

AFTER CARE

Your fitting has a high quality finish and should be treated with extra care to prevent the visible surfaces.

All surfaces will wear if not cleaned correctly. Use a soft damp cloth with clean soapy water to clean the surfaces. Stains can be removed with using washing up liquid. Do not use any other cleaning solution or abrasive cloths or wire cleaners as this may damage the surface of the tap.

If the cloth used to clean the tap has previously been used with a cleaner that contains bleach take special care to thoroughly rinse the cloth with clean water before use.

Twyford bathrooms



INSTALLATION AND OPERATING INSTRUCTIONS FOR THERMOSTATIC BASIN MIXERS COMPLYING WITH N.H.S ESTATES MODEL ENGINEERING SPECIFICATION D08

THE VALVE COVERED IN THIS BOOKLET HAS BEEN TESTED AND APPROVED TO N.H.S
ESTATES MODEL ENGINEERING SPECIFICATION D08

SF1056CP - Sola Wall Mounted Safetouch Surgeon's Mixer
SF1057CP - Sola Deck Mounted Safetouch Surgeon's Mixer

LP - WE LOW PRESSURE WASH BASIN
HP - WE HIGH PRESSURE WASH BASIN

Note : These basin mixers are factory fitted with 2.75l flow limiter (hot side) and 10l flow limiter (cold side), this is stated to comply with BREEAM flow rates less than 6.0l/min at 3.0 bar. Please refer to page 6 in these instructions prior to installation and for the removal of flow limiters for use in Low Pressure installations and changing the Hot side flow limiter used in High Pressure installations when BREEAM flow rates are not required.

TMV3 approval information available on request
WRAS approval information available on request

Twyford Bathrooms
Lawton Road
Alsager
Stoke-on-Trent
ST7 2DF
UK

UK Technical Helpline
Telephone: 0844 412 5951
Fax: 0844 412 5922
Email: twyford.technical@twyfordbathrooms.com

INTRODUCTION

It has been recognised that users of hot water in care establishments are at risk from scalding. This risk has been reduced by the use of thermostatic mixing valves. In order to assure the performance of thermostatic mixing valves N.H.S. Estates Model Engineering Specification DO8 was written. The valves listed in the following pages have been tested and approved to this standard by a third party as part of the BUILDCERT scheme for use within their designated applications.

The following abbreviated designation codes are used throughout this booklet. Detailed descriptions are given below:-

HP High pressure
LP Low pressure
S Shower
B Bidet
W Washbasin
T44 Bath with fill temperature of 44°C max
T46 Bath with fill temperature of 46°C max

THE SF1056CP & SF1057CP BASIN MIXERS HAVE BEEN APPROVED FOR USE IN THE FOLLOWING TMV3 DESIGNATIONS :-

CODE	OPERATING PRESSURE	APPLICATION
LP-WE	LOW PRESSURE	BASIN MIXER
HP-WE	HIGH PRESSURE	BASIN MIXER

For full installation instructions and method of temperature adjustment see General Assembly and Servicing Guide.

INSTALLATION RECOMMENDATIONS

The following general recommendations should be observed.

- 1) The thermostatic mixing valve should be installed in such a position that maintenance and the commissioning and testing of the TMV can be undertaken.
- 2) Always flush both supply pipes fully before connecting mixing valve to ensure no pipe debris enters the inlets. Always fit filters provided.
- 3) All installations must comply with current local Water Company Regulations.

CONDITIONS FOR NORMAL USE

In order to give compliance with N.H.S. specification DO8 scheme. The tables below list the conditions for normal use, the valves may perform adequately outside these parameters but the TMV3 scheme approval does not apply. If they are required to work with other supply conditions an engineer must carry out a risk assessment and satisfy themselves that the units are still suitable for use.

