

# Manual and maintenance instructions

for INTERNORMEN-Filter, circulating units  
US 10, 20, 21, 22, 40, 41, 80, 81, 160, 161, 162, 320, 321

Sheet No.  
**32260-4A**

These instructions are based on data sheets 4008.1-3, 4009.1-2, 4010.1-3, 4011.1-2, 4012.1-2 (or in case of special design the corresponding data sheet) and contain common requirements intended to ensure perfect operation of the filter unit and which may need to be supplemented by user-specific conditions for application.

## **1. Intended use**

The circulating filter units US 10-321 are stationary filter units for fine filtering of mineral oil-based hydraulic oil as well as water separation from the above-mentioned fluids.

The max. permissible size of the dirt particles in the operating fluids should be no more than < 200µm. Larger particles will lead to early wear of the geared pump.

## **2. Commissioning**

The rotary filter unit is supplied ready for operation.

The initial and non-operational condition is identified as follows :

- The filter unit is not connected to the electrical power supply
- The filter is fitted with a ready-for-use filter elements
- The ventilating and draining screws are closed
- The filter is empty
- The hydraulic pipe connection must be adapted to the respective filter unit without a reduction in nominal diameter and must be unstressed
- The max. pipe length is 2 m for the suction line and 4 m for the discharge line. Longer lines will lead to reduced max viscosity.
- The electric motor must be connected in accordance with the respective national rules and regulations and must be made safe with a current-sensitive fused overload safety device
- When commissioning the unit, check that the direction of rotation of the electric motor agrees with the marking on the fan housing. In the event of this not being the case, change the poles over.

The filter unit is switched on and off by switching the electric motor ON and OFF. After use or repair and maintenance work the initial / rest condition must be re-established.

## **3. Changing the element**

The filter element must be changed when the contamination indicator on the filter is on "O", so signalling the necessity for a change of the element (display field red).

The element is changed with the unit in the rest condition (electric motor disconnected from the mains, filter empty and drain screw E2 open).

To remove the contaminated filter element, turn the clamping screw, item 5, on the filter counter-clockwise until the clamping screw including the filter cover, item 2, can be removed. The filter element is now accessible and can be removed.

Depending on the degree of contamination of the open filter housing, it may be necessary to clean the housing before a new filter element can be inserted.

The exchange filter element should only be removed from its packing just before it is fitted into the filter housing and should be checked for perfect condition (no visible mechanical damage and/or faults) and completeness (O-rings in the locating ring of the exchange element).

After the filter element has been fitted into the housing, fit the filter housing cover and tighten with the clamping nut (tightening torque 60 Nm).

Care should be taken to ensure that, during the complete filter changing process, neither the filter housing nor the exchange elements come into contact with dirt. Close the drain and venting screws.

## **4. Cleaning the filter housing**

The filter housing must be cleaned when particularly contaminated fluid has been filtered and dirt is visible in the filter housing. The filter housing is cleaned at the same time as the filter is changed.

Drain screws E2 and E3 are open. Clean the inside of the filter housing using standard cleaning equipment and solvents.

Care must be taken during cleaning that no dirt reaches the clean side (hole in the locating spigot) and that no solvent is left in the filter housing.

## **5. Venting**

Venting of the filter is necessary every time the filter has been emptied.

Venting is carried out when the filter is in operation. A vent hose is connected to the venting connection E1 of the filter according to the instructions specified in data sheet 1650, using either the high pressure hose M16.630 (length of hose 630 mm) or hose M16.2000 (length of hose 2000 mm).

Venting has been carried out satisfactorily when bubble-free fluid flows from the connected hose.

The hose is removed from the venting point after venting and a sealing cap is fitted to the venting connection.

## **6. General information**

- Check the condition of the O-ring, item 9, every time the filter cover has been removed and change the rings if there is any sign of damage or leakage.
- Clamping screw, item 5, tightening torque is 60 Nm.

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