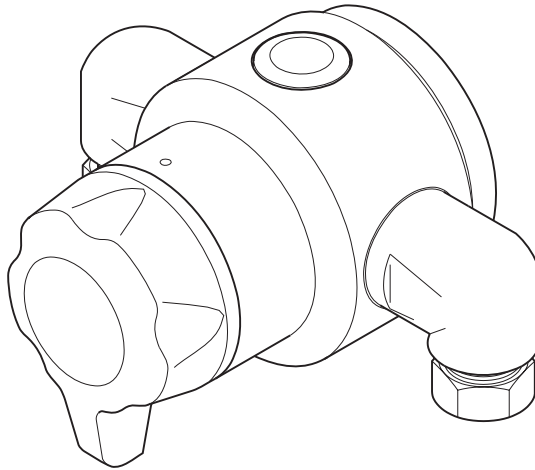


Rada Meynell V8/3 Thermostatic Mixing Valve



Important! This Manual is the property of the customer and must be retained with the product for maintenance and operational purposes.

Product Manual

rada
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INTRODUCTION

The Meynell V8/3 is a Thermostatic Mixing Valve specified to meet the highest standards of safety, and reliability as demanded by today's users. All Meynell products are designed, manufactured and supported in accordance with accredited BS EN ISO 9001: 2000 Quality Systems.

This Manual covers all Meynell V8/3 Thermostatic Mixing Valves manufactured from June 1997.

The suffix '3' indicates that this mixer has been certified for use in UK Healthcare premises as a Type 3 valve under the BUILDCERT TMV3 scheme. For Healthcare installation refer to the TMV3 Requirements Manual.

The approved designations for Type 3 Valves are as follows:

Model	Designations
Rada Meynell V8/3	HP-S, HP-W, LP-S, LP-W

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

Meynell V8/3 Model Designation.

Description	Installation	Temperature Adjustment	Finish
Meynell V8/3	Exposed or Built-In	Short Lever Adjustable	Chrome
Meynell V8/3 L	Exposed or Built-In	Long Lever Adjustable	Chrome
Meynell V8/3 K	Exposed or Built-In	Locked	Chrome

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

SAFETY : WARNINGS

Warning!

Products manufactured by us are safe provided they are installed, used and maintained in good working order in accordance with our instructions and recommendations.

Caution!

1. Read all of these instructions.
2. Retain this guide for later use.
3. Pass on this guide in the event of change of ownership of the installation site.
4. Follow all warnings, cautions and instructions contained in this guide.
5. The plumbing installation must comply with the requirements of UK Water Regulations/Bye-laws (Scotland), Building Regulations or any particular regulations and practices, specified by the local water supplier. **The installation should be carried out by a plumber or contractor who is registered or is a member of an association such as:**
 - i) Institute of Plumbing (IOP), throughout the UK.
 - ii) National Association of Plumbing, Heating and Mechanical Services Contractors (NAPH & MSC), England and Wales.
 - iii) Scottish and Northern Ireland Plumbing Employers' Federation (SNIPEF), Scotland and Northern Ireland.
6. Anyone who may have difficulty understanding or operating the controls of any appliance should be attended whilst operating. Particular consideration should be given to the young, the elderly, the infirm, or anyone inexperienced in the correct operation of the controls.

The use of the word “failsafe” to describe the function of a thermostatic mixing valve is both incorrect and misleading. In keeping with every other mechanism it cannot be considered as being functionally infallible.

Provided that the thermostatic mixing valve is installed, commissioned, operated within the specification limits and maintained according to this Manual, the risk of malfunction, if not eliminated, is considerably reduced.

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

Certain types of system can result in the thermostatic mixing valve having excessive ‘dead-legs’ of pipework. Others allow an auxiliary cold water supply to be added to the mixed water from the mixing valve. Such systems can disguise the onset of thermostatic mixing valve malfunction.

