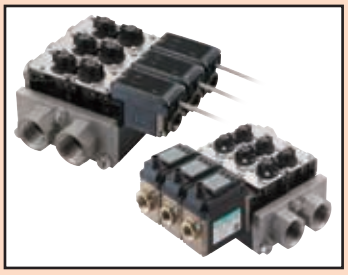


Integrated unit for water control One-fluid control

WXU-H/HC Series

- Connection Port Size: Rc3/8, Rc1/2, Rc1
- Flow rate range: 0.5 to 32 L/min

RoHS

Model No. Notation Method

● Karman Vortex Flow Sensor

WXU-H - 6 - L - 15 - 12 - A0N0

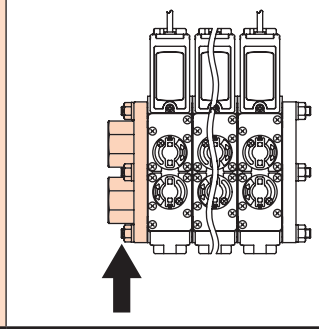
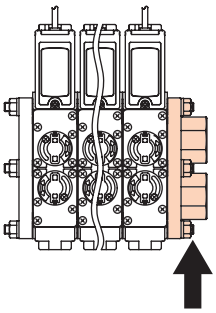
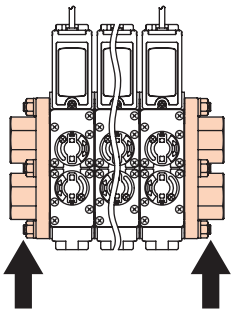
- Model No.
- 1 Station No.
- 2 In-block position
- 3 Port size (branching port)
- 4 Flow rate range for flow sensor
- 5 Flow rate sensor output (1)
- 6 Flow rate sensor output (2)

If all single-station assemblies have the same component configuration, the entire unit can be designated by a model No. through code selection. If combining stations with different component configurations into a single unit, please specify the configuration in the 'Manifold Specification Sheet' (P. 24).

1 Station No.

Code	Content
2	2 stations
to	to
10	10 stations

2 In-block position

Code	L	R	W
Content	Left	Right	Both Sides
Layout			

3 Port size (branching port)

Code	Content
10	Rc3/8
15	Rc1/2

4 Flow rate range for flow sensor

Code	Content
04	0.5 to 4.0 L/min
12	1.5 to 12 L/min
32	4.0 to 32 L/min

5 Flow rate sensor output (1)

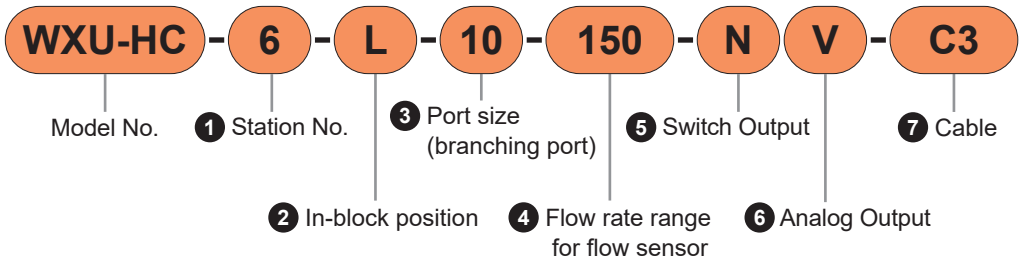
6 Flow rate sensor output (2)

Code	Content	Content				
		Not required	Transistor output 1 point			
			NPN a contact	NPN b contact	PNP a contact	PNP b contact
		Blank	N0	N1	P0	P1
A0	0 to 5 VDC	●	●	●	●	●
A1	4 to 20 mA DC	●	●	●	●	●
A2	1 to 5 VDC	●	●	●	●	●
A3	0 to 10 VDC	●	●	●	●	●
N0	NPN transistor output, 2 points (a contact)	●				
N1	NPN transistor output, 2 points (b contact)	●				
P0	PNP transistor output, 2 points (a contact)	●				
P1	PNP transistor output, 2 points (b contact)	●				

Model No. Notation Method

● Electromagnetic flow sensor

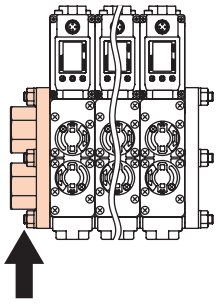
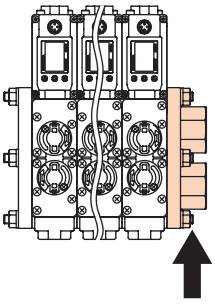
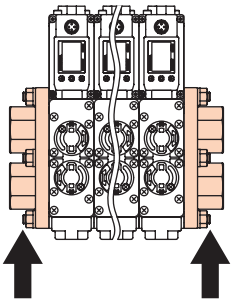
If all single-station assemblies have the same component configuration, the entire unit can be designated by a model No. through code selection. If combining stations with different component configurations into a single unit, please specify the configuration in the 'Manifold Specification Sheet' (P. 25).



1 Station No.

Code	Content
2	2 stations
to	to
10	10 stations

2 In-block position

Code	L	R	W
Content	Left	Right	Both Sides
Layout			

3 Port size (branching port)

Code	Content	4 Flow rate range for flow sensor	
		150	600
10	Rc3/8	●	
15	Rc1/2		●

4 Flow rate range for flow sensor

Code	Content
150	0.5 to 15 L/min
600	2.0 to 60 L/min

5 Switch Output

Code	Content
N	NPN transistor output
P	PNP transistor output

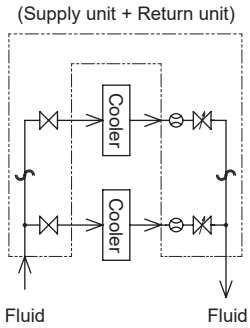
6 Analog Output

Code	Content
V	1 to 5 VDC
A	4 to 20 mA DC

7 Cable

Code	Content	
Blank	None	
C3	Cable (M12/4-conductor/3 m included)	
L3	L-type cable (M12/4-conductor/3 m included)	

[Application examples]



This single unit can manage both the supply and return for cooling piping. Each circuit can be controlled individually.
Note: Adjust the flow rate using the valve on the return side.

Common Specifications

Item		WXU-H/HC
Operating Fluid		Water/hot water
Operating Pressure MPa		0 to 0.7
Proof pressure (water) MPa		1.4
Fluid temperature °C		WXU-H: 1 to 70/WXU-HC: 1 to 85
Ambient Temperature °C		5 to 50
Atmosphere		Place free of corrosive gas and explosive gas
Flow rate adjusting range%		0 to 100 (water) [with closing function]
Station No.		2 to 10 stations
Mounting Orientation		Unrestricted
Sealant		Fluororubber
Connection Port Size	IN/OUT port	Rc1
	Branching ports	Rc3/8 or Rc1/2

