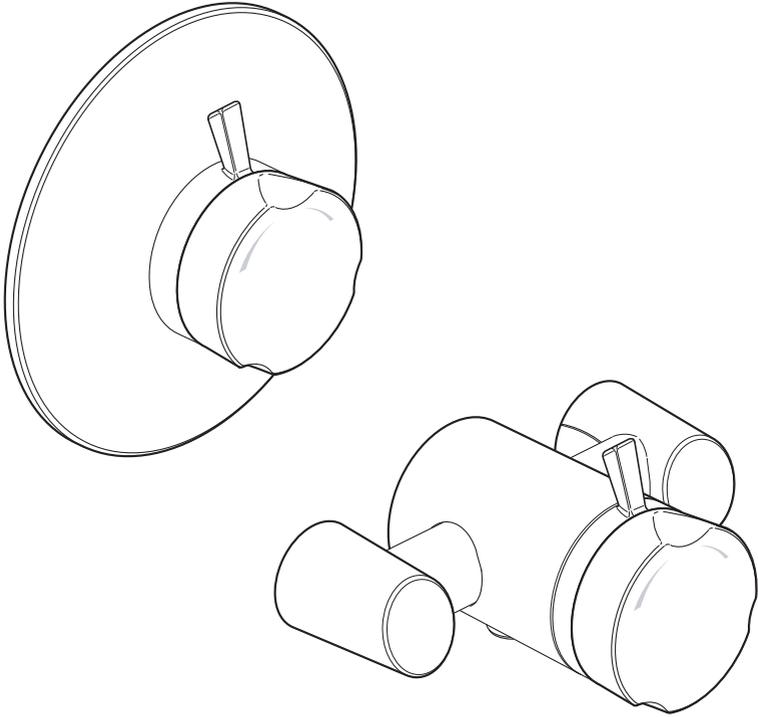


mira
Discovery



MIRA DISCOVERY

THERMOSTATIC MIXER

Installation and User Guide

These instructions are to be left with the user

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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, having done so, keep it handy for future reference.

The Mira Discovery Thermostatic Mixer is a Thermostatic Shower Control with separate flow and temperature controls.

A 12 L/Min flow regulator is supplied for high pressure systems to reduce excessive shower force.

The Thermostatic Mixer incorporates a wax capsule temperature sensing unit, which provides an almost immediate response to changes in pressures or temperature of the incoming water supplies to maintain the selected temperature. An adjustable maximum temperature stop is provided which limits the temperature to a safe level. Inlet Filters are fitted to protect the thermostatic cartridge.

Mira Discovery Exposed: Thermostatic Mixer for connection to rising, falling or rear entry pipework, supplied complete with Mira Discovery Shower Fittings.

Mira Discovery Built-in: Thermostatic Mixer for connection to concealed pipework, supplied complete with Mira Discovery Shower Fittings.

This product has been certified as a Type 2 valve under the BUILDCERT TMV2 scheme. This product also complies with the Water Supply (water fittings) Regulations 1999.

Patents and Design Registration

Patents:	GB:	2 291 693, 2 392 225, 2 421 297
	Euro:	1 672 257 DE FR GB IT NL SE
	Germany:	695 13 455.8
	France:	0 694 721
	USA:	7 240 850
Patent Applications:	Euro:	03254070.0
	USA:	2006-0124758-A1, 11/804 631
Design Registration		000351887-0001-0006

If you experience any difficulty with the installation or operation of your new Thermostatic Mixer, please refer to '**Fault Diagnosis**', before contacting Kohler Mira Ltd. Our telephone and fax numbers can be found on the back cover of this guide.

Guarantee

For **domestic installations**, Mira Showers guarantee the Mira Discovery against any defect in materials or workmanship for a period of three years from the date of purchase (shower fittings for one year).

For **non-domestic installations**, Mira Showers guarantee the Mira Discovery against any defect in materials or workmanship for a period of one year from the date of purchase.

For terms and conditions refer to the back cover of this guide.

Recommended Usage

Application	Valve Only	Valve with Fittings
Domestic	✓	✓
Light Commercial	✗	✗
Heavy Commercial	✗	✗
Healthcare	✗	✗

SAFETY : WARNINGS

Mira thermostatic mixers are precision engineered and should give continued safe and controlled performance, provided:

1. They are installed, commissioned, operated and maintained in accordance with manufacturers recommendations.
2. Periodic attention is given, when necessary, to maintain the product in good functional order.

Caution!

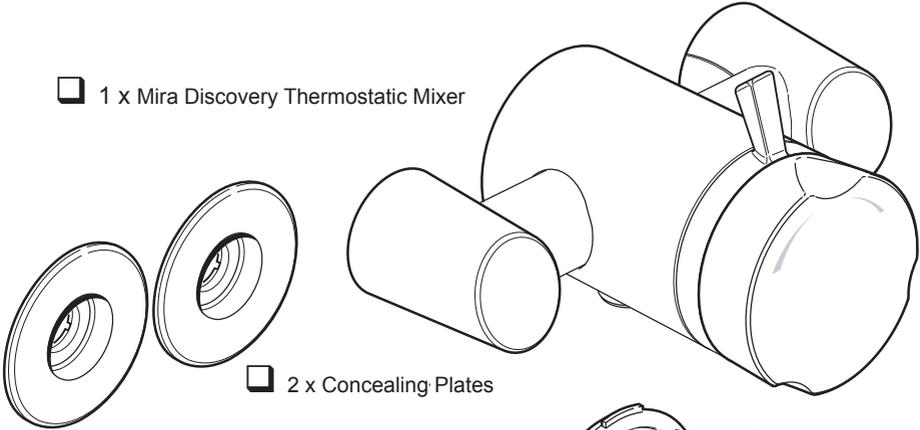
1. Read all of these instructions.
2. Retain this guide for later use.
3. Pass on this guide in the event of change of ownership of the installation site.
4. Follow all warnings, cautions and instructions contained in this guide.
5. Anyone who may have difficulty understanding or operating the controls of any shower should be attended whilst showering. Particular consideration should be given to the young, the elderly, the infirm or anyone inexperienced in the correct operation of the controls.
6. Rapid/Excessive movement of the flow and/or temperature control levers may result in momentary changes in blend temperature.
7. Care is required when adjusting flow or temperature, make sure that the temperature has stabilised.
8. When this product has reached the end of its serviceable life, it should be disposed of in a safe manner, in accordance with current local authority recycling, or waste disposal policy.

PACK CONTENTS

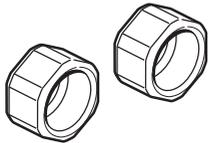
Tick the appropriate boxes to familiarise yourself with the part names and to confirm that the parts are included.

Exposed Discovery Thermostatic Mixer

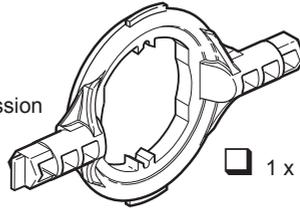
1 x Mira Discovery Thermostatic Mixer



2 x Concealing Plates



2 x 15 mm Compression Nuts



1 x O-Key



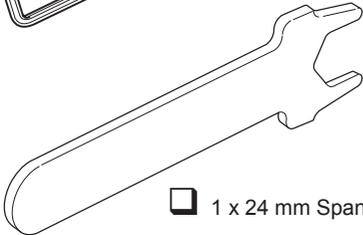
2 x 15 mm Olives



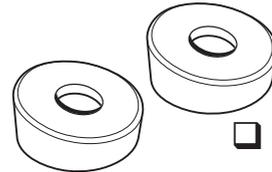
1 x 12 L/Min Flow Regulator



1 x 2.5 mm Hexagon Key



1 x 24 mm Spanner



2 x Concealing Caps



2 x Concealing Cap Seals



2 x Wall Plugs

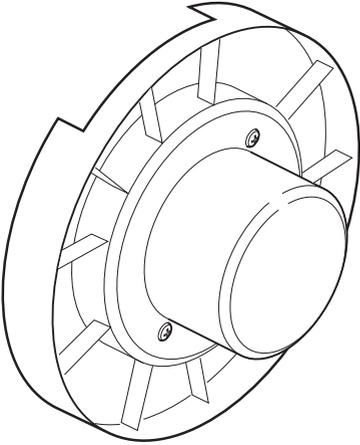


2 x Securing Screws

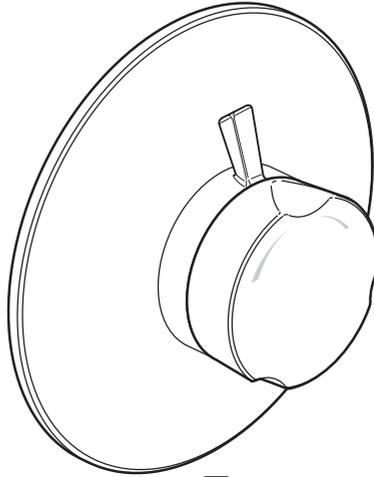
1 x Guarantee Registration Document

1 x Installation Template

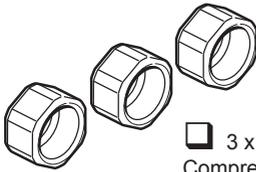
Built-in Discovery Thermostatic Mixer



☐ 1 x Mira Discovery Thermostatic Mixer
(attached to the Building-in Shroud)



☐ 1 x Control Assembly



☐ 3 x 15 mm
Compression Nuts



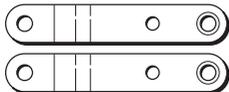
☐ 3 x 15 mm Olives



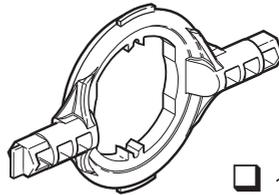
☐ 1 x 12 L/Min
Flow Regulator



☐ 1 x 2.5 mm Hexagon Key



☐ 2 x Securing Brackets



☐ 1 x O-Key



☐ 2 x Wall Plugs



☐ 2 x Securing Screws

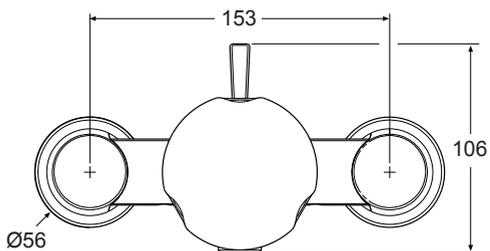
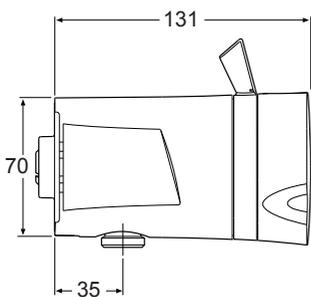


