

Inline clean filter

FCS500 Series

- Port size: Rc1/8, Rc1/4, R1/8, R1/4
Push-in fitting ø4, ø6, ø8

JIS symbol



Specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

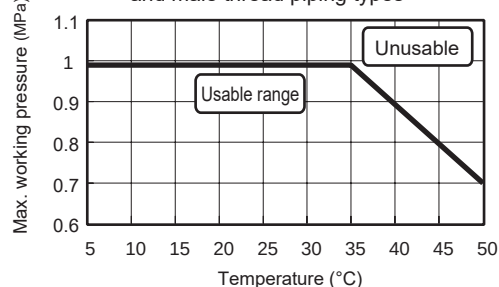
Item		Standard element resin type	Male thread piping	P9 element stainless steel		
		FCS500-(*1)(*2)	FCS500-(*1)(*2)	FCS500-66-P90 FCS500-66-P94	FCS500-88-P90 FCS500-88-P94	
Working fluid		Compressed air, N ₂				
IN side bore size (*1)		Select from ø4, ø6 and ø8	Select from ø4, ø6, ø8, R1/8 and R1/4	Rc1/8	Rc1/4	
OUT side bore size (*2)				Rc1/8	Rc1/4	
Proof pressure	MPa	1.5 (≈220 psi, 15 bar)	1.5 (≈220 psi, 15 bar)	2.25 (≈330 psi) (compressed air), 1.5 (≈220 psi) (N ₂)		
Differential pressure-resistant	MPa	0.5 (0.2 at 45 (113°F) to 50 (122°F)°C)	0.5 (0.2 at 45 (113°F) to 50 (122°F)°C)	0.5 (≈73 psi, 5 bar)		
Working pressure	MPa	-0.095 (≈-14 psi) to 0.99 (≈140 psi) *2	-0.095 (≈-14 psi) to 0.99 (≈140 psi) *2	-0.095 to 1.5 (compressed air), -0.095 to 0.99 (N ₂)		
Ambient / fluid temperatures		°C	5 (41°F) to 50 (122°F)	5 (41°F) to 45 (113°F)		
Filtration rating		μm	0.01 (removal efficiency 99.99%)			
Processing flow rate ℓ/min (ANR) *1		50 (H8H8 type: 80)	50 (H88A and 8AH8 types: 80)	50	80	
Weight		g	45	100	100	
Material	Body	Polyamide	Polyamide, aluminum (alumite treatment)	Stainless steel		
	Case	Clear polyamide	Clear polyamide	Stainless steel		
	Element	Polypropylene + urethane				
Assembling/inspection/packageging		Integrated production in cleanroom				
Cleaning		Degreasing				

*1: Initial flow rate at primary pressure 0.7 MPa and pressure drop 0.03 MPa.

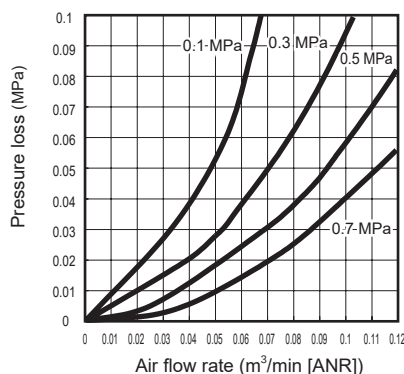
*2: Maximum working pressure varies with working temperature. Check graphs showing the relationship of working temperature and maximum working pressure.

Flow characteristics

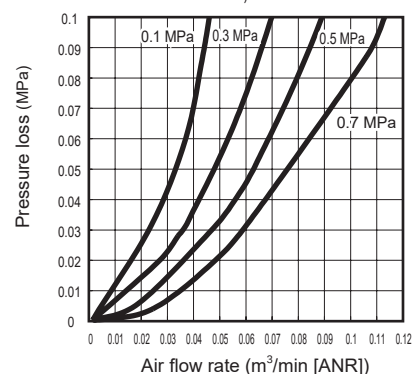
Relation of the working temperature and maximum working pressure for element resin and male thread piping types