Weight

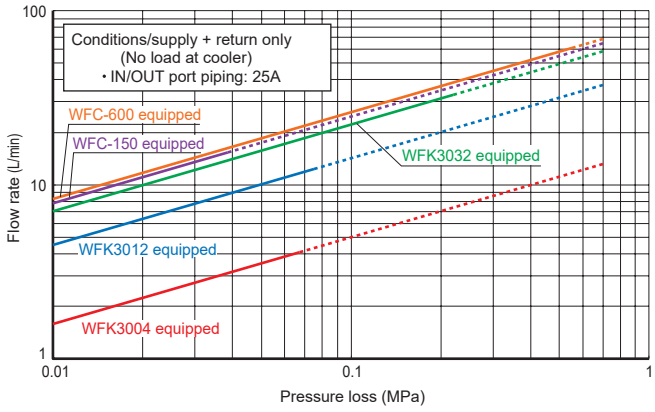
In-block (kg)	0.67
End block (kg)	0.63
One-station assembly (kg)	0.76
One-station assembly (WFC equipped) (kg)	1.00

Flow Characteristics

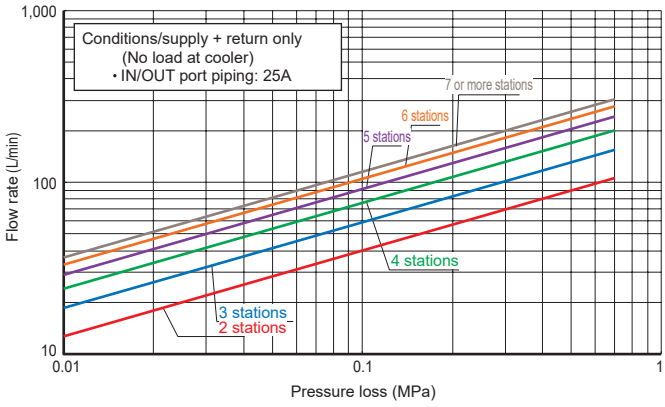
Supply/drain category	Configuration Flow Sensor	Cv	Kv value *1
Supply side (one station)	-	3.00	2.60
Return side (one station)	WFK3004	0.35	0.30
	WFK3012	1.05	0.91
	WFK3032	1.80	1.56
	WFC-150	2.10	1.82
	WFC-600	2.30	2.00

*1: For the Kv value refer to RJ-008AA "Sensors/Controllers".
*2: Make sure to check the flow rate of onestation (each system) and overall unit. (Refer to "Reading the Flow Properties Table" on page 28)

● One station

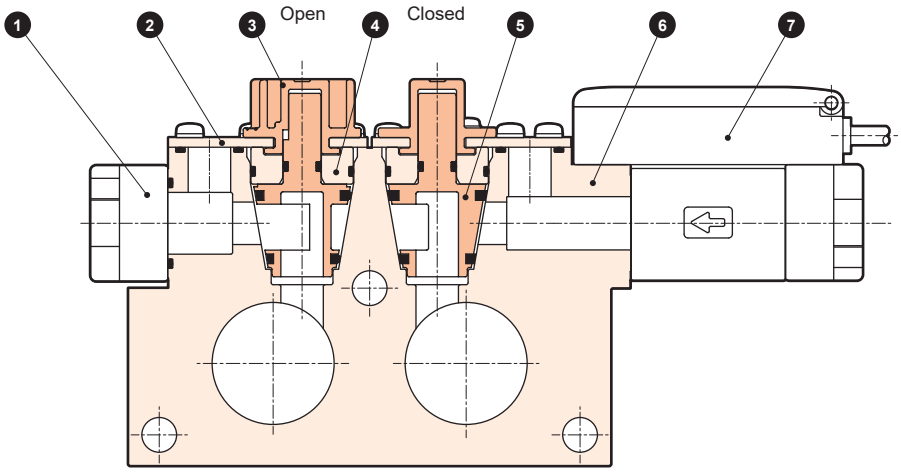


● Overall unit



Internal Structure Diagram/Materials

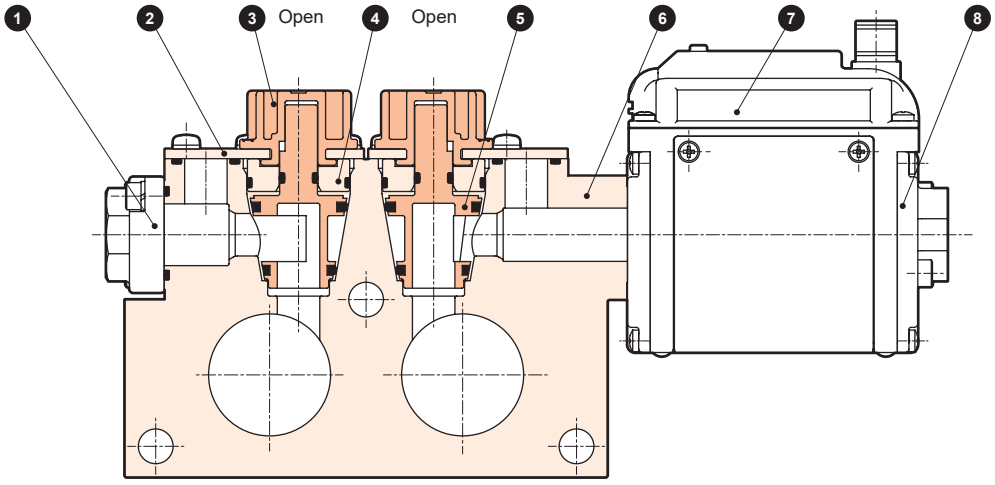
● Karman Vortex Flow Sensor WXU-H



[Valve is fully opened at shipment.]

Part No.	Part Name	Material	
1	Attachment	SCS13	Stainless steel casting
2	Plate	SUS304	Stainless Steel
3	Knob	PBT	Polybutylene terephthalate
4	Spacer	PPS	Polyphenylene sulfide
5	Cock	PPS FKM	Polyphenylene sulfide Fluororubber
6	Base	PPS	Polyphenylene sulfide
7	Flow rate sensor [WFK3000 Series]		

