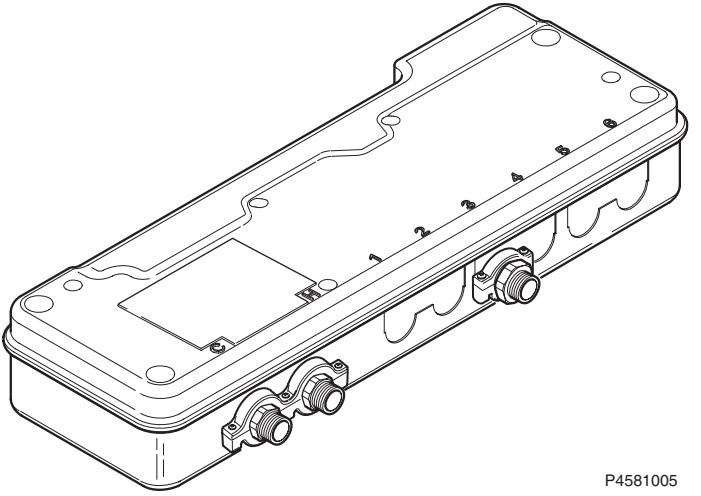


P4581005

Mira Digital Mixer (DM)

Installation and User Guide

IMPORTANT!

Installer: This manual is the property of the customer and must be retained with the product for maintenance and operational purposes.

CONTENTS

INTRODUCTION

Thank you for purchasing a quality Mira product. To enjoy the full potential of your new product, please take time to read this guide thoroughly and keep it handy for future reference.

The Digital Mixer (DM) is designed to be used with the Mira Magna water delivery system.

Products Covered By This Guide

Mira Digital Mixer

Mira Digital Mixer, Pumped Version.

Recommended Usage	
Domestic	✓
Light Commercial	✓
Heavy Commercial	×
Healthcare	×

P3953260

Note! This product is not suitable for areas of very high humidity (i.e. Steam rooms). Contact your installer for more advice.

Please read this Installation and User Guide in conjunction with the Mira Magna Water Delivery System Installation and User Guide.

IMPORTANT SAFETY INFORMATION

Please read all of these instructions and retain this guide for later use.

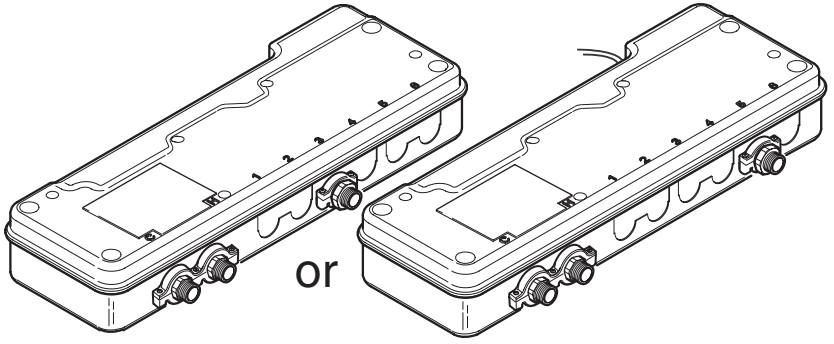
1. Please pass on this guide in the event of change of ownership of the installation site.
2. Follow all warnings, cautions and instructions contained in this guide, and on the appliance.
3. Make sure you know how to isolate the water and electricity supply.
4. The electrical installation must comply with the "Requirements For Electrical Installations" (refer to section 7) commonly referred to as the IEE Wiring Regulations, or any particular regulations and practices, specified by the local electricity supply company in force at the time of installation. The installation should be carried out by an electrician or contractor who is registered, or is a member of, an association such as:
   - National Inspection Council for Electrical Installation and Contracting (NICEIC), throughout the UK.
   - The Electrical Contractors Association (ECA), England and Wales.
   - The Electrical Contractors Association of Scotland (ECAS).
5. The installation must comply with relevant building regulations and water regulations. The installation should be carried out by a plumber or contractor who is registered, or is a member of, an association such as:
   - Institute of Plumbing (IOP), throughout the UK.
   - National Association of Plumbing, Heating and Mechanical Services Contractors (NAPH & MSC), England and Wales.
   - Scottish and Northern Ireland Plumbing Employers' Federation (SNIPEF), Scotland and Northern Ireland.
6. The installation should be carried out by a competent installer who is familiar with electrical and plumbing systems (refer to **INSTALLATION INSTRUCTIONS** for further details).
7. The Digital Mixer (DM) must not be exposed to freezing conditions. If the shower is to be left for long periods of time (e.g. holiday) **we would recommend that supplies to the shower are isolated**.

8. **DO NOT** fit any form of outlet flow restriction (trigger handset). Use only Mira recommended fittings.
9. If any of the following conditions occur, isolate the electricity and water supplies and refer to **"To contact us",** on the back page of this guide.
    - If the cover is not correctly fitted and water has entered the appliance case.
    - If the case is damaged.
    - If the appliance begins to make an odd noise, smell or smoke.
    - If the appliance shows signs of a distinct change in performance, indicating a need for maintenance.
    - **DO NOT** operate this appliance if water leaks from this appliance.
    - **DO NOT** operate this appliance if it is frozen. If suspected of being frozen, isolate and contact us for advice.

Safety Information for Pumped Version Only

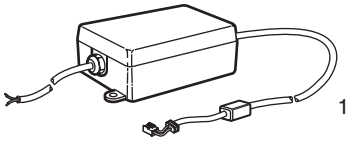
10. **DO NOT** connect the Digital Mixer to a mains-fed water supply. Such a connection will damage the Digital Mixer, and is not covered under the manufacturer's guarantee.
11. **DO NOT** allow the Digital Mixer to be run dry.
12. Mains connections are exposed when the cover is removed.
13. Moving parts are exposed when the cover is removed.
14. Do not turn on the electrical supply until the plumbing has been completed.

PACK CONTENTS CHECKLIST



1 x Digital Mixer (DM) ❑

1 x Digital Mixer (DM) ❑
(Pumped Version)



1 x Power Supply Unit (PSU) ❑

4 x Wall Plugs ❑

4 x Fixing Screws ❑

6 x Rubber Feet ❑

1 x Light Green Flow Reg ❑

1 x Dark Green Flow Reg ❑

2 x Fixing Screws ❑

2 x Wall Plugs ❑

1 x Installation and User Guide ❑
1 x Installation Template (marked on packaging) ❑
1 x Customer Support Brochure ❑

P4581050

SPECIFICATIONS

Standards and Approvals

The Mira Digital Mixer (DM) complies with all the relevant directives for CE marking.

