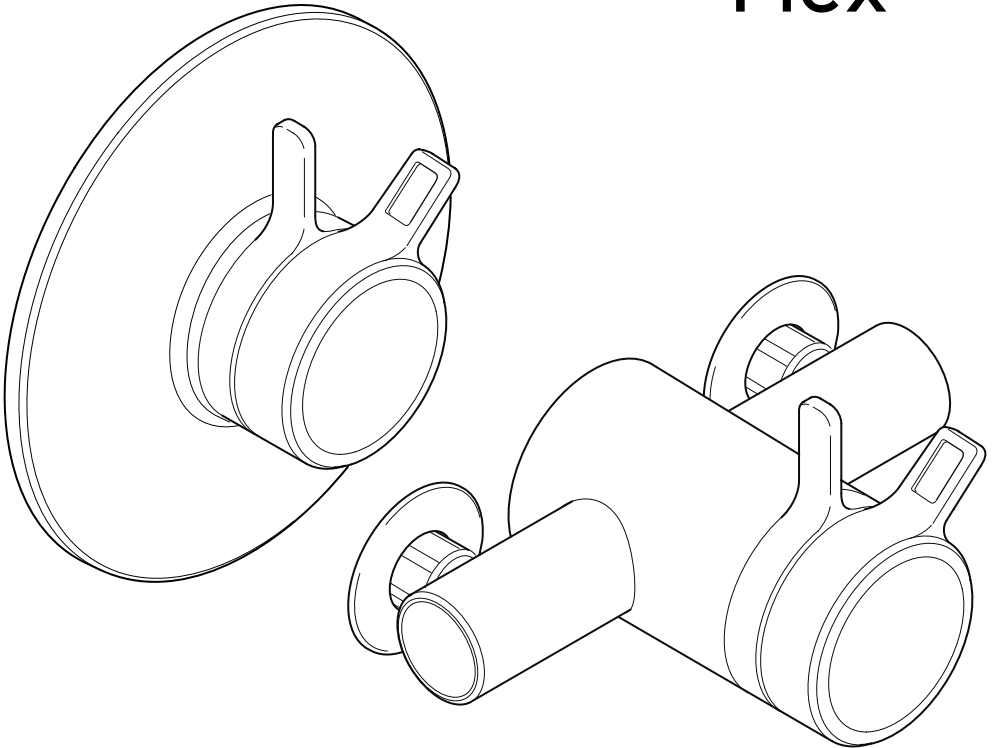


mira

Select
Flex



MIRA SELECT FLEX

THERMOSTATIC MIXER

INSTALLATION AND USER GUIDE

These instructions must be left with the user.

CONTENTS

Introduction	2
Guarantee	3
Recommended Usage	3
Patents and Design Registration	3
Safety Warnings	3
Pack Contents	4
Specifications	5
Pressures	5
Temperatures	5
Thermostatic Shut-down	5
Connections	5
Flow Rates	5
Dimensions	6
Installation	7
Suitable Plumbing Systems	7
General	7
Exposed Thermostatic Mixers	8
Built-in Thermostatic Mixers	10
Control Assembly	19
Reversed Inlet Supplies	20
Operation	21
Commissioning	22
Exercising the Thermostat	22
Maximum Temperature	22
Maximum Temperature Setting	22
Type 2 and Type 3 Valves	23
Application	23
Commissioning	23
Maintenance	24
Maintenance	25
General	25
Planned Maintenance	25
Fault Diagnosis	27
Inlet Filters	28
Notes	29
Spare Parts	30
Exposed Models	30
Built-in Models	31
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 Select Flex is a thermostatic mixer with separate flow and temperature controls. The lever controls have been designed to be easily operated by users with restricted hand movement.

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

On exposed models the thermostatic mixer has adjustable inlets to fit pipework centres between 139 mm and 153 mm and is designed for connection to rising, falling or rear entry pipework.

The Mira Select Flex has been certified for use in UK Healthcare premises as a Type 3 valve under the BUILDCERT TMV3 scheme. The Mira Select Flex has also been certified as a Type 2 valve under the BUILDCERT TMV2 scheme. For Healthcare* installations refer to section: '**Type 2 and Type 3 Valves**'. This product also complies with the Water Supply (water fittings) Regulations 1999.

*Healthcare applications are hospitals, aged person facilities, residential care homes, etc. and any other application where the user is similarly at risk.

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 contact details can be found on the back cover of this guide.

Guarantee

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

For **non-domestic installations**, Mira Showers guarantee the Mira Select Flex 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	✓	✗

Note! Heavy duty shower fittings are available separately for use in Healthcare and Heavy Commercial applications, for details contact Customer Services.

Patents and Design Registration

Patents:

GB: 2 291 693, 2 392 225, 2 421 297

US: 7 240 850

Euro: 1 672 257 DE, FR, GB, IT, NL, SE

Patent Applications:

GB: 2 435 077, 0712546.1

US US-2006-0124758

US-2007-0221740

Euro: 03254070.0

Design Registration:

000834007/01, 000834007/02,

000578463-0006

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 manufacturer's recommendations.
2. For Type 2 and Type 3 installations, they are only used for applications covered by their approved designations, refer to section: '**Type 2 and Type 3 Valves**'.
3. Periodic attention is given, when necessary, to maintain the product in good functional order.

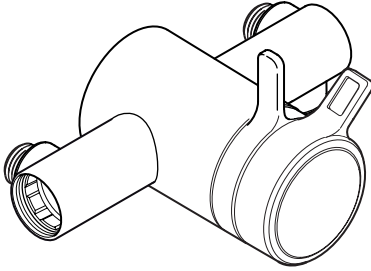
Caution!




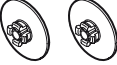


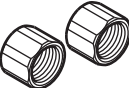


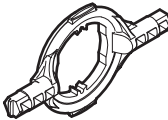
1. Read all of these instructions.
2. Retain this guide for later use.
3. Pass on this guide in the event of change of ownership of the installation site.
4. Follow all warnings, cautions and instructions contained in this guide.
5. Anyone who may have difficulty understanding or operating the controls 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. This is particularly important in healthcare procedures, such as supervised bathing where patients are unable to respond immediately to unsafe temperatures.
6. Rapid/Excessive movement of the flow and/or temperature controls may result in momentary unstable blend temperatures.
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.

- 1 x Mira Select Flex Exposed Shower Control

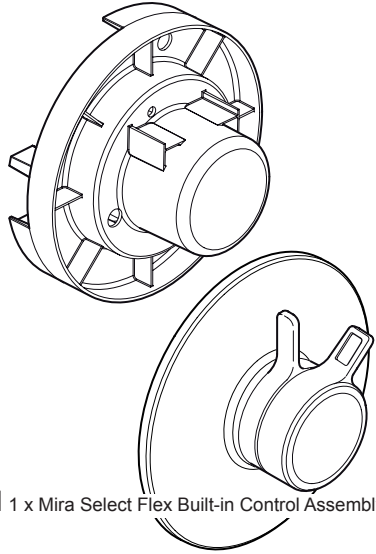


-  2 x Screws, No 8 x 1 1/4"
-  2 x Wall Plugs
-  2 x Securing Clips
-  2 x Concealing Caps
-  1 x 12 L/Min Flow Regulator
-  2 x Concealing Plates
-  2 x Compression Nuts
-  2 x Olives
-  1 x Hexagon Key, 2.5 mm
-  1 x 'O' Key










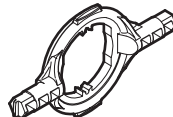
Documentation

- 1 x Installation Template

- 1 x Mira Select Flex Built-in Shower Control (attached to the building-in shroud)



- 1 x Mira Select Flex Built-in Control Assembly

-  3 x Compression Nuts
-  2 x Olives
-  2 x Wall Plugs
-  2 x Screws, No 8 x 1 1/4"
-  1 x 12 L/Min Flow Regulator
-  1 x Hexagon Key, 2.5 mm
-  2 x M5 x 40 mm Screws
-  2 x Securing Brackets
-  2 x Bracket Screws
-  1 x 'O' Key

SPECIFICATIONS

For Type 2 and Type 3 Valves, the supply conditions specified in section: '**Type 2 and Type 3 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 showerhead outlet).
Note! For gravity fed or other low pressure systems (0.5 bar or below) do not fit the outlet flow regulator (where applicable).
- For optimum performance supplies should be nominally equal.

Temperatures

- Factory Pre-set (Blend) Shower: **41°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

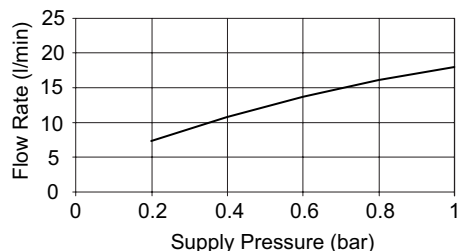
- For safety and comfort the thermostat will shut off the mixing valve **within 2 Seconds** if either supply fails (achieved only if the blend temperature has a minimum differential of 12°C from either supply temperature).

