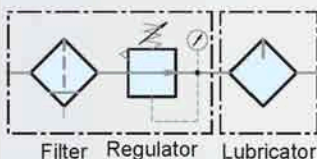
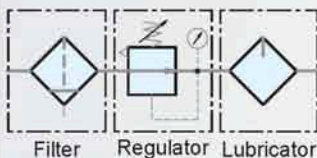


## MINIATURE FRL/FR-L COMBINATION (FRL700A/FRL600A) COMPOSITE



### Symbol



### Features

- \* Remove water and particle effectively.
- \* Compact size with effective air service.
- \* 40 $\mu$ m and 5 $\mu$ m filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.
- \* Oil spray in mist ensures good lubrication for machines.
- \* Strict quality control offers product stable quality and long life.

Miniature FRL A type patent  
Patent number in Taiwan:1888494  
Patent number in the US.: US6.733.044  
Patent number in China: 538716

### How to order

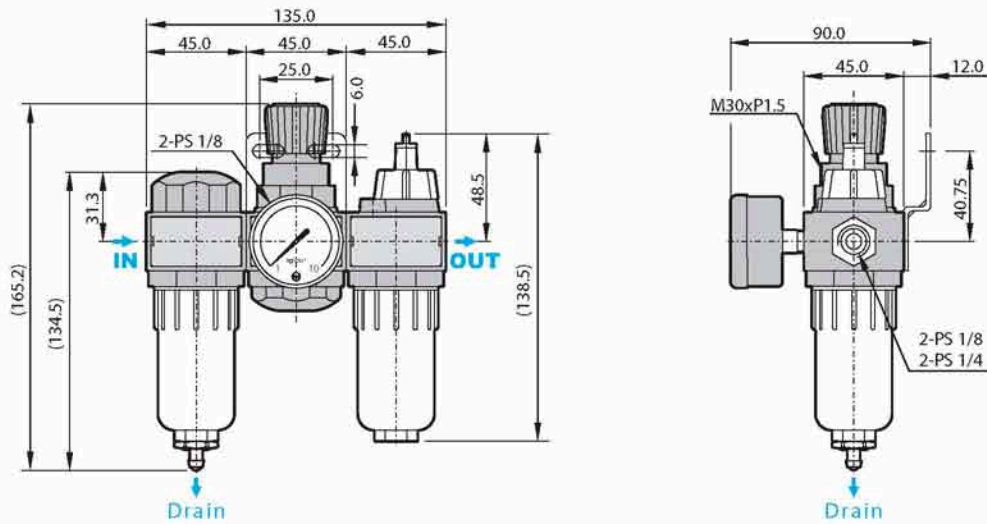
FRL700A		-	02	N	C	H	K
FRL700A	Miniature Filter+Regulator+Lubricator	Port size	Thread	Filtration	Drain	Bowl guard	
FRL600A	Miniature Filter Regulator+Lubricator	01 1/8" Option	Blank PS N NPT	Blank 5 $\mu$ m C 40 $\mu$ m	Blank Semi-auto drain H Manual drain	Blank W/O guard K W/I guard	
		02 1/4" Standard					

