CKD

New Products

New Product

Integrated Unit for Water Control
WXU Series

INTEGRATED UNIT FOR WATER CONTROL

Space-saving pipeless

80% less footprint (2 fluid control type)

Significant reduction of installation space due to fewer ports and integration

CKD Corporation
CC-1116A 2

A new era of water control

A rich variation of water control equipment
has all-in-one space-saving

80% less

footprint by pipeless

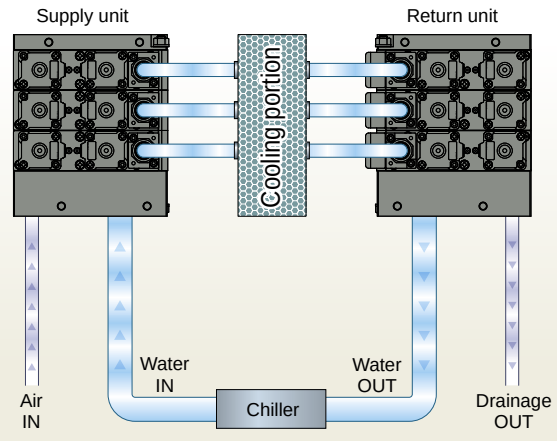
Compact

- Reduction of individual piping
- Reducing leakage in piping
- Reducing design and arrangement man hours

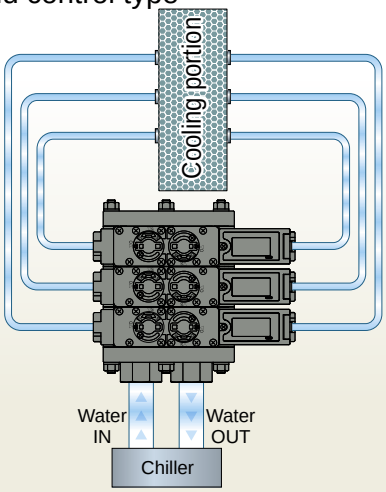
WXU Integrated Unit for Water Control **Series**

System image

2 fluid control type



1 fluid control type

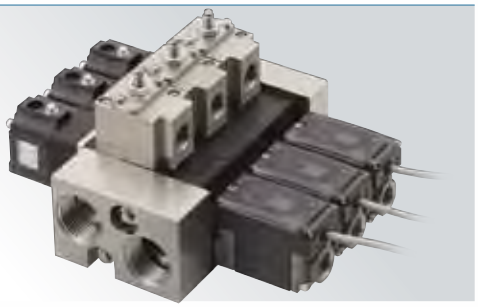


WXU-H — 1 fluid specifications

New

- Cooling pipe supply and 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



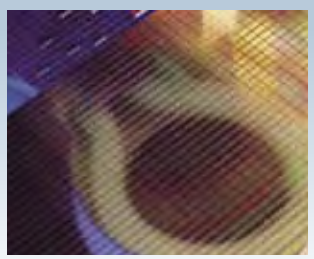
- Cooling pipe supply and return is available with one unit.
- On the supply side, a needle and valve can be mounted, and individual control in each system (on/off) is possible.
- Easy adjustment flow rate with needle.

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.
- Suitable for circuits with cooling water and air such as sputtering equipment.
- Individual control in each system (passing water/air purge) is available.

Application

Vacuum sputtering



WXU-P

Film formation

WXU-J/H

Casting

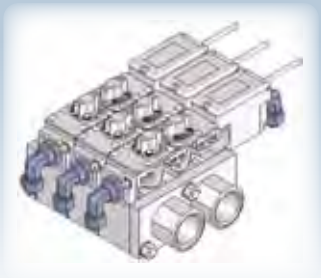
WXU-P/J/H

Molding

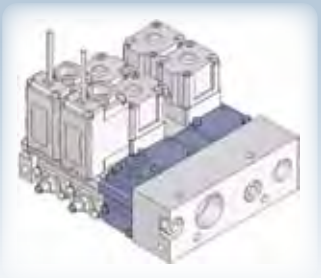
WXU-J/H

Custom design example

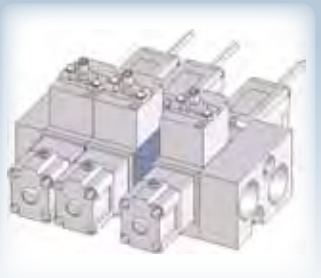
Units to suit your convenience can be manufactured.



With fitting

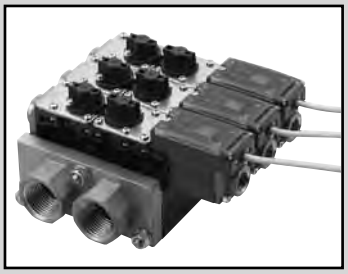


Masking



Intermediate block

- Separated display is available. (sensor)
- Analog + SW output (sensor)
- Divergence (WXU-P)
- No cylinder valve (WXU-J)



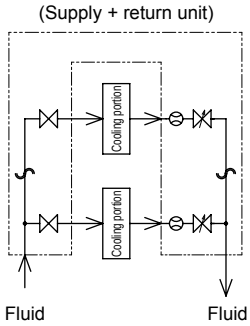
Integrated Unit for Water Control 1 fluid control type

WXU-H Series

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

RoHS

<Applications example>



Cooling pipe supply and return can be done in 1unit.

Individual control is possible in each circuit.

In addition, please perform flow rate adjustment with the return side valve.

Common specifications

Descriptions		WXU-H
Working fluid		Water, hot water
Working pressure	MPa	0 to 0.7
Proof pressure (water pressure)	MPa	1.4
Fluid temperature	ºC	1 to 70
Ambient temperature	ºC	5 to 50
Atmosphere		Free of corrosive and explosive gases
Flow rate adjustment range	%	0 to 100 (With water)<With closing function>
Station no.		2 to 10 stations
Mounting orientation		Free
Sealant material		Fluoro rubber
Port size	IN/OUT port	Rc1
	Branch port	Rc3/8 or Rc1/2

Weight

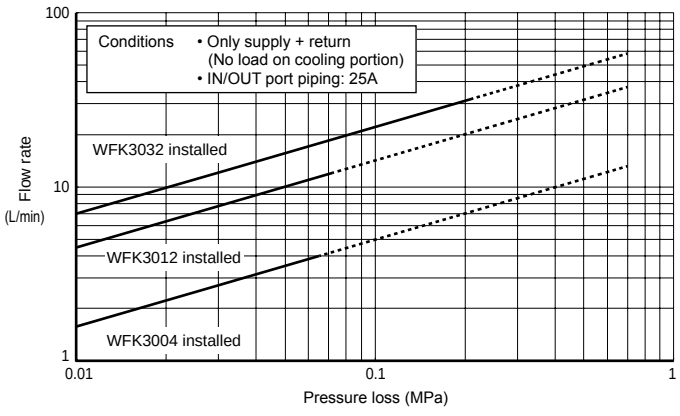
In block	(kg)	0.67
End block	(kg)	0.48
1 station assembly	(kg)	0.76

Flow characteristics

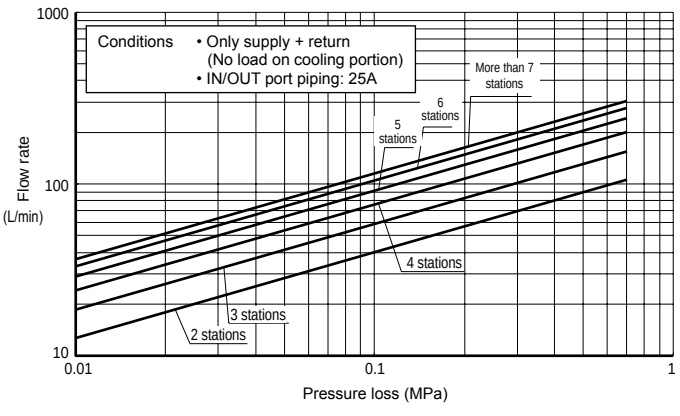
Water supply and drainage classification	Composition Flow rate sensor	Cv value
Supply side (1 station)	–	3.00
Return side (1 station)	WFK3004	0.35
	WFK3012	1.05
	WFK3032	1.80

Note: Please be sure to carry out flow rate confirmation of the 1 station (each line) and the entire unit. (Please refer to page 19 "Viewpoint of flow characteristics table".)

● 1 station



● Entire unit



If the entire 1 station assembly equipment configuration is the same, you can order the entire unit through symbol selection.
If you form a unit with different equipment configurations mixed with the 1 station assembly, please specify the configuration in the "Manifold specification sheet" (page 16).

How to order

WXU-H - 6 - L - 15 - 12 - N0

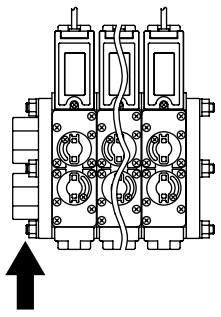
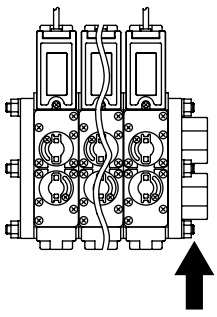
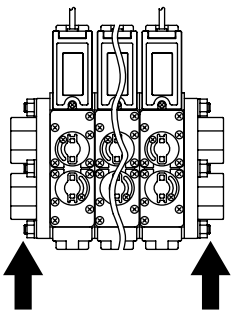
- Ⓐ Station no.
- Ⓑ In-block position
- Ⓒ Port size (branch port)
- Ⓓ Flow rate sensor range
- Ⓔ Flow rate sensor output

Symbol	Descriptions
Ⓐ Station no.	
2	2 stations
to	to
10	10 stations
Ⓑ In-block position	
L	Left
R	Right
W	Both sides
Ⓒ Port size (branch port)	
10	Rc3/8
15	Rc1/2 (Not available with "T" water temperature measuring function.)
Ⓓ Flow rate sensor range	
04	0.5 to 4.0L/min
12	1.5 to 12L/min
32	4.0 to 32L/min
Ⓔ Flow rate sensor output	
A0	DC0 to 5V
A0T	DC0 to 5V+With water temperature measuring function
A1	DC4 to 20mA
A2	DC1 to 5V
A2T	DC1 to 5V+With water temperature measuring function
A3	DC0 to 10V
A3T	DC0 to 10V+With water temperature measuring function
N0	NPN transistor 2 outputs (a contact point)
N1	NPN transistor 2 outputs (b contact point)
P0	PNP transistor 2 outputs (a contact point)
P1	PNP transistor 2 outputs (b contact point)

<Example of model no.>
WXU-H-6-L-15-12-N0
Model: Integrated Unit for Water Control 1 fluid control type

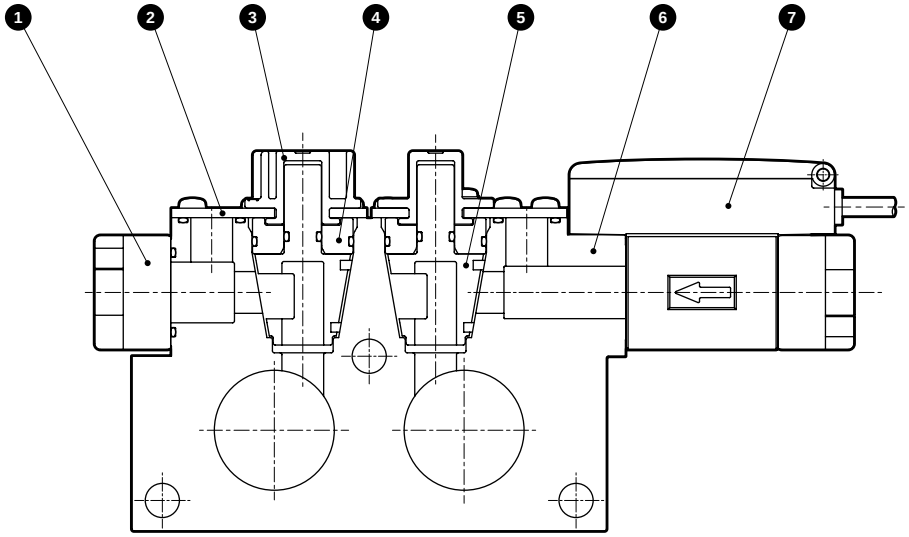
Ⓐ	Station no.	: 6stations
Ⓑ	In-block position	: Left
Ⓒ	Port size (branch port)	: Rc1/2
Ⓓ	Flow rate sensor range	: 1.5 to 12L/min
Ⓔ	Flow rate sensor output	: NPN transistor 2 outputs (a contact point)