● Electromagnetic flow sensor WXU-HC

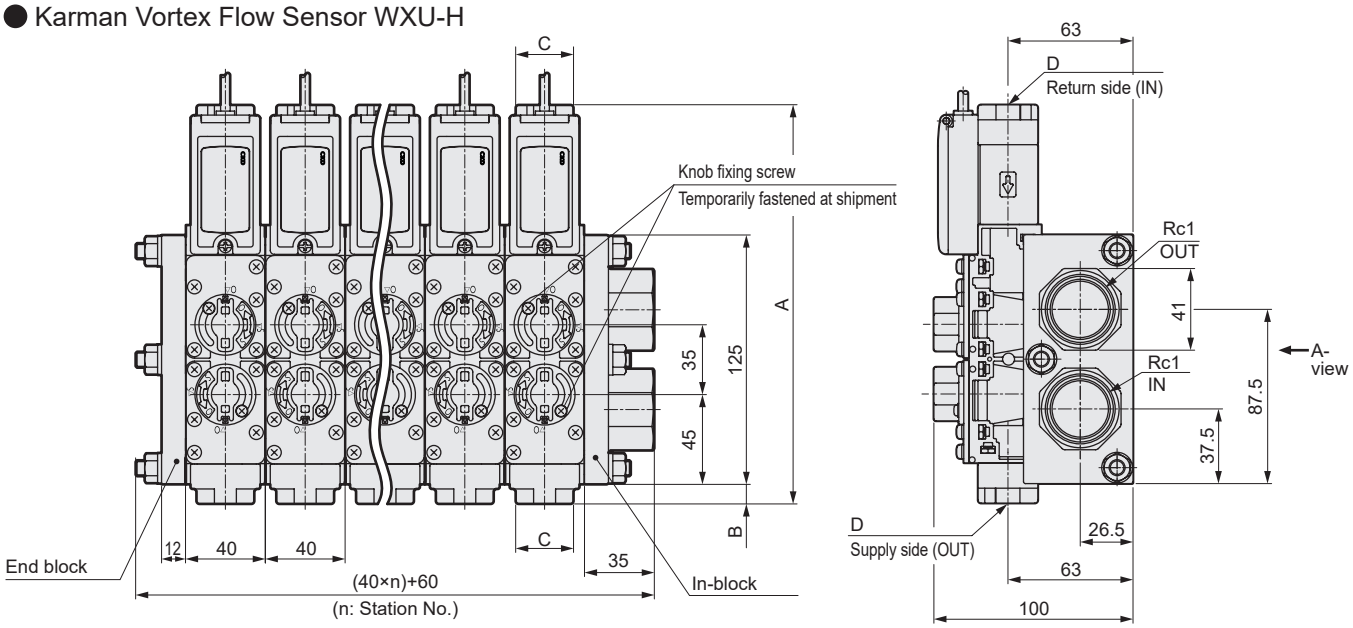


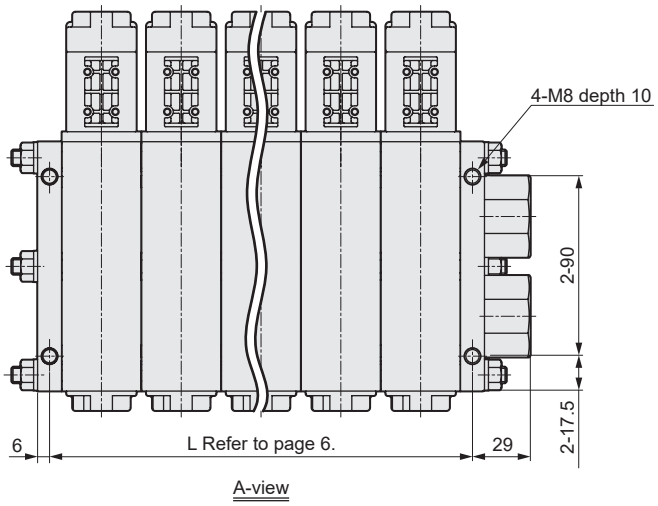
[Valve is fully opened at shipment.]

Part No.	Part Name	Material	
1	Attachment	SCS13	Stainless steel casting
2	Plate	SUS304	Stainless Steel
3	Knob	PBT	Polybutylene terephthalate
4	Spacer	PPS	Polyphenylene sulfide
5	Cock	PPS FFM	Polyphenylene sulfide Fluororubber
6	Base	PPS	Polyphenylene sulfide
7	Flow rate sensor [WFC Series]		
8	Socket	CAC804 or C6931	Brass

External Dimension Drawings

● Karman Vortex Flow Sensor WXU-H



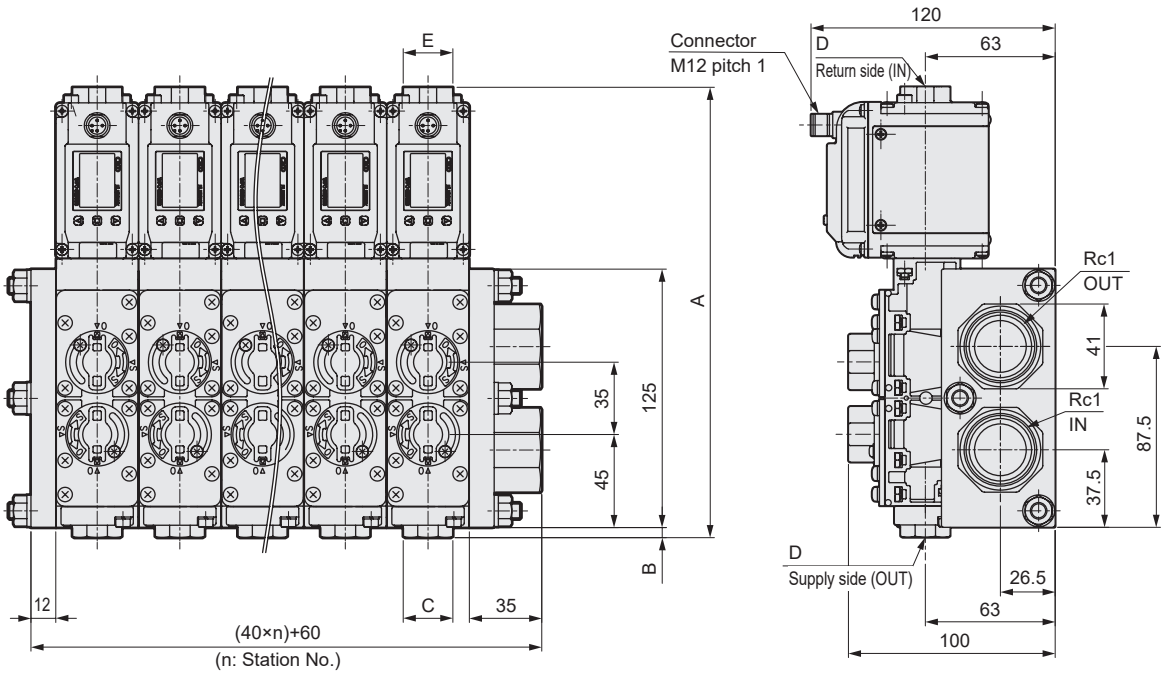


A-view

Model No.	A	B	C	D	E
WXU-H-□-□-10-□-□	190	5	24	Rc3/8	–
WXU-H-□-□-15-□-□	200	10	29	Rc1/2	–
WXU-HC-□-□-10-150-□□□	218	5	24	Rc3/8	24
WXU-HC-□-□-15-600-□□□	228	10	29	Rc1/2	28

External Dimension Drawings

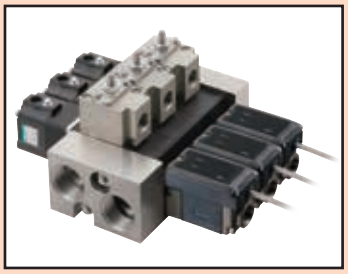
● Electromagnetic flow sensor WXU-HC



Pitch (L) for fixing main body

The screw pitch (L) is as follows.
Consider mounting holes by adopting a slotted hole at one side, etc.

Station No.	2	3	4	5	6	7	8	9	10
L: Screw pitch	92 $^{+1}_{-2}$	132 $^{+1.5}_{-2.5}$	172 $^{+1.5}_{-3}$	212 $^{+2}_{-3.5}$	252 $^{+2}_{-4}$	292 $^{+2}_{-4.5}$	332 $^{+2.5}_{-5}$	372 $^{+2.5}_{-5.5}$	412 $^{+3}_{-6}$



Integrated unit for water control One-fluid control

WXU-J Series

- Connection Port Size: Rc3/8, Rc1/2, Rc3/4, Rc1
- Flow rate range: 0.5 to 32 L/min

RoHS

Model No. Notation Method

If all single-station assemblies have the same component configuration, the entire unit can be designated by a model No. through code selection. If combining stations with different component configurations into a single unit, please specify the configuration in the 'Manifold Specification Sheet' (P. 26).

