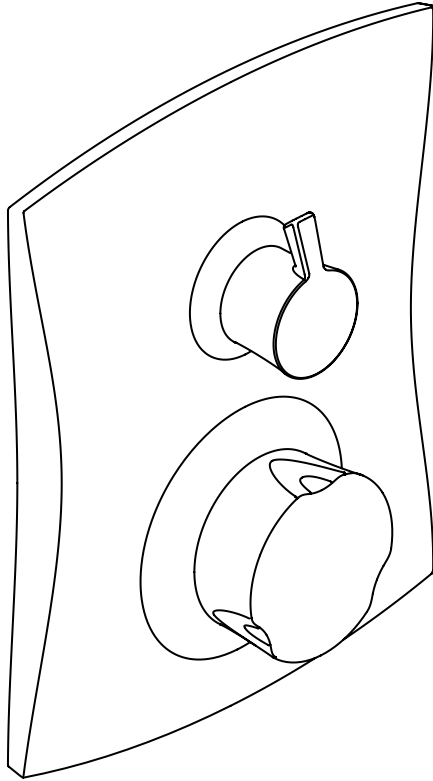


mira

Discovery



BUILT-IN DUAL CONTROL

MIXING VALVE

Installation and User Guide

These instructions are to be left with the user

CONTENTS

Introduction	3
Patents and Design Registration.....	3
Safety : Warnings	4
Pack Contents	5
Dimensions	6
Specifications	7
Pressures	7
Temperatures	7
Connections	7
Installation Requirements	9
Installation	11
General.....	11
Installation Methods	12
1. Solid Wall or Stud Partition (Using Securing Brackets - Mounting off Front Face).....	13
2. Solid Wall or Stud Partition (Using Rear Fixing Points on Shower Control)	16
3. Laminated Panel (Using Securing Brackets - Mounting off Rear Face).....	18
Control Assembly	20
Reversed Supplies	22
Commissioning	23
Maximum Temperature Setting	23
Operation	24
Fault Diagnosis	25
Maintenance	26
General.....	26
Filters.....	28
Type 2 Valves	29
Spare Parts	30
Customer Service	Back Page

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 Built-in Dual Control Thermostatic Mixer is a Thermostatic Shower Control with independent selection for temperature and spray force and is suitable for connection to concealed pipework.

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.

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

Design Registration:	000555768-0006, 000555768-0007	
Patents:	GB:	2 291 693, 2 392 225, 2 421 297
	Germany:	695 13 455.8
	France:	0 694 721 (E)
	Euro:	1 672 257 DE, FR, GB, IT, NL, SE
	USA	7 240 850
Patent Applications:	Euro:	03254070.0
	USA:	2006-0124758-A1, 11/804 631

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.

SAFETY : WARNINGS

This Mira Discovery Thermostatic Mixer is precision engineered and should give continued safe and controlled performance, provided:

1. It is 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.

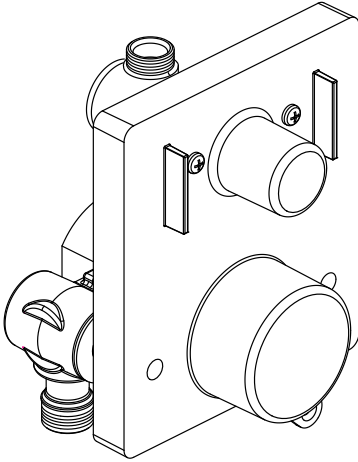
Caution!

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. 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.

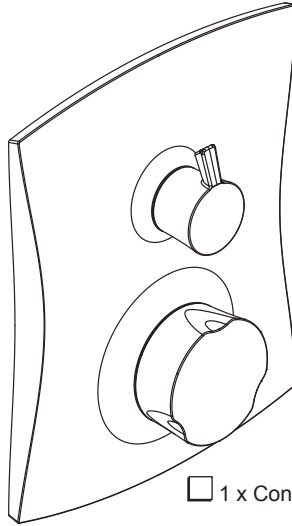
PACK CONTENTS



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

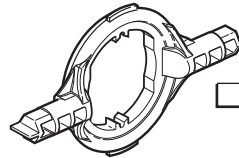
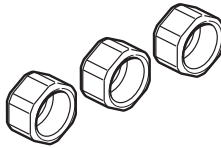


1 x Shower Valve fitted to the Building-in Shroud



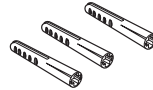
1 x Control Assembly

3 x Compression Nuts



1 x O-Key

3 x Olives



3 x Wall Plugs

1 x Hose Washer



3 x Securing Screws

1 x Flow Regulator
(12 litres per minute)

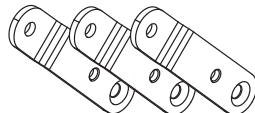


2 x M5 x 40 Screws

1 x Hexagon Key



3 x Mounting Brackets

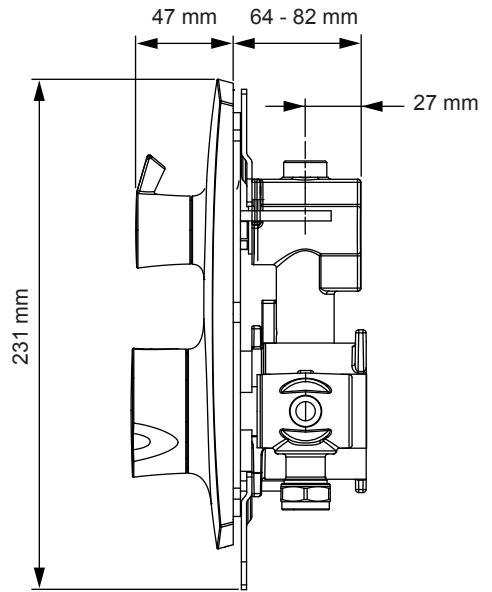
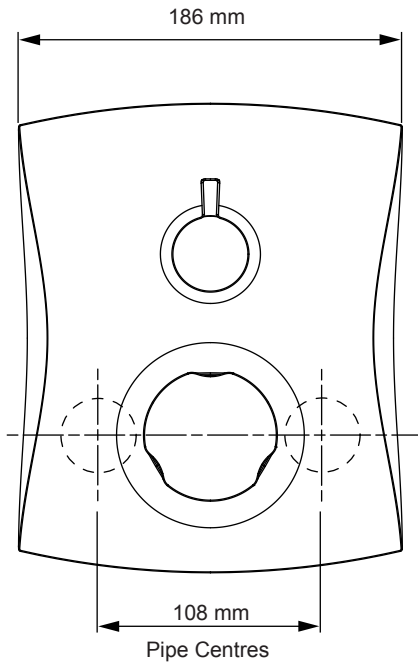


3 x M5 x 8 Screws

Documentation

1 x Guarantee Registration Document

DIMENSIONS



Note! All Dimensions are Nominal

SPECIFICATIONS

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

Pressures

Maximum Static Pressure: **10 Bar**.

Minimum Maintained Pressure (Gas Water Heater): **1.0 Bar**.

(for optimum performance initial supplies should be nominally equal).

Minimum Maintained Pressure (Gravity System): **0.1 Bar**.

(0.1 bar = 1 Metre head from base of cold tank to the outlet of the shower handset).

Maximum Maintained Pressure: **5 Bar**.

Temperatures

Factory Pre-set (Blend) Shower: **43°C**.