Ⓕ In-block position

Symbol	L	R	W
Descriptions	Left	Right	Both sides
Layout			

Internal structure and parts list

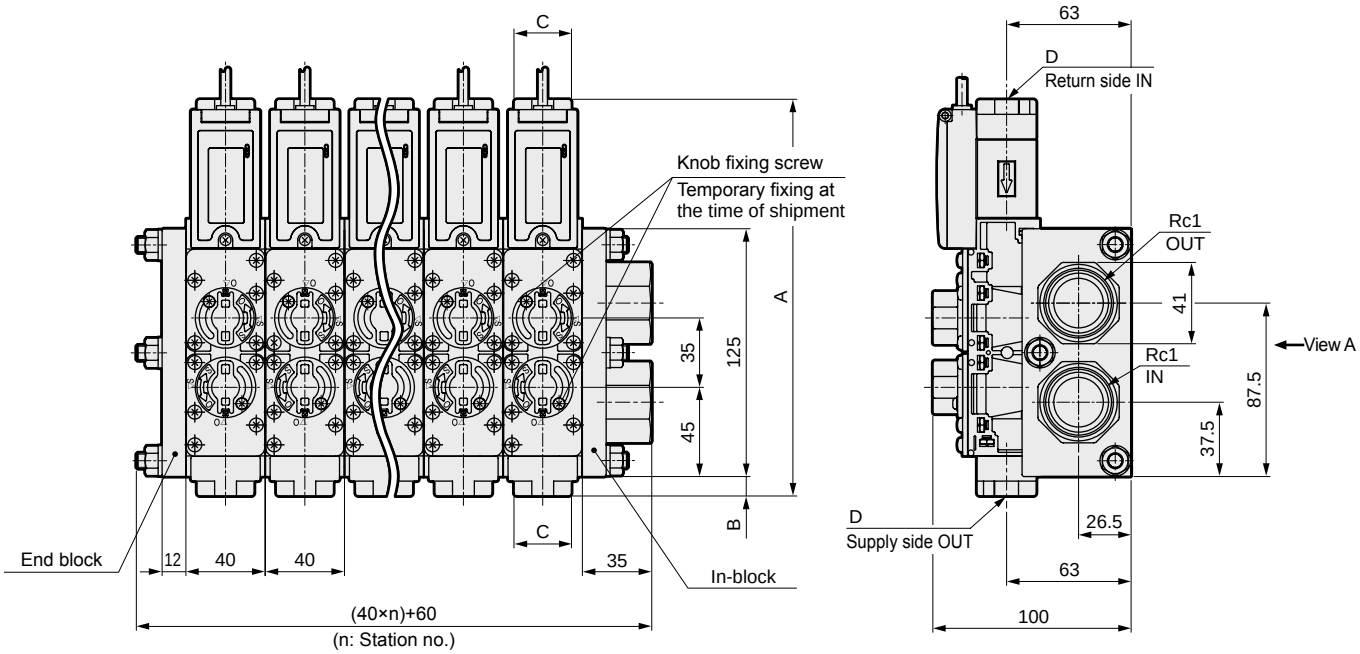
● 1 station assembly



<The valve will be shipped in the fully open state.>

No.	Product name	Material	
1	Attachment	SCS13	Stainless steel casting
2	Plate	SUS304	Stainless steel
3	Adjusting knob	PBT	Polybutylene terephthalate
4	Spacer	PPS	Polyphenylene sulfide
5	Cock	PPS FKM	Polyphenylene sulfide Fluoro rubber
6	Base	PPS	Polyphenylene sulfide
7	Flow rate sensor [WFK3000 Series]		

Dimensions



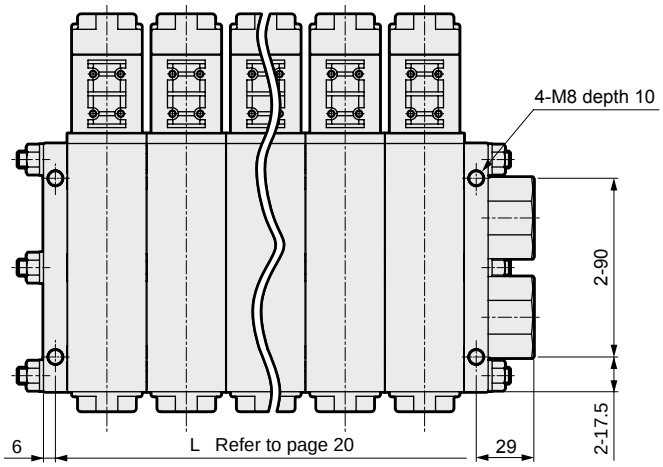
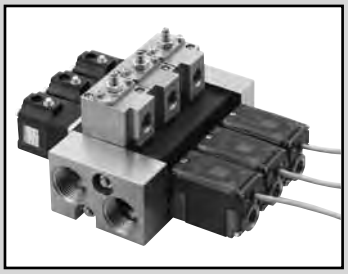


Diagram view A

Model no.	A	B	C	D
WXU-H-***-10	190	5	24	Rc3/8
WXU-H-***-10-**T	205	5	24	Rc3/8
WXU-H-***-15	200	10	29	Rc1/2



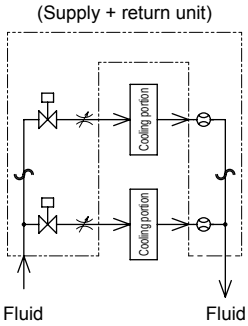
Integrated Unit for Water Control 1 fluid control type

WXU-J Series

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

RoHS

<Applications example>



Cooling pipe supply and return can be done in 1 unit.
Individual control is possible in each circuit.

Common specifications

Descriptions		WXU-J
Working fluid		Water, hot water
Working pressure	MPa	0 to 0.4 (Note)
Proof pressure (water pressure)	MPa	1.0
Fluid temperature	ºC	1 to 70
Ambient temperature	ºC	5 to 50
Atmosphere		Free of corrosive and explosive gases
Flow rate adjustment range	%	0 to 100 (Water) <with closing function>
Station no.		2 to 10 stations
Mounting orientation		Free
Sealant material		Fluoro rubber
Port size	IN/OUT port	Rc3/4 or Rc1/2
	Branch port	Rc3/8 or Rc1/2

Note: Please contact us when using at higher working pressure.

Weight

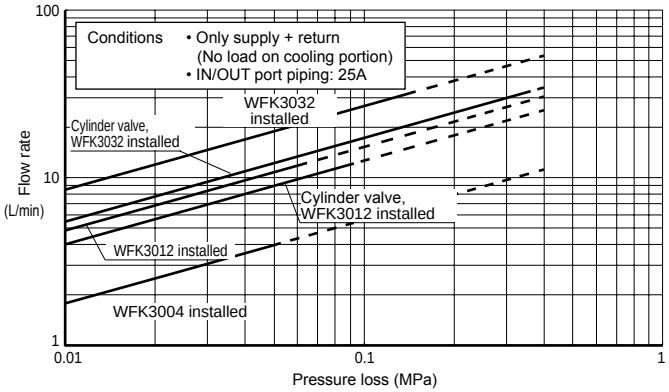
		Port size	–
In block	(kg)	20A	1.30
		25A	1.20
End block	(kg)		1.05
		Supply side Cylinder valve	–
1 station assembly	(kg)	Large flow rate	1.29
		None	1.05

Flow characteristics

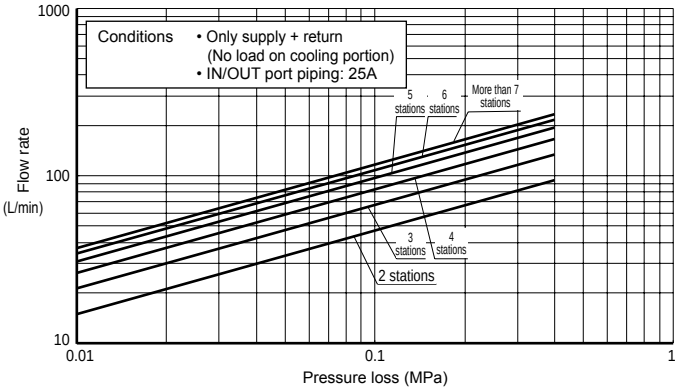
Water supply and drainage classification	Composition		Cv value
	Cylinder valve	Flow rate sensor	
Supply side (1 station)	Large flow rate	–	1.34
	None	–	2.51
Return side (1 station)	–	WFK3004	0.41
		WFK3012	1.18
		WFK3032	2.82

Note: Please be sure to carry out flow rate confirmation of the 1 station (each line) and the entire unit. (Please refer to page 19 "Viewpoint of flow characteristics table".)

● 1 station



● Entire unit



If the entire 1 station assembly equipment configuration is the same, you can order the entire unit through symbol selection.
If you form a unit with different equipment configurations mixed with the 1 station assembly , please specify the configuration in the "Manifold specification sheet" (page 17).

How to order

WXU-J - 6 - L - 25 - B1 - 15 - 12 - N0

- Ⓐ Station no.
- Ⓑ In-block position
- Ⓒ Port size (IN/OUT port)
- Ⓓ Valve actuation classification
- Ⓔ Port size (branch port)
- Ⓕ Flow rate sensor range
- Ⓖ Flow rate sensor output

Symbol	Descriptions
Ⓐ Station no.	
2	2 stations
to	to
10	10stations
Ⓑ In-block position	
L	Left
R	Right
W	Both sides
Ⓒ Port size (IN/OUT port)	
20	Rc3/4
25	Rc1
Ⓓ Valve actuation classification	
B1	NC (normally closed) type (large flow rate)
B2	NO (normally closed) type (large flow rate)
00	None
Ⓔ Port size (branch port)	
10	Rc3/8
15	Rc1/2 (Not available with "T" water temperature measuring function.)
Ⓕ Flow rate sensor range	
04	0.5 to 4.0L/min
12	1.5 to 12L/min
32	4.0 to 32L/min
Ⓖ Flow rate sensor output	
A0	DC0 to 5V
A0T	DC0 to 5V+With water temperature measuring function
A1	DC4 to 20mA
A2	DC1 to 5V
A2T	DC1 to 5V+With water temperature measuring function
A3	DC0 to 10V
A3T	DC0 to 10V+With water temperature measuring function
N0	NPN transistor 2 outputs (a contact point)
N1	NPN transistor 2 outputs (b contact point)
P0	PNP transistor 2 outputs (a contact point)
P1	PNP transistor 2 outputs (b contact point)

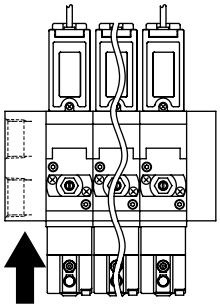
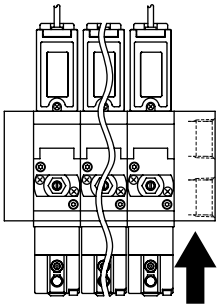
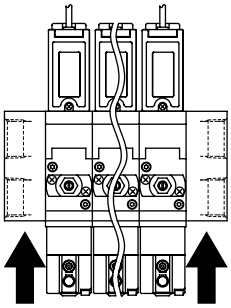
<Example of model no.>

WXU-J-6-L-25-B1-15-12-N0

Model: Integrated Unit for Water Control 1 fluid control type

- Ⓐ Station no. : 6stations
- Ⓑ In-block position : Left
- Ⓒ Port size (IN/OUT port) : Rc1
- Ⓓ Valve actuation classification : NC (normally closed) type (large flow rate)
- Ⓔ Port size (branch port) : Rc1/2
- Ⓕ Flow rate sensor range : 1.5 to 12L/min
- Ⓖ Flow rate sensor output : NPN transistor 2 outputs (a contact point)