### Specifications

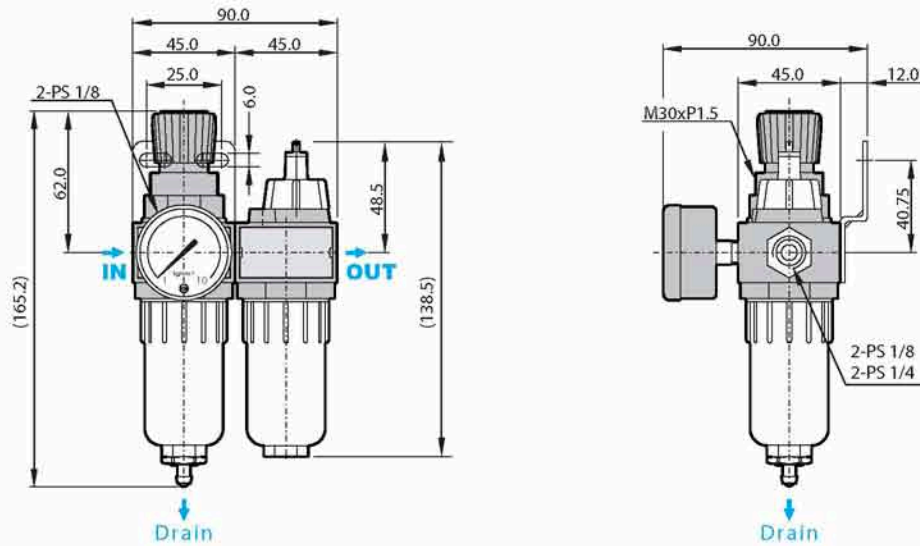
Model	FRL700A-01	FRL700A-02	FRL600A-01	FRL600A-02
Port size	1/8" (Option)	1/4" (Standard)	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air			
Regulator construction	Diaphragm			
Body material	Polycarbonate			
Bowl material	Polycarbonate (Standard)			
Filtration	5 $\mu$ m (Standard), 40 $\mu$ m (Option)			
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>			
Max. inlet pressure (Standard bowl)	12 kgf/cm <sup>2</sup>			
Max. flow rate l/min (6kgf/cm <sup>2</sup> )	1850		1650	1850
Ambient temperature	-10C ~ 60C			
Lubricator oil (Recommended)	ISO-VG32			
Filter bowl capacity	35cc			
Lubricator bowl capacity	50cc			
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )			
Net weight	810g		560g	
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2			

— Dimensions

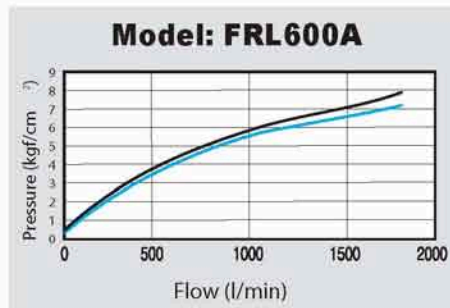
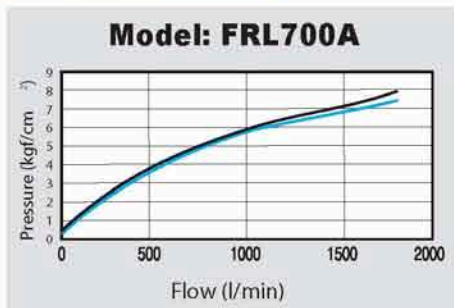
● FRL700A-01, 02



● FRL600A-01, 02



— Flow chart



**Note:**

- X axis: Flow
- Y axis: Pressure
- Blue line (P0) = Outlet pressure
- Black line (P1) = Inlet pressure
- P1-P0= Pressure range

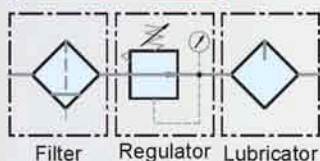
COMPOSITE/ALUMINIUM

# MAC

VALVES

## STANDARD & LARGE FRL COMBINATION (UFRL) F+R+L (3 Unit Style) ALUMINIUM DIE-CAST/COMPOSITE

### Symbol



### Features

- \* Remove water and particle effectively
- \* 40 $\mu$ m and 5 $\mu$ m filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.
- \* Anti-acid & alkali bowl and aluminum bowl provide excellent protection in organic chemistry working environments. (Please contact MVP for more enquires.)



### How to order

<b>UFRL</b>	<b>-</b>	<b>02</b>	<b>N</b>	<b>C</b>	<b>D</b>	<b>A</b>	<b>SB</b>
F.R.L combination	Port size	Thread	Filtration	Drain	Bowl	Spacer block	
Filter+Regulator +Lubricator	02 1/4" 03 3/8" 04 1/2" 06 3/4" 08 1"	Blank PS N NPT	Blank 5 $\mu$ m C 40 $\mu$ m	Blank Semi-auto drain H Manual drain D Auto drain	Blank Standard bowl A Anti-acid & alkali bowl AL Aluminum bowl (1/4"~1/2")		

