

®

**PLANET**

# FSB

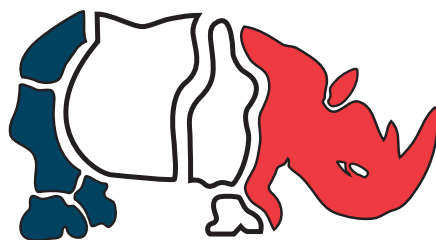
SUCTION FILTERS

SAUGFILTER

FILTRES D'ASPIRATION

FILTRI IN ASPIRAZIONE SOTTO BATTENTE

FILTROS EN ASPIRACION SEMI SUMERGIDOS



**FILTERS**  
**HYDRAULIC**

COMPANY WITH  
ENVIRONMENTAL MANAGEMENT  
SYSTEM CERTIFIED BY DNV  
= ISO 14001 =

COMPANY  
WITH QUALITY SYSTEM  
CERTIFIED BY DNV  
= ISO 9001/2000 =

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E-mail: info@planetfilters.it  
Http://www.sofima-hyd.com

## GB Suction filters - FSB series -

**DESCRIPTION:** Suction filters of FSB serie have to be fixed outside the tank, below oil level (see drawing): they permit to replace the element without emptying the oil into the tank.

**Connections:** 1 1/4" ÷ 4" - **Flow:** 10 ÷ 600 L/min

### TECHNICAL DATA

**Body:** aluminium and nylon for FSB 110 and FSB 501,  
die cast and aluminium for FSB 535 and FSB 540.

**Working temperature:** -25 ÷ +110°C

### FILTER ELEMENTS

**Special paper:** 10µ - 25µ

**Steel wire mesh:** 30µ - 60µ - 125µ - 250µ

**SEALS** Standard: Buna-N On request: FKM - Fluoroelastomer

All tests performed according to the following standards:

**ISO 2941:** Element collapse resistance test

**ISO 2942:** Production integrity test

**ISO 2943:** Fluids compatibility

**ISO 3723:** End load test method

**ISO 3724:** Flow fatigue resistance method

**ISO 3968:** Pressure drop versus flow rate

**ISO 16889:** Multipass test

## D Saugfilter - FSB Serie -

**KURZBESCHREIBUNG:** Die Saugfilter der Serie "FSB" werden unter dem Ölniveau installiert (siehe Montagesystem) Und lassen ein Auswechseln des Filterelementes zu, ohne das Öl im Tank entleeren zu müssen.

**Anschlüsse:** 1 1/4" ÷ 4" - **Durchflussmengen :** 10 ÷ 600 L/min

### TECHNISCHE DATEN

**Behälter:** Aluminium-Nylon für FSB 110 und FSB 501,  
Stahl-Aluminium für FSB 535 und FSB 540.

**Betriebstemperatur:** -25 ÷ +110°C

### FILTERELEMENTE

**Spezialpapier:** 10µ - 25µ

**Metallsieb:** 30µ - 60µ - 125µ - 250µ

**DICHTUNGEN** Standard: Buna-N - Auf Wunsch: FKM - Fluorelastomer

Alle Proben wurden nach folgenden Normen durchgeführt:

**ISO 2941:** Kollaps u. Berstdruckprüfung

**ISO 2942:** Feststellung der einwandfreien Fertigungsqualität

**ISO 2943:** Prüfung der Verträglichkeit des Materials mit den

Flüssigkeiten

**ISO 3723:** Verfahren zur Prüfung der Endscheibenbelastung

**ISO 3724:** Prüfung zur Bestimmung der Ermüdungseigenschaften

**ISO 3968:** Durchflusswiderstand gegen Volumenstrom

**ISO 16889:** Multipass Test

## F Filtres d'aspiration - série FSB -

**DESCRIPTION:** Les filtres d'aspiration "série FSB" sont spécialement conçus pour être incorporés au réservoir (voir fiches techniques). Montage au-dessous du niveau d'huile (montage immergé). L'élément filtrant peut être remplacé sans vidanger le réservoir.

