# AK model

Easy Maintenance Filter by cleaning handle

Characteristics

- ● **Element cleaning by handle rotation on the top**
- ● **Best for a system that filter is often clogged with large amount of particle**
- ● **Wedge wire element (10 – 50 μm) is available (MODEL: CFK *)**
- ● **Pipe connection type is "Rc threaded" and "flange"**

＊ CFK is a special model. Please ask us since price and delivery are different with AK type.

OUT

IN
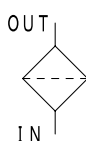
Oil filter

SPECIFICATION

Max working pressure		MPa	1.0
Working temperature	Standard	℃	–10 ～ 90
	High temperature *1	℃	–10 ～ 150
Indicator working pressure		MPa	Not available
Cracking pressure		MPa	Not available
Allowable differential pressure of filter element		MPa	0.7
Flow direction/Extract direction of filter element			OUT → IN / Downward

Inner diameter		04	06	08	10	12	16
Standard flow rate ☆　　　ℓ /min		45	60	135	170	330	350
Main material	Body	ADC				AC	
	Lower cover	ADC		Steel plate			
Coating	Body	Non-coating					
	Lower cover	Non-coating		Protective film treatment			
Weight *2　　　　　　　　　kg		0.8		2.0		4.7	

☆ Standard flow rate is estimated by the condition of density: 0.86, kinematic viscosity: $32mm^2$/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	–	AK	–	08	–	150K	–	N

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	
04	Rc 1/2	(15A)
06	Rc 3/4	(20A)
08	Rc1	(25A)
10	Rc1 1/4	(32A)
12	Rc1 1/2	(40A)
16	Rc2	(50A)

Code	Filtration rating	
Notch wire (Dimple wire)		
40UK	40 μm	
50UK	50 μm	
200K	200Mesh	
150K	150Mesh	
100K	100Mesh	
60K	60Mesh	

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

Code	Option
Companion flange	
Blank	Non
N	Companion flange *3

＊1　Sealing parts: FKM　＊2　Weight without companion flange　＊3　Companion flange is not available for Inner diameter of 04 and 06

FLOW RATE GRAPH

■ Condition

| Fluid type : ISO VG32 |
| Oil temperature：40℃ |
| (Density: 0.86, Kinematic viscosity: 32mm²/s) |

■ How to calculate of pressure drop

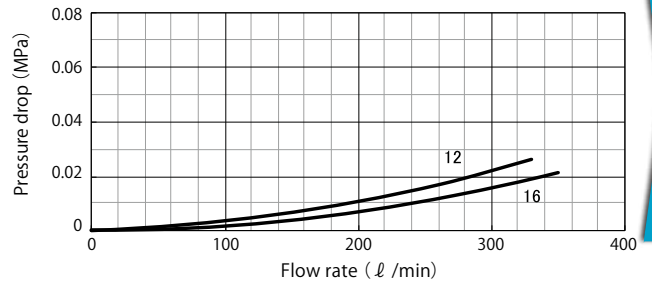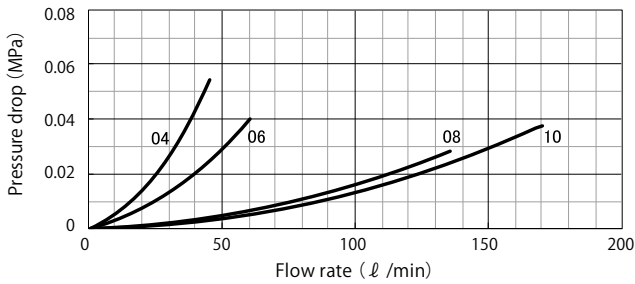・Estimate pressure drop of filter assembly by following equation:

| **Pressure drop of filter assembly = ① Pressure drop of filter housing + ② Pressure drop of filter element** |

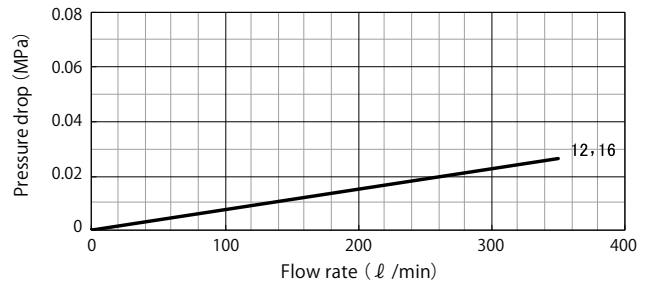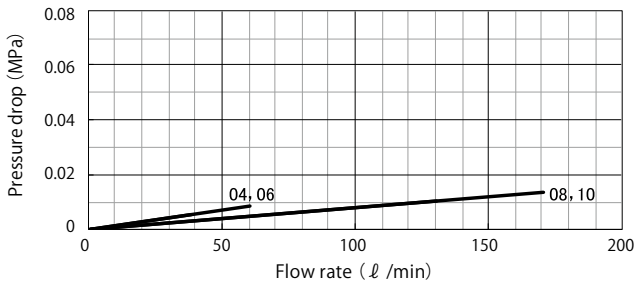・Estimate pressure drop of filter assembly by following equation if required condition is different:

$$\text{Pressure drop of filter housing} = \frac{\text{Fluid density}}{0.86} \times \text{Pressure drop of filter housing at density of 0.86}$$

