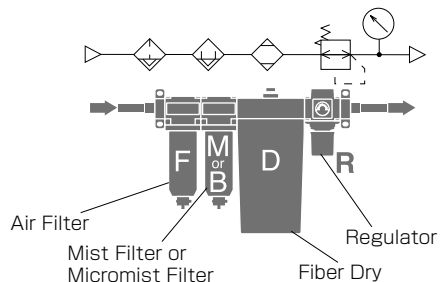




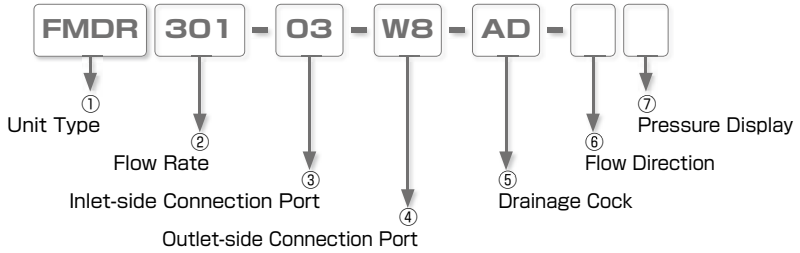
Hollow Fiber Membrane Type Air Drier Unit Dry Unit

- *No electric power supply is required. Air Filter, Mist Filter (Micromist Filter) and Regulator are integrated.*
- *Space-saving type achieving direct connection to air source.*



- *Pressure Gauge Option - Bourdon tube Compact Pressure Gauge
Battery Operated Digital Display Gauge
Dual LCD Display Pressure Sensor Switch*

Model Designation (Example)



① Unit Type

Code	Air Filter	Mist Filter	Micromist Filter	Fiber Dry	Regulator
FD	○	—	—	○	—
FDR	○	—	—	○	○
FBD	○	○	—	○	—
FMD	○	—	○	○	—
FBDR	○	○	—	○	○
FMDR	○	—	○	○	○

② Flow Rate

Code	100	301
Flow Rate(l/min(ANR))	100	300

③ Inlet Port

(*For Rc thread (02 and 03), size of Inlet and Outlet Ports are same.)

02 : Rc 1/4(Refer to Table 1)

03 : Rc 3/8(Refer to Table 1)

C6(e.g.) : Fitting Size (Refer to Table 2)

④ Outlet Port (* Selectable for Fitting Size only)

No Code : Same size as Inlet port

C6(e.g.) : Fitting Size (Refer to Table 2)

⑤ Drainage Cock

MD : Manual Drain Cock

AD : Auto Drain Cock

⑥ Flow Direction

No Code : Left to Right

R : Right to Left

Table 1. Thread Size (Female)

	100 Series		301 Series	
	02	03	02	03
FD	○	—	—	○
FDR	○	○	○	○
FBD	○	—	—	○
FMD	○	—	—	○
FBDR	○	○	○	○
FMDR	○	○	○	○

Table 2. Thread Size of Push-In Fitting

C Straight Type		L Elbow Type		W Double Banjo Type	
Code	Size(øD)	Code	Size(øD)	Code	Size(øD)
C4	4mm	L4	4mm	W4	4mm
C6	6mm	L6	6mm	W6	6mm
C8	8mm	L8	8mm	W8	8mm
C10	10mm	L10	10mm	W10	10mm
C12	12mm	L12	12mm	W12	12mm
C16	16mm	L16	16mm	* Outlet Port only	

* Only when Manual Drain is selected, fitting push-in fitting size ø4mm or ø6mm is selectable.

* Inch sizes of 5/32", 1/4", 3/8", 1/2" and 5/8" are available.
Ask us for the details.

⑦ Pressure Gauge

No entry : Bourdon tube pressure gauge

L : No gauge

G : Digital pressure gauge

T2 : Dual LCD digital pressure sensor (1 point SW + analog output (2m cable))

T2C : Dual LCD digital pressure sensor (1point SW+analog output (M8, 4-pin male connector))

T3 : Dual LCD digital pressure sensor (2 points SW output (2m cable))

T3C : Dual LCD digital pressure sensor (2 points SW output (M8, 4-pin male connector))

T4 : Dual LCD digital pressure sensor (NPN output, 2 points SW output+analog output)

T4P : Dual LCD digital pressure sensor (PNP output, 2 points SW output+analog output)

T5 : Dual LCD digital pressure sensor (NPN output, 2 points SW output+copy function)

T5P : Dual LCD digital pressure sensor (PNP output, 2 points SW output+copy function)

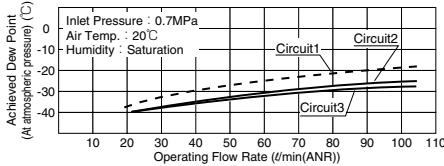
Specification

Please refer to the specification of the following product website

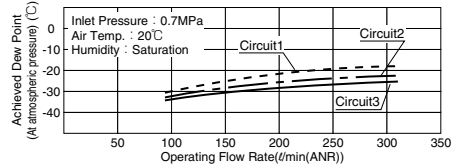
- Air Filter Air, Mist, Micromist Filter
- Mist Filter Air, Mist, Micromist Filter
- Micro Mist Filter Air, Mist, Micromist Filter
- Regulator Pressure Regulator
- Drier Fiber Dry
- Digital Pressure Gauge Filter Regulator
- Dual LCD Digital Pressure Sensor Filter Regulator

Dehumidifying Performance Chart

100 Series

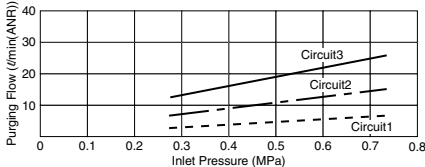


301 Series

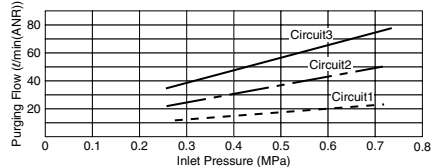


Purging Flow Chart

100 Series



301 Series





Dry Unit

Calculation Method of Dehumidification Amount

● Conditions

Dehumidification amount is under the following condition.

Compressed air of temp.: 20oC, humidity: 100%, pressure: 0.7MPa is dehumidified up to dew point -25oC by an air dryer.

■ Example: Calculation Method of Atmospheric Dew Point (Temp.: 20oC, Humidity: 100%, Pressure: 0.7MPa)

[Fig. 1]

Atmospheric Dew Point..... - 8°C

Check the saturated vapor at -8oC and -25oC in the figure 1.

[Fig. 2]

Amount of saturated vapor at -8°C.....2.74g/m³

Amount of saturated vapor at -25°C.....0.705g/m³

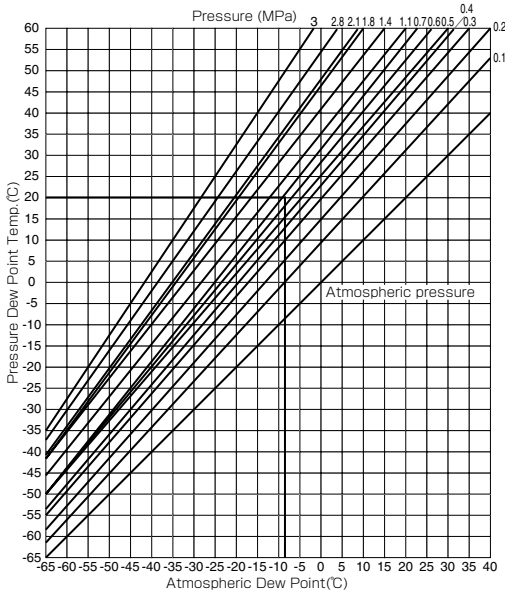
2.74 - 0.705 = 2.035

Dehumidification Amount.....2.035g/m³

[Fig. 2] (Table of Saturated Vapor Amount)

Temp. (°C)	Vapor Amount (g/m ³)	Temp. (°C)	Vapor Amount (g/m ³)
-50	0.0617	0	4.85
-49	0.0689	1	5.19
-48	0.0767	2	5.56
-47	0.0853	3	5.95
-46	0.095	4	6.36
-45	0.106	5	6.79
-44	0.117	6	7.26
-43	0.13	7	7.75
-42	0.144	8	8.27
-41	0.159	9	8.82
-40	0.176	10	9.4
-39	0.194	11	10
-38	0.214	12	10.7
-37	0.236	13	11.3
-36	0.26	14	12.1
-35	0.286	15	12.8
-34	0.314	16	13.6
-33	0.345	17	14.5
-32	0.378	18	15.4
-31	0.414	19	16.3
-30	0.453	20	17.3
-29	0.496	21	18.3
-28	0.542	22	19.4
-27	0.592	23	20.6
-26	0.646	24	21.8
-25	0.705	25	23
-24	0.768	26	24.4
-23	0.863	27	25.8
-22	0.909	28	27.2
-21	0.989	29	28.7
-20	1.07	30	30.3
-19	1.17	31	32.3
-18	1.26	32	33.8
-17	1.37	33	35.6
-16	1.48	34	37.5
-15	1.61	35	39.6
-14	1.74	36	41.7
-13	1.88	37	43.9
-12	2.03	38	46.2
-11	2.19	39	43.6
-10	2.36	40	51.5
-9	2.54	41	53.7
-8	2.74	42	56.4
-7	2.95	43	59.3
-6	3.17	44	62.2
-5	3.41	45	65.3
-4	3.66	46	68.5
-3	3.93	47	71.9
-2	4.22	48	75.4
-1	4.52	49	79
		50	82.8

[Fig. 1] (Atmospheric Dew Point)



Conversion Table of Dew Point, Vapor Amount and Relative Humidity

Dew Point (°C)	Vapor Amount (g/m ³)	Relative Humidity (%)		
		Air Temp. 20°C	Air Temp. 25°C	Air Temp. 30°C
30	30.3	—	—	100
25	23.0	—	100	76
20	17.3	100	75	57
15	12.8	74	55	42
10	9.40	54	41	31
5	6.79	39	30	22
0	4.85	28	21	16
-5	3.41	18	14	11
-10	2.36	12	9.3	7.1
-15	1.01	8.2	6.0	4.6
-20	1.07	5.1	3.8	2.9
-25	0.705	3.2	2.4	1.8
-30	0.453	2.0	1.5	1.1
-35	0.286	1.2	0.88	0.67
-40	0.176	0.89	0.52	0.39
-45	0.106	0.40	0.30	0.22
-50	0.0617	0.22	0.17	0.13

△ Detailed Safety Instructions

Before using PISCO products, be sure to read "Safety Instructions" and "Safety Instruction Manual" and Common Safety Instructions for Fiber Dry and Dry Unit".