Optimum Thermostatic Control Range: **35°C - 45°C**.

(Achieved with supplies of 15°C cold, 65°C hot and nominally equal pressures).

Max. Hot Supply: **85°C**.

Recommended Hot Supply: **60°C - 65°C**.

Min. Differential between Hot Supply and Outlet Temperature: **10°C**.

Cold Water Range: **1°C - 20°C**.

Thermostatic Shut-down

Thermostat will shut off Hot Supply **Within 2 Seconds** if Cold Supply Fails.

(Achieved only if the hot supply temperature is greater than 10°C above the set blend temperature).

Connections

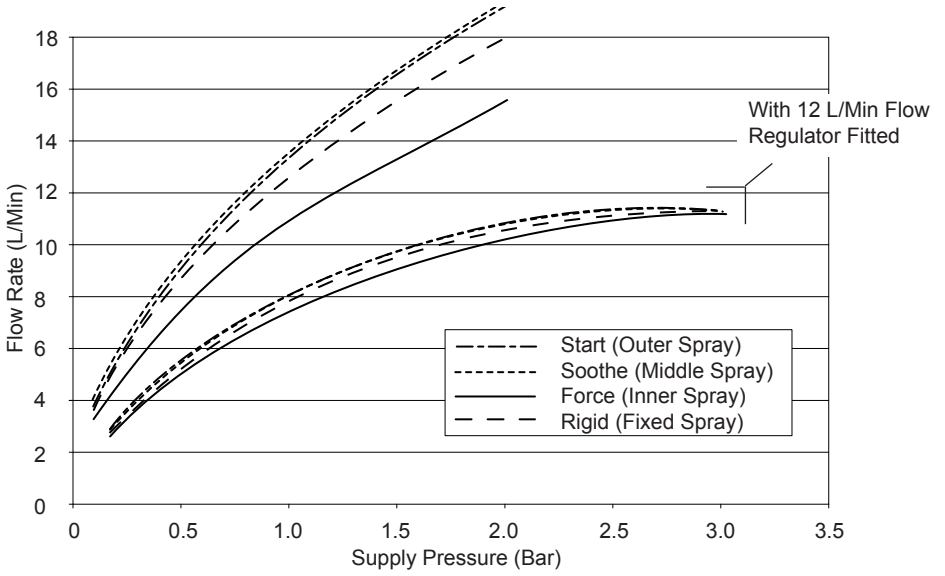
Standard connections are: **Hot-Left, Cold-Right, Top-Outlet**, if reversed inlets are required refer to sections: '**Installation**' and '**Reversed Supplies**'.

Inlets: 15 mm Compression.

Outlet: 15 mm Compression.









Flow Rates

Typical Flow Rates - Mira Discovery Dual Control with Adjustable Fittings:



INSTALLATION REQUIREMENTS

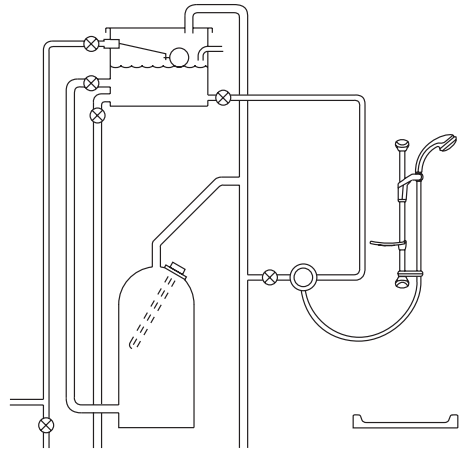
Key to symbols

	Isolating valve		Twin Impeller Pump
	Mixing Valve		Single Impeller Pump
	Overflow Indicator		Tempering Valve
	Pressure Reducing Valve		Mini Expansion Vessel

Note! The Shower Control is compatible with the following installations.

Gravity fed system

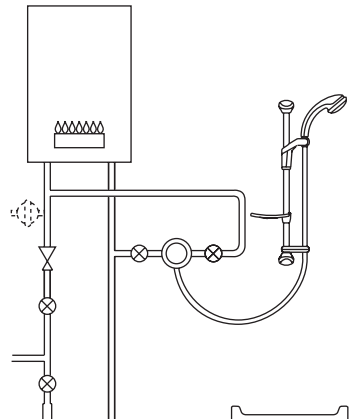
The shower **MUST** be fed from a cold water cistern and hot water cylinder providing nominally equal pressure.



Gas heated system

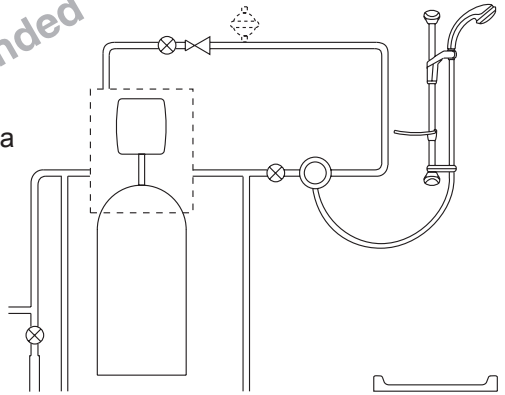
The shower **MUST** be installed with a gas water heater or combination boiler of a **fully modulating** design.

Note! Flow regulator recommended to be installed, refer to the Fittings Installation and User Guide. However, it is possible following installation of a flow regulator that the flow rate is reduced too much for the boiler to ignite. If this is the case remove the flow regulator.



Unvented mains pressure system

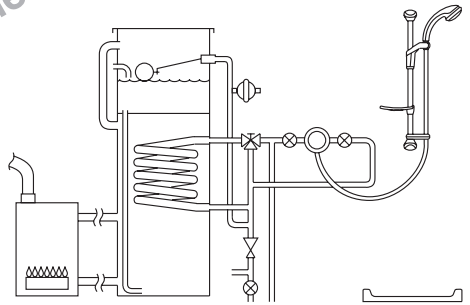
The shower can be installed with an unvented, stored hot water cylinder.



Mains pressurised instantaneous hot water system (thermal store)

The shower can be installed with systems of this type with balanced pressures.

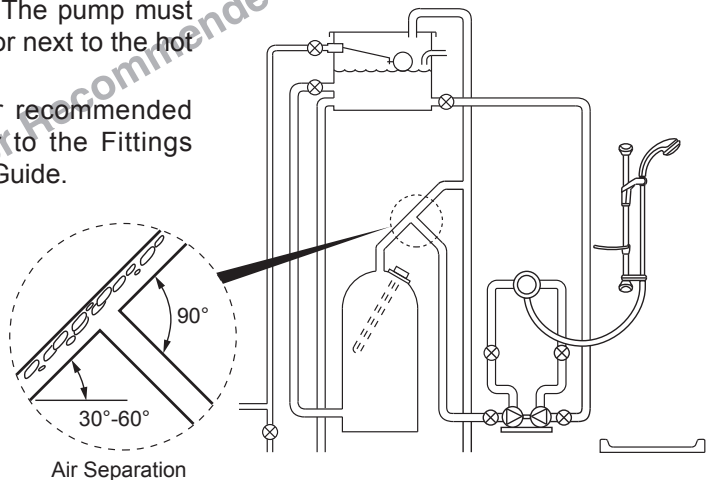
Note! Flow regulator recommended to be installed, refer to the Fittings Installation and User Guide.



Pumped system

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.

