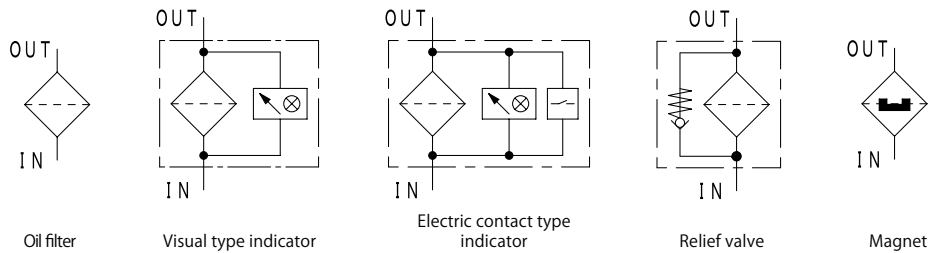


### Middle Pressure Model of Best-selling "U" series



#### Characteristics

- Strong filter housing by FCD material.
- Exchange of In/Outlet is available by changing of cover direction
- Easy element replacement by only removing 4 bolts
- Clogging indicator, magnet, relief valve, and companion flange are selectable as an option
- Element of "U" series (UL, UM, UH) can be used in common



★ Refer to P.222 for hydraulic graphic symbol of other combination of optional equipment.

### SPECIFICATION

Max working pressure	MPa	7.0
Repetition durability test		0~7.0MPa x10 <sup>7</sup> times
Working temperature	Standard	°C -10 ~ 90
	High temperature* <sup>1</sup>	°C -10 ~ 150
Indicator working pressure	MPa	0.3
Cracking pressure	MPa	0.35
Allowable differential pressure of filter element	MPa	0.7
Flow direction/Extract direction of filter element		OUT → IN / Upward

Inner diameter	03	04	06	08	10	12	16A	20B	24B	
Standard flow rate ☆	ℓ /min	30	50	90	105	240	290	440	680	730
Main material	Body	FCD								
	Cover	FCD								
	Inlet	ADC								
Coating	Aqua blue									
Weight* <sup>2</sup>	kg	8.9	11.1	22.7	21.5	37.0				

☆ Standard flow rate is estimated by the condition of density: 0.86, kinematic viscosity: 32mm<sup>2</sup>/s, filtration rating: 10U, pressure drop: lower than 0.05MPa.  
(Since it is adjusted by characteristic of each product, value can be different in some cases.)

### MODEL CODE

(Model code example)



Code	Fluid type
Blank	Mineral oil
F	Phosphate ester fluid
G	Water glycol fluid
C	Fatty ester fluid
W	High water base fluid
S	Fuel (Kerosene, Gas oil, Diesel oil)
B	Brake fluid

Code	Inner diameter
03	Rc 3/8 (10A)
04	Rc 1/2 (15A)
06	Rc 3/4 (20A)
08	Rc1 (25A)
10	Rc1 1/4 (32A)
12	Rc1 1/2 (40A)
16A	Rc2 (50A)
20B	Rc2 1/2 (65A)
24B	Rc3 (80A)

Code	Filtration rating
C-Fiber	
3C	3 μm
8C	8 μm
25C	25 μm
Paper	
10U	10 μm
20U* <sup>3</sup>	20 μm
40U* <sup>3</sup>	40 μm

Refer to P.15-16 for detail information of filter element.

Code	Filtration rating
Wire gauze	
5UW	5 μm
10UW	10 μm
20UW	20 μm
40UW	40 μm
50UW	50 μm
200W	200Mesh
150W	150Mesh
100W	100Mesh
60W	60Mesh
Notch wire (Dimple wire)	
50UK	50 μm
200K	200Mesh
150K	150Mesh
100K	100Mesh
60K	60Mesh

Code	Option
① Indicator	
Blank	Closing plug
I	Visual type
E	Electric contact type
D	Electric contact type (Micro capacity)
② Relief valve	
K	Non
V	Relief valve
③ Companion flange	
Blank	Non
N	Companion flange
④ Magnet	
Blank	Non
M	Magnet

Code	Flow direction of fluid
Blank	Left → Right
L	Right → Left

\* 1 Sealing parts: FKM, only for wire gauze element, indicator and relief valve are not available (Max oil temperature is visual type: 130°C, electric contact type: 90°C)

