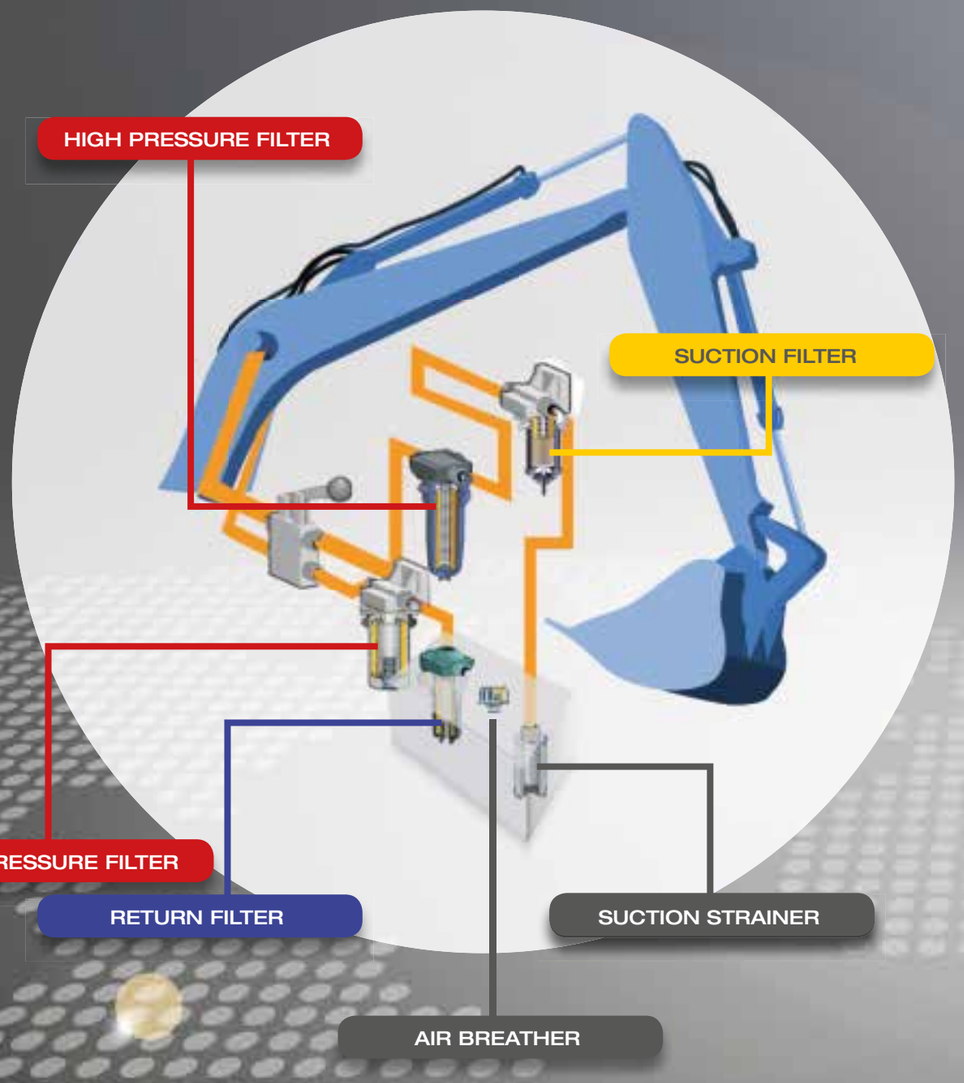
NO “JACK-OF-ALL-TRADES”, SIMPLY PROFICIENT AT ONE!

SOFIMA FILTERS

HYDRAULIC

Let the filter take the strain!



Engineered Filtration Solutions for Mobile Hydraulic Applications

The supply of reliable hydraulic power to vehicles serving the arduous requirements of the construction industry, safeguards vehicle utilization and productivity levels and avoids the expensive, time-consuming issues associated with un-planned downtime, maintenance and repair.

The single, most important measure of hydraulic-machine health is the quality of the hydraulic-oil provided to precision-componentry in the hydraulic-circuit. Where properly protected against contamination these components enable vehicle fluid-power systems to achieve incredible displays of power and agility in a vast array of applications and working environments.

To achieve and maintain this level of quality in the fluid-power system, **Filtration Quality** is essential. More hydraulic failures are a result of particulate contamination than any other single cause.

SOFIMA (an UFI Group company) has the knowledge and engineering technology to confront and master these issues with a proven range of filtration products for the mobile customer.
Many well-known construction-vehicle manufacturers and end users have placed their trust in our ability for many years, either in “first-build” OE-vehicle supply and/or in OES and independent after-market applications.

Backed by the substantial background of the UFI Group and its recognized Industrial pedigree, as an innovation and technology supplier to the Automotive industry, **SOFIMA** has earned a solid reputation for quality and cost-efficient products.

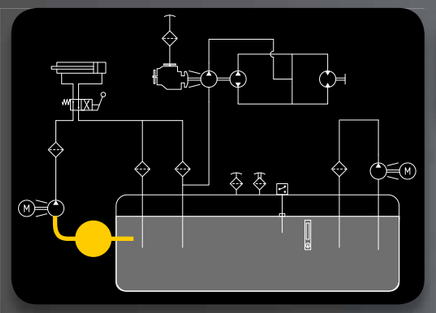
SOFIMA filters meet the hydraulic-system requirements of maximum protection, with high efficiency and constant stability. High-performance micro-fibre filtration media, with high voids-volume, warrants validated levels of dirt-holding capacity, synonymous with the economic extended machine-life service-intervals demanded by the market.

There is no evidence that it is possible to have oil which is “too-clean,” therefore, **Filtration Quality** should be as efficient as space, costs and pressure-drop will allow!

QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV·GL ISO 14001

QUALITY SYSTEM CERTIFICATION DNV·GL ISO/TS 16949



Optimal protection of your pump

Application:
required for general purpose coarse filtration protection of the downstream hydraulic-pump.
Fine filtration at this point in the hydraulic circuit is not recommended to avoid pump-cavitation.

SUCTION FILTERS

User Benefits: “first-line” filtration combats:
- the ingress of contamination into the hydraulic circuit.
- prolongs the lifetime of finer downstream filtration.
- reduces the particulate-load on the finer filter, thus extending service-life-intervals, unplanned downtime and maintenance.
- avoids damage to the finer downstream filter from coarse particulate, such as rust.
- the overall consequence of effective “first-line” suction filtration is a reduction in the Kwh running costs of the hydraulic-pump.

