Weight (kg)
APK11-8G	G1/4	12	9.4	0.41	2.2	—	0	1.0		100 VAC 50/60 Hz 200 VAC 50/60 Hz	24	19	61	54	10/8	0.7
APK11-10G	G3/8	12	15	0.37	2.7	—										0.7
APK11-15G	G1/2	16	20	0.31	4.5	—					32	26	123	106	13/11	1.0
APK11-20G	G3/4	23	—	—	8.6	162										1.3
APK11-25G	G1	28	—	—	12	231										1.7

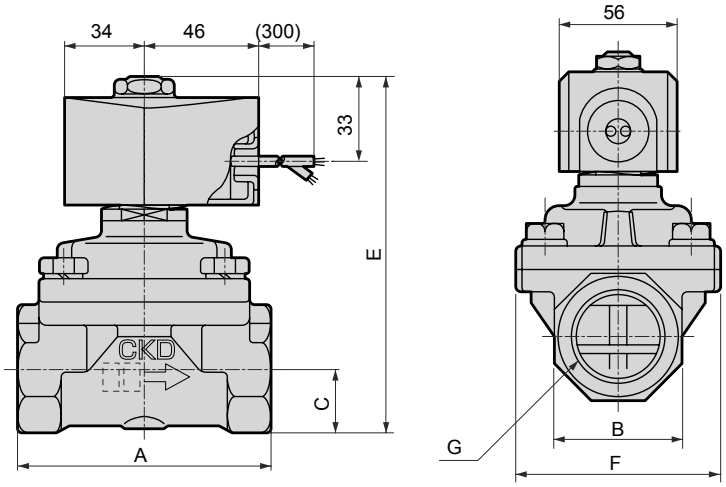
*1: Variation of rated voltage should be within ±10%.
*2: Effective area S and sonic conductance C are converted as S ≒ 5.0×C.

● APK11 series open frame lead wire type

APK11-8G•10G-C4A



APK11-15G•20G•25G-C4A



Model No.	A	B	C	E	F	G
APK11-15G	71	27	14.5	119.5	50	G1/2
APK11-20G	80	32	17.5	126.5	60	G3/4
APK11-25G	90	41	21.5	136.5	71	G1

CKD

Integrated Unit for Water Control WXU Series

WATER INTEGRATED UNIT

New era of water control

A rich variation of water control equipment
has all-in-one space-saving

Footprint by pipingless

80%

Compact

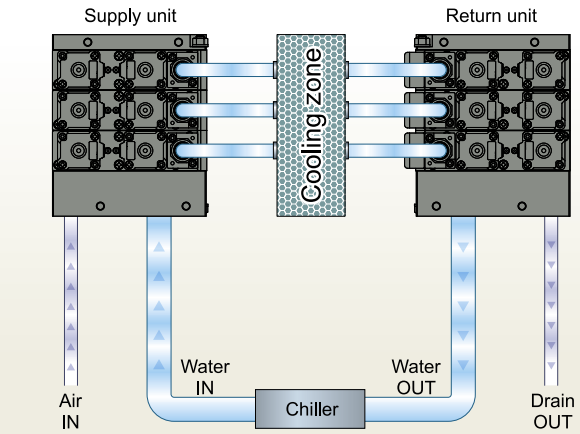
- Reduction of individual piping
- Reducing air leakage
- Reducing design arrangement man hours