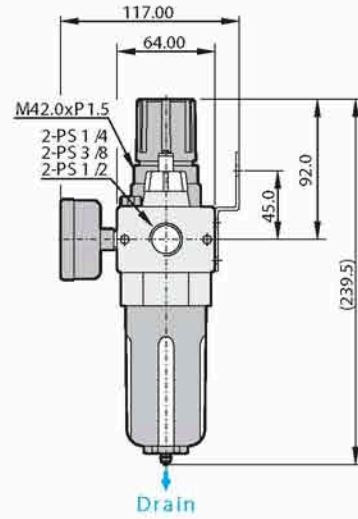
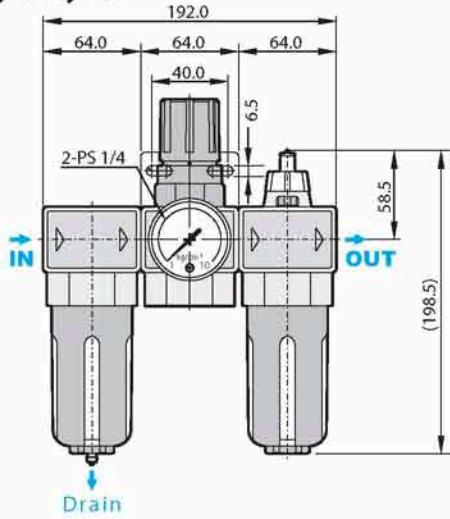
### Specifications

Model	UFRL-02	UFRL-03	UFRL-04	UFRL-06	UFRL-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Regulator construction	Piston				
Body material	Aluminum die-cast				
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)				
Filtration	5 $\mu$ m (Standard), 40 $\mu$ m (Option)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Max. operating pressure (Standard bowl)	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (6kgf/cm <sup>2</sup> )	2080	2100	2600	7940	8200
Ambient temperature	-10C ~ 60C				
Lubricator oil (Recommended)	ISO-VG32				
Filter bowl capacity	105cc		210cc		
Lubricator bowl capacity	125cc		235cc		
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )				
Net weight	1800g (AL Aluminum bowl 2100g)			2650g	
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 4				

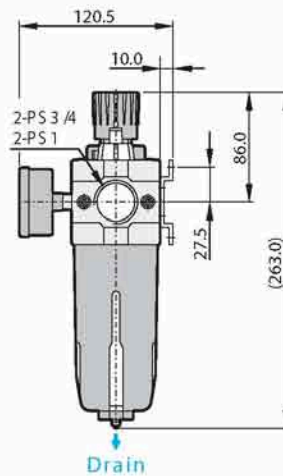
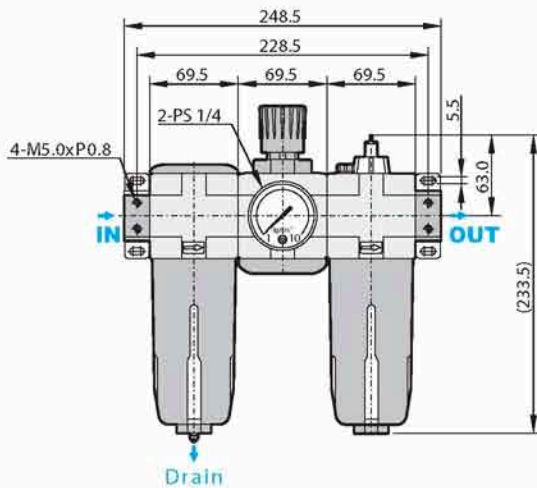
COMPOSITE/ALUMINIUM

## Dimensions

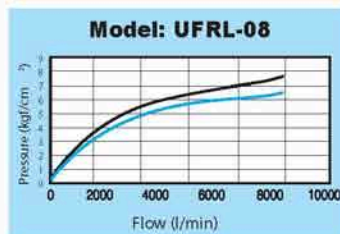
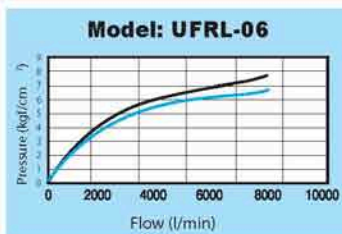
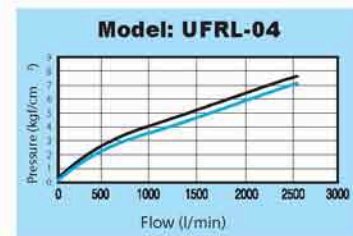
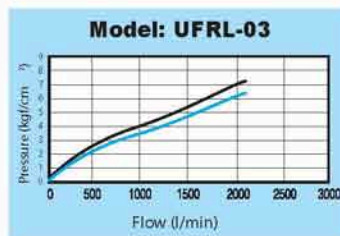
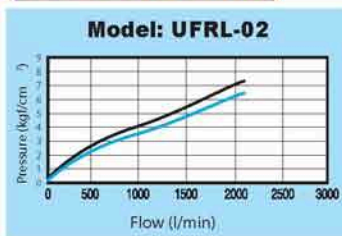
### UFRL-02, 03, 04