☐ 2 x M5 x 40 Screws

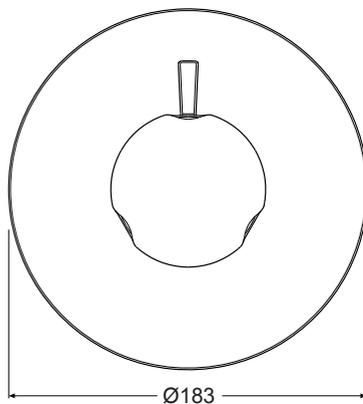
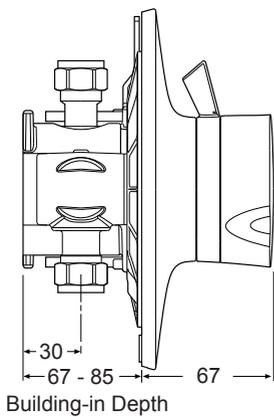
☐ 1 x Guarantee Registration Document

DIMENSIONS

Exposed Discovery Shower Control



Built-in Discovery Shower Control



Dimensions in mm

SPECIFICATIONS

Operating Parameters

For Type 2 valves, the supply conditions specified in section: '**Type 2 Valves - Application**' take precedence over the operating parameters which follow.

Pressures

- Max Static Pressure: **10 Bar**.
- Max Maintained Pressure: **5 Bar**.
- Min Maintained Pressure (Gravity System): **0.1 Bar**. (0.1 bar = 1 Metre head from cold tank base to shower handset outlet).

Note! For gravity fed / other low pressure systems (0.5 bar or below) do not fit the flow regulator.

- For optimum performance supplies should be nominally equal.

Temperatures

- Factory Pre-set (Blend) Shower: **43°C**.
- Optimum Thermostatic Control Range: **35°C to 43°C** (achieved with supplies of 15°C cold, 65°C hot and nominally equal pressures).
- Recommended Hot Supply: **60°C to 65°C Note!** The mixing valve can operate at higher temperatures for short periods without damage, however this could detrimentally affect thermostatic performance. For safety and performance reasons it is recommended that the maximum hot water temperature is limited to 65°C.
- Cold Water Range: up to **25°C**.
- Minimum Recommended Differential between Hot Supply and Outlet Temperature: **12°C**.

Thermostatic Shut-down

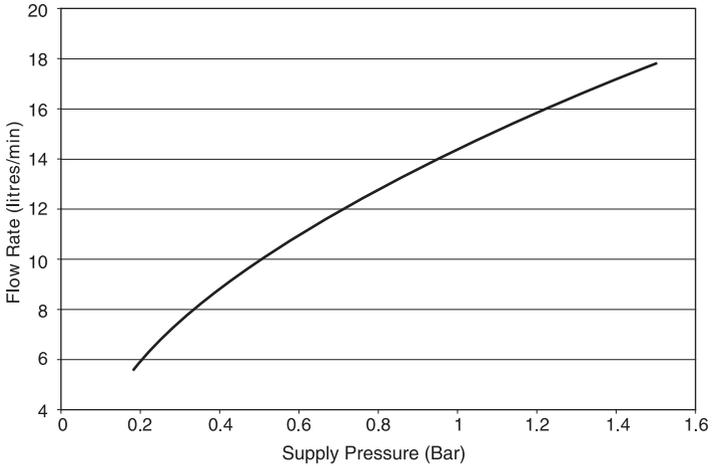
- For safety and comfort the thermostat will shut off the mixing valve **within 2 Seconds** if either supply fails (achieved only if the blend temperature has a minimum differential of 12°C from either supply temperature).

Connections

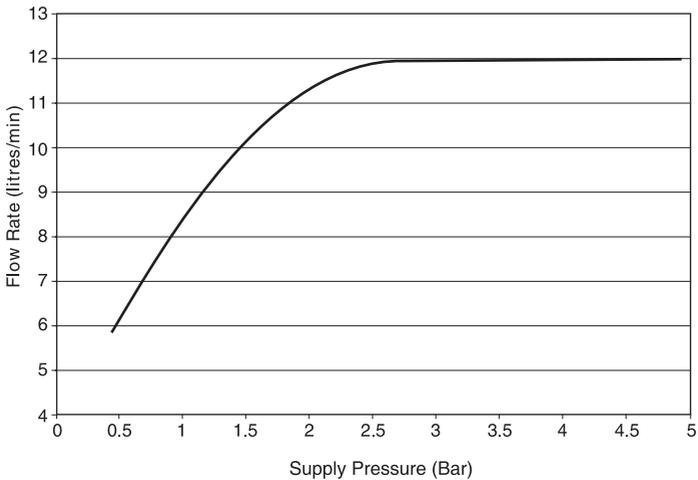
- Inlets: 15 mm Compression.
- Outlet: ½" BSP Flat Face / 15 mm Compression
- Standard connections are: **hot - left, cold - right, outlet - bottom (EV models), top (BIV models)**.

Flow Rates

Typical Flow Rates on Low Pressure Systems - Mira Discovery with Adjustable Fittings or Rigid Head:



Typical Flow Rates on High Pressure Systems (with 12 Litres/Min Flow Regulator fitted in shower control outlet) - Mira Discovery with Adjustable Fittings or Rigid Head:



INSTALLATION

Suitable Plumbing Systems

Gravity Fed:

The thermostatic mixer must be fed from a cold water cistern (usually fitted in the loft space) and a hot water cylinder (usually fitted in the airing cupboard) providing nominally equal pressures.

Mains Pressurised Instantaneous Hot Water System (Combination Boiler):

The thermostatic mixer can be installed with systems of this type with balanced pressures. (Recommended Minimum Maintained Pressure: **1.0 Bar**).

Unvented Mains Pressure System:

The thermostatic mixer can be installed with an unvented, stored hot water system.

Pumped System:

The thermostatic mixer can be installed with an inlet pump (twin impeller). The pump must be installed in a suitable location and in accordance with its instructions.

General

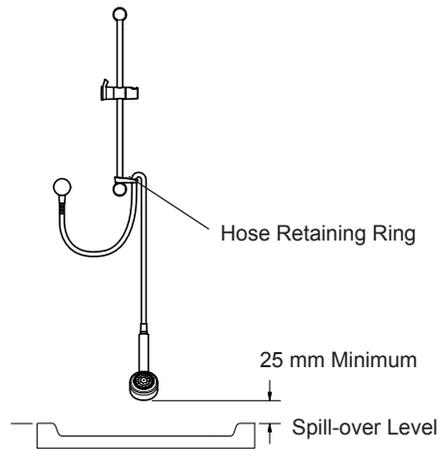
Installation must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.

The installation must comply with the “Water Supply Regulations 1999 (Water Fittings)” or any particular regulations and practices, specified by the local water company or water undertakers.

Note! Make sure that all site requirements correspond to the information given in the section: ‘**Specifications**’. For Type 2 valves see also supply conditions in section: ‘**Type 2 Valves**’.

1. The Mixer must not be installed in an area where it may freeze.
2. For stud partitions alternative fixings may be required.
3. Isolating valves **must** be installed close to the Mixer for ease of maintenance.
4. Pipework must be rigidly supported and avoid any strain on the connections.
5. Pipework dead-legs should be kept to a minimum.

6. Decide on a suitable position for the Mixer. The position of the Mixer and the Shower Fittings must provide a minimum gap of 25 mm between the spill-over level of the shower tray/bath and the handset (refer to illustration). This is to prevent back-siphonage. For further information on the installation of your **Shower Fittings**, refer to the Fittings Installation and User Guide.
- Note!** Only use Shower Fittings recommended by the manufacturer or supplier.



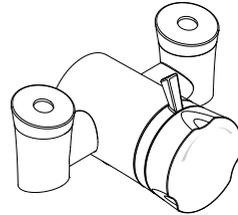
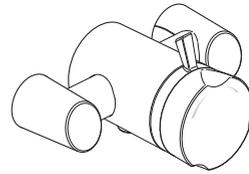
Installation Methods

Exposed Discovery Shower Control

The **Exposed** Discovery Shower Control can be installed with Rear, Rising or Falling Supply Inlets.

For Rear Entry Supplies, go to section: '**Exposed Shower Control, 1. Rear Supplies**'.

For Rising or Falling Supplies, go to section: '**Exposed Shower Control, 2. Rising or Falling Supplies**'.



Built-in Discovery Shower Control

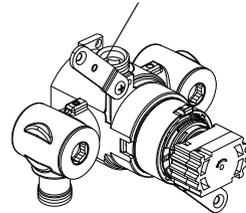
The **Built-in** Discovery Shower Control can be installed using Rear Fixing Points on the Body, or by using the Securing Brackets (supplied) on the Front Face of a Solid Wall or Stud Partition, or on the Rear Face of a Laminated Panel.

For installation into a Solid Wall or Stud Partition using the Securing Brackets, go to section: '**Built-in Shower Control, 1. Solid Wall or Stud Partition (Using Securing Brackets - Mounting off Front Face)**'.

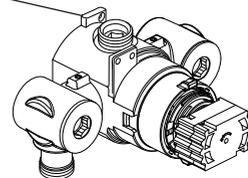
For installation into a Solid Wall or Stud Partition using the Rear Fixing Points, go to section: '**Built-in Shower Control, 2. Solid Wall or Stud Partition (Using Rear Fixing Points on Shower Control)**'.

For installation behind a Laminated Panel using the Securing Brackets, go to section: '**Built-in Shower Control, 3. Laminated Panel (Using Securing Brackets - Mounting off Rear Face)**'.

