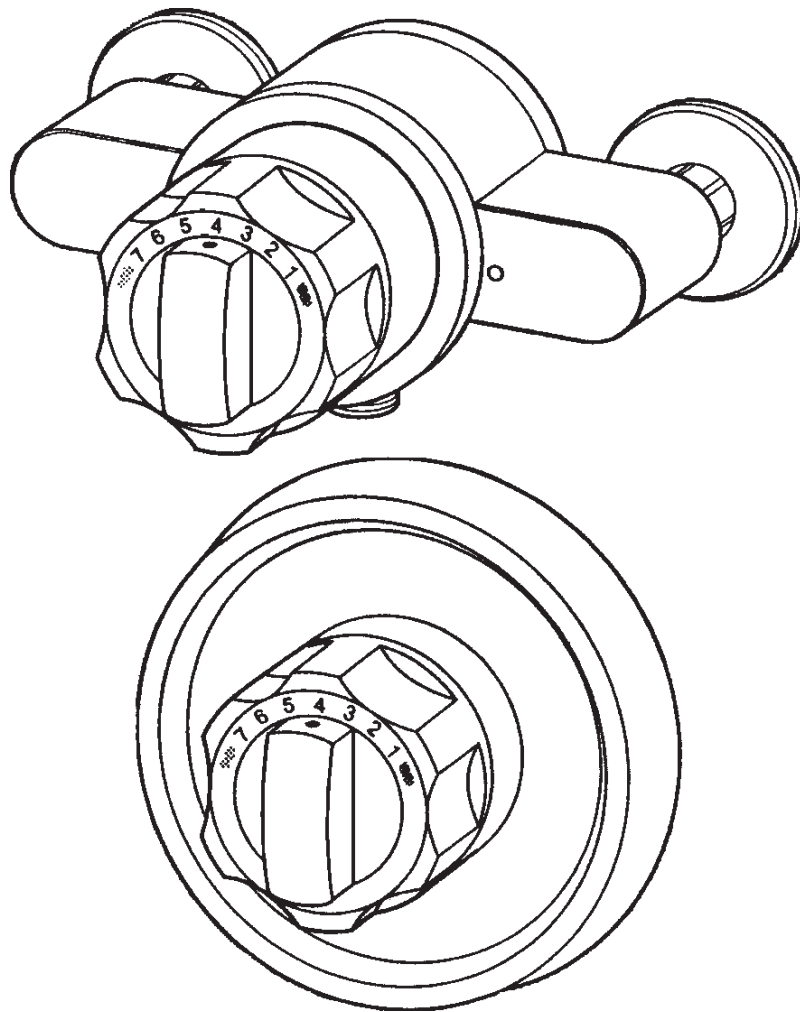


mira

SHOWERS



SHOWER CONTROL

Installation

Operation &

Maintenance Guide

THESE INSTRUCTIONS ARE TO BE LEFT WITH THE USER

Introducing the Excel Thermostatic Shower Control Range

Description

A range of Mira thermostatic ½" shower controls having independent selection of spray force and temperature. The shower control incorporates a wax capsule temperature sensing unit which provides almost immediate response to changes in the pressures or temperatures 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. The flow control utilises ceramic plate technology operating directly on the hot and cold inlets providing complete isolation of the incoming water supplies. Low and high pressure versions are available to suit most applications.

The Mira Excel thermostatic shower control range are guaranteed against any defect of materials or workmanship for three years from the date of purchase.

Product range

- Mira Excel T.E:** Exposed shower control for connection to **exposed pipework**, for **low pressure** applications (**0.06-2.0 bar**). White/chrome or white/light golden colour models are available.
- Mira Excel T.H.E:** Exposed shower control for connection to **exposed pipework**, for **high pressure** applications (**1.0-5.0 bar**). White/chrome or white/light golden colour models are available.
- Mira Excel TB:** Built-in shower control for connection to **concealed pipework**, for **low pressure** applications (**0.06-2.0 bar**). White/chrome, all white or white/light golden colour models are available.
- Mira Excel T.H.B:** Built-in shower control for connection to **concealed pipework**, for **high pressure** applications (**1.0-5.0 bar**). White/chrome, all white or white/light golden colour models are available.

Safety

Anyone who may have difficulty understanding or operating the controls of any shower should be attended to whilst showering. Particular consideration should be given to the young, the elderly, the infirm or anyone inexperienced in the correct operation of the controls.

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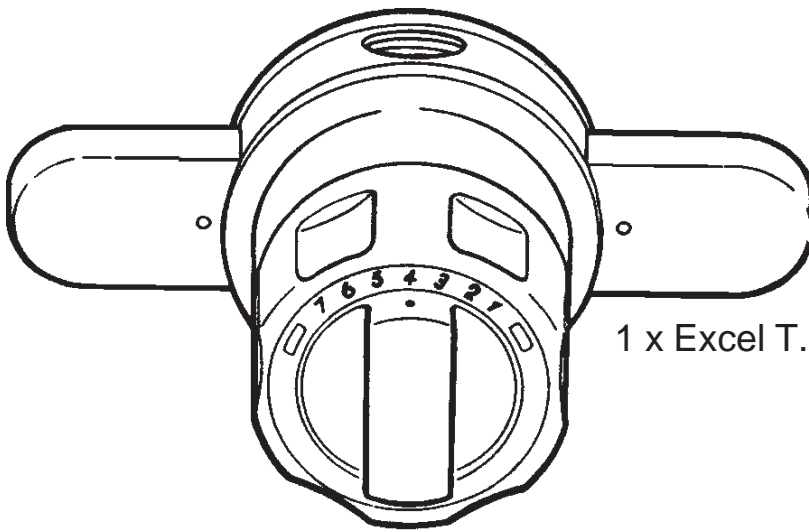
Pack Contents Checklist

Excel T.E. & T.H.E. Exposed Shower Control

1 x Installation, Operation and Maintenance Guide

1 x Customer Support Brochure

1 x Installer Registration Card



1 x Excel T.E. or T.H.E. Shower Control



2 x Compression Nuts



2 x Pipe Concealing Plates



2 x Olives



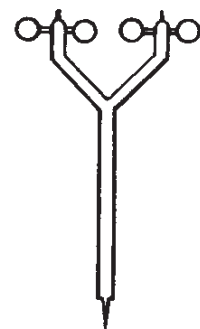
1 x Outlet Nipple



2 x ½" BSP Inlet Connector Nipples



1 x 'O' Seal (outlet nipple)



1 x Concealing Caps (set)



2 x Fibre Gaskets



1 x 2.5mm A/F Hexagon Wrench



2 x Wallplugs



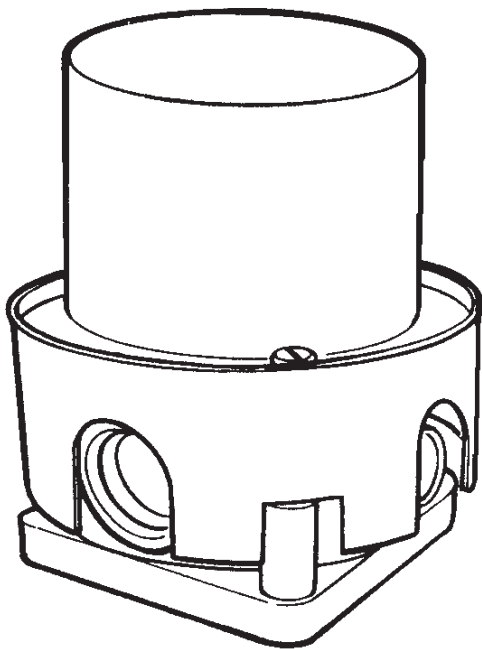
2 x Fixing Screws No. 8 x 1¾"

Excel T.B. & T.H.B. Exposed Shower Control

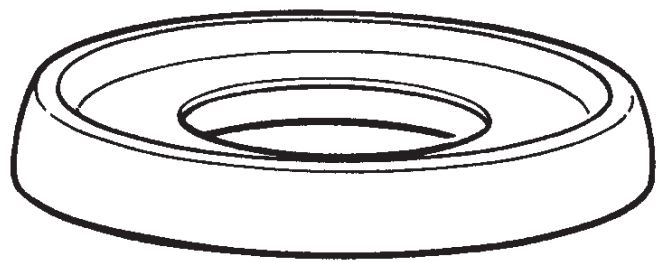
1 x Installation, Operation and Maintenance Guide

1 x Customer Support Brochure

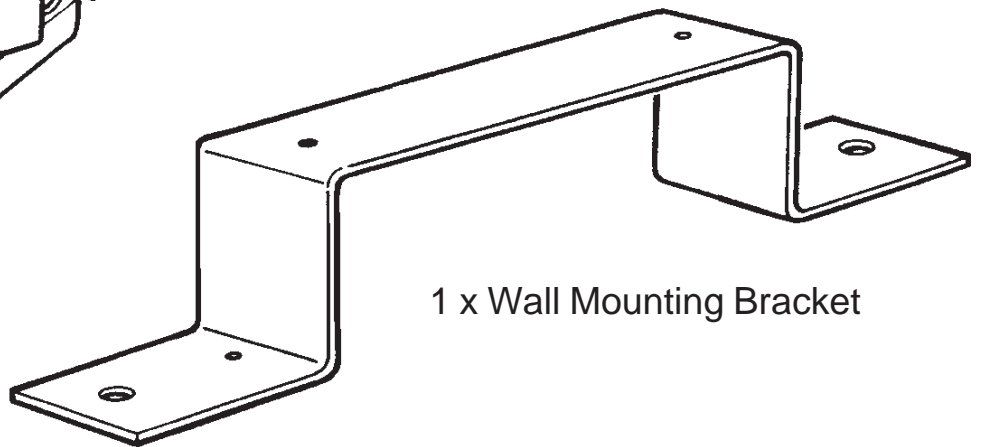
1 x Installer Registration Card



1 x Excel T.B. or
T.H.B. Shower Control
with Building-in Shroud



1 x Concealing Plate, Foam Seal and
Circular Mounting Bracket



1 x Wall Mounting Bracket



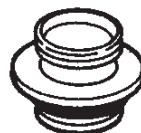
3 x Compression Nuts



3 x Olives



1 x 2.5mm A/F
Hexagon Wrench



1 x Outlet Nipple (brass)
and 'O' Seal



1 x Foam Seal (outlet nipple)



2 x Screws

M4 x 16mm



2 x Fixing Screws

No.8 x 1 1/4"



2 x Wallplugs

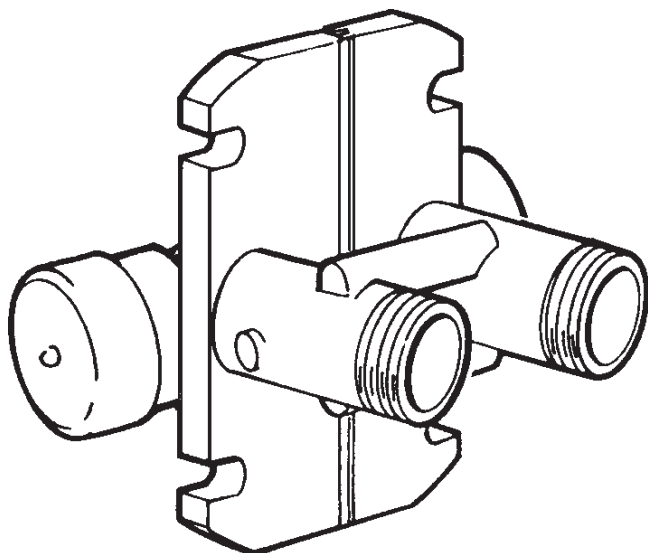


2 x Screws

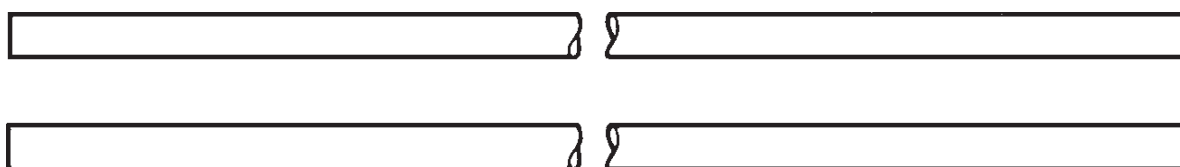
M4 x 30mm

Accessories

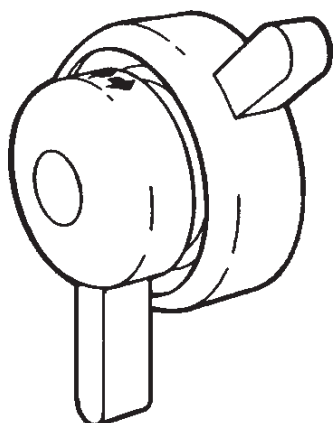
Excel Flushing Cartridge: A plastic moulded plug-in cartridge, designed to temporarily replace the thermostatic cartridge for the purpose of flushing the incoming hot and cold water supply pipework prior to making the final connections to the shower control (Bye-law 55).



Straight Installation Kit: Polished stainless steel or light golden colour copper tube (1375mm) for direct connection to 15mm compression inlets, available as an optional accessory from your Mira stockist.

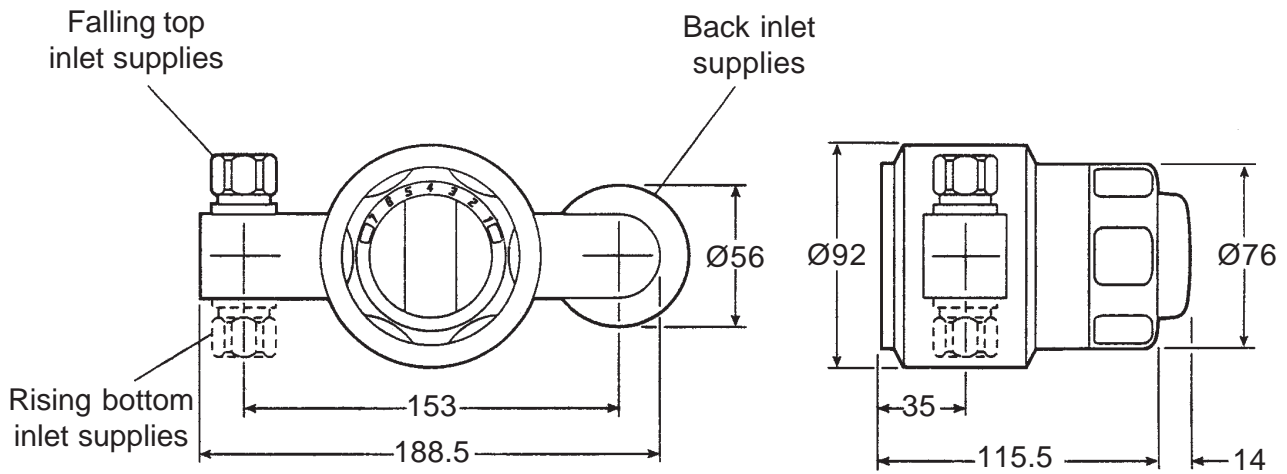


Excel Lever Controls: Moulded from ABS plastic, designed to allow a domestic shower control to be more easily operated by users with restricted hand movement. (Replaces the existing lever control).

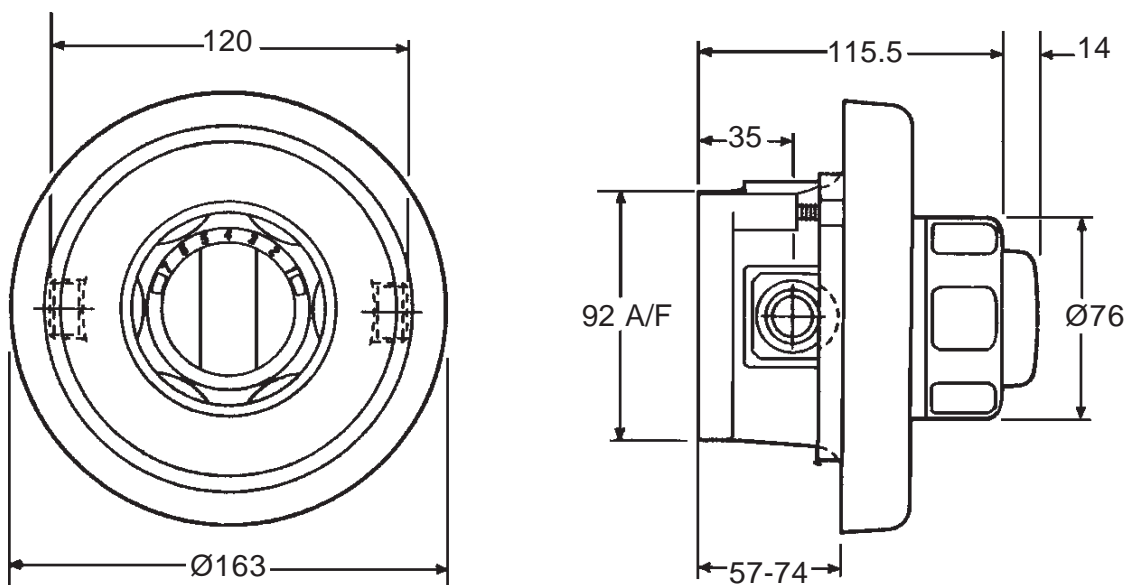


Dimensions

Excel T.E. & T.H.E.



Excel T.B. & T.H.B.



All dimensions are nominal and in millimetres

Specifications

Pressure range

Excel T.E. & T.B.

Minimum maintained pressure 0.1 bar (1 metre head) when used with Mira fittings.

Maximum maintained pressure 2.0 bar.

Maximum static pressure 10 bar.

Maximum pressure loss ratio 10:1 in favour of either supply.

Excel T.H.E. & T.H.B.

Minimum maintained pressure 1 bar (10 metre head) when used with Mira fittings.

Maximum maintained pressure 5 bar.

Maximum static pressure 10 bar.

Maximum pressure loss ratio 10:1 in favour of either supply.

Temperature control

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

The temperature span of adjustment is typically 25°C

The full specification performance outlined below for the standard product is achieved with a blend set between 34-45°C and supplies of 15°C cold and 65°C hot with nominally equal pressures.

1. The blended water temperature is maintained within 2°C with a 10°C change in the hot or cold water supply
2. The wax capsule sensor effects a shut down to seepage in approximately 2 seconds if the cold supply fails.
3. Shut down to seepage is achieved even if the hot supply is only 120C above the blend temperature.
4. The blended water temperature is maintained within 1.5°C when the pressure between inlet and outlet is halved (defined as a pressure loss ratio of 2:1) on either the hot or cold side.
5. The shower control will maintain control with a pressure loss ratio of up to 10:1.

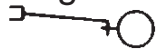






Standards

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

BS6700 recommends that the stored temperature of 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. WBS approved product. Product approval number 9204011. IRN 001, 003 and 109.

