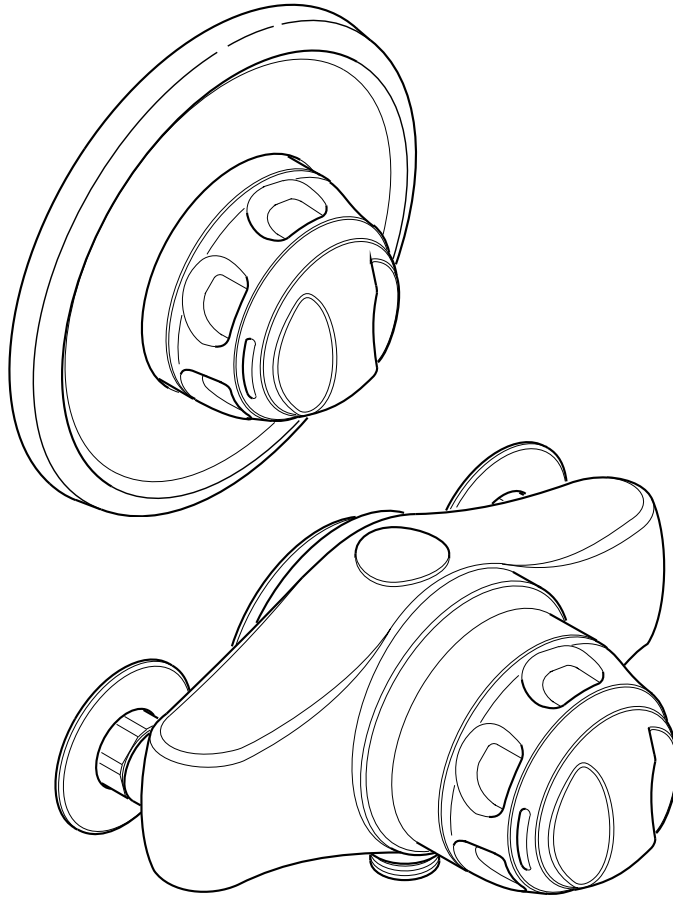


mira

EXCEL



SHOWER CONTROL

Installation

Operation &

Maintenance Guide

THESE INSTRUCTIONS ARE TO BE LEFT WITH THE USER

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Guarantee, Customer Care Policy, and How to contact us Back cover

1. WARNING!

- 1.1. Products manufactured by us are safe and without risk provided they are installed, used and maintained in good working order in accordance with our instructions and recommendations.

2. Caution!

- 2.1. Read all of these instructions.
- 2.2. Retain this guide for later use.
- 2.3. Pass on this guide in the event of change of ownership of the installation site.
- 2.4. Follow all warnings, cautions and instructions contained in this guide.
- 2.5. The plumbing installation must comply with Water Supply Bye-laws, BS 6700, Building Regulations or any particular regulations and practices, specified by the local water company or water undertakers. The installation should be carried out by a plumber or contractor who is registered, or is a member of, an association such as:
 - 2.5.1. Institute of Plumbing (IOP), throughout the UK, Tel: 01708 472791.
 - 2.5.2. National Association of Plumbing, Heating and Mechanical Services Contractors (NAPH & MSC), England and Wales, Tel: 01203 470626.
 - 2.5.3. Scottish and Northern Ireland Plumbing Employers' Federation (SNIPEF), Scotland and Northern Ireland, Tel: 0131 225 2255.
- 2.6. 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.

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 Excel is a thermostatic shower control with independent selection of spray force and temperature. The shower control incorporates a wax capsule temperature sensing unit. This 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 the desired level. An override button allows the user to override the preset maximum temperature. The flow control mechanism utilizes ceramic plate technology operating directly on the hot and cold inlets to provide complete isolation of the incoming water supplies. An adjustable pressure setting allows the Excel to be used in either low or high pressure applications.

Shower controls covered by this guide:

Mira Excel

An exposed shower control for connection to exposed or rear entry pipework. Refer to **Section 4, Specifications** for details on the pressure ranges.

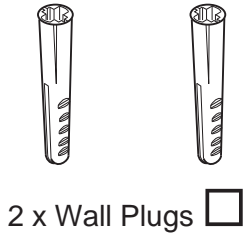
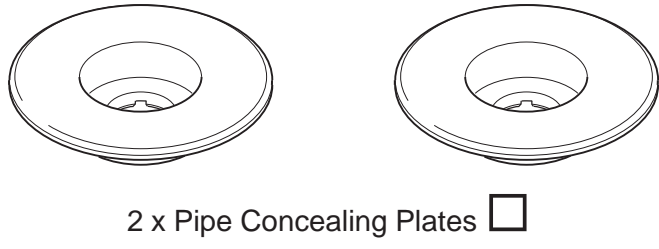
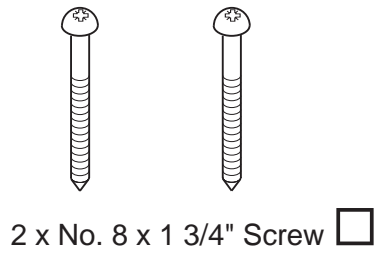
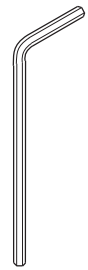
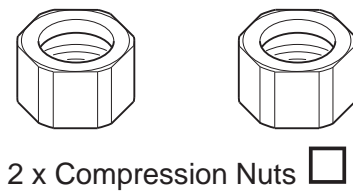
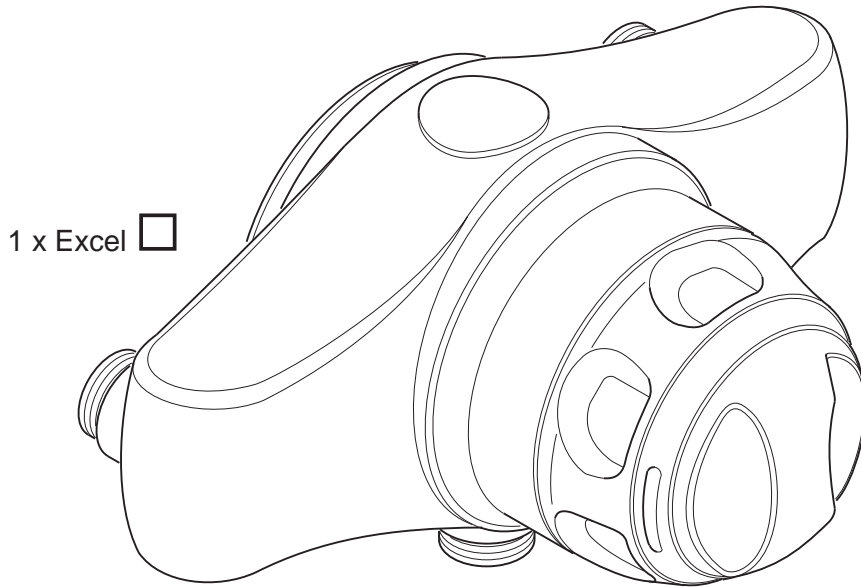
Mira Excel B

A built-in shower control for connection to concealed pipework. Refer to **Section 4, Specifications** for details on the pressure ranges.

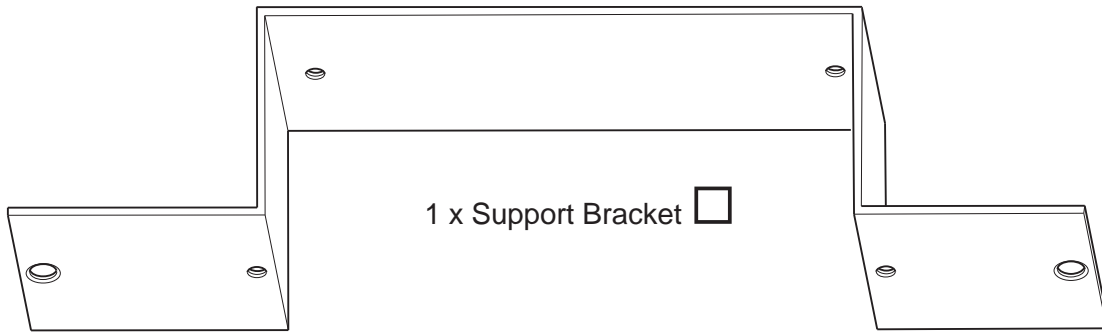
If you experience any difficulty with the installation or operation of your new shower control, then please refer to **Section 11, "Fault Diagnosis"**, before contacting Kohler Mira Limited. Our telephone and fax numbers can be found on the back cover of this guide.

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

1. Excel shower control

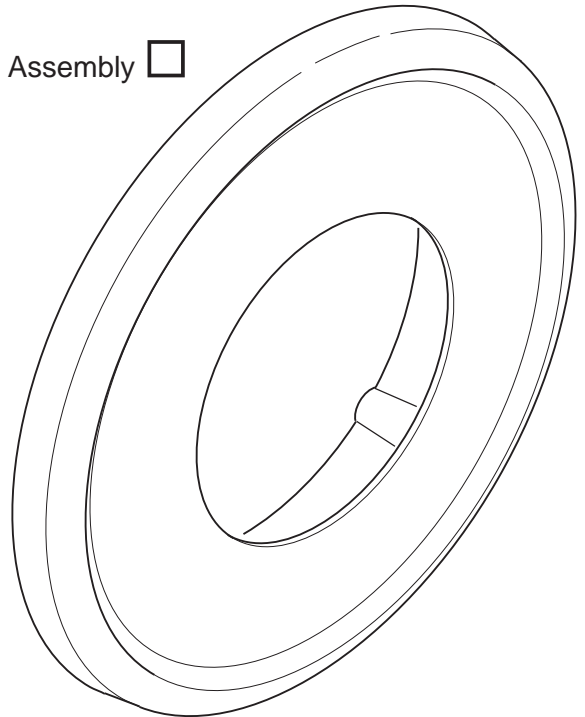
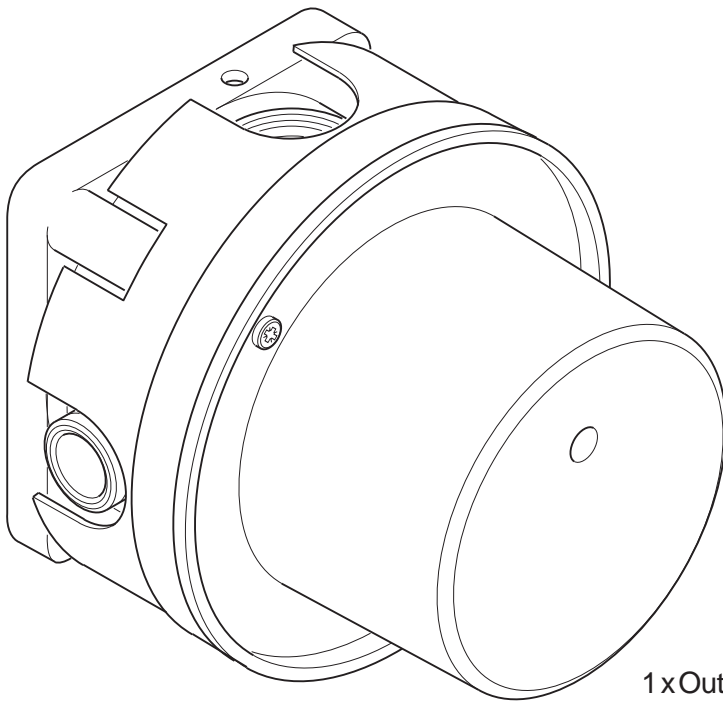


2. Excel B shower control



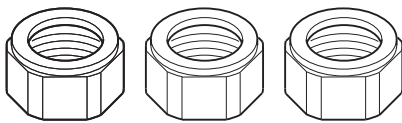
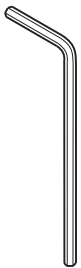
1 x Excel B

1 x Concealing Plate Assembly



1 x Outlet Nipple

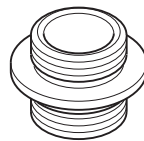
1 x 2.5 mm A/F
Hexagon
Wrench



3 x Compression Nuts



3 x Olives



1 x 'O' Seal



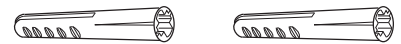
1 x Foam Seal



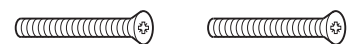
2 x No. M4 x 16 mm Screw



2 x No. 8 x 1 1/4" Screw



2 x Wall Plugs



2 x No. M4 x 30 mm Screw

3. Documentation

1 x Installation, Operation and Maintenance Guide

1 x Customer Support Brochure

1. Pressure Ranges

The Excel/Excel B has an adjustable pressure range to suit the particular installation (see section 6). For methods of measuring the system pressure, refer to section 5, "Installation Requirements".

Excel & Excel B - Low pressure setting

- 1.1. Minimum maintained pressure 0.1 bar (1 Metre head) when used with Mira shower fittings (0.06 bar without fittings).
- 1.2. Maximum maintained pressure 1.0 bar.
- 1.3. Maximum static pressure 10 bar.

Excel & Excel B - High pressure setting

- 1.4. Minimum maintained pressure 1 bar (10 Metre head) when used with Mira shower fittings.
- 1.5. Maximum maintained pressure 5.0 bar.
- 1.6. Maximum static pressure 10 bar.

Note! Nominally equal inlet supply pressures are recommended for optimum performance.

2. Temperature Control

- 2.1. Close temperature control is provided between 30 and 50 °C.

Note! The temperature control specification, outlined below, is achieved with the blend set between 35 and 45 °C, with supply temperatures of 15 °C cold and 65 °C hot, **AND**, nominally equal inlet supply pressures.

- 2.2. The blended temperature is maintained within 2 °C with a 10 °C change in the hot or cold supply.
- 2.3. The wax capsule sensor effects a shut down to seepage in approximately 2 seconds if the cold supply fails. Shut down to seepage is only achieved if the hot supply is 12 °C above the blend temperature.

3. Standards and Approvals

- 3.1.** Designed to comply with BS1415 Part 2 1986 for Thermostatic Mixing Valves, and to be used within systems designed to BS6700 (1987).

- 3.2.** BS 6700 recommends that the temperature of stored water should never exceed 65 °C. A stored water temperature of 60 °C is considered sufficient to meet all normal requirements and will minimise the deposition of scale in hard water areas.

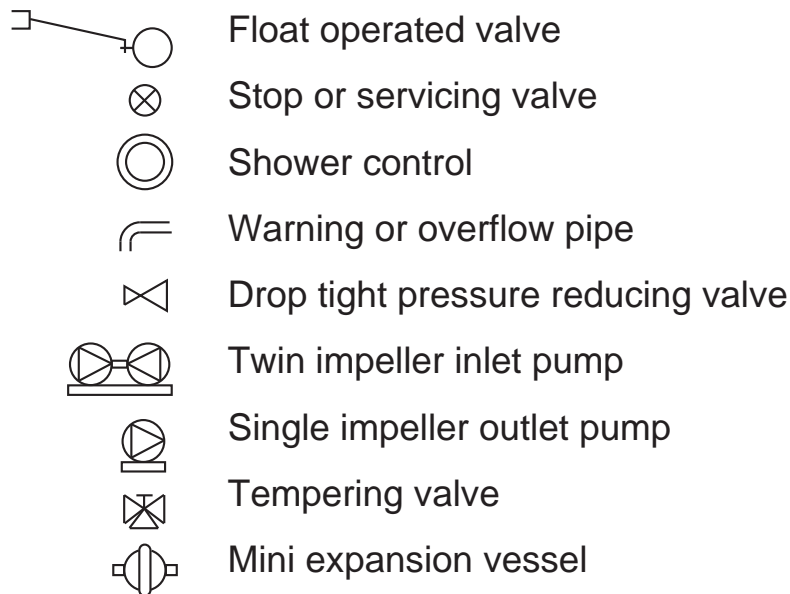
1. General

Read the section “**Important Safety Information**” first.

- 1.1. Supply pipework **MUST** be flushed to clear debris before connecting the shower control (Bye-law 55). A flushing cartridge is available free of charge upon request (see **Accessories**, Appendix 2).
- 1.2. **Do not** fit any form of flow control in the outlet pipework.
- 1.3. **Do not** install the product in a position where it could become frozen.
- 1.4. Layout and sizing of pipework **MUST** be such that nominally equal inlet supply pressures are achieved and effects of other draw-offs are minimised.
- 1.5. Conveniently situated isolating valves must be fitted for servicing purposes.
- 1.6. If the shower control is to be used with a multipoint water heater, combination boiler, thermal store or unvented system an expansion vessel must be fitted to accommodate the expansion of water in the domestic hot water supply (this may already be part of the system, check with the appliance manufacturer).
- 1.7. **Do not** use excessive force when making connections.
- 1.8. **Do not** install the shower control in a position that restricts service access.

2. Typical suitable installations

Key to symbols



2.1. Instantaneous gas-heated showers (e.g. combination boilers)

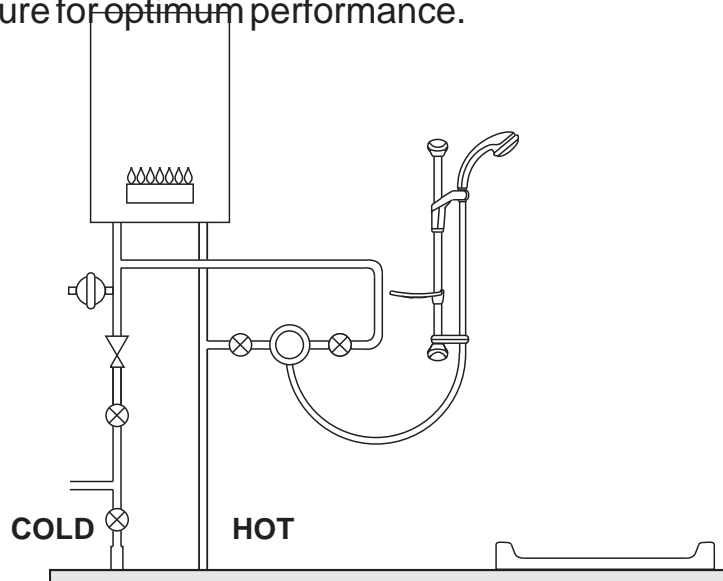
The shower control **MUST** be installed with a multipoint gas water heater or combination boiler of a **fully modulating design** (i.e. where the water draw-off rate indirectly controls the gas flow rate to the burner).

A drop tight pressure reducing valve **MUST** be fitted if the supply pressures exceed 5 bar maintained.

