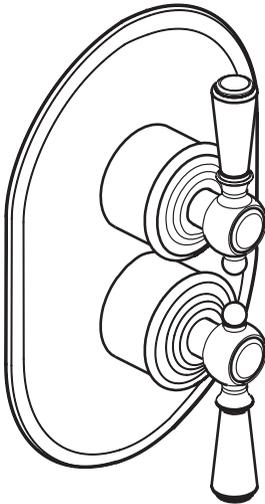
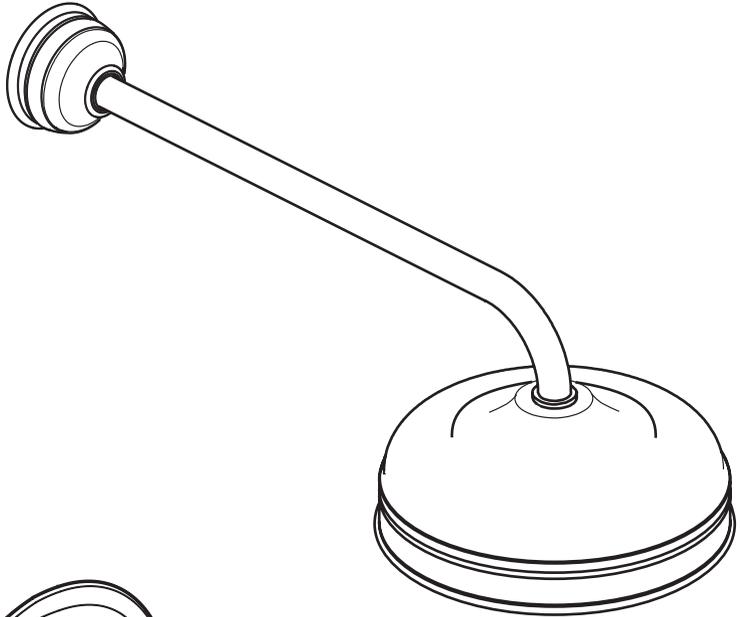


mira

Crescent



SHOWER CONTROL

Installation

Operation &

Maintenance Guide

THESE INSTRUCTIONS ARE TO BE LEFT WITH THE USER

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SAFETY : WARNINGS

The function of this thermostatic mixing valve is to deliver water consistently at a safe temperature. This requires that:

1. It is installed, commissioned, operated and maintained in accordance with the recommendations given in this Manual.
2. Periodic attention is given, as necessary, to maintain the product in good functional order. Recommended guidelines are given in the **MAINTENANCE** section.
3. Continued use of this product in conditions outside the specification limits given in this Manual can present potential risk to users.

ADVICE

The use of the word 'failsafe' to describe the function of a thermostatic mixing valve is both incorrect and misleading. In keeping with every other mechanism it cannot be considered as being functionally infallible.

Provided that the thermostatic mixing valve is installed, commissioned, operated within the specification limits and maintained according to this Manual, the risk of malfunction, if not eliminated, is considerably reduced.

Malfunction of thermostatic mixing valves is almost always progressive in nature and will be detected by the use of proper temperature checking and maintenance routines.

Certain types of system can result in the thermostatic mixing valve having excessive 'dead-legs' of pipework. Others allow an auxiliary cold water supply to be added to the mixed water from the mixing valve. Such systems can disguise the onset of thermostatic mixing valve malfunction.

Ultimately, the user or attendant must exercise due diligence to ensure that the delivery of warm water is at a stable, safe temperature. This is particularly important in such healthcare procedures as supervised bathing of patients unable to respond immediately to unsafe temperatures.

INTRODUCTION

The Mira Crescent Thermostatic mixing valves are specified to meet the highest standards of safety, comfort and economy as demanded by todays users. The Mira Crescent is designed, manufactured and supported in accordance with accredited BS EN ISO 9001:1994 Quality Systems.

This Manual covers all Mira Crescent Thermostatic mixing valves manufactured from May 2001.

DESCRIPTION

The Mira Crescent thermostatic shower is a built-in shower control with a fixed spray head suitable for connection to concealed pipework. The Mira Crescent provides accurate temperature and flow control for single-point installations.

The shower control incorporates a unique sealed-for-life thermostatic cartridge, utilising proven durability high-technology materials, for extended service-free reliability. This cartridge employs an advanced 2nd generation 'thermoscopic' temperature sensor to provide water at safe, accurate temperatures for showering or similar applications.

Also incorporated is a sealed-for-life flow cartridge, utilising ceramic technology to provide durable and positive control of flow. The shower control inlets are fitted with strainers and checkvalves, housed within readily-accessible cartridges for easy maintenance.

PACK CONTENTS

Tick the appropriate boxes to familiarize yourself with the part names and to confirm that the parts are included.

1 x Valve Body

1 x Rigid Arm and Backplate Assembly

1 x Building-in Shroud

1 x 6" Deluge head

OR

1 x 8" Deluge head

1 x Support Bracket

1 x Foam Seal

1 x Outer Seal

3 x Compression Nuts

3 x Olives

4 x Countersunk Fixing Screws

4 x Wall Plugs

4 x Countersunk Short Bolts

1 x Hexagonal Key

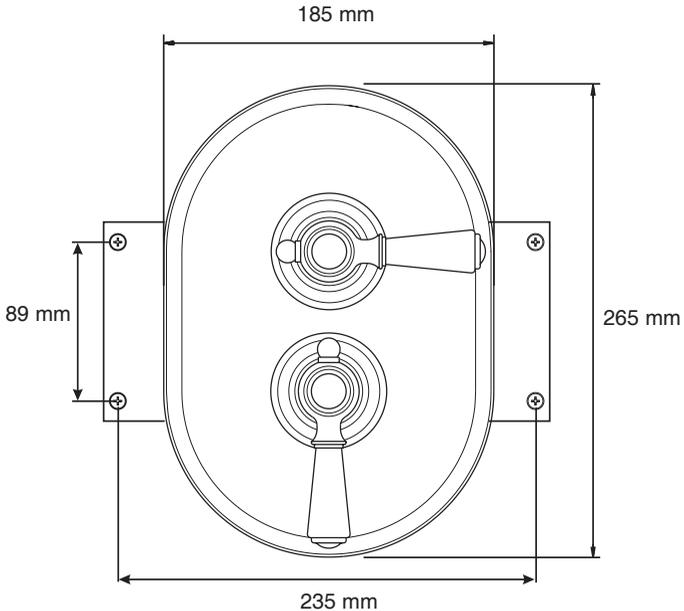
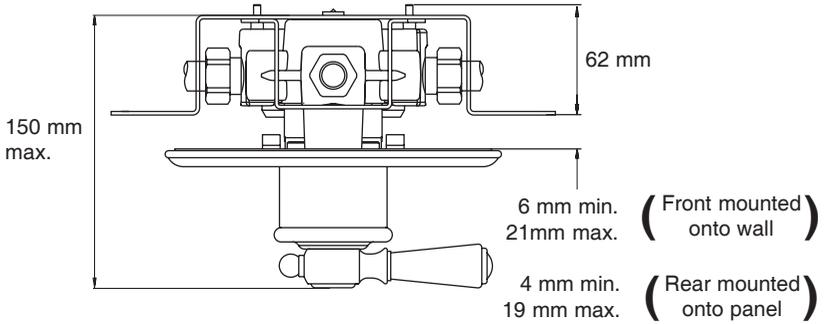
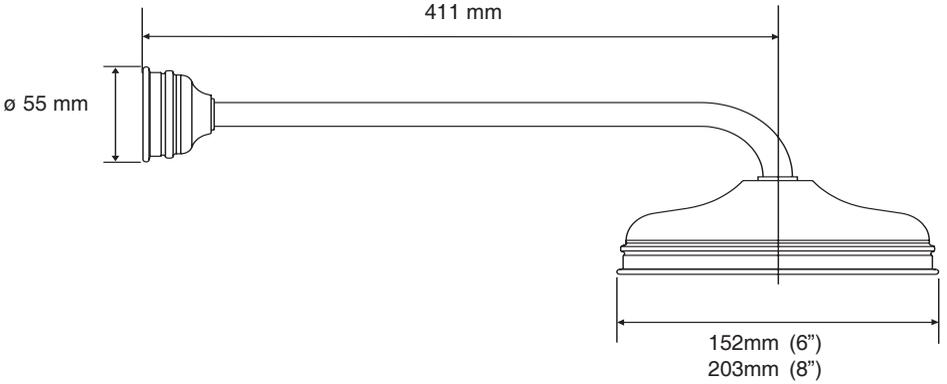
1 x Concealing Plate

Documentation

- 1 x Installation, Operation and Maintenance Guide
- 1 x Customer Support Brochure



DIMENSIONS



SPECIFICATION

Normal Operating Conditions are considered as:

- inlet dynamic pressures nominally balanced to within 10% of each other during flow.
- a differential of approximately 50°C between the hot and cold inlet temperatures, and with differentials of 15-35°C between the blend setting and either supply.
- daily usage of 1-6 hours.
- installation and usage environment not subject to extremes of temperature, unauthorised tampering or wilful abuse.

