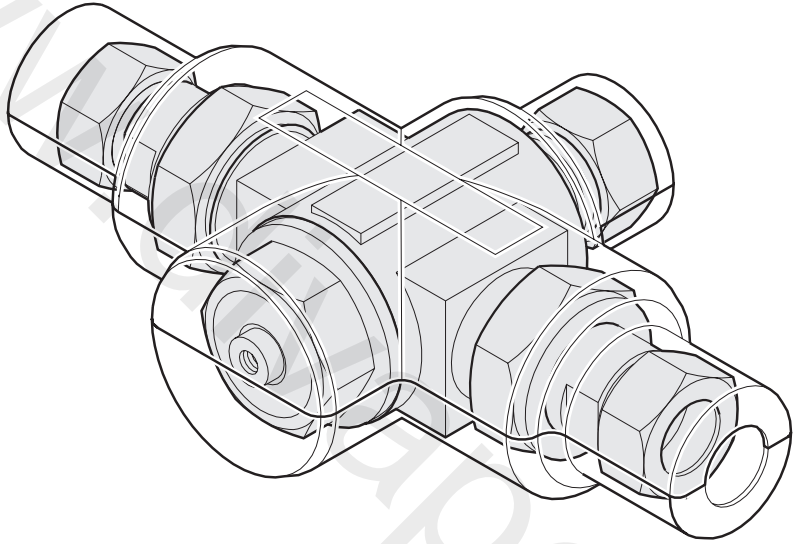


## 15/3 Thermostatic Mixing Valve



**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 15/3 Thermostatic Mixing Valve is specified to meet the highest standards of safety, comfort and economy 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 15/3 Thermostatic Mixing Valves manufactured from June 1997. The suffix '3' indicates that the Thermostatic 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 TMV Requirements Manual.

The approved designations for Type 3 Valves are as follows: HP-S, HP-W, LP-S, LP-W

# DESCRIPTION

**Meynell 15/3:** a 1/2" point of use thermostatic mixing valve designed to supply temperature controlled hot water to one or possibly two washbasin outlets.

# SAFETY : WARNINGS

Meynell products are precision engineered and should give continued superior and safe performance, provided:

- They are installed, commissioned, operated and maintained in accordance with the recommendations given in this Manual.
- Type 3 Valves are only used for applications covered by their approved designations (refer to the TMV Requirements Manual).

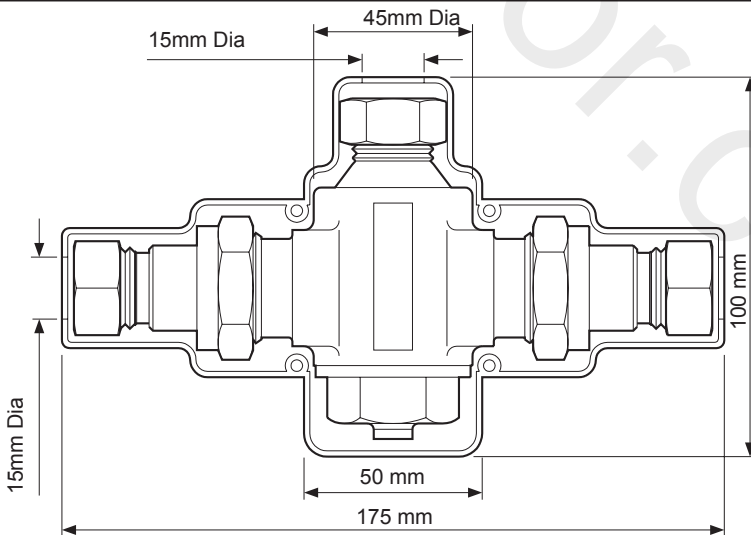
Follow all warnings, cautions and instructions contained in this guide, and on or inside the Thermostatic Mixing Valve

1. Read all of these instructions and retain this guide for later use.
2. If you experience any difficulty with the installation or operation, then please refer to 'Fault Diagnosis', before contacting Mira Showers. Our contact details can be found on the back cover of this guide.
3. 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.
4. 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.
5. The plumbing installation must comply with the requirements of UK Water Regulations/Bye-laws (Scotland), Building or any particular regulations and practices, specified by the local water company or water undertakers.