FAM
SUCTION STRAINER

Port sizes: 3/8” ÷ 4”
Flow rates: 5 ÷ 600 l/min

TECHNICAL DATA
Bypass valve:
300 kPa (0,3 bar) ± 10% on request
(not available for FAM130-150)

Filter element collapse pressure:
standard Δp 100 kPa (1 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Connector: aluminium
Internal core: zinc plated steel
End cap: zinc plated steel

FSB
SUCTION FILTER

Port sizes: 1 1/4”÷ 4”
Flow rates: 10 ÷ 600 l/min

TECHNICAL DATA
Filter element collapse pressure:
standard: Δp 100 kPa (1 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Cover: aluminium

Housing:
FSB 110 and FSB 501
aluminium and polyamide

FSB 550 and FSB 560
aluminium

FSB 535 and FSB 540
steel

Seals: standard NBR (on request FKM)

LFM
SUCTION OR LOW PRESSURE IN-LINE FILTER

Port sizes: 3/8” ÷ 1 1/2”
Flow rates: 4 ÷ 600 l/min

TECHNICAL DATA
Max. working pressure: 0,7 MPa (7bar)
Max. test pressure: 1,4 MPa (14 bar)
Bursting pressure: 2,1 MPa (21 bar)

Filter element collapse pressure:
Δp 400 kPa (4 bar) - ISO 4572

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: aluminium
Bowl: cold formed steel
Seals: standard NBR (on request FKM)

MSZ
SUCTION STRAINER

Port sizes: 1/2” ÷ 3”
Flow rates: 15 ÷ 550 l/min

TECHNICAL DATA
Bypass valve:
30 kPa (0,3 bar) ± 10% on request

Filter element collapse pressure:
standard: Δp 100 kPa (1 bar)

Working temperature: -25 ÷ +90 °C

MATERIALS
Connector: polyamide
Internal core: zinc plated steel
End cap: zinc plated steel

AMF
SPIN-ON FILTER FOR SUCTION OR RETURN LINE

Port sizes: 3/4” - 1 1/4” - 1 1/2”
Flow rates: 7 ÷ 375 l/min

TECHNICAL DATA
Max. working pressure: 1,2 MPa (12 bar)
Max. test pressure: 1,5 MPa (15 bar)
Bursting pressure: 2,5 MPa (25 bar)

Fatigue test:
0 ÷ 1,2 MPa (12 bar) / 100.000 cycles

Bypass valve:
suction 25 kPa (0,25 bar) ±10%
return 170 kPa (1,7 bar) ±10%

Filter element collapse pressure:
standard: Δp 400 kPa (4 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: die cast aluminium
Seals: standard NBR (on request FKM)

FAC
TANK SIDE WALL SUCTION FILTER

Port size: 1 1/4”
Flow rate: up to 70 l/min

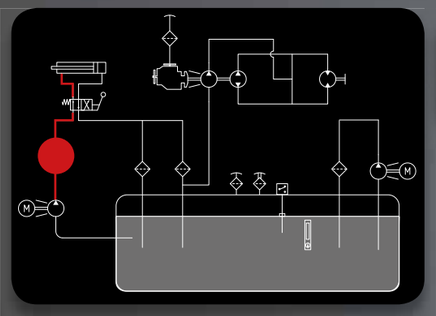
TECHNICAL DATA
Filter element collapse pressure:
1 MPa (1 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Top-cap: polyamide
Housing: aluminium alloy
Seals: NBR

All tests performed according to the following standards:
ISO 2941: Element collapse resistance test
ISO 2942: Production integrity test
ISO 2943: Fluids compatibility
ISO 3723: End load test method
ISO 3724: Flow fatigue resistance method
ISO 3968: Pressure drop versus flow rate
ISO 16889: Multipass test.

COMPATIBILITY (ISO 2943:1999)
Full with fluids: HH-HL-HM-HV-HTG (according to ISO 6743/4).
For fluids different than the above mentioned, please contact our Sales Department.



Main-line, high-efficiency filtration

Application:
hydraulic Transmission and power-steering applications.
General main-line, open-loop pressure filters for full-flow hydraulic system conditions.

PRESSURE FILTERS

User Benefits:
- main-line, high-efficiency, full-flow fine filtration for the protection of precision valves and fluid-power proportional controls.
- high-performance, high-dirt-holding capacity, micro-fibre filter-elements keep the cost-of ownership (running-costs) low between planned vehicle service-intervals.
- non-welded housing design for extended life and safer operation.

MDS
MEDIUM PRESSURE FILTER

Port sizes: 3/4” - 1” - 1 1/4” - 1 1/2”
Flow rates: 50 ÷ 420 l/min

TECHNICAL DATA
Working pressure: 5 MPa (50 bar)
Fatigue test:
0 ÷ 5 MPa (50 bar) / 1.000.000 cycles
Elements collapse differential pressure: 1 MPa (10 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: aluminium alloy
Bowl: steel
Seals: standard NBR (on request FKM)

MDM
MEDIUM PRESSURE FILTER

Port sizes: 1/2”
Flow rates: 8 ÷ 75 l/min

TECHNICAL DATA
Max. working pressure: 11 MPa (110 bar)
Max. testing pressure: 16 MPa (160 bar)
Bursting pressure: 30 MPa (300 bar)

Fatigue test:
0 ÷ 9 MPa (90 bar) / 1.000.000 cycles

Bypass valve: Δp 600 kPa (6 bar) ± 10%

Filter element collapse pressure:
standard: Δp 8 MPa (80 bar)
except CD-CV series Δp 2 MPa (20 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head and bowl: anodized aluminium
Seals: standard NBR (on request FKM)

SPM
MEDIUM PRESSURE IN-LINE FILTER

Port sizes: 1/2”÷ 1”
Flow rates: 10 ÷ 130 l/min

TECHNICAL DATA
Max. working pressure: 22 MPa (220 bar)
Max. test pressure: 33 MPa (330 bar)
Bursting pressure: 66 MPa (660 bar)

Fatigue test:
0 ÷ 15 MPa (150 bar) / 1.000.000 cycles

Bypass valve:
Δp 350 kPa (3,5 bar) ± 10%
Δp 600 kPa (6 bar) ± 10%

Filter element collapse pressure:
standard: Δp 2,1 MPa (21 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head and bowl: anodized aluminium
Seals: standard NBR (on request FKM)

XTT4
HIGH PRESSURE IN-LINE FILTER

2nd Generation XTT Filter with improved flow-rates, increased effective filtration area and 22% higher dirt-holding capacity.
Reverse-flow valve
Installation flexibility: in-line or at 90° from above
New differential pressure indicator (clogging indicator)

Port sizes: M22 x 1,5 - 1/2” - 3/4” - 1” BSP
Flow Rates: up to 180 l/min

TECHNICAL DATA
Max. working pressure: 35 MPa (350 bar)
Max. testing pressure: 47,5 MPa (475 bar)
Min. bursting pressure: 106 MPa (1060 bar)
Fatigue test: 0 ./. 28 MPa (280 bar)
Bypass valve: standard Δp 600 kPa (6 bar) +/- 10%

Filter element collapse pressure:
Δp 2.1 MPa (21 bar) all types
Δp 21 MPa (210 bar) 2T-2C-2D-2V-TD-TV-TT-TS

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: cast iron
Body: forged steel
Seals: standard NBR (on request FKM)

MHT
HIGH PRESSURE IN-LINE FILTER

NEW Stainless Steel MHT Filter available for aggressive environments (incl: Stainless Steel visual clogging indicator).