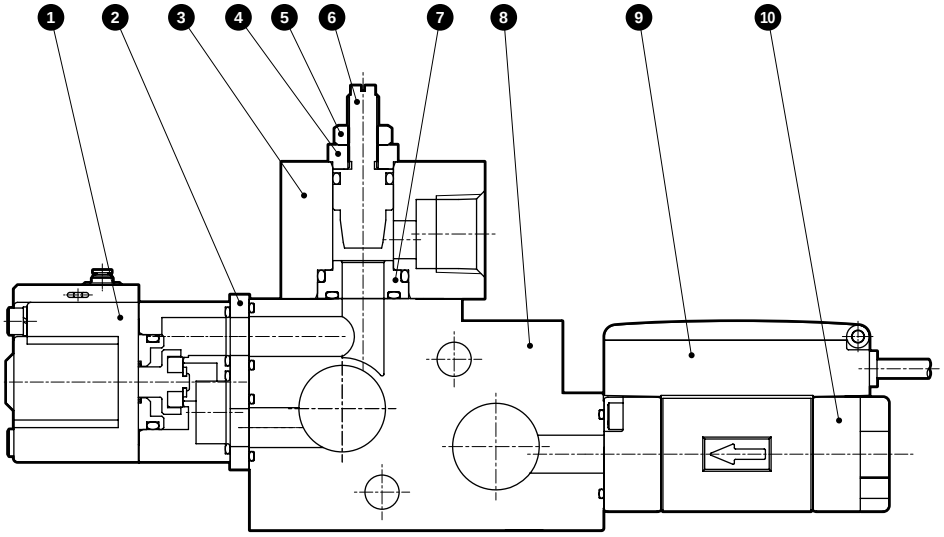
Ⓑ In-block position

Symbol	L	R	W
Descriptions	Left	Right	Both sides
Layout			

Internal structure and parts list

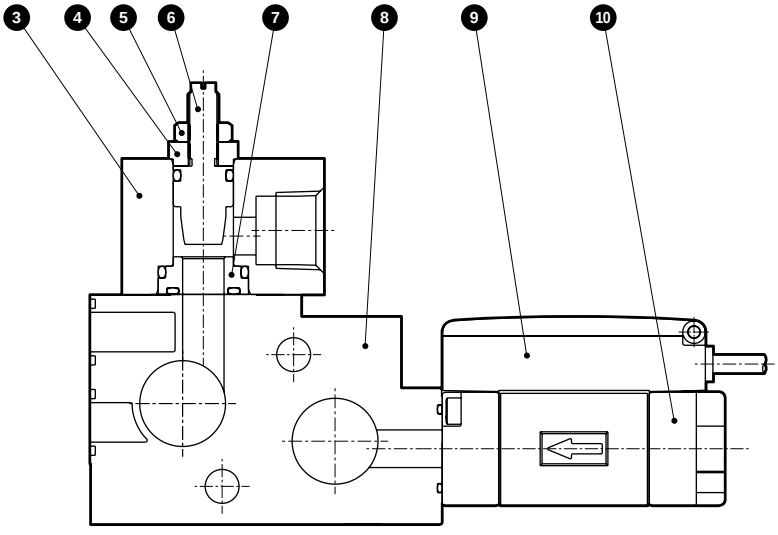
● 1 station assembly

• With valve



<The needle will be shipped in the fully open state.>

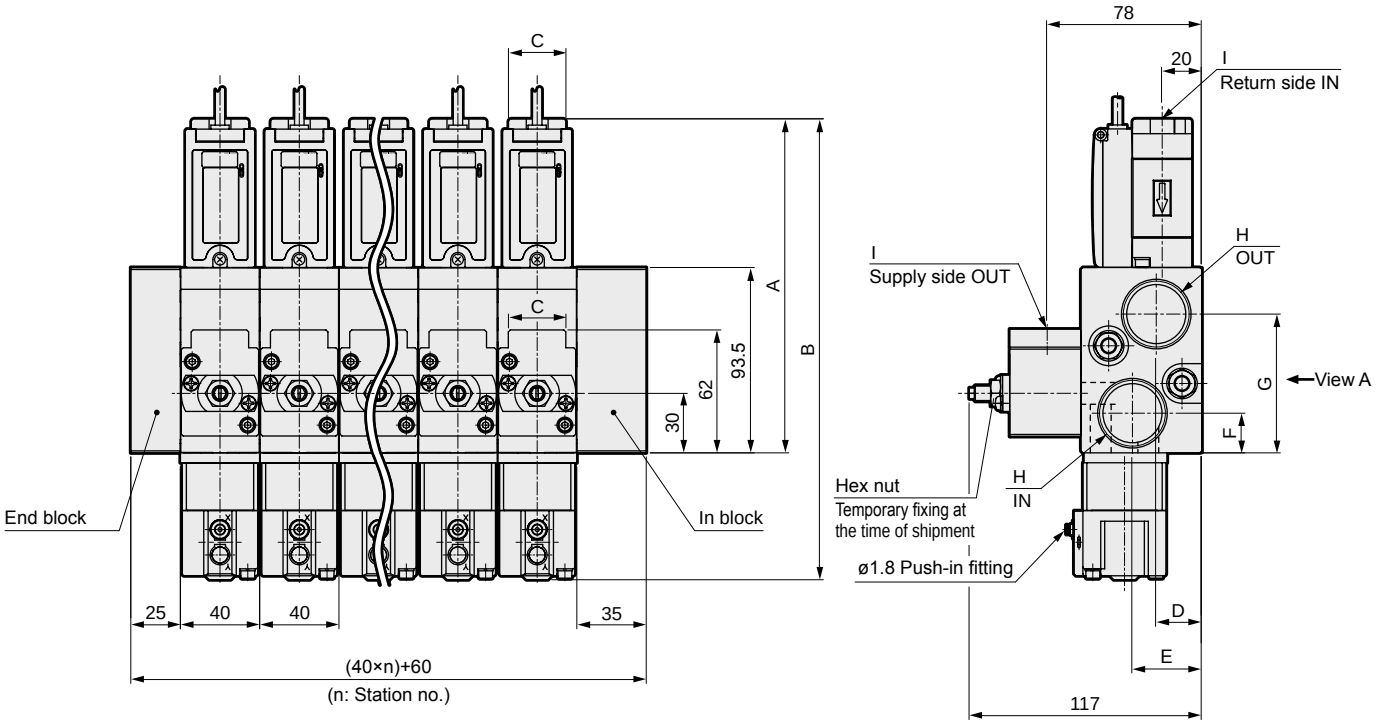
• Without valve



<The needle will be shipped in the fully open state.>

No.	Product name	Material	
1	Cylinder valve [GNAB Series]		
2	Plate	SUS304	Stainless steel
3	Needle block	SUS304	Stainless steel
4	Needle stopper	SUS304	Stainless steel
5	Hex nut	SWCH	Cold forging carbon steel
6	Needle	SUS304	Stainless steel
7	Valving element	PP	Polypropylene
8	Base	PPS	Polyphenylene sulfide
9	Flow rate sensor [WFK3000 Series]		
10	Attachment	SCS13	Stainless steel casting

Dimensions



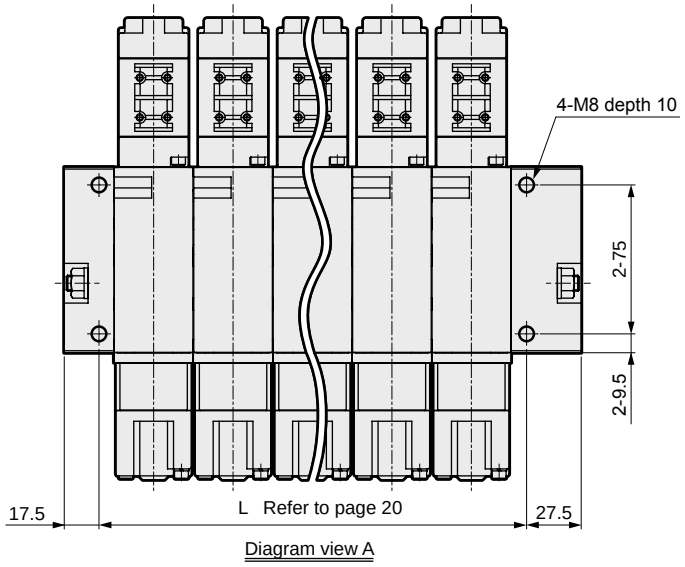
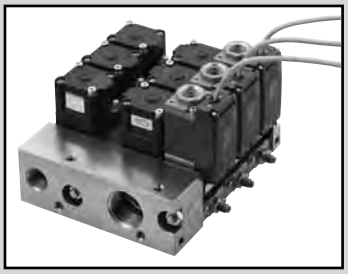


Diagram view A

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



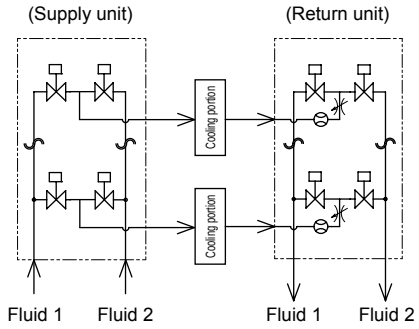
Integrated Unit for Water Control 2 fluid control type

WXU-P Series

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

RoHS

<Applications example>



You can make a flow rate with 2 kinds of fluids (such as water and air).
It is suitable for circuits that have water cooling and air purge.
Individual control is possible in each circuit.
(Used in 2 units)

Common specifications

Descriptions		WXU-P
Working fluid		Water, hot water, air
Working pressure MPa		0 to 0.4 (Note)
Proof pressure (water pressure) MPa		1.0
Fluid temperature ºC		1 to 70
Ambient temperature ºC		5 to 50
Atmosphere		Free of corrosive and explosive gases
Flow rate adjustment range %		15 to 100 (With water)
Station no.		2 to 6stations
Mounting orientation		Free
Sealant material		Fluoro rubber
Port size	Fluid 1 port	Rc1
	Fluid 2 port	Rc1/2
	Branch port	Rc3/8 or Rc1/2

Note: Please contact us when using at higher working pressure.

Weight

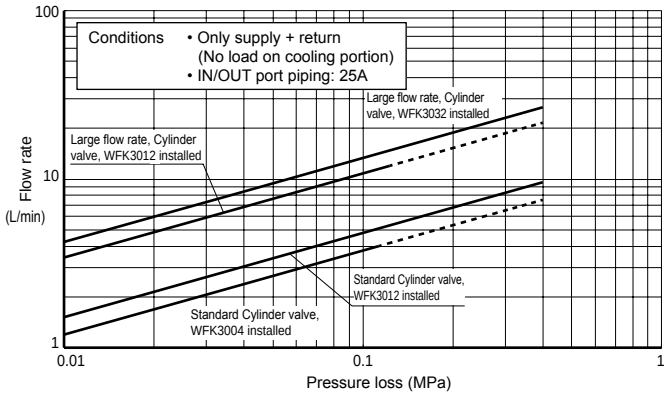
In block (kg)				2.60
End block (kg)				0.70
1 station assembly (kg)	Water supply and drainage classification	Fluid 1 cylinder valve	Fluid 2 cylinder valve	–
	Supply side	Standard	Standard	0.87
		Large flow rate	Standard	0.90
	Return side	Standard	Standard	1.14
		Large flow rate	Standard	1.17

Flow characteristics

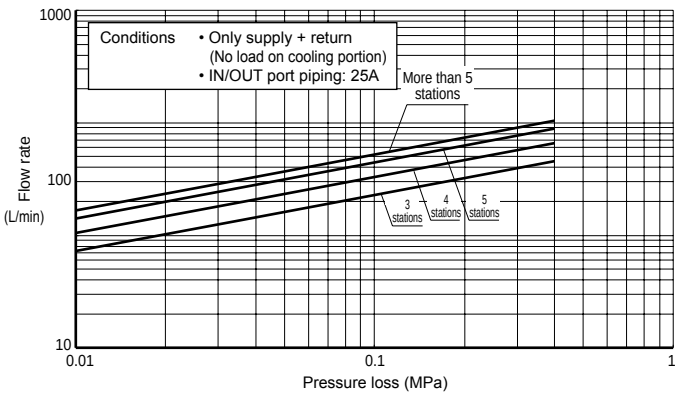
Water supply and drainage classification	Composition		Fluid 1 side Cv value	Fluid 2 side	
	Cylinder valve	Flow rate sensor		C[dm³/(s•bar)]	b
Supply side (1 station)	Standard	–	0.44	1.4	0.2
	Large flow rate	–	1.28	3.0	0.1
Return side (1 station)	Standard	WFK3004	0.33	1.4	0.2
		WFK3012	0.52		
	Large flow rate	WFK3012	0.94	3.0	0.1
		WFK3032	1.37		

Note: Please be sure to carry out flow rate confirmation of the 1 station (each line) and the entire unit. (Please refer to page 19 "Viewpoint of flow characteristics table".)

● 1 station



● Entire unit



If the entire 1 station assembly equipment configuration is the same, you can order the entire unit through symbol selection.
If you form a unit with different equipment configurations mixed with the 1 station assembly , please specify the configuration in the "Manifold specification sheet" (page 18).