- FCS500-H8H8 ● FCS500-H88A ● FCS500-8AH8
- FCS500-88-P90/P94



- FCS500-H4H4 ● FCS500-H6H6 ● FCS500-H46A
- FCS500-66-P90/P94 (products including ø4 and ø6 fittings, and R1/8 and Rc1/8 connections)



How to order

● Resin

FCS500 - H4 H4

Model No.
(clean-room
specifications)
(oil-prohibited
specifications)

A IN side
Port size

B OUT side
Port size

A IN side port size

H4	ø4
H6	ø6
H8	ø8
6 A	R 1/8
8 A	R 1/4

B OUT side port size

H4	ø4
H6	ø6
H8	ø8
6 A	R 1/8
8 A	R 1/4

*1: Two mounting screws (M2.5 x 25) and two spring washers are included with the product.
(These are not included when 6A or 8A is selected for the IN or OUT side connection port size.)

*2: When using male thread piping for both IN and OUT sides, confirm that piping does not apply a lateral load or bending torque during installation.

● Stainless steel

FCS500 - 88 - B - P90

Model No.
(clean-room
specifications)
(oil-prohibited
specifications)

A Port size

B Included

C Clean-room
specifications

A Port size

66	IN side/OUT side port size Rc1/8
88	IN side/OUT side port size Rc1/4

B Included

Blank	No
B	Bracket, mounting screw

C Clean-room specifications

	Structure/treatment	Material restrictions
P90	Stainless steel Oil-prohibited	-
P94	Stainless steel Oil-prohibited	Copper-based/Silicon-based/Halogen-based (fluorine/Chlorine/oxalic) Not available

Note: "P94" is made to order.

● Model No. of single bracket

FCS500-B
(Bracket x1, mounting screw (M4x6) 2l)
Weight: 6 g

Specifications for rechargeable battery (Catalog No. CC-1226)

● Design compatible with rechargeable battery manufacturing process

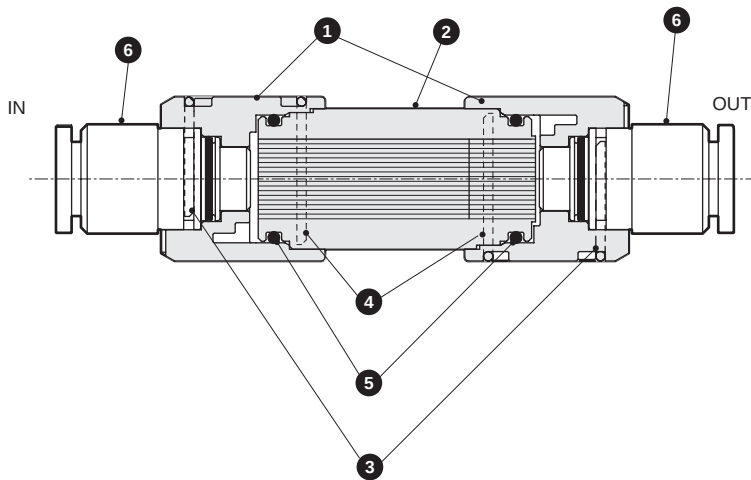
FCS500 — — P40

F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain
Separ
Mech
Press SW
Res press
exh valve
SlowStart
Anti-bac/Bac-
remove Filtr
Film
Resist FR
Oil-ProhR
Med
Press FR
No Cu/
PTFE FRL
Outdrs FRL
Adapter
Joiner
Press
Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/
other
Fit/Tube
Nozzle
Air Unit
PrecsCompn
Electro
Press SW
ContactSW
AirSens
PresSW
Cool
Air Flo
Sens/Ctrl
WaterRISens
TotAirSys
(Total Air)
TotAirSys
(Gamma)
Gas
generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg
etc
Ending