NOTES

Table 1: Conditions for normal use

Operating Pressure Range	Low Pressure	High Pressure
Maximum Static Pressure (bar)	10	10
Flow Pressure . Hot & Cold (bar)	0.2 to 1	1 to 5
Hot Supply Temperature (°C)	52 to 65	52 to 65
Cold Supply Temperature (°C)	5 to 20	5 to 20
Minimum temperature differential between mixed temperature and either supply	10°C	10°C

COMMISSIONING

Since the installed supply conditions may differ from those used in testing and setting the valves during final inspection and a valve may have several designations, it is necessary to reset the mix temperature. The following procedure should be used after ensuring:-

- a) The designation of the thermostatic mixing valve matches the intended application (i.e. if a shower is to be supplied at 2 bar then the valve must have a HP-S designation).
- b) The supply pressures match those for which the valve has been approved, see table1 and valve details.
- c) The supply temperatures are such that they are within the permitted range (see table1) and comply with guidance information on the prevention of legionella.

Note:- If the supply conditions are not within the parameters for normal use the valve may still be suitable, but individual engineers must carry out their own risk assessment and satisfy themselves that the units are still suitable for use. Adjust the mixed water temperature in accordance with table 2, the method of adjustment is covered in the section Temperature Setting.

Table 2: Mixed Water Temperature

Application	Abbreviated Designation	Mixed water temperature °C
Bidet	-HP-B, BE,-LP-B, BE	38 max
Shower	-HP-S,SE;-LP-S, SE	41 max
Washbasin	-HP-W,WE: -LP-W, WE	41 max
Bath (44°C fill)	-HP-T44; -LP-T44	44 max
Bath (46°C fill)	-HP-T46; -LP-T46	46 max

Note 1: For washbasins, washing under running water is assumed.

Note 2: Bath fill temperatures of more than 44°C should only be available when the bather is always under the supervision of a competent person (e.g. nurse or care assistant)

Note 3: A thermostatic mixing valve having multiple designations (i.e. it is capable of satisfying the requirements of this specification for more than one application) should be re-set on site to suit the designation required.

The following set of tests should be carried out.

- 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) isolate the cold water supply to the mixing valve and monitor the mixed water temperature.
- d) record the maximum temperature achieved as a result of (d) and the final temperature.
- e) record the equipment, thermometer etc. used for the measurements.

IN-SERVICE TESTING

The purpose of in-service testing is to regularly monitor the thermal performance of the thermostatic mixing valve. Deterioration in performance can indicate the need for service work to be carried out on the system.

If the authority concerned does not have a planned test and maintenance schedule then the suggestions below should form the basis of a new system.

At intervals of 6 - 8 weeks and 12 - 15 weeks after commissioning:-

1. Check supply parameters are still within the expected values if not check system for faults.
2. Carry out commissioning procedures a) to c) using the same test equipment, if the mixed water temperature has changed a significant amount (by more than 1K) check to ensure in-line filters are clean, that the check valves are working and all isolating valves are fully open. If no fault can be found check and record the mixed water temperatures and re-adjust mixed water temperature to the values in table 2.

Complete the commissioning procedure a) to f) if the mixed water temperature exceeds the values of the maximum recorded temperature by more than 2K the need for service work is indicated (see relevant instruction leaflet.)

Depending on the results of these two tests the following should be adopted

- a) If a small change (e.g. 1K to 2K) occurs in one of these tests or there is no significant change (e.g. 1K maximum) then the next in service test should be 24 to 28 weeks after commissioning.
- b) If small changes occur in both test or a larger change occurs in one test (exceeding 2K) then the next in service test should be carried out 18 to 21 weeks after commissioning.