Port sizes: 1/2” ÷ 1 1/2”
Flow rates: 10 ÷ 420 l/min

TECHNICAL DATA
Max. working pressure: 42 MPa (420 bar)
Max. testing pressure: 62 MPa (620 bar)
Min. bursting pressure: 126 MPa (1260 bar)
Fatigue test: 0 ÷ 28 MPa (280 bar)

Bypass valve: standard Δp 600 kPa (6 bar) +/- 10%
Reverse flow valve

Filter element collapse pressure:
Δp 2,1 MPa (21 bar) all types
Δp 21 MPa (210 bar) 2T-2C-2D-2V-TD-TV-TT-TS

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: cast iron / stainless steel
Bowl: forged steel / stainless steel
Seals: standard NBR (on request FKM)

HCA
MEDIUM PRESSURE SPIN-ON FILTER

Medium pressure Spin-on filters
In-line medium pressure protection of the hydraulic circuit, hydrostatic charge-pumps and hydraulic transmissions.

Port size: 1 3/8” -12 UNF, 1 3/4”-12 UNF
Flow rate: up to 140 l/min (1 3/8”)
upto 150 l/min (1 3/4”)

TECHNICAL DATA
Max. working pressure: 3,5 MPa (35 bar)
Rated static burst pressure: 6,9 MPa (69 bar)

Filter element collapse pressure:
1 MPa (10 bar)

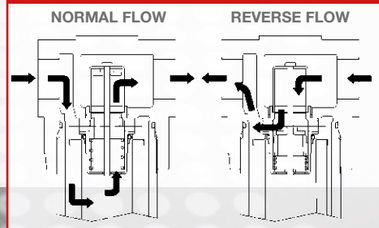
Working temperature:
-29 ÷ +121 °C (fibre)
-29 ÷ +107 °C (cellulose)

MATERIALS
Bowl: steel
Seals: standard NBR

FLA

In-pipeline / in-hose “point-of use” pre-filtration with high filter-element collapse pressure and a max. working pressure of 21MPa (210 bar). These filters are designed to protect auxiliary equipment interfaces, powered by the main fluid-power circuit on the vehicle.
Port sizes: 1/2” BSP - 3/4” BSP - M22

REVERSE FLOW VALVE

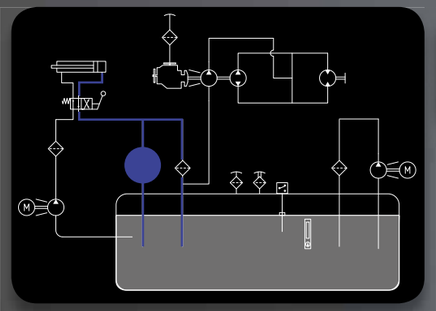


Pressure drop through the valve in the reverse direction:
0,4 bar at 100 L/min - 0,6 bar at 200 L/min - 0,8 bar at 300 L/min

For hydraulic systems where reverse flow can occur, the pressure filter series XTT4 and MHT are equipped with a reverse-flow valve, which allows the fluid to pass through the filter element in the normal direction and to by-pass the element in the reverse direction. The reverse-flow valve is also available with an incorporated bypass valve for the normal direction of flow, set at 6 bar. Under normal flow conditions, the entire flow passes through the filter element. In the option with incorporated by-pass, if the differential pressure across the filter exceeds 6 bar, the bypass is activated. Under reverse-flow conditions, the flow by-passes the filter element.

All tests performed according to the following standards:
ISO 2941: Element collapse resistance test
ISO 2942: Production integrity test
ISO 2943: Fluids compatibility
ISO 3723: End load test method
ISO 3724: Flow fatigue resistance method
ISO 3968: Pressure drop versus flow rate
ISO 16889: Multipass test.

COMPATIBILITY (ISO 2943:1999)
Full with fluids: HH-HL-HM-HV-HTG (according to ISO 6743/4).
For fluids different than the above mentioned, please contact our Sales Department.



Return-Line, safeguards fluid cleanliness

Application:
hydraulic Return-Filters for installation on the return-side of the hydraulic-circuit, where the oil re-enters the tank-reservoir. This type of filter should be sized for the maximum flow of the hydraulic system. To avoid “foaming” in the reservoir, the return flow-pipe must be located below the liquid level in the tank.

As a general “rule of thumb,” the distance between the bottom of the reservoir-tank and the end of the return-pipe should be more than 2 to 3 times larger than the pipe diameter.

RETURN FILTERS

HYDRAULIC

User Benefits: space-saving “tank-top” mounting avoids excessive piping.
Alternative: externally-mounted filters, keep contamination outside of the tank-reservoir and are often more accessible for filter-element replacement.

- Light-weight / compact-design. Tank-reservoir filling via the filter top-cap helps maintain system cleanliness.
- Ease of maintenance and filter-element replacement.
- Filters available with built-in air breathers.
- Integral filter-element by-pass valves.

RFC Filter-series with filter-element magnetic core as standard (effective removal of ferrous particles). Built-in zinc-plated diffusor helps reduce flow-velocities and provide fluid-mixing without agitation.

High-performance, high-dirt-holding capacity, micro-fibre filter-elements keep the cost-of ownership (running-costs) low between planned vehicle service-intervals.

Differential pressure indicators (Clogging-indicators) available for all filters

Non-welded housing design for extended life and safer operation.

AMF

SPIN-ON FILTER FOR SUCTION OR RETURN LINE

Port sizes: 3/4” - 1 1/4” - 1 1/2”
Flow rates: 7 ÷ 375 l/min

TECHNICAL DATA
Max. working pressure: 1,2 MPa (12 bar)
Max. test pressure: 1,5 MPa (15 bar)
Bursting pressure: 2,5 MPa (25 bar)

Fatigue test:
0 ÷ 1,2 MPa (12 bar) / 100.000 cycles

Bypass valve:
suction 25 kPa (0,25 bar) ±10%
return 170 kPa (1,7 bar) ±10%

Filter element collapse pressure:
standard: Δp 400 kPa (4 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: die cast aluminium
Seals: standard NBR (on request FKM)

MAR

TANK TOP RETURN LINE SPIN-ON FILTER

Port sizes: 3/4” ÷ 1 1/2”
Flow rates: 30 ÷ 205 l/min

TECHNICAL DATA
Max. working pressure: 1,2 MPa (12 bar)
Max. test pressure: 1,5 MPa (15 bar)
Bursting pressure: 2,5 MPa (25 bar)