How to order

WXU-P - R - 6 - L - S 1 1 - N - 15 - 12 - N0

- Ⓐ Water supply and drainage classification
- Ⓑ Station no.
- Ⓒ In-block position
- Ⓓ Fluid 1 valve size
- Ⓔ Fluid 1 Valve actuation classification
- Ⓕ Fluid 2 Valve actuation classification
- Ⓖ Flow rate adjustment
- Ⓗ Port size (branch port)
- Ⓘ Flow rate sensor range
- Ⓙ Flow rate sensor output

<Example of model number>

WXU-P-R-6-L-S11-N-15-12-N0

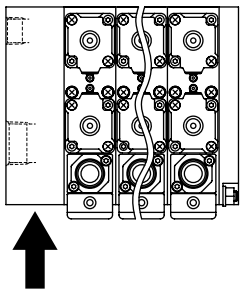
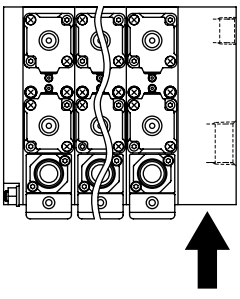
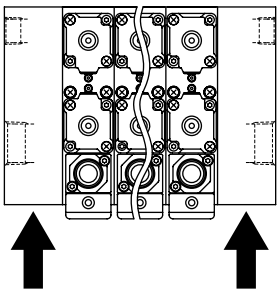
Model: Integrated Unit for Water Control 2 fluid control type

Ⓐ Water supply and drainage classification	: Return side
Ⓑ Station no.	: 6 stations
Ⓒ In-block position	: Left
Ⓓ Fluid 1 valve size	: Standard specifications
Ⓔ Fluid 1 Valve actuation classification	: NC (Normally closed) type
Ⓕ Fluid 2 Valve actuation classification	: NC (Normally closed) type
Ⓖ Flow rate adjustment	: With flow rate adjustment
Ⓗ Port size (branch port)	: Rc1/2
Ⓘ Flow rate sensor range	: 1.5 to 12L/min
Ⓙ Flow rate sensor output	: NPN transistor 2 outputs (a contact point)

Symbol	Descriptions
Ⓐ Water supply and drainage classification	
S	Supply side
R	Return side
Ⓑ Station no.	
2	2 stations
to	to
6	6 stations
Ⓒ In-block position	
L	Left
R	Right
W	Both sides
Ⓓ Fluid 1 valve size	
S	Standard
B	Large flow rate
Ⓔ Fluid 1 Valve actuation classification	
1	NC (Normally closed) type
2	NO (Normally open) type
Ⓕ Fluid 2 Valve actuation classification	
1	NC (Normally closed) type
2	NO (Normally open) type
Ⓖ Flow rate adjustment	
N	With flow rate adjustment
O	None
Ⓗ Port size (branch port)	
10	Rc3/8
15	Rc1/2 (Not available with "T" water temperature measuring function.)
Ⓘ Flow rate sensor range	
04	0.5 to 4.0L/min
12	1.5 to 12L/min
32	4.0 to 32L/min
00	No flow rate sensor (Ⓐ If there is a water supply and drainage classification of "S")

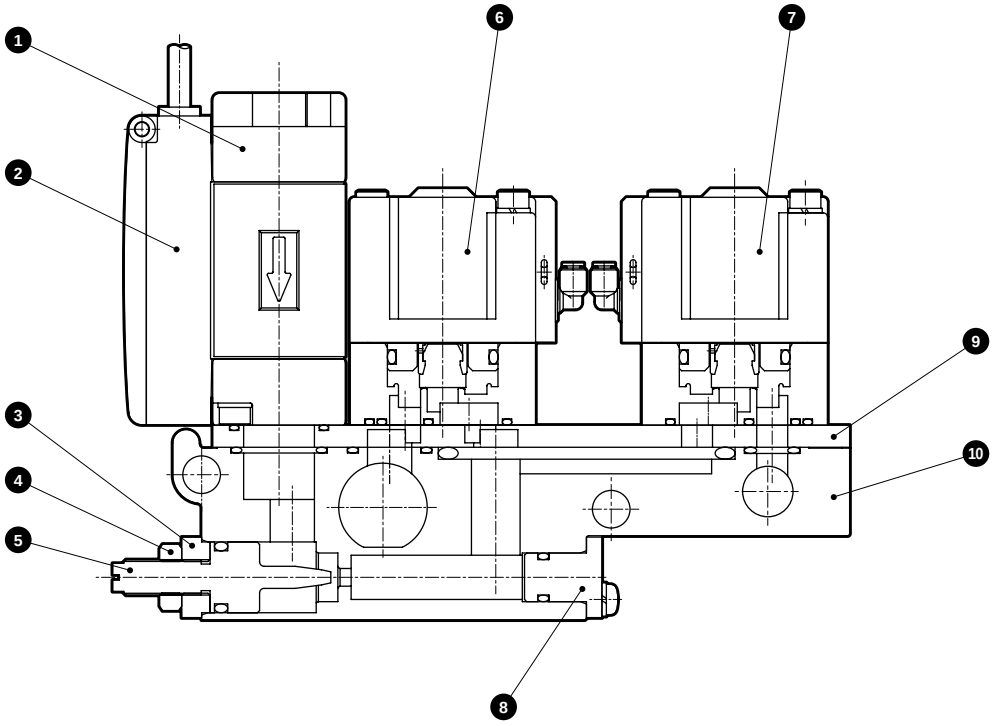
Ⓙ Flow rate sensor output	
A0	DC0 to 5V
A0T	DC0 to 5V+With water temperature measuring function
A1	DC4 to 20mA
A2	DC1 to 5V
A2T	DC1 to 5V+With water temperature measuring function
A3	DC0 to 10V
A3T	DC0 to 10V+With water temperature measuring function
N0	NPN transistor 2 outputs (a contact point)
N1	NPN transistor 2 outputs (b contact point)
P0	PNP transistor 2 outputs (a contact point)
P1	PNP transistor 2 outputs (b contact point)
000	No flow rate sensor (Ⓐ If there is a water supply and drainage classification of "S")

Ⓒ In-block position

Symbol	L	R	W
Descriptions	Left	Right	Both sides
Layout			

Internal structure and parts list

● 1 station assembly

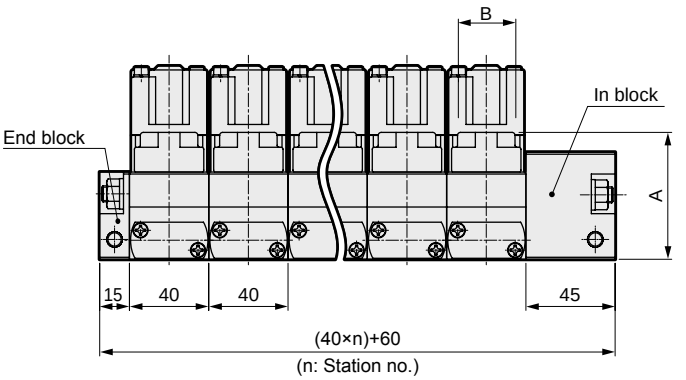


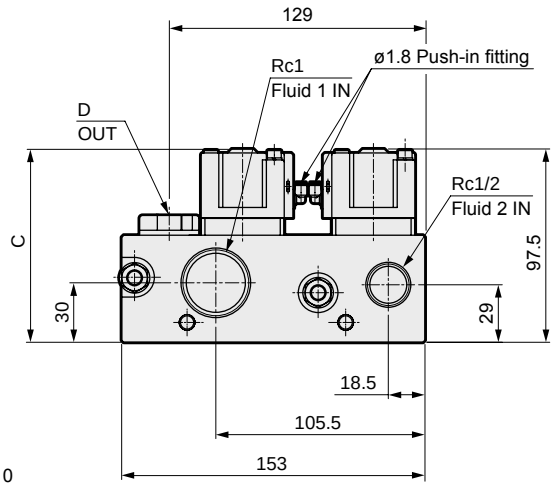
<The needle will be shipped in the fully open state.>

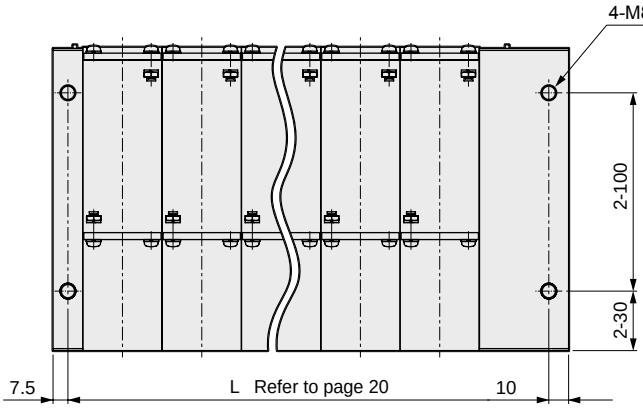
No.	Product name	Material	
1	Attachment	SCS13	Stainless steel casting
2	Flow rate sensor [WFK3000 Series]		
3	Needle stopper	SUS304	Stainless steel
4	Hex nut	SWCH	Cold forging carbon steel
5	Needle	SUS304	Stainless steel
6	Fluid 1 cylinder valve [GNAB Series]		
7	Fluid 2 cylinder valve [GNAB Series]		
8	Plug	SUS304	Stainless steel
9	Plate	SUS304	Stainless steel
10	Base	PPS	Polyphenylene sulfide

Dimensions

● WXU-P-S

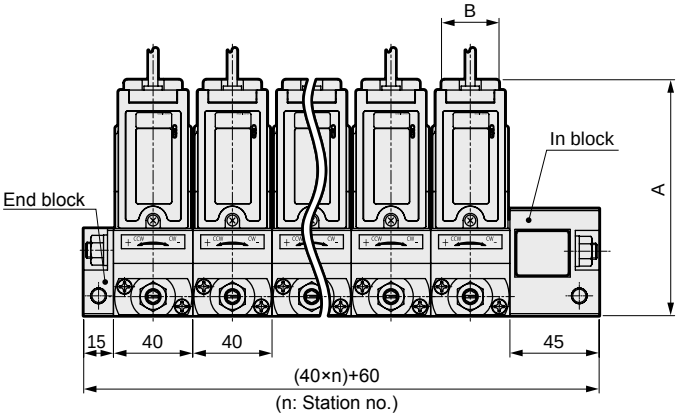


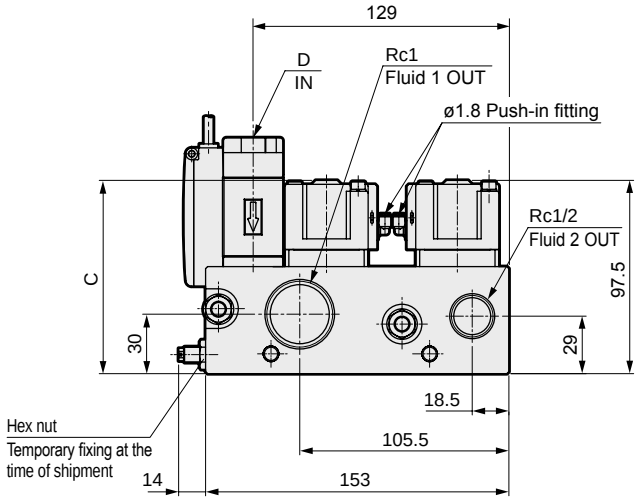


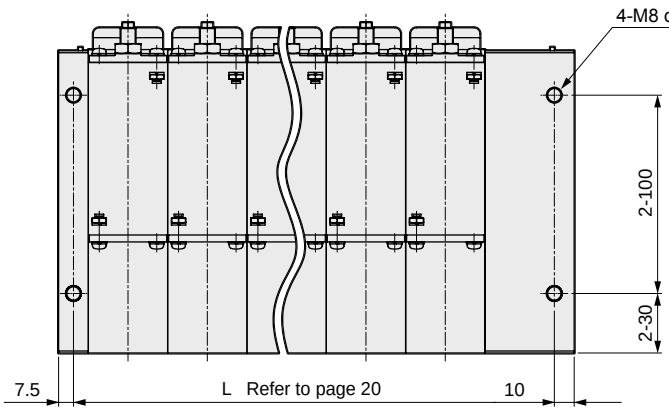


Model no.	A	B	C	D
WXU-P-S-∗∗∗-S-∗∗∗-10	59	24	97.5	Rc3/8
WXU-P-S-∗∗∗-B-∗∗∗-10	59	24	103	Rc3/8
WXU-P-S-∗∗∗-S-∗∗∗-15	64	29	97.5	Rc1/2
WXU-P-S-∗∗∗-B-∗∗∗-15	64	29	103	Rc1/2

● 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

Installed equipment specifications

■ Valve portion specifications

Descriptions	GNAB-X□	
	Standard	Large flow rate
Valve seat leakage cm³/min	0.12 or less (Air pressure)	
Orifice size mm	7	10
Cv value	1.0	1.6
C [dm³/(s•bar)]	3.8 (*1)	−
b	0.3	−
Pilot air pressure MPa	NC (Normally closed) type: 0.25 to 0.7 NO (Normally open) type: (*2)	
Pilot connection	Air fiber φ1.8 push-in fitting (*For other connections, please contact us separately.)	

*1 Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.
*2 Refer to page 23 regarding the NO type pilot air pressure.