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

6. Anyone who may have difficulty understanding or operating the controls of any shower should be attended whilst showering. Particular consideration should be given to:
  - 3.1. The young.
  - 3.2. The elderly.
  - 3.3. The infirm.
  - 3.4. The disabled.
  - 3.5. Anyone who suffers from a medical condition that can result in temporary incapacity (e.g. epilepsy or blackouts).
  - 3.6. Anyone inexperienced in the correct operation of the controls.”
7. **DO NOT** fit the product where it may be exposed to freezing conditions.
8. Make sure that any pipe work that could become frozen is properly insulated.
9. The water supplies to this product must be isolated if the product is not to be used for a long period of time. If the product or pipe work is at risk of freezing during this period they should also be drained of water.
10. 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.
11. 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
12. 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.
13. When this appliance has reached the end of its serviceable life, it should be disposed of in a safe manner, in accordance with current local authority recycling, or waste disposal policy.

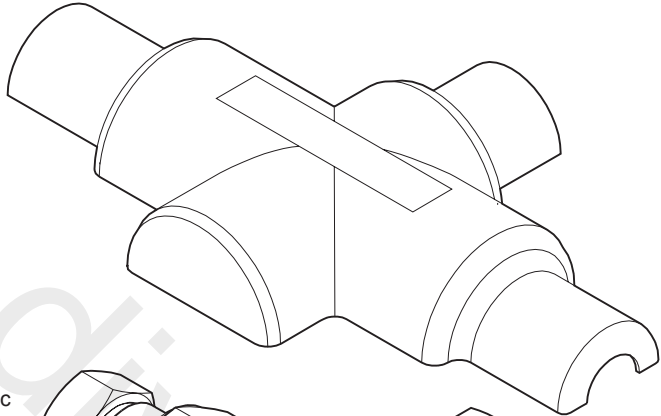
## DIMENSIONS



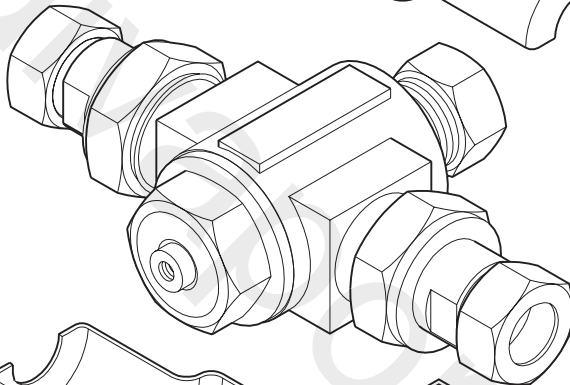
# PACK CONTENTS

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

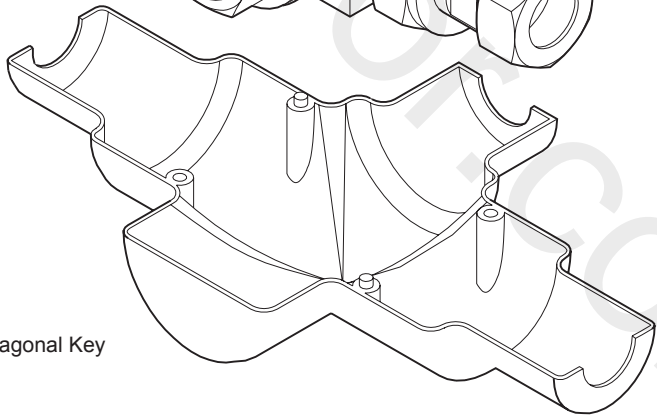
2 x Covers



1 x 15/3 Thermostatic  
Mixing Valve



1 x Hexagonal Key



# SPECIFICATIONS

**Normal Operating Conditions** are considered as:

- inlet dynamic pressures nominally balanced to within 10% of each other during flow.
- a differential of approximately 50°C between the hot and cold inlet temperatures, and with differentials of 15-35°C between the blend setting and either supply.
- daily usage of 1-6 hours.
- installation and usage environment not subject to extremes of temperature, unauthorised tampering or wilful abuse.