Caution

1. Make sure to adjust the pressure of the regulator in the increasing direction and lock it by pressing the lock button after adjustment.
2. Air is exhausted from the drain port until the supply pressure rises to 0.05MPa for Manual Drain Type and to 0.15Mpa for Auto Drain Type. During this time, the air will not stop coming out even if the drain knob is turned. (Contact PISCO for instructions if the time is too long before the supply pressure rises to 0.15MPa)
3. Adjust the drain knob with fingers.
4. Inner size 6mm of Nylon Tube is required for the fitting of Manual Drain Type. Do not bend the tube near the fitting.
5. The fitting of Manual Drain is rotatable. No need to detach a tube even when drain is discharged by hand.
6. Do not exceed the setting pressure (Max. 0.85MPa) of Regulator. Otherwise, it may cause malfunctions.



■ How to insert and disconnect

1. How to insert and disconnect tubes

① Tube installation

For Dry Unit Series (Dry Unit Series with a Built-in Tube Fitting), insert a Push-In Fitting until it touches to the tube end which makes the lock-claws bite the tube to fix and the elastic sleeve seal around the tube.

Refer to "2. Instructions for Tube Installation" under "Common Safety Instructions for Fittings" when installing a tube fitting.

② Tube disconnection

The tube is disconnected by pushing the release-ring which releases the lock-claws.

Make sure to stop air supply before the tube disconnection.

2. How to fix a Push-In Fitting

① Fixing of a Push-In Fitting

When you order a Dry Unit without a Push-In Fitting and order a fitting later, fix it by tightening on the hexagonal-column with a spanner. Refer to the recommended tightening torque in Table 2: Recommended tightening torque of "2 Instructions for Installing Controllers" under "Common Safety Instructions for Controllers"

3. How to fix a Dry Unit

① Fixing of a Dry Unit

Use fixing holes of bracket on Dry Unit to tighten with proper size screws. (Refer to the dimensional drawings of the hole pitch and screw size)

Refer to the recommended tightening torque in Table 2: Recommended tightening torque of "2 Instructions for Installing Controllers" under "Common Safety Instructions for Controllers"

100 Series

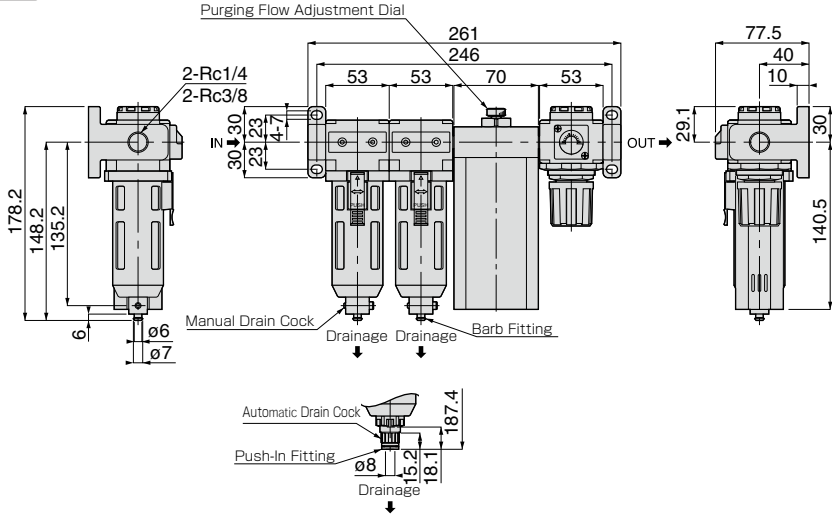


Unit of Air Filter, Micromist Filter, Fiber Dry and Regulator with Bourdon Tube Pressure Gauge



Unit of Air Filter, Mist Filter, Fiber Dry and Regulator with Bourdon Tube Pressure Gauge

RoHS compliant



Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR100-□-MD-□	1,593	1,586	CRDY-001
FMDR100-□-AD-□	1,622	1,615	
FBDR100-□-MD-□	1,593	1,586	
FBDR100-□-AD-□	1,622	1,615	

100 Series

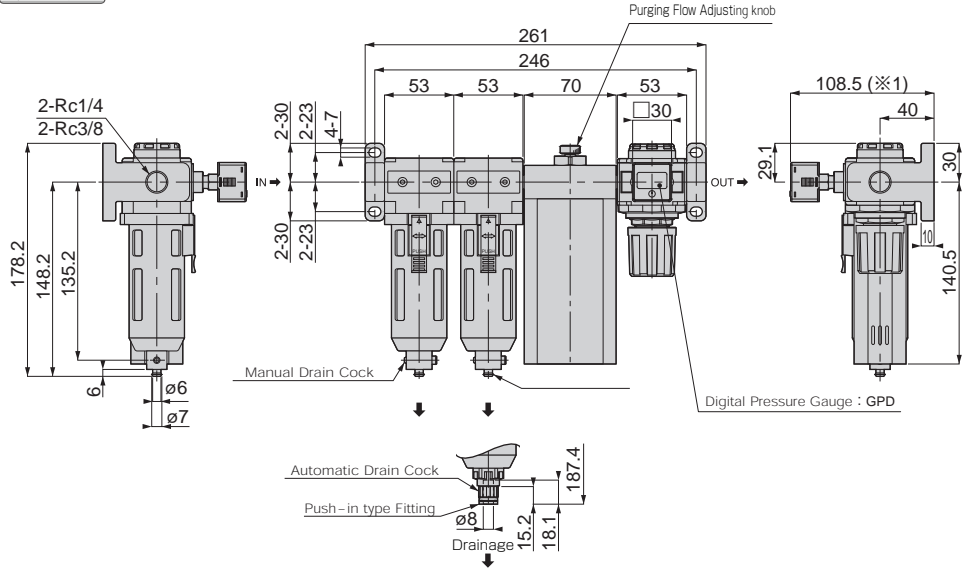


Unit of Air Filter, Micromist Filter, Fiber Dry and Regulator with Digital Pressure Gauge



Unit of Air Filter, Mist Filter, Fiber Dry and Regulator with Digital Pressure Gauge

RoHS compliant



Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR100-③-MD-⑥G	1,602	1,595	-
FMDR100-③-AD-⑥G	1,631	1,624	
FBDR100-③-MD-⑥G	1,602	1,595	
FBDR100-③-AD-⑥G	1,631	1,624	

※ 1. The dimension of 108.5mm is just for reference.

※ 2. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread.

Fill in ⑥ with R only if the flow direction from right to left is needed.

Otherwise leave it blank (standard flow direction is from left to right).

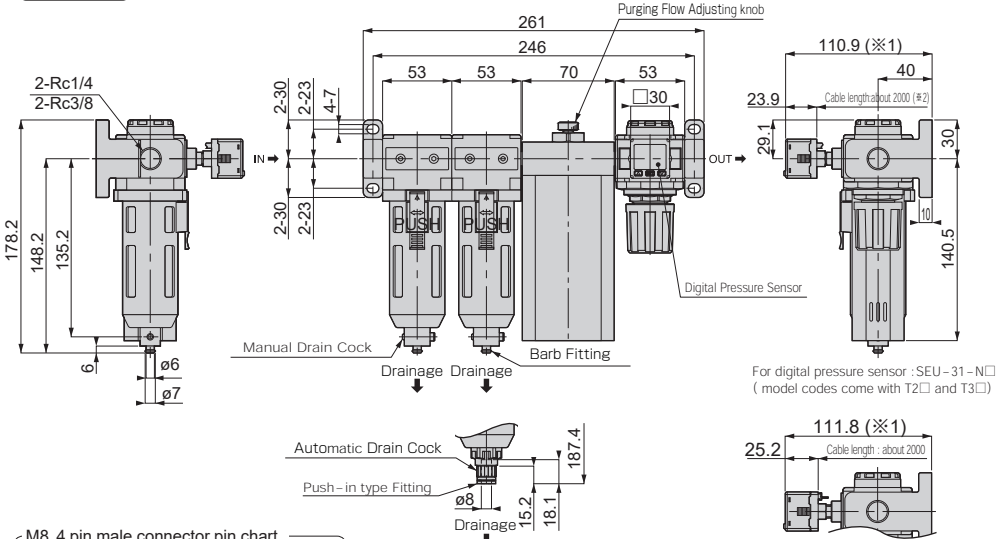


Unit of Air Filter, Micromist Filter, Fiber Dry and Regulator with Digital Pressure Gauge

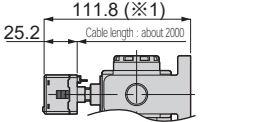


Unit of Air Filter, Mist Filter, Fiber Dry and Regulator with Digital Pressure Gauge

RoHS compliant

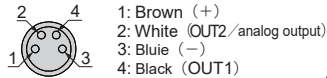


For digital pressure sensor : SEU-31-N□
(model codes come with T2□ and T3□)



For digital pressure sensor : SEU-32-N□
(model codes come with T4□ and T5□)

M8, 4 pin male connector pin chart



● For model codes with T2□ and T3□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR100-③-MD-⑥T□	1.638	1.631	-
FMDR100-③-MD-⑥T□C	1.601	1.594	
FMDR100-③-AD-⑥T□	1.667	1.660	
FMDR100-③-AD-⑥T□C	1.630	1.623	
FBDR100-③-MD-⑥T□	1.638	1.631	
FBDR100-③-MD-⑥T□C	1.601	1.594	
FBDR100-③-AD-⑥T□	1.667	1.660	
FBDR100-③-AD-⑥T□C	1.630	1.623	

Fill in □ with 2 if SW 1point output + analog output pressure sensor is needed and 3 for SW 2points output pressure sensor.