■ Flow rate sensor specifications (Sensor type)

Descriptions	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.		
Output	-A0: DC0 to 5V, -A1: DC4 to 20mA, -A2: DC1 to 5V, -A3: DC0 to 10V		
Supply voltage	DC12 to 24V±10% (MAX80mA) -A3 to DC15 to 24V		

• Water temperature measurement function (Only 10A)

Descriptions	Contents
Measuring temperature range ºC	10 to 70
Accuracy	±2ºC (Less than 50ºC) ±3ºC (More than 50ºC)
Output	DC1 to 7V

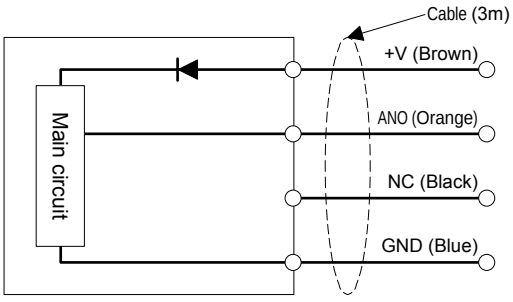
■ Flow rate sensor specifications (Switch type)

Descriptions		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.±1digit		
Output	Display	Instantaneous flow rate 2 digits L.E.D. display		
	Switch output	2 point transistor output (NPN/PNP selection) MAX.DC50mA Internal voltage drop: 2.0V or less		
Supply voltage		DC12 to 24V±10% (MAX80mA)		

Flow rate sensor wiring method

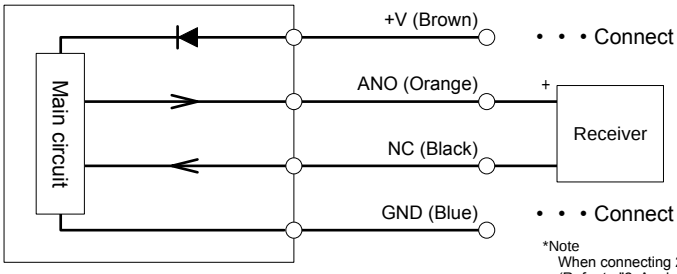
• Observe the following precautions when wiring.
• The cable is 4-core cabtire cable with core wire of 0.2 mm².

● Sensor type voltage output specifications: -A0, -A2, -A3



• • • Connect to the DC power supply plus [+] : DC12 to 24V±10% (Option A3 is DC15 to 24V±10%)
• • • Analog output : Output voltage is proportional to the flow rate
• • • Spare core : Please do not connect this to anything
• • • Connect to the DC power supply minus [-] : DC 0V

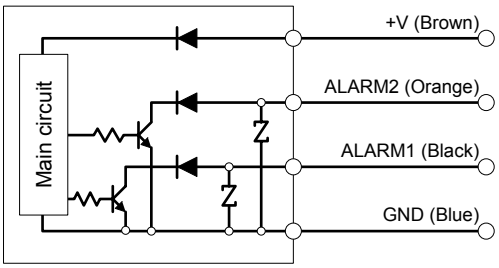
● Sensor type current output specifications: -A1



• • • Connect to the DC power supply plus [+] : DC12 to 24V±10%
• • • Connect to the 4-20mA input device
• • • Connect to the DC power supply minus [-] : DC 0V

*Note
When connecting 2 or more flow rate sensors to host input circuits (receivers), avoid signal interference.
(Refer to "2. Analog output A1 (4-20mA) connection" on page 25.)

● Switch type NPN output specifications: -N0, -N1



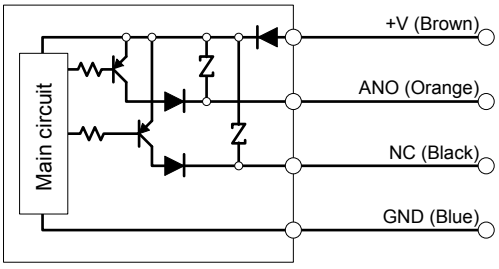
• • • Connect to the DC power supply plus [+] : DC12 to 24V±10%

• • • Switch 2 (OUT2) output : MAX DC30V • 50mA

• • • Switch 1(OUT1) output : MAX DC30V • 50mA

• • • Connect to the DC power supply minus [-] : DC 0V

● Switch type NPN output specifications: -P1, -P1



• • • Connect to the DC power supply plus [+] : DC12 to 24V±10%

• • • Switch 2 (OUT2) output : MAX 50mA

• • • Switch 1(OUT1) output : MAX 50mA

• • • Connect to the DC power supply minus [-] : DC 0V

Functional explanation

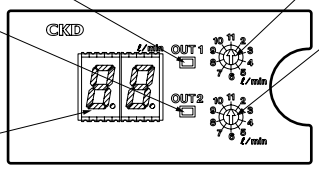
● Switch type (WFK30**M)

● Output lamp: Green (OUT1)
The switch output state is displayed.

● Output lamp: Orange (OUT2)
The switch output state is displayed.

● 2 digit digital display
It displays the instantaneous flow rate.

*Decimal display less than 10L/min
Integer display more than 10L/min

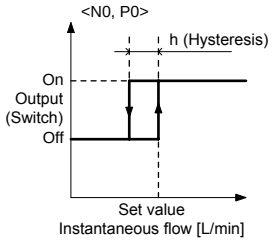


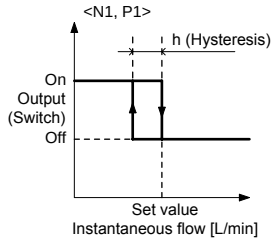
● Switch output setting rotary switch (OUT1)
Switch output flow rate is set in 10 steps.

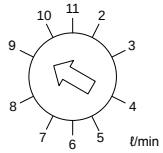
● Switch output setting rotary switch (OUT2)
The switch output flow rate is set in 10 steps.

*OUT1: Lead wire (black)
OUT2: Lead wire (orange).

• Switch output type Switch operation







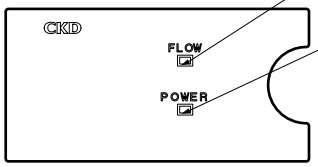
Model	WFK3004M	WFK3012M	WFK3032M
Switch output set value [L/min]	0.6 0.7 0.8 0.9 1.0 1.5 2.0 2.5 3.0 3.5	2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10 11	5.0 9.0 12 14 16 18 21 24 27 30
Hysteresis [L/min]	0.1	0.5	1.0

* Switch output setting is done with the rotary switch in the sensor top portion.
* Please use a precision screwdriver, etc. for the rotary switch setting. Please be careful as poor contact connection may occur if excessive force is applied to the rotating part.
* The flow rate setting value is fixed as shown in the table on the right.

● Sensor type (WFK30**S)

● Water flow display: Green
Lights when water is flowing within the specified range.

● Power display: Orange
Lights when power is turned on.



WXU-P type How to make manifold specification sheet

Supply side / (Return side)

Please prepare manifold specifications for each supply side and return side.

* 1, 2, ... of Layout is from the left towards the front of the flow rate sensor cover. 1, 2. (See image below)

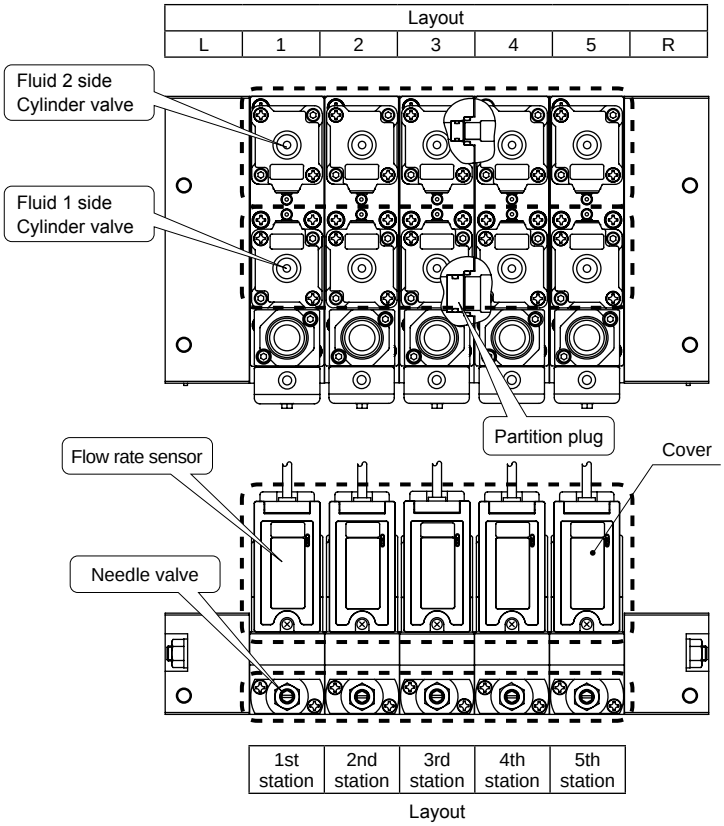
Product name	Specifications	Model no.	Layout L	1	2	3	4	5	6	R	Quantity
In block	Rc1, Rc1/2	–	○								1
End block	–	–								○	1
Fluid 2 side cylinder valve	NC	**GNAB-X2144-5**		○	○	○					3
<Specialized for Integrated Unit for Water Control>	NO	**GNAB-X2190-5**					○	○			2
	Masking plate	–									
Fluid 1 side cylinder valve	NC (Standard)	**GNAB-X2144-5**			○	○					2
<Specialized for Integrated Unit for Water Control>	NO (Standard)	**GNAB-X2190-5**					○				1
	NC (Large flow rate)	**GNAB-X2145-5**		○							1
	NO (Large flow rate)	**GNAB-X2224-5**						○			1
	Masking plate	–									
Branch port port size (Supply side only)	Rc3/8	–									
	Rc1/2	–									
Flow rate sensor <Specialized for Integrated Unit for Water Control> (Return side only)	From the flow rate sensor below, please select and fill out the table on the right. (Please refer to the installed equipment specifications on page 13)										
	Flow rate range: 04/12/32	**WFK30** 04 S – 15 – A0		○							1
	Type: S/M	**WFK30** 32 S – 15 – A3			○	○					2
	Port size: 10/15	**WFK30** 04 M – 15 – N0					○				1
	Output: Refer to Note 1 (table below)	**WFK30** 32 M – 15 – P0						○			1
		WFK30 – –									
	Only in the case of the port: Rc3/8	–									
	Only in the case of the port: Rc1/2	–									
Needle valve	Standard / Large flow rate: Decided from the fluid 1side cylinder valve model no.	–		○	○	○	○	○			5
Partition plug	Fluid 1 side	–					○				1
	Fluid 2 side	–					○				1
Remarks											

Please specify the equipment to be mounted in every 1 station.

Please fill in the total quantity.

Note 1) Water flow rate sensor output variation

Type: S (Analog output)	
A0	DC0 to 5V
A0T	DC0 to 5V + With water temperature measuring function (only 10A)
A1	DC4 to 20mA
A2	DC1 to 5V
A2T	DC1 to 5V + With water temperature measuring function (only 10A)
A3	DC0 to 10V
A3T	DC0 to 10V + With water temperature measuring function (only 10A)
Type: M (Switch output)	
N0	NPN transistor 2 outputs (a contact point)
N1	NPN transistor 2 outputs (b contact point)
P0	PNP transistor 2 outputs (a contact point)
P1	PNP transistor 2 outputs (b contact point)



WXU-H type Manifold specification sheet

● Contact ● Quantity sets ● Delivery date Month Day

Issue Year Month Day

Your company name

Contact

P.O. No.

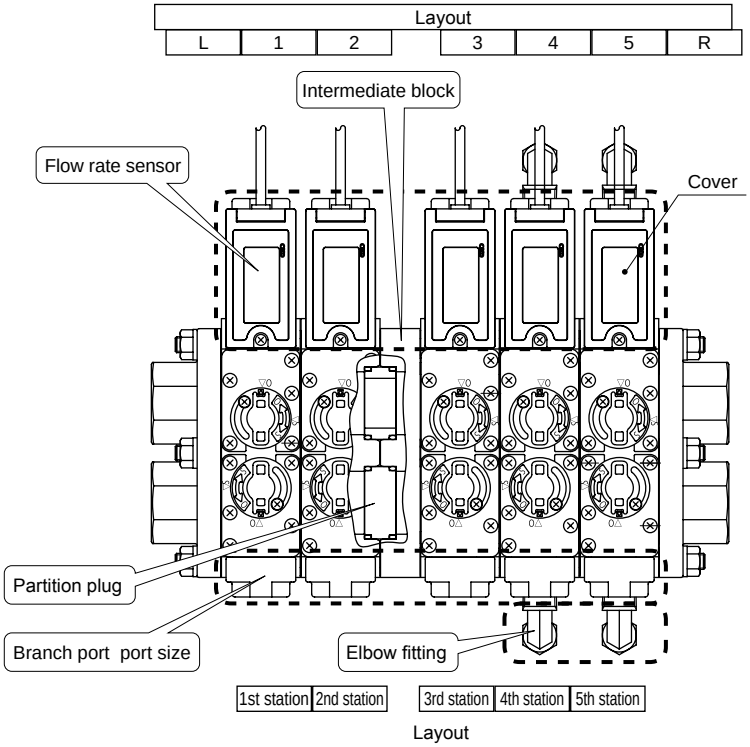
Slip No.	Order No.

