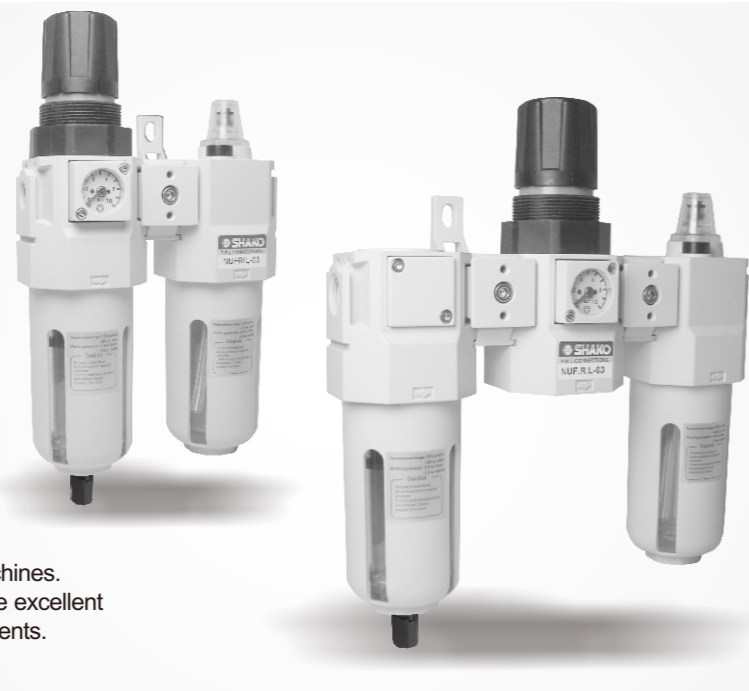
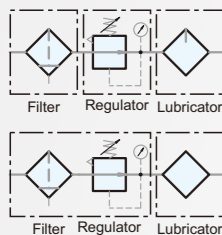


# FRL COMBINATIONS

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### 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 our sales for more enquiries.)

### How to order

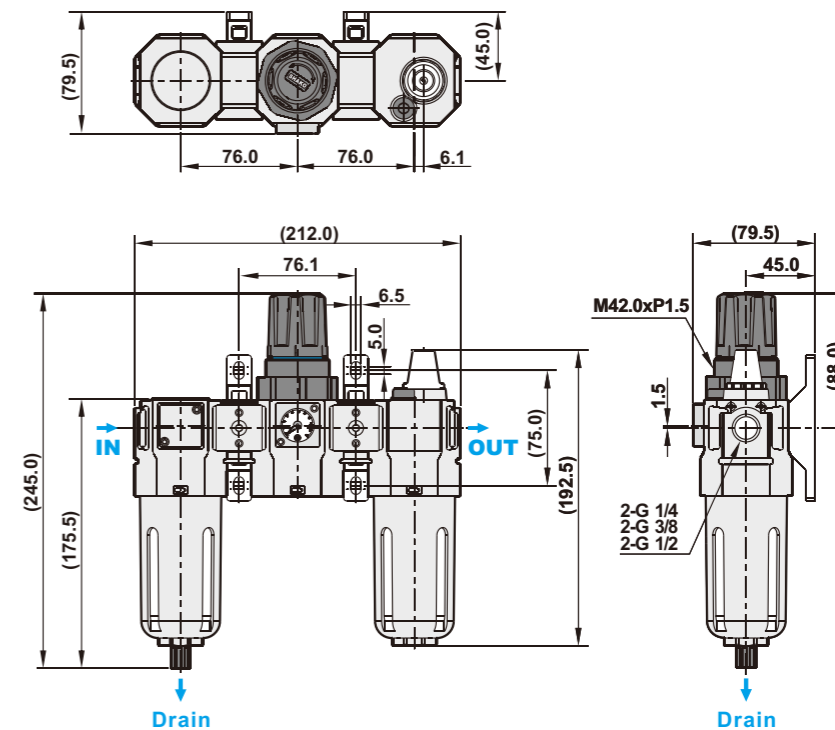
<b>NUFRL</b>	<b>-</b>	<b>02</b>	<b>N</b>	<b>C</b>	<b>G</b>	<b>D</b>	<b>A</b>	<b>SB</b>
F.R.L combination	Port size	Thread	Filtration	Gauge type	Drain	Bowl	Spacer block	
<b>NUFRL</b>	<b>02</b> 1/4"	<b>Blank</b> G	<b>Blank</b> 5 $\mu$ m	<b>Blank</b> Square	<b>Blank</b>	<b>Blank</b> Standard bowl		
Filter+Regulator+Lubricator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

### Specifications

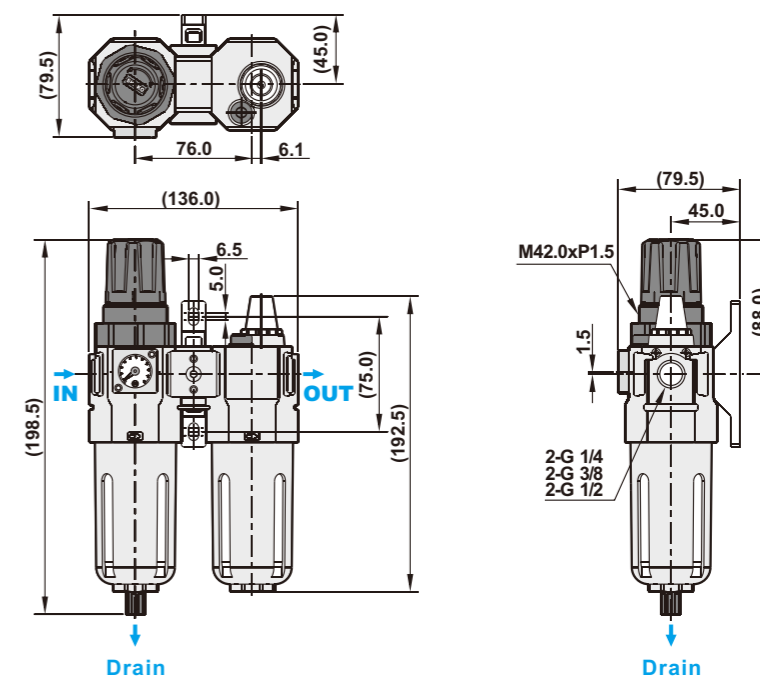
Model	NUFRL-02	NUFRL-03	NUFRL-04	NUFR/L-02	NUFR/L-03	NUFR/L-04
Port size	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
Fluid	Compressed air					
Regulator construction	Piston					
Body material	Aluminum die-cast					
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)					
Filtration	5 $\mu$ m (Standard) · 40 $\mu$ m (Option)					
Operating pressure range	0.5 ~ 9.9 kgf/cm <sup>2</sup>					
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>					
Max. flow rate l/min (ANR)	2080	2100	2600	2080	2100	2600
Ambient temperature	-10 $^{\circ}$ C ~ 60 $^{\circ}$ C					
Lubricator oil (Recommended)	ISO-VG32					
Filter bowl capacity	105cc					
Lubricator bowl capacity	125cc					
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )					
Net weight	2000g (W/I Aluminum bowl 2300g)		1380g (W/I Aluminum bowl 1680g)			
Option	Gauge plate					

### Dimensions

#### NUFRL-02, 03, 04

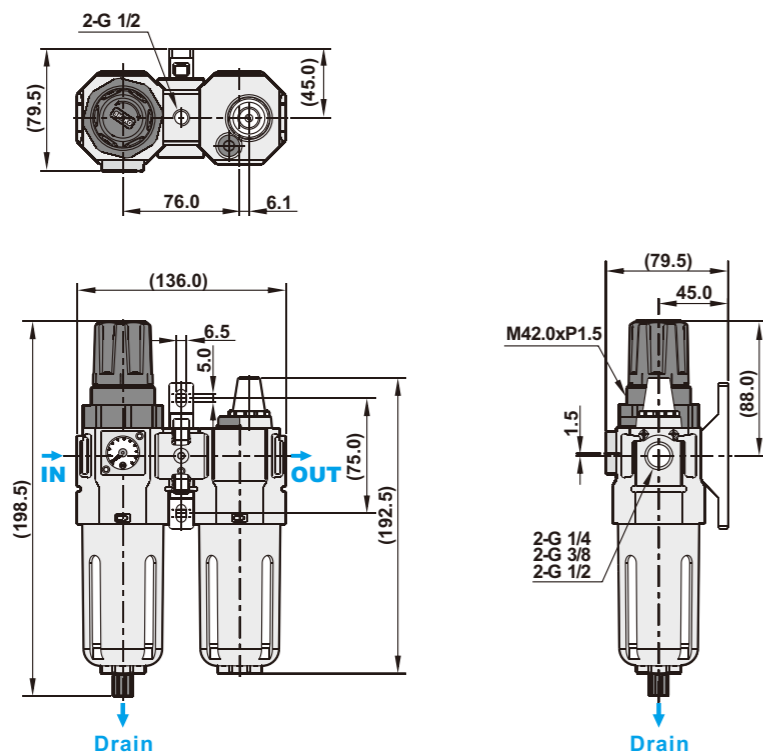


#### NUFR/L-02,03,04

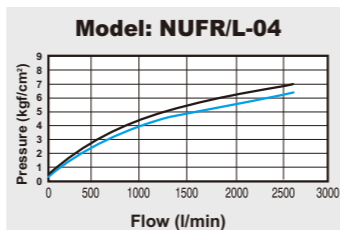
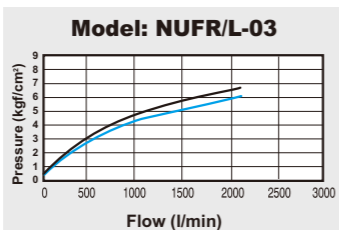
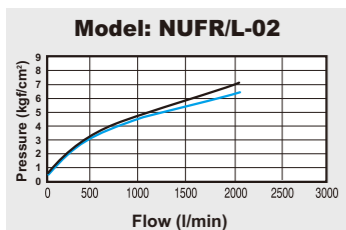
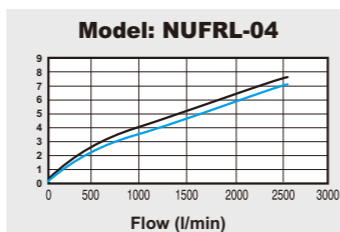
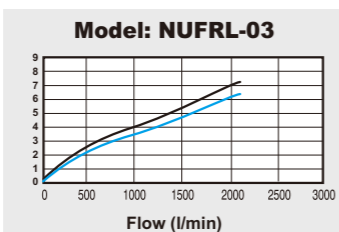
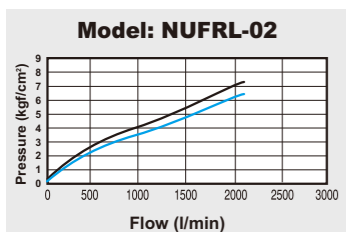


### Dimensions

#### NUFR/L-02, 03, 04SB (Spacer block)



### Flow chart



#### Note:

X axis: Flow (l/min)

Y axis: Pressure (kgf/cm<sup>2</sup>)

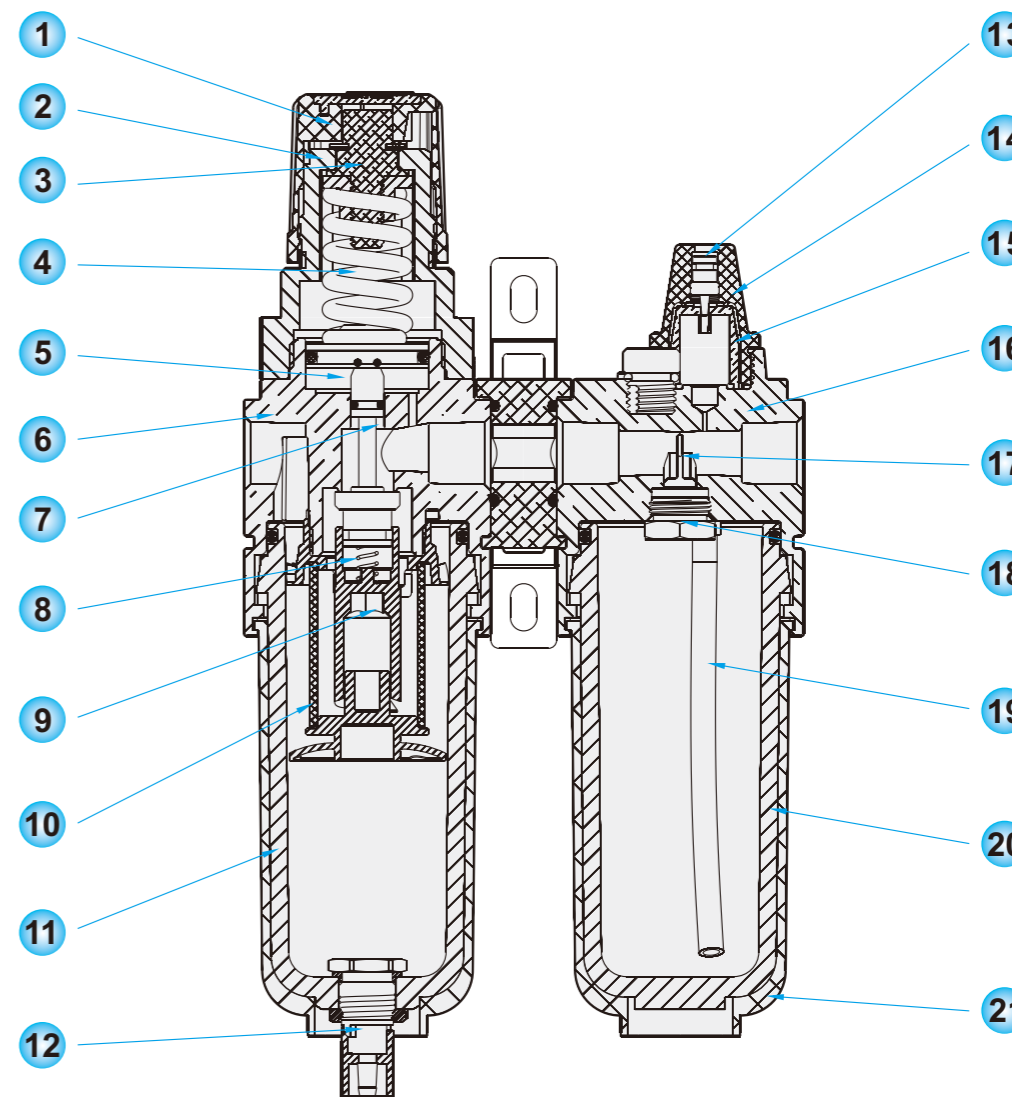
Blue line (P0) = Outlet pressure

Black line (P1) = Inlet pressure

P1-P0=Pressure range

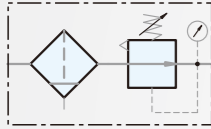
### Construction

#### UFR/L-02, 03, 04



No.	Description	Material	No.	Description	Material
1	Pressure regulating knob	NY	12	Semi-auto drain	POM
2	Regulator base	NY+GF	13	Oil adjusting screw	Cu+Ni
3	Pressure regulating screw	Fe+Ni	14	Oil viewer	GV4H
4	Pressure regulating spring	Spring steel+Ni	15	Oil dropping orifice	PC
5	Piston	Cu+Ni	16	Lubricator body	ADC12
6	Regulator body	ADC12	17	Damper	PU
7	Regulating needle	Cu+NBR	18	Plug	Cu
8	Spring	SUS304	19	Oil pipe	PU
9	Filter element holder	NY	20	Lubricator bowl	PC
10	Filter element	Cu	21	Bowl guard	NY
11	Filter bowl	PC			

### Symbol



Filter Regulator

### Features

- \* Remove water and particle effectively.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.

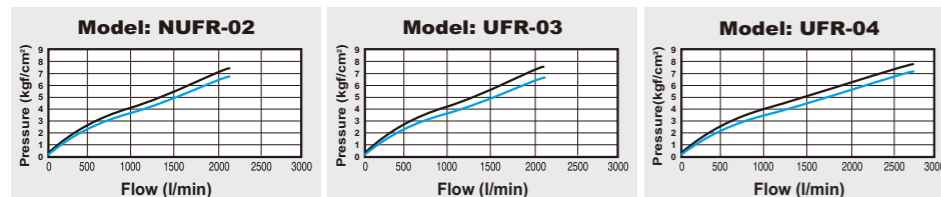
### How to order

<b>NUFR</b>	<b>02</b>	<b>N</b>	<b>C</b>	<b>G</b>	<b>D</b>	<b>A</b>					
Filter Regulator	Port size	Thread		Filtration		Gauge type	Drain		Bowl		
	02 1/4"	Blank	G	Blank	5 μm	Blank	Square	Blank	Semi-auto drain	Blank	Standard bowl
	03 3/8"	N	NPT	C	40 μm	G	Circle	H	Manual drain	A	Anti-acid & alkali bowl
	04 1/2"							D	Auto drain	AL	Aluminum bowl (1/4"~1/2")

### Specifications

Model	NUFR-02	NUFR-03	NUFR-04
Port size	1/4"	3/8"	1/2"
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 μm (Standard) · 40 μm (Option)		
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>		
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2080	2100	2600
Ambient temperature	-10°C ~ 60°C		
Filter bowl capacity	105cc		
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )		
Net weight	810g (W/I Aluminum bowl, 1010g)		
Accessories	Mounting bracket, Screw x 4		
Option	Gauge plate, Mounting nut		

### Flow chart



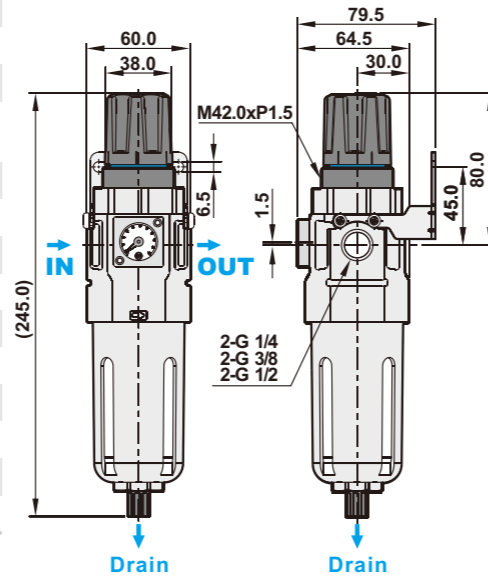
### Note:

X axis: Flow (l/min)  
 Y axis: Pressure (kgf/cm<sup>2</sup>)  
 Blue line (P0)= Outlet pressure  
 Black line (P1)= Inlet pressure  
 P1-P0= Pressure range

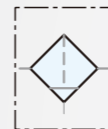


### Dimensions

#### NUFR-02, 03, 04



### Symbol



Filter

### Features

- \* Remove water and particle effectively.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.

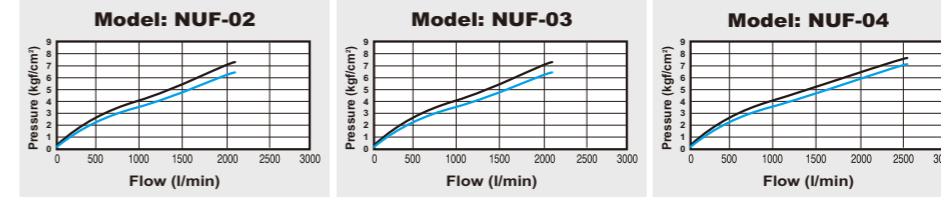
### How to order

<b>NUF</b>	<b>02</b>	<b>N</b>	<b>C</b>	<b>D</b>	<b>A</b>		
Filter	Port size	Thread		Filtration	Drain	Bowl	
	02 1/4"	Blank	G	Blank	5 μm	Blank	Standard bowl
	03 3/8"	N	NPT	C	40 μm	H	Anti-acid & alkali bowl
	04 1/2"					D	Aluminum bowl (1/4"~1/2")

### Specifications

Model	NUF-02	NUF-03	NUF-04
Port size	1/4"	3/8"	1/2"
Fluid	Compressed air		
Body material	Aluminum die-cast		
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)		
Filtration	5 μm (Standard) · 40 μm (Option)		
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>		
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2440	2450	3030
Ambient temperature	-10°C ~ 60°C		
Filter bowl capacity	105cc		
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )		
Net weight	480g (W/I Aluminum bowl 700g)		
Accessories	Mounting bracket, Screw x 4		

### Flow chart



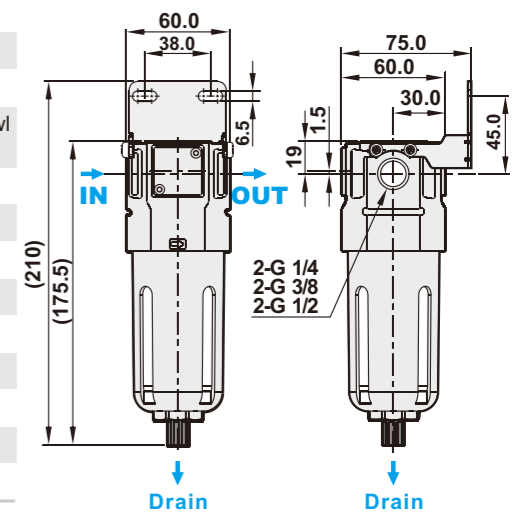
### Note:

X axis: Flow (l/min)  
 Y axis: Pressure (kgf/cm<sup>2</sup>)  
 Blue line (P0)= Outlet pressure  
 Black line (P1)= Inlet pressure  
 P1-P0= Pressure range

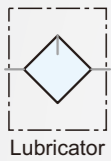


### Dimensions

#### NUF-02, 03, 04



### Symbol



Lubricator

### Features

- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.

### How to order

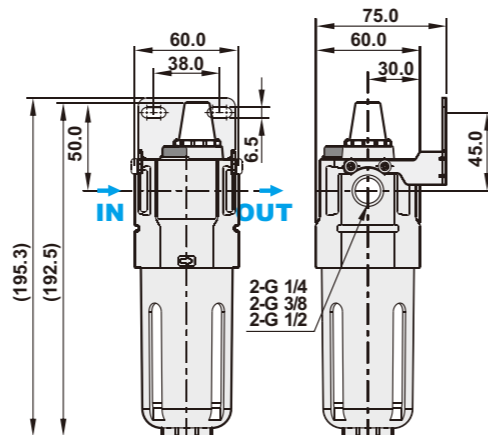
<b>NUL</b>	—	<b>02</b>		<b>N</b>		<b>A</b>
Lubricator		Port size		Thread		Bowl
		02 1/4"		Blank G		Blank Standard bowl
		03 3/8"		N NPT		A Anti-acid & alkali bowl
		04 1/2"				AL Aluminum bowl (1/4"~1/2")

### Specifications

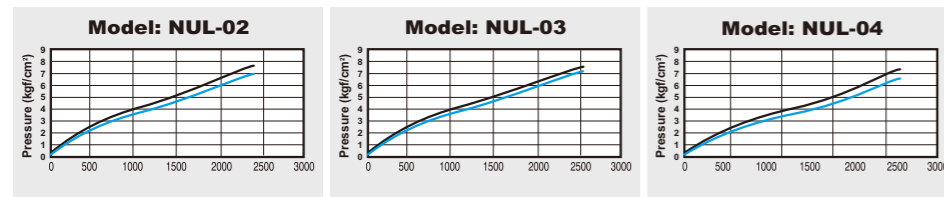
Model	NUL-02	NUL-03	NUL-04
Port size	1/4"	3/8"	1/2"
Fluid	Compressed air		
Regulator construction	Piston		
Body material	Aluminum die-cast		
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)		
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>		
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2080	2100	2600
Ambient temperature	-10°C ~ 60°C		
Lubricator oil (Recommended)	ISO-VG32		
Lubricator bowl capacity	125cc		
Net weight	550g (W/I Aluminum bowl, 720g)		
Accessories	Mounting bracket, Screw x 4		

### Dimensions

#### NUL-02, 03, 04



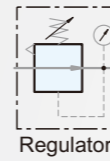
### Flow chart



#### Note:

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0)=Outlet pressure  
Black line (P1)=Inlet pressure  
P1-P0=Pressure range

### Symbol



Regulator

### Features

- \* Accurate and easy pressure setting.
- \* Panel mounting is available.