Installation Notes

Key to symbols appearing throughout this guide:

-  Float operated valve
-  Stop or servicing valve
-  Shower control
-  Warning or overflow pipe
-  Water pressure governor
-  Twin impeller inlet pump
-  Single impeller outlet pump

- A.** Layout and sizing of pipework must be such that when other services are used, pressures at the shower control inlets are maintained approximately equal and do not fall below the recommended minimum, or outside the 10:1 pressure loss ratio. Avoid a position in which the product could become frozen.
- B.** Supply pipes **MUST** be flushed to clear debris before connecting the shower control. A pipework flushing cartridge is available upon request.
- C.** Conveniently situated isolating valves must be fitted for servicing purposes.
- D.** No form of flow control should be fitted in the outlet pipework.
- E.** The plumbing installation must comply with Water Supply Bye-laws, B56700, Building Regulations or any particular regulations and practices, specified by the local water company or water undertakers.

Bye-law 91 - If a Mira product is to be used with a mains fed secondary water heating device (eg jacketed heater) the system must have a means of accommodating the expansion of water.

Bye-law 17 - For further information please see:-

"The Mira Shower Guide to the New Model Water Bye-laws". Publication number P2445.

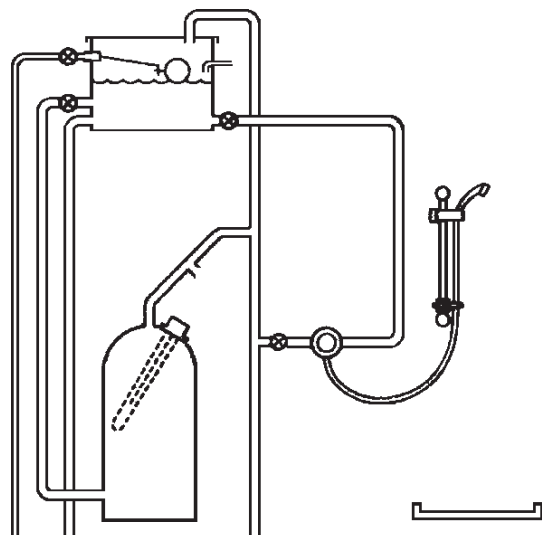
If in doubt we recommend that a plumber or contractor who is registered with one of the following be contacted:-

- (a) Institute of Plumbing (I.O.P.) throughout the U.K.
Tel: 01708 472791.
- (b) National Association of Plumbing Heating and Mechanical Services Contractors (N.A.P.H. & M.S.C.) England and Wales.
Tel: 0203 470626.
- (c) Scottish and Northern Ireland Plumbing Employers Federation (S. N. I. P. E. F.) Scotland and Northern Ireland.
Tel: 0131 225 2555.

The following diagrams and text illustrate typical examples of suitable plumbing systems for the Excel thermostatic shower control series:-

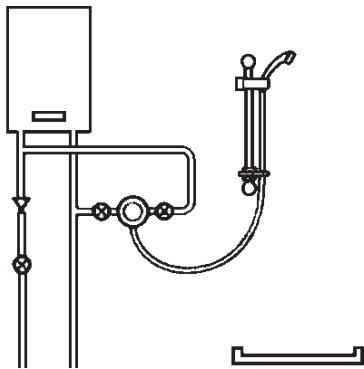
F. Gravity fed showers

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



G. Gas-heated showers

The shower control **MUST** be installed with a multi-point gas water heater or combination boiler of a **modulating design**. A modulating multi-point gas water heater or combination boiler is one in which the water draw-off rate controls indirectly the gas flow rate to the burner. The concept is to produce relatively constant hot water output temperatures within the operating limits of the heating appliance. A pressure reducing valve will be required to ensure that cold water pressures do not exceed 5 bar maintained for the Excel T.H.E. & T.H.B.



I. Mains pressurised instantaneous hot water, heated from thermal store, showers

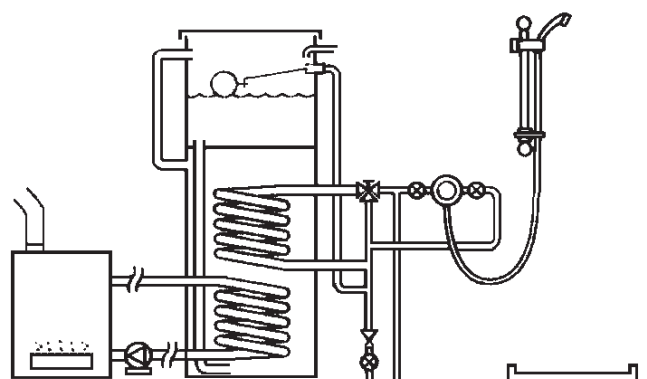
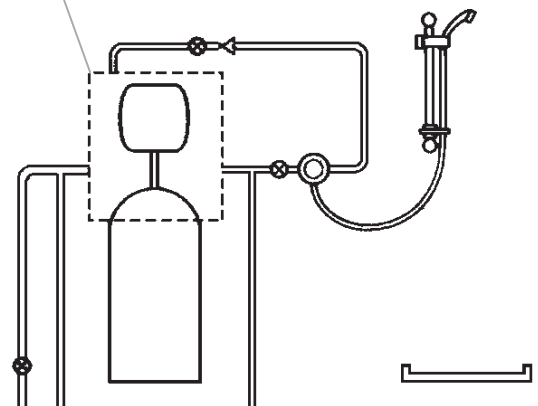
Packages of this type, fitted with a tempering valve can be used with the Mira Excel. The tempering valve provides a relatively constant hot water temperature and the Mira Excel shower control compensates for system temperature variations should they occur. A pressure reducing valve will be required to ensure that cold water pressures do not exceed 5 bar maintained for the Excel T.H.E. & T.H.B.

H. 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 pressure reducing valve, it will be necessary to fit an additional pressure reducing valve, set at the same value as the unvented package in the position shown dotted, when the mains pressure is over 5 bar. This does not apply to packages with a cold take off after the pressure reducing valve.

The pressure reducing valve ensures that cold water pressures do not exceed 5 bar maintained for the Excel T.H.E. & T.H.B.

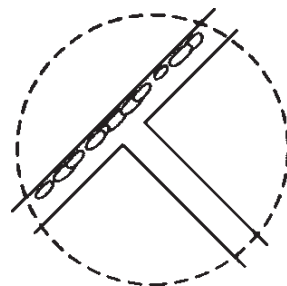
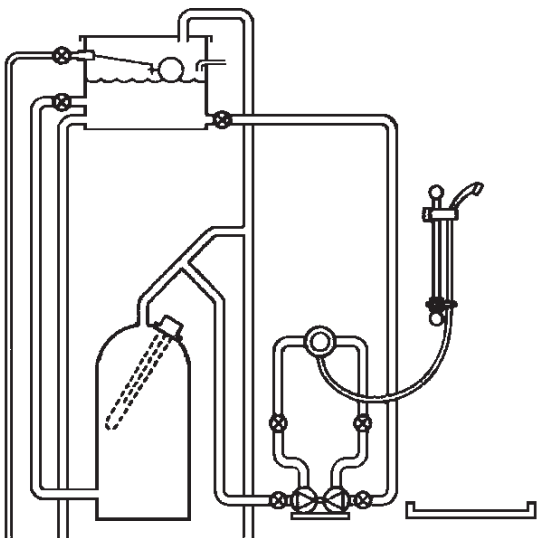
Safety devices have not been shown within dotted lines area for clarity of illustration.



Pumped showers

J. Inlet pumps

The shower control can be installed with an inlet pump (twin impeller). The pump MUST be located on the floor next to the hot water cylinder and cylinder/vent arranged as shown to achieve air separation.

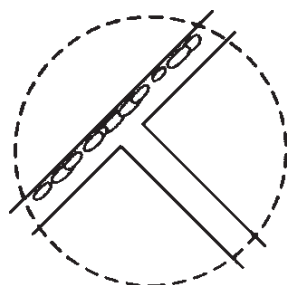
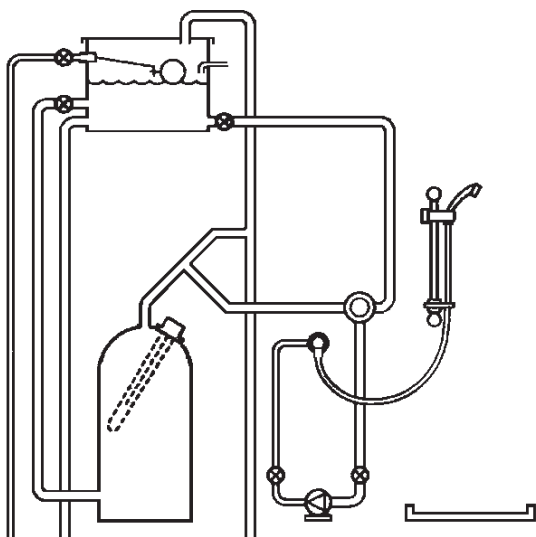


Air separation connection

Vent pipe with air bubbles travelling freely to atmosphere.

K. Outlet pumps

The 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 hot water cylinder/vent pipe must be arranged as shown to achieve air separation.



Air separation connection

Vent pipe with air bubbles travelling freely to atmosphere.

Product Identification

The product is identified by removing the temperature control knob, which will reveal a colour coded temperature hub.

'Mira T.E. & T.B.' - Low pressure version, temperature hub colour coded yellow.

'Mira T.H.E. & T.H.B.' - High pressure version, temperature hub colour coded green.

Instructions for removing the temperature control knob can be found in the section '**Commissioning: Maximum temperature setting.**'

Excel Application Selection Table

System	Product	Excel T.E. & T.B. (0.06-2.0 bar)	Excel T.H.E. & T.H.B. (1.0-5.0 bar)
Gravity-fed showers		*	
Pumped shower systems			*1
Unvented mains pressure showers			*1

*1 If installed with body sprays, low pressure unvented mains pressure showers, then the use of an Excel low pressure cartridge is recommended.

For user comfort and convenience we recommend the following:

The Mira Excel T.E. and T.B. should be specified for pumps which provide maintained system pressures below 1 bar.

The Mira Excel T.H.E. and T.H.B. should be specified for pumps which provide maintained system pressures above 1 bar.

Model	Cartridge supplied	Colour coding
Excel T.E. & T.B	Low pressure cartridge	Temperature hub coloured - YELLOW
Excel T.H.E. & T.H.B	High pressure cartridge	Temperature hub coloured - GREEN

Excel T.E. & T.H.E. Exposed Shower Control

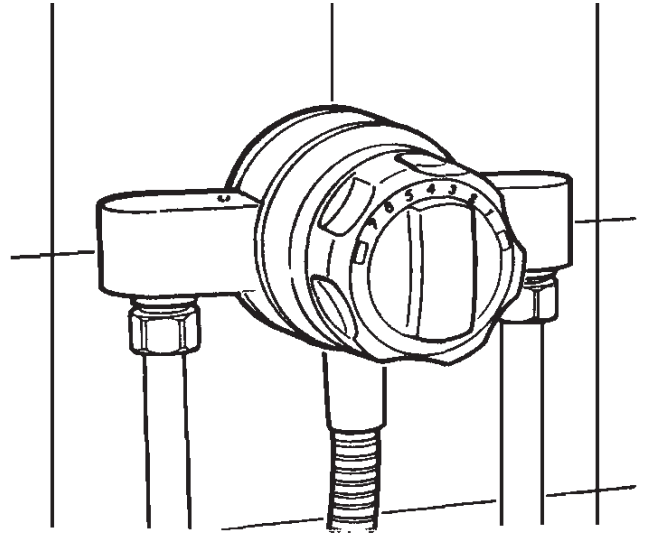
Rising bottom inlet and falling top inlet supplies

1

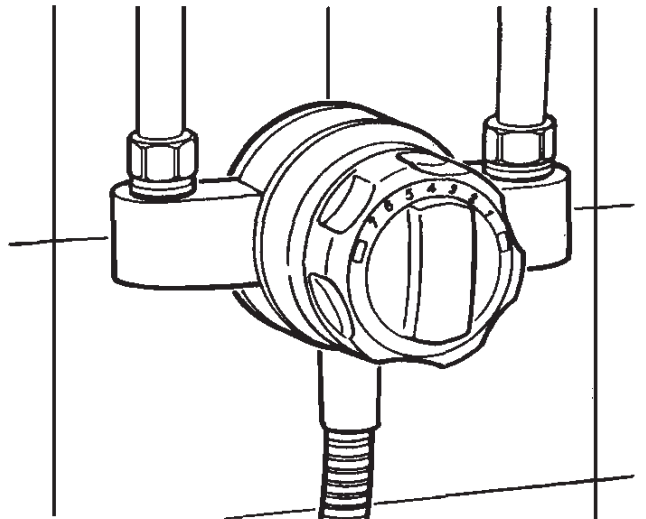
Determine whether the hot or cold water services will be connected to the shower control from the top (falling) or from the bottom (rising).

The hot water service must always be connected to the hot inlet port adjacent to the red indicator on the numbered temperature scale.

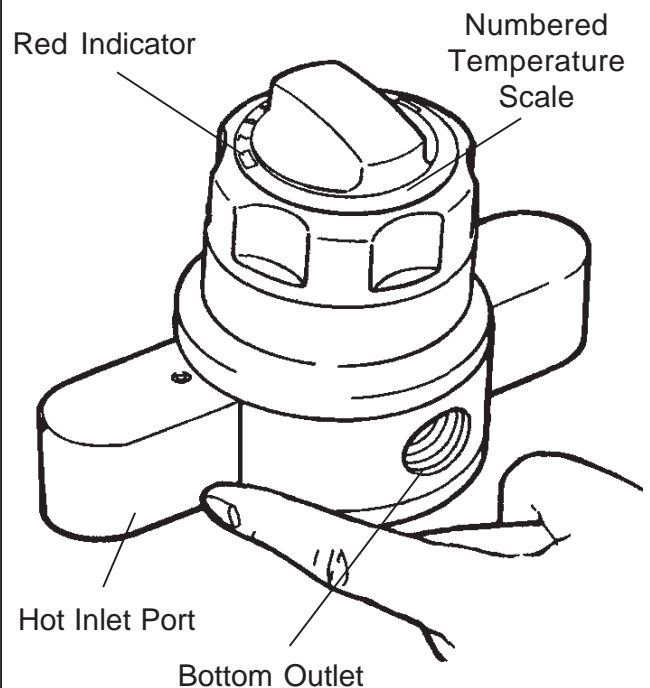
Installation

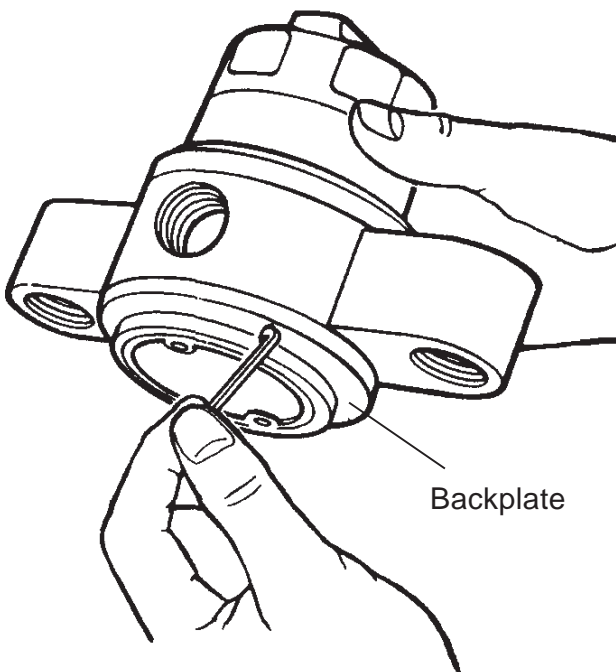
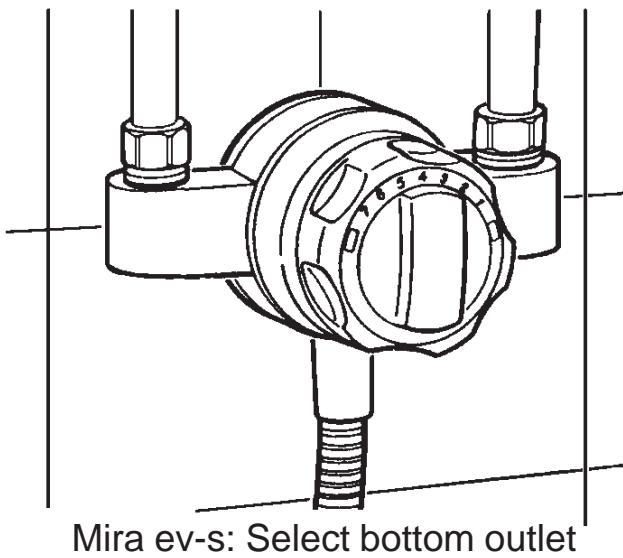
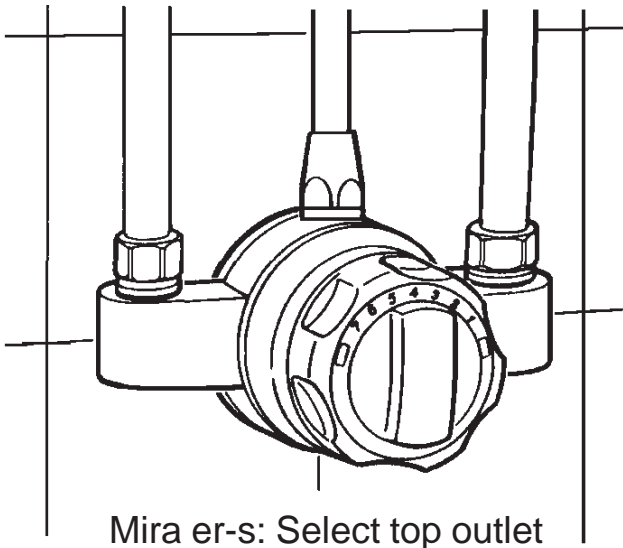


Rising bottom inlet supplies



Falling top inlet supplies





Before deciding the final positioning of the shower control, please bear in mind the following:-

- (i) Consideration should be given to the requirements of Bye-law 17 with regard to positioning of the shower control and selected shower fittings. (Not applicable to rigid shower fittings).
- (ii) Determine the position of the outlet in relation to the type of shower fitting used.

e.g. Mira er-s: Select top outlet

Mira ev-s: Select bottom outlet

The Excel T.E. and T.H.E. are supplied with inlet connections **hot left, cold right** and **bottom outlet** as standard.

To change the position of the outlet refer. to the section, **'Reversed Connections': instructions 48 to 61** inclusive.