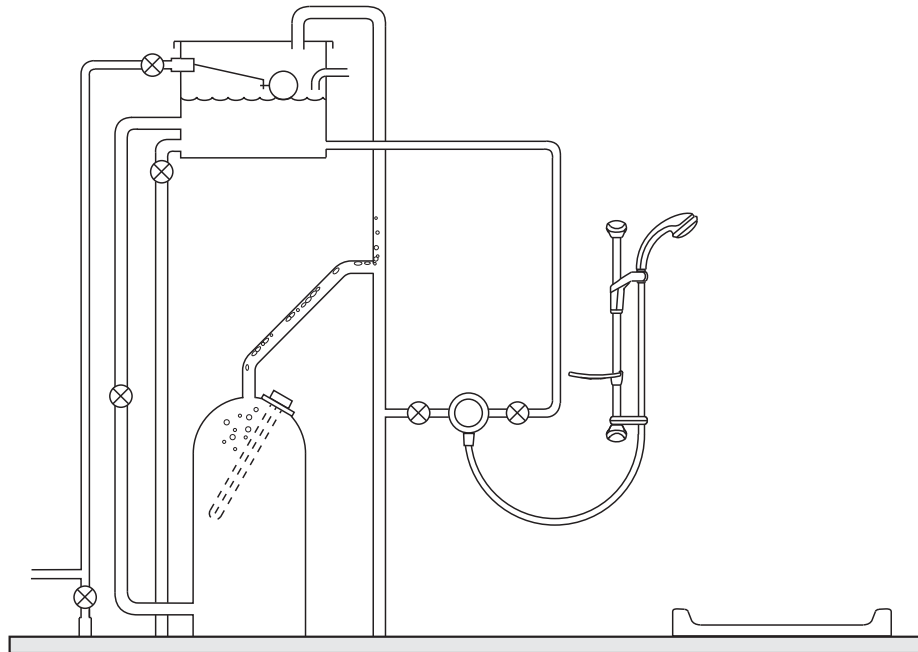
An expansion vessel **MUST** be fitted (and regularly maintained) as shown in the diagram below to ensure that excess pressures do not damage the product. This may already be fitted within the boiler (check with the manufacturer) and is in addition to the normally larger central heating expansion vessel.

The layout and sizing of pipework **MUST** be such that nominally equal inlet supply pressures are achieved **AND** the effects of other draw-offs are minimized.

The hot supply temperature **MUST** be at least 12 °C hotter than the required blend temperature for optimum performance.



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



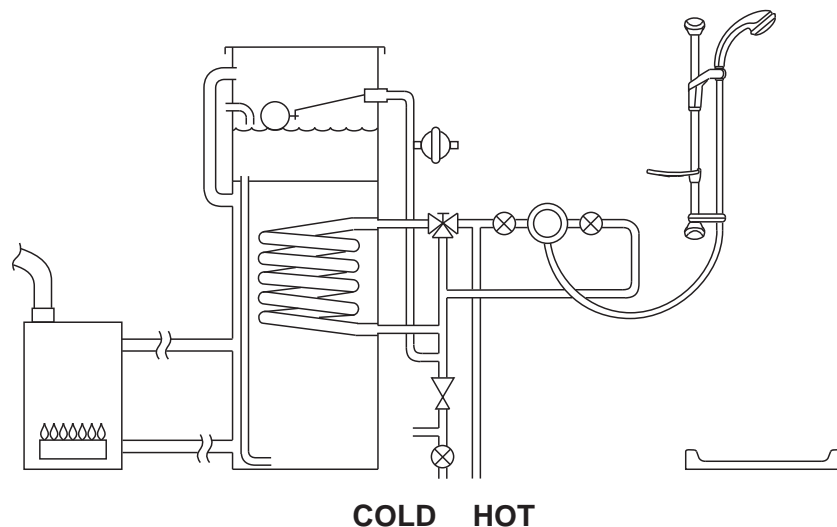
2.3. Mains pressurised instantaneous hot water shower, heated from a thermal store

Packages of this type, fitted with a tempering valve can be used.

A drop tight pressure reducing valve **MUST** be fitted if the supply pressures exceed 5 bar maintained.

An expansion valve **MUST** be fitted (and regularly maintained) as shown in the diagram below to ensure excess pressures do not damage the product. This may already be fitted externally or internally within the thermal store (check with thermal store manufacturer).

The layout and sizing of pipework **MUST** be such that nominally equal inlet supply pressures are achieved **AND** the effects of other draw-offs are minimized.



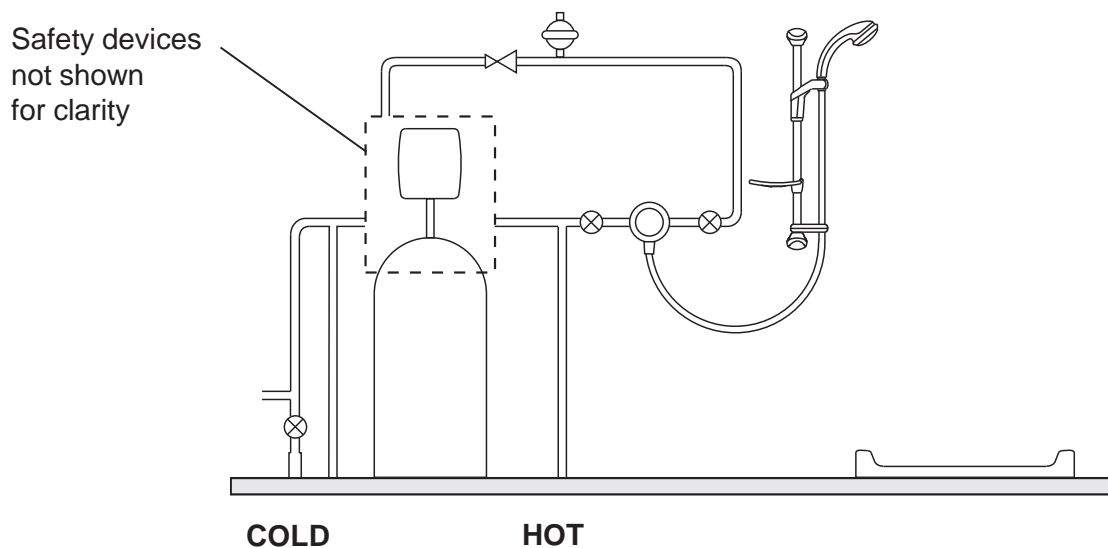
2.4. Unvented mains pressure showers

The shower control can be installed with an unvented, stored hot water cylinder. Only a "competent person" as defined by part G of schedule 1 of the Building Regulations may fit this type of system.

For packages with no cold water take off after the appliance reducing valve, it will be necessary to fit an additional drop tight pressure reducing valve when the mains pressure is over 5 bar. The drop tight pressure reducing valve must be set at the same value as the unvented package pressure reducing valve.

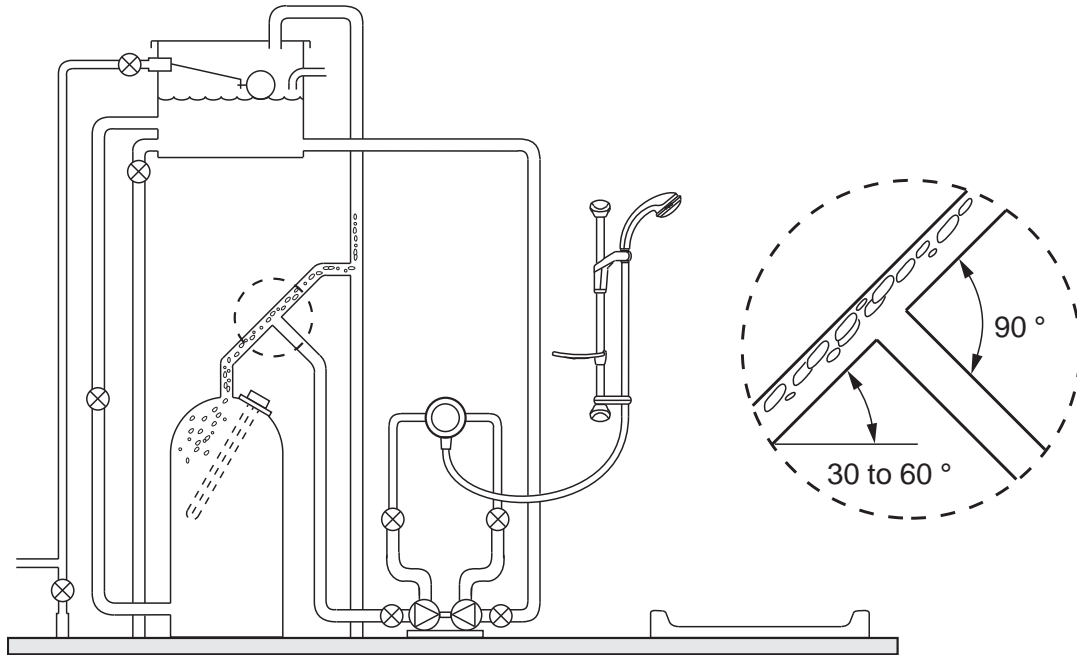
Note! An additional expansion vessel may be required and fitted as shown if a second pressure reducing valve is installed. This does not apply to packages with a cold take off after the pressure reducing valve.

The layout and sizing of pipework **MUST** be such that nominally equal inlet supply pressures are achieved **AND** the effects of other draw-offs are minimized.



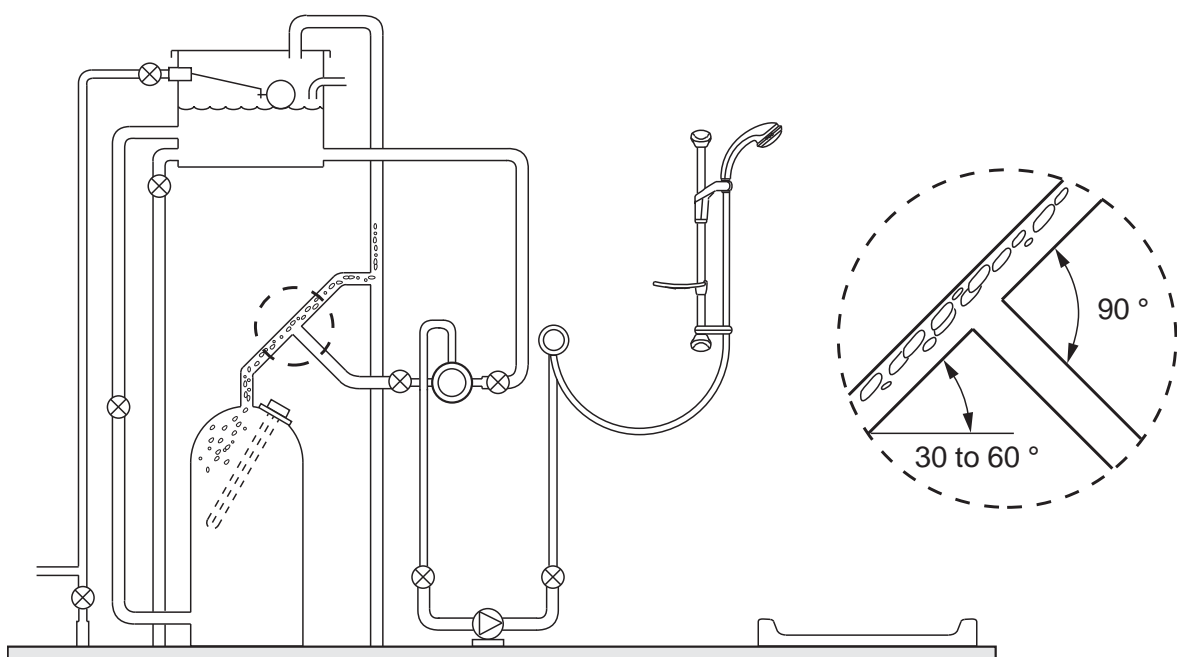
2.5. Pumped showers (inlet pumps) - The shower control can be installed with an inlet pump (twin impeller). The pump **MUST** be located on the floor next the hot water cylinder. The hot water cylinder/vent pipes must be arranged as shown to achieve air separation.

The layout and sizing of pipework **MUST** be such that nominally equal inlet supply pressures are achieved **AND** the effects of other draw-offs are minimized.



2.6. Pumped showers (outlet pumps) - The built-in shower control can be installed with an outlet pump (single impeller). The pump **MUST** be located on the floor near to the shower control.

The layout and sizing of pipework **MUST** be such that nominally equal inlet supply pressures are achieved **AND** the effects of other draw-offs are minimized.



3. Measuring system pressures

3.1. General

It is important that the system pressure does not exceed the Excel specification (refer to section, 4).

If the system pressure is not known then the system pressure **MUST** be measured as explained in this section.

Pressures are those present at the inlet to the appliance either whilst running (maintained) or in the off state (static). Nearby hot and cold taps connected to the same proposed feed pipes as the appliance can be used to measure the static pressure. No other fitting or appliance should be in use at this time.

Water pressures vary throughout the day, therefore you must ensure that water pressures do not drop below or exceed the minimum/maximum required (refer to Specifications).

3.2. To measure static pressure (Refer to Figure 1)

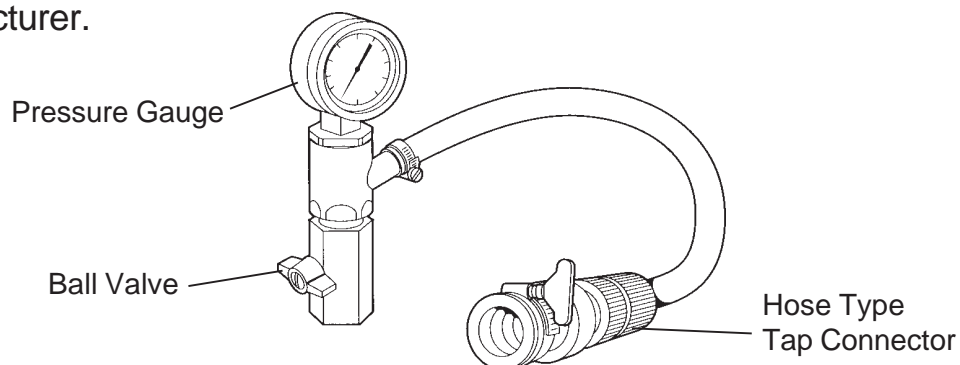
With the pressure testing device firmly connected to a tap drawing from one of the proposed feed pipes and the outlet from the device in the off position, the tap is turned on and the static pressure noted.

3.3. To measure maintained pressure (Refer to Figure 1)

The pressure testing device is connected as above, the taps turned on and the outlet from the device opened until a flow of around 5 l/min is obtained (this is easily done by timing the flow into a calibrated container). The maintained pressure which can be expected when the shower is in operation can then be read. This should be carried out on the hot and cold supply.

3.4. To measure pressure drop

Pressure drop results from another fitting being turned on when the shower is in use. Having checked the maintained pressure as in 3.3. and with the device still discharging at approximately 5 l/min, turn on a second draw-off from the same feed pipe. This new reading will show the pressure drop from 3.3. and should be above the minimum maintained pressure recommended by the manufacturer.



Pressure Testing Device
Figure 1

Important! Before the Excel shower control can be installed the cartridge assembly **must** be set to the correct pressure setting for the plumbing system.

1. General

Read the section "**Installation Requirements**" first.

The table below gives the correct pressure setting for **typical** plumbing installations. Refer to section 5, for measuring the actual system pressures.

System	Low Pressure Setting	High Pressure Setting
Gravity-fed showers.	✓	
Instantaneous gas heated showers.		✓
Mains pressurised instantaneous hot water shower, heated from a thermal store.		✓
Unvented mains pressure showers.		✓
Pumped Showers.		✓ †

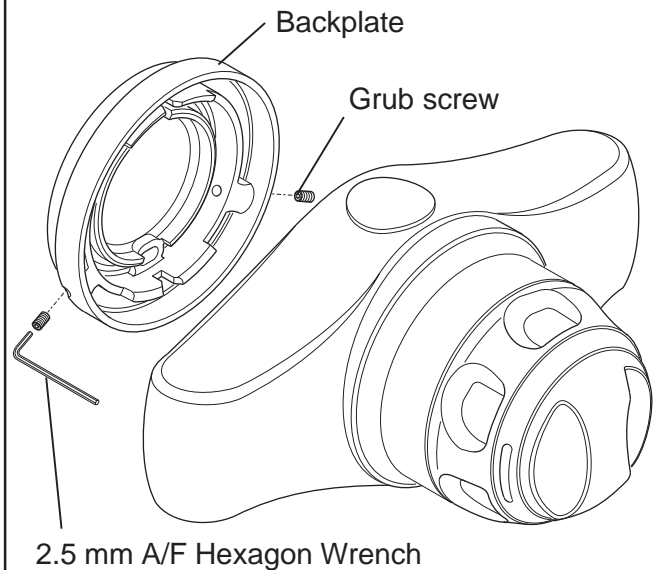
† **Note!** For user comfort and convenience we recommend the low pressure setting for pumps that provide maintained system pressure below 1 bar, and the high pressure setting for pumps that provide maintained system pressure above 1 bar.

2. Excel and Excel B

Important! The cartridge assembly is supplied set for low pressure. The following procedure is necessary, even if a low pressure setting is required, to remove the backplate prior to installation and to confirm the factory setting.

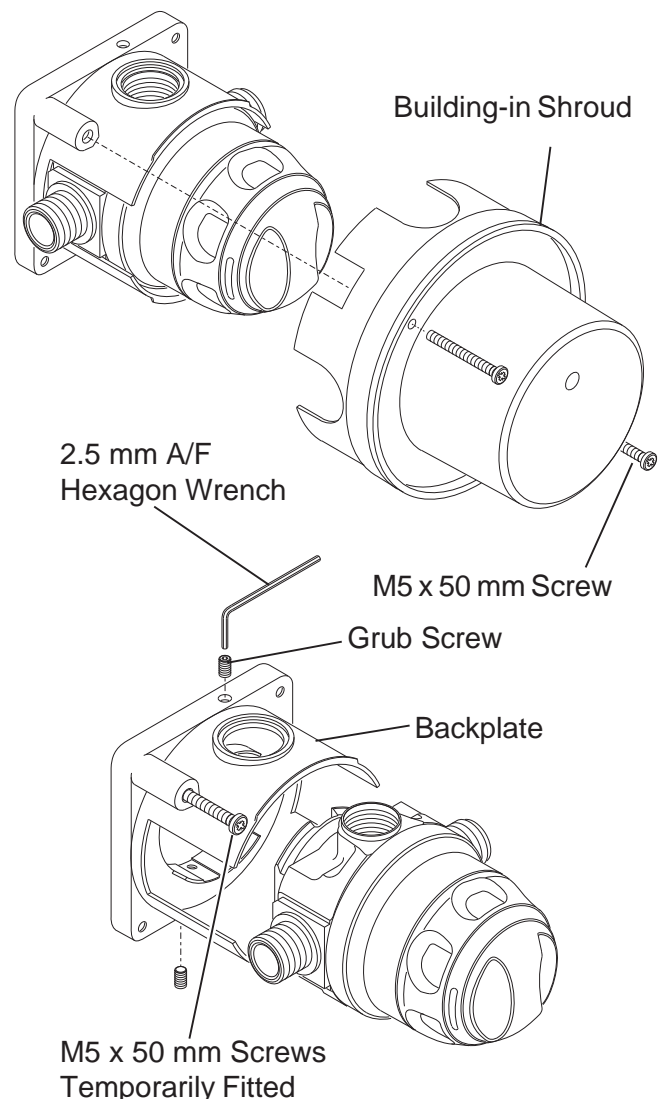
Excel

- 2.1. Use the 2.5 mm A/F hexagon wrench (supplied) to loosen the two grub screws.
- 2.2. Remove the backplate. This will allow access to the rear face of the cartridge assembly.