WXU Integrated Water Unit **Series**

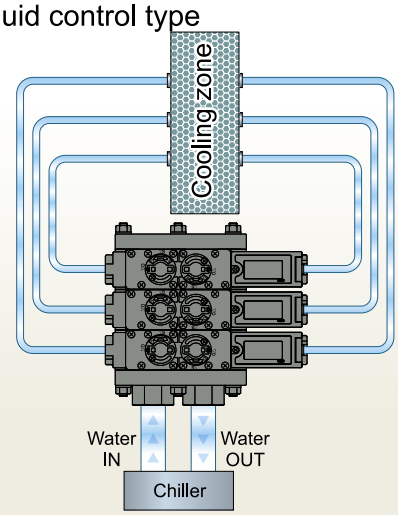
General purpose valves

System image

2 Fluid control type



1 Fluid control type

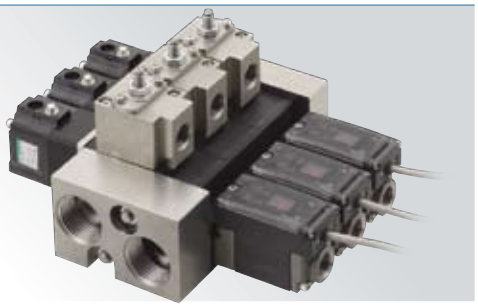


WXU-H — 1 Fluid specifications

New

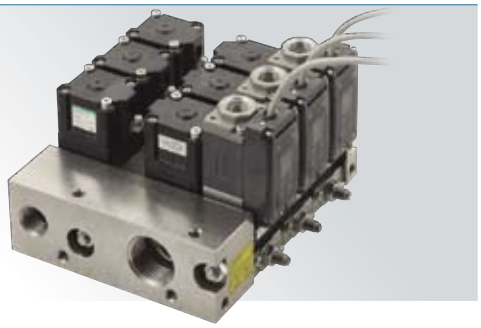
- Cooling water supply & return is available with one unit.
- A Valve can be equipped to both the return side and the supply side
- By adopting a cock type valve, it can be opened and closed with one action and visual confirmation is easy
- By making the in-block and valve housing lightweight it is easy to handle.

WXU-J — 1 Fluid specifications



- Cooling water supply & return is available with one unit.
- In the supply side, a needle and valve can be mounted, and individual control in each system (on/off) is possible.
- Easy adjustment flow rate with needle.

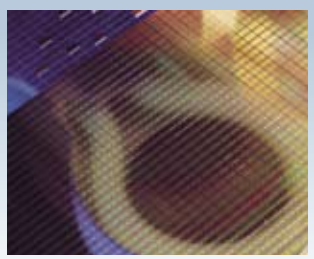
WXU-P — 2 Fluid Specifications



- The supply and return units are used, and 2 kinds of fluids (water, air, etc.) can be made to flow.
- The sputtering equipment, etc. is for circuits with cooling water and air.
- Individual control in each system (passing water/air purge) is possible.

Applications

Vacuum sputtering



WXU-P

Film-formation

WXU-J/H

Casting

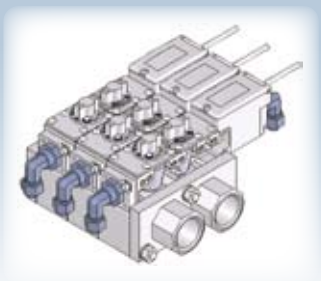
WXU-P/J/H

Molding

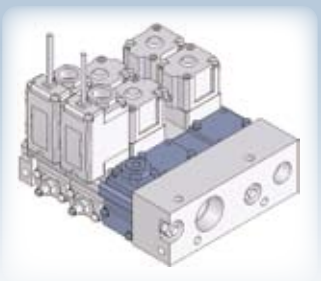
WXU-J/H

Custom order example

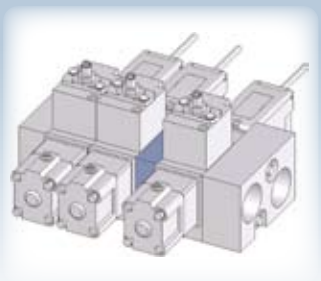
Customized unit available to make depending on usability.



With fitting



Masking



Center block

- Separated indicator is available. (Sensor function)
- Analog + SW output (Sensor)
- Divergence
- No cylinder valve

● WXU-H Type manifold specification

● Contact: ● Quantity: sets ● Request date:

Slip No.:	Order No.:

Issue:

Your company name:

Contact:

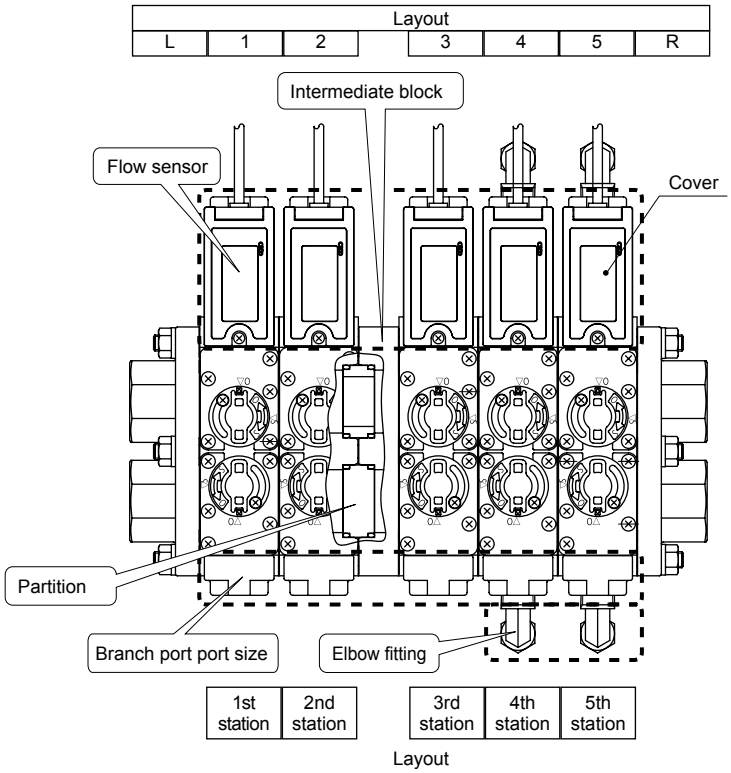
P.O. No.:

* The layout from the left towards the front of the flow sensor cover becomes 1, 2. (See image below)

Product name	Specifications		Model No.	Layout L	1	2	3	4	5	6	7	8	9	10	R	Quantity
In-block	G1		—													
End-block	—		—													
Flow rate sensor <Specialized sensor for water integrated unit> (Return-side only)	From the flow sensor below, please select and fill out the table on the right.		Flow rate Range / Type / Port size / Output													
			WFK30 — —													
	Flow rate range: 04/12/32		**WFK30** — —													
	Type: S/M		**WFK30** — —													
	Port size: 10/15		**WFK30** — —													
	Output: Refer to Note 1 (table below).		**WFK30** — —													
	Only in the case of the port	G3/8	—													
		G1/2	—													
Branch port port size (Supply-side OUT port)	G3/8		—													
	G1/2		—													
Partition plug	With an intermediate block (Width: 20 mm)	Supply-side	—													
		Return-side	—													
Elbow fitting (stainless steel) (Supply and Return connected to both sides)	Tube, thread size (inch)	Applicable tube O.D. × I.D.	By Nitta Corporation Quick seal fitting													
	3/8	9.53×6.99	L1N3/8-PT3/8-S													
	1/2	12.70×9.56	L1N1/2-PT1/2-S													
Remarks																

Note 1. Water flow sensor output variation

Type: S (analog output)	
A0	0-5 V DC
A0T	0-5 V DC with water temperature measuring function (10 A only)
A1	4-20 mA DC
A2	1-5 V DC
A2T	1-5 V DC with water temperature measuring function (10 A only)
A3	0-10 V DC
A3T	0-10 V DC with water temperature measuring function (10 A only)
Type: M (switch output)	
N0	NPN transistor 2 outputs (Contact a)
N1	NPN transistor 2 outputs (Contact b)
P0	PNP transistor 2 outputs (Contact a)
P1	PNP transistor 2 outputs (Contact b)



● WXU-J Type manifold specification

● Contact: ● Quantity: sets ● Request date:

Slip No.:	Order No.:

Issu:

Your company name:

Contact:

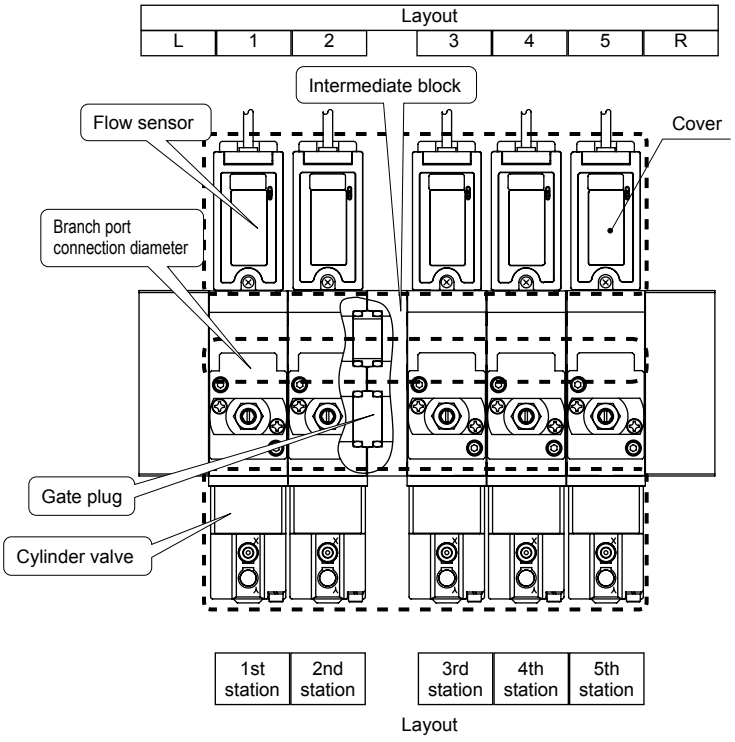
P.O. No.:

* The layout from the left towards the front of the flow sensor cover becomes 1, 2. (See image below)

Product name	Specifications		Model No.							Layout L	1	2	3	4	5	6	7	8	9	10	R	Quantity
In-block	G3/4		—																			
	G1		—																			
End-block	—		—																			
Cylinder valve <Specialized sensor for water integrated unit>	NC		**GNAB-X2225-1**																			
	NO		**GNAB-X2226-1**																			
	Masking plate		—																			
Flow rate sensor <Specialized sensor for water integrated unit> (Return-side only)	From the flow sensor below, please select and fill out the table on the right.			Flow rate Range	Type		Connection Diameter		Output													
			WFK30			—		—														
	Flow rate range: 04/12/32		**WFK30**			—		—														
	Type: S/M		**WFK30**			—		—														
	Port size: 10/15		**WFK30**			—		—														
	Output: Refer to Note 1 (table below).		**WFK30**			—		—														
	Port only For	G3/8	—																			
		G1/2	—																			
Branch port port size (Supply-side OUT port)	G3/8		—																			
	G1/2		—																			
Partition plug	With an intermediate block (Width: 20 mm)	Supply-side	—																			
		Return-side	—																			
Remarks																						

Note 1. Output variation of the water flow rate sensor

Type: S (analog output)	
A0	0-5 V DC
A0T	0-5 V DC with water temperature measuring function (10 A only)
A1	4-20 mA DC
A2	1-5 V DC
A2T	1-5 V DC with water temperature measuring function (10 A only)
A3	0-10 V DC
A3T	0-10 V DC with water temperature measuring function (10 A only)
Type: M (switch output)	
N0	NPN transistor 2 outputs (Contact a)
N1	NPN transistor 2 outputs (Contact b)
P0	PNP transistor 2 outputs (Contact a)
P1	PNP transistor 2 outputs (Contact b)



● WXU-P Type manifold specification

● Contact: ● Quantity: sets ● Request date:

Slip No.:	Order No.:

Issu:

Your company name:

Contact:

P.O. No.:

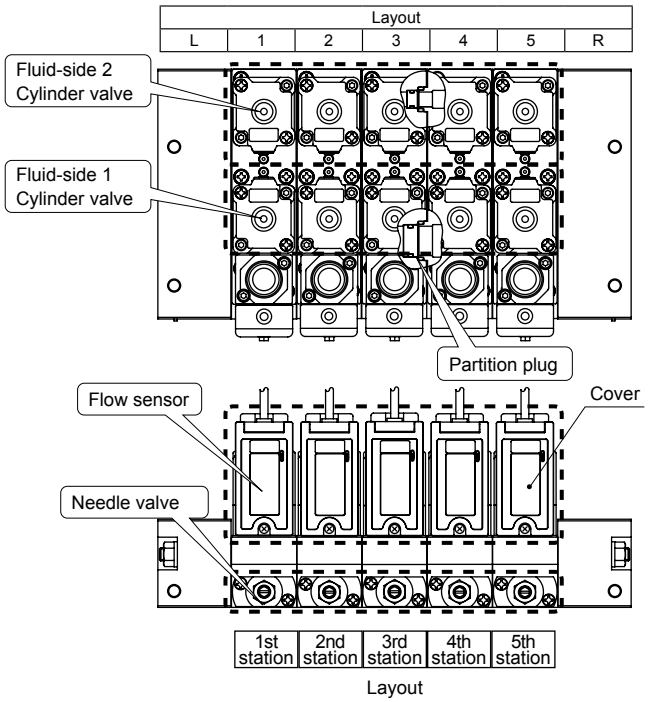
Supply-side and Return-side

* The layout from the left towards the front of the flow sensor cover becomes 1, 2. (See image below)

Product name	Specifications	Model No.	Layout L	1	2	3	4	5	6	R	Quantity
In-block	G1, G1/2	—									
End-block	—	—									
Cylinder valve for fluid side 2 <Specialized sensor for water integrated unit>	NC	**GNAB-X2144-5**									
	NO	**GNAB-X2190-5**									
	Masking plate	—									
Cylinder valve for fluid side 1 <Specialized sensor for water integrated unit>	NC (standard rate)	**GNAB-X2144-5**									
	NO (standard rate)	**GNAB-X2190-5**									
	NC (large flow rate)	**GNAB-X2145-5**									
	NO (large flow rate)	**GNAB-X2224-5**									
	Masking plate	—									
Branch port port size (Supply-side only)	G3/8	—									
	G1/2	—									
Flow rate sensor <Specialized sensor for water integrated unit> (Return-side only)	From the flow sensor below, please select and fill out the table on the right.	Flow rate Range / Type / Connection Diameter / Output									
		WFK30 — —									
	Flow rate range: 04/12/32 Type: S/M Port size: 10/15 Output: Refer to Note 1 (table below).	**WFK30** — —									
	Port only For G3/8	—									
	Port only For G1/2	—									
Needle valve	For Standard rate / For Large flow rate	Depends on the model number of the cylinder valve for Fluid-side 1. —									
Partition plug	Fluid-side 1	—									
	Fluid-side 2	—									
Remarks											

Note 1. Output variation of the water flow rate sensor

Type: S (analog output)	
A0	0-5 V DC
A0T	0-5 V DC with water temperature measuring function (10 A only)
A1	4-20 mA DC
A2	1-5 V DC
A2T	1-5 V DC with water temperature measuring function (10 A only)
A3	0-10 V DC
A3T	0-10 V DC with water temperature measuring function (10 A only)
Type: M (switch output)	
N0	NPN transistor 2 outputs (Contact a)
N1	NPN transistor 2 outputs (Contact b)
P0	PNP transistor 2 outputs (Contact a)
P1	PNP transistor 2 outputs (Contact b)

