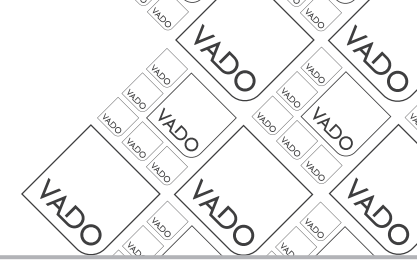




where inspiration flows



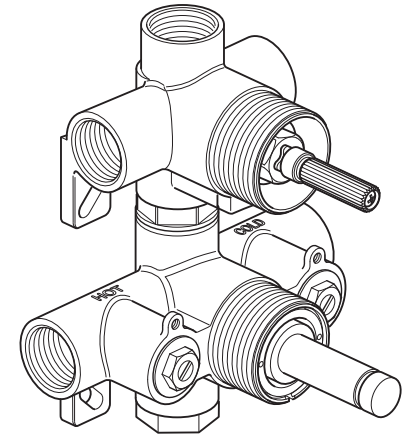
## Installation Guide

This instruction booklet covers model:

CEL-148D/2/RO, CEL-148D/2/SQ, ELE-148D/2, LIF-148D/2, MIX-148D/2,  
NOT-148D/2, ORI-148D/2, PHA-148D/2, PHO-148D/2.

CEL-148D/3/RO, CEL-148D/3/SQ, ELE-148D/3, LIF-148D/3, MIX-148D/3,  
NOT-148D/3, ORI-148D/3, PHA-148D/3, PHO-148D/3.

CON-BV048D/2-BR  
CON-BV048D/3-BR



Vado  
Wedmore Road, Cheddar, Somerset, England BS27 3EB  
tel 01934 744466. fax 01934 744345  
aftersales@vado.com  
www.vado.com



## Important - please read

Please read these instructions carefully before starting installation and keep for future reference.

Remove all packaging and check the product for missing parts or damage before starting installation.

Any alterations made to this product and fittings may infringe water regulations and will invalidate the guarantee.

The installation must comply with all Local/National Water Supply Authority Regulations/Byelaws and Building and Plumbing Regulations.  
To be installed in accordance with BS EN806.

We strongly recommend that you use a qualified and registered plumber.

## General installation

This fitting is a mixing device and therefore operating pressures (hot and cold supply) should be kept as balanced as possible in order to assure optimum efficiency.

When installed, the fitting must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 and Scottish Byelaws 2004.

For further information, contact the Water Regulations department of your local water supplier (see the WRAS website [www.wras.co.uk](http://www.wras.co.uk) for details) or the Water Regulations Advisory Scheme by email ([info@wras.co.uk](mailto:info@wras.co.uk)) or telephone: 01495848454.

Before making any inlet pipe connections, all supply pipes MUST be thoroughly flushed to remove debris. Failure to do so could result in damage or low flow from the mixer unit.

The fitting of strainers is recommended as close as practicable to the water supply inlets of the thermostatic mixing valve.

If the concealed valve is connected to pipework that is fixed by soldering, it is essential the concealed valve is protected to prevent the check valves, thermostatic cartridge and headworks being exposed to elevated temperatures which can cause internal damage.

**Please note:** if installing in an enclosed environment, access should be left for servicing and maintenance. No costs relating to inadequate access can be accepted.

## Operating Specifications

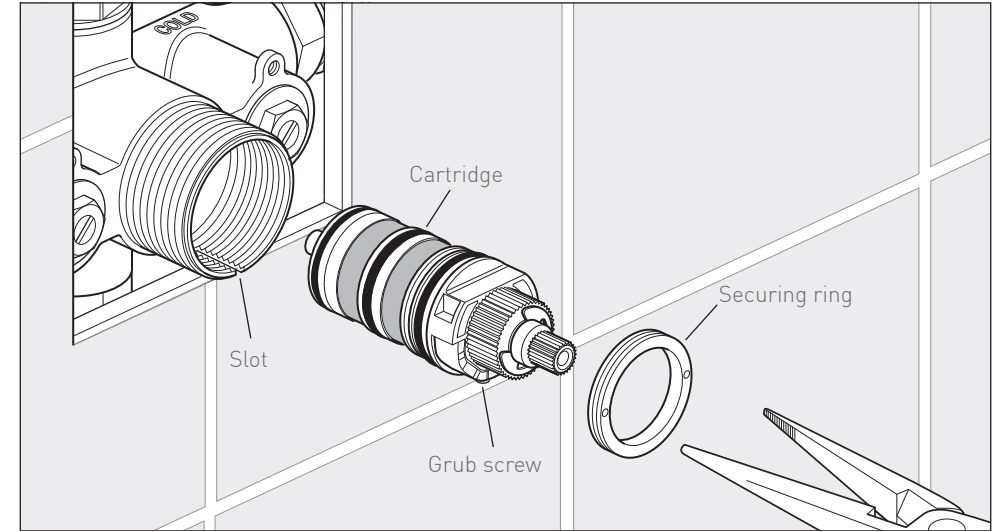
### Operating Pressure

Minimum operating pressure for shower **0.2 bar**

Minimum operating pressure for bath **1 bar**

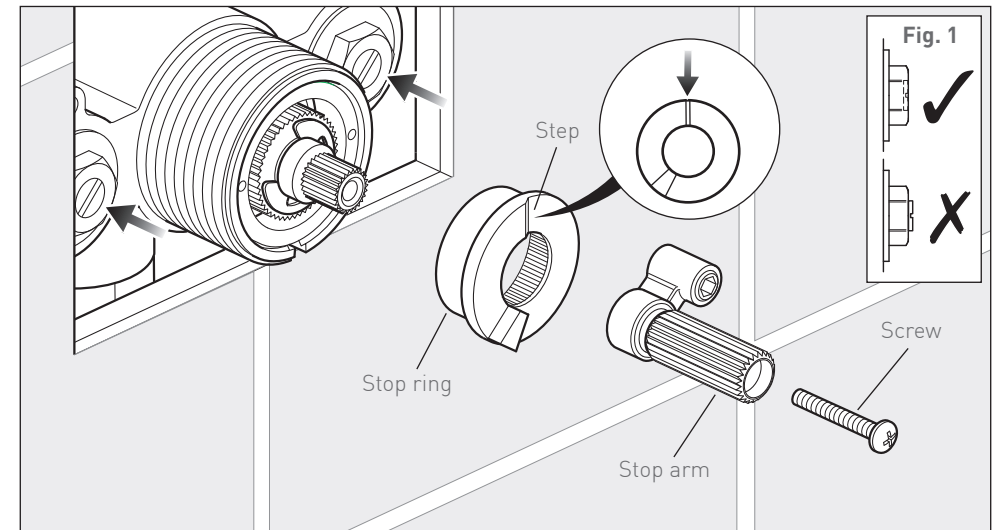
Maximum operating pressure **5 bar**

## Installation



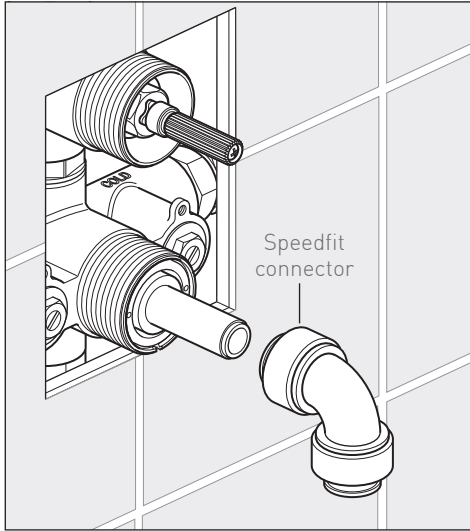
Push the cartridge into the body, align the grub screw with the slot and continue to push the cartridge all the way in.

Fit the securing ring and tighten using a pair of long-nosed pliers

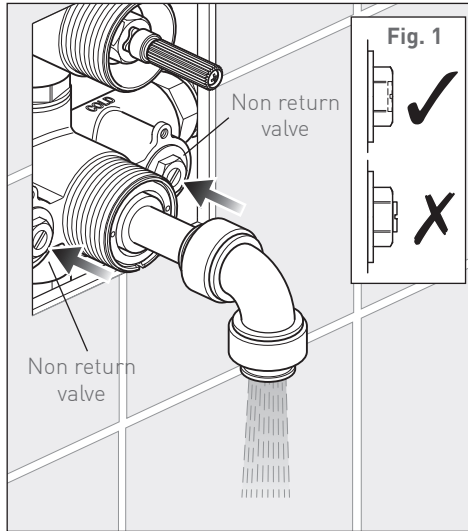


Push the stop ring onto the splines of the cartridge, making sure that the step on the stop ring is at 12 o'clock. Slide the stop arm on and secure in position with the screw. Open both non return valves.