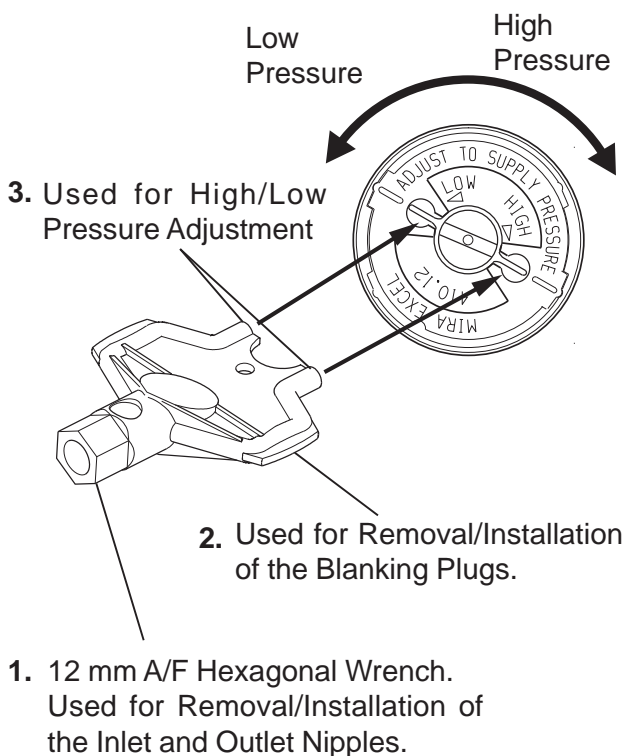
Excel B

- 2.3. Remove the two screws that hold the building-in shroud to the backplate.
- 2.4. Remove the building-in shroud.
- 2.5. Refit the two screws temporarily into the backplate.
- 2.6. Use the 2.5 mm hexagon wrench (supplied) to loosen the two grub screws.
- 2.7. Remove the shower control from the backplate. This will allow access to the rear face of the cartridge assembly.
- 2.8. Adjust the pressure setting if necessary (refer to use of installation key).



3. Use of Installation Key

An installation key is available to help you during installation of the Mira Excel. The key has the following functions:



- 3.1. The plastic end prongs fit neatly into the pressure selector to enable you to easily change the pressure setting to high or low pressure.
- 3.2. Refit the shower control to the backplate and use the 2.5 mm hexagon wrench to tighten the grub screws.
 - A 12 mm A/F hexagonal wrench. Used for removal and installation of the inlet and outlet nipples. The hexagonal wrench can also be used on other products that require a 12 mm A/F hexagonal wrench.
 - The wing of the key is a screwdriver blade that is used for the removal and installation of the blanking plugs reducing the risk of damage to the plated surfaces.

4. Spray Plates

Important! The handset supplied with the Excel is fitted with a low capacity spray plate. This should be replaced with a high capacity spray plate for high pressure installations.

If the Excel is fitted on a combination boiler with a VR (Vandal Resistant) spray head the flow regulator in the spray head **MUST** be removed and a **high capacity spray plate fitted for high pressure installations.**

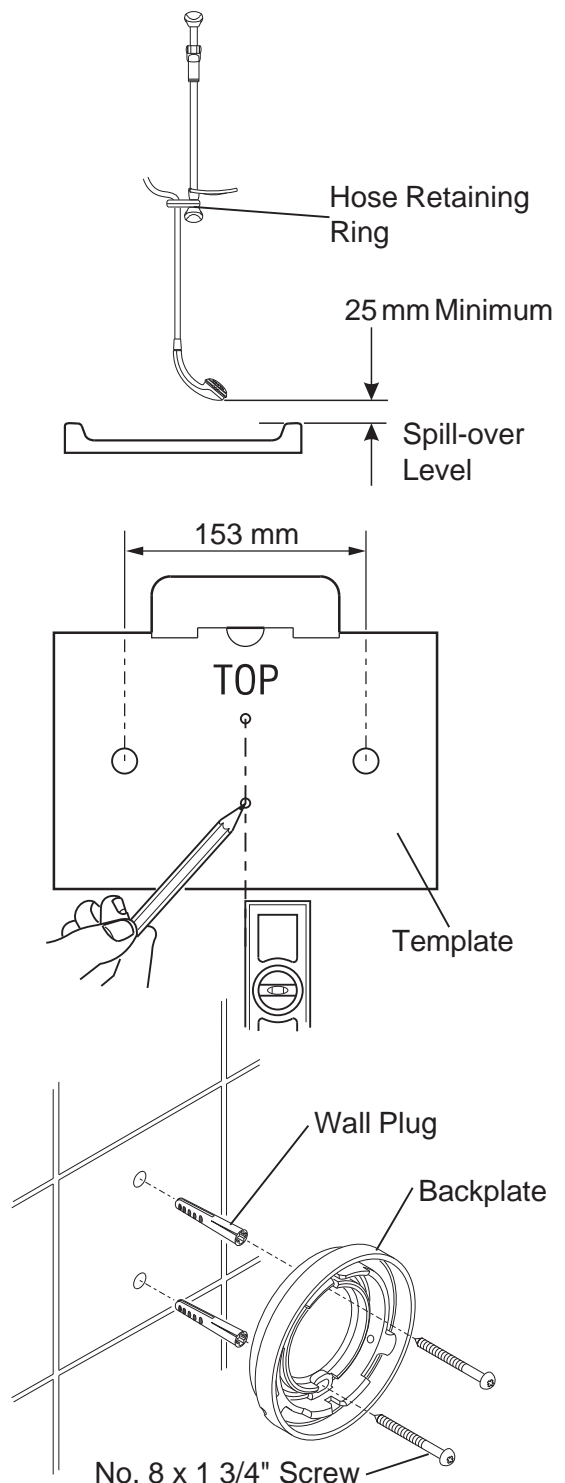
Excel

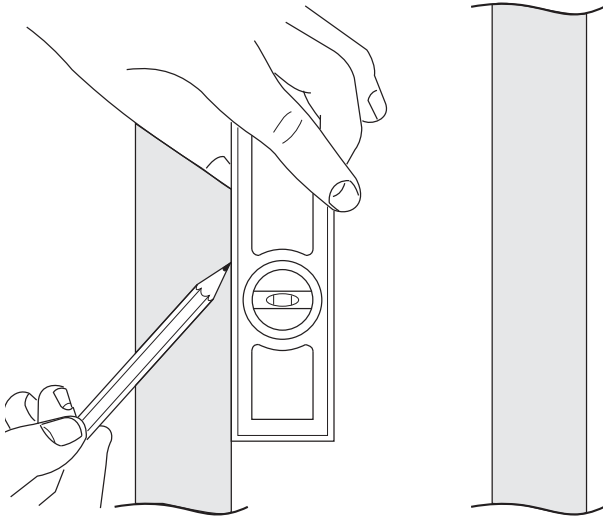
1. Back inlet supplies (rising or falling concealed pipework)

Read the section "Installation Requirements" first.

CAUTION! Before the Excel shower control can be installed the cartridge assembly **must** be set to the correct pressure setting for the plumbing system. Refer to **Section 6 "Pressure Setting"**.

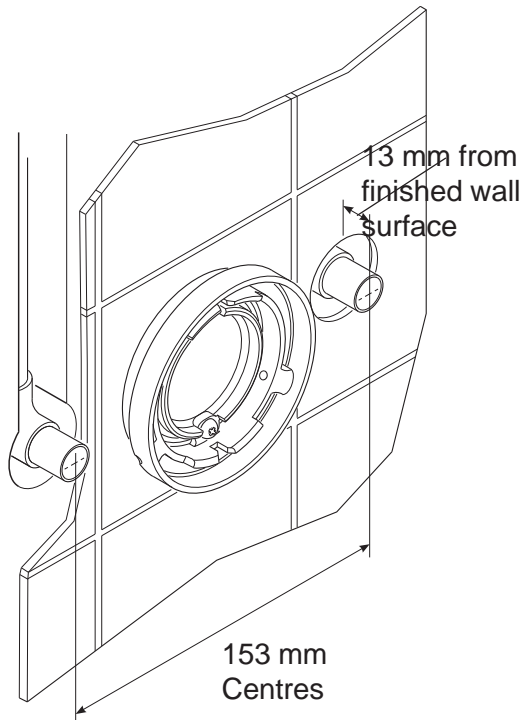
- 1.1. Decide on a suitable position for the shower control. The position of the shower control and the shower fittings must provide a minimum gap of 25 mm between the spill-over level of the shower tray/bath and the handset. This is to prevent backsiphonage and comply with the requirements of Bye-law 17.
- 1.2. Use the cardboard template which is part of the packaging to mark the hole positions on the finished wall surface. **Make sure that the small holes for the backplate are aligned vertically.**
- 1.3. For solid walls drill the backplate holes with a 6 mm diameter drill and insert the wall plugs (supplied). For other types of wall structure alternative fixings may be required.
- 1.4. Use the two No. 8 x 1 3/4" screws (supplied) to fix the backplate to the wall with the 'TOP' marking uppermost.





- 1.5.** Use a spirit level and pencil to mark the route of the hot and cold water supply pipes at 153 mm centres.

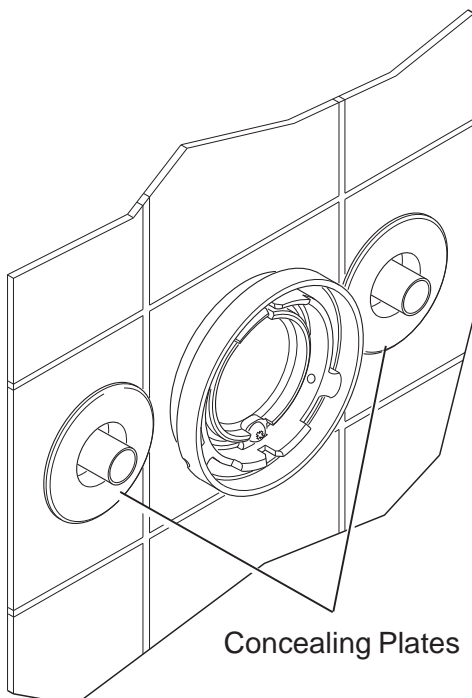
Note! The Excel is supplied with inlet connections **hot left, cold right** and **bottom outlet** as standard. For installations with reversed hot and cold supplies complete the installation and refer to **Section 8, Reversed Inlet Connections**.



- 1.6.** Remove the plaster and brick/block to the required depth to conceal the pipework.

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

- 1.7.** Install the supply pipes. The pipes must project 13 mm from the finished surface of the wall at 153 mm centres.



- 1.8.** Finish the surface of the wall as required. The recesses from which the pipes emerge must also accommodate the 32 mm diameter x 10 mm deep flanges on the pipe concealing plates.

- 1.9.** Fit the pipe concealing plates over the hot and cold supply pipes.

1.10. Thoroughly flush the hot and cold water supply pipes. The supplies must be clean and free from debris before connecting the shower control (Bye-law 55). Failure to do so may result in product malfunction.

Alternatively fit the shower control as instructed, remove the cartridge and use the Flushing Cartridge (refer to Accessories, Appendix 2).

1.11. Slide the compression nuts and olives over the supply pipes.

1.12. Locate the Excel shower control on to the backplate and supply pipes and hold it in position.

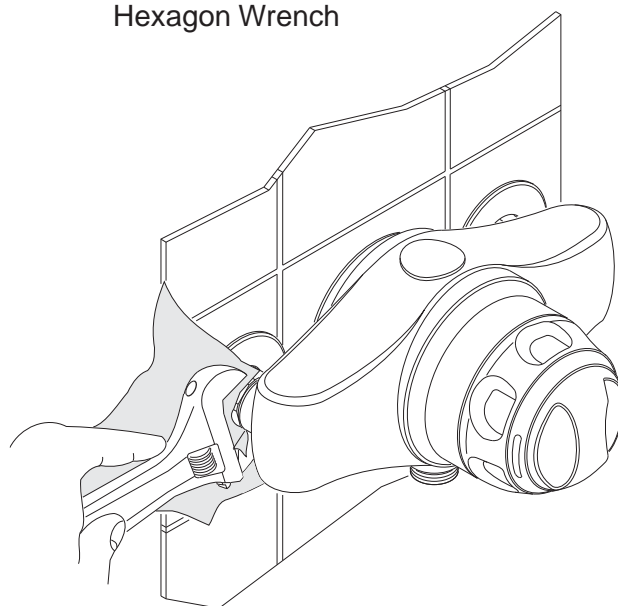
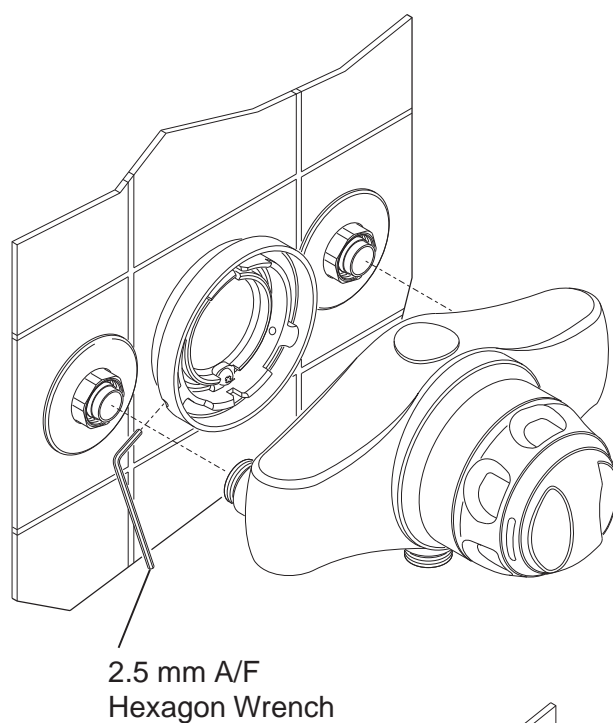
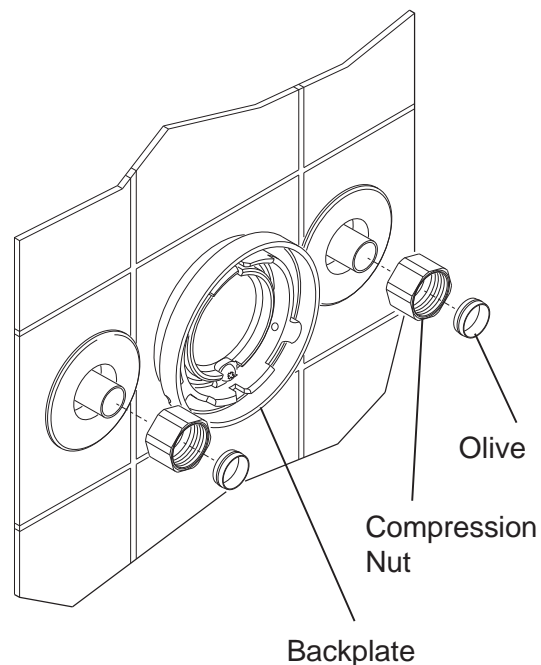
1.13. Use the 2.5 mm A/F hexagon wrench (supplied) to tighten the two grub screws in the backplate. The grub screws will hold the shower control in position.

1.14. Use a suitable spanner to tighten the compression nuts (anticlockwise rotation when viewed from front). Protect the chromium plated surfaces with a cloth.

1.15. Turn on the water supplies and check for any leaks.

Shower fittings

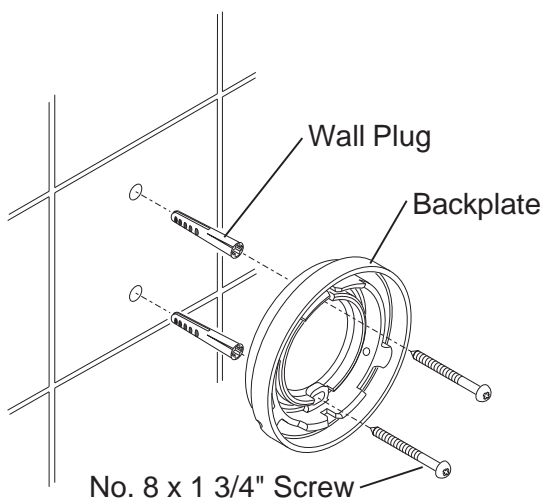
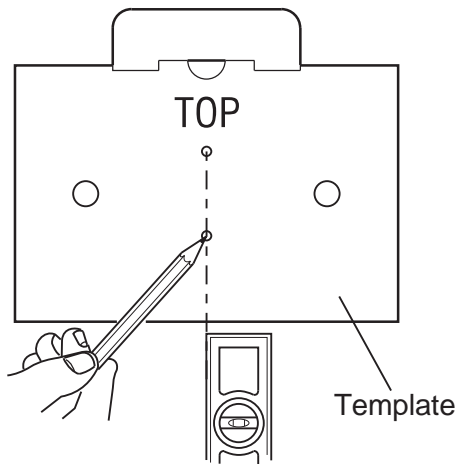
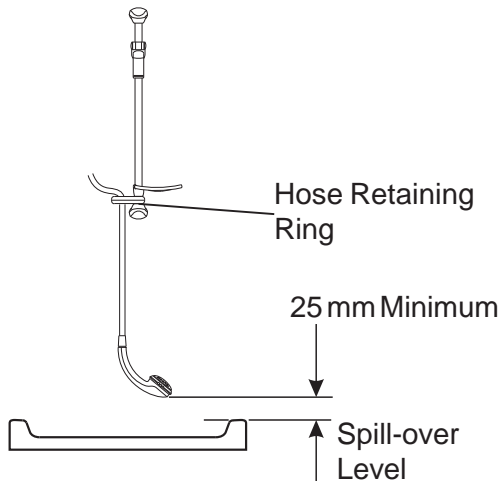
1.16. Install the shower fittings. Refer to the Installation, Operation and Maintenance Guide for the shower fittings.



2. Exposed supplies (rising or falling surface pipework)

Read the section "Installation Requirements" first.

Important! Before the Excel shower control can be installed the cartridge assembly **must** be set to the correct pressure setting for the plumbing system. Refer to **Section 6 "Pressure Setting"**.



Rising Supplies

- 2.1. Decide on a suitable position for the shower control. The position of the shower control 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 backsiphonage and comply with the requirements of Bye-law 17.
- 2.2. Use the cardboard template which is part of the packaging to mark the hole positions on the finished wall surface. Make sure that the small holes for the backplate are aligned vertically.
- 2.3. For solid walls drill the backplate holes with a 6 mm diameter drill and insert the wall plugs (supplied). For other types of wall structure alternative fixings may be required.
- 2.4. Fix the backplate to the wall with the two No. 8 x 1 3/4" screws (supplied).