Note! Flow regulator recommended to be installed, refer to the Fittings Installation and User Guide.



INSTALLATION

General

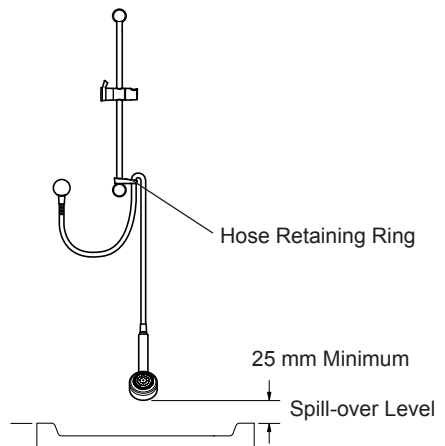
Installation must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.

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 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. Supply pipework layout should be arranged to minimise the effect of other outlet usage upon the dynamic pressures at the Mixer inlets.
7. Inlet and outlet threaded joint connections should be made with PTFE tape or liquid sealant. Do not use oil-based, non-setting joint compounds.
8. To eliminate pipe debris it is essential that supply pipes are thoroughly flushed through before final connection.
9. 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. 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.



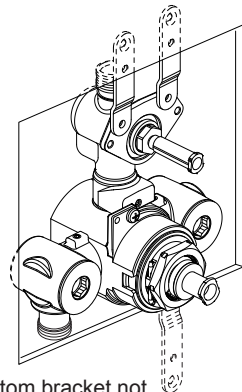
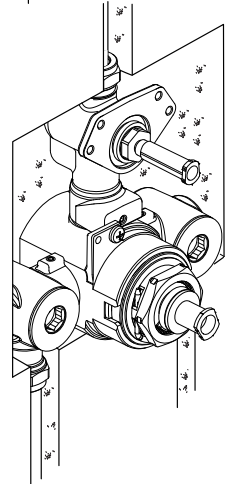
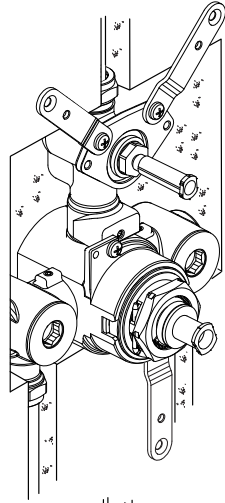
Installation Methods

The Discovery Thermostatic 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 from the front face into a Solid Wall or Stud Partition using the Securing Brackets, go to section: **'Installation, 1. Solid Wall or Stud Partition (Using Securing Brackets - Mounting off Front Face)'**.

For installation from the front face into a Solid Wall or Stud Partition using the Rear Fixing Points, go to section: **'Installation, 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: **'Installation, 3. Laminated Panel (Using Securing Brackets - Mounting off Rear Face)'**.



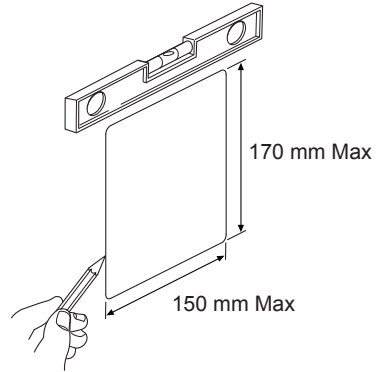
Warning! Bottom bracket not to be drilled or screwed to.

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

1.1 Remove the three securing screws and remove the shower valve from the building-in shroud (retain the screws for later use).

1.2 Mark the position of the shower valve, a cut out 150 x 170 mm (Max) is required.

Note! Use a spirit level to make sure that the hole cutout will be horizontal and vertical.

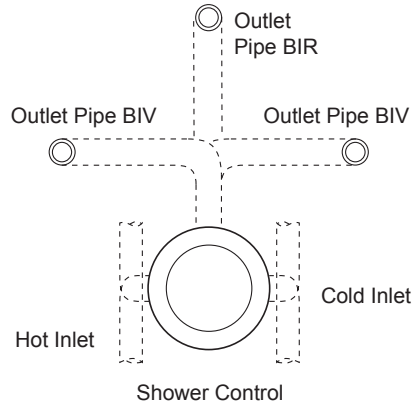


1.3 Mark the routes for the hot and cold supply pipework at 108 mm centres.

Falling Supplies: For falling supplies remove the grubscrew on each elbow. Remove the elbows and install on opposite sides. Secure the elbows with the grub screws.

Caution! Do not overtighten.

Note! Make sure that the filter plugs are positioned to the front (i.e. hexagonal key facing forward).

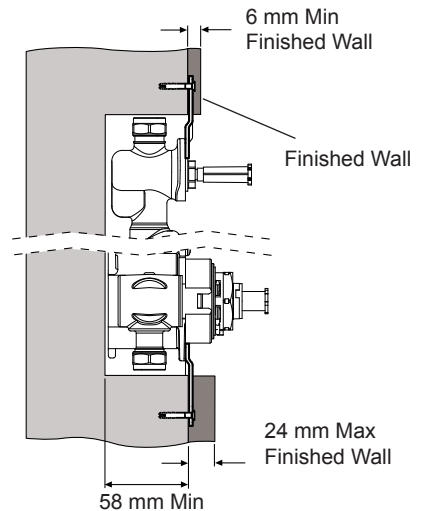


1.4 Mark the route for the outlet pipework.

Note! For biv models the outlet elbow should be sited above the control and on the right or left, as site dictates.

1.5 Cut away the plasterboard or brick work to a minimum depth of 58 mm to accommodate the shower valve body, the hot and cold supply pipework and the outlet pipework.

1.6 Make sure that the building-in shroud fits inside the hole cutout.



- 1.7 Fit the three securing brackets to the shower valve.

Important! Make sure that the correct holes are used, otherwise the backplate will not fit (refer to illustration).

Note! The brackets can be rotated for suitable fixing points.

- 1.8 Mark the positions of the countersunk fixing holes on the wall.

Note! Make sure that they do not interfere with the pipework.

- 1.9 Drill three 6 mm holes for the wall plugs.

- 1.10 Fit the wall plugs (supplied) and secure the shower valve to the wall with the securing screws (supplied).

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

Important! At this point position the building-in shroud onto the shower valve and make sure that it is horizontal and will be parallel to the finished wall surface.

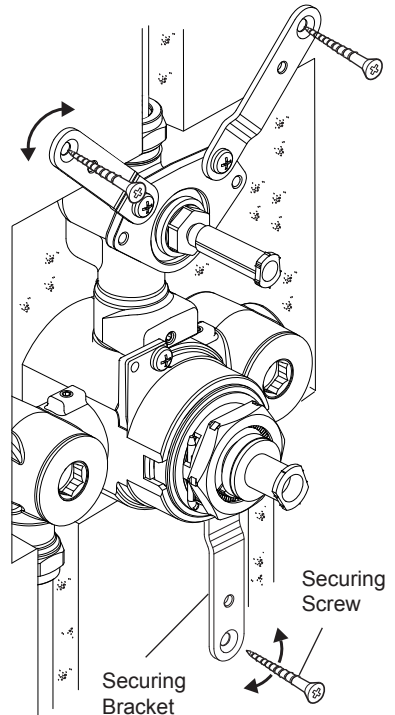
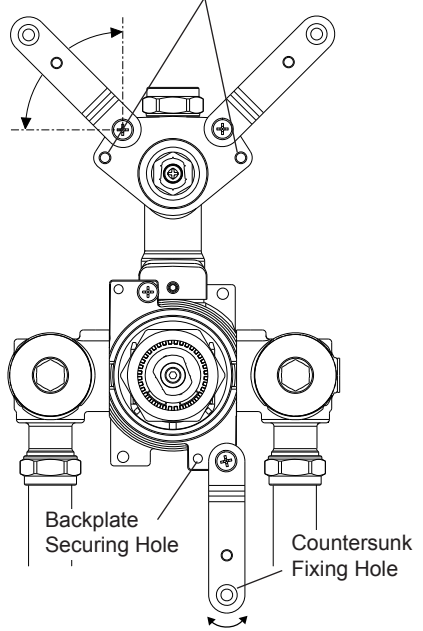
- 1.11 Remove the building-in shroud and fit the hot and cold supply pipes and outlet pipe and tighten the compression nuts.