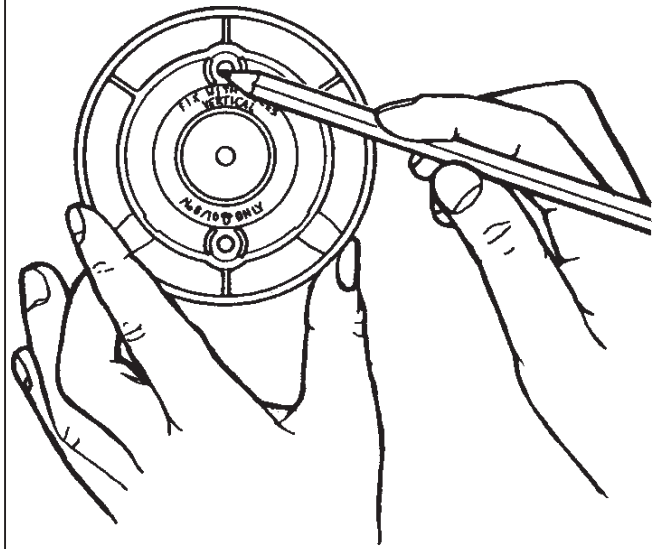
2

Remove the backplate by releasing, anti-clockwise, the two recessed grub screws which retain the backplate against the brass shower control body, using the 2.5mm A/F hexagon wrench (supplied).

3

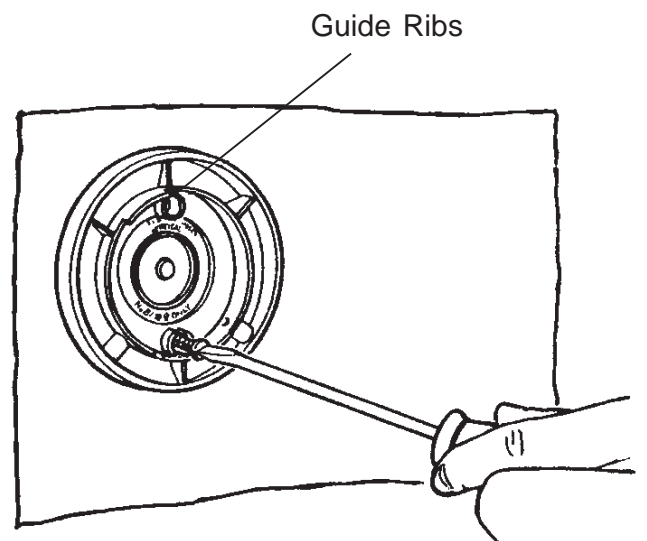
Mark the final position on the finished wall surface using the backplate as a template.

Mark through the backplate the position of the two holes ensuring that they are vertically aligned.



4

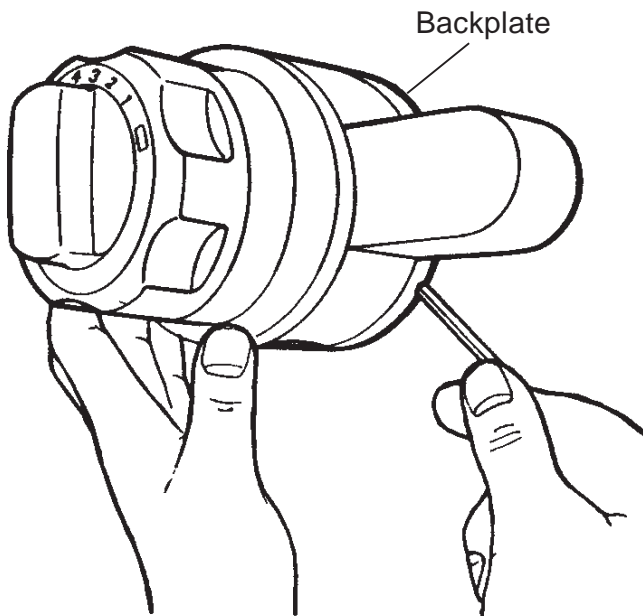
Drill and suitably plug the two marked fixing holes. Secure the backplate to the wall with the two No.8 1 3/4" fixing screws and wallplugs provided, ensuring that screw head seats into guide ribs.



9

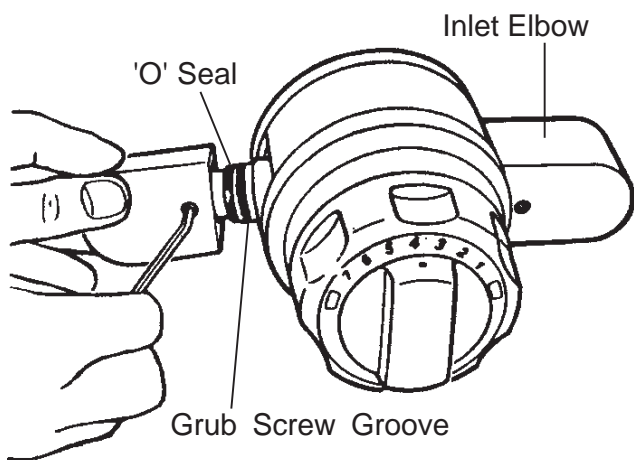
Thoroughly flush the incoming hot and cold water supplies before final connection of the shower control (Bye-law 55). Failure to do so may result in a product malfunction.

A plug in pipework flushing cartridge is available as an optional extra.



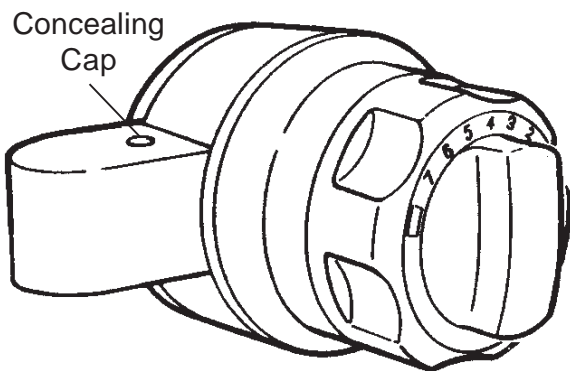
6

Locate the shower control body onto the backplate and secure by tightening, clockwise, the two recessed grub screws, using the 2.5mm A/F hexagon wrench (supplied).



7

Release, anti-clockwise, the two grub screws that retain the inlet elbows, using the 2.5mm A/F hexagon wrench (supplied). Ensure that the 'O' seal is correctly located on the smaller diameter shoulder of the brass inlet connector.

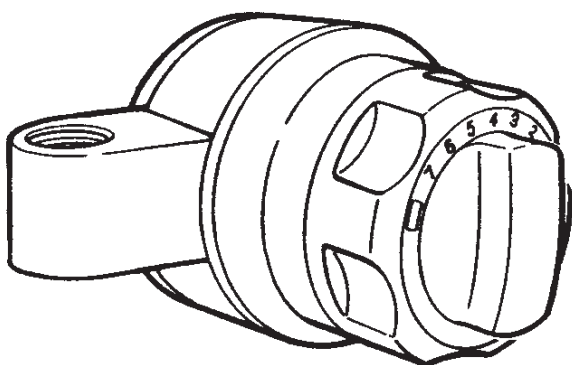


Rising supplies

8

Refit the elbows in the required position, i.e. rising or falling supplies, ensuring that the grub screws locate into the grub screw socket.

Tighten, clockwise, the grub screws and fit the two concealing caps.

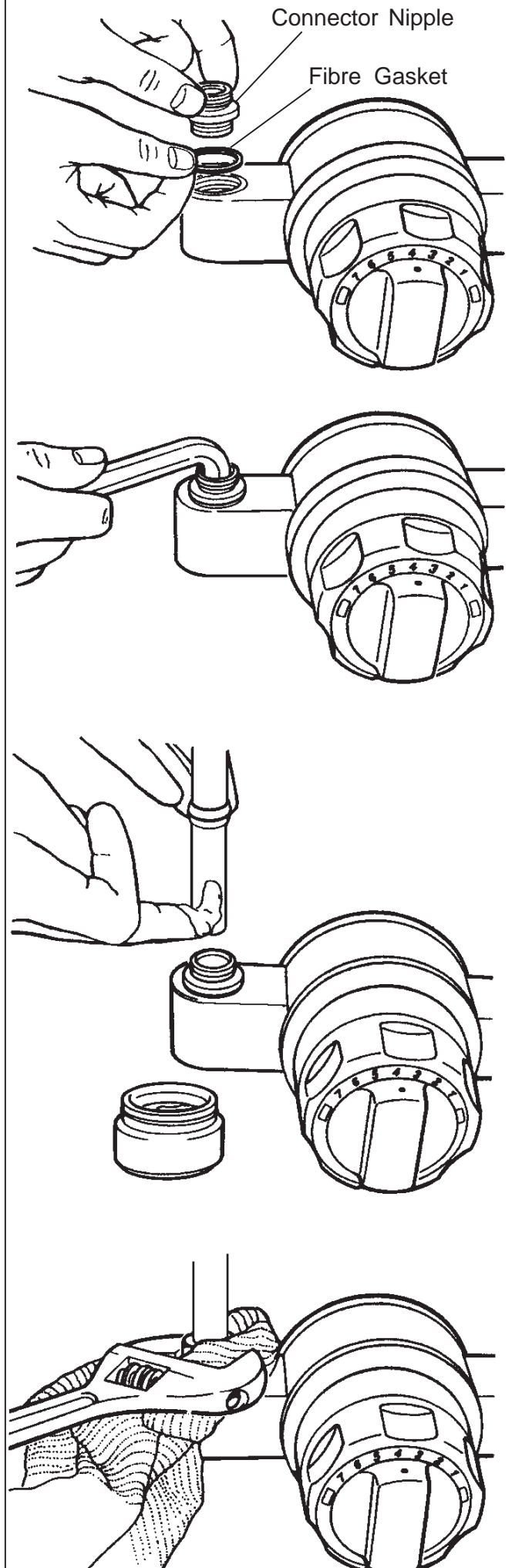


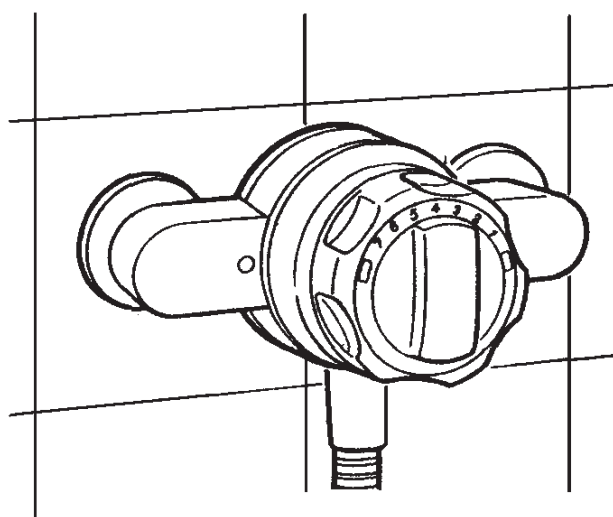
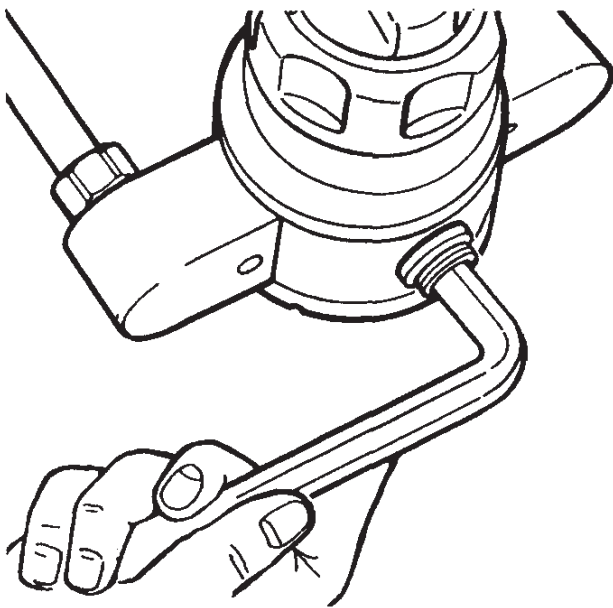
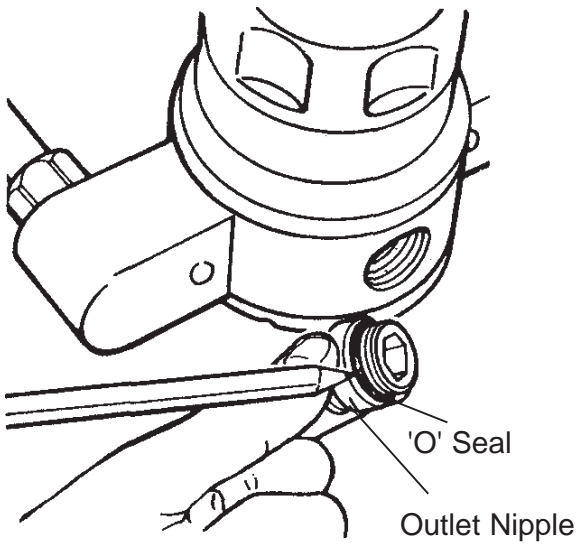
Falling supplies

9

Assemble the components of the inlet connector compression fittings in the following sequence for each inlet:-

- (i) Place the fibre gasket against the shoulder of the $\frac{1}{2}$ " BSP inlet connector nipple.
- (ii) Screw in, clockwise, the $\frac{1}{2}$ " BSP connector nipple ensuring that the compression taper faces uppermost, using a 12mm A/F hexagon wrench (not supplied).
- (iii) Slide, in turn, the compression nut, then the olive, over the hot and cold inlet pipework. If necessary, sparingly, smear 'liquid jointing' on the pipe end and the outside of the olive.
- (iv) Insert the hot and cold inlet pipework into the opening of the $\frac{1}{2}$ " BSP inlet connector nipple then slide the olive and compression nut into place.
- (v) Finally, carefully tighten clockwise the compression nuts using an adjustable spanner. Protect the chromium plated surfaces with cloth.





Rising and falling back entry supplies

10

Place the 'O' seal into the groove adjacent to the shoulder face of the outlet nipple taking care not to damage the seal on the nipple threads. Smear the 'O' seal with a silicone based lubricant.

Ensure that compression taper faces uppermost.

Screw in, clockwise, the outlet nipple, using a 12mm A/F hexagon wrench (not supplied).

11

This completes the installation of the **Excel T.E.** and **T.H.E.** for connection to **'Rising bottom inlet and falling top inlet supplies'**.

Rising and falling back entry supplies

12

Follow the shower control installation procedure as for **'Rising bottom inlet and falling top inlet supplies'**: **instructions 1 to 4** inclusive.

13

Using a spirit level, mark the route of incoming hot and cold water supply pipes at a distance of 153mm centres.

14

Remove the plaster and brickwork to the required depth to conceal the supply pipework.

15

Install the hot and cold supply pipework ensuring that the pipe ends emerge from the wall surface at 153mm centres, and project from the finished wall surface by 13mm. Sufficient depth of concealment of the hot and cold supply pipework, and any plumbing fittings, must be allowed to ensure that the two circular recesses for the pipework concealing plates, measuring 32mm diameter x 10mm depth, can be accommodated in the wall surface.

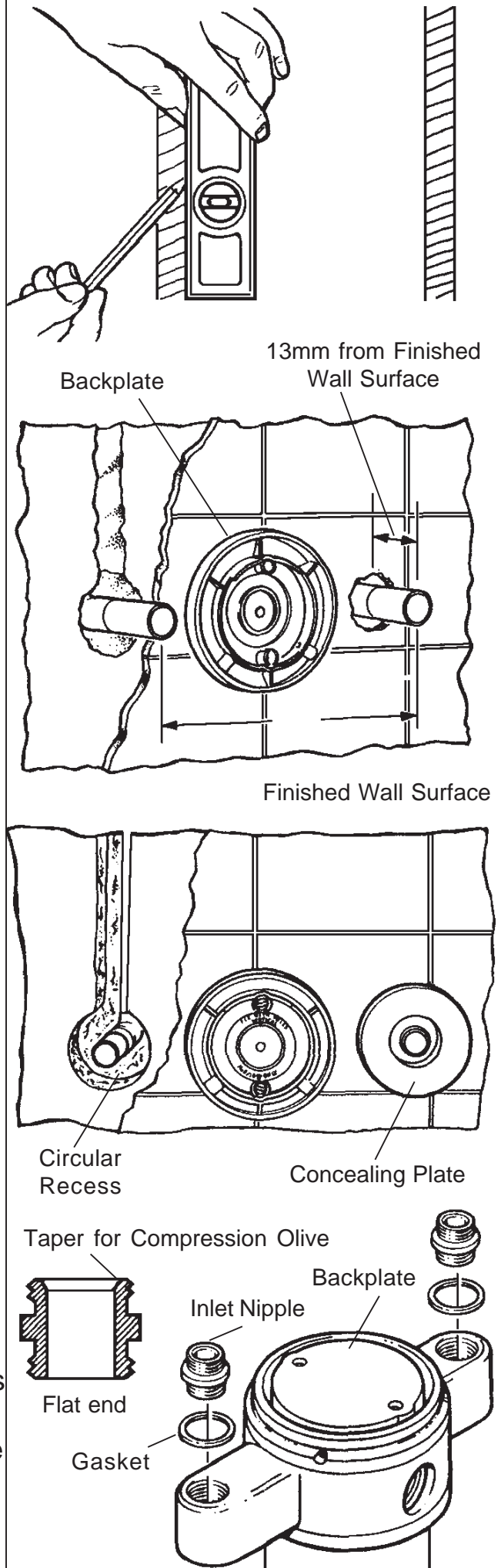
16

Fit the pipework concealing plates over hot and cold water supply pipework.

Make good the wall surface.

17

Fit the gaskets to the $\frac{1}{2}$ " BSP connector nipples and screw in the nipples with the tapered ends outermost to accept the compression fittings. Tighten the $\frac{1}{2}$ " BSP connector nipples fully with a 12mm A/F hexagon wrench (not supplied).



18

Thoroughly flush the incoming hot and cold water supply pipes before connecting the shower control (Bye-law 55). Failure to do so may result in product malfunction.

19

Slip the compression nuts and olives over the supply pipes.

Locate the shower control body onto the backplate and inlet supply pipework, then secure by tightening, clockwise, the two recessed grub screws, using the 2.5mm A/F hexagon wrench (supplied).

Tighten anti-clockwise the compression nuts using an adjustable spanner. Protect the chromium plated surfaces with cloth.

Turn on the water supplies and check for any leaks!