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

★ 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
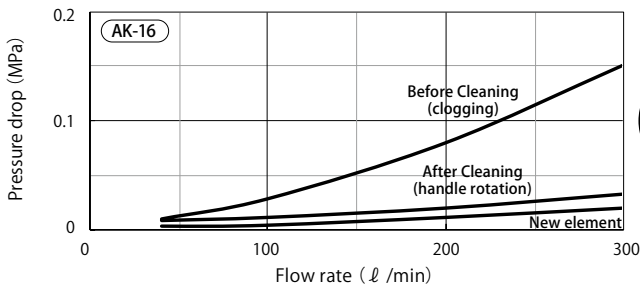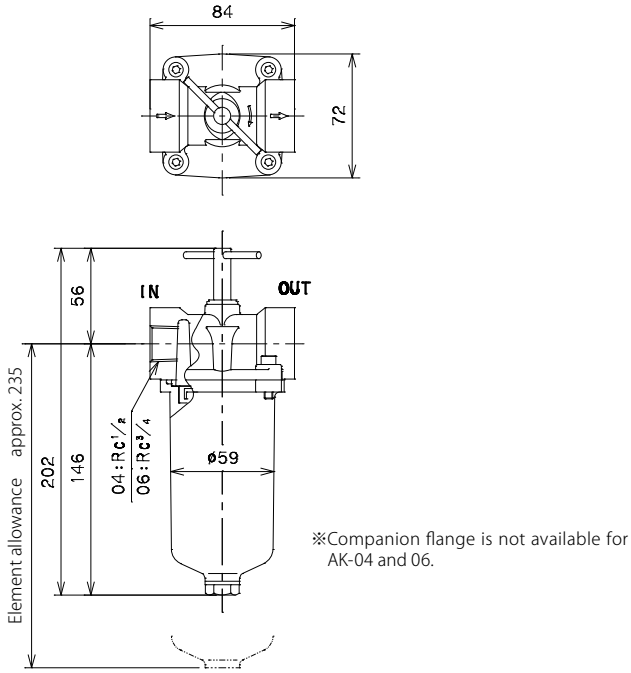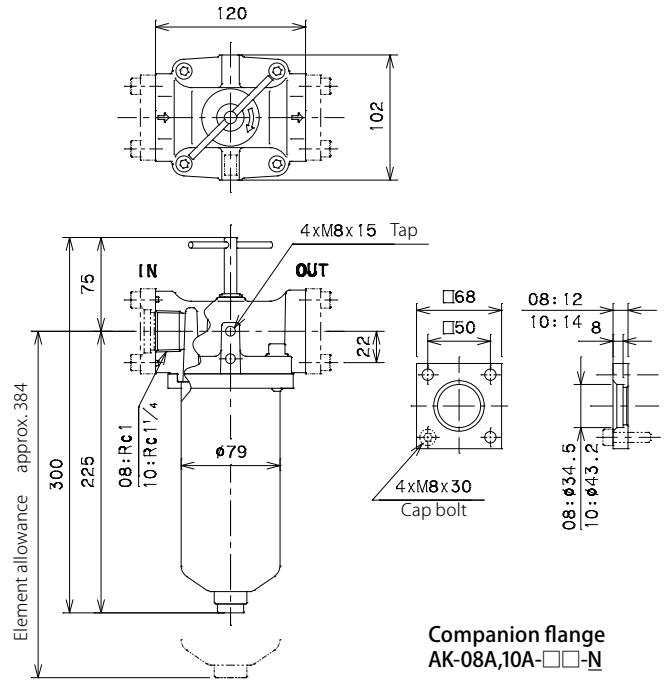

② Pressure drop of filter element

150K
150Mesh

③ Pressure drop of filter element "Cleaning Effect"

AK-16

Before Cleaning (clogging)

After Cleaning (handle rotation)

New element

150K
150Mesh

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AK-04,06 -□□ *1

84

72

56

Element allowance   approx. 235

202

146

IN   OUT

04 : Rc¹/₂
06 : Rc³/₄

ø59

※Companion flange is not available for AK-04 and 06.

