

# KSF Filter



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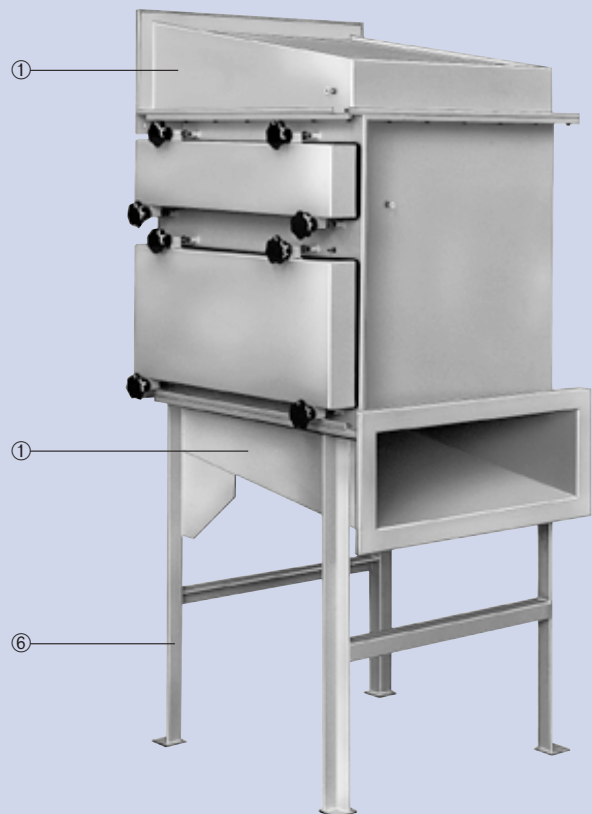
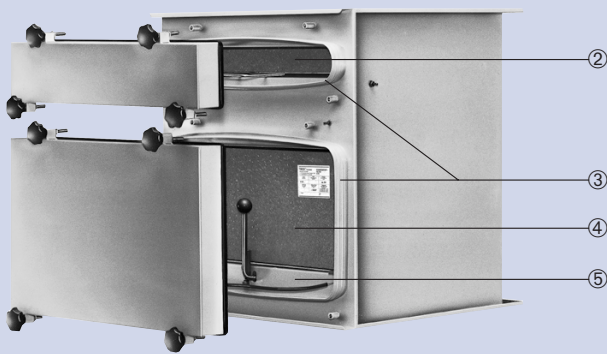
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Trox KSF safe-change filters are designed to separate particles and aerosols, and provide containment for protection of maintenance personnel in hazardous conditions, for example toxic and radioactive systems.

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



# 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.

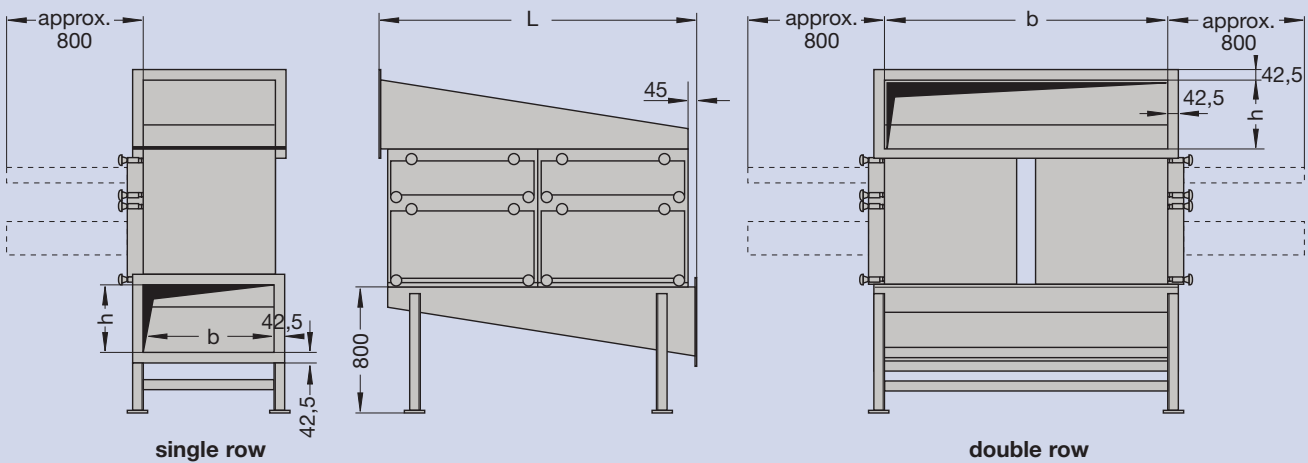
The filter installations are supplied fully assembled with spigot arrangements as requested. The filter installations are divided from casings sizes "D" and "K" onwards, for ease of transport.

