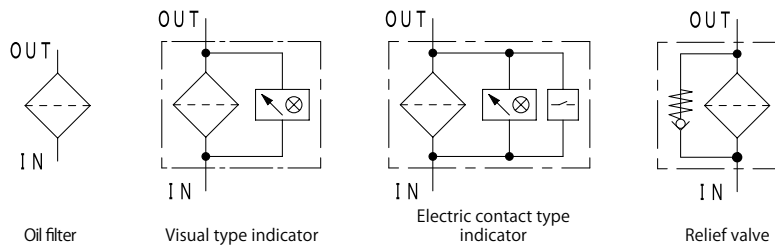


L-type Bypass Filter



Characteristics

- Best for bypass filter because of element with large filtration area
- Element size is selectable depending on flow rate and contaminant amount
- Pipe connection type is "flange" (companion flange is included)
- Clogging indicator and relief valve are selectable as an option



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

SPECIFICATION

Max working pressure	MPa	3.0
Working temperature	Standard	°C -10 ~ 90
	High temperature *1	°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	12-4	12-6	12-10	16-4	16-6	16-10
Standard flow rate ☆	ℓ /min 450	500	600	450	500	600
Main material	Upper cover	FCD				
	Lower cover	FCD				
	Shell	STKM, SS				
Coating	Protective film treatment					
Weight	kg 30	38	57	30	38	57

☆ Standard flow rate is estimated by the condition of density: 0.86, kinematic viscosity: 32mm²/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〉

F - LCN - **12** - **4** - **3C** - **E V**
① ②

Code	Fluid type
Blank	Mineral oil
F	Phosphate ester fluid
G	Water glycol fluid
C	Fatty ester fluid
W	High water base fluid
R	Refrigerant oil*2
S	Fuel (Kerosene, Gas oil, Diesel oil)
B	Brake fluid

Code	Inner diameter
12	40A
16	50A

Code	Case length
	4
	6
	10

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

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

Code	Option
Blank	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

FLOW RATE GRAPH

Condition

Fluid type : ISO VG32
Oil temperature: 40°C

(Density: 0.86,
Kinematic
viscosity: 32mm²/s)

How to calculate of pressure drop

• Estimate pressure drop of filter assembly by following equation:

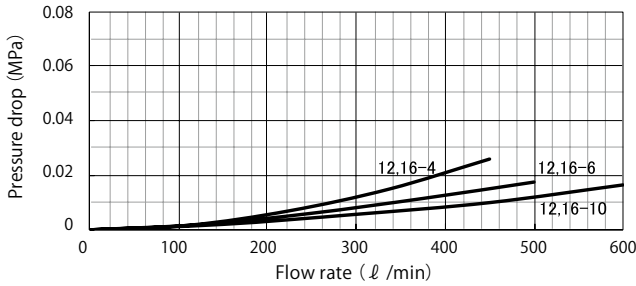
$$\text{Pressure drop of filter assembly} = \text{① Pressure drop of filter housing} + \text{② Pressure drop of filter element}$$

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

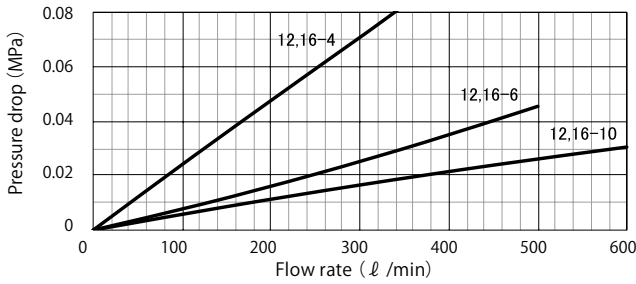
$$\begin{aligned} \text{Pressure drop of filter housing} &= \frac{\text{Fluid density}}{0.86} \times \text{Pressure drop of filter housing at density of 0.86} \\ \text{Pressure drop of filter element} &= \frac{\text{Fluid Density}}{0.86} \times \frac{\text{Kinematic viscosity}}{32} \times \text{Pressure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

