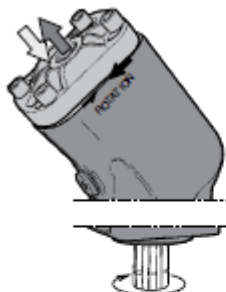
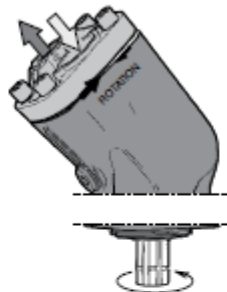


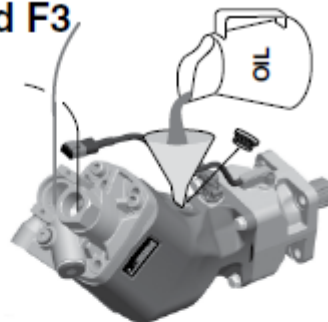
Installation and start-up for F1, T1, F2 and F3



Left hand (L.H.; counter clockwise) rotating pump.



Right hand (R.H.; clockwise) rotating pump.



Before start-up, the housing must be filled with hydraulic fluid.

Direction of rotation

The pictures above show direction of flow vs. shaft rotation.

The direction of rotation can be changed (i. e. from right hand to left hand) by turning the end cap.

Remove the four cap screws and turn the end cap about half a turn while making sure it stays in contact with the barrel housing.

Re-fit the cap screws and torque to 80-100 Nm.

Installation

Make sure max torque and bending moment (due to the weight of the pump) of the utilised PTO are not exceeded. (The approx. center of gravity of the various pump sizes are shown in the installation drawings).

The top illustration on page 73 shows two ways of installing a gear on the shaft of fixed displacement pumps. The pump shaft spline end usually fits directly in the PTO internal spline coupling.

NOTE: In order to obtain the longest bearing life, the pump should be installed according to the information shown on page 76 "Pump bearing life".

Fluid viscosity

Recommended viscosity:
20 to 30 mm²/s (cSt).

Operating viscosity limits:

- Min 10 mm²/s; max 400 mm²/s.
- At start-up, max 4000 mm²/s.

Fluids

The fixed displacement pumps data shown in the specifications for each pump in chapter 3 to 9 are valid when operating on high quality, mineral based hydraulic oil.

Type HLP (according to DIN 51524) hydraulic oil is suitable as well as biologically degradable fluids like natural and synthetic esters and polyalphaolefins.

The utilised hydraulic fluid shall meet one of the following Swedish standards:

- SS 15 54 34
 - SMR Hydraulic Oil Standard 1996-2.
- Contact Parker Hannifin for further information.

NOTE: - ATF (automatic transmission fluid) and API type CD engine oils may also be useable.
- Seals are made of nitrile rubber; make sure the utilised fluid is compatible with this material.

Fluid temperature

Main circuit: Max 75 °C.

Drain line

Fixed displacement pumps don't need an external drain line as they are internally drained.

When the pump is mounted in a Engine-PTO we recommend a drain line from the bypass valve directly to oil tank.

Filtration

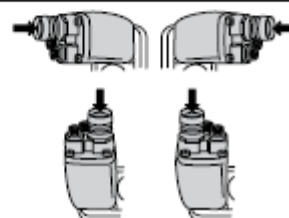
Filtration should follow ISO standard 4406, code 20/18/13.

To obtain the longest life of fixed displacement pumps, we recommend an oil cleanliness of 10 µm (absolute).

Start-up

Make sure the entire hydraulic system is clean before filling it with a recommended hydraulic fluid. In particular, make sure the pump is filled (to at least 50%) as the internal leakage does not provide sufficient lubrication at start-up.

NOTE: - The suction port should always be above the pressure port when the pump is installed above the reservoir oil level.
- During operation, the pump must be filled with oil to at least 50%.

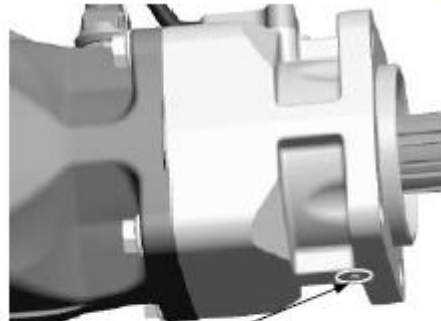


If any oil should drop out of the indication-hole on the pump;

- Stop the system immediately.
- Determine the cause of leakage.
- Replace damaged parts.
- Make sure you have corrected the source of the problem, not only the symptom.

Parker can not be held responsible for damage to PTO, engine and gearbox caused by improper maintenance of the hydraulic system.

F3



F1



Pump bearing life

Bearing life is dependent on how the pump is installed on the PTO as shown in the illustrations below.

A pump mounted according to fig. 1 gives the lowest bearing life; the highest is obtained when installed according to fig. 3.

Parker Hannifin will assist in determining bearing life in a particular application.

