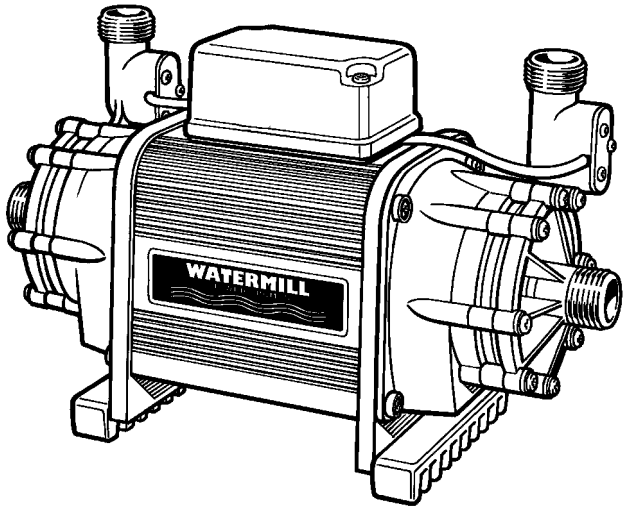
INSTALLATION INSTRUCTIONS

LOW VOLTAGE SHOWER PUMPS
Models PC25DLV PC50DLV
PC55SLV PC70DLV ANHPC60DLV



WATERMILL

Performance Shower Products

CUSTOMER SERVICE HELPLINE:

01883 730339

CONTENTS

PLEASE READ THESE INSTRUCTIONS CAREFULLY:
This booklet covers all models in the range;
ensure you follow the appropriate sections.

1. GENERAL

Your Watermill Shower Pump has been designed, manufactured and carefully tested in England.

If correctly installed and not misused, it will give many years of reliable service.

To ensure satisfactory operation, we ask that you read the instructions before commencing installation. Then carry out, in sequence, each step as described.

The **Important Instructions *MUST*** be followed, otherwise the pump may be damaged and your guarantee invalidated.

All transformers are fitted with auto resetting thermal cutouts. If the transformer overheats for any reason, the thermal cutout will switch the pump off. The cutout will automatically turn on again when the transformer has cooled down.

For the ANHPC60DLV see supplementary Negative Head Instuctions.

2. IMPORTANT INSTRUCTIONS

If soldering pipe joints do not allow solder flux to come in contact with the plastic parts of the pump. The plastic will corrode and cause serious leaks.

1. **Do not connect pump to water mains pressure.** The pump cannot be used with combination boilers.
2. **Select a position for installing the pump which affords easy access** for subsequent servicing and maintenance. This shower pump is fitted with carbon/ceramic mechanical long life seals which, in some circumstances, can leak. Although this is very unlikely, when locating the pump, position to mitigate against possible water damage.
3. **The pump must have a supply head of at least 2 metres.** If the pump is to be installed in the loft, the height from the top of the water in the cold water storage tank must be at least 2 metres above the inlet to the pump.
4. **Do not use any jointing compounds** such as Boss White, abrasive compounds will cause the seals to leak.
5. **The flexible hoses supplied must be used to connect the pump** – do not connect any pipework directly to the pump. The filters must be used on inlet connections.
6. Complete all pipework before making electrical connections – **do not let any water into the electric terminal box.**
7. **Do not run pump dry** – purge with water thoroughly for 5 minutes before running pump.
8. After completing installation, the whole system must be thoroughly tested – operating both hot and cold at full flow. Also check water temperature stability. Then thoroughly check each connection is tight and not leaking.
9. **Maximum hot water temperature must not exceed 60˚C.** The hot water supply to the pump should be connected from the first outlet from the hot water cylinder expansion pipe.
10. We recommend that all flexible hoses and connections are inspected at least every 6 months. Replace as necessary to prevent leaks.

