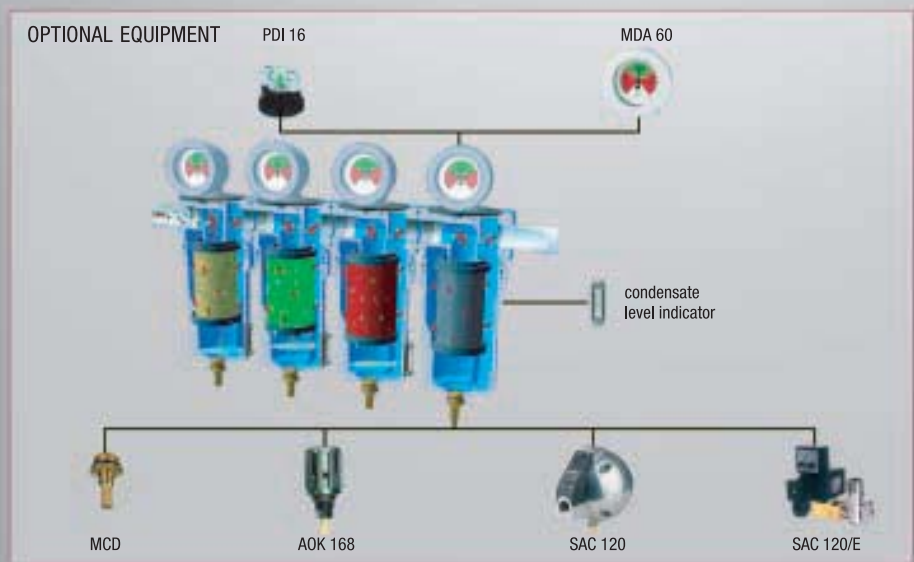




# F/P-M-S-A-W

FILTERS

The new aluminum F/P-M-S-A casings have been designed to achieve higher efficiency through an aerodynamic process of the compressed air between the inlet and outlet vents. The structure of the casings - made of high-quality aluminium, through a highly accurate dye-cast process - is able to provide a locking action with a simple rotation; the casings are provided with a safety whistle in case the operator tries to open the filter under pressure. The new dye-cast structure and the resilient finish achieved with powder-painting, make the casing look very nice. The head is provided with a special bayonet-tapered opening which enables you to push in the filtering element, thus ensuring a perfect seal thanks to the recessed o-ring.



# F/P-M-S-A-W

FILTERS

The W series is composed by centrifugal condensation separators, in which the compressed air enters and spins with a centrifugal motion thanks to which it is possible to obtain a partial separation of the condensate.



### Technical characteristics and dimensions

| F/W<br>16 BAR MAX | Code    | l/min | m <sup>3</sup> /h | AxB     | KG  | IN<br>OUT |
|-------------------|---------|-------|-------------------|---------|-----|-----------|
| F 010 W           | 223101A | 2000  | 120               | 88x256  | 1.5 | 3/4"      |
| F 030 w           | 223102A | 5500  | 330               | 125x362 | 3.3 | 1"        |
| F 070 w           | 223103A | 13000 | 780               | 125x643 | 3.9 | 1 1/2"    |
| F 150 w           | 223104A | 25000 | 1500              | 163x935 | 8.4 | 2"        |

### DEGREE OF FILTERING AND APPLICATION

| GRADE                       | solid particle size | quality class solids | residual oil content (mg/m <sup>3</sup> / ppm) | quality class oils | pressure drop new element (mbar / psi) | change cartridge at pressure drop (mbar / psi) | filter material           | pleated version | wrapped version | Installation example | APPLICATION EXAMPLE  |
|-----------------------------|---------------------|----------------------|--|--------------------|--|--|---------------------------|-----------------|-----------------|----------------------|--|
| P pre-filter                | 3 micron            | 3                    | -  | -                  | 40/0,58                                | 600/8,7  | acrile fibres             | x               | -               |                      | Pre-filter to series M, S, A. Pneumatic blowing systems. Pre-filters for vacuum pumps. Dust filters for a low pressure applications. Dust filters for desiccant dryers.                            |
| M coalescent                | 0,1 micron          | 1                    | 0,1/0,08                                       | 2                  | <80/1,16                               | 600/8,7  | borosilicate micro fibres | x               | -               |                      | Pneumatic tools. Pneumatic conveying. Pneumatic controls. Surface treatment. Vacuum pumps discharge. Compressed air motors. Shipyards and offshore. Sandblasting. Pre-filter for desiccant dryers. |
| S coalescent                | 0,01 micron         | 1                    | 0,01/0,01                                      | 1                  | <90/1,3                                | 600/8,7  | borosilicate micro fibres | x               | -               |                      | Controllers and regulators. Pneumatic conveying. Fluid. Analytical instrumentation. Pre-filter for desiccant dryers.   |
| A activated carbon absorber | -                   | -                    | 0,005/0,005                                    | 1                  | 120/1,74                               | *every 6 months                                | active carbon             | -               | x               |                      | Process air. Pharmaceuticals. Foodstuffs. Brewing. Hospitals service. Packaging. Breathing air. Galvanising. Photographic laboratories. Logic circuits.  |

\*To suit application, filter elements "A" must be periodically changed, but at least every 6 months. Activated carbon filters "A" must not operate in oil saturated conditions.

### Technical characteristics and application

| F/P<br>16 BAR | Code    | F/M<br>16 BAR | Code    | F/S<br>16 BAR | Code    | F/A<br>16 BAR | Code    | l/min   | m <sup>3</sup> /h | AxB  | KG       | IN<br>OUT  |
|---------------|---------|---------------|---------|---------------|---------|---------------|---------|---------|-------------------|------|----------|------------|
| 3 MICRON      | F 005 P | 223051A       | F 005 M | 223061A       | F 005 S | 223070A       | F 005 C | 223090A | 1000              | 60   | 88x187   | 0,7 3/8"   |
|               | F 007 P | 223052A       | F 007 M | 223062A       | F 007 S | 223071A       | F 007 C | 223091A | 1300              | 78   | 88x187   | 0,7 1/2"   |
|               | F 010 P | 223053A       | F 010 M | 223063A       | F 010 S | 223072A       | F 010 C | 223092A | 2000              | 120  | 88x256   | 0,9 3/4"   |
|               | F 018 P | 223054A       | F 018 M | 223065A       | F 018 S | 223073A       | F 018 C | 223093A | 3300              | 198  | 125x262  | 2,2 1"     |
|               | F 030 P | 223055A       | F 030 M | 223066A       | F 030 S | 223074A       | F 030 C | 223094A | 5500              | 330  | 125x362  | 2,6 1"     |
|               | F 047 P | 223056A       | F 047 M | 223067A       | F 047 S | 223075A       | F 047 C | 223095A | 8500              | 510  | 125x452  | 2,9 1 1/2" |
|               | F 070 P | 223057A       | F 070 M | 223068A       | F 070 S | 223076A       | F 070 C | 223096A | 13000             | 780  | 125x643  | 3,7 1 1/2" |
|               | F 094 P | 223058A       | F 094 M | 223069A       | F 094 S | 223077A       | F 094 C | 223097A | 16600             | 996  | 163x695  | 7,4 2"     |
|               | F 150 P | 223059A       | F 150 M | 223081A       | F 150 S | 223078A       | F 150 C | 223098A | 25000             | 1500 | 163x935  | 10 2"      |
|               | F 240 P | 223060A       | F 240 M | 223064A       | F 240 S | 223079A       | F 240 C | 223099A | 46000             | 2760 | 248x1070 | 25 3"      |

### "F" Correction factor for different operating pressure

| bar | 1    | 2    | 3   | 4    | 5    | 6    | 7  | 8    |
|-----|------|------|-----|------|------|------|----|------|
| F   | 0.25 | 0.38 | 0.5 | 0.65 | 0.75 | 0.88 | 1  | 1.13 |
| bar | 9    | 10   | 11  | 12   | 13   | 14   | 15 | 16   |
| F   | 1.25 | 1.38 | 1.5 | 1.63 | 1.75 | 1.88 | 2  | 2.13 |

For more information, please contact your nearest dealer or:

## BOTTARINI

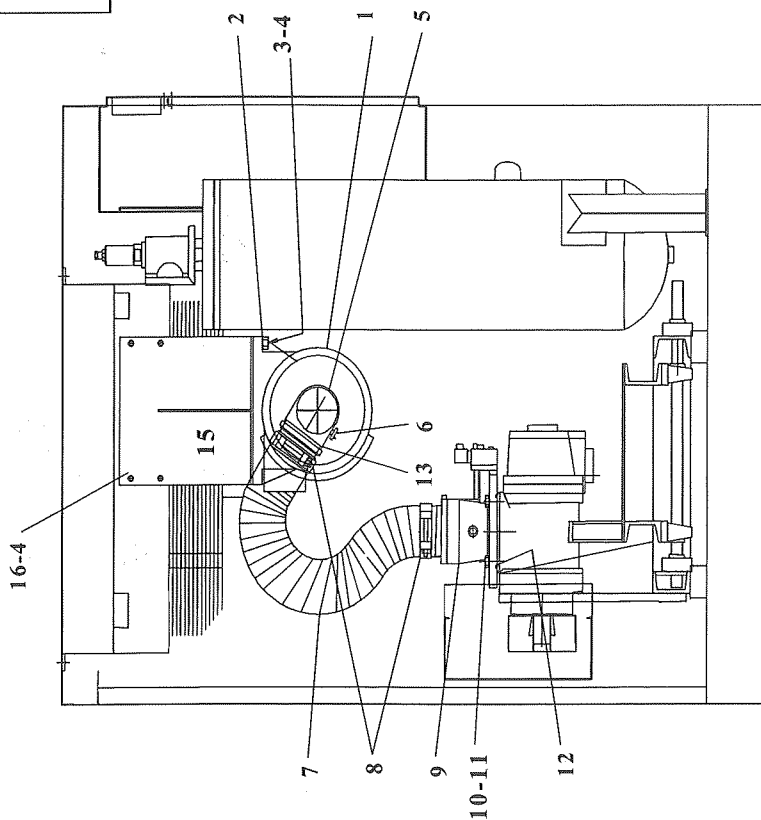
Gardner Denver S.r.l. 21015 LONATE POZZOLO (VA) Italia Via Tevere, 6