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

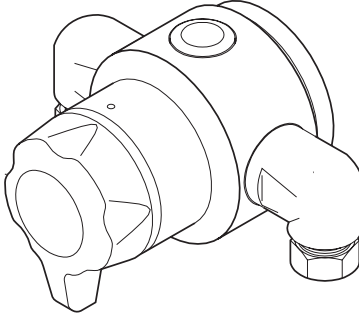
PACK CONTENTS



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

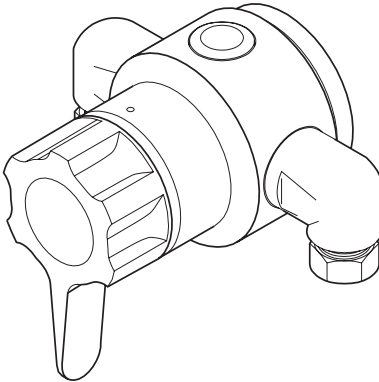
Exposed Models

1 x V8/3



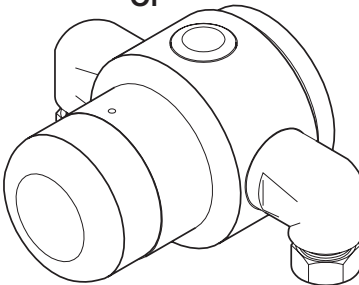
Or

1 x V8/3 L



Or

1 x V8/3 K



1 x Hexagonal Key



3 x Fixing Screws



2 x 6 L/M Flow
Regulators

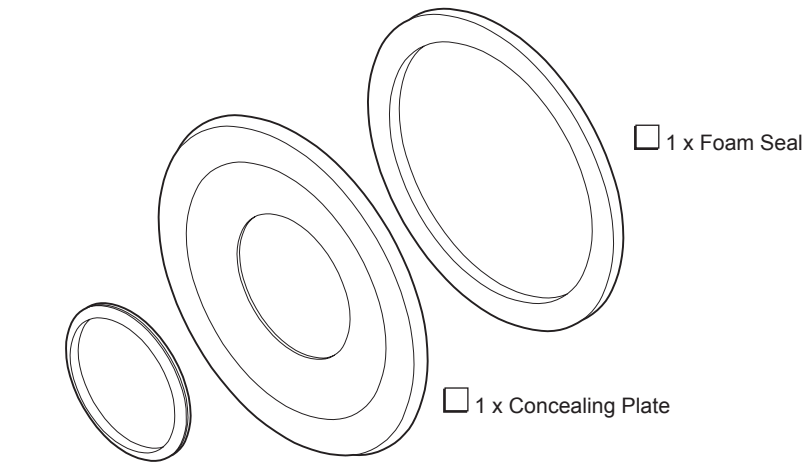
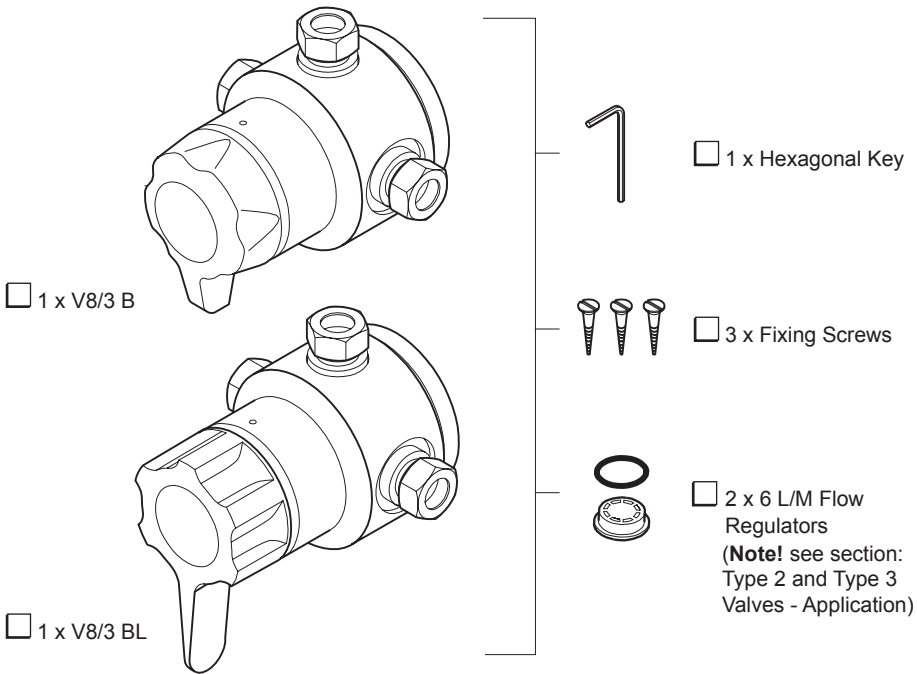
(Note! see section:
Type 2 and Type 3
Valves - Application)



1 x Compression Nut

1 x TMV3 Requirements Manual

Built-in Models



□ 1 x Rubber Grommet

□ 1 x TMV3 Requirements Manual

SPECIFICATIONS

Normal Operating Conditions are considered as:

- inlet maintained pressures are nominally balanced
- daily usage 1-6 hours
- installation and usage environment not subject to extremes of temperature, unauthorised tampering or wilful abuse.

Operating Parameters

For Type 3 installations, the supply conditions specified in the TMV3 Requirements Manual take precedence over the operating parameters which follow.

Pressures And Flow Rates

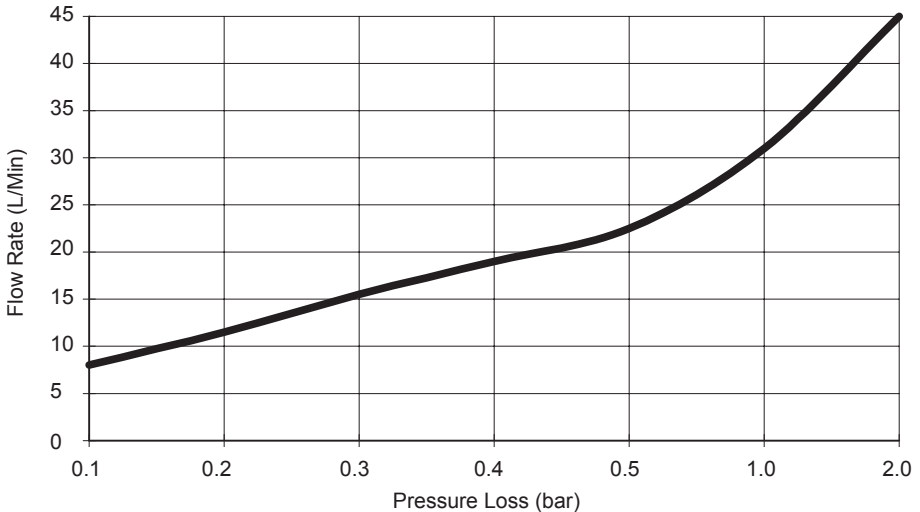
For optimum performance, maintained supply pressures should be nominally equal.

Maximum Pressure Loss Ratio: **10:1**

Minimum Maintained Pressure: **0.1 bar** (= 1 metre head from underside of cold tank to outlet of shower fitting)

Maximum Static Pressure: **10 bar**

Thermostatic Mixing Valve



Temperature Control

Minimum temperature differential between hot and outlet temperature: **10°C**

Optimum temperature control range: **35 - 45°C**

Maximum hot water temperature: **85°C** (for safety, a recommended hot water storage temperature maintained below 85°C and for ablutionary installations at between **60 to 65°C**).

The performance specification outlined below is achieved with outlet blend temperature set between 35 - 45°C and supplies of 15°C cold and 65°C hot with nominally equal pressures.

- Outlet blend temperature is maintained within 2°C with a 10°C change in hot or cold supply.
- Thermostatic shut down to seepage within 2 seconds if cold supply fails. This is achieved only if the hot supply temperature is 10°C above the set outlet blend temperature.

