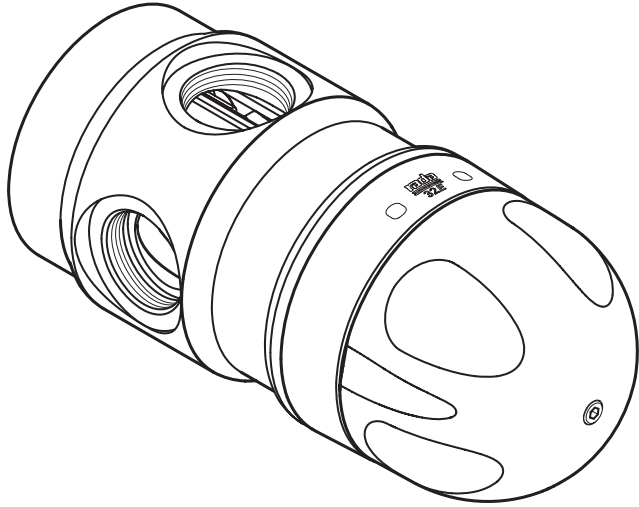


# 32E



## Product Manual

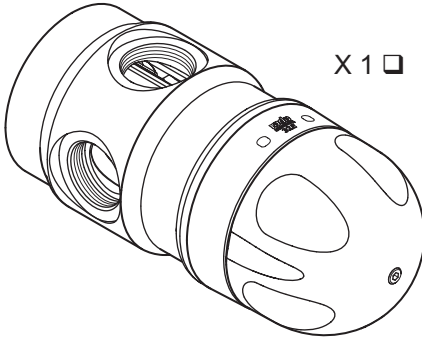
**Installer:** This manual is the property of the customer and must be retained with the product for maintenance and operational purposes.



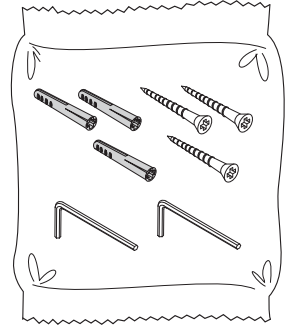




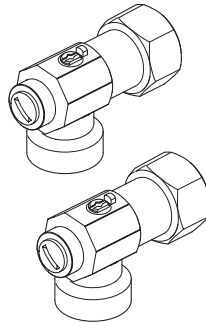
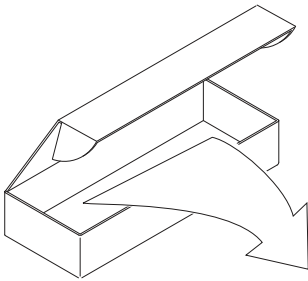
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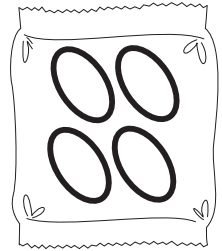
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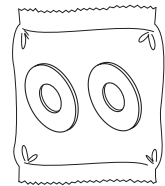
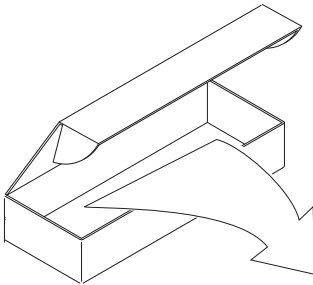
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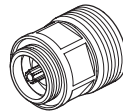


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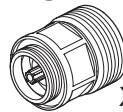
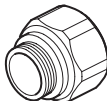


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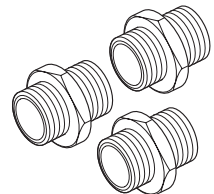
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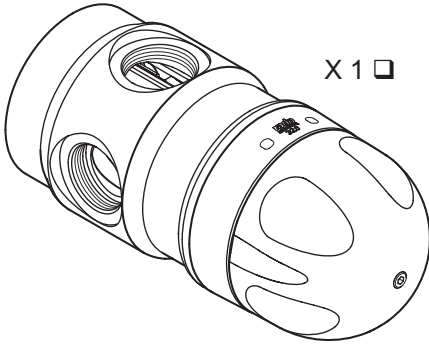


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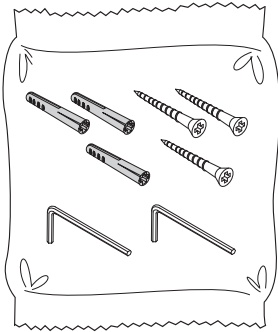


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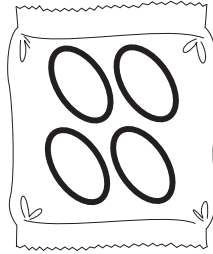
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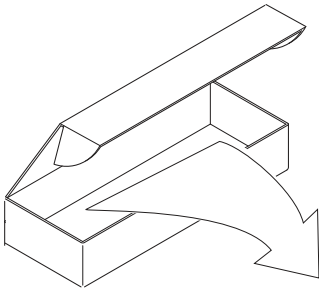
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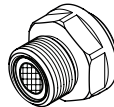
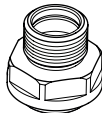
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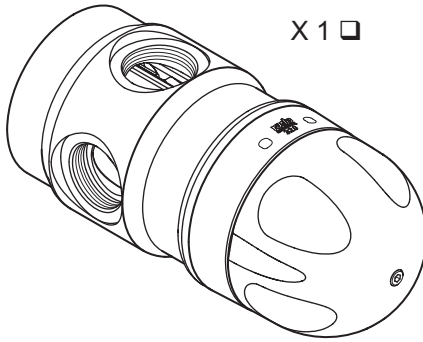
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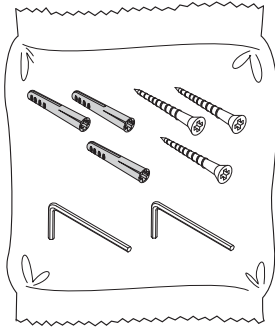
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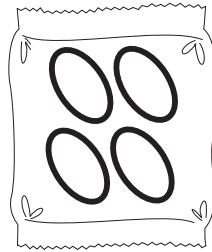
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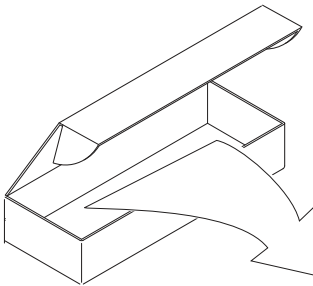
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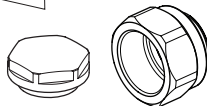
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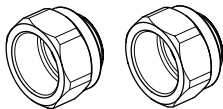
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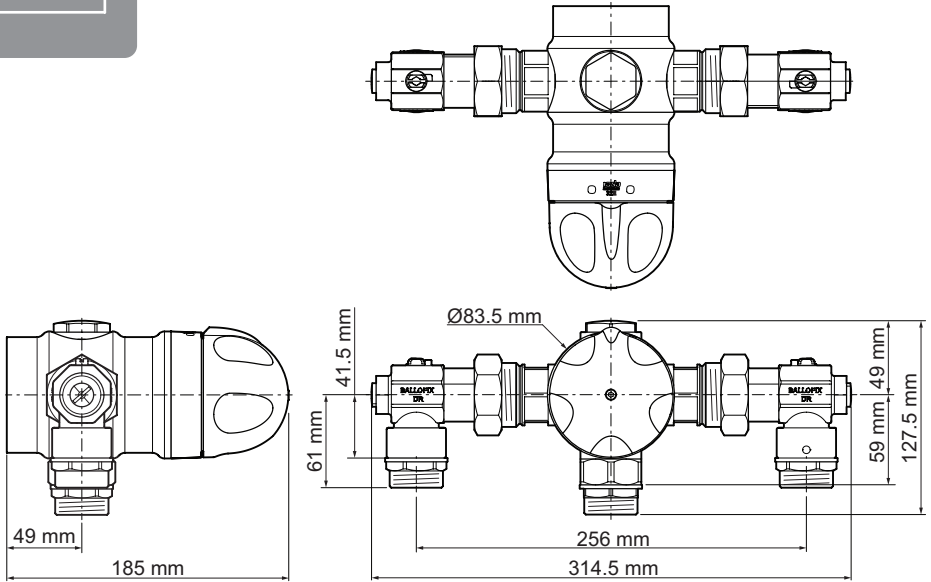


