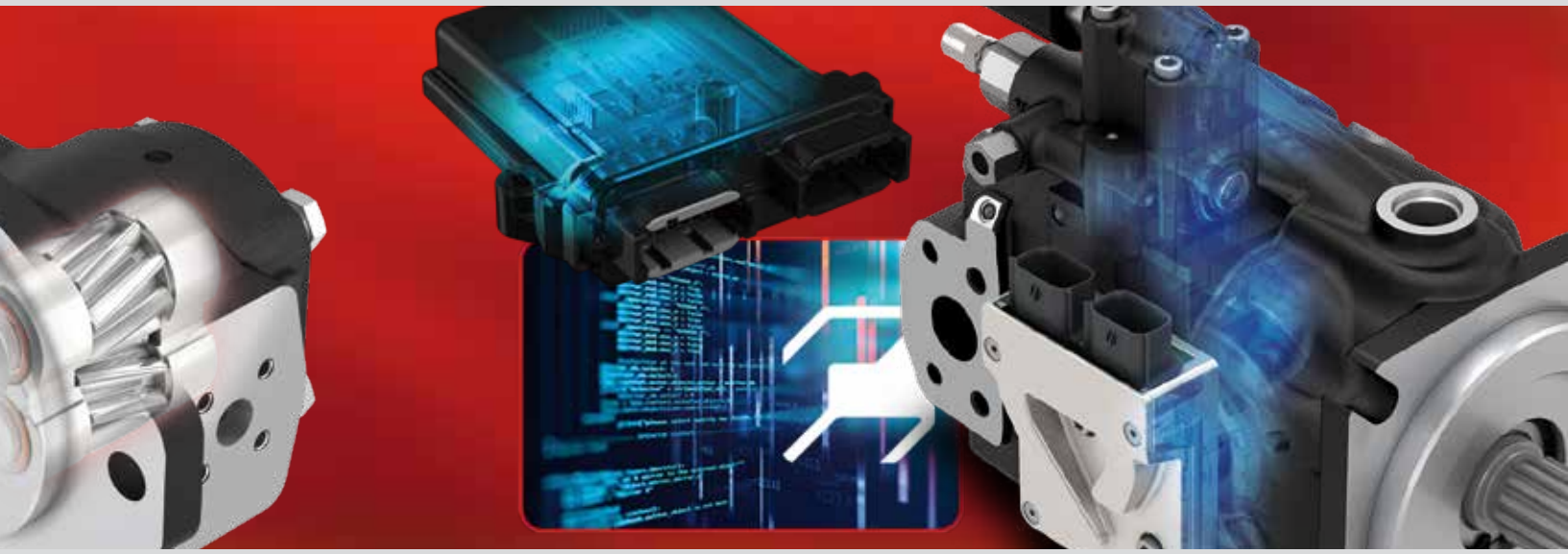
CASAPPA®
FLUID POWER DESIGN



# HYDRAULIC PUMPS, MOTORS, ELECTRO-HYDRAULIC SYSTEMS & FILTERS

CASAPPA®
FLUID POWER DESIGN

# Our passion for high performance in hydraulic drives us.

Constant evolution and a passion for hydraulics; this has been Casappa's strategy, a privately owned company that has been working for more than sixty years in the field of fluid power transmission.

We design and build the main components for the hydraulic system.
We listen to and work with our customers, from developing a new idea to after-sales service, anywhere around the globe.
As a tight-knit group of highly motivated and professionally qualified people, we are always ready to meet new challenges head on.
Thanks to the use of the most modern design engineering, simulation and lab testing technologies, we are always flexible and ready to quickly modify our offer to meet market demands.
We are convinced that integrating electronics with hydraulics is instrumental to improve hydraulic control circuit performance. For this reason we continuously invest in research & development, increasing the number of electronic control and regulation parts in our system.
Quality is our total commitment: that's why all of our products are thoroughly tested with constant monitoring including data analysis and traceability. Further, specific tests are performed on machines in the field to verify their effectiveness in their actual environment.

Casappa is worldwide recognized as a highly specialised manufacturer of hydraulic components.

We offer:

**Fixed and variable displacement hydraulic pumps and motors**

**Hydraulic valves to control pressure and flow rate**

**Electro-hydraulic systems**

**Hydraulic filters, hand pumps, accessories and filtration devices**

Some of the major companies that rely on our specialised expertise and choose us as an important supplier of hydraulic components for a wide range of applications include:

| | | | | | |
|---|---|---|---|---|---|
| AGCO | CNH | HYVA GROUP | LINDE | SANDVIK | XCMG |
| AMMAN APOLLO | DAIMLER | JCB | LIUGONG | SANY | YANMAR |
| ARGO TRACTORS (LANDINI) | DOOSAN | JLG | MAN TRUCK & BUS | SCANIA | ZAPAGROMASCH |
| ASTRA Veicoli Industriali | FARID | JOHN DEERE | MANITOU GROUP | SOOSAN | ZOOMLION |
| ATLAS COPCO | FOTON LOVOL | JUNGHEINRICH | MANITOWOC | STILL | |
| BAI | HAMM | KION GROUP | MAZ | TEREX | |
| BOBCAT | HUNAN SUNWARD | KOMATSU | MERLO | TEXTRON | |
| BROKK | HUSQVARNA | LEEBOY | PALFINGER | TORO | |
| CATERPILLAR | HYUNDAI | LIEBHERR | SAME DEUTZ FAHR | VOLVO CE | |

## Product range

**Aluminium body gear pumps and motors**

**Cast iron body gear pumps and motors**

**Cast iron and aluminium body gear pumps helical gear design**

**Aluminium body gear flow dividers**

**Cast iron body gear flow dividers**

**Variable displacement axial piston pumps**

A complete range of high quality pumps and motors, the end result of listening carefully to what customers need and of working closely with suppliers.

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Casappa offers nothing but the best value to its customers thanks to the skills and expertise of its workforce, investments in research and new technologies, cooperation with leading universities and electronics-hydraulics integration.

Casappa offers a wide choice of gear or piston pumps and motors for open-circuit applications. Many functions, such as valves and controls, are built directly into the products to optimise system space and costs.

## POLARIS series

Gear pumps and motors built in three pieces with an extruded body in high resistance aluminium alloy. The wide choice of shafts, flanges and ports, in compliance with all international standards (SAE, DIN and EUROPEAN) allow for their use in an infinite variety of applications.
Displacements from 1,07 $cm^3$/rev (0.07 $in^3$/rev) to 91,10 $cm^3$/rev (5.56 $in^3$/rev) available in groups 10, 20 and 30.
Max. peak pressure up to 300 bar (4350 psi).
Max. speed up to 4000 $min^{-1}$.