**Raccordements:** 1 1/4" ÷ 4" - **Débits:** 10 ÷ 600 L/min

### INFORMATIONS TECHNIQUES

**Boî:** Aluminium-nylon pour FSB 110 - FSB 501,  
acier-aluminium pour FSB 535 - FSB 540.

**Temperature de travail:** -25 ÷ +110°C

### ELEMENTS FILTRANTS

**Papier special:** 10µ - 25µ

**Treillis métallique:** 30µ - 60µ - 125µ

**JOINTS** Standard: Buna-N - Sur demande: FKM - Fluoroélastomèr

Tous les tests sont réalisés selon les standards suivant:

**ISO 2941:** Test de pression d'écrasement élément filtrant

**ISO 2942:** Conformité aux détails de production

**ISO 2943:** Compatibilité media / fluids

**ISO 3723:** Détermination résistance à la déformation axiale

**ISO 3724:** Détermination résistance selon variation du débit

**ISO 3968:** Détermination des pertes de charge selon le débit

**ISO 16889:** Test Multipass.

## E Filtros en aspiración - serie FSB -

**DESCRIPCION:** Los filtros en aspiración de la serie FSB se instalan en el depósito por debajo del nivel de líquido (ver detalle de instalación) y permiten la substitución del elemento filtrante sin necesidad de vaciar el aceite del depósito.

**Conexiones:** 1 1/4" ÷ 4" - **Caudal:** 10 ÷ 600 L/min

### CARACTERISTICAS TÉCNICAS

**Cuerpo:** Aluminio y nylon para FSB 110 y FSB 501,  
acero y aluminio para FSB 535 y FSB 540

**Temperatura de servicio:** -25 ÷ +110°C

### ELEMENTOS FILTRANTES

**Papel especial:** 10µ - 25µ

**Tela metálica:** 30µ - 60µ - 125µ - 250µ

**JUNTAS** Estandard: Buna-N - Bajo demanda: FKM - Fluoroelastomero

Todos los ensayos se realizan según las normas sigüentes:

**ISO 2941:** Verificación de la presión de aplastamiento del cartucho

**ISO 2942:** Verificación de conformidad a la fabricación

**ISO 2943:** Compatibilidad de los materiales con los fluidos

**ISO 3723:** Prueba de resistencia a la deformación axial

**ISO 3724:** Prueba de resistencia a la fatiga

**ISO 3968:** Pérdidas de carga según el caudal

**ISO 16889:** Prueba multipass

## I Filtri in aspirazione - serie FSB -

**DESCRIZIONE:** I filtri in aspirazione della serie FSB vanno installati sotto battente (vedi sistema di montaggio) e consentono la sostituzione dell'elemento filtrante senza dover svuotare la carica dell'olio in serbatoio.

**Attacchi:** 1 1/4" ÷ 4" - **Portate:** 10 ÷ 600 L/min

### CARATTERISTICHE TECNICHE

**Corpo:** Alluminio e nylon per FSB 110 e FSB 501,  
acciaio e alluminio per FSB 535 e FSB 540.

**Temperatura di lavoro:** -25 ÷ +110°C

### ELEMENTI FILTRANTI

**Carta speciale:** 10µ - 25µ

**Tela metallica:** 30µ - 60µ - 125µ - 250µ

**GUARNIZIONI** Standard: Buna-N - A richiesta: FKM - Fluoroelastomero

Tutti i test sono stati eseguiti secondo le seguenti norme:

**ISO 2941:** Test verifica pressione collasso cartuccia

**ISO 2942:** Test verifica di conformità di fabbricazione

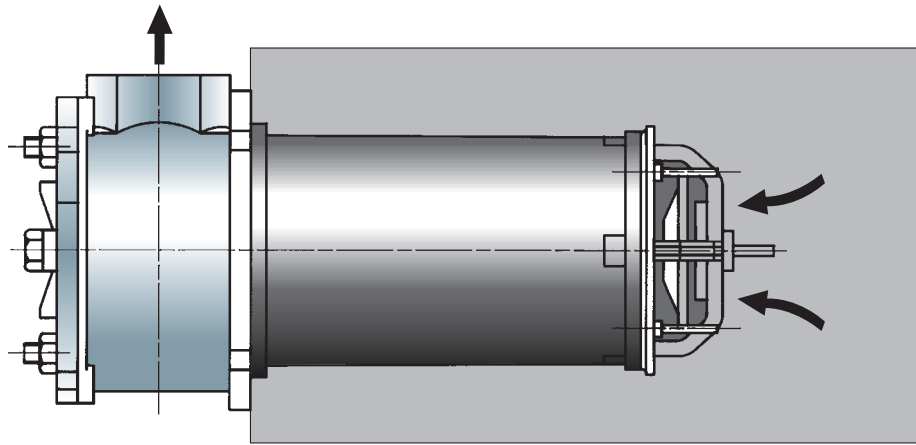
**ISO 2943:** Test verifica compatibilità materiali con fluidi