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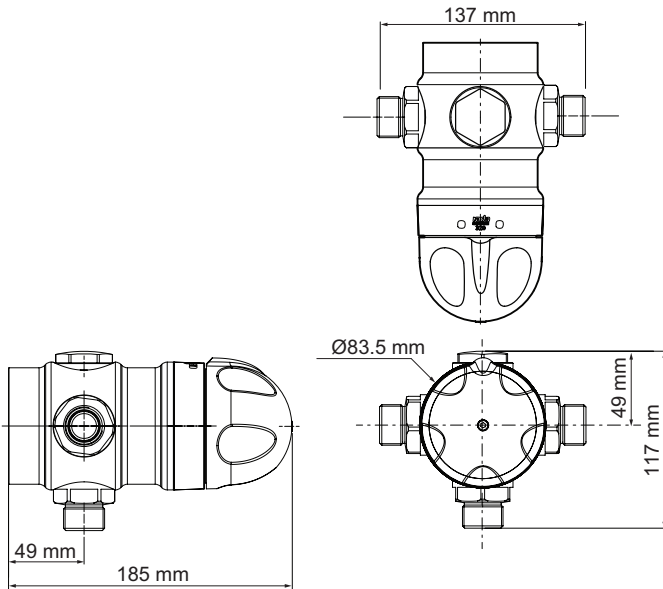




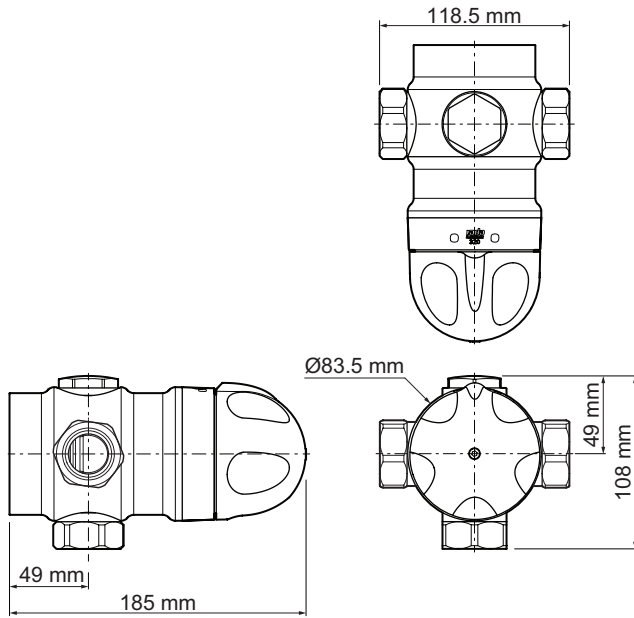
### 32E



### 32E BSP



# 320 F



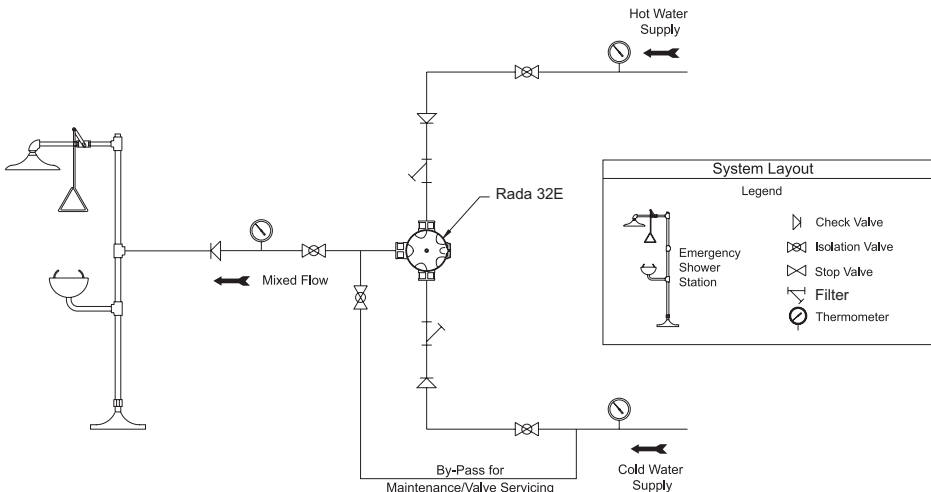
# Rada 32E

Rada 32E series has been designed specifically to provide temperature controlled water to emergency fixtures.

Tepid flushing fluid is considered necessary in all types of emergency equipment applications. Tepid is defined in the standard (DIN CN 15154-2), as "A flushing fluid temperature conducive to promoting a minimum 15-minute irrigation period. A suitable range is 16-37°C. Generally, temperatures higher than 37°C may cause chemical interactions with the skin and result in further damage. At 16°C and below hypothermia becomes a concern. Consulting a safety/health advisor will be a helpful aid in the determination of the best temperature parameters. No two hazards are exactly the same and each should be evaluated on a case-by-case basis".

## Point of Use

Rada 32E Thermostatic Mixing Valves are suitable for installation at or near a point of use for direct tepid water supply to an emergency fixture or grouping of fixtures. Groups of fixtures must meet the valve's flow capacity requirements if there is a potential for simultaneous operation.



## Installation Schematic



## Rada 32E

Rada 32E is a Thermostatic Mixing Valve of “sealed for life” disposable cartridge construction.

**For Emergency Drench Showers** - The Rada 32E will pass a specified minimum of 76 litres per minute (l/min) and will flow a minimum of 38 l/min from direct cold water supply in hot failure mode at 2.7 bar (40 psi) maintained equal inlet supply pressure.

**For Emergency Eye Wash Stations** - For single or multiple fixture installation, the Rada 32E will control accurately at flow rates from 76 to 8 l/min.

In flow applications between 76 and 38 l/min, the Rada 32E will pass approximately 50% of original flow setting in hot failure mode.

