Twyford
bathrooms

SOLA W/M THERMOSTATIC MIXER PROX SENS TMV3

SF1119CP

INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS

PLEASE LEAVE THESE INSTRUCTIONS WITH THE USER

INTRODUCTION

This installation guide has been produced for the thermostatic mixer with infrared sensor control. These instructions cover the installation, operation and maintenance. Please read the enclosed instructions before commencing the installation of this product, please note;

WE RECOMMEND THAT THE INSTALLATION OF ANY TWYFORD PRODUCT IS CARRIED OUT BY AN APPROVED INSTALLER

The installation must be carried out strictly in accordance with the Water Supply (Water Fitting) Regulations 1999 and any local authority regulations.

If in doubt, we would recommend that you contact either your local water authority, the secretary of the Water Regulations Committee at WRc on Tel: 01495 248454 or Institute of Plumbing on Tel: 01708 472791.

IMPORTANT

When installing the product, care must be taken not to damage/affect the finish of this product. To ensure the finish of this product is maintained, we recommend that this product be cleaned periodically with a soft cloth and mild detergent. The use of any type of abrasive or solvent-based cleaners is not recommended.

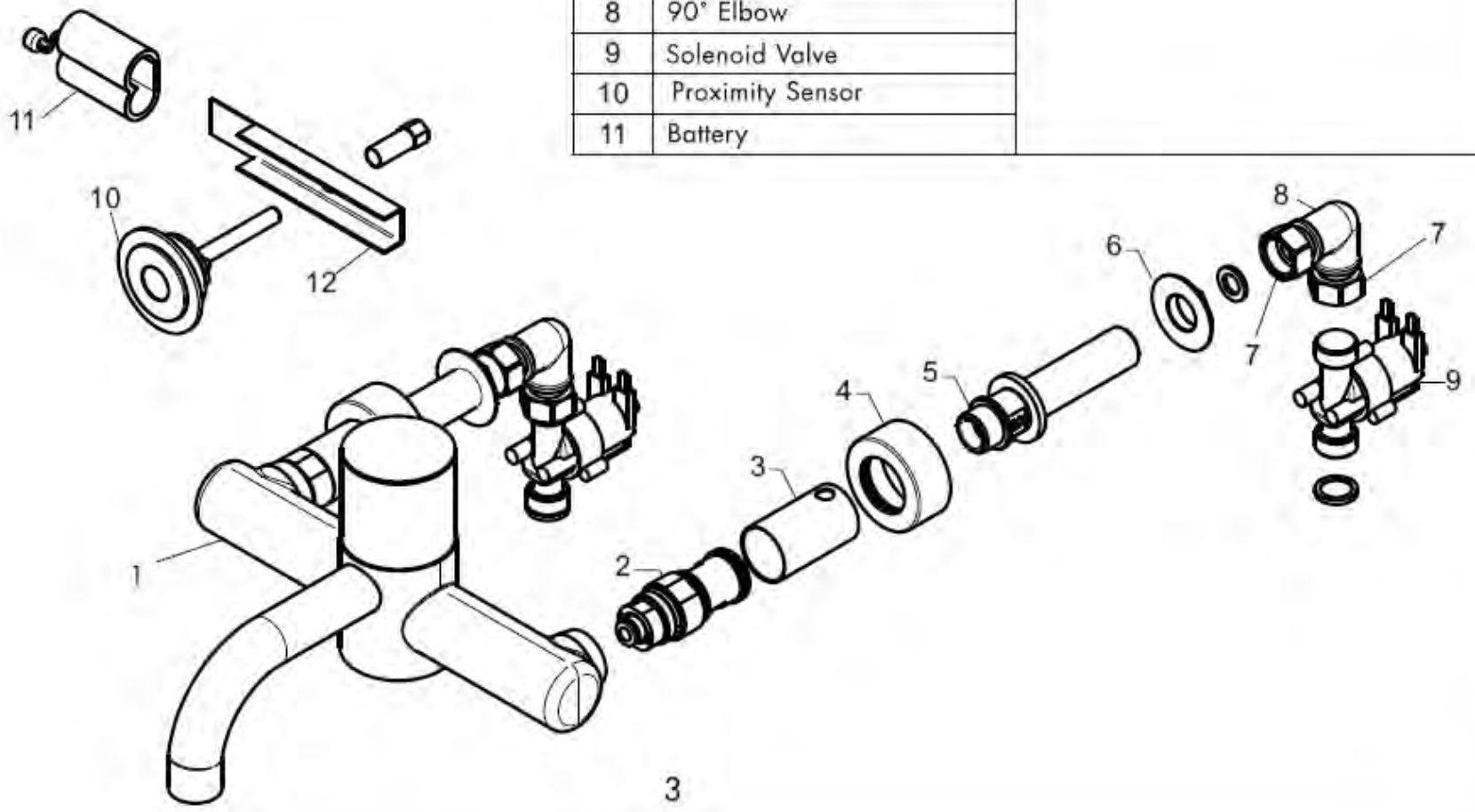
All products MUST be re-commissioned to suit site conditions to ensure optimum performance levels of the product are obtained.