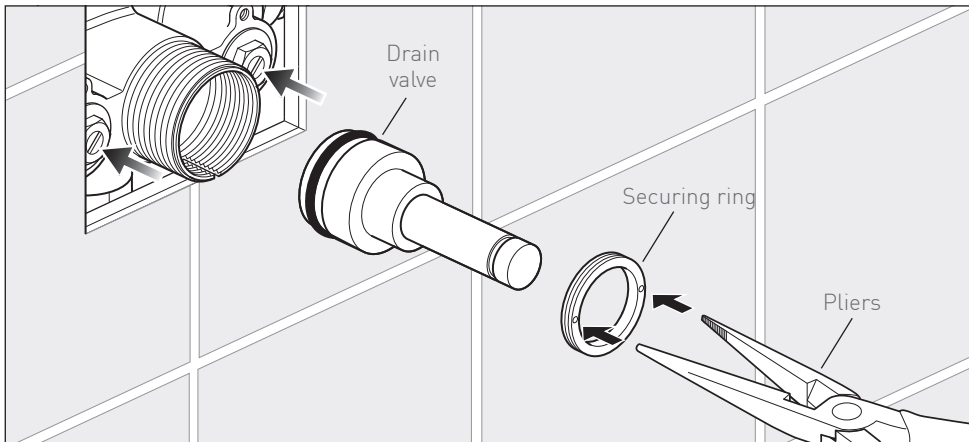
## Installation



We recommend to push a speedfit connector (not supplied) over the drain, and place a bucket underneath. If a speedfit connector is not being used, carefully hold a bucket underneath the drain valve.



Turn on at the mains, open both non return valves and allow the debris and water to drain. When loosening the non return valve do not unscrew further than the face of the nut (**see Fig. 1**). After approximately two minutes of flushing the pipe work and product close both non return valves. Do not overtighten.



Close both non return valves. Remove the speedfit connector. Using a pair of long-nosed pliers unscrew the securing ring and remove. Pull the drain valve out from the body

## Operating specifications

### Conditions of use for Type 2 valves

	High Pressure
Maximum Static Pressure [Bar]	10
Flow Pressure, Hot & Cold [Bar]	0.5 to 5
Hot Supply Temperature (°C)	55 to 65
Cold Supply Temperature (°C)	Equal to or Less than 25

**Note:** Valves operating outside these conditions cannot be guaranteed by the Scheme to operate as Type 2 valves. If a water supply is fed by gravity then the supply pressure should be verified to ensure the conditions of use are appropriate for the valve.

### Approvals & Application

**NSF approval number: NSF1913**

This thermostatic mixing valve has been independently tested by NSF and certified as meeting the requirements of the BS EN1111 specification under the TMV2 scheme as being suitable for use on the following designations: HP-S-T.

### Recommended outlet temperatures

The NSF TMV scheme recommends the following mixed water outlet temperature for use in all premises:

- 44° C for bath fill but see notes below;
- 41° C for showers;
- 41° C for washbasins;
- 38° C for bidets.

The mixed water temperatures must never exceed 46° C.

The maximum mixed water temperature can be 2° C above the recommended maximum set outlet temperatures.

### Note:

46° C is the maximum mixed water temperature from the bath tap. The maximum temperature takes account of the allowable temperature tolerances inherent in thermostatic mixing valves and temperature losses in metal baths.

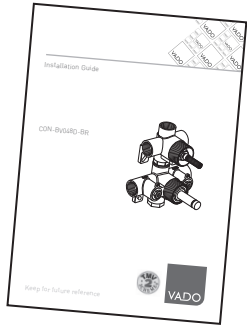
### It is not a safe bathing temperature for adults or children.

The British Burns Association recommends 37° to 37.5° C as a comfortable bathing temperature for children. In premises covered by the Care Standards ACT 2000, The maximum mixed water outlet temperature is 43° C.

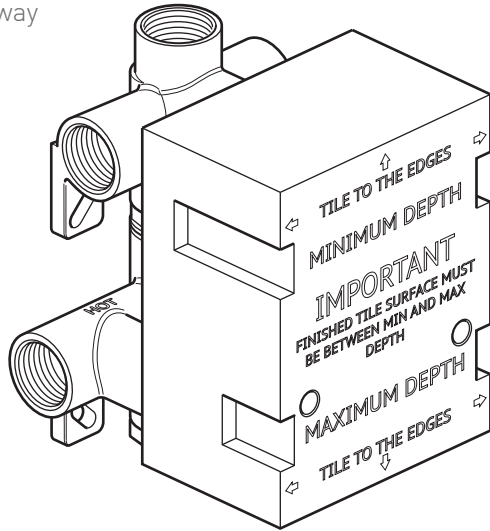
The thermostatic mixing valve will be installed in such a position that maintenance of the TMV and its valves and the commissioning and testing of the TMV can be undertaken.

# Contents of Packaging

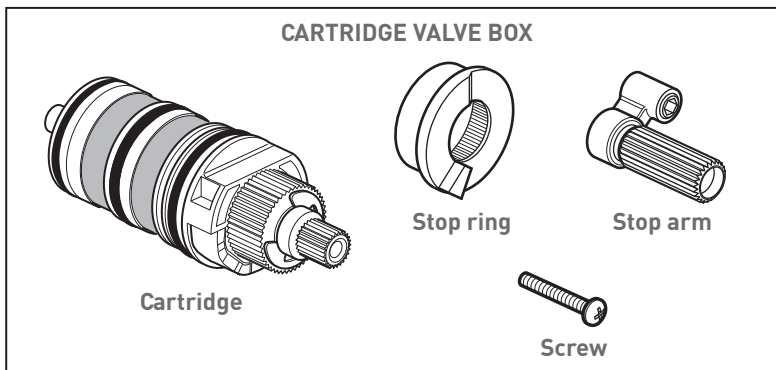
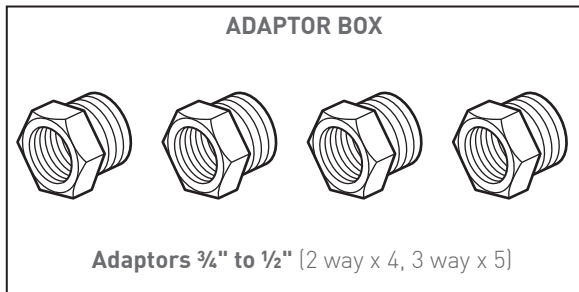
For illustrational purposes, the 3 way body is shown.



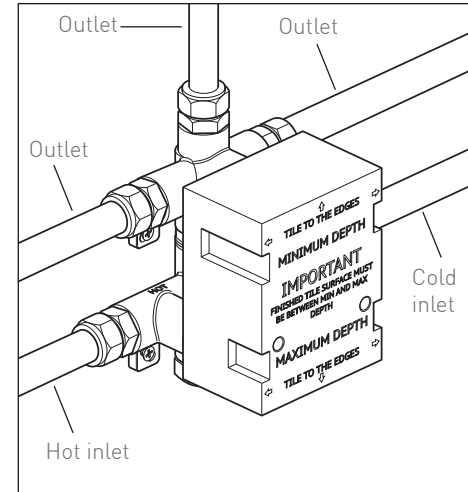
Installation guide



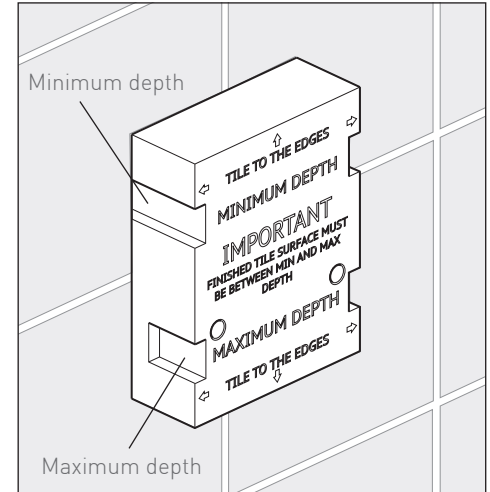
Valve body  
(with mortar guard)