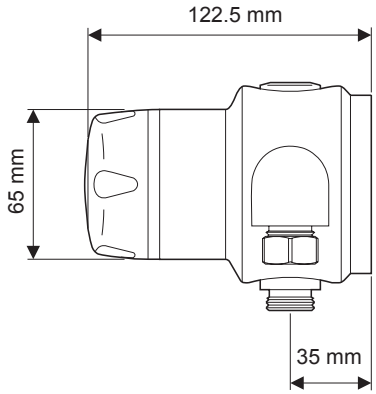
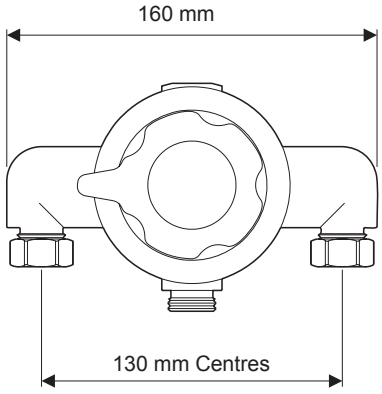
Connections

- Inlet connectors are 15 mm compression
- Outlet connector is 1/2" BSP Male or 15 mm compression

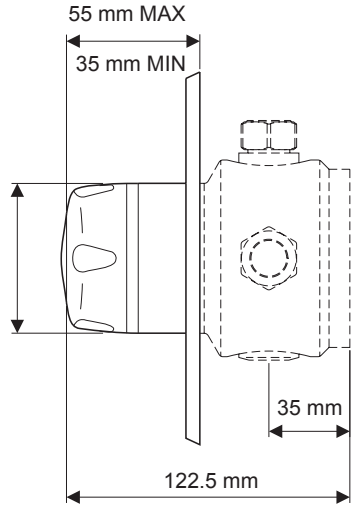
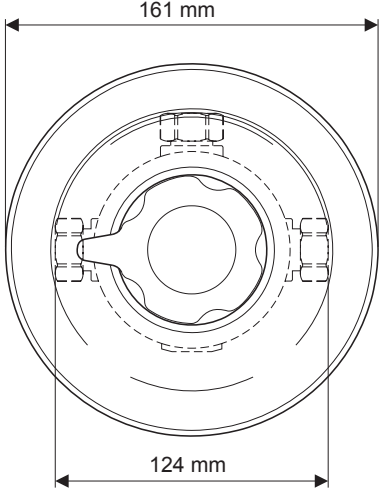
Hot (H) and Cold (C) inlets are clearly marked and must be connected this way.

Dimensions

Exposed Model

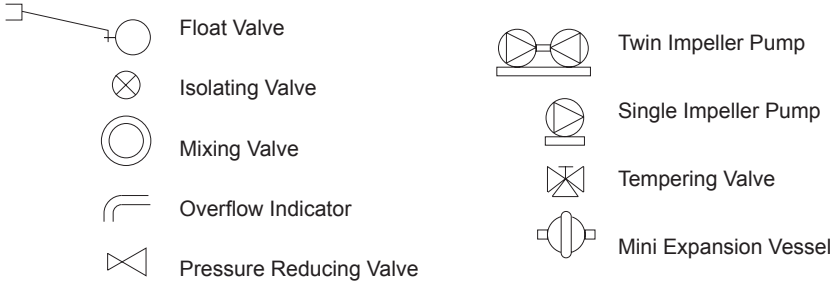


Built-in Model



INSTALLATION REQUIREMENTS

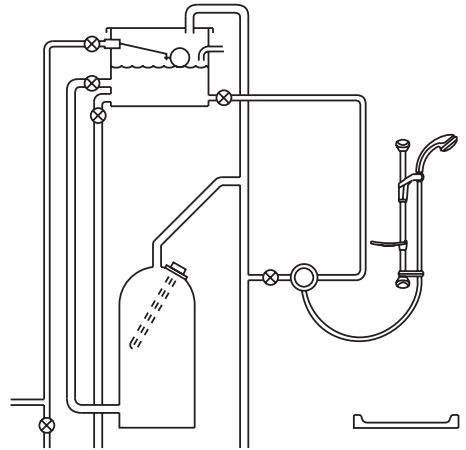
Key to Symbols



The Meynell V8/3 Thermostatic Mixing Valve is compatible with the following systems:

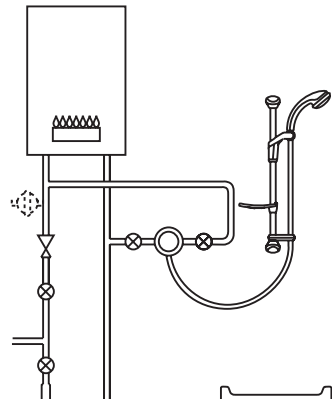
Gravity fed system

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



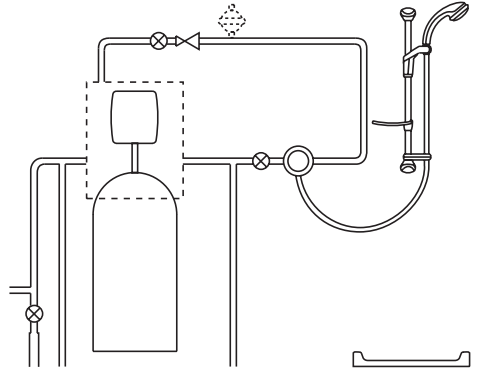
Gas heated system

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



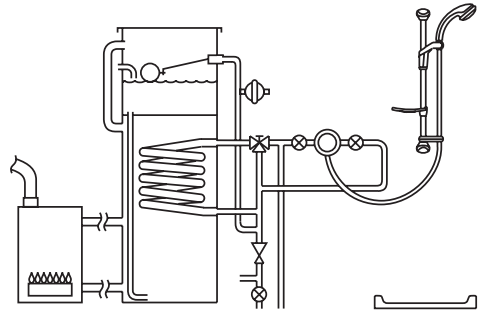
Unvented mains pressure system

The Mixing Valve can be installed with a unvented, stored hot water cylinder.



