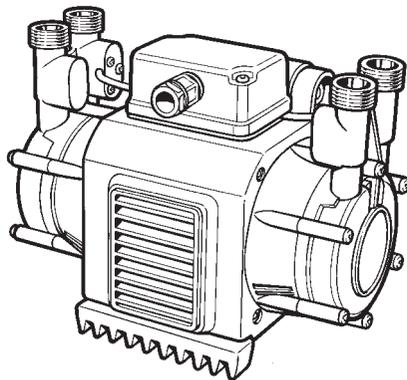


**INSTALLER PLEASE  
LEAVE INSTRUCTIONS  
WITH CUSTOMER**

# **WATERMILL**

## **PERFORMANCE SHOWER PRODUCTS**



### **INSTALLATION INSTRUCTIONS FOR REGENERATIVE MAINS SHOWER PUMP**

**Model:**

**PR35D Medium pressure twin  
PR50D Medium pressure twin  
PR50S Medium pressure single**

#### **NOTE**

These pumps are made of acetal copolymer plastic, which is destroyed by solder flux. Do not allow any solder flux to come into contact with any part of this pump.

If this happens, clean immediately with strong detergent, rinse and inspect surfaces for corrosion.

**SERVICE HELPLINE TEL:**

**01883 730339**

## 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.

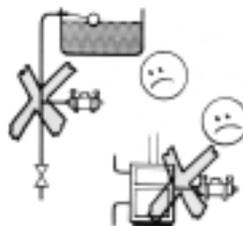
The **important instructions MUST** be followed, otherwise the pump may be damaged and your guarantee invalidated.

## 2. IMPORTANT INSTRUCTIONS

1. When unpacking and installing pump, ensure that **no foreign particles** (such as solder or dust, etc) are allowed to enter the outlets; these will cause the flowswitch to malfunction and damage the pump impeller.
2. **Do not connect pump to water mains pressure.**  
The pump cannot normally be used with combination boilers.
3. **A supply head of at least 2 metres is recommended.**

However the pump will function with a supply head as low as 900mm (3') providing; the water make up system has unrestrictive pipework; and provision is made to avoid air locks.

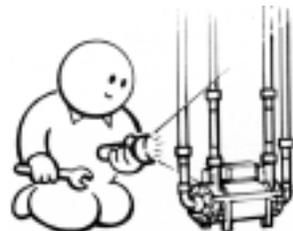
**Note: The pump cannot operate if the level of the water in the cold water storage tank is below the level of the pump**



### IMPORTANT

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, position the pump to mitigate against possible water damage.



4. Do not fit non-return valves in the inlet line to the pump. The pump must be able to vent back to the supply tank.
5. Complete all pipework before making electrical connections.

**Do not let any water into the electric terminal box**

7. **NO SOLDER FLUX.**

Do not allow **any** solder flux to come into contact with any of the plastic parts of the pump especially the "push fit" retaining rings.



### 8. Do not let the pump run dry.

Purge with water thoroughly for 5 minutes before running pump.

**Then check that each connection is water tight and not leaking.**



9. After completing installation, the whole system must be thoroughly tested – operating both hot and cold at full flow.

10. **Maximum hot water temperature must not exceed 60°C (140°F) in accordance with BS6700 1997.**

The hot water supply to the pump inlet should be connected from the first outlet from the hot water cylinder expansion pipe, i.e use a Surrey Flange.



## 3. POSITIONING PUMP

Pumps are designed to push water, not suck. For this reason, keep the pump as close as possible to the source of hot and cold water. Keep the pump as low, and the input head of water as high as possible.

For optimum performance ensure a good water flow to the pump from the tank. This is achieved by having a sufficient head, unrestrictive pipework and provision to prevent air locks.

Suggested location for the pump, if space allows, is on the floor of the airing cupboard. The area around the pump must be well ventilated – the pump must not be covered by boxes, clothes etc, otherwise the motor will overheat.

If the pump is to be installed in the loft, see note 3 of section 2 (important instructions), there may not be sufficient head to feed the pump. Protect from frost damage.

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

To reduce noise caused by vibration we recommend the pump be mounted on a small concrete paving slab approximately 225 x 225mm and 40-50mm thick.

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

To achieve a flow of 0.5 l/min to turn the flowswitches on, there must be a minimum height between the water level in the cold water storage tank and the shower outlet of approximately 250mm – see Fig 1.

The pump must be installed in accordance with the Water Supply (Water Fittings) Regulations 1999.