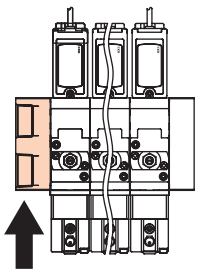
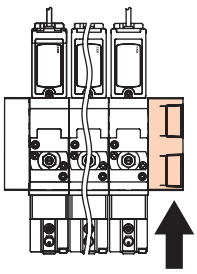
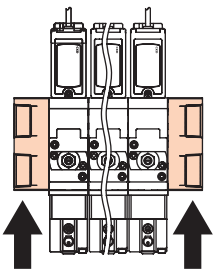
WXU-J - 6 - L - 25 - B1 - 15 - 12 - A0N0

- WXU-J: Model No.
- 6: ① Station No.
- L: ② In-block position
- 25: ③ Port size (IN/OUT port)
- B1: ④ Valve actuation
- 15: ⑤ Port size (branching port)
- 12: ⑥ Flow rate range for flow sensor
- A0N0: ⑦ Flow rate sensor output (1), ⑧ Flow rate sensor output (2)

① Station No.

Code	Content
2	2 stations
to	to
10	10 stations

② In-block position

Code	L	R	W
Content	Left	Right	Both Sides
Layout			

③ Port size (IN/OUT port)

Code	Content
20	Rc3/4
25	Rc1

④ Valve actuation

Code	Content
B1	NC (normally closed) (large flow rate specifications)
B2	NO (normally open) (large flow rate specifications)
00	None

⑤ Port size (branching port)

Code	Content
10	Rc3/8
15	Rc1/2

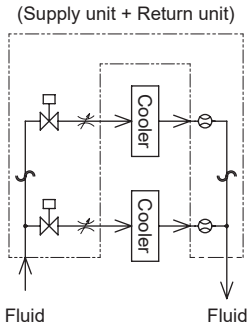
⑥ Flow rate range for flow sensor

Code	Content
04	0.5 to 4.0 L/min
12	1.5 to 12 L/min
32	4.0 to 32 L/min

⑦ Flow rate sensor output (1) / ⑧ Flow rate sensor output (2)

Code	Content	Content				
		Not required	Transistor output 1 point			
			NPN a contact	NPN b contact	PNP a contact	PNP b contact
		Blank	N0	N1	P0	P1
A0	0 to 5 VDC	●	●	●	●	●
A1	4 to 20 mADC	●	●	●	●	●
A2	1 to 5 VDC	●	●	●	●	●
A3	0 to 10 VDC	●	●	●	●	●
N0	NPN transistor output, 2 points (a contact)	●				
N1	NPN transistor output, 2 points (b contact)	●				
P0	PNP transistor output, 2 points (a contact)	●				
P1	PNP transistor output, 2 points (b contact)	●				

[Application examples]



This single unit can manage both the supply and return for cooling piping. Each circuit can be controlled individually.

Common Specifications

Item		WXU-J
Operating Fluid		Water/hot water
Operating Pressure MPa		0 to 0.4 (Note)
Proof pressure (water pressure)MPa		1.0
Fluid temperature °C		1 to 70
Ambient Temperature °C		5 to 50
Atmosphere		Place free of corrosive gas and explosive gas
Flow rate adjusting range%		0 to 100 (water) [with closing function]
Station No.		2 to 10 stations
Mounting Orientation		Unrestricted
Sealant		Fluororubber
Connection Port Size	IN/OUT port	Rc3/4 or Rc1
	Branching ports	Rc3/8 or Rc1/2

Note: Contact CKD about use at pressures higher than working pressure.

Weight

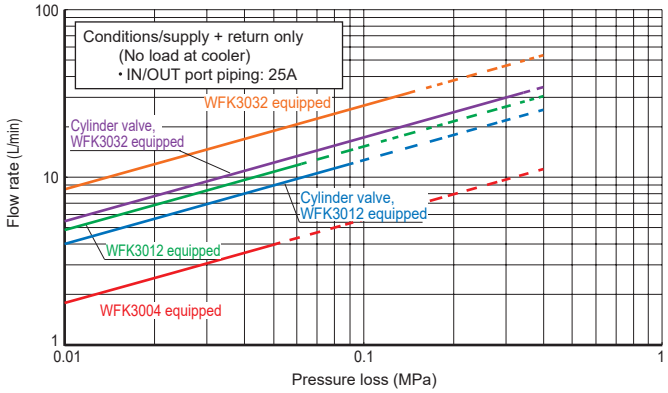
In-block (kg)	Connection Port Size	–
	20A	1.30
	25A	1.20
End block (kg)		1.05
One-station assembly (kg)	Supply side Cylinder Valve	–
	Large flow rate specifications	1.29
	None	1.05

Flow Characteristics

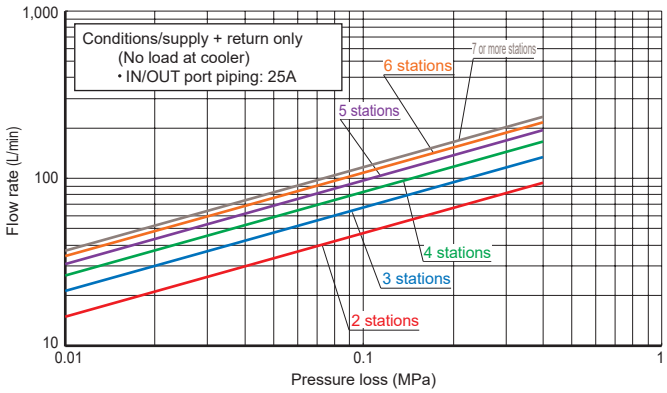
Supply/drain category	Configuration		Cv	Kv value *1
	Cylinder Valve	Flow Sensor		
Supply side (one station)	Large flow rate specifications	-	1.34	1.16
	None	-	2.51	2.18
Return side (one station)	-	WFK3004	0.41	0.36
		WFK3012	1.18	1.02
		WFK3032	2.82	2.45

*1: For the Kv value refer to RJ-008 "Sensors/Controllers".
*2: Make sure to check the flow rate of one station (each system) and overall unit.
(Refer to "Reading the Flow Properties Table" on page 28)