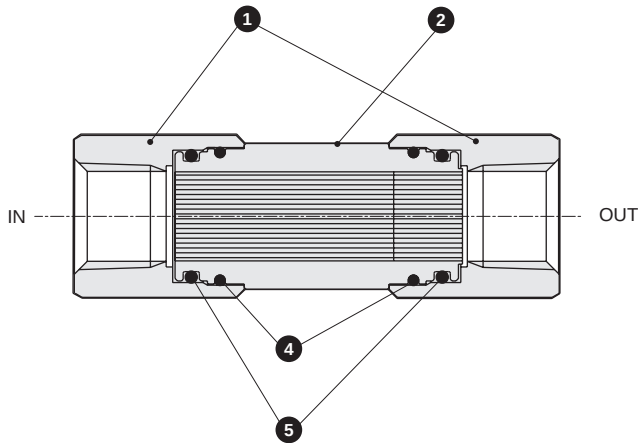
- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain
Separ
- Mech
Press SW
- Res press
exh valve
- SlowStart
- Anti-bac/Bac-
remove Filt
- Film
Resist FR
- Oil-ProhR
- Med
Press FR
- No Cu/
PTFE FRL
- Outdrs FRL
- Adapter
Joiner
- Press
Gauge
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- Speed Ctrl
- Silncr
- CheckV/
other
- Fit/Tube
- Nozzle
- Air Unit
- PrecsCompn
- Electro
Press SW
- ContactSW
- AirSens
- PresSW
Cool
- Air Flo
Sens/Ctrl
- WaterRtSens
- TotAirSys
(Total Air)
- TotAirSys
(Gamma)
- Gas
generator
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg
etc
- Ending

Internal structure and parts list

● Resin type



● Stainless steel



Cannot be disassembled

● Parts list

No.	Part name		Standard element resin type	Male thread piping	P9* element stainless steel
1	Body		Polyamide	Polyamide, aluminum (alumite treatment)	Stainless steel
2	Element	Housing	Clear polyamide	Clear polyamide	Stainless steel
		Filter	Polypropylene	Polypropylene	Polypropylene
		Filler material	Urethane	Urethane	Urethane
3	Pin		Stainless steel		
4	Pin		Stainless steel		
5	O-ring		Fluoro rubber		Fluoro rubber (clean-room specs P90) HNBR (clean-room specs P94)
6	Cartridge fitting		Copper alloy (nickeling) Hydrogenated nitrile rubber		-

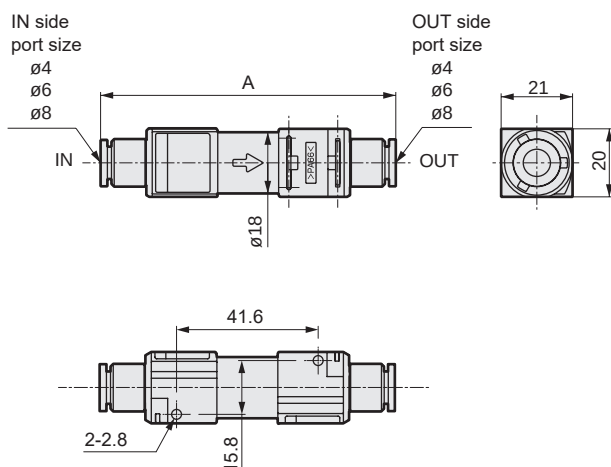
Dimensions



● Resin type

Port size

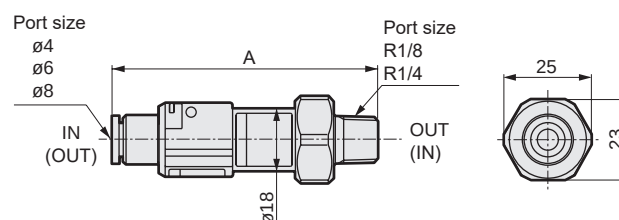
IN side (cartridge fitting) - OUT side (cartridge fitting)



