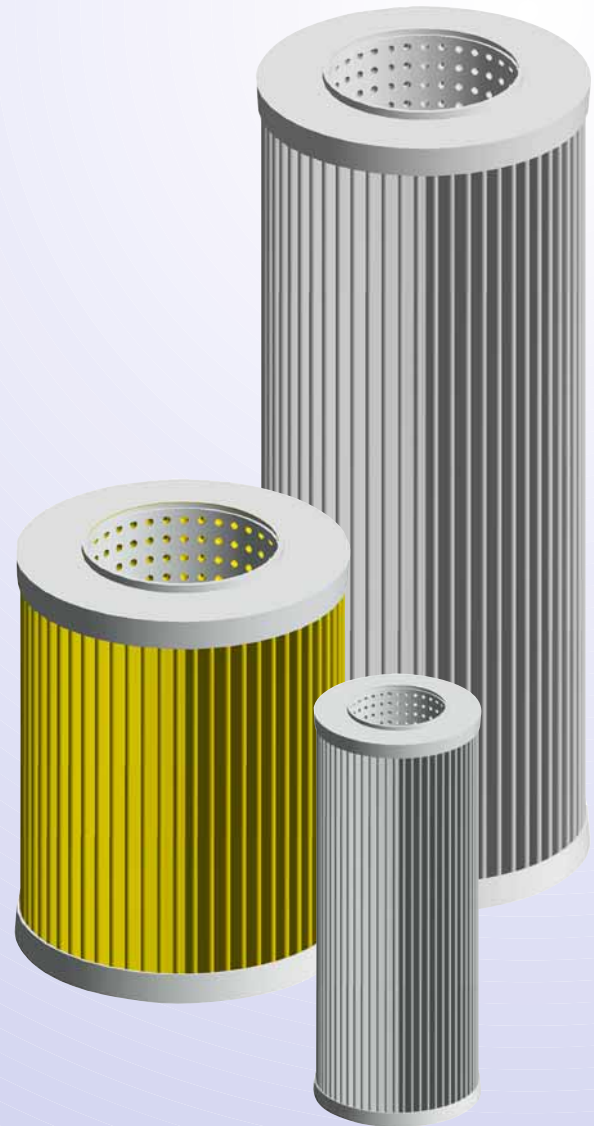




Industrial Filters · Accumulators

## Filter Elements



*Filter media for all applications*

*Made out of glassfibre-paper,  
filter-paper, wire mesh,  
nonwovens and metal fibre*

*Achievable oil cleanliness  
up to ISO 12/8/3 (ISO 4406)*

*Filtration ratio  $\beta_x = 1000$*

*Cleanable filter media*

*Superior dirt holding capacity  
using multiple layer technology*

*Filtration grade: 1- 1500  $\mu\text{m}$*

*Filter area: 10cm<sup>2</sup> - 4.8 cm<sup>2</sup>*



Quality assured!

## Filter Elements for EPE-Industrial Filters

### Application

Filtration of hydraulic fluids, lubricants, industrial liquids and gases.

### Construction

Special star pleated filter media that is mounted on a perforated support tube.

It is glued with a 2-component adhesive in a longitudinal direction and with metal end-caps. Sealed with O-ring or profile seal.

### Filter Media

#### H...XL

Combination of inorganic glass fibre paper laminated with protective nonwoven media, high dirt holding capacity through 2-layer glass fibre technique.

Filtration grade: 1/3/6/10/16/20  $\mu\text{m}$  "absolute". Performance data for ISO 16889 refer to "filter element characteristics"

Use: For highest cleanliness requirements of hydraulic fluids and lubricants.  
Non cleanable.

#### G...

Surface filter made of stainless steel mesh 1.4401 and 1.4571, underlaid with supporting mesh.  
Mesh size: 10-1500  $\mu\text{m}$ .

Use: For protective, surface, coarse and pre-filtration.

Cleanable, regenerative.

(see separate information in this catalogue)

#### P...

Low-priced depth filter made from filter paper, underlaid with supporting mesh.

Made of special impregnated cellulose fibres to resist moisture and swelling.

Nominal filtration grade 5/10/25  $\mu\text{m}$ .

Use: For coarse and preliminary filtration.

Non cleanable.

#### M...

Depth filter in stainless steel fibre 1.4404 with supporting fabric underlay.

Filtration grade 5, 10, 15  $\mu\text{m}$  "absolute" according to ISO 16889.

Use: For highest cleanliness requirements with aggressive industrial and chemical liquids at high operating temperatures.

Cleanable dependent on application.