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

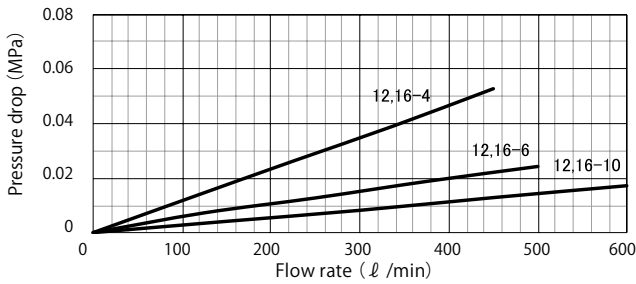
① Pressure drop of filter housing



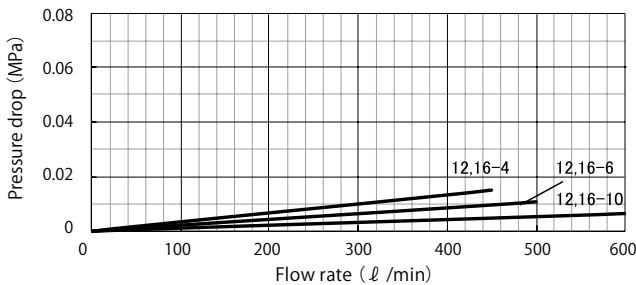
② Pressure drop of filter element



3C
3 μm



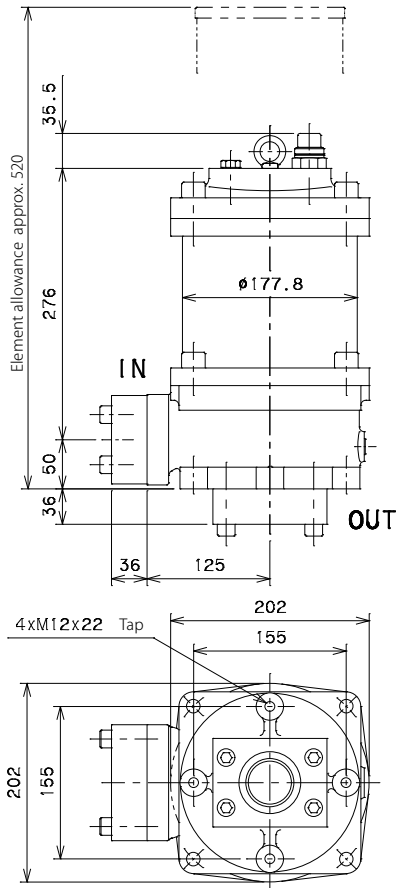
8C
8 μm



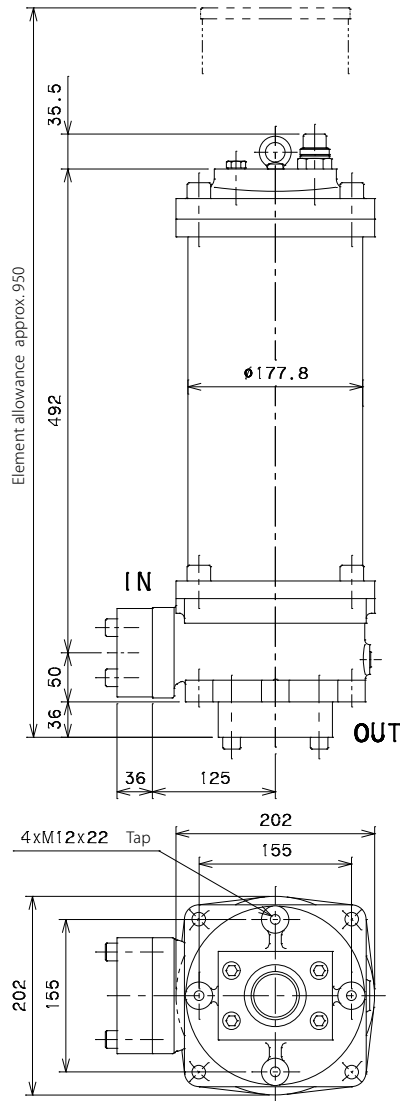
10U
10 μm

LCN-12,16-4-□□-I□

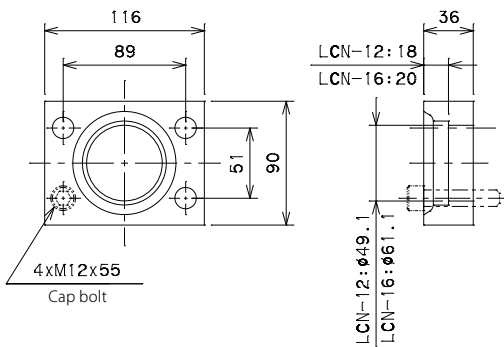
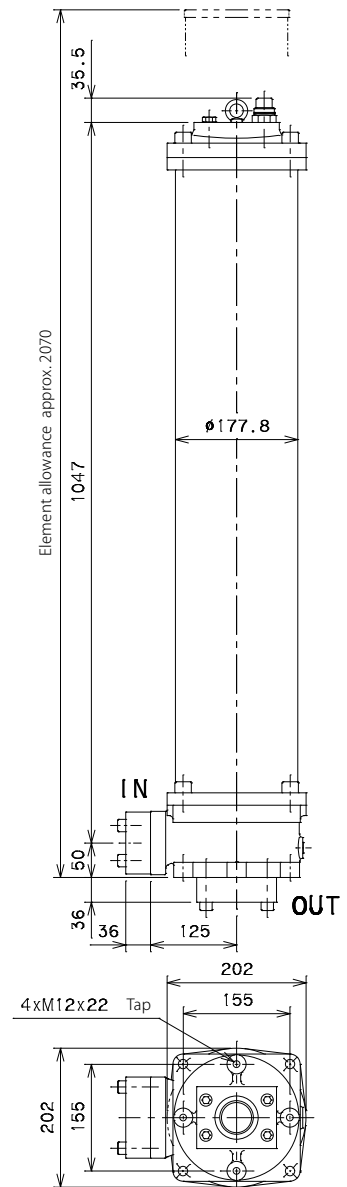
I : Visual type indicator