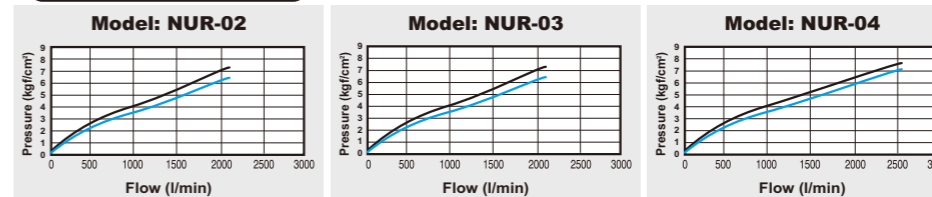
### How to order

<b>NUR</b>	—	<b>02</b>		<b>N</b>		<b>G</b>
Regulator		Port size		Thread		Gauge type
		02 1/4"		Blank G		Blank Square
		03 3/8"		N NPT		G Circle
		04 1/2"				

### Specifications

Model	NUR-02	NUR-03	NUR-04
Port size	1/4"	3/8"	1/2"
Fluid	Compressed air		
Regulator construction	Piston		
Body material	Aluminum die-cast		
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>		
Proof pressure	15 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2100	2130	2750
Ambient temperature	-10°C ~ 60°C		
Net weight	560g	550g	540g
Accessories	Mounting bracket, Screw x 4		
Option	Mounting nut		

### Flow chart



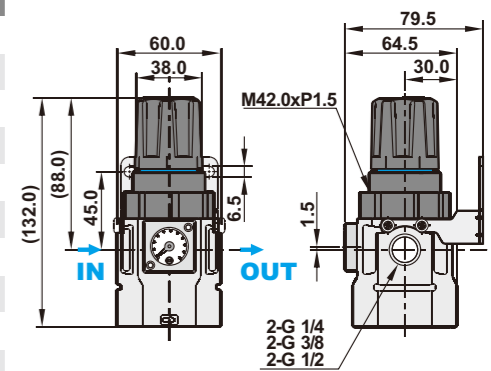
#### Note:

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0)=Outlet pressure  
Black line (P1)=Inlet pressure  
P1-P0=Pressure range

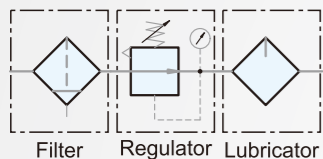


### Dimensions

#### NUR-02, 03, 04



### 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 our sales for more enquires.)



### How to order

<b>UFRL</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
<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>G</b>	<b>Blank</b>	<b>5 <math>\mu</math>m</b>	<b>Blank</b>	<b>Semi-auto drain</b>	<b>Blank</b>	<b>Standard bowl</b>
		<b>N</b>	<b>NPT</b>	<b>C</b>	<b>40 <math>\mu</math>m</b>	<b>H</b>	<b>Manual drain</b>	<b>A</b>	<b>Anti-acid &amp; alkali bowl</b>
						<b>D</b>	<b>Auto drain</b>	<b>AL</b>	<b>Aluminum bowl (1/4"~1/2")</b>

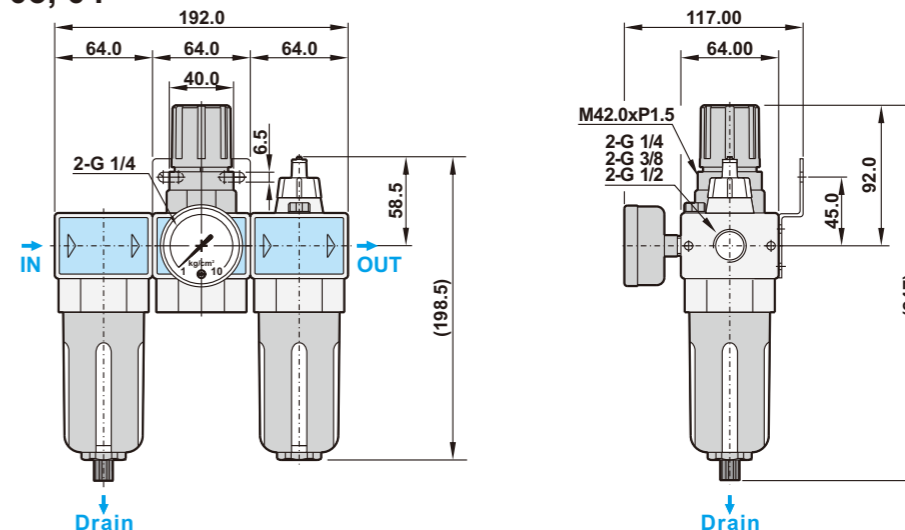
※Note: Please see page 1-5<sup>1</sup> for ordering spacer block separately.

### Specifications

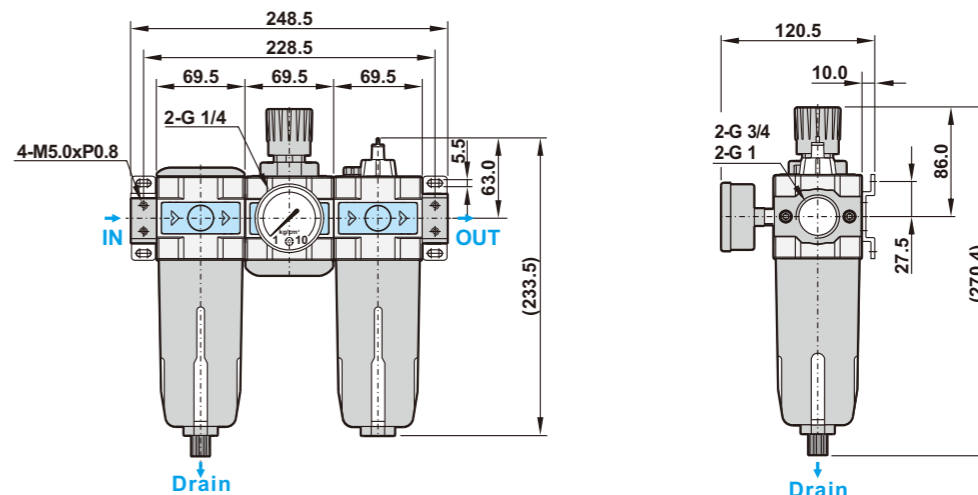
Model	UFRL-02	UFRL-03	UFRL-04	UFRL-06	UFRL-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Regulator construction	Piston				
Body material	Aluminum die-cast				
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)				
Filtration	5 $\mu$ m (Standard) · 40 $\mu$ m (Option)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (ANR)	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	1800g (W/I Aluminum bowl 2100g)			2650g	
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 4				

### Dimensions

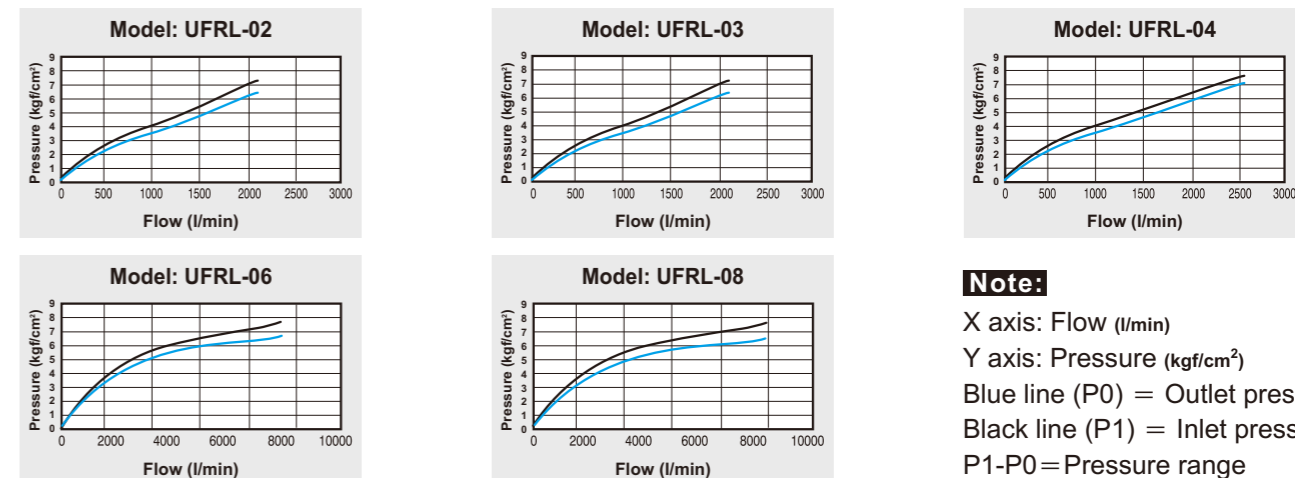
#### UFRL-02, 03, 04



#### UFRL-06, 08

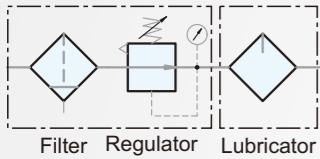


### Flow chart



**Note:**  
 X axis: Flow (l/min)  
 Y axis: Pressure (kgf/cm<sup>2</sup>)  
 Blue line (P0) = Outlet pressure  
 Black line (P1) = Inlet pressure  
 P1-P0 = Pressure range

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

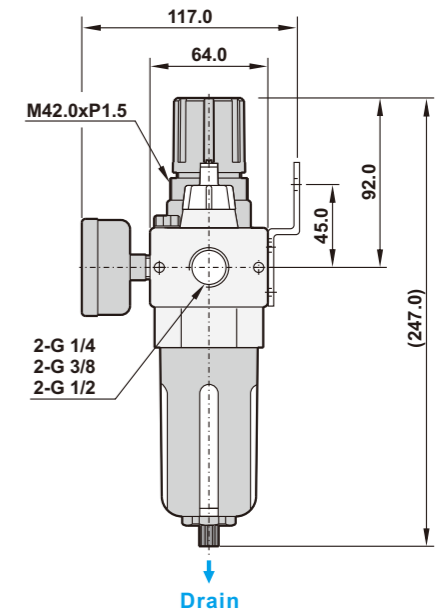
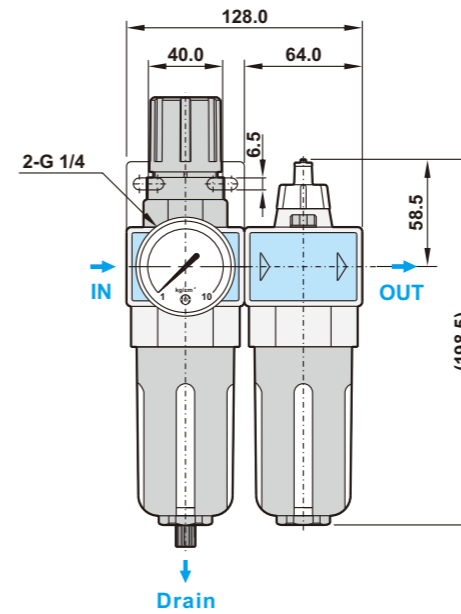
※Note: Please see page 1-5<sup>1</sup> for ordering spacer block separately.

#### Specifications

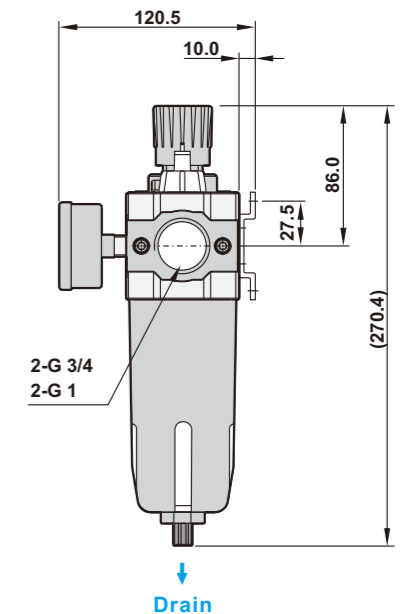
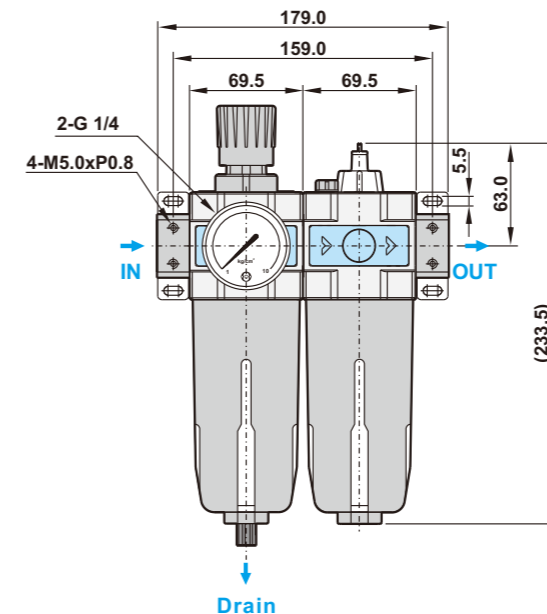
Model	UFR/L-02	UFR/L-03	UFR/L-04	UFR/L-06	UFR/L-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Regulator construction	Piston				
Body material	Aluminum die-cast				
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)				
Filtration	5 $\mu$ m (Standard) · 40 $\mu$ m (Option)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (ANR)	2080	2100	2600	7940	8200
Ambient temperature	-10 $^{\circ}$ C ~ 60 $^{\circ}$ 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 (W/I Aluminum bowl 1780g)			2145g	
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 4				

#### Dimensions

##### UFR/L-02, 03, 04

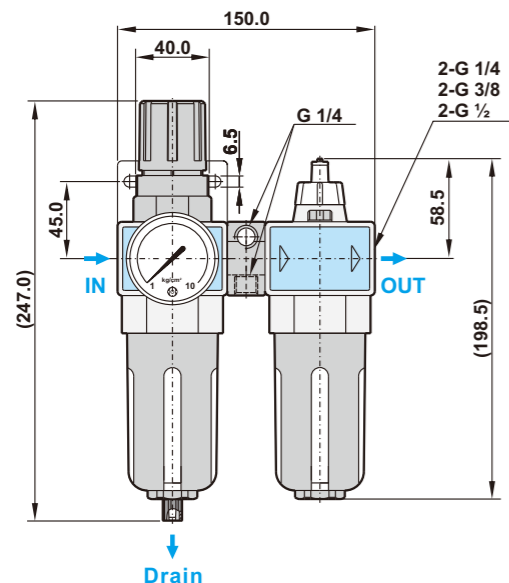


##### UFR/L-06, 08

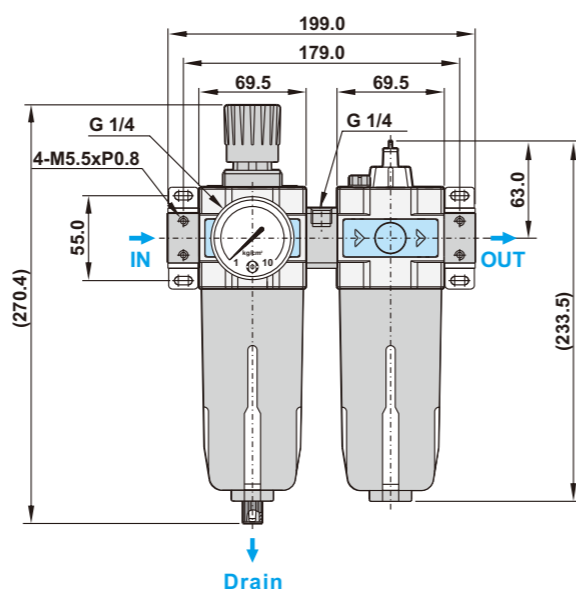


#### Dimensions

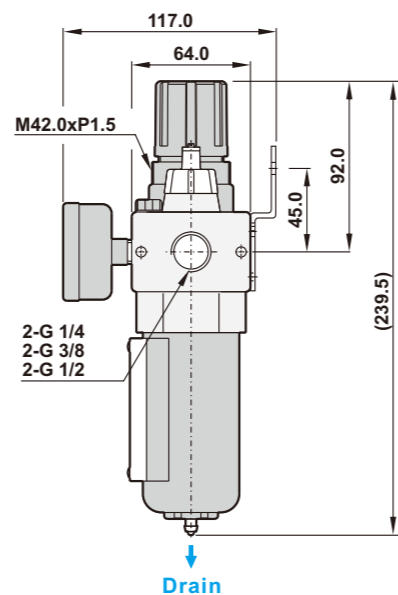
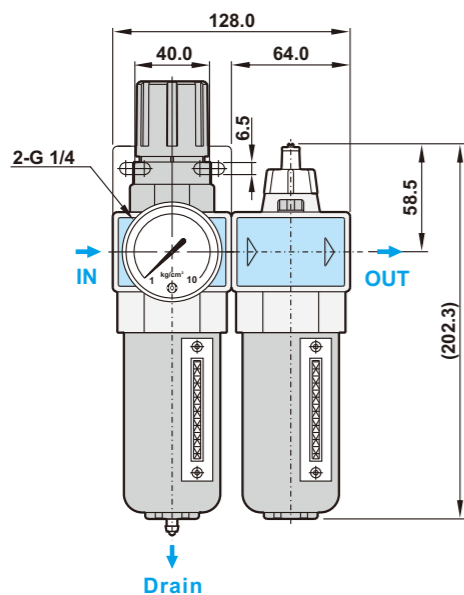
##### UFR/L-02, 03, 04SB (Spacer block)



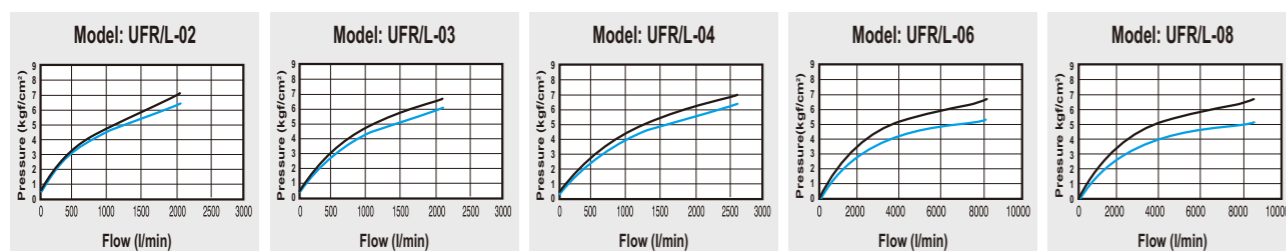
##### UFR/L-06, 08SB (Spacer block)



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



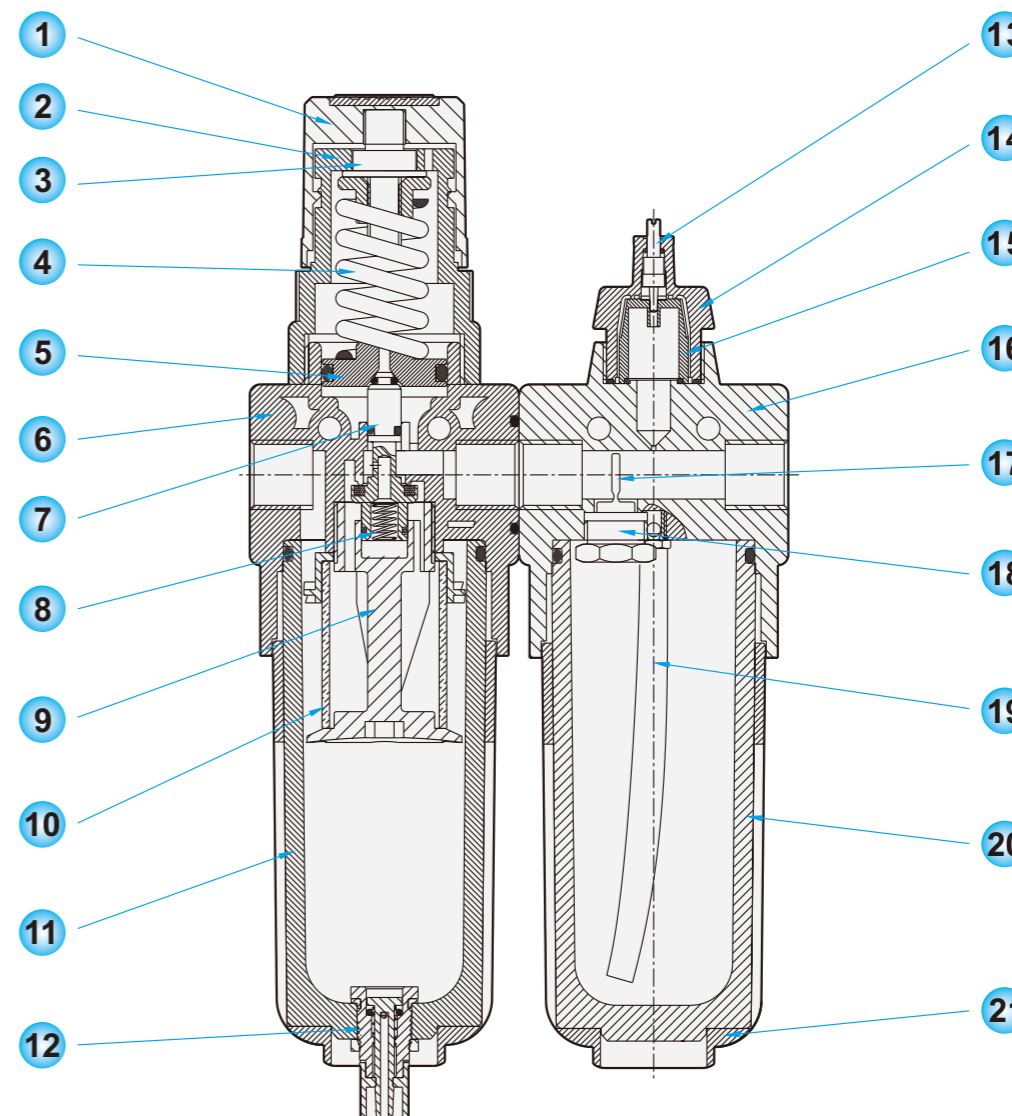
#### Flow chart



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

#### Construction

##### UFR/L-02, 03, 04

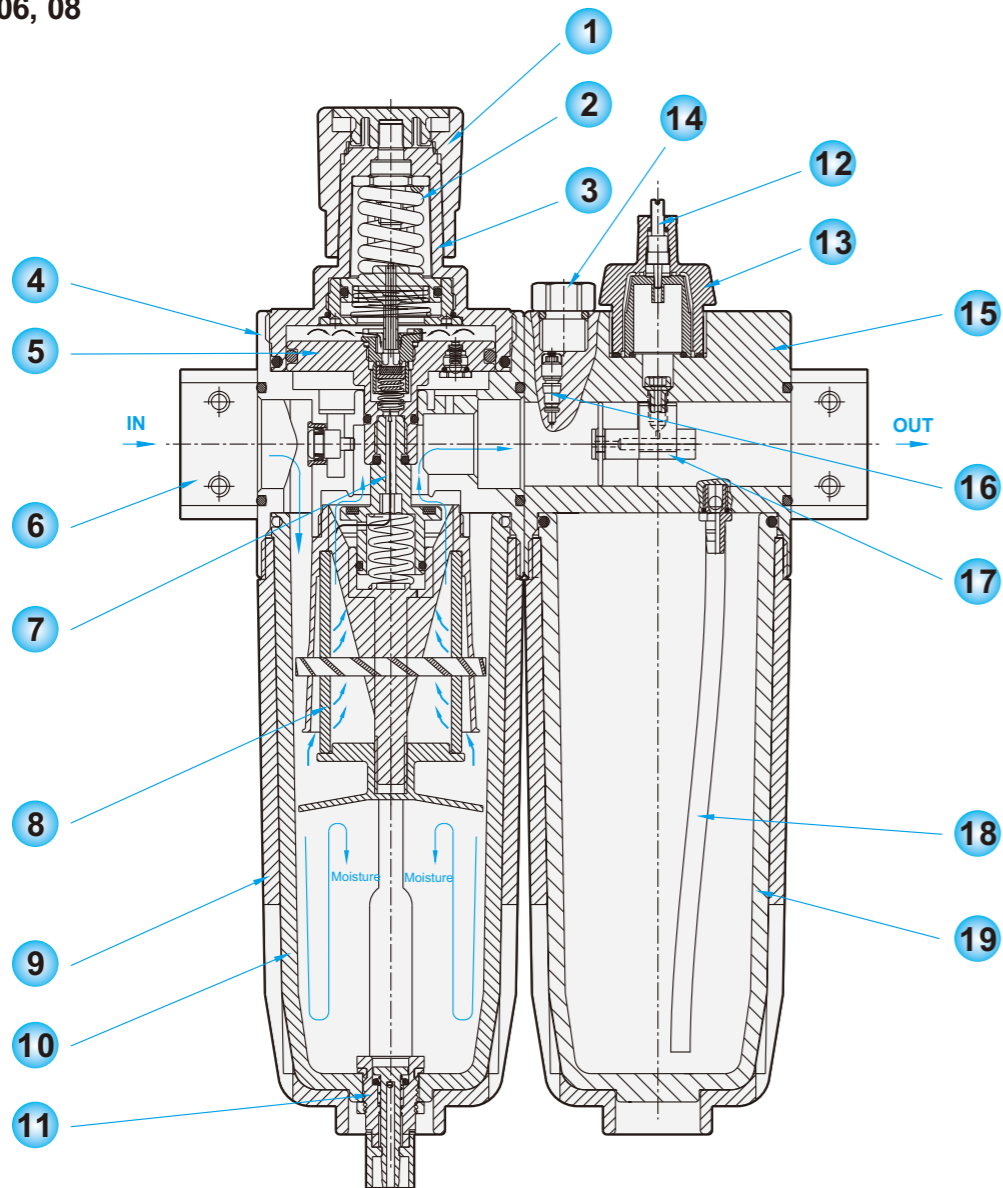


No.	Description	Material	No.	Description	Material
1	Pressure regulating knob	NY	12	Semi-auto drain	POM
2	Regulator base	NY+GF	13	Oil adjusting screw	Cu+Ni
3	Pressure regulating screw	Fe+Ni	14	Oil viewer	GV4H
4	Pressure regulating spring	Spring steel+Ni	15	Oil dropping orifice	PC
5	Piston	Cu+Ni	16	Lubricator body	ADC12
6	Regulator body	ADC12	17	Damper	PU
7	Regulating needle	Cu+NBR	18	Plug	Cu
8	Spring	SUS304	19	Oil pipe	PU
9	Filter element holder	NY	20	Lubricator bowl	PC
10	Filter element	Cu	21	Bowl guard	NY
11	Filter bowl	PC			



### Construction

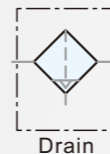
UFR/L-06, 08



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 nozzle	Cu
18	Oil pipe	PU
19	Lubricator bowl	PC

### Symbol



### Features

- \* AD940 series effectively and quickly drains water.
- \* Special internal construction prevents vacuum occurred.