**ISO 3723:** Test per resistenza alla deformazione assiale

**ISO 3724:** Test determinazione resistenza alla fatica

**ISO 3968:** Test perdite di carico in funzione della portata

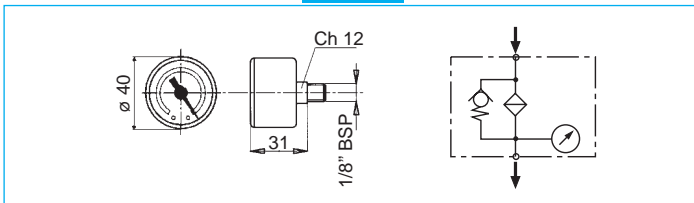
**ISO 16889:** Prova Multipass



CLOGGING INDICATORS  
VERSCHMUTZUNGSANZEIGEN

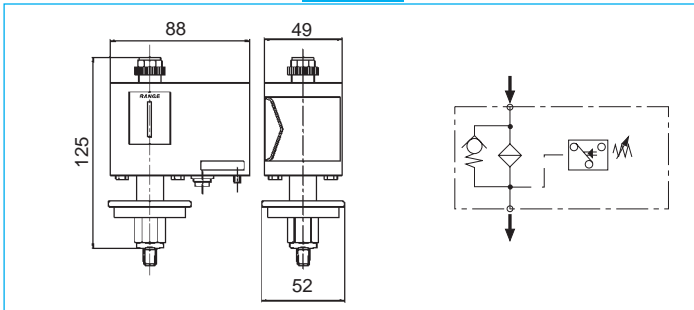
INDICATEUR DE COLMATAGE  
INDICATORI DI INTASAMENTO

10

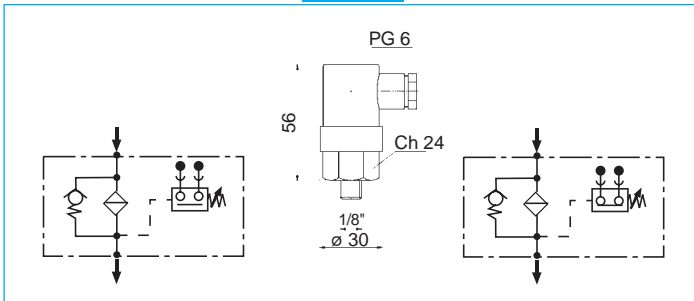


| Series<br>Série<br>Serie | Setting<br>Einstellung<br>Réglage<br>Taratura | Type<br>Typ<br>Type<br>Tipo  | For<br>Pour<br>Für<br>Per                                    |
|--------------------------|---|--|--|
| 10                       | -   | Vacuum gauge<br>Vakuummeter<br>Vacuomètre<br>Vuotometro  | FSB 110<br>FSB 501<br>FSB 535                                |
| 21                       | 0+0,8 bar<br>(0+80 kPa)                       | Vacuum switch SPDT, adjustable<br>Vakuumschalter SPDT, justierbar<br>Interrupteur à vide SPDT, réglable<br>Vuotostato SPDT, regolabile | All models<br>Jede Type<br>Tous les types<br>Tutti i modelli |
| 90                       | 0,2 bar (20 kPa)                              | Vacuum switch N.O.<br>Vakuumschalter N.O.<br>Interrupteur à vide N.O.<br>Vuotostato N.A.   | FSB 110<br>FSB 501<br>FSB 535                                |
| 92                       | 0,2 bar (20 kPa)                              | Vacuum switch N.C.<br>Vakuumschalter N.C.<br>Interrupteur à vide N.F.<br>Vuotostato N.C.   | FSB 110<br>FSB 501<br>FSB 535                                |
| L1                       | 0,2 bar (20 kPa)                              | Vacuum switch SPDT<br>Vakuumschalter SPDT<br>Interrupteur à vide SPDT<br>Vuotostato SPDT   | FSB 540  |

