

GUARANTEE

Terms and Conditions for UK (outside UK contact your local distributor)

We, Applied Energy Products Limited, guarantee this product for the period of 36 months from the date of purchase. Within the guarantee period we will resolve, **free of charge**, any manufacturing defects in the product resulting from faulty workmanship or material on condition that:-

- a) The appliance has been correctly installed in accordance with our instructions and is being used on the supply circuit or voltage printed on the rating plate.
- b) The appliance has been used in accordance with these instructions and has not been tampered with or otherwise subject to misuse, neglect or accident.
- c) The appliance has not been taken apart, modified or repaired except by a person authorised by us.
- d) Evidence of the date of purchase in the form of an invoice or receipt will be required in order to qualify for an in-guarantee repair.
- e) For the service work to be undertaken free of charge, the work must be only undertaken by Applied Energy Products Limited, or our approved agents.
- f) Service under guarantee has no effect on the expiry date. The guarantee on any exchanged parts or product ends when the original guarantee period ends.

EXCLUSIONS

This guarantee **DOES NOT** cover damage or defects arising from poor or incorrect installation, improper use or lack of maintenance, including the build-up of limescale. It is the responsibility of the installer to check that the installation parameters meet the requirements of the product, and any relevant regulations.

If we are called out to a fault, which is subsequently identified as being an installation fault, we will make a charge. It is important that the routine checks are completed before calling us out, as many issues can be simply diagnosed and resolved.

We make no guarantees as to response times for repairs. We will endeavour to achieve the most timely response possible but while we indicate an average response time, this should not be taken as a guarantee.

The guarantee applies to a repair or replacement (at our discretion) of the product subject to the conditions above, and **DOES NOT** cover compensation for the loss of the product or consequential loss of any kind.

The guarantee does not apply to the repair or replacement of pressure relief devices, sprayheads, hoses, accessories, isolating switches, electrical cable, fuses and/or circuit breakers.

This guarantee does not affect your statutory rights.

REDRING

APPLIED ENERGY PRODUCTS LIMITED
MORLEY WAY, PETERBOROUGH PE2 9JJ
TEL: +44 (0) 844 372 7750
FAX: +44 (0) 844 372 7760
Website: www.redring.co.uk

REDRING

REDRING POWERSTREAM

UNVENTED INSTANTANEOUS
WATER HEATER

Installation and User Guide

IMPORTANT:
This booklet should be left with the user after installation and demonstration.
It should be kept in a safe place, as you may need to refer to it for general instructions or future maintenance

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INTRODUCTION

Thank you for purchasing a quality *Redring Powerstream* manufactured in England. To enjoy your new unit at its best, please take time to read this manual thoroughly to familiarise yourself with all instructions, BEFORE beginning installation.

If you experience any difficulty with the installation or operation of your new water heater, then please refer to the "What to do if things go wrong" section in this manual before contacting us.

IMPORTANT SAFETY INFORMATION

- Your *Powerstream* has been designed for convenience, economy and safety of use, provided that it is installed, used and maintained in good working order and in accordance with our instructions and recommendations.
- All wiring and installation must be supervised by a suitably qualified person.
- **THIS APPLIANCE MUST BE EARTHED.**
- The installation must be in accordance with the current edition of BS.7671 (*the "IEE Wiring Regulations"*) and "Part P" of the *"Building Regulations"* in force at the time of installation. Installations outside England and Wales must also conform to any local regulations in effect.
- This appliance is intended to be permanently connected to the fixed electrical wiring of the mains supply with its own dedicated supply.
- This appliance must **NOT** be fitted where it may be subjected to freezing conditions **DO NOT** switch the appliance on if you suspect it of being frozen. Wait until you are sure it has thawed out.
- Isolate the mains electrical and water supply before removing the front cover of the appliance.