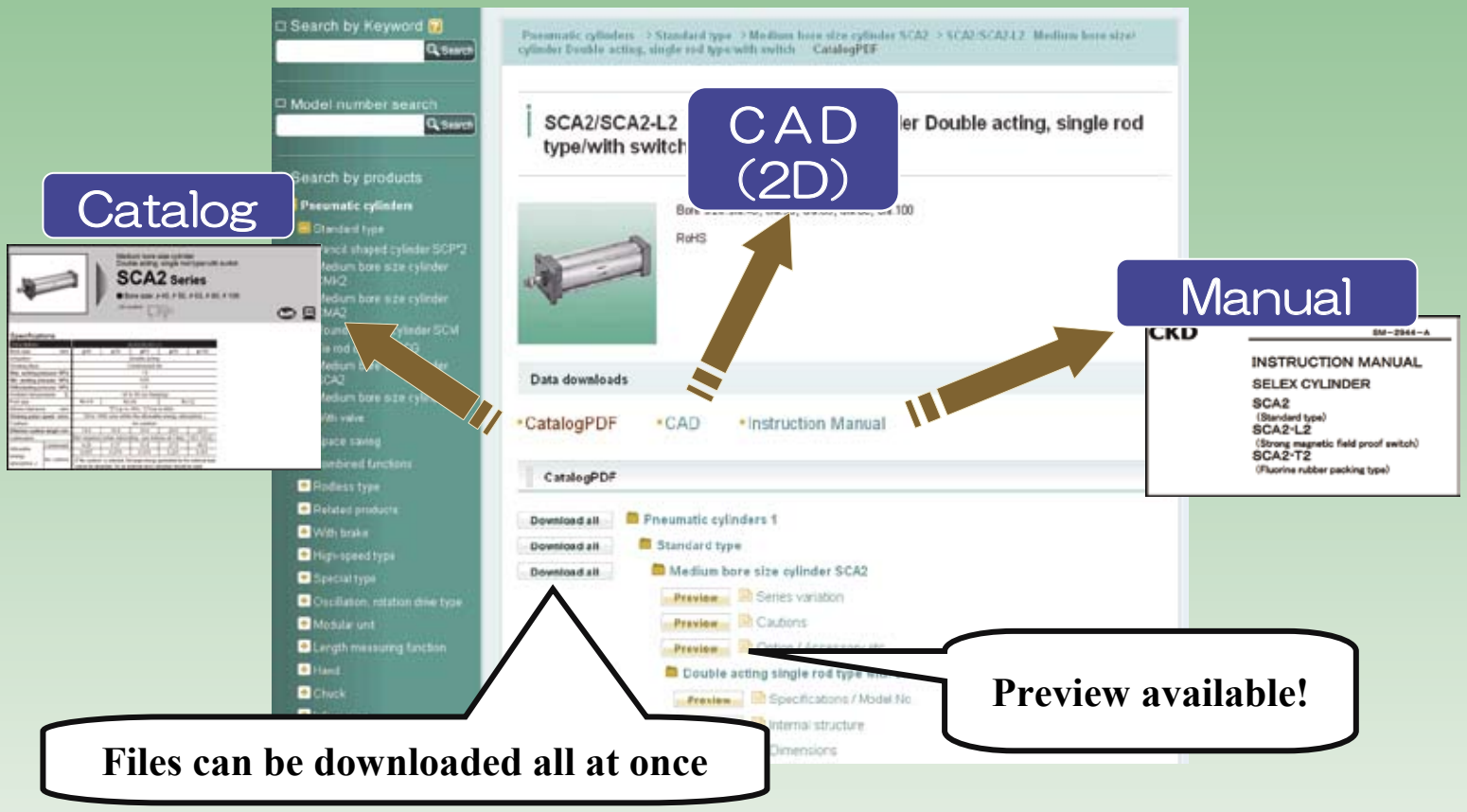


Easy access to products you want
Catalog view system!

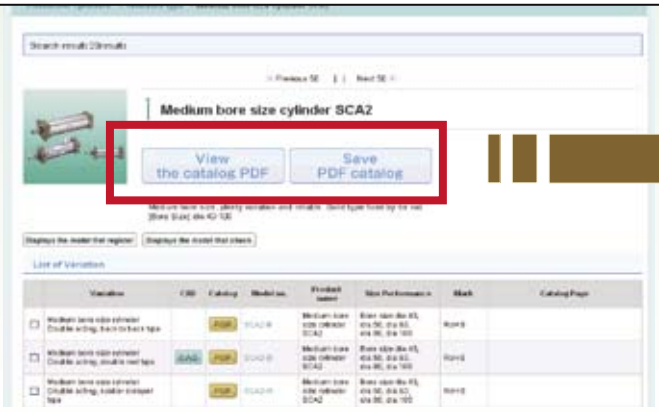
CKD

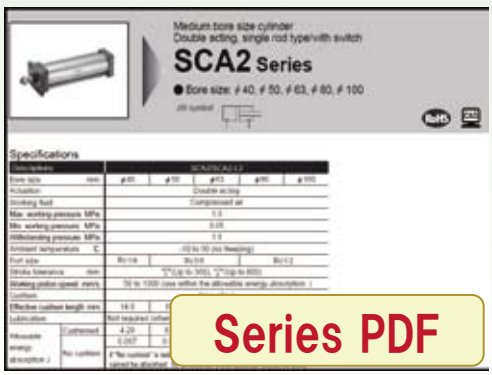
CKD CATALOG EXPRESS

● Catalog, manual, CAD accessible in one go



Viewing PDF of whole series available!