2.5. Use a suitable screwdriver to remove the blanking plugs.

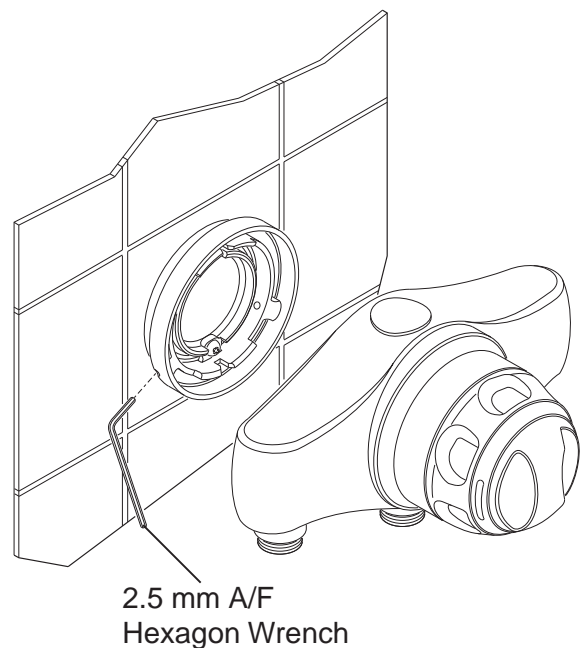
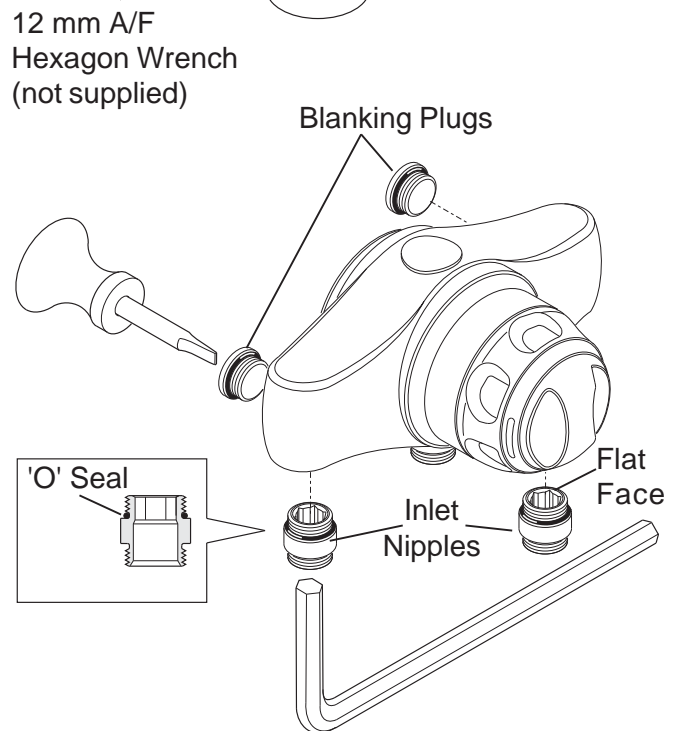
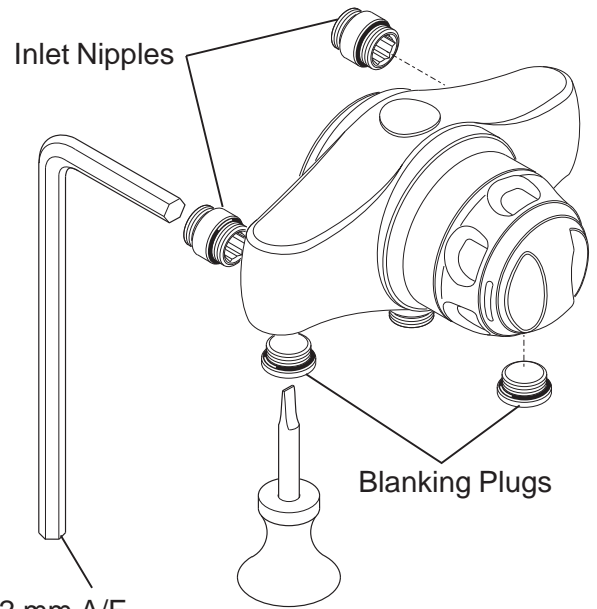
2.6. Use a 12 mm A/F hexagon wrench to remove the inlet nipples from the rear of the shower control valve. Alternatively use the red installer key.

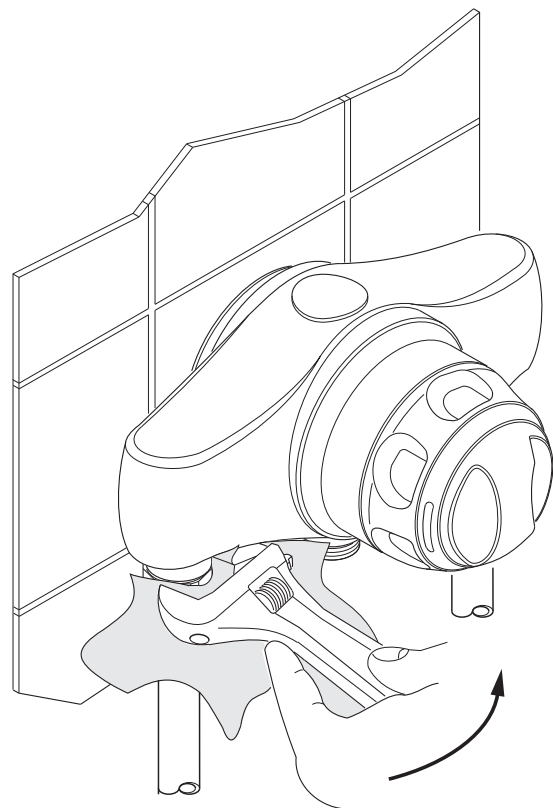
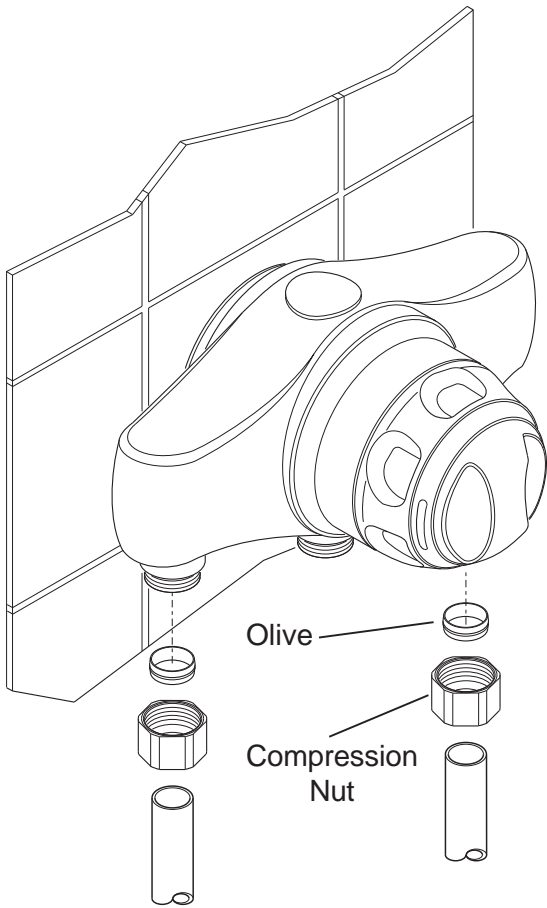
2.7. Screw the inlet nipples, complete with 'O' seals, into the blanking plug holes flat face end first. Tighten the inlet nipples with the 12 mm A/F hexagon wrench. Alternatively use the red installer key.

2.8. Screw the blanking plugs, complete with 'O' seals, into the rear inlet nipple holes. Tighten the blanking plugs. Alternatively use the red installer key.

2.9. Locate the Excel shower control on to the backplate.

2.10. Use the 2.5 mm A/F hexagon wrench (supplied) to tighten the two grub screws in the backplate. The grub screws will hold the shower control in position. Do not overtighten the grub screws.





2.11. Install the hot and cold supply pipes at 153 mm centres. The cardboard template can be used as a guide.

Note! The Excel is supplied with inlet connections **hot left, cold right** and **bottom outlet** as standard. For installations with reversed hot and cold supplies complete the installation and refer to **Section 8, Reversed Inlet Connections**.

2.12. Thoroughly flush the hot and cold water supply pipes. The supplies must be clean and free from debris before connecting the shower control (Bye-law 55). Failure to do so may result in product malfunction.

Alternatively fit the shower control as instructed, remove the cartridge and use the Flushing Cartridge (refer to Accessories, Appendix 2).

2.13. Slide the compression nuts and olives over the supply pipes.

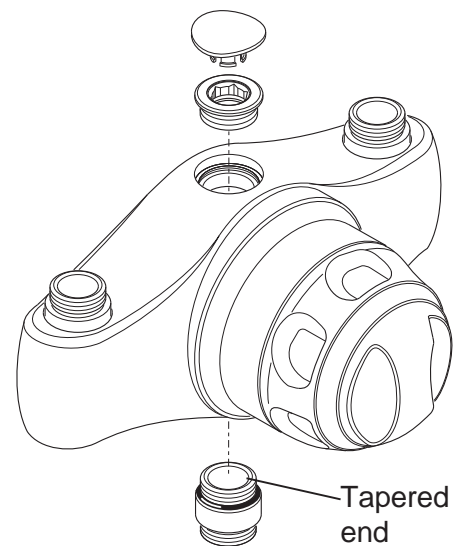
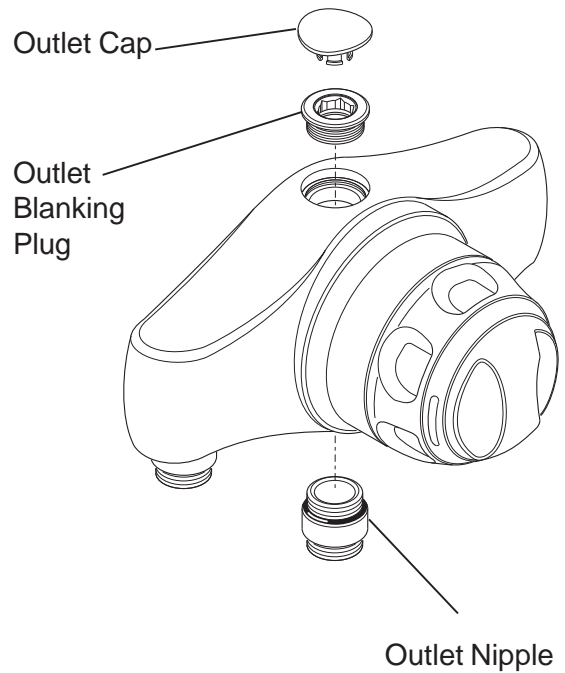
2.14. Insert the hot and cold supply pipes fully into the inlet nipples and slide the olives and compression nuts into place.

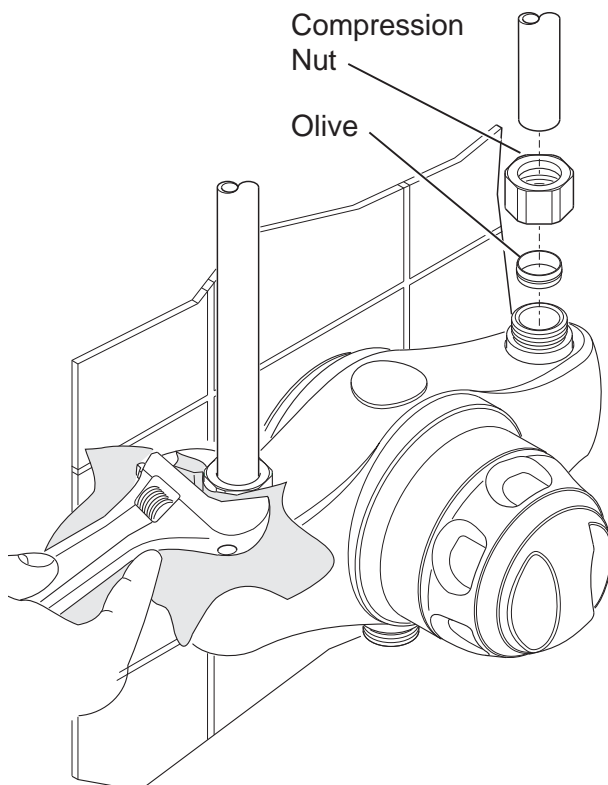
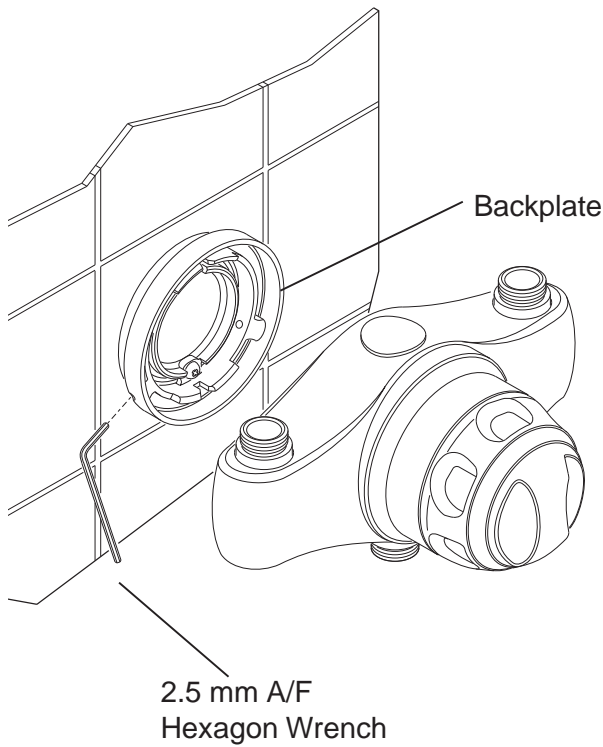
2.15. Use a suitable spanner to tighten the compression nuts. Protect the chromium plated surfaces with a cloth.

2.16. Turn on the water supplies and check for any leaks.

Falling Supplies

- 2.17. Follow the installation instructions 2.1 to 2.8 inclusive.
- 2.18. Use a 12 mm A/F hexagon wrench to remove the outlet nipple, alternatively use the red installer key.
- 2.19. Carefully lever the outlet cap from the outlet blanking plug in the shower control body.
- 2.20. Use the 12 mm A/F hexagon wrench to remove the outlet blanking plug, alternatively use the red installer key.
- 2.21. Screw the outlet nipple, complete with 'O' seal into the hole previously blanked. Tighten the outlet nipple with the 12 mm A/F hexagon wrench, alternatively use the red installer key.
- 2.22. Screw the outlet blanking plug, complete with 'O' seal, into the outlet hole between the two inlet nipples. Tighten the outlet blanking plug with the 12 mm A/F hexagon wrench, alternatively use the red installer key.
- 2.23. Fit the outlet cap correctly. The matching contours of the outlet cap and shower control body must be aligned.
- 2.24. Locate the Excel shower control on to the backplate.





2.25. Use the 2.5 mm A/F hexagon wrench (supplied) to tighten the two grub screws in the backplate. The grub screws will hold the shower control in position.

2.26. Install the hot and cold supply pipes at 153 mm centres.

2.27. Follow the installation instructions 2.12. to 2.15. inclusive.

2.28. Refer to **Section 8, Reversed Inlet Connections** and follow the installation instructions 1.2. to 1.14. inclusive. This will put the cartridge assembly, the indicator trim and the temperature knob in the correct orientation for **hot left** and **cold right** inlet supplies.

Note! For falling supplies where the hot and cold inlet pipes have been reversed, only the indicator trim and the temperature knob need to be removed and reinstalled the correct way up. Refer to **Section 8, Reversed Inlet Connections**.

2.29. Turn on the water supplies and check for any leaks.

Shower fittings

2.30. Install the shower fittings. Refer to the Installation, Operation and Maintenance Guide for the **shower fittings**.

Excel B

3. Solid and dry-lined walls

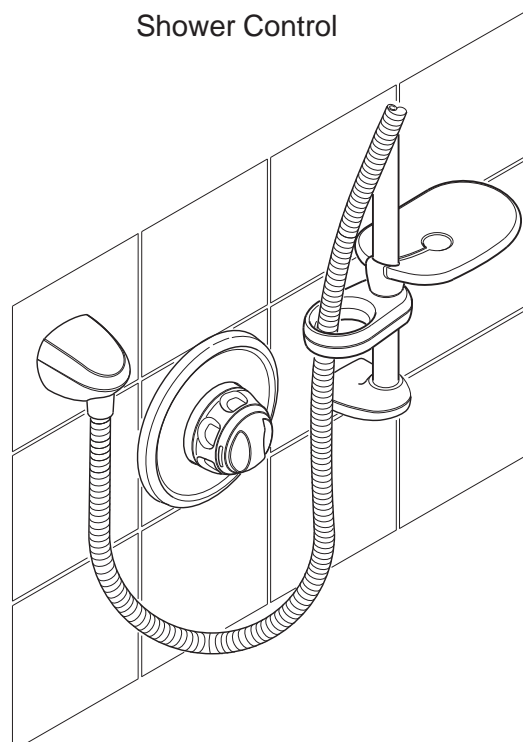
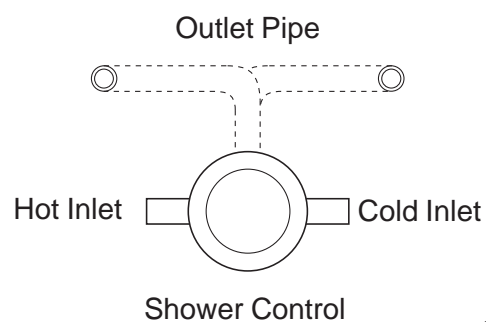
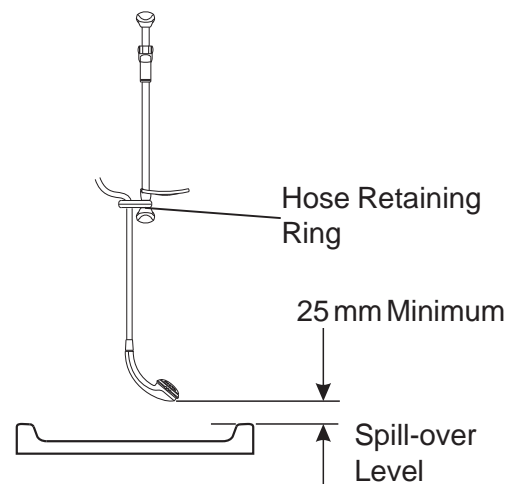
Read the section “Installation Requirements” first.

