

# Clean air system

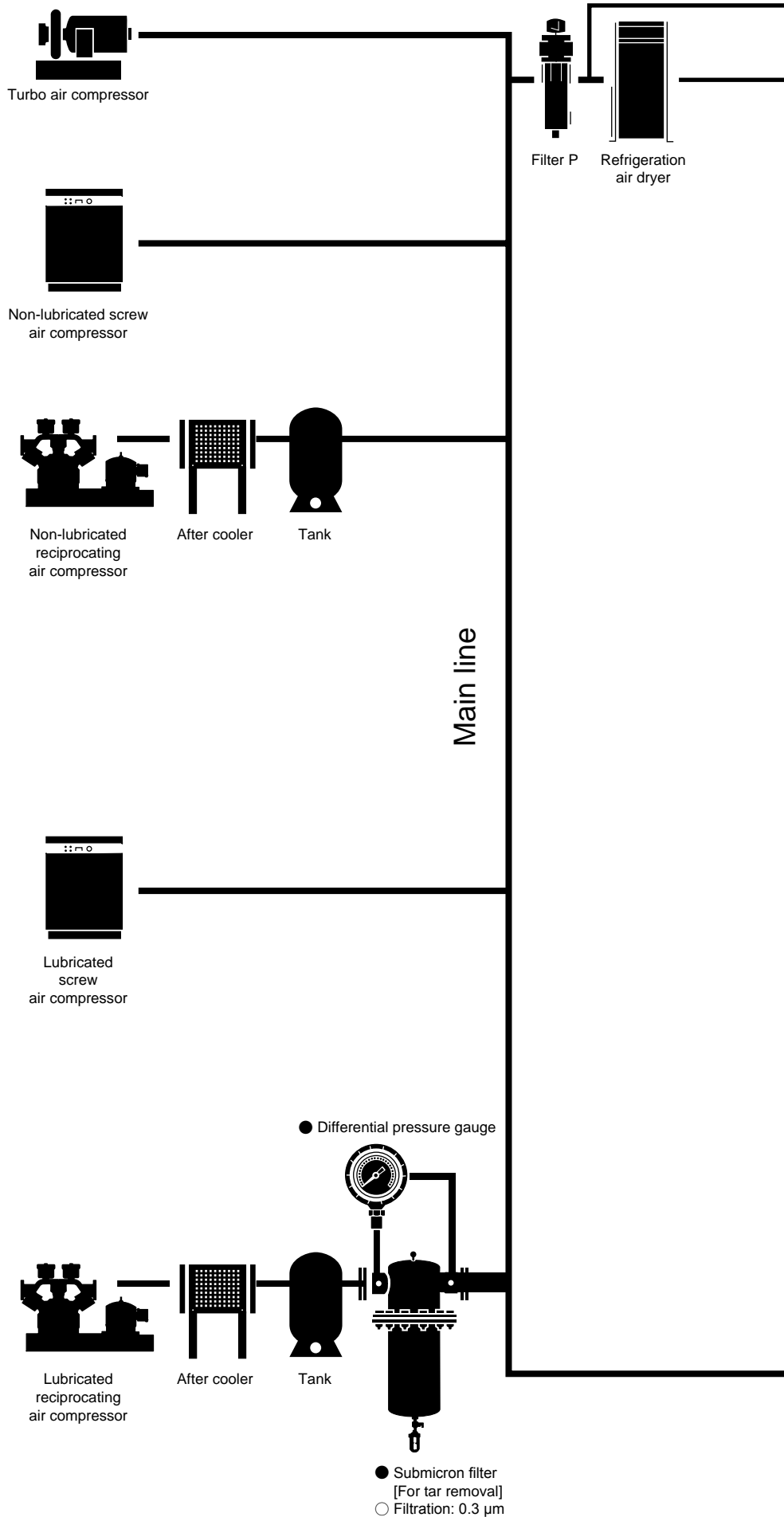
- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain Separ
- Mech Press SW
- Res press exh valve
- SlowStart
- Anti-bac/Bac-remove Filtr
- Film Resist FR
- Oil-ProhR
- Med Press FR
- No Cu/PTFE FRL
- Outdrs FRL
- Adapter Joiner
- Press Gauge
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneur
- 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

## CKD clean air system

CKD's clean air system removes impurities in compressed air effectively and economically. Diverse clean air systems are available for each industry or application to solve any annoying issues caused by compressed air.