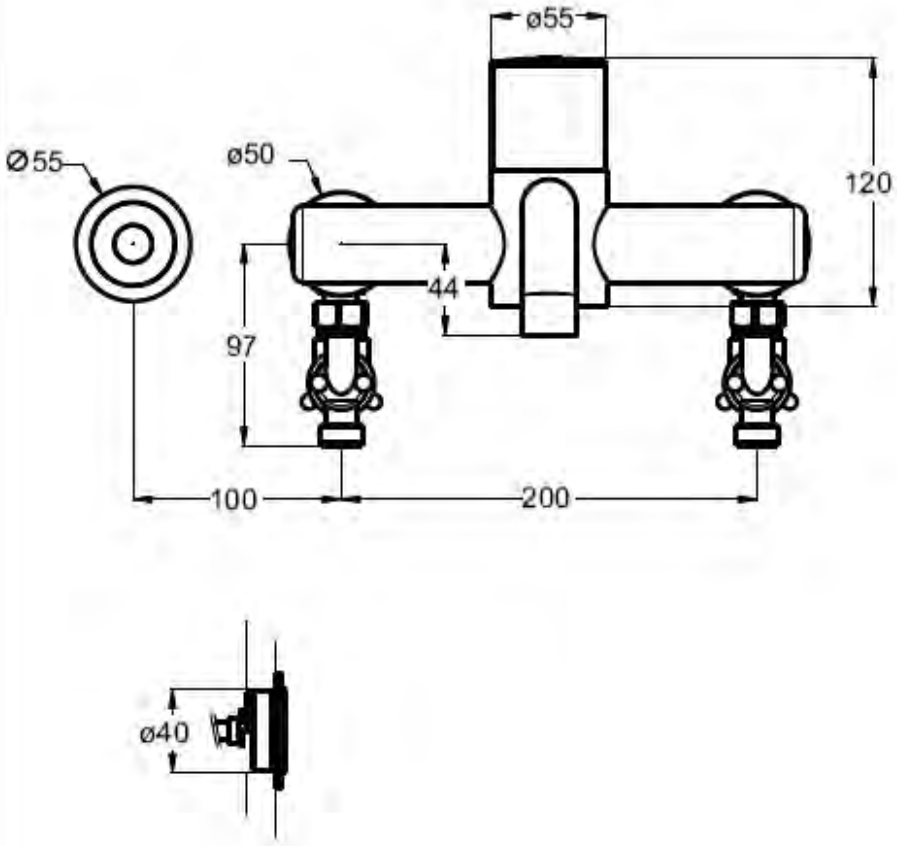
TECHNICAL DATA

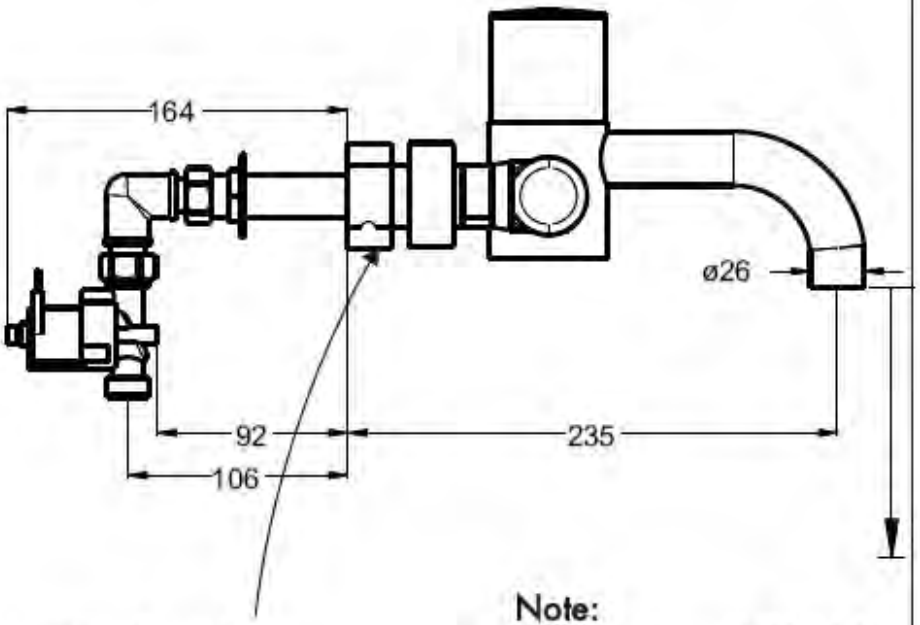
This Twyford thermostatic mixer is suitable for installations on all types of plumbing systems, including gravity supplies, fully pumped, modulating combination boiler, unvented water heater and unbalanced supplies i.e. Cold Mains & Tank Fed Hot. They are not suitable for non-modulating combination boilers.

Max Dynamic Pressure	5 bar	Min Operating Pressure	1.0 bar
Max Static Pressure	12 bar	Min Inlet Temperature	10°C
Max Inlet Temperature	85°C	Temperature Stability	± 2°C
Pre Set Factory Temp Setting	43°C	Min Temp Differential	
Max Unbalanced Pressure Ratio	15:1	to ensure fail-safe between	
(With Flow Regulators)		hot and cold supplies	10°C
Max Unbalanced Pressure Ratio	5:1		
(Without Flow Regulators)			

Ref	Item / Description	Ref	Item / Description
1	Body & Thermostatic Cartridge	12	Mounting Bracket
2	Inlet tail assembly including check valve		
3	Concealing tube		
4	Concealing plate		
5	Inlet Tail assembly		
6	Back nut		
7	Swivel Nut		
8	90° Elbow		
9	Solenoid Valve		
10	Proximity Sensor		
11	Battery		







Slide concealing flange forward to expose the isolation valve
Use a screwdriver to operate isolating ball valve

Note:
Please refer to HTM 64 for guidance on mounting distance from outlet to waste fitting.

INSTALLATION INSTRUCTIONS

Please check that all components are in the box prior to installation of this product.

Before starting the installation, ensure that the site conditions are suitable - see Technical Data.

Ensure that the location of the solenoid valve and battery will be in an easily accessible position for any future servicing.

The two union joints on the elbows can be used to position the solenoid valves above or below the inlet to the mixer, ensure the flow through the solenoid valves is in the correct direction.

The hot water supply is connected to the left hand side of the mixer when viewed from the front and the cold water to the right.

Assemble the isolation/filter valves (6) and end flanges (7) and fix through the panel and secure with the back nuts (8) as shown on page 4, with the screw driver operators beneath the valves.

Assemble the 90° elbows (11) and swivel joints (9 &10) to solenoid valves and assemble to the end flanges (7) ensuring a water tight joint. The solenoid valve bodies should be secured to brackets or uni strut for more secure fixing.

Assemble the mixer to the isolation/filters and secure with the swivel nuts (2).

Please ensure that the hydraulic installation is completed and that all check valves are open.

Install the sensor a safe distance from the body of the tap, ensuring that the electric cables supplied are long enough to connect the sensor to the battery box (23). Using double side tape stick the battery box to the wall.

Ensure that the sensor cannot be affected by any external sources such as a mirror which may create nuisance operation of the product.

