

# Flushing of Plain Bearings by Filtered Medium

## Applications

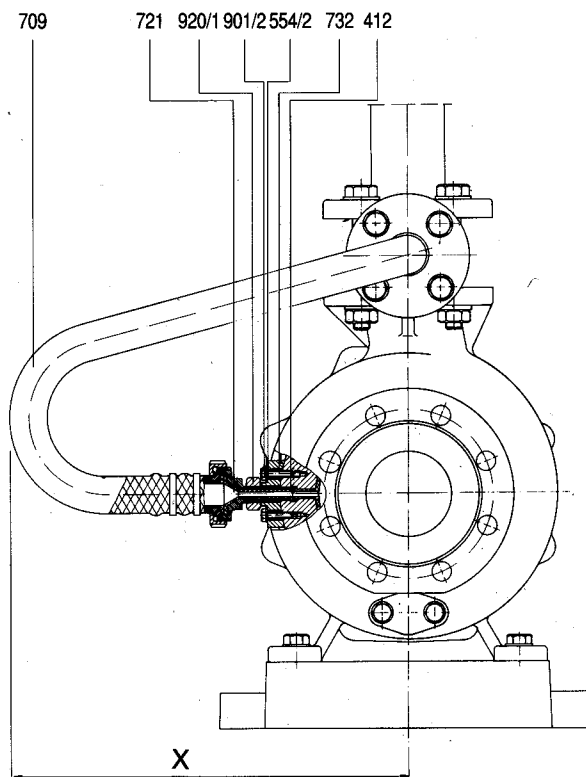
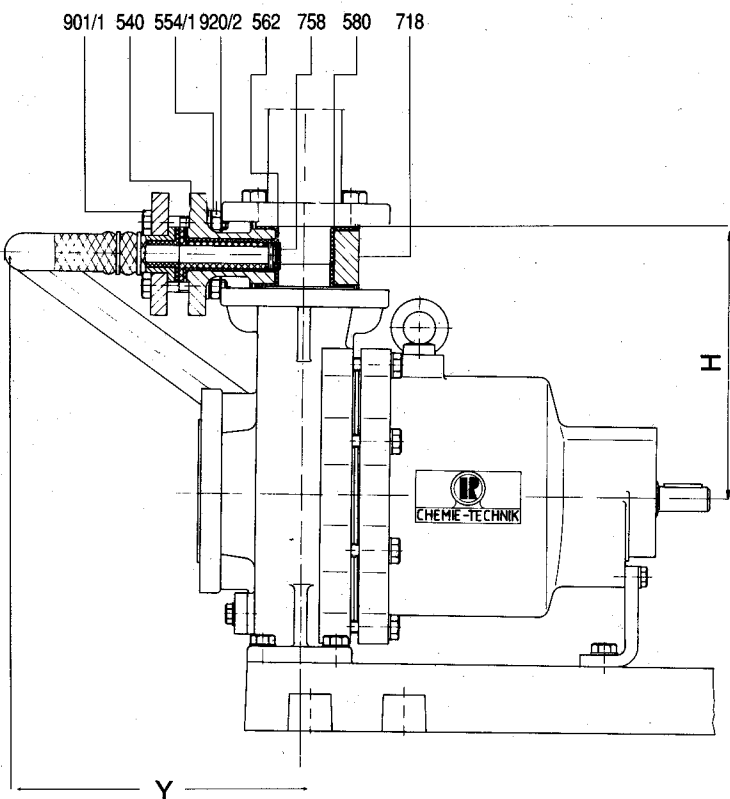
Operation of the pump for the conveyance of solid-bearing media, using filtered conveyed medium. Suitable for solids with a particle diameter  $< 2\text{ mm}$ . This version is not suitable for use with solids which have a tendency to agglomerate or form crusts. For particle sizes  $\geq 2\text{ mm}$  please see bottom note on page 3 (Vortex pumps).

## Description of Design

Filtered conveyed medium is diverted via an axially approached strainer located above the pressure nozzle. This branch stream passes via a chemical hose and a connection on the plain bearing carrier into the can and ensures lubrication of the plain bearings. Back-sided vanes on the impeller provide an adequate pressure drop at the plain bearings. This system of flushing ensures lubrication of the plain

bearings across the pump's entire performance range. The plain bearing carrier features no flushing borings other than this connection. It is thus ensured that no solids can enter the can.

The system consists of a PTFE-lined tubular nozzle (item 718) of the same nominal diameter as the pump's pressure nozzle. A PTFE sleeve (item 540) with a strainer insert (item 758) and cap (item 580) of PTFE or ceramic material is positioned inside this tubular nozzle. The axial approach attitude of the flow to the strainer ensures that the strainer element continuously self-cleans. The flushing connection on the plain bearing carrier consists of a support (item 732) and a PTFE-lined transition pipe (item 721). Sealing between the plain bearing carrier and the transition pipe is effected by means of an O-ring consisting of Kalrez® or Viton® resp. equivalent material (item 412).



Pump size	X	Y	H
25 - 25 - 125	380	350	190
50 - 32 - 125	380	350	190
25 - 25 - 160	400	350	210
50 - 32 - 160	400	350	210
80 - 50 - 160	400	350	210
50 - 32 - 200	530	410	230
65 - 40 - 200	530	410	230
80 - 50 - 200	530	410	250
80 - 50 - 250*	580	410	275
125 - 80 - 200*	580	415	300

- 412 O-ring
- 540 Filter support
- 554/... Washer
- 562 Stud bolt
- 580 Cap
- 709 Hose
- 718 T-pipe
- 721 Transition pipe

- 732 Support
- 758 Filter insert
- 901/... Hex. screw
- 920/... Hex. nut

X and Y are approx. dimensions.  
All dimensions in mm.

\* not in close-coupled design

# for Richter Pumps Series MNK and MNK-B

For increased operational safety a flow monitor system can be installed between the T-pipe (item 718) and the hose (item 709).

## Start-up, Shut-down and Maintenance

The Richter "Instructions for Installation, Operation, Maintenance and Repair of Magnetic Drive Chemical Pumps" valid at the relevant time has to be followed. Filling of the pump housing must be effected very carefully. Since the can can only be ventilated via the plain bearings and the flushing connection, the pump may be started only approximately five minutes after opening of the suction and pressure sided valves. The ventilating of the can can be improved by turning the pump impeller over several times by hand (**Note safety regulations!**)

**In divergence from the aforementioned instructions the suction line should be shut off immediately if the motor stops.** This prevents solids accumulating in the pump housing while the pump is out of operation.

**Important: the inlet valve must under all circumstances be opened before the pump is restarted.**

When conveying media with a high impurity burden, the strainer element (item 758) should, for safety reasons, be inspected at least every 3000 operating hours and changed if necessary.

**Important: A small amount of liquid remains in the can when the pump is drained. This can be discharged only via the flushing connection.**

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## Plain bearing flushing with filtered pumped liquid mounted to a standardized Richter pump "MNK"

Note: the shut-off valve normally is to be installed with a larger distance to the pump, in order to ensure a sufficient ventilation of the separating can.



### Conveyance of Media with High Solid Contents resp. Large Particles

Richter Vortex pumps have especially been designed for the conveyance of media with

- solid contents up to 50 %
- particle sizes of 10 to 20 mm
- long-fibre constituents.

These pumps feature a recessed semi-open impeller and do not tend to clogging. They are available with magnetic drive and alternatively with mechanical sealing.

More details can be obtained from our brochure "Vortex pumps".