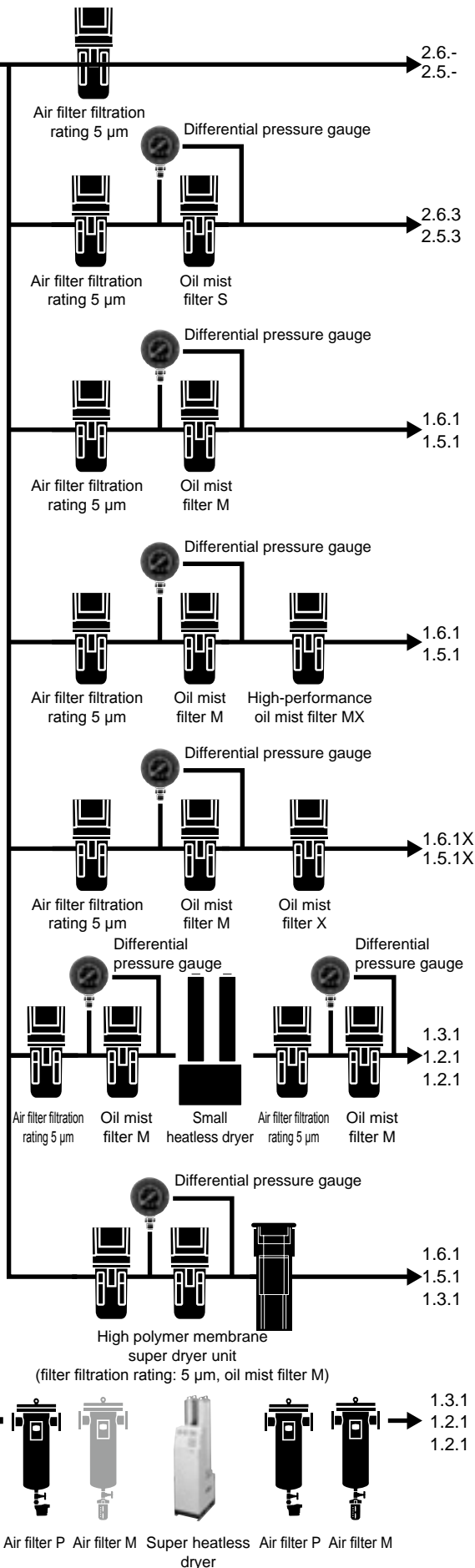
## What are CKD's clean air systems

An air compressor is normally used to make compressed air by compressing the atmosphere. The compressed air will be highly contaminated with a high content of impurities such as water vapor and small particles too small to see which were originally in the ambient air, but now in high concentrations in proportion to the compression ratio. In some types of lubrication air compressor, lubricant is oxidized by compression heat or frictional heat to form oil oxide, or may generate solid substance such as carbon and tar, etc. Oil-free air compressors will also generate carbon particles. These factors make the compressed air more contaminated. To remove the impurities in the compressed air, CKD's clean air systems offer an effective and inexpensive means by arranging the components suitably for a specific application, including a submicron filter to remove tar and carbon, a dryer to remove water vapor, and an oil mist filter to remove oil oxides and odor.



JIS B 8392-1:2012  
Compressed air purity grade

Peripheral lines



JIS B 8392-1:2012 Compressed air purity grade	Impurities in compressed air				Applications
	Solid applications (Nominal)	Moisture	Secondary side oil conc. (21°C)	Odor	
2.-.-	1 µm	-	-	-	Removing water drip/coarse dust · Construction, civil engineering machines · Air for cleaning (dry air not required)
2.6.3	0.3 µm	Pressure dew point 10°C	0.5 mg/m <sup>3</sup>	-	General dry air · Air tool · Air drill/air screw driver · Air grinder · Labor saving devices and components/pneumatic jigs and tools · Air chuck/air vice · Precision part cleaning air blow
2.5.3		Pressure dew point 7°C			
1.6.1	0.01 µm	Pressure dew point 10°C	0.01 mg/m <sup>3</sup>	-	Oil-free dry clean air · Instrumentation · Measurement · Logic control · Luxury painting · Precision mining industry
1.5.1		Pressure dew point 7°C			
1.6.1	0.01 µm	Pressure dew point 10°C	0.001 mg/m <sup>3</sup>	-	Ultra-oil-free dry clean air · Precise measurement · Luxury painting
1.5.1		Pressure dew point 7°C			
1.6.1	0.01 µm	Pressure dew point 10°C	0.003 mg/m <sup>3</sup>	None	Odorless air · Food industry · Pharmaceutical industry · Stirring/transportation/dry · Packing/brewing air
1.5.1		Pressure dew point 7°C			
1.3.1	0.01 µm	Pressure dew point -20°C	0.01 mg/m <sup>3</sup>	-	Ultra dry air · Drying computer rooms · Drying furnace gas · Ozone generator · Drying the insulation gas of a high-voltage generator · Drying the air supply of a high-voltage breaker · Central control instrumentation
1.2.1		Pressure dew point -40°C			
1.2.1		Pressure dew point -60°C			

\*1: The system No. is based on the class below.

X in the table below indicates odor removal. "-" indicates no specification.

\*2: The table shows the highest compressed air quality grade that can be achieved by the CKD clean air system. The grade varies depending on the condition at the filter inlet.

JIS B 8392-1:2012 Compressed air purity grade

Grade	Solid particle			Humidity and moisture		Oil
	Max. No. of particles per 1 m <sup>3</sup> for particle diameter d (µm)			Pressure dew point °C	Water concentration C <sub>w</sub> g/m <sup>3</sup>	Total oil concentration mg/m <sup>3</sup>
	0.1 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0			
0	Conditions stricter than Grade 1 to be specified by user or supplier.					
1	≤ 20,000	≤ 400	≤ 10	≤ -70	-	≤ 0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40	-	≤ 0.1
3	-	≤ 90,000	≤ 1,000	≤ -20	-	≤ 1
4	-	-	≤ 10,000	≤ +3	-	≤ 5
5	-	-	≤ 100,000	≤ +7	-	-
6	-	-	-	0 < C <sub>p</sub> ≤ 5	≤ +10	-
7	-	-	-	5 < C <sub>p</sub> ≤ 10	-	C <sub>w</sub> ≤ 0.5
8	-	-	-	-	-	0.5 < C <sub>w</sub> ≤ 5
9	-	-	-	-	-	5 < C <sub>w</sub> ≤ 10
X	-	-	-	-	-	C <sub>w</sub> > 10

JIS B 8392-1:2003 has been revised to JIS B 8392-1:2012.