### Features

- High efficiencies
- Integrated outboard bearings for heavy duty applications
- Multiple units available in standard version, common inlet and separated stages
- Electro-hydraulic fan drive system
- Custom design

### Optional built-in valves

- Anticavitation valves
- Maximum pressure relief valves
- Priority valves
- Load-Sensing priority valves
- Unloading valves
- By-pass electric valves
- Proportional relief valves
- Reverse valves

(◆) Values refer to unidirectional pumps and motors. For reversible rotation please see the respective technical catalogue.

### Main characteristics

| | Displacement | Max. continuous pressure (◆) | Max. speed |
|---|---|---|---|
| **POLARIS 10** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **PL. 10•1** | 1,07 (0.07) | 260 (3750) | 4000 |
| **PL. 10•1,5** | 1,60 (0.10) | 260 (3750) | 4000 |
| **PL. 10•2** | 2,13 (0.13) | 260 (3750) | 4000 |
| **PL. 10•2,5** | 2,67 (0.16) | 260 (3750) | 4000 |
| **PL. 10•3,15** | 3,34 (0.20) | 260 (3750) | 4000 |
| **PL. 10•4** | 4,27 (0.26) | 250 (3600) | 4000 |
| **PL. 10•5** | 5,34 (0.33) | 250 (3600) | 4000 |
| **PL. 10•5,8** | 6,20 (0.38) | 230 (3350) | 3500 |
| **PL. 10•6,3** | 6,67 (0.41) | 230 (3350) | 3500 |
| **PL. 10•8** | 8,51 (0.52) | 180 (2600) | 3500 |
| **PL. 10•10** | 10,67 (0.65) | 140 (2050) | 3500 |
| **POLARIS 20** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **PL. 20•4** | 4,95 (0.30) | 250 (3600) | 4000 |
| **PL. 20•6,3** | 6,61 (0.40) | 250 (3600) | 4000 |
| **PL. 20•7,2** | 7,29 (0.44) | 250 (3600) | 4000 |
| **PL. 20•8** | 8,26 (0.50) | 250 (3600) | 3500 |
| **PL. 20•9** | 9,17 (0.56) | 250 (3600) | 3500 |
| **PL. 20•10,5** | 10,90 (0.66) | 250 (3600) | 3500 |
| **PL. 20•11,2** | 11,23 (0.69) | 250 (3600) | 3500 |
| **PL. 20•14** | 14,53 (0.89) | 250 (3600) | 3500 |
| **PL. 20•16** | 16,85 (1.03) | 250 (3600) | 3000 |
| **PL. 20•19** | 19,09 (1.16) | 200 (2900) | 3000 |
| **PL. 20•20** | 21,14 (1.29) | 200 (2900) | 3000 |
| **PL. 20•24,5** | 24,84 (1.52) | 170 (2450) | 2500 |
| **PL. 20•25** | 26,42 (1.61) | 170 (2450) | 2500 |
| **PL. 20•27,8** | 28,21 (1.72) | 130 (1900) | 2000 |
| **PL. 20•31,5** | 33,03 (2.01) | 130 (1900) | 2000 |
| **POLARIS 30** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **PL. 30•22** | 21,99 (1.34) | 250 (3600) | 3000 |
| **PL. 30•27** | 26,70 (1.63) | 250 (3600) | 3000 |
| **PL. 30•34** | 34,55 (2.11) | 240 (3500) | 3000 |
| **PL. 30•38** | 39,27 (2.40) | 240 (3500) | 3000 |
| **PL. 30•43** | 43,98 (2.68) | 230 (3350) | 3000 |
| **PL. 30•51** | 51,83 (3.16) | 210 (3050) | 2500 |
| **PL. 30•61** | 61,26 (3.74) | 190 (2750) | 2500 |
| **PL. 30•73** | 73,82 (4.50) | 170 (2450) | 2500 |
| **PL. 30•82** | 81,68 (4.98) | 160 (2300) | 2200 |
| **PL. 30•90** | 91,10 (5.56) | 150 (2200) | 2200 |

NOTES
PL. : PLP = pump / PLM = motor

## POLARIS “PH” series

Gear pumps and motors built in three pieces with cast iron body. The new gear pumps and motors “PH” series is an evolution of the “POLARIS” series. “POLARIS PH” has a new body made of cast iron to have higher operating parameters and keep the full POLARIS versatility regarding shafts, flanges, ports and built-in valves.
This project is targeted for forklifts, skid steer loaders and all those applications where traditional aluminum pumps are being pushed close to their limits. The possibility to mate the body with the cast iron covers further reduces noise levels, in addition to increasing strength.
Displacements from 8,26 $cm^3$/rev (0.50 $in^3$/rev) to 33,03 $cm^3$/rev (2.01 $in^3$/rev).
Max. peak pressure up to 300 bar (4350 psi).
Max. speed up to 3500 $min^{-1}$.

### Features

- High working pressure also for high displacements
- Long service life
- Low noise level
- High volumetric efficiency also at high temperature
- Inlet & Outlet optimization – High speed
- Combination in multiple pumps
- Built-in Valves simplify circuit design

### Optional built-in valves

- Anticavitation valves
- Maximum pressure relief valves
- Priority valves
- Load Sensing priority valves
- Unloading valves
- By pass electric valves
- Proportional relief valves
- Reverse valves

(◆) Values refer to unidirectional pumps and motors. For reversible rotation please see the respective technical catalogue.

### Main characteristics

| POLARIS PH 20 | Displacement $cm^3$/rev ($in^3$/rev) | Max. continuous pressure (◆) bar (psi) | Max. speed $min^{-1}$ |
|---|---|---|---|
| **PH. 20•8** | 8,26 (0.50) | 250 (3600) | 3500 |
| **PH. 20•10,5** | 10,9 (0.66) | 250 (3600) | 3500 |
| **PH. 20•11,2** | 11,23 (0.68) | 250 (3600) | 3500 |
| **PH. 20•14** | 14,53 (0.88) | 250 (3600) | 3500 |
| **PH. 20•16** | 16,85 (1.02) | 250 (3600) | 3500 |
| **PH. 20•18** | 18,29 (1.11) | 250 (3600) | 3500 |
| **PH. 20•19** | 19,09 (1.16) | 250 (3600) | 3500 |
| **PH. 20•20** | 21,14 (1.29) | 250 (3600) | 3500 |
| **PH. 20•23** | 23,32 (1.42) | 250 (3600) | 3000 |
| **PH. 20•24,5** | 24,84 (1.52) | 230 (3350) | 3000 |
| **PH. 20•25** | 26,42 (1.61) | 230 (3350) | 3000 |
| **PH. 20•27,8** | 28,21 (1.72) | 200 (2900) | 2500 |
| **PH. 20•31,5** | 33,03 (2.01) | 200 (2900) | 2500 |

NOTES
PH. : PHP = pump / PHM = motor

**XHP20 series:** cast iron body gear pumps
**XLP20 series:** aluminium body gear pumps
Three pieces pump - Interchangeable with all Casappa's group 2 pumps.
Displacements from 8,06 $cm^3$/rev (0.49 $in^3$/rev) to 28,01 $cm^3$/rev (1.71 $in^3$/rev) available in group 20.
Max. peak pressure up to 300 bar (4350 psi).
Max. speed up to 3500 $min^{-1}$.