For installation within a bathroom locate the pump in accordance with the IEE Wiring Regulations sixteenth edition (BS7671:2001) Part 6 Section 601 for a shower pump with an IPX2 enclosure.

It must be positioned at least 0.6 metres horizontally or 3 metres vertically away from any bath, shower tray or basin.

It may be fitted under a bath PROVIDING this space is ONLY accessible through the use of a tool.

If in doubt consult the Wiring Regulations.

### 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 shower pump to operate in the “negative head” mode, a special negative head kit will be required. This consists of a pneumatic push button and air switch (pre-wired and mounted in a terminal box) complete with 7.5 metres (25 feet) of plastic tubing.

**Service Helpline: 01883 730339**

When fitted with a Negative Head Switch the shower is operated by turning on the mixer valve and starting the pump by pushing the switch once. The pump will then run as normal and will automatically switch off when the shower is turned off.

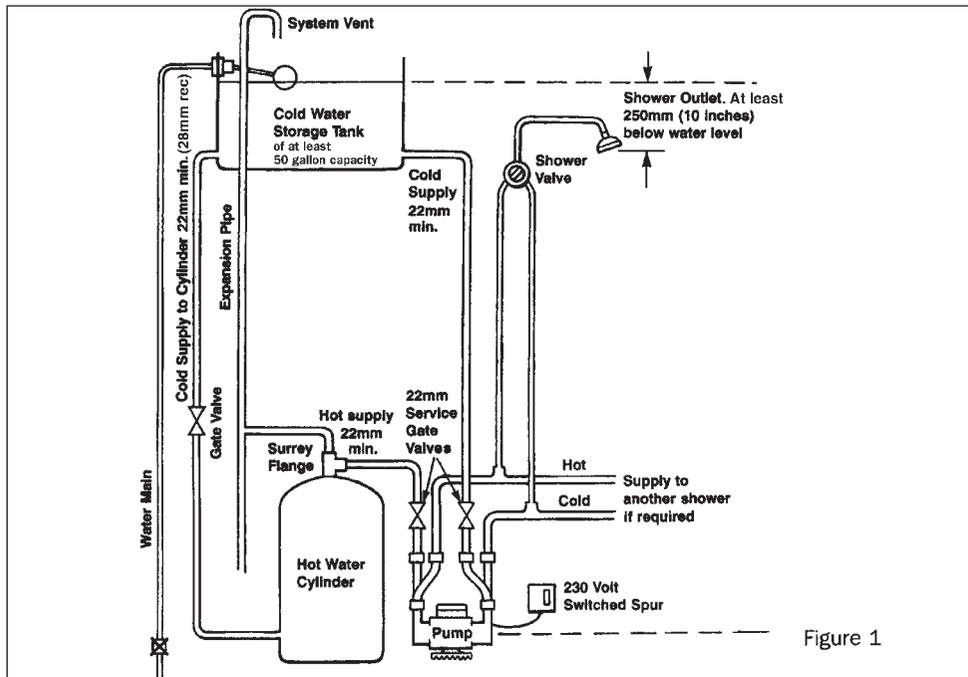


Figure 1

Note. If the pump is positioned above the outlet from the hot water cylinder; ensure the pipework to the pump from the cylinder has a downward loop. This will help prevent air locks.

## 4. HOT WATER CYLINDER CONNECTIONS

### DO NOT USE ANY JOINTING COMPOUNDS

We recommend that 28mm pipework is used to feed the cylinder from the header tank for optimum performance.

The use of a Surrey Flange (see Fig 1) is recommended to ensure a free flowing supply of "air free" hot water.

If the hot water feed is taken directly from the top of the hot water cylinder - entrapped air may cause poor shower performance.

22mm pipe should be used to connect to the pump. This will ensure an adequate flow. Use of a smaller diameter may cause cavitation and/or reduce showering performance.

## 5. COLD WATER SUPPLY

### DO NOT CONNECT DIRECTLY TO WATER MAINS

The cold water supply to the pump must be connected directly from the cold water 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 to prevent the supply of hot water only.

## 6. CONNECTING PUMP

### DO NOT USE ANY JOINTING COMPOUNDS OR TAPE

For ease of installation, future servicing and cleaning of filters, gate valves or full bore isolating valves must be fitted to the inlet supplies. (See Figure 1).

Failure to fit isolating valves will result in excessive time being necessary for draining down and refilling, with increased service charges.

The flexible hoses supplied must be used for connecting this pump to the pipework. Use of these hoses will ensure strain and vibration-free watertight connections.

Fit the strainers to the flexible hoses and pump inlets as shown in Figure 2.