● For model codes with T4□ and T5□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR100-③-MD-⑥T□	1.645	1.638	-
FMDR100-③-AD-⑥T□	1.674	1.667	
FBDR100-③-MD-⑥T□	1.645	1.638	
FBDR100-③-AD-⑥T□	1.674	1.667	

Fill in □ with 4 if NPN output, SW 2points output + analog output pressure sensor is needed, 4P for PNP output, SW 2points output + analog output sensor, 5 for NPN output, SW 2points output + copy function sensor and 5P for PNP output, SW 2points output + copy function sensor.

※ 1. The dimensions of 110.9mm and 111.8mm are just for reference

※ 2. The Cable length of M8, 4 pin connector is 150mm

※ 3. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread. Fill in ⑥ with R only if the flow direction from right to left is needed. Otherwise leave it blank (standard flow direction is from left to right).

100 Series

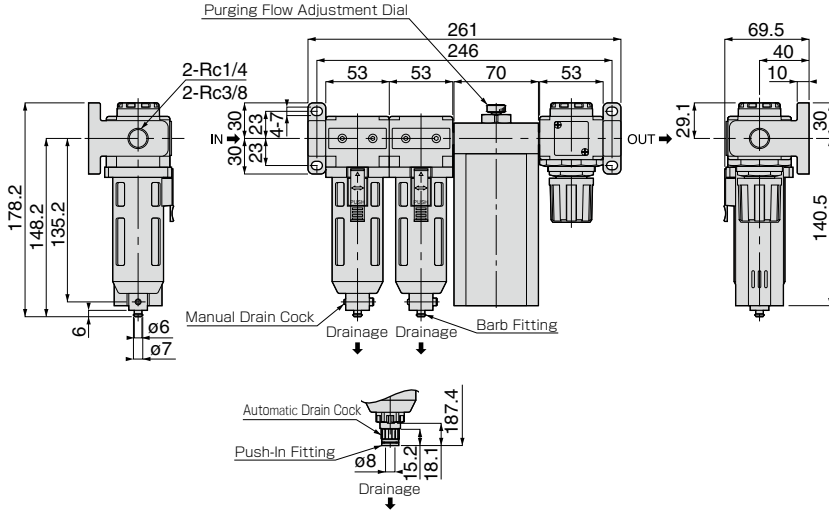


Unit of Air Filter, Micromist Filter, Fiber Dry and Regulator with No Gauge



Unit of Air Filter, Mist Filter, Fiber Dry and Regulator with No Gauge

RoHS compliant

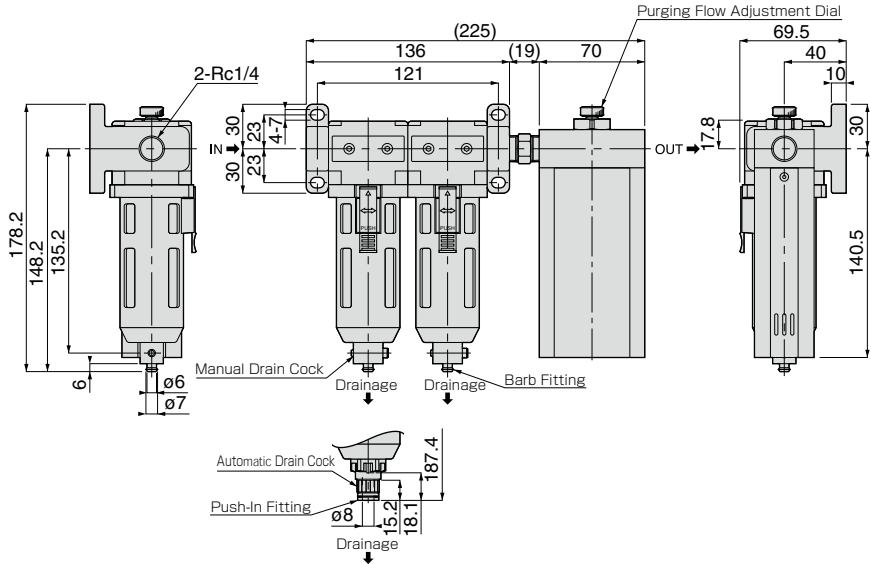


Model Code	Weight (g)	
	Port Dia : 02(Rc1/4)	Port Dia : 03(Rc3/8)
FMDR100-□-MD-□L	1,556	1,549
FMDR100-□-AD-□L	1,585	1,578
FBDR100-□-MD-□L	1,556	1,549
FBDR100-□-AD-□L	1,585	1,578

FMD 100 Unit of Air Filter,
Micromist Filter and Fiber Dry

FBD 100 Unit of Air Filter,
Mist Filter and Fiber Dry

RoHS compliant



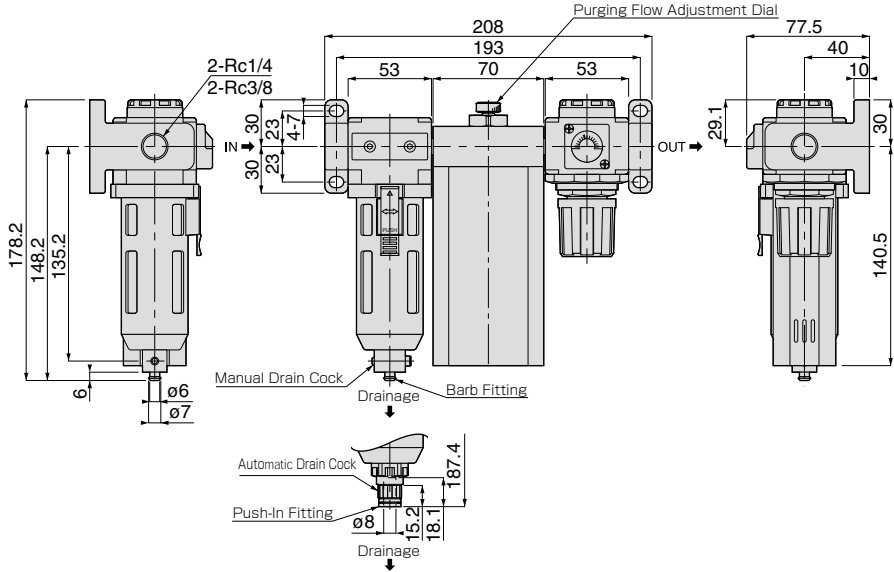
Model Code	Weight (g)	CAD File
FMD100-02-MD-□	1,228	CRDY-001
FMD100-02-AD-□	1,257	
FBD100-02-MD-□	1,228	
FBD100-02-AD-□	1,257	

■ 100 Series



Unit of Air Filter, Fiber Dry and Regulator with Bourdon Tube Pressure Gauge

RoHS compliant

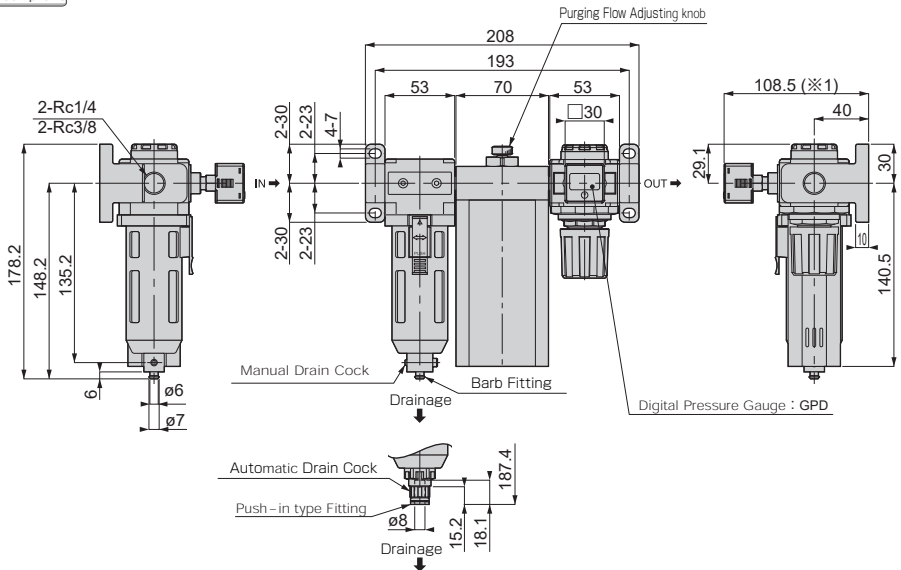


Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR100-□-MD-□	1,246.5	1,239.5	CRDY-002
FDR100-□-AD-□	1,261	1,254	



Unit of Air Filter, Fiber Dry and Regulator with Digital Pressure Gauge

RoHS compliant



Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR100-③-MD-⑥ G	1,255	1,248	-
FDR100-③-AD-⑥ G	1,270	1,263	

※ 1. The dimension of 108.5mm is just for reference.