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

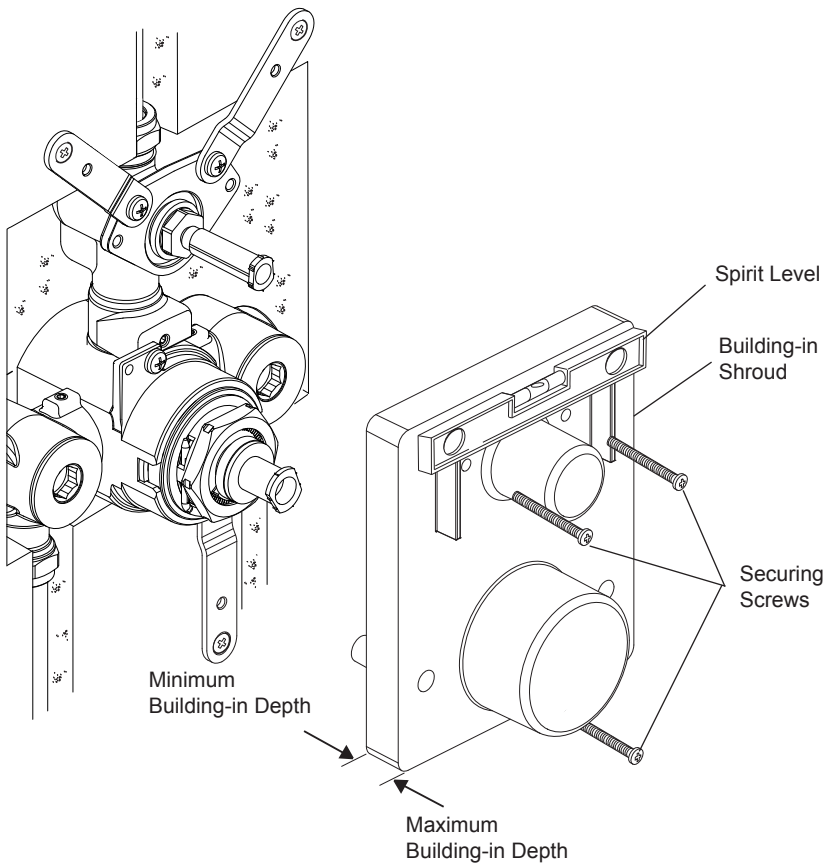
- 1.12 Fit the outlet pipework, leaving enough pipe through the wall to temporarily cap off.

Rotate for Suitable Fixing Point

Backplate Securing Holes



- 1.13 Turn on the water supplies and check for leaks.
- 1.14 Re-fit the building-in shroud to the shower valve using the three fixing screws.
- 1.15 Using the building-in shroud as a guide for the finished wall thickness, finish the wall.
- Caution!** Make sure that the finished wall is within the minimum and maximum limits otherwise the control components will not fit correctly.
- 1.16 Remove the building-in shroud. Retain the three securing screws for securing the backplate.
- 1.17 Fit the shower fittings, refer to your fittings installation and user guide for instructions.
- 1.18 Fit the control assembly, refer to section: '**Control Assembly**'.



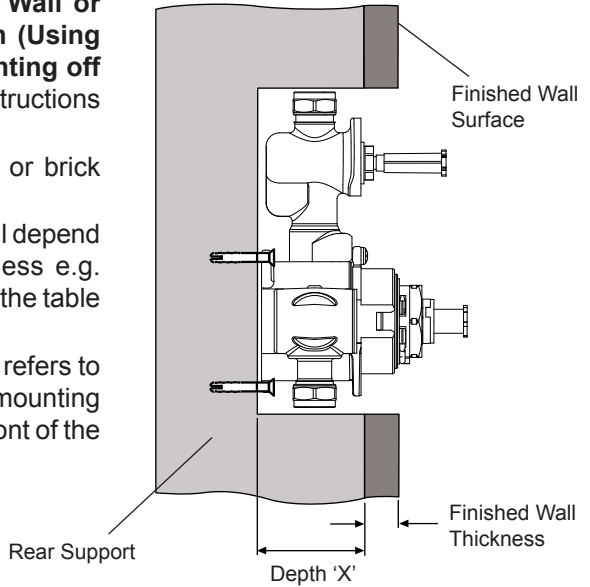
2. Solid Wall or Stud Partition (Using Rear Fixing Points on Shower Control)

2.1 Refer to section: '1. Solid Wall or Stud Partition Installation (Using Securing Brackets - Mounting off Front Face)' and follow instructions 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. wooden baton, to the front of the wall (before tiling).



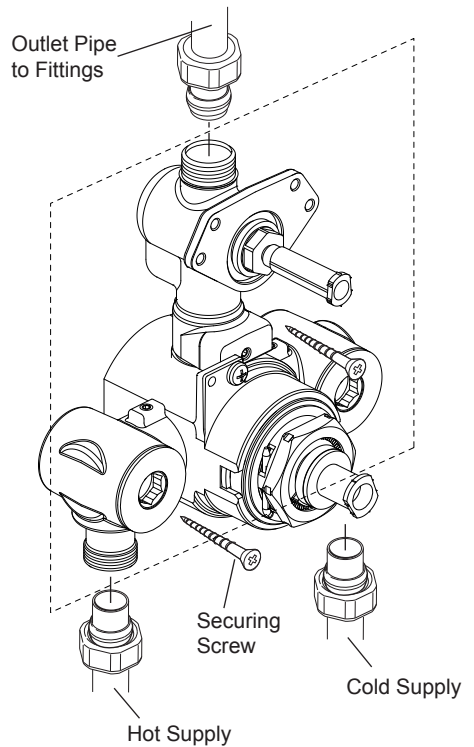
Finished Wall Thickness (e.g. tile and adhesive)	Wall Cutout Depth 'X'
6 mm	76 - 58 mm
8 mm	74 - 56 mm
10 mm	72 - 54 mm
12 mm	70 - 54 mm
14 mm	68 - 54 mm
16 mm	66 - 54 mm
18 mm	64 - 54 mm
20 mm	62 - 54 mm
22 mm	60 - 54 mm
24 mm	58 - 54 mm

- 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 Fit the wall plugs (supplied) and fix the shower valve to the wall with the securing screws (supplied).

Note! For stud partition installations alternative fixings may be required (not supplied) to fix the shower valve to the rear face of the wall cavity or to a timber noggin.

Important! At this point position the building-in shroud onto the shower valve and make sure that it is level, both horizontally and vertically.

