The benefits

The compact design

Convincing in every respect

Numerous innovative details contribute to the superior performance, reliability and efficiency of the BOLLFILTER Automatic TYPE 6.72. Among the most important improvements are:

- space savings thanks to compact housing,
- improved durability through a sturdy design, less assemblies and moving parts and a connection to the air reservoir without piping,
- perfect synchronisation of the backflushing process due to the double-acting air/flushing valve,
- easy access to the filter elements thanks to the quick-release covers,
- low maintenance due to an innovative design with less wear parts,
- exclusion of malfunction risks leading to an increase in the availability of the plant.

BOLL & KIRCH has at its fingertips the ideal logistical basis for providing perfect customer support. Naturally, users of the BOLLFILTER Automatic TYPE 6.72 also benefit from the advantages this worldwide network provides – swift delivery, faster availability of technical support and a trouble-free supply of replacement parts.

The service network

Maximum customer orientation for maximum satisfaction

The Compact Design Two-Chamber Filter

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The task

The benefits

Perfect pre-treatment

In order to ensure that large combustion engines operate for long periods of time without problems and interruptions, the fuels, lubricants have to fulfil defined quality requirements. The heavy fuel oil operation of engines also requires an extensive pre-treatment of the fuel. In all cases, filtration plays a key role. The special filters installed in the inlet systems and liquid circuits must

- through their capacity guarantee the supply of sufficient amounts of liquid,
- guarantee a high degree of purity of the fuel, in order to protect the injection system against wear,
- through their design and dimensioning ensure the constant operating pressure,
- even in the case of varying fuel qualities ensure a problem-free continuous operation and
- through maintenance-free operation and a long service life contribute to keeping operating costs low.

The benefits

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Maximum customer orientation for maximum satisfaction

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The Compact Design
Two-Chamber Filter

BOLL & KIRCH continues to prove its strengths as a manufacturer and supplier of filters long after the product has been delivered. As a leading international supplier of marine and industrial filters for filtering fuels, lubricants, coolants and water with a global network of sales and service centers in five continents, BOLL & KIRCH has at its fingertips the ideal logistical basis for providing perfect customer support. Naturally, users of the BOLLFILTER Automatic TYPE 6.72 also benefit from the advantages this worldwide network provides – swift delivery, faster availability of technical support and a trouble-free supply of replacement parts.

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The service network
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The compact design
Two-Chamber Filter

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Filtration and regeneration without interruption

During the filtration process, the liquid to be filtered will flow through the inlet opening into the filter housing. The liquid passes through the inside of the candle to the filter outlet in the lower part of the housing. During this filtration process, one filter element with clean filter candles will be used as reverse flow in the chamber that is currently operating being contaminated, the regenerative and reserve element will take over. The filter element cleaning process is activated automatically. The pneumatic drain valve will then start the actuating device to a point where the inflow of unfiltered liquid into the contaminated filter chamber is blocked while the inflow into the chamber with the reserve candles is reinstated at the same time. This will cause the differential pressure to drop immediately. At one and the same time a double-acting tappet valve opens the opening for the flushing oil outlet and the inlet for the flushing air. The flushing air from the air reservoir will expand explosively and pass the clean liquid at a high speed in reverse direction through the filter candles. The particles on the outside of the candle are thereby removed and flushed out of the filter via the open backflush discharge valve. After a short after-bleeding time, the backflush discharge valve will close again. The emptied chamber will be filled with clean liquid via a refill tube. The candles in this chamber are now the reserve that is switching and waiting to be once again switched into the filtering process.

Monitoring and control

The fully automatic filter combines the regulations of the following Marine Standards Authorites - ABS, BV, CLASS, DNV GL, LR, KNR, RINA, UDN. The unoperated operation onboard ship:

- The standard equipment of the backflushing filter includes an Electronic Control Box Type 2200 with the following features and functions:
  - membrane keypad with three keys,
  - display of backflushing operation, number of backflushes and error messages,
  - display of backflushing operation, number of backflushes and error messages,
  - display of backflushing operation, number of backflushes and error messages,
- adjustable user current relay,
- DIN card with non-volatile ERM/program memory,
- 1/3 build-in controller,
- main switch with on/off-lingering system.