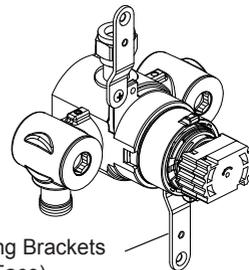
Securing Brackets
(Front Face)



Rear Fixing
Points



Securing Brackets
(Rear Face)



Exposed Shower Control

1. Rear Supplies

1.1 Use the Installation Template to mark the positions of the holes for the Backplate and the pipe centres.

Note! Allow a minimum of 150 mm either side of the Shower Control, to allow the hot and cold inlet Compression Nuts to be tightened with the Spanner supplied.

1.2 For solid walls drill the Backplate holes with a 6 mm drill and fit the Wall Plugs (supplied). For other types of wall structure alternative fixings (not supplied) may be required.

1.3 Drill the supply pipe holes at 153 mm centres.

1.4 Recess the wall to allow for the concealing plates, 32 mm diameter x 10 mm deep.

1.5 Fit the supply pipework (Hot - Left, Cold - Right). The pipework must project 18 mm from the finished wall surface at 153 mm centres (use the installation template as a guide).

Note! If the connections are reversed, complete the installation then refer to section: **'Reversed Inlet Supplies'** before commissioning.

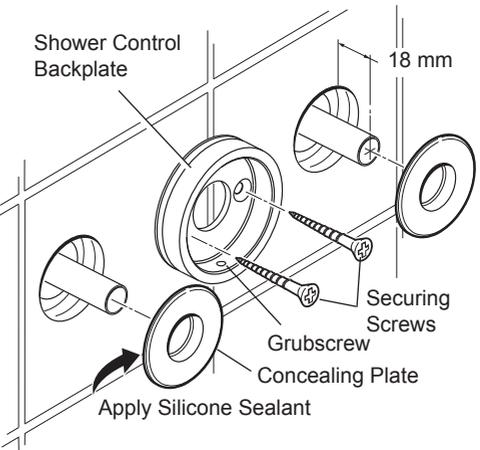
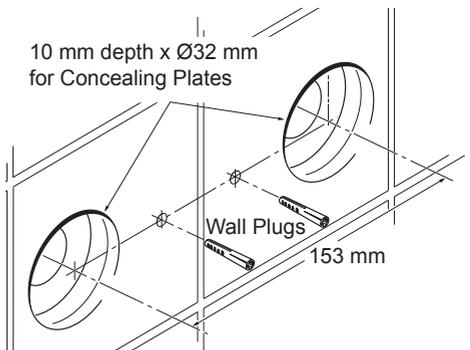
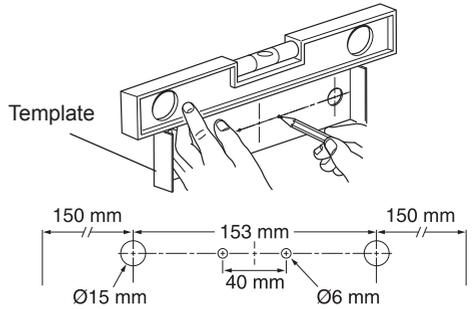
1.6 Loosen the Grubscrew with the 2.5 mm hexagon key (supplied) and remove the Backplate from the Shower Control.

1.7 Secure the Backplate to the wall using the Fixing Screws (supplied).

Note! The Grubscrew should be at the bottom.

1.8 Fit the Concealing Plates.

Note! Apply silicone sealant to the back face of the flange.

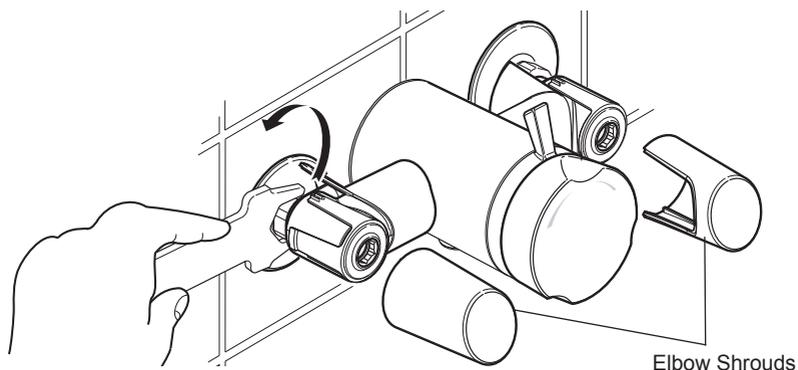
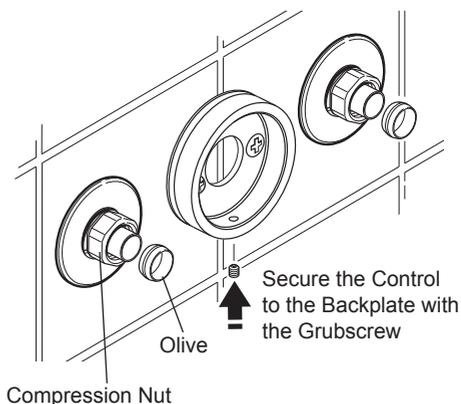


Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the Shower Control. Failure to do so may result in product malfunction.

- 1.9 Put the Compression Nuts and Olives onto the pipework.
- 1.10 Remove the Elbow Shrouds from the Shower Control.
- 1.11 Align the Shower Control with the pipework and fit onto the Backplate.
- 1.12 Tighten the Compression Nuts onto the Shower Control with the Spanner (supplied).

Caution! Take care not to damage the chrome surfaces.

- 1.13 Tighten the Grubscrew to secure the Shower Control to the Backplate.



- 1.14 Fit the Shower Fittings, refer to your Fittings Installation and User Guide for instructions.
- 1.15 Turn on the hot and cold water supplies and check for leaks.
- 1.16 Refit the Elbow Shrouds.
- 1.17 The Shower Control is preset to approximately 43 °C at the factory. If adjustment is required, refer to section: '**Commissioning**'.

2. Rising or Falling Supplies

2.1 Remove the Elbow Shrouds from the Shower Control.

2.2 Rising Supplies: Loosen the Grubscrew on each Elbow using the 2.5 mm hexagon key (supplied) and pull off the Elbows from the Shower Control. Refit each Elbow on the opposite side and rotate 90° as required. Retighten the Grubscrews.

Caution! Do not overtighten.

Falling Supplies: Loosen the Grubscrew on each Elbow using the 2.5 mm hexagon key (supplied) and rotate the Elbows 90° as required. Retighten the Grubscrews.

Caution! Do not overtighten.

2.3 Use the Installation Template to mark the positions of the fixing holes for the Backplate.

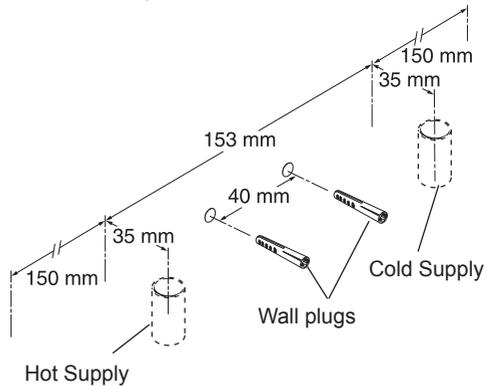
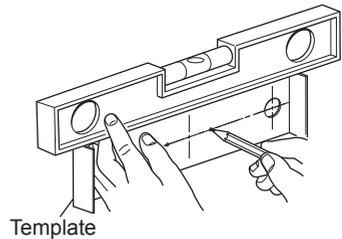
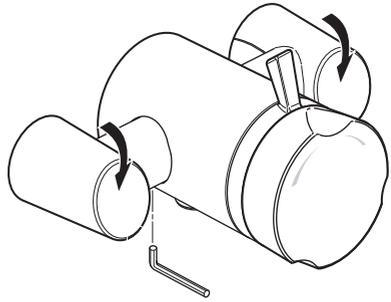
Note! Allow a minimum of 150 mm either side of the Shower Control, to allow the hot and cold inlet Compression Nuts to be tightened with the Spanner supplied.

2.4 For solid walls drill the Backplate holes with a 6 mm drill and fit the Wall Plugs (supplied). For other types of wall structure alternative fixings (not supplied) may be required.

2.5 Fit the supply pipework, centres set 35 mm from the finished wall surface (Hot - Left, Cold - Right).

Note! If the connections are reversed, complete the installation then refer to section: '**Reversed Inlet Supplies**' before commissioning.

2.6 Loosen the Grubscrew and remove the Backplate from the Shower Control.



- 2.7** Attach the Backplate to the wall using the Fixing Screws (supplied).

Note! The Grubscrew should be at the bottom.

Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the Shower Control. Failure to do so may result in product malfunction.

- 2.8** Fit the Connector Covers and 'O' Seals onto the pipework.

- 2.9** Fit the Compression Nuts and Olives onto the pipework.

- 2.10** Align the Shower Control with the pipework and fit onto the Backplate.

- 2.11** Tighten the Compression Nuts onto the Shower Control with the Spanner (supplied).

Caution! Take care not to damage the chrome surfaces.

- 2.12** Tighten the Grubscrew to secure the Shower Control to the Backplate.

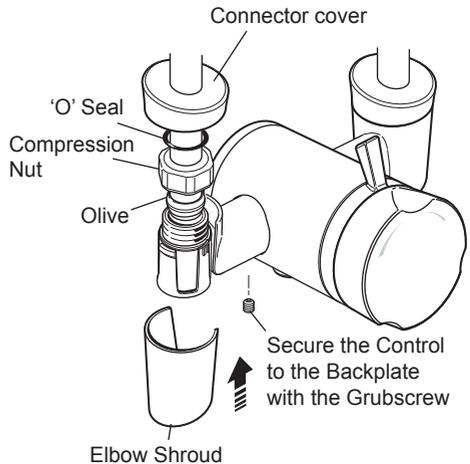
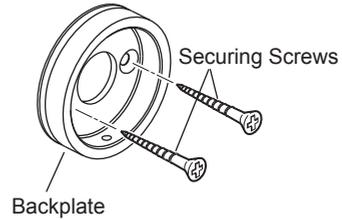
- 2.13** Fit the Shower Fittings, refer to your Fittings Installation and User Guide for Instructions.

