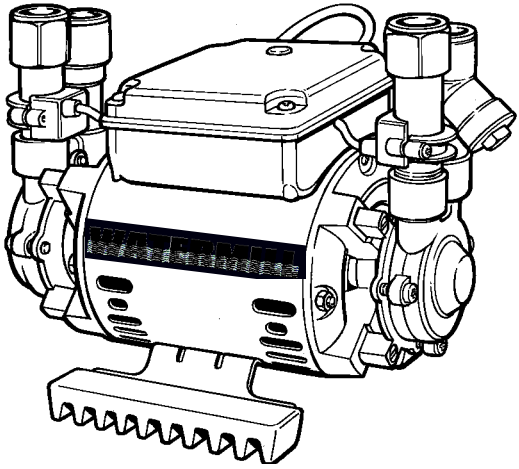
HEAVY DUTY
BRASS SHOWER PUMPS



YOUR GUARANTEE IS AT RISK
IF PUMP NOT INSTALLED CORRECTLY.
SEE SECTION 2 IMPORTANT INSTRUCTIONS

WATERMILL

Performance Shower Products

SERVICE HELPLINE TEL:
01883 730339

1. GENERAL

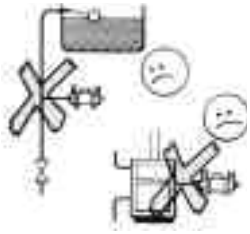
Your Watermill Shower Pump has been designed, manufactured and carefully tested, in England.

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 the destruction of 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.

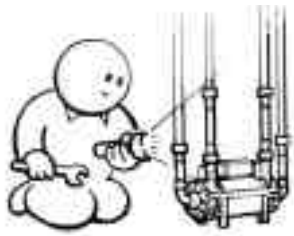
However the pump will function with a supply head as low as 600mm (2') providing; the water make up system has unrestrictive pipework; and provision is made to avoid air locks.

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/silicon carbide 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.



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

5. Push Fit Connections. The pump inlets and outlets are fitted with "push fit" connections. The hoses supplied with the pump **must** be used.

Make sure each hose connection is fully inserted to the red "insert guide line". Pipes must be inserted to a minimum depth of 33mm.

6. **Disconnecting hose.** To disconnect “push fit” hose, firmly push down white retaining ring, whilst pulling out the hose.

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 0.5 l/min to turn the flowswitches on, there must be a minimum height between the water level in the cold water storage cistern 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.

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 a Negative Head pump from the Watermill Automatic Negative Head range.

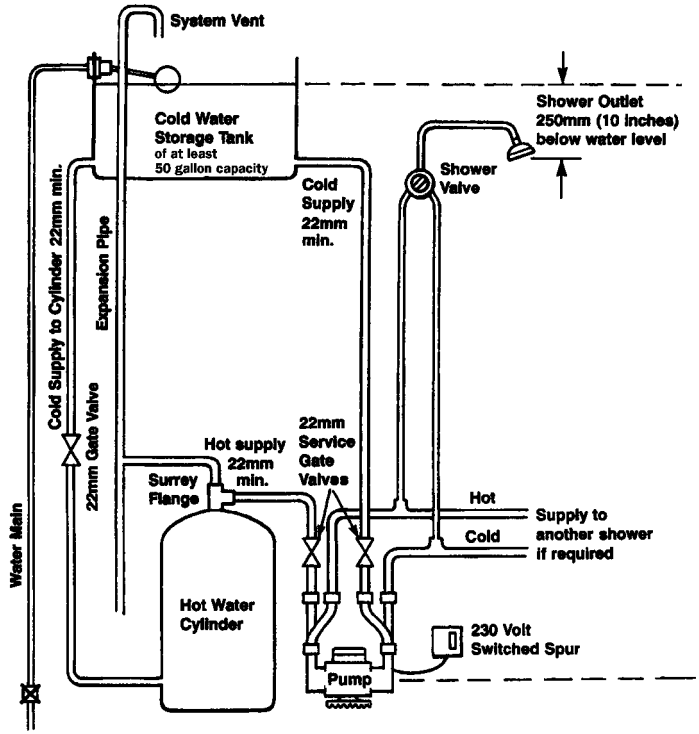


Figure 1

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

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

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. Where high flows are expected 28mm is recommended.