- 2.6 Refer to section: '1. Solid Wall or Stud Partition Installation (Using Securing Brackets - Mounting off Front Face)' and follow instructions 1.11 to 1.18.



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

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

Panel thickness must be between 4 and 22 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 valve.

3.1 Remove the three securing screws and remove the shower valve from the building-in shroud (retain the screws for later use).

3.2 Mark the position of the shower valve, a cut out 150 x 170 mm (Max) is required.

Note! Use a spirit level to make sure that the hole cutout will be horizontal and vertical.

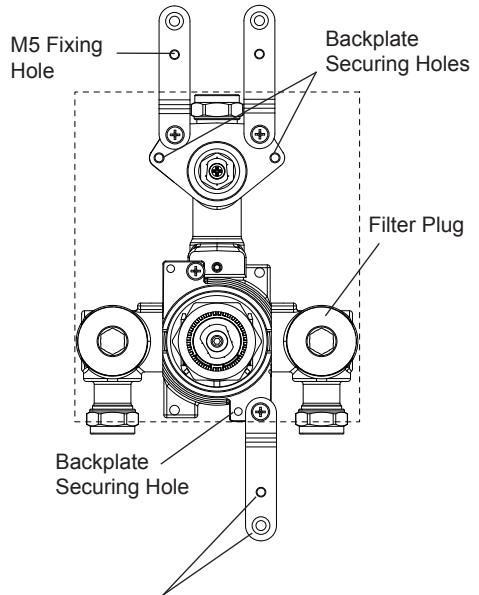
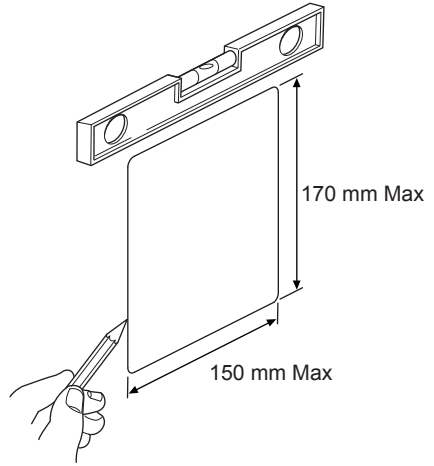
3.3 **Carefully** cut out the laminated panel and make sure that the building-in shroud fits inside the hole cutout.

3.4 Fit the securing brackets to the shower valve.

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

Important! Make sure that the correct holes are used, otherwise the backplate will not fit (see Warning below).

3.5 Re-fit the building-in shroud to the shower valve using the three fixing screws.



Warning! Do not drill any holes for the bottom securing bracket. The bracket is used only to align the valve. If holes are drilled they will not be covered by the concealing plate.

- 3.6** To assist in marking the positions of the fixing holes, reverse the shower valve and fit the building in shroud through the cutout in the front of the panel. Mark the positions of the M5 fixing holes in the two top brackets **only**.

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

Warning! Do not drill any holes for the bottom securing bracket.

- 3.7** Drill the two 5 mm holes for the fixings (countersink the holes at the front).
- 3.8** Remove the building-in shroud (retain the screws for later use).
- 3.9** Secure the shower valve (positioned from the rear of the panel) with the M5 x 40 mm fixing screws (refer to illustration).

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

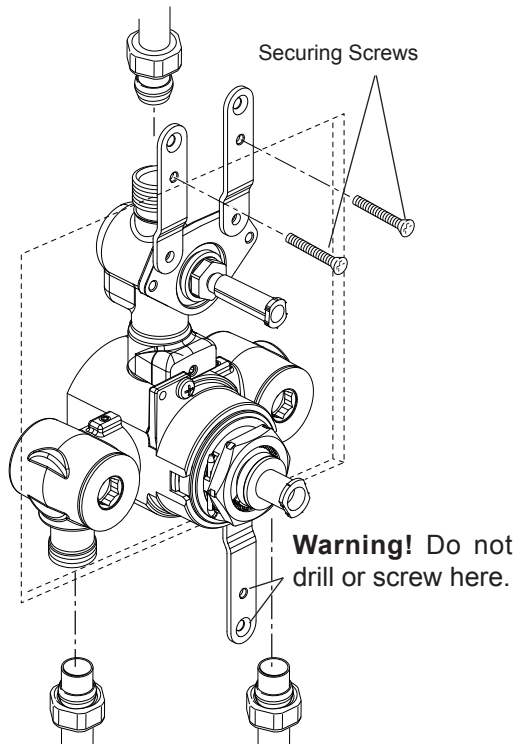
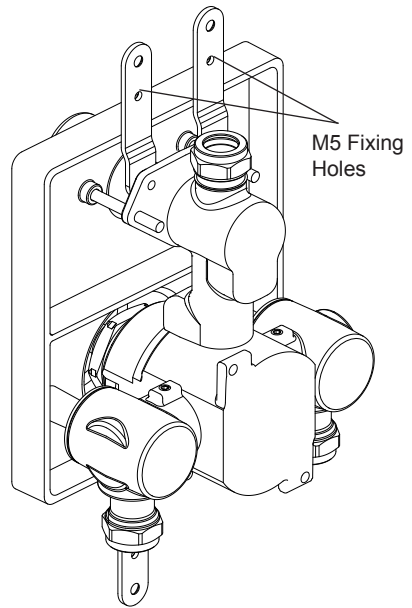
Caution! Make sure that the olives are fitted and all pipework is flushed through before connecting to the shower control.

Falling Supplies: For falling supplies remove the grub screw on each elbow. Remove the elbows and install on opposite sides. Secure the elbows with the grub screws.

Caution! Do not overtighten.

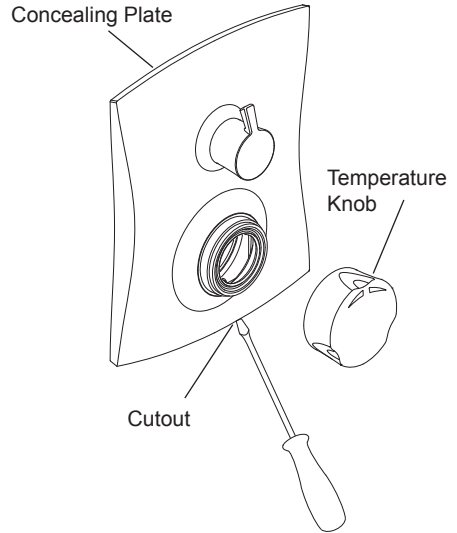
Note! Make sure that the filter plugs are positioned to the front (i.e. hexagonal key facing forward).

- 3.11** Fit the outlet pipework, leaving enough pipe through the wall to temporarily cap off.
- 3.12** Turn on the water supplies and check for leaks.
- 3.13** Fit the shower fittings, refer to your fittings installation and user guide.
- 3.14** Fit the concealing plate and control assembly, refer to section: '**Control Assembly**'.



Control Assembly

1. Pull off the temperature knob.
2. Carefully separate the concealing plate from the backplate.
Note! Use a screwdriver in the cutout to assist separation.