For example,

What is Grade 1:2:1?

- Solid particles 0.1 to 0.5 µm are 20,000 particles or less, 0.5 to 1.0 µm are 400 particles or less, and 1.0 to 5.0 µm are 10 particles or less
- Pressure dew point -40°C or less
- Oil concentration 0.01 mg/m<sup>3</sup> or less.









## ⚠ Precautions for system selection

- \*1: If your conditions are different, refer to the specifications in the catalog to select a model.
- \*2: Use anti-rust processed materials for piping (zinc plated pipe, lining pipe or stainless steel pipe). Use stainless steel pipes for ultra dry air.
- \*3: Always degrease the piping after oil mist filter before use.
- \*4: Always install the main pipe with a 1/100 slope.
- \*5: Install a filter immediately before the equipment to be used to remove contaminants caused in piping.

# Series variation

# Combination

F.R.L.  
F.R.  
F (Filtr)  
R (Reg)  
L (Lub)  
Drain Separ  
Mech Press SW  
Res press exh valve  
SlowStart  
Anti-bac/Bac-remov  
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

Series	Combination/application						Model No.
	F	R	L	W		M	
	Filter	Regulator	Lubricator	Filter/regulator	Reverse filter/regulator	Oil mist filter	
<b>● F.R.L. combination</b> P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 	F1000-W	R1000-W	L1000-W				C1000-W
	F2000-W	R2000-W	L3000-W				C2000-W
	F3000-W	R2000-W	L3000-W				C2500-W
	F3000-W	R3000-W	L3000-W				C3000-W
	F4000-W	R4000-W	L4000-W				C4000-W
	F6000-W	R6000-W	L8000-W				C6500-W
	F8000-W	R8000-W	L8000-W				C8000-W
<b>● W.L. combination</b> P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 			L1000-W	W1000-W			C1010-W
			L3000-W	W2000-W			C2010-W
			L3000-W	W3000-W			C3010-W
			L4000-W	W4000-W			C4010-W
<b>● F.R. combination</b> P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 	F1000-W	R1000-W					C1020-W
	F2000-W	R2000-W					C2020-W
	F3000-W	R2000-W					C2520-W
	F3000-W	R3000-W					C3020-W
	F4000-W	R4000-W					C4020-W
	F6000-W	R6000-W					C6020-W
<b>● F.M.R. combination</b> P1=0.7 MPa 	F1000-W	R1000-W				M1000-W	C1030-W
	F2000-W	R2000-W				M2000-W	C2030-W
	F3000-W	R2000-W				M3000-W	C2530-W
	F3000-W	R3000-W				M3000-W	C3030-W
	F4000-W	R4000-W				M4000-W	C4030-W
	F6000-W	R6000-W				M6000-W	C6030-W
	F8000-W	R8000-W				M8000-W	C8030-W
<b>● W.M. combination</b> P2=0.7 MPa 				W1000-W		M1000-W	C1040-W
				W2000-W		M2000-W	C2040-W
				W3000-W		M3000-W	C3040-W
				W4000-W		M4000-W	C4040-W
				W8000-W		M8000-W	C8040-W
<b>● R.M. combination</b> P2=0.7 MPa 		R1000-W				M1000-W	C1050-W
		R2000-W				M2000-W	C2050-W
		R2000-W				M3000-W	C2550-W
		R3000-W				M3000-W	C3050-W
		R4000-W				M4000-W	C4050-W
		R6000-W				M6000-W	C6050-W
<b>● F.M. combination</b> P1=0.7 MPa 	F1000-W					M1000-W	C1060-W
	F2000-W					M2000-W	C2060-W
	F3000-W					M3000-W	C3060-W
	F4000-W					M4000-W	C4060-W
	F6000-W					M6000-W	C6060-W
	F8000-W					M8000-W	C8060-W
<b>● F.F.M. combination</b> P1=0.7 MPa 	F3000-W(5 μm)					M3000-W	C3070-W
	F3000-W(0.3 μm)						
	F4000-W(5 μm)					M4000-W	C4070-W
	F4000-W(0.3 μm)						
	F6000-W(5 μm)					M6000-W	C6070-W
	F6000-W(0.3 μm)						
	F8000-W(5 μm)					M8000-W	C8070-W
	F8000-W(0.3 μm)						

Modular design (F.R.L.)