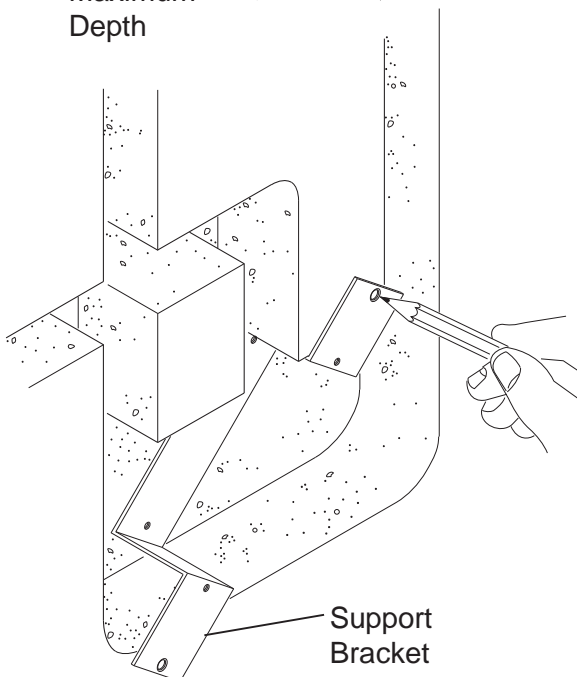
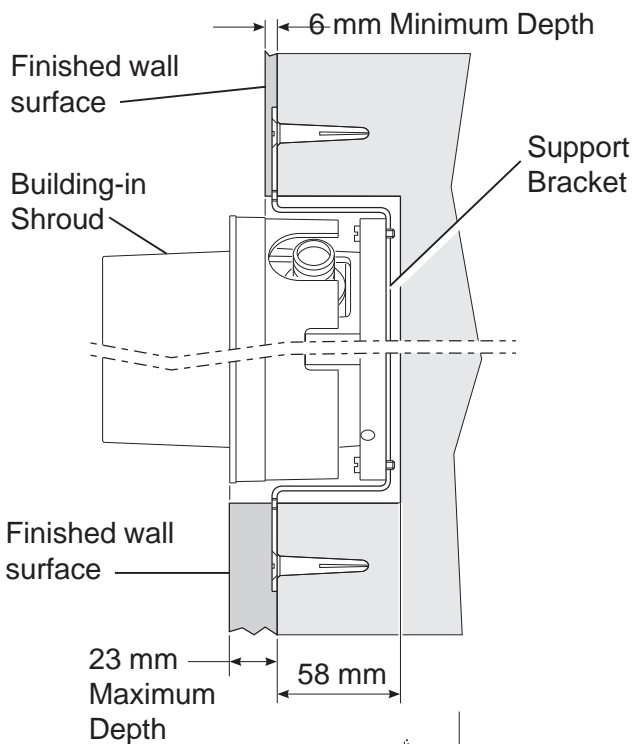
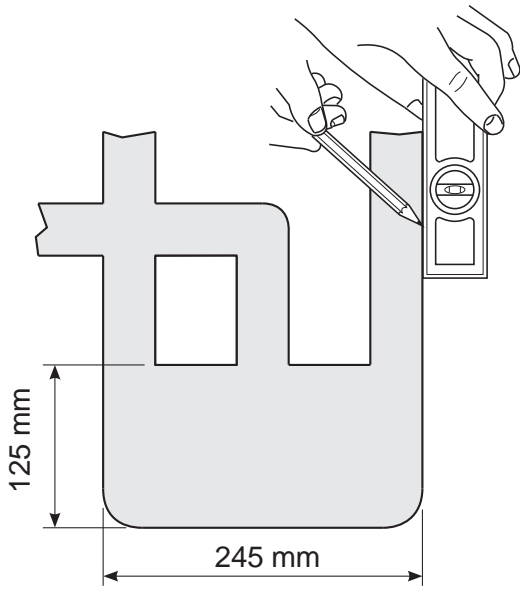
The built-in shower control is supplied with a support bracket that can be used to install the shower control into a solid or dry-lined wall structure. Installers may wish to consider other options such as fabricating rear supports using wooden noggins, however, these methods of fixing are beyond the scope of this guide.

3.1. Decide on a suitable position for the shower control. The position of the shower control 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 backsiphonage and comply with the requirements of Bye-law 17.

3.2. Determine the route for the incoming hot and cold supply pipework.

3.3. Determine the route for the outlet pipework. When connecting to the response biv shower fittings it is recommended that the outlet be positioned above and to one side of the shower control. This is to prevent the flexible hose from obstructing the temperature and flow knobs of the shower control. For further information on the installation of the **shower fittings** refer to the Installation, Operation and Maintenance Guide.





3.4. Mark an opening sufficient to accommodate the shower control approximately 245 mm x 125 mm on the surface of the wall. Alternatively, mark a 150 mm diameter hole for a carbide tipped hole cutter.

3.5. Mark the route of the supply and outlet pipes.

3.6. Remove the plaster and brick/block for the shower control to a depth of between **64 and 81 mm** from the finished surface of the wall. The support bracket requires a clearance depth of **58 mm**, with a finished wall surface thickness of between **6 and 23 mm**.

Note! The raised portion on the building-in shroud can be used as a depth gauge. The finished surface of the wall must be between the minimum and maximum depths.

3.7. Remove the plaster and brick/block for the supply and outlet pipes.

3.8. Mark the support bracket fixing hole positions. **The support bracket must be fixed at 45°.**

3.9. Drill a 6.0 mm diameter hole at each of the marked positions and insert the wall plugs (supplied)

3.10. Install the hot and cold supply pipes.

3.11. Make sure that the 'O' seal and the foam seal are correctly located on the outlet nipple.

3.12. Screw the outlet nipple into the shower control, flat face end first. Make sure that the shoulder on the outlet nipple engages with the recess in the backplate. Tighten the outlet nipple with a 12 mm A/F hexagon wrench (not supplied).

3.13. Fix the shower control to the support bracket using the two M4 x 16 mm screws (supplied).

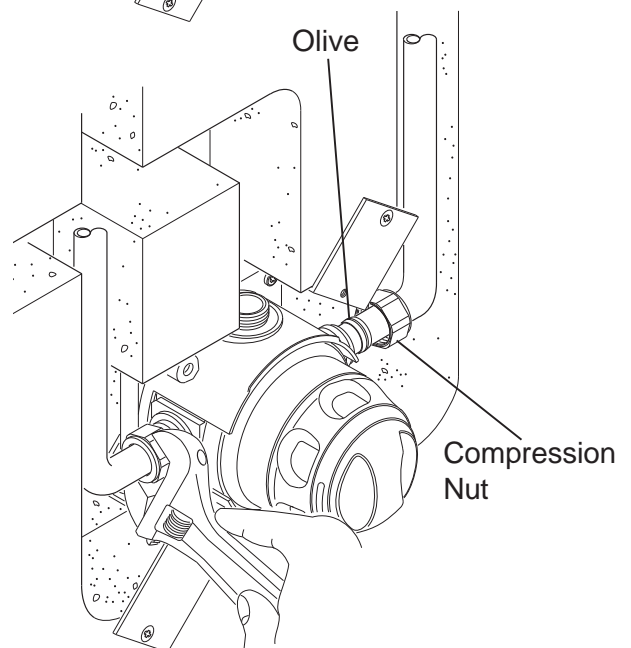
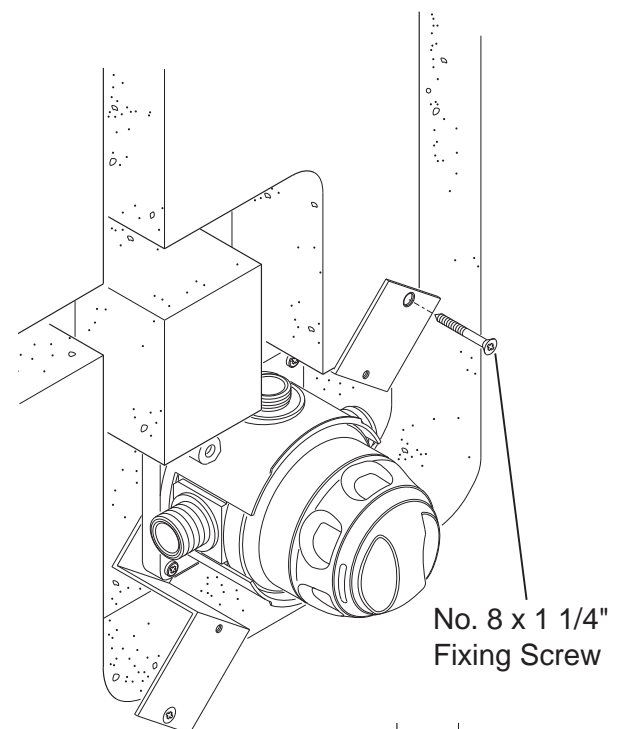
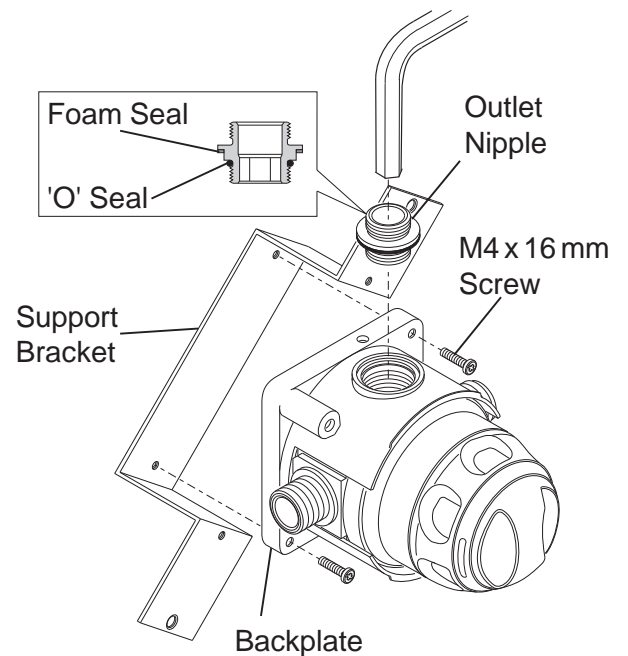
3.14. Align the holes in the support bracket with the holes in the wall and secure the shower control with the two No. 8 x 1 1/4" screws (supplied).

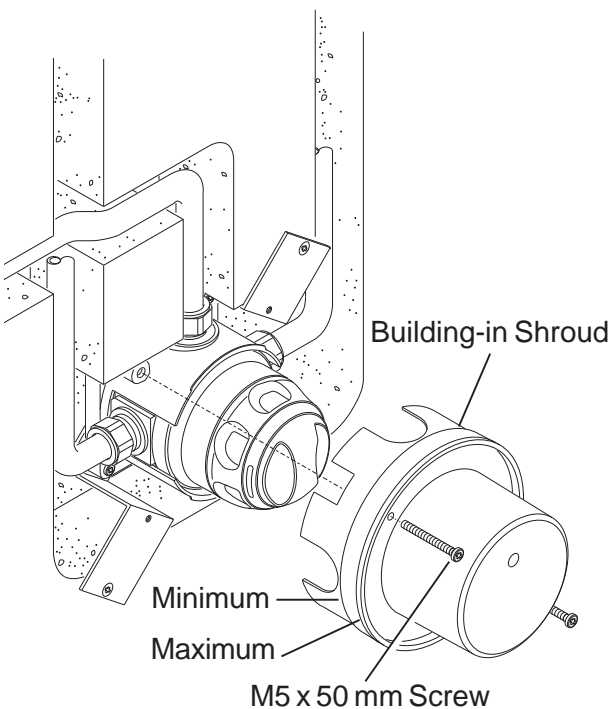
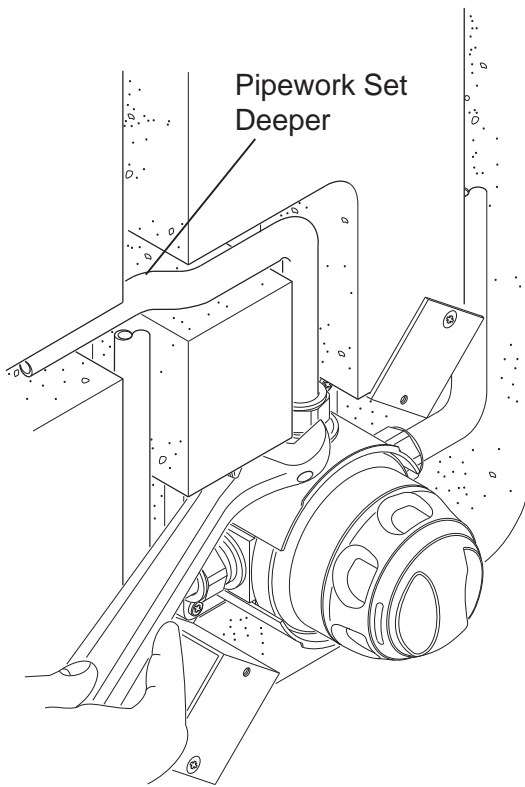
3.15. Thoroughly flush the hot and cold water supply pipes. The supplies must be clean and free from debris before connecting the shower control (Bye-law 55). Failure to do so may result in product malfunction.

Alternatively fit the shower control as instructed, remove the cartridge and use the Flushing Cartridge (refer to Accessories, Appendix 2).

Note! The Excel B is supplied with inlet connections **hot left, cold right** and **top outlet** as standard. For installations with reversed hot and cold supplies complete the installation and refer to **Section 8, Reversed inlet connections.**

3.16. Slide the compression nuts and olives over the supply pipes.





3.17. Insert the hot and cold supply pipes fully into the shower control and slide the olives and compression nuts into place.

3.18. Use a suitable spanner to tighten the compression nuts.

Note! It may be easier to tighten the compression nuts with shower control pulled forward.

3.19. Install the outlet pipe.

Note! For falling inlet supplies the outlet pipe may have to be set deeper into the wall. See diagram.

3.20. Slide the compression nut and olive over the outlet pipe.

3.21. Insert the outlet pipe fully into the shower control and slide the olive and compression nut into place.

3.22. Use a suitable spanner to tighten the compression nut.

3.23. Turn on the water supplies and check for any leaks.

3.24. Refit the building-in shroud removed during pressure setting. Secure the shroud in position with the two M5 x 50 mm screws.

3.25. Plaster and tile as necessary up to the sides of the building-in shroud. The finished surface of the wall must be between the minimum and maximum depths on the building-in shroud.

3.26. When the plaster/tiles have set remove the building-in shroud. **Retain the two M5 x 50 mm screws for use later.**

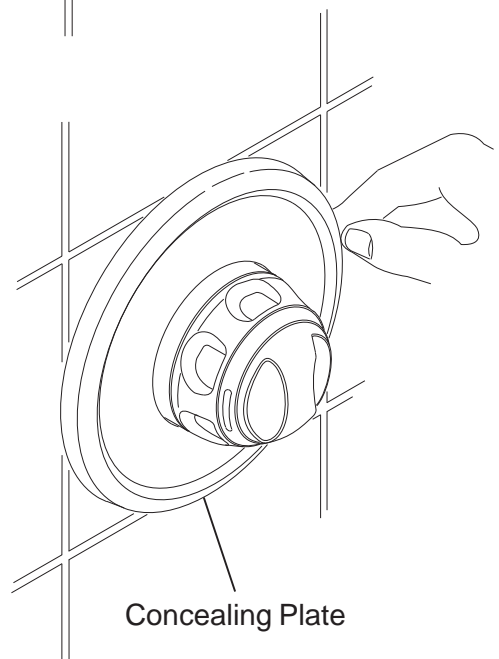
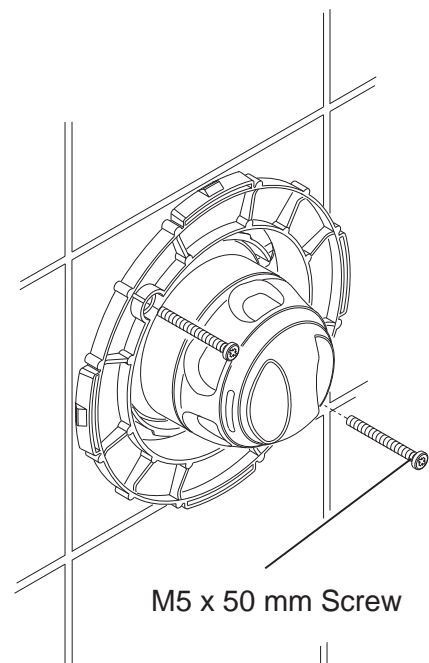
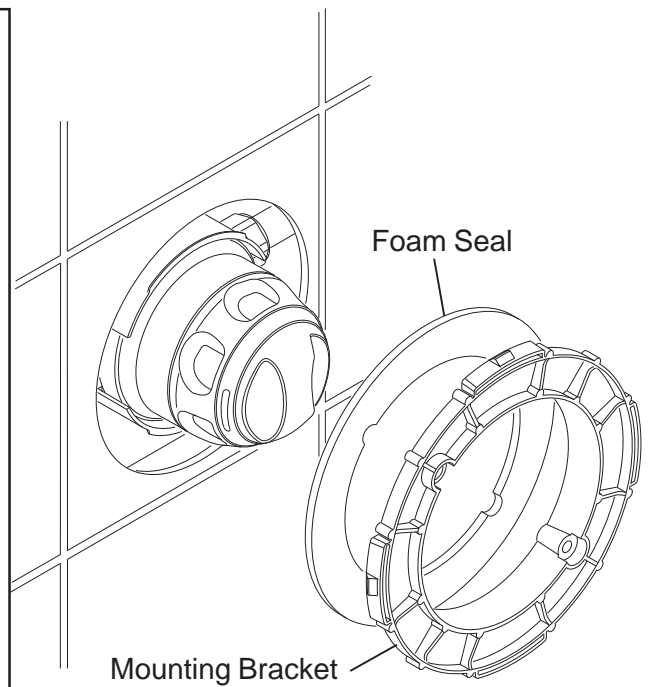
3.27. Fit the foam seal to the back of the mounting bracket.