※ 2. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread.

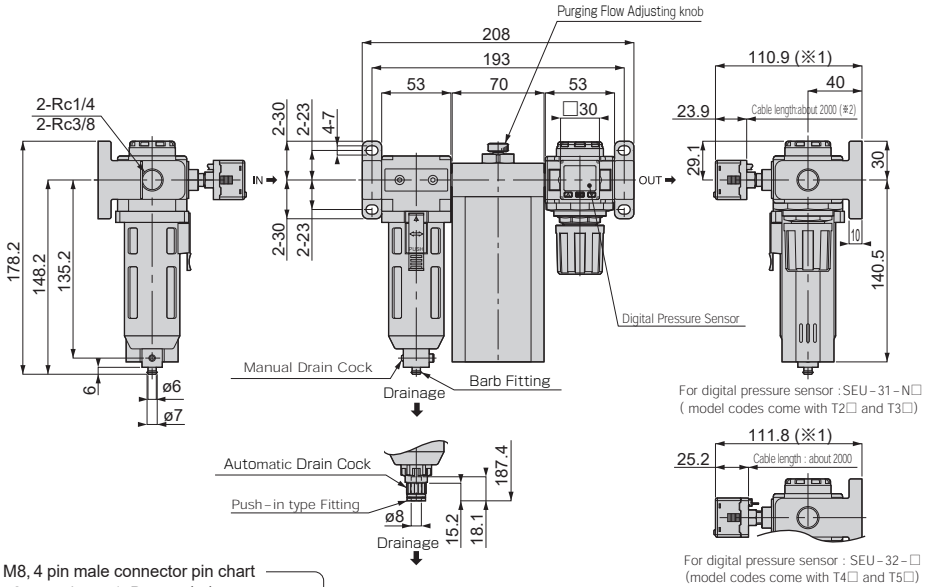
Fill in ⑥ with R only if the flow direction from right to left is needed.

Otherwise leave it blank (standard flow direction is from left to right).

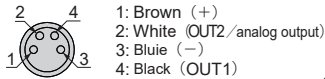


Unit of Air Filter, Fiber Dry and Regulator with Dual LCD Digital Pressure Sensor

RoHS compliant



M8, 4 pin male connector pin chart



※ 1. The dimensions of 110.9mm and 111.8mm are just for reference

※ 2. The Cable length of M8, 4 pin connector is 150mm

※ 3. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread. Fill in ⑥ with R only if the flow direction from right to left is needed. Otherwise leave it blank (standard flow direction is from left to right).

● For model codes with T2□ and T3□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR100-③-MD-⑥T□	1,291	1,284	-
FDR100-③-MD-⑥T□C	1,254	1,247	
FDR100-③-AD-⑥T□	1,306	1,299	
FDR100-③-AD-⑥T□C	1,269	1,262	

Fill in □ with 2 if SW 1point output+ analog output pressure sensor is needed and 3 for SW 2points output pressure sensor.

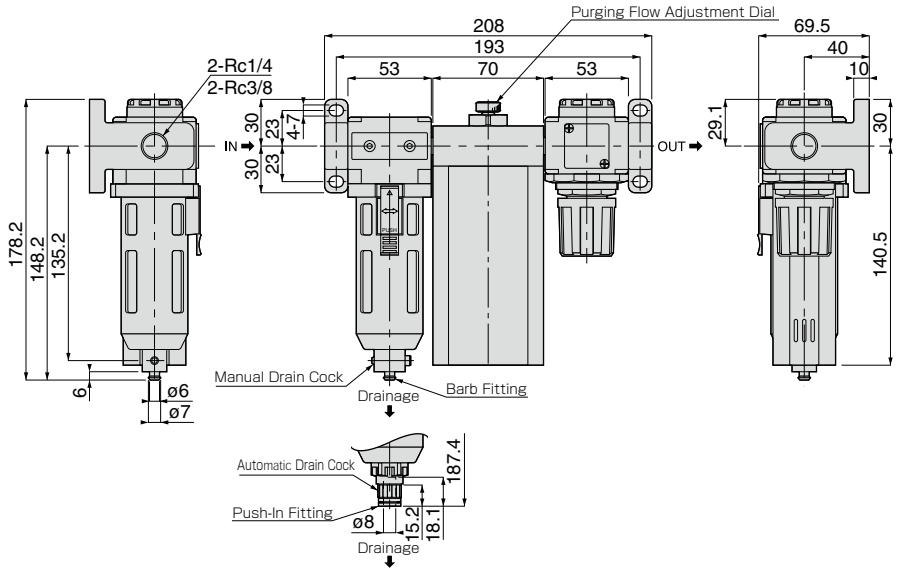
● For model codes with T4□ and T5□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR100-③-MD-⑥T□	1,298	1,291	-
FDR100-③-AD-⑥T□	1,313	1,306	

Fill in □ with 4 if NPN output, SW 2points output+analog output pressure sensor is needed, 4P for PNP output, SW 2points output+analog output sensor, 5 for NPN output, SW 2points output+copy function sensor and 5P for PNP output, SW 2points output+copy function sensor.

FDR 100 Unit of Air Filter, Fiber Dry and Regulator with No Gauge

RoHS compliant

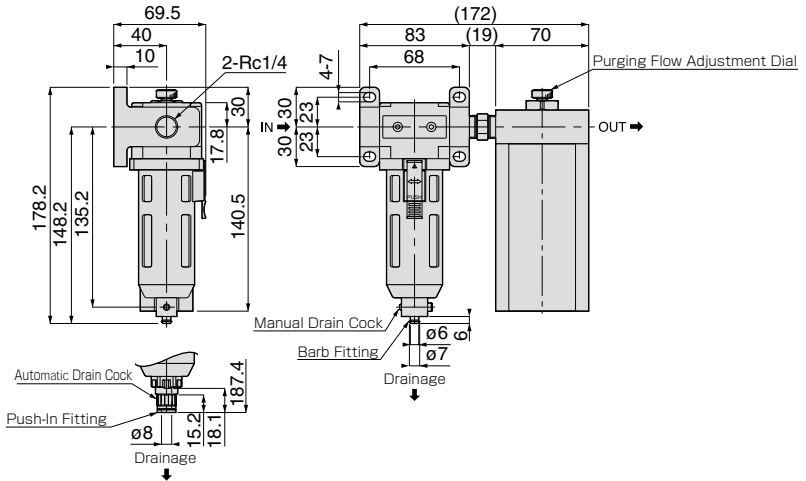


Model Code	Weight (g)	
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)
FDR100-□-MD-□L	1,209.5	1,202.5
FDR100-□-AD-□L	1,224	1,217

■ 100 Series

FD Unit of Air Filter and Fiber Dry

RoHS compliant



Model Code	Weight (g)	CAD File
FD100-02-MD-□	881	CRDY-002
FD100-02-AD-□	895.5	

301 Series

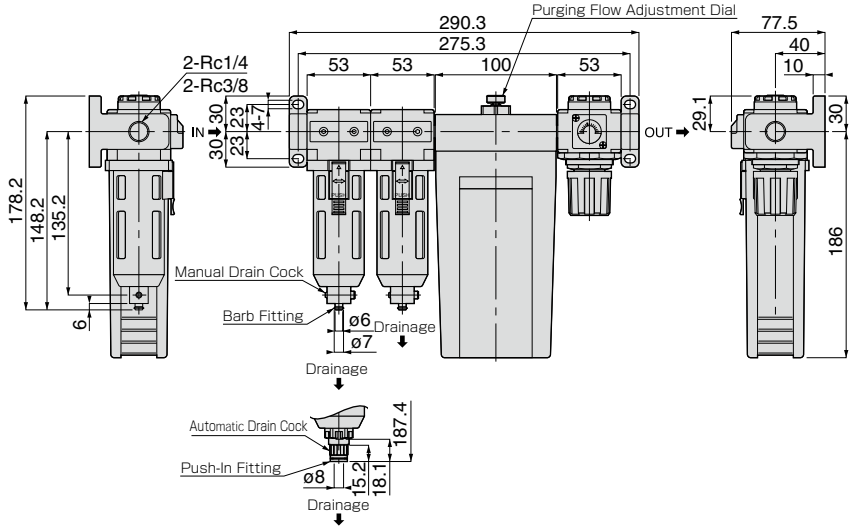


Unit of Air Filter, Micromist Filter, Fiber Dry and Regulator with Bourdon Tube Pressure Gauge



Unit of Air Filter, Mist Filter, Fiber Dry and Regulator with Bourdon Tube Pressure Gauge

RoHS compliant



Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR301-□-MD-□	1,938	1,931	CRDY-003
FMDR301-□-AD-□	1,967	1,960	
FBDR301-□-MD-□	1,938	1,931	
FBDR301-□-AD-□	1,967	1,960	