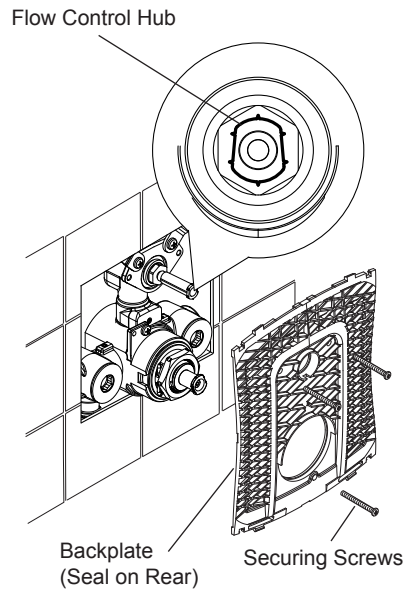


3. Fit the backplate to the shower control and secure with the three securing screws (removed from the building-in shroud). Make sure that the seal is fully compressed on the finished wall surface.

Note! If the finish is particularly uneven (i.e. due to grout lines), apply a small amount of silicone sealant to ensure a seal.

Caution! Do not overtighten the screws as this may cause the backplate to distort, preventing the fitting of the control knobs.

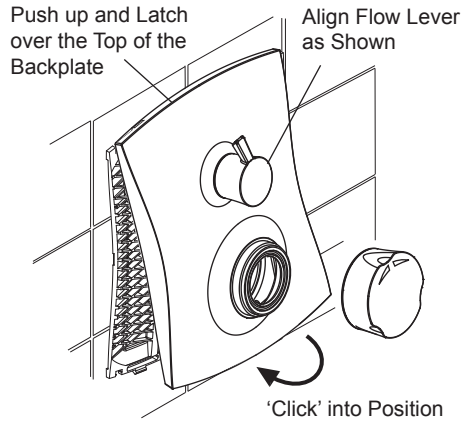
4. Align the flow control hub with the taper towards the top of the shower control (refer to illustration).



5. Align the flow control lever so that the lever is pointing up (refer to illustration).
6. Slide the flow control lever and concealing plate over the flow control hub.
7. Latch the top of the concealing plate over the top of the backplate.
Note! You will need to push the concealing plate up and over the lip on top of the backplate (refer to illustration).
8. Clip the bottom of the concealing plate into position.
9. Align the temperature control knob with the hub and push the knob onto the concealing plate.

Note! If the finished wall thickness is less than 8 mm the temperature hub spacer will need to be removed, refer to section: '**Commissioning**'.

Note! The Thermostatic Shower Control is preset to approximately 43°C at the factory. If adjustment is required, refer to section: '**Commissioning**'.



Reversed Supplies

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

Note! Refer to illustrations in section: '**Installation, Control Assembly**'.

1. Isolate the hot and cold water supplies.
2. Pull off the temperature knob.
3. Unclip and remove the concealing plate.

Note! Use a screwdriver in the slot at the bottom of the concealing plate to lever off.

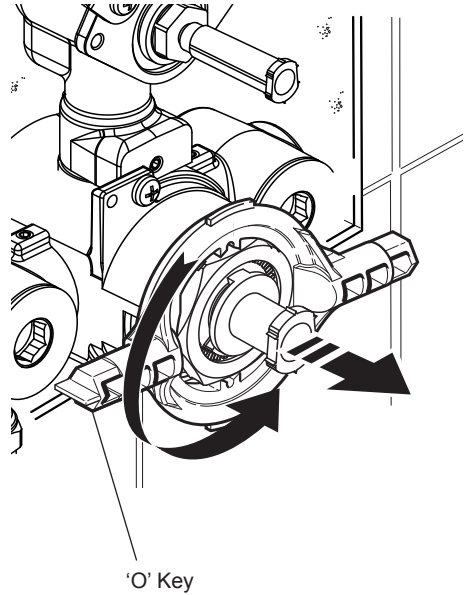
4. Fit the 'O' Key (supplied) onto the cartridge nut and turn anticlockwise. Unscrew and pull the cartridge clear from the body.

Note! Depending on the finished wall thickness it may be necessary to remove the backplate.

5. Rotate the cartridge 180°.
6. Make sure that the two cartridge side seals are fitted and carefully push into the cartridge body.

Important! Make sure that the cartridge side seals do not extrude from the body when pushing the cartridge in. Damage to these seals may result in incorrect operation.

7. Position the cartridge lugs into the body slots and tighten the nut by turning the 'O' Key clockwise.
8. Restore the hot and cold water supplies and check for leaks.
9. Refer to section: '**Installation, Control Assembly**' and follow instructions 3 to 9.



COMMISSIONING

Maximum Temperature Setting

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

Note! Make sure that the hot water temperature is at least 10 °C above the required maximum showering temperature.

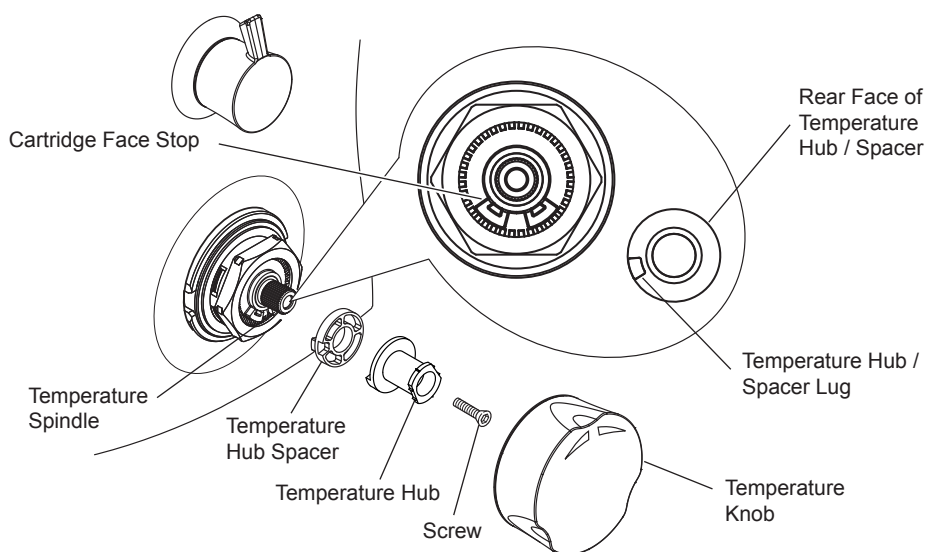
For Type 2 installations the maximum blend temperature is determined by the application, refer to section: '**Type 2 Valves - Application**'.

1. Pull-off the temperature knob.
2. Unscrew the temperature hub with a 3 mm hexagon key (supplied).
3. Remove the temperature hub and temperature hub spacer (if fitted).
4. Operate the flow control lever.
5. Rotate the spindle until required maximum blend temperature is obtained at discharge point (**clockwise = decrease temperature**).