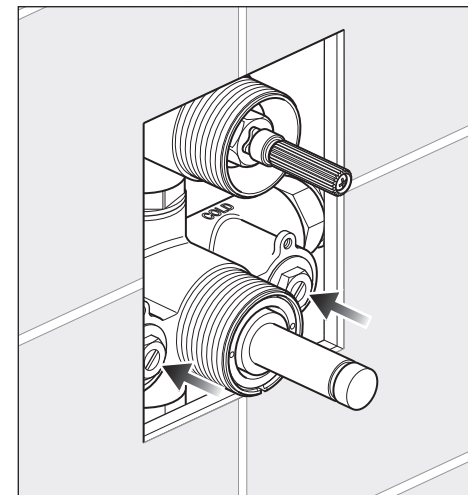
# Installation



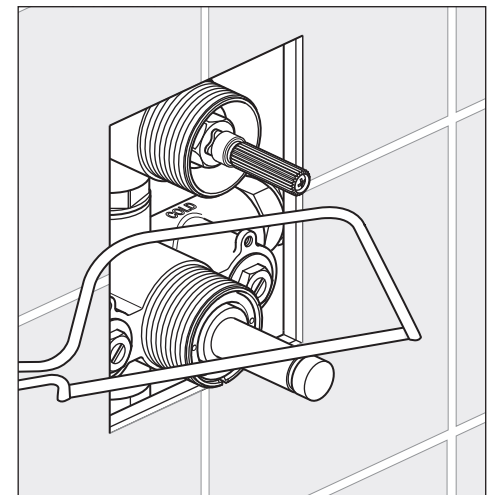
Use the supplied adaptors if required. Connect hot supply to the lower left inlet of the valve and cold supply to the lower right inlet. Connect the top and bottom outlets to the desired channels.



Finish the wall by tiling up to the mortar guard, keep the final finished wall surface between the min and max marks. Unscrew the 2 mortar guard screws and remove from the wall.



Turn off both non return valves by turning clockwise, do not overtighten.



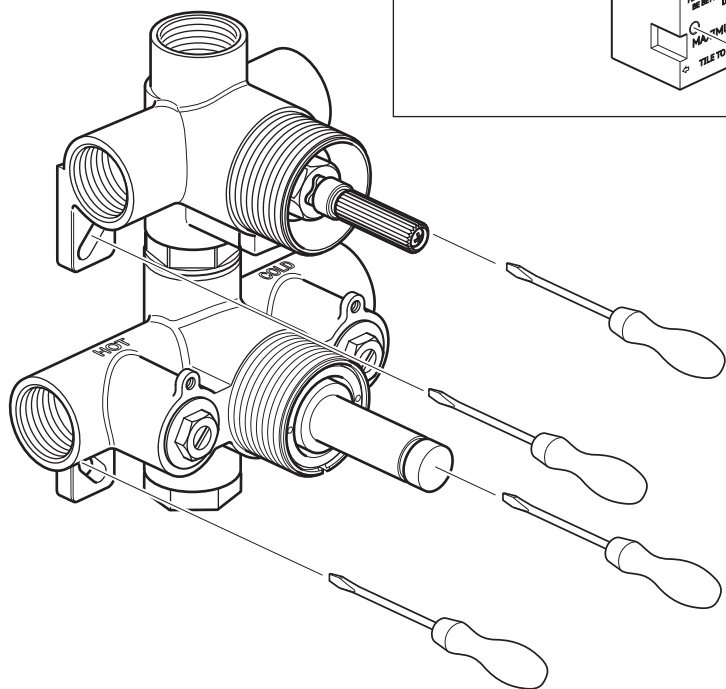
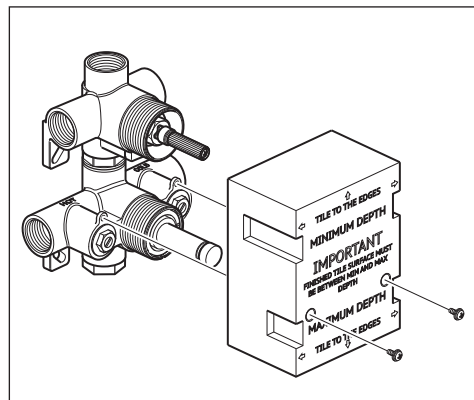
**Important:** ensure the hot and cold water supplies have been isolated. Using a suitable tool, cut the end off the drain through the easy cut section.

## Installation

### Mortar guard

During and after installation protect the outer parts by leaving the mortar guard on the valve to avoid damage to plated surfaces.

Remove the mortar guard by releasing the two screws and pulling off.



**⚠ Warning!** Please check for any hidden cables and pipes before drilling holes in the wall.

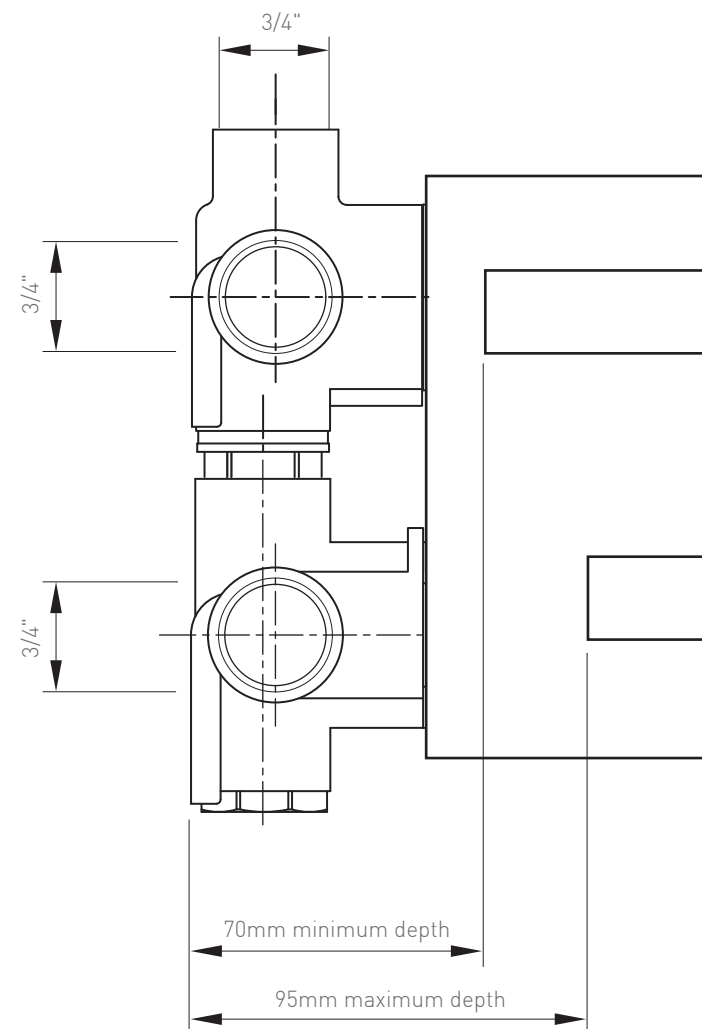
The back of the valve must be set into the wall between (70mm minimum - 95mm maximum) from the face of the finished wall.

Select the position for the shower valve and offer the shower valve to the wall, make sure the valve is vertical with a level and fixed to a flat surface, mark the 4 fixing points with a suitable pencil.

