

HYTORC®

Since 1968



Electric Pump

PES-1500-02

Operational and Maintenance Manual

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Foreword

Thank you for purchasing or renting HYTORC Bolt Tensioning Equipment.

Before using the bolt tensioning equipment you are advised to study this operating manual carefully.

The bolt tensioning equipment has been designed to comply with the European Pressure Equipment Directive and is CE marked. However the pressures and forces involved with the use of this equipment are high and it is imperative that use users of the equipment read and understand the operating manual, paying particular attention to the safety information in Section 2.0.

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General Description

PES-1500-02 is a standalone electric pump that is both lightweight and portable. The pump, reservoir and motor are all combined into one easily handled package built around a steel frame with rubber feet.

The pump is fitted with a CEJN 116 coupling outlet, a glycerine filled damped pressure gauge and an oil sight glass. It also features a fully functional remote control with a 5m cable.



Please note that the maximum operating pressure for this pump is 1500 bar, however tools and hoses connected to it may have a lower maximum operating pressure.



NEVER exceed the maximum operating pressure of the equipment connected to this pump.

The pump generates pressure in two stages. The low pressure stage is factory set to provide a high volume oil flow for rapid piston extension and seal energising. When higher pressure is required the pump automatically switches to the high pressure, low volume mode. The high oil flow ensures the pump reaches the desired operating pressure very quickly.

1. The electric motor coupled with the radial piston produce an oil flow of 3.5 litres per minute up to 30 bar.
2. The oil flow generated by the radial piston pump is amplified by the booster with a ratio of 7:1 producing an oil flow of 0.35 litres per minute up to 1500 bar.



Technical Data

Motor:

Type: *1 Phase asynchronous Motor*
Power: *0.75 kW*

Hydraulic Pump:

Type: *Radial Piston Pump*
Output: *1.25 cm³/1 to 200 bar*

Pressure Booster

Type: *Reciprocating Piston Pump*
Gain-factor: *7:1*
Max. Pressure: *2000 bar*

Solenoid Valve

Type: *4/3-directional-valve Electromagnetic Actuated*
Flow: *Max. 25 l/min*
Max. Pressure: *215 bar*

Pressure Adjustment Valve

Type: *Spring Loaded Ball-valve, Adjustable*
Flow: *Max. 25 l/min*
Max Pressure: *200 bar*
Adjustment: *ca. 10 – 200 bar*

Gauge

Type: *Tube Manometer, Glycerine Filled*
Scale: *100 mm*
Display: *0 – 2000 bar*
Precision: *Kl. 1.0*

Dimensions & Weight

Dimensions: *L x B x H 450 x 320 x 430 mm*
Weight: *37.5 kg (with hydraulic oil)*

Hydraulic Fluid

Capacity: *5 Litre*
Viscosity: *ISO32 or ISO46*

Volume

Noise Level: *82 db (A)*

Pre Operation Checks

- Carry out a visual inspection of the pump before each start up.
- Check remote control, mains plug and all cables for damage.
- If applicable check hose couplings, hoses and hydraulic tensioning tools for damage.
- Check the maximum operating pressure of the hoses, couplings and hydraulic tensioning tools.
- Check the fluid reservoir, motor and manometer for damage such as ruptures and leaks.
- Have any damaged parts repaired or replaced by qualified technicians before operation.
- Check all connections and couplings for dirt.
- Clean soiled connections and couplings before operation.
- Check the fluid level of the hydraulic oil is sufficient for the tensioning operation.
- If required, top up the hydraulic fluid.
- Check that all hydraulic connections are securely connected. DO NOT pressurise the connectors when they are disconnected.
- Check the power supply is sufficient for use with the pump unit.
- Check that the pump is connected to an appropriate power supply.

Operating the Pump

1. Switch on the motor by switching the toggle switch (1/0)
2. Press the “UP” button while the motor is running to build pressure.
3. If no button is pressed the pressure in the pump is retained. The motor can be turned off during this phase and the pump will maintain pressure.
4. Press the “DOWN” button while the motor is running to release the pressure in the pump.

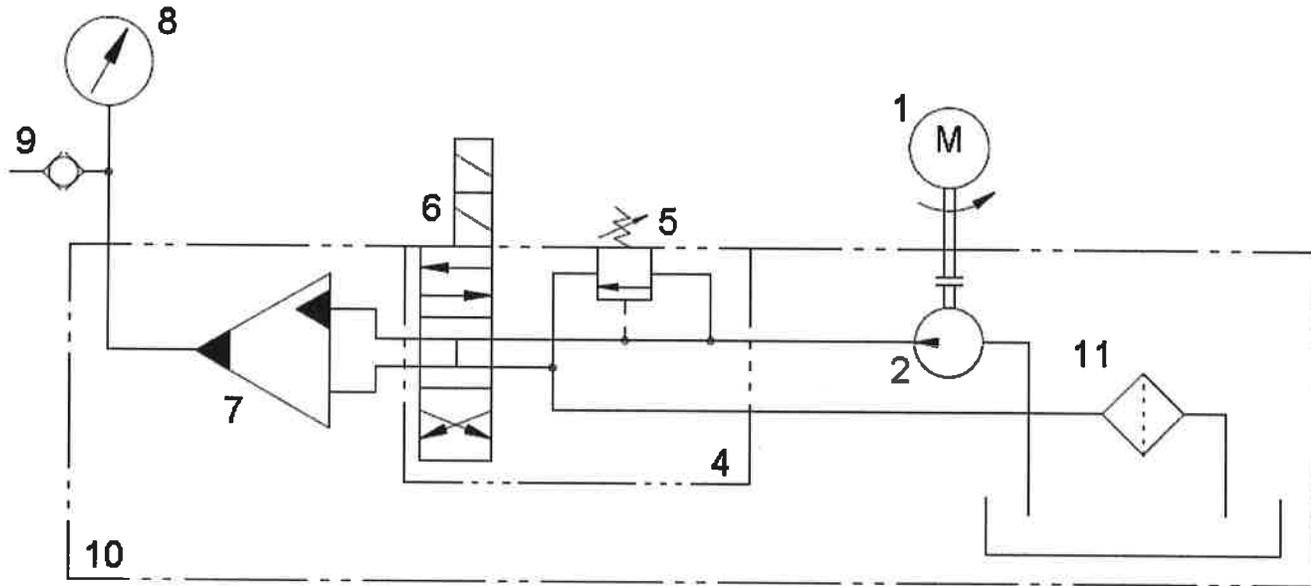
Pressure Adjustment

1. Following the instructions supplied with the bolt tensioning tool, fit the tool onto an appropriate stud.
2. Turn the pressure adjustment valve counter-clockwise until finger tight.
3. Switch on the motor, press and hold the “UP” button.
4. Slowly rotate the pressure adjustment valve clockwise to increase the pressure. The current system pressure is displayed on the gauge.
5. Once the desired working pressure is achieved, secure the setting by tightening the wing nut on the pressure adjustment valve.

Shut Down

1. With the motor running, press the “DOWN” button to relieve the pressure in the system.
2. Switch off the motor using the toggle switch on the remote control.
3. Turn the pressure adjustment valve counter-clockwise until finger tight.
4. Disconnect the hydraulic tools and hoses.
5. Disconnect the pump from the electricity supply.

Hydraulic Schematic



- 1 Electric Motor
- 2 Radial Piston Pump
- 4 Manifold
- 5 Pressure Regulating Valve
- 6 4/3-Way Solenoid Valve
- 7 Pressure Booster
- 8 Gauge
- 9 Hose Coupling
- 10 Oil Tank
- 11 Oil Filter

Electric Schematic