● One station



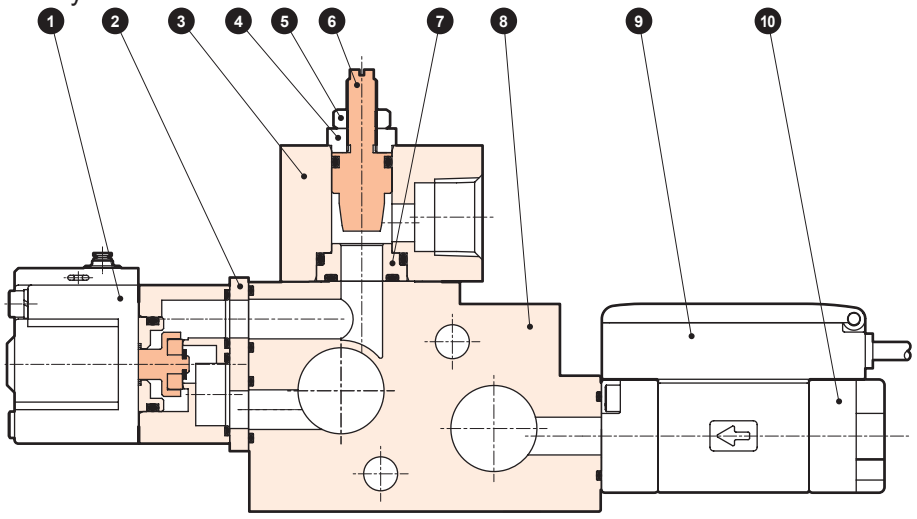
● Overall unit



Internal Structure Diagram/Materials

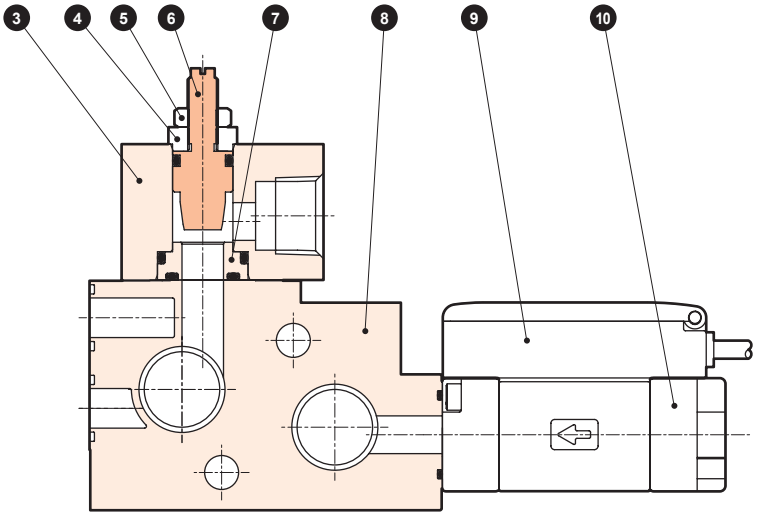
● One-station assembly

• With Valve



[Needle is fully opened at shipment.]

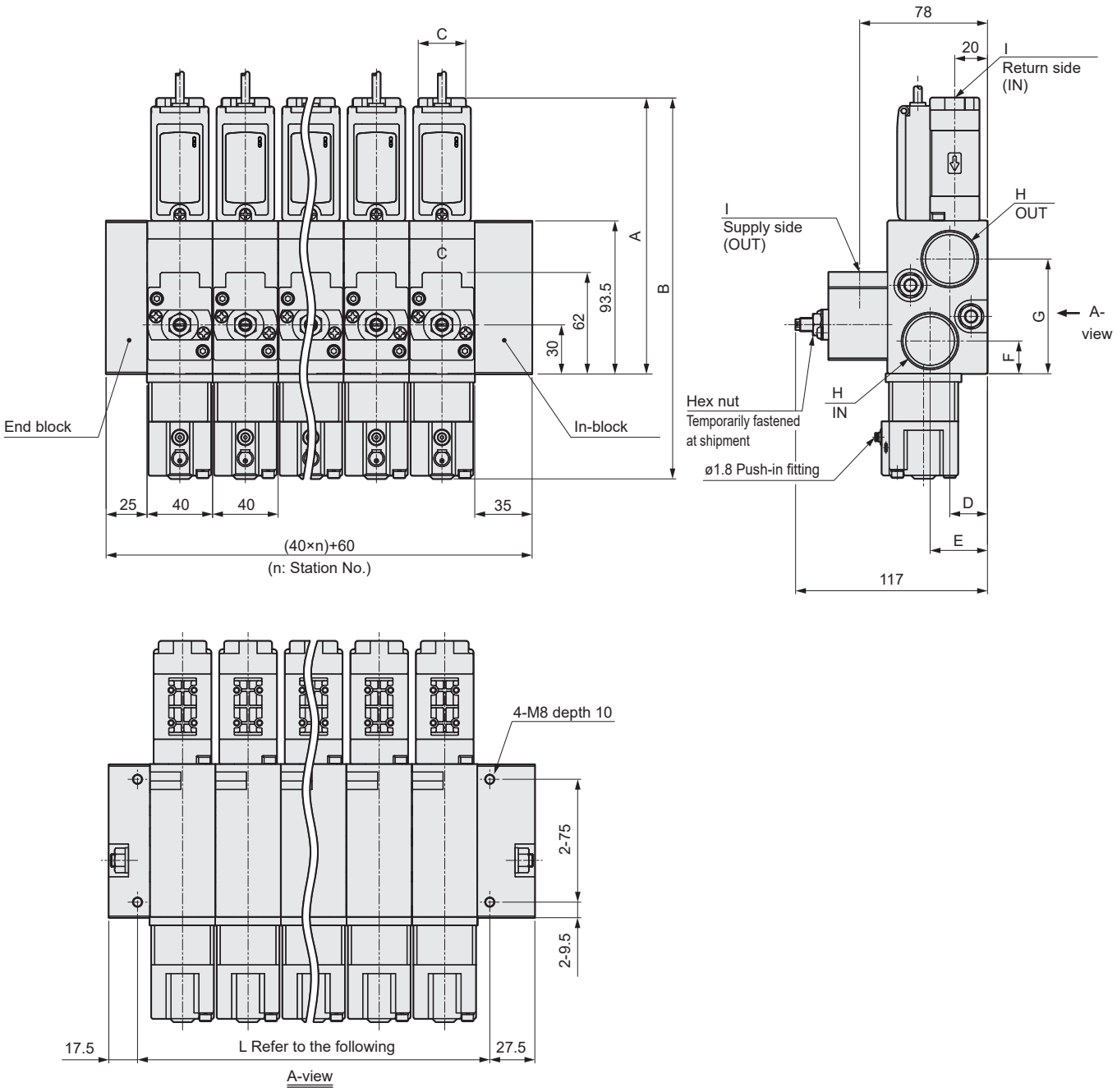
• Without Valve



[Needle is fully opened at shipment.]

Part No.	Part Name	Material		Part No.	Part Name	Material	
1	Cylinder valve [GNAB Series]			6	Needle	SUS304	Stainless Steel
2	Plate	SUS304	Stainless Steel	7	Valve Element	PP	Polypropylene
3	Needle block	SUS304	Stainless Steel	8	Base	PPS	Polyphenylene sulfide
4	Needle stopper	SUS304	Stainless Steel	9	Flow rate sensor [WFK3000 Series]		
5	Hex nut	SWCH	Carbon steel for cold rolling	10	Attachment	SCS13	Stainless steel casting

External Dimension Drawings

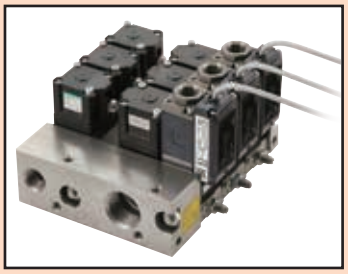


Model No.	A	B	C	D	E	F	G	H	I
WXU-J-□-□-20-□-10-□-□	164	228	24	22	33	24	65	Rc3/4	Rc3/8
WXU-J-□-□-25-□-10-□-□	164	228	24	23	35	20	70	Rc1	Rc3/8
WXU-J-□-□-20-□-15-□-□	169	233	29	22	33	24	65	Rc3/4	Rc1/2
WXU-J-□-□-25-□-15-□-□	169	233	29	23	35	20	70	Rc1	Rc1/2

Pitch (L) for fixing main body

The screw pitch (L) is as follows.
Consider mounting holes by adopting a slotted hole at one side, etc.