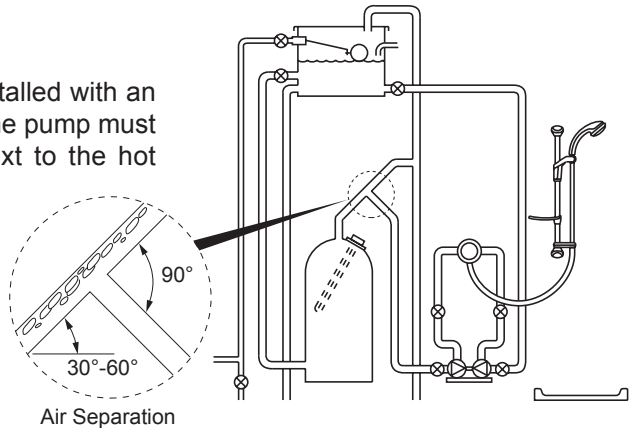
Mains pressurised instantaneous hot water system (thermal store)

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



Pumped system

The Mixing Valve can be installed with an inlet pump (twin impeller). The pump must be installed on the floor next to the hot water cylinder.



INSTALLATION

General

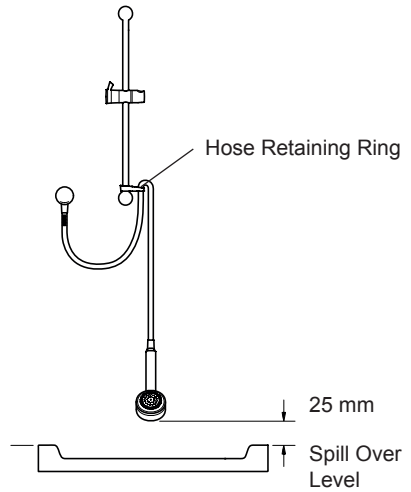
Installation must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.

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

1. Before commencing, make sure that the installation conditions comply with the information given in section: ‘Specifications’. For Type 3 valves, see also installation conditions in the TMV3 Requirements Manual.
2. Care must be taken during installation to prevent any risk of injury or damage.
3. The mixing valve should be positioned for easy access during use and maintenance. All routine maintenance procedures can be conducted with the mixing valve body in place (except for strainer and checkvalve access). For all models, allow a minimum 80 mm clearance in front of the temperature control to enable removal of the serviceable parts during maintenance. Conveniently situated isolating valves must be provided for maintenance.
4. The use of supply-line or zone strainers will reduce the need to remove debris at each mixing valve point. The recommended maximum mesh aperture dimension for such strainers is 0.5 mm. Inlet pressure tapplings which allow measurement of inlet pressure to the mixing valve under operating conditions are particularly recommended for healthcare with Type 2 and 3 valves.
5. Pipework must be rigidly supported.
6. Pipework dead-legs should be kept to a minimum. The mixed water outlet piping should not exceed 2 m and the overall length from the hot water circuit to the discharge point should not exceed 5 m.
7. Supply pipework layout should be arranged to minimise the effect of other outlet usage upon the dynamic pressures at the mixing valve inlets.
8. Inlet and outlet threaded joint connections should be made with PTFE tape or liquid sealant. Do not use oil-based, non-setting jointing compounds.
9. To eliminate pipe debris it is essential that supply pipes are thoroughly flushed through before connection to the mixing valve.
10. The installation must comply with any particular regulations and practices, specified by the local water supply regulations.

11. Decide on a suitable position for the Mixing Valve. The position of the Mixing Valve and the Shower Fittings must provide a minimum gap of 25 mm between the spill-over level of the shower tray/bath and the handset. This is to prevent back-siphonage. For further information on the installation of your shower fittings, refer to the Fittings Installation and User Guide.

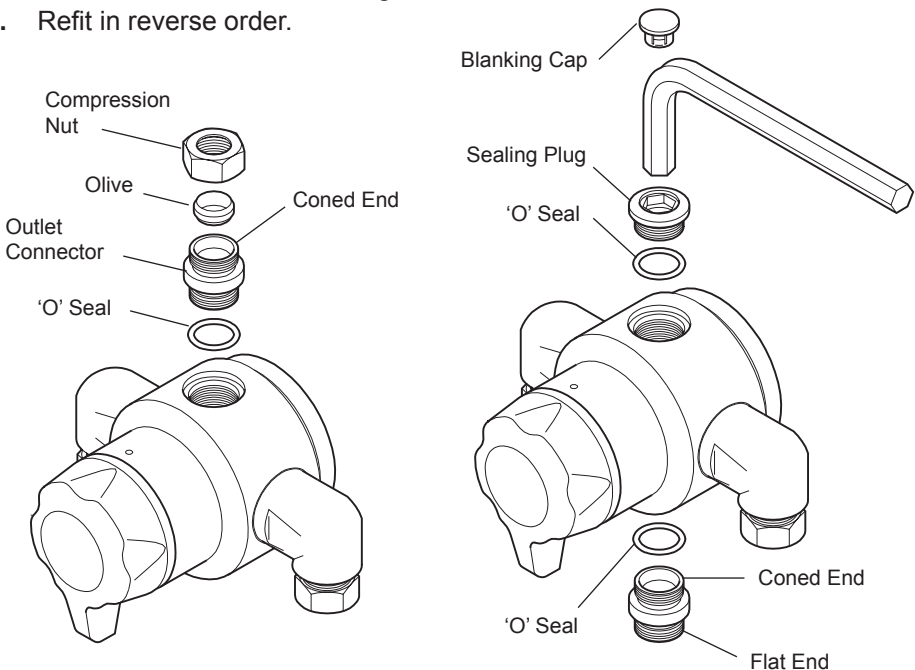
Note! Only use shower fittings recommended by the manufacturer or supplier.