X technology

**Features**

- High temperature
- High pressure
- High reliability
- Multiple units available in standard version, common inlet and separated stages

The X technology is a step forward in involute external gear pumps thanks to innovative patented solutions.

Significant increase of pump efficiency.
Both volumetric and hydro-mechanical efficiency are improved over the operating range, thanks to:

- Optimized pump design for higher stiffness
- Improved lubrification by the tip grooves
- Better meshing of helical gears
- Optimized gear machining process

Remarkable reduction of pump noise.
Thanks to the combination of the dual flank meshing and the high helix angle, the pump noise is further reduced compared to the standard dual flank technology.
In addition, the lower number of teeth of the new X technology reduces pump frequencies by 25%.
This results in a more pleasant sound quality.

## KAPPA series

Gear pumps and motors made of cast iron in two pieces. KAPPA is available with mounting flanges and side or rear ports according to SAE and European standard. The rigidity of assembly ensure reliability and high volumetric efficiency also at high operating pressures.
Displacements from 4,95 $cm^3$/rev (0.30 $in^3$/rev) to 33,03 $cm^3$/rev (2.01 $in^3$/rev) available in group 20.
Max. peak pressure up to 330 bar (4800 psi).
Max. speed up to 4000 $min^{-1}$.

### Main characteristics

| KAPPA 20 | Displacement $cm^3$/rev ($in^3$/rev) | Max. continuous pressure (◆) bar (psi) | Max. speed $min^{-1}$ |
|---|---|---|---|
| **K. 20•4** | 4,95 (0.30) | 285 (4150) | 4000 |
| **K. 20•6,3** | 6,61 (0.40) | 285 (4150) | 4000 |
| **K. 20•8** | 8,26 (0.50) | 285 (4150) | 3500 |
| **K. 20•11,2** | 11,23 (0.69) | 275 (4000) | 3500 |
| **K. 20•14** | 14,53 (0.89) | 265 (3850) | 3500 |
| **K. 20•16** | 16,85 (1.03) | 260 (3750) | 3000 |
| **K. 20•20** | 21,14 (1.29) | 210 (3050) | 3000 |
| **K. 20•25** | 26,42 (1.61) | 180 (2600) | 2500 |
| **K. 20•31,5** | 33,03 (2.01) | 140 (2050) | 2000 |

NOTES
K. : KP = pump / KM = motor

### Features

- High operating pressures
- High efficiency at high temperature
- Low noise emission

### Optional built-in valves

- Priority valves
- Load-Sensing priority valves

(◆) Values refer to unidirectional pumps and motors. For reversible rotation please see the respective technical catalogue.

## KAPPA COMPACT series

Gear pumps and motors made of cast iron in two pieces. A rigid and compact structure that makes it possible to incorporate a number of functions in a limited space. The reduced dimensions as well as a large variety of drive shafts, mounting flanges and ports ensure great flexibility in the “Compact” line.
Wide range of displacements: from 19,00 $cm^3$/rev (1.16 $in^3$/rev) to 150,79 $cm^3$/rev (9.20 $in^3$/rev) available in groups 25, 30, 35 and 40.
Max. peak pressure up to 325 bar (4700 psi).
Max. speed up to 3500 $min^{-1}$.

### Features

- High operating pressures
- Low noise emission
- Exceptional working life expectancy
- Solid and compact design
- Custom design

### Optional built-in valves

- Antishock and anticavitation valves
- Priority valves
- Load Sensing priority valves
- By pass electric valves

### Main characteristics

| | Displacement | Max. continuous pressure (◆) | Max. speed |
|---|---|---|---|
| **KAPPA compact 25** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **K. 25•19** | 19,00 (1.16) | 280 (4050) | 3500 |
| **K. 25•21** | 21,07 (1.29) | 280 (4050) | 3500 |
| **K. 25•23** | 23,06 (1.41) | 280 (4050) | 3500 |
| **K. 25•25** | 25,04 (1.53) | 280 (4050) | 3500 |
| **K. 25•27** | 27,03 (1.65) | 280 (4050) | 3500 |
| **K. 25•31** | 31,09 (1.90) | 275 (4000) | 3000 |
| **K. 25•34** | 34,03 (2.08) | 275 (4000) | 3000 |
| **K. 25•38** | 38,00 (2.32) | 230 (3350) | 3000 |
| **K. 25•43** | 43,01 (2.62) | 210 (3050) | 3000 |
| **KAPPA compact 30** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **K. 30•22 (CSC-CSL)** | 21,99 (1.34) | 270 (3900) | 3000 |
| **K. 30•27 (CSC-CSL)** | 26,70 (1.63) | 270 (3900) | 3000 |
| **K. 30•31 (CSC-CSL)** | 30,63 (1.87) | 250 (3600) | 3000 |
| **K. 30•34 (CSC-CSL)** | 34,56 (2.11) | 250 (3600) | 3000 |
| **K. 30•38 (CSC-CSL)** | 39,27 (2.40) | 250 (3600) | 3000 |
| **K. 30•41 (CSC-CSL)** | 41,62 (2.54) | 250 (3600) | 3000 |
| **K. 30•43 (CSC-CSL)** | 43,98 (2.68) | 230 (3350) | 3000 |
| **K. 30•46 (CSC-CSL)** | 46,34 (2.83) | 210 (3050) | 3000 |
| **K. 30•51 (CSC-CSL)** | 51,83 (3.16) | 210 (3050) | 2500 |
| **K. 30•56 (CSC-CSL)** | 56,54 (3.45) | 190 (2750) | 2500 |
| **K. 30•61 (CSC-CSL)** | 61,26 (3.74) | 180 (2600) | 2500 |
| **K. 30•73 (CSC-CSL)** | 73,82 (4.50) | 170 (2450) | 2500 |
| **KAPPA compact 35** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **KP 35•63** | 63,88 (3.90) | 260 (3750) | 3000 |
| **KP 35•71** | 72,40 (4.42) | 260 (3750) | 3000 |
| **KP 35•80** | 80,91 (4.94) | 260 (3750) | 3000 |
| **KP 35•90** | 91,56 (5.59) | 245 (3550) | 2500 |
| **KP 35•100** | 100,08 (6.10) | 230 (3350) | 2500 |
| **KAPPA compact 40** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **K. 40•63** | 61,43 (3.75) | 240 (3480) | 2800 |
| **K. 40•73** | 72,60 (4.43) | 240 (3480) | 2800 |
| **K. 40•87** | 86,56 (5.28) | 240 (3480) | 2800 |
| **K. 40•109** | 108,90 (6.64) | 230 (3350) | 2800 |
| **K. 40•121** | 121,80 (7.43) | 210 (3050) | 2500 |
| **K. 40•133** | 134,03 (8.18) | 200 (2900) | 2500 |
| **K. 40•151** | 150,79 (9.20) | 190 (2755) | 2500 |

(◆) Values refer to unidirectional pumps and motors. For reversible rotation please see the respective technical catalogue.