Tel: +39 0331 349411 • Fax: +39 0331 349457

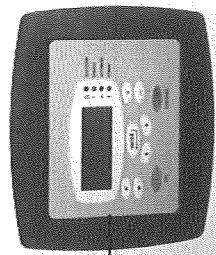
<http://www.bottarini.it> • e-mail: [bottarini@gardnerdenver.com](mailto:bottarini@gardnerdenver.com)

**SUCTION FILTER / DER ANSAUGFILTER / FILTRE  
D'ASPIRATION / FILTRO DE ASPIRACION / FILTRO  
ASPIRAZIONE**

**kw 75**



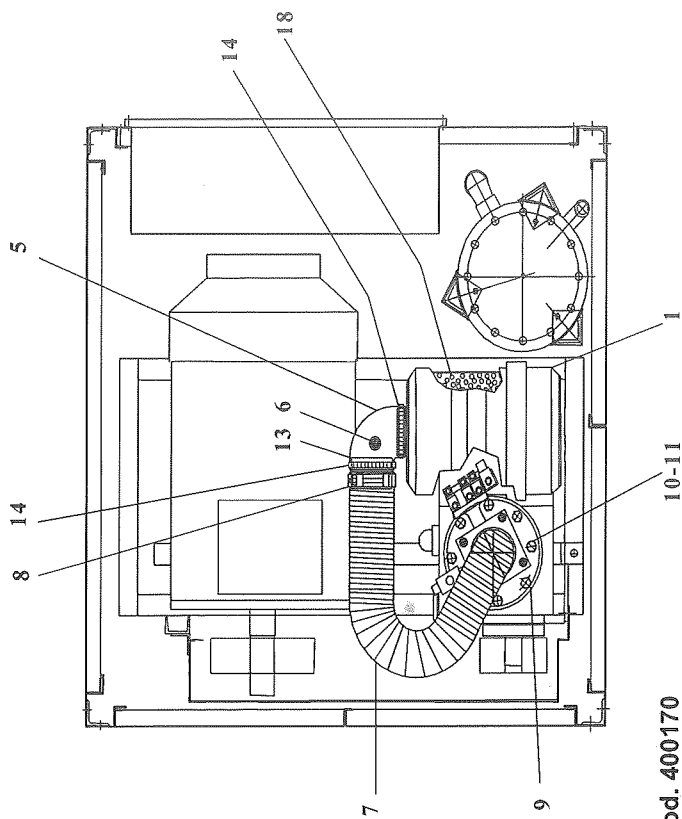
**CONTROL UNIT - KONTROLLER - CONTROLLER -  
CENTRALINA**



Cod. 89864799  
AIRSMART controller

Cod. 400170

Plan see / Ansicht von oben / Vue plan / Vista  
en altura / vista in pianta



**SUCTION FILTER / DER ANSAUGFILTER / FILTRE D'ASPIRATION / FILTRO DE ASPIRACION / FILTRO ASPIRAZIONI**

|   |                |                        |
|---|----------------|------------------------|
| VALIDITY/GULTIG BIS/SERIE VALABILE/SERIE VALIDA | FROM/VON/DE/DA | TO/BIS/JUSQU'A/FIN/O A |
| KW 75   | 15/10/2007     |                        |
|   | 15/10/2007     |                        |

| Pos | Code    | Quantity | Name                     | Benennung                 | Designation                   | Description                  | Denominazione                |
|-----|---------|----------|--------------------------|---------------------------|-------------------------------|------------------------------|------------------------------|
| 1   | 223488  | 1        | suction filter           | der Ansaugfilter          | filtre d'aspiration           | filtro de aspiracion         | filtro aspirazione           |
| 2   | 250158  | 1        | T. ES. M8x30 screw       | die Schraube T. ES. M8x30 | T. ES. M8x30 vis              | tornillo T. ES. M8x30        | stafsa fss. Filtro           |
| 3   | 180319  | 2        | washer                   | die Unterlegsscheibe      | rondelle                      | rondana                      | vite T. ES. M8x30            |
| 4   | 240011  | 6        | curve 90° D. 110         | das Bogenrohr 90° D. 110  | coude 90° D. 110              | curva 90° D. 110             | rondella plana D. 8,5        |
| 5   | 250159  | 1        | indic clogged filter     | der Verstopffilterzeiger  | indicateur filtre colmate     | indic. obstruction fil.      | curva 90° D. 110             |
| 6   | 250149  | 1        | flexible hose            | Schlauch                  | tube flexible                 | tubo flexible                | indicatore filtro imasato    |
| 7   | 150839  | 2        | clamp                    | der ParRing               | collier                       | abrazadera                   | tubo flessibile D. 110       |
| 8   | 250161  | 1        | suction valve            | das Ansaugventil          | soupape d'aspiration          | valvula de aspiracion        | fascetta D. 113-121          |
| 9   | 224049  | 1        | screw M16x40             | die Schraube M16x40       | vis M16x40                    | tornillo M16x40              | valvola aspirazione          |
| 10  | 180243  | 8        | washer                   | die Unterlegsscheibe      | rondelle                      | rondana                      | vite M16x40                  |
| 11  | 180463  | 8        | gasket                   | Dichtung                  | joint                         | guarnición                   | rondella plana D. 16         |
| 12  | -       | 1        | junction                 | die Muffe                 | raccord                       | manguito                     | guarnizione OR               |
| 13  | 250157  | 1        | clamp                    | der ParRing               | collier                       | abrazadera                   | manicotto D. 110             |
| 14  | 250095  | 2        | suction filter bracket   | die Schraube T. ES. M8x20 | support filtre d'aspiration   | soporte filtro de aspiracion | fascetta D. 108-128          |
| 15  | 132949A | 1        | T. ES. M8x20 screw       | der Ansaugfiltereinsatz   | T. ES. M8x20 vis              | tornillo T. ES. M8x20        | supporto filtro aspir.       |
| 16  | 180317  | 4        | suction filter cartridge |                           | cartouche filtre d'aspiration | cartucho filtro aspiracion   | vite T. ES. M8x20            |
| 18  | 223491  | 1        |                          |                           |                               |                              | cartuccia filtro aspirazione |

GB
D
F
E
I

# Control - Measure - Filter

## Compressed air filters: Fine filter - microfilter - Activated carbon filter

Filters for clean and oil-free compressed air ISO 8573-1

AF compressed air filters are designed for protection of the downstream compressed air system and equipment against defects and other failures. They ensure high efficient removal of solid particles, water, oil aerosols, hydrocarbons, odour and vapours from compressed air systems up to 16 bar. For any other technical gas please contact us or your local distributor. Required compressed air quality according to standard ISO 8571-1 can be achieved with 9 different grades of filter elements (B, P, R, M, S, A, A<sup>2</sup>, H<sup>2</sup> and MS<sup>2</sup>). Optional internal and external condensate drains should be used for efficient condensate draining from filter housing.

### Characteristics

- working pressure 16 bar
- flow rate 60 to 2760 Nm<sup>3</sup>/h
- connections 3/8" to 3"
- operating temp. reach 1.5 to 65 °C
- standard color RAL 5012

### Applications

- general industrial applications
- automotive
- electronics
- food and beverage
- chemistry
- petrochemical
- plastics
- paint