The Mira DM is a type 1 electronic, independently mounted control for surface mounting.

General

Pollution Degree	3
Rated Impulse Voltage	Mains Supply - 2.5 kW 12 Vdc supply to valve - 500V
Suitable for Drinking	Not suitable
Connections	15 mm Compression

Mira Digital Mixer High Pressure

Pressures	
Maximum Static Pressure	1000 kPa (10 bar)
Maximum Maintained Pressure	500 kPa (5 bar)
Minimum Maintained Pressure	50 kPa (0.5 bar)
Supply Pressure Differential	Nominally equal
Temperatures	
Minimum Temperature (factory pre-set)	45°C

Maximum Temperature (settable range)	39°C - 48°C
Minimum Temperature	Thermostatic control down to 30°C (2 on dial) Full cold also selectable (1 on dial)
Hot Water Range	50°C - 65°C
Cold Water Range	1°C - 20°C
Temperature Stability	±1°C at recommended supply conditions
Ambient Temperature	1°C - 40°C
Maximum Relative Humidity	95% non-condensing
Flow Rates and Times	
Nominal Flow Rates (will vary depending on spray mode) Low Medium High	- - 7 l/m 12 l/m 18 l/m
Pause Mode Timer	5 minutes
Electrical	
Supply Voltage	100 - 240V RMS, 50 - 60Hz
Maximum Load	35 W at 12 VDC

Mira Digital Mixer Pumped

Pressures	
Maximum Static Pressure	100 kPa (1 bar)

Maximum Maintained Pressure	100 kPa (1 bar)
Minimum Maintained Pressure	1 kPa (0.01 bar)
Supply Pressure Differential	Nominally equal
Temperatures	
Minimum Temperature (factory pre-set)	45°C
Maximum Temperature (settable range)	39°C - 48°C
Minimum Temperature	Thermostatic control down to 30°C (2 on dial) Full cold also selectable (1 on dial)
Hot Water Range	50°C - 65°C
Cold Water Range	1°C - 20°C
Temperature Stability	±1°C at recommended supply conditions
Ambient Temperature	1°C - 40°C
Maximum Relative Humidity	95% non-condensing
Flow Rates and Times	
Nominal Flow Rates (will vary depending on spray mode) Low Medium High	- - 9 l/m 12 l/m 16 l/m
Pause Mode Timer	5 minutes
Electrical	
Supply Voltage	230 V ± 10%, RMS 50Hz

Maximum Load	200 W at 230V AC
Duty Cycle	15 min ON/45 min OFF

INSTALLATION

General

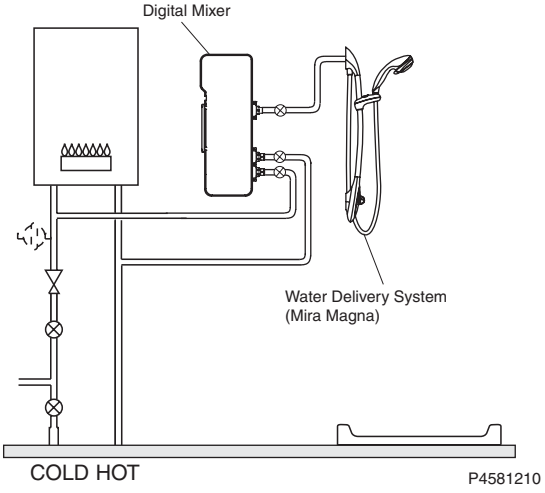
The installation must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.

The installation must comply with any particular regulations and practices, specified by the local water supply regulations.

The product may be installed in a loft space, under the bath or in a convenient cupboard space providing there is enough room for maintenance.

Caution! The DM (Digital Mixer) and the PSU (Power Supply Unit) must be installed in a dry area where it will not freeze.

Typical Suitable Installations



Instantaneous multipoint water heaters and combination boilers

The shower **MUST** be installed with a multipoint gas water heater or combination boiler of a **fully modulating design** (i.e. where the water draw-off rate indirectly controls the gas flow rate to the burner).

An expansion vessel **MUST** be fitted (and regularly maintained) if any form of backflow prevention device is fitted, e.g. non-return valve, PRV. This will ensure that excess expansion or pulse pressures do not damage the product or the plumbing system. The expansion vessel may already be fitted within the boiler (check with the manufacturer) and is in addition to the normally larger central heating expansion vessel.

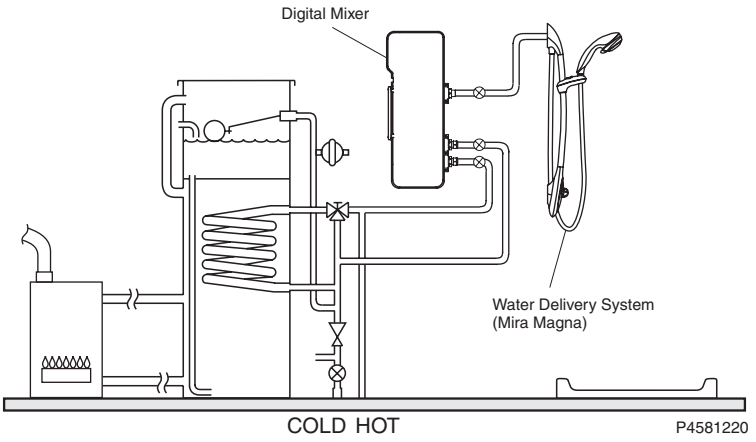
Use of Flow Regulators with Combination Boilers

The Mira Digital Mixer can demand more hot water than some instantaneous water heaters/combination boilers can heat, especially in winter when the mains water is colder. A flow regulator may need to be used to ensure that the Digital Mixer can deliver a full range of water temperatures. The table indicates the flow regulator to be fitted in the hot water inlet of the Mira Digital Mixer.