NOTES
K. : KP = pump / KM = motor

## KAPPA 40 Plus series

Large cast iron hydraulic gear pumps for heavy duty applications.
Displacements from 61,43 $cm^3$/rev (3.75 $in^3$/rev) to 180,73 $cm^3$/rev (11.02 $in^3$/rev) available in group 40.
Max. peak pressure up to 300 bar (4350 psi).
Max. speed up to 2800 $min^{-1}$.

### Main characteristics

| KAPPA 40 Plus | Displacement $cm^3$/rev ($in^3$/rev) | Max. continuous pressure bar (psi) | Max. speed $min^{-1}$ |
|---|---|---|---|
| **KP 40•63** | 61,43 (3.75) | 260 (3770) | 2800 |
| **KP 40•73** | 72,60 (4.43) | 260 (3770) | 2800 |
| **KP 40•87** | 86,56 (5.58) | 260 (3770) | 2800 |
| **KP 40•100** | 99,79 (6.09) | 260 (3770) | 2700 |
| **KP 40•109** | 108,90 (6.64) | 260 (3770) | 2700 |
| **KP 40•121** | 121,80 (7.43) | 260 (3770) | 2700 |
| **KP 40•133** | 134,03 (8.18) | 250 (3625) | 2700 |
| **KP 40•151** | 150,79 (9.20) | 240 (3480) | 2700 |
| **KP 40•160** | 160,77 (9.81) | 230 (3350) | 2500 |
| **KP 40•180** | 180,73 (11.02) | 230 (3350) | 2200 |

### Features

- New design
- Nodular cast iron
- High performance
- High strength

## FORMULA and FORMULA SFP series

Gear pumps made of cast iron in two pieces, ideal for truck application.
Displacements from 8,26 $cm^3$/rev (0.50 $in^3$/rev) to 150,79 $cm^3$/rev (9.20 $in^3$/rev) available in groups 20, 30, 35 and 40.
Max. peak pressure up to 325 bar (4700 psi).
Max. speed up to 3000 $min^{-1}$.

### Features

- High performance also at very low speed
- Different ports position availability
- Low noise emission
- Shaft seal system no leakage guarantee
- Modular design
- Direct mounting on the PTOs

### Main characteristics

| | Displacement | Max. continuous pressure (◆) | Max. speed |
|---|---|---|---|
| **FORMULA 20** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **FP 20•8** | 8,26 (0.50) | 280 (4050) | 2000 |
| **FP 20•11,2** | 11,23 (0.69) | 280 (4050) | 2000 |
| **FP 20•16** | 16,85 (1.03) | 280 (4050) | 2000 |
| **FP 20•20** | 21,14 (1.29) | 260 (3750) | 2000 |
| **FP 20•25** | 26,42 (1.61) | 220 (3200) | 2000 |
| **FP 20•31,5** | 33,03 (2.01) | 190 (2750) | 1800 |
| **FP 20•36** | 35,94 (2.19) | 170 (2450) | 1800 |
| **FP 20•40** | 39,64 (2.42) | 160 (2300) | 1800 |
| **FORMULA 30** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **FP 30•17** | 17,28 (1.05) | 290 (4200) | 3000 |
| **FP 30•27** | 26,70 (1.63) | 290 (4200) | 3000 |
| **FP 30•34** | 34,56 (2.11) | 280 (4050) | 2800 |
| **FP 30•38** | 39,27 (2.40) | 280 (4050) | 2800 |
| **FP 30•43** | 43,98 (2.68) | 270 (3900) | 2500 |
| **FP 30•51** | 51,83 (3.16) | 240 (3500) | 2500 |
| **FP 30•61** | 61,26 (3.74) | 220 (3200) | 2000 |
| **FP 30•73** | 73,82 (4.50) | 200 (2900) | 1800 |
| **FP 30•82** | 81,68 (4.98) | 190 (2750) | 1800 |
| **FP 30•100** | 100,52 (6.16) | 180 (2600) | 1800 |
| **FP 30•125** | 125,66 (7.67) | 160 (2300) | 1800 |
| **FORMULA 40** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **FP 40•63** | 61,43 (3.75) | 290 (4200) | 2700 |
| **FP 40•73** | 72,60 (4.43) | 280 (4050) | 2700 |
| **FP 40•87** | 86,56 (5.28) | 260 (3750) | 2700 |
| **FP 40•109** | 108,90 (6.64) | 240 (3500) | 2700 |
| **FP 40•133** | 134,03 (8.18) | 220 (3200) | 2500 |
| **FP 40•151** | 150,79 (9.20) | 180 (2600) | 2500 |
| **FORMULA SFP 30** | $cm^3$/rev ($in^3$/rev) | bar (psi) | (rpm) |
| **SFP 30•34** | 35,43 (2.16) | 280 (4050) | 2800 |
| **SFP 30•43** | 45,09 (2.75) | 270 (3900) | 2500 |
| **SFP 30•51** | 53,14 (3.24) | 250 (3600) | 2500 |
| **SFP 30•61** | 62,80 (3.83) | 230 (3350) | 2500 |
| **SFP 30•73** | 75,68 (4.62) | 205 (2950) | 2250 |
| **SFP 30•82** | 83,74 (5.11) | 195 (2800) | 2250 |
| **FORMULA SFP 35** | $cm^3$/rev ($in^3$/rev) | bar (psi) | (rpm) |
| **SFP 35•90** | 95,99 (5.86) | 230 (3350) | 2250 |
| **SFP 35•100** | 104,92 (6.40) | 220 (3200) | 2250 |
| **SFP 35•112** | 118,31 (7.22) | 205 (2950) | 2250 |

(◆) Values refer to unidirectional pumps. For reversible rotation please see the respective technical catalogue.

## MAGNUM series

Gear pumps and motors made of cast iron in three pieces. An extremely versatile and reliable design, also in the most extreme operating conditions.
Displacements from 17,28 $cm^3$/rev (1.05 in3/rev) to 125,63 $cm^3$/rev (7.66 $in^3$/rev) available in groups 30 and 35.
Max. peak pressure up to 320 bar (4650 psi).
Max. speed up to 3000 $min^{-1}$.

