

Flushing by External Liquid

Applications

Flushing of the plain bearings using an extraneous solids-free fluid compatible with the conveyed fluid. This system makes the magnetic-drive pump suitable for all types of solids for which mechanically sealed pumps can also be used. Grain size: < 2 mm.

Description of Design

Solid-free fluid is conveyed under pressure into the can of the pump via a flushing connection. The pressure required on the flushing connection depends on the pump's working pressure and can be calculated as follows:

$$p_{\text{flush}} = p_s + (p_D - p_s) / 2$$

in which

p_{flush} = necessary flushing pressure

p_s = pressure at suction nozzle

p_D = pressure at discharge nozzle

It is thus ensured that a minimum flow passes through the plain bearings and that the frictional heat generated is dissipated with certainty.

The plain bearing carrier features no borings other than the flushing connection borings. Thus no solids can enter the can and cause damage there.

The flushing connection on the plain bearing carrier

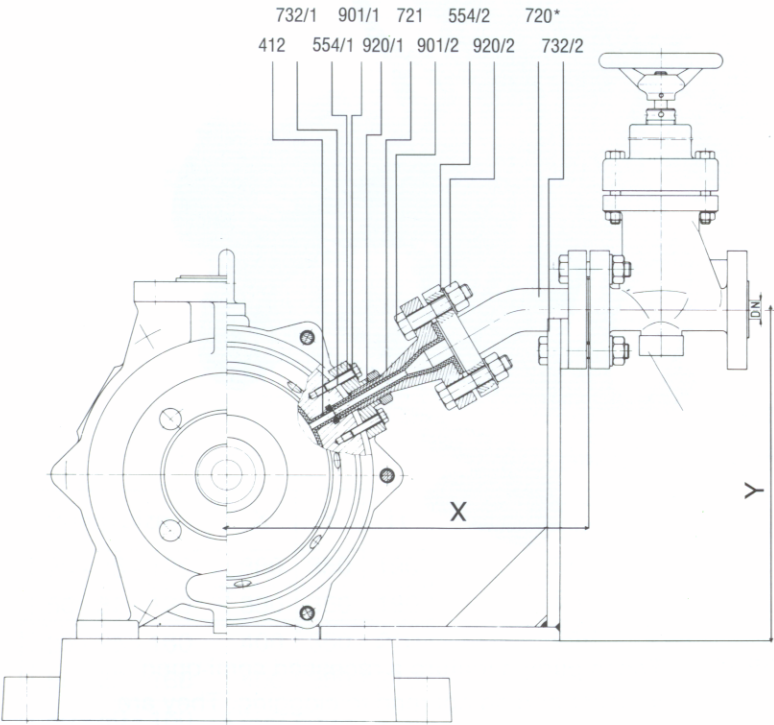
(item 339) consists of a support (item 732/1) and a PTFE-lined transition pipe (item 721). Sealing between the plain bearing carrier and the flange connection is effected by means of an O-ring made either of Kalrez® or Viton® or equivalent (item 412).

Start-up, Shut-down and Maintenance

The Richter "Instructions for Installation, Operation, Maintenance and Repair of Magnetic Drive Pumps" apply.

The suction-sided shut-off valve may be opened only after the shut-off valve in the flushing line has been opened and the necessary flushing pressure achieved. In order to avoid dry-running damage to the plain bearings, it must be ensured that sufficient flushing fluid is flowing at all times, e.g. by the installation of a flow monitor in the flushing line. This must be wired to trip an alarm and/or shut the pump down if the flushing fluid flow stops or falls below a minimum flushing rate. **In divergence from the a.m. instructions, the inlet line has to be shut off immediately if the motor stops.** The valve on the flushing connection may be closed only after the pressure and suction sided valves have been closed.

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



Pump size	X	Y	DN
25 - 25 - 125	178	112	15
50 - 32 - 125	178	112	15
25 - 25 - 160	285	267	15
50 - 32 - 160	285	267	15
80 - 50 - 160	285	267	15
50 - 32 - 200	213	160	15
65 - 40 - 200	213	160	15
80 - 50 - 200	213	160	15
80 - 50 - 250*	256	180	15
125 - 80 - 200*	256	180	15

* not in close-coupled design

412	O-ring
554/...	Washer
720**	Elbow
721	Transition pipe
732/...	Support
901/...	Hex. screw
920/...	Hex. nut

**only with sizes 25-160, 32-160 and 50-160.

All other sizes have a horizontally positioned transition pipe (item 721).