(see separate information in this catalogue)

#### VS...

Surface filter of extremely solid reinforced fibre made of polyethylene-wrapped polypropylene fibre.

Filtration grade: 25, 40 and 60  $\mu\text{m}$  nominal.

Use: Surface, coarse and pre-filtration.

Especially recommended for cooling lubricants.

Non cleanable.

#### AS...

Nonwoven media with water-adsorbent material combined with glass fibre paper.

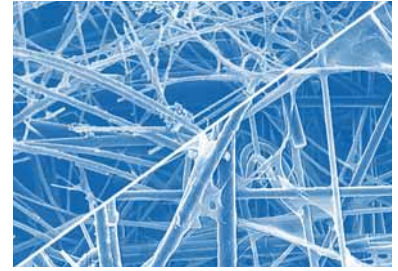
Filtration grade: 1/3/6/10/20  $\mu\text{m}$  "absolute" according to ISO 16889.

Use: Dehydration of hydraulics, lubricants and air.  
Non cleanable.

## Electronic Microscope Pictures of EPE Filter Media

H...XL,  
Glass fibre paper

H1XL,  
H3XL,  
H6XL,  
H10XL,  
H16XL,  
H20XL



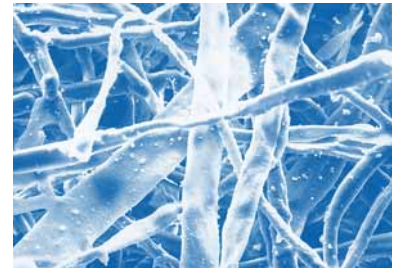
G...,  
Stainless steel mesh  
1.4401 resp. 1.4571  
(only for G250 and  
G1000)

G10, G25, G40  
G60 - G1500



P...,  
Filter paper

P5,  
P10,  
P25

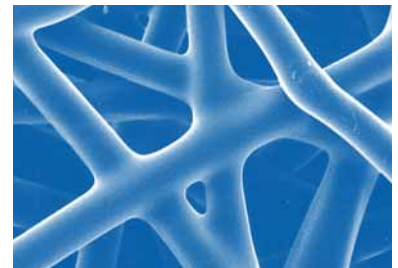


M...,  
Metal fibre 1.4404

M5,  
M10,  
M15

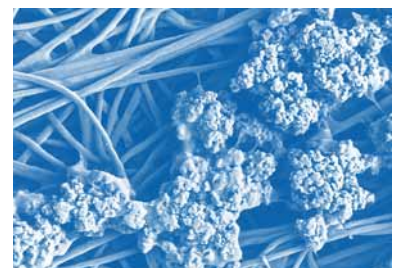


VS...,  
Nonwoven  
VS25,  
VS40,  
VS60



AS...,  
Water-adsorbent  
media

AS1,  
AS3,  
AS6,  
AS10,  
AS20



# Filter Element Characteristics

## Filtration grade and achievable oil cleanliness code

Besides the direct protection of machine components, the most important target when using an industrial filter is to achieve a given oil cleanliness. This is defined by oil cleanliness codes which classify the particle size distribution of the existing contamination. The table at the right side contains recommendations for filter media selection dependent on application and shows typical reachable oil cleanliness codes per ISO 4406 or SAE-AS 4059.

| Use  | Required oil cleanliness in accordance with ISO 4406 (SAE-AS 4059) | Recommended Filter Media/ Filtration grade |
|--|--|--|
| System with extreme dirt sensitive parts and very high usage.<br>Servo installations | ≤ 16/12/9 (3)  | H1XL/1 μm                                  |
| System with dirt sensitive parts and very high usage.<br>Servo valve systems         | ≤ 18/13/10 (5)   | H3XL/3 μm                                  |
| Systems with proportional valves and pressure > 160 bar                              | ≤ 19/14/11 (6)   | H6XL/6 μm                                  |
| Modern industrial hydraulic directional valves                                       | ≤ 20/16/13 (8)   | H10XL/10 μm                                |
| Industrial hydraulic with large tolerances and low dirt sensitivity.                 | ≤ 21/17/14 (10)  | H20XL/20 μm                                |

## Filter performance

### Filtration ratio β<sub>x</sub>

The filtration ratio β<sub>x</sub> represents the most important filter efficiency characteristic for a hydraulic filter. As an average value during initial and final test Δp it is measured by the multi pass test method according to ISO 16889, using ISOMTD test dust contaminant. It is defined as the ratio of particles upstream divided by the particles downstream larger than size of interest.