### UFRL-06, 08



## Flow chart



### Note:

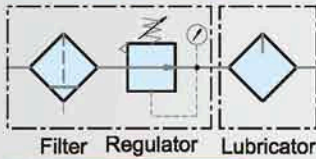
X axis: Flow  
 Y axis: Pressure  
 Blue line (P0) = Outlet pressure  
 Black line (P1) = Inlet pressure  
 P1-P0=Pressure range

COMPOSITE/ALUMINIUM

### STANDARD & LARGE FR/L COMBINATION (UFR/L) FR+L (2 Unit Style) ALUMINIUM DIE-CAST/COMPOSITE



#### Symbol



#### Features

- \* Remove water and particle effectively.
- \* 40  $\mu\text{m}$  and 5  $\mu\text{m}$  filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.
- \* Anti-acid & alkali bowl and aluminum bowl provide excellent protection in organic chemistry working environments. (Please contact our sales for more enquires.)



#### How to order

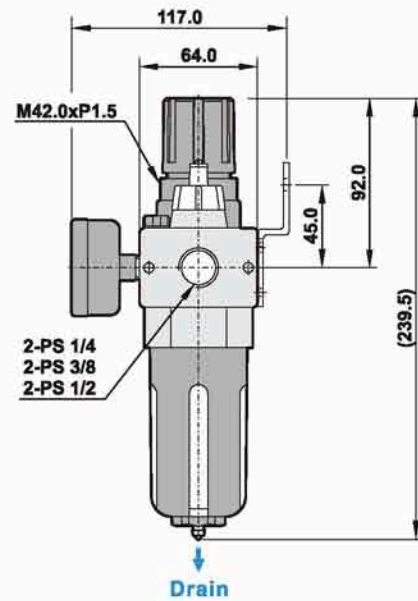
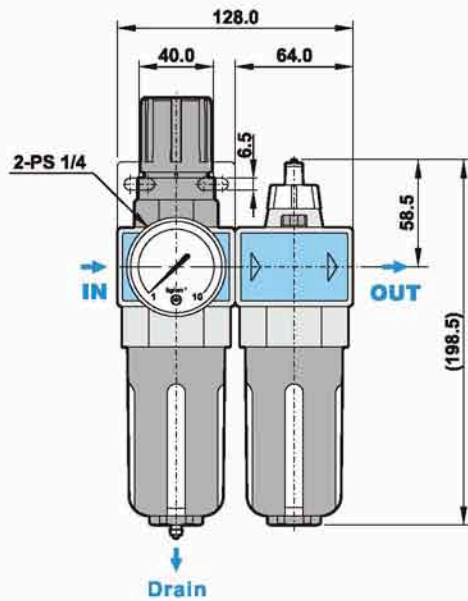
<b>UFR/L</b>	<b>-</b>	<b>02</b>	<b>N</b>	<b>C</b>	<b>D</b>	<b>A</b>	<b>SB</b>		
<b>F.R.L combination</b>	<b>Port size</b>	<b>Thread</b>		<b>Filtration</b>		<b>Drain</b>		<b>Bowl</b>	<b>Spacer block</b>
<b>Filter Regulator +Lubricator</b>	<b>02</b> 1/4" <b>03</b> 3/8" <b>04</b> 1/2" <b>06</b> 3/4" <b>08</b> 1"	<b>Blank</b> <b>N</b>	<b>PS</b> <b>NPT</b>	<b>Blank</b> <b>C</b>	<b>5 <math>\mu\text{m}</math></b> <b>40 <math>\mu\text{m}</math></b>	<b>Blank</b> <b>H</b> <b>D</b>	<b>Semi-auto drain</b> <b>Manual drain</b> <b>Auto drain</b>	<b>Blank</b> <b>A</b> <b>AL</b>	<b>Standard bowl</b> <b>Anti-acid &amp; alkali bowl</b> <b>Aluminum bowl (1/4"~1/2")</b>