Other Applications

For information on other specific applications or suitability, refer to Kohler Mira Ltd, or Local Agent.

Disinfection

In applications where system chemical disinfection is practised, chlorine can be used (calculated chlorine concentration of 50 mg/l (ppm) maximum in water, per one hour dwell time, at service interval frequency). Such procedures must be conducted strictly in accordance with the information supplied with the disinfectant and with all relevant Guidelines/Approved Codes of Practice.

If in any doubt as to the suitability of chemical solutions, refer to Kohler Mira Ltd, or Local Agent.

Operating Parameters

Pressures and Flow Rates

For optimum performance, dynamic supply pressures should be nominally equal.

Maximum Pressure Loss Ratio: **10:1***

Maximum Static Pressure: **10 bar.**

Recommended Minimum Flow Rate: **5 litres/minute** at mid-blend.

Recommended Maximum Flow Rate: **35 litres/minute** at mid-blend.

Mira Crescent with 6" Deluge Head :-

Minimum Maintained Pressure: **0.2 bar.** †

(**1.0 bar** with an instantaneous gas water heater).

Recommended Maximum Maintained Pressure: **4.0 bar.**

(To prevent excessive flow rates with the Deluge Head supplied).

Mira Crescent with 8" Deluge Head :-

Minimum Maintained Pressure: **0.2 bar**.

Recommended Maximum Maintained Pressure: **4.0 bar**.

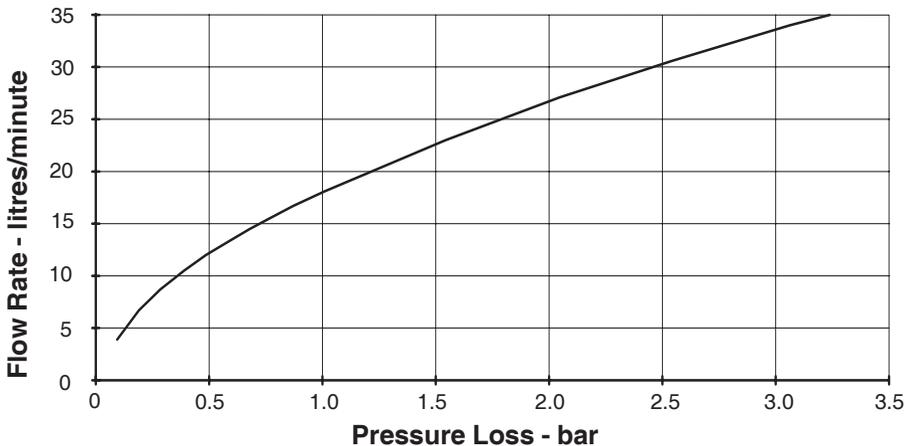
(To prevent excessive flow rates with the Deluge Head supplied).

*Pressure Loss Ratio is determined by subtracting the resistance to flow at the outlet (generally known as "back pressure", and measured at the outlet of the mixing tap) from the maintained pressures of the hot and cold water at each inlet of the mixing tap. This is at its extreme when the mixing tap is being used at its lowest flow rate and when the maximum inequality occurs in the pressure of the hot and cold water supplies.

† Equivalent to a 2 metre head measured from the underside of the cold tank to the shower fitting outlet.

Crescent Thermostatic Shower (6" and 8" models) Flow Rate / Pressure Loss Graph

(Maintained supply pressures are equal and outlet temperature set to mid-blend)



Temperature Control

Optimum performance is obtained when **temperature differentials** of **20°C** or more exist between blend and either supply. Blend control accuracy will begin to diminish at temperature differentials below **12°C**.

Blend Temperature Range: Between ambient cold and approximately **60°C**, according to hot water supply temperature.

Thermostatic Control Range: Approximately **25-60°C**.

Optimum Thermostatic Control Range: **30-50°C**.

Recommended Minimum Cold Water Supply Temperature: **1°C**.

Recommended Maximum Hot Water Supply Temperature: **85°C**.

Note! The shower control can accept temporary temperature excursions above 85°C without damage, however operation at such elevated supply temperatures is not recommended. For reasons of general safety, hot water storage temperatures should ideally be maintained at between 60-65°C where serving ablutionary applications. Minimum temperature differential between hot and outlet temperature: **12°C**

Flow Control

The Mira Crescent shower control has integral flow control; no other user-operated flow control should be used with this shower control.

Connections

The shower control and shower head connections are all 15mm compression (nuts and olives are provided).

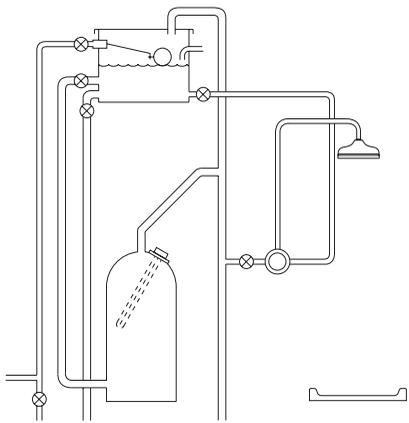
Hot (H) and Cold (C) inlets are clearly marked for the shower control and **must** be connected as described in the **INSTALLATION** section.

INSTALLATION REQUIREMENTS

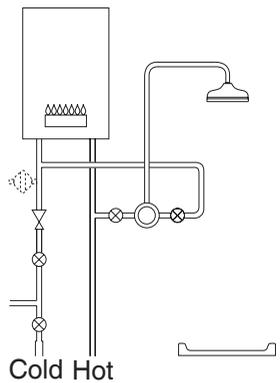
Key to Symbols

-  Float operated valve
-  Isolating Valve
-  Mixing Valve
-  Overflow
-  Pressure Reducing Valve
-  Twin Impeller Pump
-  Single Impeller Pump
-  Tempering Valve
-  Mini expansion vessel

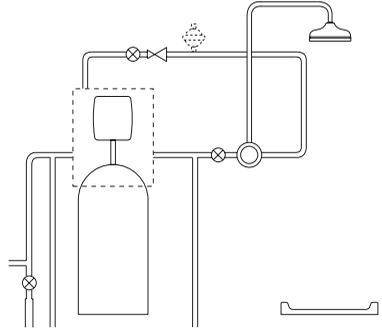
Gravity Fed Shower - The shower **MUST** be fed from a cold water cistern and hot water cylinder providing nominally equal pressure.



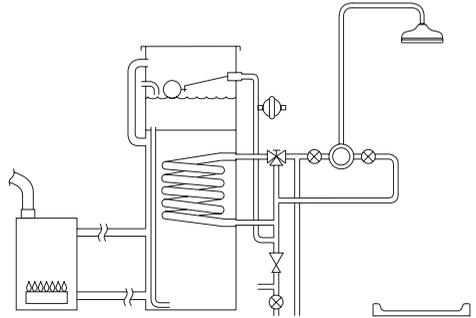
Gas Heated Shower - The shower **MUST** be installed with a gas water heater or combination boiler of a **fully modulating** design. A modulating boiler is one that the draw off rate is indirectly controlling the gas flow to the boiler, producing a relatively constant hot water temperature.



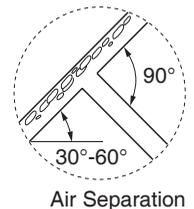
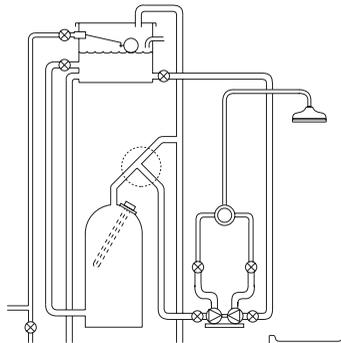
Unvented Mains Pressure Shower - The shower can be installed with an unvented, stored hot water cylinder. Only “a competent person” as defined by the Building Regulations may fit this type of system.