### Features

- Wide range of drive shafts and flanges in SAE version
- More choices of port locations
- Integrated outboard bearings for heavy duty applications
- Multiple units available in standard version, common inlet and separated stages
- Exceptional working life expectancy

### Main characteristics

| MAGNUM 30 | Displacement $cm^3$/rev ($in^3$/rev) | Max. continuous pressure (◆) bar (psi) | Max. speed $min^{-1}$ |
|---|---|---|---|
| **HD. 30•17** | 17,28 (1.05) | 280 (4050) | 3000 |
| **HD. 30•22** | 21,99 (1.34) | 280 (4050) | 3000 |
| **HD. 30•24** | 24,03 (1.47) | 280 (4050) | 3000 |
| **HD. 30•27** | 26,70 (1.63) | 280 (4050) | 3000 |
| **HD. 30•34** | 34,56 (2.11) | 270 (3900) | 3000 |
| **HD. 30•38** | 39,27 (2.40) | 270 (3900) | 3000 |
| **HD. 30•43** | 43,98 (2.68) | 260 (3750) | 3000 |
| **HD. 30•51** | 51,83 (3.16) | 230 (3350) | 2500 |
| **HD. 30•56** | 56,55 (3.45) | 215 (3100) | 2500 |
| **HD. 30•61** | 61,26 (3.74) | 200 (2900) | 2000 |
| **HD. 30•73** | 73,82 (4.50) | 190 (2750) | 1700 |
| **HD. 30•82** | 81,68 (4.98) | 170 (2450) | 1500 |

| MAGNUM 35 | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
|---|---|---|---|
| **HD. 35•40** | 40,46 (2.47) | 270 (3900) | 3000 |
| **HD. 35•50** | 51,10 (3.12) | 270 (3900) | 3000 |
| **HD. 35•63** | 63,88 (3.90) | 270 (3900) | 3000 |
| **HD. 35•71** | 72,40 (4.42) | 250 (3600) | 3000 |
| **HD. 35•80** | 80,91 (4.94) | 250 (3600) | 3000 |
| **HD. 35•90** | 91,56 (5.59) | 230 (3350) | 2700 |
| **HD. 35•100** | 100,08 (6.10) | 210 (3050) | 2700 |
| **HD. 35•112** | 112,85 (6.88) | 190 (2750) | 2700 |
| **HD. 35•125** | 125,63 (7.66) | 170 (2450) | 2500 |

NOTES
HD. : HDP = pump / HDM = motor

(◆) Values refer to unidirectional pumps and motors. For reversible rotation please see the respective technical catalogue.

## POLARIS series

Gear flow dividers made of high resistance aluminium alloy. These components can be used as flow equalizers, flow dividers and pressure intensifiers.
Displacements from 2,14 $cm^3$/rev (0.13 $in^3$/rev) to 33,03 $cm^3$/rev (2.01 $in^3$/rev) available in groups 10 and 20.
Max. peak pressure up to 280 bar (4050 psi).

### Features

- Modular design
- Accurate division of flow
- Built in relief valves
- Combinations between different groups

### Main characteristics

| | Displacement | Max. continuous pressure | Max. speed |
|---|---|---|---|
| **POLARIS 10** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **PLD 10•2** | 2,14 (0.13) | 250 (3600) | 4200 |
| **PLD 10•3,15** | 3,34 (0.20) | 250 (3600) | 3990 |
| **PLD 10•4** | 4,27 (0.26) | 250 (3600) | 3940 |
| **PLD 10•5** | 5,34 (0.33) | 250 (3600) | 3680 |
| **PLD 10•6,3** | 6,67 (0.41) | 250 (3600) | 3500 |

| **POLARIS 20** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
|---|---|---|---|
| **PLD 20•4** | 4,95 (0.30) | 250 (3600) | 4100 |
| **PLD 20•6,3** | 6,61 (0.40) | 250 (3600) | 3970 |
| **PLD 20•8** | 8,26 (0.50) | 250 (3600) | 3850 |
| **PLD 20•11,2** | 11,23 (0.69) | 250 (3600) | 3660 |
| **PLD 20•14** | 14,53 (0.89) | 250 (3600) | 3460 |
| **PLD 20•16** | 16,85 (1.03) | 200 (2900) | 3335 |
| **PLD 20•20** | 21,14 (1.29) | 200 (2900) | 3125 |
| **PLD 20•25** | 26,42 (1.61) | 200 (2900) | 2900 |
| **PLD 20•31,5** | 33,03 (2.01) | 200 (2900) | 2660 |

## MAGNUM series

Gear flow dividers made of cast iron. These components can be used as flow equalizers, flow dividers and pressure intensifiers.
Displacements from 17,28 $cm^3$/rev (1.05 $in^3$/rev) to 125,63 $cm^3$/rev (7.66 $in^3$/rev) available in groups 30 and 35.
Max. peak pressure up to 320 bar (4650 psi).

### Features

- Modular design
- Accurate division of flow
- High flow
- Combinations between different groups

### Main characteristics

| | Displacement | Max. continuous pressure | Max. speed |
|---|---|---|---|
| **MAGNUM 30** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **HDD 30•17** | 17,28 (1.05) | 280 (4050) | 3000 |
| **HDD 30•22** | 21,99 (1.34) | 280 (4050) | 3000 |
| **HDD 30•27** | 26,70 (1.63) | 280 (4050) | 3000 |
| **HDD 30•34** | 34,56 (2.11) | 270 (3900) | 3000 |
| **HDD 30•43** | 43,98 (2.68) | 260 (3750) | 3000 |
| **HDD 30•51** | 51,83 (3.16) | 230 (3350) | 2500 |
| **HDD 30•61** | 61,26 (3.74) | 200 (2900) | 2000 |
| **HDD 30•73** | 73,82 (4.50) | 190 (2750) | 1700 |
| **HDD 30•82** | 81,68 (4.98) | 170 (2450) | 1500 |

| **MAGNUM 35** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
|---|---|---|---|
| **HDD 35•50** | 51,10 (3.12) | 270 (3900) | 3000 |
| **HDD 35•63** | 63,88 (3.90) | 270 (3900) | 3000 |
| **HDD 35•71** | 72,40 (4.42) | 250 (3600) | 3000 |
| **HDD 35•80** | 80,91 (4.94) | 250 (3600) | 3000 |
| **HDD 35•90** | 91,56 (5.59) | 230 (3350) | 2700 |
| **HDD 35•100** | 100,08 (6.10) | 210 (3050) | 2700 |
| **HDD 35•112** | 112,85 (6.88) | 190 (2750) | 2700 |
| **HDD 35•125** | 125,63 (7.66) | 170 (2450) | 2500 |

## PLATA LVP series

Variable displacement axial piston pumps swash plate design. PLATA pumps are ideally suited for medium and high pressure open circuit applications.
Displacements from 28,70 $cm^3$/rev (1.75 $in^3$/rev) to 160 $cm^3$/rev (9.76 $in^3$/rev).
Max. peak pressure up to 350 bar (5075 psi).
Max. speed up to 3000 $min^{-1}$.