Boiler Rating	**24 kW (80,000 Btu/h)**	**30 kW (100,000 Btu/h)**	**36 kW (120,000 Btu/h)**
Flow Regulator	7.3 litres/min	8.5 litres/min	Not Required
Colour	Dark Green	Light Green	

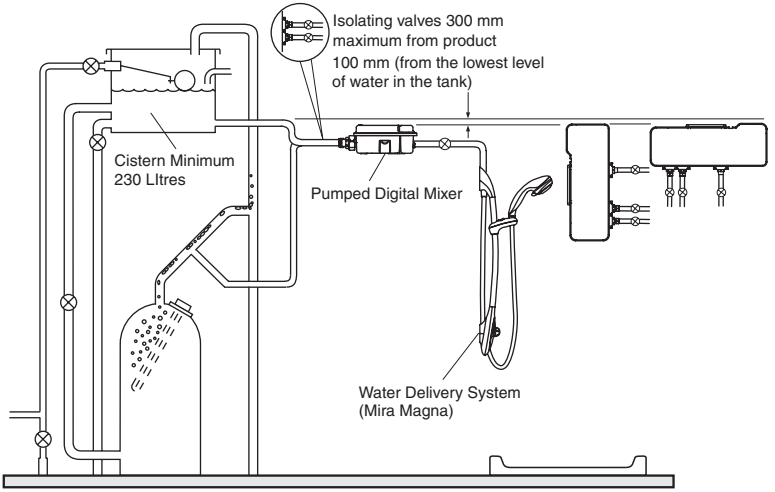
Use of warm-up feature with Combination Boilers

When using the warm-up feature with the Mira DM supplied via a instantaneous water heater/combination boiler the user may experience a brief temperature fluctuation. This is caused by the usual operation of a standard instantaneous water heater/combination boiler whereby the boiler will turn off when the flow is stopped (as happens after the warm-up sequence has been completed). Upon restart of the Mira DM a cold shot will be flushed through followed by a brief hot shot until the hot water supply is stabilised.



Mains pressurised instantaneous hot water shower, heated from a thermal store

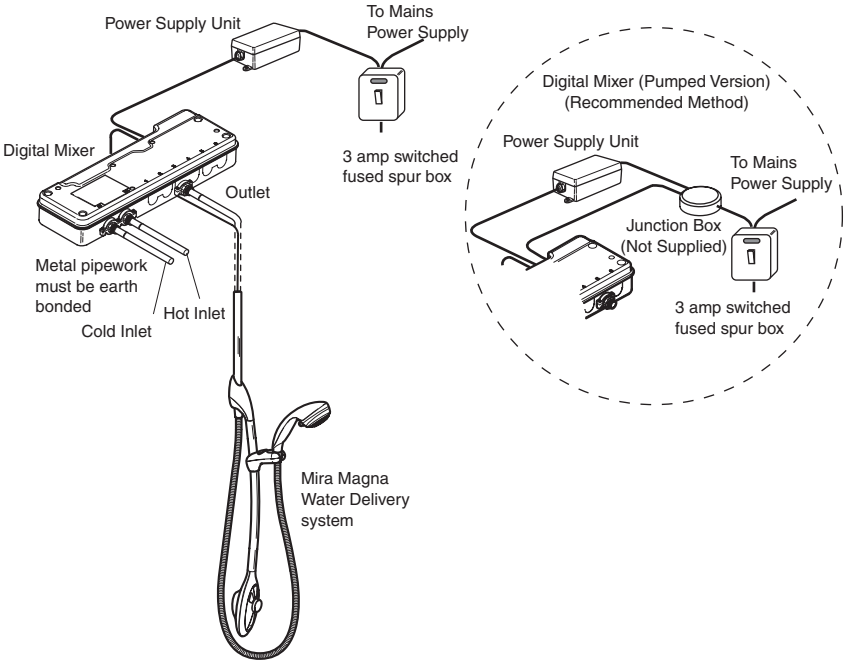
Packages of this type, fitted with a tempering valve can be used. A drop type pressure reducing valve **MUST** be fitted (and regularly maintained) if any form of backflow prevention device is fitted, e.g. non-return valve, PRV. This will ensure that excess expansion or pulse pressures do not damage the product or the plumbing system. The expansion vessel may already be fitted externally or internally within the thermal store (check with thermal store manufacturer).



Gravity fed showers

The shower control **MUST** be fed from a **cold water storage cistern and a hot water cylinder** providing nominally equal pressures.

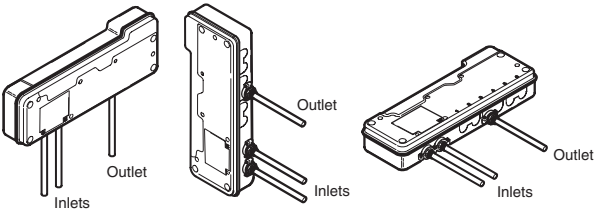
Pipework layouts and connections must be such that other draw-offs will not effect water supplies to the shower. It is therefore best practise to have independent hot and cold supplies to the pumped version of the Mira Magna digital mixer.



Installation Schematic P4581160

1. A separate, permanently connected supply must be taken from the consumer unit to the appliance through a double-pole switch, which has at least 3mm contact separation. The switch can be a ceiling mounted pull-cord type within the shower room or a wall mounted switch in an adjacent room.
2. Inlet and outlet isolating valves **must** be installed close to the Digital Mixer for ease of maintenance (recommended maximum 300 mm from the product on the inlets).
3. The use of supply-line or zone strainers will reduce the need to remove debris at the mixing valve point. The recommended maximum mesh aperture dimension for such strainers is 0.5 mm.
4. Pipework must be rigidly supported to avoid any strain on the connections.

5. Pipework dead-legs should be kept to a minimum.
6. Supply pipework layout should be arranged to minimise the effect of other outlet usage upon the dynamic pressures at the mixing valve inlets.
7. Inlet and outlet threaded joint connections should be made with PTFE tape or liquid sealant. Do not use oil-based, non-setting joint compounds.
8. To eliminate pipe debris it is essential that supply pipes are thoroughly flushed through before connection to the Mira Magna and to the Digital Mixer.



Mounting on a Vertical Surface

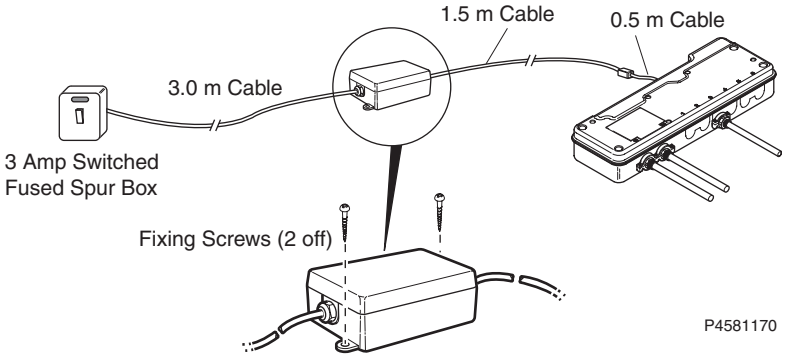
Mounting on a Horizontal Surface

P4581110

9. The Digital Mixer (which contains the thermostatic mixing valve) may **only** be orientated in the positions shown when mounted on a vertical surface. The Digital Mixer can also be mounted on top of a horizontal surface in any orientation. Failure to do so will compromise the ability of the unit to fail-safe and deliver constant blend.
10. The maximum duty cycle of the Digital Mixer (Pumped Version) is 15 minutes on, 45 minutes off).
11. Maximum hot water range 50°C - 65°.
12. This appliance is intended for permanent connection to the fixed electrical wiring using only Kohler Mira approved PSU (463.83) and mains cord (1503.646). All external connection leads must be secured adjacent to the unit.
13. If the supply cords are damaged, they must be replaced by the manufacturer or a service engineer.