THIS APPLIANCE IS NOT INTENDED FOR USE BY PERSONS (INCLUDING CHILDREN AND THE INFIRM) WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES, OR LACK OF EXPERIENCE AND KNOWLEDGE, UNLESS THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION CONCERNING USE OF THE APPLIANCE BY A PERSON RESPONSIBLE FOR THEIR SAFETY.

CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.

HOW YOUR *POWERSTREAM* WORKS

Water comes in through the inlet, via a flow switch. The flow switch measures how much water is passing through the unit. If it detects more than the preset level of:-
2.7 litres/minute for the 9.5kW model and 3.3 litres/minute for the 10.8kW and 12.0kW models

The units heating elements are switched on. This is shown by the neon light glowing.

The water is heated instantly as it passes through the copper heat exchanger tube.

The temperature of the water coming out of the unit depends on:-

- The temperature of the mains water supply
- The water flow rate
- The power consumption of the unit

The temperature of the main supply can vary from 5°C in winter up to about 20°C in summer, with an average of about 12°C. The charts below show the water temperature (°C) you can expect from the unit, operating at 9.5/10.8/12.0Kw for the different flow rates (in litres/minute)

9.5kW Powerstream

Flow rate (l/m)	3.0	4.0	6.0
Summer temp °C	–	54°	43°
Winter temp °C	50°	39°	28°

On average (12°C main water supply at 4 litres/minute) an outlet temperature of 46°C will be achieved.

10.8kW Powerstream

Flow rate (l/m)	4.0	5.0	6.0
Summer temp °C	–	51°	46°
Winter temp °C	44°	36°	31°

On average (12°C main water supply at 5 litres/minute) an outlet temperature of 43°C will be achieved.

12.0kW Powerstream

Flow rate (l/m)	5.0	6.0	7.0
Summer temp °C	54°	49°	44°
Winter temp °C	39°	34°	30°

On average (12°C main water supply at 6 litres/minute) an outlet temperature of 41°C will be achieved.

This means that with the 12.0kW unit you can shower at 39°C with a flow rate of 5 litres/minute in the middle of winter.

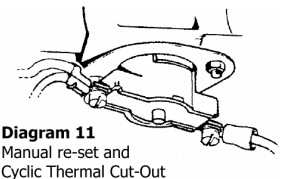
The unit includes a dual thermal cut-out (diagram 10) which is attached to the heat exchanger tube. It will switch off the heater elements if the water flow is reduced too much and the temperature goes above a set limit.

The first stage cut-out is cyclic and will automatically reset as the water temperature falls. The unit will then function normally again.

The second stage cut-out when triggered needs to be reset manually inside the unit.

This cut-out will only operate in exceptional circumstances (diagram 11)

The unit can supply more than one outlet – for example, a shower and a basin, or two basins – but water from the unit will be shared between the outlets. This is particularly important if a unit supplies a shower and a basin, as the basin should not be used while someone is using the shower.



WHAT TO DO IF THINGS GO WRONG (2)

PROFESSIONAL SERVICE

If the previous "Self Help" checks fail to restore the performance, you should seek professional help.

The person who installed the shower is probably the best one to investigate and correct it and is certainly the person to contact if you have had a problem in the guarantee period.

The following additional checklist is provided for the benefit of the qualified service person.

