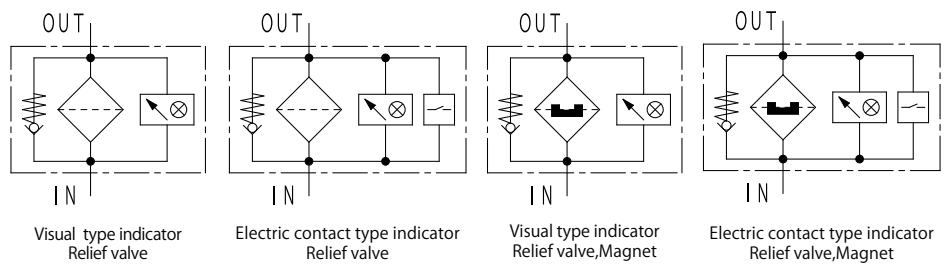


Signature Model of Case type Suction Filter



Characteristics

- Special structure to prevent air pocket inside filter
- Special structure to prevent flow-out of collected particles when replacing element
- Light filter housing of aluminum alloy
- Clogging indicator*1 and relief valve are included in standard model
- Magnet is installable for magnetic particle removal (option)
- Pipe connection type is "flange" for standard model (option: Rc threaded type companion flange)



SPECIFICATION

Max working pressure	MPa	0.5											
Working temperature	Standard	°C	-10 ~ 90										
	High temperature*2	°C	-10 ~ 130										
Indicator working pressure	MPa	0.02											
Cracking pressure	MPa	0.023											
Allowable differential pressure of filter element	MPa	0.15											
Flow direction/Extract direction of filter element		IN → OUT / Upward											
Inner diameter			03A	04A	06A	08A	10A	12A	16A	20B	24B	28A	32A
Standard flow rate ☆			20	36	70	120	240	330	490	670	830	1070	1350
Main material	Body	AC											
	Upper cover	ADC										AC	
Coating		Non-coating											
Weight			3.0	5.0	6.0	8.5	11.0	20.0					

☆ Standard flow rate is estimated by the condition of density: 0.86, kinematic viscosity: 32mm²/s, filtration rating: 150W, pressure drop: lower than 0.05MPa.
(Since it is adjusted by characteristic of each product, value can be different in some cases.)
★ Size : inner diameter 125A and 150A are available(built-to-order)

MODEL CODE

(Model code example)

F - **VN** - **08A** - **100W** - **E M P**
① ② ③

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
03A	10A
04A	15A
06A	20A
08A	25A
10A	32A
12A	40A
16A	50A
20B	65A
24B	80A
28A	90A
32A	100A

Code	Filtration rating
Wire gauze	
60W	60Mesh
100W	100Mesh
150W	150Mesh
200W	200Mesh

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

Code	Option
① Indicator	
Blank	Closing plug
I	Visual type (Standard)
E	Electric contact type
D	Electric contact type (Micro capacity)
② Magnet	
Blank	Non
M	Magnet
③ Companion flange	
Blank	Weld type (Standard)
P	Rc threaded type

* 1 Visual type indicator is installed for standard model. Electric contact type indicator is selectable as an option.
* 2 Sealing parts: FKM, visual type indicator is available (Max oil temperature is electric contact type : 90°C)

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:

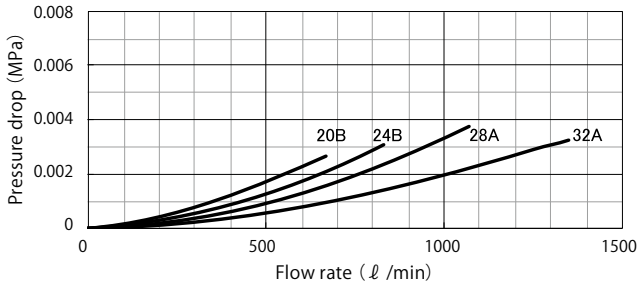
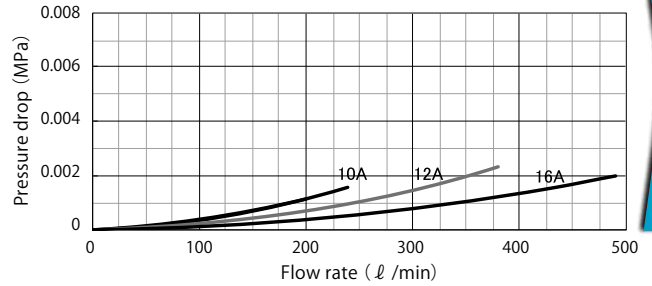
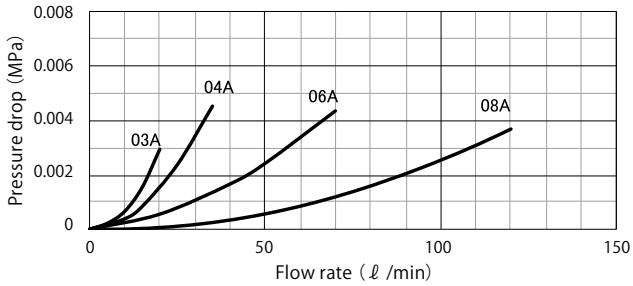
$$\text{Pressure drop of filter assembly} = \text{① Pressure drop of filter housing} + \text{② Pressure drop of filter element}$$

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

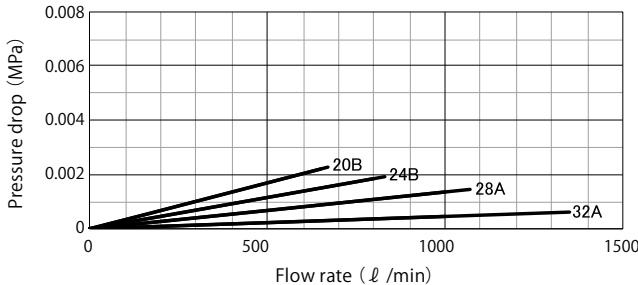
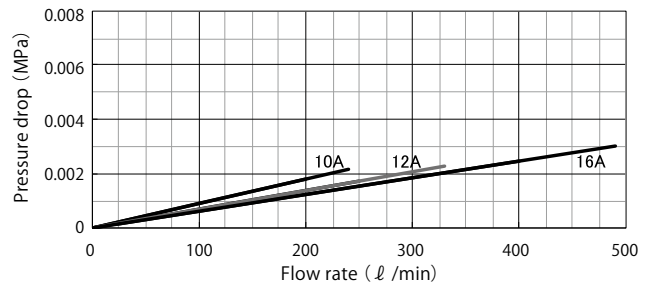
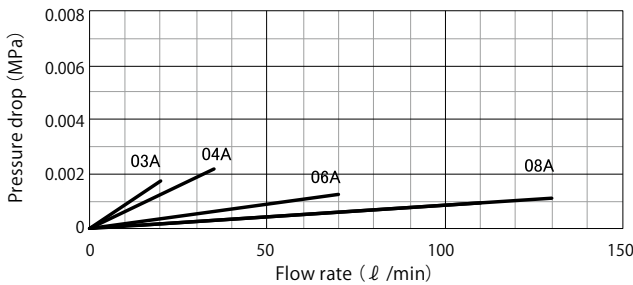
$$\begin{aligned} \text{Pressure drop of filter housing} &= \frac{\text{Fluid density}}{0.86} \times \text{Pressure drop of filter housing at density of 0.86} \\ \text{Pressure drop of filter element} &= \frac{\text{Fluid Density}}{0.86} \times \frac{\text{Kinematic viscosity}}{32} \times \text{Pressure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