Fatigue test:
0 ÷ 1,2 MPa (12 bar) / 100.000 cycles

Bypass valve: Δp 170 kPa (1,7 bar) ±10%

Filter element collapse pressure:
Δp 400 kPa (4 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: aluminium
Canister: steel
Seals: standard NBR

MRH

RETURN FILTER

Port sizes: 1/2” ÷ 3 1/2”
Flow rates: 3 ÷ 1.200 l/min

TECHNICAL DATA
Max. working pressure: 2 MPa (20 bar)
Max. test pressure: 3 MPa (30 bar)
Bursting pressure: 6 MPa (60 bar)

Fatigue test:
0 ÷ 1,5 MPa (15 bar) / 1.000.000 cycles

Bypass valve: Δp 300 kPa (3 bar) ± 10%

Filter element collapse pressure:
standard: Δp 1 MPa (10 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head: anodized aluminium
Bowl: anodized aluminium
(steel for size 250 only)
Seals: standard NBR (on request FKM)

RFA

TANK TOP RETURN FILTER, INBUILT BREATHER

Port sizes: 1/2” ÷ 1”
Flow rates: 30 ÷ 140 l/min

TECHNICAL DATA
Max. working pressure: 1 MPa (10 bar)

Fatigue test:
0 ÷ 1 MPa (10 bar) / 300.000 cycles (min.)

Bypass valve:
Δp 170 kPa (1,7 bar) ± 0,1 (CD-CV-MS-RT)
Δp 250 kPa (2,5 bar) ± 0,3 (FV-FD-FC)

Filter element collapse pressure:
Δp 300 kPa (3 bar) CD - CV
Δp 1 MPa (10 bar) FD - FV - MS - RT

Working temperature: -25 ÷ +110 °C

MATERIALS
Cover: polyamide
Head: aluminium
Bowl: polyamide
Seals: standard NBR

RFC

TANK TOP RETURN FILTER, INTERNAL TO EXTERNAL FILTRATION

Port sizes: 3/4”÷ 2 1/2”
Flow rates: 20 ÷ 1000 l/min

TECHNICAL DATA
Max. working pressure: 1 MPa (10 bar)
Max. testing pressure: 2 MPa (20 bar)
Bursting pressure: 3 MPa (30 bar)
Fatigue test:
0 ÷ 500 kPa (5 bar) / 1.000.000 cycles
Bypass valve: Δp 150 kPa (1,5 bar) ± 0,2

Filter element collapse pressure:
Δp 1 MPa (10 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head and cover: aluminium
Bowl: steel
Element support:
size 100 - 200 polyamide
size 300 aluminium
Diffusor: zinc plated steel
Magnetic core: syntherized magnetic material
Seals: standard NBR (on request FKM)

RFM

TANK TOP RETURN FILTER

Ports: 3/8”÷ 2 1/2”
Flow rates: 5 ÷ 700 l/min

TECHNICAL DATA
Max. working pressure: 300 kPa (3 bar)
Max. test pressure: 500 kPa (5 bar)
Bursting pressure: 1 MPa (10 bar)
Fatigue test:
0 ÷ 300 kPa (3 bar) / 300.000 cycles
Bypass valve:
Δp 170 kPa (1,7 bar) ± 0,2

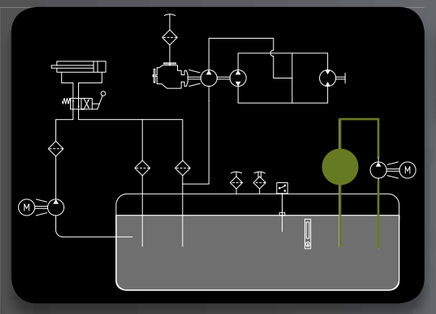
Filter element collapse pressure:
Δp 300 kPa (3 bar)
(type CD-CV) - ISO 2941
Δp 1 MPa (10 bar)
(type DR-VR-MV-MS-MN- FT-FC-FD-FV) - ISO 2941

Working temperature: -25 ÷ +110 °C

MATERIALS
Cover and head: aluminium
Bowl: polyamide (steel for size 004 and 055 to 160)
Seals: standard NBR (on request FKM)

All tests performed according to the following standards:
ISO 2941: Element collapse resistance test
ISO 2942: Production integrity test
ISO 2943: Fluids compatibility
ISO 3723: End load test method
ISO 3724: Flow fatigue resistance method
ISO 3968: Pressure drop versus flow rate
ISO 16889: Multipass test.

COMPATIBILITY (ISO 2943:1999)
Full with fluids: HH-HL-HM-HV-HTG (according to ISO 6743/4).
For fluids different than the above mentioned, please contact our Sales Department.



Flushing and hydraulic-fluid transfer

Application:
maintenance of “Roll-Off-Cleanliness” in the hydraulic-fluid circuit at the time a new vehicle leaves the manufacturing assembly-line or a vehicle undergoes repair or re-build.

The **GTC**, mobile off-line filtration unit filters hydraulic-fluid at low-pressure with the aid of a self-contained pump, motor and filter. Oil returning to the tank-reservoir from the return line is filtered by the GTC unit, which drastically reduces “clean-up time.”

The **ROL**, stationary off-line filter works at system-pressure and can be connected to the hydraulic-circuit of the vehicle in such a way that it becomes the “power-supply.” The circuit can be cycled to flush out and remove harmful contamination to pre-condition the oil for longevity and improved service-life.

OFF-LINE

User Benefits: maintain “Roll-Off”-Cleanliness.

Where the level of cleanliness is insufficient to remove harmful contamination from “Built-in,” “Brought-in”, “Induced-in” and “Taken-in” sources, the result can be premature vehicle breakdown/failure within the warranty period!

ROL
OFF-LINE FILTER
INTERNAL TO EXTERNAL FILTRATION

GTC
FILLING AND FILTRATION UNIT

Hydro-Dry
WATER REMOVAL ELEMENTS

Port sizes: 1 1/2” - 2 1/2”
Flow rates: 150 - 1.000 l/min

TECHNICAL DATA
Max. working pressure: 1 MPa (10 bar)
Max. testing pressure: 2 MPa (20 bar)
Bursting pressure: 3 MPa (30 bar)
Bypass valve: Δp 150 kPa (1,5 bar) ± 0,2

Filter elements collapse pressures:
Δp 1 MPa (10 bar)

Working temperature: -25 ÷ +110 °C

MATERIALS
Head and cover: aluminium
Element support: size 240 polyamide
size 340 aluminium
Housing: steel
Magnetic core: syntherized magnetic material
Bowl: steel
Seals: standard NBR (on request FKM)

ELECTRIC MOTOR
three phase 380V - 0,75 kW 1450 rpm IP54

GEAR PUMP
40 l/min with inbuilt relief valve 1MPa (10 bar)

INLET and OUTLET flexible hoses 2 m long, with rigid ends 0,5 m long

“Y” type filter for pump protection

CLOGGING INDICATOR:
pressure gauge
(on request: differential indicator)

- The hydro-dry filter elements remove up to 80% of the free water present in the oil.
- The hydro-dry elements use WR filter media, working by absorption and ensuring a high water retention capacity.
- To achieve maximum water removal efficiency the hydro-dry elements must be used at constant flow rate and low and constant pressure, i.e. the ideal use is in a off-line filter or in a filtration trolley.
- Hydro-dry elements also remove solid contamination (ß10 > 2) however, we recommend that the majority of the particulate contamination is removed upstream by dedicated return filters.
- The hydro-dry elements are available in standard dimensions, to fit standard filter housings.
- A clogging indicator set at 130 kPa (1,3 bar) and mounted to the filter housing is recommended for timely replacement of the clogged element.