* 1, 2, ... of Layout is from the left towards the front of the flow rate sensor cover. 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	Rc1		–													
End block	–		–													
Flow rate sensor <Specialized for Integrated Unit for Water Control> (Return side only)	From the flow rate sensor below, please select and fill out the table on the right. (Please refer to the installed equipment specifications on page 13)		WFK30 [Flow rate range] [Type] – [Port size] – [Output]													
	Flow rate range: 04/12/32 Type: S/M Port size: 10/15 Output: Refer to Note 1 (table below)		WFK30 [Flow rate range] [Type] – [Port size] – [Output]													
	Only in the case of the port	Rc3/8	–													
		Rc1/2	–													
Branch port port size (Supply side OUT port)	Rc3/8		–													
	Rc1/2		–													
Partition plug	With intermediate block (Width 20mm)	Supply side	–													
		Return side	–													
Elbow fitting (Stainless steel) (Piping to both supply and return sides)	Tube, Thread size (inch)	Applicable tube O.D × I.D. (mm)	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 rate sensor output variation

Type: S (Analog output)	
A0	DC0 to 5V
A0T	DC0 to 5V + With water temperature measuring function (only 10A)
A1	DC4 to 20mA
A2	DC1 to 5V
A2T	DC1 to 5V + With water temperature measuring function (only 10A)
A3	DC0 to 10V
A3T	DC0 to 10V + With water temperature measuring function (only 10A)
Type: M (Switch output)	
N0	NPN transistor 2 outputs (a contact point)
N1	NPN transistor 2 outputs (b contact point)
P0	PNP transistor 2 outputs (a contact point)
P1	PNP transistor 2 outputs (b contact point)



WXU-J type Manifold specification sheet

● Contact ● Quantity sets ● Request date Month Day

Issue Year Month Day

Slip No.	Order No.

Your company name

Contact

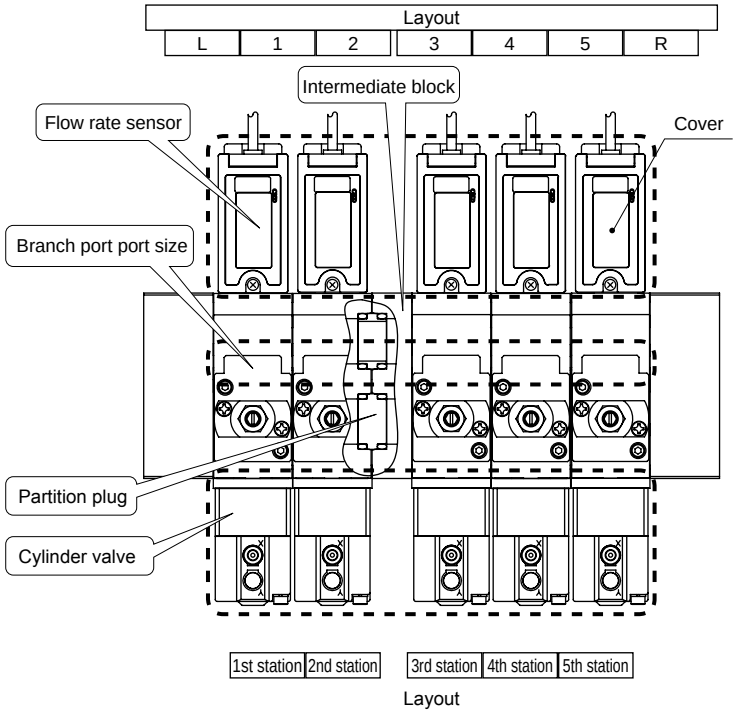
P.O. No.

* 1, 2, ... of Layout is from the left towards the front of the flow rate sensor cover. 1, 2. (See image below)

Product name	Specifications		Model no.	Flow rate range	Type		Port size		Output	Layout L	1	2	3	4	5	6	7	8	9	10	R	Quantity
In block	RC3/4		–																			
	RC1		–																			
End - block	–		–																			
Cylinder valve <Specialized for Integrated Unit for Water Control>	NC		**GNAB-X2225-1**																			
	NO		**GNAB-X2226-1**																			
	Masking plate																					
Flow rate sensor <Specialized for Integrated Unit for Water Control> (Return side only)	From the flow rate sensor below, please select and fill out the table on the right. (Please refer to the installed equipment specifications on page 13)			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	Rc3/8	–																			
		Rc1/2	–																			
Branch port port size (Supply side OUT port)	Rc3/8		–																			
	Rc1/2		–																			
Partition plug	With intermediate block (Width 20mm)	Supply side	–																			
		Elbow fitting	–																			
Remarks																						

Note 1 Water flow rate sensor output variation

Type: S (Analog output)	
A0	DC0 to 5V
A0T	DC0 to 5V + With water temperature measuring function (only 10A)
A1	DC4 to 20mA
A2	DC1 to 5V
A2T	DC1 to 5V + With water temperature measuring function (only 10A)
A3	DC0 to 10V
A3T	DC0 to 10V + With water temperature measuring function (only 10A)
Type: M (Switch output)	
N0	NPN transistor 2 outputs (a contact point)
N1	NPN transistor 2 outputs (b contact point)
P0	PNP transistor 2 outputs (a contact point)
P1	PNP transistor 2 outputs (b contact point)



WXU-P type manifold specification sheet

● Contact ● Quantity sets ● Delivery date Month Day

Issue Year Month Day

Your company name

Contact

P.O. No.

Slip No.	Order No.

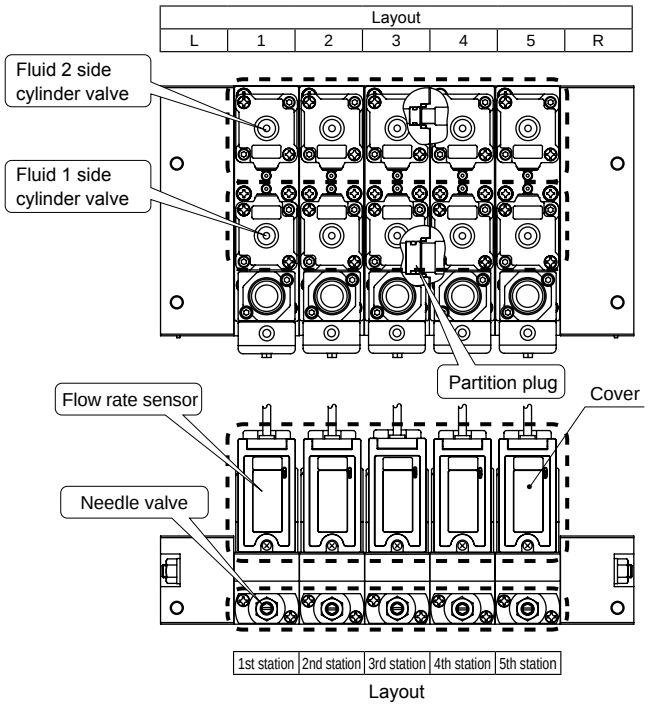
Supply side / Return side

* 1, 2, ... of Layout is from the left towards the front of the flow rate sensor cover. 1, 2. (See image below)

Product name	Specifications	Model no.	Lagout L	1	2	3	4	5	6	R	Quantity
In block	Rc1, Rc1/2	–									
End block	–	–									
Fluid 2 side cylinder valve <Specialized for Integrated Unit for Water Control>	NC	**GNAB-X2144-5**									
	NO	**GNAB-X2190-5**									
	Masking plate	–									
Fluid 1 side cylinder valve <Specialized for Integrated Unit for Water Control>	NC(Standard)	**GNAB-X2144-5**									
	NO(Standard)	**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)	Rc3/8	–									
	Rc1/2	–									
Flow rate sensor <Specialized for Integrated Unit for Water Control> (Return side only)	From the flow rate sensor below, please select and fill out the table on the right. (Please refer to the installed equipment specifications on page 13)	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: Rc3/8	–									
	Only in the case of the port: Rc1/2	–									
Needle valve	Standard / Large flow rate: Decided from the fluid 1side cylinder valve model no.	–									
Partition plug	Fluid 1 side	–									
	Fluid 2 side	–									
Remarks											

Note 1) Water flow rate sensor output variation

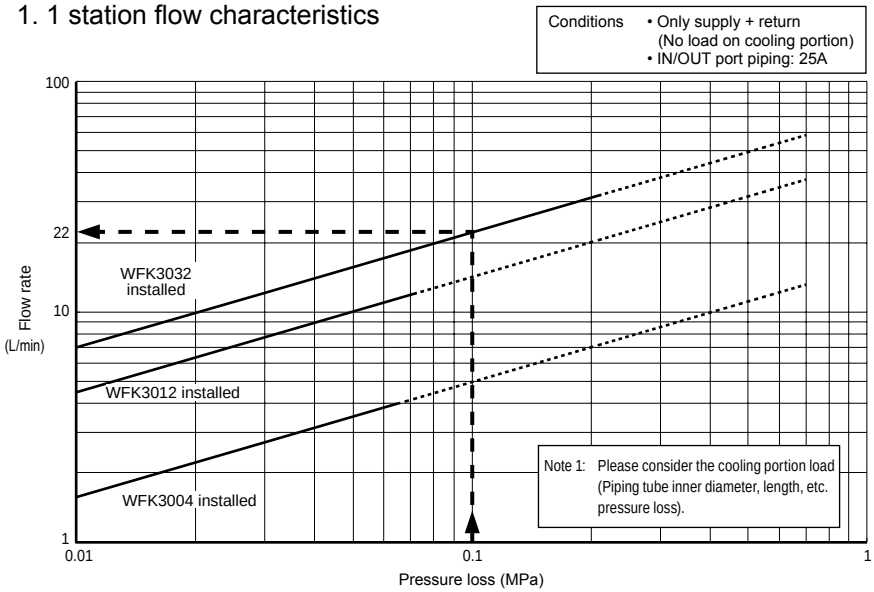
Type: S (Analog output)	
A0	DC0 to 5V
A0T	DC0 to 5V + With water temperature measuring function (only 10A)
A1	DC4 to 20mA
A2	DC1 to 5V
A2T	DC1 to 5V + With water temperature measuring function (only 10A)
A3	DC0 to 10V
A3T	DC0 to 10V + With water temperature measuring function (only 10A)
Type: M (Switch output)	
N0	NPN transistor 2 outputs (a contact point)
N1	NPN transistor 2 outputs (b contact point)
P0	PNP transistor 2 outputs (a contact point)
P1	PNP transistor 2 outputs (b contact point)



Layout

Viewpoint of the flow characteristics table

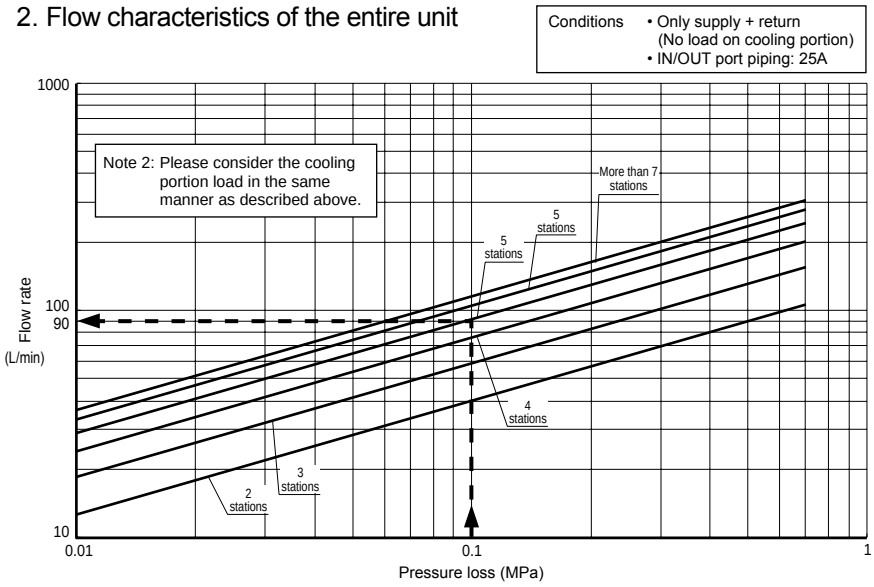
1. 1 station flow characteristics



Example 1:
In the WXU-H type, when installing the WFK3032, how much is the water (specific gravity =1) if the maximum flow rate is at △P=0.15MPa (P1-P2)? (The cooling portion load shall be 0.05MPa.)

Q=22L/min
(The pressure loss becomes 0.1MPa (0.15-0.05).)

2. Flow characteristics of the entire unit



Example 2:
In the WXU-H type, during the 5 stations, how much is the water (specific gravity =1) if the maximum flow rate is at △P=0.15MPa (P1-P2)? (The cooling portion load shall be 0.05MPa.)

Q=90L/min
(The pressure loss becomes 0.1MPa (0.15-0.05).)