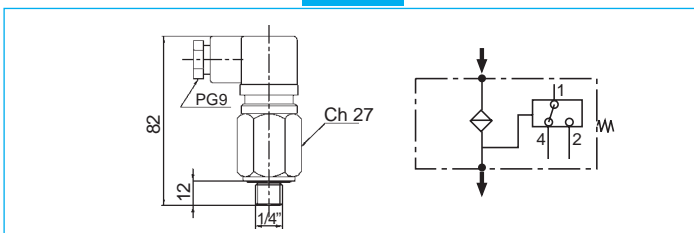
21



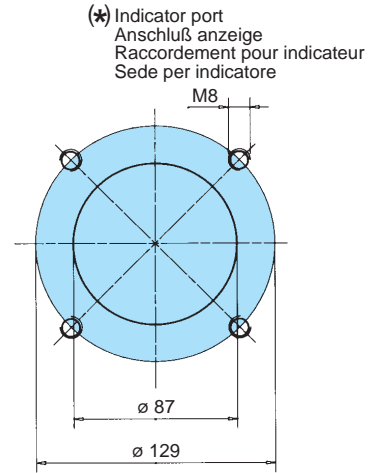
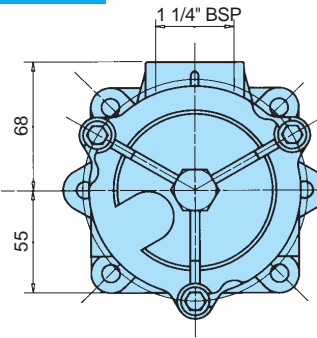
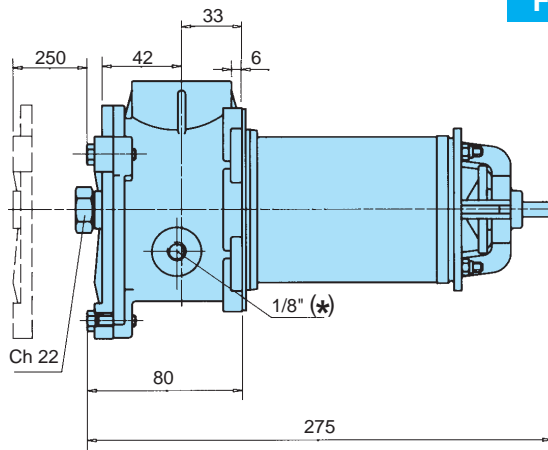
90&92



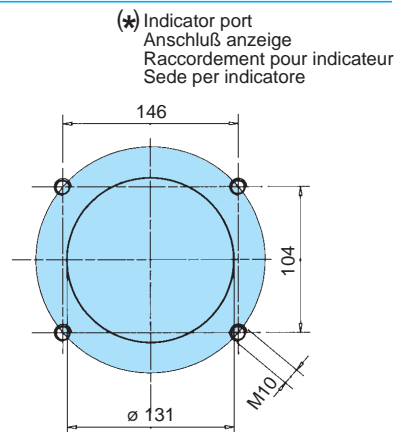
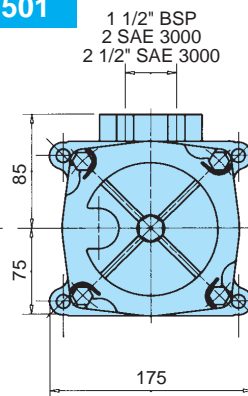
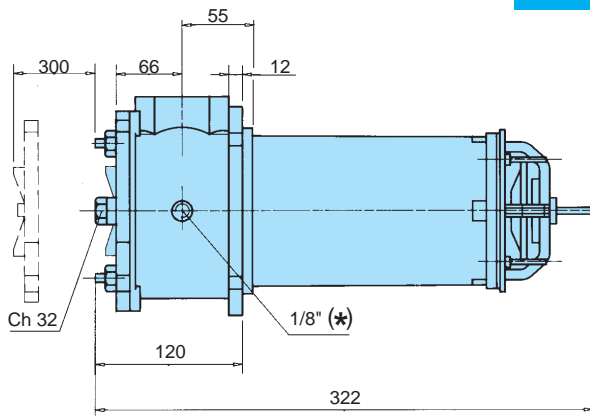
L1