### Main characteristics

| PLATA LVP | Displacement $cm^3$/rev ($in^3$/rev) | Max. continuous pressure bar (psi) | Max. speed $min^{-1}$ |
|---|---|---|---|
| **LVP 30** | 28,70 (1.75) | 280 (4050) | 3000 |
| **LVP 48** | 45,40 (2.77) | 280 (4050) | 2600 |
| **LVP 75** | 73,60 (4.49) | 280 (4050) | 2600 |
| **LVP 90** | 87,90 (5.37) | 250 (3625) | 2200 |
| **LVP 140** | 140,00 (8.54) | 280 (4050) | 2000 |
| **LVP 160** | 160,00 (9.76) | 280 (4050) | 1800 |

### Features

- Energy savings
- Low noise emission
- Short response time
- Drive shaft bearing suitable for radial and axial loads
- Multiple combinations

### Controls

- Pressure compensator
- Flow and pressure compensator (Load Sensing)
- Torque limiter
- Electrohydraulic servocontrols

## MVP - MVPD and MVPR series

Variable displacement axial piston pumps swash plate design ideally suited for open circuit in mobile hydraulic applications. “MVP” series: the compact design allows to be mounted directly on engine motors.
The new “MVPD” series allow higher flow rates than traditional pumps with same dimensions, higher machine speeds without affecting the design of the hydraulic system and a high power-to-dimensions ratio.
“MVPR” series piston pump is an evolution of MVP series with higher pressure designed for hoist applications such as truck crane and telehandler for building & construction.A careful analysis of the application working cycle will ensure a long service life of the pump.
Displacements from 14 $cm^3$/rev (0.85 $in^3$/rev) to 84,7 $cm^3$/rev (5.17 $in^3$/rev).
Max. peak pressure up to 400 bar (5800 psi).
Max. speed up to 3500 $min^{-1}$.

### Features

- Exceptional working life expectancy
- Low noise emission
- Drive shaft bearing suitable for radial and axial loads
- Multiple combinations
- Short response time

### MVPD additional features

- Higher speed
- Higher power-to-weight ratio
- Cost-optimized design

### Controls

- Min. and max. displacement limiter
- Pressure compensator
- Flow and pressure compensator (Load Sensing)
- Torque limiter
- Electronic controls

### Main characteristics

| | Displacement | Max. continuous pressure | Max. speed |
|---|---|---|---|
| **MVP** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **MVP 30.28** | 28,00 (1.71) | 280 (4050) | 3500 |
| **MVP 30.34** | 34,80 (2.12) | 250 (3600) | 2900 |
| **MVP 48.45** | 45,00 (2.75) | 280 (4050) | 3000 |
| **MVP 48.53** | 53,70 (3.28) | 250 (3600) | 2500 |
| **MVP 60.60** | 60,00 (3.66) | 280 (4050) | 3000 |
| **MVP 60.72** | 72,00 (4.39) | 280 (4050) | 2700 |
| **MVP 60.84** | 84,70 (5.17) | 250 (3600) | 2500 |

| **MVPD** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
|---|---|---|---|
| **MVPD 30.34** | 34,00 (2.07) | 230 (3350) | 3200 |
| **MVPD 30.45** | 45,00 (2.75) | 230 (3350) | 2900 |
| **MVPD 30.50** | 50,00 (3.05) | 205 (2973) | 2600 |
| **MVPD 48.53** | 53,00 (3.23) | 230 (3350) | 2800 |
| **MVPD 48.65** | 65,00 (3.97) | 230 (3350) | 2600 |

| **MVPR** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
|---|---|---|---|
| **MVPR 60.60** | 60,00 (3.66) | 350 (5075) | 3000 |
| **MVPR 60.72** | 72,00 (4.39) | 350 (5075) | 2700 |
| **MVPR 60.84** | 84,70 (5.17) | 315 (4568) | 2300 |

## MVPe series

Variable displacement axial piston pumps swash plate design ideally suited for open circuit in mobile hydraulic applications. MVPe series piston pump is an evolution of the MVP series and represents the integration in one object of:

- MVP series piston pump
- Angular sensor
- Pressure Electronic Compensator
- Electronic control unit

Displacements from 34,9 $cm^3$/rev (2.13 $in^3$/rev) to 84,7 $cm^3$/rev (5.17 $in^3$/rev).
Displacements from 14 $cm^3$/rev (0.85 $in^3$/rev) to 34,8 $cm^3$/rev (2.12 $in^3$/rev) - available soon.
Max. peak pressure up to 350 bar (5075 psi).
Max. speed up to 3000 $min^{-1}$.

### Main characteristics

| | Displacement | Max. continuous pressure | Max. speed |
|---|---|---|---|
| **MVPE** | $cm^3$/rev ($in^3$/rev) | bar (psi) | $min^{-1}$ |
| **MVPE 48.45** | 45,00 (2.75) | 280 (4050) | 3000 |
| **MVPE 48.53** | 53,70 (3.28) | 250 (3600) | 2500 |
| **MVPE 60.60** | 60,00 (3.66) | 280 (4050) | 3000 |
| **MVPE 60.72** | 72,00 (4.39) | 280 (4050) | 2700 |
| **MVPE 60.84** | 84,70 (5.17) | 250 (3600) | 2500 |

### Features

- Machine layout simplification
- 2 Different software: smartEASY & smartFULL

### Controls

- Min. and max. displacement limiter
- Pressure Electronic Compensator
- Flow compensator (Load-Sensing)

## TVP series

Variable displacement axial piston pumps swash plate design ideally suited for open circuit truck applications.
The compact design allows to be mounted directly on the PTOs.
Displacements from 60,0 $cm^3$/rev (3.66 $in^3$/rev) to 84,7 $cm^3$/rev (5.17 $in^3$/rev).
Max. peak pressure up to 400 bar (5800 psi).
Max. speed up to 3000 $min^{-1}$.

### Main characteristics

| TVP | Displacement $cm^3$/rev ($in^3$/rev) | Max. continuous pressure bar (psi) | Max. speed $min^{-1}$ |
|---|---|---|---|
| **TVP 60.60** | 60,00 (3.66) | 350 (5100) | 3000 |
| **TVP 60.72** | 72,00 (4.39) | 350 (5100) | 2700 |
| **TVP 60.84** | 84,70 (5.17) | 350 (5100) | 2500 |

### Features

- Pump internal drain line
- Compensators external drain line
- Direct mounting on the PTOs
- Body width 124,2 mm (4.8898 in)
- Compact design
- Low noise emission

### Controls

- Min. and max. displacement limiter
- Flow and pressure compensator (Load Sensing)
- Electro-proportional pressure compensator

## CASAPPA SERVICE TOOL SOFTWARE FOR FAN DRIVE & CSP SYSTEM

**Real time monitoring & application setup**

- Parametrization of electronic control units
- Monitor and diagnostic functions
- Auto detection of the different type of control unit