In flow applications between 38 and 19 l/min, the Rada 32E will pass approximately 80% of original flow setting in hot failure mode.

In flow applications below 19 l/min, the Rada 32E will pass approximately 95% of original flow setting in hot failure mode.

### Operational Specifications

1. Site Adjustable—Mechanical maximum-temperature limit stop and single-temperature locking features as a function of the temperature control handle design.
2. Thermal shutdown feature is designed to protect user from unsafe water temperatures or hot water/chemical reaction should cold supply be interrupted during use.
3. Unique constant cold water flow design ensures that in the event of a hot supply failure the Rada 32E will allow cold water to flow to fixture.
4. Unique constant cold water flow feature allows the inlet hot water supply to be set within a prescribed range, thus limiting the potential outlet temperature to a safe maximum in the event of misadjustment, unauthorized tampering or thermostat failure. This feature presumes that the correct initial commissioning was performed and that the cold water supply has not been interrupted.

### Technical Specifications

- 32E - 1” BSP Female or 28 mm Compression
- 32E BSP - 3/4” BSP Male
- Chrome-plated DZR brass/polymer construction
- Operating pressures must be nominally equal
  - Maximum: 6.9 bar\*
  - Minimum: 2.7 bar drench showers, 1.4 bar eye wash
- Integral replaceable cartridge-type inlet check valves
- Dual thermostatic elements
- Integral replaceable inlet strainers
- 38 LPM constant cold water flow in hot failure mode to open outlet at 2.7 bar pressure drop

\*High water pressures may deliver a volume and spray force that are injurious to the user. Check with fixture manufacturer or regulate water pressures within acceptable range.

# Safety Warnings

The function of a Thermostatic Mixing Valve is to deliver water consistently at a pre-designated temperature.

Rada Thermostatic Mixing Valves are precision engineered to give continued superior and safe performance provided:

1. They are installed, commissioned, operated and maintained in accordance with the recommendations provided and accepted plumbing practices.
2. Periodic attention is given, as necessary, to maintain the product, the accessory fittings and the plumbing system in good functional order.

In keeping with every other mechanical product, Rada Mixing Valves should not be considered as functionally infallible and, as such will never totally replace the vigilance and attention of maintenance, supervisory and safety staff. Provided that they are installed, commissioned, operated and maintained, the risk of product failure and its associated consequences, if not eliminated, are reduced to the minimum achievable.

**Important!** To ensure continued safe operation of this product, it should be checked and maintained (see servicing and maintenance section). In addition All '**Critical Components**' must be changed every **5 years**, irrespective of supply and usage conditions or the evidence of in-service tests. However, when supply conditions or usage patterns do not conform to the recommended operating parameters the cartridge may need to be replaced more frequently in line with appropriate risk assessments.

Critical components are Cartridge Assembly pt. no. 1812.007 and inlet service pack 1847.232 or 1847.233 where applicable.

## Rada 32E Operating Specifications

Maximum Hot Water Supply Temperature	<b>*70°C</b>
Minimum Cold Water Supply Temperature	<b>1°C</b>
Minimum Flow Rate at mid blend with nominally equal supply pressures.	<b>8 l/min</b>
Maximum Flow Rate	<b>120 l/min</b>
Maximum Dynamic Inlet Supply Pressure (supplies must be nominally equal)	<b>6.9 bar</b>
Maximum Static Pressure	<b>10 bar</b>
Minimum Inlet Supply Pressures	<b>2.7 bar</b> Drench Shower <b>1.4 bar</b> Eye Wash

**\*Note!** For optimum performance it is recommended that the maximum hot water temperature is limited to 65°C.

**Caution!** During thermal disinfection the mixing valve can operate up to 85°C for short periods ensure safety precautions are followed during discharge. Chemical disinfection agents e.g. chlorine/chloramines combined with higher temperatures will affect the life of the product adversely and could detrimentally affect the thermostatic performance, to ensure continued safe operation refer to 'Safety' Critical components.

**Caution!** High water pressures may deliver a volume and spray force which is injurious to the user. Check with fixture manufacturer or regulate water pressures within acceptable range.

**Warning! Correct on site commissioning of Rada 32E is critical.**

**Warning!** The constant cold water flow design ensures that in the event of a hot water supply failure the Rada 32E will allow cold water to flow to the fixture.

In addition, Rada 32E is designed to shutdown the hot water supply in the event of a cold water supply failure.

These features will only function if:

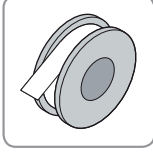
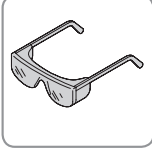
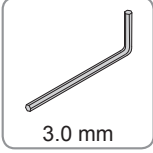
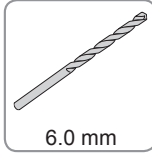
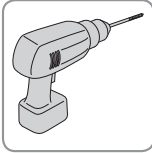
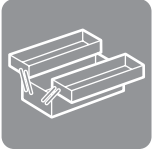
1. There is a minimum of 20°C differential between the Hot Supply and the Blend set point 25°C.
2. The Rada 32E has been factory set to deliver a maximum temperature at 25°C. **It is critical** to note that under certain inlet temperature supply conditions, the constant cold water supply feature may give the false impression that a blend set point has been correctly established. However, the blend temperature may just be a function of the combination of inlet hot water temperature and the constant cold water flow.

**Important!** The valve may actually be inadvertently set to deliver temperatures well in excess of the set point but it is unable to do so due to the constant cold water flow. **In this situation the cold water failure safety shutdown has been compromised.**

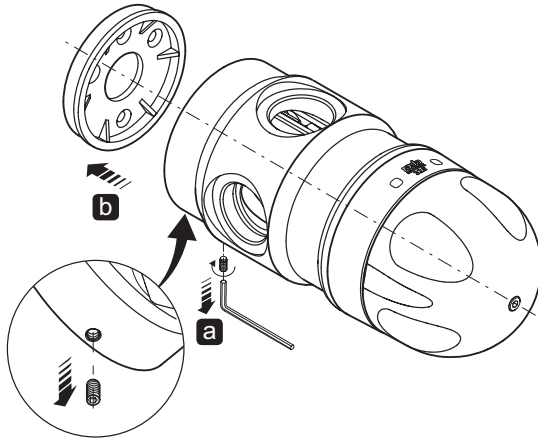
## Rada 32E Installation

The Rada 32E Thermostatic Mixing Valve must be installed as per the Installation Schematic.