| TECHNICAL DATA - AF FILTERS                           |           |                     |                             |      |                 |     |      |      |            | INCLUDING FILTER ELEMENT |                           |                  |                           |                       |                           |   |                                     |
|---|-----------|---------------------|-----------------------------|------|-----------------|-----|------|------|------------|--------------------------|---------------------------|------------------|---------------------------|-----------------------|---------------------------|---|-------------------------------------|
| Filter housing size                                   | Pipe size | Max. oper. pressure | Flow rate at 7 bar(g), 20°C |      | Dimensions [mm] |     |      |      | Mass       | B sintered 15 µm         | P prefilter 3 µm          | R prefilter 1 µm | M microfilter 0,1 µm      | S microfilter 0,01 µm | A active carbon           | A <sup>2</sup> adsorption (act. carbon) | H <sup>2</sup> catalyst (hopcalite) |
|   | inch      | [bar/psi]           | Nm <sup>3</sup> /h          | scfm | A               | B   | C    | D    | kg         |                          |                           |                  |                           |                       |                           |   |                                     |
| Filter housing size                                   | 3/8"      | 16/232              | 60                          | 35   | 187             | 88  | 20   | 60   | 0,7        | On request               | On request                | On request       | AF0056M                   | AF0056S               | AF0056A                   | On request                              | On request                          |
|   | 1/2"      | 16/232              | 78                          | 46   | 187             | 88  | 20   | 60   | 0,7        | On request               | On request                | On request       | AF0076M                   | AF0076S               | AF0076A                   | On request                              | On request                          |
|   | 3/4"      | 16/232              | 120                         | 70   | 257             | 88  | 20   | 80   | 0,8        | On request               | On request                | On request       | AF0106M                   | AF0106S               | AF0106A                   | On request                              | On request                          |
|   | 1"        | 16/232              | 198                         | 116  | 263             | 125 | 32   | 100  | 1,8        | On request               | On request                | On request       | AF0186M                   | AF0186S               | AF0186A                   | On request                              | On request                          |
|   | 1"        | 16/232              | 335                         | 197  | 363             | 125 | 32   | 120  | 2,5        | On request               | On request                | On request       | AF0306M                   | AF0306S               | AF0306A                   | On request                              | On request                          |
|   | 1 1/2"    | 16/232              | 510                         | 300  | 461             | 125 | 32   | 140  | 2,5        | On request               | On request                | On request       | AF0476M                   | AF0476S               | AF0476A                   | On request                              | On request                          |
|   | 1 1/2"    | 16/232              | 780                         | 459  | 640             | 125 | 32   | 160  | 3,2        | On request               | On request                | On request       | AF0706M                   | AF0706S               | AF0706A                   | On request                              | On request                          |
|   | 2"        | 16/232              | 1000                        | 588  | 684             | 163 | 43   | 520  | 5,1        | On request               | On request                | On request       | AF0946M                   | AF0946S               | AF0946A                   | On request                              | On request                          |
|   | 2"        | 16/232              | 1500                        | 882  | 935             | 163 | 43   | 770  | 7,1        | On request               | On request                | On request       | AF1506M                   | AF1506S               | AF1506A                   | On request                              | On request                          |
|   | 2 1/2"    | 16/232              | 1680                        | 990  | 935             | 163 | 43   | 770  | 6,9        | On request               | On request                | On request       | AF1756M                   | AF1756S               | AF1756A                   | On request                              | On request                          |
| 3   | 16/232    | 2160                | 1270                        | 795  | 240             | 59  | 630  | 12,9 | On request | On request               | On request                | AF2006M          | AF2006S                   | AF2006A               | On request                | On request                              |                                     |
| 3   | 16/232    | 2760                | 1620                        | 1000 | 240             | 59  | 780  | 14,0 | On request | On request               | On request                | AF2406M          | AF2406S                   | AF2406A               | On request                | On request                              |                                     |
| quality class - solids (ISO 8573-1)                   |           |                     |                             |      |                 |     |      |      |            | 7                        | 6                         | 3                | 2                         | 1                     | 1 <sup>3)</sup>           | 1 <sup>3)</sup>                         | 1 <sup>3)</sup>                     |
| residual oil content [mg/m <sup>3</sup> ]             |           |                     |                             |      |                 |     |      |      |            | -                        | -                         | -                | <0,1                      | <0,01                 | <0,005                    | <0,005                                  | -                                   |
| quality class - oils (ISO 8573-1)                     |           |                     |                             |      |                 |     |      |      |            | -                        | -                         | -                | 2                         | 1                     | 1                         | 0/1                                     | -                                   |
| pressure drop - new element [mbar / psi]              |           |                     |                             |      |                 |     |      |      |            | 20 / 0,290               | 10 / 0,145                | 20 / 0,290       | 50 / 0,725                | 80 / 1,160            | 60 / 0,870                | see spec.                               | see spec.                           |
| change filter cartridge at pressure drop [mbar / psi] |           |                     |                             |      |                 |     |      |      |            | <sup>1)</sup>            | 350 / 5,07                | 350 / 5,07       | 350 / 5,07                | 350 / 5,07            | 6 months <sup>2)</sup>    | 6 months <sup>2)</sup>                  | 6 months <sup>2)</sup>              |
| filter material                                       |           |                     |                             |      |                 |     |      |      |            | sintered brass           | acrylic fibres, cellulose |                  | borosilicate micro fibres |                       | borosilicate micro fibres |   |                                     |
| pleated version                                       |           |                     |                             |      |                 |     |      |      |            | -                        | ✓                         | ✓                | ✓                         | ✓                     | -                         | ✓                                       | ✓                                   |
| wrapped version                                       |           |                     |                             |      |                 |     |      |      |            | -                        | -                         | -                | -                         | -                     | ✓                         | -                                       | -                                   |
| sintered version                                      |           |                     |                             |      |                 |     |      |      |            | ✓                        | -                         | -                | -                         | -                     | -                         | -                                       | -                                   |
| min. operating temperature (°C / °F)                  |           |                     |                             |      |                 |     |      |      |            | 1,5 / 35                 | 1,5 / 35                  | 1,5 / 35         | 1,5 / 35                  | 1,5 / 35              | 1,5 / 35                  | 1,5 / 35                                | 1,5 / 35                            |
| max. operating temperature (°C / °F)                  |           |                     |                             |      |                 |     |      |      |            | 65 / 149                 | 65 / 149                  | 65 / 149         | 65 / 149                  | 65 / 149              | 45 / 113                  | 45 / 113                                | 45 / 113                            |
| CORRECTION FACTORS                                    |           |                     |                             |      |                 |     |      |      |            |                          |                           |                  |                           |                       |                           |   |                                     |
| Operating pressure [bar]                              | 2         | 3                   | 4                           | 5    | 6               | 7   | 8    | 9    | 10         | 11                       | 12                        | 13               | 14                        | 15                    | 16                        |   |                                     |
| Operating pressure [psi]                              | 29        | 44                  | 58                          | 72   | 87              | 100 | 115  | 130  | 145        | 160                      | 174                       | 189              | 203                       | 218                   | 232                       |   |                                     |
| Correction factor                                     | 0,38      | 0,50                | 0,63                        | 0,75 | 0,88            | 1   | 1,13 | 1,25 | 1,38       | 1,50                     | 1,63                      | 1,75             | 1,88                      | 2,00                  | 2,13                      |   |                                     |

<sup>1)</sup> B filter element can be cleared with ultrasonic bath or with back flushing. Intervals of cleaning depends of application. If necessary replace filter element with new one.

<sup>2)</sup> Filter elements "A, A<sup>2</sup>, H<sup>2</sup>", must be changed periodically to suit application, but at least every 6 months. Activated carbon filters must not operate in oil saturated conditions.

<sup>3)</sup> Valid if "S" filter cartridge is installed upstream.

REPLACEMENT COMPRESSED AIR FILTER ELEMENTS

| B grade 5 µm               | P grade 3 µm                    | R grade 1 µm                    | M grade 0.1 µm              | S grade 0.01 µm             | Activated carbon                                  |
|----------------------------|---------------------------------|---------------------------------|-----------------------------|-----------------------------|---|
|                            |                                 |                                 |                             |                             |   |
| prefilter                  | prefilter                       | prefilter                       | microfilter                 | microfilter                 | activated carbon                                  |
|                            |                                 |                                 |                             |                             |   |
| quality class (ISO 8573-1) | quality class (ISO 8573-1)      | quality class (ISO 8573-1)      | quality class (ISO 8573-1)  | quality class (ISO 8573-1)  | quality class (ISO 8573-1)                        |
| solids: 7                  | solids: 6                       | solids: 3                       | solids: 2                   | solids: 1                   | solids: 1   |
| oils: -                    | oils: -                         | oils: -                         | oils: 2                     | oils: 1                     | oils: 1   |
| material                   | material                        | material                        | material                    | material                    | material  |
| - sintered brass           | - acrylic fibres<br>- cellulose | - acrylic fibres<br>- cellulose | - borosilicate micro fibres | - borosilicate micro fibres | - activated carbon<br>- borosilicate micro fibres |