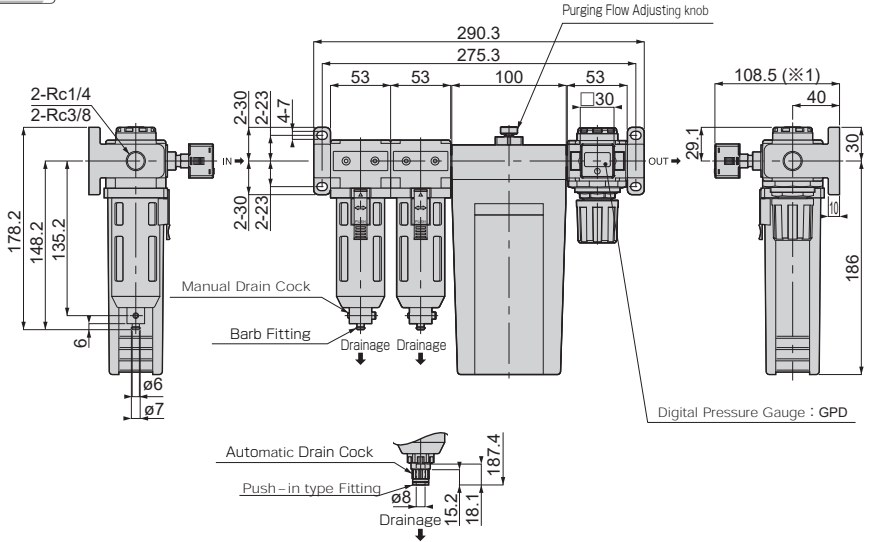


Unit of Air Filter, Micromist Filter, Fiber Dry and Regulator with Digital Pressure Gauge



Unit of Air Filter, Mist Filter, Fiber Dry and Regulator with Digital Pressure Gauge

RoHS compliant



Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR301-③-MD-⑥G	1,983	1,940	-
FMDR301-③-AD-⑥G	1,976	1,969	
FBDR301-③-MD-⑥G	1,947	1,940	
FBDR301-③-AD-⑥G	1,976	1,969	

※ 1. The dimension of 108.5mm is just for reference.

※ 2. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread.

Fill in ⑥ with R only if the flow direction from right to left is needed.

Otherwise leave it blank (standard flow direction is from left to right).

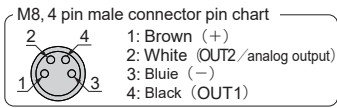
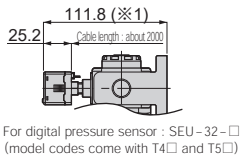
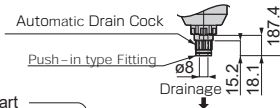
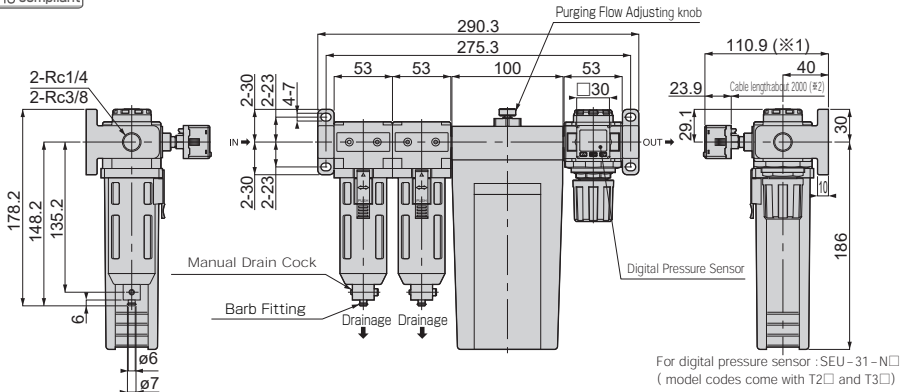


Unit of Air Filter, Micromist Filter, Fiber Dry and Regulator with Dual LCD Pressure Sensor



Unit of Air Filter, Mist Filter, Fiber Dry and Regulator with Dual LCD Pressure Sensor

RoHS compliant



● For model codes with T2□ and T3□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR301-③-MD-⑥T□	1,946	1,976	-
FMDR301-③-MD-⑥T□C	1,947	1,939	
FMDR301-③-AD-⑥T□	2,012	2,005	
FMDR301-③-AD-⑥T□C	1,975	1,968	
FBDR301-③-MD-⑥T□	1,983	1,976	
FBDR301-③-MD-⑥T□C	1,946	1,939	
FBDR301-③-AD-⑥T□	2,012	2,005	
FBDR301-③-AD-⑥T□C	1,975	1,968	

Fill in □ with 2 if SW 1point output + analog output pressure sensor is needed and 3 for SW 2points output pressure sensor.

● For model codes with T4□ and T5□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FMDR301-③-MD-⑥T□	1,990	1,983	-
FMDR301-③-AD-⑥T□	2,019	2,012	
FBDR301-③-MD-⑥T□	1,990	1,983	
FBDR301-③-AD-⑥T□	2,019	2,012	

Fill in □ with 4 if NPN output, SW 2points output + analog output pressure sensor is needed, 4P for PNP output, SW 2points output + analog output sensor, 5 for NPN output, SW 2points output + copy function sensor and 5P for PNP output, SW 2points output + copy function sensor.

- ※ 1. The dimensions of 110.9mm and 111.8mm are just for reference
- ※ 2. The Cable length of M8, 4 pin connector is 150mm
- ※ 3. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread. Fill in ⑥ with R only if the flow direction from right to left is needed. Otherwise leave it blank (standard flow direction is from left to right).

301 Series

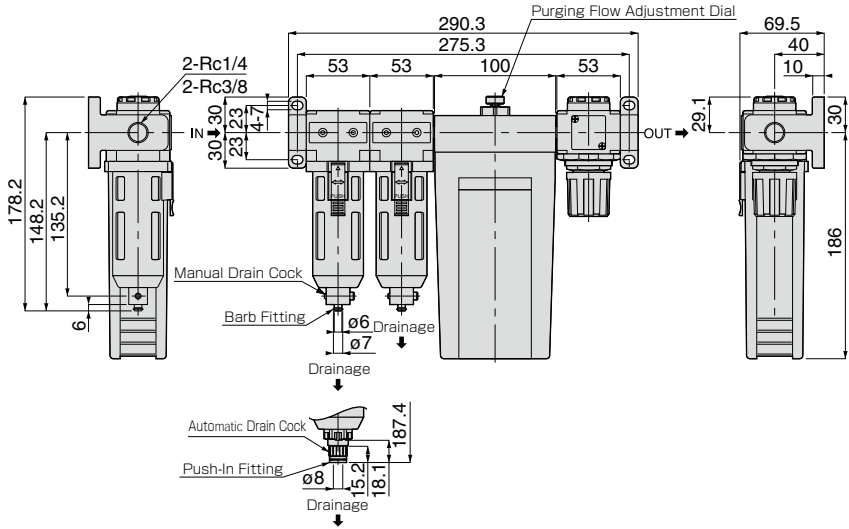


Unit of Air Filter, Micromist Filter,
Fiber Dry and Regulator with No Gauge



Unit of Air Filter, Mist Filter,
Fiber Dry and Regulator with No Gauge

RoHS compliant



Model Code	Weight (g)	
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)
FMDR301-□-MD-□L	1,901	1,894
FMDR301-□-AD-□L	1,930	1,923
FBDR301-□-MD-□L	1,901	1,894
FBDR301-□-AD-□L	1,930	1,923

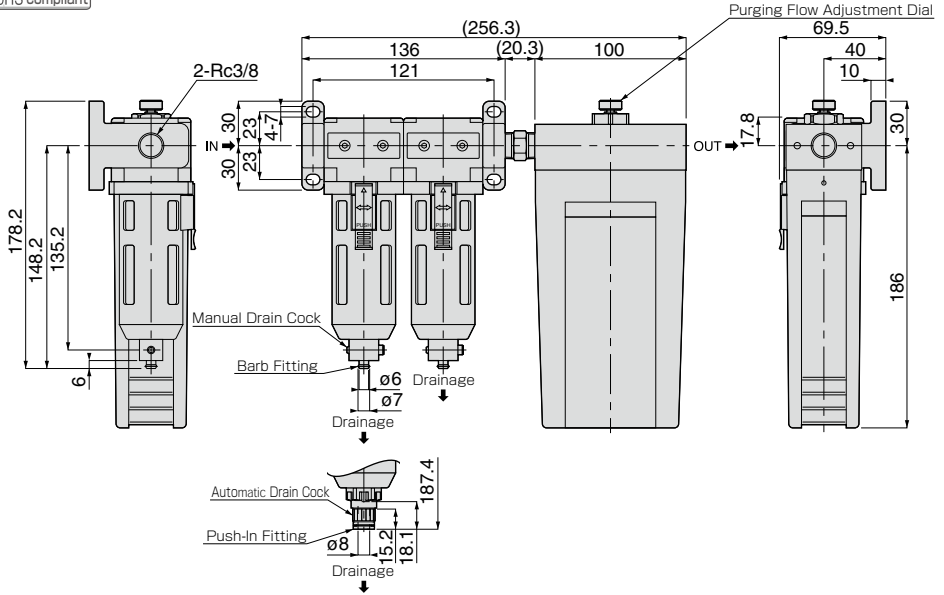


**Unit of Air Filter,
Micromist Filter and Fiber Dry**



**Unit of Air Filter,
Mist Filter and Fiber Dry**

RoHS compliant



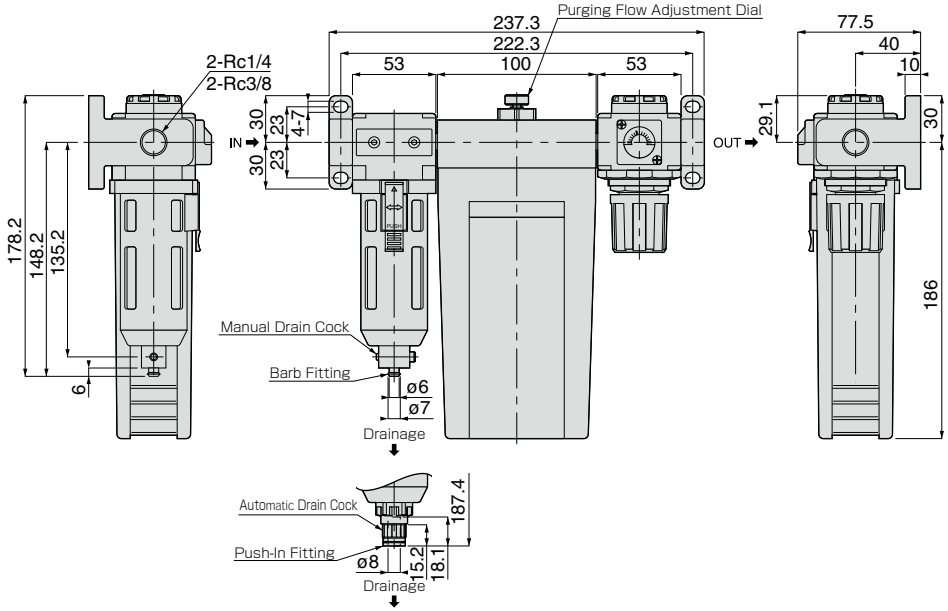
Model Code	Weight (g)	CAD File
FMD301-03-MD-□	1,570	CRDY-003
FMD301-03-AD-□	1,599	
FBD301-03-MD-□	1,570	
FBD301-03-AD-□	1,599	

