

KSF Filter



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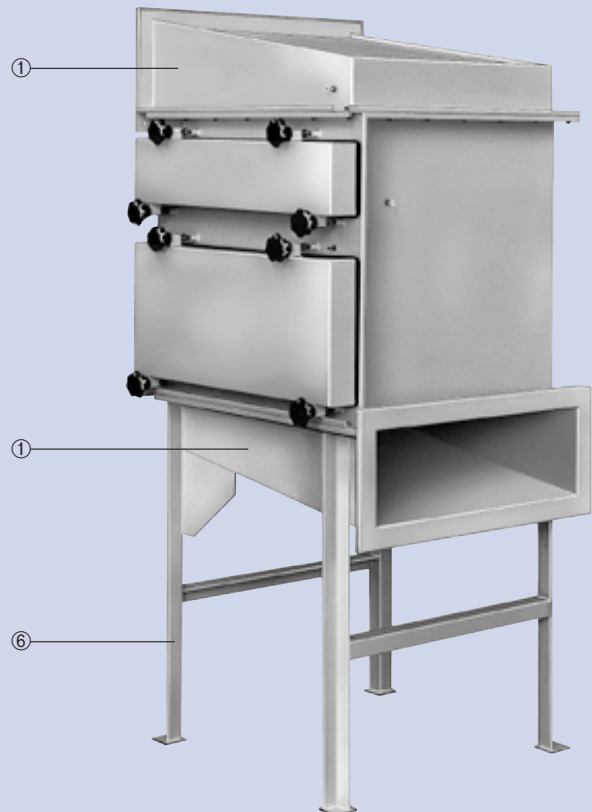
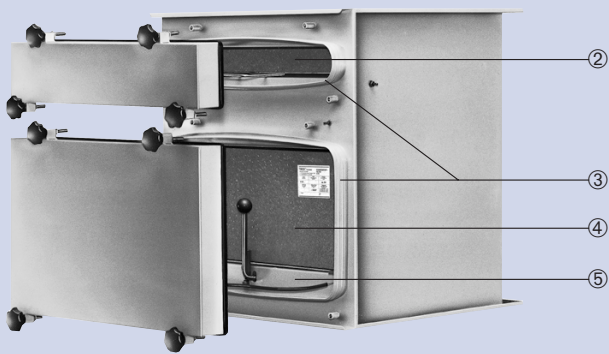
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Trox KSF safe-change filters are designed to separate particles and aerosols, and provide containment for protection of maintenance personnel in hazardous conditions, for example toxic and radioactive systems.

Welded filter casing from galvanized steel with strong double chamfered connecting flange (dimensions to DIN 24 159, sheet 3), available with or without pre-filter section. Casing surfaces with decontaminable Powder coating RAL 9002 or RAL 7001.

The access opening in the filter housing is tightly sealed by a cover plate with channel seal and star knob clamping screws for easy servicing. Where the housing is fitted with double-groove service board for contamination-free filter change, the cover plate also holds the plastic service bag. Effective operational safety is provided as the cover plate can only be replaced and firmly sealed when the clamping device is closed and the filter cell correctly positioned.

Trox KSF Filters



- ① Connecting spigot for horizontal air inlet or outlet
- ② Pre-filter cell
- ③ Double-groove service board for contamination-free filter change
- ④ Main filter section with particulate filter cell
- ⑤ Clamping device with self-adjusting clamping force
- ⑥ Base frame

KSF Filter

Easy withdrawal of the particulate filter cell from the housing is achieved by means of a special steel cord.

The clamping device in the KSF housing automatically adjusts the clamping force via a cam and leaf spring, thus guaranteeing a uniform seal between the filter housing and the particulate filter cell. The clamping device can only be closed when the filter cell is properly seated. It can only be tightened if the filter cell fits exactly. The clamping device is made of galvanised sheet steel or stainless steel. The filter housing can be fitted with a leak test device for the particulate filter cell as an optional extra.

In the pre-filter housing, the filter cell is held tightly against the seating by a push frame with leaf springs. The slide in tray has height adjustment and will accommodate pre-filters with frame heights between 47 and 60 mm.

