



MINI ESA HDR HYDRAULIC MOTOR POWERED WASHING PUMP



**Powerful ultra-compact centrifugal pump for light
and medium-duty washing trucks**

Complete equipment according to the customer's needs

**Design output 400 L/min 8 bar, maximum pressure 14 bar
maximum output 800 L/min**

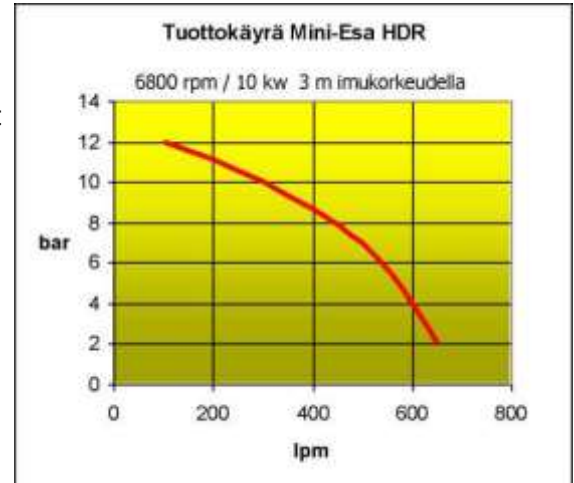
Mini-ESA HDR features

Mini ESA HDR is a very small but high-yield hydraulic pump that is particularly suitable for light and medium-duty vehicles intended for washing streets, yards, sidewalks and light traffic lanes.

The pump part is an aluminum centrifugal pump equipped with a maintenance-free mechanical seal.

The pump shaft is made of stainless steel.

The mini Esa alloy pump part is anodized for seawater resistance. Rinse the pump after use with a sweet clean water.



Engine: Volvo F11-5 revolution volume engine with a maximum speed of 10800 rpm/continuous and the maximum continuous power of 13 kW 350 bar.

Suction device: If necessary, the Mini-Esa can be equipped with a suction device of the compressed air ejector type or with a manual suction pump. Thanks to the suction devices, the pump can use open water sources without the seed water in the suction hoses. Suction hoses NS 50 or NS 65.

Suction connection: The size of the Mini Esa suction connection is R 2 "SPK.

Pressure outlet: The size of the Mini-Esa pressure connection is R 1 1/4 "SPK; the pressure valve is an NS 32 manual or pneumatic ball valve or a direct-controlled electric 12/24 V solenoid valve.

Pressure gauge: The pump is equipped with a liquid-damped 63 mm stainless steel pressure gauge with a display of -1 / + 15 bar.

Maximum speed: The maximum continuous speed is 6500 rpm/min.

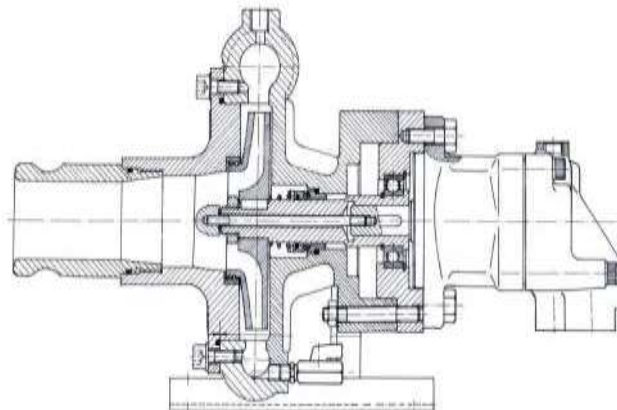
Dimensions:

Length: 320 mm without suction connector
360 mm with 2 "pk connector

Width: 280 mm with pressure valve

height: 300 mm with pressure gauge

weight: 14 kg with accessories



Commissioning of the MINI-ESA HDR and installation of hydraulics

The direction of rotation of the Mini- is counterclockwise when viewed from the direction of the pump inlet. The direction of rotation of the hydraulic motor is then also counterclockwise. The input is connected to terminal A (counterclockwise) and the return terminal to terminal B.

Note. Turning the pump clockwise will damage the pump O-ring seal.

Mini-Esa oil demand and piping

The nominal output is 32 L/min @ 200 bar. The recommended oil level for the system without the oil cooler is 3 x 1 output per minute. (example: 3 x 32 L/min = 96 L)

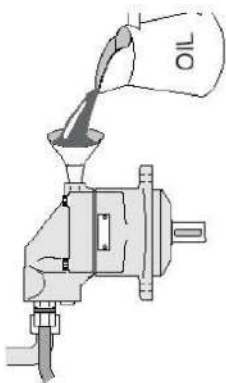
Always use a larger pipe in the return line than in the pressure line. The size of the piping is affected by its length. The general recommendation for vehicle use is 20 mm for the supply line, 32 mm for the return line and 12 mm for the leak line.

Leak line

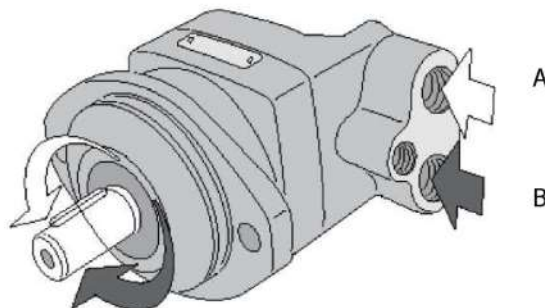
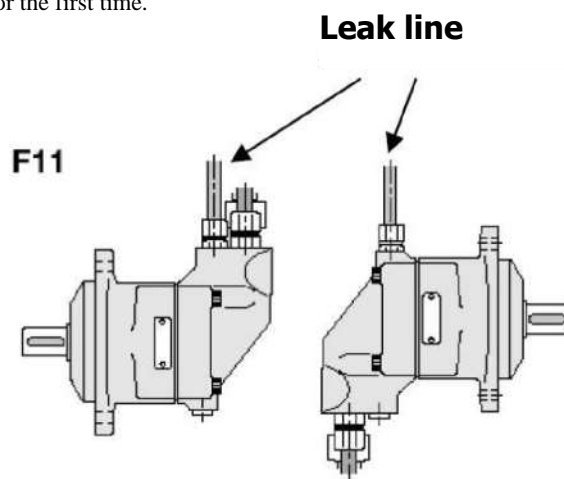
The leak line must never be left disconnected. Depending on the position of the hydraulic motor, the upper line is always selected as the leak line. (Leak line outlets on both sides of the engine).

The leak line is connected directly to the oil tank. If a leak line is connected to the return line, it must be ensured that no pressure is created in the return line by using sufficiently large piping. The pressure will damage the motor.

Fill the hydraulic motor with oil before starting for the first time.



Fill the engine with oil before starting for the first time.



Make sure that the installer has sufficient professional skills to install the pump and hydraulics.

Oy Veljekset KULMALA Ab

Linjatie 4 01260 VANTAA

www.veljeksetkulmala.fi

tel. 09 875 1800