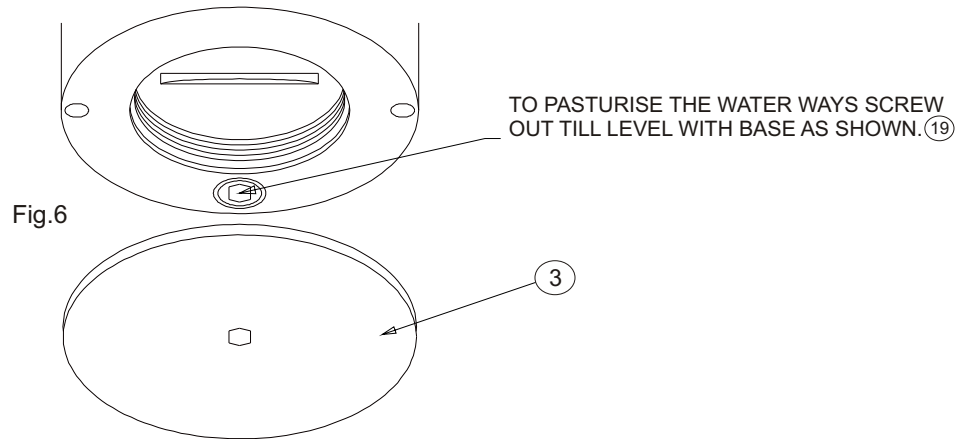
These results can then be used to set a service interval which tests have shown can be used with no more than a small change in mixed water temperature. This method of determining service intervals is used to take into account various in-service conditions (i.e. water condition) that the valve may experience.

NOTE: Valves operating outside these conditions cannot be guaranteed by the Scheme to operate as Type 3 valves.

Faultfinder

Fault	Cause	Repair
No or reduced flow and/or fluctuating temperature	One or both isolating valves not fully open	Open both valves fully
	Flow limiters incorrectly fitted	Check information and refit correctly
	Inlet pressures below specified values	Alter system to increase supply pressures
	Supply pipes blocked	Rectify system fault
	Waterways in tap blocked	Clear debris or call service department
Supply pressures unequal	Check maximum pressure differential, and check if flow limiters correctly fitted	
Maximum outlet temperature too hot	Maximum mixed water temperature incorrectly set	Reset temperature see calibration section
Maximum outlet temperature too cold or runs cold after a short time	Maximum mixed water temperature incorrectly set	Reset temperature see calibration section
	Hot water temperature too low	Increase water temperature by adjusting storage temperature or power input to the system
Mixed water flow too high	Flow limiters incorrectly fitted	See section on flow limiters
Only hot or cold water at outlet	Maximum mixed water temperature incorrectly set	Reset temperature see calibration section
	Inlet supplies reversed	Re pipe supplies
Tap will not shut off or dripping	Seal damaged or worn	Renew seals from spare parts kit
	Scale build up in body	Service and descale fitting
	Inlet pressure above maximum static pressure rating	Reduce pressure possibly by fitting reducing valve
No thermostatic fail safe	Inlet temperatures outside specification	Reset boiler or recirculation temperatures
	Debris trapped in mechanism or mechanism jammed	Strip and clean unit or call the service dept
	Inlet supplies reversed	. Re pipe supplies

Pasturisation



The following steps are required using fig. 4 (page 6) & fig.6 (above): -

- 1) Ensure the fitting is turned off
- 2) The cold water isolator should be closed, this is accessed by unscrewing the shroud (54) and pulling it back along the elbow taking care not to scratch the chrome, the 2.5mm hexagon wrench is inserted in the isolating plug and rotate it clockwise until it locks.
- 3) The back cover (3) is unscrewed using a 2.5mm hexagon wrench and put to one side.
- 4) The flushing screw (19) is unscrewed downwards till it is level with the bottom of the body (do not remove completely) see Fig 6.
- 5) Turn the fitting on, hot water at the inlet temperature will pass through the unit pasteurising the waterways and flow straightener. (the temperature must reach a minimum of 60°C for 5 minutes).
- 6) Turn the fitting off.
- 7) The flushing screw (19) is screwed upwards till it locks.
- 8) Replace the back cover (3) , reinstate the cold water and replace the shroud (54).

The unit is now ready for use.

Recommended outlet temperatures

The BuildCert TMV scheme recommends the following set maximum mixed water outlet temperatures 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.

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 fitting of isolation valves is required as close as is practicable to the water supply inlets of the thermostatic mixing valve.

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

Commissioning notes for Thermostatic Mixing Valves.