- 2.14** Turn on the hot and cold water supplies and check for leaks.

- 2.15** Refit the Elbow Shrouds.

- 2.16** Position the Connector Covers so that they slope away from the wall and slide them down the pipework, until they are flush with the Elbow Shrouds.

- 2.17** The shower control is preset to approximately 43 °C at the factory. If adjustment is required, refer to the section '**Commissioning**'.



Built-in Shower Control

1. Solid Wall or Stud Partition (Using Securing Brackets - Mounting off Front Face)

1.1 Determine the route for the hot and cold supply pipework and for the outlet pipework. When connecting to the BIV Shower Fittings it is recommended that the outlet be positioned above and to one side of the Shower Control. This is to prevent the Flexible Hose from obstructing the Shower Controls.

1.2 Remove the two Securing Screws (retain for later use) and remove the Shower Control from the Building-in Shroud.

1.3 Mark the position of the Shower Control using the Building-in Shroud as a guide.

1.4 Mark the routes for the hot and cold supply pipework at 135 mm centres.

Falling Supplies: For falling supplies loosen the grubscrew on each Elbow using the 2.5 mm Hexagon Key (supplied). Remove the Elbows and install on opposite sides. Secure the Elbows with the Grubscrews.

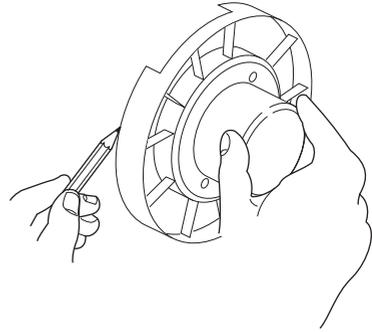
Caution! Do not overtighten.

Note! Make sure that the Filter Plugs are positioned to the front (i.e. Hexagonal Key facing forward).

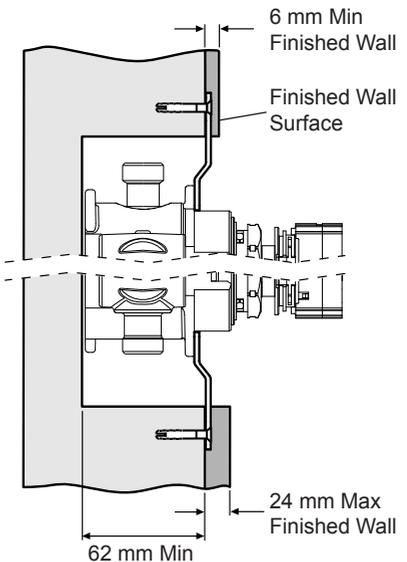
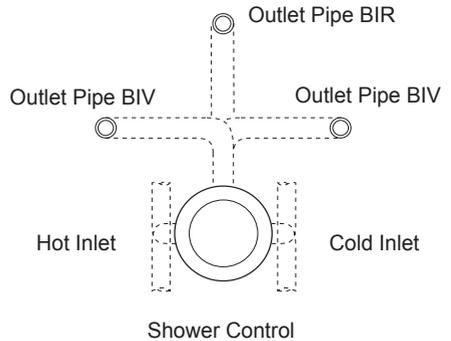
1.5 Mark the route for the outlet pipework.

Note! The Outlet Elbow should be sited above the Shower Control and on the right or left, as site dictates.

1.6 Remove the plasterboard and brick work to a minimum depth of 62 mm.



Alternative Pipe Layouts



1.7 Fit the Securing Brackets to the Shower Control.

Important! Make sure that the correct holes are used, otherwise the Backplate cannot be fitted.

Note! The Securing Brackets can be rotated for suitable fixing points.

1.8 Mark the positions for the Countersunk Fixing Holes on the wall.

1.9 For solid walls drill two 6 mm holes for the Wall Plugs.

Caution! Do not drill into pipes in the wall.

1.10 Fit the Wall Plugs (supplied) and fix the Shower Control to the wall with the Securing Screws provided.

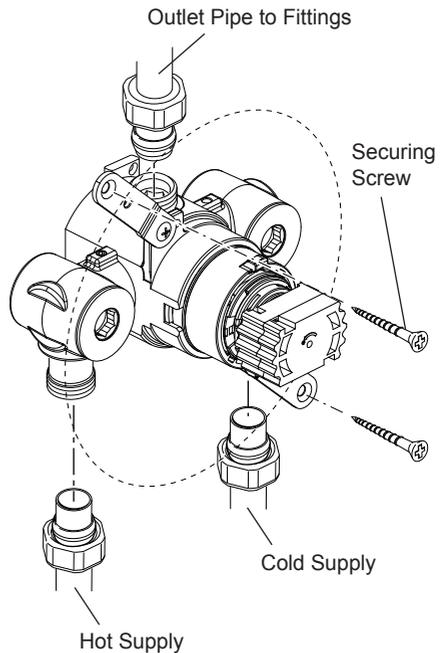
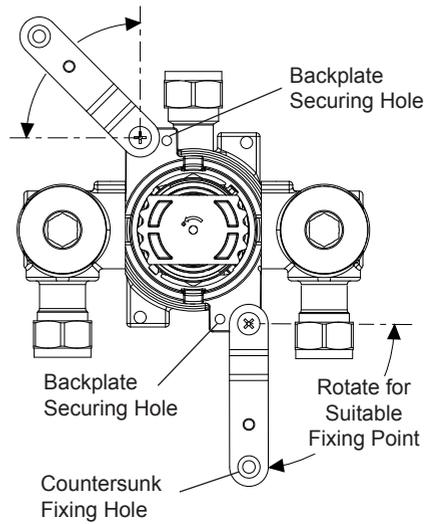
Note! For stud partition installations alternative fixings may be required (not supplied).

1.11 Connect the hot and cold supply pipes and tighten the Compression Nuts.

Caution! Make sure that the Olives are fitted and all pipework is flushed through before connecting to the Shower Control.

1.12 Fit the outlet pipework, leaving enough pipe through the wall to temporarily cap off.

1.13 Turn on the water supplies and check for leaks.



1.14 Attach the Building-in Shroud to the Shower Control using the two Securing Screws.

1.15 Using the 'Finished Wall Indicator' on the Building-in Shroud as a guide, finish the wall.

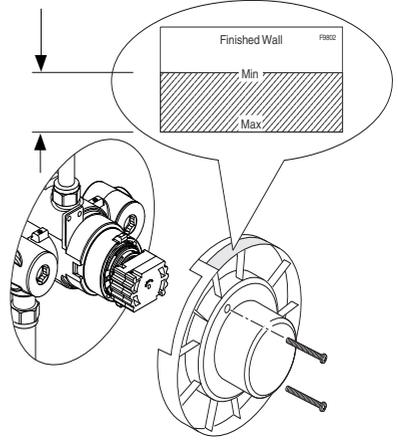
Caution! Make sure that the finished wall is within the maximum and minimum limits or the control components will not fit correctly.

1.16 Remove the Building-in Shroud. Retain the two Securing Screws for fitting the Backplate.

1.17 Fit the Shower Fittings, refer to your Fittings Installation and User Guide for instructions.

1.18 Fit the Concealing Plate and Control Assembly, refer to section: '**Control Assembly**'.

Maximum /
Minimum Limits



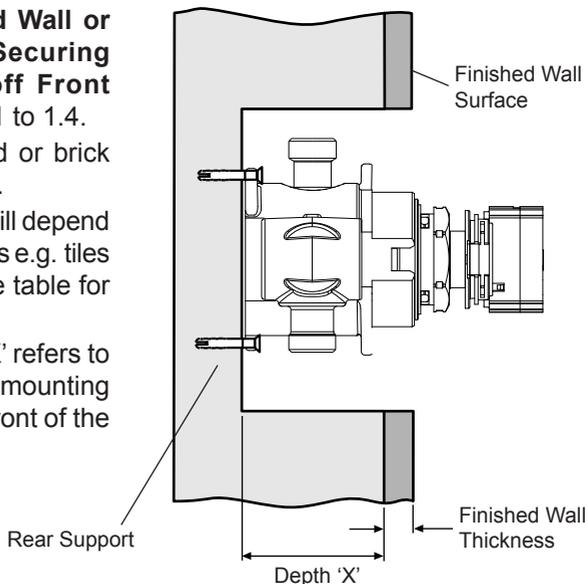
2. Solid Wall or Stud Partition (Using Rear Fixing Points on Shower Control)

2.1 Refer to section: '1. Solid Wall or Stud Partition (Using Securing Brackets - Mounting off Front Face)' and follow steps 1.1 to 1.4.

2.2 Cut away the plasterboard or brick work to the required depth.

Important! This depth 'X' will depend on the finished wall thickness e.g. tiles or facia board. Refer to the table for this measurement.

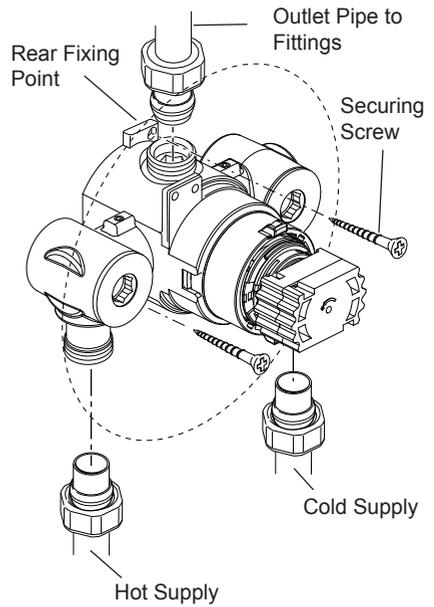
For stud partitions depth 'X' refers to the distance from the rear mounting e.g. timber noggin, to the front of the wall (before tiling).