### How to order

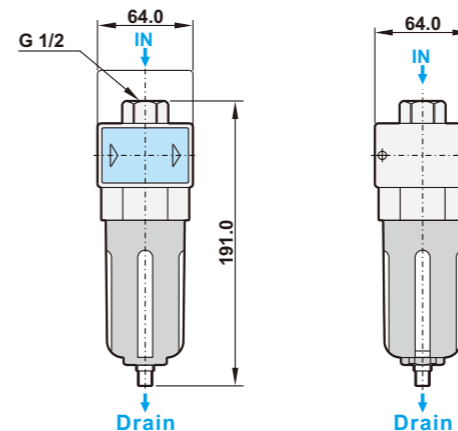
<b>AD940</b>	—	<b>04</b>	<b>N</b>	<b>AL</b>
Automatic drain		Port size	Thread	Bowl
		04 1/2"	Blank G	Blank Standard bowl
		06 3/4"	N NPT	AL Aluminum bowl (only for 1/2")
		08 1"		

### Specifications

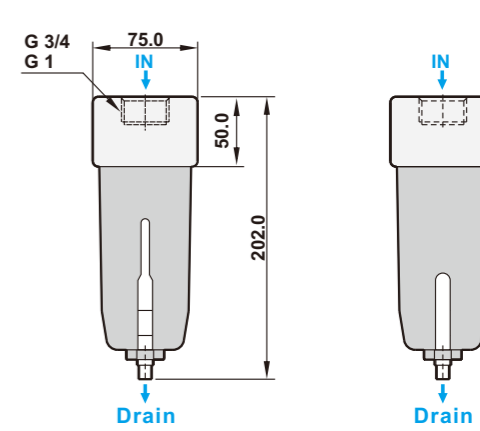
Model	AD940-04	AD940-06	AD940-08
Port size	1/2"	3/4"	1"
Fluid	Compressed air		
Body material	Aluminum die-cast		
Bowl material	Polycarbonate (Standard), Aluminum bowl (Option)		
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>		
Max. inlet pressure	12 kgf/cm <sup>2</sup>		
Ambient temperature	-10°C ~ 60°C		
Filter bowl capacity	105cc		210cc
Net weight	500g		400g

### Dimensions

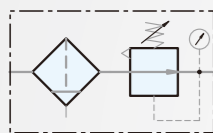
#### AD940-04



#### AD940-06, 08



### Symbol



Filter Regulator

### Features

- \* Remove water and particle effectively.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.



Patent number in Taiwan : 684011  
Patent number in China : ZL200420019530. 2  
Patent category : Pressure regulating constructions

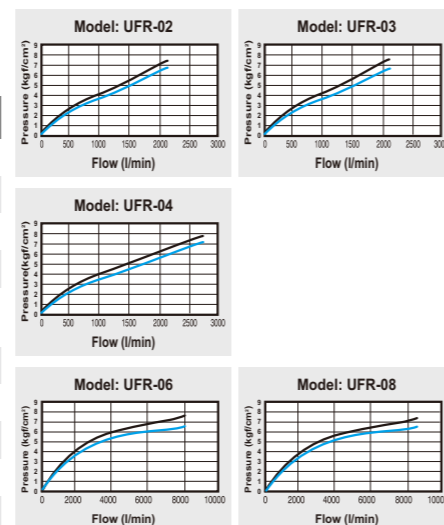
### How to order

<b>UFR</b>	—	<b>02</b>	<b>N</b>	<b>C</b>	<b>D</b>	<b>A</b>
Filter Regulator		Port size	Thread	Filtration	Drain	Bowl
		02 1/4"	Blank G	Blank 5 μm	Blank Semi-auto drain	Blank Standard bowl
		03 3/8"	N NPT	C 40 μm	H Manual drain	A Anti-acid & alkali bowl
		04 1/2"			D Auto drain	AL Aluminum bowl (1/4"~1/2")
		06 3/4"				
		08 1"				

### Specifications

Model	UFR-02	UFR-03	UFR-04	UFR-06	UFR-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 μm (Standard) · 40 μm (Option)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (ANR)	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	930g (W/I Aluminum bowl, 1230g)		1360g		
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 4				

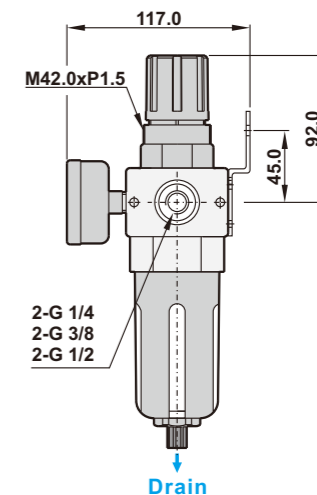
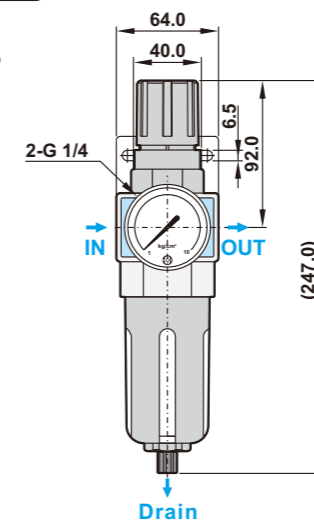
### Flow chart



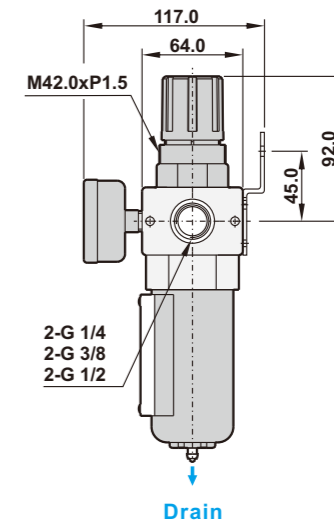
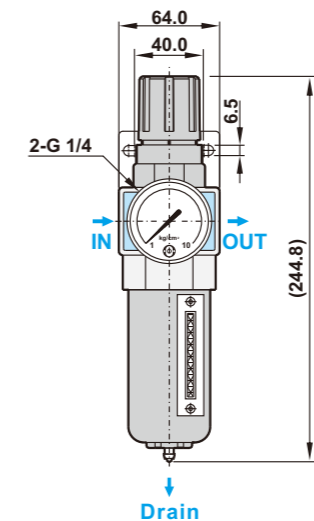
**Note:**  
X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0 = Pressure range

### Dimensions

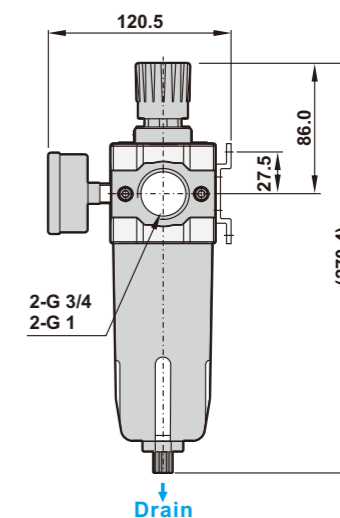
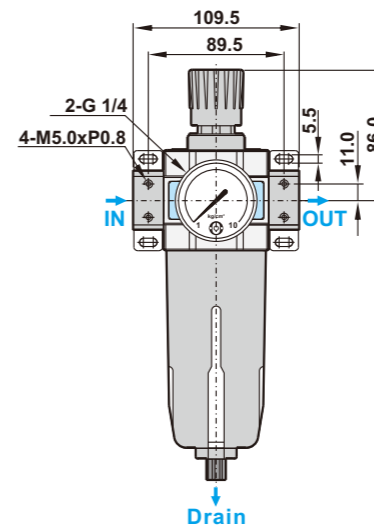
#### UFR-02, 03, 04



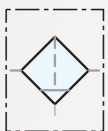
#### UFR-02AL, 03AL, 04AL (Aluminum bowl)



#### UFR-06, 08



### Symbol



Filter

### Features

- \* Remove water and particle effectively.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.



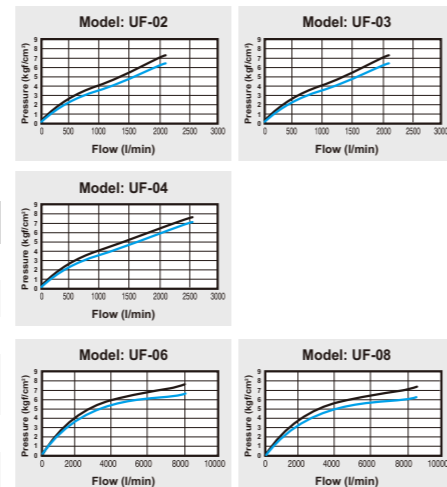
### How to order

UF	02	N	C	D	B	A					
Filter	Port size	Thread		Filtration		Drain	Mounting		Bowl		
02	1/4"	Blank	G	Blank	5 μm	Blank	Semi-auto drain	Blank	W/O bracket	Blank	Standard bowl
03	3/8"	N	NPT	C	40 μm	H	Manual drain	B	W/I bracket	A	Anti-acid & alkali bowl
04	1/2"					D	Auto drain			AL	Aluminum bowl (1/4"~1/2")
06	3/4"										
08	1"										

### Specifications

Model	UF-02	UF-03	UF-04	UF-06	UF-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Body material	Aluminum die-cast				
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)				
Filtration	5 μm (Standard) · 40 μm (Option)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (ANR)	2440	2450	3030	8250	8860
Ambient temperature	-10°C ~ 60°C				
Filter bowl capacity	105cc			210cc	
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )				
Net weight	530g (W/I Aluminum bowl 830g)			1250g	

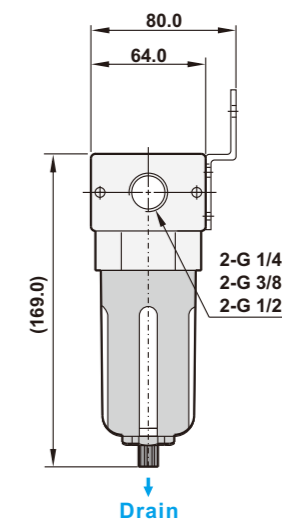
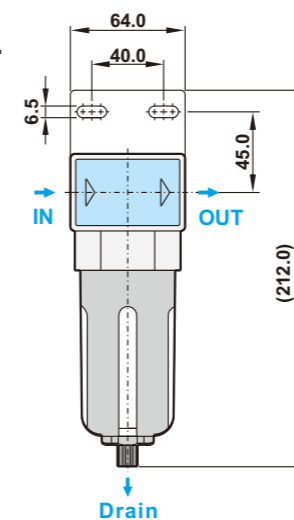
### Flow chart



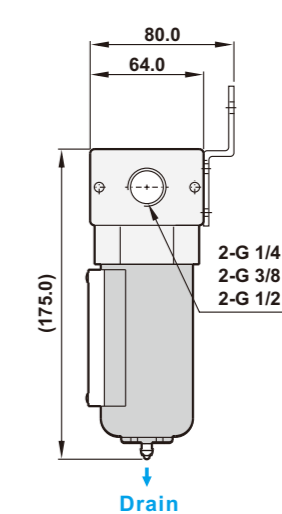
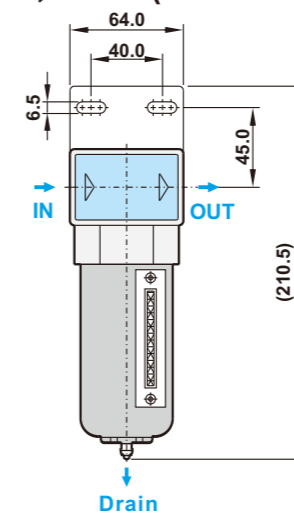
**Note:**  
 X axis: Flow (l/min)  
 Y axis: Pressure (kgf/cm<sup>2</sup>)  
 Blue line (P0) = Outlet pressure  
 Black line (P1) = Inlet pressure  
 P1-P0 = Pressure range

### Dimensions

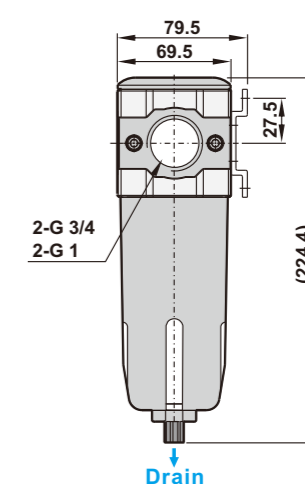
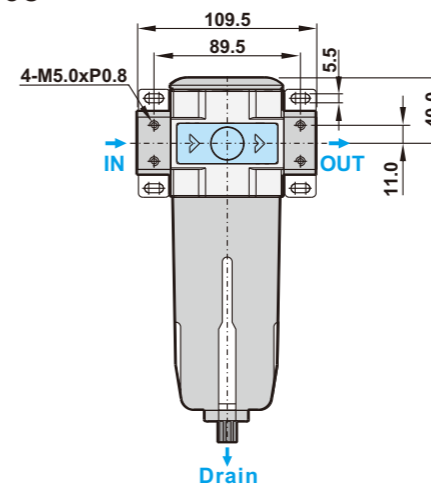
#### UF-02, 03, 04



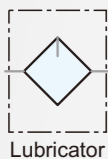
#### UF-02AL, 03AL, 04AL (Aluminum bowl)



#### UF-06, 08



### Symbol



### Features

- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.

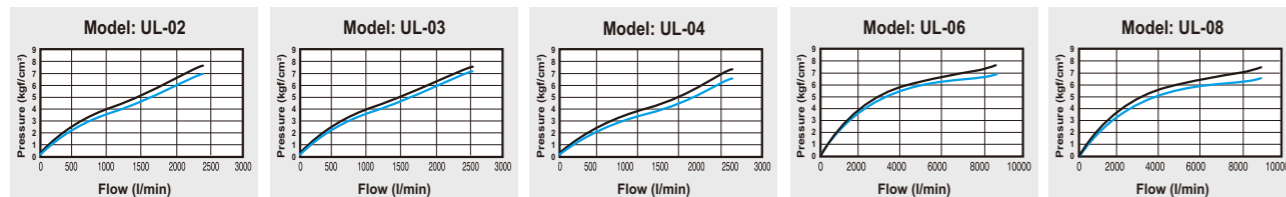
### How to order

<b>UL</b>	—	<b>02</b>	<b>N</b>	<b>B</b>	<b>A</b>
Lubricator		Port size	Thread	Mounting	Bowl
		02 1/4"	Blank G	Blank W/O bracket	Blank Standard bowl
		03 3/8"	N NPT	B W/I bracket	A Anti-acid & alkali bowl
		04 1/2"			AL Aluminum bowl (1/4"~1/2")
		06 3/4"			
		08 1"			

### Specifications

Model	UL-02	UL-03	UL-04	UL-06	UL-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Body material	Aluminum die-cast				
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (ANR)	2490	2525	4310	8400	9000
Ambient temperature	-10°C ~ 60°C				
Lubricator oil (Recommended)	ISO-VG32				
Lubricator bowl capacity	125cc			235cc	
Net weight	500g (W/I Aluminum bowl 800g)			1095g	

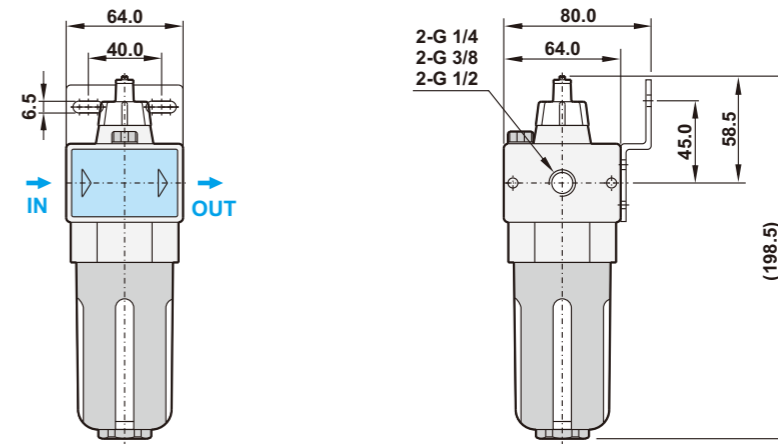
### Flow chart



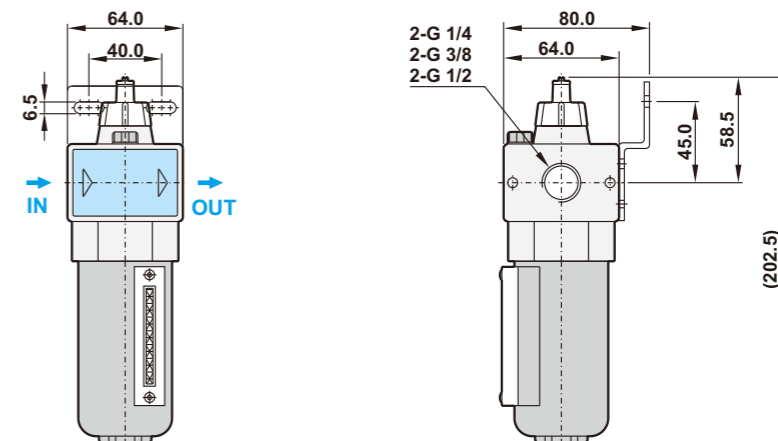
**Note:** X axis: Flow, Y axis: Pressure, Blue line (P0) = Outlet pressure, Black line (P1) = Inlet pressure, P1-P0=Pressure range

### Dimensions

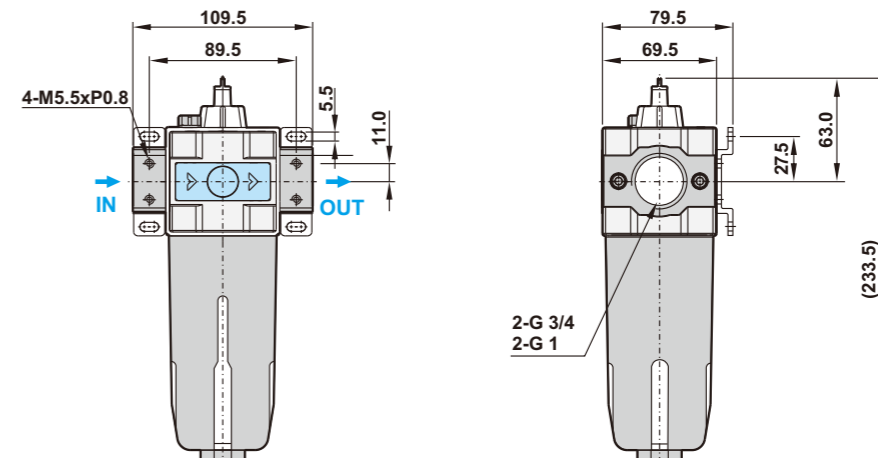
#### UL-02, 03, 04



#### UL-02AL, 03AL, 04AL (Aluminum bowl)



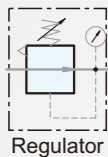
#### UL-06, 08



FRL COMBINATIONS

FRL COMBINATIONS

### Symbol



### Features

- \* Accurate and easy pressure setting.
- \* Panel mounting is available.

### How to order

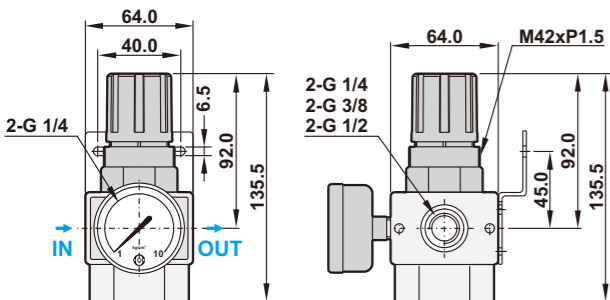
<b>UR</b>	<b>02</b>	<b>N</b>
Regulator	Port size	Thread
	02 1/4"	06 3/4"
	03 3/8"	08 1"
	04 1/2"	
		Blank G
		N NPT

### Specifications

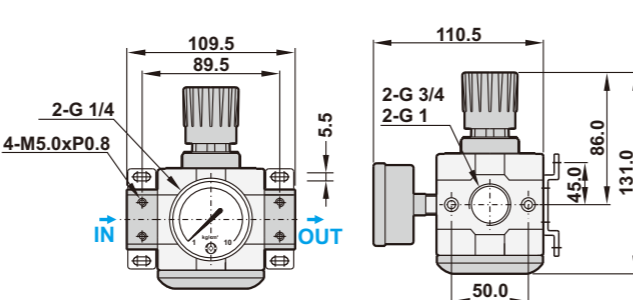
Model	UR-02	UR-03	UR-04	UR-06	UR-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Regulator construction	Piston				
Body material	Aluminum die-cast				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Proof pressure	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min (ANR)	2100	2130	2750	8000	8500
Ambient temperature	-10°C ~ 60°C				
Net weight	740g	730g	720g	1250g	1240g
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 4				

### Dimensions

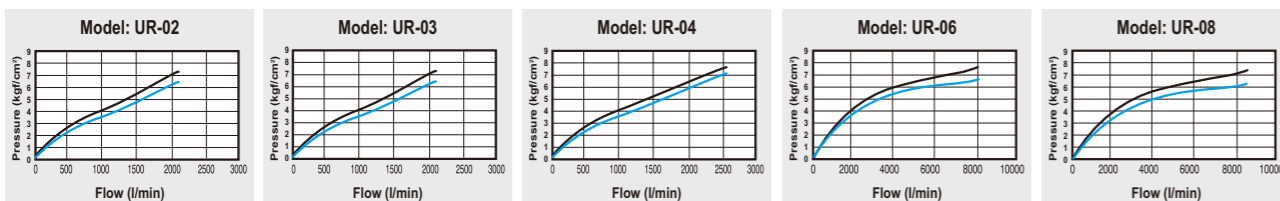
#### UR-02, 03, 04



#### UR-06, 08

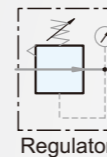


### Flow chart



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

### Symbol



### Features

- \* Large flow rate (Max. 30000 l/min)
- \* Aluminum alloy body, light weight.
- \* Pilot regulator is available for remote control.

