

LWP 2"/LTP 3"

Submersible pump

LWP 2, LTP 3

Safety and Operating Instructions



Atlas Copco

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INTRODUCTION

These operating and safety instructions must be read before operating the machine. Instructions for operation and basic maintenance are included. The purpose of this booklet is to give the machine user an understanding of how to safely and efficiently use and maintain the machine.

SAFETY INSTRUCTIONS

Introduction to safety

SAFETY INSTRUCTIONS	
• Before starting, read all instructions carefully	
• Special attention must be paid to information alongside this symbol	
• Only use Atlas Copco genuine parts	

To reduce the risk of serious injury to yourself or others, read these safety instructions before using the Pump. Post these safety instructions at work locations, provide copies to employees, and make sure that everyone reads the safety instructions before using the Pump. Comply with all safety regulations.

These instructions have been compiled from international safety standards and form part of the operating instructions. Signs and decals that are important for your safety and the care of the Pump are included with each Pump. Make sure that they are legible. New decals can be ordered using the spare parts list.

Safety symbols used

The indications DANGER, WARNING and CAUTION, as used in the safety instructions, have the following meanings:



DANGER

Immediate hazard which WILL result in serious or fatal injury if the warning is not observed



WARNING

Hazard or hazardous procedure which COULD result in serious or fatal injury if the warning is not observed



CAUTION

Hazard or hazardous procedure which COULD result in injury or damaged equipment if the warning is not observed

General safety rules

- The Pump must only be used for its purpose
- Learn how the power source is switched off in the event of an emergency
- Only qualified and trained persons may operate or maintain the Pump
- Keep the Pump in a safe place out of the reach of children, locked up
- Pay attention and look at what you are doing
- Use your common sense
- Do not use the Pump when you are tired or under influence of drugs, alcohol or anything else that may influence your vision, reaction or judgement
- Always disconnect the hydraulic circuit before dismounting hoses or servicing the Pump
- Never leave the Pump connected with the power source turned on
- Regular maintenance is prerequisite for machine safety. Carefully follow the operating instructions. Replace damaged and worn components in good time. For major service to the Pump, contact your nearest authorized workshop. When cleaning mechanical parts with solvent, make sure to comply with current health and safety regulations and ensure sufficient ventilation
- Never use the Pump without strainer and bottom plate, as an unprotected impeller may cause serious personal injury
- Pump water only for the LWP 2
- Do not use to pump drinking water
- Do not use to extinguish fires

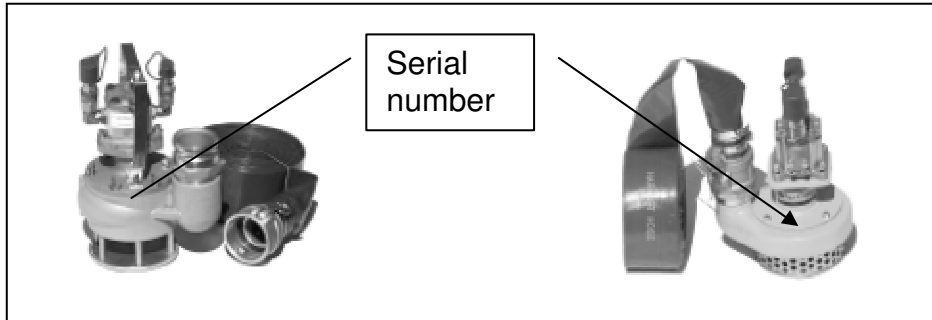
Protective equipment

Always use approved personal protective equipment. Operators and other staff in the proximity areas where work is in progress must as a minimum use the following approved protective equipment:

- Hearing protection
- Protective helmet
- Safety glass with side protection
- Respiratory protection when appropriate
- Protective gloves
- Protective boots

MARKINGS

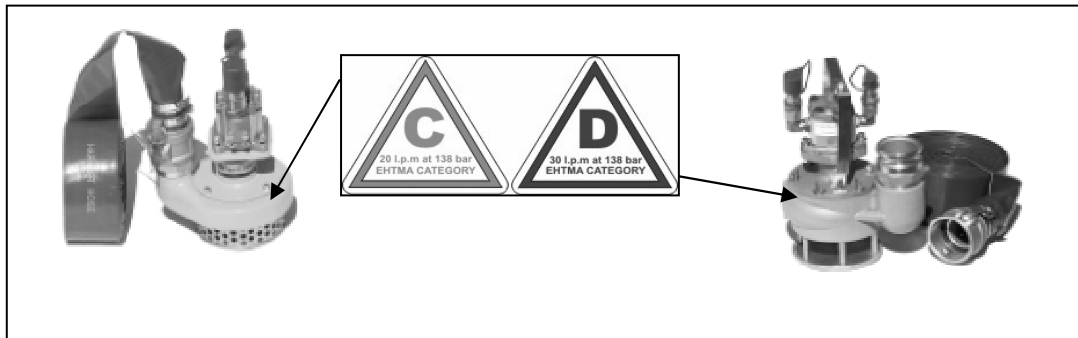
Identification



CE

The CE marking verifies that the machine is CE approved. The marking is on the ID-tag. See the “Declaration of Conformity” supplied with the Pump for more information.

Safety signs on the Pump



GENERAL INFORMATION

The Atlas Copco hydraulic Pumps are designed to meet the demand for efficient pumping. They offer high performance in relation to weight, are spark-proof and stand running dry.

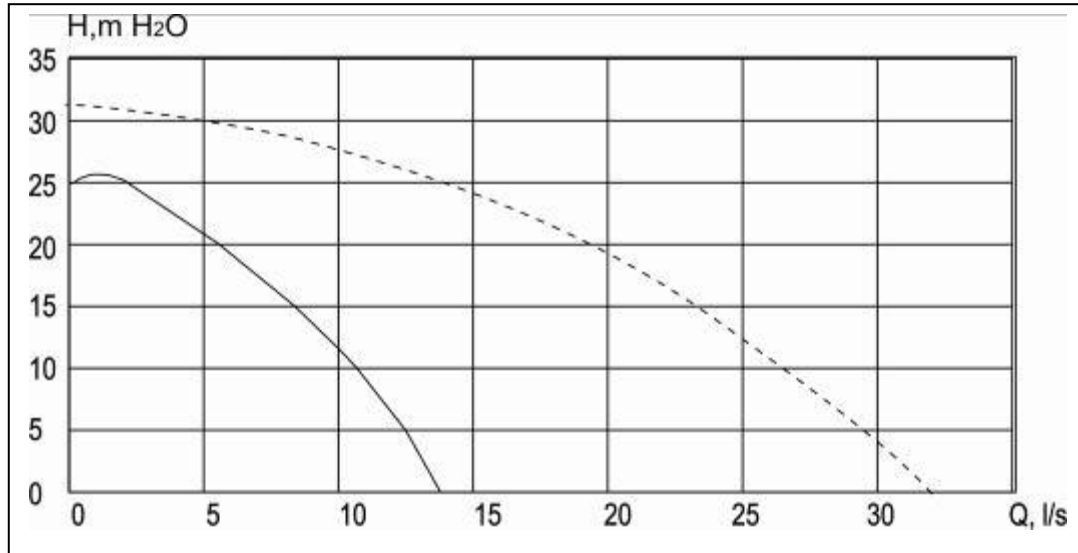
The submersible Pumps are equipped with a 2” discharge for the LWP 2 and a 3” discharge for the LTP 3 with an Ever-Tite snap coupling, which can be replaced by other couplings as required.

The Atlas Copco hydraulic submersible Pumps can be used for several different jobs, such as emergency pumping, pumping in tunnels and emptying of excavations and cellars.

OPERATING INSTRUCTIONS

To achieve standard performance, the Atlas Copco Pumps require a nominal oil supply from the motor of 20 l.p.m. at a pressure of min. 100 bar for the LWP 2 and 32 l.p.m. at a pressure of min. 140 bar for the LTP 3. The hydraulic oil filter must have a filter rating of 25 Micron or better.

Performance



H: Head (m)

Q: Performance (l.p.s.)

LWP 2 ———

LTP 3 - - - - -

The above data are based on nominal oil supply and pressure (see the section **Technical Data**).

Starting/stopping the Pump

1. Connect the hoses to the power source by means of the quick-release couplings
2. Start the Pump by letting the hydraulic oil run through and thereby determine the direction of rotation
3. Correct rotation is counter-clockwise seen from below. If rotation is clockwise, check the hoses. Incorrect connection may result in leaks and damage to the hydraulic motor
4. The water output connection requires for the LWP 2 a 2" and for the LTP 3 a 3" Ever-Tite snap coupling for the discharge hose. The hose must be able to withstand a pressure of min. 4 bar
5. Grease the bearing in the pump housing through the grease nipple in the bearing housing (3 shots). All quality types of grease are applicable
6. The strainer/bottom plate must always be fitted to the Pump
7. Fit the discharge hose
8. Start the power source and allow it to run for a few minutes to warm the hydraulic oil
9. Attach a rope or other device to the handle of the Pump. Lower the Pump into the water
10. Start the Pump and pay attention to the direction of rotation of the impeller

11. Activate the control valve of the power source to start the hydraulic oil flow
12. When finished pumping, activate the control valve to stop the hydraulic oil flow
13. Stop the engine of the power source

Flow rates


The European Hydraulic Tool Manufacturers Association (E.H.T.M.A.) has categorised hydraulic power packs and tools in terms of flow rate and working pressure.

Our Pumps are categorised by the E.H.T.M.A. as below:

LWP 2: E.H.T.M.A. category C
LTP 3 E.H.T.M.A. category D

Note: Atlas Copco hydraulic submersible Pumps are clearly marked with E.H.T.M.A. categories. It is important that any power source used with the Pumps is of a compatible category. If any doubt, consult your Atlas Copco dealer.



 **WARNING**

The setting of the pressure relief valve on the power source can in some cases be higher than the prescribed max. pressure according to the E.H.T.M.A. category.

A too high pressure relief valve setting can harm the Pump.

Readjust the pressure relief valve on the power source if the technical specifications of the Pump prescribe a lower pressure relief valve setting than the standard setting of the power source.

Hoses

For connection use high-pressure hoses (inside diameter 1/2"), which, as a minimum, are designed for a working pressure of 200 bar. We recommend the use of double wire-braided hoses that better stand outside wear. The Pump socket "P" is oil inlet (pump), and the socket "T" is oil outlet (tank).


Recommended hydraulic oil

In order to protect the environment, Atlas Copco recommends the use of biologically degradable hydraulic oil.

Viscosity (preferred) 20-40 cSt
Viscosity (permitted) 15-100 cSt
Viscosity index Min. 100

Standard mineral or synthetic oil can be used. The Pump may not be used, if the oil viscosity fails to remain within the permitted areas, or if the working temperature of the oil does not fall between $\pm 20^{\circ}\text{C}$ and 70°C .

Connecting/disconnecting hoses

 **CAUTION**

Ensure that any power source you plan to use is compatible with the submersible Pump you are using.

Non-compatible power sources might harm both the submersible Pump and the power source.

Check the section Flow rates in this instruction book and compare the flow rate with the technical specifications in the instruction book for the power source.

Connecting hoses


1. Prepare the power source
 - a) Turn the by-pass valve to the OFF position
 - b) Stop the motor

2. Inspect the couplings
 - a) Ensure that the couplings are clean and serviceable
3. Connect the hoses to the Pump
 - a) Attach the return line
 - b) Attach the feed line
 - c) Rotate the collar on the female coupling to secure the coupling
4. Check the hydraulic oil level
 - a) Start the motor and run the power pack to fill up the hydraulic circuit
 - b) Check the hydraulic oil level

Disconnecting hoses


1. Prepare the power pack
 - a) Turn the by-pass valve to the OFF position
 - b) Stop the motor
2. Remove the hoses
 - a) Rotate the collar on the female coupling
 - b) Release the return line
 - c) Release the feed line
3. Install protective caps over the ports to prevent contamination

Note: The couplings are unlocked by moving the collar back on the coupling



WARNING

Do not disconnect the hoses, when the power source is running, or if the hydraulic oil is hot. Hot hydraulic oil might cause serious burns.



WARNING

Fine jets of hydraulic oil at high pressure can penetrate the skin. Do not use your fingers to check for hydraulic oil leaks. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic oil. If hydraulic oil penetrates your skin, get medical help quickly.

Service schedules

Daily


The daily maintenance of the submersible Pump and the quick-release couplings is confined to cleaning after use.

1. Check the hoses regularly for damages. Replace if necessary
2. Clean the quick-release couplings before use. Use this maintenance schedule to maximize service life

Note: Keep all decals clean and legible. Replace if necessary

Monthly

1. Inspect the hydraulic hoses and fittings thoroughly
2. Model LTP 3 only: Remove and clean the base legs and base plate. Remove any material that may have accumulated near the inlet port



WARNING

Maintenance must be done only by suitably qualified and competent persons.

Before doing any maintenance, make sure that the submersible Pump is safe and correctly sited on level ground.

Scrapping and waste disposal

Used and worn out parts must be treated and disposed of in such a way that the greatest possible part of them can be recycled and the influence on the environment kept as low as possible.

TROUBLE SHOOTING



WARNING

Maintenance must be done only by suitably qualified and competent persons.

Problem	Cause	Solution
Pump will not operate	Pump not properly connected	Check the performance and connection of the power source
	Oil flow too low	Check the power source and ensure that the flow is according to the technical specifications
	Incorrect hydraulic oil viscosity	Use oil with correct viscosity according to the section Recommended hydraulic oil
	Only for LTP 3: Debris stuck in the impeller	Remove debris from impeller
Pump operates slowly or erratically	Cold hydraulic oil	Allow oil to reach operating temperature
	Power source not adjusted correctly	See the operating manual for the power source.
	Oil flow too low	Check the power source and ensure that the flow is according to the technical specifications
	Air in the hydraulic system	See the operating manual for the power source in order to remove air from the system
	Incorrect hydraulic oil viscosity	Use oil with correct viscosity according to the section Recommended hydraulic oil
Pump operates backwards	Hoses interchanged	Depressurize hydraulic system and switch hose connections
Pump operates, but discharge is low	Only for LTP 3: Inlet port plugged	Remove debris from the area around the base legs and base plate
	Discharge hose plugged	Remove and clean hose

TECHNICAL DATA

Submersible water pump LWP 2

Weight.....	10.25 kg
Measurement (HxW).....	267 x 215 mm
Oil flow range.....	18-24 l.p.m.
Working pressure.....	101 bar
Max. back pressure in return line (measured at Pump)	15 bar
Hydraulic oil working temperature	30-70°C
Pressure relief valve setting (max.)	160 bar
Connections P and T	Standard ½" BSP
Construction.....	Cast iron pump housing, bearing housing and blade
Solids handling	Solids up to 10 mm
Discharge.....	2" BSP external thread with various options of connection (standard = Ever-Tite snap coupling)
Pump head max.....	25 m
Pump flow max.	14 l.p.s./840 l.p.m.
Pump speed.....	Max. 4,000 r.p.m. at 24 l.p.m.
Hydraulic motor.....	Gear type motor

Submersible trash pump LTP 3

Weight.....	12.7 kg
Measurement (HxW).....	360 x 300 mm
Oil flow range.....	26-38 l.p.m.
Working pressure.....	140 bar
Max. back pressure in return line (measured at Pump)	15 bar
Hydraulic oil working temperature	30-70°C
Pressure relief valve setting (max.)	172 bar
Connections P and T	Standard ½" BSP
Construction.....	Aluminium pump housing, bearing housing and blade
Solids handling	Solids up to 76 mm
Discharge.....	3" BSP external thread with various options of connection (standard = Ever-Tite snap coupling)
Pump head max.....	32 m
Pump flow max.	32 l.p.s./1920 l.p.m.
Pump speed.....	Max. 4,200 r.p.m. at 37 l.p.m.
Hydraulic motor.....	Gear type motor

Noise declaration statement

Sound pressure level at work station L_{PA}	< 85 dB
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IMPORTANT

We, Atlas Copco Construction Tools AB, cannot be held liable for the consequences of using the declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation, over which we have no control.