The concept

The BOLLFILTER Automatic TYPE 6.72 automatically fulfills the tasks described above. It does so thanks to a special design that features two chambers in which the functions of filtration and regeneration are carried out simultaneously and separately. Two filter chambers are mounted on top of the filter housing. Each of these chambers is fitted with a vertically positioned filter element assembly and 10 filter candles. During the work among themselves, they act as a uniform system. The filtration work is divided up in such a way that at any time one of the filter chambers can regenerate while the other carries on filtering. In the event of the capacity of the filter candles in the filter chamber that is currently operating being contaminated, the regenerative and reserve element will take over. The indication of contamination is the pressure differential between the dirty and the clean sides. Regeneration is carried out efficiently and extremely fast, exceeding compressed air, in a manner that prevents the mesh from being damaged. The pressure system remains at a constant level and the flushing valves are very low. For heavy fuel oil operations an additional heating chamber can be integrated into the bottom fastening of the filter housing. Thus it is possible to equip the filter with a heating chamber designed to be integrated into the bottom fastening of the filter housing. The filter can be equipped with an additional air-line by-pass filter with an integrated change-over Cole. This configuration is available with and without a heating chamber (referable by GL).
The BOLLFILTER Automatic TYPE 6.72 optimally fulfills the tasks described above. It does so thanks to a special design that features two chambers in which the functions of filtration and regeneration are carried out separately and sequentially. Two filter chambers are mounted on top of the filter housing. Each of these chambers is fitted with a vertically positioned filter element (with star candles) and an in-line filter (star candles). During the working among themselves, they act as a uniform system. The filtering effects is developed in such a way that at any time one of the filter chambers can regenerate while the other carries on filtering. In the event of the capacity of the filter candles in the filter chamber that is currently operating being contaminated, the regenerating and reserve element will take over. The indicator for the contamination is the pressure differential between the dirty and the clean sides. Regeneration is carried out efficiently and extremely fast, exhaustively compressed air, in a manner that prevents the mesh from being damaged. The system pressure remains at a constant level and the flushing volumes are very low.

Monitoring and control
The fully automatic filter complex is fitted with the regulations of the following Marine Standards Authorities - DNV GL, LR, LR AC, LRDC, UDCGEC. The unmanned operation onboard ship
The standard equipment of the backflushing filter includes an Electronic Control Box Type 2200 with the following features and functions:
• CPU card with non-volatile EPROM and program memory,
• adjustable over current release,
• display of backflushing operation, number of backflushes and error messages,
• adjustable over current release,
• control module with variable OEROM and program memory,
• 1/3 based in control,
• main switch with interlocking system

During the filtration process, the liquid to be filtered will flow through the intake (figure 1) into the housing. The liquid is fed into the chamber that is engaged (passing through the filter candles) from the outside to the inside. The solids being filtered out are held back by the mesh. The cleaned liquid passes through the intake to the clean chamber. During this filtration process, one filter element with clean filter candles will be held as reserve in the chamber that is not involved in the current operation. The backflush discharge valve will be shut and compressed air is available for the chamber that is not involved in the current operation. The backflushing process is actuated automatically. The pneumatic drive will then open the actuating device to a point where the inflow of unfiltered liquid into the contaminated filter chamber is blocked. In the event of the capacity of the filter candles in the filter chamber that is currently operating being contaminated, the regenerating and reserve element will take over. The indicator for the contamination is the pressure differential between the dirty and the clean sides. Regeneration is carried out efficiently and extremely fast, exhaustively compressed air, in a manner that prevents the mesh from being damaged. The system pressure remains at a constant level and the flushing volumes are very low.

Filtration

Backflushing in tandem with filtration

The BOLLFILTER Automatic TYPE 6.72 is fed into the housing. The liquid to be filtered will flow through the intake (figure 1) into the housing. The liquid is fed into the chamber that is engaged (passing through the filter candles) from the outside to the inside. The solids being filtered out are held back by the mesh. The cleaned liquid passes through the intake to the clean chamber. During this filtration process, one filter element with clean filter candles will be held as reserve in the chamber that is not involved in the current operation. The backflush discharge valve will be shut and compressed air is available for the chamber that is not involved in the current operation. The backflushing process is actuated automatically. The pneumatic drive will then open the actuating device to a point where the inflow of unfiltered liquid into the contaminated filter chamber is blocked. In the event of the capacity of the filter candles in the filter chamber that is currently operating being contaminated, the regenerating and reserve element will take over. The indicator for the contamination is the pressure differential between the dirty and the clean sides. Regeneration is carried out efficiently and extremely fast, exhaustively compressed air, in a manner that prevents the mesh from being damaged. The system pressure remains at a constant level and the flushing volumes are very low.

The concept
Filtration and regeneration without interruption

The solution

Useful and functional

Data and facts at a glance
Filtration System for Heavy Fuel Operation

**The concept**

**Filtration and regeneration without interruption**

During the filtration process, the liquid to be filtered will flow through the inlet opening into the filter housing. The liquid is fed into the chamber that is engaged in filtration (figure on the right) and without heating (figure on the left) and without heating.

**Monitoring and control**

The full-automatic filter complies with the regulations of the following Marine Standards Authori-
ties: LR, USCG, NSC, MARAD, DNV. The unassembled operation involves the following steps:

- Membrane keypad with three keys,
- 2–3 display, optional.
- Impact-resistant display cover,
- Display of backflushing operation, number of backflushes and error messages,
- Adjustable user current relay,
- CPU card with micro-readable EPROM and program memory,
- 1/1 ratio in control system,
- Main switch with interlocking system.