Power Supply Unit (PSU)

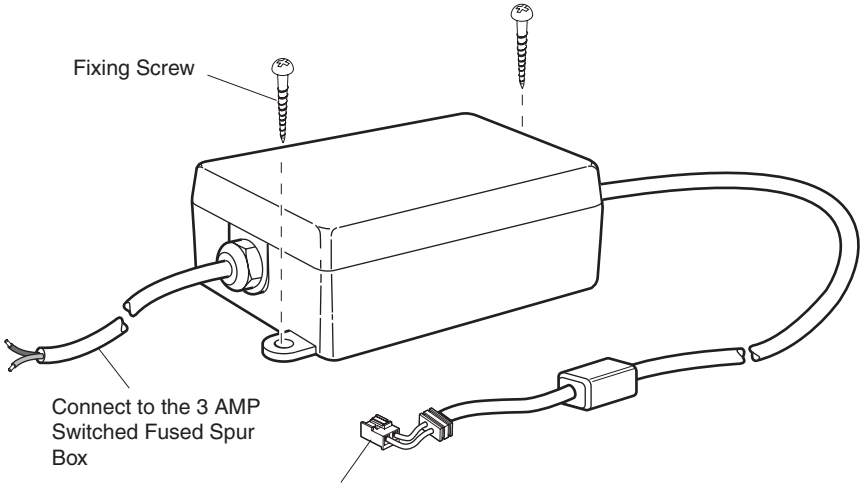
Warning! Turn off the electrical and water supplies before proceeding with the installation of the PSU. The electricity must be turned off at the mains and the appropriate circuit fuse removed, if applicable.



The Power Supply Unit (PSU) can be installed a maximum of 1.5 metres away from the Digital Mixer. A cable from the PSU connects to the Digital Mixer.

The PSU must be connected to a 3 amp switched fused spur box. The spur box can be positioned a maximum distance of 3 metres away from the PSU.

For the Pumped Digital Mixer It is recommended that both Power Supply cables from the Digital Mixer are connected to the 3 amp switched fuse spur box via a separate junction box (not supplied). Refer to page 13.



1. Put the PSU in the required position and mark the positions of the fixing holes.
2. Drill and plug the fixing holes.

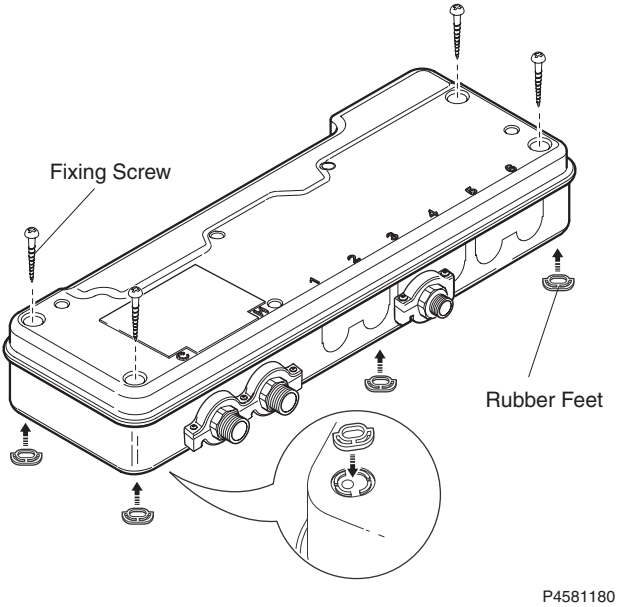
Note! Installers may wish to obtain alternative proprietary cavity fixings, when installing onto a dry lined, stud partition, shower cubicle or laminated panel wall structures. However, these methods of fixing are beyond the scope of this guide.

3. Secure the PSU in position with the fixing screws (supplied).

Digital Mixer (DM)

Warning! Turn off the electrical and water supplies before proceeding with the installation of the Digital Mixer. The electricity must be turned off at the mains and the appropriate circuit fuse removed, if applicable.

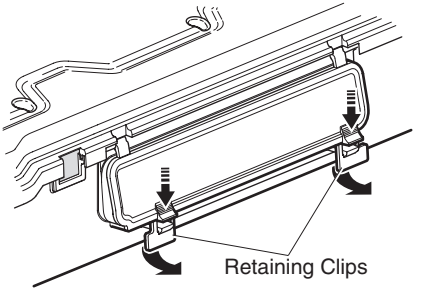
1. Use the installation template (supplied) to mark the positions of the fixing holes in the required position.



2. Drill and plug the fixing holes.

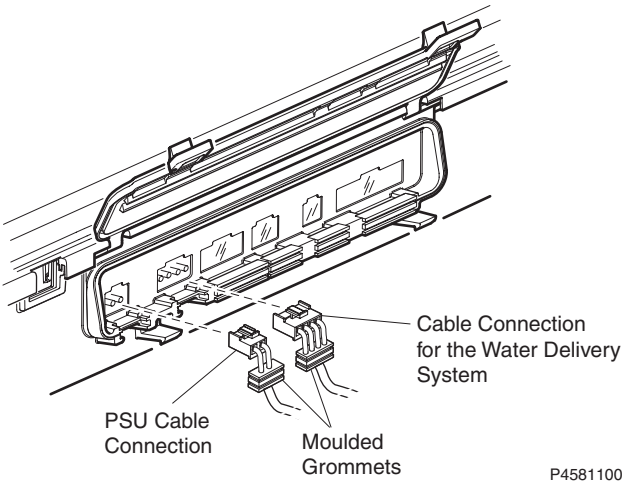
Note! Installers may wish to obtain alternative proprietary cavity fixings, when installing onto a dry lined, stud partition, shower cubicle or laminated panel wall structures. However, these methods of fixing are beyond the scope of this guide.