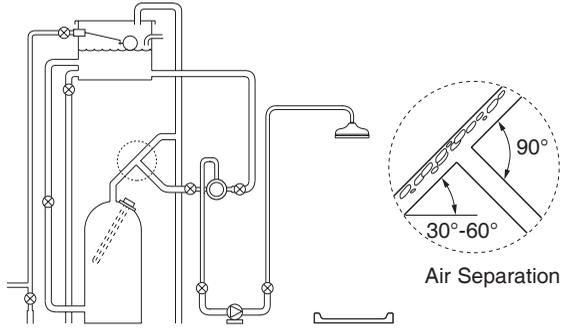
Mains Pressurised Instantaneous Hot Water Shower - The shower installed with systems of this type is supplied hot water via a tempering valve, this provides relatively constant hot water and the shower will compensate for temperature changes should they occur.



Pumped Shower (Inlet Pump) - The shower can be installed with an inlet pump (twin impeller). The pump **MUST** be installed on the floor next to the hot water cylinder. Ensure hot cylinder vent pipe is arranged as shown to enable air separation.



Pumped Shower (Outlet Pump) - The built-in shower control can be installed with an outlet pump (single impeller). The pump **MUST** be located on the floor near to the shower control. The layout and sizing of pipework **MUST** be such that nominally equal inlet supply pressures are achieved **AND** the effects of other draw-offs are minimized.



INSTALLATION

General

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

1. Before commencing, ensure that the installation conditions comply with the information given in **SPECIFICATION**.
2. Care must be taken during installation to prevent any risk of injury or damage.
3. The mixing valve should be positioned for easy access during use and maintenance. All routine maintenance procedures can be conducted with the mixing valve body in place (except for strainer and checkvalve access). For all models, allow a minimum 80 mm clearance in front of the temperature control to enable removal of the servicable parts during maintenance.
4. The use of supply-line or zone strainers will reduce the need to remove debris at each mixing valve point. The recommended maximum mesh aperture dimension for such strainers is 0.5 mm.
5. Pipework must be rigidly supported.
6. Pipework dead-legs should be kept to a minimum. The mixed water outlet piping should not exceed 2 m and the overall length from the hot water circuit to the discharge point should not exceed 5 m.
7. Supply pipework layout should be arranged to minimise the effect of other outlet usage upon the dynamic pressures at the mixing valve inlets.
8. Inlet and outlet threaded joint connections should be made with PTFE tape or liquid sealant. Do not use oil-based, non-setting jointing compounds.
9. **To eliminate pipe debris it is essential that supply pipes are thoroughly flushed through before connection to the mixing valve.**

Reversed Inlet Supplies

It is essential the inlet supplies correspond with the red and blue markings on the thermostatic cartridge for the Mira Crescent to operate correctly. The shower control is supplied with the inlet connections configured **hot-left, cold-right**. If the existing hot and cold pipework makes this configuration inconvenient the cartridge inlets can be reversed.

The connections can be altered by rotating the thermostatic cartridge through 180°, before or after installation is complete.

1. If the mixing valve body has already been installed, isolate the supplies to the mixing valve, and turn on the flow control. This will release the pressure and assist in draining the residual water.
2. Remove the knob and cover assemblies. Refer to **Removing/Fitting Knob and Concealing Plate Assemblies** in the **MAINTENANCE** section for detailed instructions.
3. With the removal clip still in place, unscrew the head nut using a 35 mm A/F wrench; this will begin to draw the thermostatic cartridge out of the body.

Note! Some residual water may be released. Pull the thermostatic cartridge free of the valve body.

4. Rotate the thermostatic cartridge through 180° and carefully push the cartridge back into the valve body, checking that the 2 cartridge inlet port seals remain in place, and locate cartridge lugs into body slots.

Note! The red and blue markings on the cartridge will now not correspond with the body markings, so to avoid future confusion remove the red and blue stickers from the valve body.

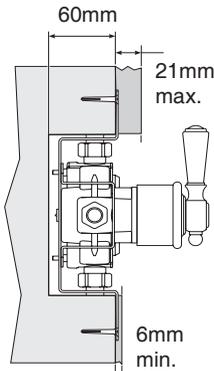
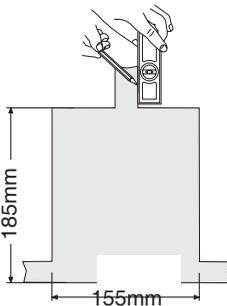
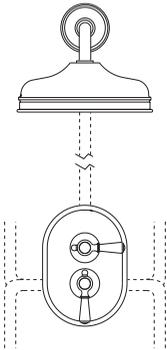
5. Carefully align and then tighten the head nut; **do not overtighten**.
6. Complete the **INSTALLATION**, if appropriate.
7. If the mixing valve body has already been installed, restore hot and cold supplies and check for any leaks.
8. Refit the support bracket, foam seal and concealing plate; and secure in position with the locknuts. Ensure the foam seal remains in place as the locknuts are screwed back into position. Refit the shield and lever assemblies.
9. The maximum temperature may now need resetting; check the outlet water temperature, and if necessary refer to **COMMISSIONING**.

Installation

The Mira Crescent can be built into solid, dry-lined, stud partition or dry partition wall structures. All plumbing connections are 15mm compression.

A building-in shroud is supplied, which can provide a depth reference when chasing out the wall surface and protects the shower control during plastering.

Installation: Solid and Dry-lined Walls

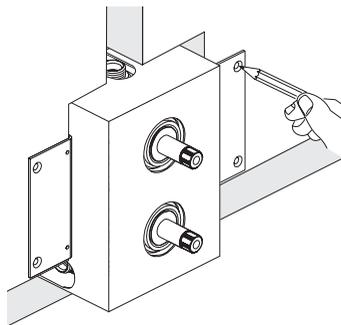


1. Decide on a suitable position for the shower control and outlet. Ideally the shower outlet should be fitted at a convenient height for all the family, facing down the centre-line of the bath or across the opening of the shower cubicle.
2. Determine whether the hot or cold water supplies will be connected to the shower control from the top (falling) or from the bottom (rising).
3. Familiarise yourself with the hot and cold water inlet and outlet ports.
4. Determine the route for the outlet pipework.
5. Mark the route of the inlet and outlet pipework and the approximate shape of the recess (185mm high x 155mm wide).

6. Remove the plaster and brickwork/dry-lining to the required depth using the building-in shroud as a reference. The wall mounting bracket requires a minimum building-in depth of 60 mm.

The total building-in depth for the shower control (to the finished wall surface) can be between 66 and 81 mm. This will accommodate a final thickness of plaster and tiles of between 6 and 21 mm.

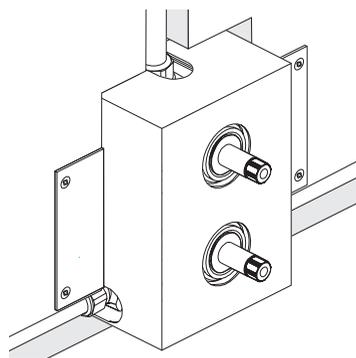
7. Remove the control knobs and locknuts (refer to **Removing/Fitting Knob and Concealing Plate Assemblies**) and fit the building-in shroud over the valve.
8. Mark the position of the wall mounting bracket fixing holes. Drill a 6.0 mm diameter hole at each of the marked positions and insert the wall plugs (supplied).
9. Remove the building-in shroud and install the hot and cold supply pipes.



10. **Flush the hot and cold water supply pipes thoroughly. The supplies must be clean and free from debris before connecting the shower control. Failure to do so may result in product malfunction.**
11. Mount the shower control in the recess and connect the inlet pipework. Check the hot and cold supplies have been connected to the correct inlets. If necessary the valve inlets can be reversed, refer to **Reversed Inlet Supplies** for further information.

Note! If the wall screws cannot be fixed into the wall, fit the building-in shroud and fill the cavity behind the mounting bracket with an appropriate material (e.g. expandable foam).