★ 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

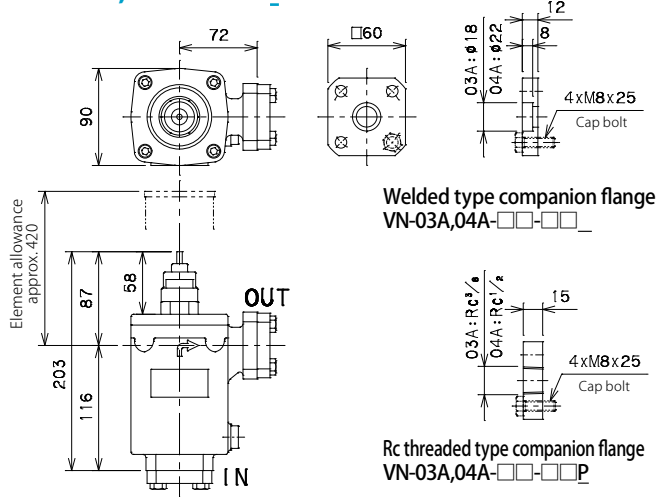


② Pressure drop of filter element

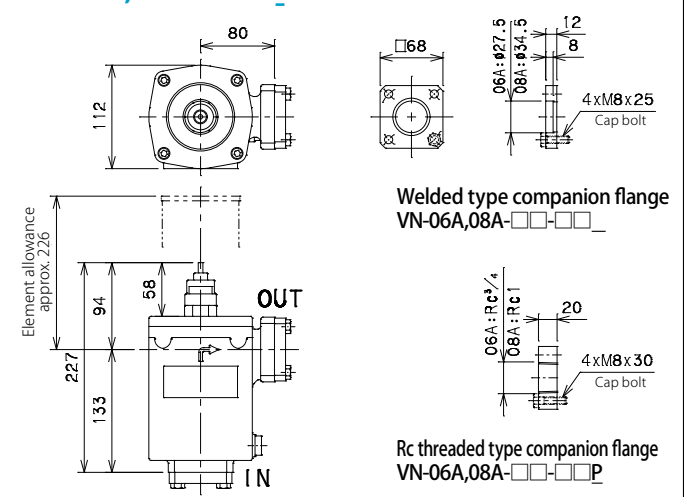


150W
150Mesh

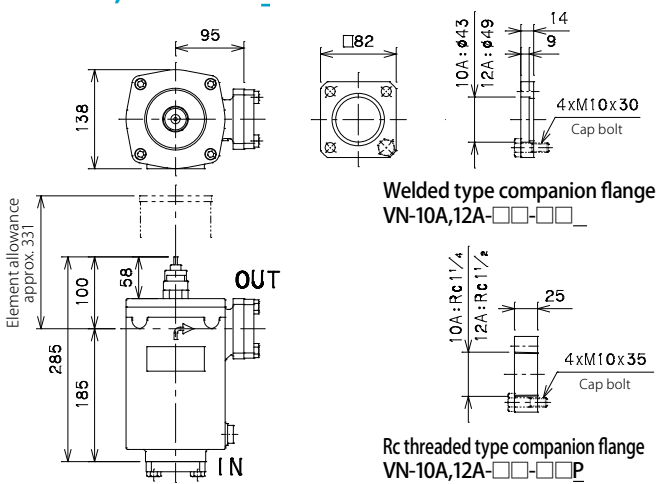
VN-03A,04A-□□-I□□ I: Visual type indicator