All tests performed according to the following standards:
ISO 2941: Element collapse resistance test
ISO 2942: Production integrity test
ISO 2943: Fluids compatibility
ISO 3723: End load test method
ISO 3724: Flow fatigue resistance method
ISO 3968: Pressure drop versus flow rate
ISO 16889: Multipass test.

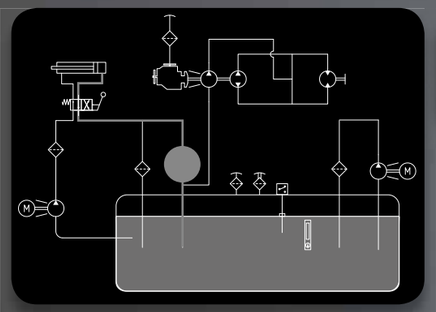
COMPATIBILITY (ISO 2943:1999)
Full with fluids: HH-HL-HM-HV-HTG (according to ISO 6743/4).
For fluids different than the above mentioned, please contact our Sales Department.

- **“Built-in”** - contamination left in the system or in componentry during initial vehicle assembly or vehicle repair/re-build.

- **“Brought-in”** - components and/or sub-assemblies “brought-in” or manufactured off-line/off-site, may be contaminated and add to the overall levels of contamination on the vehicle during assembly, repair or re-build.

- **“Induced-in”** - contamination internally “induced” into the system during operation and performance-testing or caused by wear, corrosion, agitation, oxidation or hydraulic-fluid degredation.

- **“Taken-in”** - Externally introduced contamination that enters a system from the atmosphere via insufficiently sealed orifices, covers or access-points.



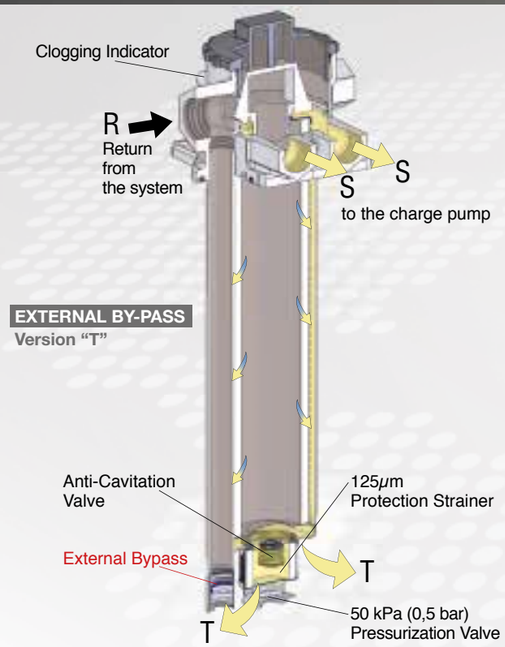
Combined return & suction filter

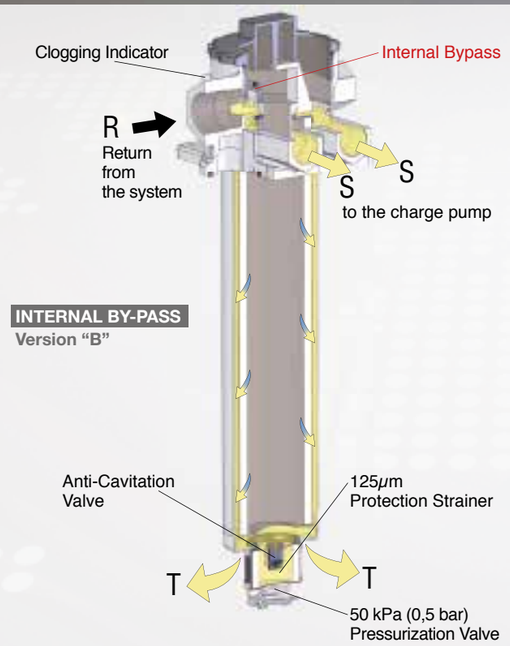
Application:
hydraulic transmissions are usually configurated in one of two ways, split or closed-coupled.
A split transmission consists of a power unit with hydraulic pump, heat-exchanger, hydraulic filter(s), valves and controls mounted on a tank-reservoir. Split transmissions are typically used in heavy-duty applications. Split transmissions offer a wide range of flexibility in terms of system-configuration for the most efficient use of space and weight distribution.

The **KTS** series of tank-mounted suction and return filters are designed for split hydrostatic transmissions where the return flow is higher than the flow of the charge-pump (50% higher under normal operating conditions). The filtered oil flow is maintained at a slight pressure (0.5 bar) to provide clean, pressurized oil to the charge-pump.
The same pressurized flow allows absolute filtration on the suction side of the charge-pump, protecting the same and with no risk of cavitation.
Contrary to some filtration suppliers, the direction of flow through the KTS filter is “internal to external,” this orientation ensures that retained contamination is completely removed along with the element when this is replaced.
KTS filters are available with internal or external bypass valves.

TRANSMISSION FILTERS

User Benefits:
- Lightweight construction. Space-saving.
- Less piping required / fewer potential leakage points.
- Requirement for only one filter instead of two.
  1) Filtration of the oil returning from the hydraulic system.
  2) Feeding the charge-pump with clean filtered oil.
- The charge-pump takes oil at a slight pressure (0.5 bar), avoiding cavitation risks but also contributing to good cold-start behavior.
- Charge-pump protection as the oil supplied is already pre-filtered.
- Simplified maintenance & Easy filter-element removal, with retained contamination.





KTS

Combined Return/Suction Filter for Hydrostratic Transmissions

Combined Return & Suction Filters replace the need for suction- or pressure filters for the charge-pump in closed-loop hydrostatic-drive circuits and for return filters in the open-loop hydraulic circuit (Split transmissions).