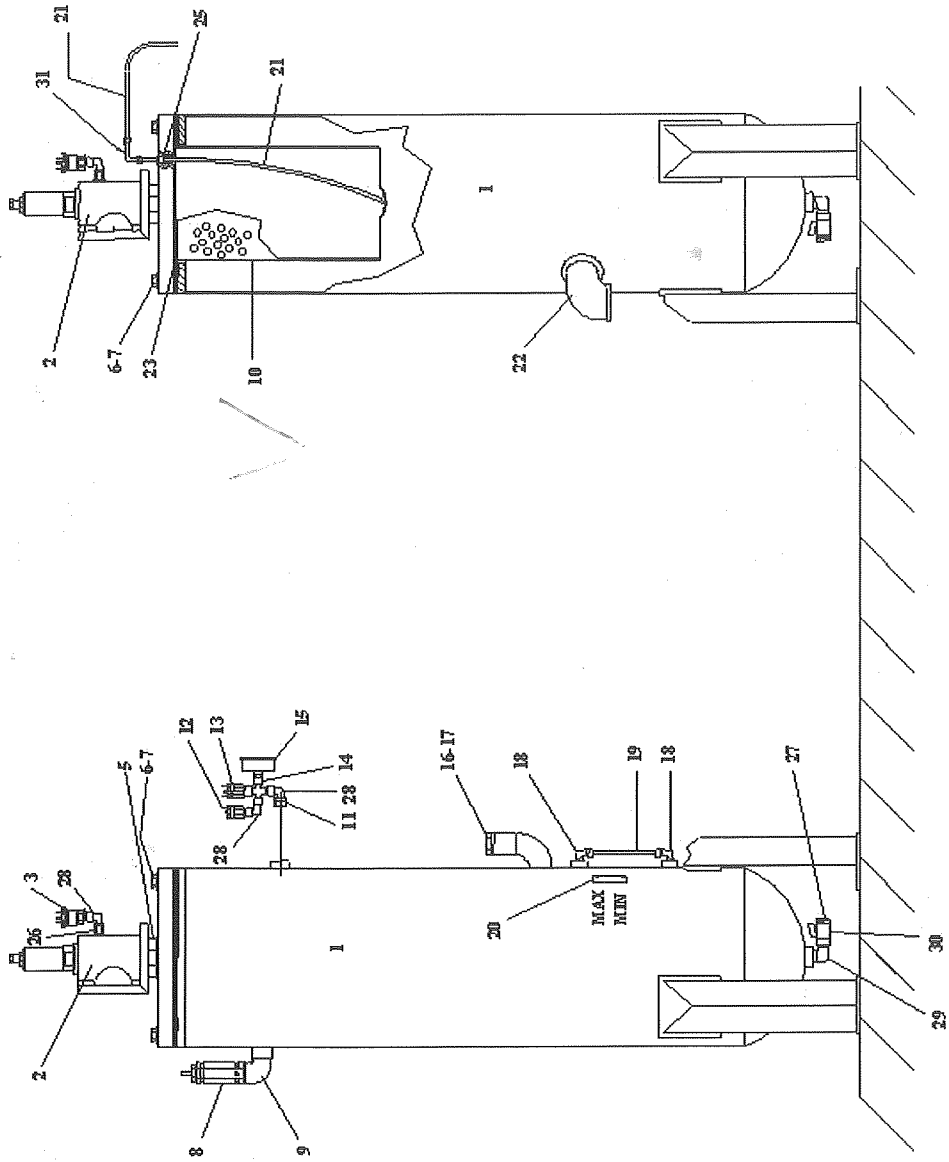
A<sup>2</sup> grade H<sup>2</sup> grade

| REPLACEMENT FILTER ELEMENTS |                |                  |                  |                  |                      |                                     |                                  |                            |                                      |
|-----------------------------|----------------|------------------|------------------|------------------|----------------------|-------------------------------------|----------------------------------|----------------------------|--------------------------------------|
| Filter housing              | Pipe size inch | B sintered 15 µm | P prefilter 3 µm | R prefilter 1 µm | M microfilter 0,1 µm | S <sup>2)</sup> microfilter 0,01 µm | A <sup>1)</sup> activated carbon | A adsorption (act. carbon) | H <sup>2)</sup> catalyst (hopcalite) |
| AF0056M                     | 3/8            | On request       | On request       | On request       | 06050M <sup>3)</sup> | 06050S <sup>3)</sup>                | 06050A <sup>3)</sup>             | On request                 | On request                           |
| AF0076M                     | 1/2            | On request       | On request       | On request       | 07050M <sup>3)</sup> | 07050S <sup>3)</sup>                | 07050A <sup>3)</sup>             | On request                 | On request                           |
| AF0106M                     | 3/4            | On request       | On request       | On request       | 14050M               | 14050S                              | 14050A                           | On request                 | On request                           |
| AF0186M                     | 1              | On request       | On request       | On request       | 12075M               | 12075S                              | 12075A                           | On request                 | On request                           |
| AF0306M                     | 1              | On request       | On request       | On request       | 22075M               | 22075S                              | 22075A                           | On request                 | On request                           |
| AF0476M                     | 1 1/2          | On request       | On request       | On request       | 32075M               | 32075P                              | 32075A                           | On request                 | On request                           |
| AF0706M                     | 1 1/2          | On request       | On request       | On request       | 50075M               | 50075S                              | 50075A                           | On request                 | On request                           |
| AF0946M                     | 2              | On request       | On request       | On request       | 51090M               | 51090S                              | 51090A                           | On request                 | On request                           |
| AF1506M                     | 2              | On request       | On request       | On request       | 76090M               | 76090S                              | 76090A                           | On request                 | On request                           |
| AF1756M                     | 2 1/2          | On request       | On request       | On request       | 76090M               | 76090S                              | 76090A                           | On request                 | On request                           |
| AF2006M                     | 3              | On request       | On request       | On request       | 51140M               | 51140S                              | 51140A                           | On request                 | On request                           |
| AF2406M                     | 3              | On request       | On request       | On request       | 75140M               | 75140S                              | 75140A                           | On request                 | On request                           |

|   |  |
|---|--|
|   |  |
| adsorption  | catalyst                                   |
|   |  |
| quality class (ISO 8573-1)                        | quality class (ISO 8573-1)                 |
| solids: 1   | solids: 1                                  |
| oils: 0/1   | oils: -                                    |
| material  | material                                   |
| - borosilicate micro fibres<br>- activated carbon | - borosilicate micro fibres<br>- hopcalite |

# KW 75-90

## OIL SEPARATION FILTER / ENTÖLUNSFILTER / FILTRE DESHUILEUR / FILTRO DESOLEADOR / FILTRO DISOLEATORE



OIL SEPARATION FILTER / ENTÖLUNGSFILTER / FILTRE DESHUIEUR / FILTRO DESOLEADOR / FILTRO DISOLEATOR

| Pos | Code      | Quantity | Name                     | Benennung                      | Designation                 | Description                  | Denominazione                |
|-----|-----------|----------|--------------------------|--------------------------------|-----------------------------|------------------------------|------------------------------|
| 1   | 131259    | 1        | oil tank                 | Öltank                         | réservoir huile             | deposito acetile             | serbatoio olio               |
| 1   | 133027    | 1        | oil tank SINGAPORE       | Öltank SINGAPORE               | réservoir huile SINGAPORE   | deposito acetile SINGAPORE   | serbatoio olio SINGAPORE     |
| 1   | 131259A   | 1        | oil tank MALAYSIA        | Öltank MALAYSIE                | réservoir huile MALAISIE    | deposito acetile MALAYSIA    | serbatoio olio MALAYSIA      |
| 1   | 131256    | 1        | oil tank AUSTRALIA       | Öltank AUSTRALIAN              | réservoir huile AUSTRALIA   | deposito acetile AUSTRALIA   | serbatoio olio AUSTRALIA     |
| 2   | 221606    | 1        | oil tank UDT POLISH      | Öltank UDT POLINISCH           | réserv. huile UDT POLONAIS  | deposito acetile UDT POLACO  | serbatoio olio POLONIA       |
| 3   | CC1028936 | 1        | minimum pressure valve   | der Druckwächter               | soupape pression minimum    | valvula de mínima presión    | valvola min. press.          |
| 5   | 160258    | 1        | transducer               | der Druckwächter               | pressostat                  | pressostato                  | trasduttore di pressione     |
| 6   | 180544    | 1        | nipple                   | Nippel                         | Injecteur                   | adaptador                    | nipplo tropicalizzato 2"     |
| 7   | 180920    | 12       | T.ES.N 16x55 screw       | die Schraube T.ES.N 16x55      | T.ES.N 16x55 vis            | tornillo T.ES.N 16x55        | vite T.ES.N 16x55            |
| 8   | 221534    | 1        | washer D.16              | die Unterlegscheibe D.16       | rondelle D.16               | rondana D.16                 | rondella piana D.16          |
| 8   | 221531    | 1        | safety valve 7.5 bar     | Sicherheitsventil 7.5 bar      | soupape de sécurité 7.5 bar | valvula de seguridad 7.5 bar | valvola di sicurezza 7.5 bar |
| 8   | 221610    | 1        | safety valve 10 bar      | Sicherheitsventil 10 bar       | soupape de sécurité 10 bar  | valvula de seguridad 10 bar  | valvola di sicurezza 10 bar  |
| 9   | 160105    | 1        | safety valve 13 bar      | Sicherheitsventil 13 bar       | soupape de sécurité 13 bar  | valvula de seguridad 13 bar  | valvola di sicurezza 13 bar  |
| 10  | 223487    | 1        | MF 1" union              | der Kriestück MF 1"            | coude MF 1"                 | codo MF 1"                   | gomito MF 1"                 |
| 11  | 160673    | 1        | separation cartridge     | Entölungsfiler                 | filtre déshuileur           | filtro separador             | filtro disoleatore           |
| 12  | 210334    | 1        | D. M.1/2"-F.1/4"         | die Muffe M.1/2"-F.1/4"        | raccord M.1/2"-F.1/4"       | manguito M.1/2"-F.1/4"       | riduzione M.1/2"-F.1/4"      |
| 13  | CC1028936 | 1        | pressure switch          | Druckwächter                   | pressostat                  | pressostato                  | pressostato A.P. 10-20 bar   |
| 14  | 160553    | 1        | pressure transducer      | Druckgeber                     | transducteur de pression    | transduttore de presión      | trasduttore di pressione     |
| 15  | 221395    | 1        | joint                    | der anschluss                  | raccord                     | enlace                       | raccordo a croce 1/4"        |
| 15  | 221396    | 1        | air gauge 7.5 bar        | Manometer 7.5 bar              | manomètre 7.5 bar           | manomètre 7.5 bar            | manometro glicerina 7.5 bar  |
| 15  | 221397    | 1        | air gauge 10 bar         | Manometer 10 bar               | manomètre 10 bar            | manomètre 10 bar             | manometro glicerina 10 bar   |
| 16  | 150175    | 1        | oil tap gasket           | Manometer 13 bar               | manomètre 13 bar            | manomètre 13 bar             | manometro glicerina 13 bar   |
| 17  | 160806A   | 1        | oil tap gasket           | der Överschraubungsdichtung    | joint bouchon               | herraje tapon acetile        | guarnizione tappo olio       |
| 18  | 160484    | 2        | screwed dipstick         | Ölstopfen                      | bouchon remplissage d'huile | tapon carga acetile          | tappo carico olio 1"         |
| 19  | 250178    | 0.15m    | joint 90° 3/8"xD.8       | der anschluss 90° 3/8"xD.8     | raccord 90° 3/8"xD.8        | enlace 90° 3/8"xD.8          | raccordo a 90° 3/8"xD.8      |
| 20  | 250245    | 1        | pipe                     | der Verbindungsschlauch        | tuyeau                      | tubo                         | tubo PVDF D.8                |
| 21  | 170365    | 2m       | oil level label          | das Ölhinneuetikett            | étiquette niveau huile      | etiqueta nivel acetile       | etichetta livello olio       |
| 22  | 160108    | 1        | pipe                     | der Verbindungsschlauch        | tuyeau                      | tubo                         | tubo acc. Inox D.6           |
| 23  | 150238    | 2        | MF 2" union              | der Kriestück MF 2"            | coude MF 2"                 | codo MF 2"                   | gomito MF 2"                 |
| 25  | 160537    | 1        | separation filter seal   | stopfenlichtung                | joint deshuileur            | herraje separador acetile    | guarnizione disoleatore      |
| 26  | 160339    | 1        | extension M.1/8"-F.1/4   | der Einschraubstützen 1/4"xD.6 | connecteur 1/4"xD.6         | enlache 1/4"xD.6             | raccordo dritto 1/4"xD.6     |
| 27  | 160803    | 1        | oil discharging tap 1/2" | Verlängerung M.1/8"-F.1/4      | rallonge M.1/8"-F.1/4       | adaptador M.1/8"-F.1/4       | prolunga M.1/8"-F.1/4"       |
| 28  | 160480    | 3        | oil discharging tap 1/2" | der Ablängstopfen 1/2"         | bouchon 1/2"                | tapon desc. acetile 1/2"     | tappo scarico olio 1/2"      |
| 29  | 160482    | 1        | joint 90° MF 1/4"        | der anschluss 90° MF 1/4"      | raccord 90° MF 1/4"         | enlace 90° MF 1/4"           | raccordo 90° MF 1/4"         |
| 30  | 160732    | 1        | oil discharging 1/2"     | der Auslaßhahn                 | raccord 90° MF 1/2"         | enlace 90° MF 1/2"           | raccordo 90° MF 1/2"         |
| 31  | 160600    | 1        | joint 90°                | der anschluss 90°              | raccord 90°                 | enlace 90°                   | rubinetto MF 1/2"            |
|     |           |          |                          |                                |                             |                              | raccordo 90°                 |