WARNING: SWITCH OFF THE ELECTRICITY AT THE LOCAL ISOLATOR BEFORE REMOVING THE COVER TO MAKE CHECKS

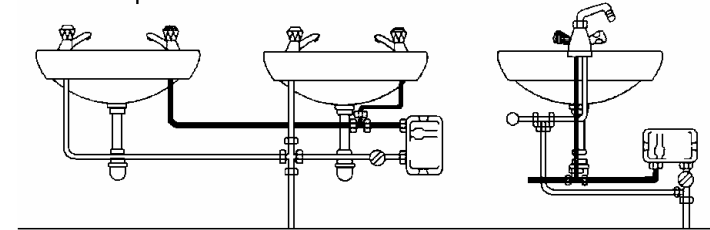
Symptom	Cause	What to do
Little or no water flows - neon light off	The water pressure is very low	Use a pump to boost the supply from a storage tank
Cold water only - neon light off	The main water is connected to the OUTLET of the unit	Reconnect the main supply to the INLET (marked in blue)
	The water pressure is too low	Use a pump to boost the supply from a storage tank.
	The thermal cut-out has triggered	Reset it by opening the unit and pushing the button on the cut-out (diagram 11). Before you do this you must remove the cause of the problem
	The flow switch is not working	Contact Redring
Water too cold - neon light on	The power select screw is set to "LO"	Change the power select screw to "HI" (diagram 7).
	One element is not working	Switch off the electricity supply and check the resistance of the elements. You should get the following readings. Loading (kW) Resistance (Ohms) 9.5 12.0 10.8 10.6 12.0 9.6
	The Power Supply Voltage has dropped.	The heater should only draw the following currents: 40 amps for the 9.5kW model 45 amps for the 10.8kW model 50 amps for the 12.0kW model
Water flow too low or temperature too high	The service valve is fitted to the OUTLET	Fit the service valve to the INLET of the unit
	There are constrictions in the plumbing	Check the plumbing. Only use PTFE tape for making pipe joints
Water goes from hot to cold	The service valve is fitted to the OUTLET	Fit the service valve to the INLET of the unit

HOW TO INSTALL YOUR POWERSTREAM

WARNING: ALL WIRING AND INSTALLATION MUST BE SUPERVISED BY A SUITABLY QUALIFIED PERSON.

WARNING: DO NOT INSTALL THIS UNIT WHERE IT MAY BE SUBJECTED TO FREEZING CONDITIONS.

Diagram 1
Examples of fitted units



BEFORE YOU START

Check that the mains electric is capable of supplying the required current. See the rating plate for current requirements.

Check the pressure of the main water supply. To operate correctly, the unit requires the following running pressures. Check the rating plate to see which applies:-

Model	Dynamic Water Pressure			
	Basin		Shower	
	Minimum	Maximum	Minimum	Maximum
Up to 9.5kW	10 psi (0.7 bar) (69 kPa)	150 psi (10.3 bar) (1035 kPa)	15 psi (1.1 bar) (103 kPa)	150 psi (10.3 bar) (1035 kPa)
Up to 10.8kW	15 psi (1.1 bar) (103 kPa)	150 psi (10.3 bar) (1035 kPa)	20 psi (1.4 bar) (138 kPa)	150 psi (10.3 bar) (1035 kPa)
Up to 12.0kW	20 psi (1.4 bar) (138 kPa)	150 psi (10.3 bar) (1035 kPa)	25 psi (1.8 bar) (172 kPa)	150 psi (10.3 bar) (1035 kPa)

FIXING THE UNIT TO THE WALL

Deciding the position

- If being used in a public place, position the unit out of reach to discourage vandalism.
- Fit the unit onto a flat piece of wall, well away from any potential splashes of water or spray.
- Position the unit either upright or lengthways (diagram 1), whichever is most convenient for plumbing and wiring. Remember to keep the lengths of hot water pipe to a minimum in order to save energy.
- If the unit is to supply a basin, you can fit it either above or below the basin.

Deciding the wiring route

- You have a choice of whether to feed the electric cable through the side or through the back of the unit.
- If it going through the side of the unit, cut out the plastic lug to expose the grommet (diagram 2).
- If is going through the back of the unit, cut through the grommet on the backplate with a sharp knife (**Take Care!**). Make sure you do not remove the grommet from the backplate (diagram 3). Feed the cable through the grommet before you fix the unit to the wall.