● Male thread piping

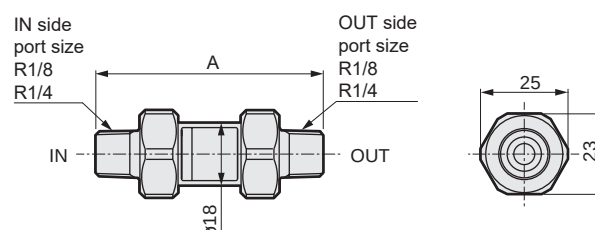
Port size

Cartridge fitting - male thread



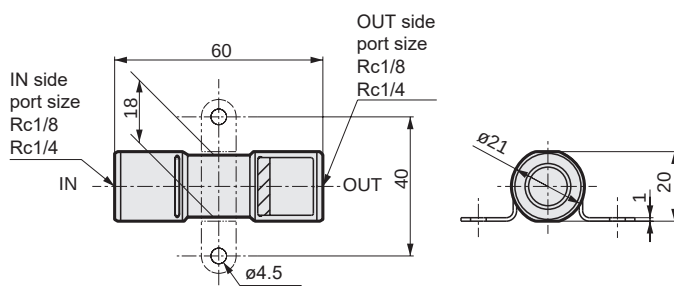
Port size

Male thread - male thread

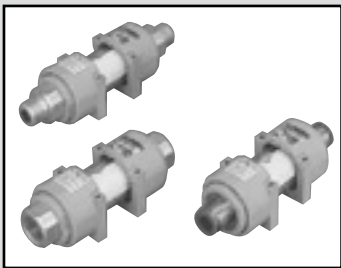


Model No.	FCS500 (standard element, resin type/male thread piping)													
Bore size model No.	H4H4	H4H6 H6H4	H4H8 H8H4	H46A 6AH4	H48A H86A 6AH8 8AH4	6A6A	6A8A 8A6A	H6H6	H6H8 H8H6	H66A 6AH6	H68A 8AH6	8A8A	8AH8 H88A	H8H8
Dimension A	80.5	83	84	69.5	73	58.5	62	85	86	72	75	65	76	87

● Stainless steel



F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain Separ
Mech Press SW
Res press exh valve
SlowStart
Anti-bac/Bac-remove Filtr
Film Resist FR
Oil-ProhR
Med Press FR
No Cu/ PTFE FRL
Outdrs FRL
Adapter Joiner Press Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
PrecsCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterRISens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending



Inline clean filter

FCS1000 Series

- Port size: Rc1/4, Rc3/8, R1/4, R3/8
Push-in fitting ø8, ø10, ø12

JIS symbol



Specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item		Resin		Stainless steel (made to order)
		FCS1000-(*1)(*2)		FCS1000-(*1)(*2)-P90 FCS1000-(*1)(*2)-P94
Working fluid		Compressed air, N2		
IN side bore size (*1)		Select from push-in fittings ø8, ø10, ø12, R1/4, R3/8, Rc1/4 and Rc3/8		Select from Rc1/4 and Rc3/8
OUT side bore size (*2)				
Proof pressure	MPa	1.5 (≈220 psi, 15 bar)		2.25 (≈330 psi) (compressed air), 1.5 (≈220 psi) (N2)
Differential pressure-resistant	MPa	0.5 (≈73 psi, 5 bar)		
Working pressure	MPa	-0.095 (≈-14 psi, -0.95 bar) to 0.99 (≈140 psi, 9.9 bar)		-0.095 to 1.5 (compressed air), -0.095 to 0.99 (N2)
Ambient / fluid temperatures	°C	5 (41°F) to 45 (113°F)		
Filtration rating	μm	0.01 (removal efficiency 99.99%)		
Processing flow rate	ℓ/min(ANR)	300 to 400 *1		
Weight		Push-in fitting	Other than push-in fitting	0.5
		0.15	0.11	
Material	Body	Polyamide		Stainless steel
	Case	Clear polyamide		Stainless steel
	Element	Polypropylene + urethane		
Assembling/inspection/packaging		Integrated production in cleanroom		
Cleaning		Degreasing		

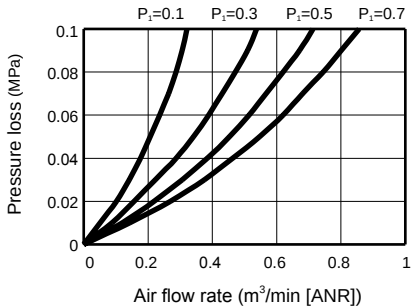
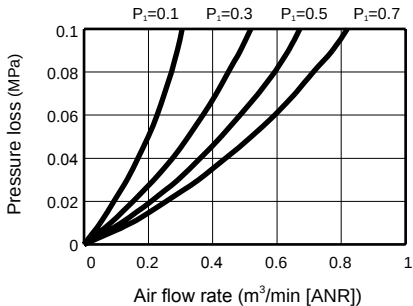
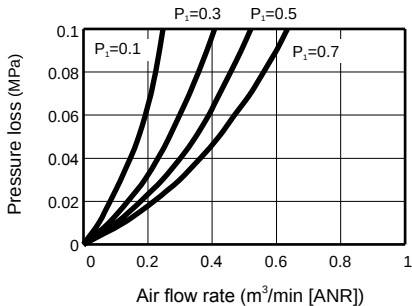
*1: Initial flow rate at primary pressure 0.7 MPa and pressure drop 0.03 MPa. (Differs according to port size.)

