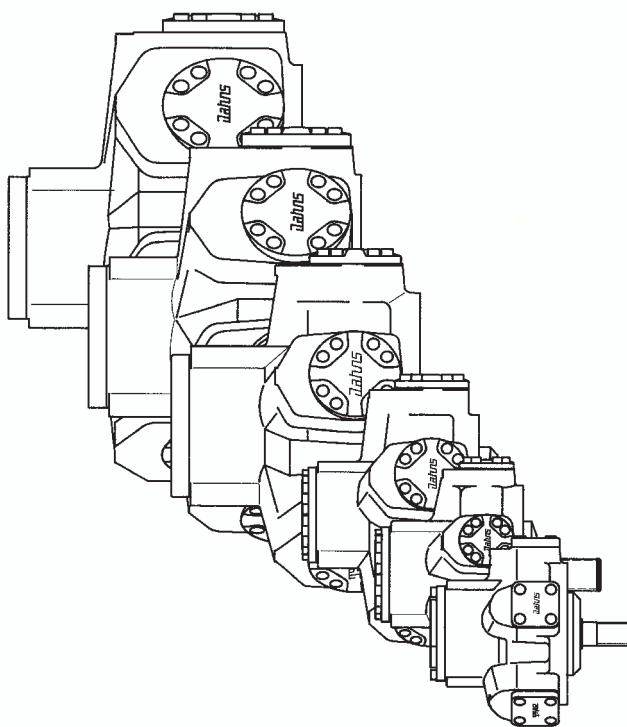


# **JAHNS**

## **HYDRAULIK**

# **Maintenance instructions for hydromotors HMw**

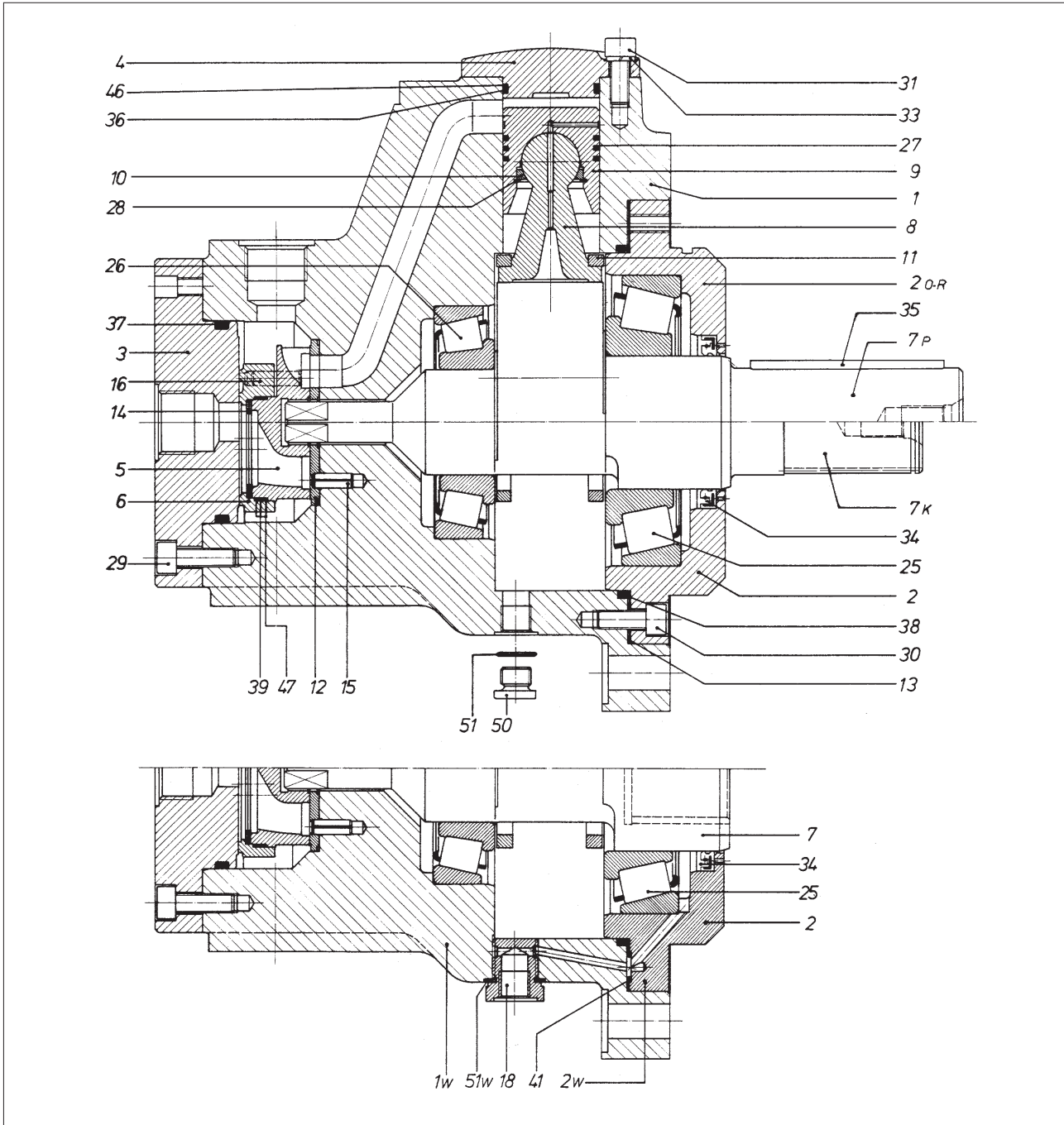
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# Description of the hydromotors



Jahns hydromotors have 5- or 7-cylinders. They are radial-pistonmotors for high torques with constant displacement volume. The motors produce mechanical rotating force out of hydraulical energy: out of pump-parameters "flow" and "pressure" motor-dates "torque" and "speed" are destined. The produced torque is nearly constant over the whole speed range and only dependant on pressure. Owing to the complete hydraulic discharge of all gliding and moving parts and special sealing of these parts the motors have an extremely high efficiency. Speed depends on pump-flow, the direction of the rotation depends on which motor-port is used for pressure-oil and which-one for tank-connection. Oiltransportation to the cylinders or out of the cylinders is steered by a special axial steering-slice (slice consists of two pieces normally). The motors are self-lubrication during operation and don't need any special control.



# Mounting instructions for hydromotor HMw

## 1. How to dismantle control discs:

Screw out screws 29, press-off cover-plate 3 with two screws, pull-off control-discs 5/6. Take slide disc 12 out of the motor housing using 1, separate disc 5 from pressure disc 6, take-off O-ring 39 and backing 47.

## 2. How to mount the control-discs:

Lay slide disc 12 into motor-housing 1. Complete pressure disc 6 with cup spring 14 and control disc with backing 47 and O-ring 39. Join control-disc 5 with pressure-disc 6. The two parts must be elastic when joint. Control discs should be fixed on the shaft-four-corner. The most eccentric point of the control-discs should lie 90° c.w. different from the most eccentric point of the shaft eccentric.

## 3. Dismantling of shaft, bearing and connection rods:

Screw off screws 30, pull off housing cap 2, control sealing 34, pull off shaft 7 in vertical position with a jerk, but not with great force, pull-off retracting rings 11, draw pistons with connection rods 9/8 out of the cylinder bores. Take off ring 28, take off piston 9 from connection rod 8, pull off conical roller bearings 25 and 26 (external and interior rings).

## 4. Mounting of shafts, bearings and connection rods:

Press external rings from conical roller bearings 25 and 26 into housing 1 and housing cap 2, press interior-ring of bearing 23 on shaft 7, lay interior-ring of bearing 26 in the external ring, move pistons with connection rods into the cylinder bores from the interior space of motor housing. After mounting the connection rods the grooves in the connection have to be seen on the upper side (vertical position). Lay in retracting rings 11. bring the connection rods in an eccentric position and bring in the crankshaft. Lay adjusting shim 13 and O-ring 38 on housing cap 2 and pull cap 2 with the screws into the housing 1. It's recommended to do it with a mechanical torque-wrench (screws 10.9). Control

axial touch of bearings!. Bearings should have an axial stretch of 0,05 to 0,15 mm!.

## 5. How to mount seals of cylinder caps:

At first you take backing 46, then O-ring 36, as shown in the spare-part-drawing.

## Maintenance

Please test: Fixing bolts

Piping (Is everything tight?)

Oil-filter should be changed or cleaned if filter-producer recommends it. Please replace oil once a year. Replacing-intervals can be shorter when the hydraulic unit works day and night under heavy conditions and / or under big contamination-danger. What is to be considered when a multidisc brake is mounted.

Multidisc brakes work with the force of springs; if pressure in the hydraulic tube of the brake is lower than 30 bars (430 psi) the brake begins at work. A good oil-filtration is very important for the seals of the brake. A very long piping to unlock the brake leads to longer times of unlocking, so that you may count with quick destruction of the discs. It's important that leakage oil is taken away regularly or with the help of a separate leakage tube.

# Installation instructions

## 1. Motor installation

The motor should be flanged with screws on a stable plain. In case of very hard strain of the motor we recommend to discharge the screws with suitable provisions. Please avoid axial-or angular failures between motor-shaft and the shaft of the driven part. Axial eccentricity between the two shafts has to be lower than 0,05mm. Please contact us, if you bring up high radial and /or axial loads to the shaft. Couplings, wheels a.s.o. shouldn't be mounted on the shaft by pressing or beating. Put on couplings and wheels using the mounting thread-whole in the center of the shaft.

## 2. Mounting position

If the mounting-position is horizontal, please take care that drain-piping lies in the upper half of the motor. If the shaft-position is vertical please lead the drain-piping up to the highest point of the motor to avoid lack of lubrication. A check-valve (0,5 bar, 7psi) could be help ful, too max. drain-pressure should lie under 2,5 bar (35psi).

## 3. Piping

Steel-piping conforming to DIN 2391, is recommended. Avoid too small diameters and other circumstances which lead to pressure drop f.e angular piping a.s.o. Avoid vibration of pipes. The pipes must be completely tight so that oil remains free of air. Please take care that no contamination is in the pipes and the tubes when you start working the hydraulic unit.

## 4. Filtration

Although Jahns-hydromotors are very sturdy a good filtration leads to longer life of the unit. We recommend a filtration of 10 µm nominal, maximal 25 µm nominal.

## 5. Hydraulic fluids

Mineral oils, recommended in the prescriptions VDMA 24318, are admitted. We prefer to take so-called HLP-oil, because they have best performance in terms of start. Motors are fit for operation with HFC and HFD-fluids. Using HFD, you need viton-seals (please ask for them in your order). Viscosity should lie in a range of 30 to 50 cSt. The range of 16 to 200 cSt can be used within a short period f.e. at start. Oiltemperatures should lie under 75°C.