Connect the sensor to the solenoid valves and the battery. The sensor calibrates itself automatically and the tap is ready to work. Within a range of 3 to 8 cm the sensor detects objects and opens the solenoid valves for a max of 60 sec.

If the users wishes to stop the water flow before, a simple hand wave in the 3 to 8cm distance is enough to give the stop order.

We recommend that independent filters, isolation and check valves are fitted in an accessible position in conjunction with this product for servicing purposes (not supplied).

INSTALLATION INSTRUCTIONS

We recommend that independent filters, isolation and check valves are fitted in an accessible position in conjunction with this product for servicing purposes (not supplied).

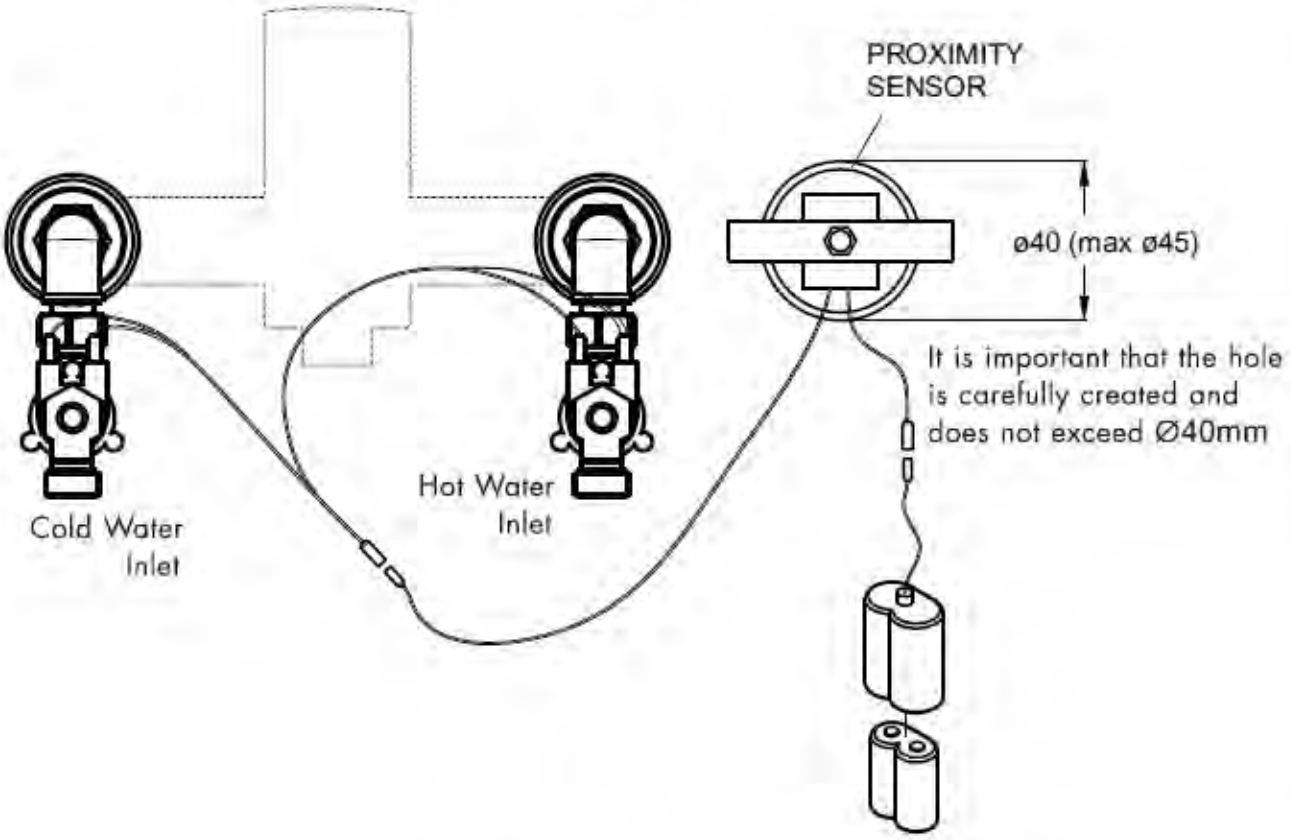
This product is identifiable by the number 950413 stamped on the cartridge and the code SF1015CP on the main body of the fitting.