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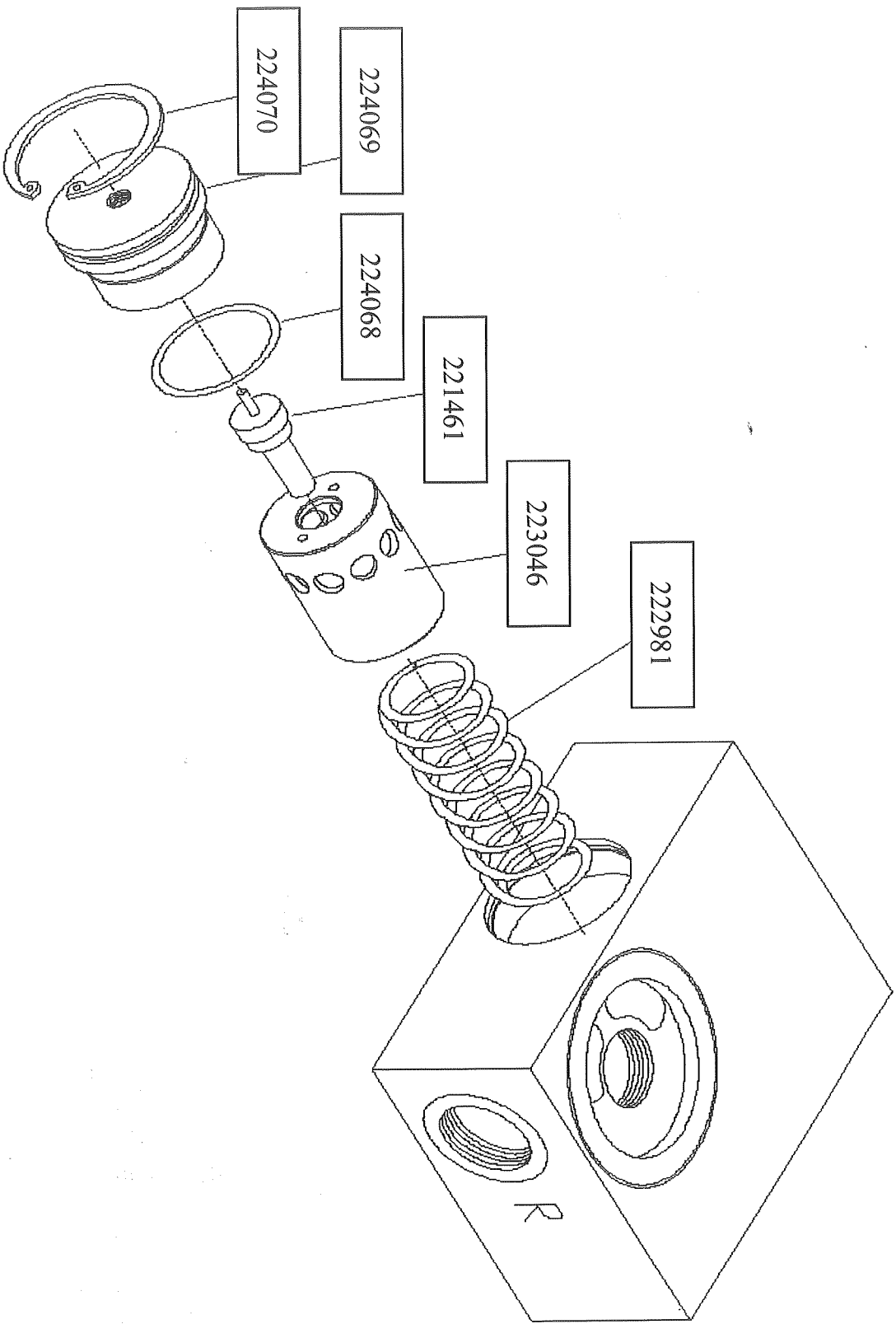
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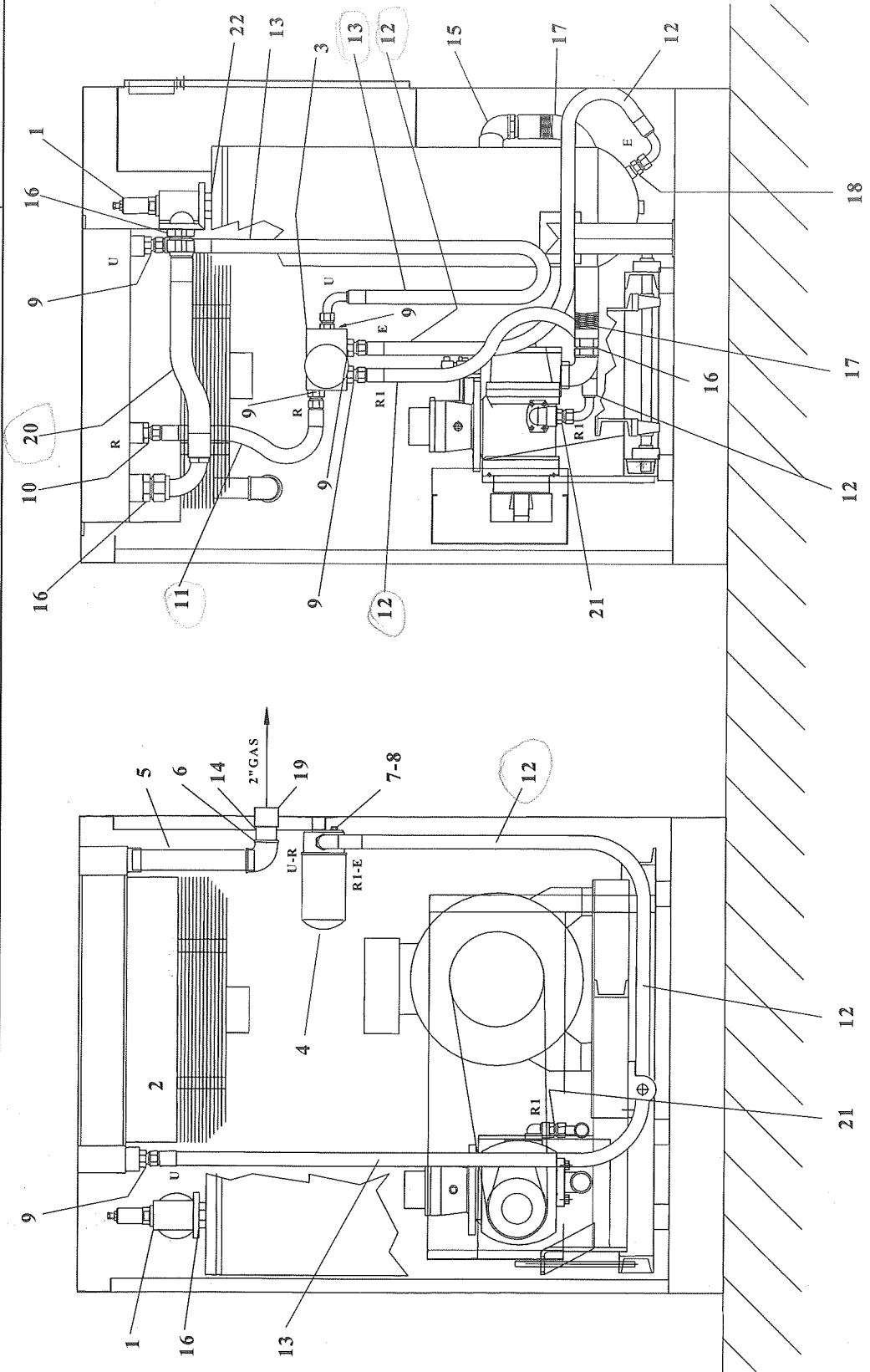