Station No.	2	3	4	5	6	7	8	9	10
L: Screw pitch	95±1	135±1.5	175±1.5	215±2	255±2	295±2	335±2.5	375±2.5	415±3



Integrated unit for water control　Two-fluid control

WXU-P Series

- Connection Port Size: Rc3/8, Rc1/2, Rc1
- Flow rate range: 0.5 to 32 L/min

RoHS

Model No. Notation Method

If all single-station assemblies have the same component configuration, the entire unit can be designated by a model No. through code selection. If combining stations with different component configurations into a single unit, please specify the configuration in the 'Manifold Specification Sheet' (P. 27).

WXU-P	-	R	-	6	-	L	-	S	1	1	-	N	-	15	-	12	-	A0N0
Model No.		① Supply/ drain category		② Station No.		③ In-block position		④ Valve size for fluid 1	⑤ Valve actuation for fluid 1	⑥ Valve actuation for fluid 2		⑦ Flow rate adjustment function		⑧ Port size (branching port)		⑨ Flow rate range for flow sensor		⑩ Flow rate sensor output① ⑪ Flow rate sensor output②

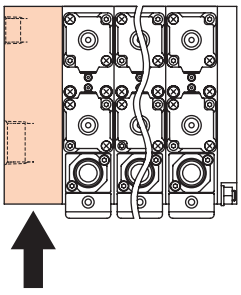
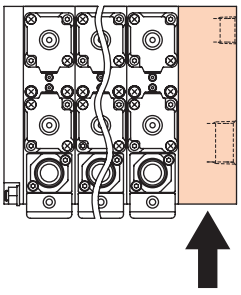
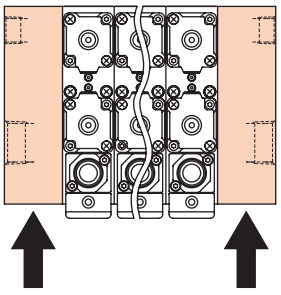
① Supply/drain category

Code	Content
S	Supply side
R	Return side

② Station No.

Code	Content
2	2 stations
to	to
6	6 stations

③ In-block position

Code	L	R	W
Content	Left	Right	Both Sides
Layout			

④ Valve size for fluid 1

Code	Content
S	Standard specifications
B	Large flow rate specifications

⑤ Valve actuation for fluid 1

Code	Content
1	NC (normally closed)
2	NO (normally open)

⑥ Valve actuation for fluid 2

Code	Content
1	NC (normally closed)
2	NO (normally open)

❼ Flow rate adjustment function

Code	Content	
N	With flow rate adjustment function	
0	None	

❽ Port size (branching port)

Code	Content
10	Rc3/8
15	Rc1/2

❾ Flow rate range for flow sensor

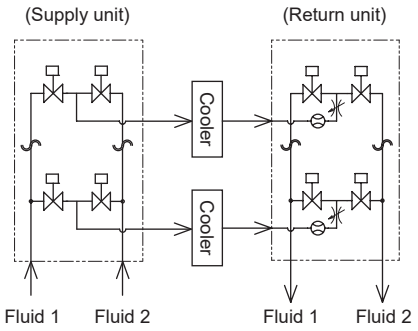
Code	Content
04	0.5 to 4.0 L/min
12	1.5 to 12 L/min
32	4.0 to 32 L/min
00	Without flow rate sensor (Supply/❶drain category "S")

❿ Flow rate sensor output①

⓫ Flow rate sensor output (2)

Code	Content	Content				
		Not required	Transistor output 1 point			
			NPN a contact	NPN b contact	PNP a contact	PNP b contact
		Blank	N0	N1	P0	P1
A0	0 to 5 VDC	●	●	●	●	●
A1	4 to 20 mADC	●	●	●	●	●
A2	1 to 5 VDC	●	●	●	●	●
A3	0 to 10 VDC	●	●	●	●	●
N0	NPN transistor output, 2 points (a contact)	●				
N1	NPN transistor output, 2 points (b contact)	●				
P0	PNP transistor output, 2 points (a contact)	●				
P1	PNP transistor output, 2 points (b contact)	●				
000	Without flow rate sensor (❶Water supply category "S")	●				

[Application examples]



Two different types of fluids (e.g., water and air) can be used. Ideal for circuits that require both cooling water and an air purge. Each circuit can be controlled individually. (Two units are used.)

Common Specifications

Item		WXU-P
Operating Fluid		Water, hot water, air
Operating Pressure MPa		0 to 0.4 (Note)
Proof pressure (water pressure)MPa		1.0
Fluid temperature °C		1 to 70
Ambient Temperature °C		5 to 50
Atmosphere		Place free of corrosive gas and explosive gas
Flow rate adjusting range%		15 to 100 (water)
Station No.		2 to 6 stations
Mounting Orientation		Unrestricted
Sealant		Fluororubber
Connection Port Size	Port for fluid 1	Rc1
	Port for fluid 2	Rc1/2
	Branching ports	Rc3/8 or Rc1/2

*: Contact CKD about use at pressures higher than working pressure.

Weight

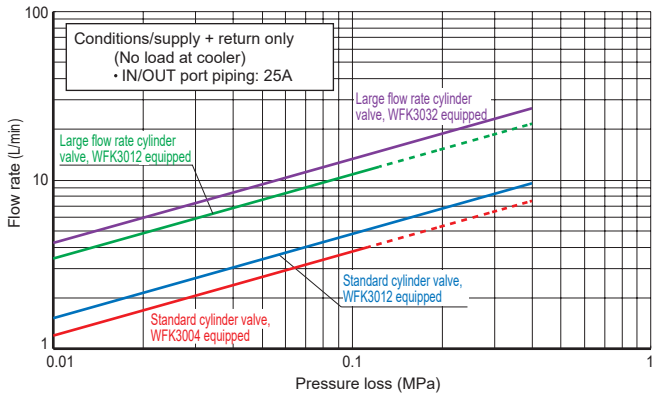
In-block (kg)				2.60
End block (kg)				0.70
One-station assembly (kg)	Supply/drain category	For fluid 1 Cylinder Valve	For fluid 2 Cylinder Valve	–
	Supply side	Standard specifications	Standard specifications	0.87
		Large flow rate specifications	Standard specifications	0.90
	Return side	Standard specifications	Standard specifications	1.14
		Large flow rate specifications	Standard specifications	1.17

Flow Characteristics

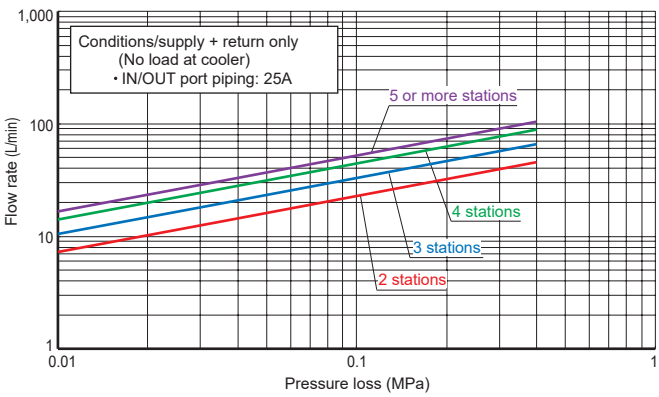
Supply/drain category	Configuration		Fluid 1 side		Fluid 2 side	
	Cylinder Valve	Flow Sensor	Cv	Kv value *1	C[dm3/(s·bar)]	b
Supply side (one station)	Standard specifications	-	0.44	0.38	1.4	0.2
	Large flow rate specifications	-	1.28	1.11	3.0	0.1
Return side (one station)	Standard specifications	WFK3004	0.33	0.29	1.4	0.2
		WFK3012	0.52	0.45		
	Large flow rate specifications	WFK3012	0.94	0.82	3.0	0.1
		WFK3032	1.37	1.19		