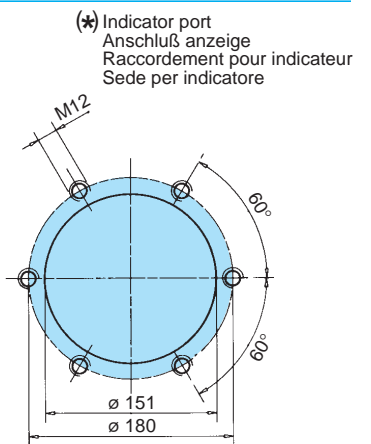
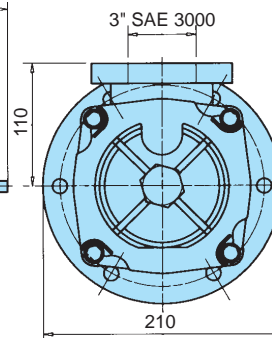
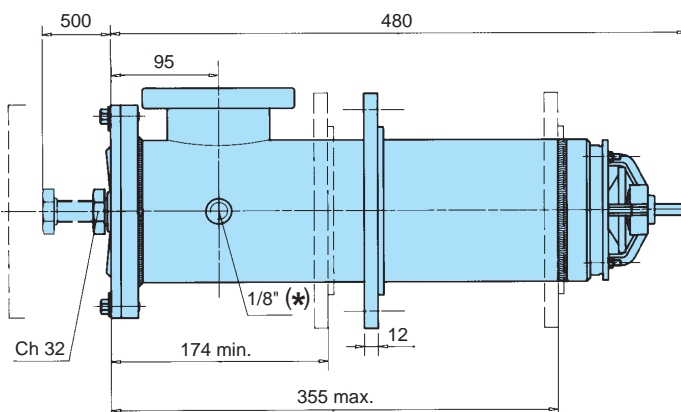
**FSB 110**



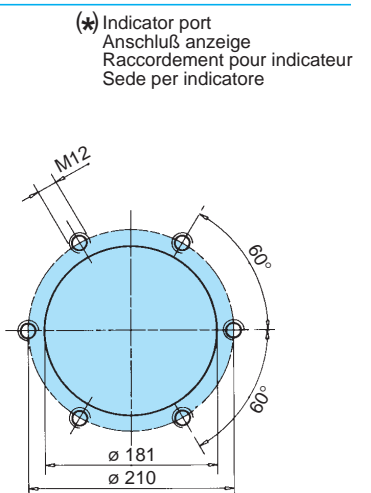
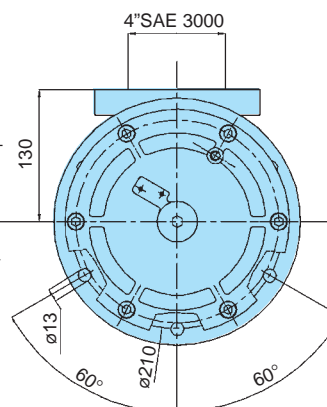
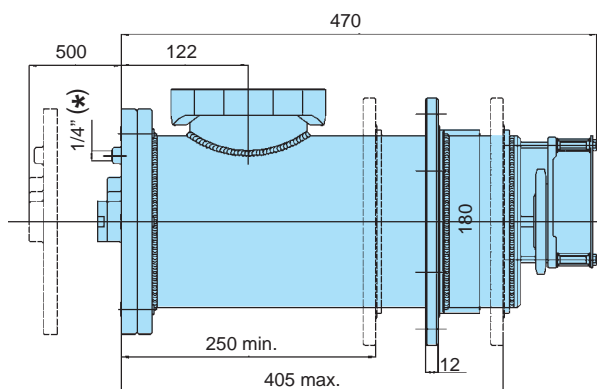
**FSB 501**



**FSB 535**



**FSB 540**



**HOW TO ORDER THE COMPLETE FILTER**  
**BESTELLBEZEICHNUNG FÜR KOMPLETTFILTER**  
**DETERMINATION D'UN FILTRE**  
**ORDINAZIONE DEL FILTRO COMPLETO**

**HOW TO ORDER REPLACEMENT CARTRIDGES**  
**BESTELLBEZEICHNUNG FÜR FILTERELEMENTE**  
**CODIFICATION CARTOUCHE DE RECHANGE**  
**ORDINAZIONE DELLA CARTUCCIA DI RICAMBIO**

|              |                          |            |            |            |            |                          |              |
|--------------|--------------------------|------------|------------|------------|------------|--------------------------|--------------|
| <b>FSB</b> ◀ | Type - Typ - Type - Tipo | <b>110</b> | <b>501</b> | <b>535</b> | <b>540</b> | Type - Typ - Type - Tipo | ▶ <b>CSF</b> |
|              |                          | <b>110</b> | <b>510</b> | <b>535</b> | <b>540</b> |                          |              |