\* 2 Weight without companion flange \* 3 Not available for water-glycol based oil and high water based fluid

# FLOW RATE GRAPH

## Condition

Fluid type : ISO VG32  
Oil temperature : 40°C

(Density : 0.86,  
Kinematic  
viscosity : 32mm<sup>2</sup>/s)

## How to calculate of pressure drop

Estimate pressure drop of filter assembly by following equation:

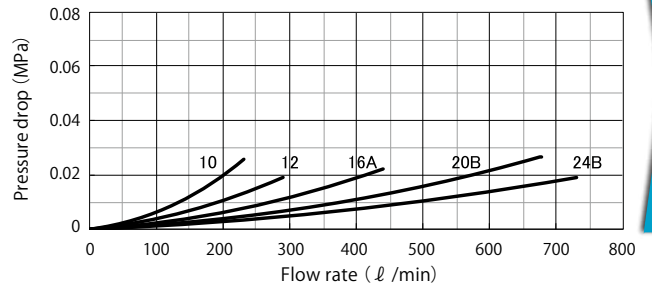
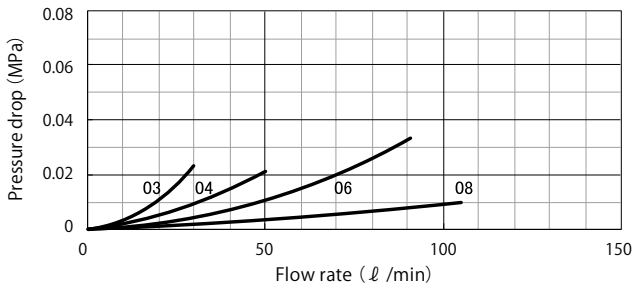
$$\text{Pressure drop of filter assembly} = \text{① Pressure drop of filter housing} + \text{② Pressure drop of filter element}$$

Estimate pressure drop of filter assembly by following equation if required condition is different:

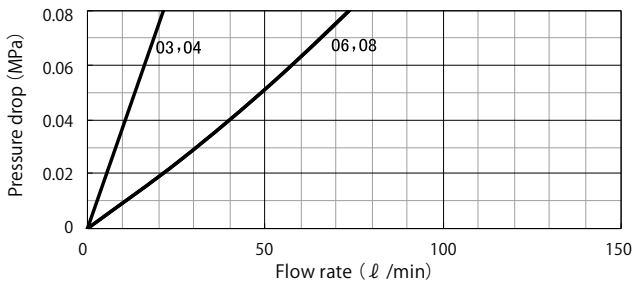
$$\begin{aligned} \text{Pressure drop of filter housing} &= \frac{\text{Fluid density}}{0.86} \times \text{Pressure drop of filter housing at density of 0.86} \\ \text{Pressure drop of filter element} &= \frac{\text{Fluid density}}{0.86} \times \frac{\text{Kinematic viscosity}}{32} \times \text{Pressure drop of filter element at density of 0.86, kinematic viscosity of 32} \end{aligned}$$

★ Pressure drop of filter housing is proportional to fluid density, and pressure drop of filter element is proportional to fluid density and kinematic viscosity.

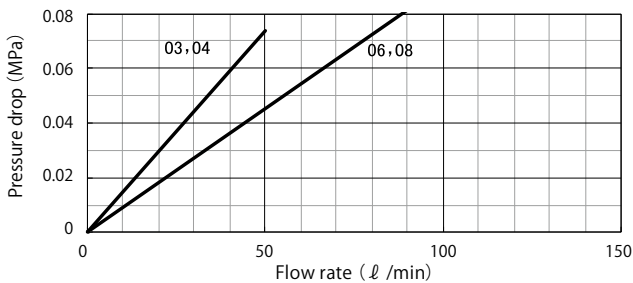
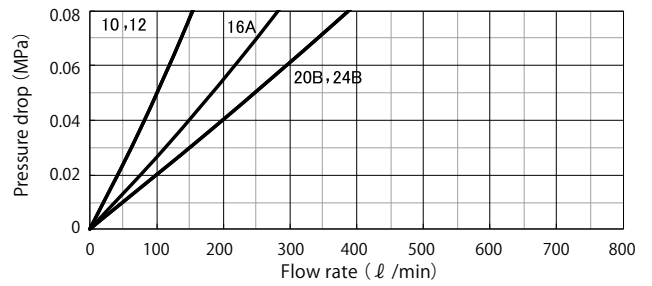
### ① Pressure drop of filter housing