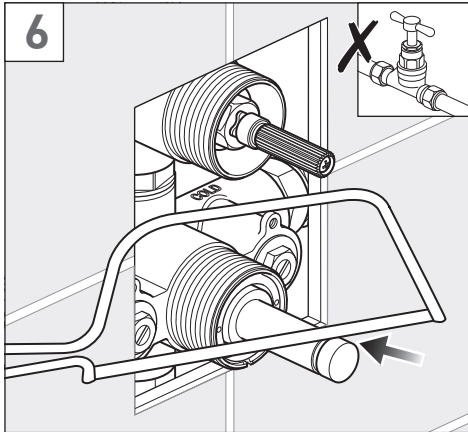
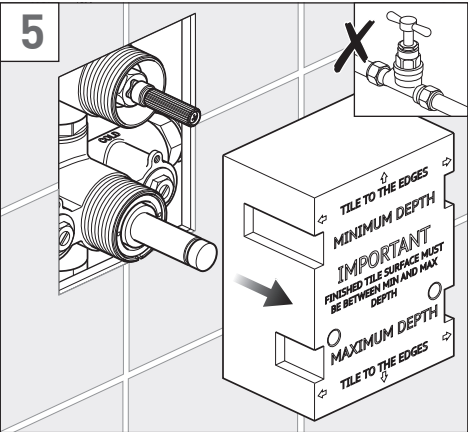
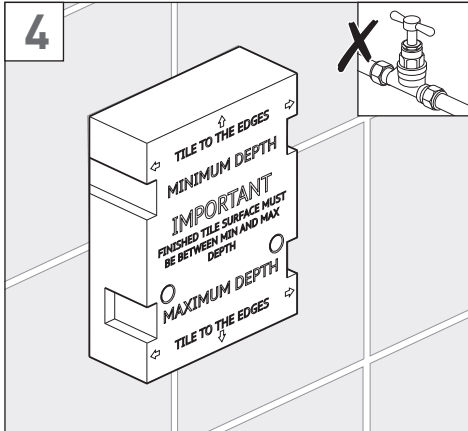
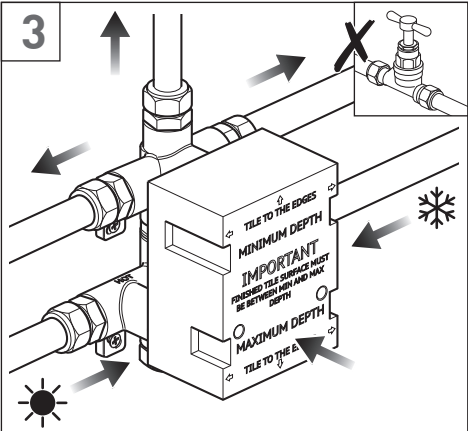
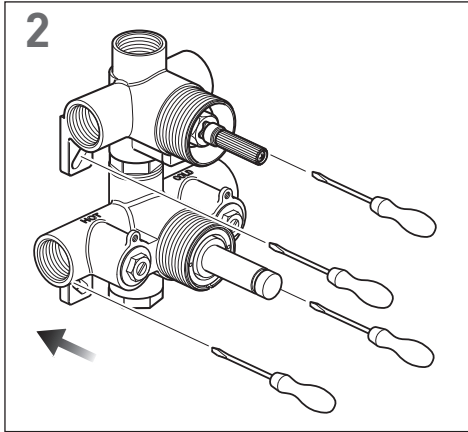
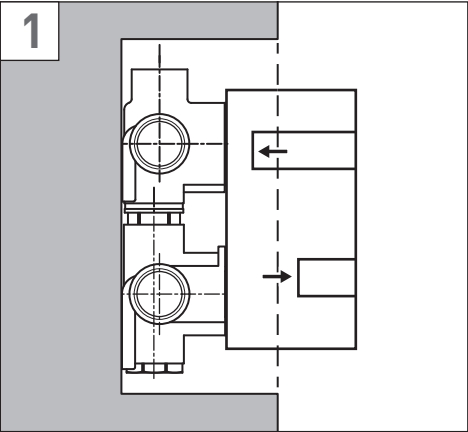
Secure using suitable fixings.

Replace the mortar guard and secure in position with the two screws.

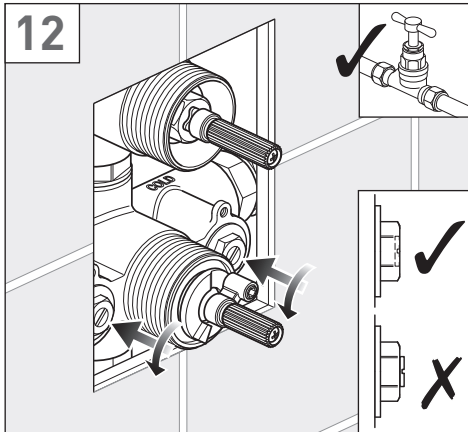
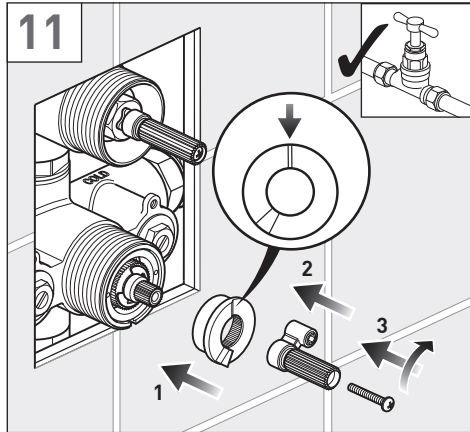
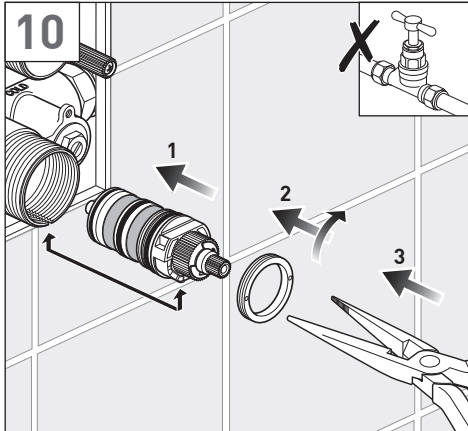
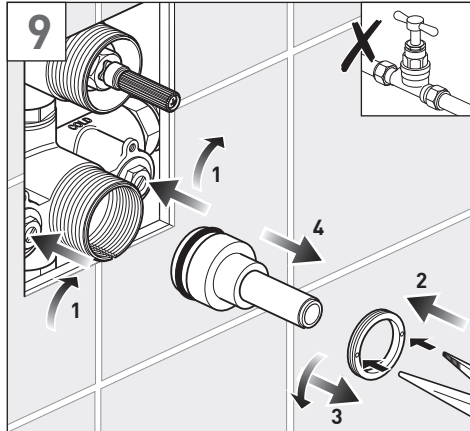
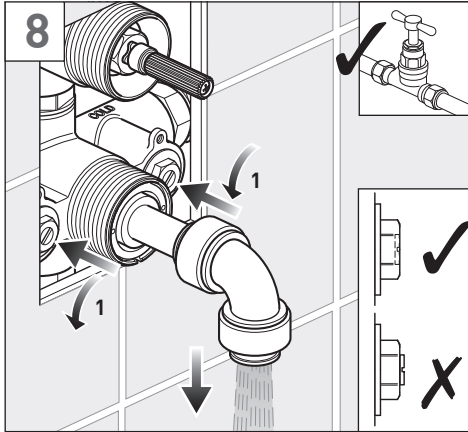
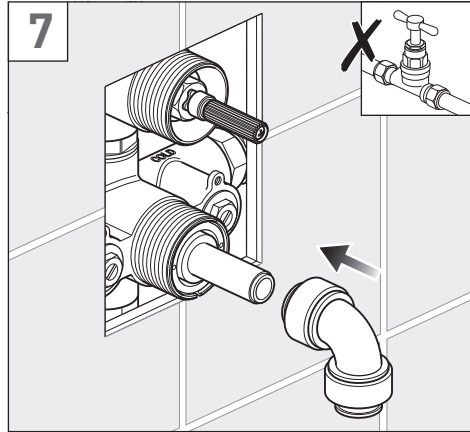
## Valve dimensions



# Installation - Quick guide

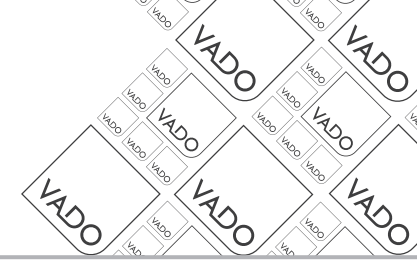


# Installation - Quick guide





where inspiration flows



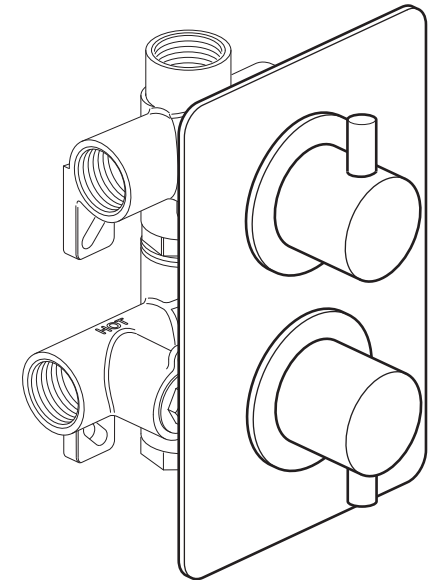
## Installation Guide

This instruction booklet covers model:

CEL-148D/2/RO, CEL-148D/2/SQ, ELE-148D/2, LIF-148D/2, MIX-148D/2,  
NOT-148D/2, ORI-148D/2, PHA-148D/2, PHO-148D/2.

CEL-148D/3/RO, CEL-148D/3/SQ, ELE-148D/3, LIF-148D/3, MIX-148D/3,  
NOT-148D/3, ORI-148D/3, PHA-148D/3, PHO-148D/3.