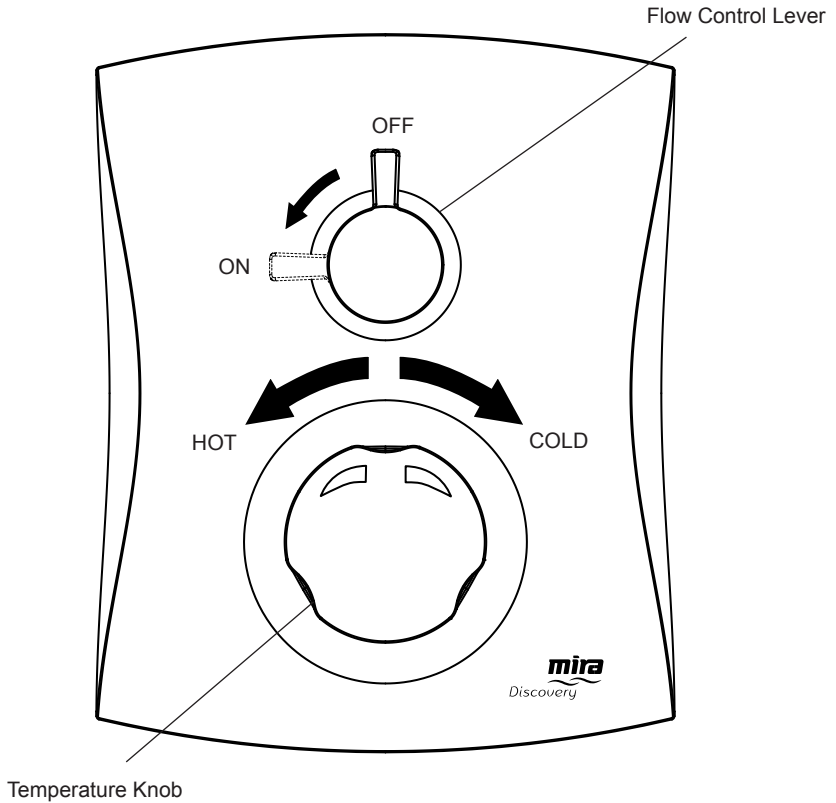
Caution! When resistance is felt do not use force to turn any further, as this can damage the internal parts.

6. Once the desired maximum blend temperature has been achieved, refit the temperature hub and temperature hub spacer (if required) without disturbing the spindle, positioning the temperature hub (or temperature hub spacer) so that the lug is against the left side of the stop on the cartridge face, thus preventing anticlockwise rotation which could damage the internal mechanism (refer to illustration). Make sure that the temperature has not altered.

Note! The temperature hub spacer will be required where the finished wall thickness is greater than 8 mm.



OPERATION



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

FAULT DIAGNOSIS

Symptom	Cause / Rectification
1. Only hot or cold water from the control outlet.	<ul style="list-style-type: none"> a. Inlets reversed, refer to section: 'Reversed Supplies'. b. No hot water reaching the control. c. Check the filters for any blockage. d. Installation conditions outside operating parameters: refer to section: 'Specifications'.
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 minimum flow rate is sufficient for supply conditions. c. Make sure the maintained inlet pressures are nominally balanced and sufficient. d. Make sure the inlet temperature differentials are sufficient. e. Check the thermostatic performance. f. Flow regulator fitted incorrectly. <small>Refer to Note below.</small> g. Airlock or partial blockage in pipework.
3. No flow rate from the control 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. Hot supply temperature fluctuation. c. Supply pressures fluctuating. d. Seal damage or wear. Renew the thermostatic cartridge.
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 shower control fitting.	<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 for product. c. Renew the flow cartridge.
7. Flow rate too low or too high.	<ul style="list-style-type: none"> a. (Too low) Insufficient supply pressures. b. (Too low) Refer to symptom 2. above. c. (Too high) Supply pressure too high. Install supplied flow regulator on the outlet. <small>Refer to Note below.</small> d. (Too high) Refer to symptom 2. above.

Note! Refer to the Discovery Fittings Installation and User Guide.

MAINTENANCE

General

This Product is precision engineered and should give continued safe and controlled performance, provided:

1. It is 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.

The Mira Discovery Thermostatic Mixer is designed for the minimum of maintenance in normal use. The only serviceable parts are the inlet filters which should be checked and cleaned every 12 months. If a malfunction occurs with the Thermostatic Cartridge then this will necessitate a complete cartridge replacement.

Note! The cartridge contains no internally serviceable parts.

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

Lubricants

Silicone based lubricants must only be used on the rubber seals.

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

Cleaning

The chrome plated parts should be cleaned using a mild washing up detergent or soap solution, rinsed and then wiped dry with a soft cloth.

Warning! Many household cleaners contain abrasive and chemical substances, and should not be used for cleaning plated or plastic fittings.

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.

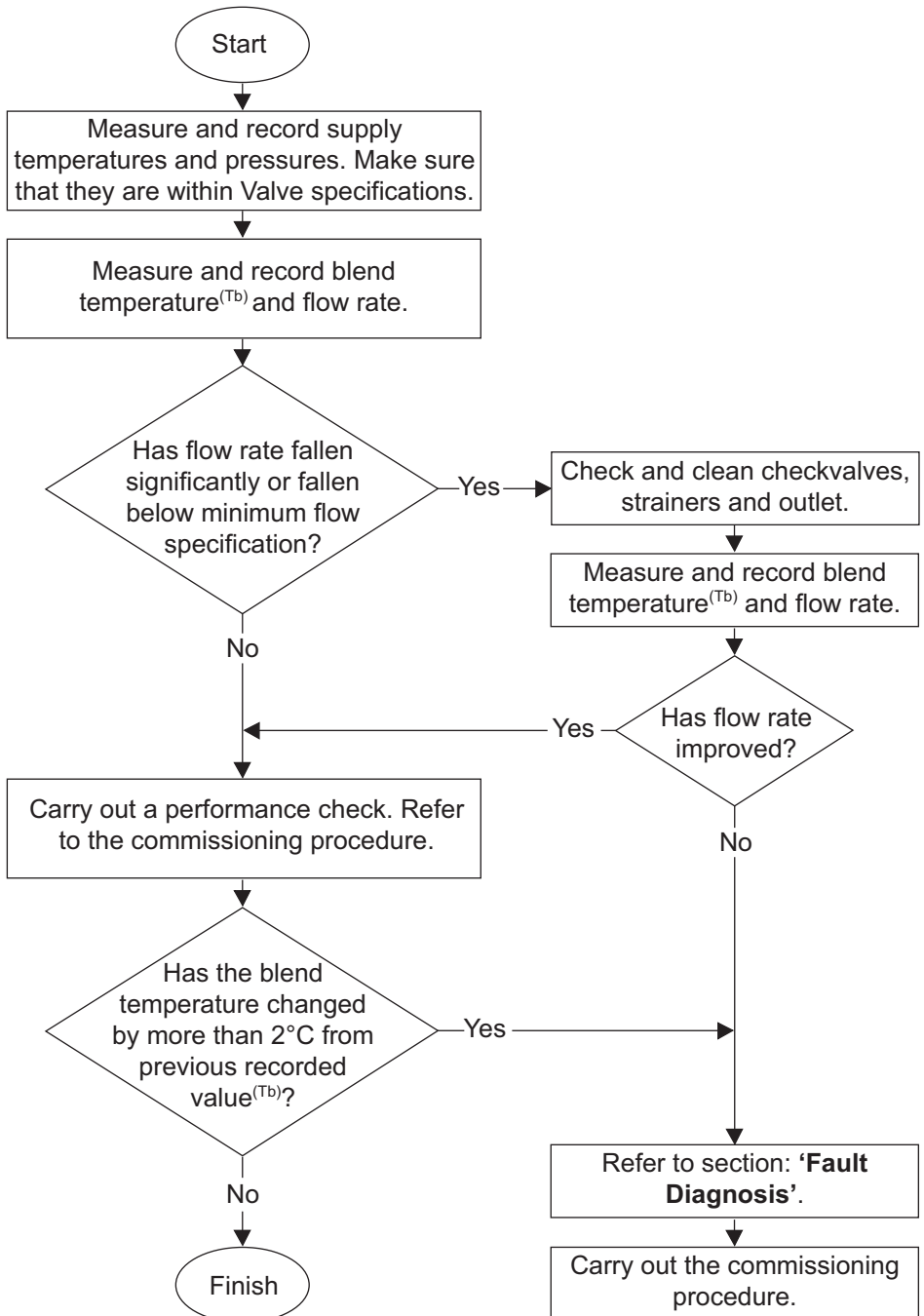
Follow the procedure detailed in the flow diagram "In-service Test Procedure".