*1: Kv value refer to RJ-008 "Sensors/Controllers".
*2: Make sure to check the flow rate of one station (each system) and overall unit. (Refer to "Reading the Flow Properties Table" on page 28)

●One station

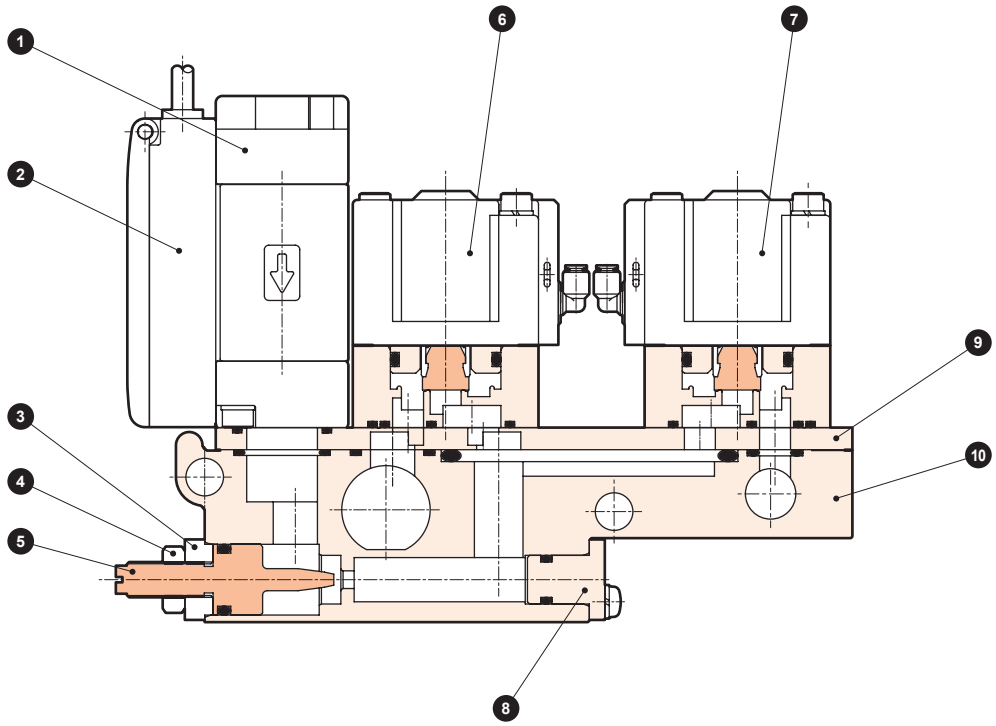


●Overall unit



Internal Structure Diagram/Materials

●One-station assembly

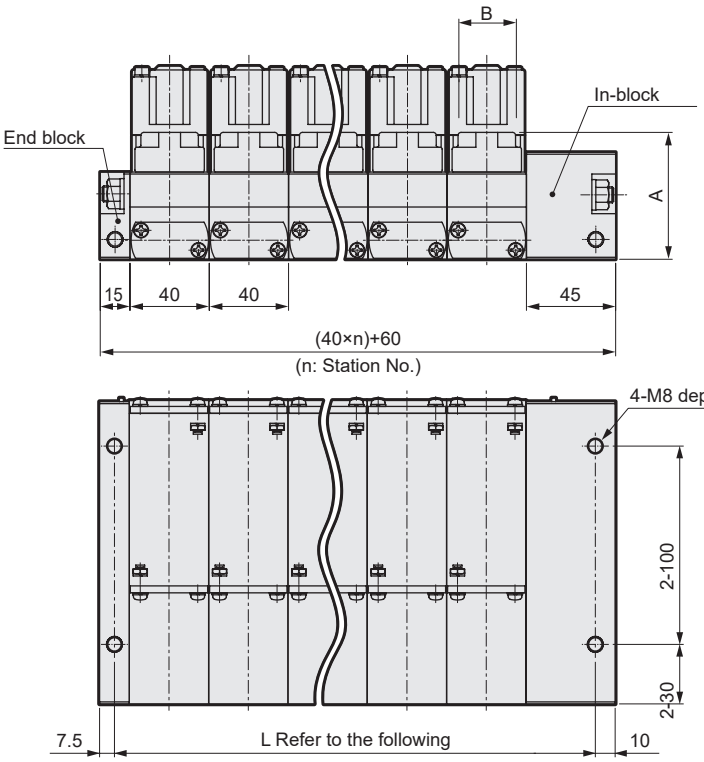


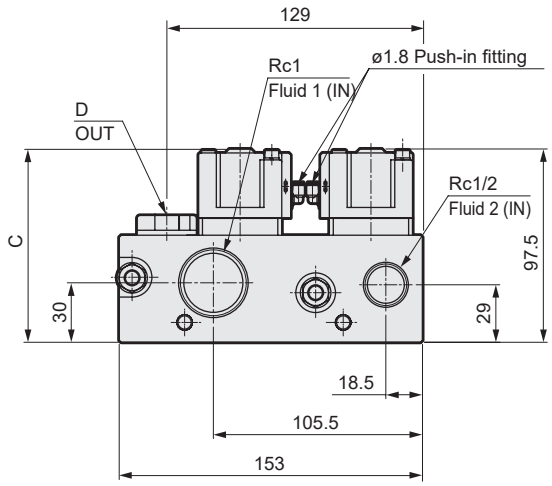
[Needle is fully opened at shipment.]

Part No.	Part Name	Material	
1	Attachment	SCS13	Stainless steel casting
2	Flow rate sensor [WFK3000 Series]		
3	Needle stopper	SUS304	Stainless Steel
4	Hex nut	SWCH	Carbon steel for cold rolling
5	Needle	SUS304	Stainless Steel
6	Cylinder valve for fluid 1 [GNAB Series]		
7	Cylinder valve for fluid 2 [GNAB Series]		
8	Plug	SUS304	Stainless Steel
9	Plate	SUS304	Stainless Steel
10	Base	PPS	Polyphenylene sulfide