This product is designed to be panel mounted or basin mounted when used in conjunction with the appropriate optional kit.

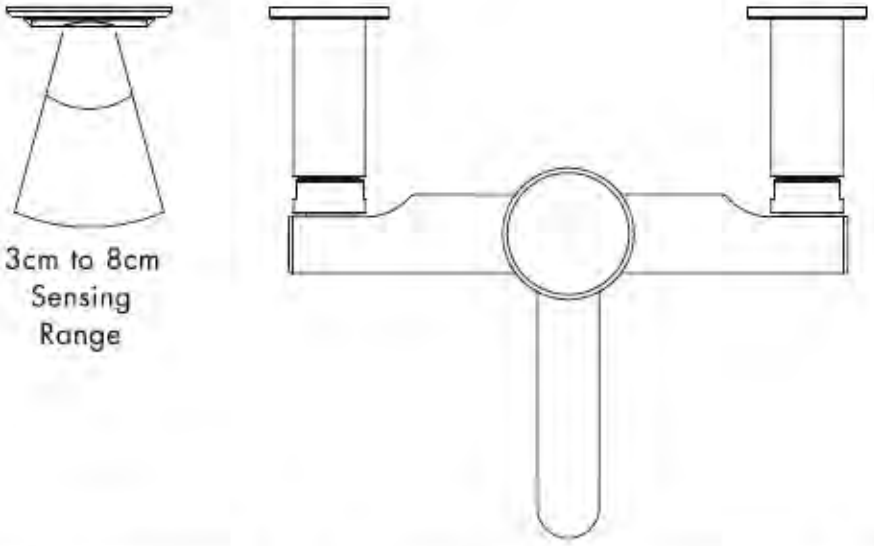
Care should be taken that the maximum panel thickness does not exceed 33mm.

In cases where the panel is thicker than this sufficient space should be created to allow for ease of installation and servicing.

INSTALLATION CONNECTIONS



OPERATION

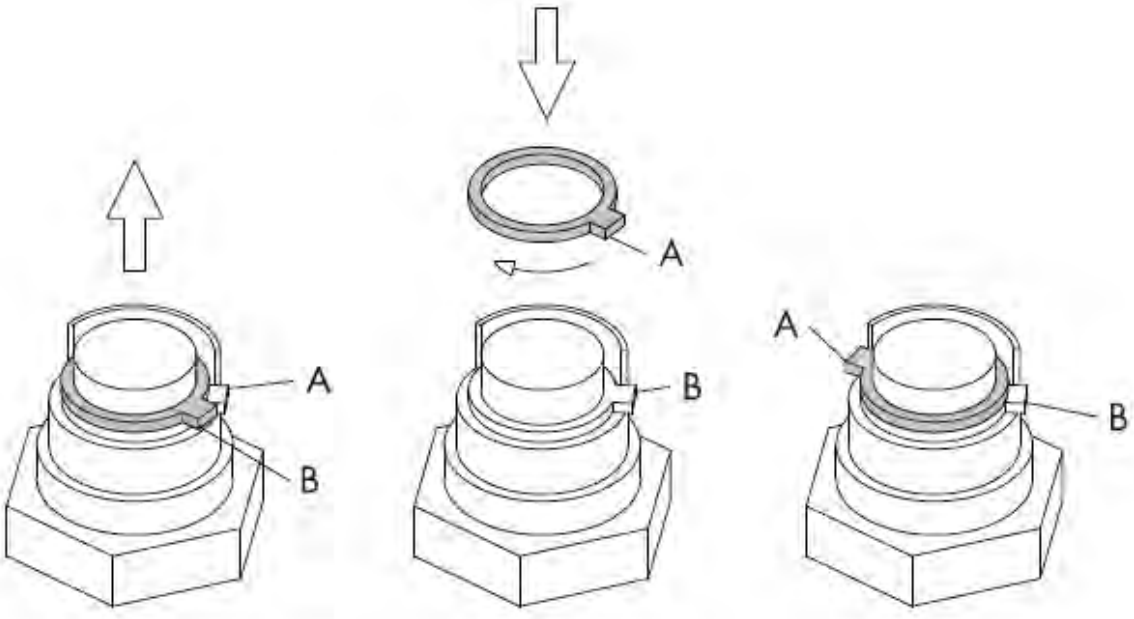


As the sensor is activated the delivery of water will commence, the mixer is factory set to deliver water at a pre-set maximum temperature of 43°C.