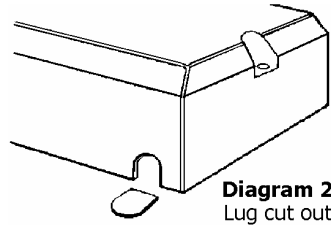


Diagram 2
Lug cut out

Fixing to the wall

- Undo the retaining nuts and take the front cover off the unit. Hold the backplate in position against the wall whilst you mark the four fixing holes.
- Drill the holes and fix the unit to the wall using the four No.8 x 38mm wood screws supplied.

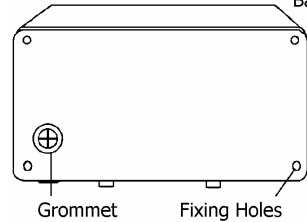


Diagram 3
Back of unit

Plumbing the unit

WARNING: IF A NON RETURN VALVE IS FITTED IN THE INLET FEED TO THE UNIT, THEN THE INSTALLATION SHOULD ALSO INCLUDE A 3.5 BAR PRESSURE REDUCING VALVE AND A 6 BAR PRESSURE RELIEF (EXPANSION) VALVE

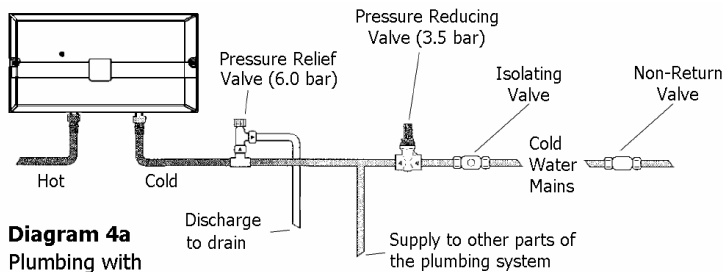


Diagram 4a
Plumbing with
Non-Return Valve

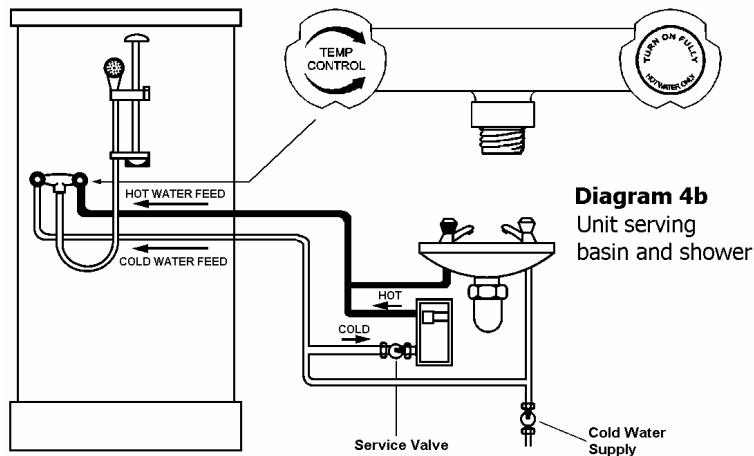


Diagram 4b
Unit serving
basin and shower

WHAT TO DO IF THINGS GO WRONG (1)

SELF HELP

If the unit is not working satisfactorily, make the following checks before calling out the installer. Any one of these adjustments could restore the performance.

Symptom	Cause	What to do
Little or no water flow	The main water supply is turned off	Turn on the main supply fully at the stop valve
Cold water only - neon light off	The main water supply is not turned on enough	Turn on the main supply fully at the stop valve
Water too cold - neon light on	The water flow rate is too high The inlet water temperature has dropped	Adjust the service valve (see page 7) Adjust the service valve (see page 7) For a shower, adjust the spray pattern available on the multi-mode handset
Water flow too low, or temperature too high	The main water supply is too low The hot tap is not fully open	Increase the supply water flow. Make sure that the service valve is correctly adjusted. Adjust the service valve so that the water is at the right temperature with the tap fully open (see page 7) Always turn the hot tap fully on.
Water goes from hot to cold	The water flow or pressure is too low, and the thermal cut-out is operating A second outlet has been turned on	Increase the supply water flow Make sure that the service valve is correctly adjusted Do not use the basin whilst using the shower
Shower spray pattern deteriorates	The shower handset is clogged	Clean the handset using a descaling solution if required (see page 9)

REDRING AFTER SALES SERVICE

We offer a technical advisory service on the telephone to installers and other customers with problems in the field.