### TRIM-KIT



Vado  
Wedmore Road, Cheddar, Somerset, England BS27 3EB  
tel 01934 744466. fax 01934 744345  
aftersales@vado.com  
www.vado.com



## Important - please read

Please read these instructions carefully before starting installation and keep for future reference.

Remove all packaging and check the product for missing parts or damage before starting installation.

Any alterations made to this product and fittings may infringe water regulations and will invalidate the guarantee.

The installation must comply with all Local/National Water Supply Authority Regulations/Byelaws and Building and Plumbing Regulations.

To be installed in accordance with BS EN806.

We strongly recommend that you use a qualified and registered plumber.

## General installation

This fitting is a mixing device and therefore operating pressures (hot and cold supply) should be kept as balanced as possible in order to assure optimum efficiency.

When installed, the fitting must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 and Scottish Byelaws 2004.

For further information, contact the Water Regulations department of your local water supplier (see the WRAS website [www.wras.co.uk](http://www.wras.co.uk) for details) or the Water Regulations Advisory Scheme by email ([info@wras.co.uk](mailto:info@wras.co.uk)) or telephone: 01495848454.

Before making any inlet pipe connections, all supply pipes MUST be thoroughly flushed to remove debris. Failure to do so could result in damage or low flow from the mixer unit.

The fitting of strainers is recommended as close as practicable to the water supply inlets of the thermostatic mixing valve.

Please take great care when installing this mixer not to damage its surface.

If the concealed valve is connected to pipework that is fixed by soldering, it is essential the concealed valve is protected to prevent the check valves, thermostatic cartridge and headworks being exposed to elevated temperatures which can cause internal damage.

**Please note:** if installing in an enclosed environment, access should be left for servicing and maintenance. No costs relating to inadequate access can be accepted.

## Operating Specifications

### Operating Pressure

Minimum operating pressure for shower **0.2 bar**

Minimum operating pressure for bath **1 bar**

Maximum operating pressure **5 bar**

## Notes



## Handle installation

**NOTE: For illustrative purposes only the Celsius handles and cover plate is shown below. Please follow the same procedure to install the other handles.**

### Flow control handle (top).

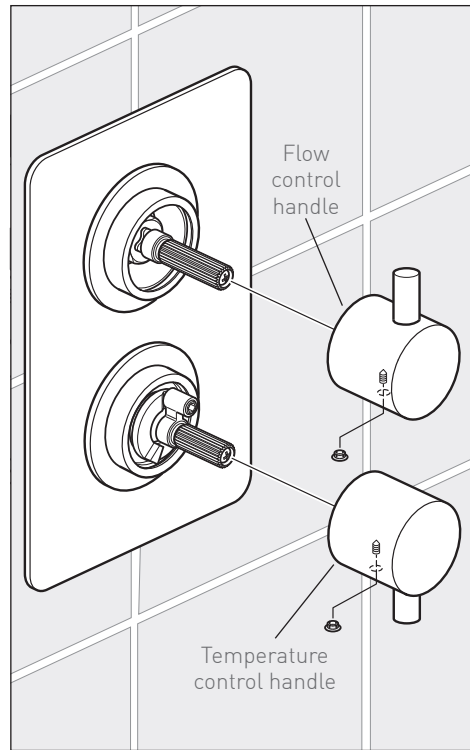
Carefully slide the flow control handle onto the splines of the top valve, with the lever at 12 o'clock. Secure the handle with the grub screw on the underside using the supplied hex key.

Push on the screw cover cap.

### Temperature control handle (bottom).

Carefully slide the temperature control handle onto the splines of the bottom valve, with the lever at 6 o'clock. Be careful not to turn the spline of the valve. Secure the handle with the grub screw on the underside using the supplied hex key.

Push on the screw cover cap.



## Operating specifications

### Conditions of use for Type 2 valves

	High Pressure
Maximum Static Pressure (Bar)	10
Flow Pressure, Hot & Cold (Bar)	0.5 to 5
Hot Supply Temperature (°C)	55 to 65
Cold Supply Temperature (°C)	Equal to or Less than 25

**Note:** Valves operating outside these conditions cannot be guaranteed by the Scheme to operate as Type 2 valves. If a water supply is fed by gravity then the supply pressure should be verified to ensure the conditions of use are appropriate for the valve.

### Approvals & Application

**NSF approval number: NSF1913**

This thermostatic mixing valve has been independently tested by NSF and certified as meeting the requirements of the BS EN1111 specification under the TMV2 scheme as being suitable for use on the following designations: HP-S-T.

### Recommended outlet temperatures

The NSF TMV scheme recommends the following mixed water outlet temperature for use in all premises:

- 44° C for bath fill but see notes below;
- 41° C for showers;
- 41° C for washbasins;
- 38° C for bidets.

The mixed water temperatures must never exceed 46° C.

The maximum mixed water temperature can be 2° C above the recommended maximum set outlet temperatures.

### Note:

46° C is the maximum mixed water temperature from the bath tap. The maximum temperature takes account of the allowable temperature tolerances inherent in thermostatic mixing valves and temperature losses in metal baths.

### It is not a safe bathing temperature for adults or children.

The British Burns Association recommends 37° to 37.5° C as a comfortable bathing temperature for children. In premises covered by the Care Standards ACT 2000, The maximum mixed water outlet temperature is 43° C.

The thermostatic mixing valve will be installed in such a position that maintenance of the TMV and its valves and the commissioning and testing of the TMV can be undertaken.

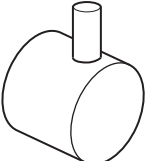
# Contents of Packaging

For illustrational purposes, the Celsius plate and handles are shown.

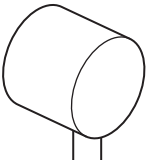


**Installation guide & User manual**


**HANDLE BOX**



**Flow Handle**  
(in cotton bag)

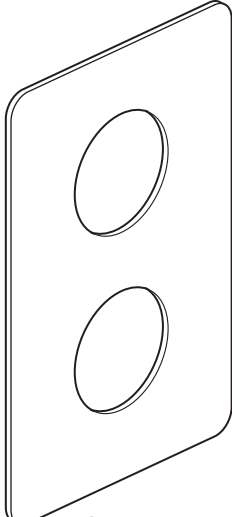


**Temperature Handle**  
(in cotton bag)



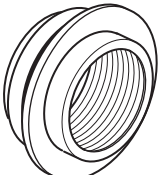
**Cover caps    Hex key**  
(in plastic bag)

**COVER BOX**

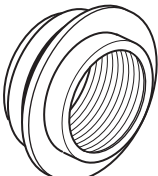


**Cover**  
(in cotton bag)

**SHROUD BOX**

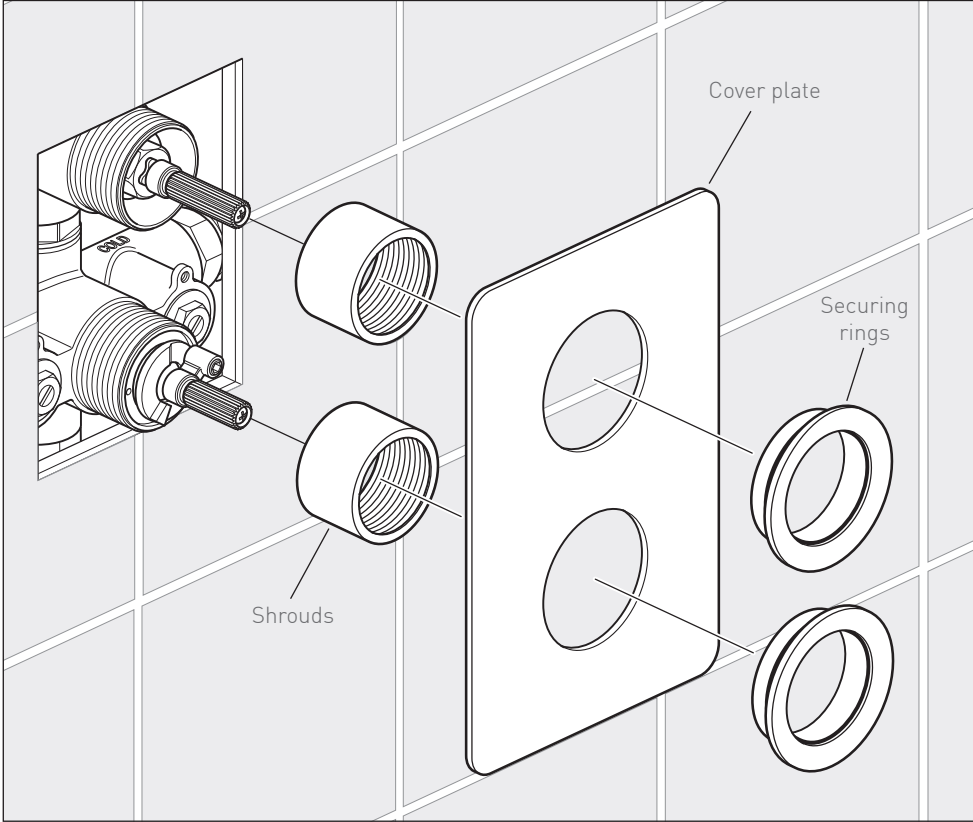


**Shroud & Securing ring**  
(in cotton bag)



**Shroud & Securing ring**  
(in cotton bag)

# Installation



Screw shrouds on ensuring they sit proud of the finished wall. The shrouds can be turned/adjusted to achieve this.