3. Make sure that the rubber feet (6 off) are located on the bottom of the digital mixer (fixed or glued at manufacture and must not be removed).
4. Secure the Digital Mixer in position with the fixing screws (supplied).



P4581090

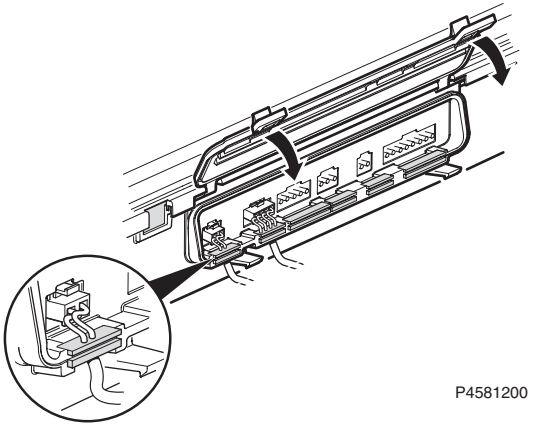
5. Press down on the electrical compartment cover lugs to release the retaining clips.
6. Swing the cover up.



P4581100

7. Connect the cable from the PSU to the Digital Mixer.

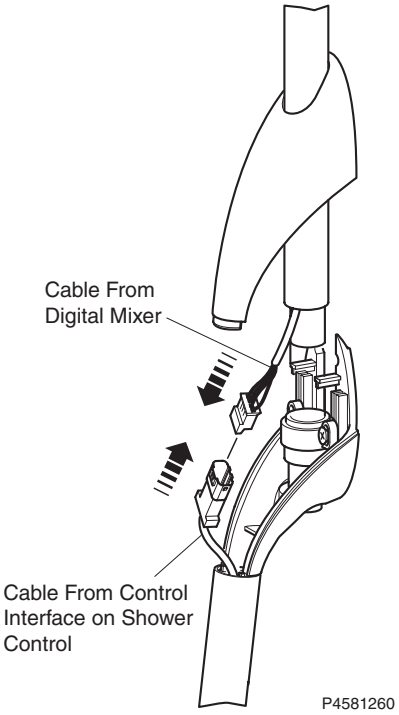
8. Position the moulded grommet on the PSU cable into the slot of the electrical connection compartment.
9. Connect the cable connection from the water delivery system to the Digital Mixer.
10. Position the moulded grommet on the cable connection into the slot of the electrical connection compartment.
11. Close the hinged cover of the electrical connection compartment and make sure that the cover is secure.



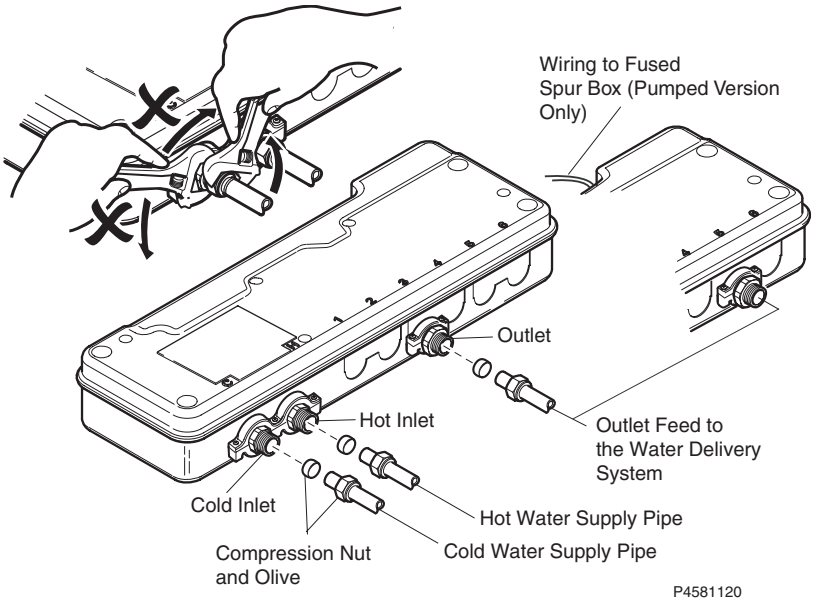
P4581200

Note! If necessary, carefully push the wires between the grommet and connector to one side to allow the cover to be secured correctly.

Note! Make sure that the seal on the hinged cover and the moulded grommets are secure.



12. Connect the cable from the water delivery system to the cable from the Digital Mixer.
13. **For the Pumped Digital Mixer** connect the cable from the pump in the Digital Mixer to the 3 amp fused spur (refer to page 13).



14. Make sure that all the pipework is flushed before connecting the Digital Mixer using the adjacent isolating valves. Connect the digital mixer to the water delivery system.

Caution! The cold inlet connection on the Digital Mixer must be held securely when the cold water supply pipe is being tightened.

15. Connect the cold water supply pipe to the Digital Mixer.

Caution! The hot inlet connection on the Digital Mixer must be held securely when the hot water supply pipe is being tightened.

16. Connect the hot water supply pipe to the Digital Mixer.

Caution! The outlet connection on the Digital Mixer must be held securely when the outlet supply pipe is being tightened.

17. Connect the outlet water pipe to the Digital Mixer.
18. Restore the water supplies.

19. Check that there are no leaks.
20. Restore the power supply.

OPERATION

Refer to the Installation and User guide supplied with the Mira Magna Water Delivery System on how to Operate the unit.

COMMISSIONING

Refer to the Installation and User guide supplied with the Mira Magna Water Delivery System on how to Commission the installation.

For the Pumped Version Remove the handset and lower the end of the hose into the bath. Let the product run in order to prime.

For long pipe runs allow extra time for priming (up to 3 to 4 minutes).

FAULT DIAGNOSIS

Read the section **"Important Safety Information"** first.

The Digital Mixer is one part of an entire plumbing system. The fitting of a pump places additional requirements on the plumbing system. Some systems may require plumbing modifications to allow them to cope with higher flow rates.

Providing the Digital Mixer has been correctly installed and is operated in accordance with the instructions contained in this guide, difficulties should not arise. If any maintenance is required then it must be carried out by a competent tradesperson. Before replacing any parts make sure that the underlying cause of the malfunction has been resolved.

Warning! There are no user serviceable components beneath the cover of the appliance. Only a competent tradesperson should remove the cover.

Note! This is not an extensive list of faults, if you find a fault that is not listed below, please contact us for assistance.