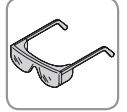
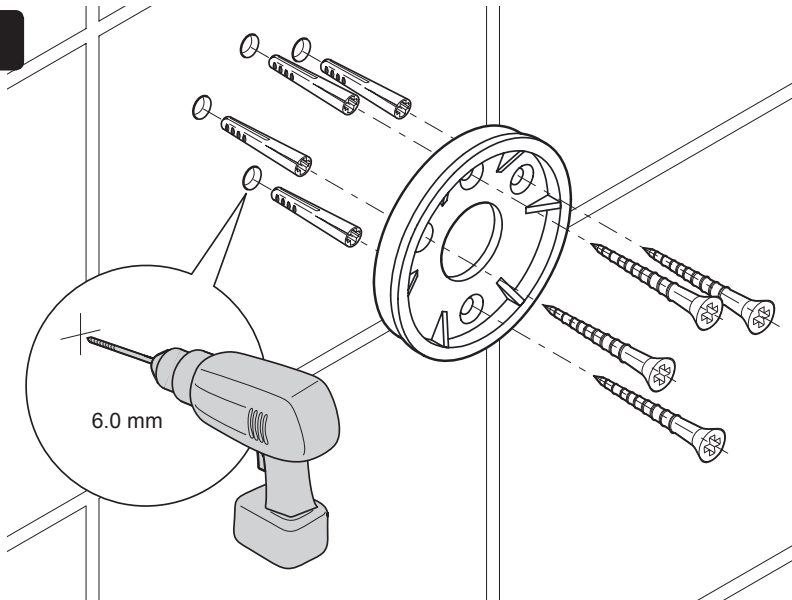
1. The Rada 32E should be installed in a horizontal position.
2. The Rada 32E must be installed in a standard HOT-LEFT/COLD-RIGHT inlet supply configuration. There are red(hot) and blue(cold) markings on each valve.
3. Be sure to thoroughly flush the pipework before fitting the Rada 32E.
4. Do not expose the Rada 32E or any of its fittings to extreme temperatures.
5. The Rada 32E is serviced from the front of the valve as you face it. A minimum 180 mm clearance in front of the Temperature Control Handle is suggested for internal parts access.
6. The Rada 32E is pre-set at the factory to a 25°C Blend outlet temperature. **The RADA 32E MUST NOT BE TEMPERATURE ADJUSTED ON-SITE.**
7. The Rada 32E is designed to control a single drench shower or combination drench shower/eye wash station.
8. The Rada 32E is designed to control a single eye wash station.  
Multiple eye wash stations can be controlled by a single Rada 32E as long as the potential multiple simultaneous demand does not exceed valve capacity.
9. Ensure that the inlet supply pressures are nominally equal.

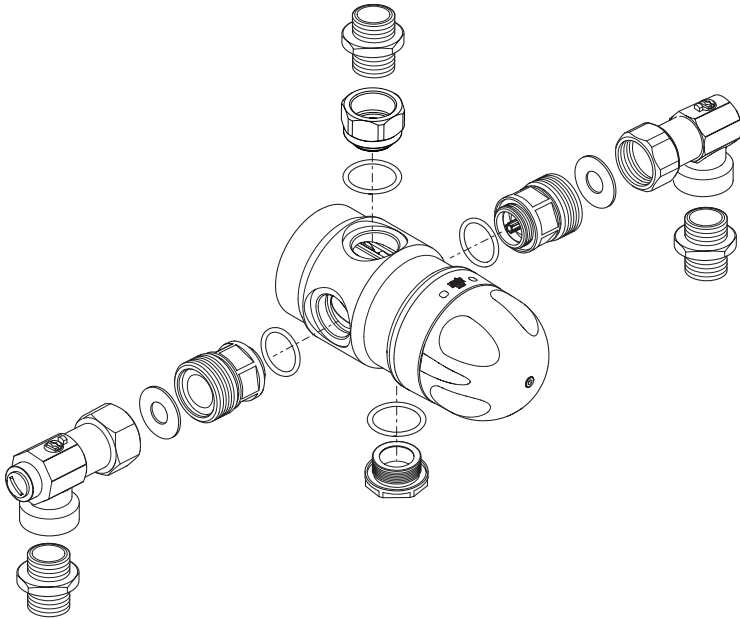
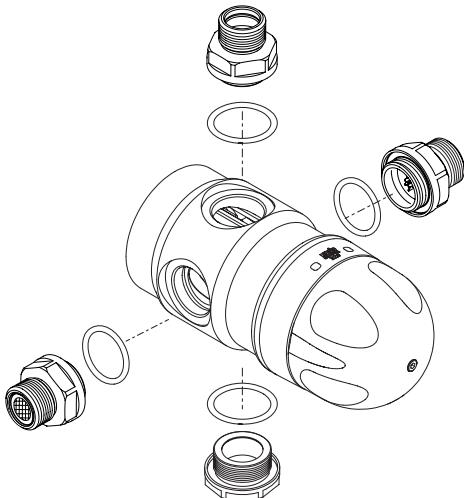
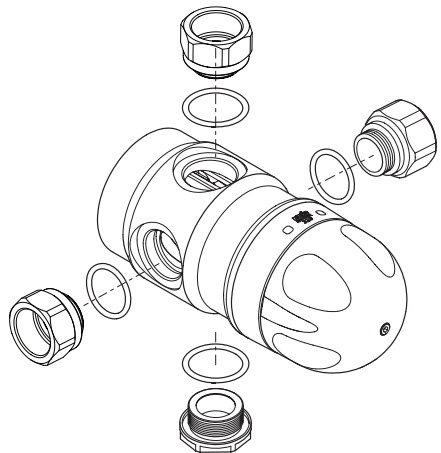


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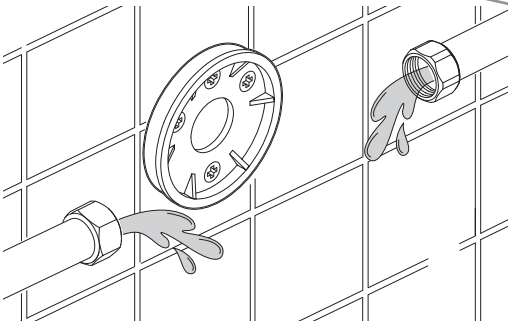
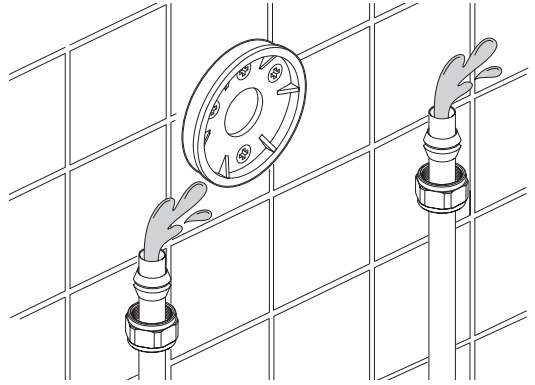
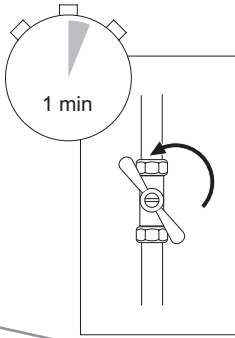