Construction

Surface of filter housing:
Decontaminable powder coating RAL 9002
Galvanised clamping device

Code:

					1
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Decontaminable powder coating RAL 7001
Stainless steel clamping device

Code:

					2
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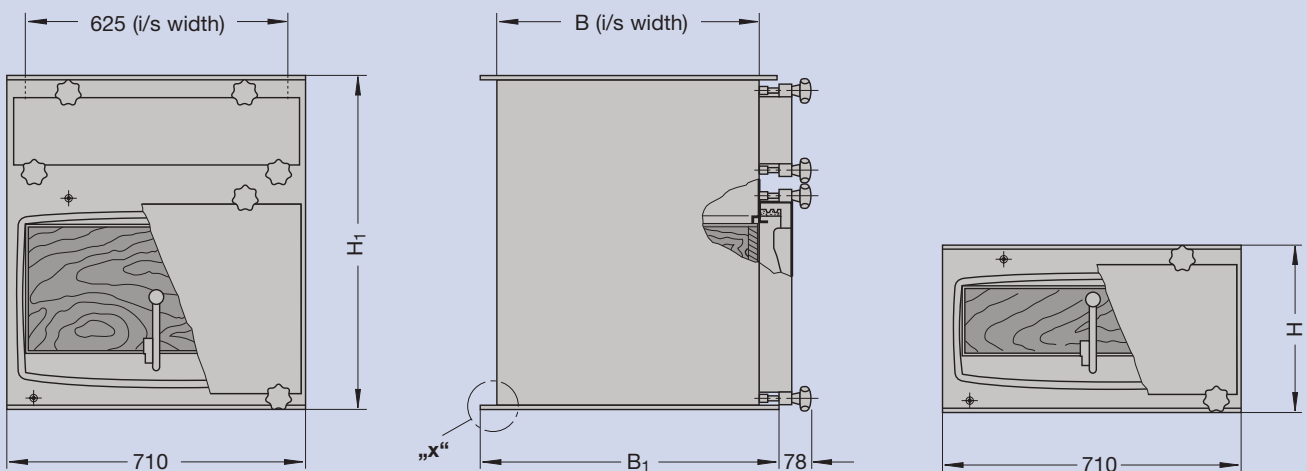
Filter Housing Design

Code:

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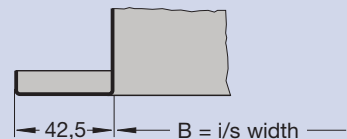
Service Board	Leak Test	Code
without	without	1
with	without	2
without	with	3
with	with	4

Dimensions



The installed position of the filter housing is as shown or rotated through 90°. Filter housing has continuous connecting flange, width 42.5 mm (connecting dimension to DIN 24 159 sheet 3). Flanges supplied undrilled; to be drilled on site by others. Differential pressure connections are supplied with each filter unit for fixing on site by others.

Detail "X"



Selection Table for Dimensions and Volume Flows

Housing dimensions				Dimensions for filter cell in mm	Air Volume		Reference number for KSF Filter		Weight for filter housing complete with filter cells	
H ₁ in mm	H in mm	B in mm	B ₁ in mm		in l/s	in m ³ /h	W/o. Pre-Filter	With Pre-Filter	W/o. Pre-Filter	With Pre-Filter
652	400	320	405	305 x 610 x 150	150	540	F 361 A	F 371 A	40 kg	60 kg
652	400	625	710	610 x 610 x 150	320	1150	F 362 A	F 372 A	50 kg	70 kg
794	535	320	405	305 x 610 x 292 ¹⁾	290 415	1050 1500	F 365 A	F 375 A	55 kg	75 kg
794	535	625	710	610 x 610 x 292 ¹⁾	580 830	2100 3000	F 363 A	F 373 A	65 kg	85 kg
794	535	785	870	762 x 610 x 292 ¹⁾	730 1040	2625 3750	F 364 A	F 374 A	70 kg	95 kg

¹⁾ Particulate filter cells with choice of volume flows according to requirement.

Connecting Spigots

Connecting spigot for horizontal air intake or air discharge. Connecting spigots are available in pairs for KSF filters with support legs for installation combinations of up to six filter units side by side (single row or double row).

Surface finish in standard paint or with two pack paint system for decontaminating purposes.