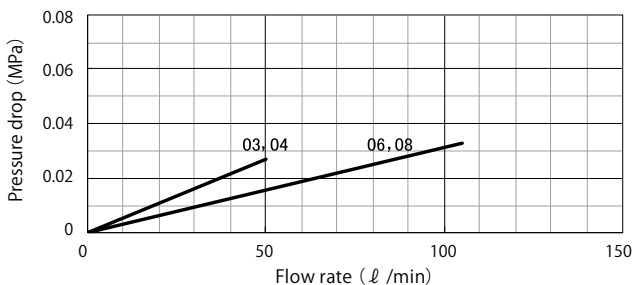
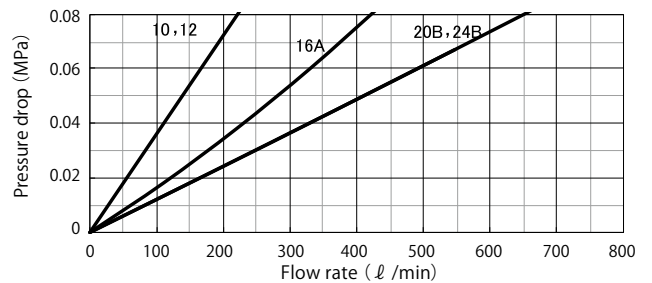
### ② Pressure drop of filter element



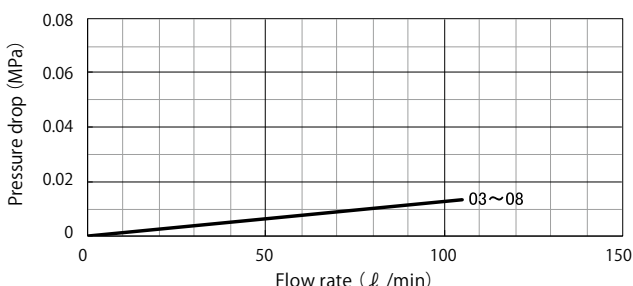
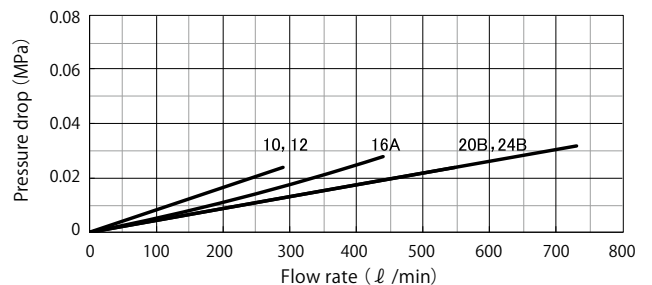
**3C**  
3µm