Reverse Outlet Connector

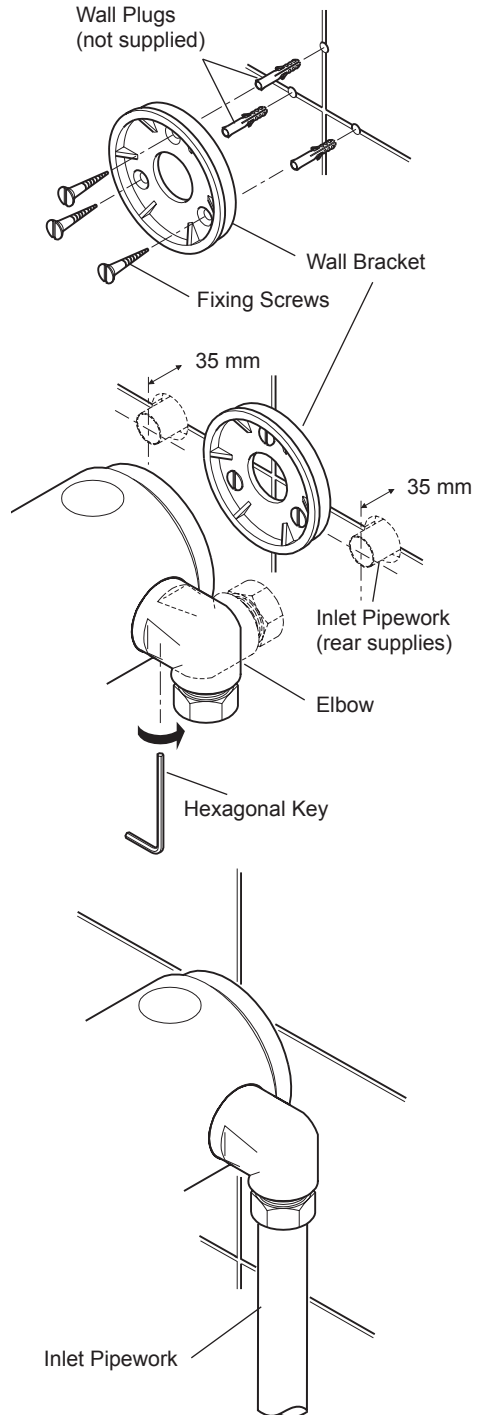
If the Shower Outlet needs to be reversed (e.g. bottom outlet to top outlet):

1. Remove the Blanking Cap (if fitted).
2. Using a 1/2" hexagonal key remove the Sealing Plug from the top and the Outlet Connector from the bottom of the Thermostatic Mixing Valve.
3. Swap around and refit, if changing from flat connector to compression make sure that the 'O' Seal is changed around.
4. Refit in reverse order.



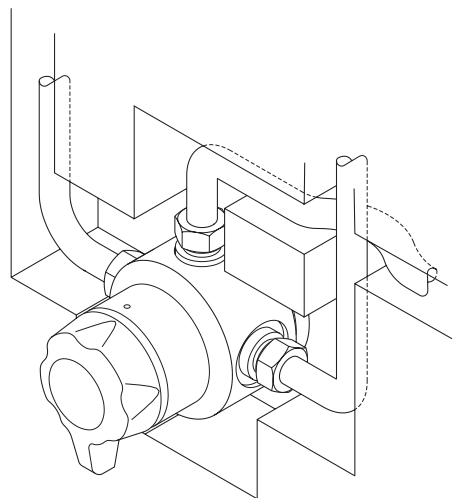
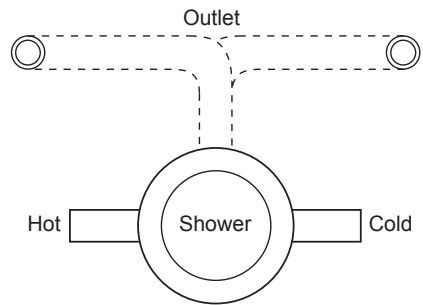
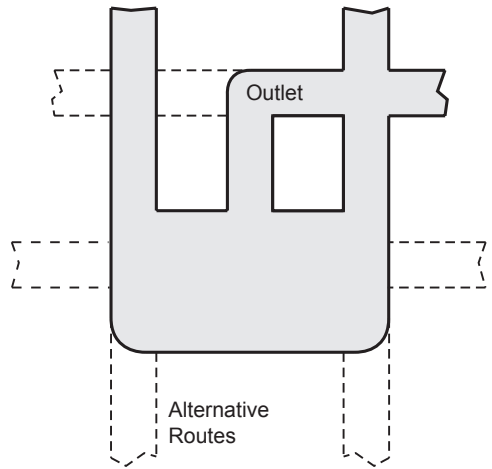
1. Exposed Models

- 1.1 Decide on a suitable position for the Thermostatic Mixing Valve where all users can operate it.
- 1.2 Remove the Wall Bracket from the rear of the Mixer Valve Body by loosening the Wall Bracket Grubscrew with a 2.5 mm hexagonal key (supplied).
- 1.3 Use the Wall Bracket to mark 3 hole positions. Drill wall and insert suitable Wall Plugs (not supplied) for No.10 Fixing Screws (supplied).
- 1.4 The Thermostatic Mixing Valve is supplied for rising supplies. For Falling or Rear Entry supplies loosen the Elbow Grubscrew and rotate the Elbow to the required position. Then secure with the Grubscrew.
- 1.5 Fit the supply pipework (Hot - Left, Cold - Right).
Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the Thermostatic Mixing Valve. Failure to do so may result in product malfunction.
- 1.6 Locate the Thermostatic Mixing Valve onto the pipework and secure to the Wall Bracket with the Grubscrew.
- 1.7 Tighten the Compression Nuts and Olives using a suitable spanner.
- 1.8 Install the Shower Fittings, refer to your Shower Fittings Installation and User Guide.
- 1.9 Turn on the hot and cold water supplies and check for leaks.