# F.R.L. unit

Combination series variation

\* P1 = primary pressure P2 = secondary pressure  $\Delta P$  = differential pressure

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
				●	●									0.45/0.63	34
					●	●								1.2/1.7	
					●	●								1.2/1.7	
					●	●								1.28/1.75	
					●	●	●	● Note						1.43/2.4/3.0	
								●	●					4.5/5.0	
								●	●					7.0/7.5	
				●	●									0.45/0.63	42
					●	●								1.2/1.7	
					●	●								1.28/1.75	
					●	●	●	● Note						1.43/2.4/3.0	
								●	●					7/7.5	
				●	●									0.77/1.1	48
					●	●								1.75/2.5	
					●	●								1.75/2.5	
					●	●								2.0/2.6	
					●	●	●	● Note						2.5/4.4/5.0	
								●	●					7/7.7	
								●	●					10	
				●	●									0.15	54
					●	●								0.25	
					●	●								0.36	
					●	●								0.36	
					●	●	●	● Note						0.825	
								●	●					1.27	
								●	●					2.6	
				●	●									0.15	60
					●	●								0.25	
					●	●								0.36	
					●	●	●	● Note						0.825	
								●	●					2.6	
				●	●									0.15	66
					●	●								0.25	
					●	●								0.36	
					●	●								0.36	
					●	●	●	● Note						0.825	
								●	●					1.27	
								●	●					2.6	
				●	●									0.15	72
					●	●								0.25	
					●	●								0.36	
					●	●	●	● Note						0.825	
								●	●					1.27	
								●	●					2.6	
					●	●								0.225	78
					●	●	●	● Note						0.5	
								●	●					0.8	
								●	●					1.1	








Note: Pipe adaptor is mounted.

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
PressCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterR/Sens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending

# Series variation

# F.R.L. unit

- 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

Series	Model No.	Combination/application					Combination option/application				
		F	R	L	W	M	D	S	P	V(V1)	K
		Filter	Regulator	Lubricator	Filter/Regulator	Oil mist filter	Distributor	Pressure switch	Residual pressure exhaust valve		
<b>● F.R.L. combination</b> 	C1000-W	F1000-W	R1000-W	L1000-W			D101-W	P1100-W		V1000-W	
	C2000-W	F2000-W	R2000-W	L3000-W			D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C2500-W	F3000-W	R2000-W	L3000-W			D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C3000-W	F3000-W	R3000-W	L3000-W			D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	*5 C4000-W	F4000-W	R4000-W	L4000-W			D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C4000-20-W	F4000-W	R4000-W	L4000-W			D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C6500-W	F6000-W	R6000-W	L8000-W			D801-W	P8100-W			V6010-W
	C8000-W	F8000-W	R8000-W	L8000-W			D801-W	P8100-W			V6010-W
<b>● W.L. combination</b> 	C1010-W			L1000-W	W1000-W			P1100-W		V1000-W	
	C2010-W			L3000-W	W2000-W			P4100-W	P4000-W	V3000-W	V3010-W
	C3010-W			L3000-W	W3000-W			P4100-W	P4000-W	V3000-W	V3010-W
	*5 C4010-W			L4000-W	W4000-W			P4100-W	P4000-W	V3000-W	V3010-W
	C4010-20-W			L4000-W	W4000-W			P4100-W	P4000-W	V3000-W	V3010-W
	C8010-W			L8000-W	W8000-W			P8100-W			V6010-W
<b>● F.R. combination</b> 	C1020-W	F1000-W	R1000-W				D101-W	P1100-W		V1000-W	
	C2020-W	F2000-W	R2000-W				D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C2520-W	F3000-W	R2000-W				D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C3020-W	F3000-W	R3000-W				D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	*5 C4020-W	F4000-W	R4000-W				D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C4020-20-W	F4000-W	R4000-W				D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C6020-W	F6000-W	R6000-W				D801-W	P8100-W			V6010-W
	C8020-W	F8000-W	R8000-W				D801-W	P8100-W			V6010-W
<b>● F.M.R. combination</b> 	C1030-W	F1000-W	R1000-W			M1000-W	D101-W	P1100-W		V1000-W	
	C2030-W	F2000-W	R2000-W			M2000-W	D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C2530-W	F3000-W	R2000-W			M3000-W	D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C3030-W	F3000-W	R3000-W			M3000-W	D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	*5 C4030-W	F4000-W	R4000-W			M4000-W	D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C4030-20-W	F4000-W	R4000-W			M4000-W	D401-W	P4100-W	P4000-W	V3000-W	V3010-W
	C6030-W	F6000-W	R6000-W			M6000-W	D801-W	P8100-W			V6010-W
	C8030-W	F8000-W	R8000-W			M8000-W	D801-W	P8100-W			V6010-W
<b>● W.M. combination</b> 	C1040-W				W1000-W	M1000-W		P1100-W		V1000-W	
	C2040-W				W2000-W	M2000-W		P4100-W	P4000-W	V3000-W	V3010-W
	C3040-W				W3000-W	M3000-W		P4100-W	P4000-W	V3000-W	V3010-W
	*5 C4040-W				W4000-W	M4000-W		P4100-W	P4000-W	V3000-W	V3010-W
	C4040-20-W				W4000-W	M4000-W		P4100-W	P4000-W	V3000-W	V3010-W
	C8040-W				W8000-W	M8000-W		P8100-W			V6010-W
<b>● Filter/regulator</b> 	W1000-W							P1100-W		V1000-W	
	W2000-W							P4100-W		V3000-W	
	W3000-W							P4100-W		V3000-W	
	W4000-W							P4100-W		V3000-W	
<b>● Reverse filter/regulator</b> 	W1100-W							P1100-W		V1000-W	
	W2100-W							P4100-W		V3000-W	
	W3100-W							P4100-W		V3000-W	
	W4100-W							P4100-W		V3000-W	

\*1: Two T-brackets are included with the combination option.

\*2: The T type bracket installation position changes depending on the combination.

\*3: T type bracket standard installation position is on the inner side of the end product of each combination.