Most faults can be rectified by checking the following:

1. Ensure the water supply has not been interrupted. The main stopcock and shower isolating valves should be fully open.

Symptoms	Probable Cause	Possible Remedy
User Interface not illuminated.	The power supply has been disabled.	Check and rectify.
	Electrical connections to/from the Digital Mixer have been disturbed.	Check and make sure connections are secure.
No flow from the Digital Mixer outlet.	The inlet/outlet fittings may be blocked.	Check and clean the inlet strainers.
	Hot or cold water supply failure.	Reinstate the hot and cold water supplies.
Only cold water from outlet.	The hot water inlet may be blocked.	Check and clean the inlet strainers.
	Hot water supply failure.	Reinstate the hot water supply.
Fluctuating or reduced flow rate.	The inlet/outlet fittings may be blocked.	Check and clean the inlet strainers.
	Water pressure is low.	Check the flow rate is above the stated minimum (refer to Specification).
	Fluctuating flow.	Make sure that the dynamic inlet pressures are within specification.
	Fluctuating water temperature.	Make sure that the inlet temperature differentials are sufficient.
Maximum blend temperature setting too hot or too cool.	Incorrect maximum temperature setting.	Refer to Commissioning in the Installation and User Guide for the Water Delivery System.

(Continued)

P4581030

Symptoms	Probable Cause	Possible Remedy
Continuous flow.	System will not switch off.	Isolate power supply/ water supply and contact Kohler Mira Limited.
Water leaking from the Digital Mixer.	Seals worn or damaged. Internal leakage.	Obtain Service Pack and renew all seals. Digital Mixer requires servicing. Contact Kohler Mira Limited.
Shower runs for a short time (30 - 60 seconds) then flow reduces, splutters or stops. Aggravated when other hot taps are in use. Less evident on full cold.	Air is being sucked down the vent pipe, as the hot take off to the shower is too high up the pipe.	Refer to plumbing system diagrams in the section "Installation" for correct connection method. Note the 100 mm take-off dimension. Consider increasing cold feed pipe to cylinder to 28 mm diameter.
Shower runs cool after a short time (1 - 2 minutes) then flow splutters.	Air ingress into hot pipework.	Refer to plumbing system diagrams in the section "Installation" for correct connection method.
Flow of water virtually stops and surges on/off after a few minutes.	Insufficient storage of cold water in cistern (230 litres recommend-ed).	Increase storage of cold water.
Shower runs cold after 5 - 10 minutes.	Insufficient storage of hot water in cylinder.	Increase storage of hot water.

P4581040

Symptoms	Probable Cause	Possible Remedy
Shower temperature affected by use of adjacent hot/cold tap.	Insufficiently sized pipe-work for both systems to be used together.	Increase pipe sizes or seperately feed shower. Refer to plumbing system diagrams in the section "Installation" for correct connection method.
Pump does not operate.	Electrical supply failure. Pump PCB failure. Motor overheated, thermal switch operated.	Check power supply. Renew the PCB. If the thermal switch operates repeatedely contact Customer Services for advice.
Pump does not stop.	PCB failure.	Renew the PCB.
Low or no water flow.	Isolating valves closed. Inlet filters blocked. Check valve fitted incorrectly. Appliance sited above cold water storage cistern. Plumbing system fault (airlock). Blocked spray plate.	Open valves. Clean filters. Refer to Maintenance - Checkvalve Cartridges. The appliance is not suitable for negative head installations. Refer to plumbing system diagrams. Reroute pipework to avoid airlock. Clean sprayplate.

P4581270

MAINTENANCE

General

Read the section **"Important Safety Information"** first.

If any maintenance is required then it must be carried out by a competent tradeperson for whom the maintenance instructions are provided. Before replacing any parts ensure that the underlying cause of the malfunction has been resolved.

Warning! There are no user serviceable components beneath the cover of the appliance. Only a competent tradesperson should remove the cover.

Cleaning

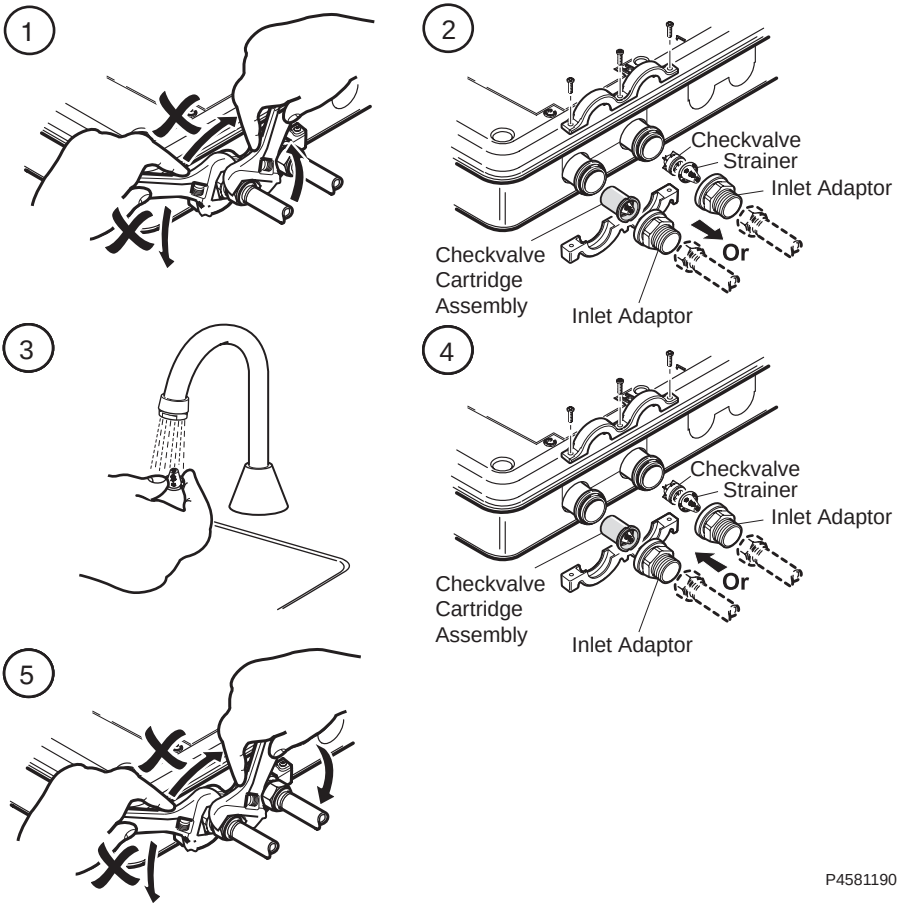
Many household cleaners contain abrasives and chemical substances, and should not be used for cleaning plated or plastic fittings. These finishes should be cleaned with a mild washing up detergent or soap solution, and then wiped dry using a soft cloth.