Flow rate calculation method

SI unit

$$Q=45.16Cv\frac{\sqrt{P_1-P_2}}{\sqrt{G}}$$

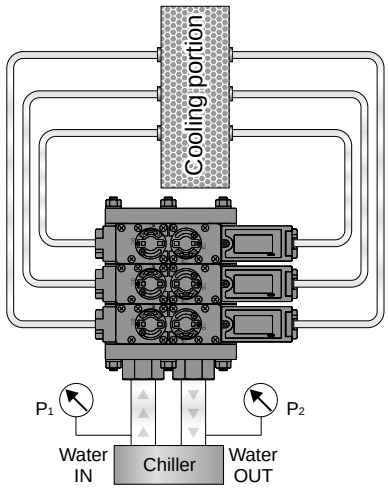
Q: Flow rate ℓ/min

P_1: Primary side absolute pressure MPa(abs)

P_2: Secondary side absolute pressure MPa(abs)

G: Specific gravity (Water = 1)

Cv: Flow rate coefficient

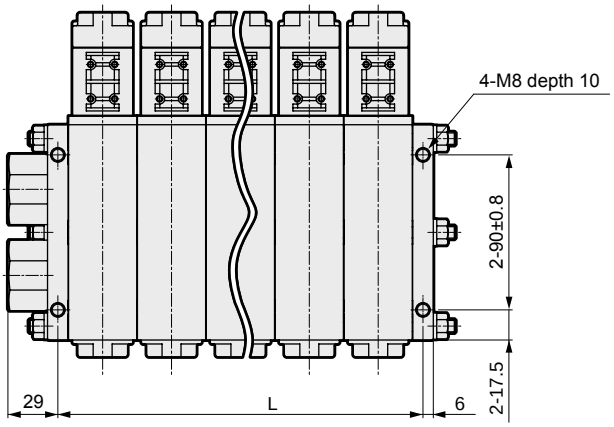


Pressure loss
△P
$\triangle P=P_1-P_2$

Screw pitch (L) to fix the body

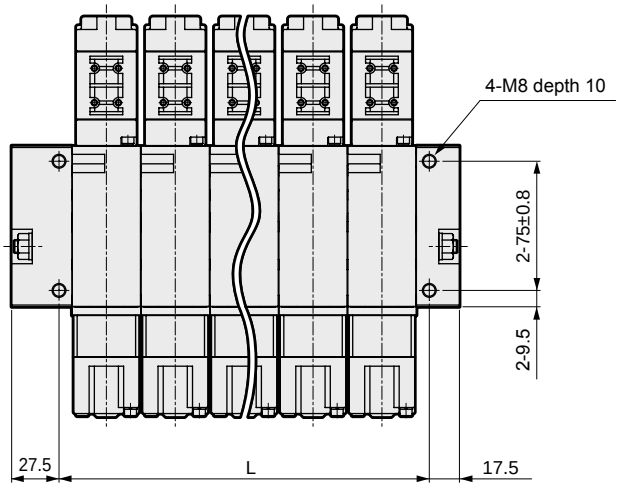
Screw pitches (L) for each type are described in below.
Please consider including adopting oval hole for one side of mounting hole.

● WXU-H



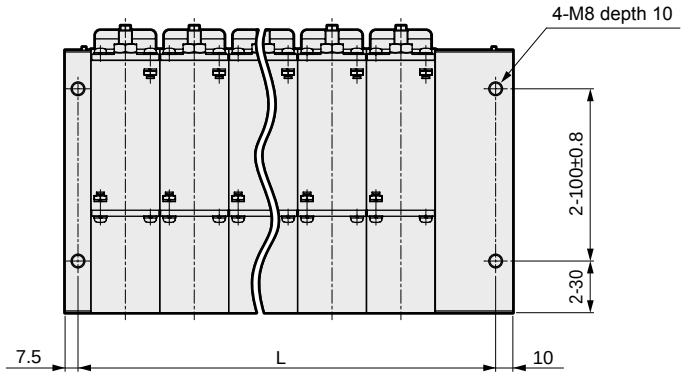
Station no.	2	3	4	5	6	7	8	9	10
L: Screw pitch	92 $^{+1}_{-2}$	132 $^{+1.5}_{-2.5}$	172 $^{+1.5}_{-3}$	212 $^{+2}_{-3.5}$	252 $^{+2}_{-4}$	292 $^{+2}_{-4.5}$	332 $^{+2.5}_{-5}$	372 $^{+2.5}_{-5.5}$	412 $^{+3}_{-6}$

● WXU-J



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

● WXU-P



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

Safety precautions

Be sure to read the instructions before use.

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. Do not attempt to modify or additionally machine the product.
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.
(If you consult CKD upon adoption and consent to CKD product specification, it will be applicable; however, safeguards should be adopted that will circumvent dangers in the event of failure.)

❶ Use for special applications requiring safety including nuclear energy, railroad, aviation, ship, vehicle, medical equipment, equipment or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits, or for safeguard.
❷ Use for applications where life or assets could be adversely affected, and special safety measures are required.

3 Observe corporate standards and regulations, etc., related to the safety of device design and control, etc.

ISO4414, JIS B 8370 (Pneumatic system rules)
JFPS2008 (Principles for pneumatic cylinder selection and use)
Including High Pressure Gas Maintenance Law, Occupational Safety and Sanitation Laws, other safety rules, body standards and regulations, etc.

4 Do not handle, pipe, or remove devices before confirming safety.

❶ Inspect and service the machine and devices after confirming safety of the entire system related to this product.
❷ Note that there may be hot or charged sections even after operation is stopped.
❸ When inspecting or servicing the device, turn off the energy source (air supply or water supply), and turn off power to the facility. Discharge any compressed air from the system, and pay attention to possible water leakage and leakage of electricity.
❹ When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.

5 Observe warnings and cautions on the pages below to prevent accidents.

■The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

⚠ DANGER: (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 the event of damages during the above term of warranty where it is deemed that CKD is responsible, CKD shall provide substitution of this product, free parts necessary for repair, or free repairs at our plant.
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 caused by other than the delivered product.
③ Use other than original design purposes.
④ Third-party repair/modification.
⑤ Failure caused by reason that is unforeseeable with technology put into practical use at the time of delivery.
⑥ Failure attributable to force majeure.
In addition, the guarantee stated here is related to the purchased product itself, and any damage which may be caused by failure of delivered goods will also be excluded.

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.

Safety precautions

Fluid control components: Warnings, cautions

Be sure to read the instructions before use.
Refer to the "General Purpose Valves (Catalog No. CB-03-1S)" for details on precautions for general purpose valves.

Individual precautions: Integrated Unit for Water Control WXU Series

Design & Selection

1. Design for Safety

⚠WARNING

- This product cannot be used as an emergency shut off valve.
  Valves in this catalog are not designed to ensure safety such as emergency shutoff. When using in such a system, provide other measures to ensure safety.
- Take measures to prevent harm to operators or objects if this product fails.

⚠CAUTION

- Liquid ring
  If liquid flows, when the circuit seal becomes liquid through temperature change, the pressure rises, it does not operate or components may be damaged. Provide a relief valve so that a liquid ring circuit is not created.
- Vibration
  Please use it attached to a place without vibration.

2. Working fluid

⚠WARNING

- Working fluid
  Do not use this product for fluids other than working fluids in catalog specifications.
- Fluid quality
  Iron rust and dirt, etc., in fluid can cause operation faults or leaks, and lowering product performance. Eliminate such substances.
- Fluid temperature
  Do not use beyond specified fluid temperature range.

3. Environment used

⚠WARNING

- Only explosion-proof solenoid valves and air-driven valves can be used in an explosion-proof atmosphere.
  When used in an explosion-proof atmosphere, please select from the air-driven valve or explosion-proof solenoid valve.
- Do not use this product in an environment in which corrosive gases could impregnate configuration materials.
- Do not use this product near heat-generating elements or where it may be subject to radiated heat.
- Use the product within the specified ambient temperature range.
  If there is risk of freezing, drain water or provide insulation so water does not freeze.
- Take appropriate antifreeze measures when using in a cold district.

4. Ensuring space

⚠CAUTION

- Securing maintenance space
  Secure sufficient space for maintenance and inspection.

Installation & Adjustment

1. Mounting

⚠CAUTION

- Always thoroughly read the Instruction Manual before installing this product.
- After installing, check for leaks from pipes and for wire connections, and check that the product is correctly installed.
- Use screws for mounting of the in-block, end-block and intermediate block, and please perform fixing of the product.

2. Piping

⚠CAUTION

- Please observe the effective screw length of the piping screw length. Chamfer the end of the screw a half-pitch. Chamfering of nozzle
- Before piping, flush the inside of the pipe with 0.3 MPa of air, and remove foreign matter such as dirt, metal chips, rust, and sealing tape.
- If excessive sealant (tape, gel) is applied when piping, it could enter the product and cause operation faults.
- When applying or wrapping sealant on piping material, apply it or wind it from the pipe end along the screw and leave 1.5 to 2 threads uncovered.

■ Trash and foreign matter in the fluid (including water stains, slime, etc.) interfere with normal functions of the product. Install an 80 mesh or higher filter for water flow, and a 5 μm or fewer filters for air flow.
If you are using a needle to adjust the small flow rate, the needle opening (gap) becomes extremely small, large foreign matter contained in the fluid and foreign material clogs the gap, and since the flow rate is reduced, please note this.

■ Do not mistake the supply port when piping to the product.

■ In the case of piping, fix the metal portion of the port, and please do not apply force to the plastic portion. This can lead to damage of the resin portion.

■ Tighten the piping with the following torques.

Piping nominal diameter	Recommended value of the pipe tightening torque
Rc3/8	22 to 24
Rc1/2	28 to 30
Rc3/4	31 to 33
Rc1	36 to 38

3. Wiring

⚠ CAUTION

■ Please use it in the allowable voltage range. Use outside of the allowable voltage range can cause malfunctions.

During Use & Maintenance

1. Maintenance / Inspection

⚠ WARNING

■ Do not touch coils or actuators with hands or otherwise while power is on or immediately after turning power on. There is a risk of electrical shock.
Touching electrical wire connections while power is on could lead to electrical shocks.

■ Please use it in specified working pressure.

■ To ensure that the product is used optimally, regularly inspect the product every six months. This frequency varies with the frequency of use.

⚠ CAUTION

■ After adjusting the flow, always tighten the lock nuts (WXU-P, WXU-J) or knob fixing screw (WXU-H).

■ Please do not turn the flow rate adjustment needle strongly.

■ Do not step the valve, nor put the heavy things on it.

■ If the product has not been used for more than a month, carry out trial operation.

■ Read the instruction manual thoroughly before starting maintenance to ensure correct operation.

■ Before performing maintenance, make sure to turn off the power and take out the fluid and pressure.

■ Care must be taken not to clog the strainer-filter.

2. Disassembly / Assembly

⚠ CAUTION

■ When cleaning the product, use a low-polluting cleaning agent such as a neutral detergent. (However, rubber parts must be replaced since it may swell)

■ When not using the product for one or more months after using water or hot water, remove any water or hot water left in the product. Water or hot water residue will cause rusting and may lead to operation faults or leaks.
If residual water cannot be removed, operate the valve several times a days to ensure correct use.

■ Consult with CKD on questions about consumables, etc.

Individual precautions: Air operated 2 port valve (cylinder valve)

Design & Selection

1. Working fluid

⚠CAUTION

■ External pilot air

① Measure to drain - a large amount of drainage (water, oil oxidation, tar, foreign matter) is included in the compressed air. These factors that significantly reduce the reliability of pneumatic equipment. As drainage measures, please perform dehumidification through the after cooler dryer, and improvement of air quality (clean air) through tar removal by removing foreign material through the filter.

② No lubrication - this series is applicable without lubrication, so a lubricator is not required. When lubricating, continuously lubricate so that the component does not run out of lubrication. Use the turbine oil Class 1/ISOVG32 (#90) or equivalent.

③ Filter - install the filter with a filter element less than 5μm.

During Use & Maintenance

1. Before Use

⚠CAUTION

■ Since the water hammer occurs depending on fluid pressure conditions, please use it with performing valve opening and closing speed adjustment, and lower the water hammer.

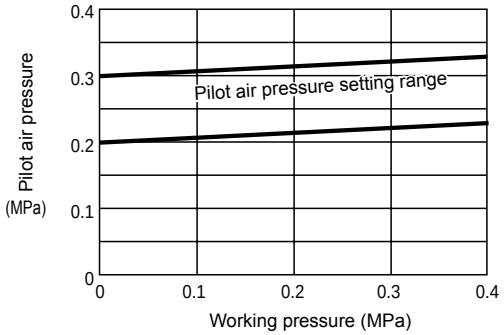
2. Maintenance / Inspection

⚠CAUTION

■ Pilot air pressure

Please use the pilot air pressure within the specified range.
In particular, please set the NO type pilot air pressure as in the graph below. If the product is used below the range of the graph shown on the right, there is a risk of seal failure or damage occurring in the seal portion.
If the pilot air cannot be managed, NC type selection is recommended.