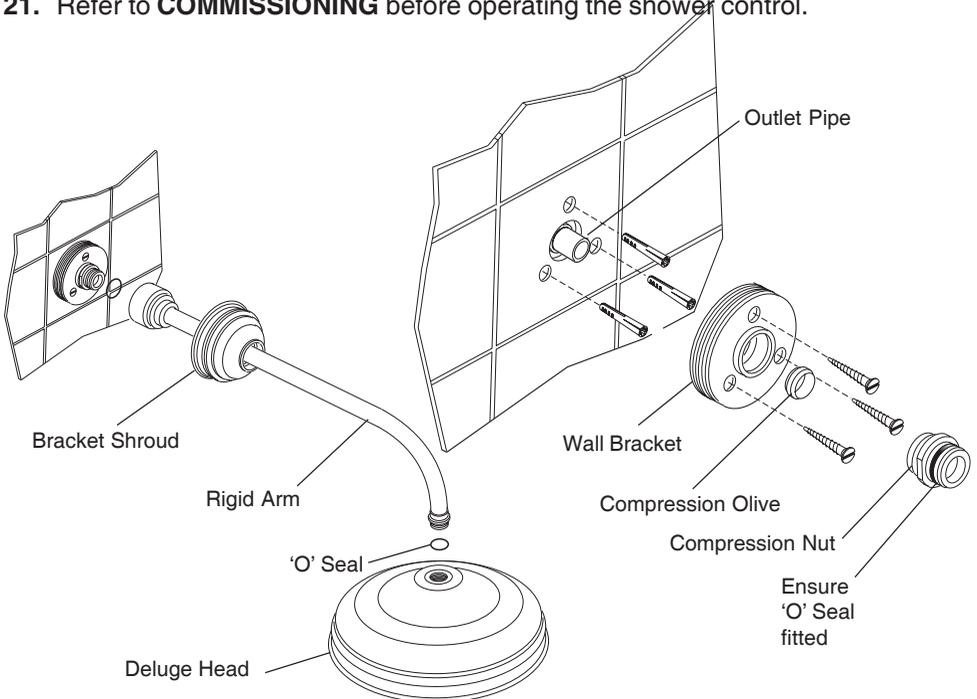
12. Install the outlet pipework and connect to the shower control. Taking into account the finished wall thickness ensure the pipework extends far enough from the wall (at least 15 mm) to allow for the shower outlet to be fitted. Check for water leaks.
13. Fit the building-in shroud over the valve in the recess. Plaster and tile, or finish as appropriate, up to edge of the building-in shroud. **The final wall surface must fall between the 2 lines on the building-in shroud.**



14. When the wall surface has been completed, remove the building-in shroud. If necessary cut the shroud to help removal.
15. Fit the support bracket (with the T shaped hole at the top), the concealing plate seals and the concealing plate to the valve. To ensure an effective seal the main seal will need to be fitted with the smooth side facing the wall. Cut the tabs away from the main seal before fitting the concealing plate (refer to **Removing/Fitting Knob and Concealing Plate Assemblies**).

Note! Should the wall surface or tiling be uneven, the seal will need to be aided or substituted with silicone sealant.

15. Screw the locknuts onto the valve until they firmly lock the concealing plate against the wall. This will compress the seal and prevent water ingress into the recess.
 16. Refit the locknut shields and the knob assemblies.
 17. Place the outlet wall bracket onto the outlet pipe and mark the positions of the three fixing holes. Drill a 6.0 mm diameter hole at each of the marked positions and insert the wall plugs (supplied).
- Note! Ensure none of the fixing holes are positioned directly over the connecting pipework. Failure to do so may result in damage to the pipework when drilling or fixing with screws.**
18. Check the outlet pipe extends 15 mm from the wall, if necessary cut to length and deburr. **Flush the outlet pipework thoroughly to ensure it is clean and free of debris.**
 19. Fit the wall bracket to the wall. Fit the compression nut and olive onto the pipe. Tighten the nut sufficiently to make the compression joint. Take care not to damage the 'O' seal on the compression nut.
 20. Fit the rigid arm to the wall bracket assembly and secure by screwing the bracket shroud onto the wall bracket. Fit the deluge head to the rigid arm.
 21. Refer to **COMMISSIONING** before operating the shower control.



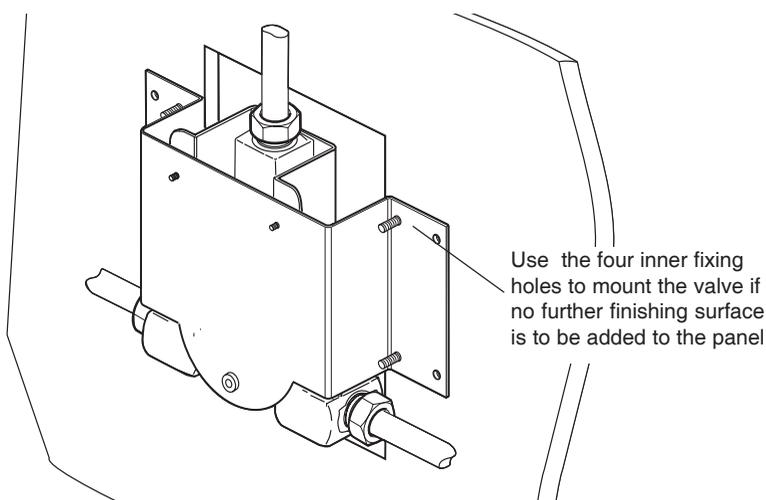
Shower Outlet Installation

Installation: - Panel (4 to 19 mm thickness) Rear Mounted

The Mira Crescent incorporates a mounting bracket, enabling the valve to be installed through a laminated panel or shower cubicle.

The bracket must be in the correct orientation and mounted to the rear face of panels with a finished thickness of 4-19 mm .

1. Put the building-in shroud in the correct position on the wall and draw around it with a pencil. Cut out the hole in the panel.
2. Using the valve and the building-in shroud as a template, mark and drill 4 fixing holes to secure the mounting bracket in position. If no further finishing surface is to be added use the four inner fixing holes to mount the valve, as the concealing plate will conceal the fixing screws when fitted.
3. Follow the instructions outlined in **Installation: solid and dry lined walls**.
4. If access is available it may be preferable to make the initial valve/pipework connections prior to securing the mixing valve to the panel.
5. Mount the mixing valve securely onto the rear of panel, with the panel fixing screws (supplied).
6. **Important! Flush through the hot and cold supplies thoroughly before connection to mixing valve.**
7. Connect the inlet and the outlet pipework, checking that the hot and cold supplies have been piped to the correct inlets. Check for water leaks and that all connections are watertight.
8. Follow the instructions outlined in **Installation: solid and dry lined walls**. Refer to **COMMISSIONING** before operating the shower control.



Installation - Panel (4 to 19 mm thickness)

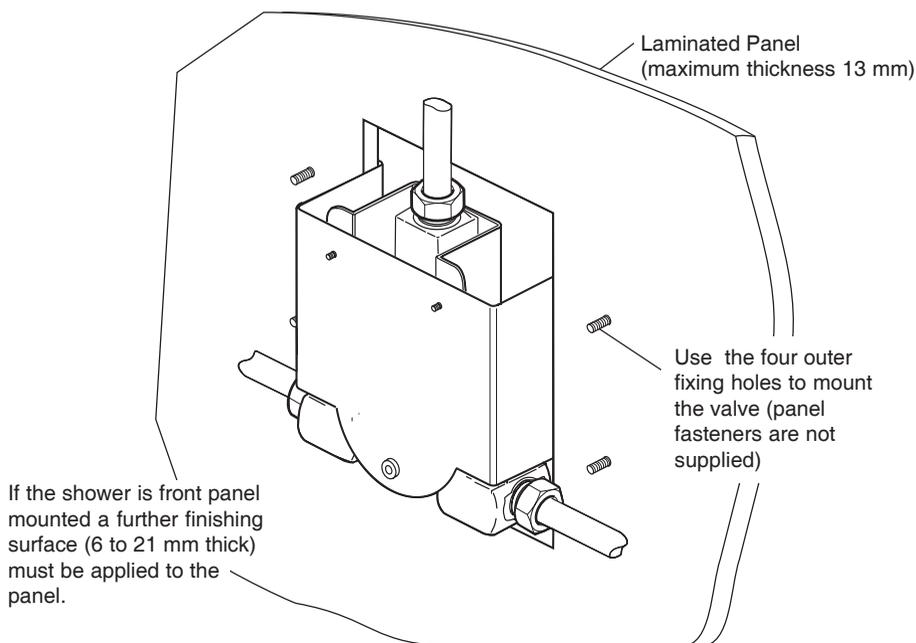
Installation: - Panels (13 mm max. thickness) Front Mounted

To fit the Crescent shower control to the front face of a panel, a further finishing layer (e.g. plaster and tiles) must be applied to the panel to cover over the wall mounting plate and fixing screws. This finishing layer can be between 6 and 21 mm thick. The laminated panel can be a maximum of 13 mm thick.

1. Cut a hole 185 mm high x 155 mm wide in the panel.
2. Using the valve and support bracket as a template, mark and drill 4 fixing holes to secure the mounting bracket in position. The fixing hole dimensions must be suitable for the selected securing method, and appropriate for the particular panel material.
3. Follow the instructions outlined in **Installation: solid and dry lined walls**.