RING 0844 372 7766 (UK ONLY) / RING YOUR LOCAL DEALER (Export Variants)

Remember to quote the exact type of unit, as written on the front of the unit and on this leaflet. The model and serial number are located on the bottom face of the unit.

Make a note of those numbers here, and be sure to quote them if you call for advice.

Model Number: _____ **Serial Number:** _____

Note: You may be charged for a service call if you do not have the serial number.

ADDITIONAL ACCESSORIES AND COMMON SPARE PARTS

Please Note:- The fitting of Spare Parts must be supervised by a suitably qualified person.

Chrome and White Shower Mixer Unit Complete with full accessories

Including 3 position multi-function handset

¼ turn lever control spray tap

For further details, including a comprehensive list off accessories and spare parts, contact Redring Sales Hotline 0844 372 7750

Catalogue No. 85-793620

Catalogue No. 85-793616

HOW TO USE YOUR POWERSTREAM

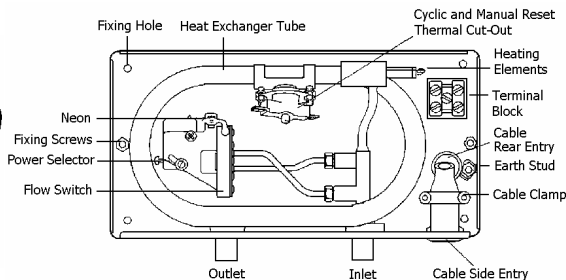
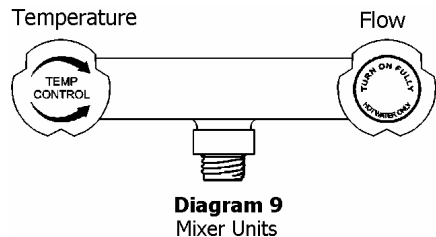
WARNING: DO NOT USE THE UNIT IF YOU THINK IT MAY BE FROZEN, AS THIS COULD RESULT IN SERIOUS DAMAGE TO THE UNIT. WAIT UNTIL YOU ARE SURE THAT IT HAS COMPLETELY THAWED OUT BEFORE YOU SWITCH ON.

Basin

- Check that the power is switched on at the mains isolator switch.
- Turn on the hot water tap **FULLY**. If you do not turn the tap on, you will find that the temperature of the water will vary. The hot water temperature will have been set using the service valve (diagram 5).
- If the unit has been used recently, run the water through for a few seconds to let the temperature settle down, we advise you **DO NOT** enter the water flow during this time.
WARNING: YOU MAY INITIALLY GET A SHORT BURST OF VERY HOT WATER FROM THE UNIT.
- If a second tap connected to the unit is also turned on, the hot water will be shared between the two and so the flow will drop.
- When you have finished do not switch off the power if you are going to use the unit again shortly.

Shower

- Check that the power is switched on at the mains local isolator switch.
- Turn on the hot (or “flow”) tap **FULLY** (diagram 9).
- If the unit has been used recently, run the water through for a few seconds to let the temperature settle down, we advise you **DO NOT** enter the water flow during this time.
WARNING: YOU MAY INITIALLY GET A SHORT BURST OF VERY HOT WATER FROM THE UNIT.
- Turn on the cold (or “temperature”) tap, if necessary, to adjust the temperature of the water.
- Make sure that no other outlets connected to the unit are used whilst you are in the shower, or the water flow will drop suddenly.
- When you have finished, do not switch off the power if you are going to use the unit again shortly.
- It is important to clean the shower spray plate regularly (see page 7).
- In order for the Powerstream to function correctly, the “Redring Mixer Kit” must be used. The kit, Cat No. 85-793605, comes complete with full accessories including a 3 position multi-function shower handset.



