

Alfa Laval LKVF

Filters and strainers

Introduction

The Alfa Laval LKVF Coarse Strainer is a type of filter used to remove coarse particles from liquids from 1 to 3 mm.

Application

The Alfa Laval LKVF Coarse Strainer is designed to remove coarse particles from the liquid flow to protect pumps or other sensitive equipment from damage. It is used on a wide range of applications across the dairy, food, beverage and brewery industries.

Benefits

- Safeguards membrane filtration, pumps and other equipment from damage
- Easy to install and clean
- High durability
- Flexible filter element selection

Standard design

The LKVF Coarse Strainer consists of a housing with inlet and outlet. Inside the housing, the filter element is fixed to allow the flow to be forced through it. This element consists of a perforated tube which is welded to a flange with a handle. This flange fits a ferrule on the casing to which it is clamped.

Working principle

The recommended flow direction is to allow the liquid to enter the inlet (A). The particles strained collect inside the filter element which facilitates cleaning, especially if the handle points downwards or if the strainer is installed in a horizontal position. The liquid leaves the strainer through the side outlet (B).

However, it is possible to allow the liquid to enter the inlet (B) since the perforated tube is designed to withstand the pressure drop in both flow directions. The liquid leaves the strainer through the outlet (A). If side connection (B) is used as the inlet, then the maximum product pressure is 7 bar.



TECHNICAL DATA

Pressure

Max. product pressure (A=inlet):	1000 kPa (10 bar)
Max. product pressure (B=inlet):	700kPa (7 bar)
Min. product pressure:	Full vacuum

Temperature

Temperature range:	-10°C to 140°C (EPDM)
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Strainer area

25-38-51 mm:	430 cm ²
63.5-76.1 mm:	840 cm ²

PHYSICAL DATA

Materials

Product wetted steel parts:	Acid-resistant steel AISI 316
Other steel parts:	Stainless steel AISI 304
Seals:	EPDM rubber
Surface finish:	Semi bright
Material grades	Seal of nitrile (NBR) or PTFE

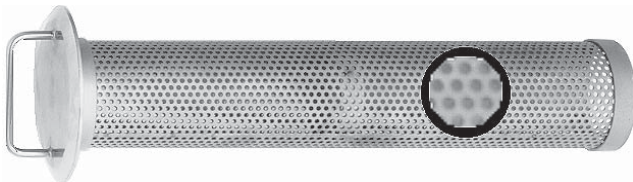
Sizes

25 mm, 38 mm, 51 mm, 63.5 mm and 76.1 mm.

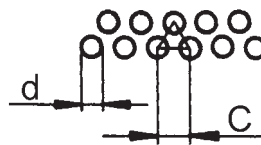
Strainer element perforation (mm)

d mm	C mm	Perforation
1	2.0	23%
2	3.5	30%
3	5.0	33%

Separate pressure drop/capacity diagrams are available on request.

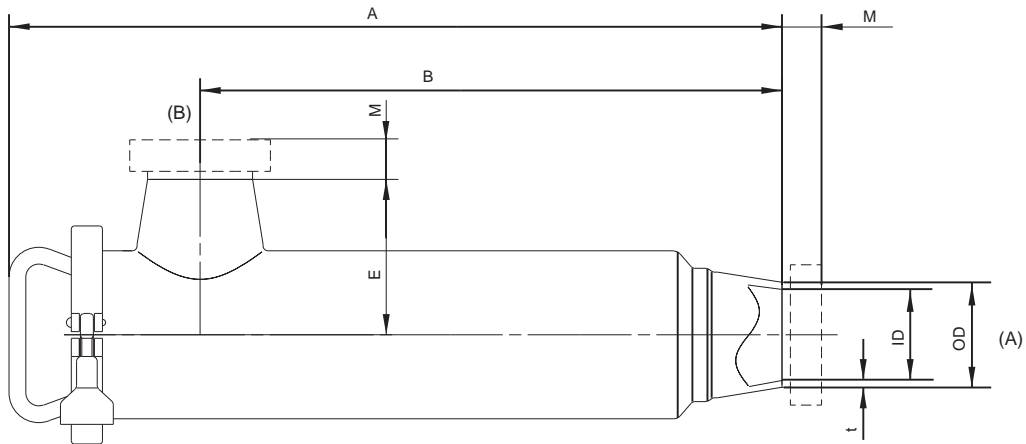


Filter element.