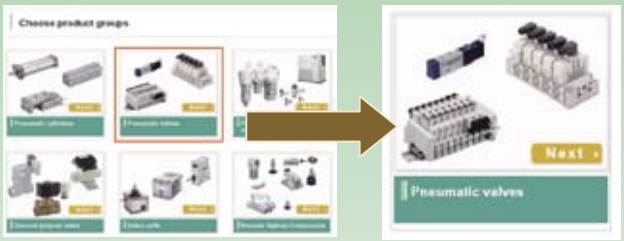


※Search by product groups.

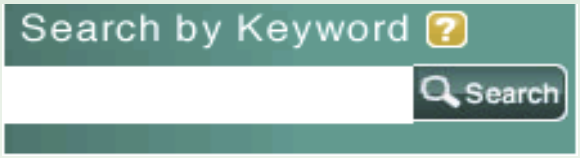
●4 useful search functions!

① Search by model number ⇒"Model number search"

② Search by products ⇒"Choose product groups"



③ Heat resistance? low speed? Search by use ⇒"Search by Keyword"



④ Search by capital letters ⇒"Search by alphabet"

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●Specifications are subject to change without notice.
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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.)

❶Use 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
❷Use 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.

❶Inspect and service the machine and devices after confirming safety of the entire system related to this product.
❷Note that there may be hot or charged sections even after operation is stopped.
❸When 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.
❹When 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:** (DANGER) When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.

⚠ **WARNING:** (WARNING) When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.

⚠ **CAUTION:** (CAUTION) When a dangerous situation may occur if handling is mistaken leading to minor injuries 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)

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.

EUROPE

Sales Branch

Time zone difference from Japan –8
※The local time is moved forward an hour with daylight-saving time.

Country code for international calls 31

CKD Corporation Europe Branch

❶CKD Corporation Europe Branch

De Fruittuinen 28 Hoofddorp The Netherlands
Phone:(0)23-5541490 Fax:(0)23-5541491
http://www.ckd-europe.com/

【HQ:Amsterdam】

【UK Office】

【Germany Office】

【Czech Office】

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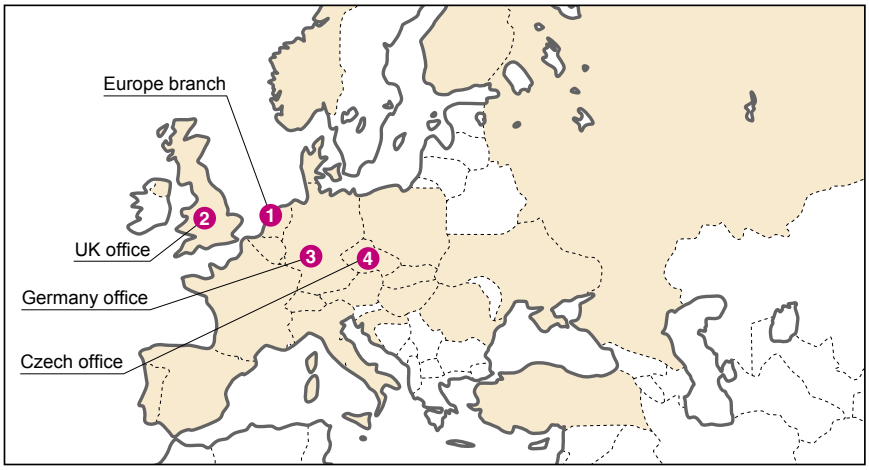
❹	CZECH OFFICE	260 Havlickova, Kolin 4 280 02, Czech Republic	+420-(0)321-622-034	+420-(0)321-622-055

Japanese support is available.

●Europe branch territory and available countries



- Netherland • UK
- Germany • Czech
- Spain • France
- Belgium • Italy
- Austria • Portugal
- Switzerland • Denmark
- Finland • Norway
- Russia • Ukraine
- Luxembourg • Croatia
- Slovakia • Hungary
- Romania • Poland
- Turkey • South Africa

24 countries and 30 distributors

- Besides above counties, neighboring distributor will take care. Contact ❶ Europe branch for details.