WARNING: ENSURE THAT THE MAINS WATER SUPPLY MEETS THE REQUIREMENTS LISTED ON PAGE 3 BEFORE CONTINUING WITH INSTALLATION.

WARNING: BEFORE CONNECTING THE PIPE WORK TO THE POWERSTREAM, ENSURE THAT THE PIPE WORK IS FULLY FLUSHED OUT.

Fitting the pipes

- The unit should be connected directly to the main cold water supply.
- We recommend that you use Ø15mm copper or stainless steel pipe for the inlet and outlet connections. (See addendum sheet for local installation requirements).
- Use PTFE tape for making screw joints. Do not use a jointing compound.
- Remember to keep the hot water pipe runs as short as possible.

In some cases, it may be worth fitting a second unit.

- If the unit is to supply more than one basin outlet, the head should be the same at each outlet if they are to be used at the same time. If not, one outlet will take all the water.
- When the pipework has been plumbed in, flush it through with water before you connect the unit, to remove any swarf or loose particles.

Connecting the unit to the pipes

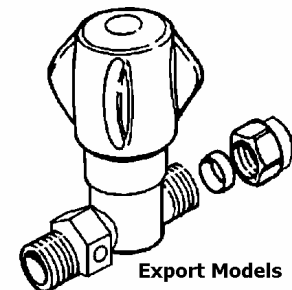
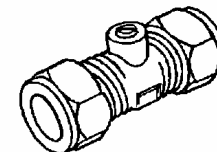
- Model 45-793270: See addendum sheet for local installation requirements.
- The inlet and outlet are clearly marked on the unit. Some models are fitted with ½” NPT connections. Other models have Ø15mm straight shank connections.
- The unit comes with a service valve (diagram 5) which should be fitted on the inlet of the unit. Models have either ½” NPT connections or Ø15mm straight shanks. Check your unit to see which applies. The valve can be used to turn off the water supply to the unit if it needs servicing, or to reduce the main supply flow if it is too high.

Fitting the attachments

- If the unit is to supply a shower, you will also need a “Redring Mixer Unit”. Available in chrome/white finish and suitable for surface or concealed pipe entry (see page 9 for details).
- If the unit is to supply a shower, and the shower handset can reach water in a bath or basin, you must fit a vacuum breaker to comply with Water By-laws. Vacuum breakers are available from our sales office (see page 9). Alternatively, use the hose-retaining feature built into the soapdish. Because water can sometimes seep through, you should position the vacuum breaker where dripping will not do any damage.
- If the unit is to supply a basin, we recommend that you use “¼ turn lever control spray taps” (see page 9 for details).

Diagram 5
Service Valve supplied with:

UK Models



MAKING THE ELECTRICAL CONNECTIONS

WARNING: THIS WATER HEATER MUST BE EARTHED.

The electrical installation must be in accordance with the current BS.7671 (IEE Wiring Regulations) and "Part P" of the Building Regulations and/or local regulations

Wiring to the mains (Check the unit rating to see which applies)

Rating	Fuse/MCB	Isolating Switch	Cable Size
9.5 kW	40 amps	40 amps	6 mm ² / 10 mm ² *
10.8 kW	45 amps	45 amps	10 mm ²
12 kW	50 amps	50 amps	10 mm ² /16mm ² *

* For cable runs over 10 metres or where cable is not flat clipped and surface mounted, the larger size is the minimum required.

A means for disconnection in all poles must be incorporated in the fixed wiring in accordance with the wiring rules.

If the unit is fitted in a Bathroom:

9.5 kW and 10.8 kW Powerstream: A standard 45 amp cord operated isolator switch is recommended.