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<br>$m^3/h$ | 320<br>1150                    | 640<br>2300  | 960<br>3450   | 1280<br>4600  | 1600<br>5750  | 1920<br>6900  | 640<br>2300                    | 1280<br>4600  | 1920<br>6900  | 2560<br>9200  | 3200<br>11500  | 3840<br>13800  |
| 610 x 610 x 292 mm   | $\dot{V}_{in}$ l/s<br>$m^3/h$ | 580<br>2100                    | 1160<br>4200 | 1740<br>6300  | 2320<br>8400  | 2800<br>10500 | 3480<br>12600 | 1160<br>4200                   | 2320<br>8400  | 3480<br>12600 | 4640<br>16800 | 5800<br>21000  | 6960<br>25200  |
| 762 x 610 x 292 mm   | $\dot{V}_{in}$ l/s<br>$m^3/h$ | 730<br>2625                    | 1460<br>5250 | 2190<br>7875  | 2920<br>10500 | 3650<br>13125 | 4380<br>15750 | 1460<br>5250                   | 2920<br>10500 | 4380<br>15750 | 5840<br>21000 | 7300<br>26250  | 8760<br>31500  |
| 610 x 610 x 292 mm <sup>1)</sup>                                 | $\dot{V}_{in}$ l/s<br>$m^3/h$ | 830<br>3000                    | 1660<br>6000 | 2490<br>9000  | 3320<br>12000 | 4150<br>15000 | 4980<br>18000 | 1660<br>6000                   | 3320<br>12000 | 4980<br>18000 | 6640<br>24000 | 8300<br>30000  | 9960<br>36000  |
| 762 x 610 x 292 mm <sup>1)</sup>                                 | $\dot{V}_{in}$ l/s<br>$m^3/h$ | 1040<br>3750                   | 2080<br>7500 | 3120<br>11250 | 4160<br>15000 | 5200<br>18750 | 6240<br>22500 | 2080<br>7500                   | 4160<br>15000 | 6240<br>22500 | 8320<br>30000 | 10400<br>37500 | 12480<br>45000 |
| Connecting spigot – pair <sup>2)</sup><br>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  |                               | <b>F390A</b>                   | <b>F390B</b> | <b>F390C</b>  | <b>F390D</b>  | <b>F390E</b>  | <b>F390F</b>  | <b>F390G</b>                   | <b>F390H</b>  | <b>F390J</b>  | <b>F390K</b>  | <b>F390L</b>   | <b>F390M</b>   |
| Connecting spigot – pair <sup>2)</sup><br>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  |                               | <b>F391A</b>                   | <b>F391B</b> | <b>F391C</b>  | <b>F391D</b>  | <b>F391E</b>  | <b>F391F</b>  | <b>F391G</b>                   | <b>F391H</b>  | <b>F391J</b>  | <b>F391K</b>  | <b>F391L</b>   | <b>F391M</b>   |

<sup>1)</sup> Particulate filter cell F780 or F781

<sup>2)</sup> 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 <sup>1)</sup>                     | 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  |                 |
| <b>Order number</b>                                      | <b>F702 E12</b> | <b>F706 E12</b> | <b>F757 W95</b> | <b>F759 W95</b> |
| Dimensions W x H x D in mm                               | 610 x 610 x 47  |                 | 610 x 610 x 60  |                 |
| <b>Order number</b>                                      | <b>F702 E10</b> | <b>F706 E10</b> | <b>F757 W93</b> | <b>F759 W93</b> |
| Dimensions W x H x D in mm                               | 762 x 610 x 47  |                 | 762 x 610 x 60  |                 |
| <b>Order number</b>                                      | <b>F702 E11</b> | <b>F706 E11</b> | <b>F757 W94</b> | <b>F759 W94</b> |