Connections

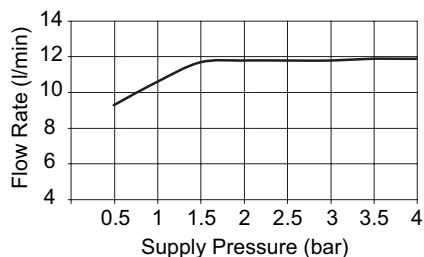
- Inlets: 15 mm Compression.
- Outlet: ½" BSP Flat Face (Exposed models), 15 mm Compression (Built-in models)
- Standard connections are: **hot - left, cold - right, outlet - bottom (Exposed models), top (Built-in models)**.

Flow Rates

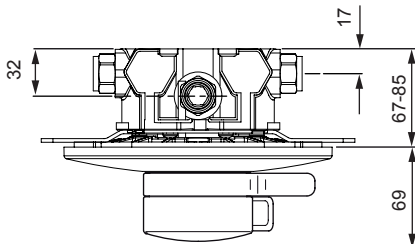
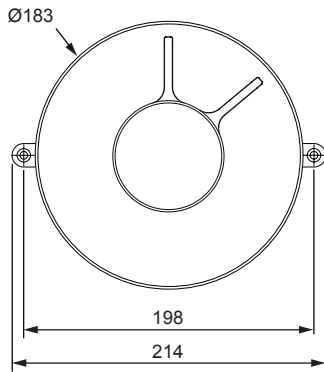
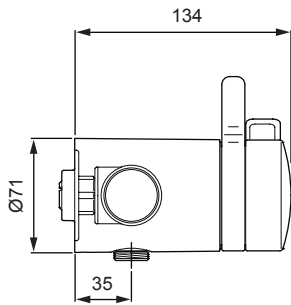
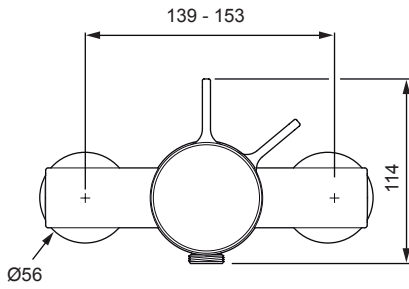
Typical Flow Rates on Low Pressure Systems, Mira Select Flex with Mira Select Flex Shower Fittings:



Typical Flow Rates on High Pressure Systems (with 12 Litre/Min flow regulator fitted in shower control outlet), Mira Select Flex with Mira Select Flex Shower Fittings:



Dimensions



All dimensions are in mm.

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.

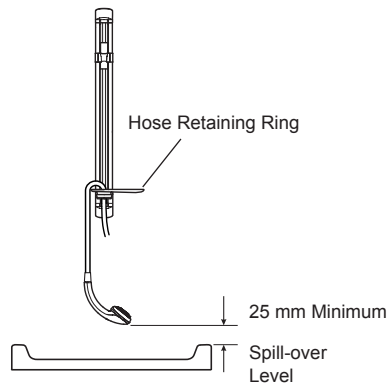
General

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 section: '**Specifications**'. For Type 2 and Type 3 Valves see also supply conditions in section: '**Type 2 and Type 3 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. 'Full bore' 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 showerhead (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.



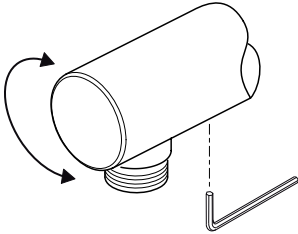
Important! A hose retaining ring should be fitted to prevent the showerhead from dropping below the spillover level of the shower tray/bath, which could lead to contamination from back-siphonage. This hose retaining ring should meet the majority of user requirements for shower installations with flexible outlet fittings. However, there will be occasions when the hose retaining ring will not provide a suitable solution. In these instances an **outlet double checkvalve**, e.g. the Mira DCV-H, **must** be fitted. The inclusion of the Mira DCV-H will increase the required supply pressure typically by 10 kPa (0.1 bar), refer to section: '**Accessories**'.

Exposed Thermostatic Mixers

Installing the Thermostatic Mixer

1. The thermostatic mixer can be installed with rear, rising or falling supply inlets. Decide on the most appropriate method for your installation, and if necessary, loosen the grubscrews and rotate the inlet elbows to suit.

Important! Make sure that the elbows are pushed fully onto the mixer before tightening the grubscrews, **do not** overtighten.

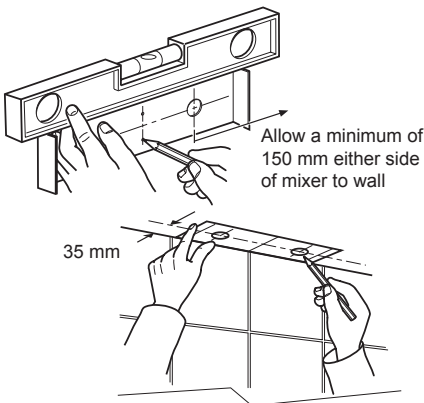


2. Use the installation template to mark the positions of the holes for the backplate and the pipe centres.

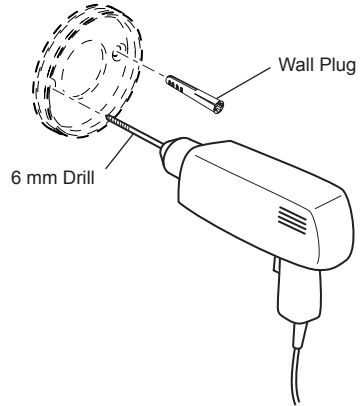
For rising or falling supplies the pipe positions should be set 35 mm from the centre of pipe to the finished wall at 153 mm centres.

Note! Allow a minimum of 150 mm either side of the mixer to allow servicing of the hot and cold inlet filters.

Note! The thermostatic mixer has adjustable inlets to fit existing pipework centres between 139 mm and 153 mm.



3. For solid walls drill the holes for the backplate with a 6 mm drill and insert the wall plugs. For other types of wall structure alternative fixings may be required (not supplied).



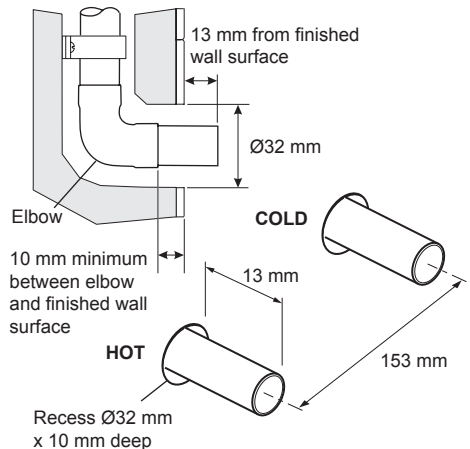
4. For Rear Entry Supplies Only:

- a) Drill the holes for the supply pipes at 153 mm centres.
- b) Recess the inlet holes $\text{Ø}32 \text{ mm} \times 10 \text{ mm}$ deep to allow for the concealing plates.

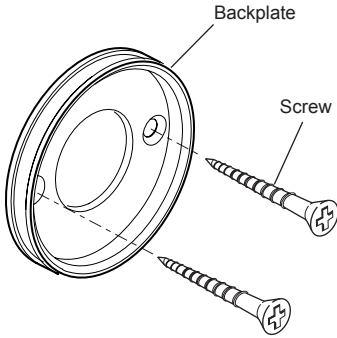
Note! Depth must be sufficient to prevent the concealing plates fouling on the plumbing elbows.

5. Fit the supply pipework: **Hot - Left, Cold - Right**. The inlet pipework should extend 13 mm from the finished wall surface.

Note! If it is not possible to install the mixer with this pipework configuration complete the installation then refer to section: '**Reversed Inlet Supplies**'.



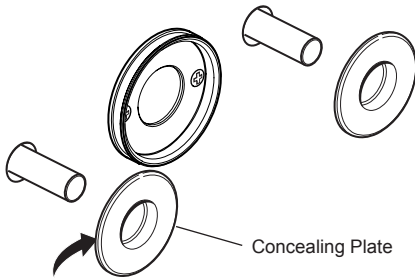
6. Remove the backplate from the mixer by loosening the grub screw with a 2.5 mm hexagonal key.
7. Secure the backplate to the wall using the screws.



8. For Rear Entry Supplies Only:

- a) Fit the concealing plates over the inlet pipes.