3.28. Fix the mounting bracket to the shower control with the two M5 x 50 mm screws.

3.29. Push the concealing plate firmly on to the mounting bracket until it clips into position.

Shower fittings

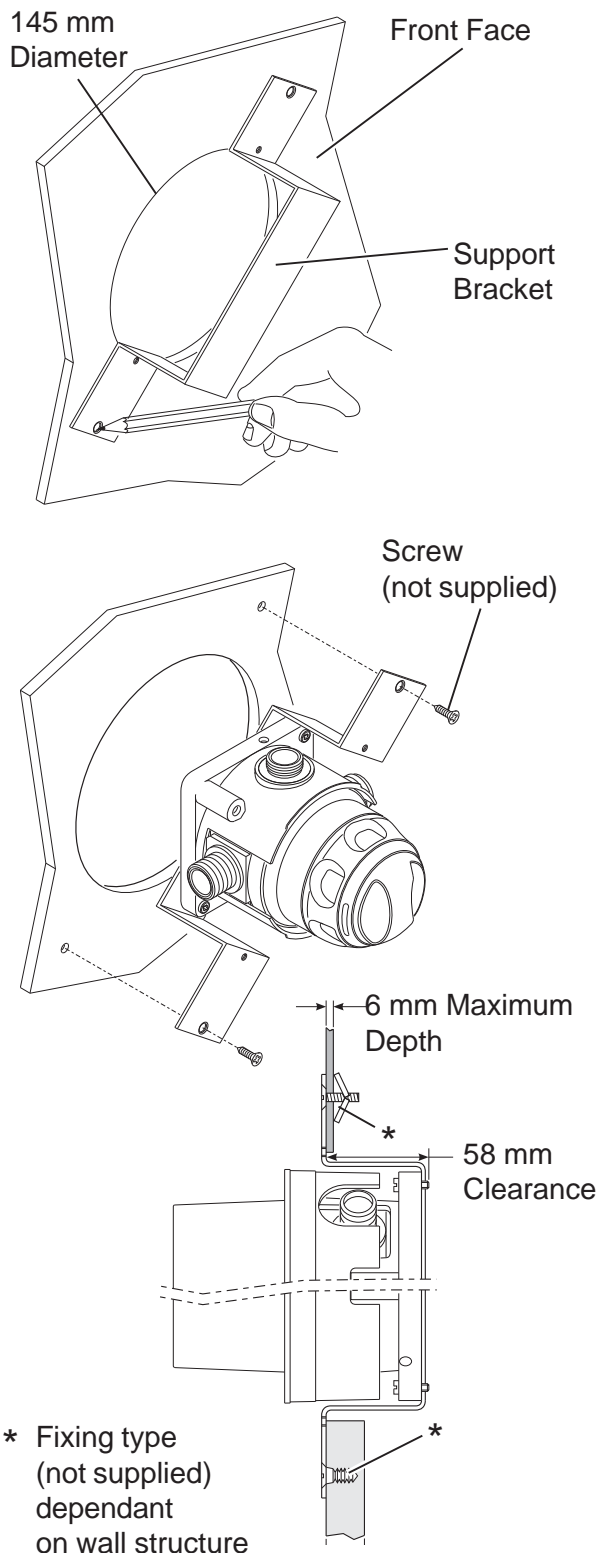
3.30. Install the **shower fittings**. Refer to the Installation, Operation and Maintenance Guide for the shower fittings.



4. Stud partition, shower cubicle or laminated panel walls

Read the section “Installation Requirements” first.

The built-in shower control is supplied with a support bracket that can be used to install the shower control into the front face of a stud partition wall structure or the rear face of a shower cubicle or laminated panel. The front face installation of the support bracket is only practical where plaster or tiles can conceal flanges of the bracket. Installers may wish to consider other options such as fabricating rear supports using wooden noggins, however, these methods of fixing are beyond the scope of this guide.



Front face installation

- 4.1. Refer to **Section 7, Installation: "3. Solid and dry-lined walls"** and follow instructions 3.1. to 3.3. inclusive.
- 4.2. Cut a 145 mm diameter hole in the panel and mark the fixing holes for the support bracket at 45°.
- 4.3. Refer to **Section 7, Installation: "3. Solid and dry-lined walls"** and follow instructions 3.10. to 3.13. inclusive.
- 4.4. Fix the support bracket and shower control in position using suitable fixings (not supplied).

Note! The support bracket requires a clearance depth of **58 mm**, with a finished wall thickness of **6 mm**. The raised portion on the building-in shroud can be used as a depth gauge. Wall thicknesses in excess of 6 mm can be accommodated, but clearance will be required around the inlet and outlet connections to allow insertion of pipe and tightening of compression nuts.

4.5. To complete the installation refer to **Section 7, Installation: "3. Solid and dry-lined walls"** and follow instructions 3.15. to 3.30. inclusive.

Back face installation

Note! This installation is only possible with a finished wall thickness of between **4 and 21 mm**, and is normally associated with the installation into laminated panels or preformed shower cubicles.

4.6. Refer to **Section 7, Installation: "3. Solid and dry-lined walls"** and follow instructions 3.1. to 3.3. inclusive.

4.7. Cut a 124 mm diameter hole in the panel and mark the fixing holes for the support bracket at 45°.

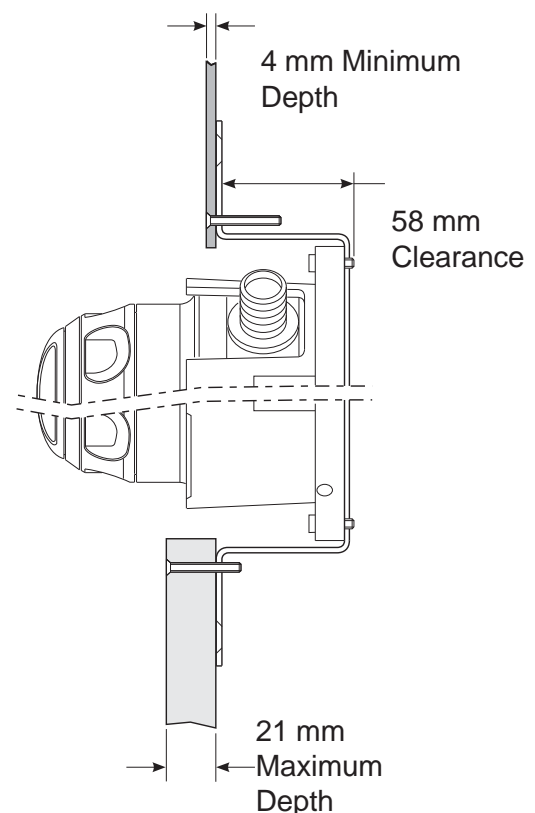
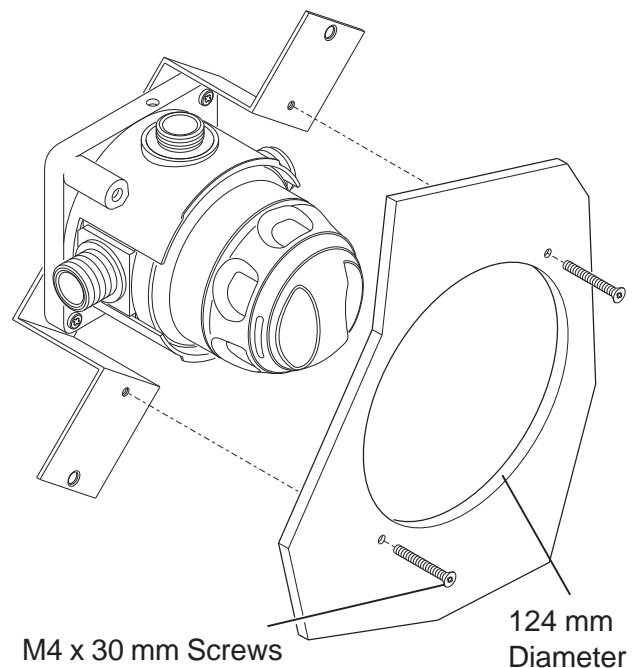
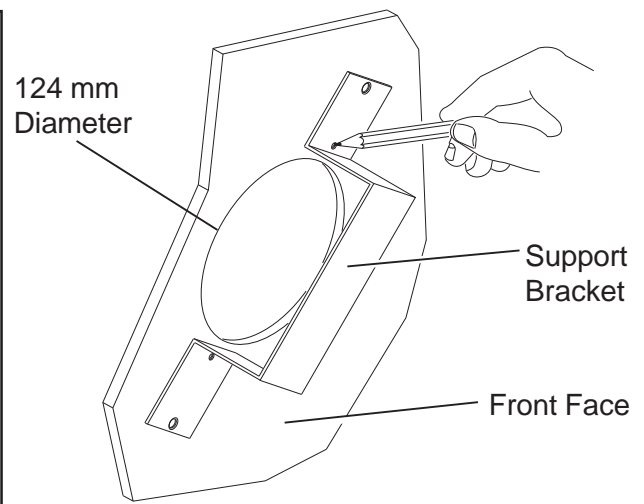
4.8. Drill and countersink the fixing holes to accept the M4 x 30 mm screws (supplied).

4.9. Refer to **Section 7, Installation: "3. Solid and dry-lined walls"** and follow instructions 3.10. to 3.13. inclusive.

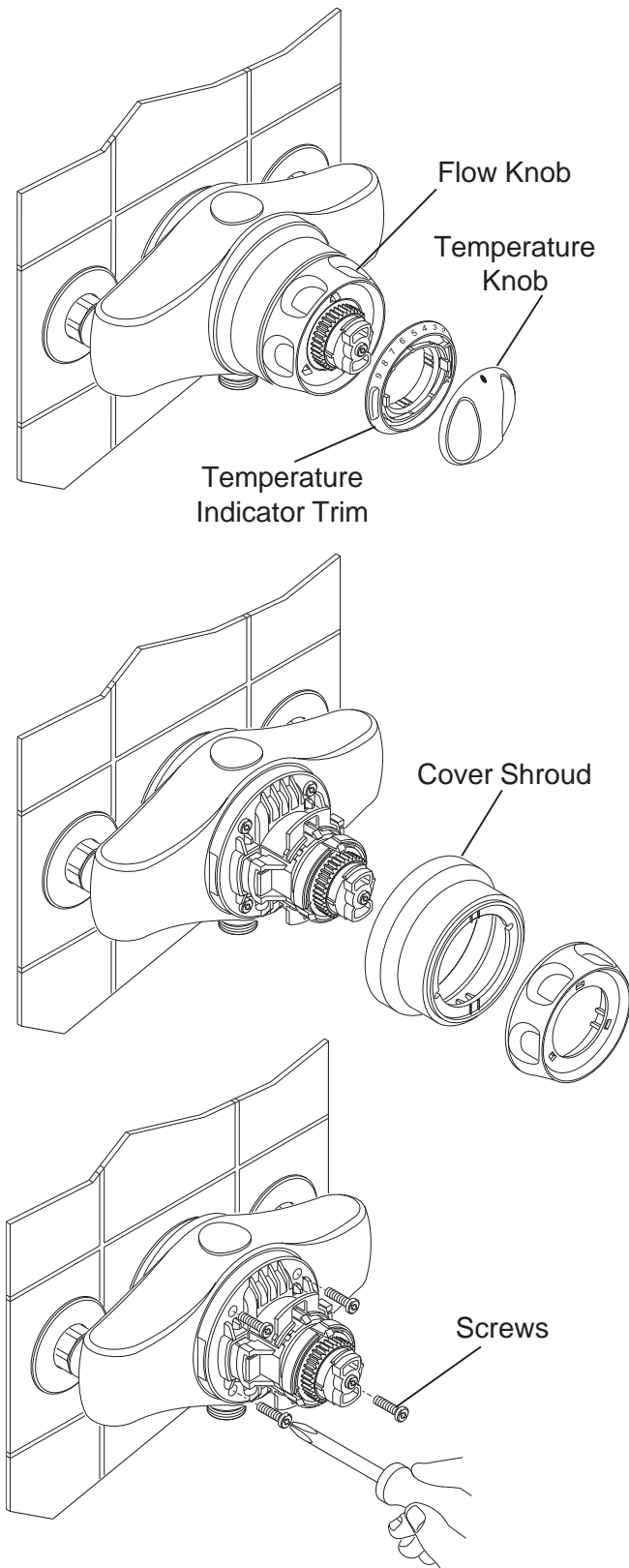
4.10. Fix the support bracket and shower control in position using the two M4 x 30 mm screws (supplied).

Note! The support bracket requires a clearance depth of **58 mm**, with a finished wall thickness of between **4 and 21 mm**.

4.11. To complete the installation refer to **Section 7, Installation: "3. Solid and dry-lined walls"** and follow instructions 3.15. to 3.23. and 3.27. to 3.30. inclusive.



The Excel is supplied with inlet connections **hot left, cold right** and **bottom outlet**. The Excel B 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.



- 1.1. Isolate the hot and cold water supplies to the shower control.
- 1.2. Turn the flow knob fully anticlockwise to drain any water.
- 1.3. Carefully pull off the temperature knob.
- 1.4. Remove the temperature indicator trim complete with override button.
- 1.5. Unclip and remove the flow knob.
- 1.6. Unclip and remove the cover shroud.
- 1.7. Remove the four cartridge retaining screws. **The red and blue tags identify the correct hot and cold inlets for the cartridge.**

1.8. Remove the cartridge assembly. Two flats are provided on the cartridge assembly and a lever can be used on these to aid removal. Any residual water will drain from the body.

Caution! Do not remove or damage the two round inlet seals and the two oval outlet seals.

1.9. Rotate the cartridge assembly through half a turn (180°) and insert it back into the shower control body. **The blue tag should now be on the left side of the shower control.**

Caution! Do not over tighten the screws.

1.10. Fit the four screws that retain the cartridge assembly.

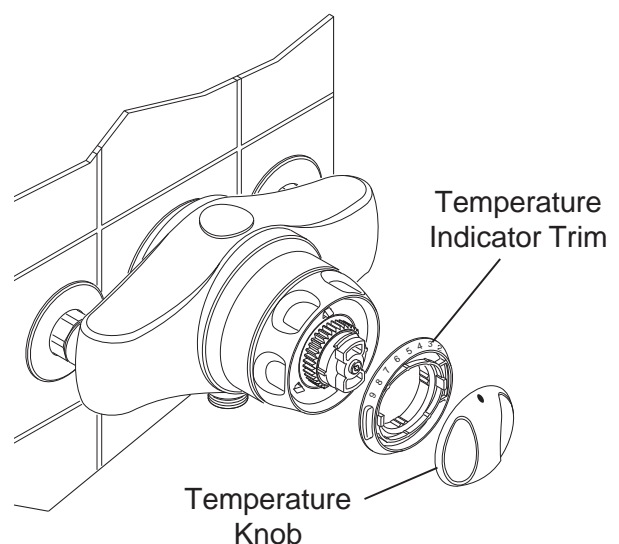
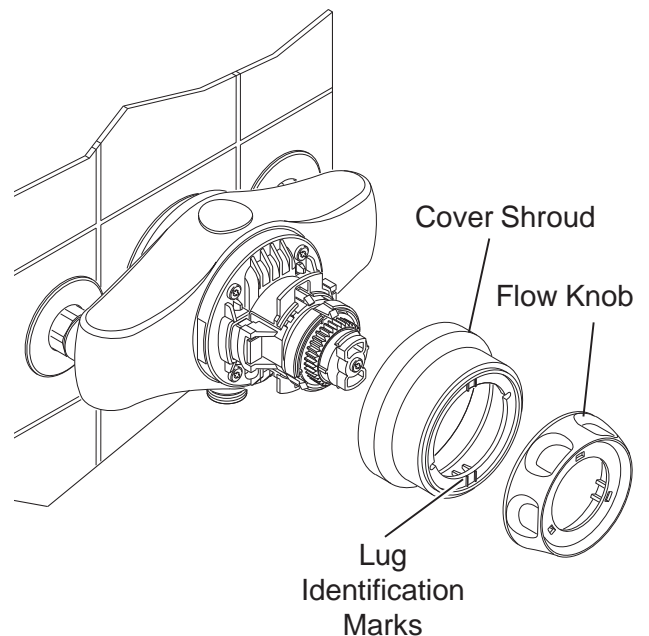
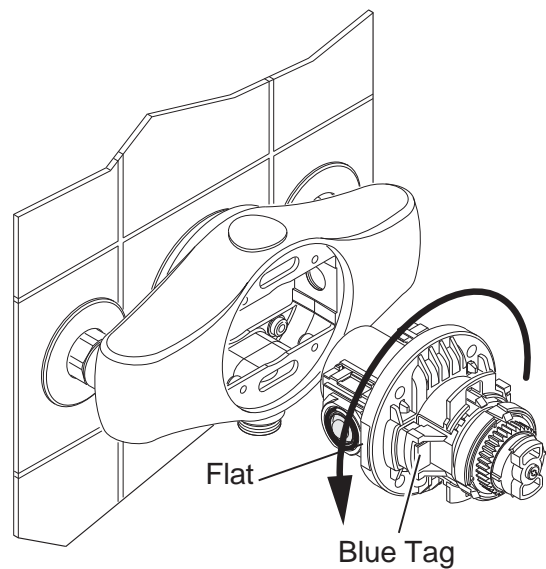
1.11. Refit the cover shroud. The lugs on the inside of the cover shroud must engage with the cutouts in the cartridge assembly. Line markings on the front face of the cover shroud show the position of the lugs.

1.12. Clip the flow knob on to the cartridge assembly.

1.13. Refit the temperature indicator trim with the scale uppermost and the red override button to the left.

1.14. Refit the temperature knob with the indicator adjacent to the scale on the indicator trim.

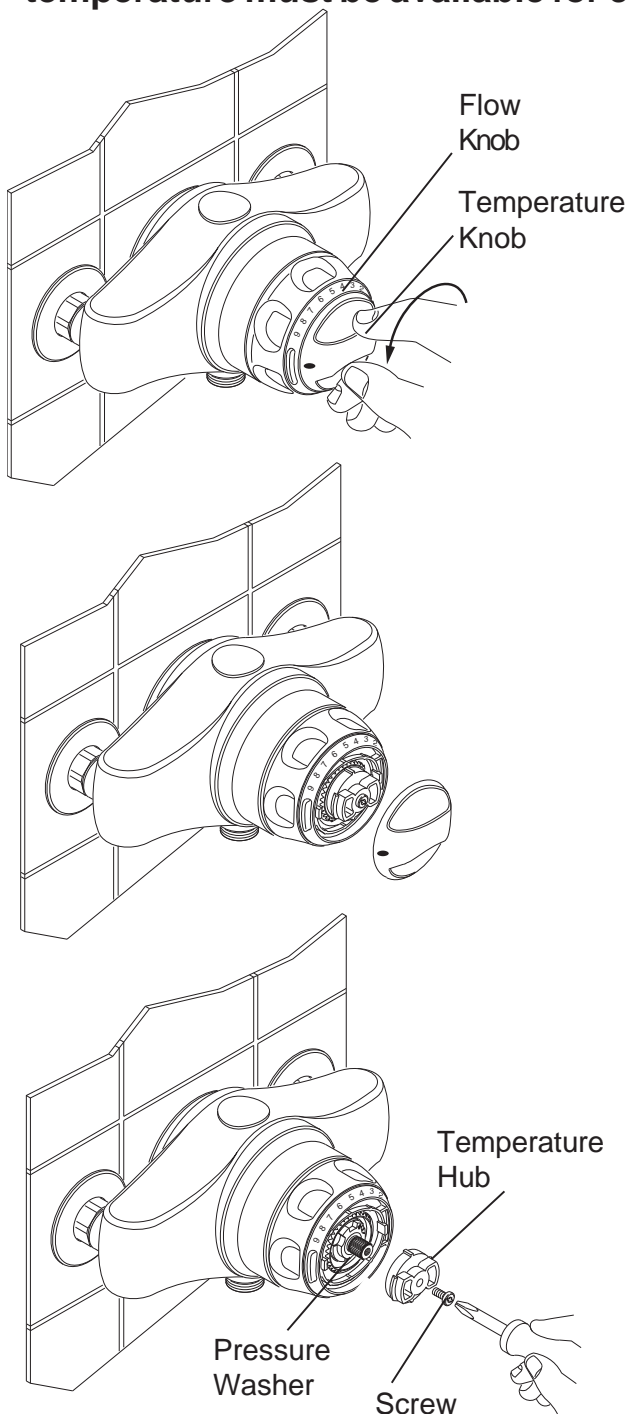
1.15. Restore the hot and cold water supplies and check for any leaks.