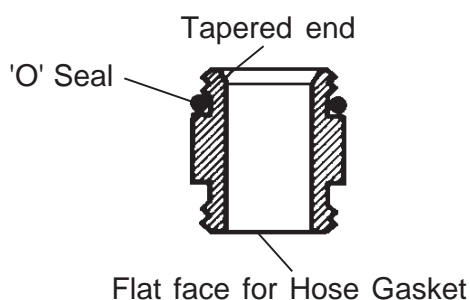
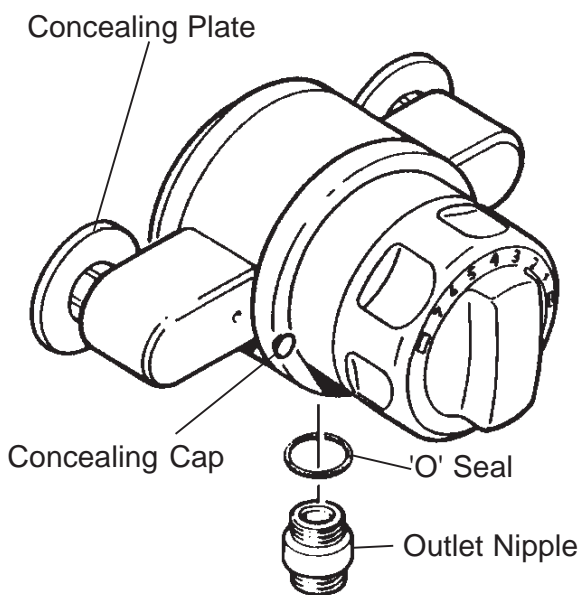
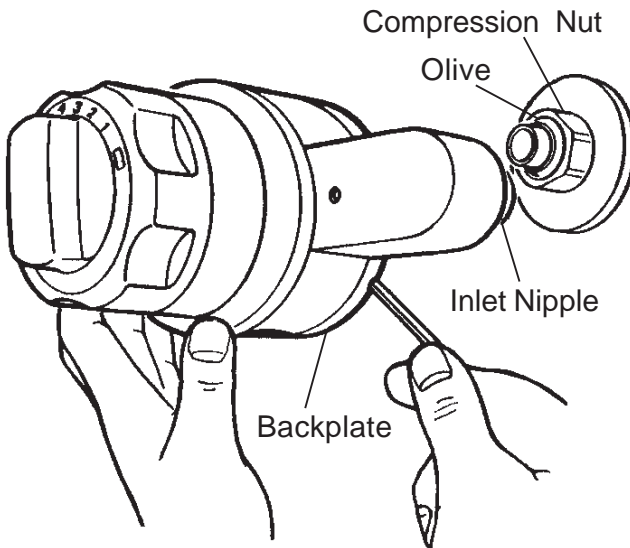
Fit the 'O' Seal to the tapered end of the outlet nipple and screw it into the shower control outlet using a 12mm A/F hexagon wrench (not supplied) This will leave the flat face for connection of the shower hose.

Shower Fittings

To install the shower fittings please refer to the appropriate section in the Installation, Operation and Maintenance Guide which accompanies the fittings.

20

This completes the installation of the **Mira Excel T.E.** and **T.H.E.** for "Rising and falling back inlet supplies".



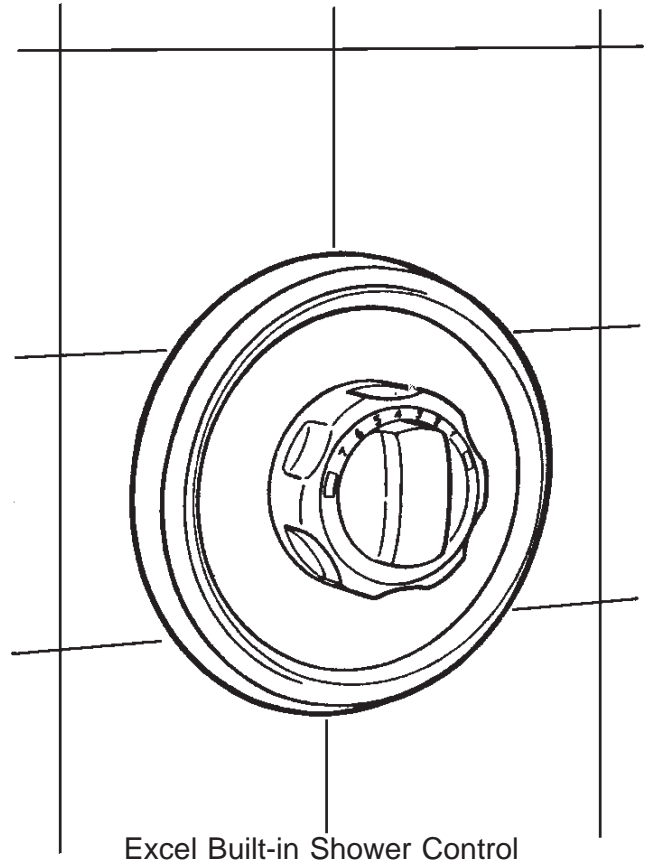
Excel T.B. & T.H.B. Built-in Shower Control

The built-in shower control incorporates an integral wall mounting bracket assembly which can be used to install the shower into a solid, dry-lined, stud partition or dry partition wall structure, shower cubicle or laminated panel. 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.

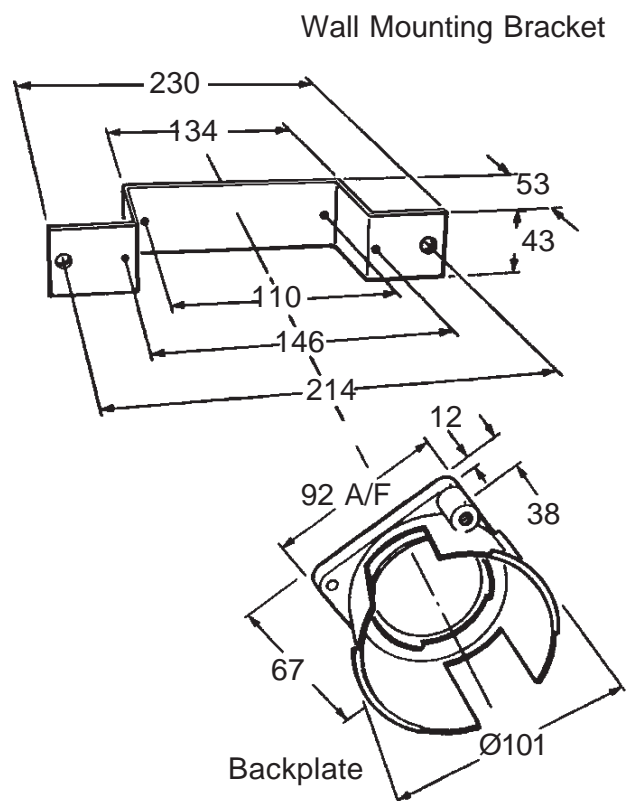
The building-in depth for the integral wall mounting bracket assembly is **58mm**. The building-in depth for the shower control (to the finished wall surface) is between **64** and **81mm**. The building-in depth calculation must include the final thickness of plaster and tiles. This dimension determines how much of the flow and temperature control knob will be visible through the concealing plate when the installation is completed.

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

Installation



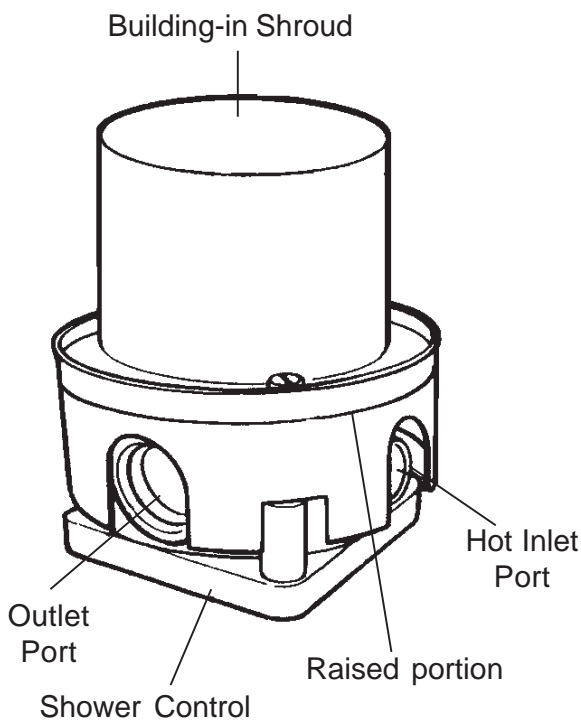
Integral Wall Mounting Bracket Assembly



(All dimensions are nominal and in millimetres)

The built-in shower control has $\frac{1}{2}$ " BSP male inlets and is supplied with 15mm compression fittings. The outlet has a $\frac{1}{2}$ " BSP tapping and supplied with a special screw-in nipple terminating in a $\frac{1}{2}$ " BSP male or 15mm compression fitting.

Solid, dry-lined, stud partition or dry partition wall structures



21

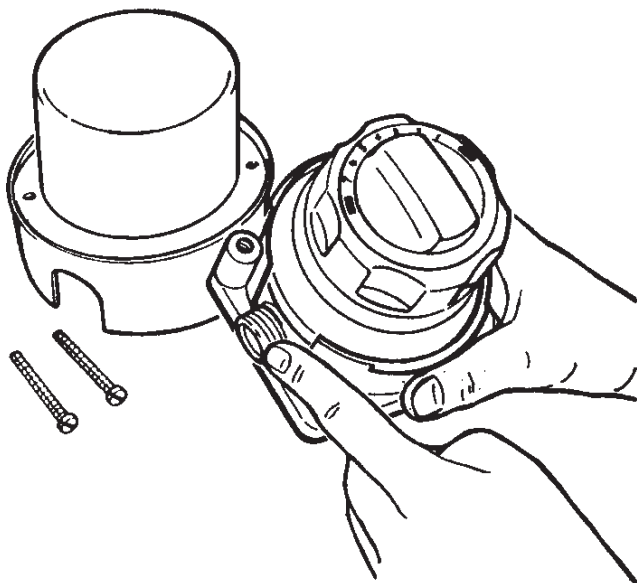
Determine whether the hot or cold water services will be connected to the shower control from the top (falling) or from the bottom (rising).

22

Remove the plastic building-in shroud. The two M5 x 50mm building-in shroud retaining screws should be screwed temporarily into the base of the shower control for use later.

23

Familiarise yourself with the hot and cold water inlet ports and outlet port They can be identified as follows:-



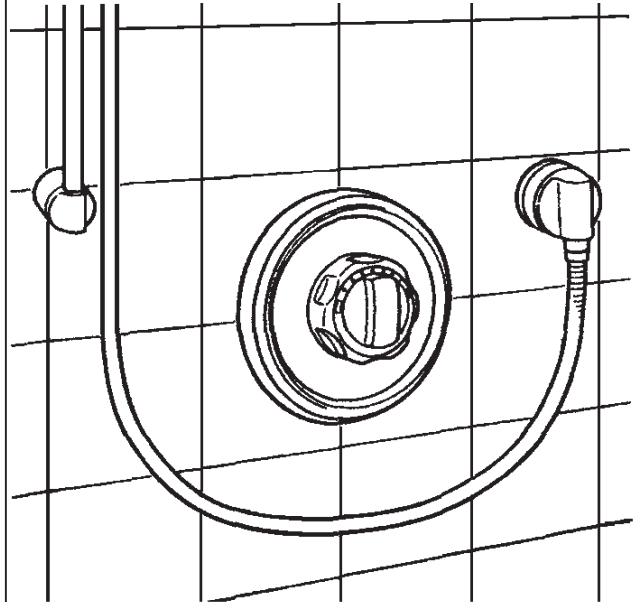
The Excel T.B. and T.H.B. are supplied with inlet connections Hot left, cold right and top outlet as standard.

To change the position of the outlet refer to the section, '**Reversed Connections**': instructions 48 to 61 inclusive.

24

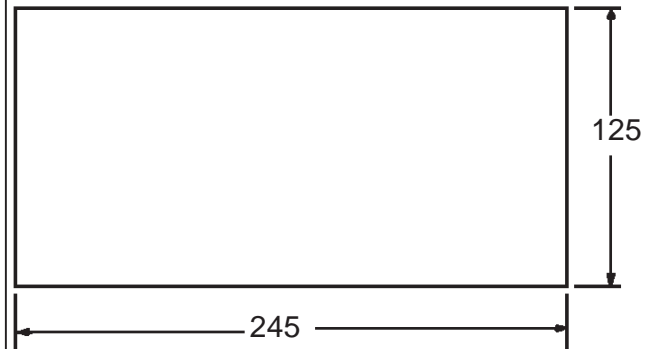
Determine the route for the incoming hot and cold water supply pipework.

The outlet pipework to a flexible shower fitting should emerge above and to one side of the shower control to allow the flexible hose to drape around the underside of the shower preventing the hose from interfering with the flow and temperature controls.



25

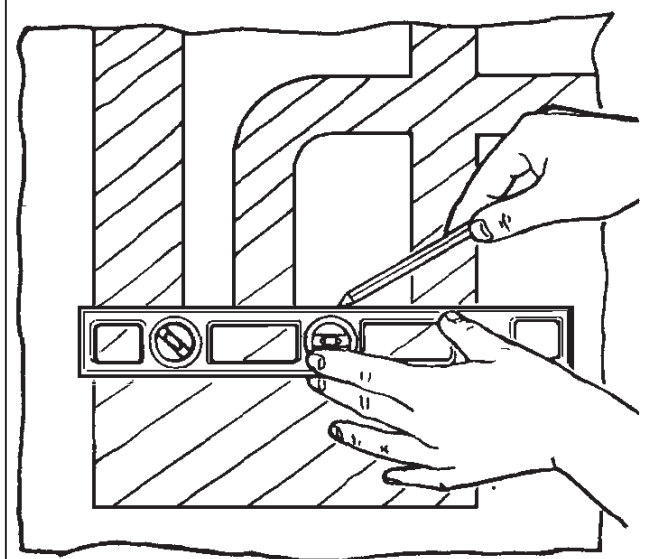
Mark the wall surface for an opening measuring approximately 245mm x 125mm.

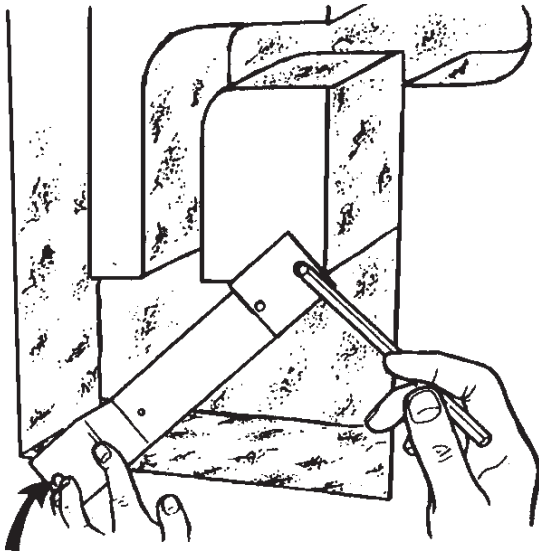


Mark the route of the incoming and outgoing pipework services.

Using the building-in shroud as a guide remove the plaster and brickwork/dry-lining to the required depth of concealment.

NOTE! that the depth of concealment must be such that the final wall surface (e.g. plaster and tiles etc.) finishes on the raised portion of the plastic building-in shroud.





26

Mark the final position in the wall chase of the two larger outer diameter fixing holes in the flanges of the wall mounting bracket. This bracket must be fixed at 45°.

27

Drill and suitably plug the two marked fixing holes.

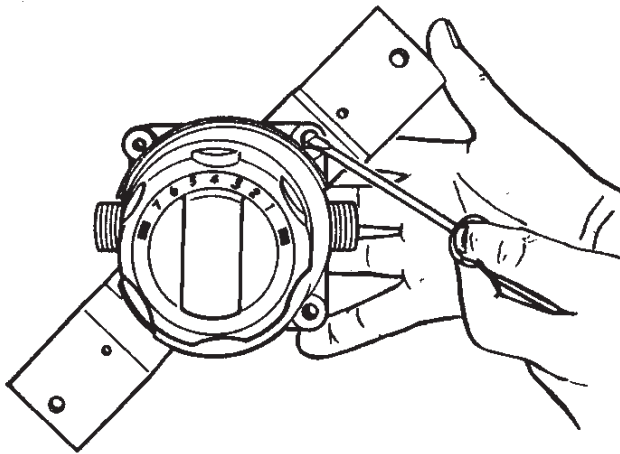
28

Thoroughly flush the incoming hot and cold water supply pipes before connecting the shower control.

A plug in pipework flushing cartridge is available as an optional extra.

29

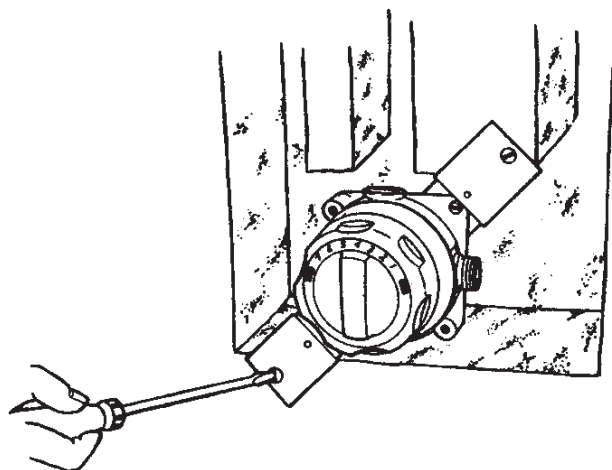
Fix the shower control to the wall mounting bracket using the two M4 x 16mm screws provided.



30

Install the shower control into the wall chase, aligning the two flange holes of the wall mounting bracket assembly with the pre-drilled fixing holes.

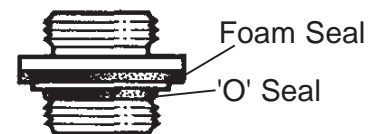
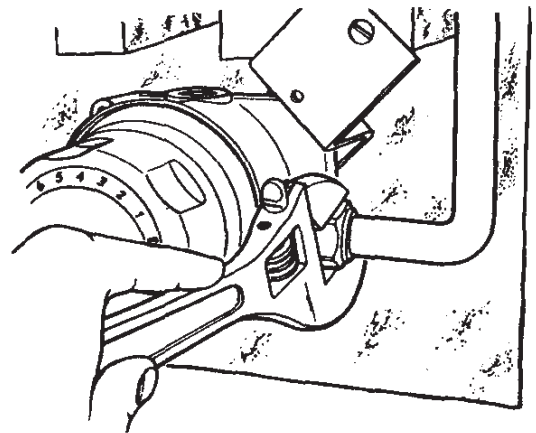
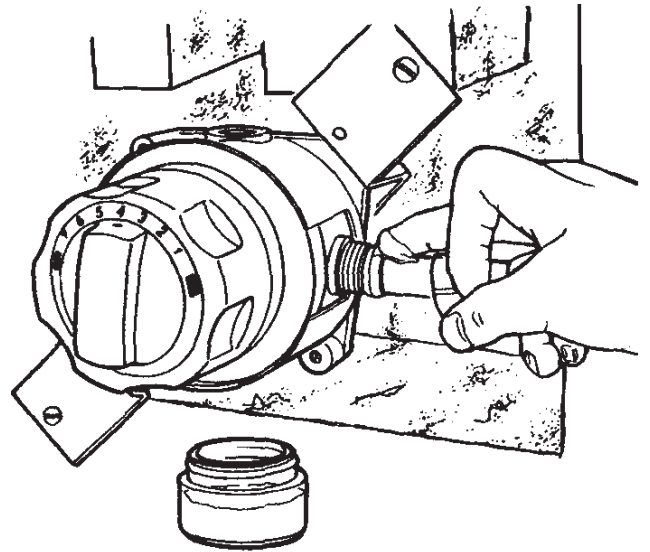
Secure the shower control with the two No.8 x 1¼" fixing screws supplied.