Finished Wall Thickness (e.g. tile and adhesive)	Wall Cutout Depth 'X'
4 mm	81 - 63 mm
6 mm	79 - 61 mm
8 mm	77 - 59 mm
10 mm	75 - 57 mm
12 mm	73 - 55 mm
14 mm	71 - 55 mm
16 mm	69 - 55 mm
18 mm	67 - 55 mm
20 mm	65 - 55 mm
22 mm	63 - 55 mm
24 mm	61 - 55 mm

Important! Total building-in depth (X + Finished Wall Thickness) **must not** exceed an absolute maximum of 85mm.

- 2.3** Mark the positions of the Fixing Screw holes on the wall.
- 2.4** For solid walls drill two 6 mm holes for the Wall Plugs.
- 2.5** Insert the Wall Plugs (supplied) and attach the Shower Control to the wall with the Securing Screws provided.
- Note!** For stud partition installations alternative fixings may be required (not supplied) to fix the shower control to the rear face of the wall cavity or to a timber noggin.
- 2.6** Refer to section: **'1. Solid Wall or Stud Partition (Using Securing Brackets - Mounting off Front Face)'** and follow steps 1.10 to 1.18.



3. Laminated Panels (Using Securing Brackets - Mounting off Rear Face)

Note! For laminated panels the shower control must be positioned from the rear of the panel.

Panel thickness must be between 4 and 12 mm (if a thicker panel is used, it will be necessary to recess the securing brackets into the rear of the panel).

Important! Make sure that there is a minimum clearance of 64 mm behind the laminated panel to house the shower control.

3.1 Remove the two Securing Screws (retain for later use) and remove the Shower control from the Building-in Shroud.

3.2 Mark the position of the Shower Control using the Building-in Shroud as a guide.

3.3 Carefully cut out the laminated panel.

3.4 Fit the Securing Brackets to the Shower Control.

Important! The brackets **must** be fixed vertically, as illustrated.

Important! Make sure that the correct holes are used, otherwise the Backplate cannot be fitted.

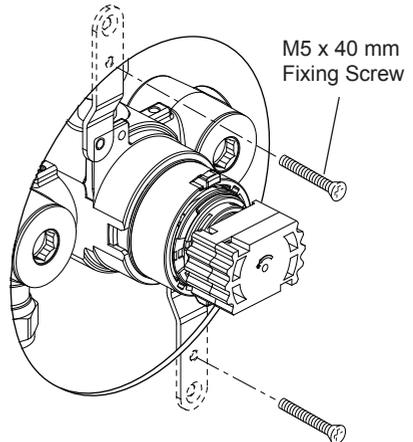
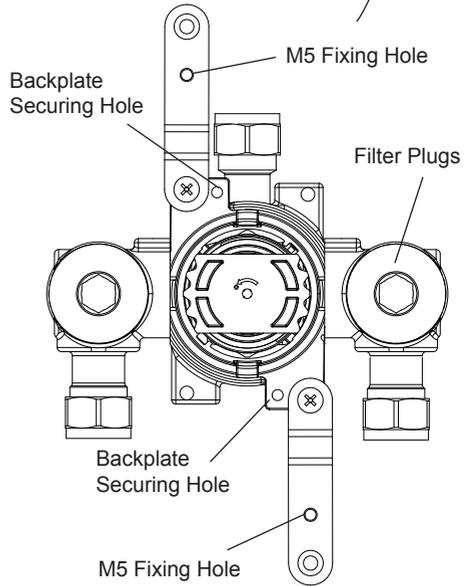
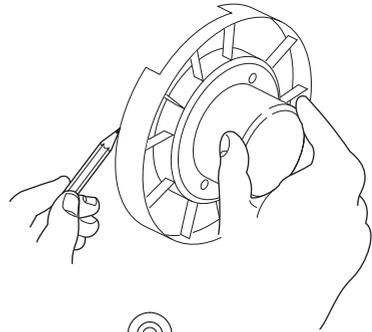
3.5 Position the Shower Control on the front of the panel and mark the position of the M5 fixing holes.

Important! Make sure that the correct holes are used (refer to illustration).

Note! Make sure that the Filter Plugs are positioned so that they can be removed for servicing.

3.6 Drill the two 5 mm holes for the fixing positions (countersink the holes at the front).

3.7 Secure the Shower Control with the M5 x 40 screws as shown.



- 3.8** Fit the hot and cold supply pipes and tighten the compression nuts.

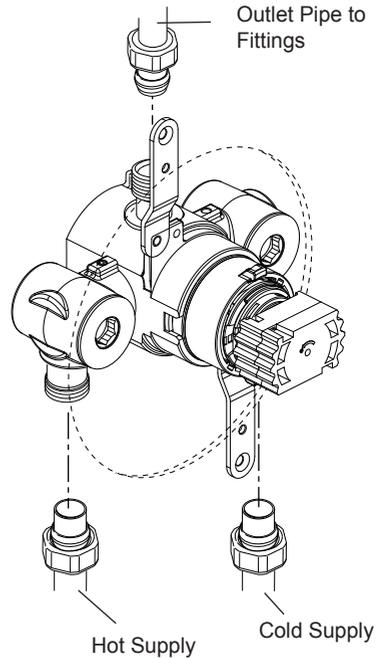
Falling Supplies: For falling supplies loosen the grub screw on each Elbow using the 2.5 mm Hexagon Key (supplied). Remove the Elbows and install on opposite sides. Secure the Elbows with the Grubscrews.

Caution! Do not overtighten.

Note! Make sure that the Filter Plugs are positioned to the front (i.e. Hexagonal Key facing forward).

Caution! Make sure that the olives are fitted and all pipework is flushed through before connecting to the Shower Control.

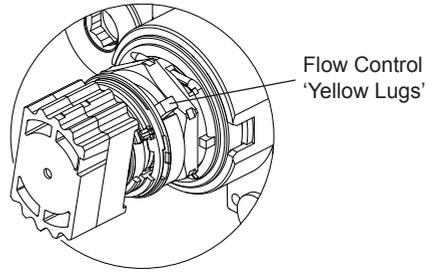
- 3.9** Fit the outlet pipework, leaving enough pipe through the wall to temporarily cap off.
- 3.10** Turn on the water supplies and check for leaks.
- 3.11** Fit the Shower Fittings, refer to your Fittings Installation and User Guide for instructions.
- 3.12** Fit the Concealing Plate and Control Assembly, refer to section: '**Control Assembly**'.



Control Assembly

Important! The Yellow Lugs on the Flow Control must be in the fully clockwise (off) position in order to fit the Control Assembly.

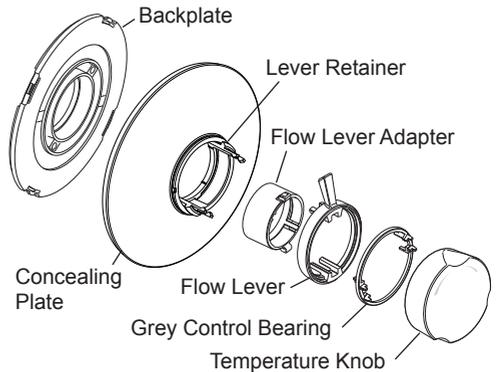
Note! The Flow Control Lugs on pre 2006 models are Black.



1. Rotate the Temperature Knob fully clockwise and carefully pull it off.
2. Remove the Grey Control Bearing.
3. Pull off the Flow Lever.
4. Remove the Flow Lever Adapter.

Important! The Lever Retainer must not be removed.

5. Carefully unclip the Concealing Plate from the Backplate.
Note! Use a screwdriver in the cutout to assist separation.

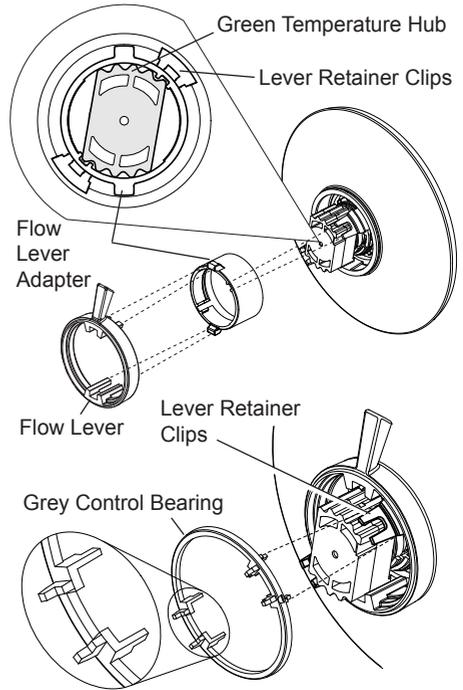


6. Fit the Backplate to the Shower Control and secure with the two Securing Screws (removed from the Building-in Shroud). Make sure that the Foam Seal is fully compressed. Do not overtighten.

Note! If the knob does not come off, rotate it fully anticlockwise, pull on the Temperature Knob while slowly rotating it clockwise until it disengages.

7. With the cutout at the bottom, locate the Concealing Plate over the Shower Control, engage the crosses in the Concealing Plate with the square recesses in the Backplate, and push firmly until the Concealing Plate clicks into position.

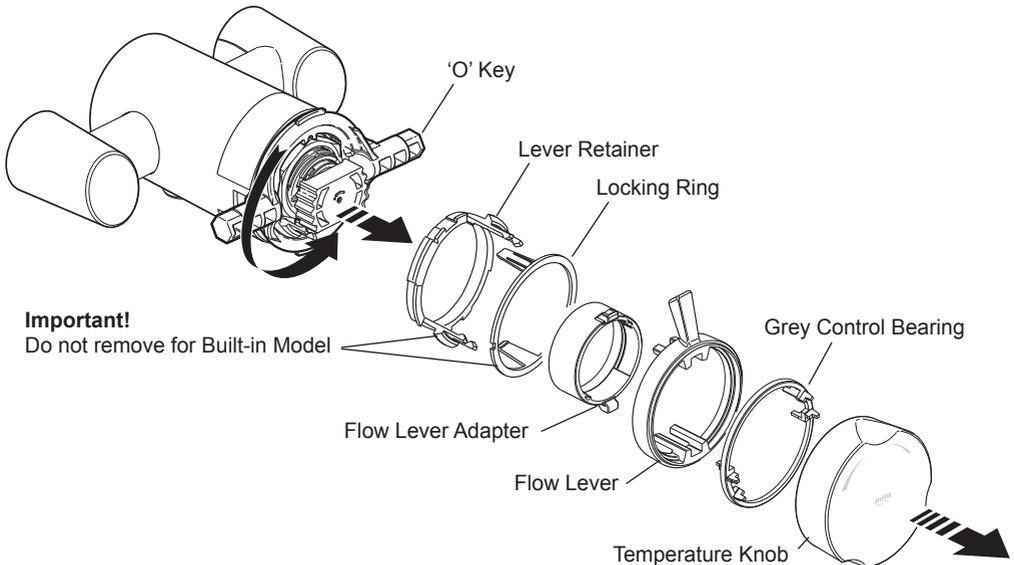
8. Align the Green Temperature Hub with the Lever Retainer Clips as illustrated.
9. Slide the Flow Lever Adapter over the Cartridge and onto the yellow lugs on the Flow Control, exactly as illustrated.
10. Push the Flow Lever onto the Flow Lever Adapter (align lugs as illustrated).
11. Push the Grey Control Bearing over the Lever Retainer.
Note! Align the Grey Control Bearing with the Lever Retainer Clips and **not** the Flow Control Lever.
12. Refer to section '**Commissioning**', for maximum temperature setting and temperature knob assembly.