| Filter media - Filtermaterial<br>Finesse média - Materiale filtrante |                 |        |  |           |           |           |           | Filter media - Filtermaterial<br>Finesse média - Materiale filtrante |                 |        |  |
|--|-----------------|--------|--|-----------|-----------|-----------|-----------|--|-----------------|--------|--|
| <b>CD = 10<math>\mu</math></b>                                       | Paper           | Papier |  | <b>CD</b> | <b>CD</b> | <b>CD</b> | <b>CD</b> | <b>CD = 10<math>\mu</math></b>                                       | Paper           | Papier |  |
| <b>CV = 25<math>\mu</math></b>                                       | Papier          | Carta  |  | <b>CV</b> | <b>CV</b> | <b>CV</b> | <b>CV</b> | <b>CV = 25<math>\mu</math></b>                                       | Papier          | Carta  |  |
| <b>RT = 30<math>\mu</math></b>                                       |                 |        |  | <b>RT</b> | <b>RT</b> | <b>RT</b> | <b>RT</b> | <b>RT = 30<math>\mu</math></b>                                       |                 |        |  |
| <b>MS = 60<math>\mu</math></b>                                       | Metal wire mesh |        |  | <b>MS</b> | <b>MS</b> | <b>MS</b> | <b>MS</b> | <b>MS = 60<math>\mu</math></b>                                       | Metal wire mesh |        |  |
| <b>MN = 90<math>\mu</math></b>                                       |                 |        |  | <b>MN</b> | <b>MN</b> | <b>MN</b> | <b>MN</b> | <b>MN = 90<math>\mu</math></b>                                       |                 |        |  |
| <b>DC = 250<math>\mu</math></b>                                      |                 |        |  | <b>DC</b> | <b>DC</b> | <b>DC</b> | <b>DC</b> | <b>DC = 250<math>\mu</math></b>                                      |                 |        |  |

| Seals - Dichtungen - Joints - Guarnizioni |                          |  |  |          |          |          |          | Seals - Dichtungen - Joints - Guarnizioni |                          |  |  |
|---|--------------------------|--|--|----------|----------|----------|----------|---|--------------------------|--|--|
| <b>1</b>                                  | = NBR - Nitrile - Buna-N |  |  | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>1</b>                                  | = NBR - Nitrile - Buna-N |  |  |
| <b>2</b>                                  | = FKM - Fluoroelastomer  |  |  | <b>2</b> | <b>2</b> | <b>2</b> | <b>2</b> | <b>2</b>                                  | = FKM - Fluoroelastomer  |  |  |

| Bypass type - Type de by-pass<br>Bypass Typ - Tipo di bypass |             |  |  |          |          |          |          |
|--|-------------|--|--|----------|----------|----------|----------|
| <b>0</b>   | = no bypass |  |  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

| Ports - Anschlussart<br>Raccordements - Tipo di Attacchi |              |  |  |          |          |          |          |
|--|--------------|--|--|----------|----------|----------|----------|
| <b>B</b>   | = BSP        |  |  | <b>B</b> | <b>B</b> | <b>B</b> | <b>B</b> |
| <b>F</b>   | = SAE flange |  |  | <b>F</b> | <b>F</b> | <b>F</b> | <b>F</b> |

| Port size - Anschlussgrösse<br>Raccordements - Grandezza attacchi |          |  |  |          |          |          |          |
|---|----------|--|--|----------|----------|----------|----------|
| <b>6</b>  | = 1 1/4" |  |  | <b>6</b> | -        | -        | -        |
| <b>7</b>  | = 1 1/2" |  |  | -        | <b>7</b> | -        | -        |
| <b>8</b>  | = 2"     |  |  | -        | <b>8</b> | -        | -        |
| <b>9</b>  | = 2 1/2" |  |  | -        | <b>9</b> | -        | -        |
| <b>A</b>  | = 3"     |  |  | -        | -        | <b>A</b> | -        |
| <b>C</b>  | = 4"     |  |  | -        | -        | -        | <b>C</b> |