In former times the β - ratio was measured according to the multi pass test as per ISO 4572. The test results from ISO 4572 are not directly comparable to those of ISO 16889. Further information about the β - ratio characteristic is given in our technical documentations.

Typical β values up to 4 bar Δp filter element <sup>1)</sup>

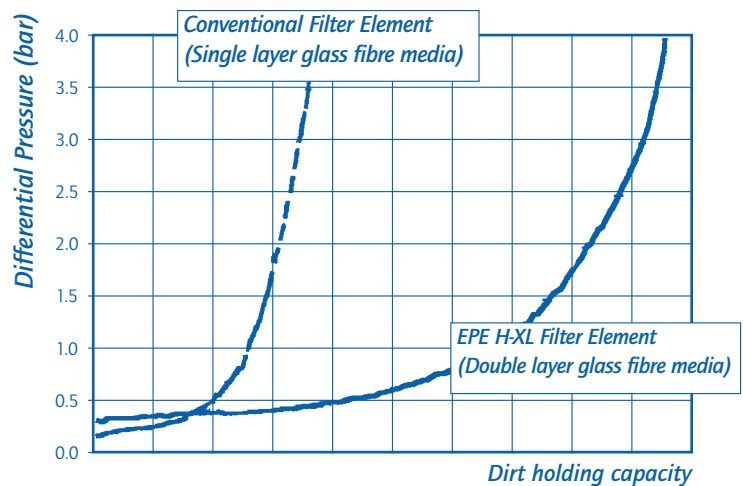
| Filter media | Particle size „x“ for various β - ratios measured according to ISO 16889 |                         |                         |
|--------------|--|-------------------------|-------------------------|
|              | β <sub>x</sub> = 75  | β <sub>x</sub> = 200    | β <sub>x</sub> = 1000   |
| H1XL         | < 4.0 μm <sub>(c)</sub>  | < 4.0 μm <sub>(c)</sub> | < 4.0 μm <sub>(c)</sub> |
| H3XL         | 4.0 μm <sub>(c)</sub>  | < 4.5 μm <sub>(c)</sub> | 5.0 μm <sub>(c)</sub>   |
| H6XL         | 4.8 μm <sub>(c)</sub>  | 5.5 μm <sub>(c)</sub>   | 7.5 μm <sub>(c)</sub>   |
| H10XL        | 6.5 μm <sub>(c)</sub>  | 7.5 μm <sub>(c)</sub>   | 9.5 μm <sub>(c)</sub>   |
| H16XL        | 13.5 μm <sub>(c)</sub>   | 16.0 μm <sub>(c)</sub>  | 19.5 μm <sub>(c)</sub>  |
| H20XL        | 18.5 μm <sub>(c)</sub>   | 20.0 μm <sub>(c)</sub>  | 22.0 μm <sub>(c)</sub>  |

### Dirt holding capacity

This is also measured using the Multipass test and gives the amount of test dust ACFTD or ISOMTD that the filter media can retain until a definite increase in pressure is reached.

In comparison to the conventional filter material, the EPE H-XL material displays superior dirt holding capacity, due to its two separate filter layers.

Superior dirt holding capacity of H-XL Filter Elements



### Δp (Pressure Drop)

The sizing of the EPE filter and filter element by means of the initial Δp or pressure drop can be easily carried out with the selection program "EPE-FILTERSELECT", which is available on request. Additionally, the pressure drop curves are shown in the filter catalogues.

|  |           |
|--|-----------|
| Production quality (Bubble Point Test)   | ISO 2941  |
| Performance filter test (Multipass Test) | ISO 16889 |
| Δp (Pressure loss) characteristic lines  | ISO 3968  |
| Compatibility with hydraulic fluid       | ISO 2943  |
| Collapsibility pressure test             | ISO 2941  |
| Flow fatigue test                        | ISO 3724  |

### Filter Element Test

EPE Filter elements are tested at our own test benches in accordance with various ISO test standards.

Further information on EPE filter element technology as well as information about contamination - and oil cleanliness monitoring are given in our publications or specific brochures.

<sup>1)</sup> = filtration ratio β<sub>x</sub> for other filter media on request

# Aquasorb - AS... Water-adsorbing Filter Elements

EPE Aquasorb filter elements are used to remove water from hydraulic and lubricating oil, as well as to dehumidify air.

Water, even when present in only small amounts above the adsorption level of oil, can accelerate the aging of the oil through oxidation.

Increased corrosion and a higher level of wear are the result. Water can also cause change of the condition of certain oil additives, and also produce precipitation in the form of solid, slimy substances that can prematurely block the pores of the filter in use.