2. Built-in Models

- 2.1 Decide on a suitable position for the Thermostatic Mixing Valve where all users can operate it.
- 2.2 Determine the routes of the incoming hot and cold supply pipework. They can be rising or falling supplies.
- 2.3 Determine the route for the outlet pipework. When connecting the Shower Fittings to the outlet they should be to the side and above the Thermostatic Mixing Valve to make sure that the Flexible Hose hangs correctly and does not obstruct the Shower Control. The outlet can be sited on the right or on the left, as site dictates.
- 2.4 Mark suitable routes for inlet and outlet pipework.
- 2.5 Cut away plasterboard and brick work to a depth of between 60 mm to 80 mm. Depth should be 67 mm min / 87 mm max including finish wall thickness (tiles or facia board).
- 2.6 Fit the supply pipework (Hot - Left, Cold - Right).
Caution! It is essential at this point that the supply pipework is thoroughly flushed through before connection to the Thermostatic Mixing Valve. Failure to do so may result in product malfunction.
- 2.7 Fix the Thermostatic Mixing Valve to the wall or timber noggin (refer to section: '1. Exposed Models' and follow instructions 1.2 and 1.3).
- 2.8 Make the connections to the inlets and outlet of the Thermostatic Mixing Valve as shown
- 2.9 Tighten the Compression Nuts and Olives using a suitable spanner.
- 2.10 Turn on the hot and cold water supplies and check for leaks.



2.11 Plaster and tile up to the Thermostatic Mixing Valve, leaving a maximum diameter hole around the Mixing Valve of 125 mm.

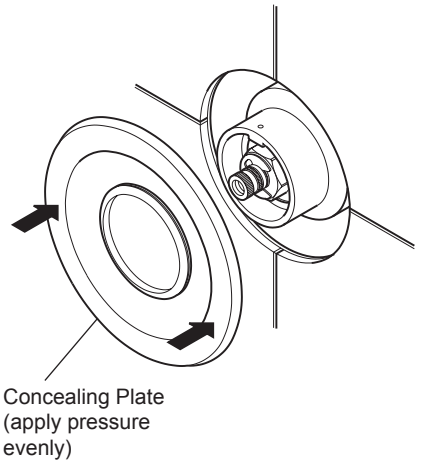
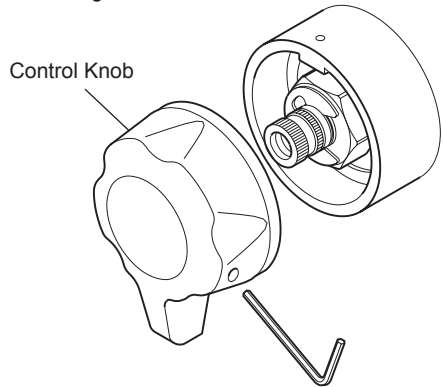
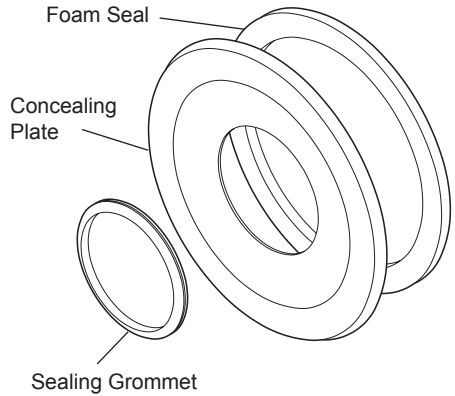
2.12 Fit the Sealing Grommet to the inner diameter of the Concealing Plate. Remove the protective backing from one side of the Foam Washer and fix to rear of the Concealing Plate.

2.13 Unscrew the Control Knob Grubscrew and remove the Control Knob.

2.14 Check that the Concealing Plate will cover the installation hole.

2.15 Peel the second protective backing from the Foam Washer and fit over the Thermostatic Mixing Valve. Push evenly on the Concealing Plate to make sure that the adhesive backing provides a sufficient seal.

2.16 Refit and secure the Control Knob.

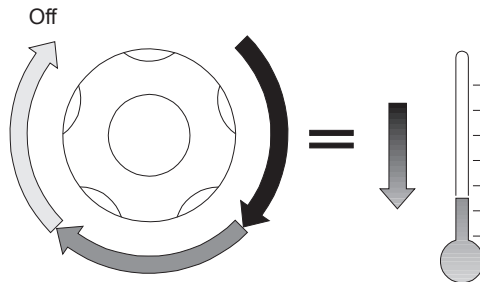
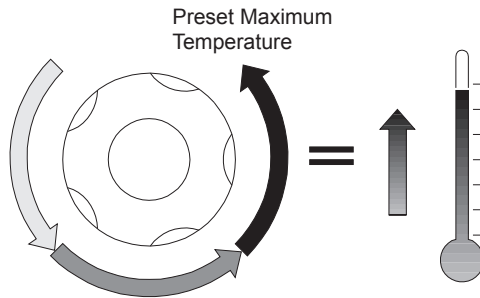


OPERATION

Temperature selection (not lockshield model).

The mixer has one control to set temperature and works in a sequence:

Off → Cold → Tepid → Pre-set Maximum



COMMISSIONING

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

Exercising the Thermostat

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

A simple way to provide this exercise is:

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

Commissioning Checks

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

1. Check the inlet pipework temperature for correct function of the checkvalves.
2. Operate the Meynell V8/3 and check:
 - Flow rate is sufficient for purpose
 - Temperature obtainable is acceptable
 - All connections are watertight.
3. It is advisable to establish a performance check at this time, which should be noted for future reference as part of a Planned Maintenance Program (a Maintenance Record Card has been provided with this Manual).

The procedure should be chosen to imitate both typical and difficult operating conditions, such as any supply pressure fluctuations that may be likely. An ideal method is to locate another outlet on the common cold water supply close to the Thermostatic Mixing Valve (operating this outlet should cause a drop in supply pressure), and note the subsequent effect on blend temperature. This should be no more than 2°C change).

Note! Causing thermal shutdown of the Meynell V8/3 by full closure of the cold supply may not adequately indicate the practical capability of the Meynell V8/3, nor its service condition. Consequently this is not a recommended performance check, and repeated such testing may ultimately affect service life.

Maximum Temperature

Note! For Type 3 valves in healthcare installations the maximum blend temperature is determined by the application, refer to the TMV3 Requirements Manual.