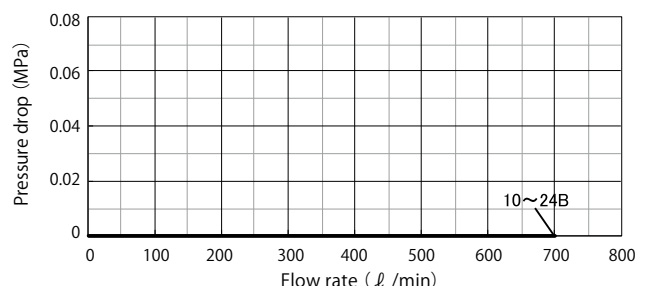
**8C**  
8µm



**10U**  
10µm



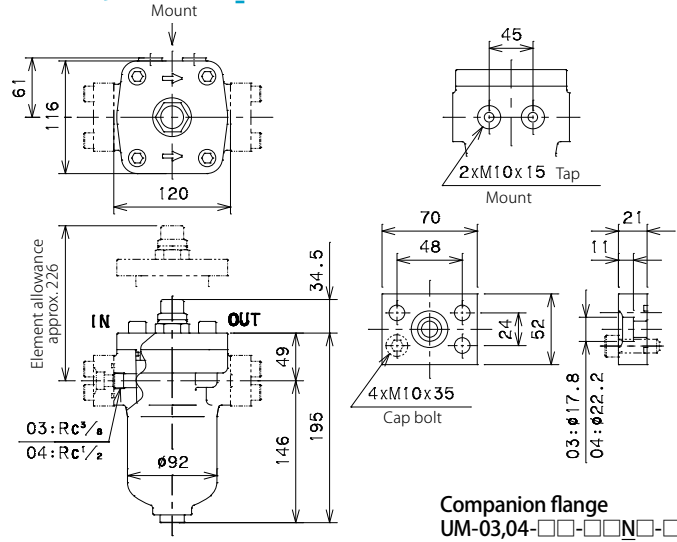
**150W**  
150Mesh\*1



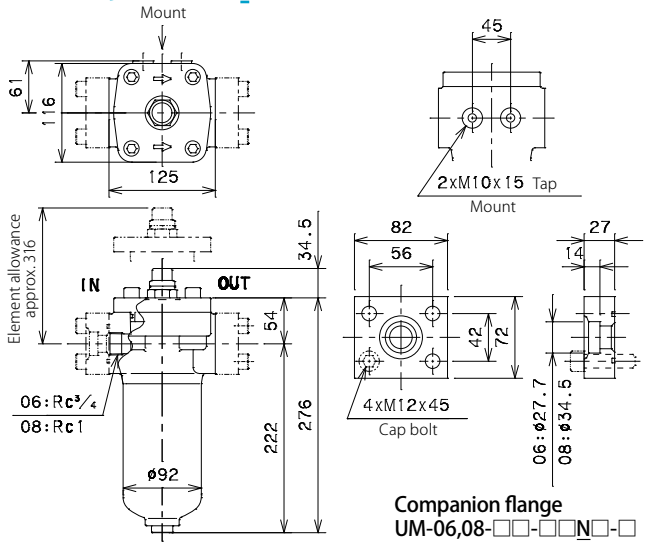
\* 1 Pressure drop of wire gauze element is described with one line since the value is low and there is no difference at each filter size.