Note that if the pipe adaptor is combined on the end, the bracket is installed on the inner side of the product past the pipe adaptor.

# Series variation



## F.R.L. unit


### (Other related products/attachments)

Combination option list (U□□□□)																	Combination position	
D	S	P	V	V1	K	DS	DP	DV	DK	DSV	DSK	DPV	DPK	SV	SV1	SK		PV
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>							<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>											<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>
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# Series variation


# Combination, filter/regulator


## [Combination]

Separated	Series name	Compatible product(s)	Model No.
	<ul style="list-style-type: none"> <li>F.R.L. kit</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 	Set (with accessory)	<b>K60570</b>

## [Filter/regulator]

Series	Compatible product(s)						Model No.		
	F Filter	R Regulator	L Lubricator	W Filter/ regulator	Reverse filter/regulator	M Oil mist filter			
<ul style="list-style-type: none"> <li>Filter/regulator</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 				●			<b>WB500 (small)</b> <b>W1000-W</b> <b>W2000-W</b> <b>W3000-W</b> <b>W4000-W</b> <b>W8000-W</b>		
	<ul style="list-style-type: none"> <li>Filter/regulator flame-resistant series</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 				●			<b>W3000-G4</b> <b>W4000-G4</b> <b>W8000-G4</b>	
		<ul style="list-style-type: none"> <li>Reverse filter/regulator</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 					●		<b>W1100-W</b> <b>W2100-W</b> <b>W3100-W</b> <b>W4100-W</b> <b>W8100-W</b>
			<ul style="list-style-type: none"> <li>Reverse filter/regulator flame-resistant series</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 					●	
	<ul style="list-style-type: none"> <li>Filter/regulator outdoor series</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 					●			<b>WW4000</b> <b>WW8000</b>

Series	Compatible product(s)						Model No.
	F Filter	R Regulator	L Lubricator	W Filter/ regulator	Reverse filter/regulator	M Oil mist filter	
<ul style="list-style-type: none"> <li>Compact filter/regulator</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 							<b>WB500</b>

Series	Compatible product(s)						Model No.
	F Filter	R Regulator	L Lubricator	W Filter/ regulator	Reverse filter/regulator	M Oil mist filter	
<ul style="list-style-type: none"> <li>7000 Series</li> <li>P1=0.7 MPa</li> <li>P2=0.5 MPa</li> <li>ΔP = 0.1 MPa</li> </ul> 							<b>B7019-*C</b>

# F.R.L. unit

## Combination, filter/regulator series variation

\* P1 = primary pressure P2 = secondary pressure  $\Delta P$  = differential pressure

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
				●	●									0.2/0.3	410

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
	●	●												0.08/0.18	388
				●	●									0.83/1.15	90
					●	●								1.5/2.0	
					●	●	●							2.15/2.43/2.43	
					●	●	●							2.5/4.35/4.75	
								●	●					10	252
					●	●	●							2.15/2.43	
					●	●	●							2.5/4.35/4.75	
								●	●					10	98
				●	●									0.83/1.15	
					●	●								1.5/2.0	
					●	●	●							2.15/2.43/2.43	
									●	●				2.5/4.35/4.75	258
									●	●				10.0	
					●	●	●							2.15/2.43	
									●	●				2.5/4.35/4.75	324
									●	●				10	

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
	●	●												0.08/0.18	388

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
				●	●									0.5/0.9	412












- 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
- PresCompn
- 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



# Series variation

# Filter

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

Series	Compatible product(s)						Model No.		
	F	R	L	W Regulator	M				
	Filter	Regulator	Lubricator	Filter/ regulator	Reverse filter/regulator	Oil mist filter			
<b>Modular design</b>  ● Filter P1=0.7 MPa ΔP = 0.02 MPa	●						F1000-W F2000-W F3000-W F4000-W F6000-W F8000-W		
	 ● Filter/flame-resistant series P1=0.7 MPa ΔP = 0.02 MPa	●						F3000-G4 F4000-G4 F8000-G4	
	 ● Filter/medium pressure series P1=1.3 MPa ΔP = 0.02 MPa	●						FM3000-W FM4000-W FM6000-W FM8000-W	
	 ● Filter/outdoor series P1=0.7 MPa ΔP = 0.02 MPa	●						FW4000 FW8000	
Series	Compatible product(s)						Model No.		
	F	R	L	W Regulator	M				
	Filter	Regulator	Lubricator	Filter/ regulator	Reverse filter/regulator	Oil mist filter			
<b>Clean-room</b>  ● Inline clean filter P1=0.7 MPa ΔP = 0.03 MPa	●						FCS500 FCS1000		
	<b>Inline filter</b>  ● Inline filter P1=0.7 MPa ΔP = 0.02 MPa	Inline push-in fitting, for both positive and negative pressures						FSL100 FSL200 FSL500	
Series name		Compatible product(s)						Model No.	
<b>Separated</b>  ● Air filter P1=0.7 MPa ΔP = 0.02 MPa	Wide variation Filtration rating 5 μm						A1019-*C 1138-*E 1126-*E		
	 ● Heavy duty air filter P1=0.7 MPa ΔP = 0.002 MPa	High moisture removal type Filtration rating 5 μm						A1338 1326	
		 ● Submicron air filter P1=0.7 MPa ΔP = 0.01 MPa	Tar removing Filtration rating 0.3 μm						1138-*C-EY A1338-*C-Y 1126-*C-EY 1326-*C-Y
	 ● Micro alescer micro naught P1=0.7 MPa ΔP = 0.01 MPa		Oil removing Oil removing ratio 0.1 PPM/W/W						1219-2C 1238-6C 1226-8C 1126J-*C
			 ● Micro alescer micro naught P1=0.7 MPa ΔP = 0.01 MPa	For deodorizing					