| Indicators - Verschmutzungsanzeigen<br>Indicateurs - Indicatori |   |  |  |           |           |           |           |
|---|---|--|--|-----------|-----------|-----------|-----------|
| <b>04</b>   | = 2x1/8" Predisposition - Mit Bohrungen - Predisposition - Predisposizione  |  |  | <b>04</b> | <b>04</b> | <b>04</b> | -         |
| <b>10</b>   | = Vacuum gauge - Vakuummeter - Vacuomètre - Vuotometro  |  |  | <b>10</b> | <b>10</b> | <b>10</b> | -         |
| <b>90</b>   | = Vacuum switch N.O. - Vacuumschalter N.O. - Vacuostat N.O. - Vuotostato N.A.   |  |  | <b>90</b> | <b>90</b> | <b>90</b> | -         |
| <b>92</b>   | = Vacuum switch N.C. - Vacuumschalter N.C. - Vacuostat N.F. - Vuotostato N.C.   |  |  | <b>92</b> | <b>92</b> | <b>92</b> | -         |
| <b>G1</b>   | = 1/4" Predisposition - Mit Bohrungen - Predisposition - Predisposizione  |  |  | -         | -         | -         | <b>G1</b> |
| <b>L1</b>   | = Vacuum switch SPDT - Vacuumschalter SPDT - Vacuostat SPDT - Vuotostato SPDT   |  |  | -         | -         | -         | <b>L1</b> |
| <b>21</b>   | = Vacuum switch SPDT (adjustable) - Vacuumschalter SPDT (justierbar) - Vacuostat SPDT (réglable) - Vuotostato SPDT (regolabile) |  |  | <b>21</b> | <b>21</b> | <b>21</b> | <b>21</b> |

| Accessories - Zubehör - Accessoires - Accessori |  |  |  |          |          |          |          |
|---|--|--|--|----------|----------|----------|----------|
| <b>S</b>  | = without - ohne - sans - senza  |  |  | <b>S</b> | <b>S</b> | <b>S</b> | <b>S</b> |
| <b>M</b>  | = magnetic core - Magnetkern - noyau magnétique - colonna magnetica                  |  |  | -        | <b>M</b> | <b>M</b> | <b>M</b> |
| <b>E</b>  | = safety microswitch - Sicherheitsschalter - sûreté électrique - sicurezza elettrica |  |  | -        | <b>E</b> | <b>E</b> | <b>E</b> |
| <b>T</b>  | = M+E  |  |  | -        | <b>T</b> | <b>T</b> | <b>T</b> |

| Type<br>Typ<br>Type<br>Tipo | $\mu$        | $\Delta p$ (bar) |      |      |
|-----------------------------|--------------|------------------|------|------|
|                             |              | 0,02             | 0,04 | 0,06 |
| FSB 110                     | CD - CV      | 46               | 100  | 150  |
|                             | RT           | 54               | 120  | 180  |
|                             | MS - MN - DC | 60               | 160  | 240  |
| FSB 501                     | CD - CV      | 73               | 150  | 190  |
|                             | RT           | 77               | 180  | 228  |
|                             | MS - MN - DC | 85               | 240  | 305  |
| FSB 535                     | CD - CV      | 160              | 200  | 250  |
|                             | RT           | 195              | 240  | 300  |
|                             | MS - MN - DC | 210              | 320  | 400  |
| FSB 540                     | CD - CV      | 210              | 250  | 350  |
|                             | RT           | 260              | 300  | 420  |
|                             | MS - MN - DC | 300              | 400  | 600  |

The reference fluid has a kinematic viscosity of 30 cSt and a density of 0,86 Kg/dm<sup>3</sup>

Bezugsflüssigkeit mit kinematische Viskosität von 30 cSt und Dichte von 0,86 Kg/dm<sup>3</sup>

Fluid de référence avec viscosité de 30 cSt et densité de 0,86 Kg/dm<sup>3</sup>

Fluido di riferimento con viscosità cinematica di 30 cSt e densità di 0,86 Kg/dm<sup>3</sup>

**FILTER AREA**  
**FILTERFLÄCHE**

**(cm<sup>2</sup>)**

**SURFACE FILTRANTE**  
**SUPERFICIE FILTRANTE**

| Type<br>Typ<br>Type<br>Tipo | Filter elements - Filterelemente - Elements filtrants - Elementi filtranti |                   |
|-----------------------------|--|-------------------|
|                             | CD - CV  | RT - MS - MN - DC |
| CSF 110                     | 2560   | 1600              |
| CSF 510                     | 3070   | 1845              |
| CSF 535                     | 5670   | 3545              |
| CSF 540                     | 8100   | 5065              |