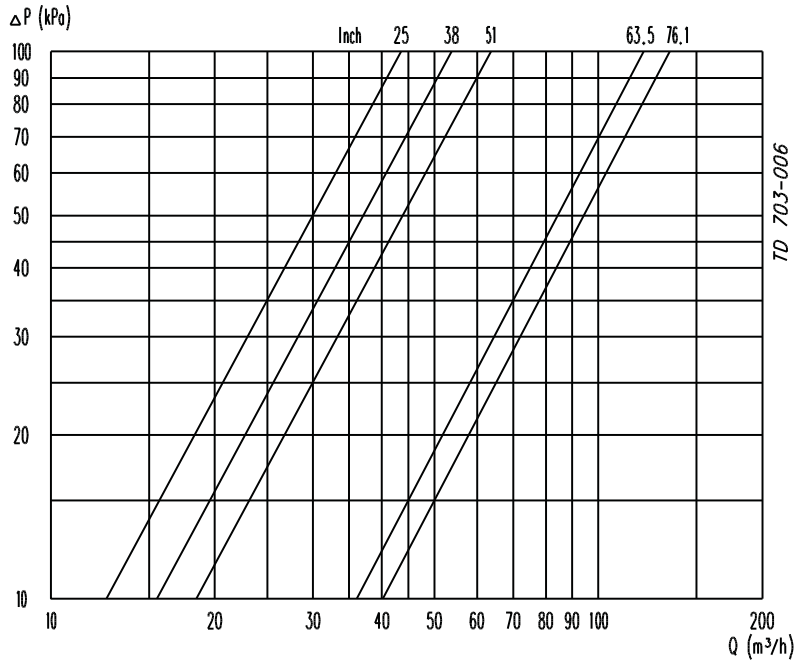
Dimensions (mm)

Size	25 mm	38 mm	51 mm	63.5 mm	76.1 mm
A	419	375	333	460	421
B	288	244	202	352	313
OD	25	38	51	63.5	76.1
ID	22.6	35.6	48.8	60.3	72.1
t	1.2	1.2	1.1	1.6	2
E	121	77	77	94	94
M/DS male	18.5	20	20	24	24
M/SMS male	15	20	20	24	24
M/ISO male	21.5	21.5	21.5	21.5	21.5
M/BS male	22	22	22	22	22
M/DIN male	22	22	22	25	30
M/ISO clamp	21.5	21.5	21.5	21.5	21.5
Weight (kg)	1.5	1.5	1.5	3.7	3.7



TD703-008

Pressure drop / capacity diagram



LKVF with $\varnothing 2$ mm holes in filter element. Medium: water (20°C).

Ordering

Please state the following when ordering:

- Size
- Connections if not welding ends
- Size of holes in straining element, 1, 2 or 3 mm
- Options

Alfa Laval LKSF

Filters and strainers

Introduction

The Alfa Laval LKSF Slot Strainer is a filter which separates solid matter from liquid that flows through it. The impurities are stopped by the filter element. When the filter is full of particles, it can be cleaned by removing the clamp and pulling out the filter element.

Application

The LKSF Slot Strainer is designed to fulfil basic filtration duties in hygienic applications across the dairy, food, beverage and brewery industries to protect equipment and product.

Benefits

- Fine filtration
- Easy to install
- Easy to clean
- High durability
- Flexible filter element selection

Standard design

The LKSF Slot Strainer consist of a housing in which the strainer element is fitted centred. There are two types of LKSF Slot Strainers: the LKSF-BL with housing in two parts and the LKSF-CL with housing in three parts for vertical installation.

To allow for quick dismantling for cleaning, the housing is assembled by means of clamps. The upper clamp ring has a wing nut for manual operation. The strainer element has direct access to the end cover with welded handle to facilitate dismantling when cleaning is required.

The strainer element is available from 53 µm to 4 mm. Various male parts are also available to attach the strainer to a process line.

Working principle

Type LKSF-BL: The product enters from the bottom. The filter element captures impurities. When the filter is full of particles, it can be cleaned by removing the clamp and pulling out the filter element. It is also possible to reverse the flow and flush out the impurities (backflush).