■ 301 Series



Unit of Air Filter, Fiber Dry and Regulator with Bourdon Tube Pressure Gauge

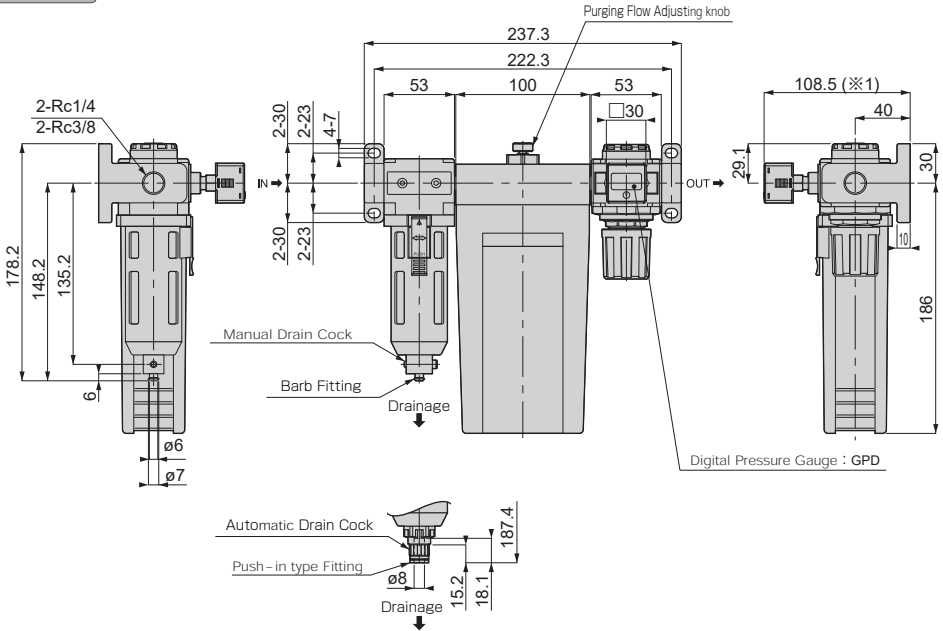
RoHS compliant



Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR301-□-MD-□	1,591.5	1,584.5	CRDY-004
FDR301-□-AD-□	1,606	1,599	

FDR 301 Unit of Air Filter, Fiber Dry and Regulator with Digital Pressure Gauge

RoHS compliant



Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR301-③-MD-⑥ G	1,600	1,593	-
FDR301-③-AD-⑥ G	1,615	1,608	-

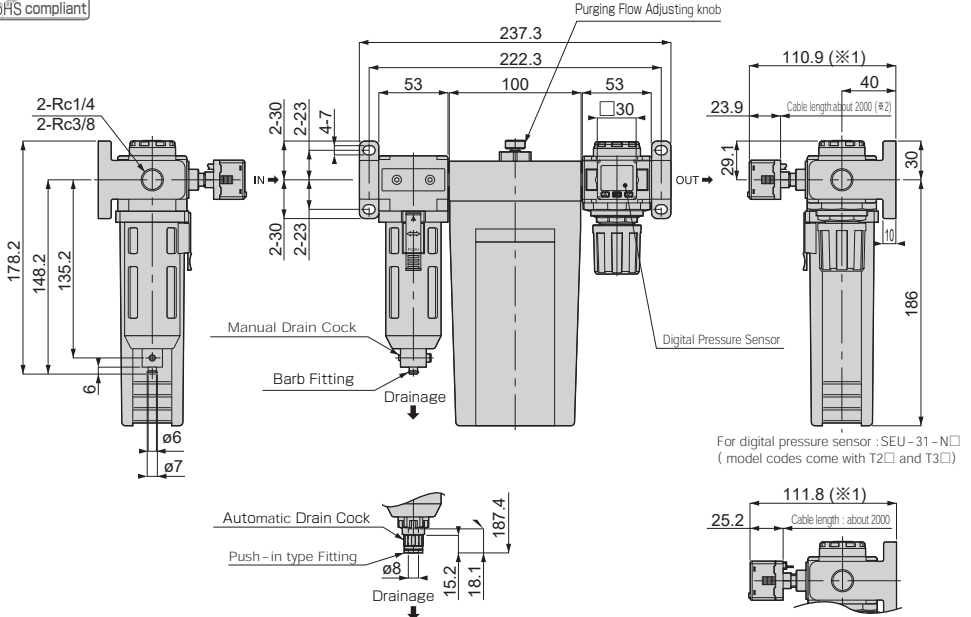
- ※ 1. The dimension of 108.5mm is just for reference.
- ※ 2. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread. Fill in ⑥ with R only if the flow direction from right to left is needed. Otherwise leave it blank (standard flow direction is from left to right).

■ 301 シリーズ



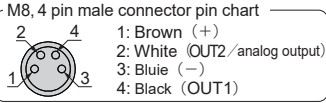
Unit of Air Filter, Fiber Dry and Regulator with Dual LCD Pressure Sensor

RoHS compliant



For digital pressure sensor : SEU-31-N□
(model codes come with T2□ and T3□)

For digital pressure sensor : SEU-32-□
(model codes come with T4□ and T5□)



● For model codes with T2□ and T3□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR301-③-MD-⑥T□	1,636	1,629	-
FDR301-③-MD-⑥T□C	1,599	1,592	
FDR301-③-AD-⑥T□	1,651	1,644	
FDR301-③-AD-⑥T□C	1,614	1,607	

Fill in □ with 2 if SW 1point output+ analog output pressure sensor is needed and 3 for SW 2points output pressure sensor.

● For model codes with T4□ and T5□

Model Code	Weight (g)		CAD File
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)	
FDR301-③-MD-⑥T□	1,643	1,636	-
FDR301-③-AD-⑥T□	1,658	1,651	

Fill in □ with 4 if NPN output, SW 2points output+ analog output pressure sensor is needed, 4P for PNP output, SW 2points output+ analog output sensor, 5 for NPN output, SW 2points output+ copy function sensor and 5P for PNP output, SW 2points output+ copy function sensor.



※ 1. The dimensions of 110.9mm and 111.8mm are just for reference.

※ 2. The Cable length of M8, 4 pin connector is 150mm

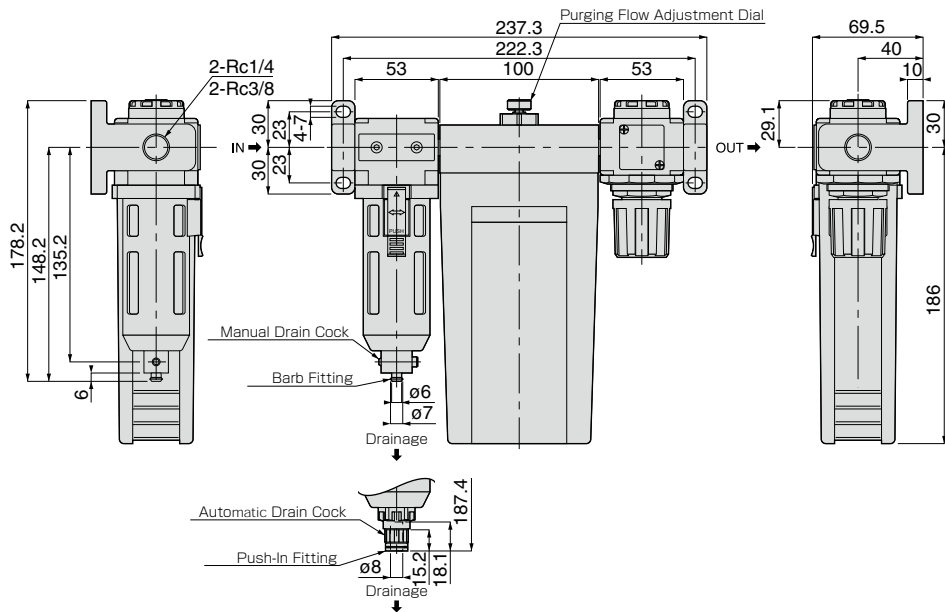
※ 3. Fill in ③ of model code with 02 for Rc1/4 thread or 03 for Rc3/8 thread.

Fill in ⑥ with R only if the flow direction from right to left is needed. Otherwise leave it blank (standard flow direction is from left to right).