# F.R.L. unit

## Filter series variation

\* P1 = primary pressure P2 = secondary pressure  $\Delta P$  = differential pressure








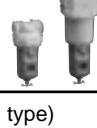
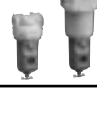
	Port size													Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2				
				●	●									0.46/0.61	106	
					●	●								1.3/1.7		
					●	●								1.23/1.5		
					●	●	●							1.32/2.14/3.0		
								●	●					5.6/6.2		
								●	●					6.4/6.8		
					●	●								1.23/1.5	266	
					●	●	●							5.6/6.2		
								●	●					6.4/6.8		
					●	●	●							1.6/2.0	296	
					●	●								1.9/2.8/3.8		
								●	●					6.7/8.1		
								●	●					8.1/9.0		
					●	●	●							1.32/2.14/3.0	330	
								●	●					6.4/6.8		
	Port size													Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	ø10	ø12	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2			2
	●	●	●			●	●								0.05 (ø4,ø6,1/8) / 0.08 (ø8,1/4)	544
			●	●	●		●	●							0.3 to 0.4	548
	Port size													Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	ø10	ø12	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2			2
	●	●													0.07/0.10	406
	●	●													0.08/0.14	
		●	●	●											0.18/0.36/0.44	
	Port size													Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2				
				●	●									0.55/0.7	414	
								●	●					5.5/7.0	444	
										●	●	●		18/21/25		
								●	●					1.55	448	
										●	●	●		5.8		
								●	●					1.55	450	
								●	●					1.55		
										●	●	●		4.9		
										●	●	●		4.9		
					●									0.056	416	
								●						1.27	452	
									●					2.49		
											●	●		4.8		
								●						1.27	454	
									●					2.49		
											●	●		4.8		

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  
PresCompn  
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

# Series variation

# Oil mist filter

- 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
- DesiccDry
- HiPolymDry
- MainFiltr
- Dischrg
- etc
- Ending

Series	Compatible product(s)						Model No.	
	F	R	L	W SELEX		M		
	Filter	Regulator	Lubricator	Filter/ regulator	Reverse filter/regulator	Oil mist filter		
Modular design	<ul style="list-style-type: none"> <li>● Oil mist filter (S type)</li> <li>P1=0.7 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration: 0.3 μm</li> <li>- Secondary side oil concentration 0.5 mg/m<sup>3</sup></li> </ul> 						●	M1000-W*-S M2000-W*-S M3000-W*-S M4000-W*-S M6000-W*-S M8000-W*-S
	<ul style="list-style-type: none"> <li>● Oil mist filter (M type)</li> <li>P1=0.7 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration: 0.01 μm</li> <li>- Secondary side oil concentration 0.01 mg/m<sup>3</sup></li> </ul> 						●	M1000-W M2000-W M3000-W M4000-W M6000-W M8000-W
	<ul style="list-style-type: none"> <li>● Oil mist filter (X type)</li> <li>P1=0.7 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration rating: suction by activated charcoal</li> <li>- Secondary side oil concentration 0.003 mg/m<sup>3</sup></li> </ul> 						●	M1000-W*-X M2000-W*-X M3000-W*-X M4000-W*-X M6000-W*-X M8000-W*-X
	<ul style="list-style-type: none"> <li>● High-performance oil mist filter</li> <li>P1=0.7 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration: 0.01 μm</li> <li>- Secondary side oil concentration 0.001 mg/m<sup>3</sup></li> </ul> 						●	MX1000-W MX3000-W MX4000-W MX6000-W MX8000-W
	<ul style="list-style-type: none"> <li>● Oil mist filter medium pressure (S type)</li> <li>P1=1.4 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration: 0.3 μm</li> <li>- Secondary side oil concentration 0.5 mg/m<sup>3</sup></li> </ul> 						●	MM3000-W*-S MM4000-W*-S MM6000-W*-S MM8000-W*-S
	<ul style="list-style-type: none"> <li>● Oil mist filter medium pressure (M type)</li> <li>P1=1.4 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration: 0.01 μm</li> <li>- Secondary side oil concentration 0.01 mg/m<sup>3</sup></li> </ul> 						●	MM3000-W MM4000-W MM6000-W MM8000-W
	<ul style="list-style-type: none"> <li>● Oil mist filter medium pressure (X type)</li> <li>P1=1.4 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration rating: suction by activated charcoal</li> <li>- Secondary side oil concentration 0.003 mg/m<sup>3</sup></li> </ul> 						●	MM3000-W*-X MM4000-W*-X MM6000-W*-X MM8000-W*-X
	<ul style="list-style-type: none"> <li>● Oil mist filter outdoor (S type)</li> <li>P1=0.7 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration: 0.3 μm</li> <li>- Secondary side oil concentration 0.5 mg/m<sup>3</sup></li> </ul> 						●	MW4000-S MW8000-S
	<ul style="list-style-type: none"> <li>● Oil mist filter outdoor (M type)</li> <li>P1=0.7 MPa</li> <li>ΔP = 0.01 MPa</li> <li>- Filtration: 0.01 μm</li> <li>- Secondary side oil concentration 0.01 mg/m<sup>3</sup></li> </ul> 						●	MW4000-M MW8000-S