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



Apply Silicone Sealant

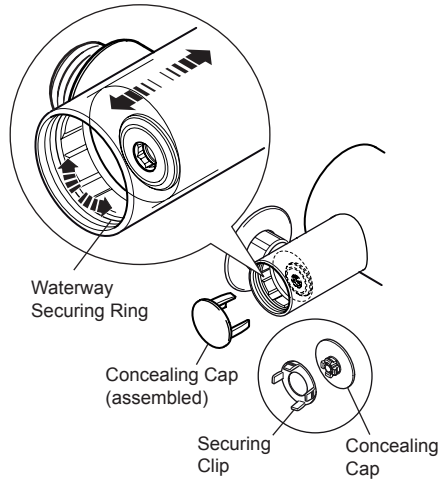
9. **Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the mixer.** Failure to do so may result in product malfunction and will not be covered under the guarantee.

10. Fit the compression nuts and olives onto the pipework.

11. Align the mixer with the pipework and fit onto the backplate. Minor misalignment of the pipework can be accommodated by the inlets, which are adjustable between 139 and 153 mm centres.

Important! Make sure that the hot and cold inlets on the mixer correspond with the hot and cold inlet supplies.

12. Using a suitable tool, tighten the waterway securing ring until it abuts the adjustable inlet preventing outward movement.



13. Assemble the concealing caps and securing clips and push into the elbow.

14. Tighten the compression nuts onto the mixer with a suitable spanner.

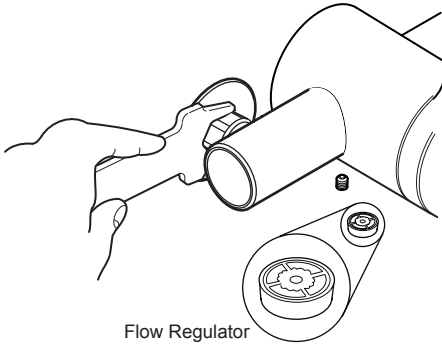
Caution! Take care not to damage the chrome surfaces.

15. Tighten the grub screw to secure the mixer to the backplate.

16. Fit the shower fittings, refer to your shower fittings installation and user guide for instructions.

Note! For high pressure systems (above 0.5 bar) make sure that the flow regulator (supplied) is fitted inside the outlet nipple (refer to illustration).

Important! The fitting of this flow regulator will invalidate any TMV2 or TMV3 compliance due to the minimum flow rate requirements. Do not fit the flow regulator in TMV2 and TMV3 applications.



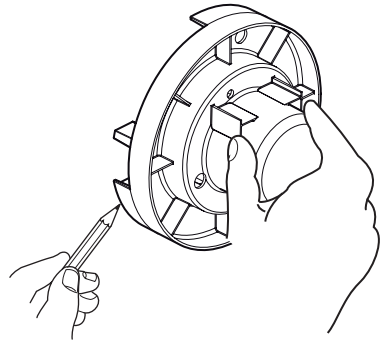
17. Turn on the hot and cold water supplies and check for leaks.

18. Before using the shower, refer to section: 'Commissioning'.

Built-in Thermostatic Mixers

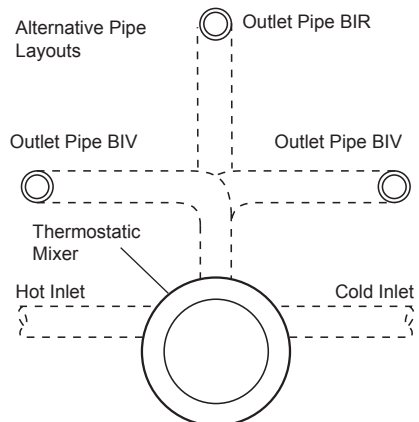
Solid Wall or Stud Partition Fixing using Rear Mountings

1. Determine the route for the hot and cold supply pipework and for the outlet pipework. When connecting to BIV Shower Fittings it is recommended that the outlet be positioned above and to one side of the mixer. This is to prevent the flexible hose from obstructing the shower controls.
2. Remove the two shroud screws (retain for later use) and remove the building-in shroud from the mixer.
3. Determine the position of the mixer and draw around the building-in shroud.



4. Mark the routes for the hot and cold supply pipework (**Hot - Left, Cold - Right**) and for the outlet pipework.

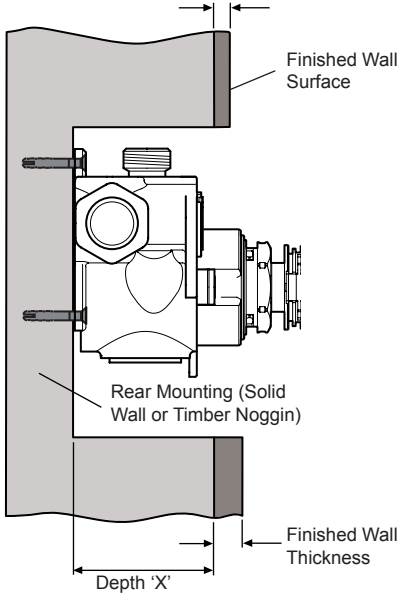
Note! (if applicable) The outlet elbow should be sited above the mixer and on the right or left, as site dictates.



- Cut away the plasterboard and/or brick work to the required depth.

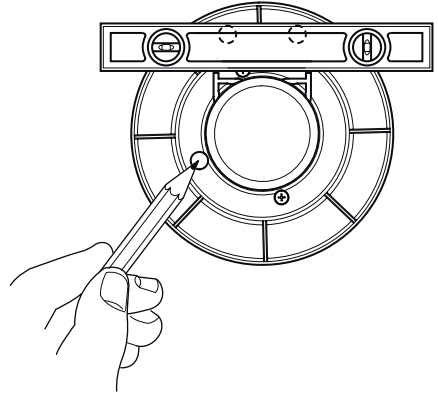
Important! This depth 'X' will depend on the finished wall thickness e.g. tiles or facia board. Refer to the table for this measurement.

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

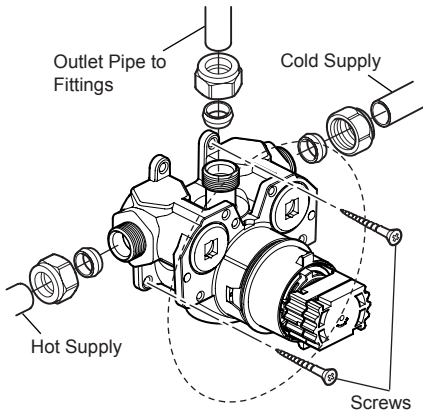
- Refit the building-in shroud to the mixer using the two shroud screws removed earlier.
- Make sure that the mixer is level and central in the hole, and square to the finished wall surface (or the control components will not fit correctly), then mark the positions of two fixing screw holes on the wall.



- For solid walls drill two 6 mm holes for the wall plugs.
- Fit the hot and cold supply pipework (**Hot - Left, Cold - Right**).
- Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the mixer.** Failure to do so may result in product malfunction and will not be covered under the guarantee.

11. Insert the wall plugs and attach the mixer to the wall with the screws provided.

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



12. Remove the two shroud screws (retain for later use) and remove the building-in shroud from the mixer.

13. Make sure that the olives are fitted, connect the hot and cold supply pipes and tighten the compression nuts.

14. Connect the outlet pipework and install the RAC assembly or BIR assembly, **before** continuing with the installation of the mixing valve.

RAC assembly, go to section: 'Installation, RAC Assembly'.

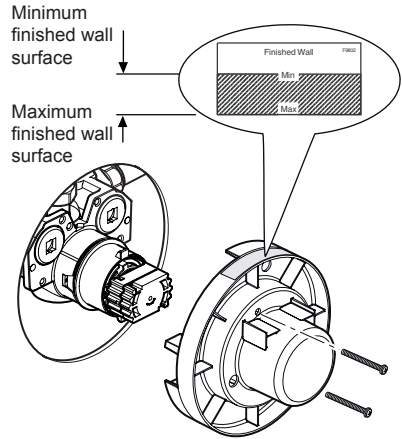
BIR assembly, refer to your shower fittings installation and user guide then continue with instruction 15.

15. Turn on the water supplies and check for leaks.

16. Refit the building-in shroud to the mixer using the two shroud screws removed earlier.

17. Using the 'Finished Wall Indicator' on the building-in shroud as a guide, finish the wall, e.g. tiles.

Caution! Make sure that the finished wall is within the maximum and minimum limits and to an even depth (no greater than 2 mm variation) or the control components will not fit correctly.



18. Remove the two shroud screws (retain for later use) and remove the building-in shroud.

19. Fit the concealing plate and control assembly, refer to section: 'Control Assembly'.

Panel Fixing using Securing Brackets

Note! For laminated panels the mixer 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).

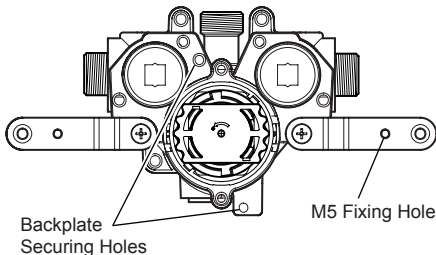
Important! Make sure that there is a minimum clearance of 64 mm behind the laminated panel to house the mixer.