#### Specifications

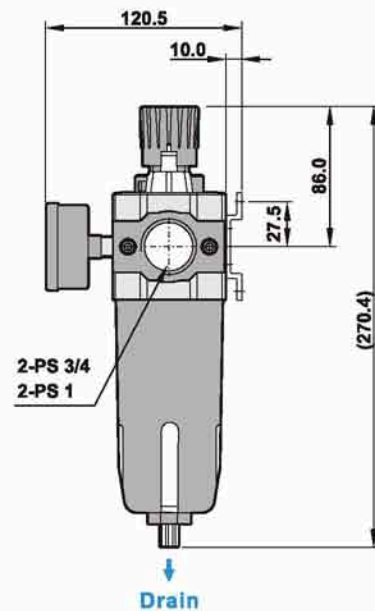
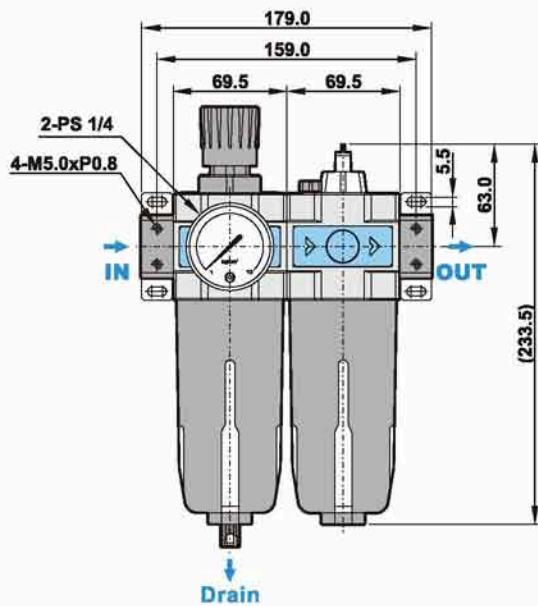
Model	UFR/L-02	UFR/L-03	UFR/L-04	UFR/L-06	UFR/L-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Regulator construction	Piston				
Body material	Aluminum die-cast				
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)				
Filtration	5 $\mu\text{m}$ (Standard) - 40 $\mu\text{m}$ (Option)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Max. operating pressure (Standard bowl)	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (6kgf/cm <sup>2</sup> )	2080	2100	2600	7940	8200
Ambient temperature	-10°C ~ 60°C				
Lubricator oil (Recommended)	ISO-VG32				
Filter bowl capacity	105cc			210cc	
Lubricator bowl capacity	125cc			235cc	
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )				
Net weight	1480g (AL Aluminum bowl 1780g)			2145g	
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 4				