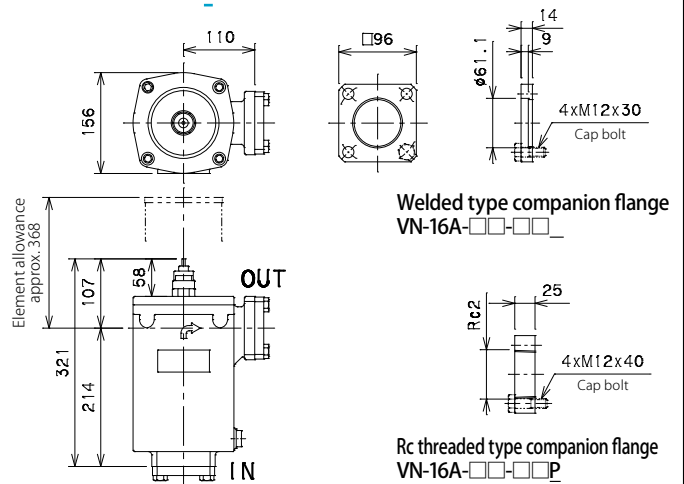
VN-06A,08A-□□-I□□



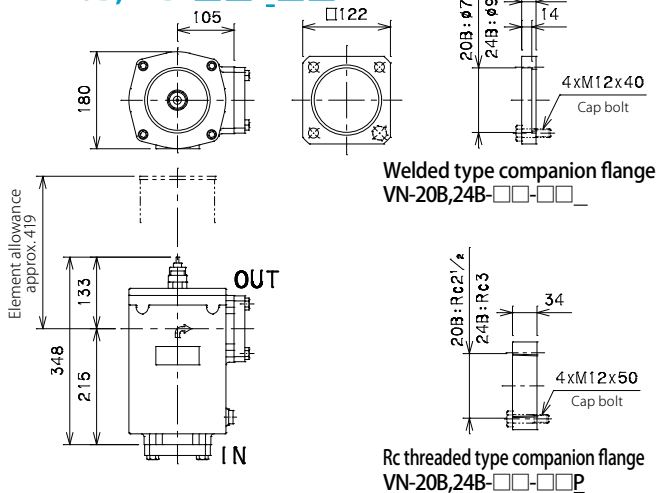
VN-10A,12A-□□-I□□



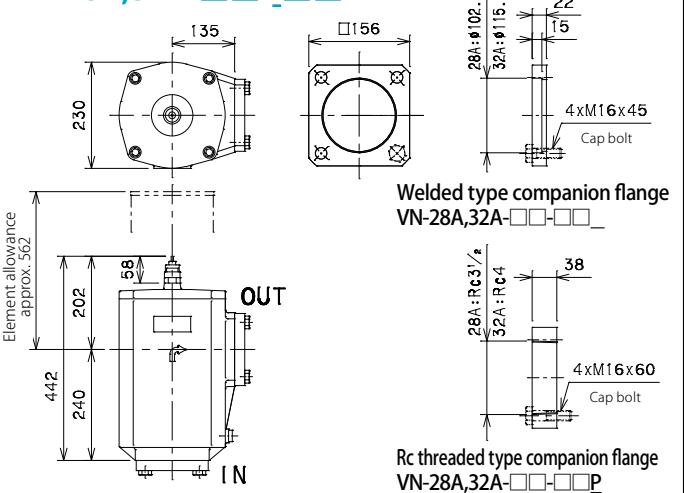
VN-16A-□□-I□□



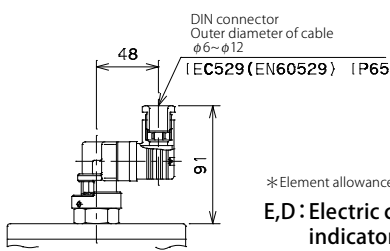
VN-20B,24B-□□-I□□



VN-28A,32A-□□-I□□



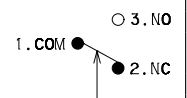
Differential pressure type indicator part
* Common at all size



Model code	Working pressure (MPa)		Electric signal
	Visual observation signal	Caution	
ID-02 ^{*1}	0.012	0.02	
ED-02	0.012	0.02	0.02
ED-02D	0.012	0.02	0.02