ON SITE CALIBRATION

The factory setting at 43°C can be altered to suit site conditions, care must be taken when altering the setting as INCORRECT CALIBRATION CAN CAUSE INJURY.

- Remove indice from the cap.
- Fully open the flow control to establish a stable flow of water at the maximum temperature set point.
- Taking care not to damage the tap body remove the indice, screw and cap from the body.
- Remove the temperature stop rings from the cartridge and set the mixed water to the required temperature.
- Once the required temperature is achieved replace the two temperature stop rings on the splined spindle of the cartridge as shown. These two rings are used to prevent the temperature of the cartridge from being altered whilst in use. The stop rings should be locked at either end of the operating cycle and will form a physical stop to prevent the cartridge turning (see drawing)



Remove rings and set water temperature

Replace rings as shown

Rings acting as stops

REMOVING CARTRIDGE

1 Remove indice from the cap.

2 Remove the screw and lift the cap from the tap body.

3 The thermostatic cartridge is a single piece construction and should be unscrewed from the mixer body using a 36mm A/F socket

4 When re-installing the cartridge into the mixer body - it should be tightened to a maximum of 15 Nm.

5 Re-commission the mixer in accordance with the instructions enclosed.

FAULT FINDING

Fault	**Diagnosis**
Mixed water temperature is not hot enough.	Ensure the hot water supply is at a constant temperature above 60°C. Check for airlocks in the pipe work.
The water goes cold during operation.	Insufficient stored hot water supply. Ensure that the boiler is still firing for combi boilers. Adjust the boiler control to a minimum setting of 65°C not necessarily the best flow rate.
When the water is set at cold, the blended temperature is too hot.	Hot and cold supply connections have been made in reverse.
Max blended temperature is too hot or when set to hot water runs cold.	Check the commissioned maximum temperature of the valve. Check connections to the mixer are not reversed.
Flow of water through the valve is low.	Check the filters are clean and supply pressure is above 0.2 bar.
No flow of water.	Ensure the mixer has not fail-safed, and check that there is water flow to the mixer and the check valves are not closed - see exploded drawing.

AFTERCARE INSTRUCTIONS

- With all highly polished items, care should be taken not to damage any of the external surfaces.
- We recommend that to ensure the physical appearance of the product and component parts is maintained that periodically, the mixer should be cleaned with a soft damp cloth and a mild detergent. The use of abrasive or solvent cleaners will damage the finish of the product.
- Care should be taken when cleaning the sensor eye not to damage it by using abrasive cleaners
- We recommend periodically that the flow straightener is cleaned using a suitable scaling solvent. Check first it does not affect the plated surface.
- We recommend that this fitting is serviced at least once a year.
- Only use genuine Twyford spare parts, full list available on request by ringing the help line, the number is on the back page.

BATTERY REPLACEMENT

When the battery is ready for changing the LED will flash continuously and the mixer continues to operate normally.

When the LED remains illuminated the battery is exhausted and must be replaced.

1. Turn off the water supply to the hot and cold connections of the mixer.
2. Pull apart the two halves of the connector to disconnect the battery.
3. Remove the battery from the rubber housing and replace with a new one of the same type - model CRP2 - 6 Volt.
4. Re-connect the two parts of connector, refit the battery housing.
5. Turn on the water supplies and cover the sensor window with a finger until the water turns off automatically.
6. Remove your finger and the mixer enters the auto programme sequence.
7. The mixer is now ready for use.

WHEN THIS PRODUCT IS USED IN A D08 APPLICATION THE FOLLOWING INSTRUCTIONS APPLY

INTRODUCTION

This Twyford thermostatic mixer has been specifically designed and manufactured to meet the requirements of BS 7942: 2000 and NHS D08. The product have been independently tested and approved as a TYPE 3 valve under the TMV3 scheme.