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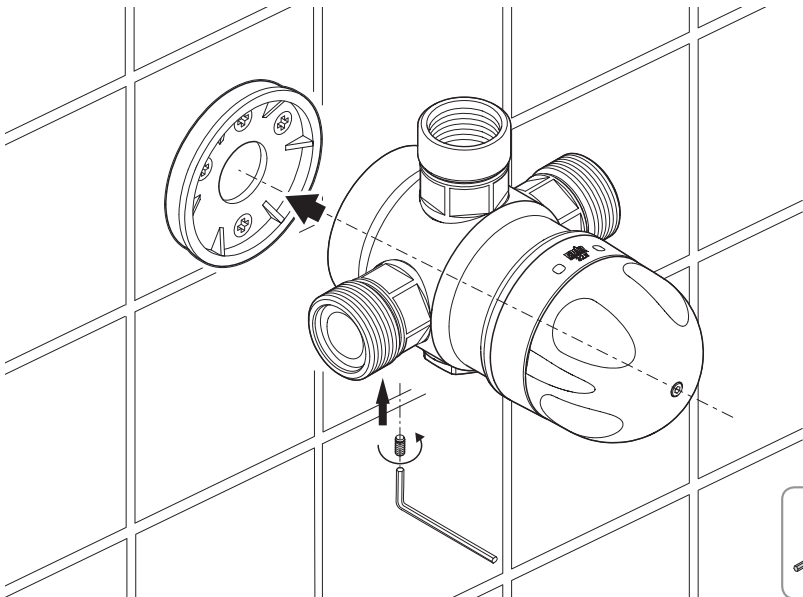


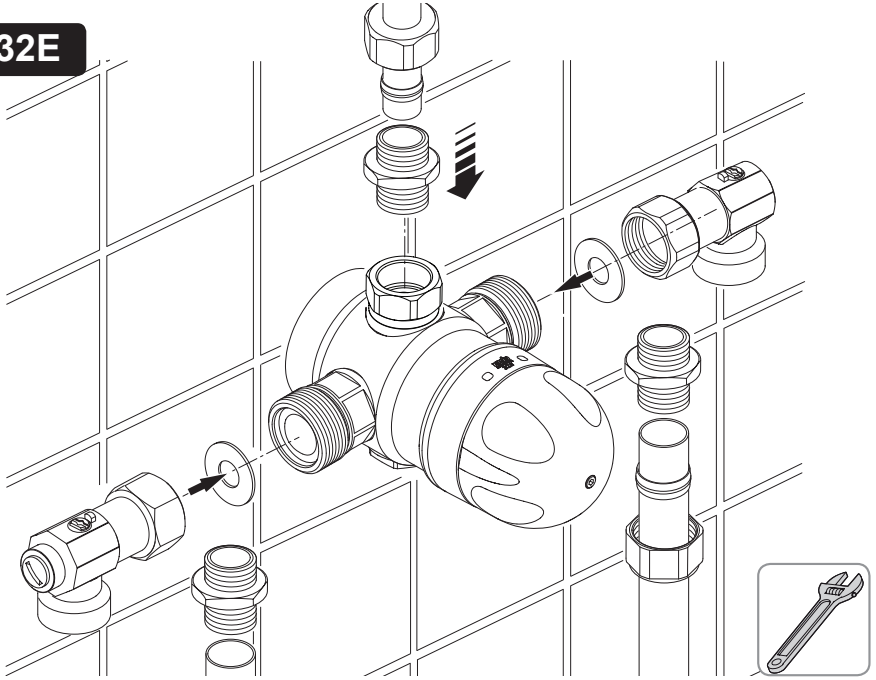
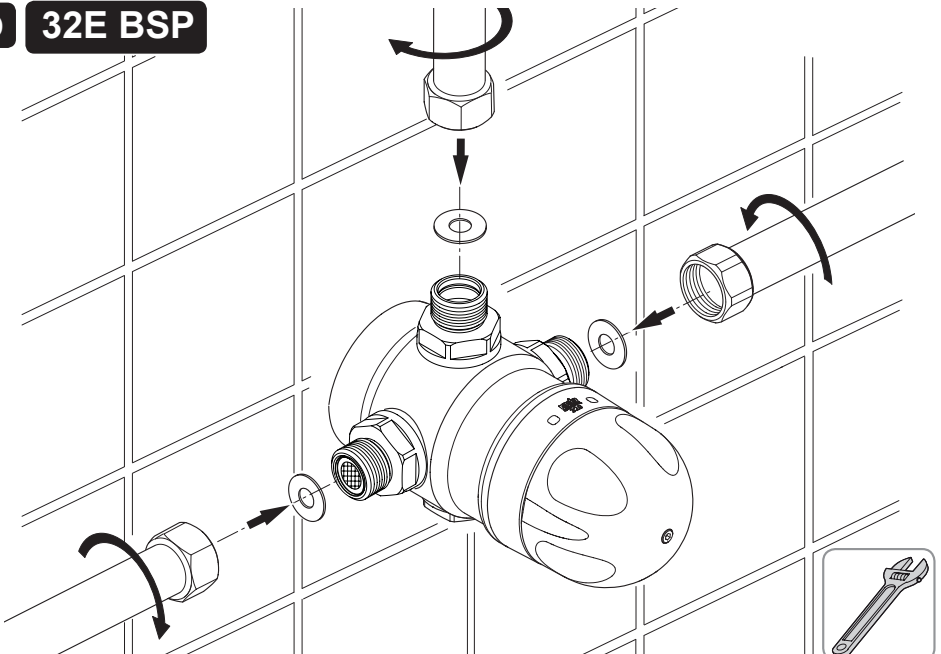
**3** Install the connections**32E****32E BSP****320 F**

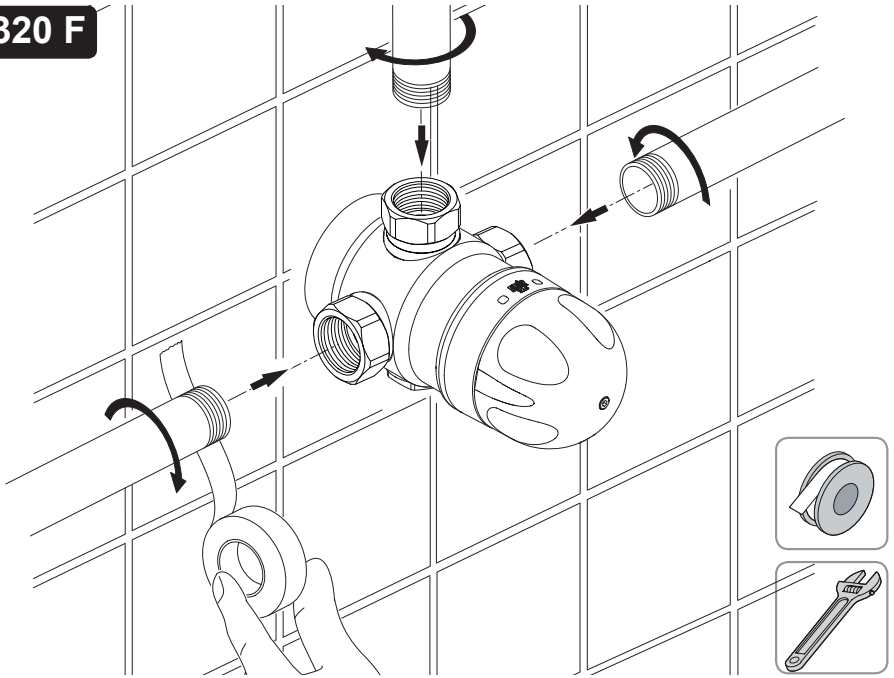
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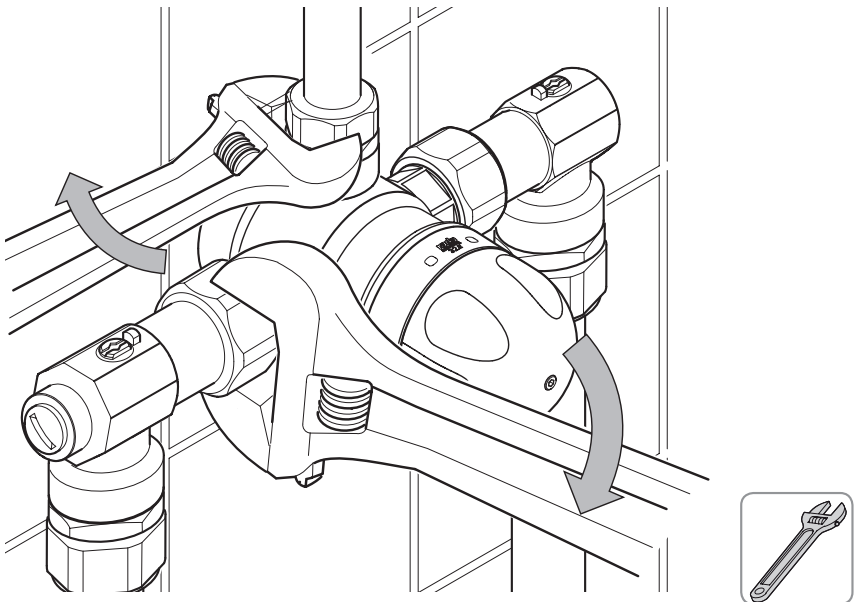
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**6** Install the pipework**a** **32E****b** **32E BSP**