1. Refer to section: **'Rear Fixing into Solid Walls or Stud Partitions'** and follow instructions 1 to 4.
2. Carefully cut out the laminated panel.
3. Fit the securing brackets to the mixer.

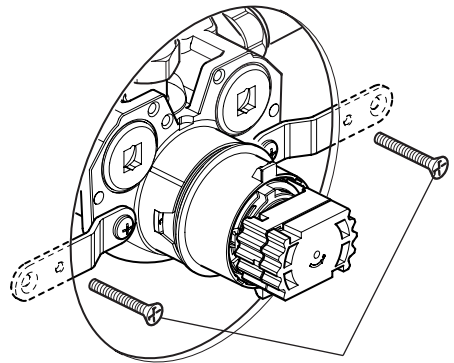
Important! Make sure that the correct holes are used, otherwise the backplate cannot be fitted.

4. Position the mixer on the front of the panel, make sure that it is level and central in the hole, then mark the position of the M5 fixing holes.

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



5. Drill the two 5.5 mm holes for the fixing positions (countersink the holes at the front).
6. Fit the hot and cold supply pipework (**Hot - Left, Cold - Right**).
7. **Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the mixer.** Failure to do so may result in product malfunction and will not be covered under the guarantee.
8. Secure the mixer with the M5 x 40 screws as shown.

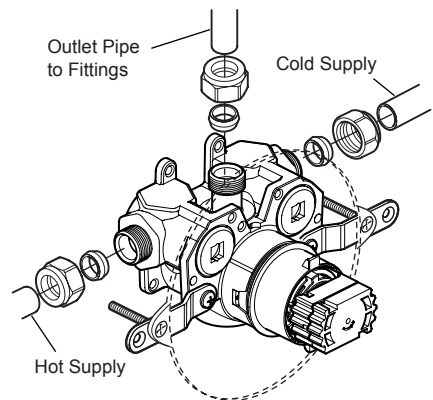


M5 x 40 mm
Fixing Screws

9. Make sure that the olives are fitted, connect the hot and cold supply pipes and tighten the compression nuts.
10. Connect the outlet pipework and install the RAC assembly or BIR assembly, **before** continuing with the installation of the mixing valve.

RAC assembly, go to section: **'Installation, RAC Assembly'**.

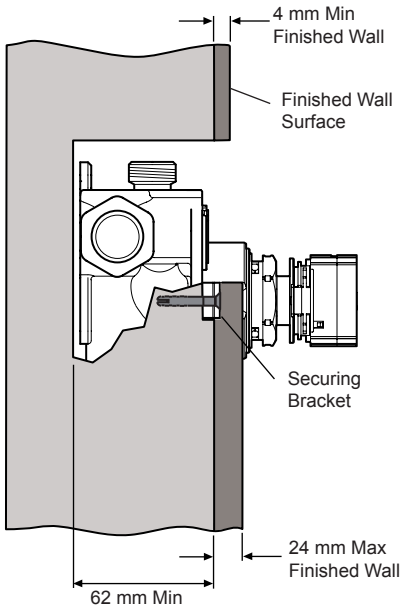
BIR assembly, refer to your shower fittings installation and user guide then continue with instruction 11.



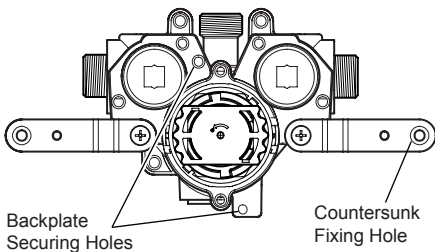
11. Turn on the water supplies and check for leaks.
12. Fit the concealing plate and control assembly, refer to section: **'Control Assembly'**.

Solid Wall or Stud Partition Fixing using Securing Brackets

1. Refer to section: 'Rear Fixing into Solid Walls or Stud Partitions' and follow instructions 1 to 4.
2. Remove the plasterboard and/or brick work to a minimum depth of 62 mm.

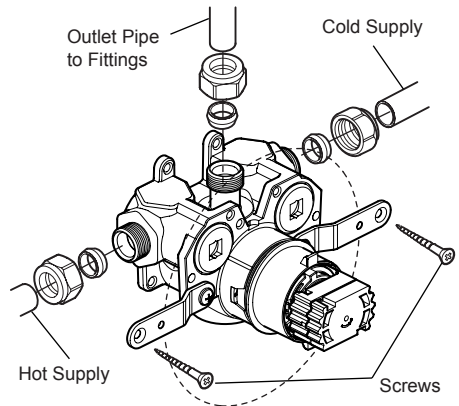


3. Fit the securing brackets to the mixer with the bracket securing screws.
Important! Make sure that the correct holes are used, otherwise the backplate cannot be fitted.



4. Make sure that the mixer is level and mark the positions for the countersunk fixing holes on the wall.
5. For solid walls drill two 6 mm holes for the wall plugs.

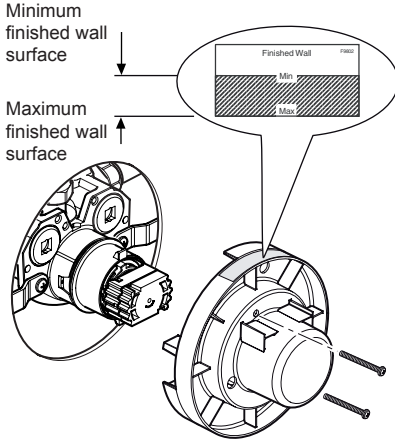
6. Fit the hot and cold supply pipework (**Hot - Left, Cold - Right**).
7. **Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the mixer.** Failure to do so may result in product malfunction and will not be covered under the guarantee.
8. Remove the wall brackets from the mixer.
9. Make sure that the olives are fitted, connect the hot and cold supply pipes and tighten the compression nuts.
10. Refit the wall brackets to the mixer, fit the wall plugs and fix the mixer to the wall with the screws provided.
Note! For stud partition installations alternative fixings may be required (not supplied).
14. Connect the outlet pipework and install the RAC assembly or BIR assembly, **before** continuing with the installation of the mixing valve.
RAC assembly, go to section: 'Installation, RAC Assembly'.
BIR assembly, refer to your shower fittings installation and user guide then continue with instruction 12.



12. Turn on the water supplies and check for leaks

13. Refit the building-in shroud to the mixer using the two shroud screws removed earlier.
14. Using the 'Finished Wall Indicator' on the building-in shroud as a guide, finish the wall, e.g. tiles.

Caution! Make sure that the finished wall is within the maximum and minimum limits and to an even depth (no greater than 2 mm variation) or the control components will not fit correctly.



15. Remove the two shroud screws (retain for later use) and remove the building-in shroud.
16. Fit the concealing plate and control assembly, refer to section: '**Control Assembly**'.

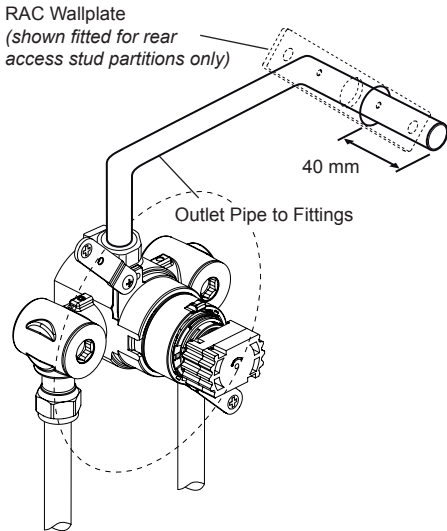
RAC Assembly

1. Before the RAC assembly can be fitted you must have first installed your built-in shower control and have connected the inlet and outlet pipework.

Important! Make sure that the outlet pipework protrudes through a Ø25 mm hole in the wall or stud partition by approximately 40 mm.

Note! For stud partition installations where access to the rear of the partition is possible, fit the RAC wallplate over the outlet pipework on the inside of the partition.

For stud partition installations where access to the rear of the wall is not possible, follow instructions for solid wall installations, making sure that suitable wall fixings (not supplied) are used to secure the wallplate to the outside of the stud partition.



2. Temporarily cap off the outlet pipe, turn on the water supplies and check for leaks.
3. Determine the finished wall position (e.g. tile thickness). Turn off the water supply, carefully uncap the outlet pipe and cut to length, the outlet pipe must protrude through the **finished wall surface** by 21–23 mm.

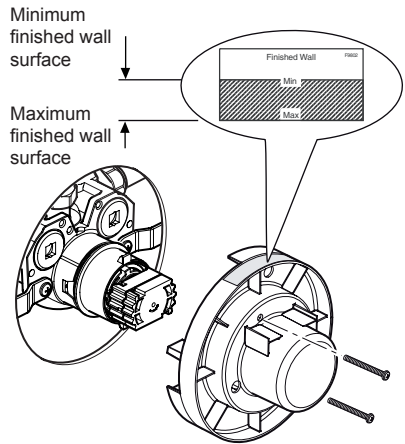
Note! Remove any burrs from the pipes before proceeding.