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

The Meynell V8/3 is fully performance tested, and the maximum temperature is preset to approximately 42°C under ideal installation conditions at the factory.

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

Maximum Temperature Setting

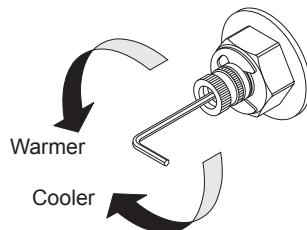
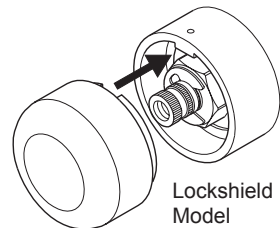
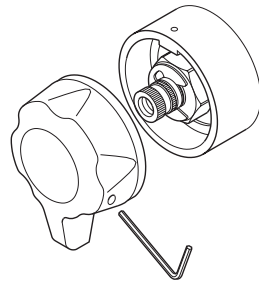
Make sure that an adequate supply of hot water is available at the hot inlet of the Meynell V8/3 and that both inlet isolating valves are fully open.

The minimum temperature of the hot water must be at least 10°C above the desired blend, however during resetting this should be close to the typical storage maximum to offset the possibility of any blend shift due to fluctuating supply temperatures.

1. Turn on the Thermostatic Mixing Valve to its maximum setting, (for Lockshield models turn on the separate outlet device fitted eg. stopvalve). Let the temperature stabilise.
2. Unscrew the Control Knob Grubscrew and remove the Control Knob or Lockshield.
3. Insert the 2.5 mm hexagon key into the centre of Mixing Valve Head.
4. Turn the hexagon key anticlockwise to increase the temperature, or clockwise to decrease temperature.
5. Refit and secure the Control Knob or Lockshield and turn off the Thermostatic Mixing Valve (on lockshield models turn off the outlet device).

Note! The Control Knob should be fitted with the 'brand' horizontal.

Note! For Lockshield models make sure that the anti-rotation slots are engaged on the Lug on the Mixing Valve Body (refer to arrow on illustration).



FAULT DIAGNOSIS

Symptom	Cause/Rectification
1. Only hot or cold water from mixer outlet.	<ul style="list-style-type: none"> a. Inlet supplies reversed (hot supply to cold supply). b. No hot water reaching mixer. c. Check strainers and inlet/outlet fittings for blockage. d. Installation conditions continuously outside operating parameters, refer to section: 'Specifications' and 2.e below.
2. Fluctuating or reduced flow rate.	<p>Normal function of the thermostatic control when operating conditions are unsatisfactory.</p> <ul style="list-style-type: none"> a. Check strainers and inlet/outlet fittings for blockage. b. Make sure minimum flow rate is sufficient for supply conditions. c. Make sure the maintained inlet pressures are nominally balanced and sufficient. d. Make sure the inlet temperatures differentials are sufficient. e. (Subsequent to rectification of supply conditions) Check thermostatic performance; renew Piston Assembly if necessary.
3. No flow rate from mixer outlet.	<ul style="list-style-type: none"> a. Check strainers and inlet/outlet fittings for blockage. b. Hot or cold supply failure.
4. Blend temperature drift.	<p>Indicates operating conditions changed.</p> <ul style="list-style-type: none"> a. Refer to symptom 2. above. b. Hot supply temperature fluctuation. c. Supply pressures fluctuating. d. Seal damage or wear. Renew seals.
5. Maximum blend temperature setting too hot or too cold.	<ul style="list-style-type: none"> a. Indicates incorrect maximum temperature setting; refer to section: 'Commissioning'. b. As symptom 4. above.
6. Water leaking from mixer body.	<p>Seal wear or damage.</p> <ul style="list-style-type: none"> a. Obtain Seal Kit, renew all seals.
7. Flow rate too high or too low.	<ul style="list-style-type: none"> a. (Too low) Refer to symptom 2.a-e. above. b. (Too low) Insufficient supply pressures. c. (Too high) Supply pressure too high. d. (Too high) Refer to symptom 2.a-e. above.

MAINTENANCE

General

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

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

The Rada Meynell V8/3 is designed for the minimum of maintenance in normal use. The only serviceable parts are the inlet filters which should be checked and cleaned every 12 months. If a malfunction occurs with the Thermostatic Cartridge then this will necessitate a complete cartridge replacement.

Note! The cartridge contains no internally serviceable parts.

If you require a Rada trained engineer or agent, refer to section: 'Customer Service'.

Planned Maintenance

Important! For Type 3 Valves use the In-Service Tests given in the TMV3 Requirements Manual. In the absence of any other instruction or guidance on the means of determining the appropriate frequency of in-service testing, the procedure contained within this guide (taken from Annex F of D08) should be used.

For other commercial installations it is recommended that the correct blend setting is checked every 6 months and that the In-Service Test procedure is followed every 12 months.