— Dimensions

● UFR/L-02, 03, 04



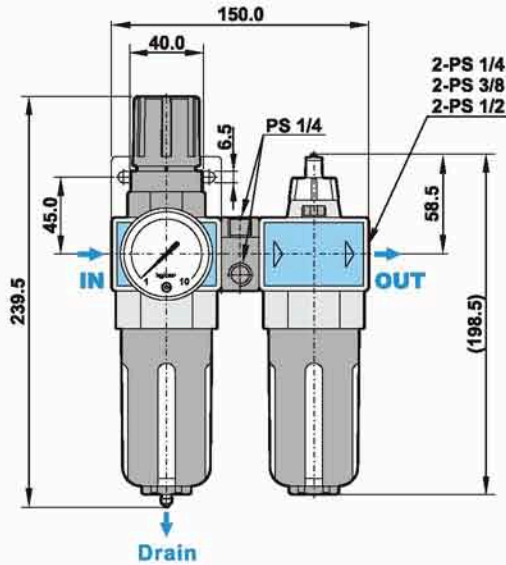
● UFR/L-06, 08



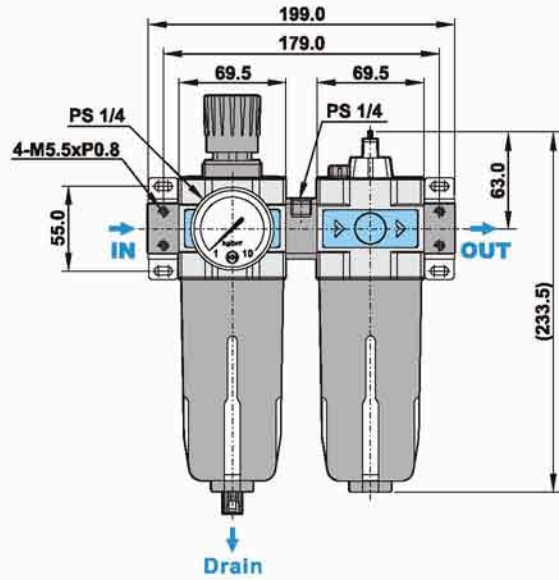
COMPOSITE/ALUMINIUM

**Dimensions**

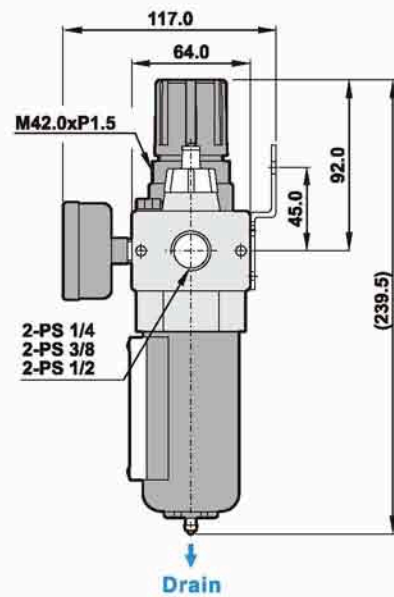
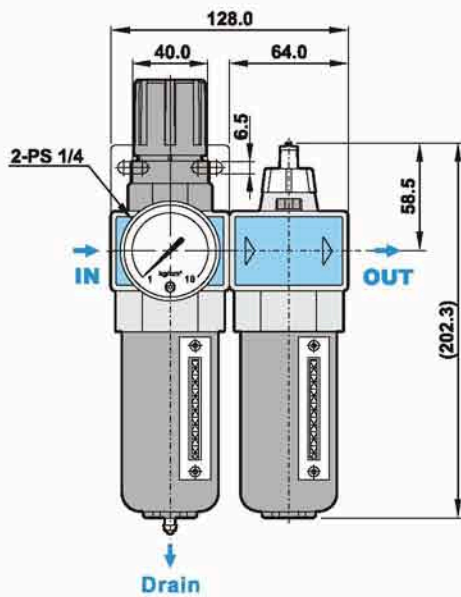
**UFR/L-02, 03, 04SB (Spacer block)**