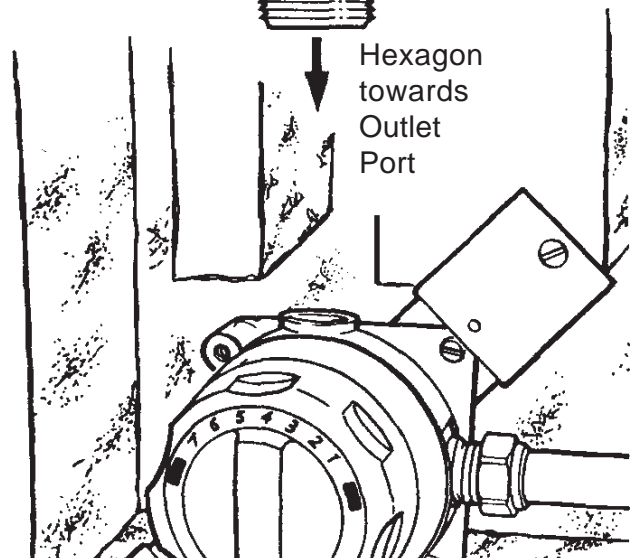
31

Make the connections to the incoming hot and cold water supply pipes in the following sequence for each port:-

- (i) Slide the compression nut, then the olive, over the pipe end. If necessary, sparingly smear liquid jointing on the pipe end and the outside of the olive.
- (ii) Insert pipe end into the opening of the inlet connector then slide the olive and compression nut into place.
- (iii) Tighten clockwise the compression nuts using an adjustable spanner.



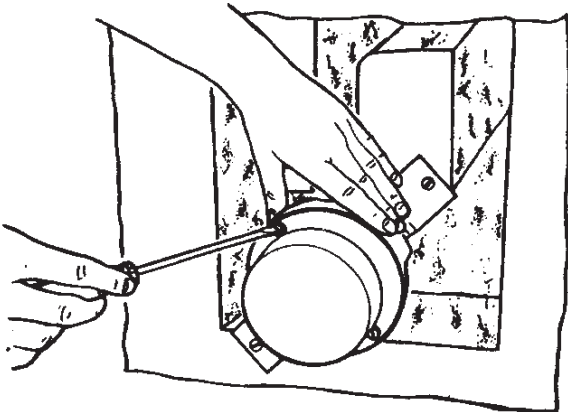
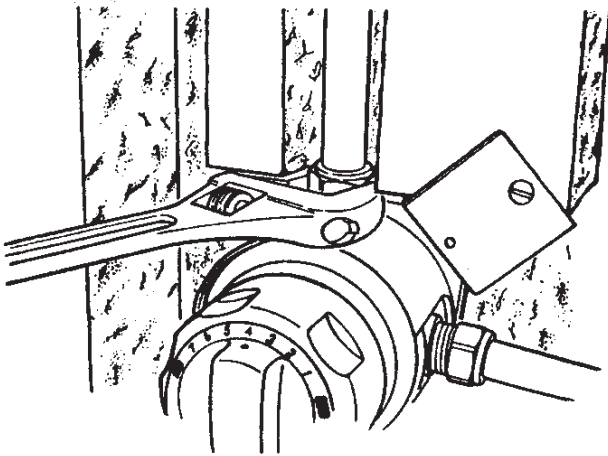
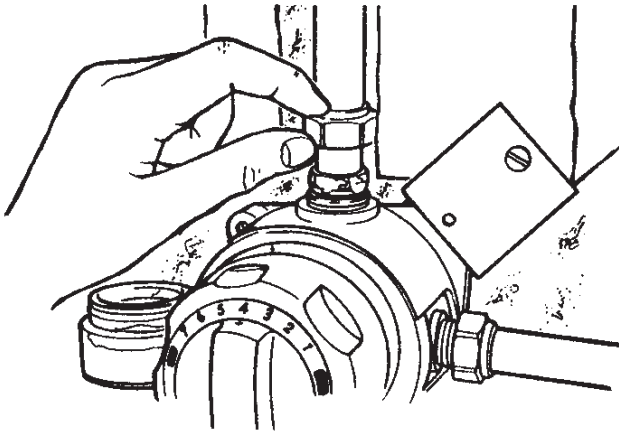
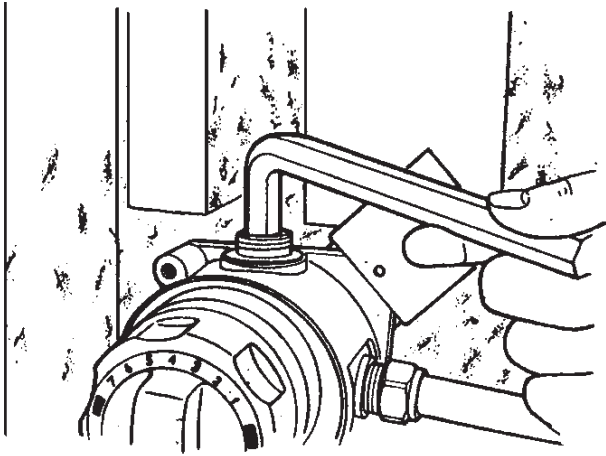
Hexagon towards
Outlet
Port



32

Make the connection to the outlet pipe in the following sequence:-

- (i) Ensure the 'O' seals are fitted as illustrated. Locate the hexagon towards the shower control outlet port. Smear the 'O' seal with a silicone based lubricant.



(ii) Screw in, clockwise, the outlet nipple, using a 12mm A/F hexagon wrench (not supplied).

(iii) Slide the compression nut, then the olive, over the pipe end. If necessary, sparingly, smear liquid jointing on the pipe end and the outside of the olive.

(iv) Insert pipe end into the opening of the outlet nipple then slide the olive and compression nut into place.

(v) Finally, carefully tighten, clockwise, the components.

Turn on the water supplies and check the pipework for any leaks!

33

Refit the plastic building-in shroud over the shower control and secure with the two M5 x 50mm shroud retaining screws, removed in **instruction 22**.

Plaster and tile up to the tapered sides of the plastic building-in shroud and, when set remove the shroud. The two M5 shroud retaining screws should be screwed temporarily into the base of the shower control for use later.

34

Fit the foam seal over the reverse side of the circular mounting bracket.

35

Fix the circular mounting bracket to the shower control body using the two M5 x 50mm screws used to retain the plastic building-in shroud.

NOTE! The bracket has been designed with semi-circular knock outs which may need to be relieved to accommodate the supply pipework under minimum building-in depth conditions.

36

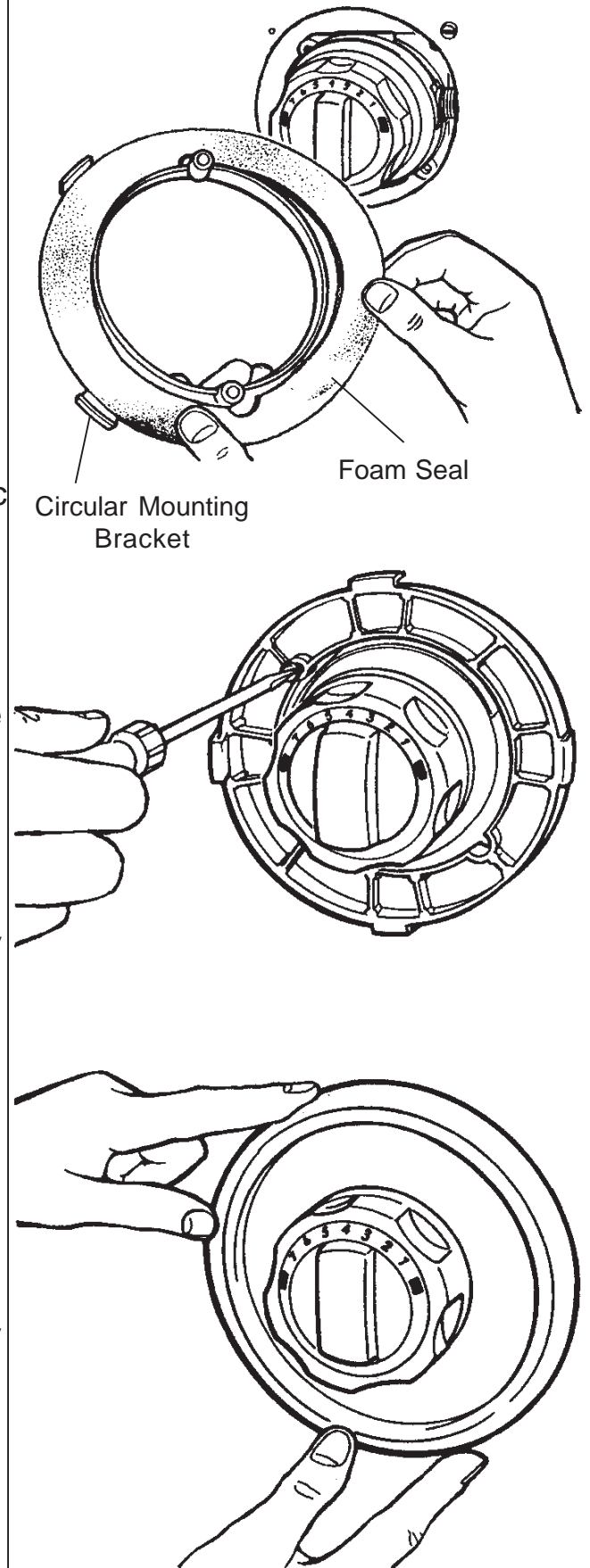
Push the concealing plate firmly over the circular mounting bracket until it locates on the four clips.

Shower Fittings

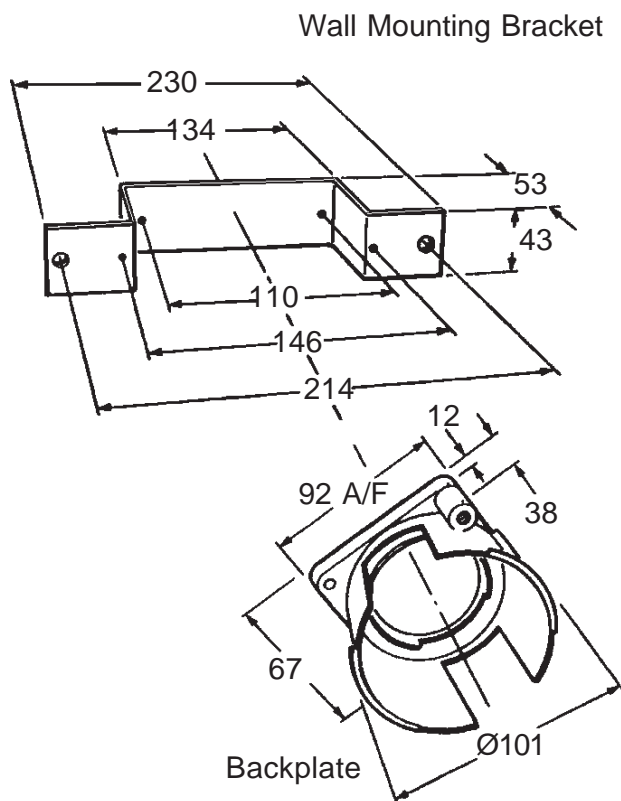
To install the shower fittings please refer to the appropriate section in the Installation, Operation and Maintenance Guide which accompanies the fittings.

37

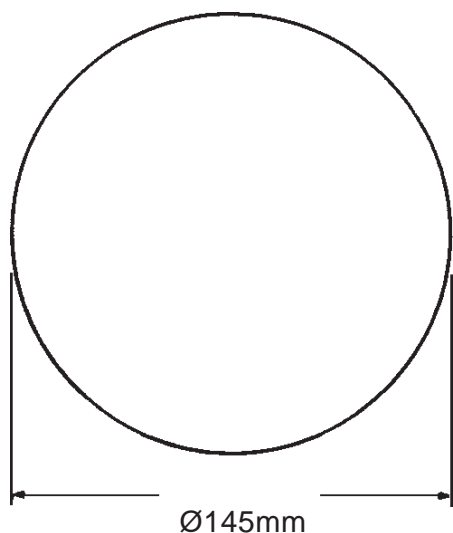
This completes the installation of the **Excel T.B. and T.H.B.** for installation into '**Solid, dry-lined, stud partition or dry partition wall structures**'.



Integral Wall Mounting
Bracket Assembly



(All dimensions are nominal and in millimetres)



Shower cubicle or laminated panel

The built-in shower control incorporates an integral wall mounting bracket assembly which can be used to install the shower into the front or back face of a shower cubicle or laminated panel.

Installation on to the front face of a shower cubicle or laminated panel.

Depending on the structure of the shower cubicle or laminated panel it may be possible to conceal the flanges of the integral wall mounting bracket assembly into the front face of the wall surface then cover over the fixings with plaster and tiles. The building-in depth for the integral wall mounting bracket assembly is **58mm**. The thickness of plaster and tiles which conceal the integral wall mounting bracket assembly flanges must be between **6** and **23mm**.

38

Follow the shower control installation procedure as for '**Solid, dry-lined, stud partition or dry partition wall structures**': instructions **21** to **24** inclusive.

39

Cut a hole in the panel measuring 145mm in diameter.

40

Follow the shower control installation procedure as for '**Solid, dry-lined, stud partition or dry partition wall structures**': instructions **26** to **36** inclusive to complete the installation.

Installation on to the back face of a shower cubicle or laminated panel.

The building-in depth for the integral wall mounting bracket assembly is **58mm**. The integral wall mounting bracket assembly can be used to install the shower control into a shower cubicle or laminated panel of between **4** and **21**mm. The building-in depth calculation must include for the final thickness of plaster and tiles.

41

Follow the shower control installation procedure as for **'Solid, dry-lined, stud partition or dry partition wall structures'**: instructions **21** to **24** inclusive.

42

Cut a hole in the panel measuring 124mm in diameter.

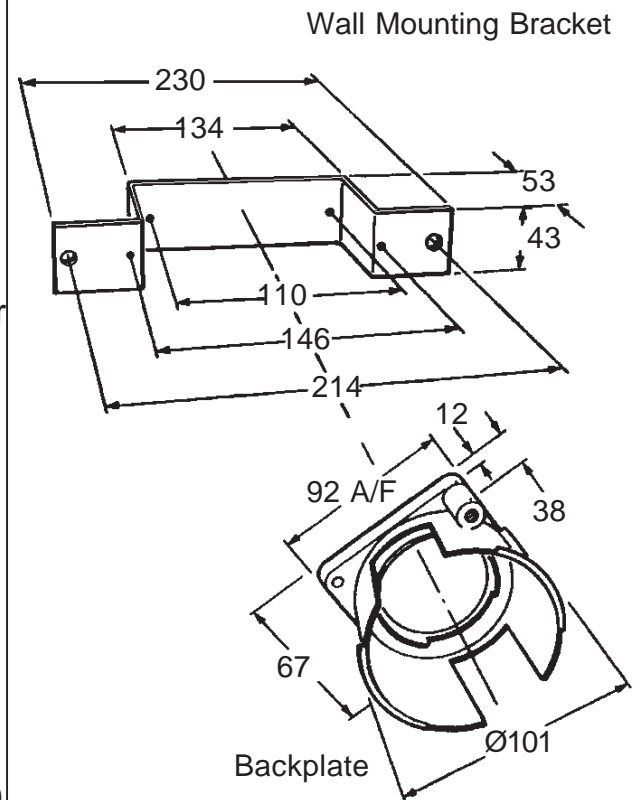
43

Using the wall mounting bracket as a template, mark the position of the two smaller diameter fixing holes on the flanges of the bracket. These should be at an angle of 45°.

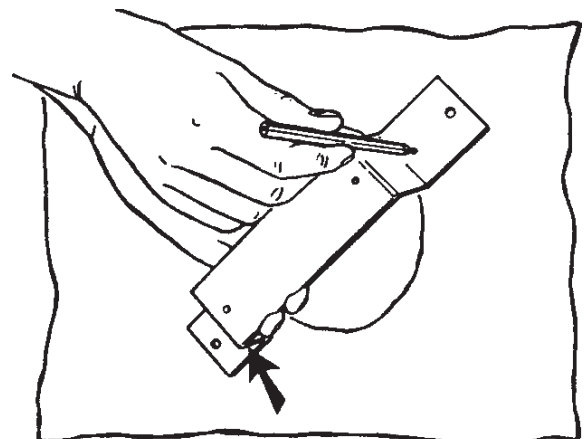
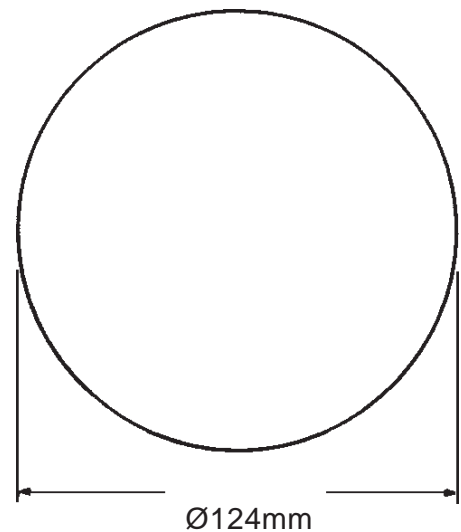
44

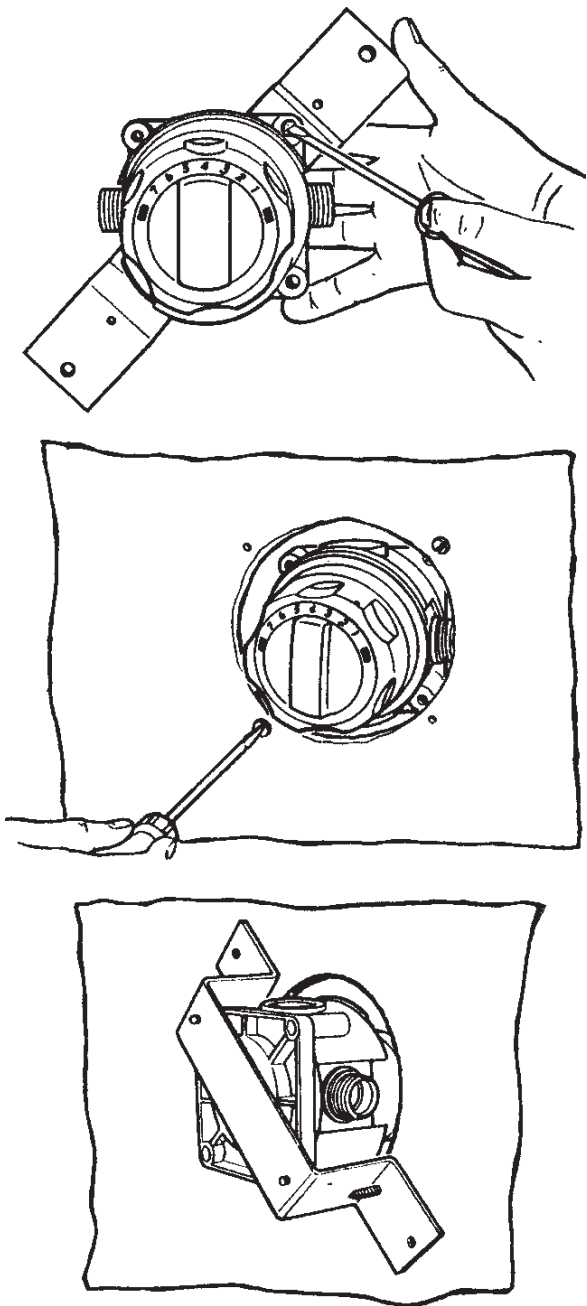
Drill the two fixing holes.