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.

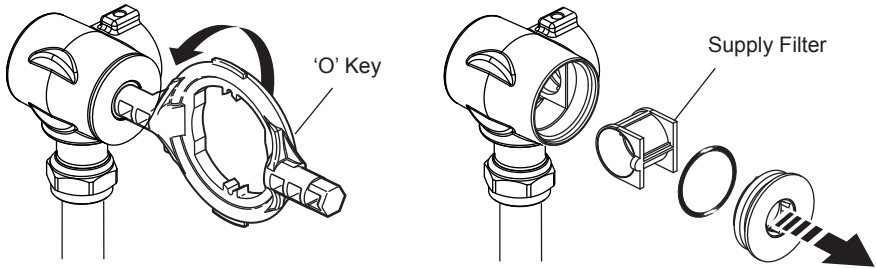


Note! All measurements and results should be recorded in the Log Book.

Flow Diagram, In-service Test Procedure

Filters

1. Isolate the supplies to the shower control and operate the flow control to drain any residual water.
2. Unclip and remove the concealing plate.
3. Unscrew the 3 backplate securing screws and remove the backplate.
4. Unscrew the filter caps with the 'O Key' (supplied) or a 12 mm hexagonal wrench and remove the filters.
5. Clean each filter in turn under a jet of water to remove any lodged particles.
6. Re-fit the filters and tighten the filter caps.
7. Restore the water supplies and check for leaks.
8. Reassemble the shower control (refer to section '**Installation, Control Assembly**').



TYPE 2 VALVES

Application

The approved designations for Type 2 Valves are as follows:

Model	Designation
Mira Discovery Built-in Dual Control	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

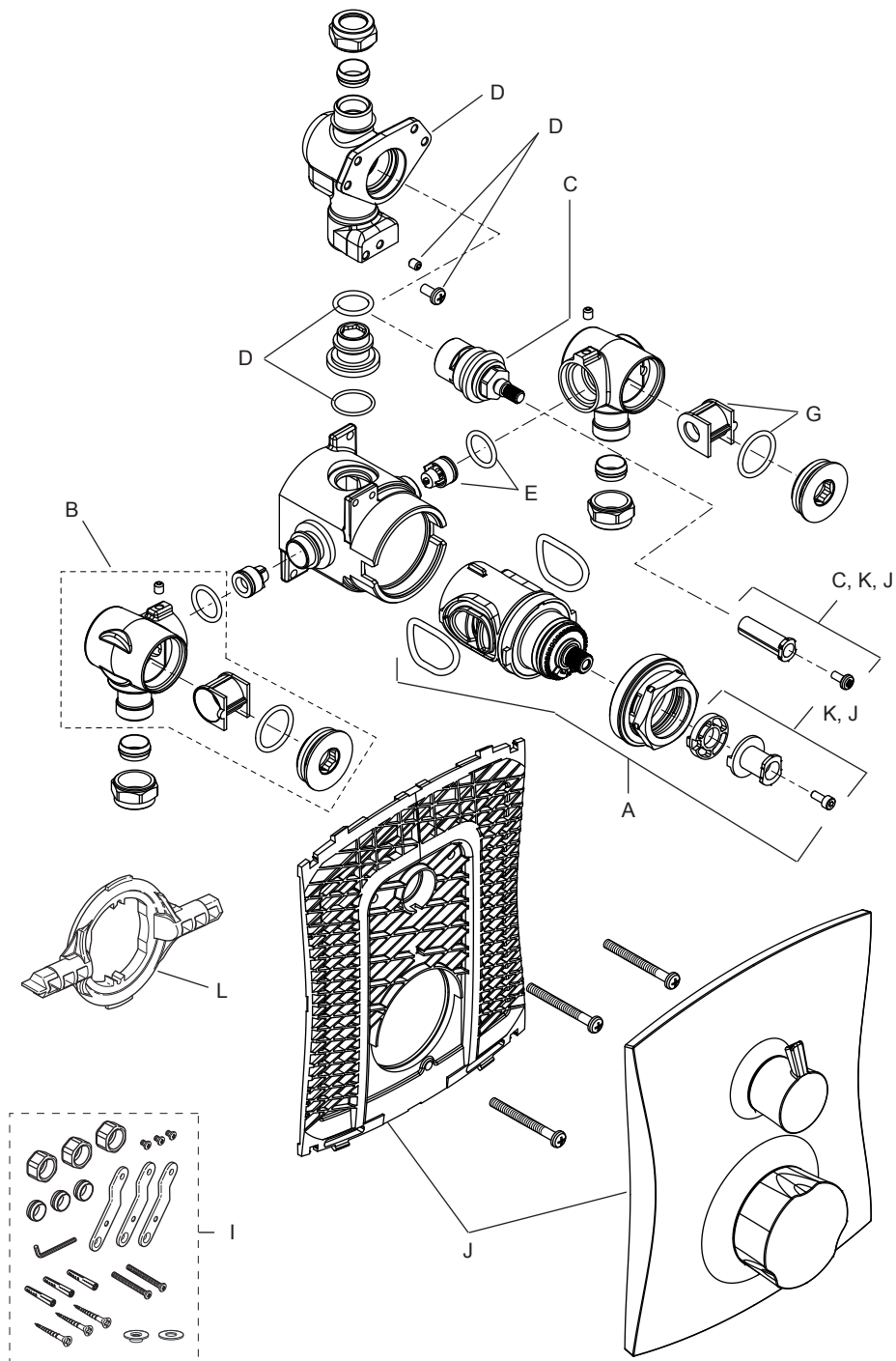
For applications where a Type 2 Valve is required, the supply conditions must comply with the values in the Table below. Note that both hot and cold supply pressures must lie within the same pressure range.

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

1609.040	(A) Thermostatic Cartridge Assembly
1609.041	(B) Elbow Pack (2 off)
1609.042	(C) Flow Control Assembly
1609.043	(D) Flow Control Housing
1609.044	(E) Non-Return Valve (2 off)
1609.045	(F) Screw Pack (not illustrated)
1609.046	(G) Filter Pack (2 off)
1609.047	(H) Seal Pack (not illustrated)
1609.048	(I) Component Pack
1609.049	(J) Concealing Plate Assembly
1609.050	(K) Hub Pack
1595.231	(L) 'O' Key



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.

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 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.

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.

All spares are guaranteed for 12 months from date of purchase. Spares that have been supplied directly from us can be returned within one month from 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 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 spare parts and a 12 month guarantee on the repair.

Payment should be made directly to the engineer/agent using Visa, MasterCard 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, Mon to Fri 8:00 am - 5:30 pm
Sat 8:30 am - 3:30 pm

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, Mon to Fri 9:00 am - 5:00 pm

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Fax: Dublin 01 459 2329

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

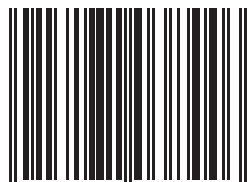
Modern Plant (Cork)

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