AK-08,10 -□□

120

102

4×M8×15 Tap

75

22

IN   OUT

Element allowance   approx. 384

300

225

08 : Rc1
10 : Rc1¹/₄

ø79

□68
□50

08 : 12
10 : 14

8

4×M8×30
Cap bolt

08 : ø34.5
10 : ø43.2

Companion flange
AK-08A,10A-□□-N

AK-12,16 -□□

160

140

4×M10×20 Tap

85

25

IN   OUT

Element allowance   approx. 427

341

256

12 : Rc1¹/₂
16 : Rc2

ø110

□86
□64

18

10

4×M10×40
Cap bolt

12 : ø49.1
16 : ø61.1

Companion flange
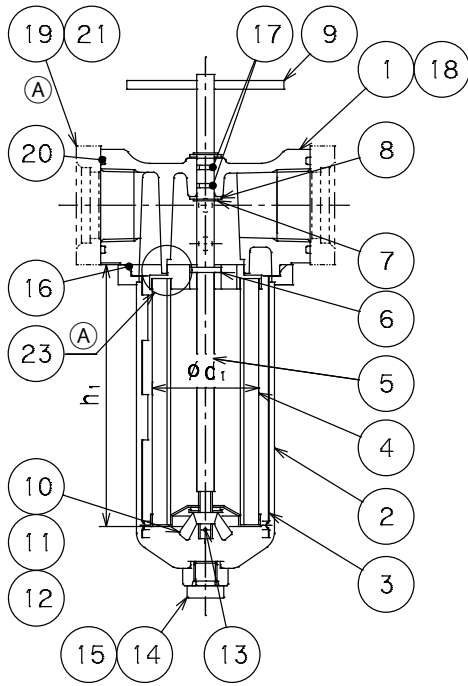**AK-12A,16A-□□-N**

※ 1   Companion flange is not available for connection diameter of 04 and 06

CROSS SECTION

Ⓐ O-ring groove on companion flange for AK-12 and 16.

PARTS LIST

No.	Item	Qty
1	Body	1
2	Lower cover	1
3	Scraper	1
4	Element	1
5	Center rod	1
6	Spring pin	1
7	Stop ring	2
8	Washer	2
9	Handle	1
10	Wing nut	1
11	Washer	1
12	Packing	1
13	Snap pin	1
14	Drain plug	1
15	O-ring	1
16	O-ring	1
17	O-ring	2
18	Cap bolt	4
19	Companion flange	2
20	O-ring	2
21	Cap bolt	8

ELEMENT SIZE

Element Model code	Size(mm) ϕd_1	Size(mm) h_1	Weight (kg)
P-AK-04,06	44	90	0.1
P-AK-08,10	64	150	0.25
P-AK-12,16	84	166	0.52

SEALING PARTS LIST

No. Model code	12	15	16	17	20	Material	Item code of sealing parts set [*2] SP No.: 12,15,16	SA No.: 12,15～17	SA-N No.: 12,15～17,20
Standard[*1]	Special packing	JIS B2401 1A	JIS B2401 1A		JIS B2401 1A				
AK-04,06	t2×ϕ14 /ϕ6.5	Seal washer	G60	P7		NBR	SSF000163	SSF000158	
						FKM	SSF000518	SSF000513	
AK-08,10	t2×ϕ17 /ϕ8.5	P11	G85	P7	G50	NBR	SSF000164	SSF000159	SSF000161
						FKM	SSF000519	SSF000514	SSF000516
AK-12,16	t2×ϕ17 /ϕ8.5	P14	G105	P7	G70	NBR	SSF000165	SSF000160	SSF000162
						FKM	SSF000520	SSF000515	SSF000517

MODEL CODE OF SPARE PARTS

Replacement element 〈**Model code example**〉

P	–	F	AK	08	–	150K

("P" represents filter element)
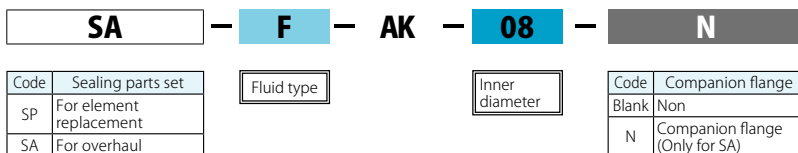
Fluid type — Inner diameter — Filtration rating

★ 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**〉

SA	–	F	AK	–	08	–	N

Code	Sealing parts set
SP	For element replacement
SA	For overhaul

Fluid type — Inner diameter

Code	Companion flange
Blank	Non
N	Companion flange (Only for SA)

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

※1 Standard for NBR. For other material, conform to the standard.
※2 Sealing parts are available as "Sealing parts set" only. We do not provide single part individually.