Flow characteristics

- FCS1000-H8H8
- FCS1000-8A8A

- FCS1000-H10H10
- FCS1000-10A10A
- FCS1000-88
- FCS 1000-88-P90/P94

- FCS1000-H12H12
- FCS1000-1010
- FCS 1000-1010-P90/P94



How to order

● Resin type

FCS1000 - H8 H8

Model No.
(clean-room
specifications)
(oil-prohibited
specifications)

A IN side
port size

B OUT side
port size

A IN side port size	
H8	ø8
H10	ø10
H12	ø12
8A	R1/4
10A	R3/8
8	Rc1/4
10	Rc3/8

B OUT side port size	
H8	ø8
H10	ø10
H12	ø12
8A	R1/4
10A	R3/8
8	Rc1/4
10	Rc3/8

*1: Two mounting screws (M3 x 40), two plain washers, and two spring washers are included with the product.

● Stainless steel (made to order)

FCS1000 - 8 8 - P90

Model No.
(clean-room
specifications)
(oil-prohibited
specifications)

A IN side
port size

B OUT side
port size

C Clean-room
specifications

A IN side port size	
8	Rc1/4
10	Rc3/8

B OUT side port size	
8	Rc1/4
10	Rc3/8

C Clean-room specifications		
	Structure/treatment	Material limitations
P90	Stainless steel material used Oil-prohibited	-
P94	Stainless steel material used Oil-prohibited	Use of copper-, silicon-, or halogen-based materials (e.g. fluorine, chlorine, or bromine) is not possible.

● Single unit model number for replacement element (1 element, 2 O-rings)

- For resin: **FCS1000-E**
- Stainless steel

For P90: **FCS1000-E-P90** (made to order)

For P94: **FCS1000-E-P94** (made to order)

Specifications for rechargeable battery (Catalog No. CC-1226A)

● Design compatible with rechargeable battery manufacturing process

FCS1000 - - P40

F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain Separ
Mech Press SW
Res press exh valve
SlowStart
Anti-bac/Bac- remove Filtr
Film Resist FR
Oil-ProhR
Med Press FR
No Cu/ PTFE FRL
Outdrs FRL
Adapter Joiner Press Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
PrecsCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterRtSens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

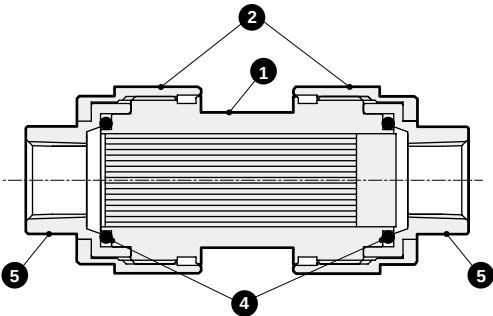
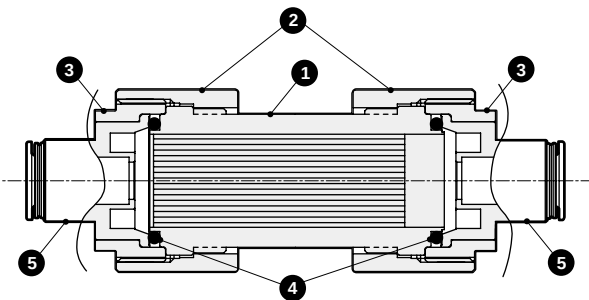
FCS1000 Series