Carefully place the cover plate over the shrouds, once the plate is flush with the wall, secure with securing rings.

# Commissioning

Please check the following:

1. The designation of the thermostatic mixing valve matches the application.
2. The supply pressures are within the valves operating range.
3. The supply temperatures are within the valves operating range.
4. Isolating valves (and strainers preferred) are provided.

If all these conditions are met, proceed to set the temperature as stipulated within these installation instructions.

**Note: mix water temperature at terminal fitting should never exceed 46° C.**

The valve has been factory set under balance pressures and hot water supply at 65°C. When your specific operating conditions are significantly different from the above, the temperature of the water may vary from the setting.

When the difference is too great, you can adjust the calibration of the valve to suit individual requirements of the installation:

1. Check the temperature of the water being delivered from the outlet with a thermometer, when the stop arm is located at 12 o'clock.

**Note:** temperature readings should be taken at normal flow rate after allowing for the system to stabilise.

2. If the temperature is not 38°C proceed to reset the calibration as follows:

Remove the stop arm (**see Fig. 1**).

Ensure the step on the stop ring is located at 12 o'clock (**see Fig. 2**)

Do not remove the plastic stop ring. Turn the spline of the thermostatic valve clockwise to decrease the temperature and anti-clockwise to increase the temperature until 38°C is achieved at outlet.

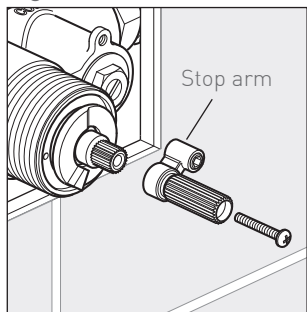
**Note:** the sensing part of the thermometer probe must be fully submerged in the water that is to be tested.

Replace the stop arm making sure that the arm is against the step (**see Fig. 3**)

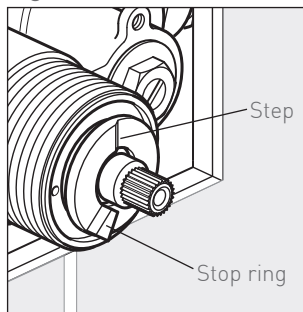
When the handle is attached (see page 9) ensure the temperature does not exceed 46°C when turned entirely anti-clockwise.

Your valve setting is now commissioned.

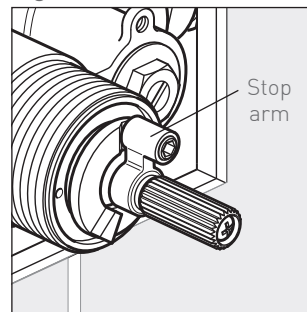
**Fig. 1**



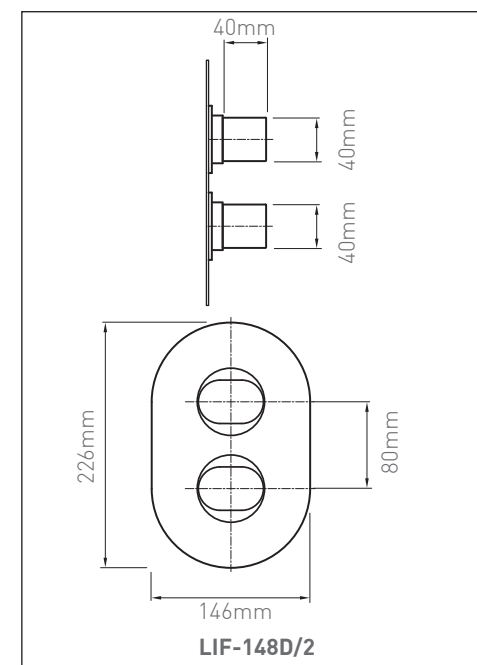
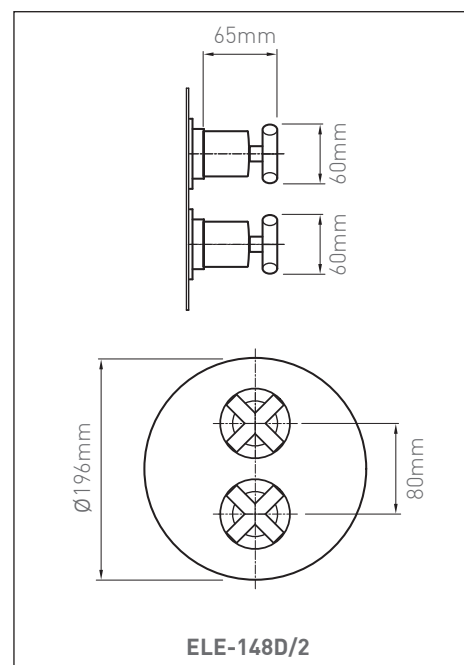
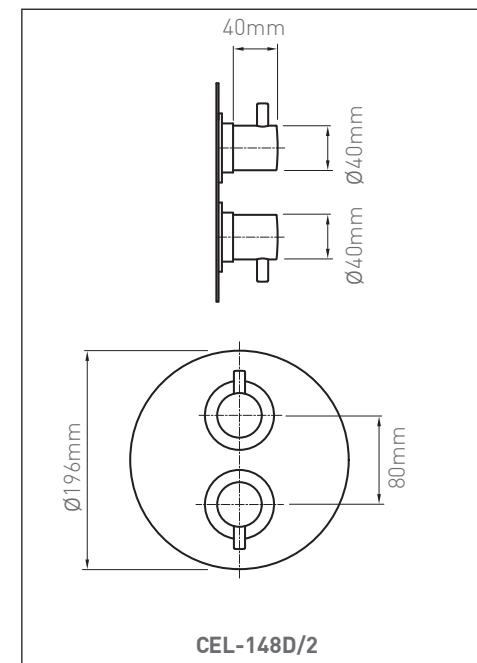
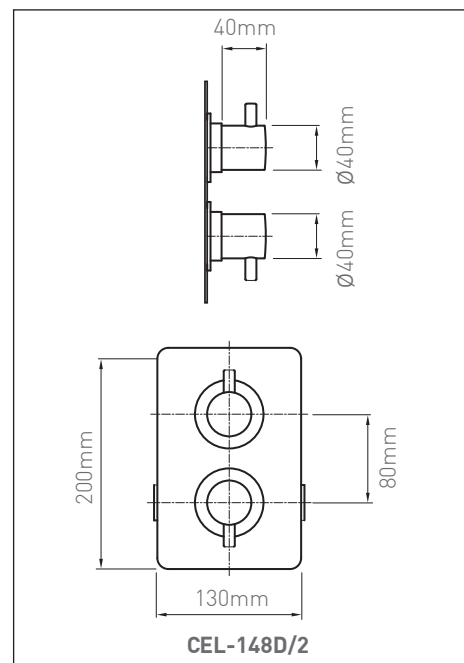
**Fig. 2**