# F.R.L. unit

## Oil mist filter series variation

\* P1 = primary pressure P2 = secondary pressure  $\Delta P$  = differential pressure








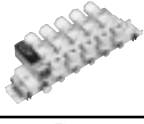

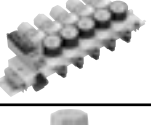

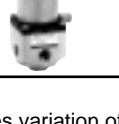
	Port size											Max. flow rate m <sup>3</sup> /min	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2			2
				●	●								0.15	116
					●	●							0.31	
					●	●							0.45	
					●	●	●						1	
								●	●				1.4	
								●	●				2.9	
				●	●								0.15	116
					●	●							0.25	
					●	●							0.36	
					●	●	●						0.825	
								●	●				1.27	
								●	●				2.6	
				●	●								0.15	116
					●	●							0.36	
					●	●							0.45	
					●	●	●						1.0	
								●	●				1.4	
								●	●				2.9	
				●	●								0.075	128
					●	●							0.18	
					●	●	●						0.37	
								●	●				0.67	
								●	●				1.48	
													0.61	
					●	●	●						1.37	302
								●	●				1.92	
								●	●				3.98	
					●	●							0.49	
					●	●	●						1.13	302
								●	●				1.74	
								●	●				3.56	
					●	●	●						0.61	
					●	●	●						1.37	302
								●	●				1.92	
								●	●				3.98	
					●	●	●						0.825	
								●	●				2.6	334
													0.825	
					●	●	●						1	334
								●	●				2.9	

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
PresCompn
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

# Series variation

# Regulator

- F.R.L.
- F.R.
- F (Filter)
- 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

Series	Compatible product(s)							Model No.	
	F	R		L	W Regulator		M		
	Filter	Regulator	Reverse regulator	Lubricator	Filter/regulator	Reverse filter/regulator	Oil mist filter		
<b>Modular design</b> ● Regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 		●						R1000-W R2000-W R3000-W R4000-W R6000-W R8000-W	
	● Regulator/flame-resistant series P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 		●						R3000-G4 R4000-G4 R8000-G4
		● Regulator oil-prohibition series P1=0.7 MPa P2=0.5 MPa 		●					
	● Regulator medium pressure series P1=1.6MPa P2=0.5 MPa 			●					
		● Regulator/outdoor series P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 		●					
	● Reverse regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 				●				
<b>Compact</b> ● Regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 			●						RA800 RB500
		● Block manifold regulator 		●					
<b>Precision</b> ● Regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 				●					
		● Block manifold regulator 		●					
<b>Clean-room</b> ● Clean regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 			●						RC2000
	● Clean regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa 		●						2619

[Electro pneumatic regulator]  
 Refer to page 580 for the series variation of electro pneumatic regulators.

# F.R.L. unit

## Regulator series variation

\* P1 = primary pressure P2 = secondary pressure  $\Delta P$  = differential pressure

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
				●	●									0.77/1.35	136
					●	●								1.75/2.5	
					●	●								2.0/2.6	
					●	●	●							2.5/4.4/5.0	
								●	●					7/7.7	
								●	●					14.0/11.0	
					●	●								2.0/2.6	274
					●	●	●							2.5/4.4/5.0	
								●	●					14.0/11.0	
					●	●								1.6/2.6	288
					●	●	●							2.4/3.0/3.0	
								●	●					4.5/6	
					●	●								2.0	308
					●	●	●							3.0	
					●	●	●							2.5/4.4/5.0	338
								●	●					14.0/11.0	
				●	●									0.77/1.35	144
					●	●								1.75/2.5	
					●	●								2.0/2.6	
					●	●	●							2.5/4.4/5.0	
								●	●					7/7.7	
								●	●					14.0/11.0	
				●	●									0.35	382
	●	●												0.1/0.2	386
	●	●	●											0.1/0.2	392
	●	●												0.1/0.2	
	●	●												0.06/0.08	490
	●	●	●											0.06/0.08	492
	●	●												0.06/0.08	
					●	●	●							0.8	566
				●	●									0.18/0.18	570






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
PresCompn
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

# Series variation


# Regulator/lubricator



F.R.L.  
F.R.  
F (Filtr)  
R (Reg)  
L (Lub)  
Drain Separ  
Mech Press SW  
Res press exh valve  
SlowStart  
Anti-bac/Bac-remov  
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

## [Regulator]


Series name	Compatible product(s)	Model No.	
Separated	<ul style="list-style-type: none"> <li>● Regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa</li> </ul> 	Extensive models	B2019-*C 2215-*C
	<ul style="list-style-type: none"> <li>● Reverse regulator P1=0.7 MPa P2=0.5 MPa ΔP = 0.1 MPa</li> </ul> 	Check valve integrated, no by-pass circuit required	2419-*C 2415-*C
	<ul style="list-style-type: none"> <li>● Dial air regulator P1=0.7 MPa P2=0.5 MPa</li> </ul> 	With setting dial	2302-*C 2303-*C 2304-*C
	<ul style="list-style-type: none"> <li>● Remote dial air regulator P1=0.7 MPa P2=0.5 MPa</li> </ul> 	For remote control	2302-*C-R 2303-*C-R 2304-*C-R
	<ul style="list-style-type: none"> <li>● Relief valve Set pressure 0.7 MPa, pressure rise 0.08 MPa</li> </ul> 	For maintaining the set pressure	B6061-*C