5. COLD WATER SUPPLY

DO NOT CONNECT DIRECTLY TO WATER MAINS SUPPLY

DO NOT USE ANY JOINTING COMPOUNDS

The cold water supply to the pump must be connected using 22mm pipe, to the cold water tank (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, to prevent the supply of hot water only.

6. CONNECTING PUMP

DO NOT USE ANY JOINTING COMPOUNDS

For ease of installation, future servicing and cleaning of filters, full bore isolating gate valves should be fitted in both hot and cold inlets and outlets.

Isolating valves greatly assist draining down, filter cleaning and refilling, which will result in much lower service costs.

The flexible hoses supplied with the pump, or authorised replacements from Watermill, must be used for connecting this pump to the pipework. Use of these hoses will ensure strain and vibration-free watertight connections.

Make sure each hose connection is fully inserted to the red "insert guide line". When connecting to the pump hoses, make sure connecting pipe is fully inserted to a minimum depth of 33mm (1 1/4"). Failure to fully insert connections will cause leaks

The inlets to the pump are fitted with strainers to prevent damage to the pump from abrasive debris in the water supply.

After initial installation, run the pump for a few minutes, switch off, drain down and clean the strainers.

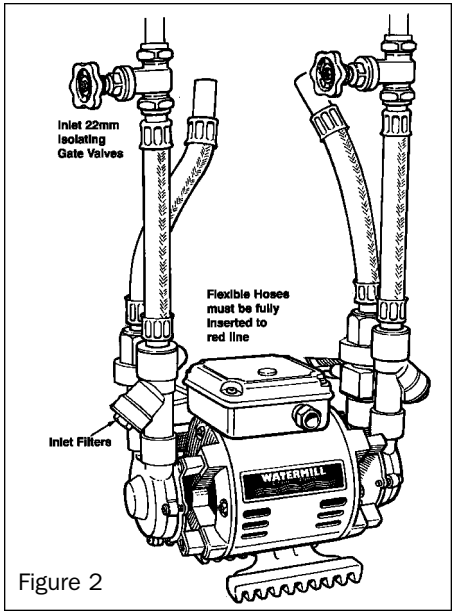


Figure 2

If Y strainers are fitted (as fig. 2) access is via the angled plug on the inlet port. If internal strainers are used remove the inlet hose from the pump and the strainer basket can be removed by hand or with long nosed pliers.

Position pump level (see section 3 positioning pump) ensuring that the outlets are vertical for correct operation of the flow switches.

Line up pipework and fit hoses to pump before connecting to pipes. Position pipework accurately sop that the pump is not subject to mechanical strain, such as supporting weight of pipes.

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

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 (10A on model BP130D). 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 I.E.E. regulations. 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 terminal cover in place.

The mains on indicator light (where fitted) must not be relied on as a disconnect safety check. The light may be faulty. Always switch off before removing terminal box cover.

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.

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^2. H05V V-F.

The pump connection end should be made as the diagram below.

NB. *The power cord is available complete from Watermill Products. Part number WS137.*

To fit:

Disconnect the power supply.

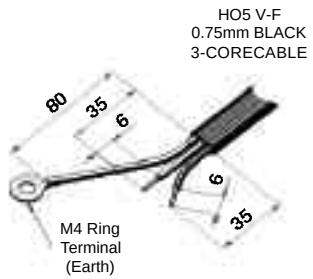
Remove the terminal box lid and existing damaged cable taking care not to lose any fixings.