Type LKSF-CL: The product enters the filter from the side. Most of the impurities collect at the bottom and can be manually emptied during operation via a valve. Automatic discharge is also possible using two remote controlled valves at B. The upper valve is open during operation and the lower is closed. The impurities will collect between the two valves. Closing the upper valve and opening the lower one will empty the impurities with minimal product loss.

The filter can be cleaned as LKSF-BL. The degree of filtering can be altered by changing filter element. Strainer type LKSF-CL must always be installed vertically. The filtration degree may be immediately adjusted by changing the strainer element.



TECHNICAL DATA

Pressure

Max. working pressure. (20°C): 1000 kPa (10 bar)

Temperature

Temperature range: -10 to +140°C (EPDM)

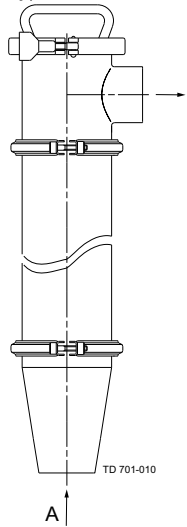
Strainer area: 1100 cm²

Max. Δp in flow direction: 1000 kPa (10 bar)

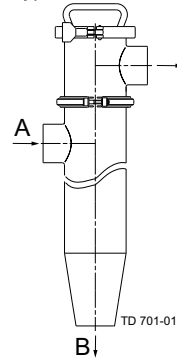
Capacity: 10-120 m³/h (water) at $\Delta p = 1$ bar

Separate pressure drop/capacity diagrams are available on request.

Type LKSF-BL



Type LKSF-CL



PHYSICAL DATA

Materials

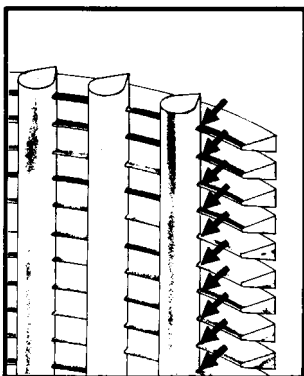
Product wetted steel parts: AISI 316

Other steel parts: AISI 304

Seals: EPDM rubber

Surface finish: Semi bright

The LKSF strainer element is welded at every intersection of vertical rod and surface wire



Ordering

When ordering please specify strainer element, type of male part and position. (See: Connection position).

Strainer elements - available slot sizes

Standard		Option	
74 µm		53 µm	595 µm
105 µm		63 µm	841 µm
177 µm		88 µm	1190 µm
500 µm		125 µm	1410 µm
707 µm		149 µm	1680 µm
1000 µm		210 µm	2380 µm
2000 µm		250 µm	2830 µm
		297 µm	3360 µm
		354 µm	4000 µm
		420 µm	

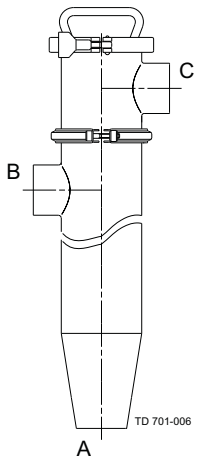
Separate pressure drop/capacity diagrams are available on request.

Additional length mm - for male parts (both types)

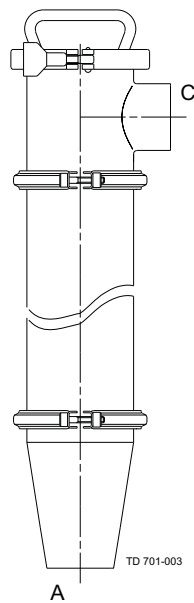
Size	25 mm	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm
DS	18.5	20.0	20.0	24.0	24.0	24.0
SMS	15.0	20.0	20.0	24.0	24.0	35.0
IDF	21.5	21.5	21.5	21.5	21.5	21.5
BS	22.2	22.2	22.2	22.5	22.2	27.0
Clamp	21.5	21.5	21.5	21.5	21.5	21.5
DIN	22.0	22.0	22.0	25.0	30.0	30.0

Separate pressure drop/capacity diagrams are available on request.