Integral Wall Mounting Bracket Assembly



(All dimensions are nominal and in millimetres)





45

Fix the shower control to the wall mounting bracket using the two M4 x 16mm screws provided.

46

Feed the shower control through the opening in the panel and fix to the panel with the two M4 x 30mm fixing screws.

47

Follow the shower control installation procedure as for **'Solid, dry-lined, stud partition or dry partition wall structures'**: instructions 31 to 36 inclusive to complete the installation.

Reversed Connections

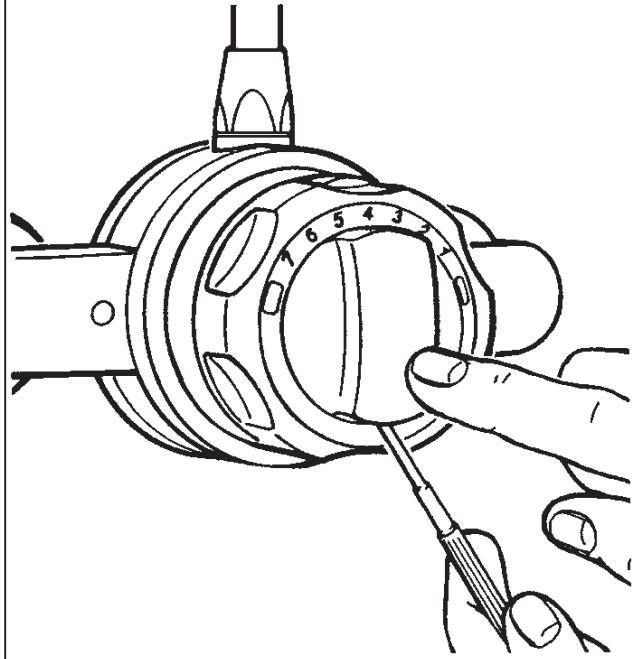
The Excel T.E. and T.H.E. are supplied with inlet connections **hot left, cold right** and **bottom outlet**. The Excel T.B. and T.H.B. are supplied with inlet connections **hot left, cold right** and **top outlet** as standard. Should the hot and cold water supplies have been incorrectly connected during installation, or an alternative outlet position required, then the following procedure should be followed.

48

Isolate the incoming hot and cold water supplies to the shower control, as necessary.

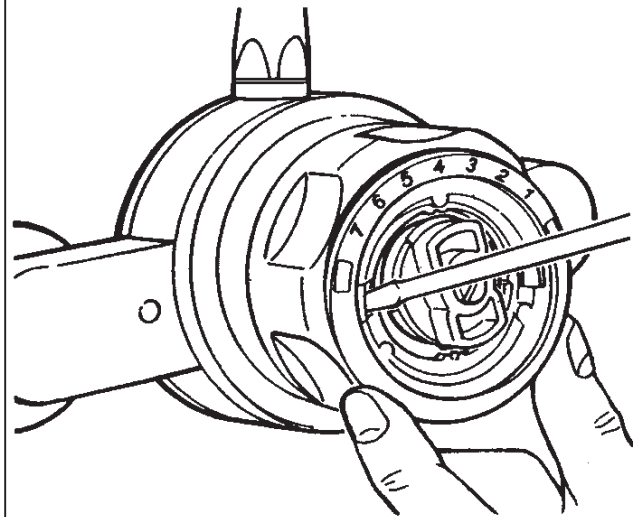
49

Gently lever off the temperature control knob, using a screwdriver.



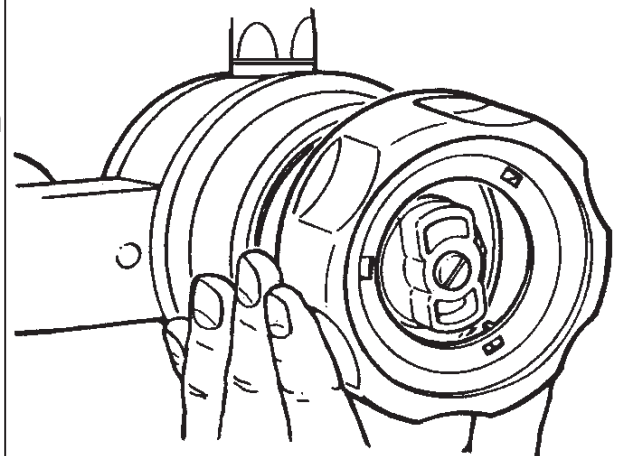
50

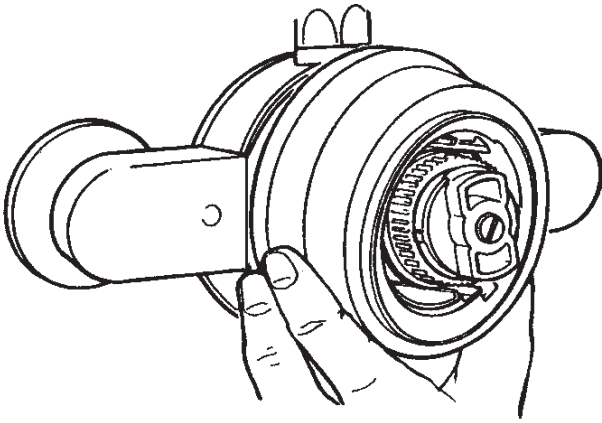
Gently lever off the numbered temperature scale, using a screwdriver.



43

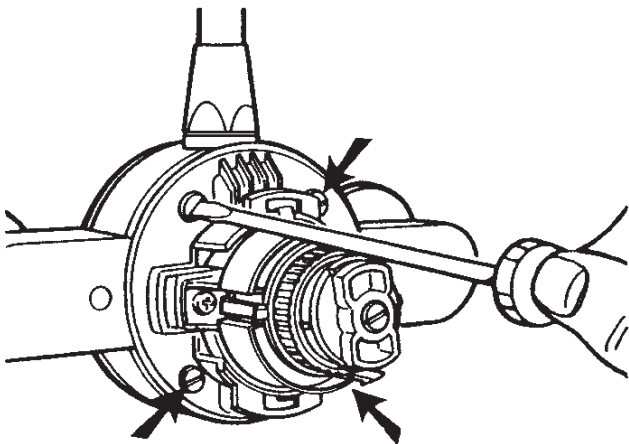
Unclip the flow control knob from the three retaining clips.





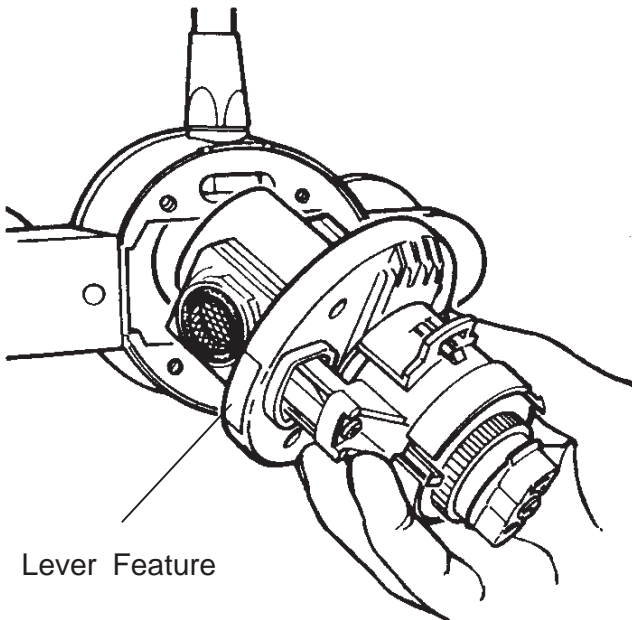
52

Unclip the cover shroud from the two retaining clips.



53

Remove the four lower cartridge assembly retaining screws. **Do not remove the screws which retain the red and blue tags.**



54

Remove the cartridge assembly from the shower control body. Note the two lever features provided to assist removal. Turn the cartridge through half a turn (180°) and push it back fully into the body. The flow control yoke assembly screws are marked with red and blue tags to assist in identifying the hot and cold water inlets.

Note! Care should be taken to avoid the loss of, or damage to, the seals on both the inlet and outlet ports to the cartridge.

Note! Use only a silicone based lubricant on any 'O' seals.

55

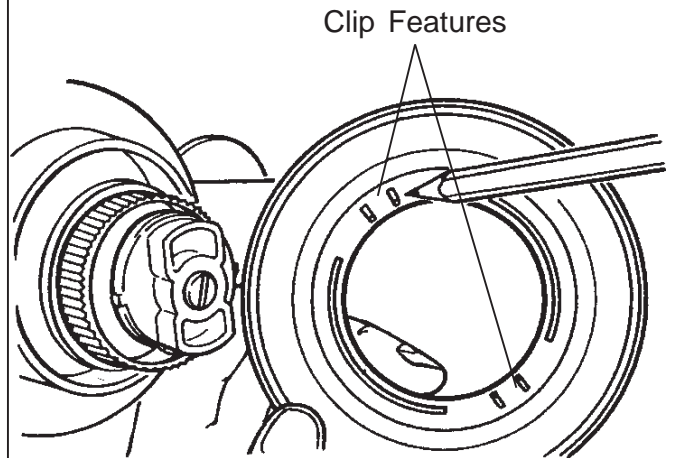
Replace the four lower cartridge assembly retaining screws.

Do not over tighten!

Lever Feature

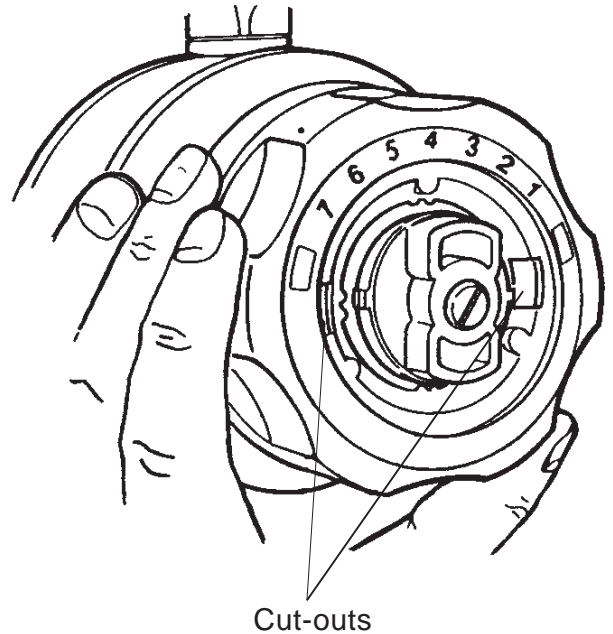
56

Refit the cover shroud. Note the two clip features on the inside rim of the shroud, these should engage with the two cut-outs in the upper flange of the cartridge assembly. (Additional line markings are provided on the front face of the shroud to make identification of the clip features easier).



57

Replace the flow control knob aligning the three cut-outs in the knob with the retaining clips.

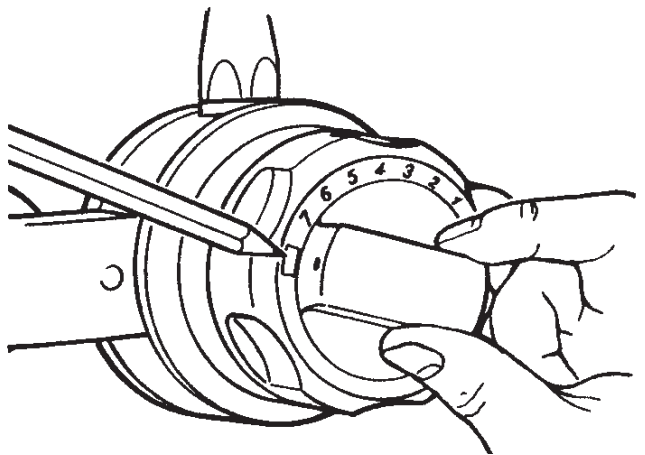


58

Refit and align the numbered temperature scale uppermost with the two cut-outs horizontal.

59

Rotate the temperature hub to the full hot or full cold position, then refit the temperature control knob with the black dot in line with the corresponding red or blue marker. If alignment cannot be achieved then the numbered temperature scale will need to be repositioned as detailed in **instruction 58**.



60

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

61

This completes the procedure for '**Reversed Connections**'.

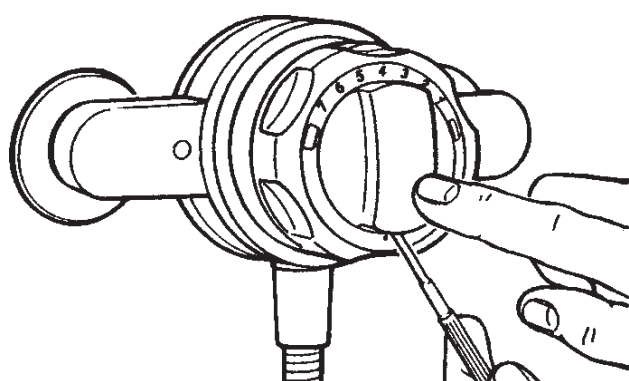
Maximum temperature setting

Mira Excel thermostatic shower controls are fully performance tested and the maximum temperature has been pre-set to approximately 45°C under ideal installation conditions at the factory. Site conditions and personal preference may dictate that the maximum temperature has to be reset.

To reset the maximum temperature ensure that an adequate supply of hot water is available at a temperature at least 12°C in excess of that required from the shower control with the temperature control knob set to full hot position. Turn the flow control knob fully anti-clockwise (maximum flow) then check the temperature at the discharge point (allow sufficient time for hot water to reach the hot inlet of the shower control). If the temperature is correct, turn the flow control knob fully clockwise to the off position as no further adjustment is necessary.

If the temperature achieved at the discharge point is unsatisfactory then adjust the maximum temperature as follows:-

Gently lever off the temperature control knob, using a screwdriver.



62

63

Identify the temperature hub, coloured yellow or green.

64

Remove the temperature hub securing screw.

65

Gently lever off the temperature hub, using a screwdriver.

Ensure the pressure washer remains in position.

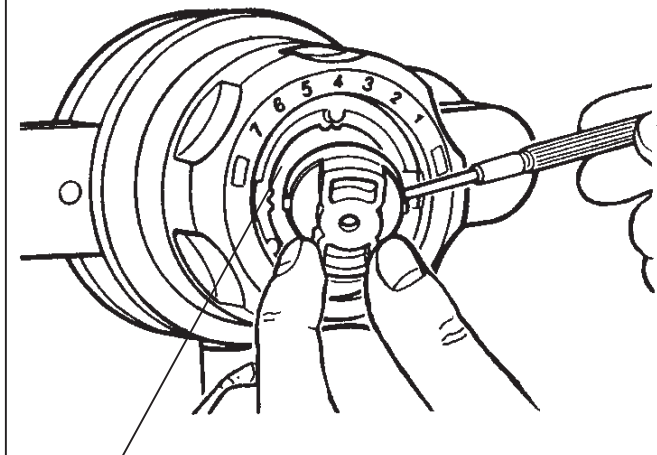
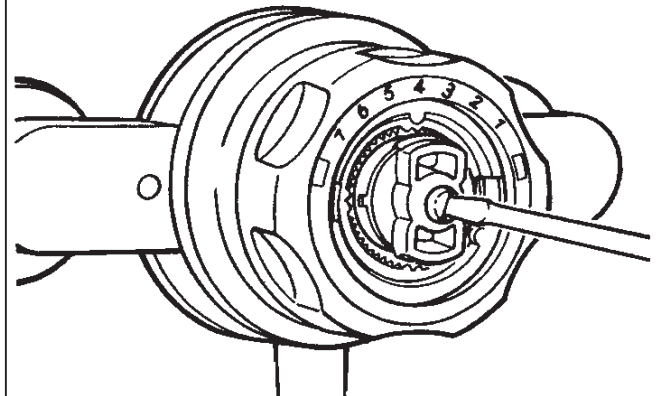
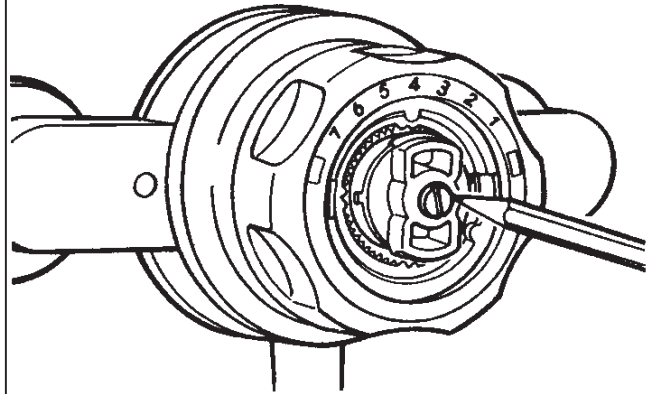
66

Turn the flow control knob fully on (outer knob).