Unit of Air Filter, Fiber Dry and Regulator with No Gauge

RoHS compliant

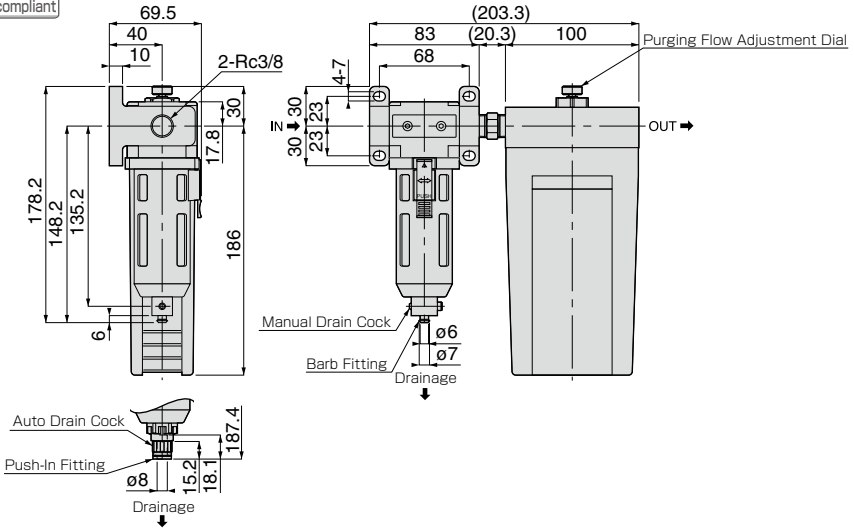


Model Code	Weight (g)	
	Port Dia. : 02(Rc1/4)	Port Dia. : 03(Rc3/8)
FDR301-□-MD-□L	1,554.5	1,547.5
FDR301-□-AD-□L	1,569	1,562

■ 301 Series

FD
301 Unit of Air Filter and Fiber Dry

RoHS compliant



Model Code	Weight (g)	CAD File
FD301-03-MD-□	1,223	CRDY-004
FD301-03-AD-□	1,237.5	



Common Safety Instructions for Fiber Dry Series and Dry Unit Series

Before selecting or using PISCO products, read the following instructions. Read the detailed instructions for individual series.

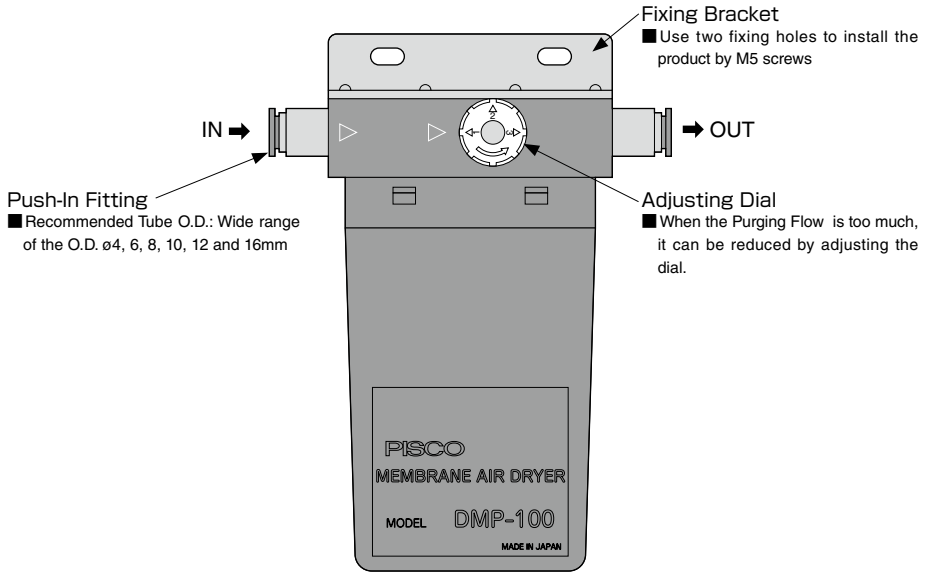
Warning

1. When installing the dryer, provide adequate support and fix it securely. Looseness or dropping off of the dryer may cause injuries.
2. Do not use the dryer without the explosion-proof casing (bowl guard). If the bowl breaks, the pieces may fly apart to cause injuries.
3. Make sure to set the lock lever on the filter, mist filter and micromist filter to "lock" before using. Otherwise, there is a risk of Bowl Guard or Bowl coming off which may cause injuries.
4. When conducting the maintenance, checkup, or replacement of the product, make sure to turn off the power and shut off the air supply. Confirm the residual pressure in the piping becomes zero before maintenance or replacement of expendables.
5. Do not use the dryer in a fluid or atmosphere containing corrosive gas or organic solvent gas. Such a use may deteriorate the dryer body which causes leakage or damage.

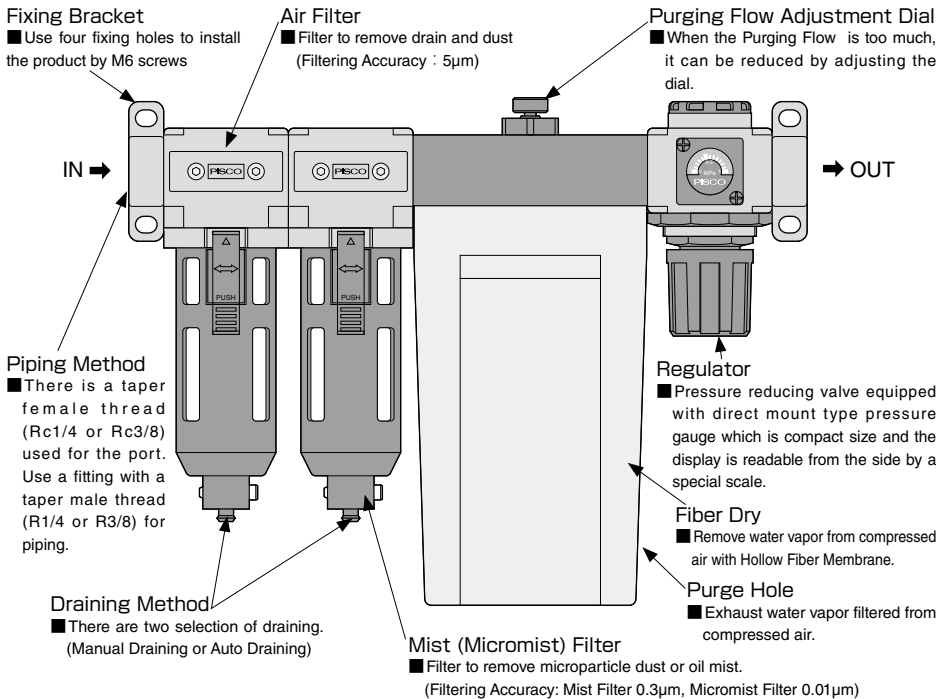
Caution

1. Air Filter and Micromist Filter shall be installed downward in a vertical direction. Improper installation may cause faulty draining.
2. Drain in Air Filter, Mist Filter and Micromist Filter are discharged automatically at the air pressure less than 0.05MPa for the manual drain type and 0.15MPa for the auto drain type. When installing, consider the self-discharging of air and drain.
3. The dryer requires 10 to 20 minutes of initial drying operation (idling) before it reaches the designated performance.
4. When the manual drain type is selected, discharge drain before it reaches to the "MAX. DRAIN LEVEL" . Otherwise, it may become the cause which the drain flows into a secondary side.
5. Do not operate Fiber Dry with Purging Flow Adjustment Dial "Zero" . It may impair the dehumidification performance. Refer to the performance data in this catalog for the details of the dehumidification.
6. Check the IN side of air supply by the ▷ mark. Wrong piping may impair the performance.
7. Do not apply back pressure to the purge hole. It may impair the performance.

Fiber Dry Series



Dry Unit Series





SAFETY Instructions

This safety instructions aim to prevent personal injury and damage to properties by requiring proper use of PISCO products.

Be certain to follow ISO 4414 and JIS B 8370

ISO 4414 : Pneumatic fluid power...Recommendations for the application of equipment to transmission and control systems.

JIS B 8370 : General rules and safety requirements for systems and their components.

This safety instructions is classified into "Danger", "Warning" and "Caution" depending on the degree of danger or damages caused by improper use of PISCO products.



Danger

Hazardous conditions. It can cause death or serious personal injury.



Warning

Hazardous conditions depending on usages. Improper use of PISCO products can cause death or serious personal injury.



Caution

Hazardous conditions depending on usages. Improper use of PISCO products can cause personal injury or damages to properties.



Warning

1. Selection of pneumatic products

- ① A user who is a pneumatic system designer or has sufficient experience and technical expertise should select PISCO products.
- ② Due to wide variety of operating conditions and applications for PISCO products, carry out the analysis and evaluation on PISCO products. The pneumatic system designer is solely responsible for assuring that the user's requirements are met and that the application presents no health or safety hazards. All designers are required to fully understand the specifications of PISCO products and constitute all systems based on the latest catalog or information, considering any malfunctions.

2. Handle the pneumatic equipment with enough knowledge and experience

- ① Improper use of compressed air is dangerous. Assembly, operation and maintenance of machines using pneumatic equipment should be conducted by a person with enough knowledge and experience.

3. Do not operate machine / equipment or remove pneumatic equipment until safety is confirmed.

- ① Make sure that preventive measures against falling work-pieces or sudden movements of machine are completed before inspection or maintenance of these machine.
- ② Make sure the above preventive measures are completed. A compressed air supply and the power supply to the machine must be off, and also the compressed air in the systems must be exhausted.
- ③ Restart the machines with care after ensuring to take all preventive measures against sudden movements.