Fit rubber washers to the flexible hoses and pump outlets.

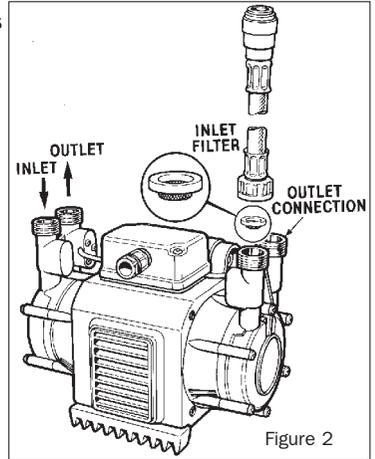
The flexible hose connections should be “hand tight” only. Ensure they are not cross threaded.

Position supply pipes and shower pipes accurately so that the pump or hoses are not under any mechanical strain, such as supporting weight of pipes.

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

Ensure correct alignment to avoid cross threading.

Line up pipework accurately and fit hoses to pump before connecting to pipes.



## 7. ELECTRICAL CONNECTIONS

### WARNING - THIS PUMP MUST BE EARTHED

#### Electrical hazard will result if the pump is not correctly earthed.

If in doubt - consult a qualified electrician or call your local electricity board engineer.

The pump must be connected to a 230 volt 50Hz supply with a switched spur fused of 5A. The switch must have a double pole disconnection with a separation gap of at least 3mm. See Fig 1. Connect as the following colour code:

Connect BROWN to terminal L (Live)

Connect YELLOW/GREEN to terminal E (Earth)

Connect BLUE to terminal N (Neutral)

Insert wire fully into terminal connector and screw down firmly – ensure connection is secure. Be sure to tighten cable restraint.

Ensure compliance with the IEE Wiring Regulations (BS 7671). In the interests of safety it is recommended that a residual current device (RCD) be installed in the supply circuit.

To avoid electrical hazard do not operate pump without the terminal cover in place.

For normal operation of the system the pump switch should be left on at all times.

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.

**Service Helpline: 01883 730339**

## Power Cord Replacement

This operation should be carried out by a competent person.

If the power cord needs replacement, it is important to use the correct cable and fit it in the correct manner.

The cable should be 3 core 0.75mm<sup>2</sup>. H05V V-F.

The outer sheath should be stripped back 35mm on the live and neutral; 45mm on the earth. 6mm of insulation should be removed from each core.

The pump connection end should be made as below.

**NB.** *The power cord is available complete from Watermill Products. Part number WS138.*

### To fit:

Disconnect the power supply.

Remove the terminal box lid and existing damaged cable taking care not to lose any fixings.

Loosen the knurled nut on the cable gland.

Pass the new cable through the cable gland and its rubber insert.

Connect the cable as follows:

Brown to the terminal marked L

Blue to the terminal marked N

Yellow/Green E or ⊕

After inserting the cables into their terminals tighten the screws and ensure that the cables are secure.

Tighten the cable gland. Ensure the cable is secure within the gland.

Replace the terminal box and tighten the screws.

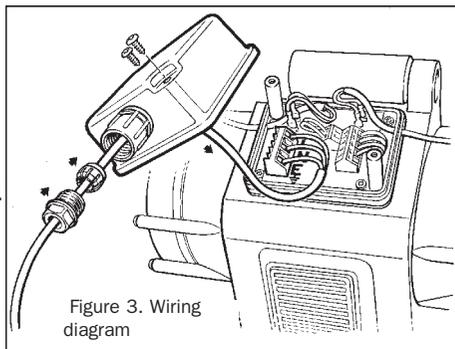


Figure 3. Wiring diagram

## 8. BEFORE USING

### **DO NOT TURN ON THE ELECTRICITY SUPPLY UNTIL PUMP HAS BEEN PURGED.**

1. Turn on water supply. Allow system to fill.
2. Immediately inspect for any leaks.
3. With shower head or handset disconnected from shower hose, let hose hang into shower tray/bath to gain maximum possible flow.
4. Turn on shower mixer valve and operate in both full hot and full cold mode for about 2 minutes to flush out debris and to purge air.
5. Turn off shower mixer valve.
6. Re-connect shower head or handset to shower hose.
7. Turn on shower mixer valve.
8. SWITCH ON ELECTRICITY SUPPLY TO PUMP and again operate mixer valve in both full hot and cold modes for about 2 minutes.
9. 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.  
After hot water has been run for several minutes re-tighten all hot water connections.
10. 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. If flow from the shower drops below its normal performance it may be necessary to clean the pump filters. Blocked filters are common on initial installation of showers, or in new buildings where the use of jointing compounds, tapes, flux and other debris can be flushed through the system.