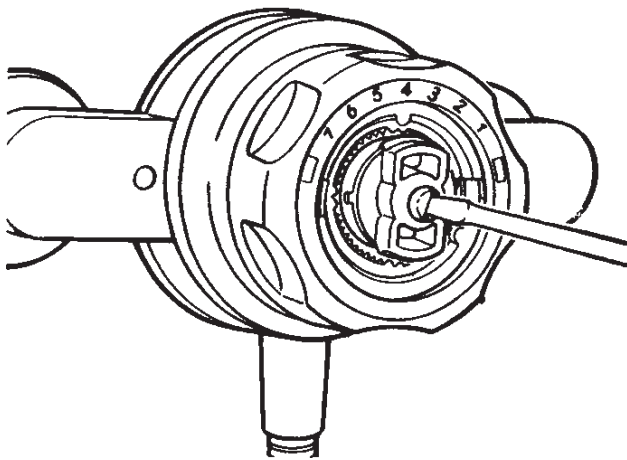
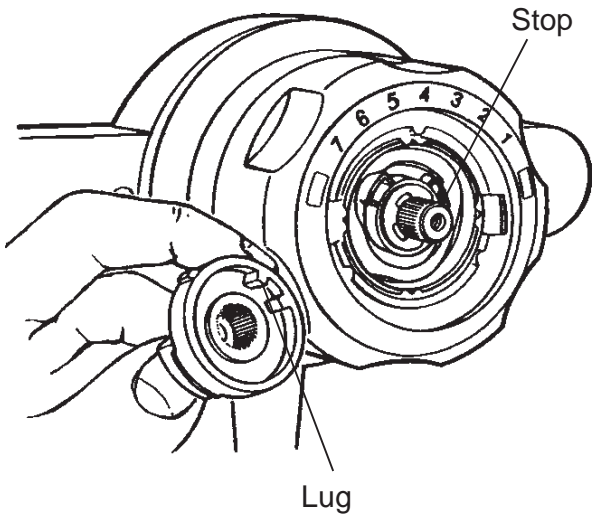
67

Turn the temperature spindle until the required maximum temperature is obtained at the discharge point, (turn anti-clockwise to increase the temperature, clockwise to decrease the temperature). When resistance is felt **DO NOT USE FORCE** to turn the spindle any further as this is the **maximum obtainable temperature** from the shower control with the available hot water supply temperature.

FORCE will **DAMAGE** the wax capsule.



Pressure Washer



68

Turn the flow control knob fully off

69

Refit the temperature hub so that the two lugs, located on the reverse side of the hub, are against the stop with an embossed symbol on the temperature cartridge, thus preventing any further anti-clockwise movement.

70

Replace the temperature hub securing screw and temperature knob.

71

Turn on the flow control knob and check that the maximum temperature setting is correct.

72

This completes the procedure for "**Commissioning: Maximum temperature setting**".

Excel T.E., T.H.E., T.B. & T.H.B.

1

Turn the flow control knob (unmarked outer knob) anti-clockwise until the desired force of water is obtained.

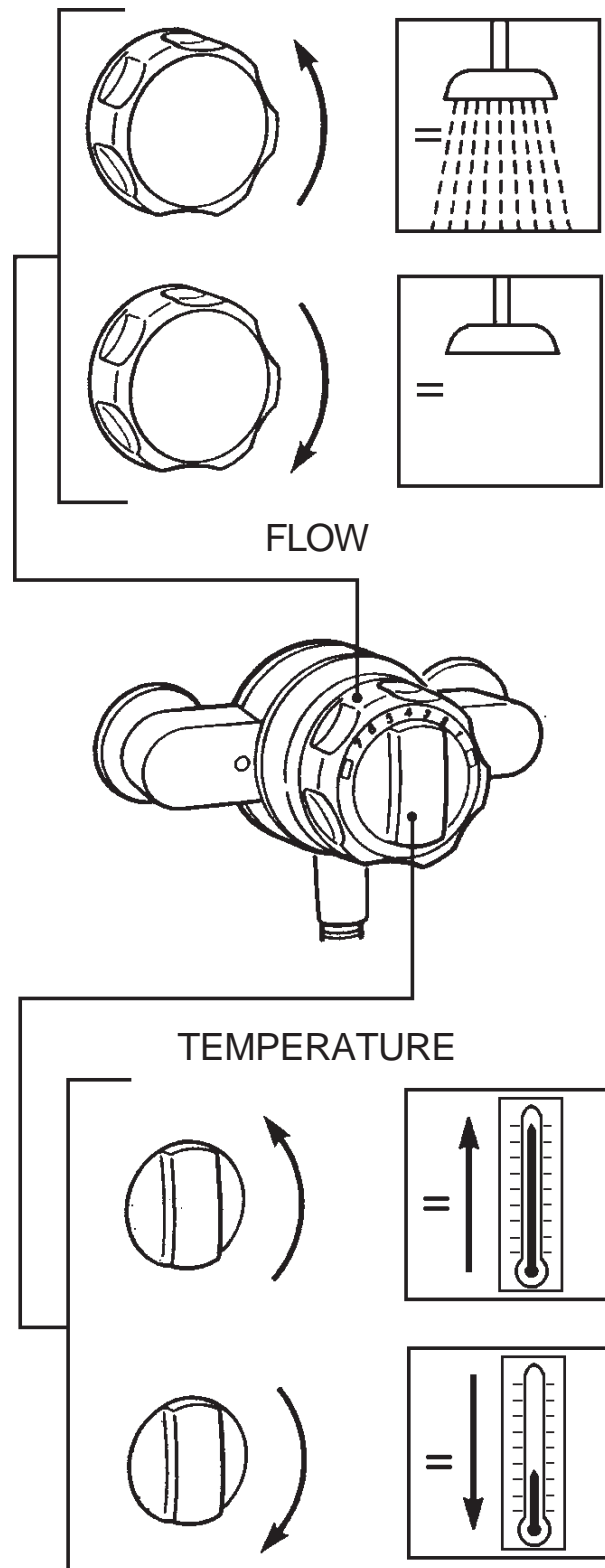
Note! When the Excel thermostatic shower control is installed with a **modulating** multi-point or combination type gas water heater, the maintained mains water pressure, and hence the flow through the heater must be sufficient to keep the burner unit in the heater ignited. Therefore, it is important to ensure that the flow control on the Excel thermostatic shower control is virtually fully open.

2

Turn the temperature control knob (inner knob) in the direction of the red indicator (anti-clockwise) for warmer water and in the direction of the blue indicator (clockwise) for cooler water, until the desired temperature of water is achieved.

For safety reasons this product is fitted with a maximum temperature stop. This setting must be checked and adjusted as necessary to suit both site conditions and user's comfort. Detailed instructions are contained in the section entitled '**Commissioning: Maximum temperature setting**'.

Operation



Fault Diagnosis

The Mira Excel thermostatic shower controls are fully performance tested after assembly. In the unlikely event that you experience problems with your shower the following procedure will enable you to undertake basic fault finding before contacting the Caradon Mira Customer Support Department for further assistance or spare parts as necessary (refer to rear cover).

Malfunction	Cause	Remedy
No flow or low flow rate from shower head	(a) Sprayplate blocked (b) Stop or servicing valve in supply pipework partially closed (c) Head of water below minimum required (d) Inlet strainer blocked	Clean sprayplate Open valve Raise cistern or fit Mira pump Clean inlet strainer
Blend temperature unstable	(a) Flow rate below 3 l/min (b) Stop or servicing valve in supply pipework partially closed (c) Sprayplate blocked (d) Inlet strainer blocked	Fit high capacity sprayplate. Raise cistern or fit Mira pump Open valve Clean sprayplate Clean inlet strainer
Shower temperature too hot	Maximum temperature incorrectly set	Reset maximum temperature
Shower temperature too cold	(a) Hot water cylinder temperature set less than 12°C above shower temperature (b) Maximum temperature incorrectly set	Adjust hot water cylinder temperature Reset maximum temperature
Temperature control knob stiff to operate	Impaired free movement of cartridge internals	Obtain replacement cartridge assembly

Malfunction	Cause	Remedy
Flow control knob stiff to operate	Impaired free movement of cartridge internals	Obtain replacement cartridge assembly
Drip from shower head*	(a) Angular movement of flow control knob incorrectly calibrated (b) Defective flow control assembly	Contact the Mira Service Office Obtain replacement cartridge assembly
Drip from shower body	Defective inlet seals or outlet seal	Obtain seal pack
Poor temperature control	Impaired free movement of cartridge internals due to debris	With flow control open rotate temperature control knob from full hot to full cold in quick succession
Unable to obtain required shower temperature; only full hot or full cold available	(a) Reversed supplies (b) Blocked cartridge (c) Inlet strainer blocked	See 'Reversed Connections' Obtain replacement cartridge assembly. Clean inlet strainer

*A small amount of water may be retained in the shower head after the shower control is turned off. This may drain off over a period of minutes and should not be confused with a 'Defective flow control assembly'.

Notes

Maintenance

Mira Excel thermostatic shower controls are precision engineered to provide satisfactory performance provided they are installed and used in accordance with our recommendations contained in the section **'Installation Notes'**.

The shower control is designed for the minimum of maintenance in normal domestic use. If either the flow or temperature controls malfunction then this will necessitate a complete cartridge replacement.

Under no circumstances should any attempt be made to dismantle the cartridge. There are no user serviceable parts inside. The cartridge is calibrated during assembly.

You may, if you wish, choose to engage the services of a Mira Service Engineer or Agent the terms of which are outlined on the back page of this guide.

In the event of damage to knob or trim components then these are available as replacement spares items from the Mira Service Office.

WARNING! - Cleaning

Many household cleaners contain mild abrasives or chemicals and should never be used for cleaning **chrome plated, light golden colour finish or plastic fittings**. These finishes should be cleaned using a mild washing up detergent or soap solution and a soft cloth, then wiped dry.

Light golden colour finish is softer than chrome and its abrasive resistance much less. When cleaning or using tools during maintenance extra care must be taken.

Cartridge interchange

Should the cartridge require to be interchanged then the following procedure should be followed.

1

Isolate the incoming hot and cold water supplies to the shower control, as necessary.

2

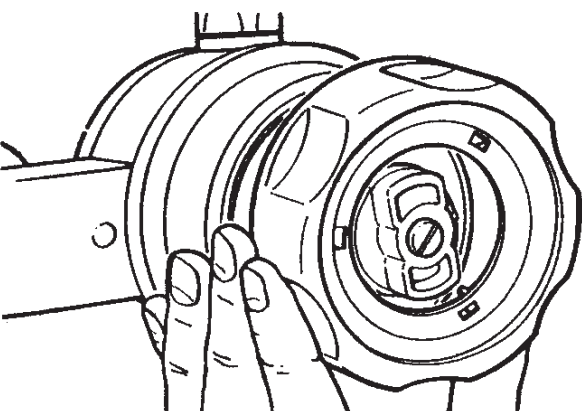
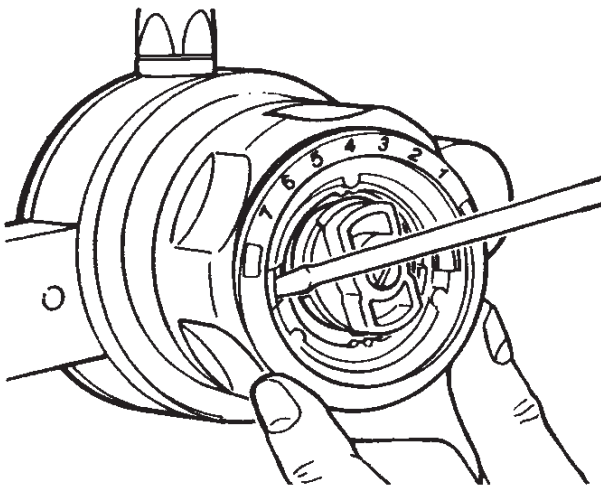
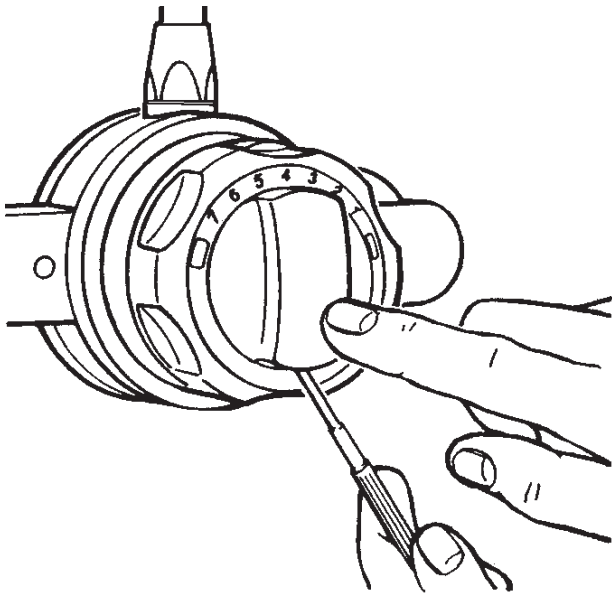
Gently lever off the temperature control knob, using a screwdriver.

3

Gently lever off the numbered temperature scale, using a screwdriver.

4

Unclip the flow control knob from the three retaining clips.



5

Unclip the cover shroud from the two retaining clips.

6

Remove the four lower cartridge assembly retaining screws. Do not remove the screws which retain the red and blue tags.

7

Remove the cartridge assembly from the shower control body and fit the replacement cartridge. Note the two lever features provided to assist removal. The flow control yoke assembly screws are marked with red and blue tags to assist in identifying the hot and cold water inlets.

Note! Care should be taken to avoid the loss of, or damage to, the seals on both the inlet and outlet ports to the cartridge.

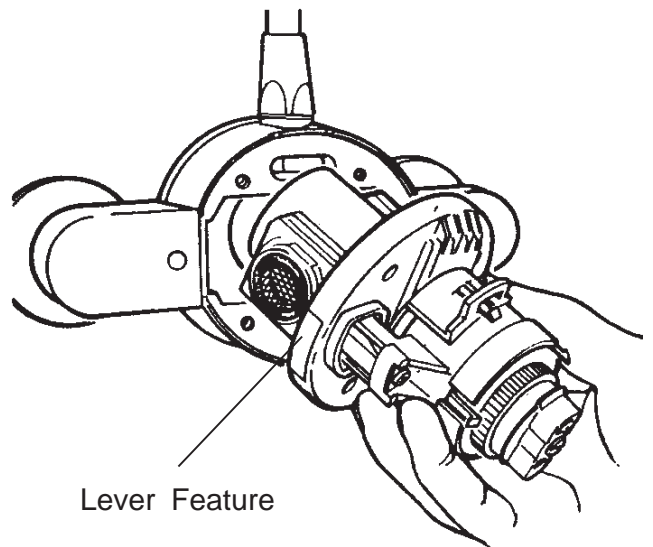
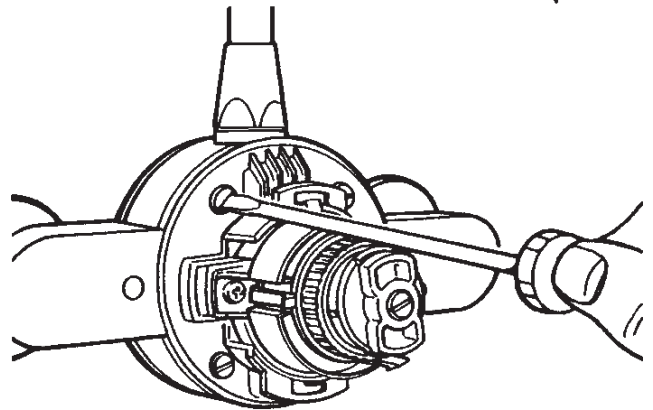
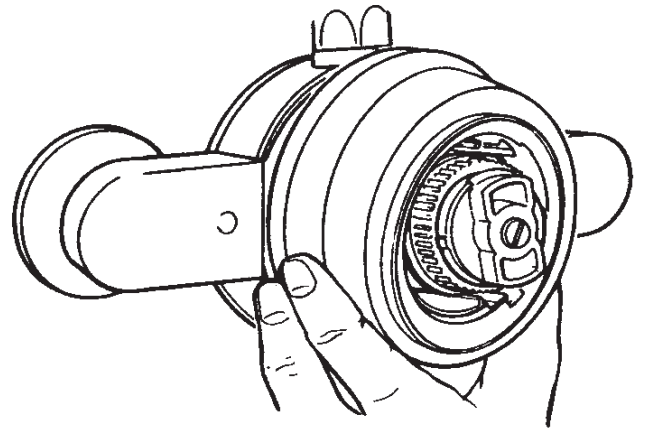
Note! Use only a silicone based lubricant on any 'O' seals.

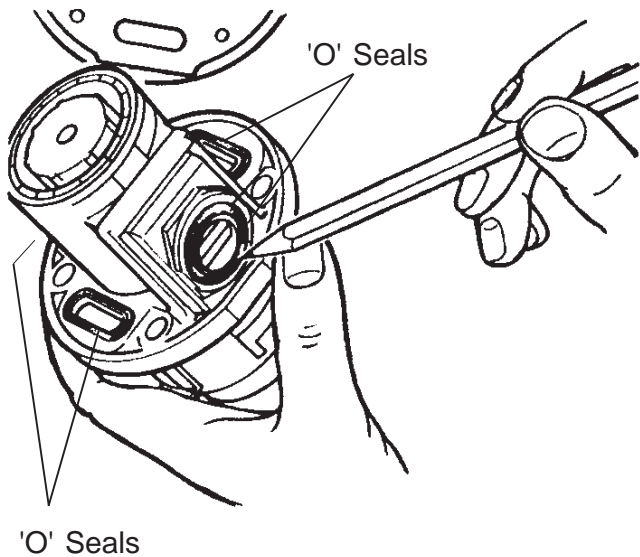
'O' seal replacement and inlet strainer cleaning

8

Should the 'O' seals require replacing or the inlet strainers require cleaning, then the following procedure should be followed.

To remove the cartridge refer to the section '**Cartridge Interchange**': instructions 1 to 6 inclusive.



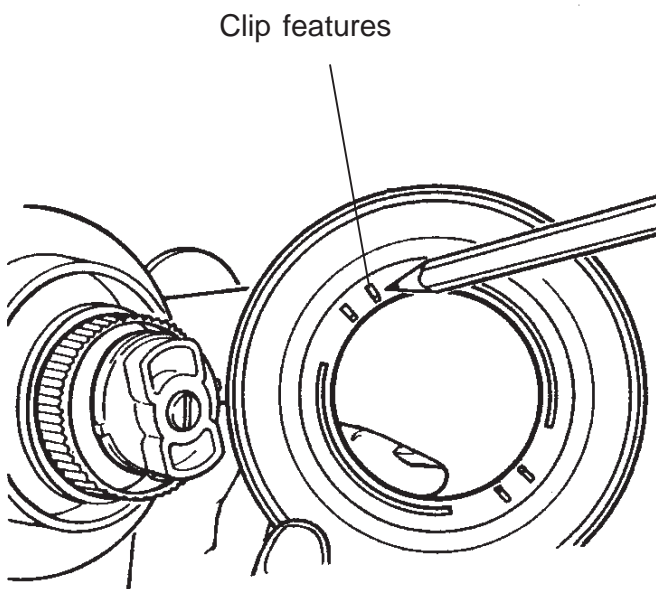


9

Remove the cartridge assembly from the shower control body. Note the two lever features provided to assist removal. Check the seals for any signs of damage and replace if necessary. Examine the outlet oval 'O' seal groove and brass seal faces of the shower control body for any signs of pitting. Replace the brass body if necessary.