THERMOSTATIC VALVE / THERMOSTATIC VENTIL / SOUPAPE THERMOSTATIC /  
VALVULA THERMOSTATIC / VALVOLA TERMOSTATICA

**KW 75-90**



OIL CIRCUIT / ÖL KREISLAUF / CIRCUIT HUILE / CIRCUITO ACEITE / CIRCUITO OLIO **kW 75**



OIL CIRCUIT / OL KREISLAUF / CIRCUIT HUILE / CIRCUITO ACEITE / CIRCUITO OLIO

VALIDITY/GULTIG BIS/SERIE VALABLE/SERIE VALIDA

FROM/VON/DEDA

TO/BIS/JUSQU'AV/FINO A

KW 75 - 50 Hz -  
KW 75 - 60 Hz -

15/10/2007  
15/10/2007

| Pos | Code    | Quantity | Name                           | Benennung                        | Designation                | Description              | Denominazione               |
|-----|---------|----------|--------------------------------|----------------------------------|----------------------------|--------------------------|-----------------------------|
| 1   | 221606  | 1        | minimum pressure valve         | das Mindestdruckventil           | soupape de min. press.     | valvula min. pres.       | valvola di min. pres.       |
| 2   | 132357  | 1        | oil radiator                   | der Öl-Wasserkühler              | radiateur huile            | radiador aceite          | radiatore olio              |
| 3   | 132363  | -        | oil radiator                   | der Öl-Wasserkühler              | radiateur huile            | radiador aceite          | radiatore olio              |
| 4   | 224048  | 1        | thermostatic valve 55°         | Thermostatisches Ventil 55°      | soupape thermostatique 55° | valvula termostatica 55° | valvola termostatica 55°    |
| 5   | 223489  | 1        | oil filter cartridge           | der Ölfilterreinsatz             | cartouche filtre huile     | cartucho filtro aceite   | cartuccia filtro olio       |
| 6   | 121035  | 1        | extension                      | Verlängerung                     | rallonge                   | adattador                | prolunga uscita radiatore   |
| 7   | 160127  | 1        | union F.F. 2"                  | der Kniestück F.F. 2"            | coude F.F. 2"              | codo F.F. 2"             | gomito F.F. 2"              |
| 8   | 180336  | 2        | screw TES.M12x25               |                                  | vis TES.M12x25             | tornillo TES.M12x25      | vite TES.M12x25 zinc.       |
| 9   | 180461  | 2        | washer D.12                    | die Unterlegscheibe D.12         | rondelle D.12              | rondana D.12             | rondella piana D.12         |
| 10  | 160248  | 5        | reducing tappet nlp. 1/1/4"-1" | Reduziernippel 1/1/4"-1"         | Injecteur 1/1/4"-1"        | racorde 1/1/4"-1"        | nipplo ridotto 1/1/4"-1"    |
| 11  | 150524A | 1        | junction 1/1/4"-1"             | die Muffe 1/1/4"-1"              | raccord 1/1/4"-1"          | manguito 1/1/4"-1"       | riduzione 1/1/4"-1"         |
| 12  | 150519A | 2        | pipe equator 1"x700            | der Verbindungsschlauch equator  | tuyau equator 1"x700       | tubo equator 1"x700      | tubo equator 1"x700         |
| 13  | 150347A | 1        | pipe equator 1"x2300           | der Verbindungsschlauch equator  | tuyau equator 1"x2300      | tubo equator 1"x2300     | tubo equator 1"x2300        |
| 14  | 121034  | 1        | pipe equator 1"x3000           | der Verbindungsschlauch equator  | tuyau equator 1"x3000      | tubo equator 1"x3000     | tubo equator 1"x3000        |
| 15  | 160108  | 2        | extension 2"x80                | Verlängerung 2"x80               | rallonge 2"x80             | adattador 2"x80          | prolunga 2"x80 zincata      |
| 16  | 160267  | 2        | union M.F. 2"                  | der Kniestück M.F. 2"            | coude M.F. 2"              | codo M.F. 2"             | gomito M.F. 2"              |
| 17  | 150852  | 3        | nipple 2"                      | Nippel 2"                        | injecteur 2"               | adattador 2"             | nipplo 2" top.              |
| 18  | 160288  | 1        | stainless steel piping 2"x1200 | das Rohr aus Stahl 2"x1200       | tuyau en acier 2"x1200     | tubo acero 2"x1200       | tubo acc. Inox 2"x1200      |
| 19  | 160219  | 1        | reducing tappet nlp. 1"-3/4"   | Reduziernippel 1"-3/4"           | Injecteur 1"-3/4"          | racorde 1"-3/4"          | nipplo ridotto 1"-3/4" top. |
| 20  | 150825  | 1        | junction 2"                    | die Muffe 2"                     | raccord 2"                 | manguito 2"              | manicotto top. 2"           |
| 21  | 160297  | 1        | pipe SAE100R1 2"x890           | der Verbindungsschlauch SAE100R1 | tuyau SAE100R1 2"x890      | tubo SAE100R1 2"x890     | tubo SAE100R1 2"x890        |
| 22  | 160258  | 1        | nipple 1"                      | Nippel 1"                        | Injecteur 1"               | adattador 1"             | nipplo 1" top.              |
|     |         | 1        | nipple 2"                      | Nippel 2"                        | Injecteur 2"               | adattador 2"             | nipplo 2"                   |

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# AEON™

## Screw Compressor Lubricants

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Protect Your Investment!

**GD**  
GARDNER DENVER

Experience Proven Results™

# AEON™ Lubricants ...

## simply the best protection of your investment



It is a known fact that a compressor's lubricant is its life-blood, its basic source of strength and vitality. So why jeopardize the efficiencies and longevity of your compressor with just any "oil"?

Gardner Denver, a name synonymous with quality, performance and dependability, offers one of the best in compressor lubrication technology – AEON™ lubricants.

AEON™ lubricants are specially formulated to combat the harsh elements of compression while maximising efficiencies and equipment longevity.

**AEON™ lubricants ... designed for maximum reliability in air compressor equipment.**

A network of factory trained Gardner Denver distributors is ready to assist you with AEON™ lubricants for all your compressor needs — and with Genuine Parts for your Gardner Denver compressors.

- **Factory**
- **Factory Tested**
- **Factory Approved**



## AEON™ 3000

### Hydrocarbon Lubricant and Coolant

Formulated from a blend of highly purified hydrocarbon base stocks and special additives for maximum operating and service life. Performs much like a full synthetic in an economical, semisynthetic, petroleum blend. A superior alternative to automotive lubricants, industrial hydraulic and turbine oils. Non-toxic, non hazardous and can be mixed in any amount with mineral oils for ease of disposal.

#### Your advantages on a view

- Outstanding demulsibility vs. automotive lubricants for fast, efficient condensate separation.
- Formulated to provide superior internal component protection over a wide temperature range.
- Excellent oxidative stability to ensure maximum service life at elevated temperatures.
- Unique additive package designed specifically for screw compressors maximises efficiency while minimising oil carry over.
- Minimises harmful varnish and sludge forming tendencies common to alternative mineral oil products.

Service life depends on model and type. Please refer to user manual.



## AEON™ 6000 FG

### Food Grade, Extended Life Synthetic Lubricant

#### Your advantages on a view

- Tested and certified by NSF International. Registered in category H1 lubricants with incidental contact. Registration number 138935.
  - Minimises maintenance and downtime.
  - Improved lubrication at high and low temperatures.
- Service life depends on model and type. Please refer to user manual.



## AEON™ 9000 SP

### Synthetic Lubricant and Coolant

It's a PAO (polyalphaolefin)/MFSE (multifunctional synthetic ester) synthetic blend tested and proven to provide optimum operating and service-life results. A highly robust blend formulated to withstand high temperatures, varnish/sludge formation, and environmental contamination. A unique additive package designed specifically to maximise compressor efficiency and provide optimum lubricity. A proven track record of superior service-life in the most rugged operating environments.

#### Your advantages on a view

- Superior thin-film protection for compressor internal components.
  - Superior oxidation stability vs. other competitive brands.
  - Completely demulsible – separates quickly, reduces condensate disposal costs.
  - Minimises oil carryover, reduces “make-up” costs.
  - High flash point improves your safety margin.
  - Non-hazardous, disposable with mineral-based compressor lubricants.
- Service life depends on model and type. Please refer to user manual.

## Selected Physical Properties

| Properties     | AEON™ 3000<br>Test Method/Results | AEON™ 6000 FG<br>Test Method/Results | AEON™ 9000 SP<br>Test Method/Results |
|----------------|-----------------------------------|--------------------------------------|--------------------------------------|
| Viscosity, cSt | ASTM D445                         | ASTM D445                            | ASTM D445                            |
| at 40 °C       | 46.0                              | 46.9                                 | 49.01                                |
| at 100 °C      | 6.8                               | 7.9                                  | 7.83                                 |
| ISO Grade      | 46                                | 46                                   | 46                                   |
| Pour point °C  | ASTM D97... -33                   | ASTM D97 ... -60                     | ASTM D97 ... -54                     |
| Flash point °C | ASTM D92... 230                   | ASTM D92 ... 246                     | ASTM D92 ... 260                     |
| Fire point °C  |                                   | ASTM D92 ... 273                     | ASTM D92 ... 293                     |
| Demulsibility  | ASTM D1401 – at 54°C 20 min       | ASTM D1401 40/40/0 (<1 min)          | ASTM D1401 – 40/40/0 (<1 min)        |
| Colour         | clear pale yellow                 | clear                                | lilac                                |
| Package size   | Part #                            | Part #                               | Part #                               |
| Bottle         | 03389144 (3 x 5 l)                | –                                    | –                                    |
| Pail           | 03389142 (20 l)                   | 89795109 (19 l)                      | 89756089 (19 l)                      |
| Drum           | 03389143 (209 l)                  | 89795239 (208 l)                     | 89767689 (208 l)                     |
| HMIS Hazard ID | Health 1                          | Health 1                             | Health 1                             |
|                | Reactivity 0                      | Reactivity 0                         | Reactivity 0                         |
|                | Flammability 1                    | Flammability 1                       | Flammability 1                       |

# Gardner Denver ...

## The Answer

You get total product support now and for years to come from our dedicated international team of professional distributors.