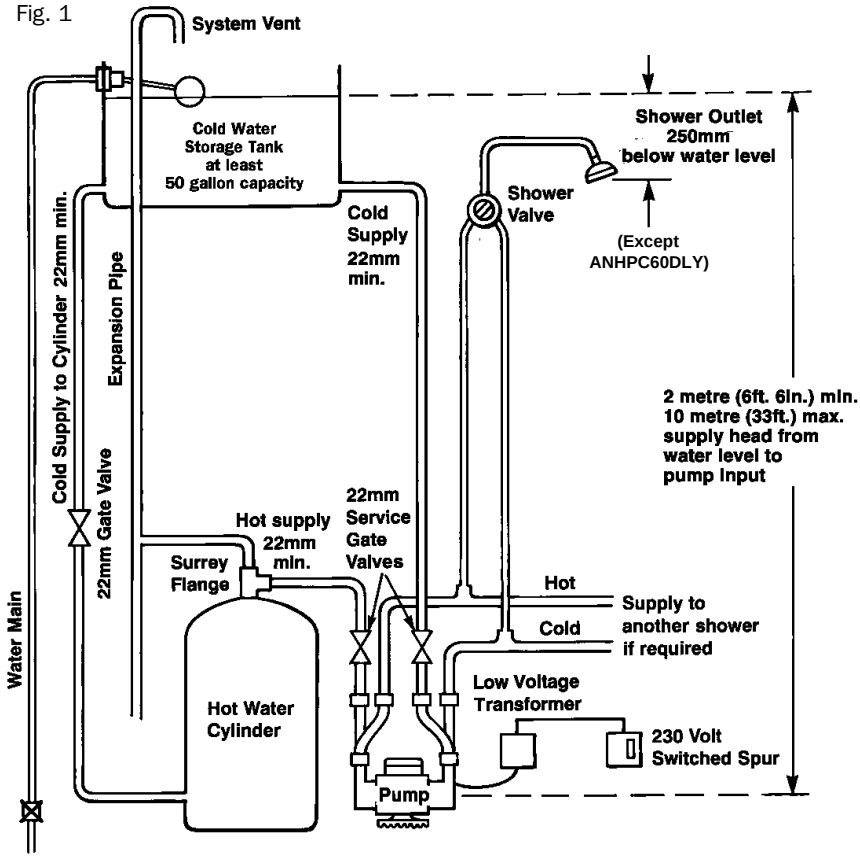
3. POSITIONING PUMP

Select a position for installing the pump which affords easy access for future servicing and maintenance.

Pumps operate better when pumping (pushing) water rather than drawing (sucking) water. For this reason, keep the pump as close as possible to the source of both hot and cold water. Also keep the pump as low, and the water head as high, as possible.

There must also be a minimum height between the water level in the cold water storage tank and the pump inlet of 2 metres. Suggested location for the pump, if space allows, is on the floor of the airing cupboard. The area must be well ventilated – the pump must not be covered by boxes, clothes etc, otherwise the motor will overheat.

Fig. 1



The pump must be mounted horizontally with outlets vertically upwards to ensure correct operation of the flow switches.

If the pump is to be installed in the loft, there may not be sufficient head to feed the pump and damage from freezing is possible. (See Note 3 of Section 2).

To reduce noise that may be caused by vibration we recommend the pump be mounted on a small concrete paving slab approximately 225 x 225mm (9"x 9") and 40–50mm ($1\frac{1}{2}$" to 2") thick.

Connect pump and shower system as shown in Fig. 1.

There must be a minimum height between the water level in the cold water storage cistern and the outlet of the shower handset of 250mm (10"). See Fig. 1.

Negative Head

If the water level of the cold water storage cistern is below the level of the shower outlet, this is called a negative head system. To enable the pump to operate it must be either an Automatic Negative Head pump from the Watermill ANH range or alternatively a Negative Head Kit needs to be used.

The negative head kit provides for a pneumatic push button and air switch. This enables the pump to be started by pressing a push button located in the shower area.

4. HOT WATER CYLINDER CONNECTIONS

DO NOT USE ANY JOINTING COMPOUNDS.
The use of a Surrey Flange; see Fig. 1 is recommended to ensure a free flowing supply of "air free" hot water. Ensure that:

- The controlled hot water temperature is no greater than 60°C.
- Maximise size of pipework to the pump.

Note: All plumbing work should conform to Water Supply (Water Fittings) Regulations 1999.
The hot water feed may be taken directly from the top of the hot water cylinder – but entrapped air may cause problems.

22mm copper pipe must be used to ensure an adequate flow to the pump. An isolating gate valve or full bore lever valve is recommended to facilitate pump servicing.

5. COLD WATER SUPPLY

DO NOT CONNECT DIRECTLY TO WATER MAINS
DO NOT USE ANY JOINTING COMPOUNDS
The cold water supply to the pump should be connected only from the cold water cistern (do not connect to the central heating header tank!) see Fig. 1. The tank connector should be positioned at least 25mm (1") lower than the cold water feed to the hot water cylinder; see Fig. 1.