1. Maximum temperature setting

All Excel shower controls are fully performance tested and the maximum temperature has been set under ideal installation conditions at the factory. The temperature stop is set to 43 ° C and depressing the override will increase the temperature by 5 ° C to approximately 48 ° C. Site conditions and personal preference may make it necessary to reset these temperatures.

Note! An adequate supply of hot water at least 12 ° C above the required temperature must be available for correct operation of the shower control.



Warning! Resetting the temperature of the temperature stop will also reset the maximum temperature obtainable with the override operated.

- 1.1. Turn the temperature knob to the full hot position. **Do not depress the override button.**
- 1.2. Turn the flow knob fully anticlockwise (maximum flow) and allow the temperature to stabilize.
- 1.3. Measure the water temperature. If the temperature is satisfactory then no adjustment is needed. If adjustment is necessary continue with the commissioning procedure.
- 1.4. Carefully pull off the temperature knob.
- 1.5. Remove the temperature hub securing screw.
- 1.6. Use a screwdriver to carefully lever off the temperature hub. Ensure that the pressure washer remains in position.

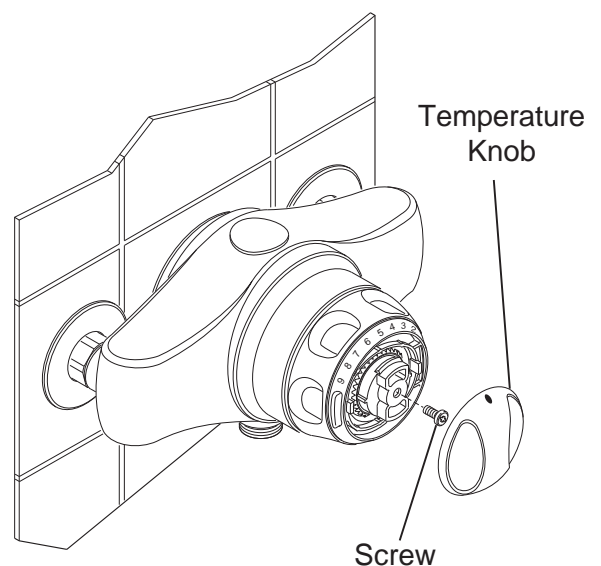
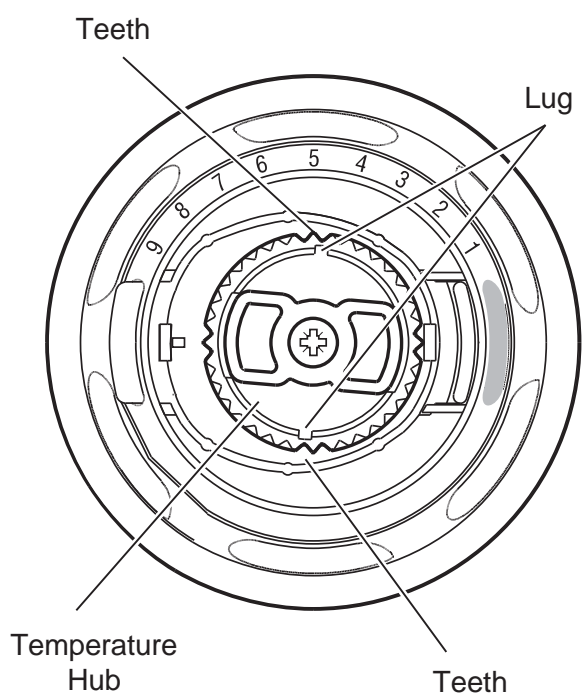
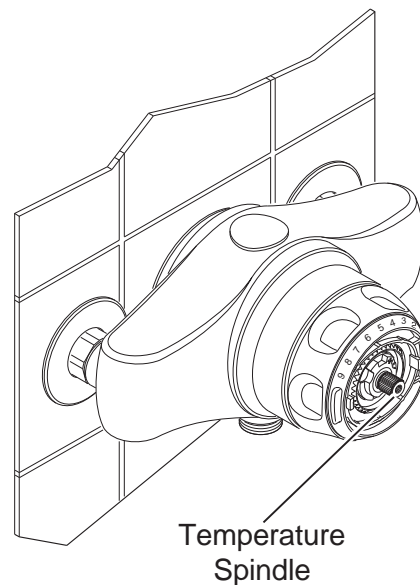
1.7. Rotate the temperature spindle until the required temperature is obtained. Turn the spindle anticlockwise to increase the temperature or clockwise to decrease the temperature. If resistance is felt **DO NOT USE FORCE** to rotate the spindle as this is the **maximum obtainable temperature** from the shower control with the available hot water supply temperature. **FORCE** will **DAMAGE** the internal components of the cartridge assembly.

1.8. Turn the flow knob fully clockwise (off).

1.9. Refit the temperature hub so that the two small lugs on the temperature hub, align with the top right and bottom left teeth on the temperature indicator trim as shown.

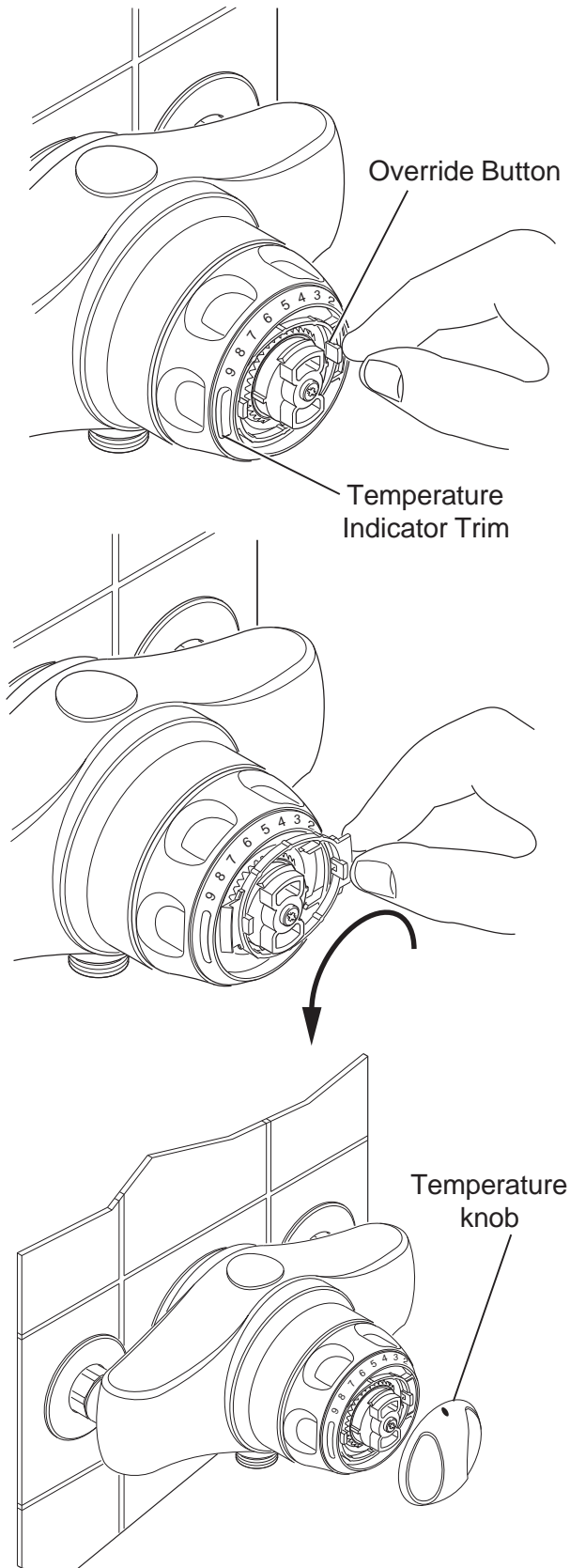
1.10. Rotate the temperature hub to a vertical position and refit the securing screw and the temperature knob. Check that the temperature knob can be rotated fully in both directions.

1.11. Turn the flow knob fully anticlockwise (maximum flow) and check the temperature is correct and the override functions correctly. If necessary repeat the procedure until the correct temperature is achieved.



2. Temperature override button - disable

The Excel incorporates a temperature override button that allows the user to override the preset maximum temperature. The following procedure can be used to disable the override button, limiting the maximum temperature available to the preset value. This setting is recommended for the young, the elderly, the infirm, or anyone inexperienced in the correct operation of the controls.



- 2.1.** Carefully pull off the temperature knob.
- 2.2.** Unclip the concealed end of the override button from the temperature indicator trim and carefully remove the override button.
- 2.3.** Rotate the override button through half a turn (180 °) and refit. Make sure that the override button locates correctly in the temperature trim.
- 2.4.** Refit the temperature knob with the indicator adjacent to the scale on the indicator trim.
- 2.5.** Reversing the above procedure will enable the override button.

1. Excel and Excel B

The Excel incorporates a temperature override button that allows the user to override the preset maximum temperature. It is recommended that this facility is disabled for the young, the elderly and the infirm, or anyone inexperienced in the correct operation of the controls. Refer to **Section 9, Commissioning: "2. Temperature override button - disable"**.

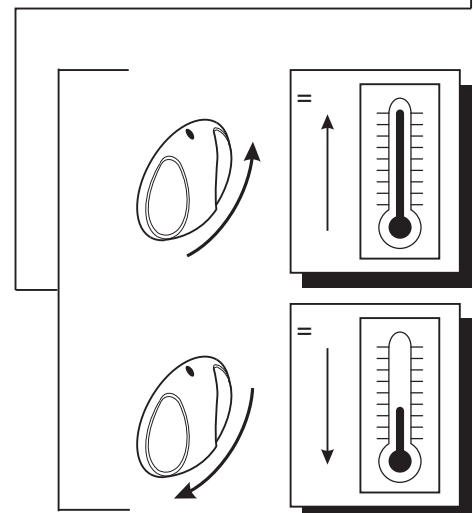
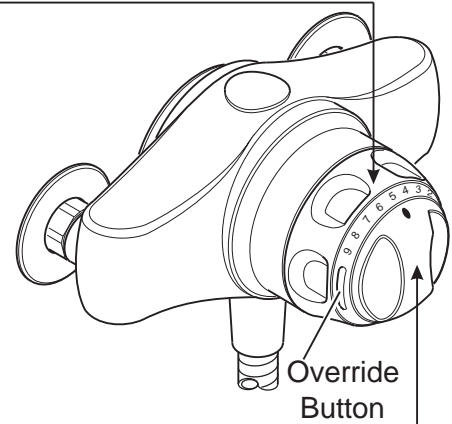
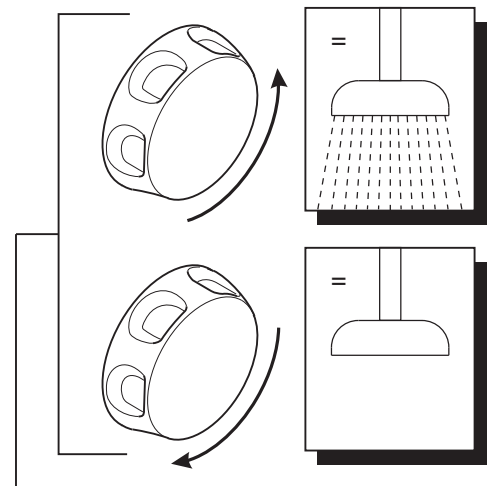
- 1.1.** Turn the flow knob (outer knob) anticlockwise until the desired force of water is obtained.

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

- 1.2.** Turn the temperature (inner) knob to a higher number for warmer water or to a lower number for cooler water. The preset maximum temperature can be adjusted as required to suit both site conditions and the user's comfort. Refer to **Section 9, Commissioning: "1. Maximum temperature setting"**.

Warning! Operation of the override button will allow a shower temperature above the preset maximum.

- 1.3.** To override the preset maximum temperature depress the override button and turn the temperature knob fully anticlockwise.



1. Fault diagnosis

Read the section “**Important Safety Information**” first.

Providing the shower control has been correctly installed and is operated in accordance with the instructions contained in this guide, difficulties should not arise. If any maintenance is required then it must be carried out by a competent tradesperson for whom the fault diagnosis chart and maintenance instructions are provided. Before replacing any parts ensure that the underlying cause of the malfunction has been resolved.

Key

A. Instantaneous Gas Heated Showers

B. Unvented Mains Pressure and Thermal Store Systems

C. Gravity Systems/Pumped Systems

Malfunction	Cause	Remedy	A	B	C
No flow/low flow rate and/or unstable fluctuating temperature.	Spray plate assembly blocked.	Clean the spray plate. Refer to the shower fitting maintenance guide.	✓	✓	✓
	Incorrect spray plate fitted.	Fit high capacity spray plate.	✓	✓	
	Partially closed stop or servicing valve in supply pipe work to shower control.	Open valve.	✓	✓	✓
	Instantaneous boiler cycling on and off as flow rate/pressure too low.	Fit high capacity spray plate. Increase flow/pressure through system. Contact boiler manufacturer.	✓		
	Head of water below minimum required.	Raise cistern or fit Mira pump.			✓
	Inlet strainer blocked.	Clean or renew. Flush pipework before refitting. (continued)	✓	✓	✓

Malfunction	Cause	Remedy	A	B	C
	<p>Other hot or cold draw offs being used causing wide pressure changes or instantaneous boiler temperature changes.</p> <p>Cartridge assembly set for high pressure in a low pressure application.</p> <p>Supply pressures unequal.</p>	<p>Do not use other outlets whilst showering.</p> <p>Refer to Section 6, Pressure Setting.</p> <p>Refer to Section 5, Installation Requirements.</p>	✓		✓
<p>Drip from handset spray plate assembly or bir sprayplate assembly.</p>	<p>A small amount of water may be retained in the shower fitting after the shower control has been turned off. This may drain over a few minutes.</p> <p>Defective ceramic plates within the shower cartridge.</p>	<p>This is quite normal. Changing the angle of the shower fitting may vary the draining time.</p> <p>Renew the cartridge assembly.</p> <p>Check that the pressures are not in excess of the maximum for product (refer to Fault Diagnosis "Flow control knob stiff to operate").</p>	✓	✓	✓
<p>Maximum shower temperature too hot or too cold</p>	<p>Maximum temperature incorrectly set.</p>	<p>Reset the maximum temperature. Refer to Section 9, Commissioning: "Maximum Temperature Setting".</p>	✓	✓	✓

Malfunction	Cause	Remedy	A	B	C
Shower temperature too cold (maximum temperature correctly set).	<p>Hot water temperature less than 12 °C above the required shower blend temperature.</p> <p>Instantaneous boiler not igniting because the water flow rate is too low.</p> <p>Instantaneous boiler not igniting because the water pressure is too low.</p>	<p>Adjust the hot water temperature or wait for the water to reheat if stored system.</p> <p>Fit high capacity spray plate. Increase flow rate through the system. Check the cartridge inlet filters, clean or replace. Contact boiler manufacturer.</p> <p>Increase water pressure. Contact boiler manufacturer.</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>
Leak from shower control body.	<p>Cartridge inlet or outlet seals missing or damaged.</p> <p>Pressure build up causing damage to the cartridge. This may be due to domestic hot water expansion.</p>	<p>Fit new seals.</p> <p>Fit domestic hot water expansion vessel. If one already fitted, it may be deflated and require repressurization. If necessary, fit new cartridge.</p>	<p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p>
Flow control knob stiff to operate.	Pressure build up. This may be due to domestic hot water expansion.	<p>Fit domestic hot water expansion vessel. If one already fitted, it may be deflated and require repressurization.</p> <p>(continued)</p>	<p>✓</p>	<p>✓</p>	

Malfunction	Cause	Remedy	A	B	C
	High inlet supply pressures.	Maximum maintained pressure for shower should not exceed 5 bar. If greater fit a drop tight pressure reducing valve (PRV) just after the property incoming mains stopcock, effectively balancing the hot and cold supply pressures. Ideally set the PRV at 3.5 bar.	✓	✓	
Excel noisy during operation.	Unbalanced inlet supply pressures.	Balance Excel inlet supply pressures. Fit a drop tight PRV just after the incoming mains stopcock, effectively balancing the hot and cold supply pressures. Ideally set the PRV to 3.5 bar.	✓	✓	
	High inlet supply pressures.	Maximum maintained pressure for shower should not exceed 5 bar. If greater fit a drop tight (PRV) installed as detailed above.	✓	✓	
Only full hot or full cold available.	Reversed inlet supplies.	Refer to Section 8, Reversed Inlet Connections.	✓	✓	✓
	Inlet strainer blocked.	Clean or renew.	✓	✓	✓

1. Cleaning

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

2. Cartridge assembly - renewal

Read the section “**Important Safety Information**” first.

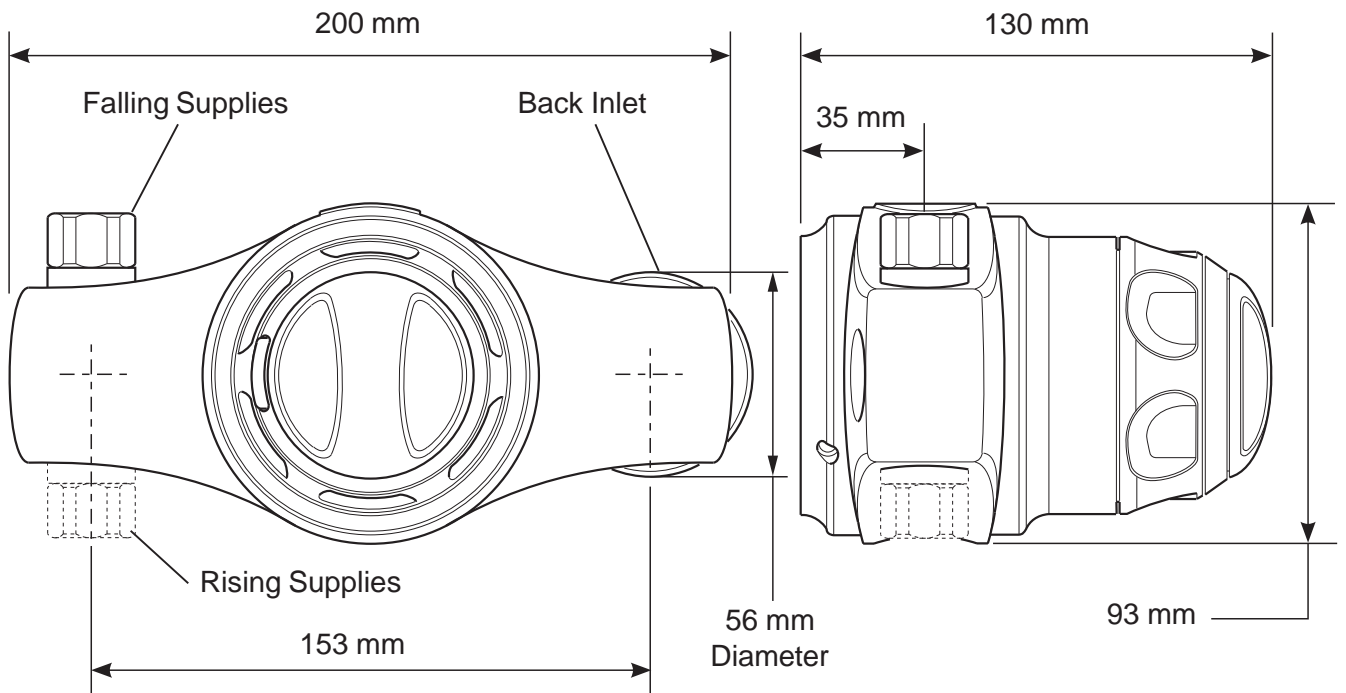
- 2.1. Refer to **Section 8, Reversed Inlet Connections** and follow instructions **1.1.** to **1.8.** inclusive to remove the cartridge assembly. Note the orientation of the red and blue tags on the cartridge assembly that identify the hot and cold inlets. Normally the red tag will be on the left unless the cartridge assembly has been rotated for reversed supplies.
- 2.2. Insert the new cartridge assembly into the shower control body.
- 2.3. Refer to **Section 8, Reversed Inlet Connections** and follow instructions **1.10.** to **1.15.** inclusive to complete the installation of the new the cartridge assembly.