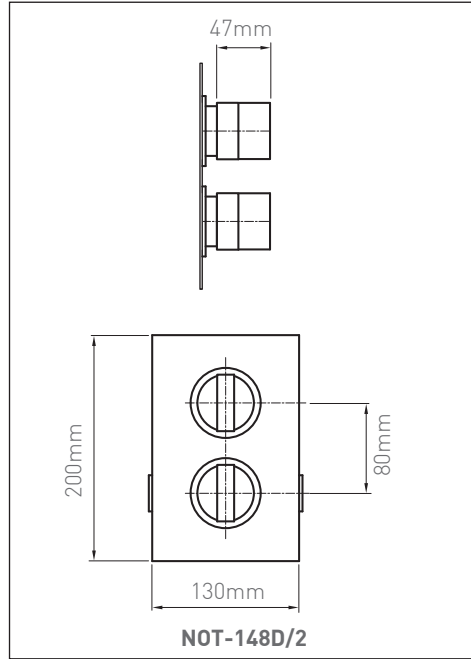
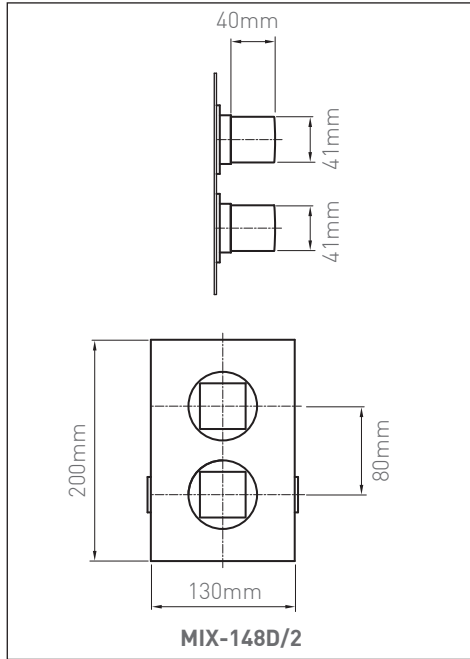
**Fig. 3**



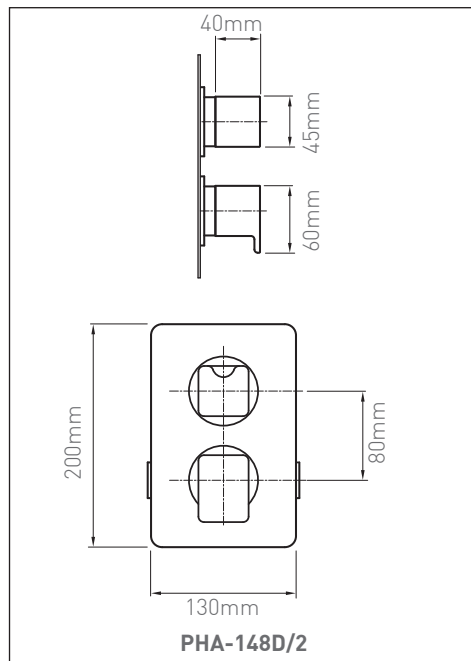
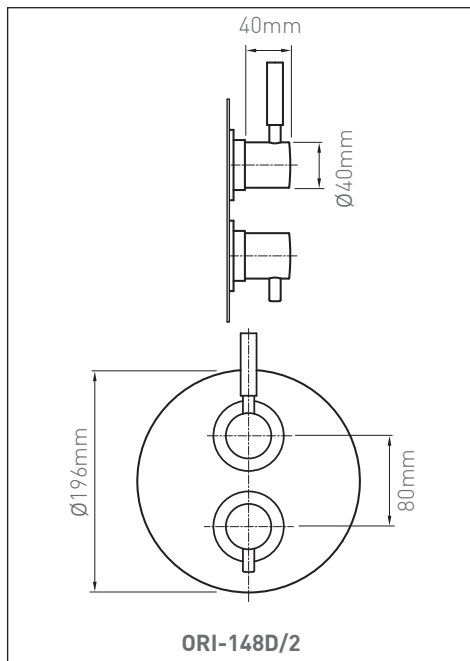
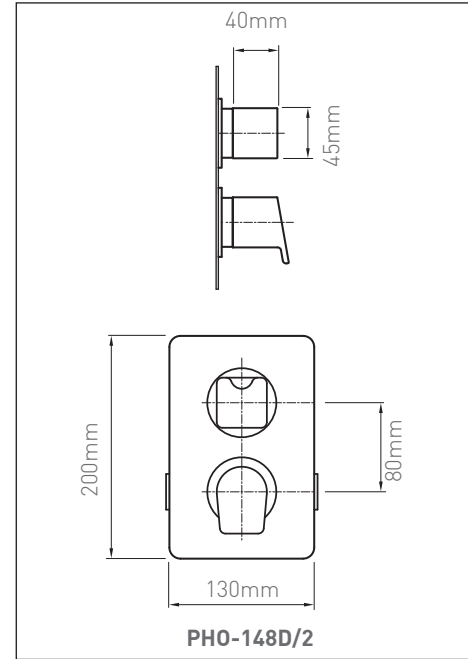
# Dimensions



## Dimensions



## Dimensions



# Guarantee

For any technical or installation queries please contact VADO on 01934 745163. This product is guaranteed against manufacturing defects from the date of purchase until the expiry of the relevant guarantee period shown below.

## The guarantee is only valid if:-

1. The product has been installed, used and maintained in accordance with VADO's instructions and subjected to normal use only.
2. The defect is not due to use of an unsuitable or inadequate water or power supply.
3. The defect is not due to accident, misuse, neglect or repair other than by VADO or VADO authorised agents or damage caused by foreign objects or substances.
4. You have registered your warranty on the VADO website within six months of purchase.

Under this guarantee (which is non-transferable) VADO will, at its option, repair or replace free of charge any product (or replacement part) found to be defective. The guarantee does not extend to any consequential loss or damage. After repair or replacement the relevant guarantee period will be calculated from the original date of purchase.

## The relevant guarantee periods are:-

VADO chrome products have a 12 year guarantee.

VADO antique gold products have 3 year guarantee.

VADO digital products have a 6 year guarantee.

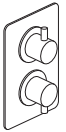
All other VADO products and spares have a 3 year guarantee.

VADO electric showers have 2 year guarantee.

All claims under the guarantee must be submitted in writing to the person who supplied the product to you and must be received no later than the last day of the relevant guarantee period. All claims must be accompanied by proof of purchase (sales receipt or delivery note).

VADO operates a policy of continuous product development and therefore reserves the right to change the product, packaging and documentation specifications without notice.

This guarantee is in addition to and does not affect your statutory rights as a consumer.



## Concealed Thermostatic Mixing Valve - 2 way User Guide



# Welcome

## Thank you for choosing VADO

Our products can be found in some of the most prestigious hotel, commercial and residential developments across the world, therefore you can expect exceptional product quality and outstanding customer service.

This product has passed through stringent quality assurance processes coupled with demanding lifecycle mechanical testing to ensure it is recognised by the NSF TMV2 Scheme and reaches the exacting standards that allow us to offer our premium 12 year guarantee. \*

To ensure this product operates at its optimum efficiency, it is essential this product is maintained and serviced in accordance with these instructions.

We work to ensure our product designs are harmonious with all sanitaryware, so when you choose VADO, your choice of coordinating items is unlimited.

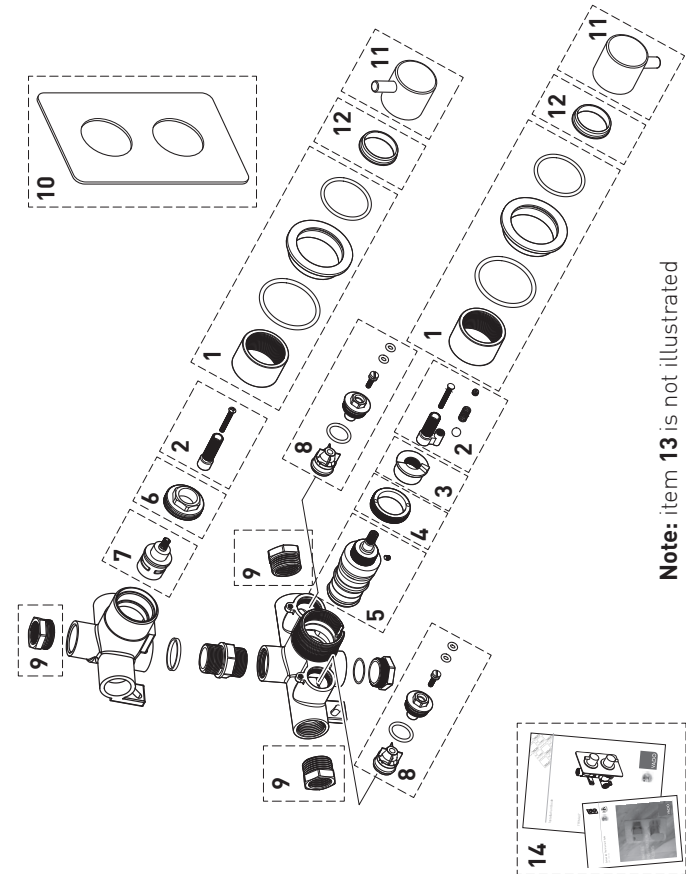
## With VADO, you can really let your inspiration flow.