4. For solid wall installations or stud partition installations **without** rear access go to instruction 11.

For stud partition installations with access to the rear of the partition continue with instruction 5.

5. Secure the building-in shroud to the mixing valve using the two building-in shroud screws removed earlier.
6. Using the building-in shroud as a guide, finish the wall, e.g. tiles.

Caution! Make sure that the finished wall is within the maximum and minimum limits and to an even depth (no greater than 2 mm variation) or the control components will not fit correctly.

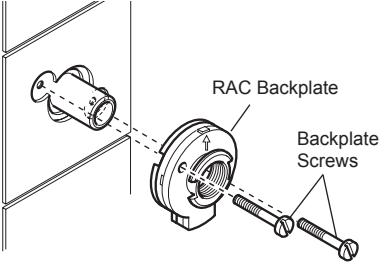


7. Remove the two building-in shroud screws (retain for later use) and remove the building-in shroud.
8. Place the RAC backplate over the outlet pipe with the arrow pointing up. The screw holes should be at 45° to the horizontal.

9. Mark the positions of the two RAC backplate fixing holes and drill two Ø5.5 mm holes.

Caution! Make sure that you do not drill into pipework in the wall.

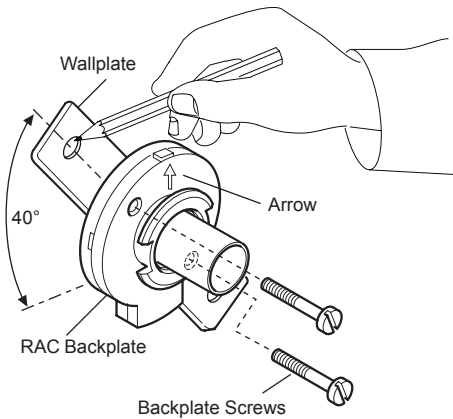
10. Hold the RAC wallplate in position on the rear of the partition, insert the two backplate screws and secure the RAC backplate to the wallplate. Make sure that the foam seal abuts the finished wall surface. Go to instruction 22.



11. Loosely attach the RAC backplate to the RAC wallplate, using the two backplate screws provided.

12. Place the RAC backplate/wallplate assembly over the outlet pipe with the arrow pointing vertically up. The screw holes should be at 40° to the horizontal.

13. Mark the positions of the two RAC wallplate fixing holes.



14. Remove the assembly from the wall and separate the backplate from the wallplate.

15. For solid walls drill two Ø6 mm holes for the wall plugs. For other types of wall structure alternative fixings may be required (not supplied). If necessary, make a recess 6 mm deep to accept the wallplate for flush fitting of the outlet to the wall surface.

Caution! Make sure that you do not drill into pipework in the wall.

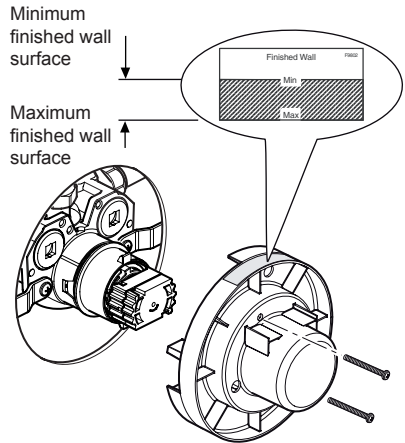
16. Fit the two wall plugs supplied and secure the wallplate to the wall with the two wallplate screws.

17. Make sure that there is clearance behind the wallplate and temporarily fit the two backplate screws into the wallplate. This will prevent the fixing holes from becoming blocked with plaster or grout.

18. Secure the building-in shroud to the mixing valve using the two shroud screws removed earlier.

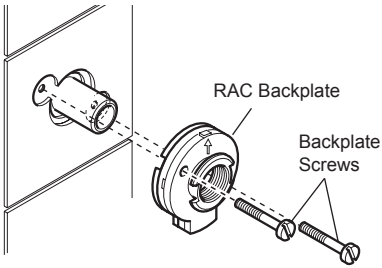
19. Using the building-in shroud as a guide, finish the wall, e.g. tiles.

Caution! Make sure that the finished wall is within the maximum and minimum limits and to an even depth (no greater than 2 mm variation) or the control components will not fit correctly.

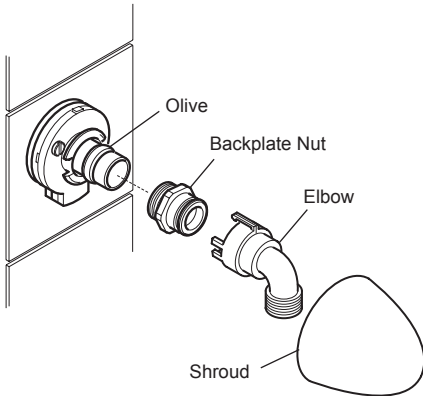


20. Remove the two backplate screws, the two building-in shroud screws (retain for later use) and the building-in shroud.

21. Place the backplate over the outlet pipe with the arrow pointing vertically up and tighten the two backplate screws. Make sure that the foam seal abuts the finished wall surface.



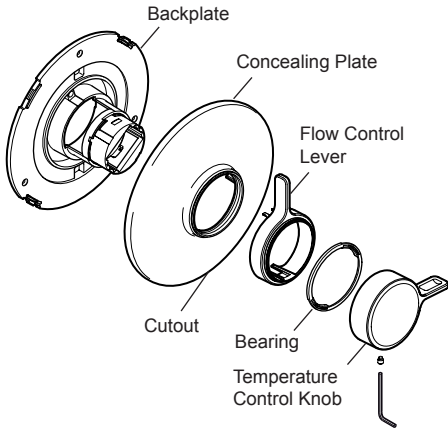
22. Check that the blue 'O' seal is fitted inside the backplate nut. Fit the olive and the backplate nut over the outlet pipe and tighten the nut.
23. Check that the second 'O' seal (black) is fitted to the outside of the backplate nut. Press the elbow onto the backplate, make sure that the clips on the elbow engage with the backplate.
24. Press the shroud over the elbow, make sure that it engages with the lugs on the backplate.



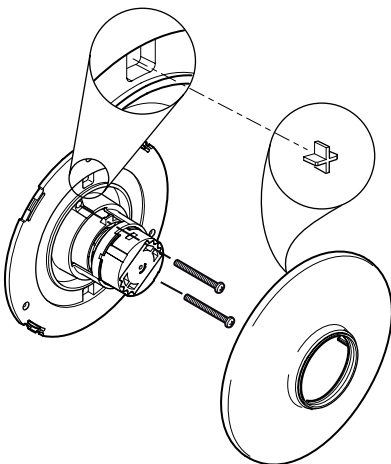
25. This completes the installation of the RAC assembly, fit the concealing plate and control assembly. Refer to section: '**Control Assembly**'.

Control Assembly

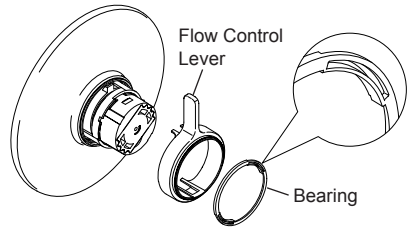
1. Unscrew the grubscrew and pull off the temperature control knob, bearing and flow control lever.
2. Carefully unclip the concealing plate from the backplate.
Note! Use a screwdriver in the cutout to assist separation.



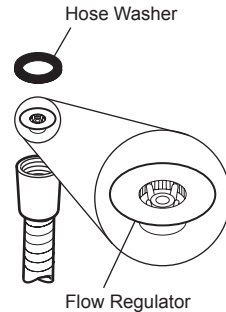
3. Attach the backplate using the two shroud screws removed earlier. Tighten the screws until the foam seal is compressed against the finished wall. **Do not** overtighten.
4. With the cutout at the bottom, locate the concealing plate over the mixer, engage the crosses in the concealing plate with the square recesses in the backplate, and push firmly until the concealing plate clicks into position.



5. Locate the flow control lever over the control assembly and push firmly into place.
6. Fit the bearing onto the flow lever.
Note! Align the bearing with the cutouts on the control assembly.



7. Fit the shower fittings, refer to your shower fittings installation and user guide.
Note! For high pressure systems (above 0.5 bar) make sure that the flow regulator (supplied) is fitted under the hose washer (refer to illustration).
Important! The fitting of this flow regulator will invalidate any TMV2 or TMV3 compliance due to the minimum flow rate requirements. Do not fit the flow regulator in TMV2 and TMV3 applications.