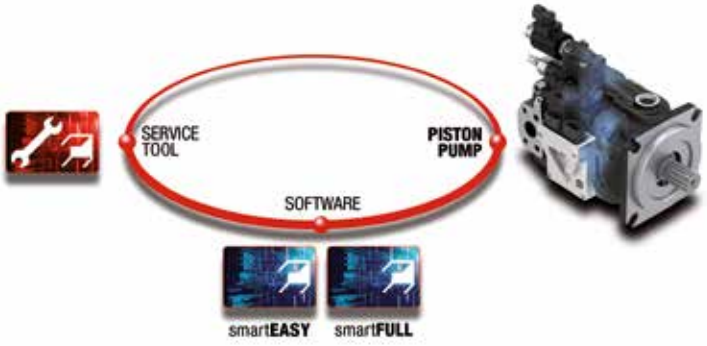
## ELECTRO-HYDRAULIC FAN DRIVE SYSTEM

**Advantages of the hydraulic system vs other technologies**

- More powerful and more effective
- Reverse function available
- Energy savings and low noise level
- Flexibility in cooling system design
- Integrated controls
- Reduced overall dimensions

## CSP SYSTEM

**Casappa Smart Power System evolution**




**Software evolution**
**smartEASY & smartFULL logics**
Availability of two different software logics

**Hardware evolution**
**MVPe**
Represents the integration in one object of:
- MVP series piston pump
- Angular sensor
- Pressure Electronic Compensator
- Electronic control unit

IKRON®
Fluid Filtration

A CASAPPA COMPANY

## Product range

**Suction filters**

**In line filters spin-on**

**Tank mounted return line filters**

**In line medium and high pressure filters**

**Accessories**

**Hand pumps**

**Filtration devices**

Founded in 1997, Ikron is the natural evolution of Casappa, a company that has always been careful to quality and to new products development. Filters in fact represent a strategic component for safeguarding the hydraulic circuit.

IKRON has been inspired since its birth by the procedures dictated by the ISO 9001 Standard, a guarantee of the care and professionalism that distinguishes its production, from the project to the delivery of the products. An aspect of primary importance for the customers that, every day, contact Ikron.

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Products design occurs by using virtual simultion instruments and by employing new generation softwares that enable to study and foresee the products behavior once they are mounted in the hydraulic circuit.
Laboratory tests contribute to the confirmation of the products quality and reliability level.
Ikron offers a wide range of filters and accessories.
Suction filters, return filters, in line spin-on filters, medium and high pressure filters, hand pumps.
Clogging indicators, level and temperature gauges, filler breathers, complete plastic reservoirs, flux oil.

Mechanical works and dimensional controls are entrusted to highly trained personnel. After passing all the process inspections, the components move to the assembly lines.

At the end of the process each product is:
- labeled
- packed
- equipped with service instructions

A highly specialized company that offers the best components to safeguard the hydraulic circuit.
Quality improvement, aimed at maximizing our custmers' satisfaction, is a continuous process that involves all company functions and the entire production process.

## Suction filters

The tank submerged suction filters are designed to be fitted directly on pump intake and provide versatility to safeguard the hydraulic components from contaminating particles.

### HF 410 series

Flow up to 300 lpm (79.3 US gpm)
By-pass valve
Oversized filtering surface

### HF 431-434-437 series

External tank connection
Aluminium head
Special version on request
Washable filtering media

## Main characteristics

| Type | Nominal flow up to l/min (US gpm) | Degree of filtration* MS (µm) | MI (µm) |
|---|---|---|---|
| **HF 410** | 300 (79.3) | 90 | 25-60-125-250 |
| **HF 431** | 220 (58.1) | | 60-125-250 |
| **HF 434** | 160 (42.3) | | 60-125-250 |
| **HF 437** | 160 (42.3) | | 60-125-250 |

NOTE
(*): MS = zinc plated steel wire mesh / MI = stainless steel wire mesh

## In line filters spin-on

These filters are specifically designed to be connected on the suction or in the return line of the hydraulic circuit and provide versatility to safeguard the circuit components from contaminating particles.

### HF 620-625 series

Easy filtering elements replacement
Differential visual indicator
Interchangeable with major manufacturers

### HF 650 series

Easy filtering elements replacement
High filtration performances
Operating pressure 35 bar (510 psi)
Interchangeable with major manufacturers

### Main characteristics

| Type | Nominal flow up to l/min (US gpm) | Operating pressure bar (psi) | Degree of filtration* FG (µm) | MS (µm) | SP (µm) | RP (µm) |
|---|---|---|---|---|---|---|
| **HF 620** | Suction 190 (50) | 12 (174) | 10-25 | 60-90 | 10-25 | |
| | Return 350 (92.5) | 12 (174) | 10-25 | 60-90 | 10-25 | |
| **HF 625** | 225 (59.4) | 25 (360) | 10-25 | 60-90 | 10-25 | |
| **HF 650** | 200 (52.8) | 35 (510) | 3-6-10-16-25 | | | 10-25 |

NOTE
(*): FG = micro-fibre glass / MS = zinc plated steel wire mesh / SP = cellulose / RP = reinforced cellulose

## Tank mounted return line filters

These filters are specifically designed to be directly connected on the hydraulic circuits return line and provide versatility to safeguard the circuit components from contaminating particles.

### HF 502 - HF 508 series

Operating pressure 8 bar (115 psi)
Flow up to 1000 lpm (264 US gpm)
Double inlet port
Extension on the oil way out of the pipe union
Fluid-decelerating diffuser

### HF 532 series

Plastic body and bowl
360° Adjustable connection

### HF 547 series

Air breather (available also with pressurized version)
Antisplash system
Anodized housing
Flange with four holes (only HF 547-20)

## Main characteristics

| | Nominal flow up to | Operating pressure | Degree of filtration* | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Type** | l/min (US gpm) | bar (psi) | FG (µm) | AF (µm) | MS (µm) | MI (µm) | SP (µm) | RP (µm) |
| **HF 502** | 630 (166.5) | 8 (115) | 3-6-10-25 | | 90 | 25-60-125 | 10-25 | 10-25 |
| **HF 508** | 1000 (264) | 8 (115) | 3-6-10-25 | | 90 | 25-60-125 | 10-25 | 10-25 |
| **HF 532** | 50 (13.2) | 8 (115) | 10-25 | 10-25 | | | | |
| **HF 547** | 200 (52.8) | 8 (115) | 3-6-10-25 | | 90 | 25-60-125 | 10-25 | 10-25 |

NOTE
(*): FG = micro-fibre glass / AF = antistatic micro-fibre glass / MS = zinc plated steel wire mesh / MI = stainless steel wire mesh / SP = cellulose
RP = reinforced cellulose

## Tank mounted return line filters

### HF 554 series

Air breather (available also with pressurized version) Antisplash system
Anodized housing

### HF 570-575-578 series

Inside-to-outside flow direction
Magnetic pre-filtration
Filler cap
Interchangeable with major manufacturers

### Main characteristics

| | Nominal flow up to | Operating pressure | Degree of filtration* | | | | |
|---|---|---|---|---|---|---|---|
| **Type** | l/min (US gpm) | bar (psi) | FG (µm) | MS (µm) | MI (µm) | SP (µm) | RP (µm) |
| **HF 554** | 630 (166.5) | 8 (115) | 3-6-10-25 | 90 | 25-60-125 | 10-25 | 10-25 |
| **HF 570** | 600 (158) | 8 (115) | 10-25 | | | 10-25 | |
| **HF 575** | 1200 (317) | 8 (115) | 10-25 | | | 10-25 | |
| **HF 578** | 1200 (317) | 8 (115) | 10-25 | | 60-125 | 10-25 | |

NOTE
(*): FG = micro-fibre glass / MS = zinc plated steel wire mesh / MI = stainless steel wire mesh / SP = cellulose / RP = reinforced cellulose

## In line medium and high pressure filters

The in-line medium and high pressure filters are specifically designed to be connected on the pressure line of the hydraulic circuit and provide versatility to safeguard the circuit components from contaminating particles.