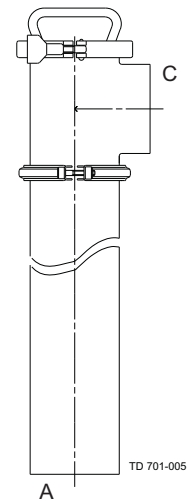
Connection Position



a. LKSF-CL



b. LKSF-BL
(25-76.1 mm)

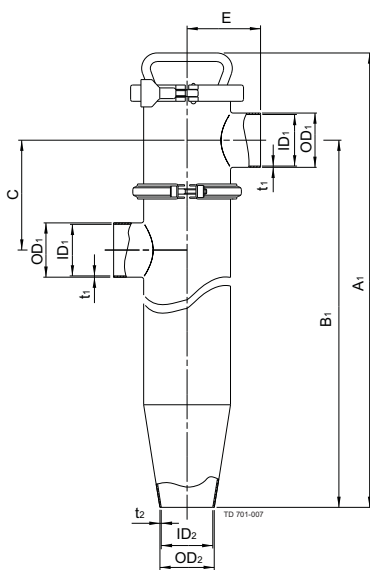


c. LKSF-BL
(101.6 mm)

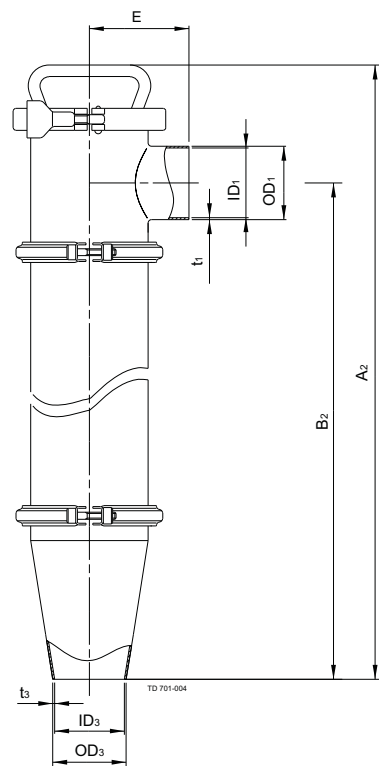
Dimensions (mm)

Size	25 mm	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm
A1	727	727	727	727	727	820
A2	852	808	766	727	688	693
B1	632.5	632.5	632.5	632.5	632.5	705
B2	756	712	670	631	592	583
C	130	130	130	130	130	150
OD ₁	25.4	38.1	50.8	63.5	76.2	101.6
ID ₁	22.2	34.9	47.6	60.3	73	97.6
t ₁	1.6	1.6	1.6	1.6	1.6	2
OD ₂	63.5	63.5	63.5	63.5	63.5	63.5
ID ₂	60.3	60.3	60.3	60.5	60.3	60.3
t ₂	1.6	1.6	1.6	1.6	1.6	1.6
OD ₃	25	38	51	36.5	76.1	101.6
ID ₃	22.6	35.6	47.8	60.3	72.1	97.6
t ₃	1.2	1.2	1.6	1.6	2	2
E	86	86	86	86	86	86
Weight (kg)	8.7	9.2	9.0	8.5	9.0	9.5

Separate pressure drop/capacity diagrams are available on request.



a. LKSF-CL



b. LKSF-BL

Alfa Laval LKIF in-line filter

Filters and strainers

Introduction

The Alfa Laval LKIF In-Line Filter is an in-line filter intended for use in process lines in hygienic applications. It provides a safe and economic method to remove particles from liquids in process flows. The filter can easily be removed for cleaning.

Application

The LKIF In-Line Filter is designed to remove particles and other impurities from product flows and to protect pumps and other sensitive equipment across the dairy, food, beverage, brewery, chemical and pharmaceutical industries.

Benefits

- Hygienic filtration
- Safe and economic method for removal of impurities
- Helps extend product shelf life
- Easy to clean

Standard design

The LKIF In-Line Filter consists of a perforated filter element with filter ring and seal rings. Optional clamp rings, clamp seal rings, and clamp liner, or DS and SMS unions are available.

Working principle

The Alfa Laval LKIF In-Line Filter is installed in process lines and removes particles and impurities as the product flows through the lines. Particles accumulate inside the filter, which can easily be removed for cleaning. If required, the liquid can flow in the opposite direction.