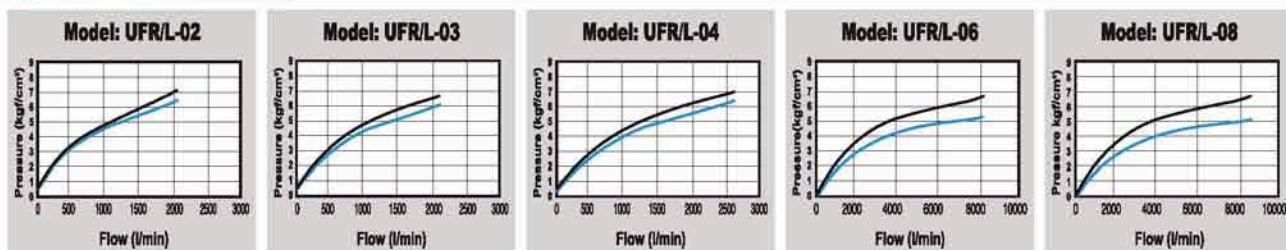
**UFR/L-06, 08SB (Spacer block)**



**UFR/L-02AL, 03AL, 04AL (Aluminum bowl)**



**Flow chart**

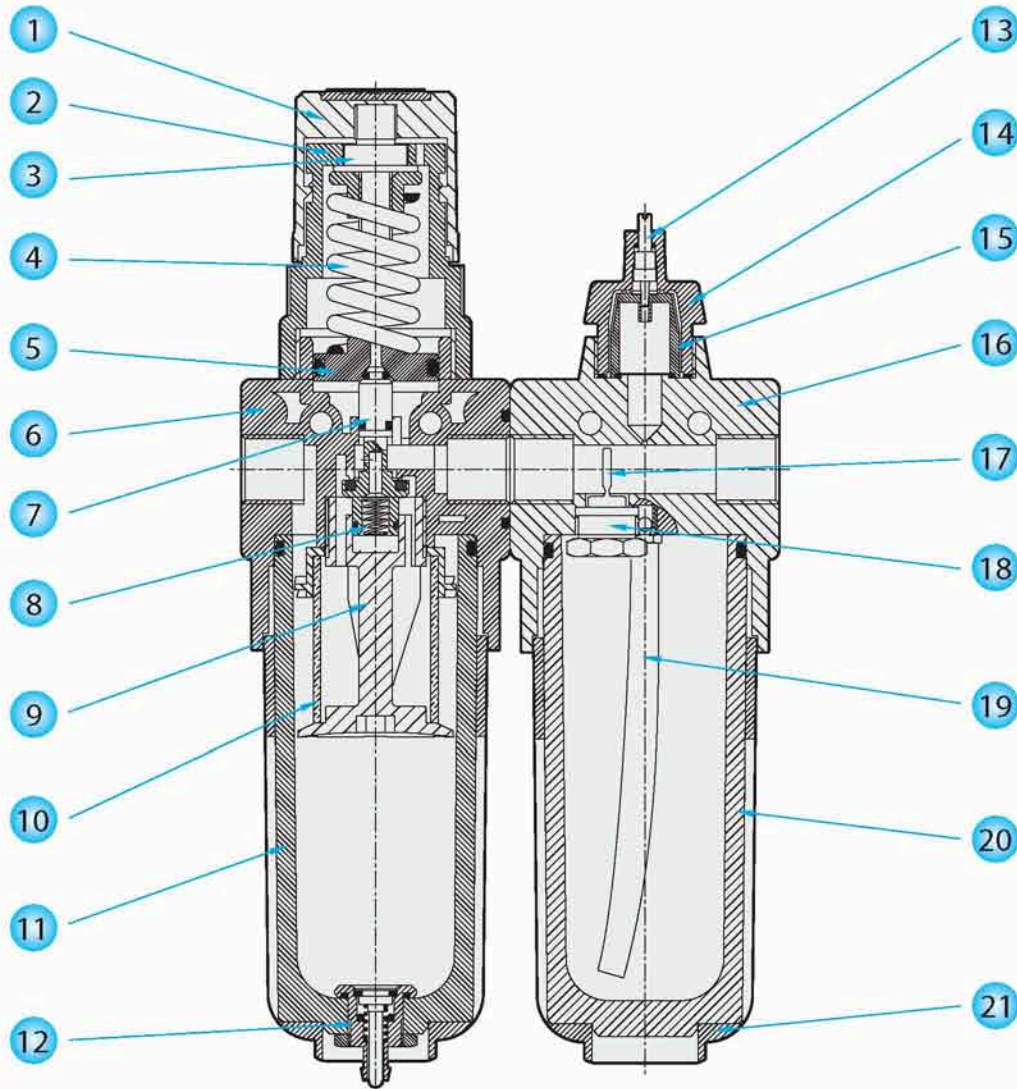


**Note:** X axis: Flow, Y axis: Pressure, Blue line (P0) = Outlet pressure, Black line (P1) = Inlet pressure, P1-P0=Pressure range

COMPOSITE/ALUMINIUM

Construction

UFR/L-02, 03, 04



No.	Description	Material
1	Pressure regulating knob	NY
2	Regulator base	NY+GF
3	Pressure regulating screw	Fe+Ni
4	Pressure regulating spring	Spring steel+Ni
5	Piston	Cu+Ni
6	Regulator body	ADC12
7	Regulating needle	Cu+NBR
8	Spring	SUS304
9	Filter element holder	NY
10	Filter element	Cu
11	Filter bowl	PC