12 kW Powerstream: A double pole 50 amp isolator switch is required.

This must be mounted out of reach of the shower cubicle or bath.
(A pull cord isolator switch is not available for this model)

Wiring the Powerstream

- The unit has been designed to accept up to 16mm² supply cable. It will be necessary to cut the rubber entry grommet (diagram 6, point X to X) to enable 10mm² and 16mm² to be correctly installed. No cutting is required for 6mm² cable. In all cases the outer sheath of the cable MUST project through the grommet (diagram 6), if side entry is used. This will prevent water getting into the unit.
- Strip back the insulation on the **LIVE** (brown or red) and **NEUTRAL** (blue or black) mains wires about 8mm. Strip back any insulation on the **EARTH** (green/yellow or green) about 20mm.
- Feed the cable through the side or rear entry grommets, as appropriate.
- Connect the cables to the terminal block and earth stud (diagram 6)
- Make sure that the live and neutral terminal block screws are tightened securely (1Nm minimum)
- Make sure that the earth wire is wrapped around its terminal stud and into the saddle washer. The nut should be tightened securely (2Nm minimum).

WARNING: FAILURE TO COMPLY WITH THESE INSTRUCTIONS COULD RESULT IN FAILURE OF THE TERMINAL BLOCK

- Check that the Power Selector Screw on the flow switch is set to "HI" (diagram 7). If flow switch is set to "LO" only one heater element will operate.
- Fit the front cover and tighten the retaining nuts.

Ensuring the earth continuity

- If the unit is fitted in a bathroom, to conform with the current BS.7671 (formally IEE regulations), the units earth continuity conductor must be effectively connected to **ALL** exposed metal parts of **ALL** other appliances in the room.

COMMISSIONING YOUR POWERSTREAM

CHECKING FOR LEAKS

- Let the water run through the unit for a few seconds. Check that no pipe joints leak.

ADJUSTING THE SERVICE VALVE

Turn the service valve on, then:-

- If the unit is to supply a basin,
 - turn on the hot water tap fully at the basin.
 - adjust the service valve until the water comes out of the tap at the required temperature.
 - check that the unit works correctly when the basin tap is closed and then opened again: if not, adjust the service valve slightly.
- If the unit is to supply a shower,
 - turn the hot water tap on the mixer unit fully on.
 - turn the service valve anti-clockwise until the neon light goes out, then turn it back until the neon just comes on.
 - check the water temperature at the handset and, if necessary, turn the cold tap on and adjust to get the desired shower temperature.

WARNING: YOU MUST REGULARLY INSPECT THE SHOWER HOSE FOR WEAR AND DAMAGE. REPLACE IF NECESSARY, OR EVERY TWO YEARS, WITH OUR APPROVED PART.

WARNING: IN ORDER TO MAINTAIN THE PERFORMANCE OF YOUR SHOWER, YOU MUST CLEAN THE SHOWER HANDSET REGULARLY.

All water contains particles of lime-scale, which build up in the shower handset and unit reducing the performance.

It is therefore important to clean the shower handset by simply rubbing the rubber nozzles, or soaking in proprietary lime-scale remover and rinsing thoroughly before use. The frequency of this will depend on water hardness and experience.

Explain to the user that when the unit is used, the hot water tap should be turned fully on so that the unit will operate correctly.

Diagram 6
Cable termination

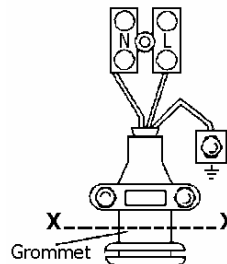


Diagram 7
Power selector screw

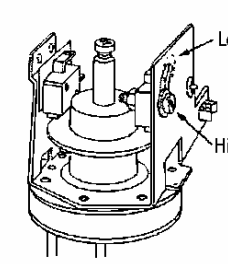


Diagram 8
Wiring Diagram