Disclaimer

1. PISCO does not take any responsibility for any incidental or indirect loss, such as production line stop, interruption of business, loss of benefits, personal injury, etc., caused by any failure on use or application of PISCO products.
2. PISCO does not take any responsibility for any loss caused by natural disasters, fires not related to PISCO products, acts by third parties, and intentional or accidental damages of PISCO products due to incorrect usage.
3. PISCO does not take any responsibility for any loss caused by improper usage of PISCO products such as exceeding the specification limit or not following the usage the published instructions and catalog allow.
4. PISCO does not take any responsibility for any loss caused by remodeling of PISCO products, or by combinational use with non-PISCO products and other software systems.
5. The damages caused by the defect of Pisco products shall be covered but limited to the full amount of the PISCO products paid by the customer.



SAFETY INSTRUCTION MANUAL

PISCO products are designed and manufactured for use in general industrial machines. Be sure to read and follow the instructions below.

Danger

1. Do not use PISCO products for the following applications.
 - ① Equipment used for maintaining / handling human life and body.
 - ② Equipment used for moving / transporting human.
 - ③ Equipment specifically used for safety purposes.

Warning

1. Do not use PISCO products under the following conditions.
 - ① Beyond the specifications or conditions stated in the catalog, or the instructions.
 - ② Under the direct sunlight or outdoors.
 - ③ Excessive vibrations and impacts.
 - ④ Exposure / adhere to corrosive gas, inflammable gas, chemicals, seawater, water and vapor. *
* Some products can be used under the condition above(④), refer to the details of specification and condition of each product.
2. Do not disassemble or modify PISCO products, which affect the performance, function, and basic structure of the product.
3. Turn off the power supply, stop the air supply to PISCO products, and make sure there is no residual air pressure in the pipes before maintenance and inspection.
4. Do not touch the release-ring of push-in fitting when there is a working pressure. The lock may be released by the physical contact, and tube may fly out or slip out.
5. Frequent switchover of compressed air may generate heat, and there is a risk of causing burn injury.
6. Avoid any load on PISCO products, such as a tensile strength, twisting and bending. Otherwise, there is a risk of causing damage to the products.
7. As for applications where threads or tubes swing / rotate, use Rotary Joints, High Rotary Joints or Multi-Circuit Rotary Block only. The other PISCO products can be damaged in these applications.
8. Use only Die Temperature Control Fitting Series, Tube Fitting Stainless SUS316 Series, Tube Fitting Stainless SUS316 Compression Fitting Series or Tube Fitting Brass Series under the condition of over 60°C (140° F) water or thermal oil. Other PISCO products can be damaged by heat and hydrolysis under the condition above.
9. As for the condition required to dissipate static electricity or provide an antistatic performance, use EG series fitting and antistatic products only, and do not use other PISCO products. There is a risk that static electricity can cause system defects or failures.
10. Use only Fittings with a characteristic of spatter-proof such as Anti-spatter or Brass series in a place where flame and weld spatter is produced. There is a risk of causing fire by sparks.
11. Turn off the power supply to PISCO products, and make sure there is no residual air pressure in the pipes and equipment before maintenance. Follow the instructions below in order to ensure safety.
 - ① Make sure the safety of all systems related to PISCO products before maintenance.
 - ② Restart of operation after maintenance shall be proceeded with care after ensuring safety of the system by preventive measures against unexpected movements of machines and devices where pneumatic equipment is used.
 - ③ Keep enough space for maintenance when designing a circuit.
12. Take safety measures such as providing a protection cover if there is a risk of causing damages or fires on machine / facilities by a fluid leakage.

⚠ Caution

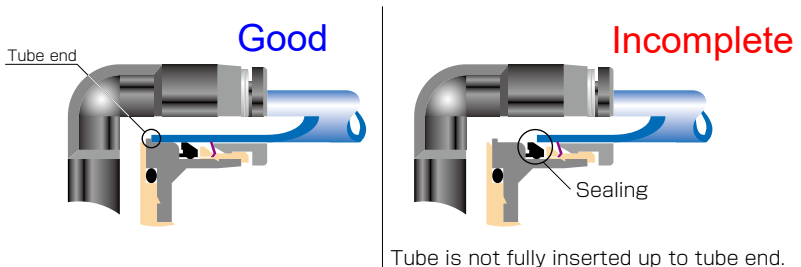
1. Remove dusts or drain before piping. They may get into the peripheral machine / facilities and cause malfunction.
2. When inserting an ultra-soft tube into push-in fitting, make sure to place an Insert Ring into the tube edge. There is a risk of causing the escape of tube and a fluid leakage without using an Insert Ring.
3. The product incorporating NBR as seal rubber material has a risk of malfunction caused by ozone crack. Ozone exists in high concentrations in static elimination air, clean-room, and near the high-voltage motors, etc. As a countermeasure, material change from NBR to HNBR or FKM is necessary. Consult with PISCO for more information.
4. Special option "Oil-free" products may cause a very small amount of a fluid leakage. When a fluid medium is liquid or the products are required to be used in harsh environments, contact us for further information.
5. In case of using non-PISCO brand tubes, make sure the tolerance of the outer tube diameter is within the limits of Table 1.

● Table 1. Tube O.D. Tolerance

mm size	Nylon tube	Polyurethane tube	inch size	Nylon tube	Polyurethane tube
ø1.8mm	—	± 0.05mm	ø1/8	± 0.1mm	± 0.15mm
ø3mm	—	± 0.15mm	ø5/32	± 0.1mm	± 0.15mm
ø4mm	± 0.1mm	± 0.15mm	ø3/16	± 0.1mm	± 0.15mm
ø6mm	± 0.1mm	± 0.15mm	ø1/4	± 0.1mm	± 0.15mm
ø8mm	± 0.1mm	± 0.15mm	ø5/16	± 0.1mm	± 0.15mm
ø10mm	± 0.1mm	± 0.15mm	ø3/8	± 0.1mm	± 0.15mm
ø12mm	± 0.1mm	± 0.15mm	ø1/2	± 0.1mm	± 0.15mm
ø16mm	± 0.1mm	± 0.15mm	ø5/8	± 0.1mm	± 0.15mm

6. Instructions for Tube Insertion

- ① Make sure that the cut end surface of the tube is at right angle without a scratch on the surface and deformations.
- ② When inserting a tube, the tube needs to be inserted fully into the push-in fitting until the tubing edge touches the tube end of the fitting as shown in the figure below. Otherwise, there is a risk of leakage.



- ③ After inserting the tube, make sure it is inserted properly and not to be disconnected by pulling it moderately.
- ※ When inserting tubes, Lock-claws may be hardly visible in the hole, observed from the front face of the release-ring. But it does not mean the tube will surely escape. Major causes of the tube escape are the followings;
- ① Shear drop of the lock-claws edge
 - ② The problem of tube diameter (usually small)
- Therefore, follow the above instructions from ① to ③, even lock-claws is hardly visible.

7. Instructions for Tube Disconnection

- ① Make sure there is no air pressure inside of the tube, before disconnecting it.
- ② Push the release-ring of the push-in fitting evenly and deeply enough to pull out the tube toward oneself. By insufficient pushing of the release-ring, the tube may not be pulled out or damaged by scratch, and tube shavings may remain inside of the fitting, which may cause the leakage later.

8. Instructions for Installing a fitting

- ① When installing a fitting, use proper tools to tighten a hexagonal-column or an inner hexagonal socket. When inserting a hex key into the inner hexagonal socket of the fitting, be careful so that the tool does not touch lock-claws. The deformation of lock-claws may result in a poor performance of systems or an escape of the tube.
- ② Refer to Table 2 which shows the recommended tightening torque. Do not exceed these limits to tighten a thread. Excessive tightening may break the thread part or deform the gasket and cause a fluid leakage. Tightening thread with tightening torque lower than these limits may cause a loosened thread or a fluid leakage.
- ③ Adjust the tube direction while tightening thread within these limits, since some PISCO products are not rotatable after the installation.

● Table 2: Recommended tightening torque / Sealock color / Gasket materials

Thread type	Thread size	Tightening torque	Sealock color	Gasket materials
Metric thread	M3 × 0.5	0.7N·m	—	SUS304 NBR
	M5 × 0.8	1.0 ~ 1.5N·m		
	M6 × 1	2 ~ 2.7N·m		
	M3 × 0.5	0.7N·m		POM
	M5 × 0.8	1 ~ 1.5N·m		
	M6 × 0.75	0.8 ~ 1N·m		
Taper pipe thread	M8 × 0.75	1 ~ 2N·m	White	—
	R1/8	4.5 ~ 6.5N·m		
	R1/4	7 ~ 9N·m		
	R3/8	12.5 ~ 14.5N·m		
Unified thread	R1/2	20 ~ 22N·m	—	SUS304, NBR
	No.10-32UNF	1.0 ~ 1.5N·m		
National pipe thread taper	1/16-27NPT	4.5 ~ 6.5N·m	White	—
	1/8-27NPT	4.5 ~ 6.5N·m		
	1/4-18NPT	7 ~ 9N·m		
	3/8-18NPT	12.5 ~ 14.5N·m		
	1/2-14NPT	20 ~ 22N·m		

※ These values may differ for some products. Refer to each specification as well.

9. Instructions for removing a fitting

- ① When removing a fitting, use proper tools to loosen a hexagonal-column or an inner hex bolt.
- ② Remove the sealant stuck on the mating equipment. The remained sealant may get into the peripheral equipment and cause malfunctions.

10. Arrange piping avoiding any load on fittings and tubes such as twist, tensile, moment load, shaking and physical impact. These may cause damages to fittings, tube deformations, bursting and the escape of tubes.