**The accessories**

- Before flushing with heating chamber (figure on the left) and without heating chamber (figure on the right).

**Useful and functional**

In line with their requirements users can, with the help of certain accessory items, modify the configuration of their BOLLFILTER Automatic TYPE 6.72. This in essence means that the filter housing can be integrated into the bottom fastening of the filter housing. The filter can be equipped with an additional oil inlet extending over the filter candle.

**Technical data**

<table>
<thead>
<tr>
<th>Filter size</th>
<th>DN 40</th>
<th>DN 65</th>
<th>DN 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal width of connection flanges</td>
<td>DN 40</td>
<td>DN 65</td>
<td>DN 80</td>
</tr>
<tr>
<td>Filter candle type</td>
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<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>Number of filter chambers</td>
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<td>2</td>
</tr>
<tr>
<td>Total no. of filter chambers</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Total filtration area in cm²</td>
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<td>7,200</td>
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<tr>
<td>Max. operating temperature</td>
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<td>160 °C</td>
<td>160 °C</td>
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<tr>
<td>Max. operating pressure</td>
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<tr>
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<tr>
<td>Max. operating pressure</td>
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<td>16 bar</td>
<td>16 bar</td>
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<tr>
<td>Range of application</td>
<td>Heavy fuel oil, diesel oil, lubricating oil</td>
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<td></td>
</tr>
<tr>
<td>BOLLFILTER Automatic TYPE 6.72</td>
<td>Multichamber automatic filter with compressed-air backflushing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**The details**

**Filtration**

- Flow through the inlet opening into the filter housing. The liquid is fed into the chamber that is engaged in filtration (figure on the right) and without heating (figure on the left) and without heating.

**Backflushing in tandem with filtration**

- While the inflow of the cleaning liquid is on hold, the reserve that is ready and waiting to be once again switched into the filtration process.

**Data and facts at a glance**

- The solution to the problem of filtration and regeneration involves the selective use of two filter chambers.

**Monitoring and control**

- Main switch with interlocking system.

**Electronic Control Box Type 2200 with the following features and functions:**

- Main switch with interlocking system
- I/O board in control box,
- CPU card with non-volatile EPROM and program memory,
- Adjustable over current release,
- Impact-resistant display cover,
- Membrane keypad with three keys,
In order to ensure that large combustion engines operate for long periods of time without problems and interruptions, the fuels, lubricants have to fulfil defined quality requirements. The heavy fuel oil operation of engines also requires an extensive pre-treatment of the fuel. In all cases, filtration plays a key role. The special filters installed in the inlet systems and liquid circuits must:

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• easy access to the filter elements thanks to the quick-release covers,

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• exclusion of malfunction risks leading to an increase in the availability of the plant.

The service network
BOLL & KIRCH continues to prove its strengths as a manufacturer and supplier of filters long after the product has been delivered. As a leading international supplier of marine and industrial filters for filtering fuels, lubricants, coolants and water with a global network of sales and service centers in five continents, BOLL & KIRCH has at its fingertips the ideal logistical basis for providing perfect customer support. Naturally, users of the BOLLFILTER Automatic TYPE 6.72 also benefit from the advantages this worldwide network provides - swift delivery, faster availability of technical support and a trouble-free supply of replacement parts.

The task
Perfect pre-treatment

BOLLFILTER Automatic TYPE 6.72 provides excellent results for the filtration of fuels and lubricants for mobile and stationary drives.
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USA / Canada
BOLL FILTER CORPORATION

Brazil

South Africa

Afrifil Industrial Filters (Pty) Ltd.

India
BOLLFILTER India Pvt. Ltd.

Russian Federation / Ukraine / Belorussia
000 BOLLFILTER Russland

Middle East

South Korea
Blohm + Voss Industries (Korea) Ltd.

Japan
BOLLFILTER Japan Ltd.

Singapore / Malaysia / Indonesia
IMI Corporation Pte. Ltd.

P. R. of China / Hong Kong
BOLLFILTER China Ltd.

Spain / Portugal / Argentina / Chile / Peru / Uruguay
BOLLFILTER España S. L.

UK / Ireland
BOLLFILTER UK Ltd.

Belgium / Luxembourg
Auximeca N.V.

Netherlands
Lubrafil B.V.

Germany
BOLL & KIRCH FILTERBAU GmbH

Switzerland / Liechtenstein
EIG CRUSTAG

Denmark / Sweden / Greece / Bulgaria
FILTERKON

Iceland / Norway / Finland / Lithuania / Latvia / Estonia
BOLLFILTER Nordic ApS

Manufacturing Safe Technical Supply Co. LLC
Motor Services Hugo Stamp Inc.

Italy
De.Co.Sta Spa

Austria / Czech Republic / Slovakia / Slovenia
Schmachtl GmbH

Croatia
Marine Trade d.o.o.

Polen
TRIMOR sp. z.o.o.

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Cyprus
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