Critical Components

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

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

Lubricants

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

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

Cleaning

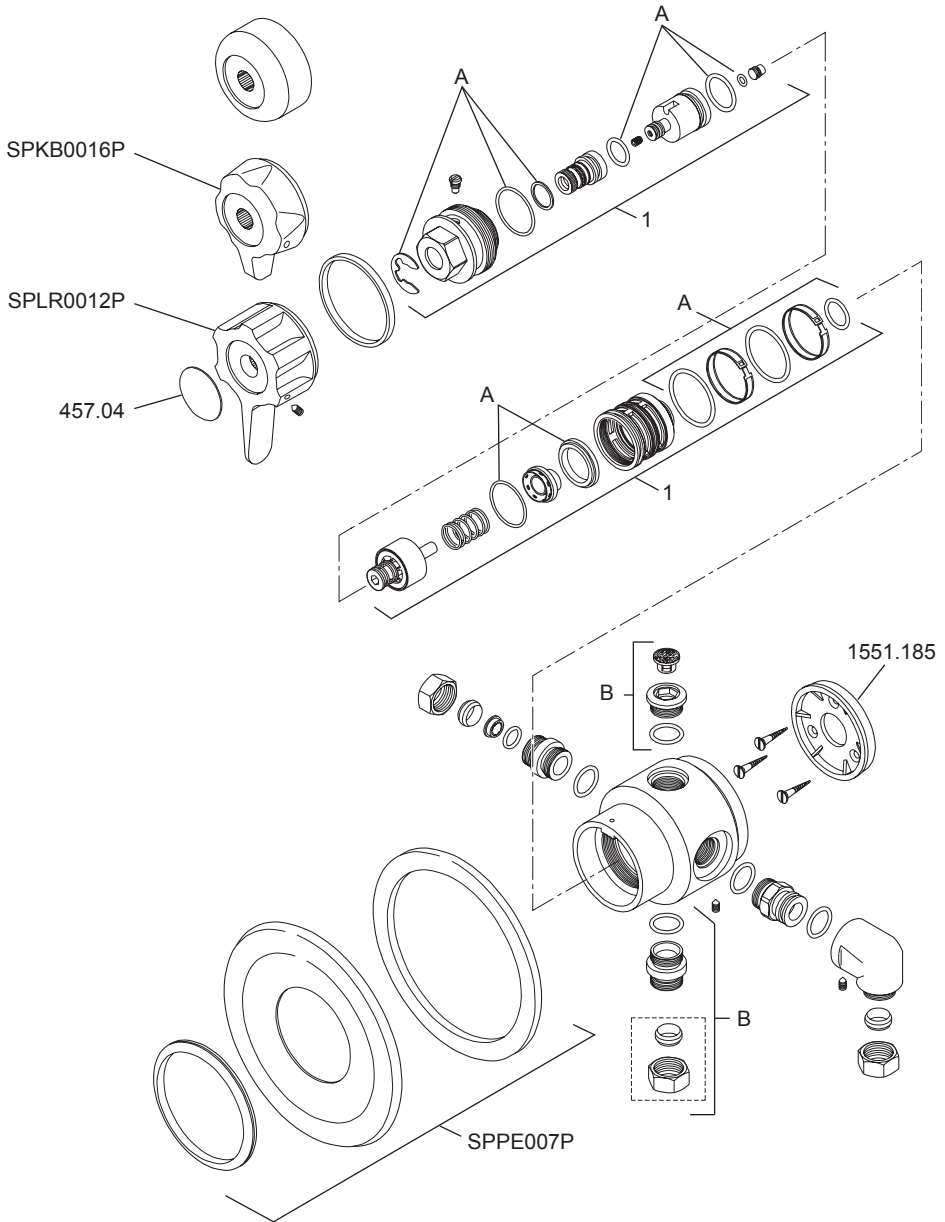
The chrome plated parts should be cleaned using a mild washing up detergent or soap solution, rinsed and then wiped dry with a soft cloth.

Warning! Many household cleaners contain abrasive and chemical substances, and should not be used for cleaning plated or plastic fittings. Do not use descalents on this product.

SPARE PARTS

SPARE PARTS

SPKB0016P	Control Knob (Stub Lever)
SPLR0012P	Control Knob (Long Lever)
SPSL0006J	Cartridge Sleeve Assembly - Components identified 1
SPPE0007P	Concealing Plate (Chrome)
SPSK0319.1J	V8 Seal Kit - Components identified 'A'
147.48	Non Return Valve (Lockshield Only) - Not Illustrated
457.04	Bezel
1531.056	Backplate



CUSTOMER CARE

Guarantee

Your product has the benefit of our manufacture's guarantee which starts from date of purchase. Within the guarantee period we will resolve defects in materials or workmanship, free of charge, by repairing or replacing parts or product as we may choose.

This guarantee is in addition to your statutory rights and is subject to the following conditions:

- The product must be installed and maintained in accordance with the instructions given in this user guide.
- Servicing must only be undertaken by us or our appointed representative. **Note!** If a service visit is required the product must be fully installed and connected to services.
- Repair under this guarantee does not extend the original expiry date. The guarantee on any replacement parts or product ends at the original expiry date.
- For shower fittings or consumable items we reserve the right to supply replacement parts only.

The guarantee does not cover:

- Call out charges for non product faults (such as damage or performance issues arising from incorrect installation, improper use, inappropriate cleaning, lack of maintenance, build up of limescale, frost damage, chemical attack, corrosion, system debris or blocked filters) or where no fault has been found with the product.
- Water or electrical supply, waste and isolation issues.
- Compensation for loss of use of the product or consequential or indirect loss of any kind.
- Damage or defects caused if the product is repaired or modified by persons not authorised by us or our appointed representative.
- Routine maintenance or replacement parts to comply with the requirements of the TMV2 or TMV3 healthcare schemes
- Accidental or wilful damage.
- Products purchased ex-showroom display.

What to do if something goes wrong

If your product does not work correctly refer to this manual for fault diagnosis and check that it is installed and commissioned in accordance with our instructions. If this does not resolve the issue, contact us for help and advice.



Technical Helpdesk Service

Contact our Customer Services Team for product advice, to purchase spare parts or accessories or to set up service visit. You can contact us via phone or e-mail - contact details below. Please provide your model name, power rating (if applicable) and date of purchase.



Rada Website (www.radacontrols.com)

From our website you can view our full product catalogue or download a brochure.



Spares and Accessories

We hold the largest stocks of genuine Rada spares and accessories.



Service/Repairs

No one knows our products better than our nationwide team of Service Technicians. We can carry out service or repair work to your product both during and after the guarantee period. You have the assurance of a fully trained Technician, genuine Rada spare parts and a 12 month guarantee on any chargeable work done.

Service Contracts

Regular servicing ensures your product continues to operate at the peak of performance. We offer annual or bi-annual servicing carried out by our fully trained technicians subject to site survey

To Contact Us - UK Customer Service & Specification Enquiries



0844 571 1777

Calls cost 7p per minute plus your phone company's access charge



Fax: 0844 472 3076



Email – Visit

rada_technical@mirashowers.com



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