LCN-12,16-6-□□-I□

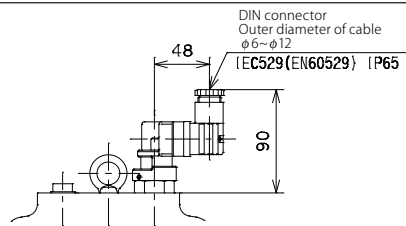


LCN-12,16-10-□□-I□



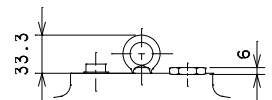
Companion flange

Differential pressure type indicator part * Common at all size



E,D: Electric contact type indicator LCN-□□-□□-E□□

Closing plug LCN-□□-□□-□□-□

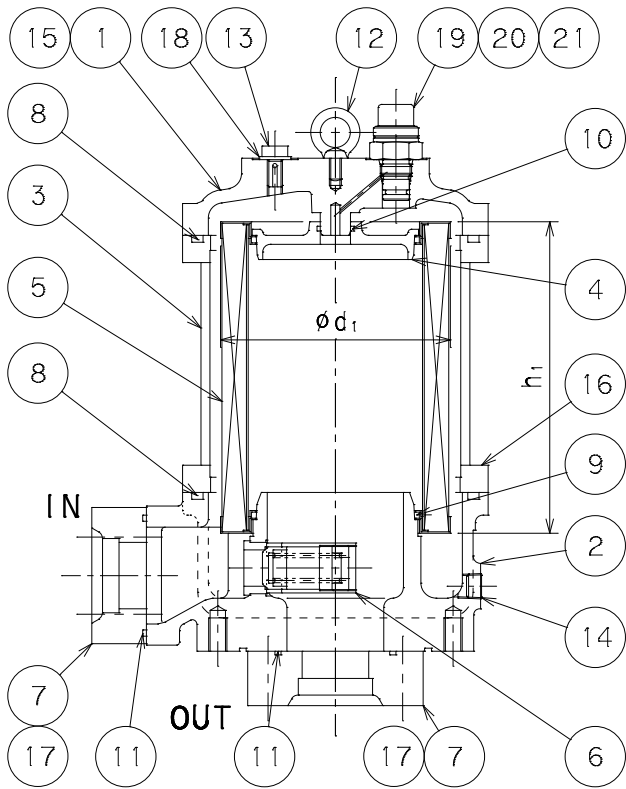


Model code	Working pressure(MPa)		Electric signal
	Visual observation signal	Caution	
IA-3	0.2	0.3	/
EA-3	0.2	0.3	
EA-3D	0.2	0.3	0.3

(Micro switch specification)

Model code	Rated capacity	Contact diagram : 1C	
EA-3	Resistance load		
			3A,250V AC 3A,30V DC
EA-3D	Inductive load		2A,250V AC 2A,30V DC
	Micro capacity		100mA,125V AC 100mA,30V DC

CROSS SECTION



PARTS LIST

No.	Item	Qty
1	Upper cover	1
2	Lower cover	1
3	Case	1
4	Element holder	1
5	Element	1
6	Relief valve	1
7	Companion flange	2
8	O-ring	2
9	O-ring	2
10	O-ring	1
11	O-ring	2
12	Eye bolt	1
13	Air vent bolt	1
14	Drain plug	1
15	Cap bolt	4
16	Cap bolt	4
17	Cap bolt	8
18	Seal washer	1
19	Indicator	1
20	O-ring	1
21	O-ring	1

ELEMENT SIZE

Element Model code	Size(mm)		Weight*1 (kg)
	φ d ₁	h ₁	
P-LCN-4	152	206	1.53
P-LCN-6		426	2.49
P-LCN-10		981	5.60

SEALING PARTS LIST

No.	8	9	10	11	18	20	21	Item code of sealing parts set*3		
Standard*2	JIS B2401 1A	AS568	JIS B2401 1A	JIS B2401 1A	Seal washer	JIS B2401 1B	JIS B2401 1A	Material	SP No.: 8*4~10,18	SA No.: 8~11, 18, 20, 21
Model code										
LCN-12,16	G180	243	P20	G75	t3xφ17/φ10.5	P18	P14	NBR	SSF000157	SSF000156
								FKM	SSF000512	SSF000511

MODEL CODE OF SPARE PARTS

Replacement element (Model code example)

P	—	F	—	LCN	—	4	—	3C
("P" represents filter element)		Fluid type		Case length		Filtration rating		
				Code				
				4				
				6				
				10				

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

Sealing parts set (Model code example)

SA	—	F	—	LCN	—	12
Code	Sealing parts set	Fluid type		Inner diameter		
SP	For element replacement					
SA	For overhaul					

* 1 Weight of "Paper" 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. * 4 Part #8 O-ring is included only 1 pc for the upper cover side.