For any technical or operational queries please contact our experienced aftersales team on 01934 745163.

\* This product has been certified as meeting the requirements of BS EN 1111 under approval number NSF1913.

**Vado**, Wedmore Road, Cheddar, Somerset, England BS27 3EB  
tel 01934 744466. fax 01934 744345  
aftersales@vado.com  
www.vado.com

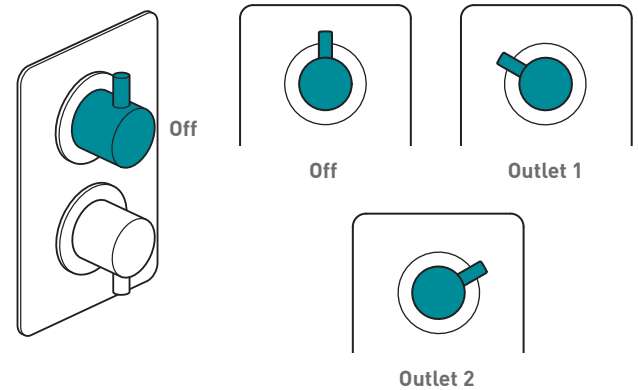
# Parts:



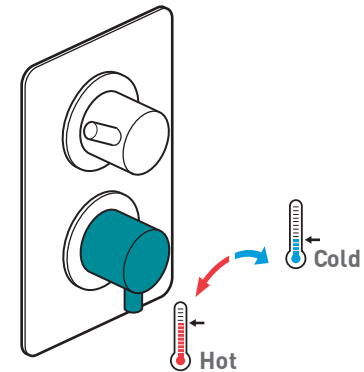
## Parts list:

Item	Description	Part Code	Quantity
<b>11</b>	Handles for CEL	CEL-1/FLOW-D-C/P CEL-1/TEMP-D-C/P	1 pair
	Handles for PHA	PHA-1/FLOW-D-C/P PHA-1/TEMP-D-C/P	
	Handles for PHO	PHO-1/FLOW-D-C/P PHO-1/TEMP-D-C/P	
	Handles for LIF	LIF-1/FLOW-D-C/P LIF-1/TEMP-D-C/P	
	Handles for MIX	MIX-1/FLOW-D-C/P MIX-1/TEMP-D-C/P	
	Handles for NOT	NOT-1/FLOW-D-C/P NOT-1/TEMP-D-C/P	
	Handles for ORI	ORI-1/FLOW-D-C/P ORI-1/TEMP-D-C/P	
	Handles for ELE	ELE-1/FLOW-D-C/P ELE-1/TEMP-D-C/P	
<b>12</b>	Handle Spacer	CON-148HANDLE- SPACER	2
<b>13</b>	Grub Kit	CON-148-GRUBKIT	1
<b>14</b>	Installation guide & User manual		1

## Operation



Turning the flow control handle to the required position increases the flow of water



Turning the temperature control handle in the direction of the arrows increases/decreases the temperature

## Servicing:

It is a requirement that all TMV2 approved valves shall be verified against the original set temperatures results once a year. When commissioning/testing is due the following performance checks shall be carried out.

Measure the mixed water temperature at the outlet.

Carry out the cold water supply isolation test by isolating the cold water supply to the TMV2, wait for five seconds if water is still flowing check that the temperature is below 46° C.

If there is no significant change to the set temperature ( $\pm 2^{\circ}\text{C}$  or less from the original settings) and the fail-safe shut off is functioning, then the valve is working correctly and no further service work is required.

### Notes:

If there is a residual flow during the commissioning or the annual verification (cold water supply isolation test), then this is acceptable providing the temperature of the water seeping from the valve is no more than 2°C above the designated maximum mixed water outlet temperature setting of the valve.

Temperature readings should be taken at the normal flow rate after allowing for the system to stabilise.

The sensing part of the thermometer probe must be fully submerged in the water that is to be tested.

Any thermostatic mixing valve (TMV) that has been adjusted or serviced must be re-commissioned and re-tested in accordance with the manufacturers instructions.

See [vado.com](http://vado.com) for more information.

## Parts list:

Item	Description	Part Code	Quantity
1	Fixing Ring Kit	CON-148-SHROUDS	1
2	Spindle Kit	CON-148-SPINDLE-KIT	1
3	Stop Ring	CON-148-STOP-RING	1
4	Locking Ring - Temp Cartridge	CON-148-TEMPLOCKRING	1
5	Temperature Cartridge	V-001C-PLA	1
6	Locking Ring - Diverter Cartridge	CON-148-DIV-LOCKRING	1
7	Diverter	FL-804-33/3X	1
8	NRV + Isolator kit	CON-148-NVR-KIT	1
9	Adaptors	CEL-CON-3/4MX1/2F-BR	1
10	Plate for: CEL-148D/SQ, PHA-148D, PHO-18D	CEL-0024/SQ-D-C/P	1
	Plate for: MIX-148D, NOT-148D	MIX-0024/SQ-D-C/P	1
	Plate for: LIF-148D	LIF-0024/SQ-D-C/P	1
	Plate for: CEL-148D/RO/, ELE-148D, ORI-148D	CEL-0024/RO-D-C/P	1



## Cleaning instructions:

The electroplating on this product is finished to the highest standard. Due care needs to be taken to ensure the appearance is retained.

We recommend cleaning all products with a soft damp cloth ONLY and advise strongly against the use of all aggressive/corrosive cleaning products i.e. powders and liquids. If these instructions are not followed, this may invalidate your guarantee in the event of a problem occurring.

## Maintenance:

**We advise that the below is carried out annually as failure to do so may result in invalidation of warranty.**

**Shut off the water supply to both hot and cold inlets, before commencing any maintenance work below.**

**See isolation procedure on page 7.**

### **Thermostatic cartridge**

This thermostatic valve is fitted with a single filtering facility.

Filters are fitted on the thermostatic cartridge.

Depending on the water quality, filters may become dirty, causing reduced flow and inefficient working of the valve.

To clean the filters, you must first remove the cartridge from the housing.

### **Removing the Cartridge**

1. Shut off the water supply to both inlets at the isolating valves. Ensure the thermostatic valve has been successfully isolated. See page 7 for correct procedure.

2. Remove the temperature control handle. Remove the screw from the temperature stop arm and pull off. Pull off the stop ring. Pull off the plate securing ring and unscrew the shroud. Using a pair of long-nosed pliers unscrew the securing ring and remove.

**For more information see the installation manuals.**

3. Pull out the thermostatic cartridge.  
4. Clean filters by rinsing them under running water to remove any debris.  
5. If there is limescale deposits then it is recommended to immerse the cartridge for a few minutes in 50% white vinegar + 50% hot water, brush the filters gently and then rinse under running water to clean all particles. If this is not effective, a replacement cartridge should be fitted.

## Maintenance:

6. Before reassembling the cartridge, clean its housing with a wet cloth and grease the 'O' rings using a suitable silicone grease, insert the thermostatic cartridge.
  7. Screw the securing nut on and tighten using long-nose pliers, careful not to overtighten.
  8. Place the temperature stop ring on the cartridge so the step is located at 12 o'clock.
  9. Turn the water supply on via the isolating valves.
  10. Check the water temperature to ensure correct commissioning.
- See page 8 of the Trim Kit instructions or Vado.com for commissioning.**
11. Replace shrouds, plate, securing ring, stop arm and handle.
  12. Secure the handle (see page 10 of Trim kit installation).

## Isolation procedure:

### **IMPORTANT:**

Please see the below procedure for isolating concealed thermostatic valves.

1. Remove handles/faceplate and trim parts allowing access to the isolation points on the valve.
2. Screw down the isolation screws clockwise until you feel a resistance (taking care not to over tighten).
3. Turn shower on to check isolation, please ensure that your body/hands are not under the flow of water as there is a potential for delivery of hot water.
4. Remove temperature stop ring (essential).
5. With shower in the on position, replace temperature handle on thermostatic valve (ensure temperature stop ring has been removed).
6. Turn temp handle fully anti-clockwise until stop point is reached and can be turned no further, please ensure that your body/hands are not under the flow of water as there is potential for delivery of hot water if isolation has been unsuccessful.
7. Turn temperature handle fully clockwise until you feel a resistance.
8. If there is no flow of water coming from the outlet during both points 6 and 7 isolation has been successful, you may now remove and maintain the thermostatic cartridge.
9. If at any of the above points water continues to flow please isolate at an alternative point within the system for both hot and cold and repeat points 3-9.