## [Lubricator]

Series	Compatible product(s)					Model No.		
	F	R		L	W		M	
	Filter	Regulator	Reverse regulator	Lubricator	Filter/regulator	Reverse filter/regulator	Oil mist filter	
Modular design	<ul style="list-style-type: none"> <li>● Lubricator P1=0.5 MPa ΔP = 0.3 MPa</li> </ul> 				●			L1000-W L3000-W L4000-W L8000-W

Series name	Compatible product(s)	Model No.	
Separated	<ul style="list-style-type: none"> <li>● Lubricator econo-mist P1=0.5 MPa ΔP = 0.03 MPa</li> </ul> 	Supplies fine oil mist	A3019-*C 3003E-*C 3004E-*C
	<ul style="list-style-type: none"> <li>● Lubricator auto-fill</li> </ul> 	Automatic supply	3003E-*C-V

## [Drain separator]

Series name	Compatible product(s)	Model No.	
● Drain separator		Lightweight compact drain separator	FX1004 FX1011 FX1037

# F.R.L. unit

## Regulator/lubricator series variation

\* P1 = primary pressure P2 = secondary pressure  $\Delta P$  = differential pressure

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
				●	●									0.5	418
								●	●	●				14	458
				●	●									0.5	420
								●	●	●				14	462
					●	●	●	●						3.0	464
								●	●	●				10.0	
											●	●		30.0	
					●	●	●	●						3.0	467
								●	●	●				10.0/30.0	
											●	●		30	
				●	●									0.15	422

\* P1 = primary pressure  $\Delta P$ 2 = differential pressure

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
				●	●									0.55/0.7	152
					●	●								1.1/2.25	
					●	●	●							1/1.7/2.7	
								●	●					6.3/10.0	

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
				●	●									0.1/0.4	424
								●	●					3.5/4.0	470
										●	●	●		15/20	
								●	●					3.5/4.0	474

	Port size												Max. flow rate m <sup>3</sup> /min (reference)	Page	
	ø4	ø6	ø8	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2			
					●	●								0.55	160
					●	●	●							1.80	
								●	●					6.10	

- 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
- PresCompn
- 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




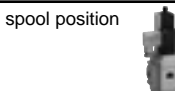



# Series variation




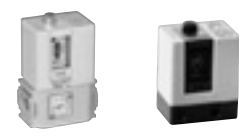
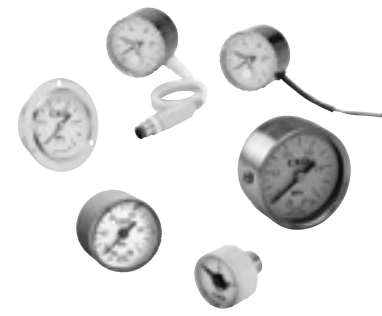

# Residual pressure exhaust valve, other related products

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

## [Residual pressure exhaust valve]

Series name	Compatible product(s)	Model No.
● Residual pressure exhaust valve 	Preventing accidents due to residual pressure in pneumatic lines.	V1000-W
		V3000-W
● Residual pressure exhaust valve with keyhole (OSHA compliant)	Preventing accidents due to residual pressure in pneumatic lines.	V3010-W V6010-W
● Quick valve 	2- and 3-port valves are available.	2QV
		3QV
● Residual pressure exhaust valve with spool position detection 	Industry's smallest class residual pressure exhaust valve, certified for safety standard ISO 13849-1	SNS
● 3-port solenoid valve with spool position detection 	Spool position detection for reliable open/close detection Module connection also allows double cutoff	SNP
● Slow start valve 	Ensuring safety when starting and stopping	V3301-W
		V3321-W

## [Other related products]

Series name	Compatible product(s)	Model No.
● Clean exhaust filter 	Provide direct exhaust within a clean room	FAC10
		FAC100
		FAC200
		FAC300
● Exhaust cleaner 	For exhaust, improving the environment	FA331-10A
		FA431-15A
		FA531-20A
		FA631-25A
		FA731-40A
		FA831-50A
● Drain discharger 	Automatic drain	DT3000/4000-W
	Heavy duty drain	DB1000/3000
	Tank drain	5100-4C
● Moisture indicator (P1 = 0.7 MPa)	For dew point monitor of desiccant dryer	6119-2C
● Air pressure switch 	Setting accuracy within ±0.02 MPa	P4000-W
		P*100-W
		APE-8T
		APE-8N
		APE-8F
		APS
● Pressure gauge 	Low-profile pressure gauge ideal for embedding in devices	G401
	Pressure gauge with safety marker	G40D
	Pressure gauge with limit marker	G45D
	General-use pressure gauge	G49D/G59D
	Pressure gauge for panel mounting	G53D
	Pressure gauge with switch	G52D
	Miniature pressure gauge	G29D
	Compact round pressure gauge	G39D
Vacuum pressure gauge	VG41D	
● Differential pressure gauge 	Air filter life measuring	GA400-8-P02