## Operational Aspects

EPE Aquasorb filter elements, like the EPE industrial filter elements, have a pleated design, but also have a non woven media type layer covered with a water-adsorbing substance in form of granulates.

Depending upon filtration grade, the corresponding glass fibre filter media (1 µm - 20 µm) is fitted behind the nonwoven media.

## Effectiveness

The effectiveness of the EPE Aquasorb elements has been proven in internal tests and in scientific experiments verified by an independent organisation.

We will be happy to make the test results available on request.

The water content (free water) can be reduced to approximately the saturation level of the oil.

The effectiveness and the water adsorption are dependent on the surface pressure of the filter, the oil viscosity and the oil temperature.

The values of water adsorption and changes due to increased viscosity are shown opposite.

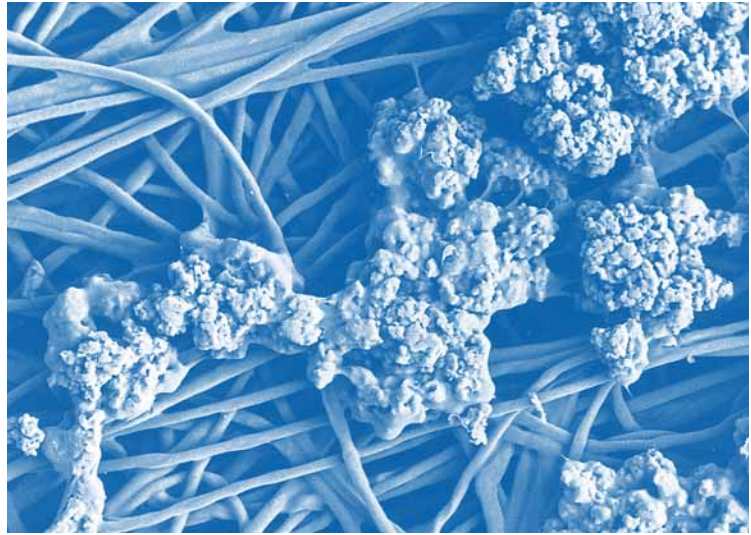
## Concept and Scope

EPE Aquasorb elements are to be so selected that the drop of pressure at the beginning does not exceed 0.2 bar. They are used preferably as by-pass filters in low pressure < 5 bar. The filter element is to be changed when a differential pressure of 1.5 bar is reached.

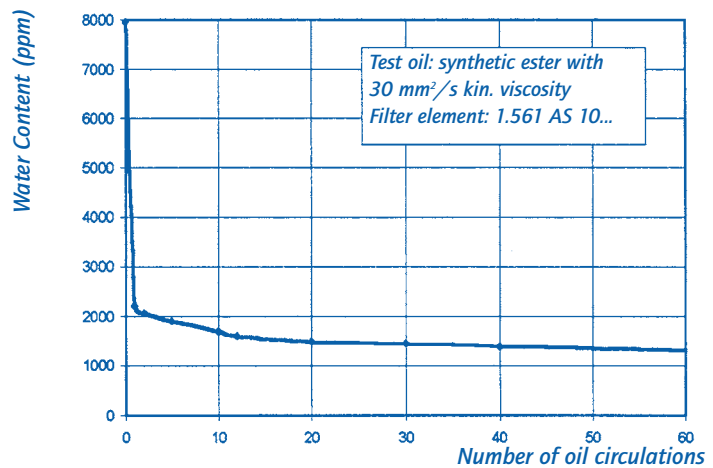
## Ordering Information

EPE Aquasorb filter elements can be ordered using the following code in accordance with the current EPE catalogue:

e.g. 1.0270 AS 10 - A00 - 0 - P



Reduction of water content of hydraulic oil using AS elements



Typical water adsorption with a selection of EPE filter elements

| Filter Element | Nominal Flow <sup>1)</sup><br>(l/min) | Water Adsorption <sup>2)</sup><br>(ml) |
|----------------|---------------------------------------|--|
| 1.561          | 37                                    | 476                                    |
| 1.1801         | 112                                   | 1428                                   |
| 1.0060         | 40                                    | 511                                    |
| 1.0270         | 267                                   | 3454                                   |
| 2.225          | 8                                     | 104                                    |
| 2.0045         | 28                                    | 365                                    |

Water adsorption in relation to oil viscosity

| Oil Viscosity<br>(mm <sup>2</sup> /s)  | 15 <sup>3)</sup> | 30  | 46  | 120 |
|--|------------------|-----|-----|-----|
| Water Adsorption<br>(= reference mark) | 100%             | 70% | 58% | 38% |

The size selection of the EPE AS filter element can also be executed by the "EPE-FILTERSELECT" programme.