● GNAB Series NO Type



Refrigeration equipment (Water equipment)

Safety precautions

Be sure to read the instructions before use.
Please check “Pneumatic, Vacuum and Auxiliary Components (No. CB-024SA)” for flow rate sensor general caution notes.

Individual precautions: Karman vortex type flow rate sensor for water WFK3000 Series

Design & Selection

1. Environment used

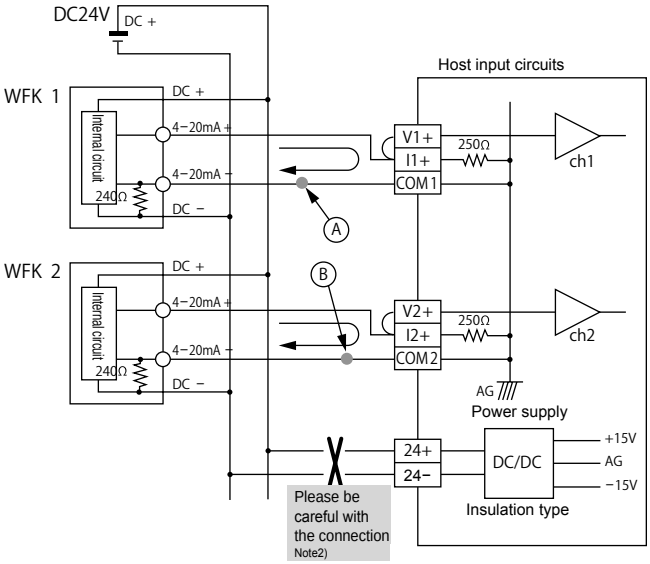
⚠ CAUTION

■ Vibration / Shock
Please avoid use with vibration more than 20m/s^2 and shock more than 98m/s^2. Since the detection principle uses the Karman vortex, it may cause malfunction or damage.

Vibration more than ~~20m/s^2~~ Shock more than ~~98m/s^2~~

2. Analog output A1(4-20mA) connection

⚠ CAUTION



Note 1) If more than one analog output 4-20mA sensor is connected to the same common input circuit (host computer, programmable controller, etc.) as shown above, signals will interfere and operation will not be correct. In this case please use the voltage output type (standard, A2, A3).

* A point voltage and B point voltage are connected in the input circuit, and if they become the same electrical potential, errors occur in each analog output.

Note 2) If the host input circuit power supply (24 VDC) is not insulated, separate the input circuit and sensor power.

Installation & Adjustment

1. Wiring

⚠ DANGER

■ Use power voltage and output within the specified voltage.
When voltage is applied outside the scope of the specifications, the sensor could malfunction or be damaged, or electrical shock or fire could occur.
Do not use a load exceeding the output rating.

⚠ WARNING

■ Check the wire color and terminal numbers when wiring.
Circuit protection is given for faulty wiring in the output transistor over-current protection circuit and polarity protection diode, etc., but it does not correspond to all faulty wiring. Faulty wiring can lead to sensor damage/destruction and malfunction.
Please confirm the wiring color and terminal number in the instruction manual and perform wiring.

■ Check wiring insulation.
Check that wires do not contact other circuits and that there are no ground faults or insulation faults across terminals. Over current could flow in and damage the sensor.

⚠CAUTION

- Separate the cable from sources of noise such as power distribution wires. Failure to do so could result in malfunctions caused by noise.
- Check that wires not used do not contact other wires.
- Do not short-circuit the output contact.
  If the load is short-circuited, the over current protection circuit protects the output transistor. If left too long, the output transistor could break.
  Over current protection…about 70mA
- Do not apply load generating surge voltage.
  A surge protection element is provided but it could break under repeated surges. Please use a built in surge absorbing element in the relay / solenoid valve. Similarly, take surge countermeasures if there is a source of surge in the same power supply line.
- Do not apply repeatedly bending or tension to leads. Failure to observe this could lead to disconnection.

2. Piping

⚠CAUTION

- It can be installed in a vertical, horizontal or any other position. However, please do the piping so that the fluid always flows through the piping. When installing vertically, the effect of bubbles inside is reduced by sending the fluid from downstream to upstream.

During Use & Maintenance

1. Common

⚠CAUTION

- If a failure occurs during operation, turn power OFF immediately and stop use. Contact your dealer. Slight heating (40°C) of the display section is not abnormal.
- About 2 seconds after the power is on, since the hard check, etc. internal settings are being performed, the display and output will not work correctly during this period. If an interlock circuit is established with control system devices using transistor output, an abnormal stop could occur, so mask the output during this time.
- If the output setting value is changed, control system devices could operate unintentionally. Stop devices before changing settings.
- The air flow rate cannot be measured.

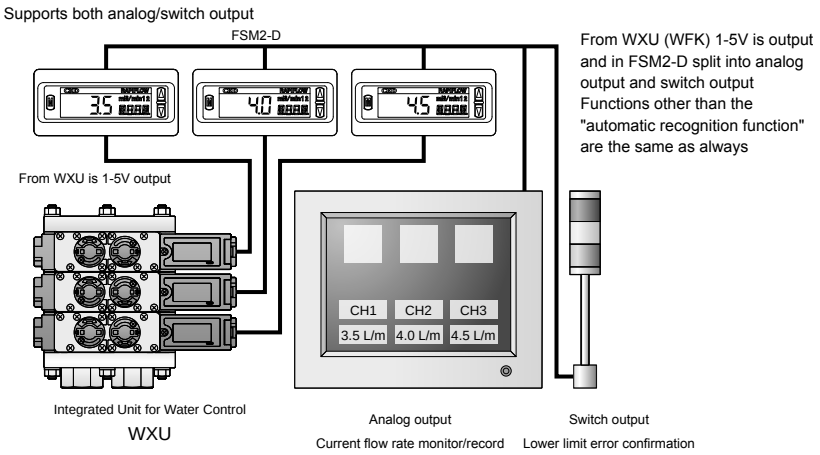
Related products

Small size flow rate sensor FSM2 Separate indicator FSM2-D Series

Catalog No.CC-886A

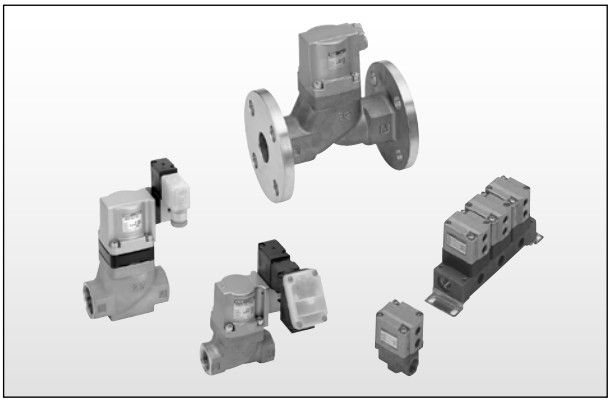
- Wiring can be easily done adopting the connector wiring method
- If you connect a sensor, since the separeted indicator automatically recognizes the flow rate range, setting of the display unit is not required

<Application example>



Cylinder valve SAB • SVB / NAB • GNAB Series

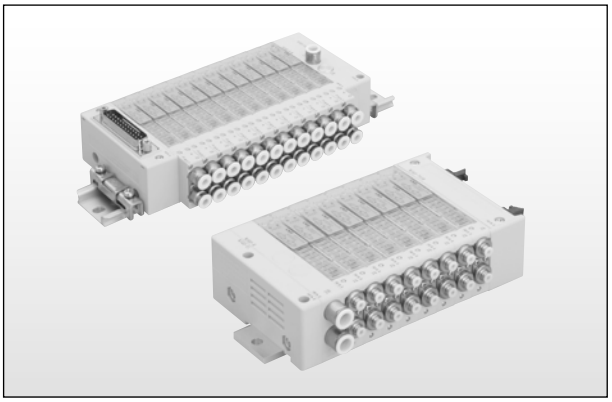
Catalog No.CB-03-1SA



- Various fluid control 2 port valve
  It can support up to high viscosity fluid and powder mixed fluid as well as air, water, gas, low vacuum and steam.
- Abundant variations
  To fit the piping port there is a broad series system from Rc1/4 to 80 flange.
- Support is also available for motion detection equipped with a sensor and a switch

3 port valve 2 mounted solenoid valve manifold MN3Q Series

Catalog No.CC-1066A

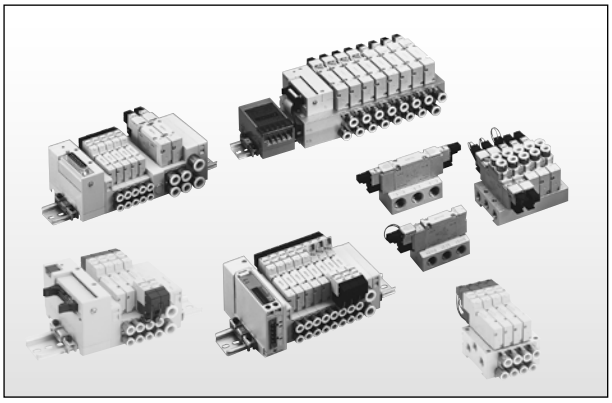


- Compact
  Through the low height of the manifold (height of 34mm), it can be installed in a narrow space
- INSTALLATION
  The mounting method is DIN rail mounting, and selected from directed mounting
- Piping
  There is freedom of maneuverability and piping improvement because you can choose the position and remove the supply and exhaust port

Related products

Metal resin base pneumatic valve 4G Series

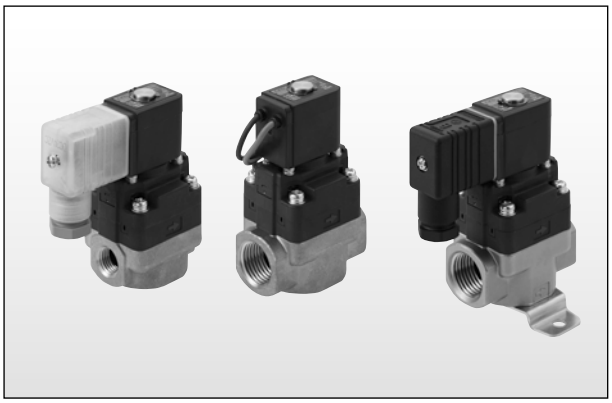
Catalog No.CB-023SA



- In a valve width 10mm, 15mm, 18mm the cylinder is driven until ø100
  NEW 3/4/5-port reduced wiring valve with safety function.
- Enhanced safety in the detailed response
  A protective cover is provided as standard for any manual override, check valves are integrated, and a filter is provided for any air supplying port as standard.
- Reliability has been upgraded
  Service life of over 60 million times, response time of 12 ms ± 2 ms, and low power of 0.6 W.
- Usability has been upgraded
  On the wiring connector, horizontal common, horizontal rotation on the wiring connector, adoption of tool-free manual equipment
- Many variations are provided
  Single item, metal base manifold, manifold block, individual, saving wiring

Pilot Solenoid Valve for Water FWD Series

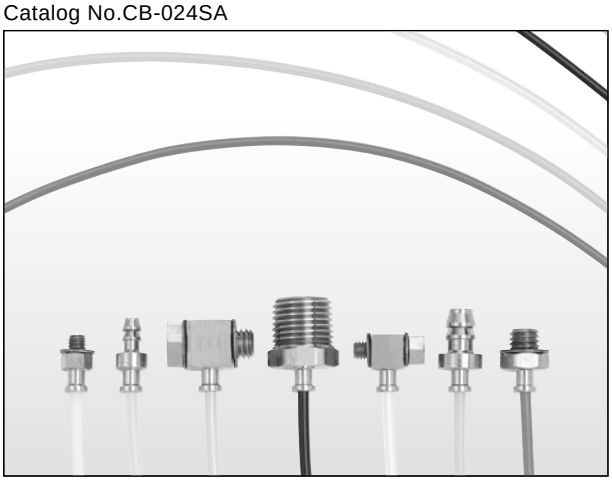
Catalog No.CC-1057A



- Low power consumption
  1/3 of the conventional product.
- Compact / lightweight
  Lighter weight is realized by optimization of used material. Both weight and volume have about 1/3 of the conventional product.
- Large flow rate
  More than 1.3 times the conventional product.

Fiber tube

Catalog No.CB-024SA



- Extremely fine air tube as fine and flexible as lead wire.
- Outer diameter: ø1.8, min. bending radius: 4 mm.
- Volume resistivity is approximately 1 × 108Ω•cm or less.
- Best suited for piping of fine speed cylinders.
- Various tube colors and fittings are available.

CKD Corporation

Website http://www.ckd.co.jp/

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