**UM-03,04-□□-□□□□-□**

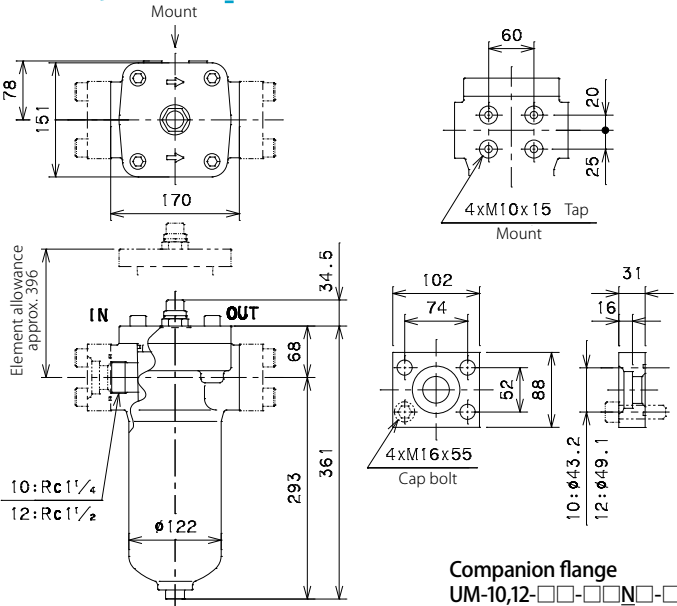
I: Visual type indicator



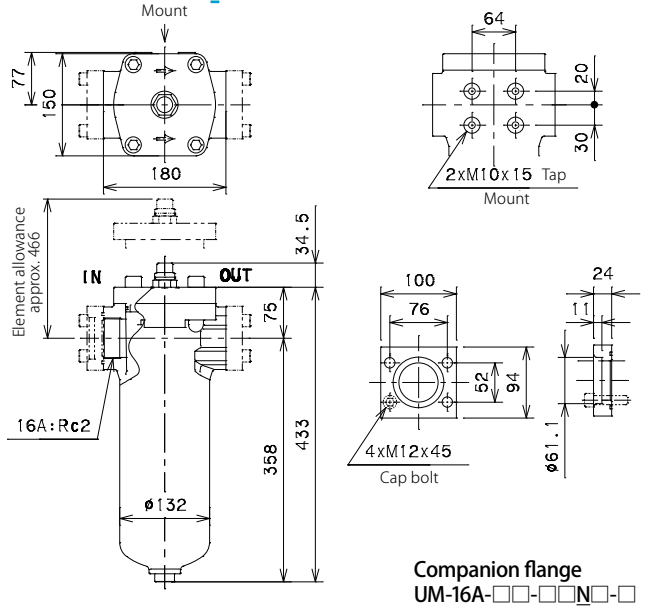
**UM-06,08-□□-□□□□-□**



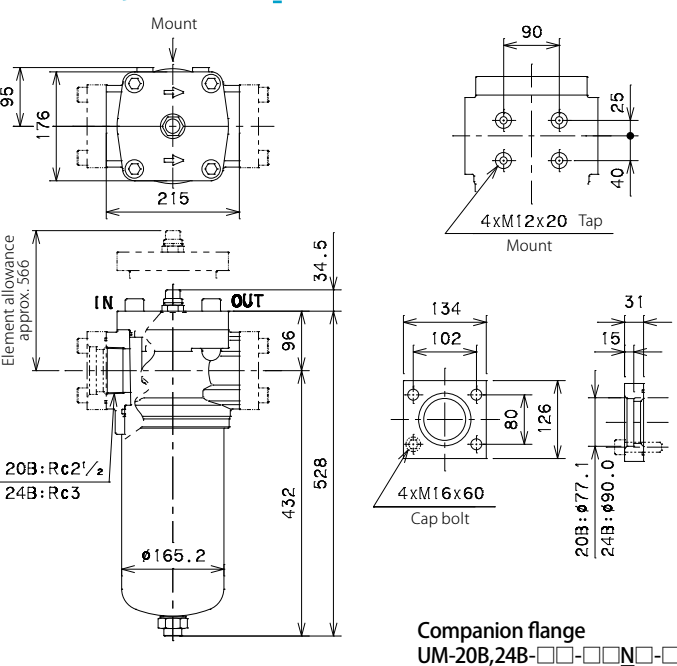
**UM-10,12-□□-□□□□-□**



**UM-16A-□□-□□□□-□**

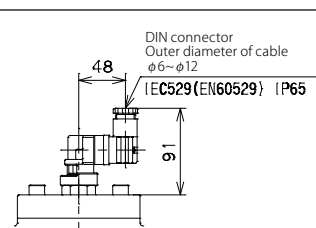


**UM-20B,24B-□□-□□□□-□**



**Differential pressure type indicator part**

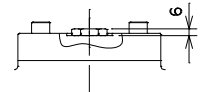
\* Common at all size



\* Element allowance should be +60mm.

**E,D: Electric contact type indicator**

UM-□□-□□-E,D□□□□-□



**Closing plug**

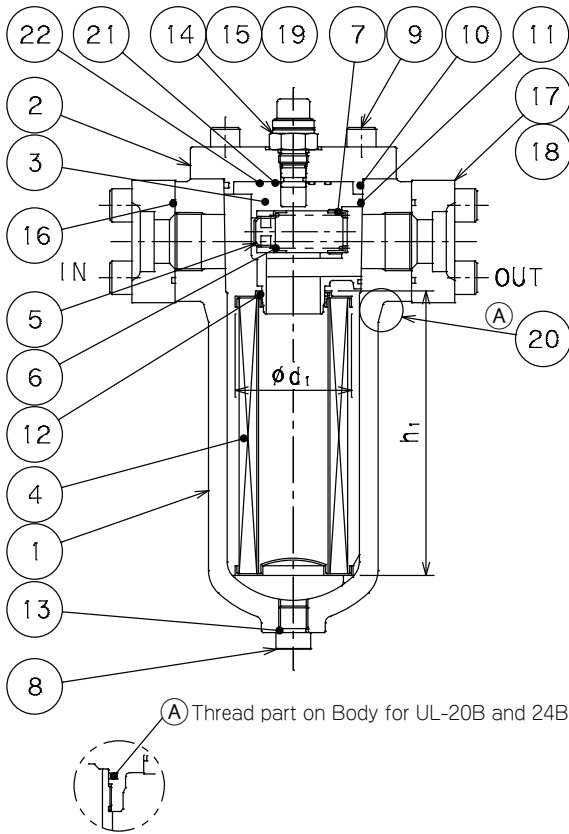
UM-□□-□□-□□□□-□

Model code	Working pressure(MPa)		Electric signal
	Visual observation signal	Caution	
IA-3	0.2	0.3	/
EA-3	0.2	0.3	
EA-3D	0.2	0.3	0.3