- Great Compressor Warranties
- Dedicated, Authorized, Factory-Trained – Compressor Distributors
- Genuine Compressor Replacement Parts
- 24-Hour Compressor Service Support

## Original Gardner Denver spares are a smart choice!

Our spare parts are specially designed, factory tested, and field proven for use in Gardner Denver rotary screw compressors. We guarantee that our spare parts will perfectly fit your Gardner Denver compressor.

Non-original parts may increase both oil consumption and power costs due to higher pressure drops over air filters and oil separators.

By using original spare parts, you save money! Our durable and reliable spares ensure that you maintain maximum output from your compressor with minimum energy costs.

Gardner Denver spare parts are made for 24 hours daily operation.

Using only original Gardner Denver spares will ensure trouble free operation for your compressor, and ensure you comply with warranty obligations.



For additional information please contact Gardner Denver or your local representative.

# GD

**GARDNER DENVER**

info.tampere@gardnerdenver.com  
www.gardnerdenverproducts.com

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# AEON<sup>®</sup> Synthetic Lubricants

AEON<sup>®</sup> PD, AEON<sup>®</sup> PD-FG, AEON<sup>®</sup> PD-XD



**GD**  
**GARDNER DENVER**

Experience Proven Results™



# AEON® Synthetic Lubricants



## *AEON PD-XD is now available!*

- AEON PD-XD has the highest viscosity offered by Gardner Denver for Extreme Duty applications
- Designed specifically for high ambient and high discharge temperature conditions

## More Economical than Mineral Oil

- Longer service life
- Fewer oil changes and less replacement oil
- Less down time = higher productivity
- Reduced maintenance personnel and material costs
- Reduced oil disposal costs
- Better for the environment

## Application

- Positive Displacement blowers & vacuum pumps
- AEON PD Synthetic Lubricants provide maximum protection for demanding operating conditions in any environment or application

## Description

- AEON PD Synthetic Lubricants are custom blended, synthetic hydrocarbon (polyalphaolefin) based oils
- AEON PD products are free of toxic materials or heavy metals per OSHA and EPA guidelines
- AEON PD is compatible with the majority of seal materials: teflon, viton, nitrile buna N, fluorocarbon, polysulfide, polyacrylic and fluorosilicone
- AEON PD-FG Food Grade complies with FDA 21 CFR 178.3570 requirements for lubricants with the possibility of incidental food contact
- AEON PD-FG is NSF approved

## Usage & Performance

- Superior performance in a variety of application and temperatures
- Factory recommended for Gardner Denver Sutorbilt®, DuroFlow®, CycloBlower®, HeliFlow® and TriFlow® PD blowers and vacuum pumps
- Formulated for minimal blower wear and maximum equipment life
- Optimized viscosity provides superior lubrication in severe hot and cold temperatures with minimal energy consumption

## Benefits of AEON PD VS. MINERAL OIL

### Longer Service Life & Improved Performance

- AEON PD typically lasts up to 4 times longer than mineral oils operating under the same conditions
  - Severe operating conditions may warrant more frequent oil changes
  - Laboratory analysis of the oil should be used to help determine the optimum oil change interval
- AEON PD Lubricants have a higher viscosity index
- AEON PD lubricates equipment more effectively and better maintains viscosity at high temperatures
- No need for seasonal oil changes (refer to Operating & Maintenance manuals for specific information)
- Mineral Oils have poor low temperature properties, resulting in increased wear during start-up, ultimately shortening equipment life
- Mineral oils have increased water content reducing bearing life exponentially

### Advanced Chemistry

- AEON PD superior oil/water separation and corrosion inhibitors protect bearings and extend blower life significantly
- Rust and oxidation inhibitors, and anti-foam additives provides improved performance



## AEON® PD Blower Lubrication Chart

|                               |                     | Ambient Temperatures  |                       |                                     |                                     |                                     |
|-------------------------------|---------------------|-----------------------|-----------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|                               |                     | Less than 10° F       | 10° F to 32° F        | 32° F to 60° F                      | 60° F to 90° F                      | Greater than 90° F                  |
| Blower Discharge Temperatures | Less than 32° F     | AEON PD<br>AEON PD-FG | AEON PD<br>AEON PD-FG |                                     |                                     |                                     |
|                               | 32° F to 100° F     | AEON PD<br>AEON PD-FG | AEON PD<br>AEON PD-FG | AEON PD<br>AEON PD-FG<br>AEON PD-XD | AEON PD<br>AEON PD-FG<br>AEON PD-XD |                                     |
|                               | 100° F to 200° F    | AEON PD<br>AEON PD-FG | AEON PD<br>AEON PD-FG | AEON PD<br>AEON PD-FG<br>AEON PD-XD | AEON PD<br>AEON PD-FG<br>AEON PD-XD | AEON PD<br>AEON PD-FG<br>AEON PD-XD |
|                               | 200° F to 300° F    | AEON PD<br>AEON PD-FG | AEON PD<br>AEON PD-FG | AEON PD<br>AEON PD-FG<br>AEON PD-XD | AEON PD-XD                          | AEON PD-XD                          |
|                               | Greater than 300° F |                       | AEON PD<br>AEON PD-FG | AEON PD-XD                          | AEON PD-XD                          | AEON PD-XD                          |

Recommended AEON PD lubricant based on operating conditions.

## Technical Data

| Properties        | AEON PD      | AEON PD-FG | AEON PD-XD |        |
|-------------------|--------------|------------|------------|--------|
| Viscosity         | at 40°C cSt  | 214        | 217        | 365.7  |
|                   | at 100°C cSt | 22.2       | 24         | 39.32  |
|                   | at 100°F SUS | 1115       | 1130       | 1911.5 |
|                   | at 210°F SUS | 110.7      | 120        | 190.4  |
| Pour Point °F/°C  | -38/-39      | -46/-43    | -44/-42    |        |
| Flash Point °F/°C | 450/232      | 535/279    | 515/268    |        |

## Order Information

NOW AVAILABLE in convenient gallon size containers

| Convenient Package Sizes | AEON PD Part No. | AEON PD-FG Part No. | AEON PD-XD Part No. |
|--------------------------|------------------|---------------------|---------------------|
| 1 quart                  | 28G23            | 28H97               | 28G46               |
| Case 12 quarts           | 28G24            | 28H98               | 28G47               |
| 1 gallon                 | 28G40            | 28H333              | 28G42               |
| Case 6 gallons           | 28G41            | 28H334              | 28G43               |
| 5 gallon pail            | 28G25            | 28H99               | 28G44               |
| 55 gallon drum           | 28G28            | 28H100              | 28G45               |

Reference blower operating manual for specific lubrication requirements.

*Protect your investment:*  
Insist on genuine Gardner Denver AEON® PD Lubricants

### Cost Savings of AEON PD vs. MINERAL OIL

- Sutorbilt 1024-8000 blower with an oil capacity of 13 quarts
- Based on an operating time of 6000 hours for one blower

#### OVER \$195 SAVINGS PER BLOWER

*Savings may vary based on your specific conditions.*


|                                  | AEON PD         | MINERAL OIL     |
|----------------------------------|-----------------|-----------------|
| Cost of initial fill (13 quarts) | \$148.79        | \$52.40         |
| Lube change interval             | 6000 hours      | 1500 hours      |
| Cost of replacement lubricant    | \$0             | \$157.20        |
| Labor (\$45/change)              | \$0             | \$135.00        |
| <b>TOTAL COST</b>                | <b>\$148.79</b> | <b>\$344.60</b> |

# Gardner Denver®

www.GardnerDenverProducts.com pd.blowers@gardnerdenver.com

Gardner Denver, Inc. 1800 Gardner Expressway, Quincy, IL 62305  
Telephone: (800) 682-9868 FAX: (217) 221-8780

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 Please recycle after use.



Product name: AEON 3000 OIL / F-2105

Date 20.12.1995

Previous date -

1

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

#### 1.1 Identification of the article

**Product name**

AEON3000OIL / F-2105

**Recommended use**

Compressor oil

**Product code**

743460

#### 1.2 Manufacturer, importer, supplier

##### 1.2.1 Supplier

Gardner Denver Oy

##### 1.2.2 Street address

Etu-Hankkionkatu 9

**Postcode and post office**

33700 Tampere

**Post-office box**

P.O.Box 516

**Postcode and post office**

33101 Tampere, Finland

**Telephone**

+358 (0)205 441 41

**Telefax**

+358 (0)205 441 40

##### 1.2.3 Name and address of the informant in emergency cases

HYKS, Poison Information Center, Stenbäckinkatu 11, FIN-00290 Helsinki

**Emergency telephone number**

+358-9-471 977 or +358-9-4711, HYKS Poison information center (24h)

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

#### 2.1 Chemical characterisation

Mineral oil-based, solvent-refined paraffinic hydrocarbons and additives mixture.

#### 2.2 Hazardous components

| 2.2.1<br>CAS-No. | 2.2.2<br>Chemical name of the<br>substance | 2.2.3<br>Weight % | 2.2.4<br>Classification |
|------------------|--|-------------------|-------------------------|
|------------------|--|-------------------|-------------------------|

|   |             |             |                       |
|---|-------------|-------------|-----------------------|
| * | Mineral oil | > 90 %(m/m) | HTP, see section 8.2. |
|---|-------------|-------------|-----------------------|

### 3. HAZARDS IDENTIFICATION

**HUMAN HEALTH HAZARDS:** No specific hazards under normal use conditions. Contains mineral oil for which an exposure limit for oil mist applies. Prolonged or repeated exposure may give rise to dermatitis. Used oil may contain harmful impurities.

**DANGERS OF FIRE AND EXPLOSION:** Not classified as flammable but will burn.

**ENVIRONMENTAL HAZARDS:** Risk of soil and water pollution. Not readily biodegradable. Has the potential to bioaccumulate.

See also sections 5, 11 and 12.