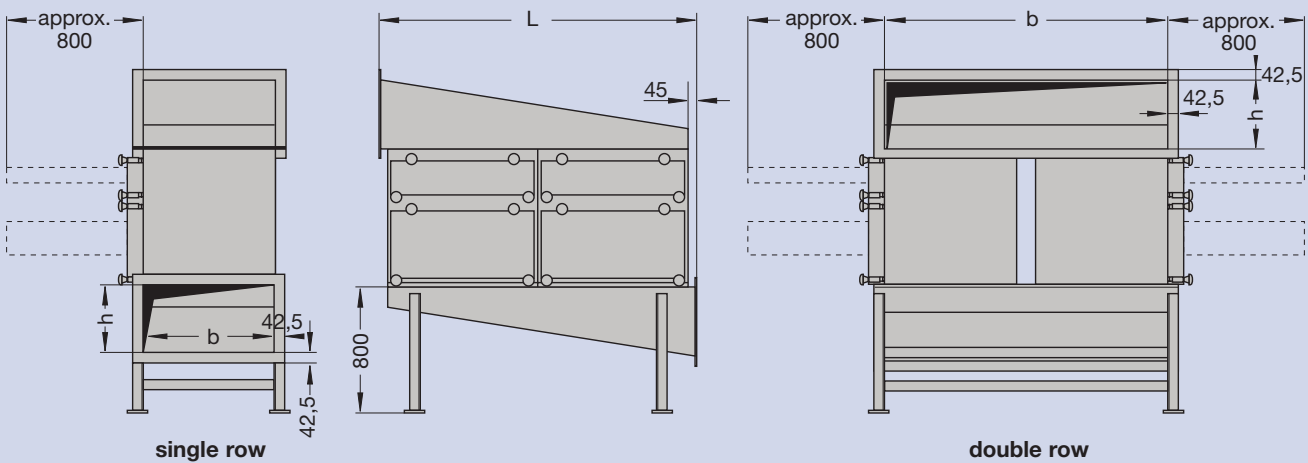
The filter installations are supplied fully assembled with spigot arrangements as requested. The filter installations are divided from casings sizes "D" and "K" onwards, for ease of transport.

For monitoring the pressure differential of the filter cells, pressure measuring points are provided on the filter installation.

Flange holes for connection to the ducting to be drilled on site by others.

All weights are net without packing.

Dimensions



Codes for Spigot Arrangement

Spigot Arrangement				
Single row	1	2	4	5
Double row	3		6	

Housing Arrangement

Order Example

Housing size and combination: KSF Filter housing for filter cell 610 x 610 x 292 mm with pre-filter section (see page 3 "Selection Table") **F373**

Housing arrangement: 3 housings side by side, single row (see below) **C**

Surface finish: Sheet steel components with decontaminable powder coating RAL7001. Stainless steel clamping device (see Page 3 "Construction") **2**

Equipment: Without service board, with leak test device for filter cell (see page 3 "Filter Housing Design") **3**

F 3 7 3 C 2 3 — Order number for filter housing

Spigot size: Pair of connecting spigots for filter unit with filter cells 610 x 610 mm (see below) **F390**

Spigot arrangement: Inlet or outlet side as per layout on page 4

F 3 9 0 C 2 4 — Order number for pair of connecting spigots

3 x **F 7 0 2 E 1 0** — Order number for pre-filter cells

3 x **F 7 7 1 K 0 3** — Order number for particulate filter cells

(Quantities depend on number of filter housings)

Selection Table for Dimensions and Volume Flow

		A	B	C	D	E	F						
								G	H	J	K	L	M
Filter unit for cell size	Number of filter units	1	2	3	4	5	6	2	4	6	8	10	12
610 x 610 x 150 mm	\dot{V}_{in} l/s m^3/h	320 1150	640 2300	960 3450	1280 4600	1600 5750	1920 6900	640 2300	1280 4600	1920 6900	2560 9200	3200 11500	3840 13800
610 x 610 x 292 mm	\dot{V}_{in} l/s m^3/h	580 2100	1160 4200	1740 6300	2320 8400	2800 10500	3480 12600	1160 4200	2320 8400	3480 12600	4640 16800	5800 21000	6960 25200
762 x 610 x 292 mm	\dot{V}_{in} l/s m^3/h	730 2625	1460 5250	2190 7875	2920 10500	3650 13125	4380 15750	1460 5250	2920 10500	4380 15750	5840 21000	7300 26250	8760 31500
610 x 610 x 292 mm ¹⁾	\dot{V}_{in} l/s m^3/h	830 3000	1660 6000	2490 9000	3320 12000	4150 15000	4980 18000	1660 6000	3320 12000	4980 18000	6640 24000	8300 30000	9960 36000
762 x 610 x 292 mm ¹⁾	\dot{V}_{in} l/s m^3/h	1040 3750	2080 7500	3120 11250	4160 15000	5200 18750	6240 22500	2080 7500	4160 15000	6240 22500	8320 30000	10400 37500	12480 45000
Connecting spigot – pair ²⁾ cell size 610 x 610 mm		Filter installation single row						Filter installation double row					
Total length	L in mm	800	1510	2220	3020	3730	4440	800	1510	2220	3020	3730	4440
Inside spigot width	b in mm	625	625	625	625	625	625	1335	1335	1335	1335	1335	1335
Inside spigot height	h in mm	200	315	400	500	630	710	200	315	400	500	630	710
Spigot weight	in kg	30	45	65	105	130	155	40	65	90	140	175	210
Reference		F390A	F390B	F390C	F390D	F390E	F390F	F390G	F390H	F390J	F390K	F390L	F390M
Connecting spigot – pair ²⁾ cell size 762 x 610 mm		Filter installation single row						Filter installation double row					
Total length	L in mm	800	1510	2220	3020	3730	4440	800	1510	2220	3020	3730	4440
Inside spigot width	b in mm	785	785	785	785	785	785	1655	1655	1655	1655	1655	1655
Inside spigot height	h in mm	200	315	400	500	630	710	200	315	400	500	360	710
Spigot weight	in kg	35	50	70	110	140	170	45	75	105	155	200	235
Reference		F391A	F391B	F391C	F391D	F391E	F391F	F391G	F391H	F391J	F391K	F391L	F391M