<Micro switch specification>

Model code	Rated capacity	Contact diagram : 1C
EA-3	Resistance load	
	Inductive load	
EA-3D	Micro capacity	

CROSS SECTION



PARTS LIST

No.	Item	Qty
1	Body	1
2	Cover	1
3	Inlet	1
4	Element	1
5	Relief valve	1
6	Spring	1
7	Spring holder	1
8	Drain plug	1
9	Cap bolt	4
10	O-ring	1
11	O-ring	1
12	O-ring	1
13	O-ring	1
14	O-ring	1
15	O-ring	1
16	O-ring	2
17	Companion flange	2
18	Cap bolt	8
19	Indicator	1
20	O-ring	1
21	O-ring	1
22	O-ring	1

ELEMENT SIZE

Element Model code	Size(mm)		Weight*1 (kg)
	φ d <sub>1</sub>	h <sub>1</sub>	
P-UM-03,04	62.2	85.3	0.19
P-UM-06,08		155.3	0.29
P-UM-10,12	82.2	204.5	0.63
P-UM-16A	102.2	254.5	1.13
P-UM-20B,24B	124.0	304.5	1.85

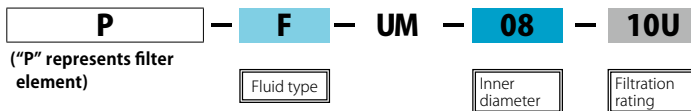
\* Common to UL,UM,UH

SEALING PARTS LIST

No.	10	11	12	13	14	15	16	20	21	22	Item code of sealing parts set *3			
Standard*2	JIS B2401 1A			JIS B2401 1B	JIS B2401 1A			Material	SP No.: 10 ~ 13	SA No.: 10 ~ 15, 20 ~ 22	SA-N No.: 10 ~ 16, 20 ~ 22			
UM-03,04	G70	G30	P32	P14	P18	P14	G30	G40	G40	G40	NBR	SSF000083	SSF000075	SSF000079
UM-06,08		G40					G40				NBR	SSF000084	SSF000076	SSF000080
UM-10,12	G95	G55	G45	P18	P14	G55	G25	G45	G45	NBR	SSF000085	SSF000077	SSF000081	
UM-16A	G110	G65	G60			G70				NBR	SSF000073	SSF000063	SSF000068	
UM-20B,24B	G135	G95	G80	P18	P14	G100	G155	G30	G55	G45	NBR	SSF000074	SSF000064	SSF000069
						G155					G30	G55	FKM	SSF000441

MODEL CODE OF SPARE PARTS

Replacement element (Model code example)

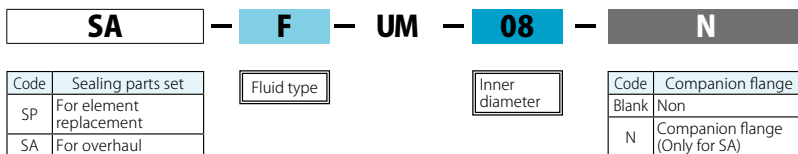


★ Model code of replacement element exists two types: “Individual code” and “Common code”, however it represents same product.

“Individual code”: Used in drawings and nameplate as shown in <Model code example>.

“Common code”: Used in vouchers and tag Refer to [Spare Element List] on P.152 for “Common code”.

Sealing parts set (Model code example)



★ Refer to the [MODEL CODE] table on the previous page for code selection.

\* 1 Weight of “Paper” element. Refer to the pages of UM and UH model for element weight with other material. element. \* 2 Standard for NBR. For other material, conform to the standard. \* 3 Sealing parts are available as “Sealing parts set” only. We do not provide single part individually.