TECHNICAL DATA

Temperature

Min. temperature: -10°C to 140°C (EPDM)

Pressure

Max. product pressure: 1000 kPa (10 bar)

Min. product pressure: Full vacuum

Sizes

25 mm (1"), 38 mm (1 1/2"), 51 mm (2"), 63.5 mm (2 1/2"), 76.1 mm (3"), and 101.6 mm (4"). 1000 kPa (10 bar)

PHYSICAL DATA

Materials

All wetted parts: Acid-resistant steel AISI 316

Other steel parts: Stainless steel AISI 304

Seals: EPDM rubber

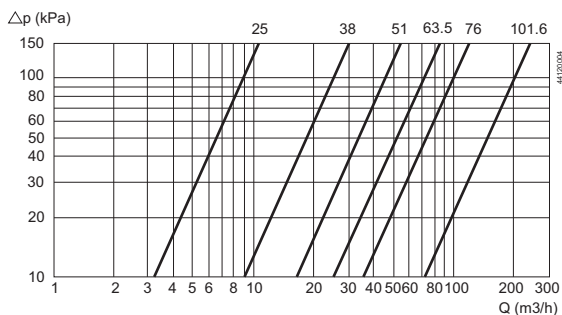
Other seals: Nitrile (NBR) and PTFE, if clamps

Finish: Semi bright

Ordering

Please state the following when ordering: - Size. - Male type.

Pressure drop/capacity diagram



NOTE!

For the diagram the following applies: Medium: Water (200C). Measurement: In accordance with VDI 2173.

Filter element perforation (mm)

Perforation: 40.2 %

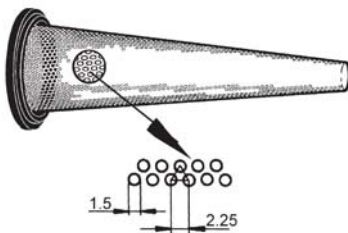
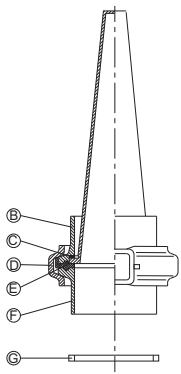


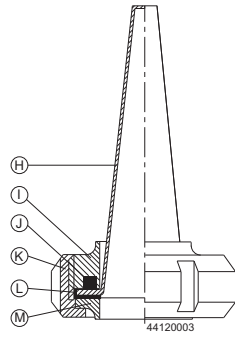
Fig. 4. Filter element.

Dimensions (mm)

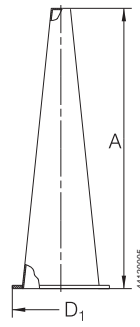
Size	25.0	38.0	51.0	63.5	76.1	101.6
	mm	mm	mm	mm	mm	mm
A	75.0	114.0	169.0	215.0	225.0	250.0
D1	31.0	40.0	53.0	67.0	80.0	106.5
D2	33.5	52.0	63.0	78.0	91.0	122.0
» Strainer area appr. (mm ²)	4400	8400	16200	26100	33300	50600
M/DS male	18.5	20.0	20.0	24.0	24.0	24.0
M/SMS male	15.0	20.0	20.0	24.0	24.0	35.0
M/ISO clamp	21.5	21.5	21.5	21.5	21.5	21.5
Weight (kg)	0.027	0.06	0.1	0.15	0.197	0.299



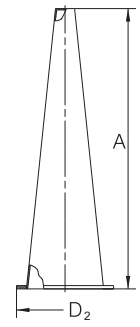
a. Clamp ends
Fig. 3. Parts lists drawings.



b. DS and SMS unions.



a. Clamp ends
Fig. 5. Dimensions.



b. DS and SMS unions.

Parts List

- A. Filter with ring.
- B. Clamp-liner welded.
- C. Seal ring.
- D. Clamp ring.
- E. Clamp seal ring.
- F. Clamp-liner welded.
- G. Replacement ring.

- H. Filter with ring.
- I. Male part welded.
- J. Seal ring.
- K. Union nut.
- L. Special seal ring.
- M. Liner welded.