Checkvalve Cartridges - Removal and Installation

Hot water entering the cold supply, or vice versa, indicates that immediate attention is necessary. This is carried out by removing and cleaning, or renewing as necessary, the checkvalve cartridges.

1. Isolate the water supply to the Digital Mixer, and open an outlet fitting to release pressure and to assist the draining of residual water.
2. Isolate the electrical supply.

Note! Some valves do not have checkvalve cartridge assemblies fitted, only checkvalve and strainers fitted.



3. The checkvalve cartridge assembly may be removed for cleaning. Inlet strainers can be flushed through under a jet of water to remove any lodged particles.

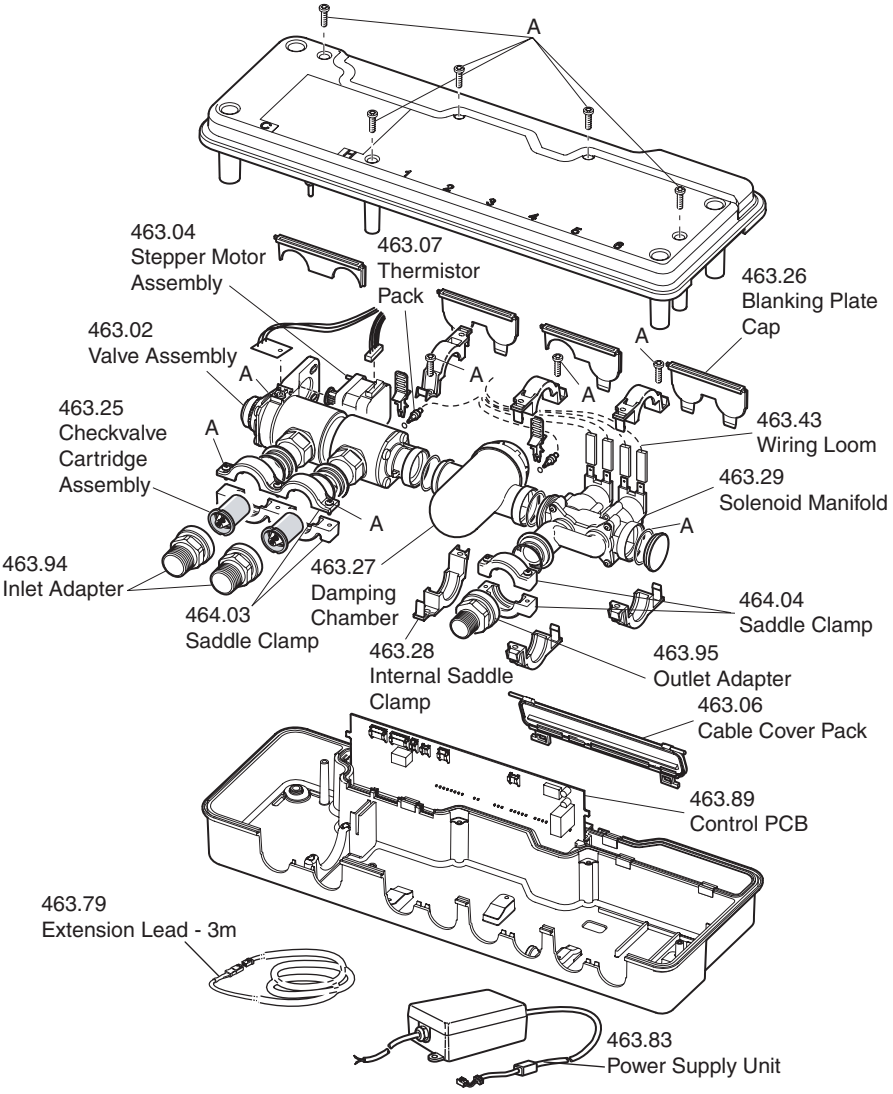
   Lightly wipe external seals of the new checkvalve with a **silicone-only based lubricant** to assist in refitting.

Note! The checkvalve cartridge is not a serviceable item, so any apparent wear or damage will require its renewal.

4. **Do not overtighten** when re-fitting checkvalve cartridges. Restore the water and power supplies and check for leaks.