REVERSED SUPPLIES

The Discovery Shower Control is supplied with inlet connections **Hot-Left, Cold-Right** and **Bottom-Outlet** as standard. If the hot and cold water supply pipes have been reversed during installation the following procedure must be performed.

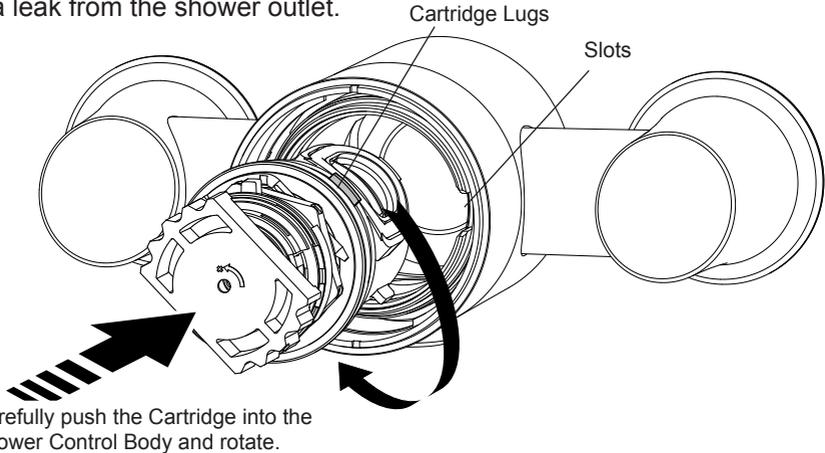
1. Isolate the hot and cold water supplies.
2. Operate the Flow Lever and Temperature Knob to drain any residual water.
3. Rotate the Temperature Knob fully clockwise and carefully pull it off.
Note! If the knob does not come off, rotate it fully anticlockwise, pull on the Temperature Knob while slowly rotating it clockwise until it disengages.
4. Remove the Grey Control Bearing.
5. Pull off the Flow Lever.
6. Remove the Flow Lever Adapter.
7. **Exposed Models only (illustrated):**
 - a) Carefully remove the Locking Ring.
 - b) Rotate the Lever Retainer clockwise to disengage and remove.
8. **Built-in Models only:**
 - a) Carefully unclip the Concealing Plate from the Backplate.
Important! The Lever Retainer must not be removed.
Note! Use a screwdriver in the cutout to assist separation.
 - b) Unscrew the two Securing Screws and carefully remove the Backplate from the Shower Control.
9. Fit the 'O' Key over the Green Temperature Hub and onto the Brass Nut.
10. Turn the 'O' Key anticlockwise to unscrew the Cartridge from the Body and pull the Cartridge clear.



11. Rotate the Cartridge 180° to reverse the inlets to the Cartridge.
Caution! Make sure the two Cartridge Side Seals are not damaged.
12. Refit the Cartridge into the Shower Control Body, make sure that the lugs engage in the slots in the Body.

Note! To assist in refitting the Cartridge, rotate 45° (i.e. with the inlet seals at 2 and 8 o'clock) and push into the Shower Control, then rotate to align the lugs with the slots in the body and push fully home (refer to illustration).

Important! Make sure that the side seals do not extrude from the Shower Control Body when pushing the cartridge in. Damage to these seals will result in a leak from the shower outlet.



13. Tighten the Brass Nut using the 'O' Key (supplied).
14. Remove the 'O' Key.
Note! If the 'O' Key has become trapped under the Yellow lugs on the Flow Control, rotate them until the 'O' Key can be removed.
Note! The Flow Control Lugs on pre 2006 models are Black.
Caution! Make sure that the Yellow Lugs are returned to the fully clockwise position before restoring the water supplies.
15. Restore the hot and cold water supplies and check for leaks.
16. Exposed Models Only:
 - a) Fit the Lever Retainer with the clips horizontal, make sure both sides locate under the lip and rotate anticlockwise.
 - b) Fit the Locking Ring.
17. Built-in Models only:
 - a) Fit the Backplate to the Shower Control and secure with the two Securing Screws. Make sure that the Foam Seal is fully compressed.
 - b) With the cutout at the bottom, slide the Concealing Plate over the Shower Control, engage the crosses in the Concealing Plate with the square recesses in the Backplate, and push firmly until the Concealing Plate clicks into position.
18. Refer to the section '**Installation, Control Assembly**' and follow steps 8 to 12.

COMMISSIONING

The Thermostatic Shower Control is preset to approximately 43 °C at the factory. If adjustment is required, set the maximum temperature as follows:

For Type 2 installations the maximum blend temperature is determined by the application, refer to the section '**Type 2 Valves - Application**'.

Flow Rate

Note! Make sure that any inlet isolating valves are fully open.

If excessive flow rate is experienced from the Shower Control, install the supplied Flow Regulator, refer to the Discovery Fittings Installation and User Guide.

Setting the Maximum Temperature

1. Rotate the Temperature Control Knob fully clockwise (full cold position) and carefully pull it off.

Note! If the knob does not come off, rotate it fully anticlockwise, pull on the Temperature Knob while slowly rotating it clockwise until it disengages.

2. Turn the Green Temperature Hub fully anticlockwise (full hot position).

Note! Operate the Shower Control until the hot and cold water temperatures have stabilised.

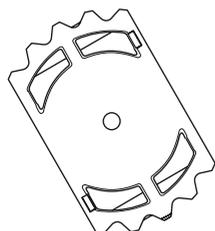
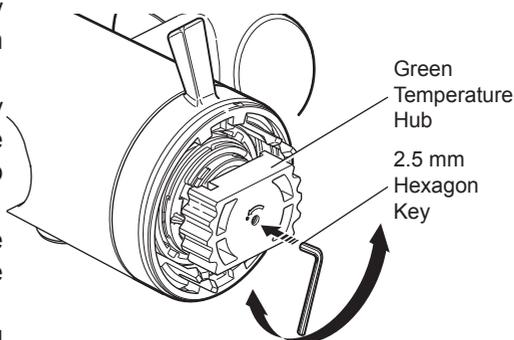
3. Insert the 2.5 mm Hexagon Key into the centre of the Green Temperature Hub.

4. Turn the 2.5 mm Hexagon Key **anticlockwise** to **increase** the temperature, or **clockwise** to **decrease** temperature.

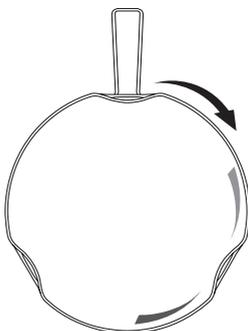
5. Rotate the Green Temperature Hub fully clockwise (refer to the following illustration).

6. Position the Temperature Control Knob (refer to the following illustration) over the Green Temperature Hub and gently push it on.

Note! Make sure the Temperature Control Knob moves freely to full hot and to full cold.



Rotate the Green Temperature Hub, fully clockwise to this position



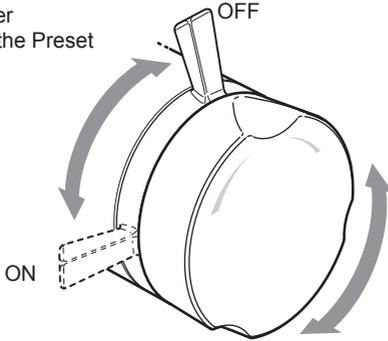
The Temperature Control Knob must be in this position (the full cold position) over the Green Temperature Hub

OPERATION

Shower Control (Exposed and Built-in Controls)

Note! The shower performance may be effected if other water appliances are operated whilst the shower is in use.

Turn the Flow Lever
Anticlockwise to the Preset
Maximum Flow



Turn the Temperature Control
Knob **Clockwise** to decrease the
Temperature, or **Anticlockwise** to the
Preset Maximum Temperature

Caution! Do not force the Temperature Control Knob. If the desired temperature cannot be achieved refer to the section '**Commissioning**'.

FAULT DIAGNOSIS

Symptom	Cause / Rectification
1. Only hot or cold water from the Mixer outlet.	<ul style="list-style-type: none"> a. Inlets reversed (hot supply to cold supply). Refer to section: 'Reversed Supplies'. b. No hot water reaching the Mixer. c. Check the Filters for any blockage. d. Installation conditions outside operating parameters: refer to sections: 'Specifications' and 'Commissioning'.
2. Fluctuating or reduced flow rate.	<ul style="list-style-type: none"> a. Check the Showerhead, Hose and Filters for any blockage. b. Make sure the maintained inlet pressures are nominally balanced and sufficient, refer to section: 'Specifications'. c. Make sure the inlet temperature differentials are sufficient, refer to section: 'Specifications'. d. Flow Regulator fitted incorrectly. e. Airlock or partial blockage in pipework.
3. No flow from the Mixer outlet.	<ul style="list-style-type: none"> a. Check the Showerhead, Hose and Filters for any blockage. b. Hot or cold supply failure.
4. Blend temperature drift.	<ul style="list-style-type: none"> a. Refer to symptom 2. above. b. Significant supply temperature fluctuation. c. Significant supply pressure fluctuation. d. Faulty Thermostatic Cartridge, renew.
5. Maximum blend temperature setting too hot or too cold.	<ul style="list-style-type: none"> a. Indicates incorrect maximum temperature setting; refer to section: 'Commissioning'. b. Refer to symptom 4. above.
6. Water leaking from the Showerhead.	<ul style="list-style-type: none"> a. Normal for a short period after shut off. b. Check that the pressures are not in excess of the specifications for product. c. Cartridge Inlet Seals damaged, renew. d. Renew the Thermostatic Cartridge.
7. Flow rate too low or too high.	<ul style="list-style-type: none"> a. (low) Insufficient supply pressures. b. (high) Supply pressure too high. Install Flow Reg. c. Refer to symptom 2. above.