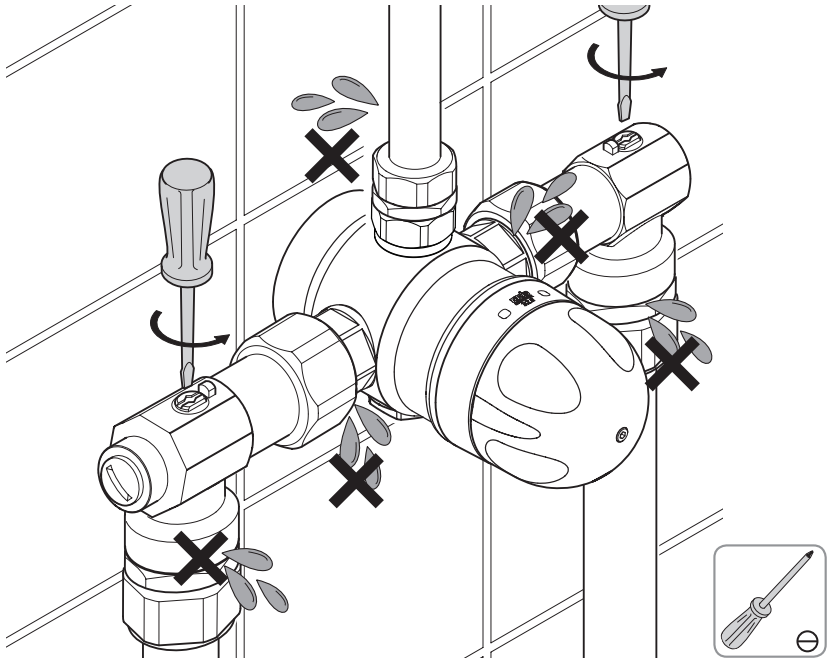
**C 320 F****7**

32E shown. The rest of the installation procedure is similar for all variants of the 32 valve.





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## Commissioning the Rada 32E

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

### Temperature Checking

The blend temperature obtainable through the mixing valve should be limited to prevent selection of a flushing temperature that is too hot.

The Rada 32E is fully performance tested and then pre-set at the factory to a 25°C blend outlet temperature. **TEMPERATURE SHOULD NOT BE ADJUSTED.**

Check that an adequate supply of hot water is available at the hot inlet of the mixing valve. For optimum performance the minimum temperature of the hot water must be at least 20°C above the blend.

### Validate The Commissioning

It is important that the commissioning is validated. Proceed as follows:

1. Operate the fixture(s) at full flow and take a temperature reading. Water temperature should not fluctuate more than 4°C. If water temperature control is unsatisfactory, refer to "Fault Diagnosis".
2. Operate the fixture(s) at full flow and intentionally "fail" the hot water supply to the Rada 32E. Cold water should continue at a reduced flow rate. Confirm that the cold water flow rates meet the specifications. If cold water does not flow, refer to "Fault Diagnosis".

3. Operate the fixture(s) at full flow and intentionally “fail” the cold water supply to the Rada 32E. All flow through the fixture should shut off completely within 2 seconds. If flow does not shut off to specification, refer to “Fault Diagnosis”.

## Servicing and Maintenance

Rada 32E Thermostatic Mixing Valves must be inspected and tested on a regular basis. We recommend preventative maintenance procedures based on individual site conditions must be employed to ensure continued and safe operation of the valve, for example site conditions such as water with high mineral content may dictate an increased frequency. In lieu of any guidance we would recommend at least 6 monthly checks be conducted to include the following – **For optimum performance and safety repeat steps 1-3 of the commissioning. Record and report any variations to the Plant Management and the Plant Safety Officer.** Annually we recommend minimum changing Filters, oval seals on inlets of cartridge. See 'safety section' for critical component replacement information.

**Note!** All seals are pre-lubricated. If further lubrication is required, use only silicone based lubricants on this product. **Do not use petroleum based lubricants.**

The Rada 32E Thermostatic Mixing Valve is of non-serviceable single “cartridge construction”. The cartridge can be removed from the valve for inspection or replacement by first removing the temperature control handle using a 3 mm hex wrench. The hub assembly may inadvertently remain attached to the inside of the temperature control handle. This is a “push fit” and can be “levered” out using a thin blade screwdriver or pliers.

**Warning!** The Rada 32E has a specially designed replacement cartridge.

**Important!** Do not install a replacement cartridge which does not have the 32E identifier.

The Temperature Indicator Ring, which fits beneath the temperature control handle can be “levered” off using a suitable thin edged tool.

Before proceeding further be sure to isolate the valve by turning off each inlet supply.