In this event turn off service valves; remove and clean the filters; replace and turn on water supply.

2. Another common cause of poor shower performance is a clogged shower head/handset, regular cleaning and descaling is important; this applies particularly in hard water areas.

## 10. FAULT FINDING

### **If shower pump fails to start, check the following.**

1. Electricity supply and fuse (5 A rating).
2. Are isolating valves turned off?
3. Has pump overheated, causing the built-in thermal protection to turn off the motor? Wait at least 2 hours for the cutout to automatically reset.
4. Are the pump filters blocked, causing insufficient flow to the pump? Turn off service valves or isolating valve; clean the filter, replace and turn on water supply.
5. Is pump correctly installed with outlets (flow switches) vertical?
6. Is there sufficient water flow to operate the flow switches (approximately 0.5 litres per minute) or head of water from the shower outlet and the water supply?

### **Pump won't turn off.**

1. Is shower mixer valve fully off?
2. Is air entrapped in the shower system, causing pulsing?
3. Is flow switch trapped in the up (on) position by dirt or debris?

### **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.

1. If problem persists, fit a Surrey Flange.
2. Reduce hot water temperature. The maximum recommended hot water temperature is 60°C.
3. Study pipework layout. There should be no high points where air can collect.

### **Pump Pulses**

Use of other water supplies in the house can cause the pump to start momentarily. If this is a problem contact the Watermill Helpline.

## TECHNICAL DATA

<b>Model</b>	<b>PR35D</b>	<b>PR50S</b>	<b>PR50D</b>
<b>ELECTRICAL</b>			
Volts/Phase/Frequency	230/1/50	230/1/50	230/1/50
Power Consumption (W)	350	270	390
Full Load Current (A)	1.5	1.2	1.7
Rating*	20 min on/40 min off	20 min on/40 min off	20 min on/40 min off
Enclosure	IPX2	IPX2	IPX2
Motor	4 Pole Induction	4 Pole Induction	4 Pole Induction
<b>MECHANICAL</b>			
Inlet Head (min-max)	1-10m	1-10m	1-10m
Max Developed Pump Head	12m	14.5m	14m
Max Working Pressure	3 bar	3 bar	3 bar
Min starting flow rate	0.5lpm	0.5lpm	0.5lpm
<b>DIMENSIONS</b>			
Length (mm)	250	230	250
Width (mm)	140	140	140
Height (mm)	190	190	190
Weight (Kg)	5.3	5.2	5.3

\*Recommended minimum flow rate 5lpm.

### NOISE

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

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## SERVICE HELPLINE

### Tel: (01883) 730339

WATERMILL PRODUCTS LTD

WATERMILL HOUSE, FAIRVIEW INDUSTRIAL ESTATE, HOLLAND ROAD, HURST GREEN, OXTED, SURREY RH8 9BD

Tel: 01883 715425 • Fax: 01883 716422

Email: [info@watermillshowers.co.uk](mailto:info@watermillshowers.co.uk) web: [www.watermillshowers.co.uk](http://www.watermillshowers.co.uk)

# WATERMILL

## GUARANTEE OF CORRECT INSTALLATION

### NOTE TO CUSTOMER

Your Watermill Shower 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 tick the following "important instructions" to confirm to both yourself and your customer this shower has been correctly installed.

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

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 pump **cannot** be used with combination boilers.
2. The pump should have a supply head of at least 2 metres (6 ft.) minimum. and 22mm hot and cold feed pipes fitted with 22mm gate valves.
3. Do not use **any** jointing compounds such as Boss White or PTFE tape on threads or retaining nuts.   
When making pipe joints do **not** allow **any** solder flux to come in contact with plastic parts of the pump. The plastic will be corroded and cause serious leaks. Ensure that the pump shroud supplied is used.
4. The flexible hoses supplied must be used to connect the pump – **do not connect any pipework directly to the pump**. The filters **must only** be used on inlet connections.
5. Complete all pipework before making electrical connections – do not let any water into the electric terminal box.
6. **Do not run pump dry** – purge with water thoroughly for 5 minutes before running pump.
7. 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.
8. An 'air free' supply of hot water is required. Do not connect directly to expansion pipe. The use of an Essex or Surrey flange is recommended. Maximum hot water temperature is 60°C (BS6700).

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

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

### 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

# 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.

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## 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](mailto: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.**

Affix  
Stamp  
Here

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