Note! The inlets accept rising or falling supplies, on thicker panels this may require the inlet pipework to be configured with elbows or pipe bends immediately prior to the inlet connections.

4. Plaster and tile, or finish as appropriate, up to the panel hole perimeter only, and to a maximum thickness of 21 mm over the front face of the mounting bracket. Protect the mixing valve and pipe connections during this process.
5. Follow the instructions outlined in **Installation: solid and dry lined walls**. Refer to **COMMISSIONING** before operating the shower control.



Installation - Panel (13 mm maximum thickness)

COMMISSIONING

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

Exercising the Thermostat

Thermostatic mixing valves with wax thermostats are inclined to lose their responsiveness if not used. Valves which have been in storage, installed but not commissioned, or simply not used for some time should be exercised before setting the maximum temperature or carrying out any tests.

A simple way to provide this exercise is:

- (a) ensure that the hot and cold water are available at the valve inlets, and the outlet is open.
- (b) move the temperature control rapidly from cold to hot and hot back to cold several times, pausing at each extreme.

Maximum Temperature

The maximum blend temperature obtainable by the user should be limited, to prevent accidental selection of a temperature that is too hot.

All Mira Thermostatic mixing valves are fully performance tested and the maximum temperature is preset to approximately 43°C under ideal installation conditions at the factory.

Site conditions and personal preference may dictate that the maximum temperature has to be reset following installation.

This shower control is provided with an adjustable temperature control knob, which allows the user to select the blend temperature between ambient cold up to a preset maximum.

Maximum Temperature Setting

Check that an adequate supply of **hot** water is available at the hot inlet of the shower control.

During resetting, the hot supply to the shower must be as close to the typical maximum to offset the possibility of any blend shift due to fluctuating supply temperatures. However, the minimum temperature of the hot water **must** be at least 12°C above the desired blend for correct thermostatic operation.

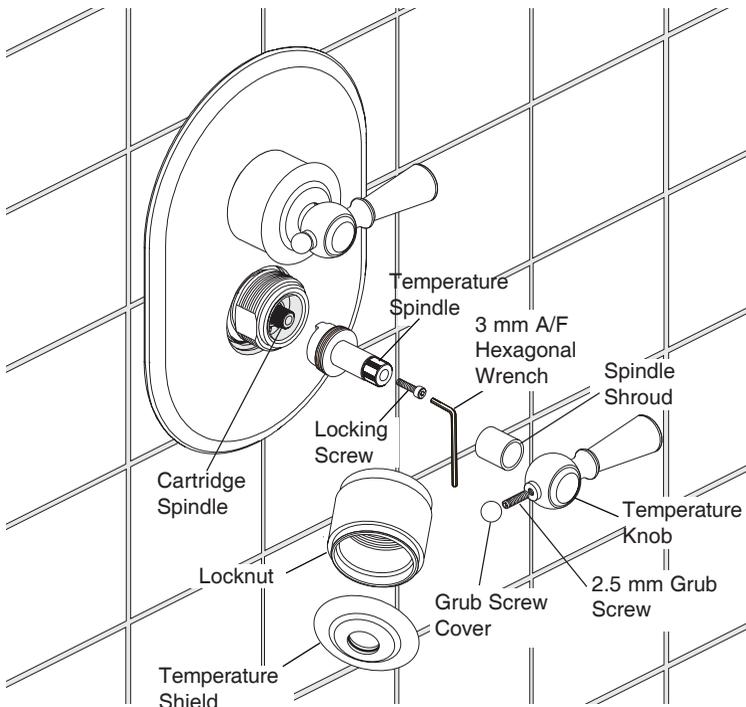
Temperatures should always be recorded using a thermometer with proven accuracy.

Check that both inlet isolating valves are fully open. Turn the temperature knob to maximum and operate the flow control. Allow the temperature to stabilize and check the outlet temperature.

- If the outlet temperature is set correctly then refer to **Commissioning Checks**.
- If adjustment of the temperature is required, carry out the procedure shown below;

1. Remove the temperature knob, the temperature shield and the locknut assemblies.
2. Unlock and remove the temperature spindle. Use a 3 mm hexagonal wrench to undo the locking screw.
3. Rotate the cartridge spindle until the required maximum blend temperature is obtained at the discharge point (**clockwise = decrease temperature**).

When resistance is felt do not use force to turn any further, as this can damage the internal parts.



Maximum Temperature Setting

4. Refit the temperature spindle at the maximum temperature position and secure with the locking screw.
5. Refit the temperature knob and locknut assemblies.
6. Rotate the temperature knob through its full range of movement to ensure the full range of water temperatures can be selected.

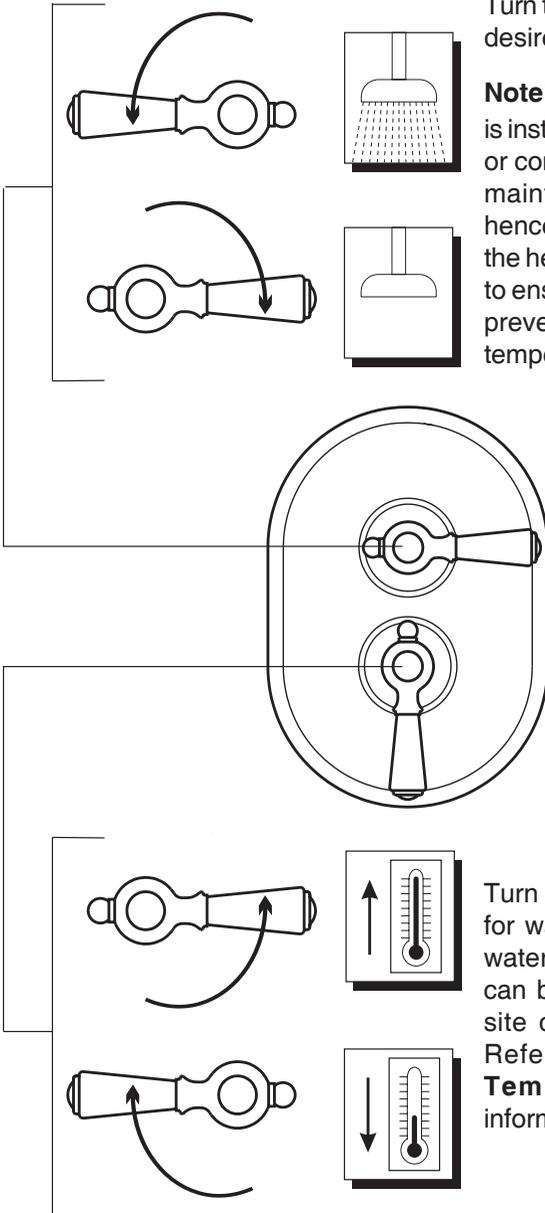
Commissioning Checks

1. Check inlet pipework temperatures for correct function of checkvalves i.e. that hot water does not cross flow into the cold supply and vice versa.
2. Check that the supply pressures are within the range of operating pressures for the valve.
3. All connections and mixer body are water tight.
4. Exercise the thermostat.
 - (a) ensure that the hot and cold water are available at the valve inlets, and the outlet is open.
 - (b) move the temperature control rapidly from cold to hot and hot back to cold several times, pausing at each extreme.
5. Adjust the temperature of the mixed water in accordance with the instructions(refer to **Maximum Temperature Settings**).
6. Operate the outlet flow control and check:
 - (a) flow rate is sufficient for purpose
 - (b) temperature(s) obtainable are acceptable.

OPERATION

Turn the flow lever anticlockwise until the desired force of water is obtained.

Note! When the Crescent shower control is installed with a fully modulating multipoint or combination type gas water heater, the maintained mains water pressure, and hence the flow, must be sufficient to keep the heater ignited. Therefore, it is important to ensure that the flow knob is fully open to prevent variation in the hot water supply temperature.



Turn the temperature lever anticlockwise for warmer water or clockwise for cooler water. The preset maximum temperature can be adjusted as required to suit both site conditions and the user's comfort. Refer to **Commissioning, Maximum Temperature Setting** for further information.