Sales promotion activity

●Exhibition and private show

To recognize CKD corporation and products more customers, exhibition and private show is held.

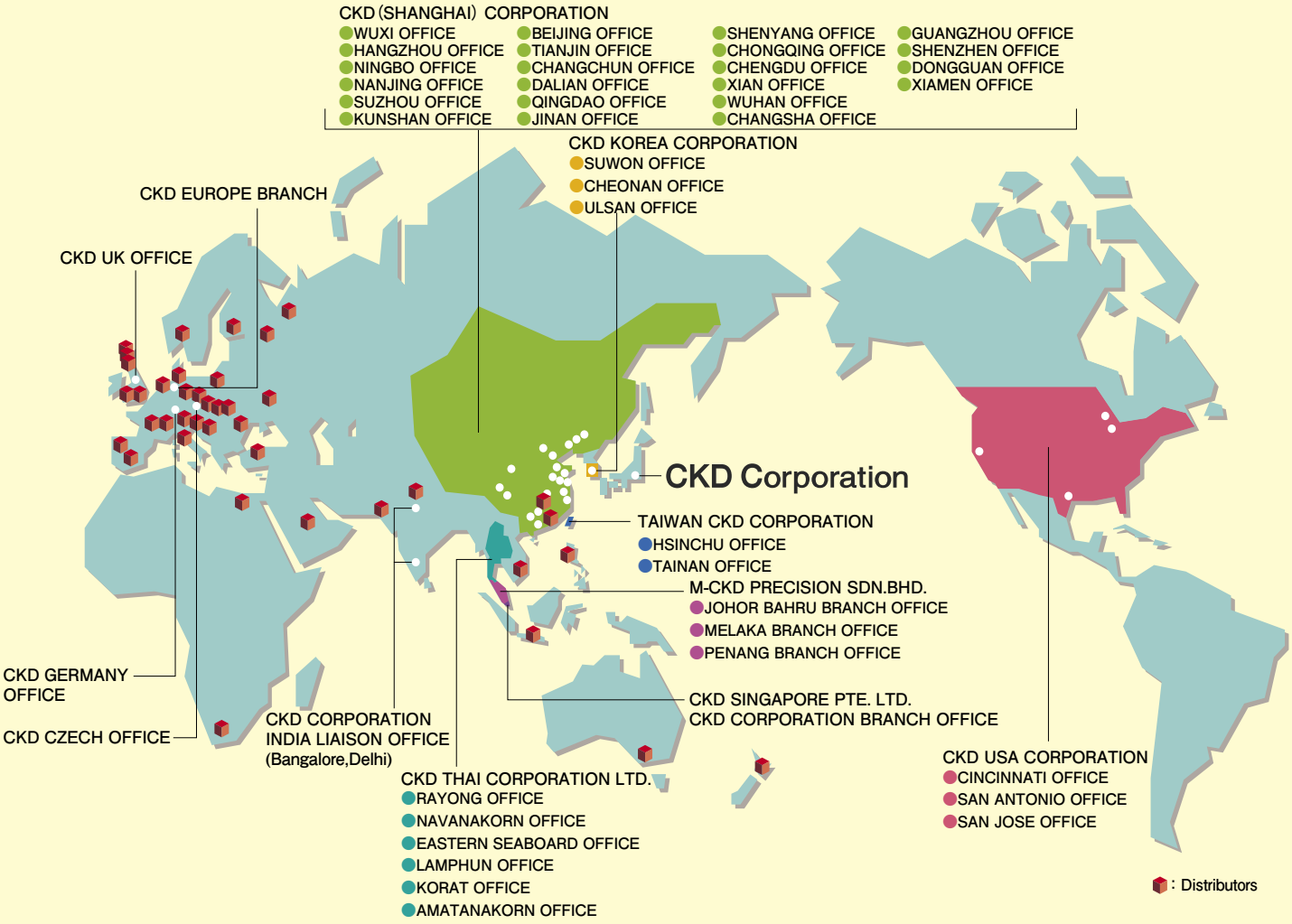
●Seminar for customer

●Training

How to use products and maintenance method can be learned by using demonstration kit.

Useful information is delivered directly and periodically to our customers.

WORLD-NETWORK



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