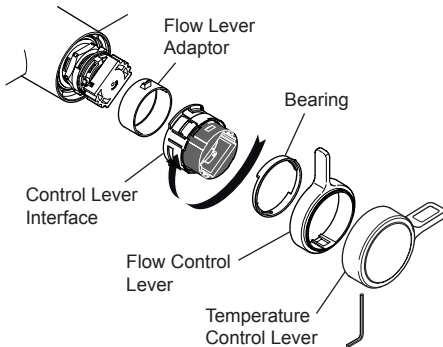
8. Turn on the hot and cold water supplies and check for leaks.
9. Before using the shower, refer to section: **'Commissioning'**.

REVERSED INLET SUPPLIES

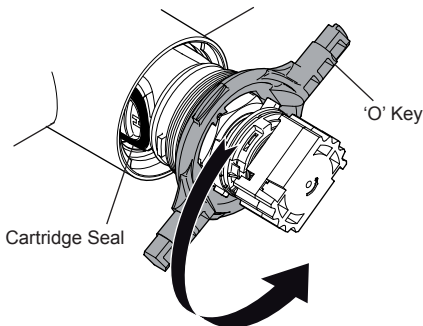
The Mira Select Flex thermostatic mixer is supplied with inlet connections **Hot - Left, Cold - Right** and **Outlet - Bottom** (exposed models), **Outlet - Top** (built-in models) as standard. If the hot and cold water supply pipes have been reversed during installation, the thermostatic cartridge must be removed and rotated 180°.

Exposed Models

1. Isolate the hot and cold water supplies and operate the flow control lever to relieve pressure and drain any residual water.
2. Unscrew the grub screw with a 2.5 mm hexagonal key and pull off the temperature control and flow control levers.
3. Pull off the bearing.
4. Rotate the white section of the control lever interface 90° clockwise and pull off.
5. Pull off the flow lever adaptor.



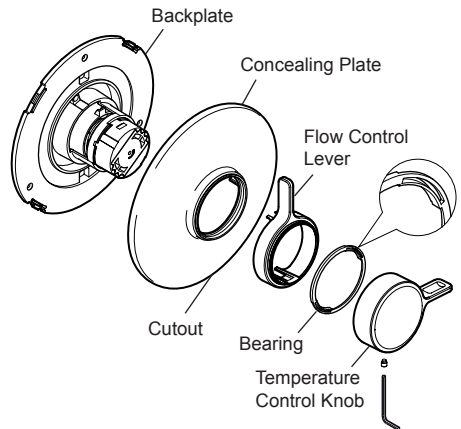
6. Locate the 'O' key (supplied) onto the cartridge nut and turn anticlockwise. Unscrew fully and pull the cartridge from the mixer body.
7. Rotate the cartridge 180°.



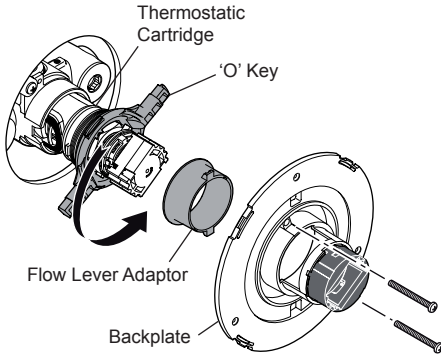
8. Make sure that the two inlet seals are fitted and carefully push the cartridge back into the mixer body, aligning the lugs into the slots.
Note! Check that the cartridge lug stamped 'H' is aligned with the hot inlet supply.
- Important!** Take care when fitting the cartridge. Damage to the cartridge inlet seals may result in dripping from the showerhead.
9. Tighten the nut by turning the 'O' key clockwise.
10. Refit the controls in reverse order. Before using the shower, refer to section: '**Commissioning**'.

Built-in Models

1. Isolate the hot and cold water supplies and operate the flow control lever to relieve pressure and drain any residual water.
 2. Unscrew the grub screw and pull off the temperature control lever, bearing and flow control lever.
 3. Carefully unclip the concealing plate from the backplate.
- Note!** Use a screwdriver in the cutout to assist separation.



4. Unscrew the two backplate screws and remove the backplate.
5. Pull off the red flow lever adaptor.
6. Locate the 'O' Key (supplied) onto the cartridge nut and turn anticlockwise. Unscrew fully and pull the thermostatic cartridge from the mixing valve.

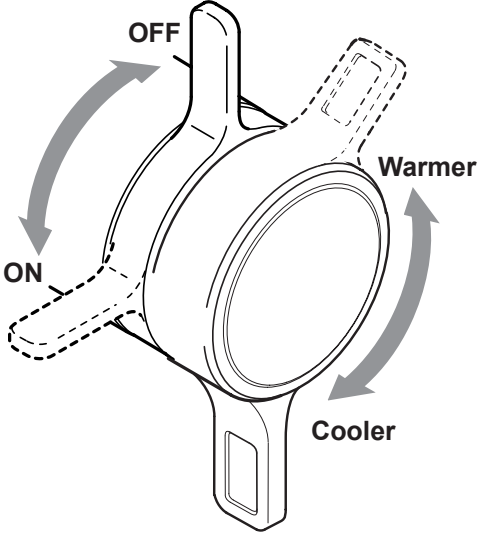


7. Rotate the thermostatic cartridge 180°.
8. Make sure that the two inlet seals are fitted and carefully push the thermostatic cartridge back into the mixing valve, aligning the lugs into the slots.
Note! Check that the cartridge lug stamped 'H' is aligned with the hot inlet supply.
Important! Take care when fitting the thermostatic cartridge. Damage to the cartridge inlet seals may result in dripping from the showerhead.
9. Tighten the nut by turning the 'O' key clockwise.
10. Refit the controls in reverse order.
Note! When refitting the bearing, make sure that the cutouts are aligned with the control assembly.
11. Before using the shower, refer to section: '**Commissioning**'.

OPERATION

The **Mira Select Flex** is a thermostatic mixer with separate control levers for on/off and temperature.

Turn the Flow Control Lever **anticlockwise** to the preset maximum flow



Turn the Temperature Control Lever **clockwise** to decrease the temperature and **anticlockwise** to the preset maximum temperature

COMMISSIONING

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

Exercising the Thermostat

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

A simple way to provide this exercise is:

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

Maximum Temperature

Note! For Type 2 and Type 3 valves in healthcare installations the maximum blend temperature is determined by the application, refer to section: '**Type 2 and Type 3 Valves, Application**'.

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

All Mira Thermostatic mixing valves are fully performance tested and the maximum temperature is preset to approximately 41°C under ideal installation conditions at the factory.

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

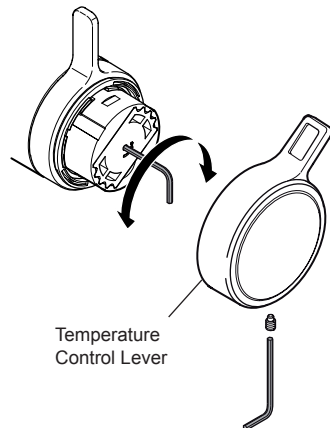
Temperatures should always be recorded using a thermometer with proven accuracy.

Maximum Temperature Setting

Before using the shower, the maximum temperature level must be checked to make sure that it is safe. It has been preset to approximately 41°C at the factory, but due to variations in site conditions the maximum temperature may need adjustment.

Note! Make sure that the hot water temperature is at least 55°C and that there is a sufficient supply.

1. Turn on the shower to maximum flow and temperature (i.e. both controls fully anticlockwise) and allow the temperature to stabilise.
If the temperature is too hot or too cold adjust as follows:
2. Using a 2.5 mm Hexagon Key (supplied), unscrew and remove the Temperature Control Lever.
3. Insert the 2.5 mm Hexagon Key into the centre of the Green Hub and engage with the hidden Temperature Adjust Screw.
4. Turn the Hexagon Key until the required maximum showering temperature is obtained. Turn anticlockwise to increase or clockwise to decrease the temperature (¼ turn = approximately 1°C).



5. Once the desired maximum blend temperature has been achieved, turn off the shower.
6. Refit the Temperature Control Lever.
7. Check that the showering temperature is correct.

TYPE 2 AND TYPE 3 VALVES

Application

The approved designations for **Type 2 Valves** are as follows:

Models	Designation
Mira Select Flex	HP-S, LP-S

The permitted application details are:

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

The approved designations for **Type 3 Valves** are as follows:

Models	Designation
Mira Select Flex	HP-S, LP-S

The permitted application details are:

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

[†] Mixed water temperature at discharge point.

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

Note! For washbasins, it is assumed that you are washing under running water.

Note! Bath fill temperatures of more than 44°C should only be available when the bather is always under the supervision of a competent person (e.g. nurse or care assistant).

In order to achieve the safe water temperatures expected of Type 2 and Type 3 Valves 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 and Type 3 installations).

Supply Conditions

For applications where a Type 2 or Type 3 Valve is required, the supply conditions must comply with the values extracted from the TMV2 and TMV3 standard (EN1287 & EN1111), shown 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 or Type 3 Valves.