<sup>1)</sup>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 <sup>3</sup> /g carbon | 0,50            |
| Total internal area of pores to BET in m <sup>2</sup> /g carbon     | ca.1000         |
| Activity tetrachloromethane CCL <sub>4</sub> 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 <sup>2)</sup> in l/s (m <sup>3</sup> /h)        | 560 (2000)      |
| <b>Order number</b>   | <b>F760 J03</b> |

<sup>2)</sup>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 <sup>1)</sup>                              |                            | H11             | H13             | H11             | H13             |
| Efficiency to DIN EN 1822  | in %                       | > 95            | > 99.95         | > 95            | > 99.95         |
| Initial pressure differential at nominal volume flow <sup>2)</sup> | 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 <sup>3)</sup>                            | 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 <sup>3</sup> /h) | 150 (540)       |                 |                 |                 |
| Order number   |                            | <b>F770 K01</b> | <b>F771 K01</b> |                 |                 |
| 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 <sup>3</sup> /h) | 290 (1050)      |                 | 415 (1500)      |                 |
| Order number   |                            | <b>F770 K21</b> | <b>F771 K21</b> | <b>F780 W35</b> | <b>F781 W35</b> |
| Dimensions W x H x D   | in mm                      | 610 x 610 x 150 |                 |                 |                 |
| Nominal volume flow  | in l/s (m <sup>3</sup> /h) | 320 (1150)      |                 |                 |                 |
| Order number   |                            | <b>F770 K02</b> | <b>F771 K02</b> |                 |                 |
| 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 <sup>3</sup> /h) | 580 (2100)      |                 | 830 (3000)      |                 |
| Order number   |                            | <b>F770 K03</b> | <b>F771 K03</b> | <b>F780 W61</b> | <b>F781 W61</b> |
| 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 <sup>3</sup> /h) | 730 (2625)      |                 | 1040 (3750)     |                 |
| Order number   |                            | <b>F770 K04</b> | <b>F771 K04</b> | <b>F780 W76</b> | <b>F781 W76</b> |

<sup>1)</sup> EN 1822: "Particulate Filter (HEPA and ULPA)".

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

<sup>3)</sup> 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><b>Trox KSF Filter</b>, comprising:<br/>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><b>Optional:</b><br/>With: pre-filter in casing (as for particulate filter cell).<br/>With: twin groove service board and plastic bag for contamination-free cell change.<br/>With: leak proof test device for particulate filter cell.</p> <p><b>Surface Finish:</b><br/>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><b>Technical Data:</b><br/>Volume flow _____ l/s (m<sup>3</sup>/h)<br/>Width _____ mm<br/>Height _____ mm<br/>Depth _____ mm<br/>Net weight _____ kg<br/>Order number _____<br/>Make: Trox</p> <p>Price/system (excluding filter media)</p> |
|      |      | <p><b>Spigots</b><br/>For horizontal air intake and air discharge support legs completely assembled with KSF filter.</p> <p><b>Surface Finish:</b><br/>Decontaminable powder coating.</p> <p>Net weight _____ kg<br/>Order number _____<br/>Make: Trox</p> <p>Price/unit</p>  |

| Item | Qty. | Description  |
|------|------|--|
|      |      | <p><b>Filter Media for KSF Filter</b></p> <p><b>Pre-Filter Cells</b><br/>Strong timber frame with neoprene seal on one side.<br/>Glass-fibre media Trox-o-fil F702 coated with dust binding agent which is odourless, non combustible and moisture-resistant.<br/>Filter class G3 to EN 779.<br/>Filter media F706 from synthetic fibres. Filter class F5 to EN 779.<br/>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><b>Particulate Filter Cells</b><br/>Moisture-resistant, impregnated compressed particle board or fibreboard with neoprene gasket on one side.<br/>Filter media of moisture-resistant glass-fibre paper with aluminium, kraft or textile thread spacers.<br/>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><b>Technical Data:</b><br/>Dimensions: W x H x D _____ mm<br/>Filter class to EN 779<br/>Average atmospheric dust weight arrestance _____ %<br/>Initial pressure differential _____ Pa<br/>Order number _____<br/>Manufacture: Trox</p> <p><b>Technical Data:</b><br/>Dimensions W x H x D _____ mm<br/>Filter class to EN 1822 _____<br/>Arrestance to EN 1822 _____ %<br/>Initial pressure differential _____ Pa<br/>Order number _____<br/>Manufacture: Trox</p> <p>Unit price</p> |