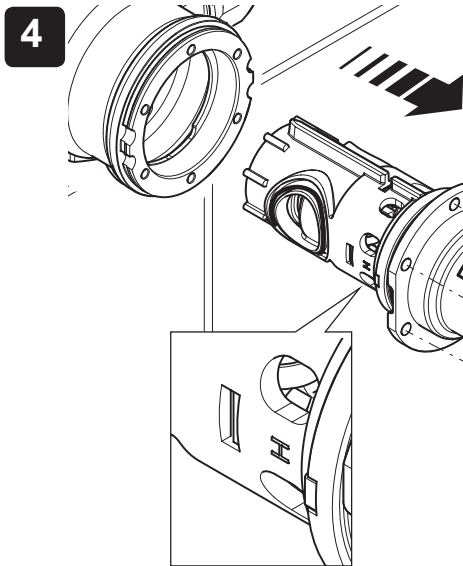
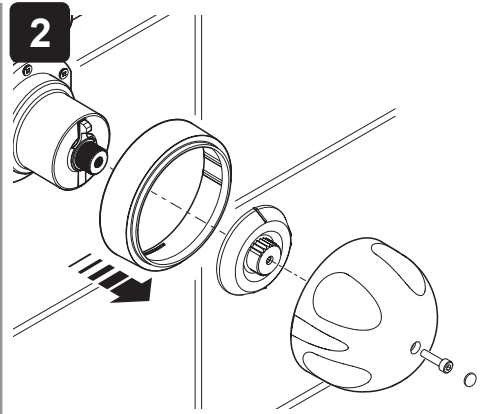
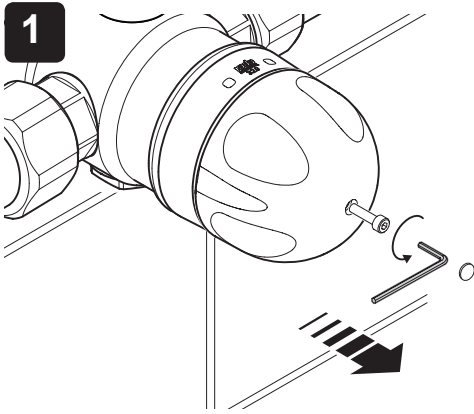
The complete cartridge assembly is accessed by first removing the 6 retaining screws and then smoothly drawing the cartridge out. Do not twist or apply “side load” leverage when extracting the cartridge.

When installing a new or reinstalling an existing cartridge note the raised “H” on the hot inlet of the cartridge and align to hot supply accordingly.

**Important!** After re-installing a replacement cartridge, the Rada 32E must be re-commissioned and validated.

**Warning!** The Rada 32E Cartridge Assembly is non-serviceable. Do not attempt to disassemble the cartridge or tamper with the factory settings beyond those detailed in this product manual.

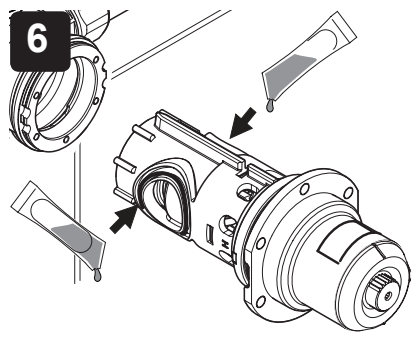
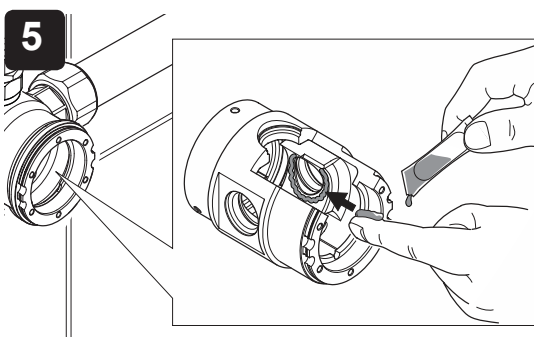
## Maintenance Procedure - Cartridge Replacement



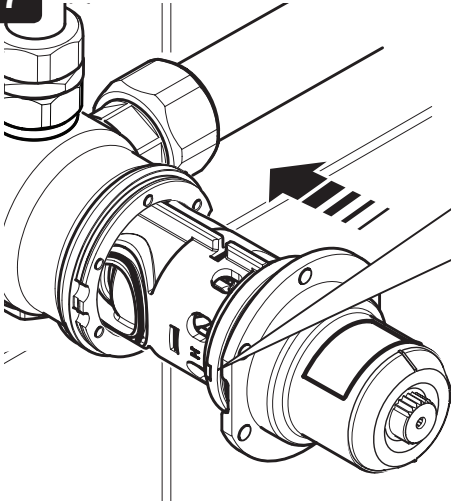
Identification Label Fixed Here

**WARNING!**  
This cartridge is only suitable for use with the 32E Emergency Shower at low blend temperatures 25° C or below. Do not use in any other product.

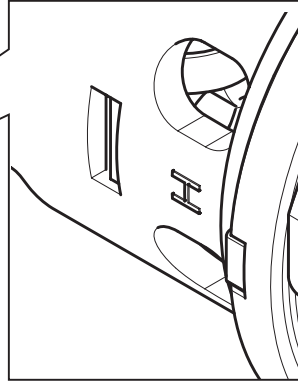
F17170/1 Kohler Mira Limited, Jan 2017



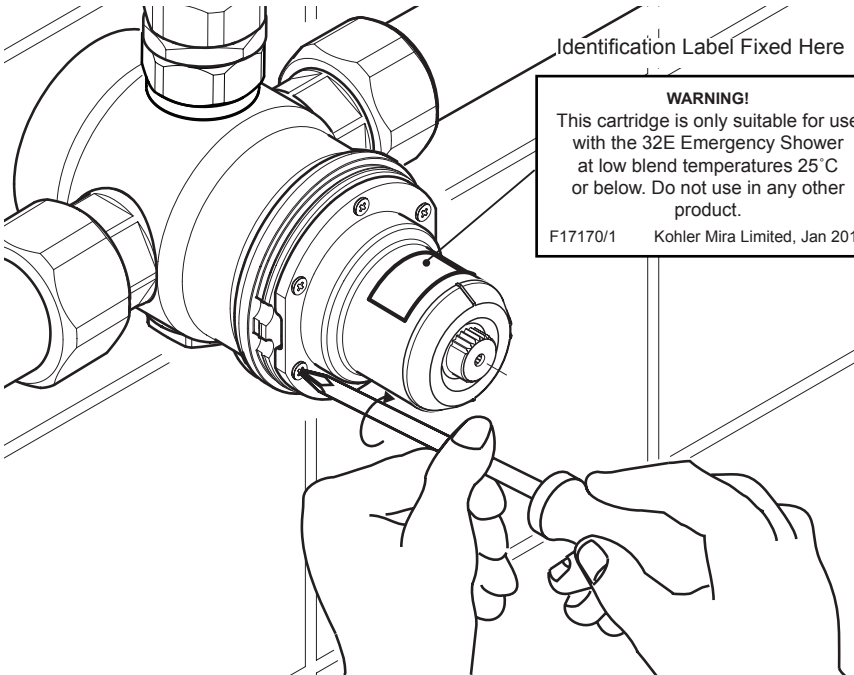
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**WARNING!**  
 This cartridge is only suitable for use with the 32E Emergency Shower at low blend temperatures 25°C or below. Do not use in any other product.  
 F17170/1 Kohler Mira Limited, Jan 2017