¹⁾ Particulate filter cell F780 or F781

²⁾ Pair of connecting spigots for cell size 305 x 610 mm on request

Filter Media Data

Pre-Filter Cells

Filter Cells with stable wooden frame with Neoprene seal glued to one side.

Glass fibre media Trox-o-fil F702 wetted with dust binding agent. The dust binding agent is non-toxic, odourless, non inflammable and resistant against moisture. Filter class G3 to EN 779.

Filter media F706 – high quality filter media spun fibre matting from synthetic fibres, self supporting. Filter class F5 to EN 779.

Minipleat Fine Dust inserts F757 or F759 using high quality, moisture-resistant glass fibre paper, Filter class F7 resp. F9 to EN 779.

Activated Carbon Filter Cells

Activated carbon filters absorb gaseous odours and toxic substances (e.g. body odours, food odours, smoke) from the atmosphere, and hydrocarbons, traces of inorganic compounds etc. from the ambient air.

The filter cells are manufactured from impregnated, moisture resistant, chipboard frames, which are securely fixed in “wedge” formations. All cells have neoprene seals on one side.

Pre-filter Cells

Filter Medium	Trox-o-fil F702	F706	F757	F759
Filter class to EN 779 ¹⁾	G3	F5	F7	F9
Average synthetic dust weight arrestance in %	86	96	–	–
Average atmospheric dust spot efficiency in %	30	47	85	95
Initial pressure differential at rated volume flow in Pa	40	160	140	180
Temperature stability in °C	to 100	to 100	to 80	to 80
Dimensions W x H x D in mm	305 x 610 x 47		305 x 610 x 60	
Order number	F702 E12	F706 E12	F757 W95	F759 W95
Dimensions W x H x D in mm	610 x 610 x 47		610 x 610 x 60	
Order number	F702 E10	F706 E10	F757 W93	F759 W93
Dimensions W x H x D in mm	762 x 610 x 47		762 x 610 x 60	
Order number	F702 E11	F706 E11	F757 W94	F759 W94

¹⁾EN 779: “Particle air filters for general ventilation and air conditioning purposes”.
(Equivalent to ASHRAE STANDARD 52-76), see leaflet F0/2/EN.

Activated Carbon Filter Cells

Cell Type	F760
Pore volume (pores > 1000 Å or 100 nm) in cm ³ /g carbon	0,50
Total internal area of pores to BET in m ² /g carbon	ca.1000
Activity tetrachloromethane CCL ₄ in g/100 carbon	62.5
Water content on packing in %	2
Max. operating temperature in °C	30
Max. relative humidity in %	70
Dimensions W x H x D in mm	610 x 610 x 292
Nominal volume flow ²⁾ in l/s (m ³ /h)	560 (2000)
Order number	F760 J03

²⁾If the volume flow falls below the nominal value, the efficiency and storage capacity of the activated carbon will improve. Excessively low volume flows should be avoided.

Particulate Filter Cells

Particulate filter cells are designed for applications where the highest standards of air purity are required.

Filter cells in standard construction with casing of moisture resistant compressed particle board or fibreboard with neoprene gasket on one side. The filter media consists of moisture resistant glass fibre paper with aluminium, kraft or textile thread separators, sealed in the casing with a durable mastic sealing compound.

The particulate filter cells, each individual cell type tested to EN 1822 leak tested Filter Class H13, are packed in damage resistant cartons.

Particulate filter cells are available on request to meet the specific requirements of industries such as pharmaceutical, nuclear and microtechnology.