MAINTENANCE

General

The Mira Discovery Shower Control is designed to be maintenance free, as such there are no serviceable parts in the cartridge. However regular cleaning will keep the shower in pristine condition, refer to section: '**Maintenance, Cleaning**'.

Filters are fitted to the inlets of the mixer to protect the cartridge and will give many years of trouble free showering. Filters should be checked at yearly intervals and cleaned or replaced to maintain optimum shower performance. Refer to the section '**Maintenance, Filters**'.

If you require a Mira trained engineer or agent, refer to the section '**Customer Service**'.

Lubricants

Silicone-only based lubricants can be used to assist in refitting.

Caution! Oil based or other lubricant types, may cause rapid deterioration of seals.

Cleaning

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

Do not use descalents on this product.

In-service Tests

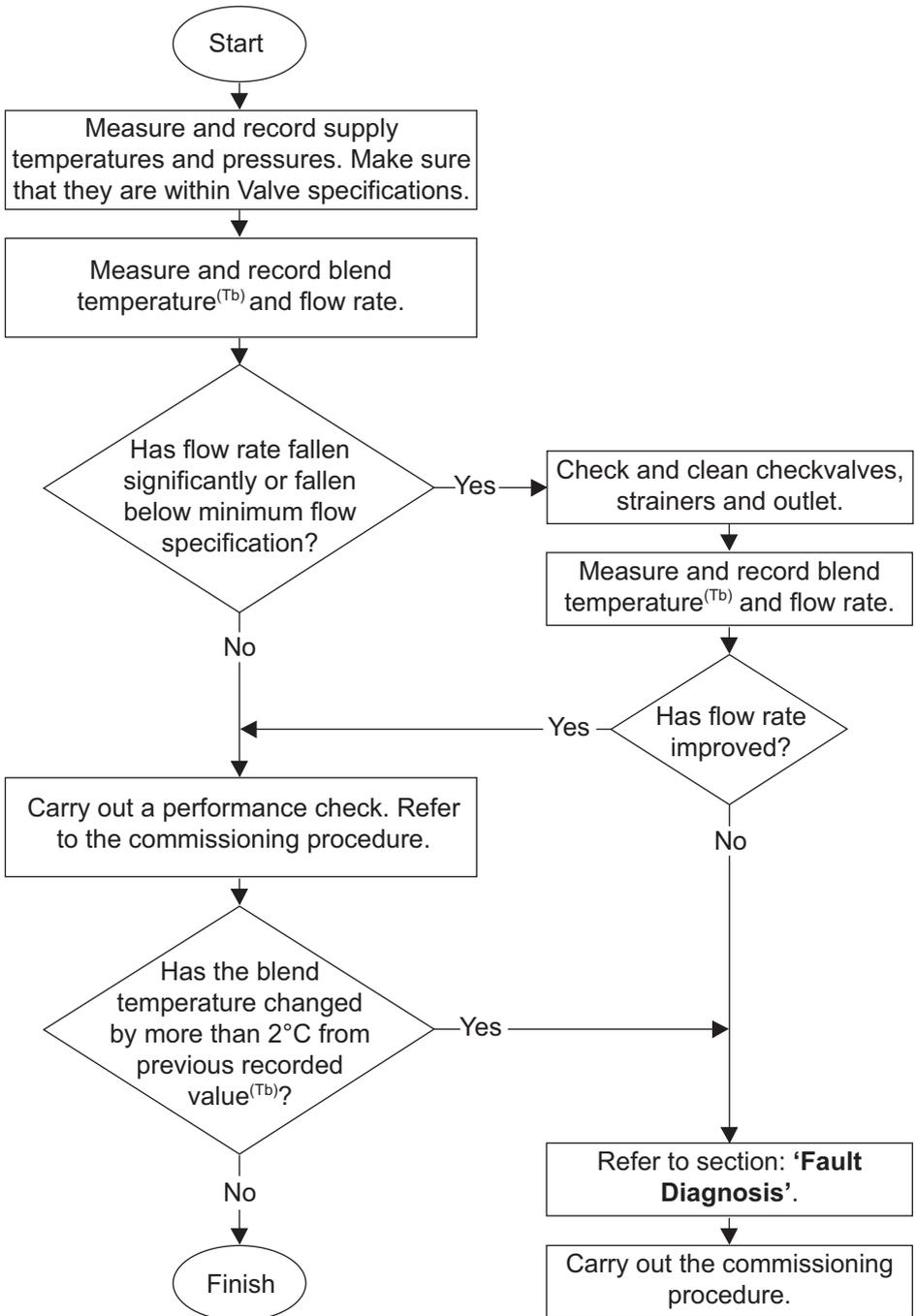
The principal means for determining the continuing satisfactory performance of the mixing valve is the in-service test.

Follow the procedure detailed in the flow diagram "In-service Test Procedure".

Frequency of In-service Tests - Commercial (non-domestic installations)

Check for correct blend setting every 6 months.

Follow the procedure detailed in the flow diagram "In-service Test Procedure", every 12 months.



Note! All measurements and results should be recorded in the Log Book.

Flow Diagram, In-service Test Procedure

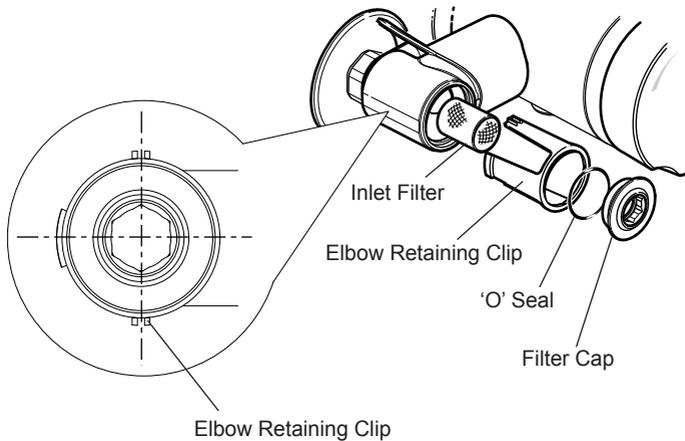
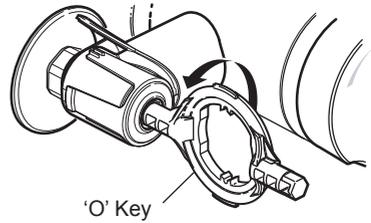
Filters - Exposed Models

To clean or replace the inlet filters:

1. Isolate the hot and cold water supplies.
2. Operate the Flow Lever to drain any residual water.
3. Remove the Elbow Shrouds.
4. Unscrew the Filter Caps with the 'O' key (supplied) or a 12 mm hexagonal key.
5. Remove the Elbow Retaining Clips.
6. Carefully pull out the Inlet Filters.
7. Clean each filter in turn under a jet of water to remove any lodged particles.
8. Refit the Inlet Filters.
9. Refit the Elbow Retaining Clips and tighten the Filter Caps.

Caution! Make sure that the Elbow Retaining Clips are fitted vertically as illustrated, otherwise the Elbow Shrouds will not fit correctly.

10. Restore the hot and cold water supplies and check for leaks.
11. Refit the Elbow Shrouds.



Filters - Built-in Models

To clean or replace the inlet filters:

Note! Refer to the section ‘**Installation, Control Assembly**’ for illustrations.

1. Isolate the hot and cold water supplies.
2. Operate the Flow Lever and Temperature Knob to drain any residual water.
3. Rotate the Temperature Control Knob fully clockwise and carefully pull it off.

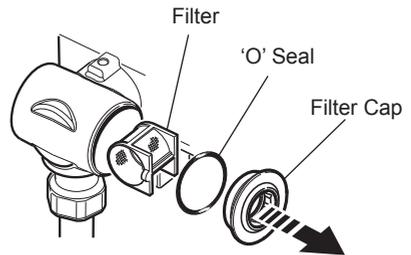
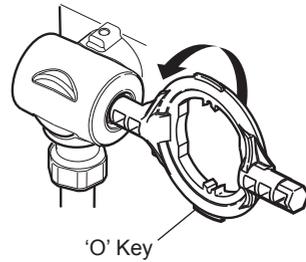
Note! If the knob does not come off, rotate it fully anticlockwise, pull on the Temperature Knob while slowly rotating it clockwise until it disengages.

4. Remove the Grey Control Bearing.
5. Pull off the Flow Lever.
6. Remove the Flow Lever Adapter.
7. Carefully remove the Concealing Plate Assembly.

Important! The Lever Retainer must not be removed.

Note! Use a screwdriver in the cutout to assist in the separation.

8. Unscrew the two Securing Screws and carefully remove the Backplate from the Shower Control.
9. Unscrew the Filter Caps with the ‘O’ Key (supplied) or a 12 mm hexagonal key.
10. Using pliers, carefully pull out the Inlet Filters.
11. Clean each Filter in turn under a jet of water to remove any lodged particles.
12. Refit the Filters.
13. Refit and tighten the Filter Caps.
14. Restore the hot and cold water supplies and check for leaks.
15. Fit the Backplate to the Shower Control and secure with the two Securing Screws. Make sure that the Foam Seal is fully compressed. Do not overtighten.
16. With the cutout at the bottom, slide the Concealing Plate over the Shower Control, engage the crosses in the Concealing Plate with the square recesses in the Backplate, and push firmly until the Concealing Plate clicks into position.
17. Refer to the section ‘**Installation, Control Assembly**’ and follow steps 8 to 12.