TECHNICAL DATA
Max. working pressure: 1 MPa (10 bar)
Max. test pressure: 1,5 MPa (15 bar)
Bursting pressure: 3 MPa (30 bar)
Fatigue test: 0 ÷ 1 MPa (10 bar) / 300.000 cycles
Bypass valve: return Δp 250 kPa (2,5 bar) ± 10%

Filter element collapse pressure: standard: Δp 1 MPa (10 bar)

Working temperature: -25 ÷ +110 °C

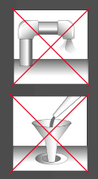
MATERIALS
Head: aluminium alloy
Bowl: steel
Seals: standard NBR (on request FKM)

All tests performed according to the following standards:
ISO 2941: Element collapse resistance test
ISO 2942: Production integrity test
ISO 2943: Fluids compatibility
ISO 3723: End load test method
ISO 3724: Flow fatigue resistance method
ISO 3968: Pressure drop versus flow rate
ISO 16889: Multipass test.

COMPATIBILITY (ISO 2943:1999)
Full with fluids: HH-HL-HM-HV-HTG (according to ISO 6743/4).
For fluids different than the above mentioned, please contact our Sales Department.

AIR FILTRATION LINE

Application:
air breathers / air filters should be fitted to the top of the tank-reservoir to protect against an ingress of contamination from the atmosphere.
The “breather” (with or without filler-cap) forms a barrier between the air exiting and entering the free-air space above the level of hydraulic oil in the tank-reservoir.
The provision of a 90° pipe, still encountered in the field, is not sufficient to prevent airborne contamination from entering the tank.
The air-breather represents one of the most important anti-contamination methods in a modern day hydraulic system!



User Benefits:
- System protection from airborne particulate contamination and humidity.
- Direct-mounting to the tank-reservoir avoids additional piping.
- Available with lockable oil-filler-cap to prevent unauthorized access to the tank.

INDICATORS

Application:
the most economic change-out time for the filter-element requires a mechanism to monitor the pressure of the hydraulic oil flowing through the filter, and one which alerts the user when this flow starts to diminish.
This is the most likely indication that the filter-element contains excessive particulate contamination!
Both the visual clogging indicator and the electrical clogging indicator must be set to trigger a signal at a pressure lower than the setting of the integrated by-pass valvein the filter.

User Benefits:
- Lightweight and compact. Direct mounting to the filter-head.
- Sealed, robust casing to protect the electrical parts (IP69K). Resistent to adverse environmental conditions (ISO 15003).
- Reliable signal prior to by-pass operation ensures timely filter-element eplacement and avoidance of potential system contamination.

ACCESSORIES

FA

AIR BREATHER FILTER

MATERIALS
Housing: black painted steel (zinc plated steel for FA47++ only)

Connector (FA47++): zinc plated steel

Mounting flange (FA55++): black painted steel

Clamp (FA68++): stainless steel

SAB

AIR BREATHER FILTER WITH SPIN-ON ELEMENT

MATERIALS
Connector: steel (zinc plated for the flanged version)

Cartridge canister: steel

SBB

SPIN-ON AIR FILTER
Flow rates: 1.800 ÷ 2.800 l/min
Filter rating: 1,2μm - 3μm

MATERIALS
Adaptor: zinc plated steel
Basket: zinc plated steel
Cartridge can: steel

SPARE FILTER ELEMENT
CD = cellulose
FD = inorganic fiber

ETT 02125

EXTENSION TUBE FOR FILLER BREATHERS

Useful to avoid oil leakage from the breather due to oil vapors or tilting of the tank.
Fits any filler breather with DIN 24557-2 flange.

MATERIALS
Tube: Polyamide - Gaskets: NBR
Screws: Zinc plated steel

TM

AIR FILTERS FILLER BREATHERS
Tank connection:
threaded, DIN 24557/2, welded

Flow rates: 150 ÷ 750 l/min
Filtering ratio: 10μm - 40μm

MATERIALS
Housing, flange and basket: zinc plated steel

Filter element (not replaceable):
Paper 10 µm
Polyurethane foam 40µm

TSP

AIR BREATHER FILTER

TECHNICAL DATA
Flow rate: 1.800 l/min

MATERIALS
Housing: plastic
Basket: plastic
Seals: NBR

SPARE FILTER ELEMENT
Type CSP120CD1: Cellulose
Filtration rating (in air): 3μm

LS

VISUAL LEVEL INDICATOR

TECHNICAL DATA
Max. working pressure: 100 kPa (1 bar)
Working temperature: -20°C ÷ +90°C
Screw torque: 10 Nm

MATERIALS
Transparent part: Trogamid T
Bowl: external protection
Fixing bolts: zinc plated steel
Seals: standard NBR (on request FKM)

LME

FLOAT SWITCHES

Note: the float switch must be mounted at a minimum distance of 50mm from ferrous walls.
Max oil viscosity: 150 cSt

MATERIALS
Tank connection: anodized aluminium
Rod: stainless steel
Float: polyamide

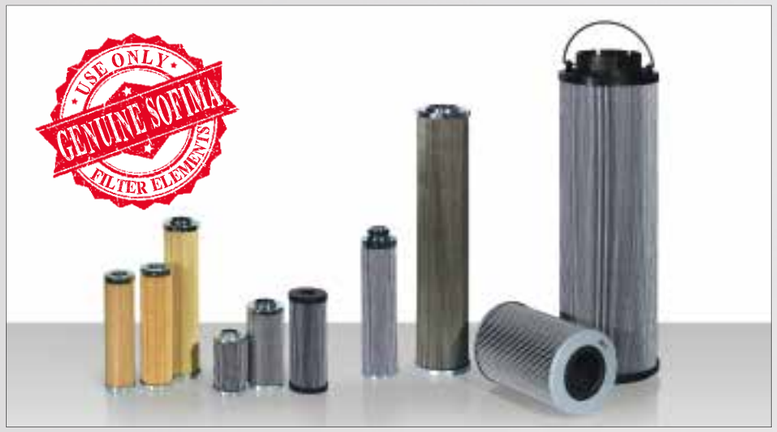
NOTE!!
Compromising hydraulic-system performance - ignoring the essential change-out requirement of a filter-element, or not fitting an indicator and forgetting the fact that a filter is installed, is a false economy and could cost far more in downtime and expensive hydraulic component repair and/or replacement.

Working temperature: -25 ÷ +110°C

All tests performed according to the following standards:
ISO 2941: Element collapse resistance test
ISO 2942: Production integrity test
ISO 2943: Fluids compatibility
ISO 3723: End load test method
ISO 3724: Flow fatigue resistance method
ISO 3968: Pressure drop versus flow rate
ISO 16889: Multipass test.

COMPATIBILITY (ISO 2943:1999)
Full with fluids: HH-HL-HM-HV-HTG (according to ISO 6743/4).
For fluids different than the above mentioned, please contact our Sales Department.
For further information contact our Technical Dept.