## **Other Applications**

For information on other specific applications or suitability, refer to Kohler Mira Ltd, or Local Agent.

## **Disinfection**

In applications where system chemical disinfection is practised, chlorine can be used (calculated chlorine concentration of 50 mg/l (ppm) maximum in water, per one hour dwell time, at service interval frequency). Such procedures must be conducted strictly in accordance with the information supplied with the disinfectant and with all relevant Guidelines/Approved Codes of Practice.

If in any doubt as to the suitability of chemical solutions, refer to Kohler Mira Ltd, or Local Agent.

## **Operating Parameters**

For Type 3 valves the supply conditions specified in the TMV Requirements Manual take precedence over the operating parameters which follow.

### **Temperatures:**

#### **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).

### **Flow Control**

The Meynell 15/3 does not have an integral flow control. Separate outlet flow control such as a tap, mechanical timed flow control device or solenoid is required. The device chosen should be non-concussive in operation.

### Connections

Inlet and outlet connectors are 15mm compression

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

The inlet connections include strainers and checkvalves.

### Pressures and Flow Rates

**Note!** For optimum performance, dynamic supply pressures should be nominally equal.

#### Maximum Static Pressure:

10 bar.

#### Maximum Dynamic Pressure:

5 bar.

#### Recommended Flow Rate for Basin Application:

4 to 6 l/min.

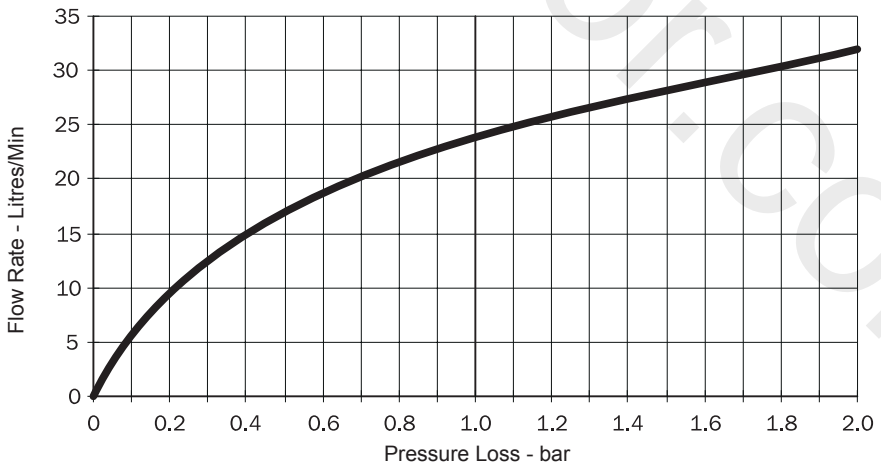
**Note!** We recommend flow regulators are fitted to the outlet device.

#### Maximum Pressure Loss Ratio\*:

Should not exceed 10:1, in favour of either supply, during flow.