FAULT DIAGNOSIS

Symptom	Cause/Rectification
1. Only hot or cold water from outlet.	<p>a. Inlet supplies reversed (see reversed inlets section). Check.</p> <p>b. No hot water reaching shower control. Check.</p> <p>c. Check strainers and inlet/outlet fittings for blockage.</p> <p>d. Refer symptom 5 below.</p> <p>e. Installation conditions continuously outside operating parameters: refer to SPECIFICATION, and 2e below.</p>
2. Fluctuating or reduced flow rate.	<p>Normal function of thermostatic control when operating conditions are unsatisfactory;</p> <p>a. Check strainers and inlet/outlet fittings for flow restriction.</p> <p>b. Make sure that minimum flow rate is sufficient for supply conditions.</p> <p>c. Make sure that dynamic inlet pressures are nominally balanced and sufficient.</p> <p>d. Make sure that inlet temperature differentials are sufficient.</p> <p>e. Subsequent to rectification of supply conditions) Check thermostatic performance; renew thermostatic cartridge, if necessary.</p>
3. No flow from shower control outlet.	<p>a. Check strainers and inlet/outlet fittings for blockage.</p> <p>b. Hot or cold supply failure; thermostat holding correct shutdown function: rectify, and refer to symptom 2.e. above.</p> <p>c. Flow control cartridge faulty. Check and renew if necessary.</p>
4. Blend temperature drift.	<p>Indicates operating conditions changed.</p> <p>a. Refer to symptom 2. above.</p> <p>b. Hot supply temperature fluctuation.</p> <p>c. Supply pressure fluctuation.</p>
5. Hot water in cold supply or vice versa.	<p>Indicates checkvalves require maintenance, refer to MAINTENANCE.</p>
6. Maximum blend temperature setting too hot or too cool.	<p>a. Indicates incorrect maximum temperature setting; refer to COMMISSIONING.</p> <p>b. As symptom 4. above.</p> <p>c. As symptom 5. above.</p>

Symptom	Cause/Rectification
<p>7. Water leaking from shower control body.</p>	<p>Seal(s) worn or damaged.</p> <p>a. Obtain service pack and renew all seals.</p> <p>b. (If leak persists from around temperature spindle) Renew thermostatic cartridge.</p>
<p>8. Flow knob or temperature knob stiff to operate.</p>	<p>a. Impaired free movement of internal components. Renew the appropriate cartridge.</p> <p>b. Supply pressures too high. Fit pressure reducing valve. Refer to SPECIFICATION for acceptable operating pressures.</p>

MAINTENANCE

General

1. The maintenance of this product must be carried out in accordance with instructions given in this Manual, and must be conducted by designated, qualified and competent personnel.
2. Mira products are precision-engineered and should give continued superior and safe performance, provided:
 - They are installed, commissioned, operated and maintained in accordance with the recommendations stated in this Product Manual.
 - Periodic attention is given as necessary to maintain the product and its associated installation components in good functional order. Guidelines are given below.
3. The use of main supply-line or zone strainers (recommended maximum mesh aperture dimension is 0.5 mm) will reduce the need to remove debris at each mixing valve point.

Warning! Many household and industrial cleaning products contain mild abrasives and chemical concentrates, and should not be used on polished, chromed or plastic surfaces.

Should an internal malfunction occur then this will probably require replacement of parts.

The designed minimum service life of all cartridges used in Mira products is 5 years providing the Mira Crescent is operated with the recommended operating conditions and within the recommended operating parameters. However, when supply conditions and/or usage patterns do not conform to the recommended operating parameters and/or the recommended operating conditions, the cartridge may need to be replaced more frequently ('recommended operating conditions' and 'recommended parameters' are defined on page 7 of this Product Manual under the headings of '**Normal Operating Conditions**' and '**Operating Parameters**').

Components are precision-made, so care must be taken while servicing to avoid damage.

When ordering spare parts, please state product type, i.e. Mira Crescent, and identify part name and number (refer to **PARTS LIST**). A Seal pack is available, containing all the seals that may be necessary for renewal during maintenance or servicing.

Lubricant

Important! All seals are pre-lubricated. If you need to lubricate the seals, use only a small amount of silicone-only based lubricants on this product. Do not use oil-based or other lubricant types as these may cause rapid deterioration of seals.

Maintenance Procedures

Maintenance Procedure - Thermostatic Cartridge

Removal

1. Isolate the supplies to the shower control. Open the flow control to release the trapped water pressure and to assist in draining the residual water.
2. Remove the temperature and flow knob assemblies, using the 2.5 mm A/F hexagonal wrench (supplied). Remove the concealing plate, the seals and the support bracket. Do not remove the temperature spindle.
3. With removal clip still in place, unscrew the head nut using a 35 mm A/F wrench. This will release the body shroud and also begin to draw the thermostatic cartridge out of the shower control body.

Warning! Some residual water may be released.

4. Note which inlet aligns with the **hot** (marked **H** and coloured **red**) lug on cartridge.
5. Pull the thermostatic cartridge free of the shower control body.

Cleaning/Renewal of Parts

6. The interior surface of the shower control body must be clean before refitting the cartridge. If scale or deposition is present, clean (**without thermostatic, flow and checkvalve cartridges fitted**) using a mild proprietary inhibited scale solvent, e.g. domestic kettle descaler. After descaling, rinse body thoroughly in clean water before refitting cartridges.

Note! The body interior must be cleaned carefully and not damaged in any way. Do not use any abrasive material.

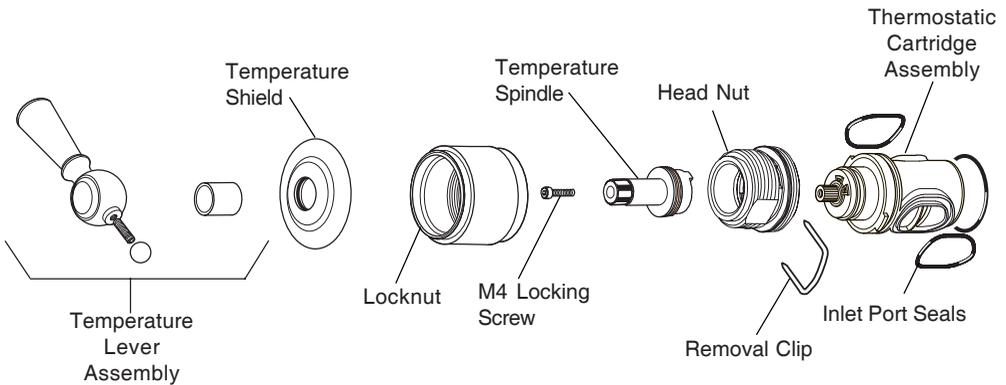
7. Cartridges may only be cleaned by flushing through under a jet of clean water to remove lodged particles. **Do not descale. Cartridges are not serviceable, and must not be dismantled.**

Cartridges cannot be tested individually, service condition should be assessed as part of the performance check; refer to **Commissioning Checks**.

8. When renewing the thermostatic cartridge, retain the temperature spindle, the removal clip and the headnut off the displaced unit and refit.
9. Examine all accessible seals for signs of deformation or damage, and renew as necessary, taking care not to damage seal grooves (a service Pack is available, containing all seals and strainer screens that may be necessary for renewal during maintenance or servicing).
10. Lightly coat all rubber seals with a **silicone-only based lubricant** to assist reassembling (see **lubricants**).

Reassembly

11. Identify which is the hot inlet to the shower control body, and align the thermostatic cartridge accordingly. Carefully push the thermostatic cartridge back into the body, checking that the 2 cartridge inlet port seals remain in place, and locate cartridge lugs into body slots.
12. Carefully align and then tighten the head nut; **do not overtighten** (max. Torque 2.5 Nm (1.85 lbf ft)). Fit the removal clip to the head nut.
13. Refit the plate and knob assemblies; refer to **Removing/Fitting Knob and Concealing Plate Assemblies** for detailed instructions.
14. Turn off the flow control and restore hot and cold supplies. Check for any leaks.
15. The maximum temperature will now need resetting; refer to **COMMISSIONING**.



Thermostatic Cartridge Removal

Maintenance Procedure- Flow Cartridge

Removal

1. Turn off the supplies to the shower control, and open the flow control to release the trapped water pressure and to assist in draining the residual water.
2. Remove the control knob and concealing plate assemblies; Refer to **Removing/Fitting Knob and Concealing Plate Assemblies** for detailed instructions.
3. Remove the flow spindle, the headnut and the splined adaptor.
4. Unscrew the flow cartridge anticlockwise and remove.

Warning! Some residual water may be released.