The importance of remaining “Genuine”, even when manufacturing alternative filter-elements



When the time comes to replace your hydraulic filter elements, don’t compromise on quality. Don’t buy a counterfeit, pirate part!

Globalisation and the highly competitive environment we live in creates enormous pressure on manufacturers. The temptation to cut costs and the under estimation of the importance of genuine hydraulic filter elements poses a real risk to manufacturing efficiency and productivity.

In a World of unbridled access to information, the decision-making process should theoretically have improved many fold.
In actual fact, “information-overload” has resulted.
The lack of reliability and transparency has played into the hands of the dubious and dishonourable, eager to make money by illegally exploiting the good name and reputation of others.
There will always be an alternative source for the filter element you originally bought, however this source doesn’t come without risk!

If you have been satisfied with the Genuine filter and its filter element, which could have been specified by your chosen equipment supplier (our OE customer for example) from the outset, why would you want to compromise that satisfaction now, for a part which is actually very reasonably priced, considering the service it performs and the protection if affords?

These “look alike” filter elements represent an unethical and often illegal practice that poses a real danger to your company’s operation. The equipment these filters are protecting has cost you a lot of money - much more than you can save by buying pirate elements. Therefore a compromise on the device designed to remove high-maintenance contamination from your essential hydraulic energy source, surely cannot make good business sense.

The difference between Genuine UFI/SOFIMA parts and available “will fit” parts goes well beyond price and becomes a question of quality, confidence and the available level of “fall-back” and support provided by a reputable filter manufacturer.

Before considering the purchase of a “pirate-element,” here are a few points worthy of consideration:

- Does your supplier have a long-standing reputation for the manufacture of high quality hydraulic filtration products?

- Does your supplier invest in testing and performance verification of its hydraulic filter range?

- Does your supplier design and test its filtration products in accordance with international performance standards?

- Does your supplier have a filtration technology background (UFI/SOFIMA is a filter media manufacturer) on which to base the design and manufacture of “alternative” filter elements?

Genuine, UFI/SOFIMA Hydraulic Filter Elements are made from the highest quality materials.
Literally millions of our Genuine parts have proven themselves over the years in many varied applications.
Others may offer interchangeable filter elements, but “under the skin” they are not the same - “It’s what you don’t see that may cost you dearly!”

UFI/SOFIMA possess the necessary filtration technology and background to manufacture “Alternative” filter elements to meet OE, OES and independent aftermarket requirements.
In doing so, these filter-elements are subjected to the same rigorous test regime as propietary product. This ensures at the very least a like-for-like performance with the competitive original. An important detail of paramount importance where OE branding of the alternative element is undertaken.
In many cases, UFI/SOFIMA alternative elements even exceed the performance characteristics of the original!

All tests on UFI/SOFIMA “Genuine” proprietary filters and on UFI/SOFIMA “Alternative” filters are performed in accordance with the following ISO standards:

ISO 2941: Element collapse resistance test
ISO 2942: Production integrity test
ISO 2943: Fluids compatibility
ISO 3723: End load test method
ISO 3724: Flow fatigue resistance method
ISO 3968: Pressure drop versus flow rate
ISO 16889: Multipass test.

Engine-oil Filtration Module with Integrated Cooler

Efficient oil lubrification and the quality of the oil-supplied to the engine are two essential factors contributing to an overall decrease in fuel consumption and avoidance of premature engine wear.

Application:
oil-filters are an integral part of the combustion-engine, performing not only a filtration duty, but in many cases also cooling. To meet OE-customer requirements of reduced installation space, reduced weight and to satisfy environmental considerations, the use of high-performance materials of construction is essential. To optimise the integration of the filter-module into the engine block, close cooperation with engine design-engineers is necessary.
Whilst the module remains permanently fixed to the engine block, the filter element is easily removed and replaced at prescribed intervals, thus maintaining engine life and performance.

User Benefits:
- Filtration efficiency
  >40% @ 10μm
  >97% @ 30μm
- Robust housing design to cope with static and pulsating pressure
  (Burst pressure > 20 bar)
- Integrated, all stainless-steel/oil-coolant Heat-exchanger (Photo: 11kW)
- Available in a wide range of capacities
- Lightweight construction
- Easy filter-element replacement

Engine-oil Filter

Engine block mounted-, filter bowl and element, prevents contamination from entering the lubrification system.
By maintaining the level of oil quality, this filter contributes to overall engine efficiency and increases service-life.

Application:
this type of filter represents an ecological alternative to traditional “spin-on” filtration solutions. Instead of replacing the entire filter housing, only the used filter-cartridge needs replacement in this case.

User Benefits:
- Unique, high-filtration efficiency
  >99,5% @ 12μm
- Robust housing design to cope with static and pulsating pressure. Lifetime pressure cycles > 500.000 (Burst pressure > 35 bar)
- Multi-layer, high-efficiency, pleated filter-media
- Available in a wide range of capacities
- Lightweight construction
- Easy filter-element replacement

Engine-oil Filtration Module with Integrated Cooler

Engine mounted, oil Filtration Module prevents contamination from entering the lubrification system. By maintaining the level of oil quality, this filter contributes to overall engine efficiency and increases service-life.

Application:
oil-filters are an integral part of the combustion-engine, performing not only a filtration duty, but in many cases also cooling. To meet OE-customer requirements of reduced installation space, reduced weight and to satisfy environmental considerations, the use of high-performance materials of construction is essential. To optimise the integration of the filter-module into the engine block, close cooperation with engine design-engineers is necessary.
Whilst the module remains permanently fixed to the engine block, the filter-element, in the form of an integrated “spin-on” housing, is easily removed and replaced at prescribed intervals, thus maintaining engine life and performance.

User Benefits:
- Unique, high-filtration efficiency
  >99,5% @ 12μm
- Robust housing design to cope with static and pulsating pressure.
  (Burst pressure > 20 bar)
- Integrated, all stainless-steel/oil-coolant Heat-exchanger (Photo: 38 kW)
- Multi-layer, high-efficiency, pleated filter-media
- Available in a wide range of capacities
- Lightweight construction
- Easy filter-element replacement

OIL-MIST LINE

Oil-Mist Separator (Blow-by, Crankcase ventilation)

These efficient separators are suitable for a wide range of applications, from trucks and buses to off-highway vehicles and equipment.

Application:
exhaust legislation has significantly increased the need for crankcase ventilation in combustion engines. UFI/SOFIMA oil-mist separators form part of the crankcase ventilation system. Their task is to coalesce liquid oil and retain particulate contamination within the fibre-structure of the filter material. Oil in aerosol (mist) form collects on the fibres and forms larger oil droplets, which coalesce and return to the engine-oil sump.