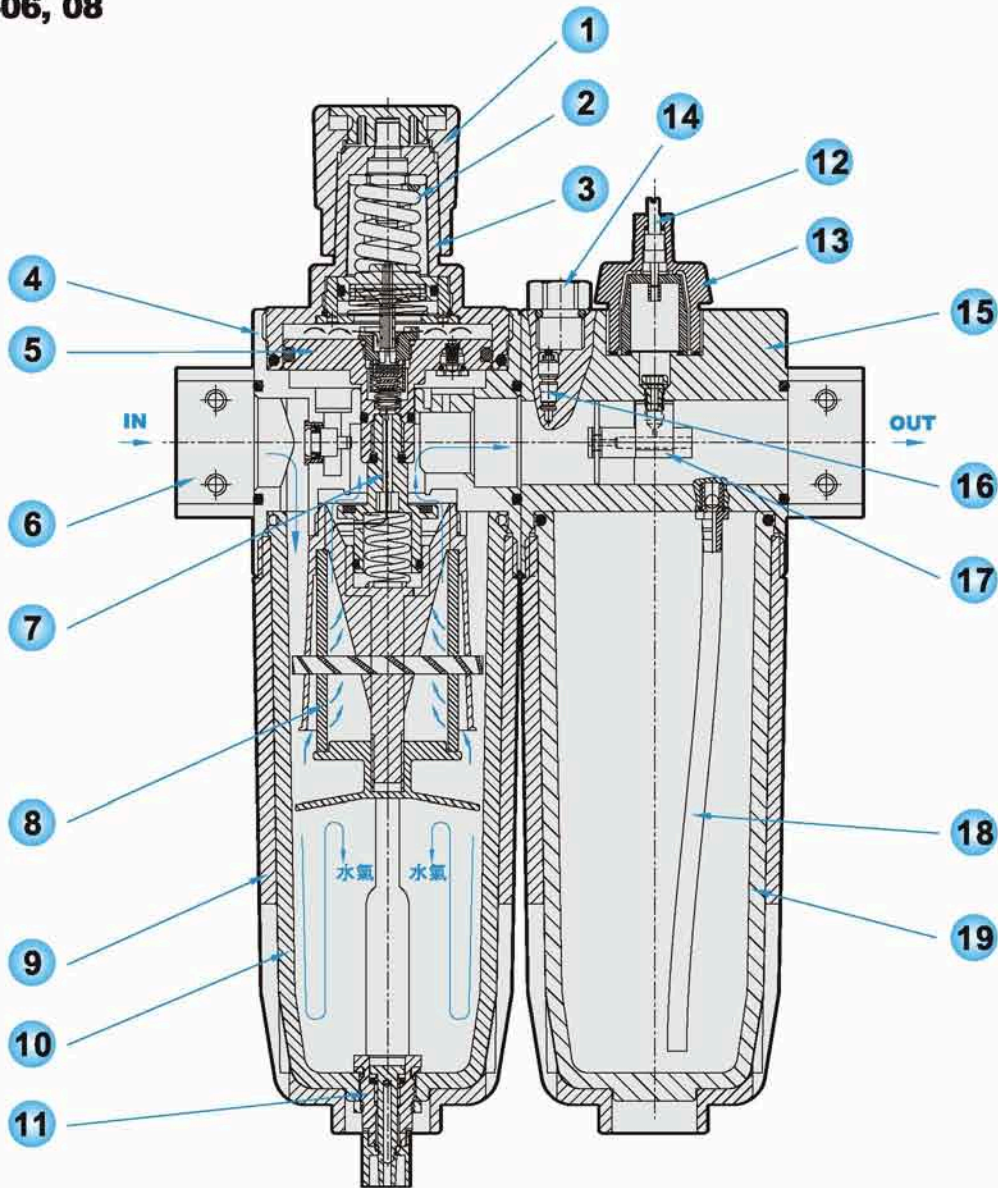
No.	Description	Material
12	Semi-auto drain	Cu+Ni
13	Oil adjusting screw	Cu+Ni
14	Oil viewer	GV4H
15	Oil dropping orifice	PC
16	Lubricator body	ADC12
17	Damper	PU
18	Plug	Cu
19	Oil pipe	PU
20	Lubricator bowl	PC
21	Bowl guard	NY

COMPOSITE/ALUMINIUM



**Construction**

**UFR/L-06, 08**



COMPOSITE/ALUMINIUM

No.	Description	Material
1	Pressure regulating knob	NY
2	Spring	Spring steel+Ni
3	Regulator base	NY+GF
4	Regulator body	ADC12
5	Piston	AL
6	Adaptor	ADC12
7	Pressure regulating needle	Cu+NBR
8	Filter element	Cu
9	Bowl guard	NY+GF
10	Filter bowl	PC

No.	Description	Material
11	Semi-auto drain	POM
12	Oil adjusting screw	Cu+Ni
13	Oil viewer	GV4H
14	Oil filling plug	Cu+Ni
15	Lubricator body	ADC12
16	Check valve	Cu
17	Oil dropping orifice	Cu
18	Oil pipe	PU
19	Lubricator bowl	PC