External Dimension Drawings

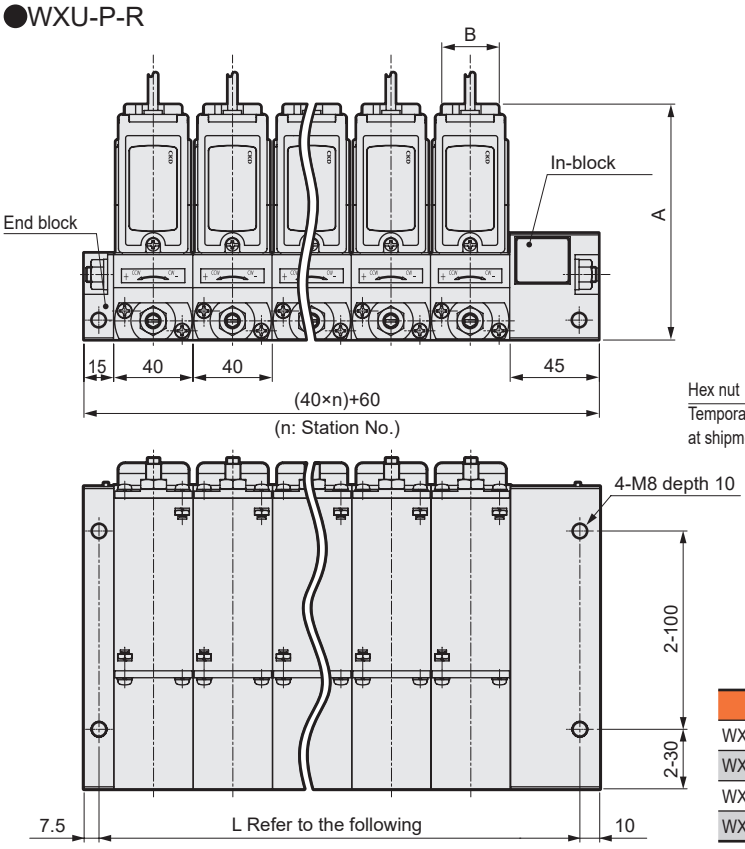
●WXU-P-S

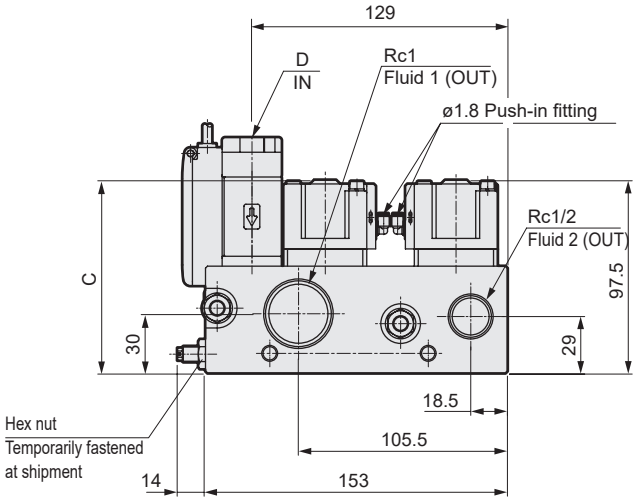




Model No.	A	B	C	D
WXU-P-S-□-□-S □□-□-10-□-□	59	24	97.5	Rc3/8
WXU-P-S-□-□-B □□-□-10-□-□	59	24	103	Rc3/8
WXU-P-S-□-□-S □□-□-15-□-□	64	29	97.5	Rc1/2
WXU-P-S-□-□-B □□-□-15-□-□	64	29	103	Rc1/2

●WXU-P-R





Model No.	A	B	C	D
WXU-P-R-□-□-S □□-□-10-□-□	114	24	97.5	Rc3/8
WXU-P-R-□-□-B □□-□-10-□-□	114	24	103	Rc3/8
WXU-P-R-□-□-S □□-□-15-□-□	119	29	97.5	Rc1/2
WXU-P-R-□-□-B □□-□-15-□-□	119	29	103	Rc1/2

Pitch (L) for fixing main body

The screw pitch (L) is shown on the right. Consider mounting holes by adopting a slotted hole at one side, etc.

Station No.	2	3	4	5	6
L: Screw pitch	122.5±2	162.5±2	202.5±2.5	242.5±2.5	282.5±2.5

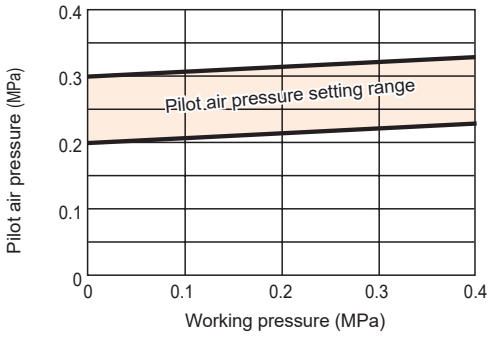
Specifications of mounted devices

Specifications of valve part

Item	GNAB-X□	
	Standard specifications	Large flow rate specifications
Valve seat leakage cm³/min	0.12 or less (pneumatic pressure)	
Orifice size mm	7	10
Cv	1.0	1.6
C [dm3/(s·bar)]	3.8 (*1)	–
b	0.3	–
Pilot air pressure MPa	NC (normally closed): 0.25 to 0.7 NO (normally open): (*2)	
Pilot connection	ø for fiber tube 1.8 push-in fitting (Contact CKD for other connections.)	

*1: Formula to calculate sonic conductance C from effective cross-sectional area S is S≈5.0×C.
*2: Refer to the graph below for NO pilot air pressure.

● GNAB Series NO type



Specifications of flow sensor part

■ Specifications of WFK30 □□ S flow sensor part (sensor)
• Flow rate sensor output (1) : -A0, -A1, -A2, -A3
• Flow rate sensor output (2): Blank

Item	04 (WFK3004S)	12 (WFK3012S)	32 (WFK3032S)
Flow rate range L/min	0.5 to 4.0	1.5 to 12	4.0 to 32
Accuracy	±2.5% F.S.		
Analog Output	-A0:0 to 5 VDC, -A1:4 to 20 mA DC, -A2:1 to 5 VDC, -A3:0 to 10 VDC		
Service voltage	12 to 24 VDC±10% (MAX80 mA) -A3 is 15 to 24 VDC		

■ Specifications of WFK30 □□ C flow sensor part (sensor/switch)
• Flow rate sensor output (1): -A0, -A1, -A2, -A3
• Flow rate sensor output (2): N0, N1, P0, P1

Item		04 (WFK3004C)	12 (WFK3012C)	32 (WFK3032C)
Flow rate range L/min		0.5 to 4.0	1.5 to 12	4.0 to 32
Accuracy		±2.5% F.S. ±1 digit		
Output	Display	Instantaneous flow rate 2-digit LED display		
	Analog Output	-A0:0 to 5 VDC, -A1:4 to 20 mA DC, -A2:1 to 5 VDC, -A3:0 to 10 VDC		
	Switch Output	1-point transistor output (select NPN/PNP) MAX.50 mA DC Internal Voltage Drop: (NPN) 2.0 V or less, (PNP) 2.5 V or less		
Service voltage		12 to 24 VDC±10% (MAX.80 mA)		

■ Specifications of WFK30 □□ M flow sensor part (switch)
• Flow rate sensor output (1): -N0, -N1, -P0, -P1
• Flow rate sensor output (2): Blank

Item		04 (WFK3004M)	12 (WFK3012M)	32 (WFK3032M)
Flow rate range L/min		0.5 to 4.0	1.5 to 12	4.0 to 32
Accuracy		±2.5% F.S. ±1 digit		
Output	Display	Instantaneous flow rate 2-digit LED display		
	Switch Output	2-point transistor output (select NPN/PNP) MAX. 50 mA DC Internal Voltage Drop: (NPN) 2.0 V or less, (PNP) 2.5 V or less		
Service voltage		12 to 24 VDC±10% (MAX. 80 mA)		