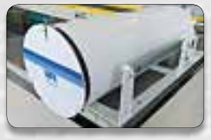
User Benefits:
- Oil separation efficiency >80%
- Effective reduction of oil consumption and emissions
- Available in a range of sizes and capacities
- Lightweight construction

Engine-mounted oil-mist separator. These efficient, spinning, oleophobic filters are suitable for a wide range of applications, from trucks and buses to off-highway vehicles and equipment.

Application:
exhaust legislation has significantly increased the need for crankcase ventilation in combustion engines. UFI/SOFIMA oil-mist separators form part of the crankcase ventilation system. High-performance, pleated oleophobic filter-media with high surface-area and oil separation efficiency of >95% protects the turbocharger and intercooler to maintain overall engine performance. Filter-rotation creates a centrifugal force, which effectively separates oil-droplets and particulate, returning the oil back to the engine sump.

User Benefits:
- Oil separation efficiency >95%
- Effective reduction of oil consumption and emissions
- Available in a range of capacities
- Lightweight construction

CARBON-BUSTER



The **Carbon-Buster range of diesel-particulate filters** has been specifically designed for use on construction and municipal vehicles to effectively reduce particulate emissions from engine exhaust.

Application:
the visible black cloud of exhaust smoke, released on engine start-up and during normal diesel engine operation and working load, poses a health hazard to the vehicle operator and all those working in the vicinity of the vehicle. When operating indoors, in confined or enclosed spaces, such as factories, warehouses, tunnels, mines etc., the effective removal of harmful carbon particulate increases in importance.
Carbon-buster represents a non-regenerative diesel-particle filter with 98% removal efficiency.
Upon installation, the clean, pleated fibre filter-element traps particles as fine as 3μm in size, continuing to improving on this and trapping even smaller particles as the filter becomes loaded with contamination.
The finite lifetime of the filter-element is dependent upon the backpressure it starts to create, signalling the necessity for replacement.
Carbon-buster filters can be mounted onto the body of the vehicle and connected to existing exhaust outlets.

User Benefits:
- Removal of 98% of harmful carbon particulate from Diesel engines
- Long-lasting, high efficiency filter-element
- Complies with Health & Safety Regulations, such as COSHH (Control Of Substances Hazardous to Health)
- Proven field performance

FUEL FILTERS

Diesel Fuel Pre-Filter High-efficiency Water Separation

Diesel Fuel Filter

Diesel Fuel Filtration Module

CNG Filters Compressed Natural Gas

The pre-filtration of Diesel fuel is crucial to efficient vehicle performance and fuel saving. By removing water from Diesel fuel, the performance of the injection system is improved, combustion is enhanced and less harmful emissions are produced.

Application:
enclosed in a steel “spin-on” housing, the filtration media is a combination of cellulose and synthetic material.
This highly efficient composite material with water-repellent surface modification, effectively blocks water on the upstream side of the filter-element and removes this from the flow of Diesel-fuel.
These filters are equally as effective when filtering “new-fuel” alternatives, such as bio-diesels.

User Benefits:
- Unique, high-filtration efficiency >90% @ 25μm
- Water Separation Efficiency > 98%
- Bio-Diesel compliant
- Integrated, electronic fuel-heating system available
- Robust housing
- Available in a wide range of capacities
- Lightweight construction
- Easy filter-element replacement

Diesel fuel filtration is crucial to efficient vehicle performance and fuel saving.

Application:
this Diesel Fuel Filter has been designed to ensure that size and weight are kept to a minimum.
The housing is equipped with a pressure-switch sensor and a temperature-switch sensor.
High-efficiency filtration media ensures protection to the injectors and injection pump, whilst keeping pressure-drop low to maximise operational lifetime.

User Benefits:
- Unique, high-filtration efficiency >95% @ 4μm
- Bio-Diesel compliant
- Robust housing
- Available in a wide range of capacities
- Lightweight construction
- Easy filter-element replacement

The pre-filtration of Diesel fuel is crucial to efficient vehicle performance and fuel saving. By removing water from Diesel fuel, the performance of the injection system is improved, combustion is enhanced and less harmful emissions are produced.
This filtration module comprises both pre-filtration and Diesel fuel final filtration.

Application:
in the first pre-filtration stage, enclosed in a steel “spin-on” housing, the filtration media is a combination of cellulose and synthetic material.
This highly efficient composite material with water-repellent surface modification, effectively blocks water on the upstream side of the filter-element and removes this from the flow of Diesel-fuel.
In the second-stage a high-efficiency Diesel Fuel filter removes harmful particulate and provides protection to the injectors and injection pump, whilst keeping pressure-drop to a minimum to maximise operational lifetime.

User Benefits:
- Unique, high-filtration efficiency >95% @ 4μm
- Water Separation Efficiency > 98%
- Bio-Diesel compliant
- Integrated, electronic fuel-heating system available
- Robust housing
- Available in a wide range of capacities
- Lightweight construction
- Easy filter-element replacement

A range of Compressed Natural Gas (CNG) & Liquid Petroleum Gas (LPG) filters for high-pressure CNG dispensing-/fueling-systems and for on-board vehicle fuel-systems.

Application:
LPG/CNG represent alternative fuel sources to diesel in heavy-duty applications.
Compared with conventionally fueled diesel engines, compressed natural gas produces less carbon dioxide, less carbon monoxide and has zero particulate emissions.
The majority of CNG engine performance issues are due to particulate contamination and oil/water carryover which begins at the CNG fueling station.
Where filtration is not fitted, oil and water created by the compression of natural gas can enter the fuel system of the vehicle when filling takes place.
Once this contamination has been brought on-board the vehicle it must be removed by effective low- and high-pressure coalescing filters to avoid costly repair to on-board gas storage cylinders and engine componentry.

User Benefits:
- Coarse filtration (>98%@5μm) & Fine filtration (>99,9%@1 to 2μm)
- 3 compact filter sizes covering the flow-range of 17 to > 53 kg/h
- High-quality stainless Steel housings
- Filter-element lifetime Coarse filtration (35.000km/700h), Fine filtration (30.000km/600h)
- Class “0” components in accordance with UN ECE R110:2008 /CNG containing high-pressure parts (**U**nited **N**ations **E**conomic **C**ommission for **E**urope)

SOFIMA HYDRAULIC FILTERS
PLANET FILTERS S.p.A.
Via S.Chierico, 24 - 24060 BOLGARE (Bergamo) ITALY
Tel +39 035 4493821 - Fax +39 035 843743
e-mail: info@sofima-hyd.it
www.sofima-hyd.com

an UFI Group company

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SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =

COMPANY WITH
ENVIRONMENTAL MANAGEMENT
SYSTEM CERTIFIED BY DNV
ISO 14001

DESIGN AND MANUFACTURE OF OIL FILTERS
FOR TRANSMISSION, GEAR BOX
AND STEERING SYSTEMS
ISO/TS 16949