F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain
Separ
Mech
Press SW
Res press
exh valve
SlowStart
Anti-bac/Bac-
remove Filt
Film
Resist FR
Oil-ProhR
Med
Press FR
No Cu/
PTFE FRL
Outdrs FRL
Adapter
Joiner
Press
Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/
other
Fit/Tube
Nozzle
Air Unit
PrecsCompn
Electro
Press SW
ContactSW
AirSens
PresSW
Cool
Air Flo
Sens/Ctrl
WaterRtSens
TotAirSys
(Total Air)
TotAirSys
(Gamma)
Gas
generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg
etc
Ending

Internal structure and parts list

● Resin type

● Stainless steel



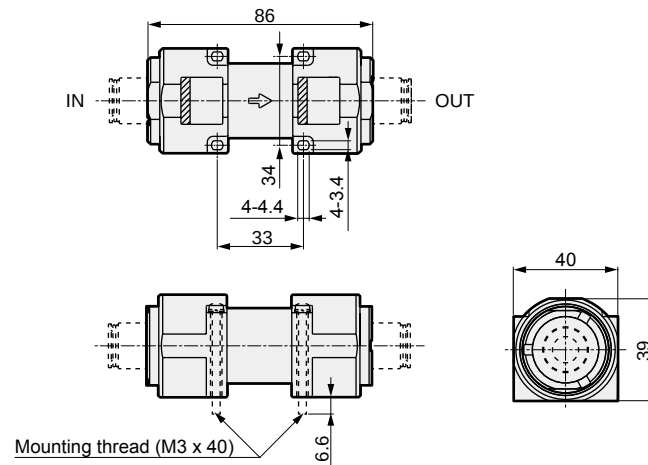
● Parts list

No.	Part name		Resin	Stainless steel
1	Element	Housing	Clear polyamide	Stainless steel
		Filter	Polypropylene	
		Filler material	Urethane	
2	Body		Polyamide	Stainless steel
3	Plug		Polyamide	-
4	O-ring		Fluoro rubber	Fluoro rubber (for clean-room specifications P90) Nitrile rubber (for clean-room specifications P94)
5	Cartridge fitting (Port size ø8, ø10, ø12)		Copper alloy (nickeling) Hydrogenated nitrile rubber	-
	Adaptor (Port size Rc1/4, Rc3/8, R1/4, R3/8)		Aluminum (alumite treatment)	Stainless steel

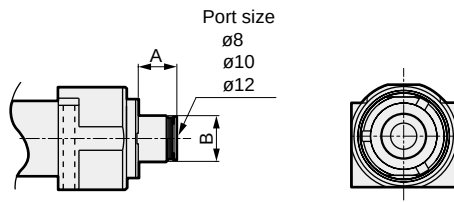
Dimensions



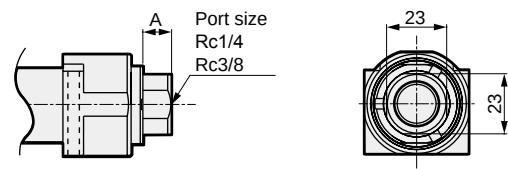
● Resin type



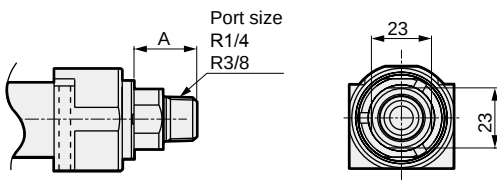
· Push-in fitting (ø8, ø10, ø12)



· Rc thread (Rc1/4, Rc3/8)

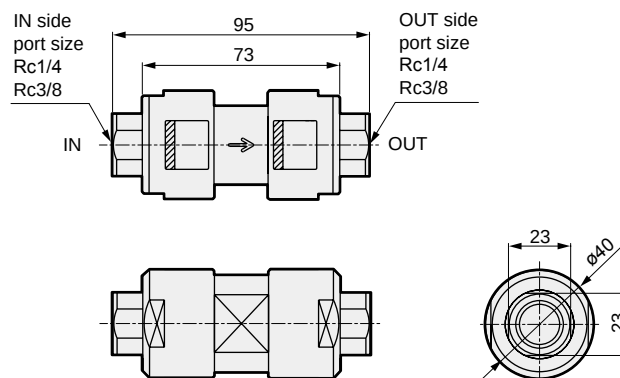


· R thread (R1/4, R3/8)