<sup>1)</sup> = Maximum recommended flow rate

<sup>2)</sup> = Water adsorption of free, undissolved water at 15 mm<sup>2</sup>/s and the indicated nominal flow rate

<sup>3)</sup> = Reference viscosity

## Cleaning of G... and M... Filter Elements

### Which filter elements are cleanable?

Before cleaning first check whether the filter element in use is re-usable (cleanable) or a disposable filter element.

EPE filter elements with the following materials are cleanable:

#### Wire Mesh G10 - G40

As this material is a surface filter it is generally cleanable.

Cleaning is however time consuming, due to the fine mesh, when compared to coarse filter material.

The table opposite shows how to clean these filter elements effectively.

#### Wire Mesh G60 - G1500

This typical surface filter material can be readily cleaned.

Cleaning can be carried out in accordance with the instructions opposite.

#### Metal Fibre M5, M10, M15

As this material is composed of stable stainless steel fibres that are closely woven and integrated together, it is classified as a cleanable material.

Cleaning of this material is difficult due to its depth filtration, and should be supported using an ultrasonic bath.

### Cleaning or Replacing?

Before a G- or M-element can be cleaned, one must remove the filter element

and check to see whether cleaning makes sense.

Does the fabric contain, for example, a good deal of fibrous substances with a material finer than G 40 or the M-material, an effective and complete cleaning is often no longer possible.

Wire mesh which has been recognisably damaged through too-frequent cleaning must be replaced.

Generally it is valid to say: The finer the mesh, the thinner the wire.

Therefore it is necessary, particularly with fine mesh, that a cleaning method must be chosen that is gentle to the materials.

Please make sure that the wire mesh and the metal fibre are not teared, otherwise you won't have sufficient filtration effect.

### Frequency of Cleaning

Experience shows that filter elements with G10, G25, G40, as well as M5 and M10 can be cleaned a maximum of ten times. Wire mesh > 60 µm can usually be used more than ten times. Repeated use is, however, heavily dependent on the amount and type of contamination as well as the pressure level (End-Δp before removing the filter element). To obtain maximum re-use, we recommend changing fine mesh and the M-material when an End-Δp of 2.5 bar is reached. The values quoted are for obvious reasons only recommended values for which there is no guarantee.

### Ultrasonic Baths and Automatic Cleaning Equipment

Information is readily available on request regarding ultrasonic bath cleaning and fully-automatic cleaning.

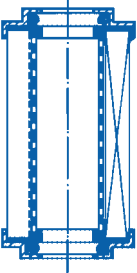



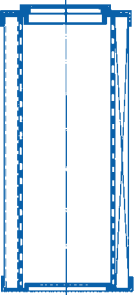
#### Manual and simple cleaning methods for G- and M-Elements

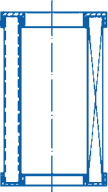
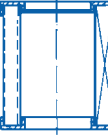
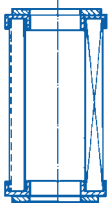
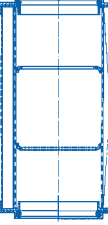





| Method                                    | Wire mesh G10, G25, G40<br>Metal fibre M5, M10, M15   |
|---|---|
| Pre-cleaning chemically                   | Allow the filter element to dry-out for approx. 1 hour.<br>Afterwards wash with solvent.  |
| Pre-cleaning mechanically                 | Free from large direct particles with a soft brush. To prevent damage to the high quality filter material, do not use hard or sharp objects.  |
| Main cleaning mechanically/<br>chemically | Place the pre-cleaned element in a ultrasonic bath with special solvent.<br>Continue ultrasonic cleaning until contamination has disappeared. |
| Inspection                                | Visually check condition of material for intactness. Replace filter element when obviously damaged.   |
| Preservation                              | After drying the cleaned element spray with conservation fluid and place in dust-proof plastic folio.   |

| Method                                    | Wire Mesh G60 - G1500  |
|---|--|
| Pre-cleaning chemically                   | Allow the filter element to dry-out for approx. 1 hour.<br>Afterwards wash with solvent.   |
| Pre-cleaning mechanically                 | Free from large dirt particles with a soft brush. To prevent damage to the high quality filter material, do not use hard or sharp objects. |
| Main cleaning mechanically/<br>chemically | Steam-out with hot wash solution (water with corrosion prevention fluid).  |
| Inspection                                | Visually check condition of material for intactness. Replace filter element when obviously damaged.  |
| Preservation                              | After drying the cleaned element, spray with conservation fluid and place in dust-proof plastic folio.                                     |