TYPE 2 VALVES

Application

The approved designations for Type 2 Valves are as follows:

Model	Designation
Mira Discovery	LP-S, HP-S

The permitted application details are:

Designation	Operating Pressure Range	Application	Mixed Water Temperature [†] °C
LP-S	Low Pressure	Shower	41°C Maximum
HP-S	High Pressure	Shower	41°C Maximum

[†] Mixed water temperature at discharge point.

Important! For TMV2 installations the mixed water temperature at the discharge point should never exceed 46°C.

In order to achieve the safe water temperatures expected of a Type 2 Valve it is essential that the valve is used only for the applications covered by its approved designations, with the appropriate water supply pressures and temperatures, and it is commissioned, maintained and serviced in accordance with the recommendations contained in this guide (refer to the section '**Maintenance, In-Service Tests**' for in service test frequency that must be used as a minimum guide in Type 2 installations).

Supply Conditions

For applications where a Type 2 Valve is required, the supply conditions must comply with the values in the Table below. Note that both hot and cold supply pressures must lie within the same pressure range.

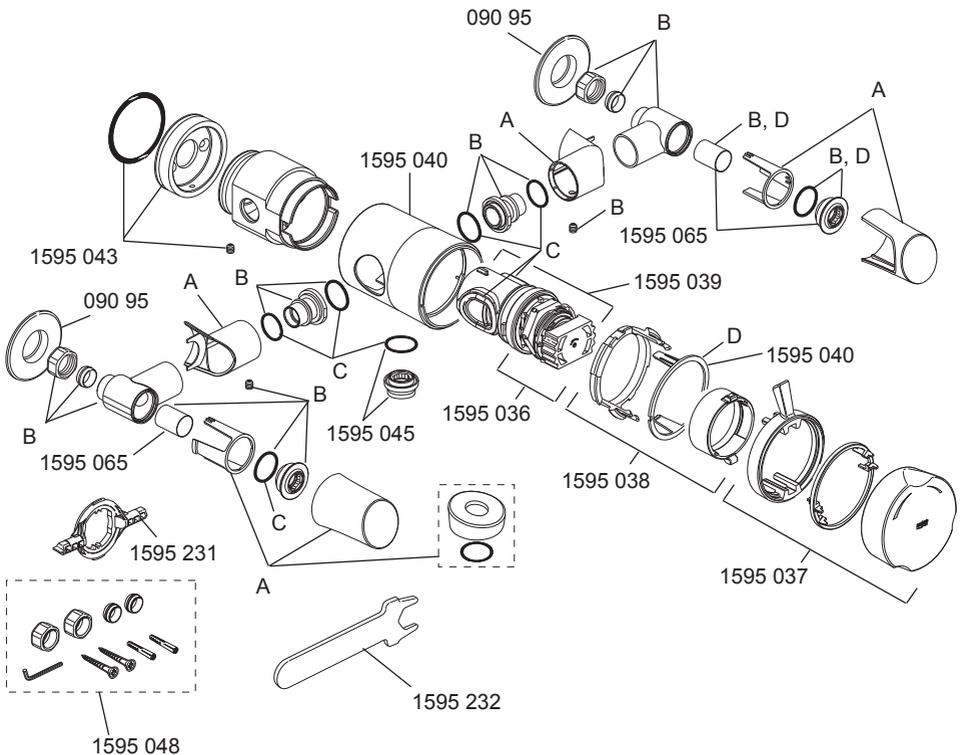
Operating Pressure Range	High Pressure	Low Pressure
Maximum Static Pressure (bar)	10	10
Maintained Pressure, Hot and Cold (bar)	1 to 5	0.2 to 1
Hot Supply Temperature (°C)	55 to 65	55 to 65
Cold Supply Temperature (°C)	≤ 25	≤ 25

Valves operating outside these conditions cannot be guaranteed to operate as Type 2 Valves.

SPARE PARTS

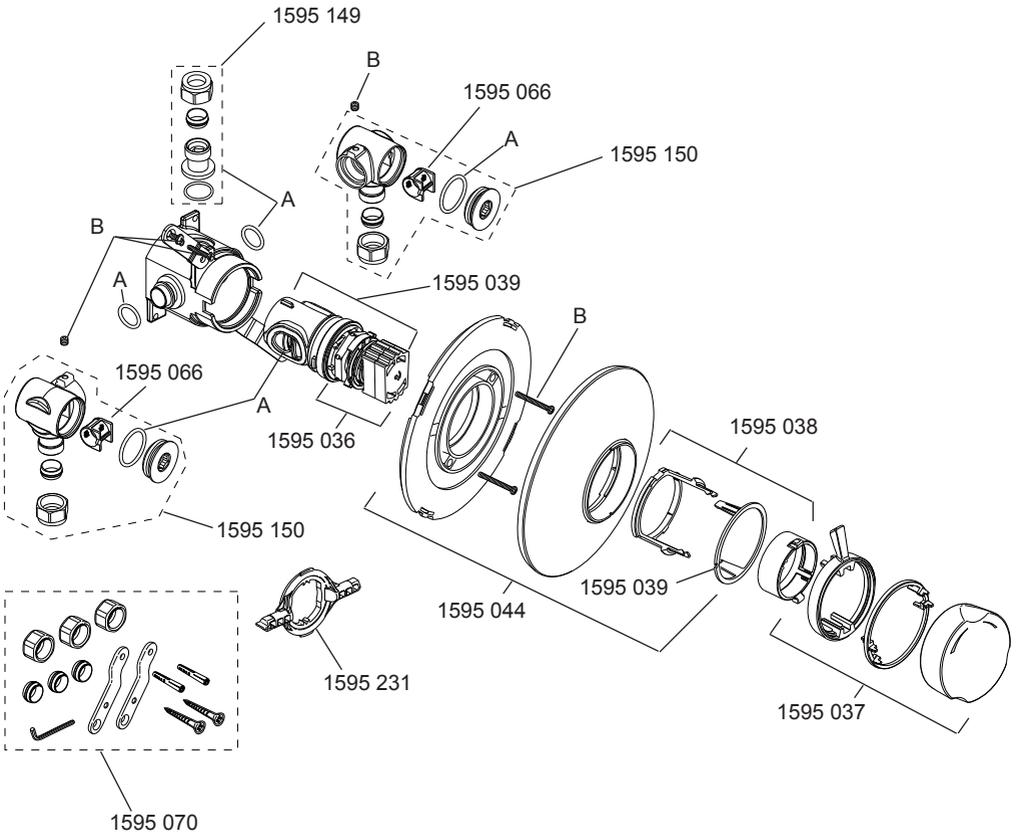
Exposed Thermostatic Shower Control

- 090 95 Pipe Concealing Plates
- 1595 036 Temperature Hub Assembly
- 1595 037 Handle Pack
- 1595 038 Handle Adapter Pack
- 1595 039 Cartridge Assembly Pack (also includes components identified 'D')
- 1595 040 Body Trim
- 1595 041 Elbow Shroud Pack (Identified 'A')
- 1595 042 Elbow Pack Assembly (Identified 'B')
- 1595 043 Mounting Assembly Pack
- 1595 045 Outlet Nipple Pack
- 1595 047 Seal Pack (Identified 'C')
- 1595 048 Component Pack
- 1595 065 Filter (2 off)
- 1595 231 'O' Key
- 1595 232 24 mm Spanner



Built-in Thermostatic Shower Control

- 1595 036 Temperature Hub Assembly
- 1595 037 Handle Pack
- 1595 038 Handle Adapter Pack
- 1595 039 Cartridge Assembly Pack
- 1595 044 Concealing Plate Assembly
- 1595 046 Seal Pack (Identified 'A')
- 1595 066 Filter Pack
- 1595 067 Screw Pack (Identified 'B')
- 1595 070 Component Pack
- 1595 149 Outlet Nipple Pack
- 1595 150 Elbow Pack
- 1595 231 'O' Key



NOTES

CUSTOMER SERVICE

Guarantee of Quality

Mira Showers guarantee your product against any defect in materials or workmanship, provided that it is installed and maintained in accordance with the instructions given in this guide.

To validate the guarantee, please return your completed registration card within 30 days of product installation.

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.

Service under this guarantee does not affect the expiry date of the guarantee.

The guarantee on any exchanged parts or product ends when the normal product guarantee period expires.

Not covered by this guarantee:

Planned maintenance, or replacement parts required to comply with the servicing requirements of the TMV 2 and TMV 3 healthcare schemes (where applicable).

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 persons not authorised by Mira Showers or our approved agents.

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

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 Team who will give every assistance and, if necessary, arrange for our service engineer to visit. If the performance of your shower declines, consult this manual to see whether simple home maintenance is required. Please call our Customer Services Team to talk the difficulty through, request a 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 provide support throughout the product's expected life.

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

Spare parts will normally be despatched within two working days. Payment can be made using most major Credit or Debit cards at the time of ordering. Should payment by cheque be preferred, a pro-forma invoice will be sent.

All spares are guaranteed for 12 months from the date of purchase. Spares that have been supplied directly from us can be returned within one month from the date of purchase, providing that they are in good order and the packaging is unopened.

Note! Returned spares will be subject to a 15% restocking charge and authorisation must be obtained before return. Please contact our Customer Services Team.

Note! In the interests of safety, spares requiring exposure to mains voltages should only be fitted by competent persons.

Service / Repairs

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 spare parts and a 12 month guarantee on the repair.

Payment should be made directly to the engineer/agent who will accept most major Credit or Debit cards or a cheque supported by a banker's card.

To Contact Us

England, Scotland, Wales and Northern Ireland

Mira Showers Customer Services

Telephone: 0870 241 0888

E-mail: technical@mirashowers.com

Fax: 01242 282595

By Post: Cromwell Road, Cheltenham,
Gloucestershire, GL52 5EP

Eire

Modern Plant Ltd (Dublin)

Telephone: 01 459 1344

E-mail: sales@modernplant.ie

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



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SHOWERS



FM 14648