# Gardner Denver

Product name: OIL F-2105

Date 20.12.1995

Previous date -

2

## 4. FIRST AID MEASURES

### 4.1 General advice

-

### 4.2 Inhalation

If the person exposed to oil mist or vapour suffers from unusual fatigue or nausea, get him or her into fresh air. If the symptoms continue, see a doctor.

### 4.3 Skin contact

Remove contaminated clothing and wash affected skin with soap and water. If high pressure injection injuries occur, obtain medical attention immediately. If persistent irritation occurs, obtain medical attention.

### 4.4 Eye contact

Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

### 4.5 Ingestion

Wash out mouth with water and obtain medical attention. DO NOT INDUCE VOMITING. If the patient is not nauseous, s/he may be given 1-2 tablespoons of cream.

### 4.6 Notes to physician

Treat symptomatically. Aspiration into the lungs may cause chemical pneumonitis. See section 11.5 concerning the effects on health.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Suitable extinguishing media

Foam and dry chemical powder. Carbon dioxide, sand or earth may be used for small fires only.

### 5.2 Extinguishing media which must not be used for safety reasons

Do not use water in a jet. Use of Halon extinguishers should be avoided for environmental reasons.

### 5.3 Specific hazards

-

### 5.4 Special protective equipment for firefighters

Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

### 5.5 Specific methods

-

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions

Evacuate the area of all non-essential personnel.

See Treatment section 7.1.

See Personnel protection equipment section 8.3.

### 6.2 Environmental precautions

Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Inform local authorities if this cannot be prevented. Shut off leaks, if possible without personal risk.

### 6.3 Methods for cleaning up

Leaks are absorbed into sand, soil or other suitable absorbent material. Sweep up and remove to a suitable, clearly marked container for disposal. Dispose in compliance with the instructions of local authorities. See Section 13 for information on disposal.

### 6.4 Specific methods

-

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## 7. HANDLING AND STORAGE

### 7.1 Handling

When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Prevent spillages.

### 7.2 Storage

Keep in a cool, dry, well-ventilated place. Use properly labelled and closable containers. Avoid direct sunlight, heat sources, and strong oxidising agents.

Storage temperature: 0 °C minimum

Storage temperature: 50 °C maximum

For containers, use: mild steel, high density polyethylene

For containers or container linings, avoid: PVC

Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Engineering measures

The product should be handled in closed systems when possible or adequate ventilation must be arranged. Avoid repeated or extended contact with the skin and inhaling oil mist. Use personal protection equipment when necessary.

### 8.2 National occupational exposure limits

#### 8.2.1 National occupational exposure limits

|                                       |                           |
|---------------------------------------|---------------------------|
| <b>Chemical name of the substance</b> | Oil mist                  |
|                                       | 5 mg/m <sup>3</sup> (8 h) |

### 8.3 Personal protective equipment

#### 8.3.1 Hygiene measures

Wash hands before eating, drinking, smoking and using the toilet.

#### 8.3.2 Respiratory protection

Not normally required. Respiratory protection equipment with a combination A2/P2 filter (organic gases and solvent fumes/organic dust) must be used when necessary.

#### 8.3.3 Hand protection

PVC or nitrile rubber gloves

#### 8.3.4 Eye protection

Wear safety glasses or full face shield if splashes are likely to occur.

#### 8.3.5 Skin and body protection

Minimise all forms of skin contact. Wear overalls to minimise contamination of personal clothing. Launder overalls and undergarments regularly.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|       |   |                    |
|-------|---|--------------------|
| 9.1   | <b>Form, Colour, Odour</b>                          | brown, oily liquid |
| 9.2   | <b>PH</b>   | -                  |
| 9.3   | <b>Information on changes in the physical state</b> |                    |
| 9.3.1 | <b>Boiling point/range</b>                          | >280 °C            |
| 9.3.2 | <b>Melting point/range</b>                          | -                  |
| 9.3.3 | <b>Decomposition temperature</b>                    | -                  |
| 9.4   | <b>Flash point</b>                                  | 220 °C (ASTM D 92) |
| 9.5   | <b>Flammability (solid, gas)</b>                    | -                  |
| 9.6   | <b>Autoignition temperature</b>                     | >320 °C            |

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|             |  |  |
|-------------|--|--|
| <b>9.7</b>  | <b>Explosive properties</b>                    | -                                      |
| <b>9.8</b>  | <b>Explosion limits</b>                        |  |
|             | - lower  | 1 %(V/V)                               |
|             | - upper  | 10 %(V/V)                              |
| <b>9.9</b>  | <b>Oxidising properties</b>                    | -                                      |
| <b>9.10</b> | <b>Vapour pressure</b>                         | < 0.5 Pa (20 °C)                       |
| <b>9.11</b> | <b>Relative density</b>                        | 885 kg/m <sup>3</sup> (15 °C)          |
| <b>9.12</b> | <b>Solubility</b>                              |  |
|             | - water solubility                             | Insoluble                              |
|             | - fat solubility                               | -                                      |
| <b>9.13</b> | <b>Partition coefficient (n-octanol/water)</b> |  |
|             | log P <sub>ow</sub> > 6 (estimate)             |  |
| <b>9.14</b> | <b>Viscosity</b>                               | 41.4 - 50.6 mm <sup>2</sup> /s (40 °C) |
| <b>9.15</b> | <b>Further information</b>                     |  |
|             | Pour point -30 °C                              |  |
|             | Calcium < 0,3 % (m/m)                          |  |
|             | Zinc < 0,2 % (m/m)                             |  |
|             | Magnesium < 0,1 % (m/m)                        |  |

## 10. STABILITY AND REACTIVITY

- 10.1** Conditions to avoid  
-
- 10.2** Materials to avoid  
-
- 10.3** Hazardous decomposition products  
-

## 11. TOXICOLOGICAL INFORMATION

- 11.1** Acute toxicity  
Toxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the toxicology of similar products.
- Dermally: LD<sub>50</sub> > 2000 mg/kg  
Orally: LD<sub>50</sub> > 2000 mg/kg  
Inhalation: Data not available.
- 11.2** Primary irritation  
Eyes: Expected to be slightly irritant.  
Skin: Expected to be slightly irritant.  
Respiratory tract: If mists are inhaled, slight irritation of the respiratory tract may occur.
- 11.3** Sensitisation  
Not a skin sensitiser.
- 11.4** Long term toxicity  
Not mutagenic. Product is based on mineral oils of types shown to be non-carcinogenic in animal skin-painting studies.
- 11.5** Human experience  
Prolonged and/or repeated contact with products containing mineral oils can result in defatting of the skin, particularly at elevated temperatures. This can lead to irritation and possibly dermatitis, especially under conditions of poor personal hygiene.

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## 11.6 Further information

Used engine oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible.

## 12. ECOLOGICAL INFORMATION

### 12.1 Persistence and degradability

#### 12.1.1 Biological degradability

Not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

#### 12.1.2 Chemical degradation

-

### 12.2 Bioaccumulation

Has the potential to bioaccumulate.

### 12.3 Mobility

Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

### 12.4 Ecotoxicity effects

#### 12.4.1 Aquatic toxicity

Poorly soluble mixture. Practically non-toxic, LC/EC50 > 100 mg/l, to aquatic organisms (estimated). May cause physical fouling of aquatic organisms.

#### 12.4.2 Toxicity to other organisms

Data not available.

### 12.5 Further information

Ecotoxicological data have not been determined specifically for this product. Information given is based on data on the components and the ecotoxicology of similar products.

## 13. DISPOSAL CONSIDERATIONS

Waste containing the product is hazardous and must be disposed of in accordance with legislation on waste and in compliance with the instructions of environmental authorities. Note that the waste is hazardous when handling it and ensure the appropriate cautionary action is taken and that warnings are posted and proper notice is given.

## 14. TRANSPORT INFORMATION

|        |                          |   |
|--------|--------------------------|---|
| 14.1   | UN-No                    | - |
| 14.2   | Packaging group          | - |
| 14.3   | Land transport           |   |
| 14.3.1 | Class                    | - |
| 14.3.2 | Risk code                | - |
| 14.3.3 | Description of the goods | - |
| 14.3.4 | Further Information      | - |
| 14.4   | Sea transport            |   |
| 14.4.1 | Class                    | - |
| 14.4.2 | Proper shipping name     | - |
| 14.4.3 | Further Information      | - |
| 14.5   | Air transport            |   |
| 14.5.1 | ICAO                     | - |
| 14.5.2 | Proper shipping name     | - |
| 14.5.3 | Further Information      | - |



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## 15. REGULATORY INFORMATION

### 15.1 Labelling

#### 15.1.1 Symbol(s)

-

## 16. OTHER INFORMATION

### 16.1 Recommended use

#### 16.1.1 Expressed in writing

Compressor oil

#### 16.1.2 Code for the purpose of use

TO D

KT: 23 .

L:

### 16.2 Instructions for use

-

### 16.3 Further information

The information in this document should be made available to all who may handle the product. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

### 16.4 Additional information available from

Gardner Denver Oy, After Sales

### 16.5 Literary reference

## CERTIFICATE OF CONFORMITY

As the manufacturer we hereby confirm that screw compressor oil  
AEON 3000 type F-2105:

| Properties     | Test method/ result       |
|----------------|---------------------------|
| Viscosity, cst | ASTM D445                 |
| At 40 C        | 46,0                      |
| At 100 C       | 7                         |
| ISO grade      | 46                        |
| Pour point C   | ASTM D97...-33            |
| Flash point C  | ASTM D92...230            |
| Demulsibility  | ASTM D1401- at 54C 20 min |
| Colour         | Clear pale yellow         |
|                |                           |

has been manufactured, inspected and tested according to our quality system, which  
fulfils the requirements of EN ISO 9001:2000 - quality standard

Gardner Denver Oy



Jari Hellsten

Manager - Quality Control