Cleaning/Renewal of Parts

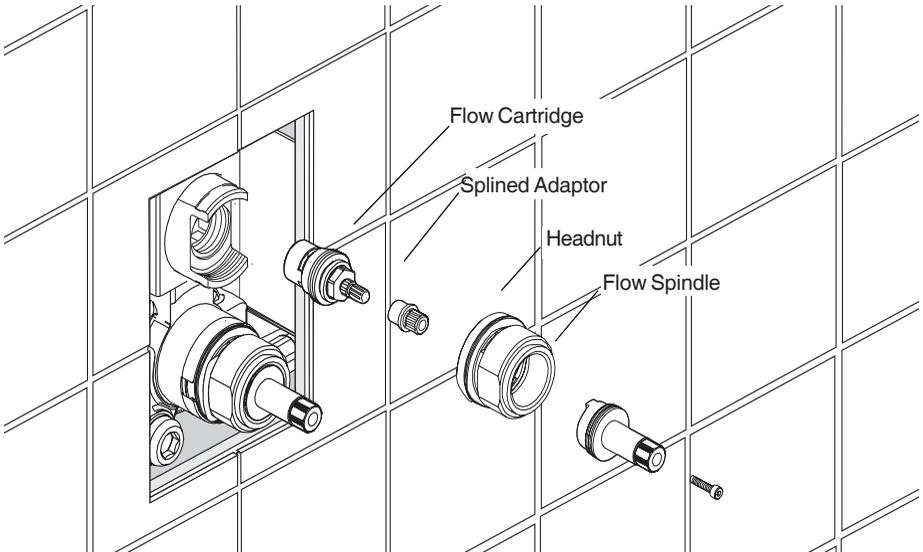
5. The inner surface of the shower control body must be clean before refitting cartridge. If scale or deposition is present, clean (**without thermostatic, flow and checkvalve cartridges fitted**) using a mild proprietary inhibited scale solvent, e.g. domestic kettle descaler. After descaling, rinse the body thoroughly in clean water before refitting the cartridge.

Note! The shower control body must be cleaned carefully and not damaged in any way. **Do not use any abrasive material.**

6. Clean the cartridge by flushing through under a jet of clean water to remove lodged particles. **Do not descale. Cartridges are not serviceable, and must not be dismantled.**

Cartridges cannot be tested individually, service condition should be assessed as part of the performance check; refer to **Commissioning Checks**.

7. Examine accessible 'O' seals for signs of deformation or damage, and if necessary renew the cartridge.
8. Lightly coat all seals with a **silicone-only based lubricant** to assist reassembling.



Flow Cartridge Removal

Reassembly

9. Check that flow cartridge seals are in place. Align and screw the cartridge into place.
10. Fit the splined adaptor, the headnut and the flow spindle.
11. Refit the control knob and concealing plate assemblies; Refer to **Removing/Fitting Knob and Concealing Plate Assemblies** for detailed instructions.
12. Restore hot and cold supplies and check for leaks.

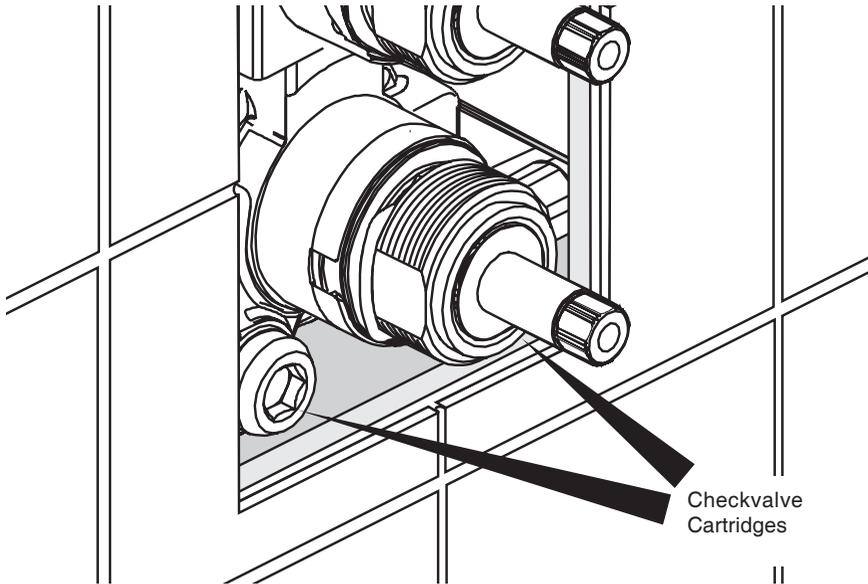
Maintenance Procedure - Checkvalve Cartridges

Hot water entering the cold supply, or vice versa, indicates the checkvalve cartridge needs immediate attention.

1. Turn off the supplies to the shower control. Open the flow control to release the trapped water pressure and to assist in draining the residual water.
2. Remove the control knob and concealing plate assemblies; Refer to **Removing/Fitting Knob and Concealing Plate Assemblies** for detailed instructions.
3. Undo the cartridge head using a 12 mm A/F wrench and pull the whole cartridge free from the valve body.

Caution! Some water may be released at this point.

4. The checkvalve cartridge assemblies may be cleaned by removing the rubber retainers and inlet strainers, and flushing through under a jet of water to remove lodged particles. **Do not descale.** Check if the checkvalve cartridge operates correctly. If the cartridge is damaged or fails to operate correctly renew.
5. Lightly wipe external seals and threads with a **silicone-only based lubricant** to aid refitting.
6. Fit the cartridges and reassemble the shower control following the steps outlined in **Removing/Fitting Knob and Concealing Plate Assemblies**. **Do not overtighten** the cartridge heads when refitting.
7. Restore the water supplies and check for leaks.



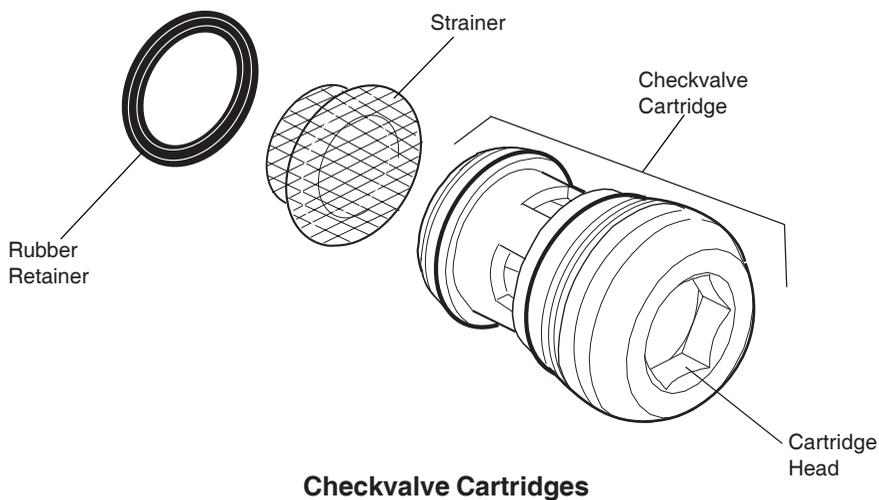
Checkvalve Cartridges

Maintenance Procedure - Inlet Strainers

Blockage of the inlet strainer screens can lead to poor flow performance and reduced temperature control. It is essential that the inlet strainer screens are periodically cleaned or, if necessary, renewed as part of a preventative maintenance programme.

A Strainer pack is available for the Mira Crescent, containing 2 strainer screens and 2 retainers.

1. Turn off the supplies to the shower control. Open the flow control to release the trapped water pressure and to assist in draining the residual water.
2. The strainers are located at the inlet of each checkvalve cartridge. Remove the cartridges to allow access.
3. Carefully remove the strainers.
4. Clean under a jet of water, or renew if damaged.
5. Refit cartridges, strainers and retainers. **Do not overtighten** the cartridge heads when refitting.
6. Turn the flow control fully clockwise to the off position. Restore the water supplies, and check for leaks.
7. Follow the steps outlined in **Removing/Fitting Knob and Concealing Plate Assemblies** to reassemble the shower control.