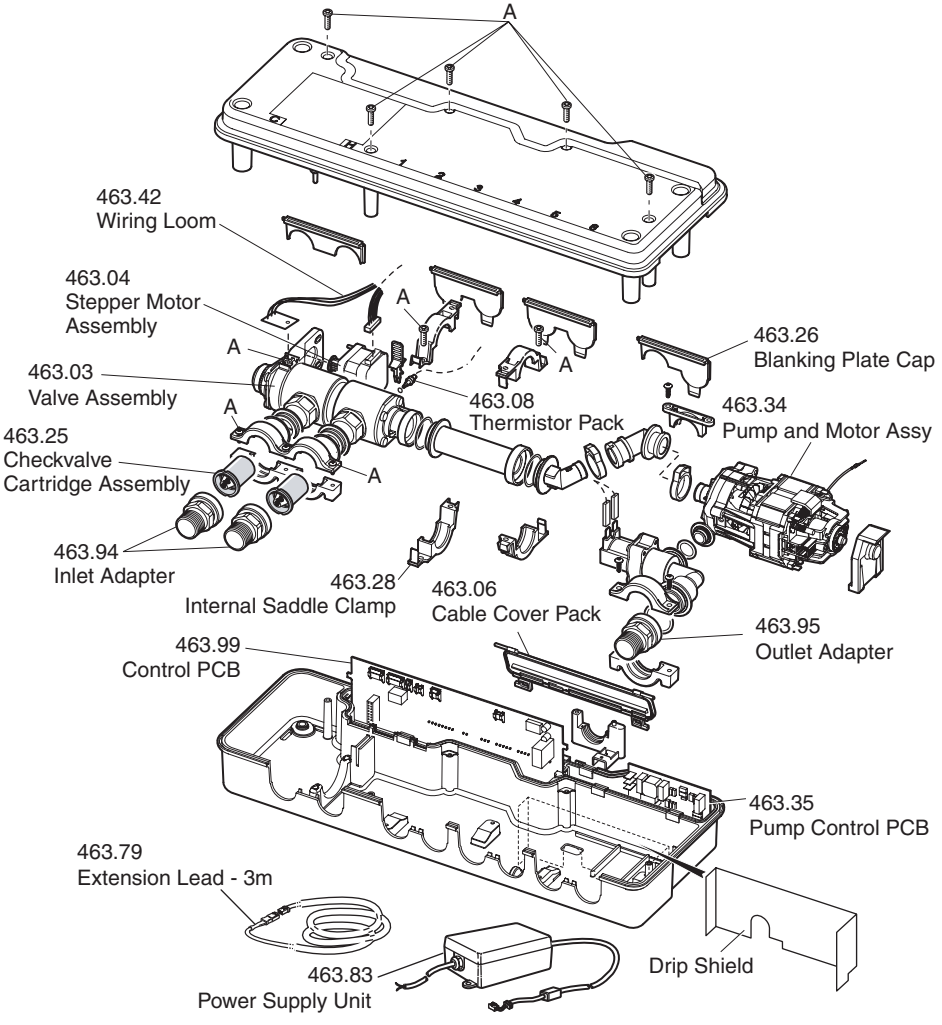
SPARE PARTS

Mira Digital Mixer Spare Parts Diagram



463.05 Seal and Screw - Components Identified 'A'

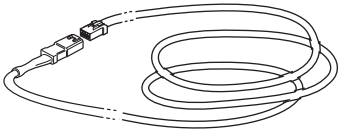
P4581240



463.05 Seal and Screw - Components Identified 'A'

P4581250

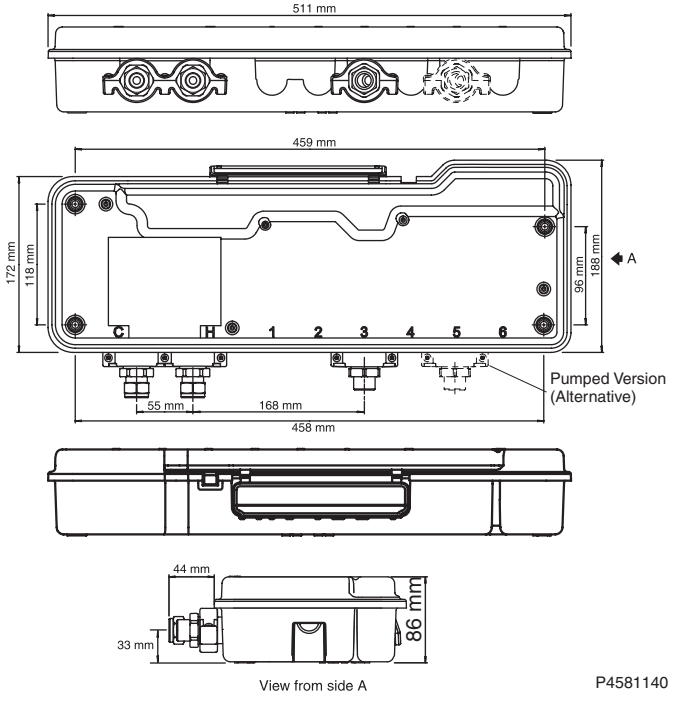
ACCESSORIES



P4581130a

Extension Lead Additional 3 metre extension lead for connection of the water delivery system to the Digital Mixer.

DIMENSIONS



CUSTOMER SERVICE

Guarantee of Quality

Mira Showers guarantee your product against any defect of materials or workmanship for the period shown in the Guarantee Registration Document included with your shower. Alternatively, to confirm the applicable guarantee period please contact Customer Services.

To validate the guarantee, please return your completed registration card.

Within the guarantee period we will resolve defects, free of charge, by repairing or replacing parts or modules as we may choose.

To be free of charge, service work must only be undertaken by Mira Showers or our approved agents in Northern Ireland and Republic of Ireland.

Service under this guarantee does not affect the expiry date. The guarantee on any exchanged parts or product ends when the normal product guarantee period expires. Not covered by this guarantee:
Damage or defects arising from incorrect installation, improper use or lack of maintenance, including build-up of limescale.
Damage or defects if the product is taken apart, repaired or modified by any person not authorised by Mira Showers or our approved agents.

This guarantee is in addition to your statutory and other legal rights.

Before using your shower

Please take the time to read and understand the operating and safety instructions detailed in this manual.

What to do if something goes wrong

If when you first use your shower it doesn't function correctly, first contact your installer to check that installation and commissioning are satisfactory and in accordance with the instructions in this manual. We are on-hand to offer you or your installer any advice you may need.

Should this not resolve the difficulty, simply contact our Customer Services who will give every assistance, and if necessary arrange for our service engineer to visit. If later the performance of your shower declines, consult this manual to see whether simple home maintenance is required.

Please call our Customer Services to talk the difficulty through, request service under guarantee if applicable, or take advantage of our comprehensive After-Sales service.

As part of our quality and training programme calls may be recorded or monitored.

After Sales Service

Our Customer Services Team is comprehensively trained to provide every assistance you may need: help and advice, spare parts or a service visit.

Spare Parts

We maintain an extensive stock of spares, and aim to have functional parts available for ten years from the date of final manufacture of the product.

Spares can be purchased from approved stockists or merchants (locations on request) or direct from Customer Services.

Spares direct will normally be despatched within two working days. Payment can be made by Visa or Mastercard at the time of ordering. Should payment by cheque be preferred a pro-forma invoice will be sent.

Note! In the interests of safety, spares requiring exposure to mains voltages can only be sent to competent persons.

Service

Our Service Force is available to provide a quality service at a reasonable cost. You will have the assurance of a Mira trained engineer/agent, genuine Mira spares – and a 12 month guarantee on the repair.

Payment should be made directly to the Service Engineer/Agent, using Visa, Mastercard or a cheque supported by a banker's card.

To contact us:

England, Scotland & Wales

Mira Showers Customer Services

Telephone: 0870 2410888

8.30am to 5pm Working days (4.30pm Fri)

8.30am to 12.30pm Saturday

E-mail: Mira_technical@mirashowers.com

Fax: 01242 282595

By Post:

Cromwell Road, Cheltenham, Gloucester GL52 5EP

For Customers in Northern Ireland

Wm H Leech & Son Ltd

Telephone: 028 9044 9257 — Mon to Fri 9am-5pm

Fax: 028 9044 9234 — 24 hours

By Post:

Maryland Industrial Estate, Ballygowan Road, Moneyreagh, Co Down BT23 6BL

For Customers in Republic of Ireland

Modern Plant Ltd

Telephone: Dublin 01 4591344 — Mon to Fri 9am to 5pm

Fax: Dublin 01 4592329 — 24 hours

By Post: Otter House, Naas Road, Clondalkin, Dublin 22

Mira Showers
Kohler Mira Ltd
Cromwell Road,
Cheltenham GL52 5EP.