*\* Pressure Loss Ratio is determined by subtracting the resistance to flow of the outlet pipework and outlet fittings (generally known as "back pressure", and measured at the outlet of the mixing valve) from the dynamic pressures of the hot and cold water at each inlet of the mixing valve. This is at its extreme when the mixing valve is being used at its lowest flow-rate and when the maximum inequality occurs in the pressure of the hot and cold water supplies.*

**Meynell 15/3 Flow Rate**



# INSTALLATION

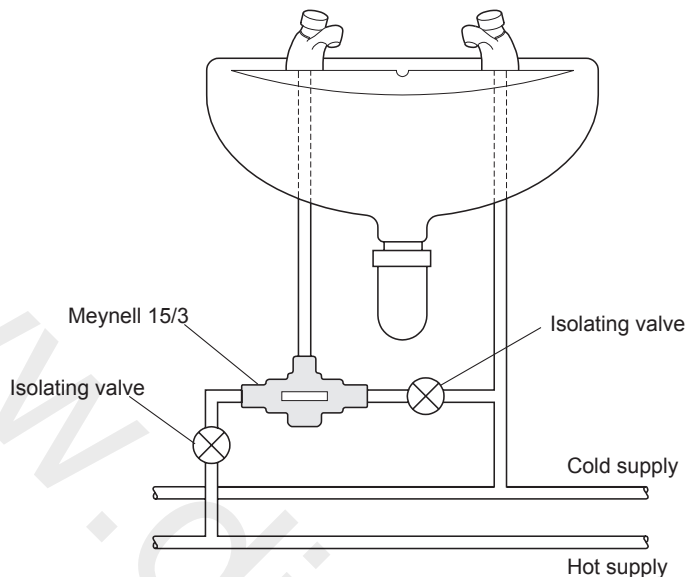
## General

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

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 TMV Requirements Manual.  
**The installation must comply with any particular regulations and practices, specified by the local water supply regulations.**
2. Care must be taken during installation to prevent 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 adequate clearance in front of the temperature control to enable removal of the serviceable parts during maintenance.
4. Conveniently situated isolating valves must be provided for maintenance.
5. 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.
6. Pipework must be rigidly supported.
7. Pipework dead-legs should be kept to a minimum.
8. Supply pipework layout should be arranged to minimise the effect of other outlet usage upon the dynamic pressures at the mixing valve inlets.
9. Inlet and outlet threaded joint connections should be made with PTFE tape or liquid sealant. Do not use oil-based, non-setting jointing compounds.
10. To eliminate pipe debris it is essential that supply pipes are thoroughly flushed through before connection to the mixing valve.

## Install the Thermostatic Mixing Valve

1. To allow cover fitting and tool access, make sure that there is adequate clearance around the valve.
2. Install isolator valves on supply pipework. This will assist removal of the valve if required.
3. Determine the layout of the pipework that suits the incoming and outlet connections.
4. Connect the pipework to the valve, making sure that the hot and cold supplies and the outlet are correctly matched. Tighten all compression nuts and inlet connector nuts.
5. Turn on the water supplies and check connections are watertight.
6. Refer to section: '**Commissioning**' to ensure correct outlet setting.
7. Fit the cover pairing around mixer.



## COMMISSIONING

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

### Maximum Temperature

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

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

All Meynell thermostatic mixing valves are 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

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

Check that an adequate supply of hot water is available at the hot inlet of the mixing valve.

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.

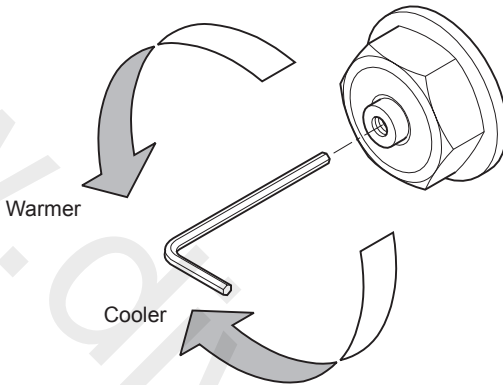
Check that both inlet isolating valves are fully open.

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



1. Ensure outlet fitting is turned off.
2. Turn on the water supplies to the mixing valve and check for leaks.
3. Turn the outlet fitting on and allow water to run until the temperature stabilizes. Measure the blend temperature from the outlet fitting.
4. If the temperature needs to be adjusted, insert the 2.5mm hexagon key into the centre of valve head.