TECHNICAL SPECIFICATION

Outlet Temp Adjustment Range	30°C to 50°C
Temperature Stability	± 2°C
Max. Hoy Inlet Temp	85°C
Inlet Temperature Range	52°C to 65°C: Hot Supply 5°C to 20°C: Cold Supply
Max. Working Pressure	10 bar: Static
Min. Working Pressure	1.0 bar: Dynamic
DO8 Working Pressure Ranges	1.0 to 5.0 bar: High Pressure
Min. Temp Differential (mix to Hot) for fail-safe	10°C
Max. Pressure Inlet Differential	10:1

APPLICATION

This thermostatic basin mixer have been independently tested by WRc and certified as meeting the requirements of the NHS ~ DO8 specification under the TMV3 Scheme as being suitable for use on the following designations

Application	Range
Basin	High Pressure

INSTALLATION

IMPORTANT - The following instructions must be read prior to the installation of any TWYFORD product. The installer should also be aware of their responsibility and duty of care to ensure that all aspects of the installation comply with all current regulations and legislations.

It has been brought to our attention that flushing systems using certain chemicals may wholly or partially remove the lubricant from the internal workings of the valve, which may adversely effect its performance. We recommend that following flushing of the system with chemicals, valves are checked for correct operation.

- It is essential that before installing this TWYFORD thermostatic valve, that the supply conditions of the system to which the valve is intended to be fitted are checked to confirm compliance with the parameters as quoted within section 2 and conditions on which the approval is granted i.e. verify supply temperatures, supply pressures, risk assessments etc.

- Consideration must be made for the possibility of multiple / simultaneous demands being made on the supply system whilst this TWYFORD thermostatic mixing valve are in use, all practical precautions must be made to ensure that the valve is not affected. Failure to make provision within the pipe sizing etc will affect the performance of the mixer.

- The supply system to which this TWYFORD thermostatic valve is to be installed must be thoroughly flushed and cleaned to remove any debris, which may be accumulated during the installation. Failure to remove any debris will affect the performance and the manufacturers warranty on the product. Independent filters / check valves and isolation valves must be fitted in conjunction with the valve. In areas that are subject to aggressive water provision must be made to treat the supplies prior to entering this product.

- The maximum flow rate of the valve will only be achieved when the supply conditions are achieved as quoted, with a flow condition under 1 bar differential pressure.

- This TWYFORD thermostatic mixer has been designed to be wall mounted. It is essential that the access to the valve is not obstructed for future maintenance that may be required to the valve or associated fittings.

- The connection of the hot and cold water supplier must be in accordance with the instructions shown above i.e. hot water connected to the left hand side of the valve when the nozzle is facing you.

- In a situation where one or both of the water suppliers are excessive, it is possible to fit a WRAs approved pressure reducing valve to bring the pressures to within those stated in the technical data previously stated.

- Thermostatic products must be fitted with a back flow prevention device, such as check valves to prevent the cross contamination of supplies. However if required additional WRAs approved back flow prevention devices should be used.

- We recommend that Y Pattern strainers and full bore isolation valves are installed in conjunction with this product as close as practically possible to the location of the valve.

- It is essential that this product should not be installed in situations where there is a possibility of the valve being deprived of water or where demands for water are greater than the actual stored supplies.

- To ensure that performance levels of this Twyford thermostatic mixer are maintained (in the event of cold water failure), the temperature of the hot water supply at the point of entry to the valve must be a minimum of 10°C before the commissioned mixed water discharge temperature.

- This TWYFORD range of products must NOT be subject to any extreme temperature variations either during the installation or under normal operating conditions.

COMMISSIONING

IMPORTANT – The following instructions must be read and understood prior to the commissioning of this Twyford thermostatic mixer. If under any circumstances there are aspects to the installation / system which do not comply with the specification laid down, the valve MUST NOT be put into operation until the system / installation complies with our specification.

- Ensure that the system is thoroughly cleaned and free from any debris prior the commissioning of the valve.

- The commissioning of the temperatures must be carried out using a suitably calibrated thermometer – preferably a digital thermometer.

- In the absence of other temperatures being specified, we recommend that the outlet temperatures quoted in table 1 are used.