Inspect the inlet strainers for debris and clean if necessary. Ensure that the inlet strainers are fitted squarely and flush into the inlet port recess of the cartridge.

Note! Use only a silicone based lubricant on any 'O' seals.



10

Replace the four lower cartridge assembly retaining screws. **Do not over tighten!**

11

Refit the cover shroud. Note the two clip features on the inside rim of the shroud, these should engage with the two cut-outs in the upper flange of the cartridge assembly. (Additional line markings are provided on the front face of the shroud to make identification of the clip features easier).

12

Replace the flow control knob aligning the three cut-outs in the knob with the retaining clips.

13

Refit and align the numbered temperature scale uppermost with the two cut-outs horizontal.

14

Rotate the temperature hub to the full hot or full cold position, then refit the temperature control knob with the black dot in line with the corresponding red or blue marker. If alignment cannot be achieved then the numbered temperature scale will need to be repositioned as detailed in **instruction 13**.

15

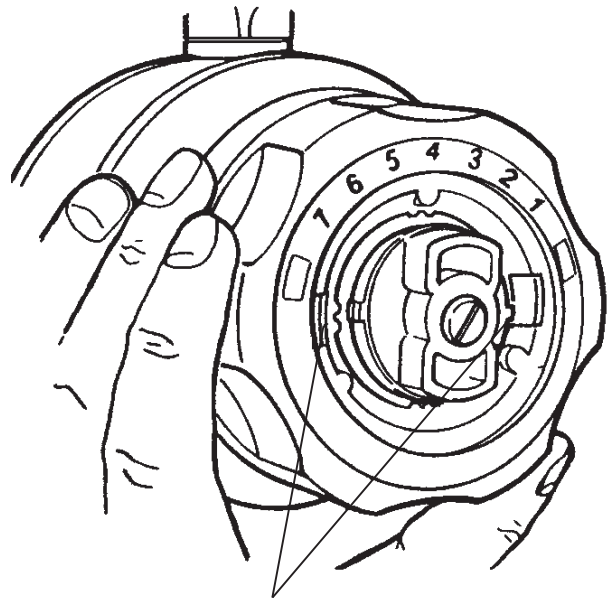
Restore the hot and cold water supplies and check for any leaks.

16

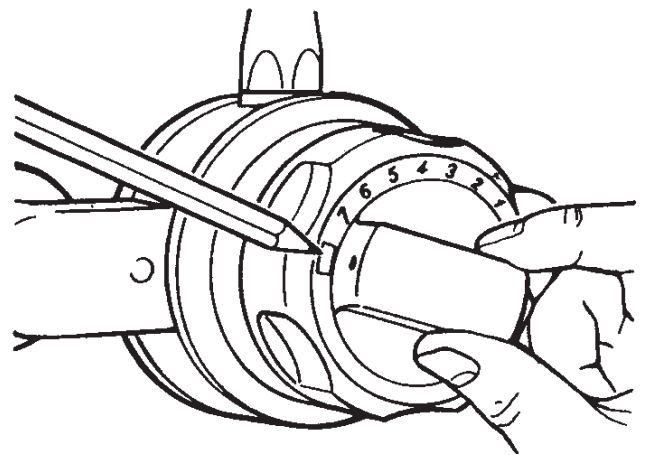
Turn on the flow control knob and check that the maximum temperature setting is correct. If adjustment is required then follow **instructions 62 to 71** inclusive contained in the previous section, **'Commissioning: Maximum temperature setting'**.

17

This completes the procedure for **'Cartridge interchange and 'O' seal replacement'**.



Cut-outs



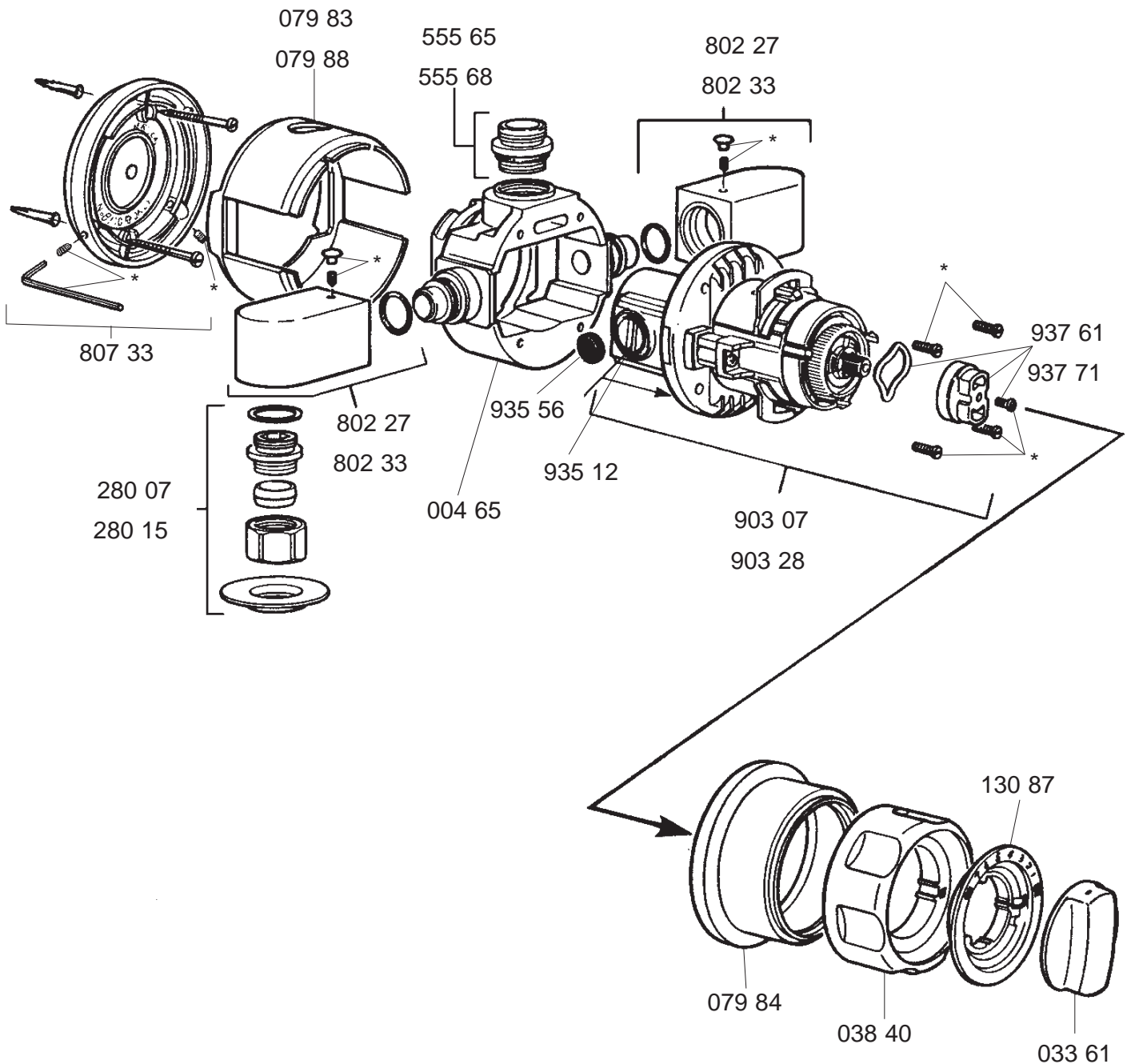
Parts List

Excel T.E. & T.H.E. Exposed Shower Control

Part No.	Description
00465	Body, Excel TE. & THE.
03361	Temperature Knob
03840	Flow Knob
07983	Body Shroud - chrome
07984	Cover Shroud
07988	Body Shroud - light golden
13087	Temperature Indicator Trim, Excel TE. & TB.
28007	Compression Fitting - chrome
28015	Compression Fitting - light golden
55565	Outlet Nipple Assembly, Excel T.E. & T.H.E. - chrome <i>Comprising:</i> 1 Outlet Nipple - chrome, 1 x 'O' Seal, 1 x Grease Sachet
55568	Outlet Nipple Assembly, Excel T.E. & T.H.E. - light golden <i>Comprising:</i> 1 x Outlet Nipple - light golden, 1 x 'O' Seal, 1 x Grease Sachet
80227	Inlet Elbow Assembly, Excel TE. & T.H.E. - chrome <i>Comprising:</i> 1 x Inlet Elbow, Excel - chrome, 1 x Grub Screw 1 x Concealing Cap, 1 x 'O' Seal, 1 x Grease Sachet, 1 x Wrench Key
80233	Inlet Elbow Assembly, Excel T.E. & T.H.E. - light golden <i>Comprising:</i> 1 x Inlet Elbow, Excel - light golden, 1 x Grub Screw, 1 x Concealing Cap, 1 x 'O' Seal, 1 x Grease Sachet, 1 x Wrench Key
80733	Backplate Assembly, Excel T.E. & T.H.E. <i>Comprising:</i> 1 x Backplate, 2 x Grub Screw, 2 x Wall Screw No. 8 x 1 ³ / ₄ " 2 x Wall Plug, 1 x 2.5mm A/F Hexagon Wrench
90327	Cartridge Assembly, Excel TE. & T.B. <i>Comprising:</i> Cartridge, 2 x 'O' Seal (inlet ports), 2 x Oval 'O' Seal (outlet ports), 1 x Grease Sachet
90328	Cartridge Assembly, Excel T.H.E. & T.H.B. <i>Comprising:</i> Cartridge, 2 x 'O' Seal (inlet ports), 2 x Oval 'O' Seal (outlet ports), 1 x Grease Sachet
93202	Component Pack (as supplied with product) <i>Comprising:</i> 2 x Olives, 2 x Fibre Gaskets, 2 x Wall Plug, 2 x Fixing Screw, 1 x 'O' Seal, 1 x Concealing Caps (set), 1 x Hexagon Wrench
93512	Seal Pack <i>Comprising:</i> 2 x 'O' Seal (inlet ports), 2 x Oval 'O' Seal (outlet ports), 1 x 'O' Seal (outlet nipple), 1 x Foam Seal (outlet nipple), 1 x Grease Sachet
93556	Inlet Strainer Pack <i>Comprising:</i> 2 x Inlet Strainers (high pressure), 2 x Inlet Strainers (low pressure)

Part No. Description

- *937 14 Component Pack, Excel T.E. & THE.
Comprising: 1 x Screw M4 x 12mm (hub retaining screw), 4 x Screw M5x16mm (cartridge cover retaining screws), 2 x Grub Screw (inlet elbow), 2 x Grub Screw (backplate), 1 x 2.5mm A/F Hexagon Wrench, 1 x Concealing Caps (set)
- 937 61 Hub Pack (low pressure)
Comprising: 1 x Hub (yellow), 1 x Retaining Screw, 1 x Pressure Washer
- 937 71 Hub Pack (high pressure)
Comprising: 1 x Hub (green), 1 x Retaining Screw, 1 x Pressure Washer



Parts List

Excel T.B. & T.H.B. Built-in Shower Control

Part No.	Description
004 66	Body, Excel T.B. & T.H.B.
033 61	Temperature Knob
038 40	Flow Knob
076 09	Concealing Plate, Excel T.B. & T.H.B. - chrome
076 15	Concealing Plate, Excel TB. & T.H.B. - light golden
076 21	Concealing P[ate, Excel T.B. & T.H.B. - white
079 84	Cover Shroud
119 85	Wall Mounting Bracket
130 87	Temperature Indicator Trim, Excel TE. & T.B.
555 67	Outlet Nipple Assembly, Excel T.B. & T.H.B. <i>Comprising:</i> 1 x Outlet Nipple, 1 x Foam Seal, 1 x 'O' Seal, 1 x Grease Sachet
641 86	Foam Seal, Excel T.B. & T.H.B. (concealing plate)
805 49	Circular Mounting Bracket Assembly, Excel T.B. & T.H.B. <i>Comprising:</i> 1 x Circular Mounting Bracket, 1 x Seal
● 807 28	Backplate Assembly, Excel T.B. & T.H.B. <i>Comprising:</i> 1 x Backplate, 2 x Grub Screw, 2 x Wall Screw No. 8 x 1 ³ / ₄ ", 2 x Wall Plug, 1 x 2.5mm A/F Hexagon Wrench
903 27	Cartridge Assembly, Excel T.E. & T.B. <i>Comprising:</i> Cartridge, 2 x 'O' Seal (inlet ports), 2 x Oval 'O' Seal (outlet ports), 1 x Grease Sachet
903 28	Cartridge Assembly, Excel T.H.E. & T.H.B. <i>Comprising:</i> Cartridge, 2 x 'O' Seal (inlet ports), 2 x Oval 'O' Seal (outlet ports), 1 x Grease Sachet
932 04	Inlet Compression Fitting Pack <i>Comprising:</i> 1 x Olive, 1 x Compression Nut
935 12	Seal Pack <i>Comprising:</i> 2 x 'O' Seal (inlet ports), 2 x Oval 'O' Seal (outlet ports), 1 x 'O' Seal (outlet nipple), 1 x Foam Seal (outlet nipple), 1 x Grease Sachet
935 56	Inlet Strainer Pack <i>Comprising:</i> 2 x Inlet Strainers (high pressure), 2 x Inlet Strainers (low pressure)
◆ 937 59	Screw Pack, Excel TB. & T.H.B. <i>Comprising:</i> 2 x Screw M5 x 50mm (shroud/shower control), 2 x Screw M4 x 16mm, 2 x Screw M4 x 30mm (wall mounting bracket)

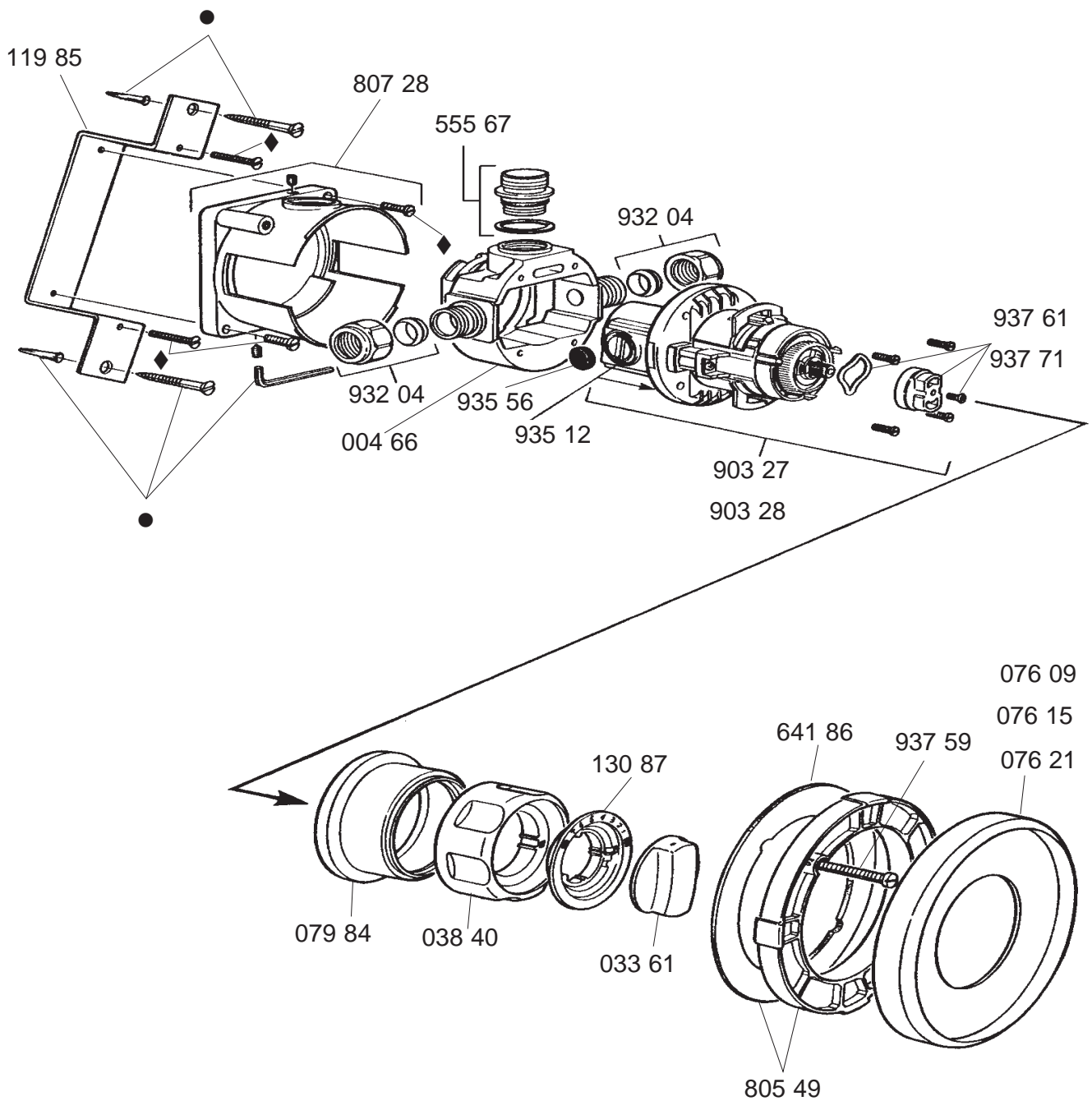
Part No. Description

937 61 Hub Pack (low pressure)

Comprising: 1 x Hub (yellow), 1 x Retaining Screw, 1 x Pressure Washer

937 71 Hub Pack (high pressure)

Comprising: 1 x Hub (green), 1 x Retaining Screw, 1 x Pressure Washer



Notes

Notes

CUSTOMER CARE

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:

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

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. Spare parts 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 should only be fitted by competent persons.

Service

Our Service Force is available to provide a quality service at a reasonable cost. You will have the assurance of a Mira trained engineer/agent, genuine Mira spare parts and a 12 month guarantee on the repair.

Payment should be made directly to the engineer/agent using Visa, MasterCard or a cheque supported by a banker's card.

To Contact Us

England, Scotland, Wales and Northern Ireland

Mira Showers Customer Services

Telephone: 0870 241 0888, Mon to Fri 8:00 am - 5:30 pm
Sat 8:30 am - 3:30 pm

E-mail: technical@mirashowers.com

Fax: 01242 282595

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

Eire

Modern Plant Ltd (Dublin)

Telephone: 01 459 1344, Mon to Fri 9:00 am - 5:00 pm

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



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