An isolating gate valve is recommended to facilitate pump servicing, also 22mm copper pipe is recommended for connection on the cold water inlet.

6. CONNECTING PUMP

DO NOT USE ANY JOINTING COMPOUNDS OR TAPES
Watermill pumps are supplied complete with matching flexible hoses. These hoses must be used to ensure strain and vibration free, watertight connections.
NOTE: Do not connect metal (Brass/Iron) fittings directly onto pump inlets/outlets. The threads are 3/4" BSP parallel and are designed for mating only with the flexible hose connections, nuts and filters/washers supplied. **DO NOT USE PTFE TAPE.**

For ease of future servicing/filter cleaning, 22mm gate valves are recommended.

The filters supplied should be inserted in the pump **inlets** only – with the wire dome towards the pump.

Position pump level on floor, with outlets (flowswitches) vertical. For correct operation the **flowswitches must be vertical.**

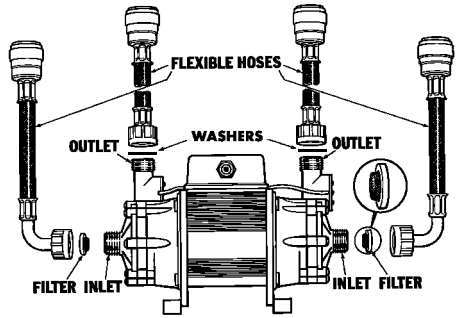
Position supply pipes and shower hoses accurately so that the pump is not under any mechanical strain, such as supporting weight of pipes. Ensure correct alignment to prevent cross threading and to prevent seals and filters from leaking.

Line up pipework and fit hoses to pipes before attaching connectors to pump.

Do not bend hoses as this will cause restriction of flow.

The plastic nuts should be finger tight plus 1/2 turn. The nuts should be re-tightened after hot water has been pumped for the first time.

Ensure filters are fitted to the inlets and washers to outlets.



7. ELECTRICAL CONNECTIONS

THIS IS A LOW VOLTAGE PUMP (USE TRANSFORMER SUPPLIED). DO NOT CONNECT PUMP DIRECTLY TO 240 VOLT. ELECTRICAL HAZARD WILL RESULT AND THE MOTOR WILL BE IRREPARABLY DAMAGED.

The low voltage pump has added electrical protection via a safety isolating transformer Fig 1. For installations where the pump has to be placed in the bathroom (for example under the bath), we recommend that the safety isolating transformer is placed **outside** the bathroom or shower area. DO NOT locate 230–240 volt connections, plugs or switches within the 'wet' area in accordance with IEE Regulations.

The low voltage leads from the transformer must be connected to the two terminals marked 'T' in the terminal box. As the supply is AC – the leads can be connected to either terminal on the pump.

The low voltage pump installation kits are supplied with 3 metres of connecting lead. The connecting leads between the pump and the isolating transformer can be extended up to about 15 metres. Use 1.0mm cable.

The safety isolating transformer must be connected to a 230–240 volt 50 Hz supply with a switched spur fused at 5 amps. The switch must have a double pole disconnection with a separation gap of at least 3mm. See Fig 1, location.

Ensure compliance with I.E.E. regulations.

Observe colour coding as follows:

Connect BROWN to terminal L (Live)

Connect BLUE to terminal N (Neutral)

For normal operation of the shower, the transformer can be left permanently switched on – very little power is used when the pump is not running.

Copper pipes should have supplementary earth bonding. Where the earth continuity has been broken by flexible pipes the pump discharge and suction pipework should be connected with earthing clamps to BS951 and 4mm earthing wire.

8. BEFORE USING

DO NOT TURN ON THE ELECTRICITY SUPPLY TO THE TRANSFORMER

1. Turn on water supply. Allow system to fill.
2. Immediately inspect for any leaks.
3. Turn on shower mixer valve.
4. Without handset attached to hose – let hose hang into shower tray/bath to gain maximum possible flow – allow to run for 5 minutes.
5. TURN ON ELECTRICITY supply to pump and repeat paragraph 4.
6. Fix handset to hose.
7. With shower pump operating, carefully inspect again for any leaks at all connections from both hot and cold feed pipes through to mixer valve and hose connections.

   Run hot water for several minutes then re-tighten all hot water connections to pump and hoses.
8. After completing installation the whole system must be thoroughly tested – operating both hot and cold at full flow. Then switch off, drain down and clean the filters.
9. The first few times the pump is used, the insulating varnish used on the pump motor may give off an odour – this is perfectly normal and will diminish with use.