### Commissioning Checks



1. Check the inlet pipework temperature for correct function of the checkvalves.
2. Operate the outlet fitting and check:
  - (a) Flow rate is sufficient for purpose
  - (b) Temperature obtainable is acceptable
  - (c) 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.

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 Meynell 15/3 (operating this outlet should cause a drop in supply pressure), and note the subsequent effect on blend temperature. This should be no more than a 2°C change.

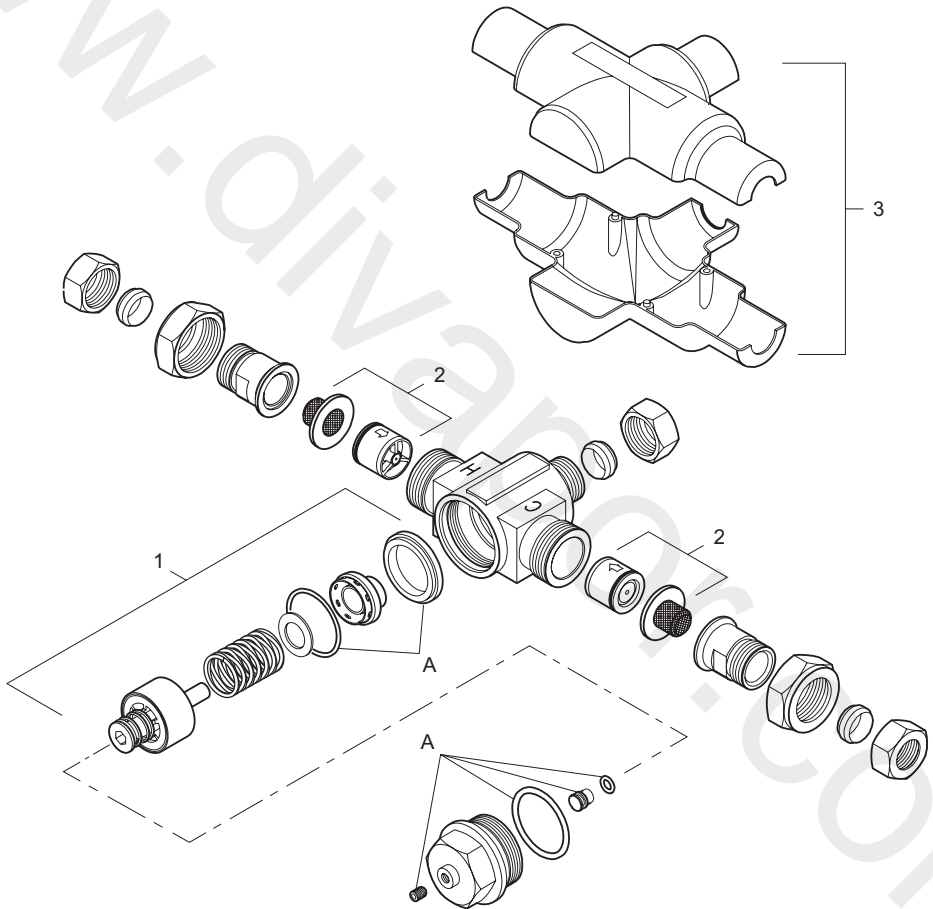
**Note!** Causing thermal shutdown of the Meynell 15/3 by full closure of the cold supply may not adequately indicate the practical capability of the 15/3, nor its service condition. Consequently this is not a recommended performance check, and repeated such testing may ultimately affect service life.

# FAULT DIAGNOSIS

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

# SPARE PARTS

1	1531.085	Shuttle / Thermostatic Assembly
2	SPCV0022J	Strainer & Checkvalve Kit
3	SPCA0018U	Cover Kit
A	SPSK0048J	Seal Kit



# 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](http://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

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