Commissioning

(Temperatures should always be recorded with a thermometer with proven accuracy)

1. Check that the designation of the thermostatic mixing valve matches the intended application.
2. Check that the supply pressures are within the range of operating pressures for the designation of the thermostatic mixing valve.
3. Check that the supply temperatures are within the range permitted for the shower control and by guidance information on the prevention of legionella etc.
4. Check inlet pipework temperatures for correct function of the non return valves.

5. All connections and thermostatic mixing valve body are watertight.
6. Operate the outlet flow divertor lever and check:
 - (a) Flow rate is sufficient for purpose (low pressure supplies may require removal of flow regulators).
 - (b) Temperature(s) obtained are acceptable.
7. Exercise the thermostat (refer to section: '**Commissioning, Exercising the Thermostat**').
8. Adjust the temperature of the mixed water in accordance with the instructions in this manual and the requirement of the application and then carry out the following sequence:
 - (a) Record the temperature, and pressures if possible, of the hot and cold water supplies.
 - (b) Record the temperature and flow rate of the mixed water at the largest draw-off flow rate.
 - (c) Record the temperature and flow rate of the mixed water at a smaller draw-off flow rate.
 - (d) Isolate the cold water supply to the mixing valve and monitor the mixed water temperature.
 - (e) Record the maximum temperature achieved as a result of **d.** and the final temperature.

Note! The final mixed water temperature should not exceed the values shown in the table below. Any higher temperatures should only occur briefly.
 - (f) Record the date, equipment, thermometer etc. used for the measurements.

Application	Maximum Mixed Water Temperature
Bidet	40°C
Shower	43°C
Washbasin	43°C
Bath (44°C fill)	46°C
Bath (46°C fill)	48°C

Maintenance

Planned maintenance for Type 3 Valves must use the 'In-Service Test', at the frequency given in the guide to in-service test frequency, and should employ temperature testing, performance log books and training as detailed in section: '**Maintenance**'.

Type 2 valves must use the 'In-Service Test' at a frequency of not more than one year.

MAINTENANCE

General

The Mira Select Flex thermostatic mixing valve is designed to need only minimal 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".

Planned Maintenance

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

We recommend a preventative maintenance procedure based on site conditions and the risk to the user. All results must be recorded in a log book.

Healthcare

Healthcare applications are hospitals, aged person facilities, residential care homes, etc. and any other application where the user is similarly at risk.

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

Irrespective of supply and usage conditions or the evidence of in-service tests, critical components should be replaced at intervals of no more than 5 years.

Note! During the replacement of critical components, it may be necessary to replace other non-critical components.

Frequency of In-service Tests

Healthcare

Follow the procedure detailed in the flow diagram "In-service Test Procedure". This procedure must be followed 6 to 8 weeks after commissioning and 12 to 15 weeks after commissioning. The recorded blend temperature ^(Tb) from these two tests will determine the maximum frequency for future service intervals.

Result of 6-8 week tests	Result of 12-15 week tests	Next service interval
< 1°C	< 1°C	9 - 12 weeks
> 1°C	< 1°C	9 - 12 weeks
< 1°C	> 1°C	9 - 12 weeks
> 1°C	> 1°C	6 - 9 weeks

The subsequent in-service test results should be used as a guide, in conjunction with a suitable risk assessment, to determine the schedule of future in-service tests.

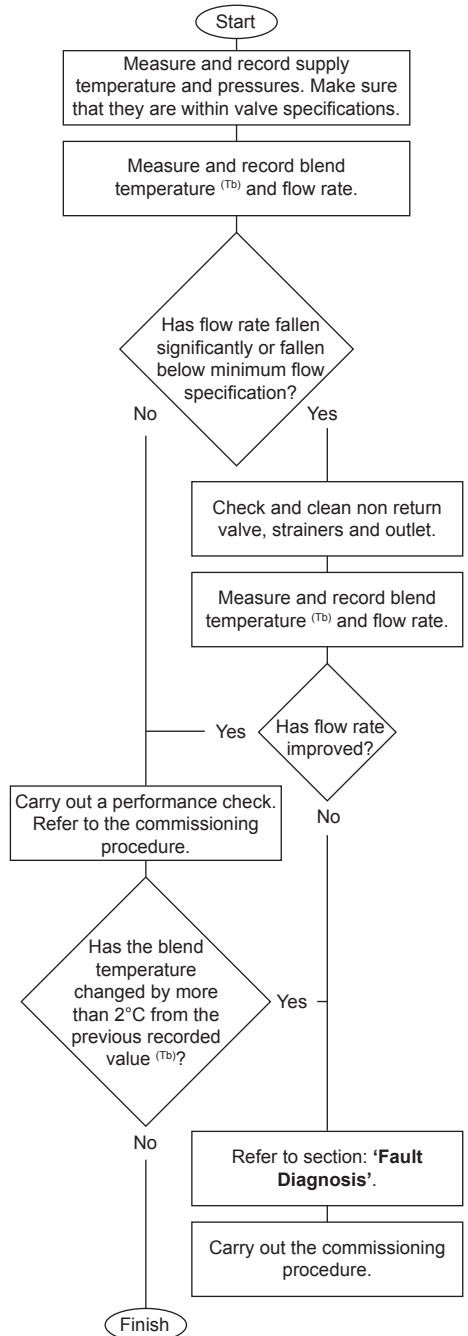
More regular temperature checks should be made where increased risks are perceived, i.e. patients are unable to immediately respond to an increase in water temperature, by either shutting the water off or removing themselves from contact with the water.

Maintenance personnel should also make sure that the staff are aware of the importance of reporting temperature variations and when detected, these should be recorded in the Log Book.

Commercial

Check for correct blend setting every 6 months. Follow the procedure detailed in the flow diagram "In-service Test Procedure", every 12 months.

Flow Diagram, In-service Test Program



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

Fault Diagnosis

Symptom:

- Only hot or cold water from the mixer outlet.
- Outlet temperature too hot / too cold.

Cause Rectification:

- Inlets reversed (hot supply to cold supply). Refer to section: '**Reversed Inlet Supplies**'.
 - No hot water reaching mixer.
 - Check the filters for any blockage.
 - Installation conditions outside operating parameters, refer to sections: '**Specifications**' and '**Commissioning**'.
-

Symptom:

- Fluctuating or reduced flow rate.

Cause Rectification:

- Check the showerhead, hose and filters for any blockage.
 - Make sure that the maintained inlet pressures are nominally balanced and sufficient, refer to section: '**Specifications**'.
 - Make sure that the inlet temperature differentials are sufficient, refer to section: '**Specifications**'.
 - Air lock or partial blockage in the pipework.
 - Flow regulator fitted incorrectly.
-

Symptom:

- Water leaking from the showerhead.

Cause Rectification:

- Normal for a short period after shut off.
- Check that the pressures are not in excess of the specifications for the product.
- Renew the thermostatic cartridge.

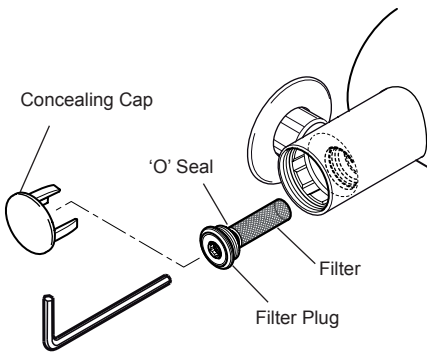
Inlet Filters

The inlet filters should be checked and cleaned as necessary every 12 months.

Note! The inlet filters must not be removed except for cleaning. If the thermostatic mixer is operated without the inlet filters fitted the warranty on the product will be void.

Exposed Models:

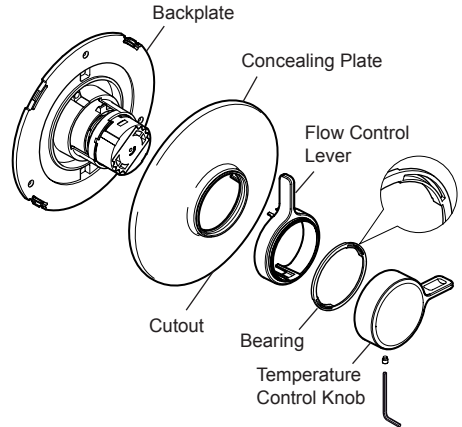
1. Isolate the hot and cold water supplies and operate the flow control lever to drain any residual water.
2. Carefully remove the concealing caps and unscrew the filter plugs with a 5 mm hexagonal wrench. Remove the filters.