9. SERVICING

1. Regular cleaning and descaling of the handset/shower head is important. The most common cause of poor shower performance is blockage of the handset or shower head. This is more likely in hard water areas.
2. If flow from the shower is still below normal it may be necessary to clean the pump filters. This is very common on initial installation of showers or in new houses where the jointing compounds, tapes, flux and other debris is being flushed through the system causing the pump filters to be blocked.

In this event turn off service valves, disconnect final connection to the pump, clean filter, reconnect, turn on water supply.

3. The flexible pump hoses can, dependent on water temperature and mechanical stress, deteriorate with age. We recommend that all flexible hoses and connections are inspected at least every 6 months. Replace as necessary to prevent leaks.

10. FAULT FINDING

If the pump doesn't start, check the following.

1. Electricity supply and fuse (5 Amps rating)
2. Are isolating valves turned on?
3. Has pump run for a long time, causing thermal protection to turn off motor? Wait at least 2 hours for cut-out to automatically reset.
4. Sufficient water flow to operate the flow switches (0.5 litres per minute) or approximately 10 inches head of water?
5. Pump filters blocked – this can cause insufficient flow to pump – drain down hot and cold water supply pipes, clean or replace filters as necessary.
6. Is pump correctly installed with outlets (flowswitches) vertical?

Pump won't turn off

1. Is shower mixer valve fully off?
2. Is air entrapped in the shower system?
3. Is flow switch locked in the up (on) position with dirt or some other foreign matter?

Unstable water temperature/noisy pump?

A common cause of poor shower performance and control is air entering the pump, most commonly from the hot water cylinder.

Air will cause erratic operation of the pump, noise and unstable shower water temperature.

To reduce the effects of air in the hot water supply:

1. Reduce hot water temperature to 60˚C.
2. Ensure adequate feed to the pump. There should be at least a 2 metre lead (measured from cold storage water level to input of pump) and all pump supply pipes should be with 22mm **gate** valves.
3. Fit **Surrey flange** to ensure good air separation at hot water cylinder.
4. The hot water supply pipes should not have any high sections allowing air traps. If necessary re-plumb hot water supply pipe, keeping as direct and short as possible.
5. If it is not possible to control the temperature of the hot water a thermostatic blend valve should be installed. The hot water feed from the cylinder to the pump is disconnected. The blend valve is connected to both the hot water and cold water supply with the output connected as the hot water feed to the pump. The thermostatic blend valve can then be adjusted to ensure the correct 60˚C temperature.

Note: All plumbing work should conform to Water Supply (Water Fittings) Regulations 1999.

WATERMILL

GUARANTEE OF CORRECT INSTALLATION

NOTE TO CUSTOMER

Your Watermill Shower Pump will only work properly if it has been installed correctly. Ask your installer to complete the following check list, ensuring it is signed and dated.

NOTE TO INSTALLER

While you are installing this shower pump tick the following "important instructions" to confirm to both yourself and your customer this shower pump has been correctly installed.

If you need assistance please contact Watermill on the Service Helpline 01883 730339.

The shower pump must be installed in line with current water regulations and I.E.E. Regulations.

When the installation is completed please sign and date the Guarantee of Correct Installation and then pass to customer to keep.

IMPORTANT INSTRUCTIONS

1. Do not connect shower pump to water mains pressure. The shower pump **cannot** be used with combination boilers. ☐
2. The pump should have a supply head of at least 2 metres/6 ft. That is, the level of the water in the tank must be this distance above the pump. ☐
3. a) Do not use **any** jointing compounds: these compounds will cause seals to leak.

   b) If soldering pipe joints do **NOT** allow **ANY** solder flux to come in contact with plastic parts of the shower pump. The plastic will be corroded and will cause serious leaks. ☐
4. Flexible hoses must be used to connect the pump – do not connect any pipework directly to the pump.
5. Complete all pipework before making electrical connections. ☐
6. Do not run pump dry – purge with water thoroughly for 5 minutes before running pump. ☐
7. Maximum hot water temperature must not exceed 60˚C (130˚F). The hot water supply to the shower pump must **NOT** be connected to the hot water cylinder expansion pipe. ☐
8. Please ensure that the installer has explained the correct operation of the shower pump. ☐

Signed: ..... Date: .....

Company: .....

If the shower pump installation does not conform to these instructions, the shower pump guarantee may be invalidated and the cost of any "on site" visits by the Watermill Service Department will be charged for.

11. TECHNICAL DATA

	PC25DLV	PC50DLV	PC55SLV	PC70DLV
ELECTRICAL				
Transformer Input	230V/50Hz	230V/50Hz	230V/50Hz	230V/50Hz
Transformer Output	31V	34V	38V	40V
Power Consumption	150W	220W	110W	380W
Rating	S2 25min	S1 Continuous	S2 75min	S1 Continuous
Motor	Permanent Magnet Low Voltage dc			
MECHANICAL				
Inlet Head (min-max)	2-10m	2-10m	2-10m	2-10m
Max Developed Pump Head	8m	13m	17m	20m
Max Working Pressure	3 bar	3 bar	3 bar	3 bar
Approx. Starting Flow Rate	0.5lpm	0.5lpm	0.5lpm	0.5lpm
DIMENSIONS				
Length (mm)	275	275	225	285
Width (mm)	120	120	120	120
Height (mm)	185	185	185	185

NOISE

The sound pressure level 1m from the pump is less than 70dbA

For ANHPC60DLV See supplementary instructions

WATERMILL PRODUCTS LTD
WATERMILL HOUSE, FAIRVIEW INDUSTRIAL ESTATE, HOLLAND ROAD, HURST GREEN, OXTED, SURREY RH8 9BD
CUSTOMER SERVICE HELPLINE TEL: 01883 730339
Email: info@watermillshowers.co.uk web: www.watermillshowers.co.uk
ML 305 02/04 Printed in England

WATERMILL PRODUCTS LTD GUARANTEE JANUARY 2004

Watermill Products Ltd. guarantee the parts and workmanship of this product for a period of **two years** from the date of initial purchase, provided that:

The product is installed and operated in accordance with our instructions and has not been damaged or abused.

The guarantee registration card is completed and returned within ten days of purchase accompanied by a copy of the original invoice (proof of purchase). We will acknowledge receipt of the guarantee registration card within ten days. ***It is this guarantee acknowledgement that acts as your* two year *guarantee*** and must be kept in a safe place and produced in the event of a claim under the terms of this guarantee. If this acknowledgement cannot be produced, the guarantee reverts to two years from date of manufacture.

The information on the guarantee registration card is purely for the use of Watermill Products Ltd. in connection with the guarantee of the product. The information will not be divulged to third parties or used by Watermill for any other marketing activities.

The guarantee is limited to product repair or replacement only.

This guarantee does not affect your statutory rights.

Watermill Products Ltd Guarantee Registration Card

Product serial number _____

Name _____

Address _____

_____ Post Code _____

Telephone number _____ E-mail _____

Date of purchase _____ Product type _____

Purchased from _____

Installed by _____

A COPY OF THE ORIGINAL PURCHASE INVOICE MUST BE ATTACHED

GUARANTEE CLAIM PROCEDURE

If you believe the product is not operating correctly, phone the helpline number 01883 730339. Most problems with pumps can be eradicated by adjustments to the pump or installation. Please have to hand your:- **Guarantee acknowledgement.** If the product has not as yet been registered, or the acknowledgement has been mislaid please have to hand your:- **Proof of purchase, Pump type** (to be found on top label), **Pump serial number** (to be found on top label).

DO NOT REMOVE THE PUMP FROM ITS INSTALLATION AS THIS WILL INVALIDATE THE GUARANTEE.

A large percentage of pumps removed from site and returned to us work perfectly when tested in our laboratory. This makes it very difficult for us to help you solve the problem long term. Sometimes the product is just not suitable for the application. It helps us to help you if we can obtain details of the application.

It is also very useful to have digital photographs of the installation e–mailed to service@watermillshowers.co.uk prior to contacting us. These photographs should show as much of the installation as possible, in particular:- The pump and hoses, the connection to the cylinder, the connection to the cold water tank, the top label on the pump, the proof of purchase.

If an engineer's site visit call is required there must be an adult on site during the visit. Site visits to products malfunctioning that are covered by the terms of this guarantee will be provided free of charge. Site visits to products outside the terms of this guarantee will be on a chargeable basis for parts and labour and must be paid for at the time of the site visit.

Please Return to:

Watermill Products Limited
Watermill House
Fairview Industrial Estate
Holland Road
Hurst Green
Oxted
Surrey RH8 9BD