Particulate Filter Cells

Filter Cell Type		F770	F771	F780	F781
Filter class to EN 1822 ¹⁾		H11	H13	H11	H13
Efficiency to DIN EN 1822	in %	> 95	> 99.95	> 95	> 99.95
Initial pressure differential at nominal volume flow ²⁾	in Pa	125	250	125	250
Recommended final pressure differential	in Pa	300	600	300	600
Maximum operating temperature	in °C	100	100	80	80
Maximum relative humidity ³⁾	in %	100	100	100	100
Dimensions W x H x D	in mm	305 x 610 x 150			
Nominal volume flow	in l/s (m ³ /h)	150 (540)			
Order number		F770 K01	F771 K01		
Dimensions W x H x D	in mm	305 x 610 x 292		305 x 610 x 292	
Nominal volume flow	in l/s (m ³ /h)	290 (1050)		415 (1500)	
Order number		F770 K21	F771 K21	F780 W35	F781 W35
Dimensions W x H x D	in mm	610 x 610 x 150			
Nominal volume flow	in l/s (m ³ /h)	320 (1150)			
Order number		F770 K02	F771 K02		
Dimensions W x H x D	in mm	610 x 610 x 292		610 x 610 x 292	
Nominal volume flow	in l/s (m ³ /h)	580 (2100)		830 (3000)	
Order number		F770 K03	F771 K03	F780 W61	F781 W61
Dimensions W x H x D	in mm	762 x 610 x 292		762 x 610 x 292	
Nominal volume flow	in l/s (m ³ /h)	730 (2625)		1040 (3750)	
Order number		F770 K04	F771 K04	F780 W76	F781 W76

¹⁾ EN 1822: "Particulate Filter (HEPA and ULPA)".

²⁾ Initial pressure differential with varying nominal volume flow see leaflet F7/3.3/EN and F7/4.3/EN.

³⁾ If the temperature falls below the dew point, note that separation of the condensed water can lead to a rise in the pressure differential. The materials used are moisture-resistant and ready for use again after drying.

The relative humidity should not exceed a maximum of 95 % in the vicinity of the particulate filter cells.

Specification Text

Item	Qty.	Description
		<p>Trox KSF Filter, comprising: Filter casing from galvanised steel with strong double chamfered connecting flange. Self-adjusting clamping device for particulate filter cell which can only be operated and tightened with the cell in the correct position. Access opening in the filter housing is tightly sealed by a cover plate with channel seal and star knob clamping screws.</p> <p>Optional: With: pre-filter in casing (as for particulate filter cell). With: twin groove service board and plastic bag for contamination-free cell change. With: leak proof test device for particulate filter cell.</p> <p>Surface Finish: Steel casing with decontaminable powder coating RAL 9002, galvanised clamping device or steel casing with decontaminable powder coating RAL 7001, stainless steel clamping device.</p> <p>Technical Data: Volume flow _____ l/s (m³/h) Width _____ mm Height _____ mm Depth _____ mm Net weight _____ kg Order number _____ Make: Trox</p> <p>Price/system (excluding filter media)</p>
		<p>Spigots For horizontal air intake and air discharge support legs completely assembled with KSF filter.</p> <p>Surface Finish: Decontaminable powder coating.</p> <p>Net weight _____ kg Order number _____ Make: Trox</p> <p>Price/unit</p>

Item	Qty.	Description
		<p>Filter Media for KSF Filter</p> <p>Pre-Filter Cells Strong timber frame with neoprene seal on one side. Glass-fibre media Trox-o-fil F702 coated with dust binding agent which is odourless, non combustible and moisture-resistant. Filter class G3 to EN 779. Filter media F706 from synthetic fibres. Filter class F5 to EN 779. Minipleat filter panel F757 or F759 of high quality, moisture-resistant glass-fibre paper with thermoplastic spacers. Filter class F7 and F9 to EN 779.</p> <p>Particulate Filter Cells Moisture-resistant, impregnated compressed particle board or fibreboard with neoprene gasket on one side. Filter media of moisture-resistant glass-fibre paper with aluminium, kraft or textile thread spacers. The particulate filter cells, each individual cell type tested to EN 1822 leak tested Filter Class H13, are packed in damage resistant cartons.</p> <p>Technical Data: Dimensions: W x H x D _____ mm Filter class to EN 779 Average atmospheric dust weight arrestance _____ % Initial pressure differential _____ Pa Order number _____ Manufacture: Trox</p> <p>Technical Data: Dimensions W x H x D _____ mm Filter class to EN 1822 _____ Arrestance to EN 1822 _____ % Initial pressure differential _____ Pa Order number _____ Manufacture: Trox</p> <p>Unit price</p>