### How to order

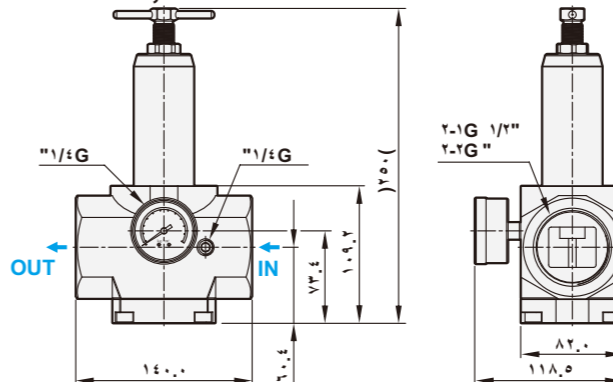
<b>UR</b>	<b>20</b>	<b>N</b>
UR	Regulator	Port size
UAR	Pilot regulator	Thread
		14 1 1/2"
		20 2"
		Blank G
		N NPT

### Specifications

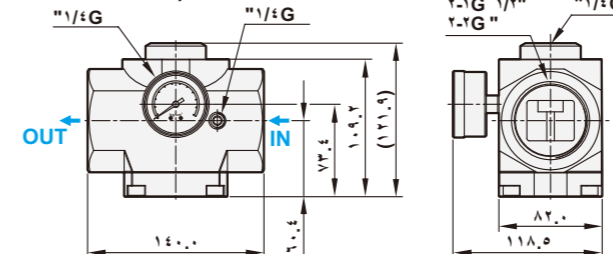
Model	UR-14	UR-20	UAR-14	UAR-20
Port size	1 1/2"	2"	1 1/2"	2"
Fluid	Compressed air			
Regulator construction	Piston			
Operating pressure range	0 ~ 8 kgf/cm <sup>2</sup>			
Proof pressure	10 kgf/cm <sup>2</sup>			
Max. flow rate l/min (ANR)	30000 l/min (input 7 kgf/cm <sup>2</sup> output 6 kgf/cm <sup>2</sup> )			
Ambient temperature	-10°C ~ 60°C			
Net weight	2.8 kg	2.5 kg	2.2 kg	2.0 kg
Accessories	Pressure gauge, plug			

### Dimensions

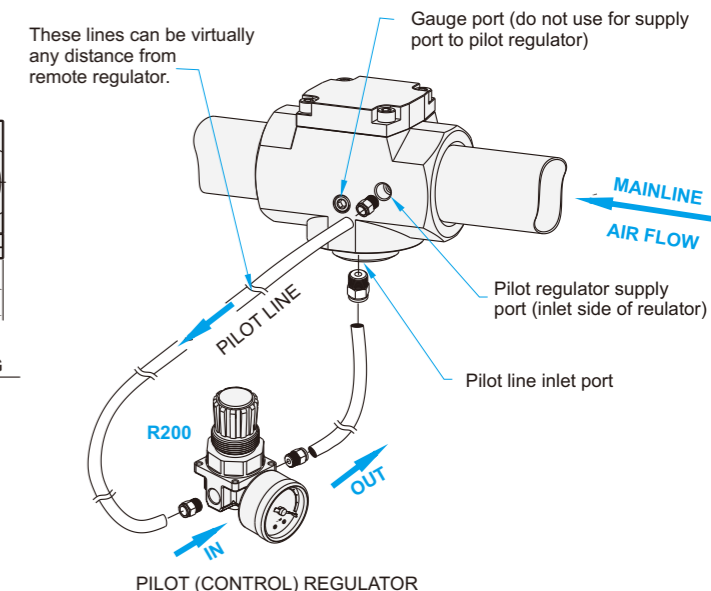
#### UR-14, 20



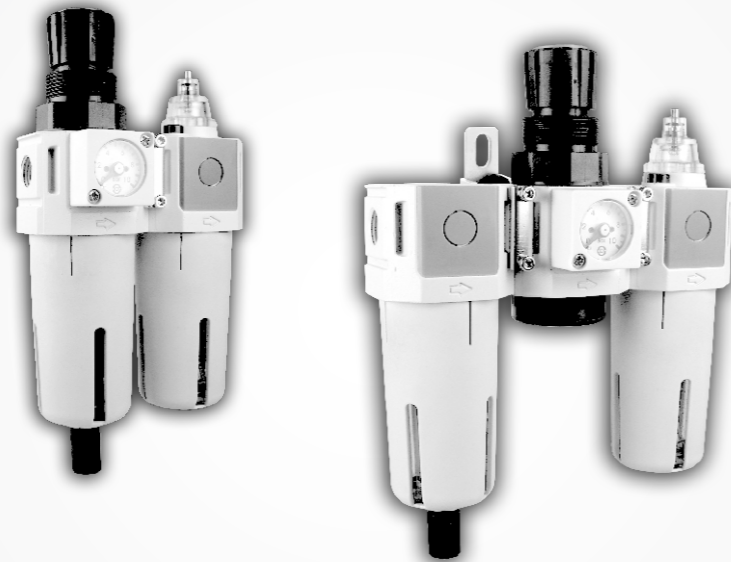
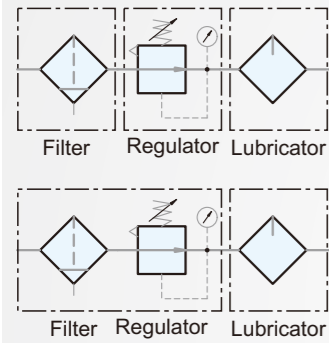
#### UAR-14, 20



### Installation



### Symbol



### Features

- \* Remove water and particle effectively.
- \* Compact size with effective air service.
- \* 40  $\mu\text{m}$  and 5  $\mu\text{m}$  filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.
- \* Oil spray in mist ensures good lubrication for machines.

### How to order

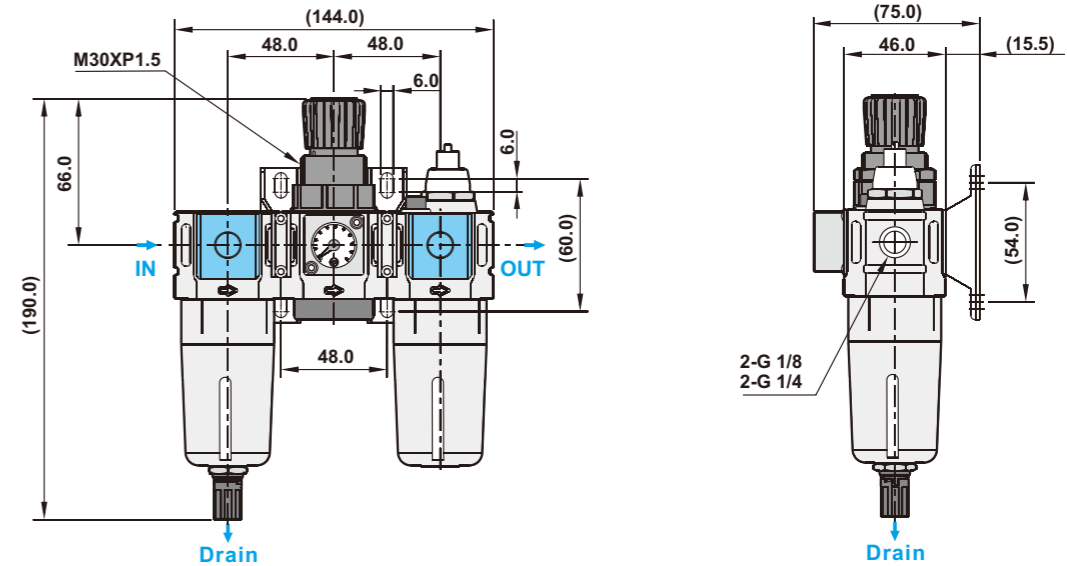
<b>FRL700C</b>		<b>02</b>	<b>N</b>	<b>C</b>	<b>G</b>	<b>H</b>
<b>FRL700C</b>	Miniature Filter+Regulator+Lubricator	<b>Port size</b>	<b>Thread</b>	<b>Filtration</b>	<b>Gauge type</b>	<b>Drain</b>
<b>FRL600C</b>	Miniature Filter Regulator+Lubricator	01 1/8" Option	Blank G N NPT	Blank 5 $\mu\text{m}$ C 40 $\mu\text{m}$	Blank Square G Circle	Blank Semi-auto drain H Manual drain
		02 1/4" Standard				

### Specifications

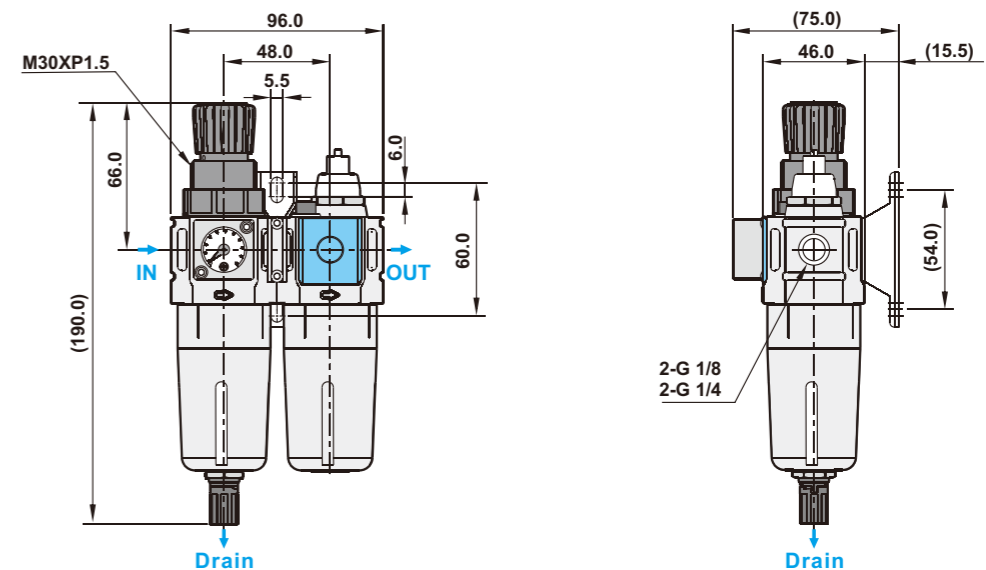
Model	FRL700C-01	FRL700C-02	FRL600C-01	FRL600C-02
Port size	1/8" (Option)	1/4" (Standard)	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air			
Regulator construction	Diaphragm			
Body material	Aluminum die-cast			
Bowl material	Polycarbonate (Standard)			
Filtration	5 $\mu\text{m}$ (Standard) · 40 $\mu\text{m}$ (Option)			
Operating pressure range	0.5 ~ 9.9 kgf/cm <sup>2</sup>			
Proof pressure (Standard bowl)	12 kgf/cm <sup>2</sup>			
Max. flow rate l/min (ANR)	1875		1750	1850
Ambient temperature	-10°C ~ 60°C			
Lubricator oil (Recommended)	ISO-VG32			
Filter bowl capacity	40cc			
Lubricator bowl capacity	50cc			
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )			
Net weight	765g		560g	
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2			
Option	Gauge plate			

### Dimensions

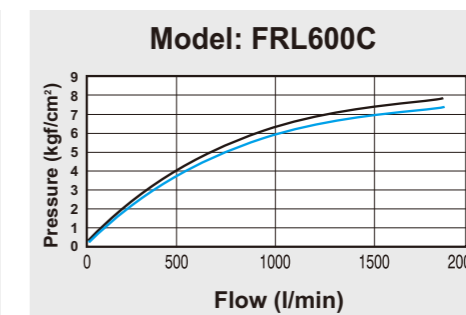
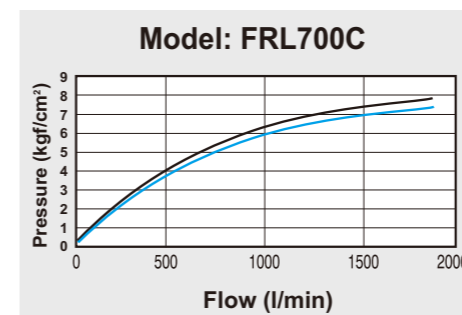
#### FRL700C-01, 02



#### FRL600C-01, 02

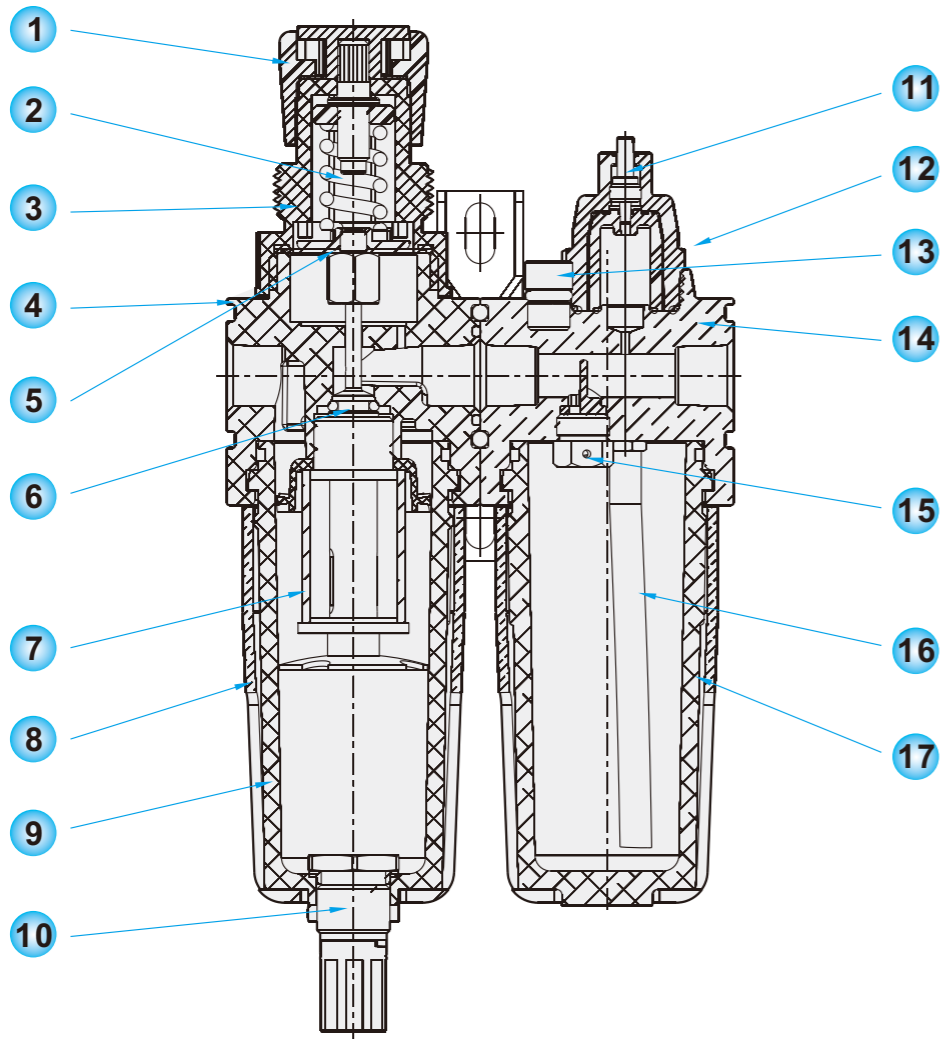


### Flow chart



**Note:**  
X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0=Pressure range

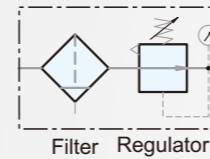
## Construction



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

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

## Symbol



## Features

- \* Remove water and particle effectively.
- \* Compact size with effective air service.
- \* 40  $\mu\text{m}$  and 5  $\mu\text{m}$  filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.

## How to order

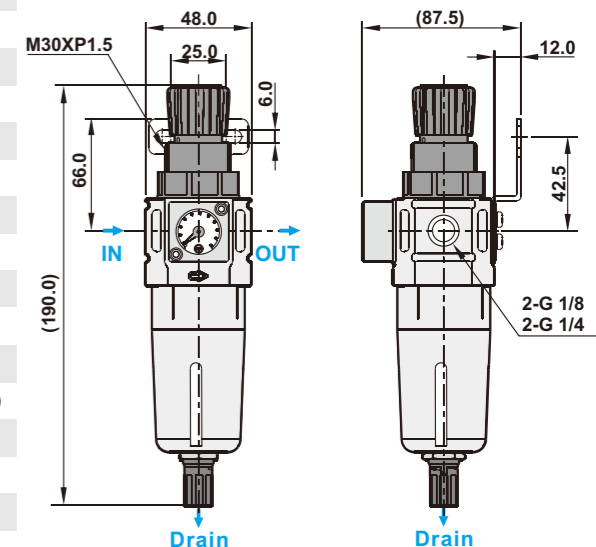
<b>FR500C</b>	—	<b>02</b>	<b>N</b>	<b>C</b>	<b>G</b>	<b>H</b>
Miniature Filter Regulator		Port size	Thread	Filtration	Gauge type	Drain
FR	Filter Regulator	01 1/8" Option 02 1/4" Standard	Blank G N NPT	Blank 5 $\mu\text{m}$ C 40 $\mu\text{m}$	Blank Square G Circle	Blank Semi-auto drain H Manual drain

## Specifications

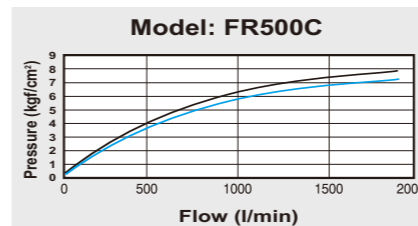
Model	FR500C-01	FR500C-02
Port size	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air	
Regulator construction	Diaphragm	
Body material	Aluminum die-cast	
Bowl material	Polycarbonate (Standard)	
Filtration	5 $\mu\text{m}$ (Standard) · 40 $\mu\text{m}$ (Option)	
Operating pressure range	0.5 ~ 9.9 kgf/cm <sup>2</sup>	
Proof pressure(Standard bowl)	12 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	1800	1880
Ambient temperature	-10°C ~ 60°C	
Filter bowl capacity	40cc	
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )	
Net weight	365g	
Accessories	Mounting bracket, Plug, Screw x 2	
Option	Mounting nut	

## Dimensions

### FR500C-01, 02



## Flow chart



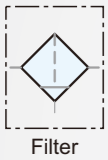
### Note:

X axis: Flow (l/min)  
 Y axis: Pressure (kgf/cm<sup>2</sup>)

Blue line (P0) = Outlet pressure  
 Black line (P1) = Inlet pressure  
 P1-P0 = Pressure range



**Symbol**



Filter

**Features**

- \* Remove water and particle effectively.
- \* Compact size with effective air service.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.



**How to order**

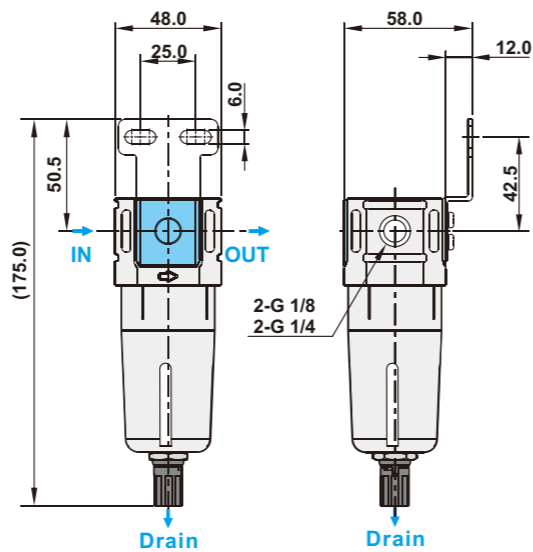
<b>F200C</b>	—	<b>02</b>	<b>N</b>	<b>C</b>	<b>H</b>
Miniature Filter		Port size	Thread	Filtration	Drain
		01 1/8" Option 02 1/4" Standard	Blank G N NPT	Blank 5 μm C 40 μm	Blank Semi-auto drain H Manual drain

**Specifications**

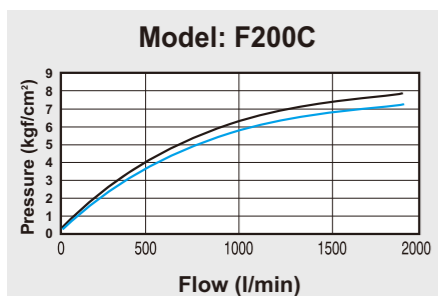
Model	F200C-01	F200C-02
Port size	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air	
Body material	Aluminum die-cast	
Bowl material	Polycarbonate (Standard)	
Filtration	5 μm (Standard) · 40 μm (Option)	
Operating pressure range	0.5 ~ 9.9 kgf/cm <sup>2</sup>	
Proof pressure (Standard bowl)	12 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	1900	
Ambient temperature	-10°C ~ 60°C	
Filter bowl capacity	40cc	
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )	
Net weight	245g	
Accessories	Mounting bracket, Screw x 2	

**Dimensions**

**F200C-01, 02**



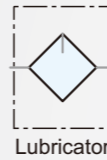
**Flow chart**



**Note:**  
X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)

Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0 = Pressure range

**Symbol**



Lubricator

**Features**

- \* Oil spray in mist ensures good lubrication for machines.