### HF 690 series

Operating pressure 150 bar (2175 psi)
Aluminium head and bowl

### HF 705 series

Sintered bronze filter element
Bidirectional flow
Aluminium housing

### HF 710 series

Aluminium housing
Operating pressure 250 bar G 3600 psi
Compact design and lightness
By-pass valve
Filtration ratio $\beta_x \geq 200$

## Main characteristics

| Type | Nominal flow up to l/min (US gpm) | Operating pressure bar (psi) | Degree of filtration* FG (µm) | RP (µm) | SB (µm) |
|---|---|---|---|---|---|
| **HF 690** | 90 (23.8) | 150 (2175) | 3-6-10-16-25 | 10-25 | |
| **HF 705** | 115 (30.4) | 350 (5100) | | | 10-25-40-60 |
| **HF 710** | 47 (12.4) | 250 (3600) | 3-6-10-16-25 | | |

NOTE
(*): FG = micro-fibre glass / RP = reinforced cellulose / SB = sintered bronze

# In line medium and high pressure filters

## HF 725 series

CETOP 3 connections with reference to ISO4401
Operating pressure 350 bar (5100 psi)
Modular assembly
Compact design
Filtration ratio $ß_x \geq 200$

## HF 735 series

Multilayer system
Flanged directly on valve blocks and hydraulic Power-Pack
Filtration ratio $ß_x \geq 200$

## Main characteristics

| Type | Nominal flow up to l/min (US gpm) | Operating pressure bar (psi) | Degree of filtration* FG (µm) | MI (µm) |
|---|---|---|---|---|
| **HF 725** | 20 (5.3) | 350 (5100) | 3-6-10-16-25 | 10-25 |
| **HF 735** | 150 (39.7) | 320 (4650) | 3-6-10-16-25 | |

NOTE
(*): FG = micro-fibre glass / MI = stainless steel wire mesh

# In line medium and high pressure filters

## HF 745 - HF 749 series

Interchangeable with major manufacturers
Multilayer system
Filtration ratio $ß_x \geq 200$

## HF 760 series

Multilayer system
Wide range 20 - 30 - 40
Interchangeable with major manufacturers
Filtration ratio $ß_x \geq 200$

## Main characteristics

| Type | Nominal flow up to l/min (US gpm) | Operating pressure bar (psi) | Degree of filtration* FG (µm) |
|---|---|---|---|
| **HF 745** | 170 (45) | 320 (4650) | 3-6-10-16-25 |
| **HF 749** | 105 (27.7) | 420 (6100) | 3-6-10-16-25 |
| **HF 760** | 450 (120) | 420 (6100) | 3-6-10-16-25 |

NOTE
(*): FG = micro-fibre glass

## Filters and accessories

Filler breathers - Air filters - Level and temperature gauges - Pressure gauges - Pressure/Vacuum gauges - Clogging indicators: visual, electrical, visual differential and electrical visual differential.

### Filler breathers main characteristics

| Type | Air flow up to l/min (US gpm) | Degree of filtration* MS (µm) |
|---|---|---|
| **HB 50** | 285 (75.3) | 10-40 |
| **HB 70** | 480 (126.8) | 10-40 |
| **HB 110** | 1400 (369.8) | 3-5-10 |
| **HB 120** | 1800 (475.5) | 3-5-10 |

NOTE (*): MS = zinc plated steel wire mesh

### Air filters main characteristics

| Type | Air flow up to l/min (US gpm) | Degree of filtration* MS (µm) |
|---|---|---|
| **AF 105** | 1000 (264.2) | 5-10-40 |
| **AF 106** | 3000 (792.6) | 3-6-10 |

NOTE (*): MS = zinc plated steel wire mesh

### Level gauges main characteristics

| Type | Distance between the mounting screws mm (in) |
|---|---|
| **HL 91** | 76 (3.00) |
| | 127 (5.00) |
| | 254 (10.00) |
| **HL 98** | 127 (5.00) |
| | 254 (10.00) |

## Up Easy series

Double acting hand pumps providing flow in both directions of lever movement.
Displacement from 12 $cm^3$/cycle (0.73 $in^3$/cycle) to 45 $cm^3$/cycle (2.75 $in^3$/cycle).
Max. pressure 315 bar (4600 psi).

### Features

- New interchange modular design for maximum flexibility
- Same pumping group with or without reservoir
- Suitable for auxiliary or emergency applications
- Available TXA aluminium body simplified version

### Main characteristics

| Type | Displacement $cm^3$/cycle ($in^3$/cycle) | Max. pressure bar (psi) |
|---|---|---|
| **EP 12 (◆)** | 12 (0.73) | 315 (4600) |
| **EP 25** | 25 (1.53) | 250 (3600) |
| **EP 45** | 45 (2.75) | 220 (3200) |

(◆) Not available in TXA version

## Complete plastic reservoirs

The complete plastic reservoirs combine a solid rotational molded plastic shell with an HF 547-10 filter and an HL 91-10 level indicator. On request, an HF 431-10 / HF 434-10 / HF 437-10 suction filter and an EP hand pump can be added to the reservoir. This module is ready to be installed into the hydraulic circuit without any additional operations, reducing manteinance costs.

### R 15-25-50 series

Easy installing
Excellent resistance to corrosion

### Main characteristics

| Type | Max. Volume l (US gallon) | Max. Temperature °C (°F) |
|---|---|---|
| **R 15** | 15 (4.0)) | -20 ÷ 80 (-4 ÷ 176) |
| **R 25** | 25 (6.5) | -20 ÷ 80 (-4 ÷ 176) |
| **R 50** | 50 (13.2) | -20 ÷ 80 (-4 ÷ 176) |

## Flux oil

Flux oil units provide a practical off-line portable filtration modality, they are designed for use in mobile installations and equipment to achieve and maintain adequate ISO cleanliness levels.

### IK 15 - IK 50 series

Compact frame in welded steel and epoxy painted with carrying handle
Compatible with mineral and synthetic hydraulic oils

### Main characteristics

| Type | Nominal flow up to l/min (US gpm) | Degree of filtration* FG (µm) multilayer |
|---|---|---|
| **IK 15** | 15 (4.0) | 3 |
| **IK 50** | 50 (13.2) | 3 |

NOTE (*): FG = micro-fibre glass

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