Connection model No.	Port size	A	B
H8	ø8 Push-in fitting	12	ø17.5
H10	ø10 Push-in fitting	14.5	ø17.5
H12	ø12 Push-in fitting	16	ø19.5
8A	R1/4	24	-
10A	R3/8	24	-
8	Rc1/4	11	-
10	Rc3/8	11	-

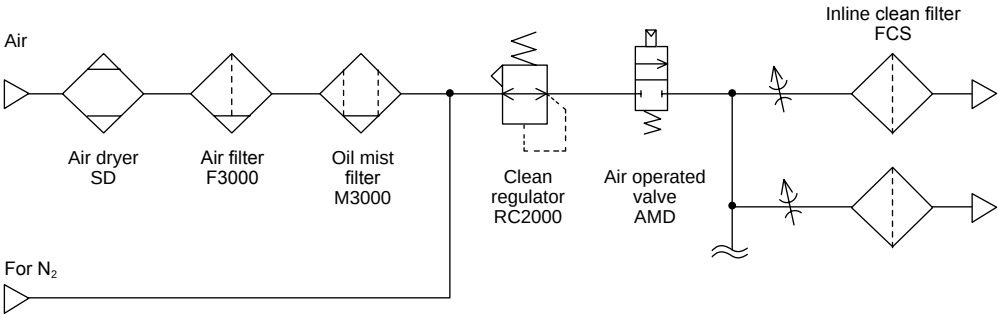
● Stainless steel



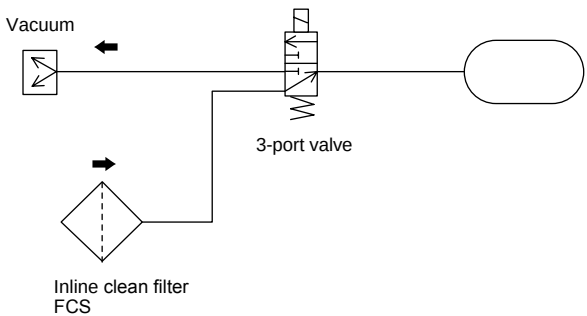
F.R.L.
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Adapter Joiner
Press Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
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WaterRtSens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

Applications and example of compatible circuit

- Application 1: Use as a precision filtration blow filter to filter out air and N₂ gas in order to provide clean air.



- Application 2: Use as a vacuum break filter for vacuum break circuit air blow and clean air supply.



Customized products

Available as customized products. Contact CKD for details.

FCS500 Integrated connection

- This integrated connection with no sealed parts is ideal for leakage testers.
- Flow rate: 10 l/min. (ANR) *1
- Port size: R1/8



FCS500 Large flow rate

- FCS500 Series increased flow rate specifications
- Flow rate: 100 to 120 l/min (ANR) *1
- Port size: ø6, ø8 push-in fitting, R1/8, R1/4



FCS500 L type fitting

- L type push-in fitting saves space during piping
- Flow rate: 50 to 80 l/min (ANR) *1
- Port size: ø4, ø6, ø8 radial push-in fitting



FCS1000 Stainless steel large flow rate

- Flow rate: 450 l/min. (ANR) *1
- Port size: Rc1/4, Rc3/8



*1: Initial flow rate at primary pressure 0.7 MPa and pressure drop 0.03 MPa.
Contact CKD regarding other piping methods or bore sizes.

FCS Large flow rate and large bore size

- Flow rate: 2000 l/min. (ANR) or more *2
- Port size: Rc1
- Body material: Aluminum (alumite treatment)



*2: Initial flow rate at primary pressure 0.7 MPa and pressure drop 0.03 MPa.
Contact CKD for other flow rates or bore sizes.

F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain Separ
Mech Press SW
Res press exh valve
SlowStart
Anti-bac/Bac-remove Filtr
Film Resist FR
Oil-ProhR
Med Press FR
No Cu/ PTFE FRL
Outdrs FRL
Adapter Joiner Press Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
PrecsCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterRISens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending