



Pressure Cleaner
Model Ref TWET1500-240
Operator's Instruction Manual

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Introduction

The TWET1500-240 is a general purpose cold water pressure washer which can be used for a wide range of cleaning applications. It is mounted on a 2-wheel trolley for easy site transportation. The machine is supplied with an 8 metre high-pressure hose, trigger gun and 900mm lance. On the inlet side of the pump there is a 10 metre hose for connecting to a mains water supply. A chemical metering system is fitted as standard allowing the machine to be used with or without detergent.

Operating Principle

Water is pressurised by forcing it through a small orifice (high-pressure jet). This results in the velocity of the water being increased as it passes through the jet and it is this, which creates the cleaning action. The two factors which influence the pressure are the rate of flow and the size of the jet. Increased flow and/or smaller jet will result in increased pressure.

When the trigger on the hand gun is released (closed), an unloader valve situated on the pump outlet, opens to allow the water to re-circulate back to the pump inlet.

Specification

Model TWET1500-240	
High pressure pump.	Interpump series 44. Model ref. W112. Piston dia. 18mm.
Max. Pressure	100bar.
Flow	12.0l/min.
Spray Angle	15 ⁰
Nozzle Size	045
Nozzle Reaction Force	13N
High Pressure Hose	3/8" x 8m washer hose, max. rated working pressure 180bar, c/with quick release connector to pump.
Suction Hose	19mm Tricoflex hose x 10metres long
Motor	2.2kW, 240v single phase.
Starter	D.O.L. push button starter with thermal overload and undervolt protection.
Electrical connection	16A 2P+E Plug to BS4343 (EN60309-2). IP44
Water supply	Mains supply with a free flow in excess of 12 l/min and a maximum pressure of 8 bar.
Length	950mm
Width	540mm
Height	950mm
Weight including hose & lance	60kg
Hand arm vibration	Trace vibration only < 2.5m/sec ²

Handling and Transportation

The pressure cleaner is mounted on a two wheel chassis for easy manoeuvrability. To assist transporting in small vehicles the handle is quickly detachable. For safety during transportation it is advisable to strap down the unit over the base of the chassis to prevent movement.

Care needs to be taken when lifting the unit. The suggested method is for two men, one either side, to lift the machine holding the front of the base with one hand and the handle with the other.

Safety Precautions

**BEFORE STARTING TO OPERATE THE PRESSURE WASHER PLEASE
READ AND UNDERSTAND THE FOLLOWING.**

Electrical Supply

The pressure washer requires a 240volt single phase supply with a 240volt 16Amp (blue) BS4343 socket outlet. It is strongly recommended that this is equipped with an RCD protection device. Installation must only be carried out by a qualified electrical engineer.

General Safety Precautions

- Only permit authorised persons to operate the pressure washer.
- Do not operate the pressure washer if it is damaged or faulty.
- Always position the pressure washer so that it will not move, if necessary chock the wheels.

Pre -Start checks.

Pressure washers can be dangerous if used incorrectly. It is therefore important that you read and understand this handbook **before starting to use the machine.**

- Stand the machine on level ground.
- Before starting to use the machine check that the cable is not chafed or damaged and that the connections to the starter and plug are sound. If you are unsure, do not use the machine until it has been checked by an electrician.
- Check the pump suction hose and inlet filter for wear and/or blockage.

- Check the high pressure hose and lance for damage or undue wear. Repair or replace as necessary. We recommend that only the correct high-pressure washer hose with a working pressure rating of 180 bar is used.

WARNING: High pressure water jets are dangerous if misused. The following safety instructions must always be observed.

Read and make sure you understand the instruction book supplied with the machine.

- **Always** wear the correct Personal Protective Equipment (PPE). You should ensure that any PPE you use conforms to Directive 89/686/EEC and in using PPE you must comply with Directive 89/656/EEC. We recommend that as a minimum you always wear eye and face protection and non-slip footwear.
- **Before** commencing work check the immediate work area for obstructions which could cause you to trip and make sure that any other people in the vicinity are wearing the correct Personal Protective Equipment.
- **Lance reaction.** When operating a pressure washer there is always a reaction force from the lance, which the operator has to resist. This force is given in the table on page 2. However, this force will be somewhat higher at the moment the handgun trigger is depressed. It is essential that you familiarise yourself with this so that you are not caught off balance. Because of this force it is inadvisable to operate a pressure washer when standing on ladders or steps or in other precarious positions.
- Never replace the high pressure jet with one of the wrong size as this may adversely affect the machines performance and safety. The correct jet size is shown in the table on page 2 and on the machine serial no. plate.
- Never direct the water jet at people or animals, even if the machine is stopped.
- Never direct the jet at yourself or others to clean clothes or footwear.
- Never direct the water jet at electrical appliances, plugs and sockets, or switch gear.
- Never direct the water jet at dangerous materials or materials containing asbestos.
- Never lock down the trigger on the handgun.
- Never use the pressure washer when working from a ladder or steps.

Starting The Machine

- Connect the suction hose to a water supply that has a flow greater than that required by the pressure washer (see table on page 2). When starting from dry, it is essential that the pump is primed quickly. To do this proceed as follows :-
- Turn on the water supply and depress the handgun trigger until water flows free of bubbles. Start the electric motor.

Pressure Washing

- Always wear the correct protective clothing referred to earlier
- The lance is fitted with an adjustable nozzle allowing the pressure to be regulated between low and high pressure. Rotate the nozzle clockwise (viewed from handgun) to the 'off' position for high-pressure washing, and anticlockwise to the 'on' position for low pressure and the infusion of detergent to the wash.
- In general the low-pressure position is used for detergent metering and this is best applied before commencing to wash with the high-pressure jet, as it will give time for the detergent to do its job.
- When using detergent always read and comply with the instructions supplied with it.
- If stopping for a short period and putting down the lance, always put the trigger lock in the safe position.
- Always stop the motor when not in use. Although water will automatically re-circulate when the gun trigger is released, both the pump and the unloader valve will suffer unnecessary wear if the machine is run needlessly.

Re-circulation of Water

When the trigger of the spray gun is released, the re-circulation (unloader) valve automatically bypasses the pressure line and re-circulates water within the pipework attached to the pump. In this situation the pressure in the system drops to nominally zero. **Important** do not leave the machine running in the bypass mode for more than 2 or 3 minutes otherwise overheating will occur and this will damage the pump.

The unloader valve is pre-set at the factory and should not require re-adjustment. Under no circumstances should adjusting the re-circulation valve be used as a means to regain lost pressure. Jet size, pump displacement and the motor speed control the pressure. Reduced pressure is most likely to be caused by a worn jet, faulty pump or partially blocked inlet filter.

Shut Down Procedure

If detergent has been used, run the pump on clear water only for at least a minute to flush it out. Then empty the pump by running for 20 seconds without a water supply. This is particularly important if freezing conditions are likely to be encountered.

Maintenance

- **Pump Lubrication**

Check the oil from time to time. Change the oil after 50 hours operation and then after every 500 hours. Use a good quality SAE20W –30W mineral oil.

- **Spare Parts**

The full spare parts list for the pump is shown on page 8. However, it is usually more convenient to purchase kits of parts for items such as seals, valves etc. Available kits together with Hilta part numbers are given in the table below.

Kit No.	Description	Hilta Pt. No.	Qty Rqd.
Kit 23	Valves Kit	TW600019	1
Kit 124	Head plugs & 'O' rings	TW600022	1
Kit 127	Short Seal Kit	TW424999	3
Kit 129	Support Ring	TW600020	1
Kit 131	Seal Kit	TW600017	1
-	Ceramic Piston	TW600025	3

Note: - The items in kits 88 and 90 are included in the full seal kit 131

Trouble Shooting

Fault	Cause	Remedy
Pump running normally but pressure low on installation.	Pump sucking air. Valves sticking Unloader valve seat faulty. Nozzle incorrectly sized Worn piston seal.	Check water supply and possibility of air ingress Check and clean or replace Check and replace if necessary. Replace. Check and replace if necessary.
Fluctuating pressure.	Valves worn. Blockage in valve. Pump sucking air. Worn piston packing.	Check and replace if necessary. Check and clean out if necessary. Check water supply and for air ingress at joints in suction line. Check and replace if necessary.
Pressure low after period of normal use.	Nozzle worn. Suction or delivery valves worn or blocked. Unloader valve seat worn. Worn piston packing.	Check and replace if necessary. Check and clean or replace as necessary. Check and replace if necessary. Check and replace if necessary.
Pump noisy	Air in suction. Broken or weak suction or delivery valve spring. Foreign matter in valves. Worn bearings.	Check water supply and connections on suction line. Check and replace if necessary. Check and clean if necessary. Check and replace if necessary.
Presence of water in oil	Oil seal worn. Very high humidity. Piston packing worn.	Check and replace if necessary. Change oil every 250 hours. Check and replace if necessary.
Water dripping from pump.	Piston packing or plunger retainer worn.	Check and replace as necessary.
Oil dripping from pump.	Oil seal worn.	Replace.
Vibration in delivery line.	Irregular functioning of valves.	Check and replace if necessary.