#### Automatic Cleaning

| Method                                    | Wire mesh G10, G25, G40, G60 - G1500<br>Metal fibre M5, M10, M15  |
|---|---|
| Pre-cleaning chemically                   | As detailed above   |
| Main cleaning mechanically/<br>chemically | With special cleaning equipment for filter elements. These usually involve a fully automatic and combined cleaning, including ultrasonic, mechanical and chemical cleaning. The best possible results are obtained through a gentle cleaning. |

| Type   | Nominal size   | Number per Filter housing  | Type . Nominal size  | Illustration  |   |
|--|--|--|--|---|---|
| FRE<br>FRD<br>FLE<br>FLD                               | 0005<br>0008<br>0013<br>0015<br>0018<br>0020<br>0030<br>0045<br>0055<br>0060<br>0095<br>0145<br>0200<br>0270 | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x | 1.0005<br>1.0008<br>1.0013<br>1.0015<br>1.0018<br>1.0020<br>1.0030<br>1.0045<br>1.0055<br>1.0060<br>1.0095<br>1.0145<br>1.0200<br>1.0270 |  |   |
| FRE<br>FRD<br>FLE<br>FLD                               | 0190<br>0290<br>0400<br>0540<br>0600<br>0810<br>1080<br>1350   | 3x<br>3x<br>3x<br>3x<br>4x<br>4x<br>5x<br>6x                               | 1.0095<br>1.0120<br>1.0200<br>1.0270<br>1.0200<br>1.0270<br>1.0270<br>1.0270   |   |   |
| FREN<br>FRDN<br>FLEN<br>FLDN<br>according to DIN 24550 | 0040<br>0063<br>0100<br>0160<br>0250<br>0400<br>0630<br>1000   | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x                               | 1.0040<br>1.0063<br>1.0100<br>1.0160<br>1.0250<br>1.0400<br>1.0630<br>1.1000   |   |   |
| FREN<br>FRDN<br>FLEN<br>FLDN<br>according to DIN 24550 | 1260<br>2000   | 2x<br>2x   | 1.0630<br>1.1000   |   |   |
| FRE  | 0003   | 1x   | 3.0003 with valve  |   |  |
| FRE  | 0003   | 1x   | 2.0003 without valve   |   |  |
| RE   | 0004<br>0006<br>0010<br>0012   | 1x   | 1.0004<br>1.0006<br>1.0010<br>1.0012   |   |  |
| LE<br>LD   | 0003<br>0005<br>0008<br>0013<br>0015<br>0018<br>0020<br>0030<br>0045<br>0055<br>0095<br>0145                 | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x       | 2.0004<br>2.0005<br>2.0008<br>2.0013<br>2.0015<br>2.0018<br>2.0020<br>2.0030<br>2.0045<br>2.0055<br>2.0095<br>2.0145                     |   |  |
| LEN<br>LDN<br>according to DIN 24550                   | 0040<br>0063<br>0100<br>0160<br>0250<br>0400<br>0630<br>1000   | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x                               | 2.0040<br>2.0063<br>2.0100<br>2.0160<br>2.0250<br>2.0400<br>2.0630<br>2.1000   |   |   |