<Micro switch specification>

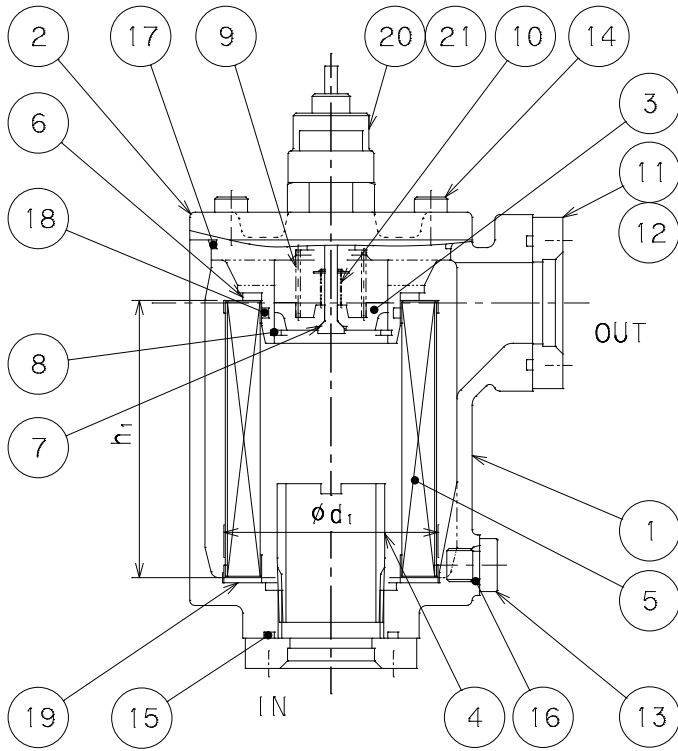
Model code	Rated capacity	Contact diagram : 1C
ED-02	Resistance load	3A,250V AC 3A,30V DC
	Inductive load	2A,250V AC 2A,30V DC
ED-02D	Micro capacity	100mA,125V AC 100mA,30V DC



* 1 Visual type indicator (ID-02) is manual reset type. Please reset clogging signal after indicator activation.

CROSS SECTION

PARTS LIST



No.	Item	Qty
1	Body	1
2	Upper cover	1
3	Valve	1
4	Inner tube	1
5	Element	1
6	Wave washer	1
7	Guide rod	1
8	Stop ring	1
9	Spring	1
10	Spring	1
11	Companion flange	2
12	Bolt	8
13	Drain plug	1
14	Cap bolt	4
15	O-ring	2
16	O-ring	1
17	O-ring	1
18	O-ring	1
19	Packing	1
20	Indicator	1
21	O-ring	1

ELEMENT SIZE

Element Model code	Size(mm)		Weight (kg)
	φ d _i	h ₁	
P-VN-03A,04A	65	90	0.20
P-VN-06A,08A	85	110	0.28
P-VN-10A,12A	100	160	0.50
P-VN-16A	120	180	0.70
P-VN-20B,24B	140	200	0.88
P-VN-28A,32A	180	260	1.37

SEALING PARTS LIST

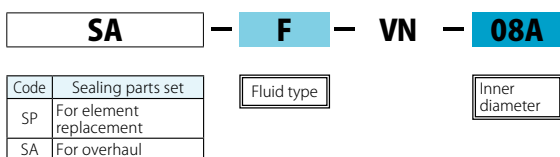
No.	15	16	17	18	19	21	Item code of sealing parts set *2		
Standard *1	JIS B2401 1A				Special packing	JIS B2401 1A	Material	SP No. : 16 ~ 19	SA No. : 15 ~ 19, 21
Model code									
VN-03A,04A	G30	P11	G65	G35	t2xφ65/φ40	P18	NBR	SSF000007	SSF000001
VN-06A,08A	G45		G90	G50	t2xφ85/φ55		FKM	SSF000374	SSF000368
VN-10A,12A	G55	P14	G100	G65	t2xφ100/φ70		NBR	SSF000008	SSF000002
VN-16A	G70		G125	G80	t2xφ120/φ85		FKM	SSF000375	SSF000369
VN-20B,24B	G95		G145	G100	t2xφ140/φ105		NBR	SSF000009	SSF000003
VN-28A,32A	G125		G180	G140	t2xφ180/φ145		FKM	SSF000376	SSF000370
							NBR	SSF000010	SSF000004
							FKM	SSF000377	SSF000371
							NBR	SSF000011	SSF000005
							FKM	SSF000378	SSF000372
							NBR	SSF000012	SSF000006
							FKM	SSF000379	SSF000373

MODEL CODE OF SPARE PARTS

Replacement element (Model code example)



Sealing parts set (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".

★ 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.