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 (ring terminal) to E or ⏚



PT.NO. WS137 - Cable Termination

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

Fit the ring terminal with a lock washer and nut and tighten with a suitable M4 spanner or nut runner.

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

Replace the terminal box.

8. BEFORE USING

WARNING - Do not run pump dry. Purge water thoroughly through system before switching on pump electrical supply.

DO NOT TURN ON THE ELECTRICITY SUPPLY

1. Turn on water supply. Allow system to fill.
2. Immediately inspect for any leaks.
3. With pump not running, allow maximum water flow, for example remove handset from shower hose, letting the shower hose hang into the shower tray or bath; operate maximum hot and cold flow for at least 2 minutes, to flush out all debris and ensure air is thoroughly purged from system.
4. SWITCH ON ELECTRICITY SUPPLY TO PUMP.

   Again operate pump in both full hot and cold modes for about 2 minutes.
5. With the pump operating carefully inspect again for any leaks from all connections on both hot and cold feed pipes to the pump and to the system.

   After hot water has been run for several minutes check all hot water connections and make sure “push fit” connectors are fully inserted.
6. 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 the 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 pumps, 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 strainers (see 6 Connecting Pump).
2. A common cause of poor shower performance is a clogged shower head/handset, so regular cleaning and descaling is important – this applies particularly to hard water areas.

10. FAULT FINDING

A If pump fails to start, check the following:

1. Electricity supply and fuse (5A rating or 10A on BP130D).
2. Are isolating valves turned on?
3. Are the pump filters blocked, causing insufficient flow to the pump? Turn off service valves or isolating valve; clean the strainers; replace, and turn on water supply.
4. Is pump correctly installed with outlets (flow switches) vertical?
5. Is there sufficient water flow to operate the flow switches 0.5 litres per minute?
6. If, for any reason, the motor overheats, the built-in thermal protection will turn off the motor. It will automatically reset once the motor has cooled sufficiently.

B. If the pump won't turn off:

1. Ensure that the hot water outlet from the pump cannot flow back to the hot water system.
2. Is the flow through the pump completely stopped?
3. Is air entrapped in the system, causing pulsing?
4. Is flow switch jammed in the up (on) position by dirt or debris?

C. 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.

DO NOT OVERTIGHTEN RETAINING SCREWS.

D. 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 (140°F).
3. Study the pipework layout. There should be no high points where air can collect.
4. Is debris caught in the impeller casing?

TECHNICAL DATA

Model	BP65S	BP100S	BP50D	BP65D	BP100D	BP130D
ELECTRICAL						
Volts/Phase/Frequency	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Power Consumption (W)	400	435	525	640	850	920
Full Load Current (A)	1.7	1.9	2.3	2.8	4.0	4.3
Rating*	Continuous	Continuous	Continuous	Continuous	Continuous	Continuous
Enclosure	IPX2	IPX2	IPX2	IPX2	IPX2	IPX2
Motor	Induction	Induction	Induction	Induction	Induction	Induction
MECHANICAL						
Inlet Head (min-max)	1-20m	1-20m	1-20m	1-20m	1-20m	1-15m
Max Developed Pump Head	23m	31m	21m	24m	34m	41m
Max Working Pressure	6 bar	6 bar	6 bar	6 bar	6 bar	6 bar
Min starting flow rate	0.5lpm	0.5lpm	0.5lpm	0.5lpm	0.5lpm	0.5lpm
DIMENSIONS						
Length (mm) [a]	178	178	243	243	266	296
Width (mm)	145	145	145	145	145	145
Height (mm)	225	225	225	225	225	225
Weight (Kg)	6.1	6.1	7.5	7.5	9.5	13.7

*Recommended minimum flow rate 5lpm.

[a] For pumps fitted with Y strainers add 8mm to a single ended pump and 16mm to a twin.

NOISE

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

SERVICE HELPLINE Tel: (01883) 730339

WATERMILL PRODUCTS LTD

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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.

Affix
Stamp
Here

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