| Type   | Nominal size   | Number per Filter housing                                | Type . Nominal size  | Illustration  |   |
|--|--|--|--|---|---|
| 16 RA<br>16 DR                                   | 10<br>18<br>32<br>56<br>90<br>140<br>225<br>225/360<br>225/450   | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x       | 1.10<br>1.18<br>1.32<br>1.56<br>1.90<br>1.140<br>1.225<br>1.225/360<br>1.225/450           |    |   |
| 16 RA<br>16 DR                                   | 10<br>18<br>32<br>56<br>90<br>140<br>225<br>225/360<br>225/450   | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x       | 1.E10<br>1.E18<br>1.E32<br>1.E56<br>1.E90<br>1.E140<br>1.E225<br>1.E225/360<br>1.E225/450  |    |   |
| 16 RA<br>16 DR<br>25 L<br>100 L<br>25 D<br>100 D | 360<br>560<br>900<br>1400<br>1800  | 1x<br>1x<br>1x<br>1x<br>1x                               | 1.360<br>1.560<br>1.900<br>1.1400<br>1.1800  |    |   |
| 16 L<br>16 D<br>16 RA<br>16 DR                   | 2200<br>3200<br>5400<br>7200   | 4x<br>4x<br>4x<br>4x                                     | 1.560<br>1.900<br>1.1400<br>1.1800   |   |   |
| 16 RL<br>16 DR<br>25 L<br>100 L<br>25 D<br>100 D | 361<br>561<br>901<br>1401<br>1801  | 1x<br>1x<br>1x<br>1x<br>1x                               | 1.361<br>1.561<br>1.901<br>1.1401<br>1.1801  |   |   |
| 16 L<br>16 D<br>16 RA<br>16 DR                   | 2201 (2202)<br>3201 (3202)<br>5401 (5402)<br>7201 (7202)<br>8401 (8402)<br>10801 (10802)<br>12601 (12602)<br>14401 (14402) | 4x<br>4x<br>4x<br>4x<br>6x<br>6x<br>7x<br>8x             | 1.561<br>1.901<br>1.1401<br>1.1801<br>1.1401<br>1.1801<br>1.1801<br>1.1801                 |   |   |
| ZH   | 30<br>90<br>120<br>180<br>220  | 1x<br>1x<br>1x<br>1x<br>1x                               | 2.230<br>2.290<br>2.2120<br>2.2180<br>2.2220   |   |  |
| 25/100<br>250/400<br>L, D, F                     | 10<br>18<br>32<br>56<br>90<br>140<br>225<br>360, 225/360<br>460, 225/460<br>560<br>900                                     | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x | 2.10<br>2.18<br>2.32<br>2.56<br>2.90<br>2.140<br>2.225<br>2.360<br>2.460<br>2.560<br>2.900 |   |  |
| 20 L   | 6<br>10<br>20  | 1x<br>1x<br>1x   | 4.06<br>4.10<br>4.20   |   |  |
| SG<br>SE   | 56<br>90<br>140<br>225<br>360<br>460<br>560  | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x                   | 6.56<br>6.90<br>6.140<br>6.225<br>6.360<br>6.460<br>6.560                                  |   |  |
| TLF  | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8   | 1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x<br>1x             | 7.002<br>7.002<br>7.004<br>7.004<br>7.004<br>7.006<br>7.007<br>7.008                       |  |   |

### Filter Elements for Filter Type:

RE  
FRE / FREN  
FRD / FRDN  
LE / LEN  
FLE / FLEN  
LD / LDN

Special types are possible on request.

| Element Design                                     |
|--|
| 0 ... = Standard-adhesive<br>T = 100° C            |
| E ... = Adhesive T = 160° C                        |
| K ... = Cooling agent resistant adhesive           |
| L ... = Welded T = 180° C                          |
| Z ... = Tension rod                                |
| ... 0 = Standard material                          |
| ... V = Stainless steel 1.4571                     |
| ... D = Nickel-plated                              |
| ... Z = Zinc free                                  |
| For temp. > 100° C<br>please call for consultation |

| Valve                              |
|------------------------------------|
| 0 = without                        |
| 5 = 2.5 bar for size 1.0004 only   |
| 7*) = 3.5 bar for size 3.0003 only |
| *) not for 1.0004-1.0012           |

| Gasket       |
|--------------|
| P = Buna N   |
| V = Viton    |
| E = EPDM     |
| T = Teflon   |
| N = Neoprene |
| I = IT       |

| Additional Information |
|------------------------|
| 0 = without            |
| 5 = Silicone free      |
| Z = Certificates       |

### Ordering Information for filter element

1. 0020 H20XL - A 00 - 0 - P 0

| Element Type  |
|---|
| 1. = Open one side with valve built into filter element |
| 1. = Open both sides                                    |
| 2. = Open one side                                      |
| 3. = Open one side with valve built into filter element |

| Nominal Size |
|--------------|
| 0004 - 0012  |
| 0005 - 0120  |
| 0040 - 1000  |
| 0145 - 0270  |
| 0003         |
| 0004 - 0145  |
| 0040 - 1000  |
| 0003         |

| Filtration Grade   |
|--|
| <b>Cleanable</b>   |
| Nominal filtration grade in µm<br>G 10 G 100 G 350 G 1000<br>G 25 G 130 G 450 G 1500<br>G 40 G 200 G 550<br>G 60 G 250 G 600<br>G 80 G 300 G 800 |
| Absolute filtration grade (ISO 16889) in µm<br>M5 M10 M15<br>cleanable (dependent on application)  |
| <b>Disposable element</b>  |
| Absolute filtration grade (ISO 16889) in µm<br>H1XL AS1<br>H3XL AS3<br>H6XL AS6<br>H10XL AS10<br>H16XL AS20<br>H20XL                             |
| Nominal filtration grade in µm<br>P5 VS25<br>P10 VS40<br>P25 VS60  |

| Differential Pressure |
|-----------------------|
| A = 30 bar            |
| 0 = 15 bar            |
| A = 30 bar            |
| A = 30 bar            |
| B = 330 bar           |
| C = 160 bar           |
| A = 30 bar            |
| B = 330 bar           |
| A = 30 bar            |