TABLE 1

Application	Recommended Set Hot Water Temperature
Basin	41°C

"Extracted from the National Health Service – Health Guidance Note – Safe Hot Water and Surface Temperatures"

- Each Valve must be commissioned taking into consideration any fluctuations, which may occur within the system due to simultaneous demands. It is advisable that any outlets which are connected to the same supply as the valve are open during the setting of the mixed water temperature. During commissioning it is advisable to ensure that the water temperatures are established before any attempt to commission.

- Once the supply temperatures are established and the normal operating conditions are established, the valve can be commissioned, We suggest that the following sequence is followed when commissioning the valve;

  a) Set the mixed water temperature to the required temperature
  b) Measure and record the temperature of the hot and cold water supplies at the connection to the valve.
  c) Measure and record the temperature of the water discharging from the valve from the largest and smallest draw off point.
  d) Isolate the cold water supply to the valve and monitor the mixed water temperature.
  e) Measure and record the maximum mixed water temperature and the final temperature. The final temperature found during the test should not exceed the values quoted in table 2

TABLE 2

Application	Maximum Hot Water Temperature
Basin	43°C

  f) Record all the equipment used during the commissioning

- Ensure that the application, to which the valve will be used in, is appropriate for the approved designation.

- The above information must be recorded and up dated on every occasion when any work is carried out on the valve.

MAINTENANCE

To ensure that this TWYFORD thermostatic mixer provides a high level of protection, we advise the following in service testing is followed (the same equipment used to commission the valve initially must be used in the following tasks).

- After a period of between 6 and 8 weeks after commissioning, carry out the following.

  a) Record the temperature of the hot and cold water supplies.
  b) Record the temperature of the mixed water at the largest draw off flow rate
  c) Record the temperature of the mixed water at the smallest draw off flow rate

- If the mixed water temperature has changed significantly from the previous test results (e.g. >1°C), record the change and before re-setting the mixed water temperature check that:

- All the strainers are clean
  b) That all the check valves are in good working order
  c) The isolation valves are fully open

- If the mixed water temperatures is acceptable, carry out the following:

  a) Record the temperature of the hot and cold water supplies
  b) Record the temperature of the mixed water at the largest draw off flow rate
  c) Record the temperature of the mixed at the smaller draw off flow rate
  d) Isolate the cold water supply to the mixing valve and monitor the mixed water temperature
  e) Record the maximum temperature achieved as a result of (d) and the final temperature (the Final temperature should not exceed the values quoted in (table 2).
  f) Record the equipment used during these tests

- If the test during (e) the mixed water temperature is greater then the values quoted in table 2 or the maximum temperature exceeds the corresponding values from previous test results by more than 2°C, the valve must be serviced.

- After a period of between 12 and 15 weeks after commissioning, carry out the sequence of tests as described previously where necessary.

- Dependant upon the results obtained from the first two series tests, there are a number of possible outcomes:

  a) If there is no significant change in the mixed water temperatures (e.g. >1°C) is recorded between commissioning and step e above – the next in service testing should be carried out at a period of 24 to 28 weeks after initial commissioning.

b) If a small change (e.g. 1 - 2°C) in the mixed water temperature is recorded in only one of these periods, necessitating adjustment of the mixed water temperature, then the next in service can be deferred to 24 to 28 weeks after commissioning.

c) If a small change (e.g. 1 - 2°C) in the mixed water temperature is recorded in both of these periods, necessitating adjustment of the mixed water temperature, then the next in service can be deferred to 18 to 21 weeks after commissioning.

d) If significant changes (e.g. 1-2°C) in the mixed water temperature are recorded in both of these periods necessitating service work, then the next in service test should be carried out at 18 – 21 weeks after commissioning.

- The general principal to be observed after the first 2 or in-service tests is that the intervals for future test should be set to those which previous tests have shown can be achieved with no more than a small change in mixed water temperature.

- In all areas periodic maintenance of the valve and associated fittings i.e. strainers, check valves will ensure optimum performance levels are maintained.

- On the inlet strainers on both the hot and cold water supply inlet can be removed for cleaning.

- The built in check valves can be accessed in a similar way to the filters to ensure freedom and correct seating.

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