3. Cartridge assembly 'O' seals/inlet strainers - renewal

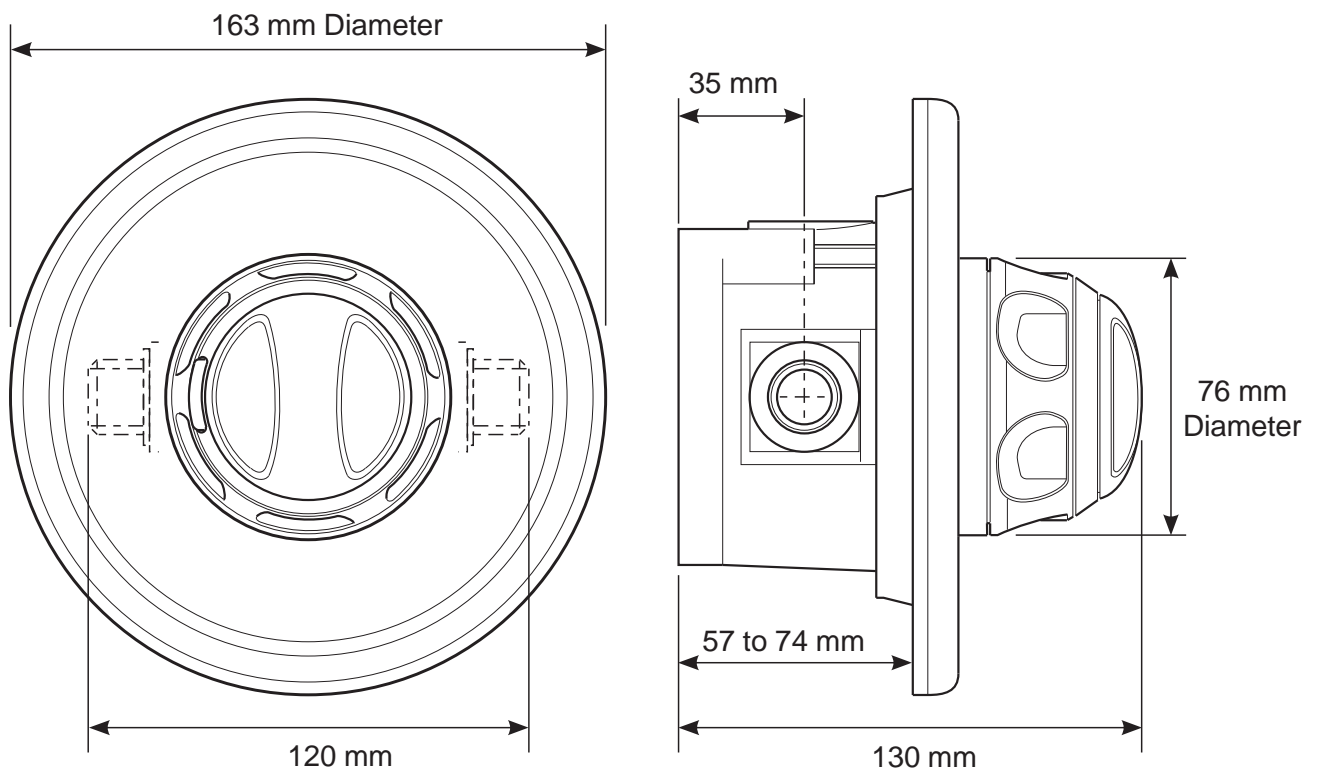
Read the section “**Important Safety Information**” first.

- 3.1. Refer to **Section 8, Reversed Inlet Connections** and follow instructions **1.1.** to **1.8.** inclusive to remove the cartridge assembly. Note the orientation of the red and blue tags on the cartridge assembly that identify the hot and cold inlets. Normally the red tag will be on the left unless the cartridge assembly has been rotated for reversed supplies.
- 3.2. Renew the 'O' seals as necessary. Refer to **Appendix 4, Spare Parts** for the seal pack details.
- 3.3. Clean or renew the inlet strainers as necessary. Refer to **Appendix 4, Spare Parts** for the strainer pack details. The inlet strainers must be fitted squarely and flush in the cartridge assembly inlet port. If necessary, flush the supply pipework to remove any residual debris. A flushing cartridge is available on request (see Accessories, Appendix 2).
- 3.4. Insert the cartridge assembly into the shower control body.
- 3.5. Refer to **Section 8, Reversed Inlet Connections** and follow instructions **1.10.** to **1.15.** inclusive to complete the installation of the cartridge assembly.

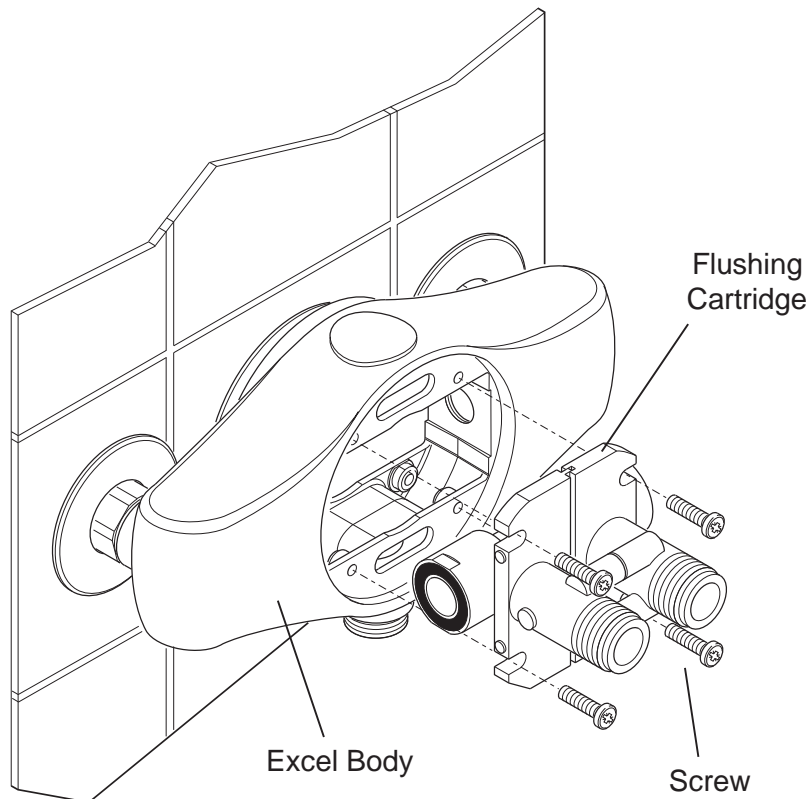
1. Excel



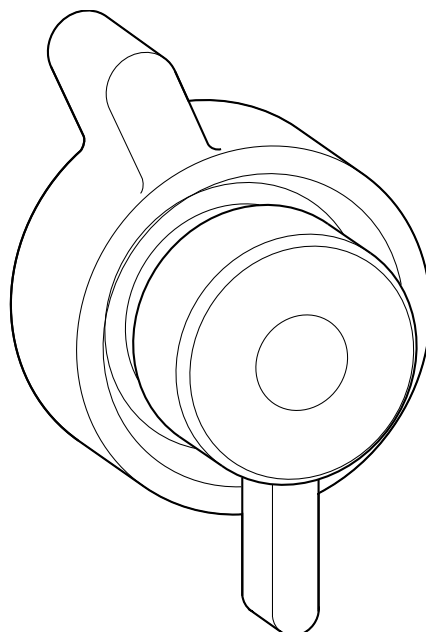
2. Excel B



Excel Flushing Cartridge: A **Flushing Cartridge** is available from Mira Customer Support **free of charge**. This flushing Cartridge is designed to fit the surface mounted and built-in products. It temporarily replaces the thermostatic cartridge assembly for the purpose of flushing the incoming hot and cold water supply pipework after installation and before using the product.



Excel Lever Controls: Moulded from ABS plastic, designed to allow the Excel shower control to be more easily operated by users with restricted hand movement. Available from standard Excel stockists.

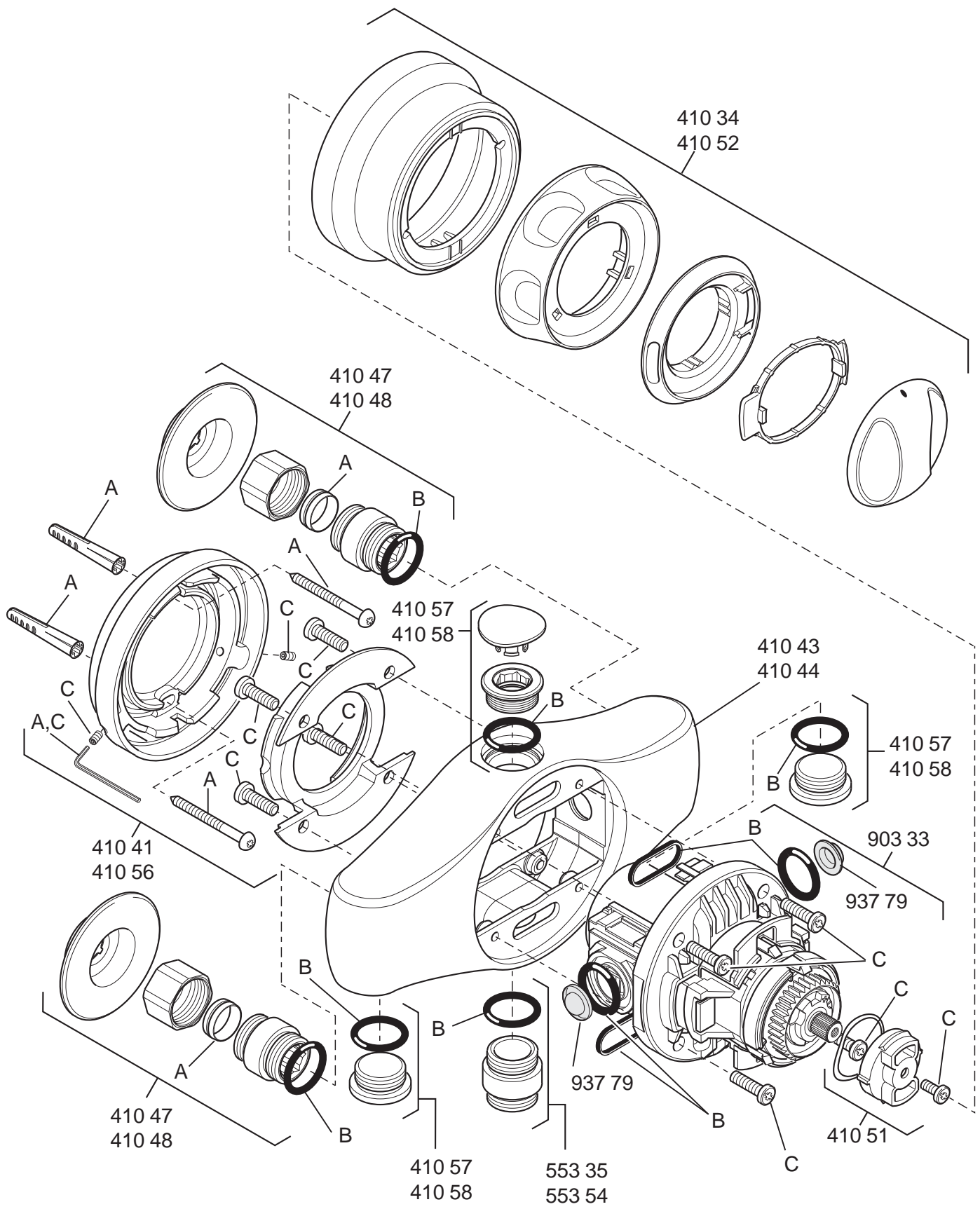


Spare Parts

1. Excel spare parts list

41034	Trim/Knob Pack - chrome
41041	Backplate Kit - chrome
41043	Excel Body - chrome
41044	Excel Body - light golden
41047	Compression Fitting Kit - chrome
41048	Compression Fitting Kit - light golden
41051	Hub Pack
41052	Trim/Knob Pack - white
41056	Backplate Kit - white
41057	Blanking Plug Pack - chrome
41058	Blanking Plug Pack - light golden
55335	Outlet Nipple - chrome
55354	Outlet Nipple - light golden
90333	Cartridge Assembly
93216	Component Pack (as supplied) - components identified 'A'
93512	Seal Pack - components identified 'B'
93714	Component Pack - components identified 'C'
93779	Strainer Pack

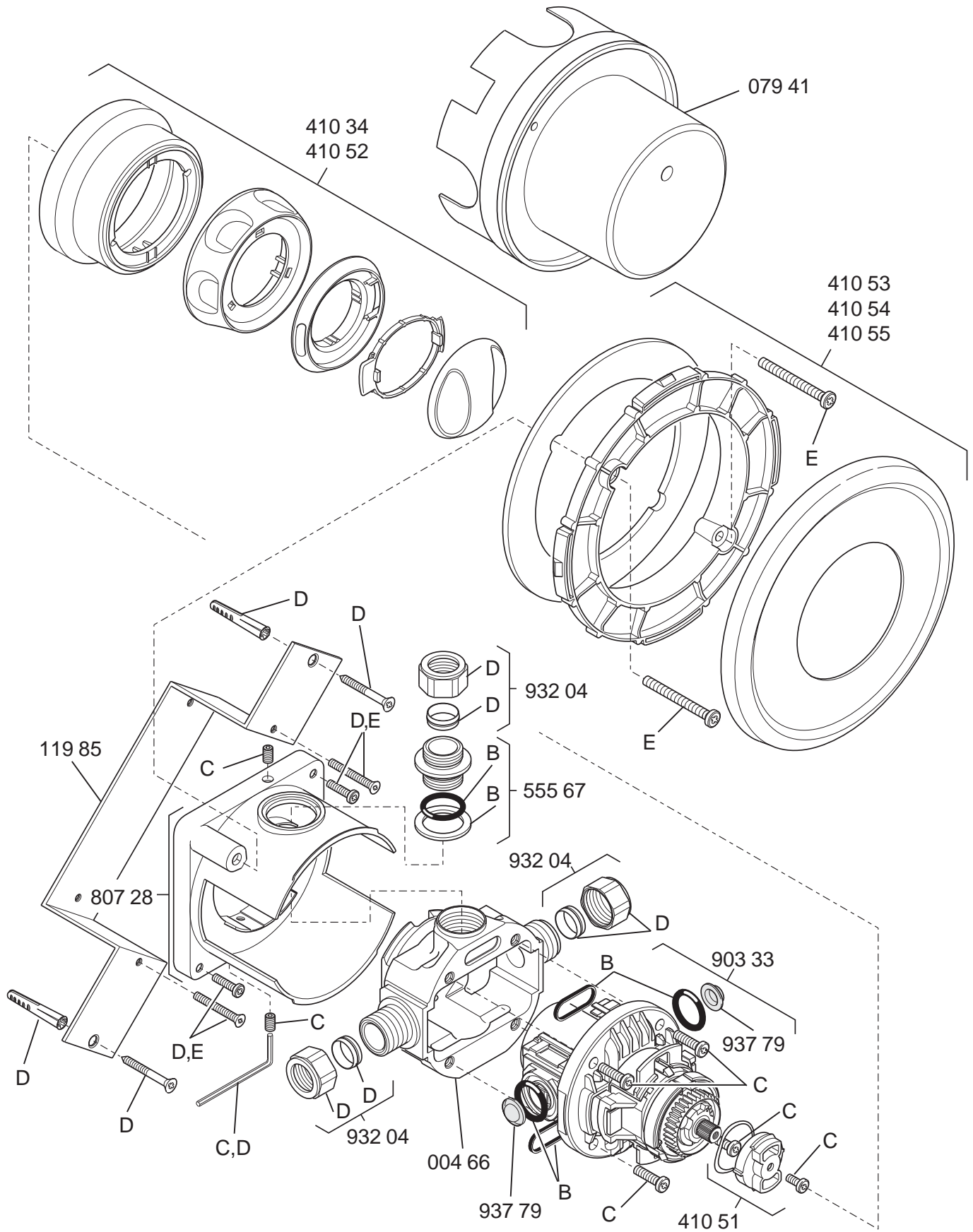
2. Excel spare parts diagram



3. Excel B spare parts list

004 66	Body
079 41	Building-in Shroud
119 85	Support Bracket
410 34	Trim/Knob Pack - chrome
410 51	Hub Pack
410 52	Trim/Knob Pack - white
410 53	Concealing Plate Kit - white
410 54	Concealing Plate Kit - chrome
410 55	Concealing Plate Kit - light golden
555 67	Outlet Nipple Assembly
807 28	Backplate Assembly
903 33	Cartridge Assembly
932 03	Component Pack (as supplied) - components identified 'D'
932 04	15 mm Compression Fitting Pack
935 12	Seal Pack - components identified 'B'
937 14	Component Pack - components identified 'C'
937 59	Screw Pack - components identified 'E'
937 79	Strainer Pack

4. Excel B spare parts diagram



Customer Service

Guarantee of Quality

Mira Showers guarantee your product against any defect in materials or workmanship for the period shown in the Guarantee Registration Document included with your shower.

Alternatively, to confirm the applicable guarantee period please contact Customer Services.

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

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

To be free of charge, service work must only be undertaken by Mira Showers or our approved agents.

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

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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

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Clondalkin, Dublin 22

Modern Plant (Cork)

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