### Filter Element for Filter Type:

TLF  
SG / SE  
RA / RL / DR  
L / D / F  
ZH

Special types are possible on request.

| Element Design                                     |
|--|
| 0 ... = Standard adhesive<br>T = 100° C            |
| E ... = Adhesive T = 160° C                        |
| K ... = Cooling agent resistant adhesive           |
| L ... = Welded T = 180° C                          |
| Z ... = Tension rod                                |
| ... 0 = Standard material                          |
| ... V = Stainless steel 1.4571                     |
| ... D = Nickel-plated                              |
| ... Z = Zinc free                                  |
| for temp. > 100° C<br>please call for consultation |

| Valve       |
|-------------|
| 0 = without |

| Seal   |
|--|
| P = Buna N   |
| V = Viton  |
| E = EPDM   |
| T = Teflon   |
| N = Neoprene   |
| I = IT   |
| X = Special  |
| 0 = without for 1.10-1.225/450, 1.E10-1.E225/450, 6.56-6.560 |

| Additional Information    |
|---------------------------|
| 0 = without               |
| 5 = Silicone free         |
| C = Silica Gel for 7 only |
| Z = Certificates          |

### Ordering Information for filter element

2. 140 G60 - A 00 - 0 - P 0

| Element Type            |
|-------------------------|
| 1. = Open both sides    |
| 1.E = Open one side     |
| 1. = Open both sides    |
| 2. = Open one side      |
| 4. = for 20 L only      |
| 6. = for SG and SE only |
| 7. = for TLF only       |
| 2.Z = for ZH only       |

| Nominal Size                                   |
|--|
| 10 to 225/450 for return filter, for valve     |
| 10 to 225/450 for return filter, without valve |
| 361 to 1801, 360 to 1800 without valve only    |
| 10 to 900 without valve only                   |
| 06 to 20                                       |
| 56 to 560 without valve and O-ring only        |
| 002/004/006/007/008 without valve only         |
| 30 to 220                                      |

| Filtration Grade   |
|--|
| <b>Cleanable</b>   |
| Nominal filtration grade in µm<br>G 10 G 100 G 350 G 1000<br>G 25 G 130 G 450 G 1500<br>G 40 G 200 G 550<br>G 60 G 250 G 600<br>G 80 G 300 G 800 |
| Absolute filtration grade (ISO 16889) in µm<br>M5 M10 M15<br>cleanable (dependent on application)  |
| <b>Disposable element</b>  |
| Absolute filtration grade (ISO 16889) in µm<br>H1XL AS1<br>H3XL AS3<br>H6XL AS6<br>H10XL AS10<br>H16XL AS20<br>H20XL                             |
| Nominal filtration grade in µm<br>P5 VS25<br>P10 VS40<br>P25 VS60  |

| Differential Pressure |
|-----------------------|
| A = 30 bar            |
| A = 30 bar            |
| A = 30 bar            |
| C = 160 bar           |
| D = 60 bar            |
| A = 30 bar            |
| B = 330 bar           |
| C = 160 bar           |
| D = 60 bar            |
| A = 30 bar            |
| S = Standard          |
| S = Standard          |
| B = 330 bar           |
| C = 160 bar           |



Industrial Filters · Accumulators

## **EPE Oil and Filter Service**

### **Mobile Service at Site:**

*Determination of oil cleanliness according to ISO 4406 and SAE-AS 4059 by on location oil analysis.*



### **Multipass Testing according to ISO 16889 for Research and Development:**

*Determination of the nominal values of filter effectiveness: Filtration grade, Filtration ratio  $\beta_w$ ,  $\Delta p$  and dirt holding capacity.*



### **Laboratory for Analysis of Oil Samples and Filter Elements:**

*Documentation of oil condition, identification of contamination and wear.*

*Evaluation of contamination in used filter elements.*



### **Laboratory, Microscopic Analysis and Documentation:**

*Microscopic evaluation of contamination and documentation of results with extensive laboratory reports and microscope photographs.*



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