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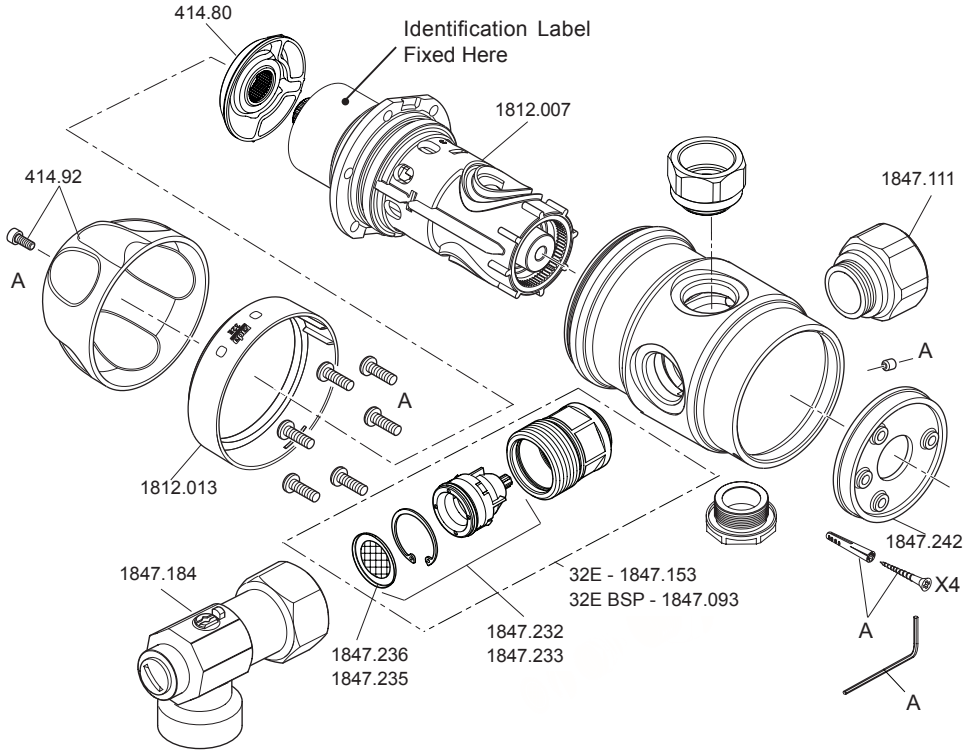


Identification Label Fixed Here

**WARNING!**  
 This cartridge is only suitable for use with the 32E Emergency Shower at low blend temperatures 25°C or below. Do not use in any other product.  
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**Important!** Do not remove hub when fitting the spare cartridge. Temperature Factory preset must not be adjusted

# Spare Parts



No:	Description
1812.007	Cartridge Assembly
414.80	Hub Pack
1847.24	Backplate
1847.242	Knob Pack
523.19	Compression Fitting - Not Illustrated
1847.093 (3/4" BSP)	Connector Pack
1847.111 (1" BSP)	Female BSP Pack
1847.153	Elbow Connection Pack
1847.184	Isolating Elbow Pack
1847.227	Seal Pack - Not illustrated
1847.229	Screw Pack - 'A'
1812.013	Indicator Trim
1847.233 (3/4") 1847.232 (1 - 1/4")	Inlet Service Pack
1847.235 (3/4") 1847.236 (1 - 1/4")	Filter Pack x 2 Filters

# Fault Diagnosis

Symptom	Cause/Action
1. Only Hot or Cold Water From Outlet	a. Inlet supplied reversed (i.e. hot supply to cold inlet) can be diagnosed by isolating the inlet supplies and removing the valve cartridge. With cartridge removed, turn the water on at each supply individually and at a very low flow rate (water will run out of the front of the valve body). Identify which inlet is the hot supply and which is the cold supply. Re-install the cartridge matching the raised H and C on the cartridge body to the inlets as identified.
	b. No hot water reaching mixing valve. Check
	c. Check strainers and inlet fittings for blockage.
	d. Refer to symptom 5 below.
	e. Installation conditions continuously outside operating parameters
	f. Normal function of mixing valve: indicates hot water inlet supply failure/interruption.
2. Fluctuating or Reduced Flow Rate	Normal function of mixing valve when operating conditions are unsatisfactory.
	a. Check strainers and inlet/outlet fittings for flow restriction.
	b. Ensure that minimum flow rate is sufficient for supply conditions.
	c. Ensure that dynamic inlet pressures are nominally balanced
	d. Ensure that inlet temperature differentials are sufficient.
	e. (Subject to rectification of supply conditions). Check the thermostatic performance; renew cartridge assembly if necessary.
f. Normal function of mixing valve: indicates hot water inlet supply failure/interruption.	
3. No Flow From Mixing Valve Outlet	Check that inlet flow controls are fully open.
	a. Check strainers and inlet/outlet fittings for blockage.
	b. Cold supply failure; thermostat holding correct shutdown function: rectify, and return to <b>2e above</b> .
4. Blend Temperature Drift	Indicates operating conditions changed.
	a. Refer to symptom <b>2 above</b> .
	b. Hot supply temperature fluctuation (rectify and refer to Commissioning).
c. Supply pressure fluctuation (rectify and refer to Installation).	
5. Hot Water in Cold Supply or Vice-Versa	Indicates check valves require maintenance (refer to Maintenance).
6. Water Leaking form Valve Body	Seal (s) worn or damaged.
	a. Obtain seal pack, renew all seals.
	b. (If leak persists from around temperature spindle). Renew cartridge assembly.
7. Cold Water does Not Flow After Hot Supply Failure	a. Incorrect valve model installed. Check and rectify.
	b. Incorrect internal cartridge installed. Check identification code and rectify
	c. Check strainers and inlet/outlet fittings for blockage
	d. Cold supply failure.
8. Hot Water continues to Flow After Cold Supply Failure	a. Incorrect Valve commissioning. Validate the Commissioning.
	b. Insufficient temperature differential see validate commissioning.

# Notes

# Customer Service

## Rada Products

### Customer Services Guarantee

Your product has the benefit of our manufacturer's guarantee which commences from date of purchase or from the date of commissioning when product commissioning has been conducted within the UK by the Rada Commercial Field Service Team.

Please contact your local agent for all guarantee terms and conditions or visit [www.radacontrols.com](http://www.radacontrols.com) for further information.

**For UK (only) Customer Service & Post Installation enquiries**, including details of the Rada Commissioning, Responsive and Maintenance Contract Service Packages please contact:

Telephone: **0844 571 1777**

**Please Note!** Calls cost 7p per minute plus your phone company's access charge

Fax: **01242 282595**

Email: [radacustomerservices@mirashowers.com](mailto:radacustomerservices@mirashowers.com) or visit [www.radacontrols.com](http://www.radacontrols.com)

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

**For UK (only) Pre-Specification Enquiries** please contact:

Telephone: **0844 571 1777**

**Please Note!** Calls cost 7p per minute plus your phone company's access charge

Fax: **01242 282404**

E-mail: [rada\\_technical@mirashowers.com](mailto:rada_technical@mirashowers.com) or visit [www.radacontrols.com](http://www.radacontrols.com)

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

## For Eire Only

Telephone: **01 531 9337**

Email: [CustomerServiceEire@mirashowers.com](mailto:CustomerServiceEire@mirashowers.com)