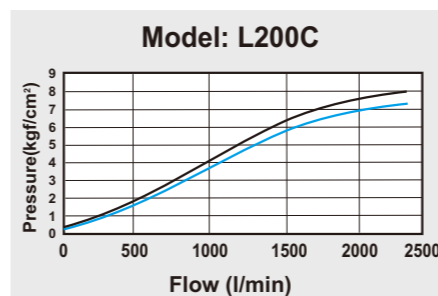
**How to order**

<b>L200C</b>	—	<b>02</b>	<b>N</b>
Miniature Lubricator		Port size	Thread
		01 1/8" Option 02 1/4" Standard	Blank G N NPT

**Specifications**

Model	L200C-01	L200C-02
Port size	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air	
Body material	Aluminum die-cast	
Bowl material	Polycarbonate (Standard)	
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>	
Proof pressure	12 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	2490	
Ambient temperature	-10°C ~ 60°C	
Lubricator oil (Recommended)	ISO-VG32	
Lubricator bowl capacity	50cc	
Net weight	245g	
Accessories	Mounting bracket, Screw x 2	

**Flow chart**

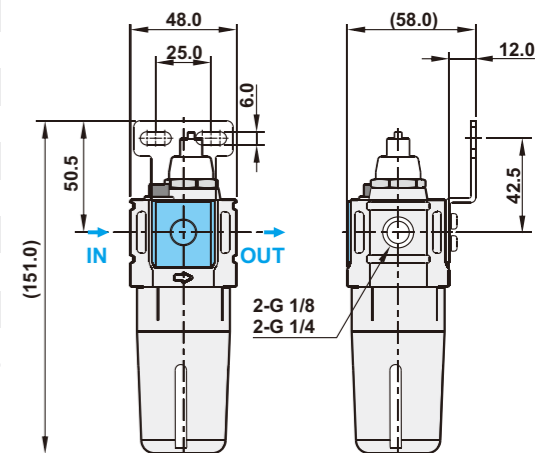


**Note:**  
X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)

Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0 = Pressure range

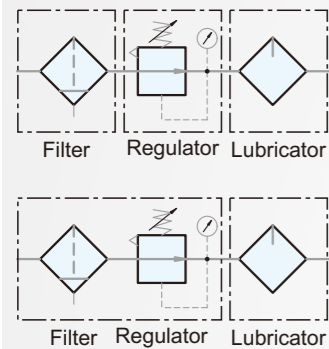
**Dimensions**

**L200C-01, 02**





### Symbol



### Features

- \* Remove water and particle effectively.
- \* Compact size with effective air service.
- \* 40  $\mu\text{m}$  and 5  $\mu\text{m}$  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

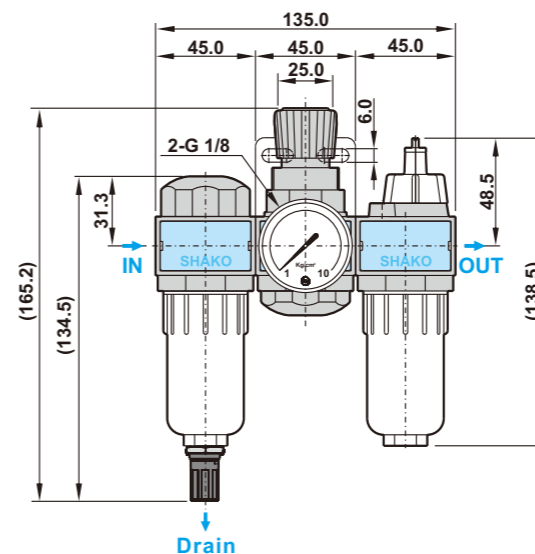
<b>FRL700A</b>		—	<b>02</b>	<b>N</b>	<b>C</b>	<b>H</b>	<b>K</b>
<b>FRL700A</b>	Miniature Filter+Regulator+Lubricator		Port size	Thread	Filtration	Drain	Bowl guard
<b>FRL600A</b>	Miniature Filter Regulator+Lubricator		01 1/8" Option 02 1/4" Standard	Blank G N NPT	Blank 5 $\mu\text{m}$ C 40 $\mu\text{m}$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

### Specifications

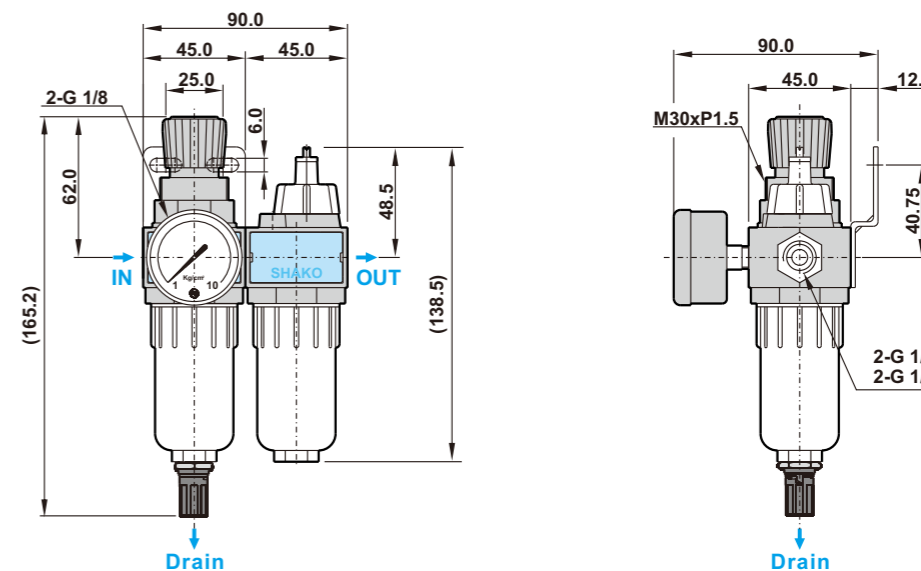
Model	FRL700A-01	FRL700A-02	FRL600A-01	FRL600A-02
Port size	1/8" (Option)	1/4" (Standard)	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air			
Regulator construction	Diaphragm			
Body material	Polycarbonate			
Bowl material	Polycarbonate (Standard)			
Filtration	5 $\mu\text{m}$ (Standard) · 40 $\mu\text{m}$ (Option)			
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>			
Proof pressure (Standard bowl)	12 kgf/cm <sup>2</sup>			
Max. flow rate l/min (ANR)	1850		1650	1850
Ambient temperature	-10°C ~ 60°C			
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

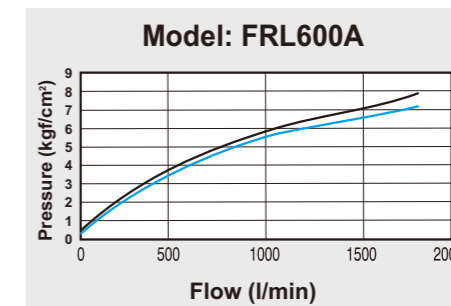
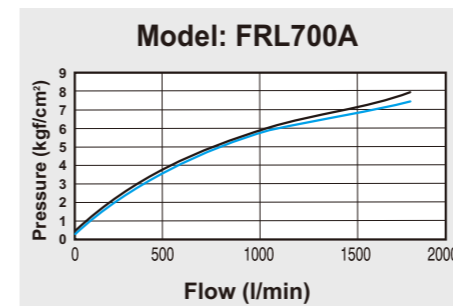
#### FRL700A-01, 02



#### FRL600A-01, 02

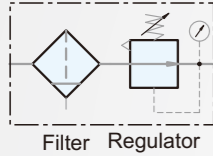


### Flow chart



**Note:**  
X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0=Pressure range

### Symbol



### Features

- \* Remove water and particle effectively.
- \* Compact size with effective air service.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.
- \* Accurate and easy pressure setting.



### How to order

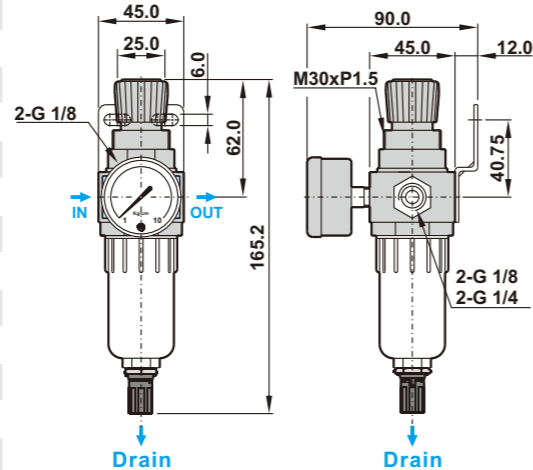
<b>FR500A</b>	—	<b>02</b>	<b>N</b>	<b>C</b>	<b>H</b>	<b>K</b>
Miniature Filter Regulator		Port size	Thread	Filtration	Drain	Bowl guard
		01 1/8" Option 02 1/4" Standard	Blank G N NPT	Blank 5 μm C 40 μm	Blank Semi-auto drain H Manual drain	Blank W/O guard K W/I guard

### Specifications

Model	FR500A-01	FR500A-02
Port size	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air	
Regulator construction	Diaphragm	
Body material	Polycarbonate	
Bowl material	Polycarbonate (Standard)	
Filtration	5 μm (Standard) · 40 μm (Option)	
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>	
Proof pressure (Standard bowl)	12 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	1840	1940
Ambient temperature	-10°C ~ 60°C	
Filter bowl capacity	35cc	
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )	
Net weight	370g	
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2	

### Dimensions

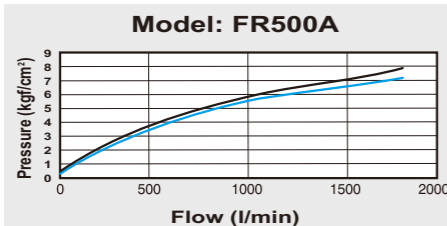
#### FR500A-01, 02



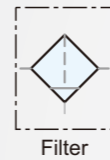
#### Note:

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0=Pressure range

### Flow chart



### Symbol



### Features

- \* Remove water and particle effectively.
- \* Compact size with effective air service.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.



### How to order

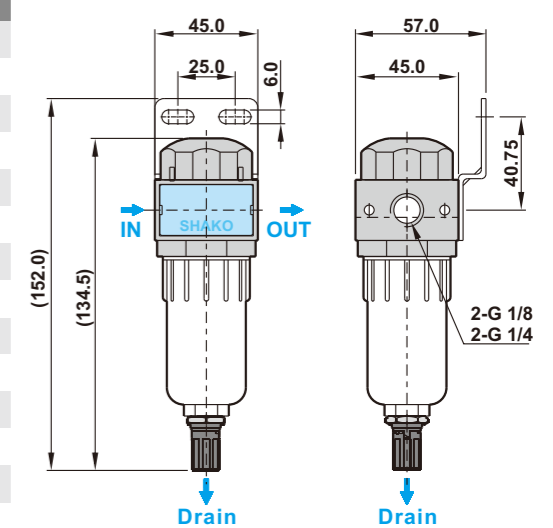
<b>F200A</b>	—	<b>02</b>	<b>N</b>	<b>C</b>	<b>H</b>	<b>B</b>	<b>K</b>
Miniature Filter		Port size	Thread	Filtration	Drain	Mounting bracket	Bowl guard
		01 1/8" Option 02 1/4" Standard	Blank G N NPT	Blank 5 μm C 40 μm	Blank Semi-auto drain H Manual drain	Blank W/O bracket B W/I bracket	Blank W/O guard K W/I guard

### Specifications

Model	F200A-01	F200A-02
Port size	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air	
Body material	Polycarbonate	
Bowl material	Polycarbonate (Standard)	
Filtration	5 μm (Standard) · 40 μm (Option)	
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>	
Proof pressure (Standard bowl)	12 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	1900	
Ambient temperature	-10°C ~ 60°C	
Filter bowl capacity	35cc	
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )	
Net weight	245g	
Accessories	Mounting bracket, Screw x 2	

### Dimensions

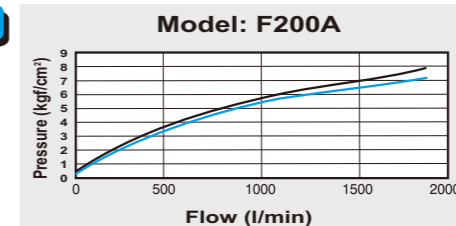
#### F200A-01, 02



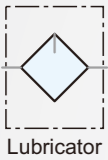
#### Note:

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0=Pressure range

### Flow chart



**Symbol**



**Features**

- \* Compact size with effective air service.
- \* Oil spray in mist ensures good lubrication for machines.



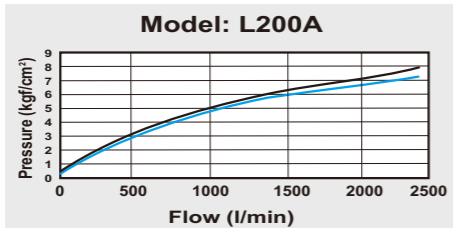
**How to order**

<b>L200A</b>	—	<b>02</b>	<b>N</b>	<b>B</b>	<b>K</b>
Miniature lubricator		Port size	Thread	Mounting bracket	Bowl guard
		01 1/8" Option 02 1/4" Standard	Blank G N NPT	Blank W/O bracket B W/I bracket	Blank W/O guard K W/I guard

**Specifications**

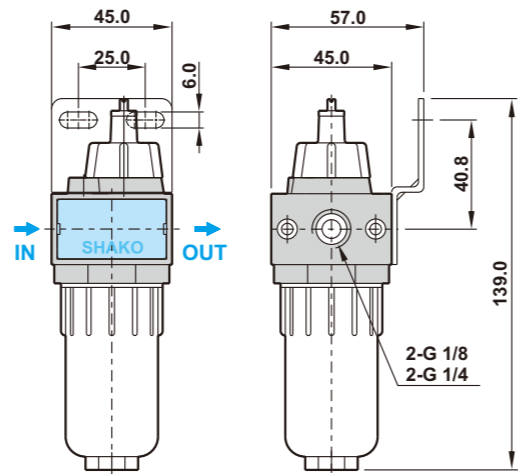
Model	L200A-01	L200A-02
Port size	1/8" (Option)	1/4" (Standard)
Fluid	Compressed air	
Body material	Polycarbonate	
Bowl material	Polycarbonate (Standard)	
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>	
Proof pressure	12 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	2449	
Ambient temperature	-10°C ~ 60°C	
Lubricator oil (Recommended)	ISO-VG32	
Lubricator bowl capacity	50cc	
Net weight	165g	
Accessories	Mounting bracket, Screw x 2	

**Flow chart**



**Dimensions**

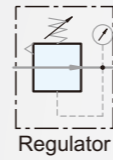
**L200A-01, 02**



**Note:**

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0 = Pressure range

**Symbol**



**Features**

- \* Accurate and easy pressure setting.
- \* Panel mounting is available.



**How to order**

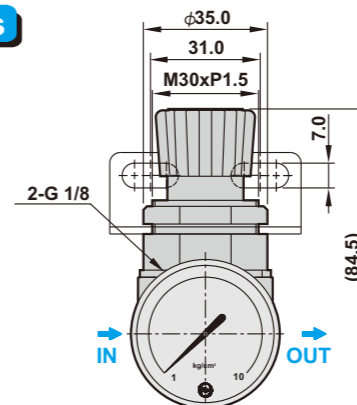
<b>R200</b>	—	<b>02</b>	<b>N</b>	<b>B</b>	<b>G</b>	<b>V</b>
R200 Miniature Regulator	Port size	Thread	Mounting bracket	Pressure gauge	Function option	
	01 1/8" 02 1/4"	Blank G N NPT	Blank W/O bracket B W/I bracket	Blank W/O gauge G W/I gauge	Blank Relief V No-Relief	

**Specifications**

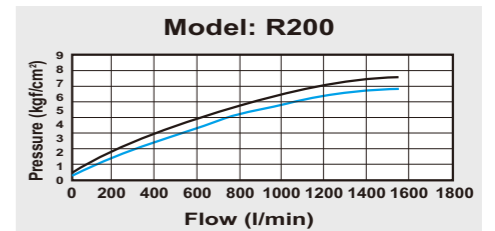
Model	R200
Port size	1/8", 1/4"
Fluid	Compressed air
Regulator construction	Piston
Body material	Aluminum die-cast
Operating pressure range	0.5 ~ 8 kgf/cm <sup>2</sup>
Proof pressure	9.9 kgf/cm <sup>2</sup>
Max. flow rate l/min (ANR)	1550
Ambient temperature	-5°C ~ 60°C
Net weight	205g
Accessories	Plug

**Dimensions**

**R200-01, 02**

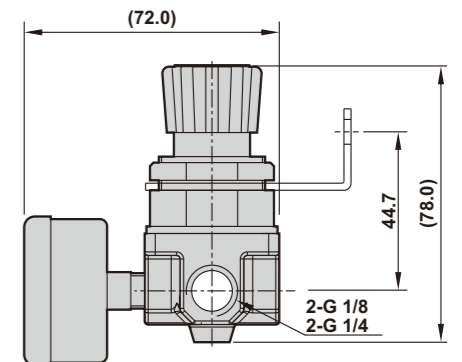


**Flow chart**

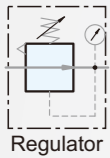


**Note:**

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0 = Pressure range



### Symbol



### Features

- \* Diaphragm design provides more accurate and easier pressure setting.
- \* Panel mounting is available.

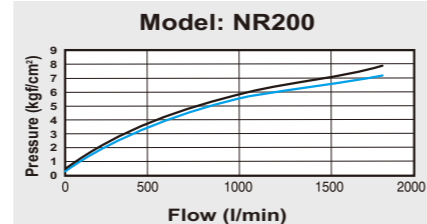
### How to order

NR200		—	02	N	B	G
NR200	Operating pressure 0.5~8kgf/cm <sup>2</sup>	Port size	Thread	Mounting bracket		Pressure gauge
NR200L4	Operating pressure 0~4kgf/cm <sup>2</sup>	01 1/8"	Blank G	Blank	W/O bracket	Blank W/O gauge
NR200L2	Operating pressure 0~2 kgf/cm <sup>2</sup>	02 1/4"	N NPT	B	W/I bracket	G W/I gauge

### Specifications

Model	NR200	NR200L4	NR200L2
Port size	1/8", 1/4"		
Fluid	Compressed air		
Regulator construction	Diaphragm		
Body material	Aluminum die-cast		
Operating pressure range	0.5~8 kgf/cm <sup>2</sup>	0~4 kgf/cm <sup>2</sup>	0~2 kgf/cm <sup>2</sup>
Proof pressure	12 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	1500		
Ambient temperature	-10°C ~ 60°C		
Net weight	205g		
Accessories	Plug		

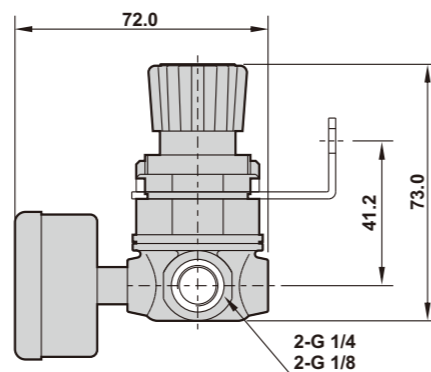
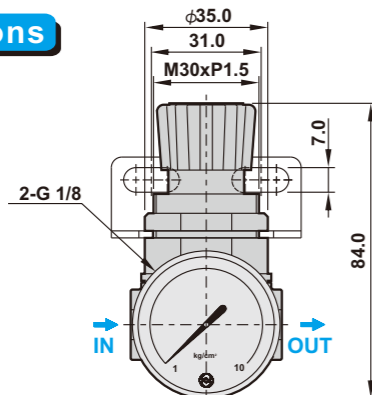
### Flow chart



**Note:**  
 X axis: Flow (l/min)  
 Y axis: Pressure (kgf/cm<sup>2</sup>)  
 Blue line (P0) = Outlet pressure  
 Black line (P1) = Inlet pressure  
 P1-P0 = Pressure range

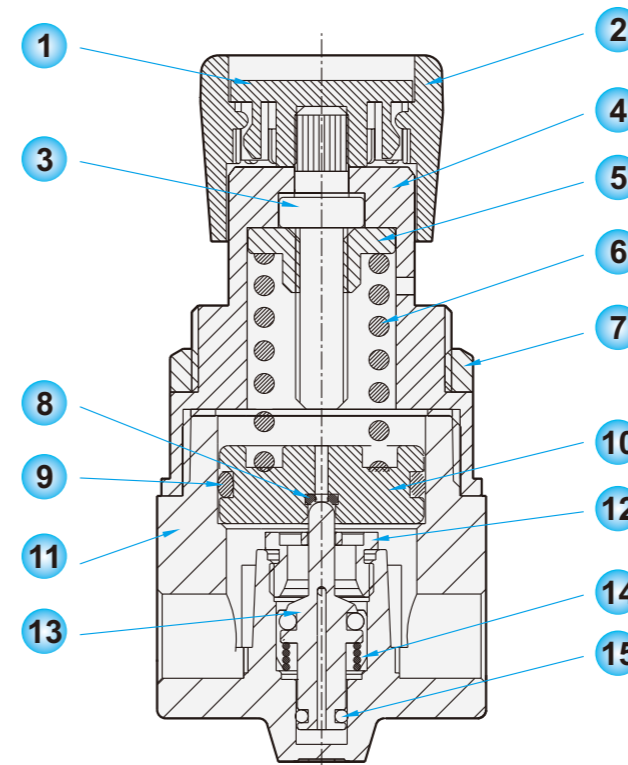
### Dimensions

#### NR200-01, 02



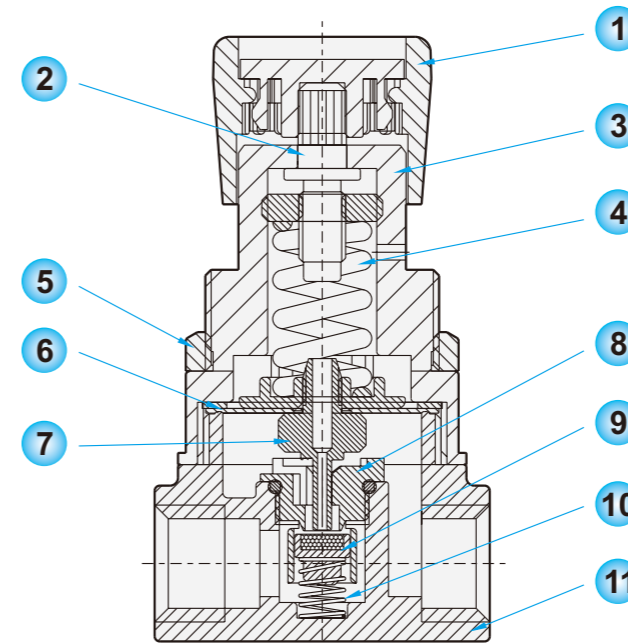
### Construction

#### R200-01, 02



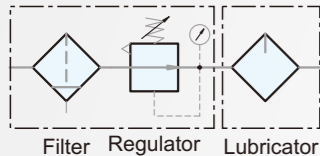
No.	Description	Material
1	Regulator dome	NY
2	Regulator knob	NY
3	Pressure regulating screw	Fe+Ni
4	Regulator base	NY+GF
5	Pressure regulating nut	Cu+Ni
6	Spring	Spring steel
7	Lock nut	NY+GF
8	O-ring	NBR
9	O-ring	NBR
10	Piston	AL
11	Body	ADC12
12	Positioning nut	Cu
13	Regulating needle	Cu
14	Spring	SUS
15	O-ring	NBR

#### NR200-01, 02



No.	Description	Material
1	Regulator knob	NY
2	Pressure regulating screw	Fe+Ni
3	Regulator base	NY+GF
4	Spring	Spring steel
5	Lock nut	NY+GF
6	Diaphragm	NBR70°
7	Regulating needle	AL
8	Positioning nut	POM
9	Plug	Cu
10	Spring	SUS
11	Body	ADC12

### Symbol



### Features

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* The product effectively removes water and particle.
- \* Accurate and sensitive pressure setting.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.



### How to order

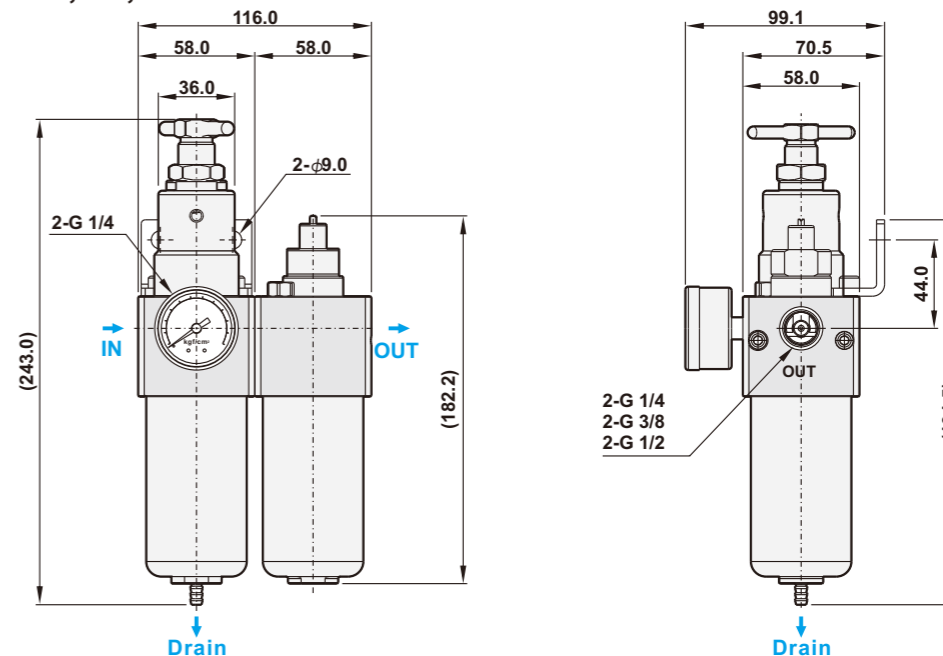
<b>US</b>	<b>FR/L</b>	<b>04</b>	<b>N</b>	<b>C</b>	<b>H</b>
SUS316 Stainless steel	Filter Regulator+Lubricator	Port size	Thread	Filtration	Drain
		02 1/4"	Blank G	Blank 5 μm	Blank Semi-auto drain
		03 3/8"	N NPT	C 40 μm	H Manual drain
		04 1/2"			D Auto drain

### Specifications

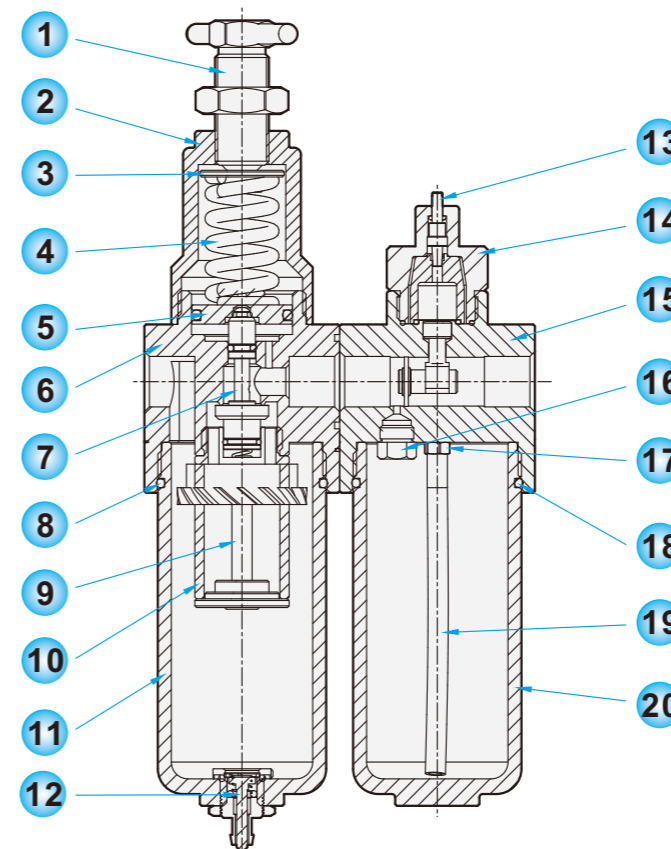
Model	USFR/L-02	USFR/L-03	USFR/L-04
Port size	1/4" (Option)	3/8"	1/2"
Fluid	Compressed air		
Regulator construction	Piston		
Body material	Stainless steel SUS316		
Bowl material	Stainless steel SUS316		
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316		
Filtration/Element material	5 μm (Standard) Stainless steel SUS316		
Operating pressure range	0.5 ~ 30 kgf/cm <sup>2</sup>		
Proof pressure	60 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2080	2200	2500
Ambient temperature	-10°C ~ 70°C		
Lubricator oil (Recommended)	ISO-VG32		
Filter bowl capacity	110cc		
Lubricator bowl capacity	130cc		
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )		
Net weight	3800g	3870g	3840g
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2		

### Dimensions

#### USFR/L-02, 03, 04



### Construction

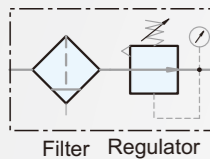


No.	Description	Material
1	Pressure regulating screw	SUS316
2	Regulator base	SUS316
3	Disc gasket	SUS303
4	Spring	SUS303
5	Piston	SUS303
6	Regulator body	SUS316
7	Pressure regulating needle	SUS303
8	O-ring	VITON
9	Filter element holder	SUS303
10	Filter element	SUS316
11	Filter bowl	SUS316
12	Drain	Cu+Ni
13	Oil adjusting screw	SUS316
14	Screw cover	SUS316
15	Lubricator body	SUS316
16	Plug	SUS316
17	Oil pipe fitting	SUS316
18	O-ring	VITON
19	Oil pipe	PU
20	Lubricator bowl	SUS316

FRL COMBINATIONS

FRL COMBINATIONS

**Symbol**



**Features**

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* The product effectively removes water and particle.
- \* Accurate and sensitive pressure setting.