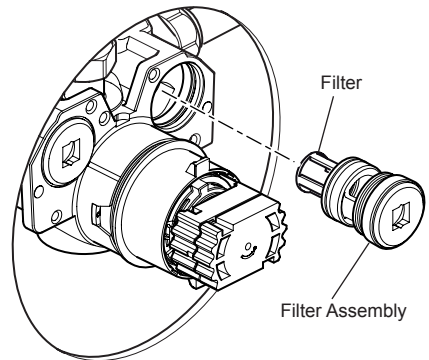
3. Clean the filters under a jet of water to remove any lodged particles.
4. Refit the filters and tighten the filter plugs.
Note! Make sure that the 'O' seal is fitted correctly and undamaged.
5. Turn on the hot and cold water supplies and check for leaks.
6. Refit the concealing caps.

Built-in Models

1. Isolate the hot and cold water supplies and operate the flow control lever to drain any residual water.
2. Loosen the grub screw to remove the temperature control knob. Then remove the flow control lever.
3. Carefully unclip the concealing plate from the backplate.
Note! Use a suitable screwdriver in the cutout to assist separation.



4. Unscrew the two shroud screws and remove the backplate from the mixer.



5. Unscrew the filter assembly.
6. The filter assembly can be cleaned or replaced as necessary.
7. Reassemble the filter assembly and screw into the mixer body.
8. Turn on the hot and cold water supplies and check for leaks.
9. Refit the controls in reverse order.
Note! When refitting the bearing, make sure that the cutouts are aligned with the control assembly.

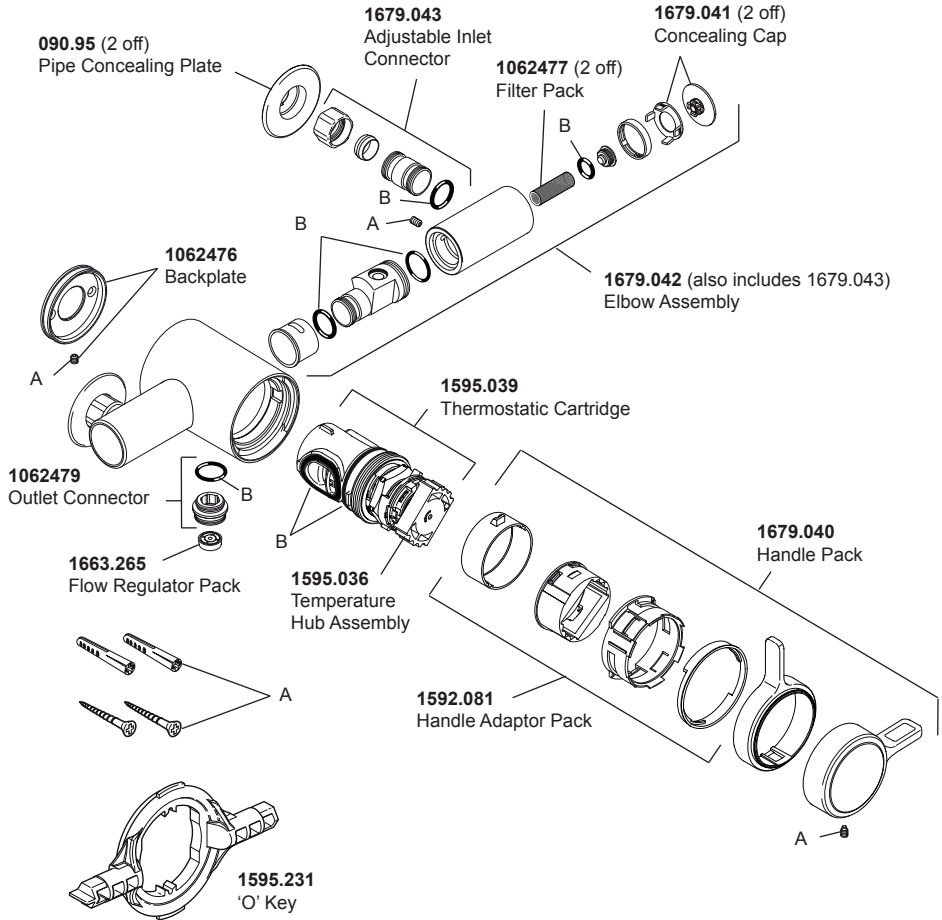
NOTES

SPARE PARTS

Note! All spare parts supplied individually unless stated otherwise.

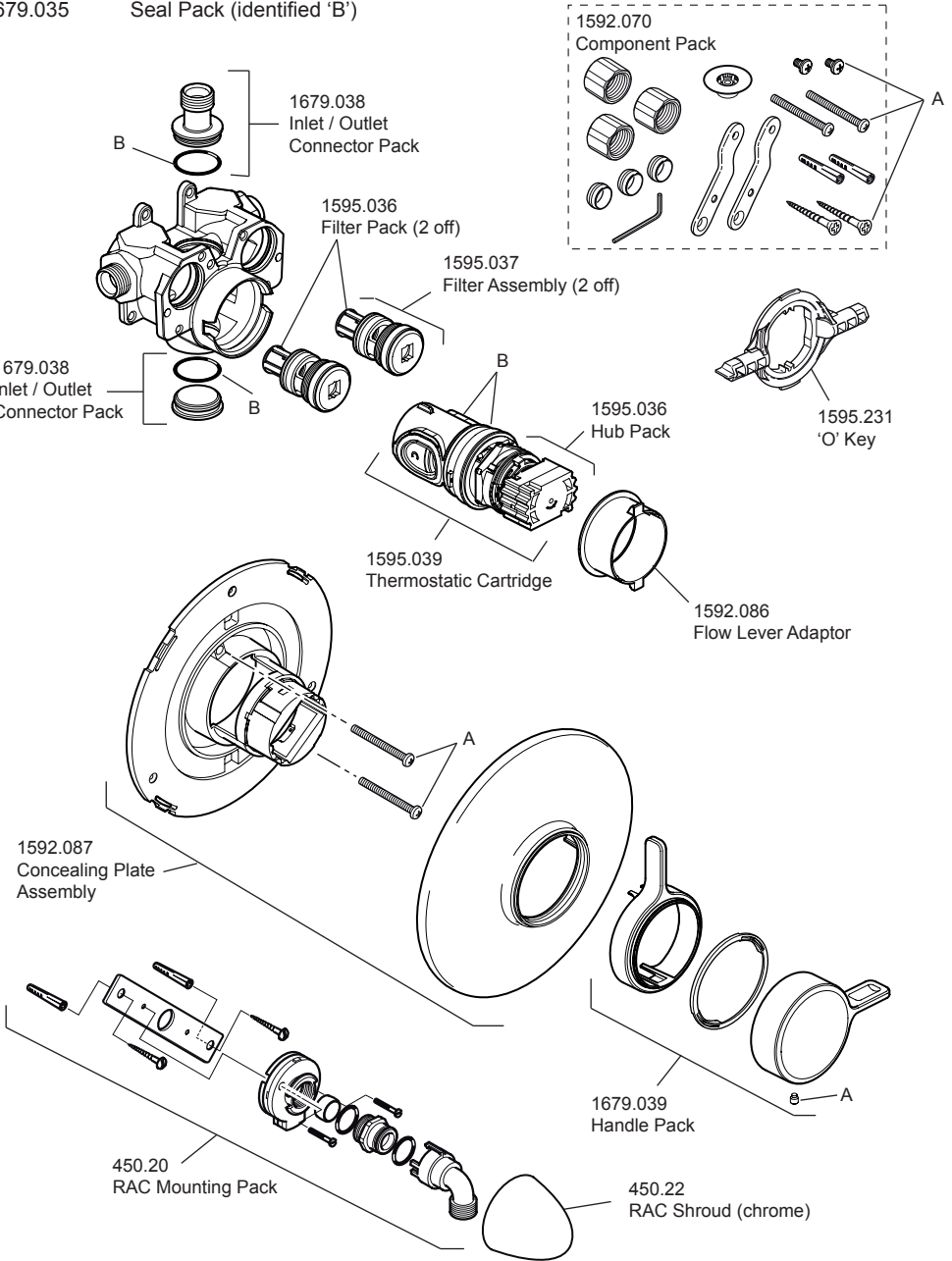
Exposed Models

- 1595.067 Screw Pack (identified 'A')
- 1679.044 Seal Pack (identified 'B')



Built-in Models

- 1679.034 Screw Pack (identified 'A')
- 1679.035 Seal Pack (identified 'B')



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.

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 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 must 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, 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

E-mail: sales@modernplant.ie

Fax: Dublin 01 459 2329

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

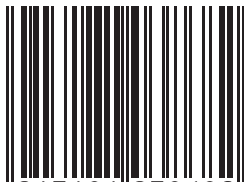
Modern Plant (Cork)

Telephone: 021 496 8755, Mon to Fri 9:00 am - 5:00 pm

E-mail: cork@modernplant.ie

Fax: 021 496 8607

Post: Tramore Road, Cork



5 013181 038682 >

Mira is a registered trade mark of
Kohler Mira Limited.

The company reserves the right to alter
product specifications without notice.

www.mirashowers.com

mira
SHOWERS



FM 14648