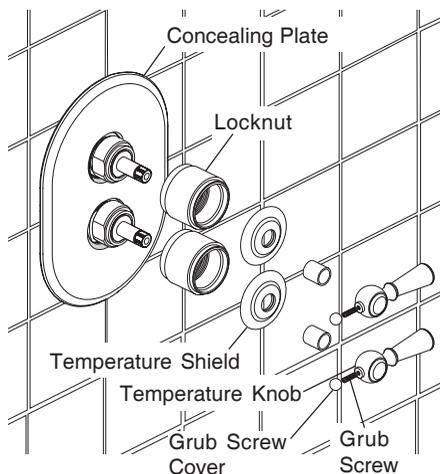


Checkvalve Cartridges

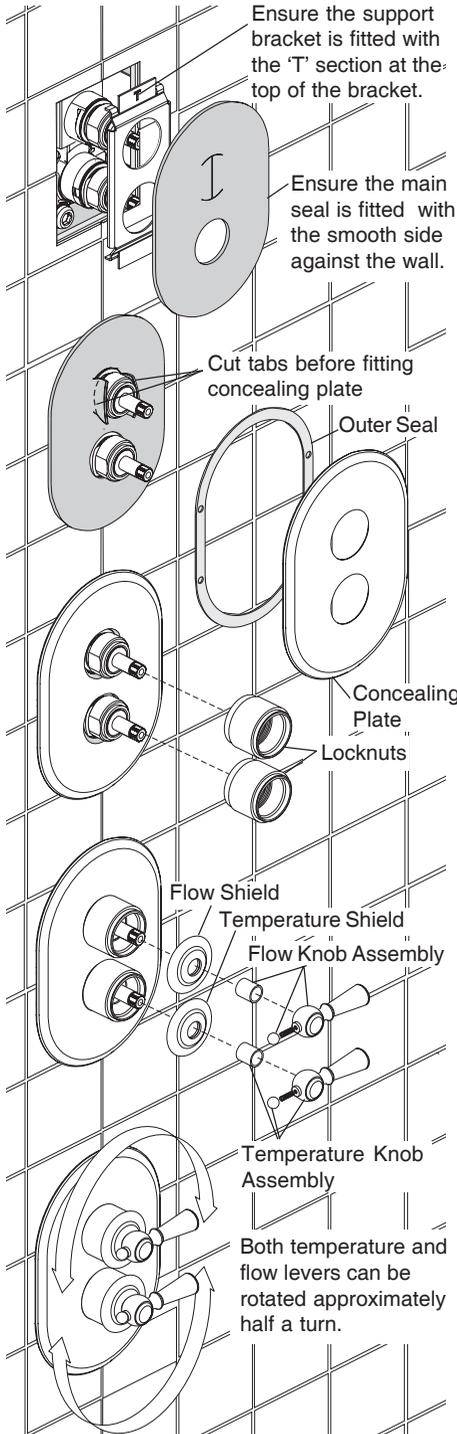
Removing/Fitting Knob and Concealing Plate Assemblies

Removal

1. Rotate the control knob either fully clockwise or anticlockwise.
2. Unscrew anticlockwise the grub screw cover. Using a 2.5mm hexagonal key unscrew the grub screw and remove the knob.
3. Remove the control knob and shield assemblies.
4. Unscrew the two locknuts which secure the cover plate in position.
5. Remove the concealing plate, the seals and the support bracket to allow access to the valve.



Reassembly



1. Fit the support bracket with the T section at the top. Fit the main seal with the smooth side facing the wall to ensure an effective seal. Cut the tabs on the main seal before fitting the concealing plate.

Note! Should the wall surface or tiling be uneven, this seal will not be fully effective and should be aided/substituted by silicone sealant.

2. Fit the outer seal to the concealing plate and push the concealing plate onto the valve. Ensure neither seal becomes displaced.

3. Whilst holding the concealing plate in position screw the locknuts onto the valve until they firmly lock the concealing plate against the wall. This will compress the concealing plate seals and prevent water ingress into the recess.

4. Refit the shield and knob assemblies.

Note! The control knobs will need to be fitted in the same position they were in when the knob assemblies were removed. The levers may become fouled against each other if incorrectly fitted.

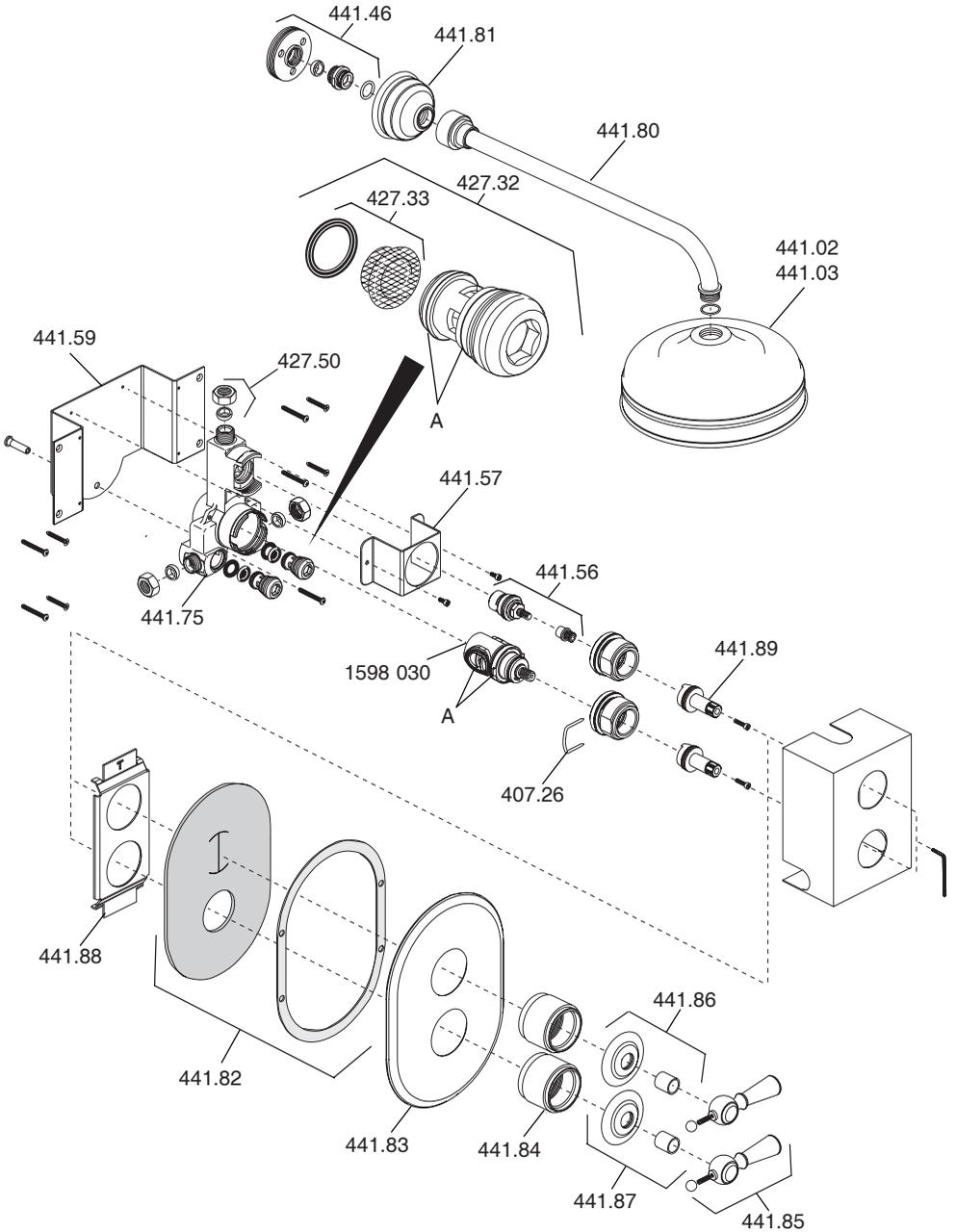
5. Check the control knobs can be rotated fully and the full flow and temperature range can be selected.

SPARE PARTS

Mira Crescent Spare Parts List

407.26	Cartridge Removal Clip
427.32	Checkvalve Assembly
427.33	Filter
427.48	Seal Pack - components identified 'A'
427.50	Compression Nut and Olive Pack
441.02	8" Deluge Head
441.03	6" Deluge Head
441.18	Screw Pack (not illustrated)
441.46	Backplate Assembly
441.56	Flow Cartridge Assembly
441.57	Valve Mounting Bracket
441.59	Wall Mounting Bracket
441.75	Valve Body
441.80	Rigid Pipe Assembly
441.81	Backplate Shroud
441.82	Plate Seals
441.83	Concealing Plate
441.84	Locknut
441.85	Valve Lever Assembly
441.86	Shield Assembly - flow
441.87	Shield Assembly - temperature
441.88	Support Bracket
441.89	Spindle
1598 030	Thermostatic Cartridge

Mira Crescent Spare Parts Diagram



CUSTOMER SERVICE

Guarantee of Quality

Mira Showers guarantee your product against any defect in 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.

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 241 0888

8:30 am to 5:00 pm Working days (4:30 pm Friday)

8:30 am to 12.30 pm Saturday

E-mail: technical@mirashowers.com

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By Post: Cromwell Road

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GL52 5EP

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Wm H Leech & Son Ltd

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

Fax: 028 9044 9234

Post: Maryland Industrial Estate

Ballygowan Road

Moneyreagh, Co Down

BT23 6BL

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Modern Plant Ltd

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