Patent number in China : ZL200620055734.0

**How to order**

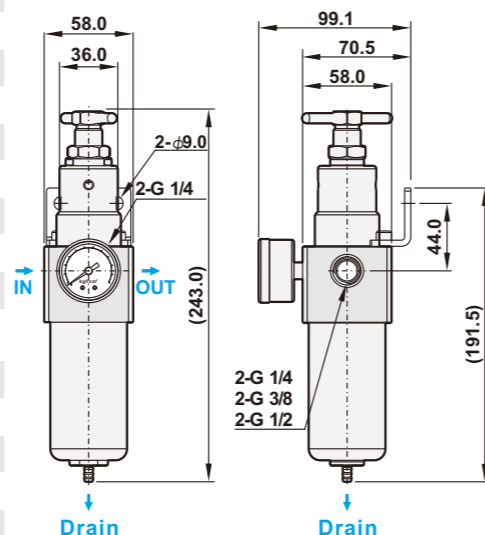
<b>US</b>	<b>FR</b>	<b>04</b>	<b>N</b>	<b>C</b>	<b>H</b>
SUS316 Stainless steel	Filter Regulator	Port size	Thread	Filtration	Drain
		02 1/4" (Option)	Blank G	Blank 5 μm	Blank Semi-auto drain
		03 3/8"	N NPT	C 40 μm	H Manual drain
		04 1/2"			D Auto drain

**Specifications**

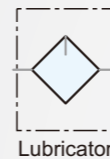
Model	USFR-02	USFR-03	USFR-04
Port size	1/4" (Option)	3/8"	1/2"
Fluid	Compressed air		
Regulator construction	Piston		
Body material	Stainless steel SUS316		
Bowl material	Stainless steel SUS316		
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316		
Filtration/Element material	5μm (Standard) Stainless steel SUS316		
Operating pressure range	0.5 ~ 30 kgf/cm <sup>2</sup> (Max)		
Proof pressure	60 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2200	2500	3800
Ambient temperature	-10°C ~ 70°C		
Filter bowl capacity	110cc		
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )		
Net weight	2000g		
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2		

**Dimensions**

**USFR-02, 03, 04**



**Symbol**



**Features**

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.



Patent number in China : ZL200620055734.0

**How to order**

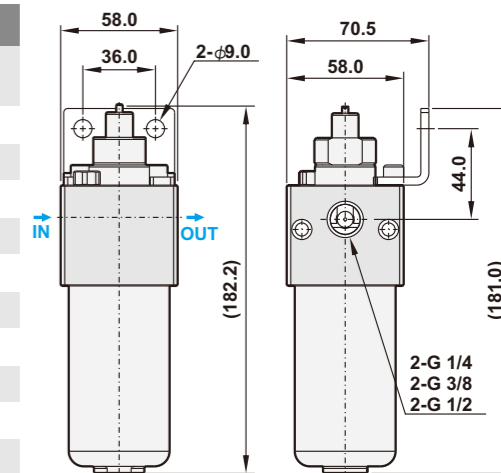
<b>US</b>	<b>L</b>	<b>04</b>	<b>N</b>
SUS316 Stainless steel	Lubricator	Port size	Thread
		02 1/4" (Option)	Blank G
		03 3/8"	N NPT
		04 1/2"	

**Specifications**

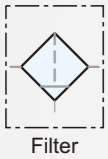
Model	USL-02	USL-03	USL-04
Port size	1/4" (Option)	3/8"	1/2"
Fluid	Compressed air		
Body material	Stainless steel SUS316		
Bowl material	Stainless steel SUS316		
Operating pressure range	0.5 ~ 30 kgf/cm <sup>2</sup> (Max)		
Proof pressure	60 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2500	2525	4100
Ambient temperature	-10°C ~ 70°C		
Lubricator oil (Recommended)	ISO-VG32		
Lubricator bowl capacity	130cc		
Net weight	1750g		
Accessories	Mounting bracket, Screw x 2		

**Dimensions**

**USL-02, 03, 04**



### Symbol



Filter

### Features

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* The product effectively removes water and particle.
- \* Strict quality control.



### How to order

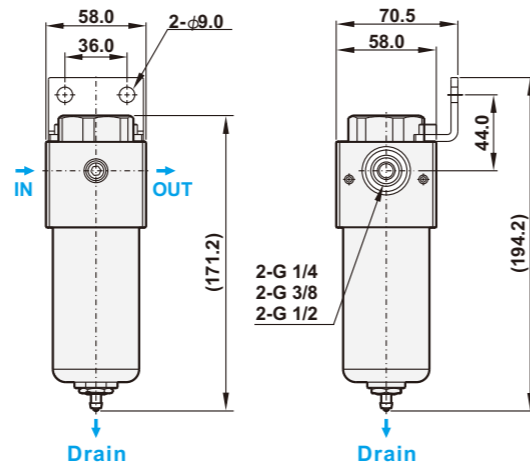
<b>US</b>	<b>F</b>	<b>04</b>	<b>N</b>	<b>C</b>	<b>H</b>
SUS316 Stainless steel	Filter	Port size	Thread	Filtration	Drain
		02 1/4" (Option) 03 3/8" 04 1/2"	Blank G N NPT	Blank 5μm C 40μm	Blank Semi-auto drain H Manual drain D Auto drain

### Specifications

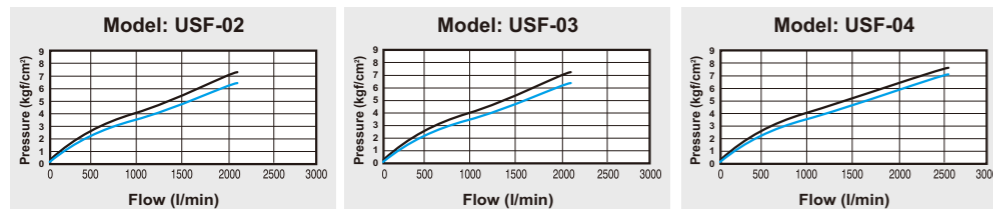
Model	USF-02	USF-03	USF-04
Port size	1/4"(Option)	3/8"	1/2"
Fluid	Compressed air		
Body material	Stainless steel SUS316		
Bowl material	Stainless steel SUS316		
Filter element material	Stainless steel SUS316		
Filtration	5μm (Standard) ,40μm (Option)		
Operating pressure range	0.5 ~ 30 kgf/cm <sup>2</sup>		
Proof pressure	60 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2440	2450	3030
Ambient temperature	-10°C ~ 70°C		
Filter bowl capacity	110cc		
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )		
Net weight	1650 g		
Accessories	Mounting bracket, Screw x 2		

### Dimensions

#### USF-02, 03, 04



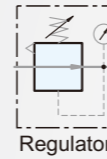
### Flow chart



#### Note:

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0)=Outlet pressure  
Black line (P1)=Inlet pressure  
P1-P0=Pressure range

### Symbol



Regulator

### Features

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Accurate and sensitive pressure setting.
- \* Strict quality control.



### How to order

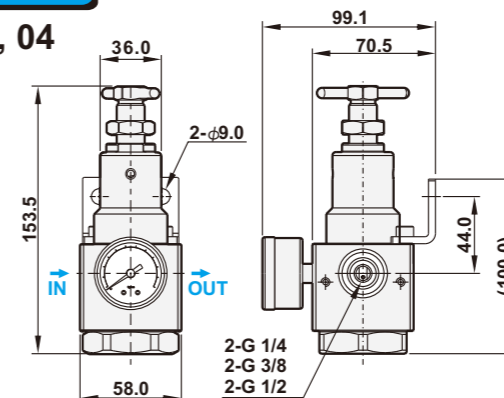
<b>US</b>	<b>R</b>	<b>04</b>	<b>N</b>
SUS316 Stainless steel	Regulator	Port size	Thread
		02 1/4" (Option) 03 3/8" 04 1/2"	Blank G N NPT

### Specifications

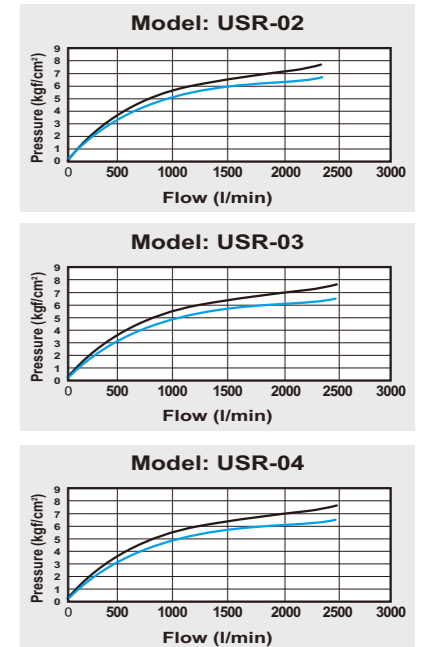
Model	USR-02	USR-03	USR-04
Port size	1/4" (Option)	3/8"	1/2"
Fluid	Compressed air		
Regulator construction	Piston		
Body material	Stainless steel SUS316		
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316		
Operating pressure range	0.5 ~ 30 kgf/cm <sup>2</sup>		
Proof pressure	60 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	1950	2250	2520
Ambient temperature	-10°C ~ 70°C		
Net weight	1400g		
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2		

### Dimensions

#### USR-02, 03, 04



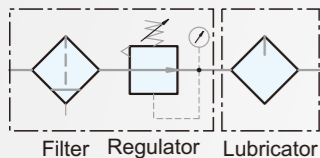
### Flow chart



#### Note:

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0=Pressure range

#### Symbol



#### Features

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Large flow rate and effectively removes water and particle.
- \* Accurate and sensitive pressure setting.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.



#### How to order

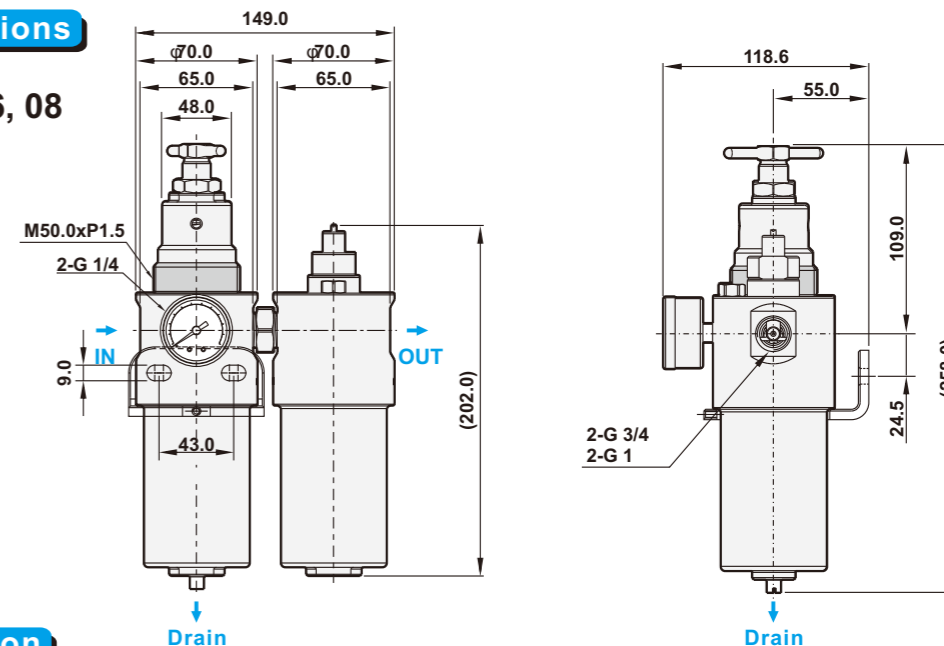
<b>US</b>	<b>FR/L</b>	<b>C</b>	<b>-06</b>	<b>N</b>	<b>C</b>	<b>H</b>
SUS316 Stainless steel	Filter Regulator+Lubricator	Series	Port size	Thread	Filtration	Drain
			06 3/4" 08 1"	Blank G N NPT	Blank 5µm C 40µm	H Manual drain

#### Specifications

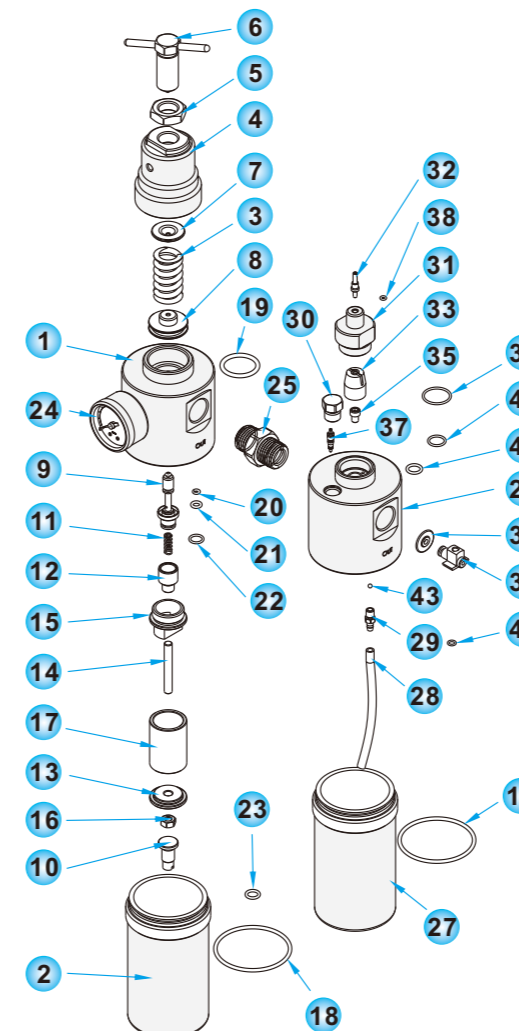
Model	USFR/LC-06	USFR/LC-08
Port size	3/4"	1"
Fluid	Compressed air	
Regulator construction	Piston	
Body material	Stainless steel SUS316	
Bowl material	Stainless steel SUS316	
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316	
Filtration/Element material	5µm (Standard) Stainless steel SUS316	
Operating pressure range	0.5 ~ 30 kgf/cm <sup>2</sup>	
Proof pressure	60 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	7250	7600
Ambient temperature	-10°C ~ 70°C	
Lubricator oil (Recommended)	ISO-VG32	
Nipple size and material	3/4", 1" / SUS316	
Filter bowl capacity	200cc	
Lubricator bowl capacity	220cc	
Standard drain	Manual drain	
Net weight	5500g	
Accessories	Pressure gauge, Plug, Mounting bracket (Option)	

#### Dimensions

#### USFR/LC-06, 08



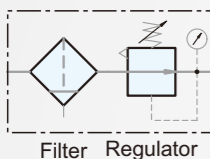
#### Explosion



No.	Description	Material	No.	Description	Material
1	Filter Regulator body	SUS316	23	O-ring	VITON
2	Filter bowl	SUS316	24	Pressure gauge	Stainless Steel
3	Pressure regulating spring	SUS304	25	Nipple	Stainless Steel
4	Stainless steel regulator base	SUS316	26	Lubricator body	SUS316
5	Nut	SUS316	27	Lubricator bowl	SUS316
6	Pressure regulating screw	SUS316	28	Oil pipe	PU
7	Disc gasket	SUS316	29	Oil pipe fitting	SUS316
8	Piston	SUS316	30	Oil filling plug	SUS316
9	Pressure regulating needle	SUS316	31	Oil adjusting knob	SUS316
10	Manual drain	SUS316	32	Oil adjusting screw	SUS316
11	Spring	SUS304	33	Oil dropping orifice	SUS316
12	Needle holder	SUS316	34	Oil spraying nozzle	SUS316
13	Plate	SUS316	35	Screw	SUS316
14	Bolt	SUS316	36	Damper	VITON
15	Spring holder	SUS316	37	Check valve	Stainless Steel
16	Nut	SUS316	38	O-ring	VITON
17	Filter element	SUS316	39	O-ring	VITON
18	O-ring	VITON	40	O-ring	VITON
19	O-ring	VITON	41	O-ring	VITON
20	O-ring	VITON	42	O-ring	VITON
21	O-ring	VITON	43	Steel ball 3mm	SUS316
22	O-ring	VITON			



**Symbol**



**Features**

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Large flow rate and effectively removes water and particle.
- \* Accurate and sensitive pressure setting.

**How to order**

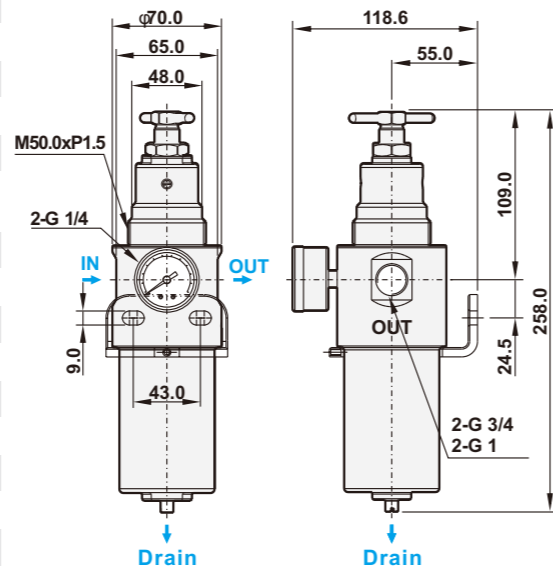
<b>US</b>	<b>FR</b>	<b>C</b>	<b>06</b>	<b>N</b>	<b>C</b>	<b>H</b>
SUS316 Stainless steel	Filter Regulator	Series	Port size	Thread	Filtration	Drain
			06 3/4" 08 1"	Blank G N NPT	Blank 5μm C 40μm	H Manual drain

**Specifications**

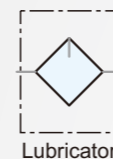
Model	USFRC-06	USFRC-08
Port size	3/4"	1"
Fluid	Compressed air	
Regulator construction	Piston	
Body material	Stainless steel SUS316	
Bowl material	Stainless steel SUS316	
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316	
Filtration/Element material	5μm (Standard) Stainless steel SUS316	
Operating pressure range	0.5 ~ 30 kgf/cm <sup>2</sup>	
Proof pressure	60 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	7250	7650
Ambient temperature	-10°C ~ 70°C	
Filter bowl capacity	200cc	
Standard drain	Manual drain	
Net weight	3000g	
Accessories	Pressure gauge, Plug, Mounting bracket (Option)	

**Dimensions**

**USFRC-06, 08**



**Symbol**



**Features**

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.

**How to order**

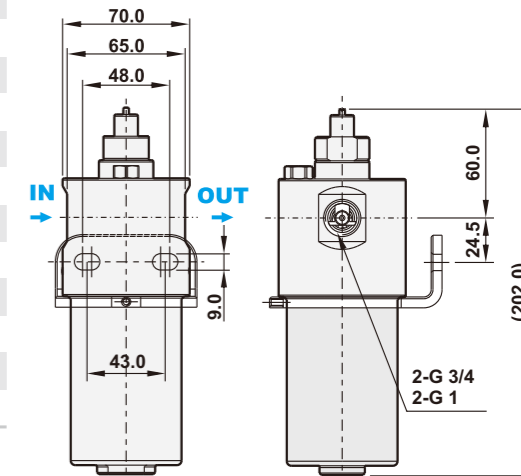
<b>US</b>	<b>L</b>	<b>C</b>	<b>06</b>	<b>N</b>
SUS316 Stainless steel	Lubricator	Series	Port size	Thread
			06 3/4" 08 1"	Blank G N NPT

**Specifications**

Model	USLC-06	USLC-08
Port size	3/4"	1"
Fluid	Compressed air	
Body material	Stainless steel SUS316	
Bowl material	Stainless steel SUS316	
Operating pressure range	0.5 ~ 60 kgf/cm <sup>2</sup>	
Lubricator bowl capacity	200cc	
Proof pressure	70 kgf/cm <sup>2</sup>	
Max. flow rate l/min (ANR)	7250	7650
Lubricator oil (Recommended)	ISO-VG32	
Ambient temperature	-10°C ~ 70°C	
Net weight	2500g	
Accessories	Mounting bracket (Option)	

**Dimensions**

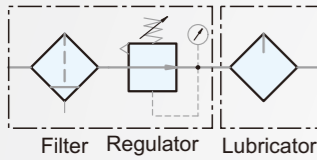
**USLC-06, 08**



FRL COMBINATIONS

FRL COMBINATIONS

### Symbol



### Features

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Large flow rate and effectively removes water and particle.
- \* Accurate and sensitive pressure setting.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.
- \* Light weight, compact size for space saving.



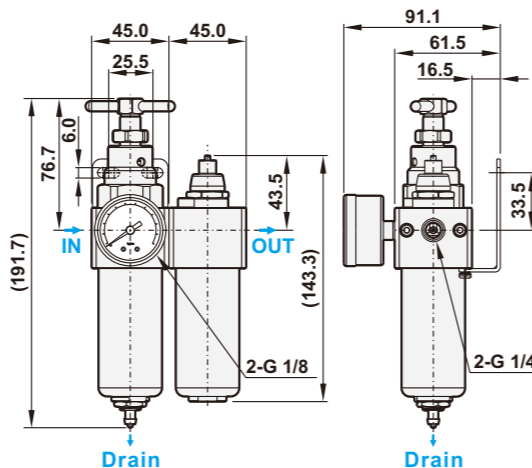
### How to order

<b>SSFRL600</b>	—	<b>02</b>	<b>N</b>	<b>H</b>
Stainless steel SUS316 miniature		Port size	Thread	Drain
Miniature Filter Regulator+Lubricator		02 1/4"	Blank G N NPT	Blank Semi-auto drain H Manual drain D Auto drain

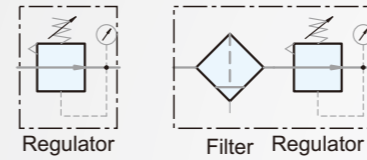
### Specifications

Model	SSFRL600
Port size	1/4"
Fluid	Compressed air
Regulator construction	Piston
Body material	Stainless steel SUS316
Bowl material	Stainless steel SUS316
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316
Filter element material	Stainless steel SUS316
Filtration	5μm (Standard) · 40μm (Option)
Operating pressure range	0.5 ~ 20 kgf/cm <sup>2</sup>
Proof pressure	30 kgf/cm <sup>2</sup>
Max. flow rate l/min (ANR)	1850 l/min
Ambient temperature	-10°C ~ 60°C
Lubricator oil (Recommended)	ISO-VG32
Filter bowl capacity	105cc
Lubricator bowl capacity	125cc
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )
Net weight	2660g
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2

### Dimensions



### Symbol



### Features

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Large flow rate and effectively removes water and particle.
- \* Accurate and sensitive pressure setting.
- \* Light weight, compact size for space saving.



### How to order

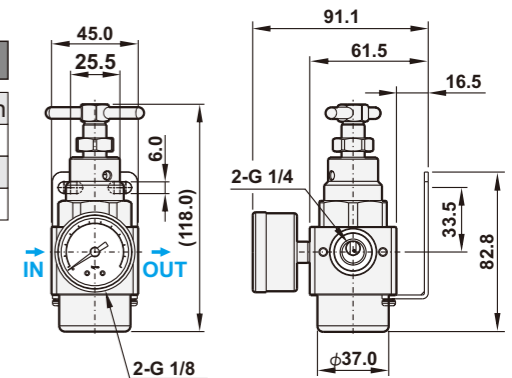
<b>SSR200</b>	—	<b>02</b>	<b>N</b>	<b>H</b>
Stainless steel SUS316 Miniature F.R.L		Port size	Thread	Drain
SSR200 Miniature Regulator		02 1/4"	Blank G N NPT	Blank Semi-auto drain H Manual drain D Auto drain
SSFR500 Miniature Filter Regulator				Only for SSFR500

### Specifications

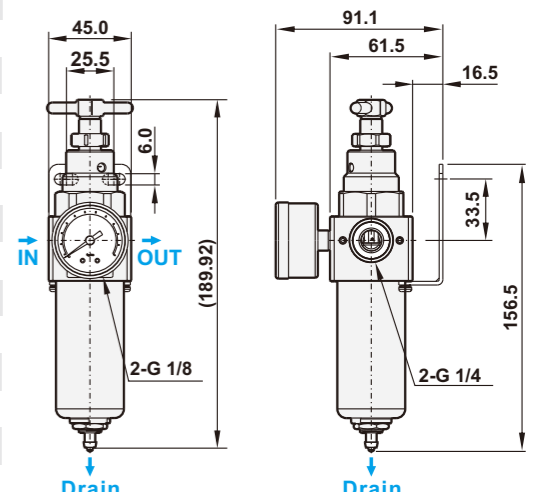
Model	SSR200	SSFR500
Port size		1/4"
Fluid		Compressed air
Regulator construction		Piston
Body material		Stainless steel SUS316
Bowl material	—	Stainless steel SUS316
Pressure gauge material	Case: Stainless steel SUS304, Thread: Stainless steel SUS316	
Filter element material	—	Stainless steel SUS316
Filtration	—	5μm (Standard) · 40μm (Option)
Operating pressure range		0.5 ~ 20 kgf/cm <sup>2</sup>
Proof pressure		30 kgf/cm <sup>2</sup>
Max. flow rate (ANR)		1850 l/min
Ambient temperature		-10°C ~ 60°C
Filter bowl capacity	—	105cc
Standard drain	—	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )
Net weight	1200g	1380g
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2	

### Dimensions

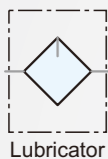
#### SSR200



#### SSFR500



**Symbol**



**Features**

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Lubricator oil can be replenished without stopping air supply.
- \* Oil spray in mist ensures good lubrication for machines.
- \* Light weight, compact size for space saving.



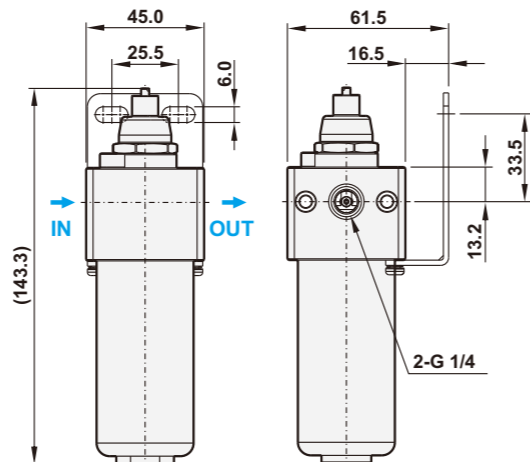
**How to order**

<b>SSL200</b>	—	<b>02</b>	<b>N</b>
Stainless steel SUS316 miniature F.R.L		Port size	Thread
Miniature Lubricator		02 1/4"	Blank G N NPT

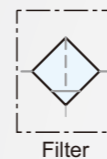
**Specifications**

Model	SSL200
Port size	1/4"
Fluid	Compressed air
Body material	Stainless steel SUS316
Bowl material	Stainless steel SUS316
Operating pressure range	0.5 ~ 20 kgf/cm <sup>2</sup>
Proof pressure	30 kgf/cm <sup>2</sup>
Max. flow rate	2500 l/min
Ambient temperature	-10°C ~ 60°C
Lubricator oil (Recommended)	ISO-VG32
Lubricator bowl capacity	125cc
Net weight	1200g
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2

**Dimensions**



**Symbol**



**Features**

- \* For high pressure use, corrosion and chemical resistance.
- \* Good performance in chemically working environments and outdoor facility.
- \* Suitable for semi-conductor industry.
- \* Effectively removes water and particle.
- \* Strict quality control.
- \* Light weight, compact size for space saving.



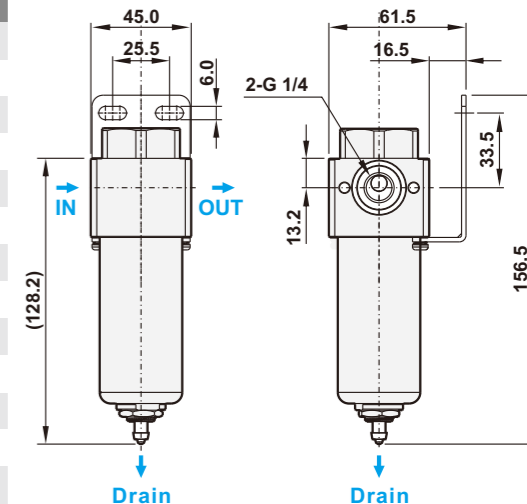
**How to order**

<b>SSF200</b>	—	<b>02</b>	<b>N</b>	<b>H</b>
Stainless steel SUS316 Miniature F.R.L		Port size	Thread	Drain
Miniature Filter		02 1/4"	Blank G N NPT	Blank Semi-auto drain H Manual drain D Auto drain

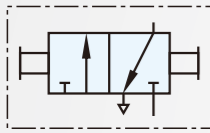
**Specifications**

Model	SSF200
Port size	1/4"
Fluid	Compressed air
Body material	Stainless steel SUS316
Bowl material	Stainless steel SUS316
Filter element material	Stainless steel SUS316
Filtration	5μm (Standard) · 40μm (Option)
Operating pressure range	0.5 ~ 20 kgf/cm <sup>2</sup>
Proof pressure	30 kgf/cm <sup>2</sup>
Max. flow rate	1900 l/min
Ambient temperature	-10°C ~ 60°C
Filter bowl capacity	105cc
Standard drain	Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )
Net weight	1260g
Accessories	Pressure gauge, Mounting bracket, Plug, Screw x 2

**Dimensions**



**Symbol**



**Features**

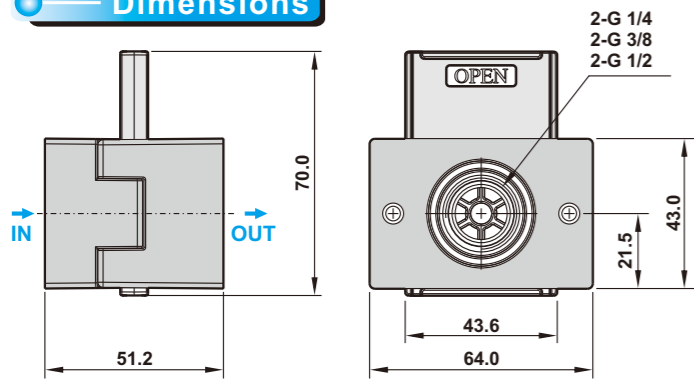
- \* The valve cut air source effectively and quickly.
- \* Hole lockable design to increase safety.
- \* Positioning mechanism ensures to cut air supply entirely.
- \* See following drawing for connection with FRL.



**How to order**

<b>SHV</b>	<b>02</b>	<b>N</b>
Shut-off valve	Port size	Thread
SHV 3/2 way	02 1/4"	Blank G
	03 3/8"	N NPT
	04 1/2"	

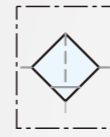
**Dimensions**



**Specifications**

Model	SHV-02	SHV-03	SHV-04
Port size	1/4"	3/8"	1/2"
Fluid	Compressed air		
Body material	Aluminum die-cast		
Shut-off panel material	Polycarbonate		
Operating pressure range	0.5 ~ 12 kgf/cm <sup>2</sup>		
Proof pressure	15 kgf/cm <sup>2</sup>		
CV value	4.0	8.0	8.0
Ambient temperature	-10°C ~ 60°C		
Net weight	350g		

**Symbol**



**Features**

- \* UV series removes particle effectively.
- \* 40 μm and 5 μm filter element are easily interchangeable and replaceable.



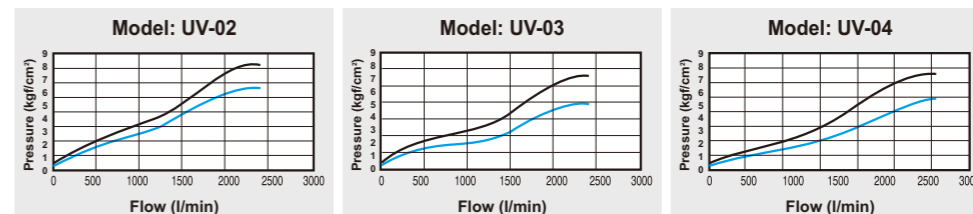
**How to order**

<b>UV</b>	<b>02</b>	<b>N</b>	<b>C</b>	<b>B</b>	<b>A</b>
Vacuum filter	Port size	Thread	Filtration	Mounting bracket	Bowl
	02 1/4"	Blank G	Blank 5 μm	Blank W/O bracket	Blank Standard bowl
	03 3/8"	N NPT	C 40 μm	B W/I bracket	A Anti-acid & alkali bowl
	04 1/2"				AL Aluminum bowl (1/4"~1/2")

**Specifications**

Model	UV-02	UV-03	UV-04
Port size	1/4"	3/8"	1/2"
Fluid	Compressed air		
Body material	Aluminum die-cast		
Bowl material	Polycarbonate (Standard)		
Filtration	5 μm (Standard) · 40 μm (Option)		
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>		
Proof pressure (Standard bowl)	15 kgf/cm <sup>2</sup>		
Max. flow rate l/min (ANR)	2440	2450	3030
Ambient temperature	-10°C ~ 60°C		
Filter bowl capacity	105cc		
Net weight	530g		

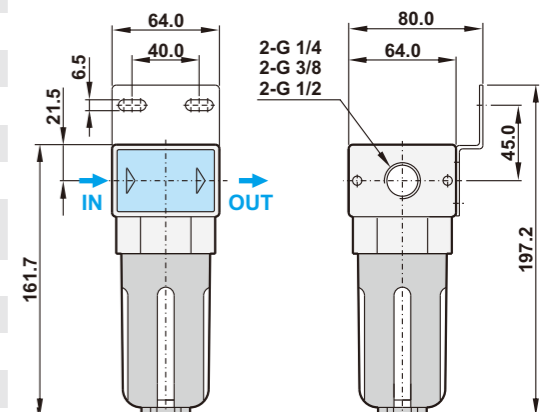
**Flow chart**



**Note:**  
 X axis: Flow (l/min)  
 Y axis: Pressure (kgf/cm<sup>2</sup>)  
 Blue line (P0) = Outlet pressure  
 Black line (P1) = Inlet pressure  
 P1-P0=Pressure range

**Dimensions**

**UV-02, 03, 04**



### Symbol



### Features

- \* UMF series effectively removes oil, water, carbon and particle.
- \* With 0.01 $\mu$ m glass fiber filter element.
- \* High quality control ensures stable running and long life.
- \* Convenient to see air quality from pressure indicator, prevent the filter element from clogging.

Note: Please install air filter UF series upstream to extend life of filter element.



### How to order

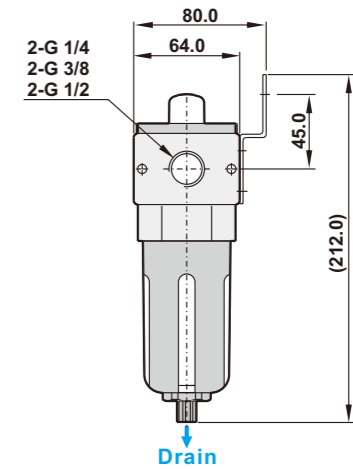
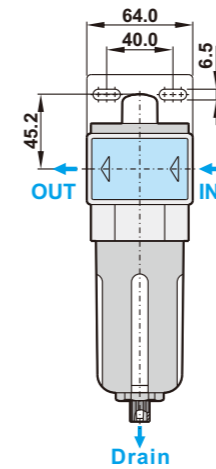
UMF	-	02	N	C	H	B	A
Coalescing filter	Port size	Thread	Filtration	Drain	Mounting bracket	Bowl	
	02 1/4"	Blank G	Blank 0.01 $\mu$ m	Blank	Blank W/O bracket	Blank	Standard bowl
	03 3/8"	N NPT	Activated	Blank	B W/I bracket	A	Anti-acid & alkali bowl
	04 1/2"		C charcoal	H		AL	Aluminum bowl (1/4"~1/2")
	06 3/4"		filter element				
	08 1"						

### Specifications

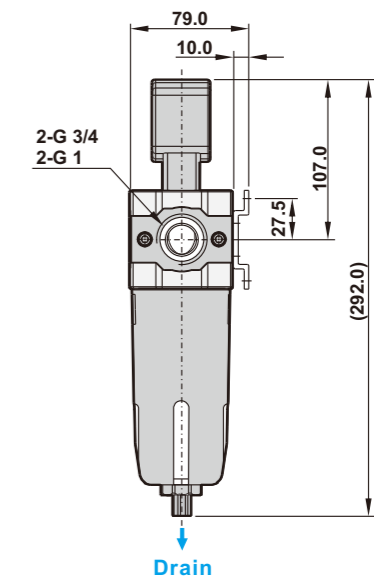
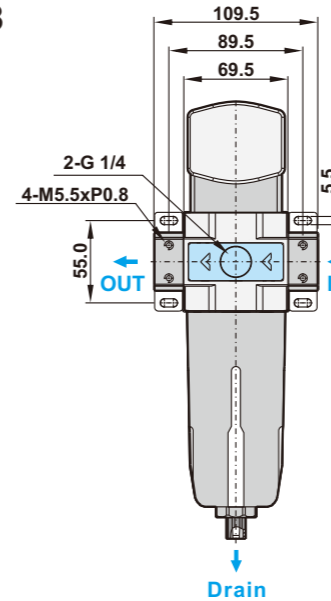
Model	UMF-02	UMF-03	UMF-04	UMF-06	UMF-08
Port size	1/4"	3/8"	1/2"	3/4"	1"
Fluid	Compressed air				
Body material	Aluminum die-cast				
Bowl material	Polycarbonate (Standard), Anti-acid & alkali bowl (Option), Aluminum bowl (Option)				
Filtration	0.01 $\mu$ m (Standard)				
Operating pressure range	0.5 ~ 10 kgf/cm <sup>2</sup>				
Proof pressure	15 kgf/cm <sup>2</sup>				
Max. flow rate l/min(ANR)	2050	2100	2150	3800	3850
Ambient temperature	0°C ~ 60°C				
Filter bowl capacity		65cc			115cc
Standard drain		Semi-auto drain (Drains below 0.5kgf/cm <sup>2</sup> )			
Net weight		600g			1200g

### Dimensions

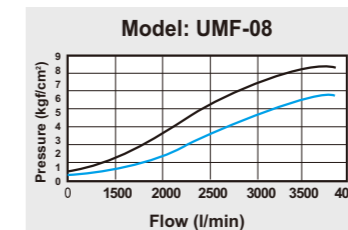
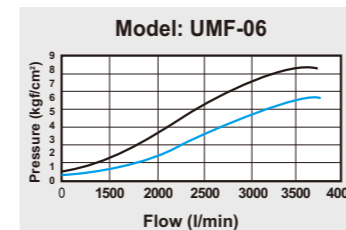
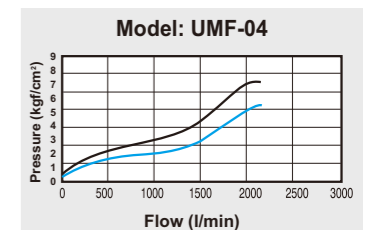
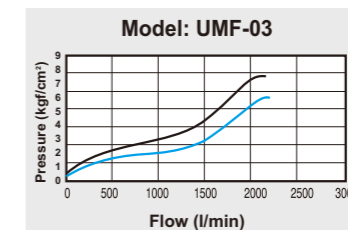
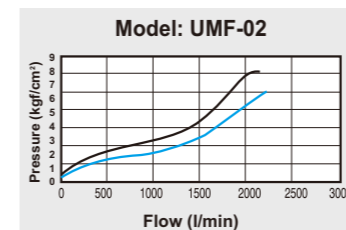
#### UMF-02, 03, 04



#### UMF-06, 08



### Flow chart



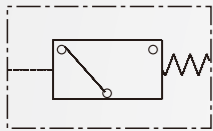
#### Note:

X axis: Flow (l/min)  
Y axis: Pressure (kgf/cm<sup>2</sup>)  
Blue line (P0) = Outlet pressure  
Black line (P1) = Inlet pressure  
P1-P0=Pressure range

FRL COMBINATIONS

FRL COMBINATIONS

### Symbol



### Features

- \* Easy operation and safe.
- \* Compact size for simple installation.
- \* Stable Presswre setting .



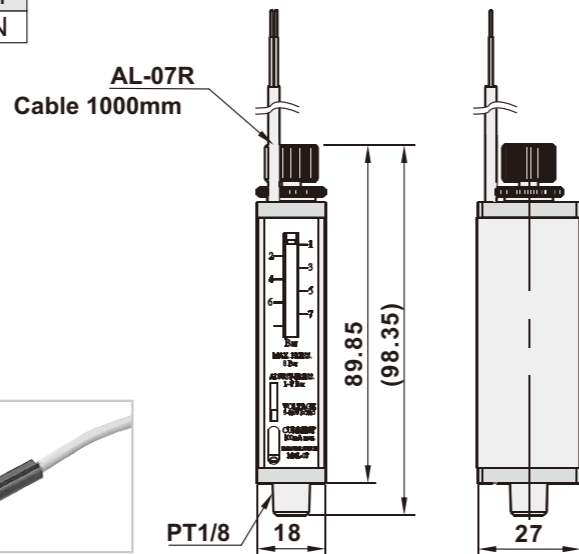
### Pressure setting notice

- \* the LED,When pressure drop to the setting value: OFF indicator is off.
- \* the LED,When pressure rise to the setting value: ON indicator is on.

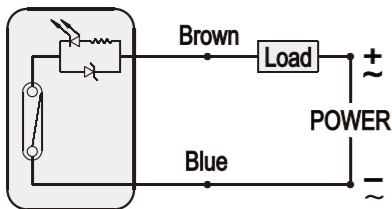
### How to order

<b>MAL-07</b>	<b>N</b>	—	<b>L</b>
Pressure switch	Thread		Pressure setting
	Blank	PT	Blank
	N	NPT	L
			OFF
			ON

### Dimensions



### Circuit diagram



Sensor	AL-07R
Voltage range	5~120VDC/AC
Max. current	100mA
Max. Contact rating	10W(VA)

### Specifications

Model	MAL-07
Port size	1/8"
Fluid	Compressed air
Body material	Aluminum
Proof pressure	10Bar(10.2 kgf/cm <sup>2</sup> )
Maximum pressure operating	7Bar(7.14 kgf/cm <sup>2</sup> )
Pressure setting range	1~7Bar(1.02~7.14 kgf/cm <sup>2</sup> )
Hysteresis pressure	0.75Bar
Repeatability (switch output)	±0.15Bar
Ambient temperature	-5°C ~ 60°C
Net Weight	127g



**Pressure gauge**

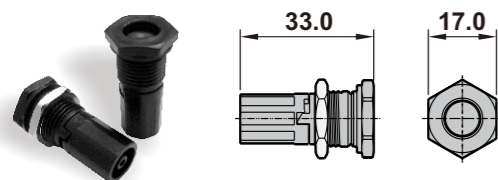
Part no.	Application	Dimension
KUX0000020	Miniature FRL series	1/8", φ 42mm
KUX0000030	Standard FRL series 1/4", 3/8", 1/2", 3/4", 1"	1/4", φ 53mm
KUX0000046	USFR Stainless steel FRL series	2"x20kg x1/4" SUS316
KUX0000053	USFR Stainless steel FRL series	2"x30kg x1/4" SUS316
KUX0000050	SSFR Miniature stainless steel FRL series	1/8", φ 42mm SUS316
KUX0001010	FRL600C,FRL700C series NUFRL series	1" x 0~10bar 27mm



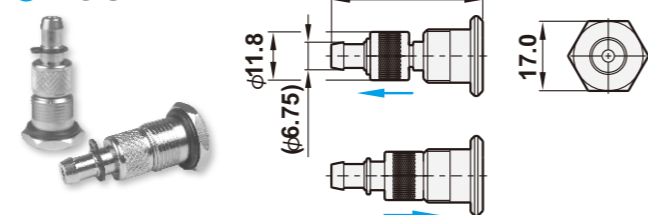
**Semi-auto/Manual drain**

Part no.	Type	Port size
ZGUX	Manual	6mm (PU tube)
ZGUX-1	Semi-auto	6mm (PU tube)
ZGUX-2	Semi-auto	6mm (PU tube)

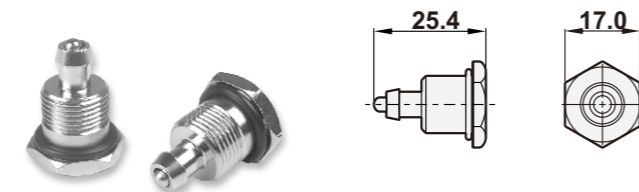
**ZGUX-2**



**ZGUX**



**ZGUX-1**

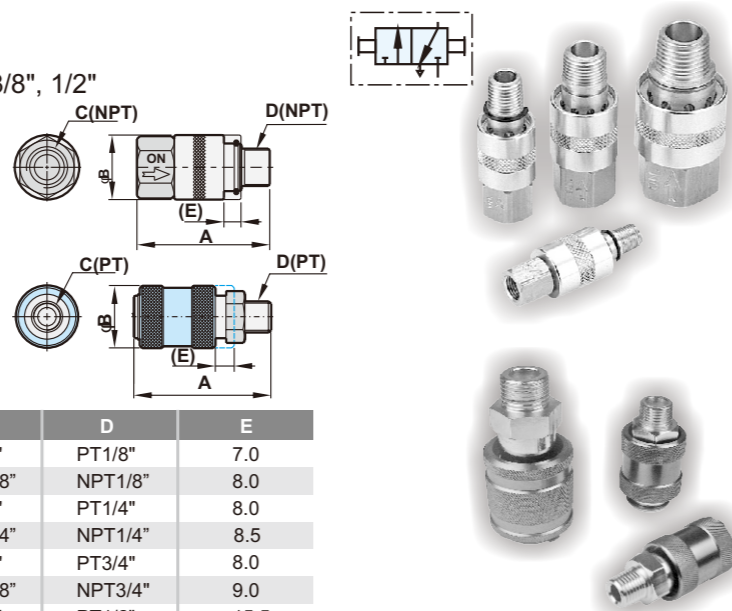


**Sleeve valve**

**How to order**

Apply to standard FRL series 1/8", 1/4", 3/8", 1/2"

<b>HV</b>	-	<b>02</b>	<b>N</b>
Sleeve valve	Port size	Thread	
01	1/8"	Blank	PT
02	1/4"	N	NPT
03	3/8"		
04	1/2"		

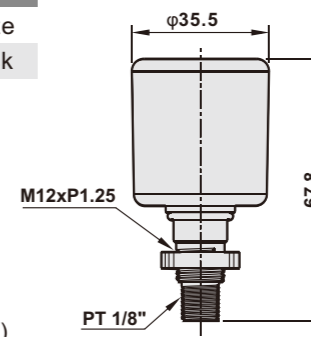


Part no.	Dimension	A	B	C	D	E
HV-01		38.0	20.0	PT1/8"	PT1/8"	7.0
HV-01N		54.5	20.0	NPT1/8"	NPT1/8"	8.0
HV-02		59.0	27.0	PT1/4"	PT1/4"	8.0
HV-02N		62.0	22.0	NPT1/4"	NPT1/4"	8.5
HV-03		58.0	32.0	PT3/8"	PT3/4"	8.0
HV-03N		66.5	26.0	NPT3/8"	NPT3/4"	9.0
HV-04		80.0	40.0	PT1/2"	PT1/2"	15.5
HV-04N		71.0	34.5	NPT1/2"	NPT1/2"	9.1

**Automatic drain**

Part no.	Thread	Color
DA-014	14mm (Male thread)	White
DA-014W	14mm (Male thread)	Black

**DA-014, DA-014W**



**Feature**

1. Completely drain water together with polluted particles and oils at once without remnants on filter bowl.
2. Automatically remove remaining water on filter bowl after air pressure is shut off.
3. Working pressure: 2~8kgf/cm<sup>2</sup>  
Discharge capacity: 10~15cc each time (12 times/min.)  
\* Patent number in Taiwan: 096216673

**Filter bowl & Lubricator bowl**

Part no.	Application	Content
ZGL200B	Lubricator bowl for FRL700A, FRL600A, L200A	Bowl with o-ring
ZGUL-06B	Lubricator bowl for UFR/L-06, 08	Bowl with o-ring
ZGUL-02B	Lubricator bowl for UFR/L-02, 03, 04	Bowl with o-ring
ZGUL-02BA	Anti-acid & alkali lubricator bowl for UFR/L-02, 03, 04	Bowl with o-ring
ZGUL-02BAL	Aluminum lubricator bowl for UFR/L-02, 03, 04	Bowl with o-ring
ZGF200B	Filter bowl for FRL700A, FRL600A, F200A	Bowl with o-ring
ZGUF-06B	Filter bowl for UFR/L-06, 08	Bowl with o-ring
ZGUF-02B	Filter bowl for UFR/L-02, 03, 04	Bowl with o-ring
ZGUF-02BA	Anti-acid & alkali filter bowl for UFR/L-02, 03, 04	Bowl with o-ring
ZGUF-02BAL	Aluminum filter bowl for UFR/L-02, 03, 04	Bowl with o-ring
ZGF200BB	Filter bowl for FRL700B, FRL600B, F200B	Bowl with o-ring
ZGL200BB	Lubricator bowl for FRL700B, FRL600B, L200B	Bowl with o-ring
ZGUSF-04B	SUS316 Filter bowl for USFR stainless steel series	Bowl with o-ring
ZGUSF-02B	SUS316 Filter bowl for SSFR Miniature stainless steel series	Bowl with o-ring



**Filter element**

Part no.	Application	Material
KUS0032041	40μm, FRL600(A,C), F200(A,C), FR500(A,C)	Sintered bronze
KUS0032042	5μm, FRL600(A,C), F200(A,C), FR500(A,C)	
KUN0010035	40μm, UFR/L-02,03,04,UFR/L-02,03,04, NUFRL, NUFRL	
KUN0010036	5μm, UFR/L-02,03,04,UFR/L-02,03,04, NUFRL, NUFRL	
KUB0008060	40μm, UFR/L-06, 08	
KUB0008061	5μm, UFR/L-06, 08	

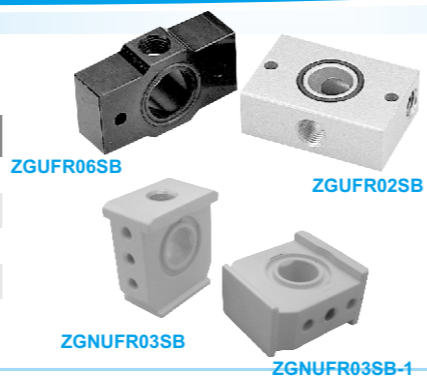


Part no.	Application	Material
NUS0032041	40μm, FRL600(A,C), F200(A,C), FR500(A,C)	Sponge
NUS0032042	5μm, FRL600(A,C), F200(A,C), FR500(A,C)	
NUN0010035	40μm, UFR/L-02,03,04,UFR/L-02,03,04, NUFRL, NUFRL	
NUN0010036	5μm, UFR/L-02,03,04,UFR/L-02,03,04, NUFRL, NUFRL	
NUN0008060	40μm, UFR/L-06, 08	
NUN0008061	5μm, UFR/L-06, 08	



**Spacer block**

Part no.	Application	Content
ZGUFR02SB	UFRL-02, 03, 04	Block, O-ring, Screw, Washer, Plug
ZGUFR06SB	UFRL-06, 08	Block, O-ring, Screw, Washer, Plug
ZGNUFR03SB	NUFRL-03, NUFRL-03	Block, O-ring, Screw
ZGNUFR03SB-1	NUFRL-03, NUFRL-03	Block, O-ring, Screw, Plug



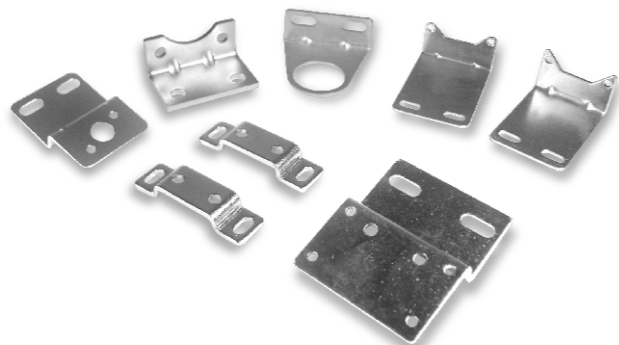
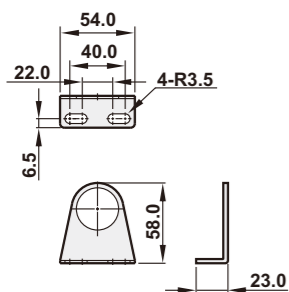
**Closed block**

Part no.	Application	Content
ZGNUFR03CB	NUFRL-03	Block, O-ring, Screw
ZGNUFR03CB-1	NUFRL-03	Block, O-ring, Screw

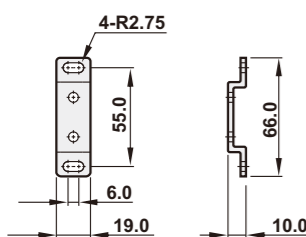


**Mounting bracket**

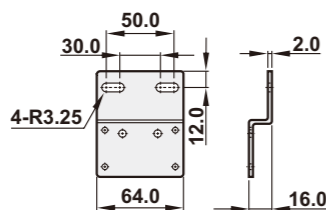
**ZGR200MB**



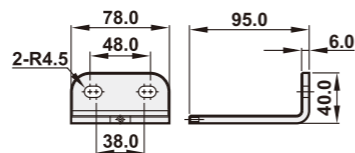
**ZGUFR/L-06MB**



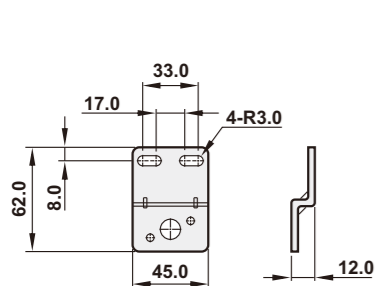
**ZGUFR/L-02MB**



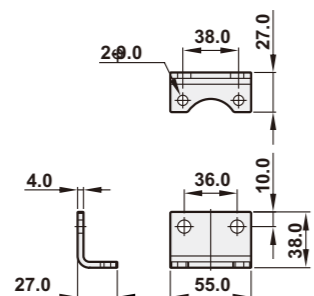
**ZGUSFRC-08MB**



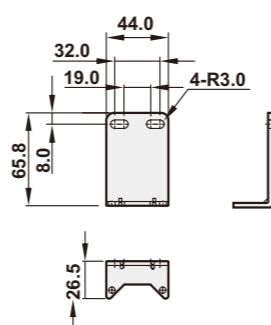
**ZGFR500AMB**



**ZGUSFR/L-04MSB**

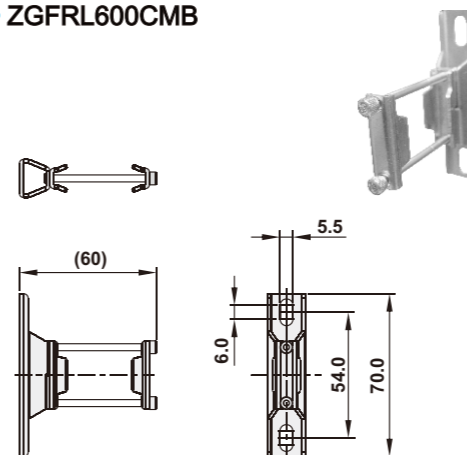


**ZGSSFR500MB, ZGFR500MB**

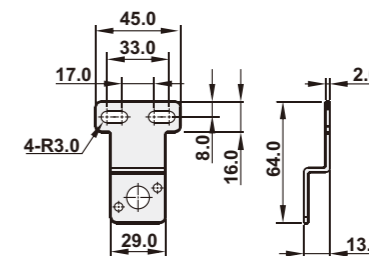


**Mounting bracket**

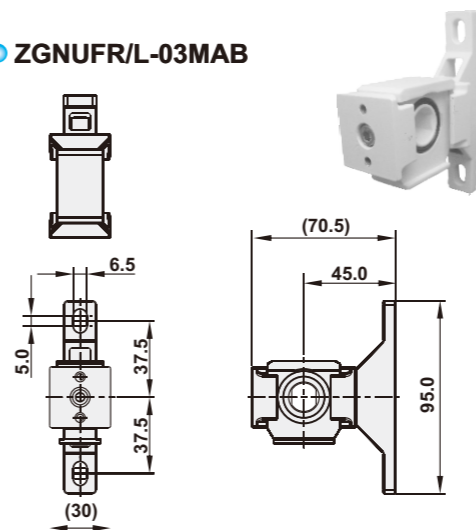
**ZGFRL600CMB**



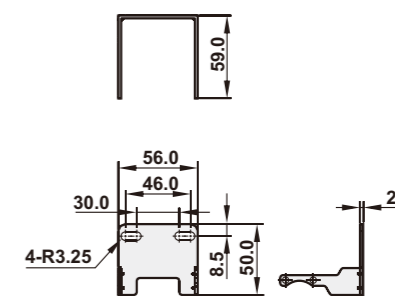
**ZGFR500CMB**



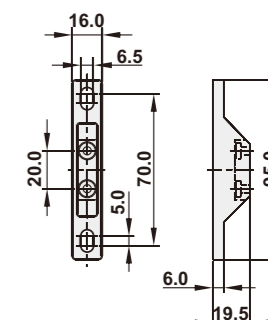
**ZGNUFR/L-03MAB**



**ZGNUFR/L-03MB**



**ZGNUFR/L-03MAB-1**

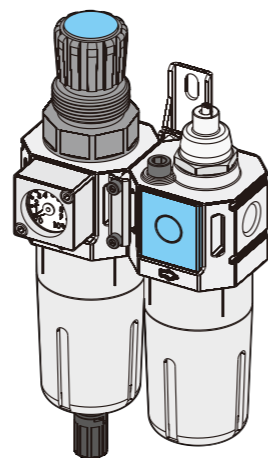


Part no.	Application	Material
ZGR200MB	R200	Metal plated
ZGUFR/L-02MB	UF-02,03,04 / UL-02,03,04 / UR-02,03,04 / UFRL-02,03,04	Metal plated
ZGUFR/L-06MB	UF-06,08 / UL-06,08 / UR-06,08 / UFR-06,08 / UFRL-06,08 / UMF-06,08 / URL-06,08	Metal plated
ZGFR500MB	FR500-02 / FRL600-02 / F200	Metal plated
ZGFR500AMB	FR500A / FRL600A / FRL700A	Metal plated
ZGFR500CMB	FR500C / F200C / L200C	Metal plated
ZGFRL600CMB	FRL600C / FRL700C	Metal plated
ZGNUFR/L-03MB	NUFR-02,03,04 / NUF-02,03,04 / NUL-02,03,04	Aluminum alloy
ZGNUFR/L-03MAB	NUFRL-02,03,04 / NUFRL-02,03,04	Aluminum alloy
ZGNUFR/L-03MAB-1	NUFRL02,03,04 / NUFRL-02,03,04	Aluminum alloy
ZGSSFR500MB	SSFR500-02	Stainless steel
ZGUSFRC-08MB	USFR/LC-06,08 / USFRC-06,08 / USFLC-06,08	Stainless steel
ZGUSFR/L-04MSB	USF-02,03,04 / USL-02,03,04 / USR-02,03,04 / USFR-02,03,04 / USFR/L-02,03,04	Stainless steel



## FRL600C

- The product can be installed by mounting bracket or purchasing lock nut as optional accessory for panel mounting in any direction.
- The miniature design is for space saving especially for installation in a limited room.
- Install anti-acid & alkali bowl to increase capability of chemical corrosion resistance.



## UFR/L-02,03,04

### Installation

Open rear blue plate on FRL body, and screw mounting bracket (the accessory of FRL) on the rear body tightly. (See attached drawing)

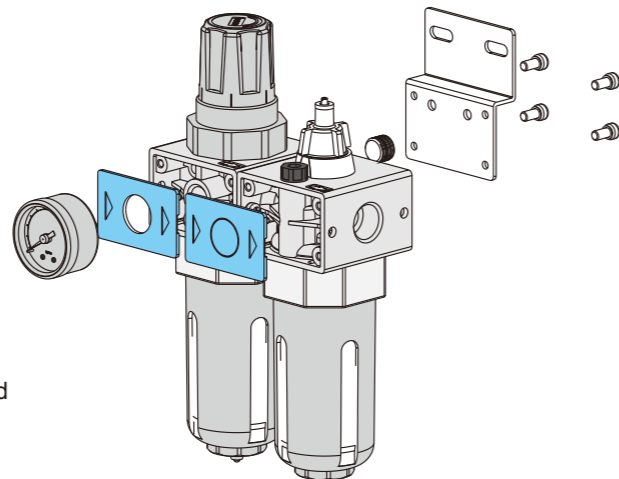
### Operation

#### (A)Filter/Regulator

- Automatic exhaust as standard type.
- Piston plus balance spring construction can offer better pressure control.
- Turn regulator knob clockwise to increase air pressure, turn regulator knob counter-clockwise to decrease air pressure.
- High quality filter possesses 5 micron sintered bronze elements
- The water collected in filter bowl can be easily removed by semi-auto drain.

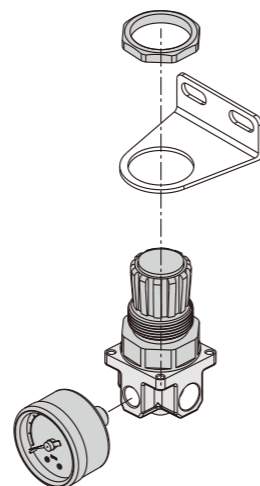
#### (B)Lubricator

After compressed air goes through regulator, the air pressure gets into lubricator bowl and draw lubricator oil into oil pipe. The oil adjusting screw on top of oil viewer is used to adjust flow of oil dropped, then the oil drop into sprayer and mix with compressed air.



## R-200

- Miniature regulator is able to be installed with pressure gauge and mounting bracket, panel nut is optional for panel mounting.
- Miniature regulator offers more accurate pressure regulating, please pull up regulator knob and turn it clockwise for pressure setting.



## Operation/Cautions

### A.Regulator

Pull up regulator knob and turn it clockwise to increase air pressure, turn it counter-clockwise to decrease air pressure. Push regulator knob back for lock the knob.

### B.Lubricator

- Open oil plug to fill lubricator oil.
- Please turn off air supply if lubricator bowl is taken off for oil refill.
- ISO VG32 lubricator oil is highly recommended, it is able to lubricate pneumatic components in system, reduce damaged rate, also extend life of operation.

### C.Filter

- Semi-auto drain (standard): Drain automatically when air pressure below 0.5kgf/c .
- Manual drain (Optional): Use hand to remove water anytime.
- Automatic drain: Drain automatically when full water in filter bowl makes float rise.
- If air pressure drop too much from inlet to outlet, please clean or change filter element to ensure the filter running well.

## Spacer block installation

When there is no need to use lubricator in working environments, it is available to install spacer block on FRL combination.

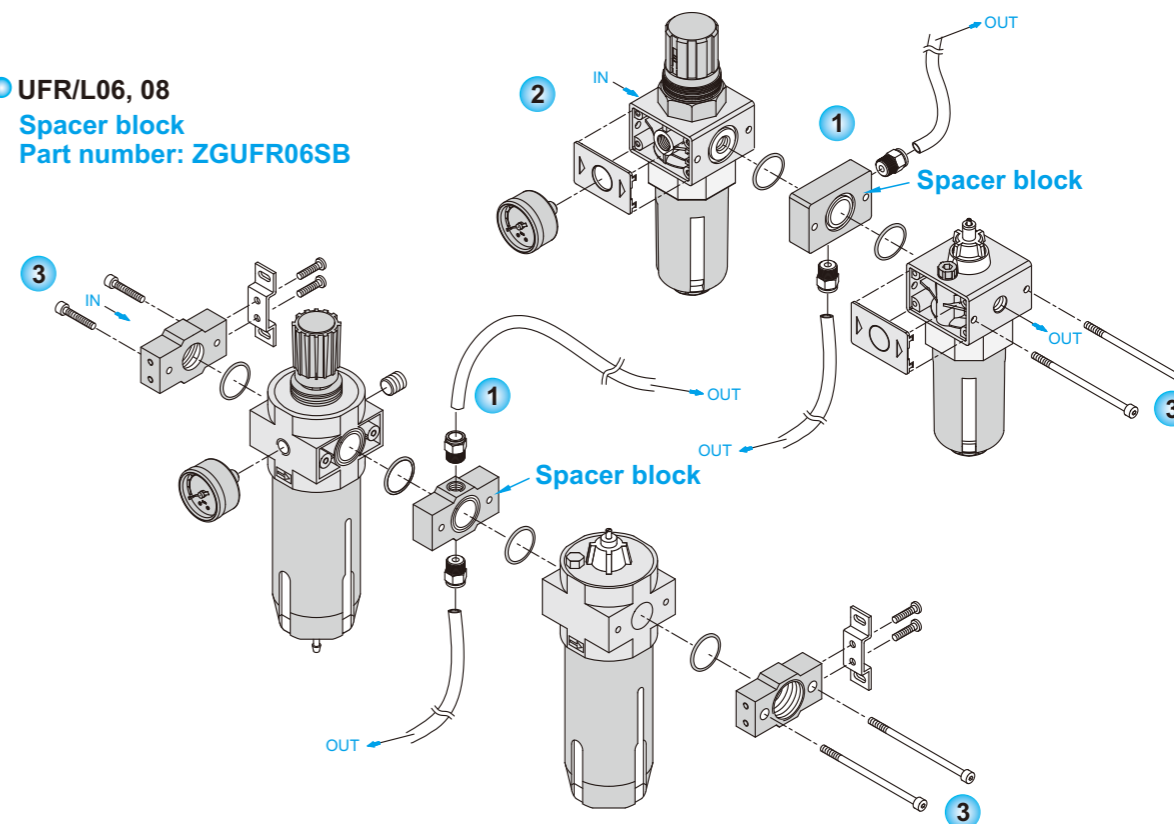
- Connect spacer block with fitting and tube as attached drawing shown.
- Open blue beauty plate as attached drawing shown.
- Use screw driver to take apart filter regulator and lubricator, and lock spacer block between filter regulator and lubricator.

### UFR/L02, 03, 04

Spacer block Part number: ZGUFR02SB

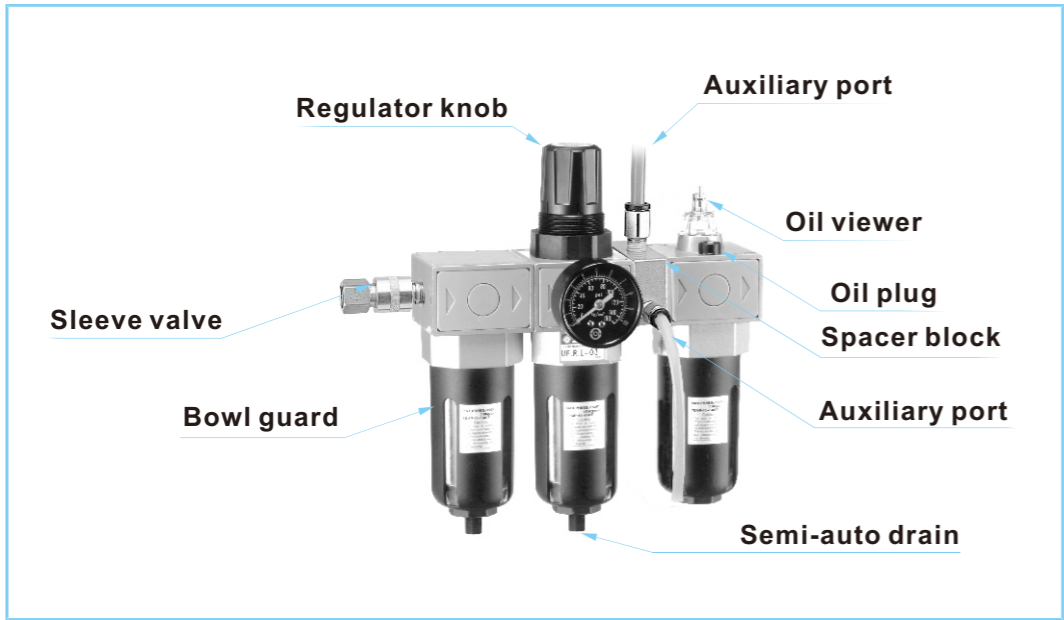
### UFR/L06, 08

Spacer block Part number: ZGUFR06SB



FRL COMBINATIONS

FRL COMBINATIONS



**Adjusting oil spray**

Use screw driver to adjust oil spray.  
Turn oil adjusting screw clockwise to increase oil spray.  
Turn oil adjusting screw counter-clockwise to decrease oil spray.



**The way to fill oil**

Open oil plug, fill oil directly without cut off air supply.  
ISO VG32 lubricator oil is highly recommended.



**How to use sleeve valve**

Pull backward to stop air and release residual air pressure.  
Push forward to open air line.



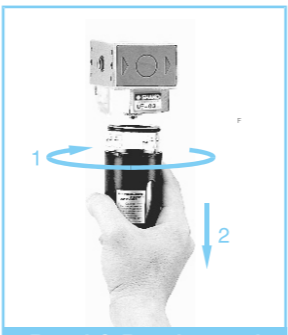
**Pressure regulating**

Pull up regulator knob and turn it clockwise to increase pressure.  
Pull up regulator knob and turn it counter-clockwise to decrease pressure.



**Semi-auto drain**

The water drain automatically when air pressure in filter bowl is below 0.5kg/cm<sup>2</sup>.  
You can also turn down the stopcock to stop drain.



**Bowl & Bowl guard**

Turn counter-clockwise to take off bowl and bowl guard.  
High quality material provides product long-life and easy maintenance.

Area with horizontal dashed lines for notes.