The first step in commissioning a thermostatic mixing valve is to check the following:

The designation of the thermostatic mixing valve matches the application.

The supply pressures are within the valves operating range.

The supply temperatures are within the valves operating range.

Isolating valves (and strainers preferred) are provided.

If all these conditions are met, proceed to set the valve out temperature as stipulated in these instructions.

The mixed water temperature at the terminal fitting must never exceed 46°C.

It is a requirement that all TMV3 approved valves shall be verified against the original set temperature 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 TMV, 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 outlet temperature ($\pm 2^\circ\text{C}$ or less change 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 TMV that has been adjusted or serviced must be re-commissioned and re-tested in accordance with the manufacturers' instructions.

The installation of thermostatic mixing valves must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999.

Specifications

Minimum pressure drop through fitting for mixing	0.1 bar
Dynamic pressure drop through fitting for mixing	5 bar
Maximum static pressure to be applied to fitting	10 bar
Maximum pressure loss ratio	20:1 either supply
Temperature stability with normal variation of supply temperatures and pressures	± 2°C from set temperature
Factory standard blend temperature	43°C
Maximum hot supply temperature	80°C

The sensitive wax capsule will shut down the operation of the valve if either the hot or cold water supply fails, provided a minimum differential of 10°C exists between the mixed water temperature and the remaining supply.

FLOW RATES

The flow rates (L/min) for the tap with and without flow limiters are quoted in the table below

Pressure Drop Bar	0.1	0.2	0.4	0.6	0.8	1.0	1.5	2.0	3.0	4.0	5.0
Low Pressure - Flow Rate without Limiters	4.0	5.8	8.0	10.0	11.6	Not recommended, use flow regulators as below.					
High Pressure - Flow Rate with limiters (Grey 6l Hot side & Yellow 10l cold Side)	Use Low Pressure Setup					8.5	9	9.3	9	9	9
High Pressure that conforms to BREEAM flow rate for Basin Mixers < 6.0l/min at 3.0 Bar Flow Rate with limiters (Lime Green 2.75l Hot side & Yellow 10l cold Side) Supplied Factory Fitted	Use Low Pressure Setup					4	4.3	4.6	4.9	4.8	4.8

Operation

The unit has a single control lever that turns the unit on and off and adjusts the temperature. Turning the handle anti clockwise from the off position firstly gives cold water flow then increases the temperature to the maximum set value.

Maintenance

This product is designed to be easily serviced, it has integral isolation, integral hot water flushing to pasteurise the mixed water chambers reducing the incidence bio film growth and unions that allow the complete body to be removed for servicing in the workshop.

Isolating and removal of the valve

Using Fig.3 & 4 as a reference (page 6) The valve has integral isolation this is accessed by unscrewing the shroud (54) and pulling it back along the elbow taking care not to scratch the chrome, the 2.5mm hexagon wrench is inserted in the isolating plug and rotating it clockwise until it locks. The securing nut (52) is then removed whilst supporting the valve to stop it falling and damaging the surface below it. The valve can then be replaced or serviced as is most convenient. The valve is replaced by reversing the above procedure ensuring the O-ring is undamaged and in place.

Cleaning integral filters

The integral filters are fitted into the inlet elbows to the fitting. The fitting should be removed from the bases as described in the previous section the filters are then accessible for servicing as shown in Fig3. They are a friction fit into the adaptors and should be care fully prizes out washed and refitted. Failure to refit the filters may invalidate the guarantee.

Calibration

Due to variations in supply parameters from those used to set and test the products in our factory the outlet temperature will require resetting on site. The temperature will need to be set between 39°C and 41°C in order to comply with TMV3 approval this is done by fully opening the valve, using a thin blade remove the targa button (58). Then inserting a 2.5mm hexagon wrench into the holes and unscrewing a 5mm grub screw, the lever (57) can be lifted showing the adjusting screw. Using a 2.5mm allen key and turning the screw clockwise will give a cooler temperature and anti clockwise for a warmer temperature see Fig. 5.

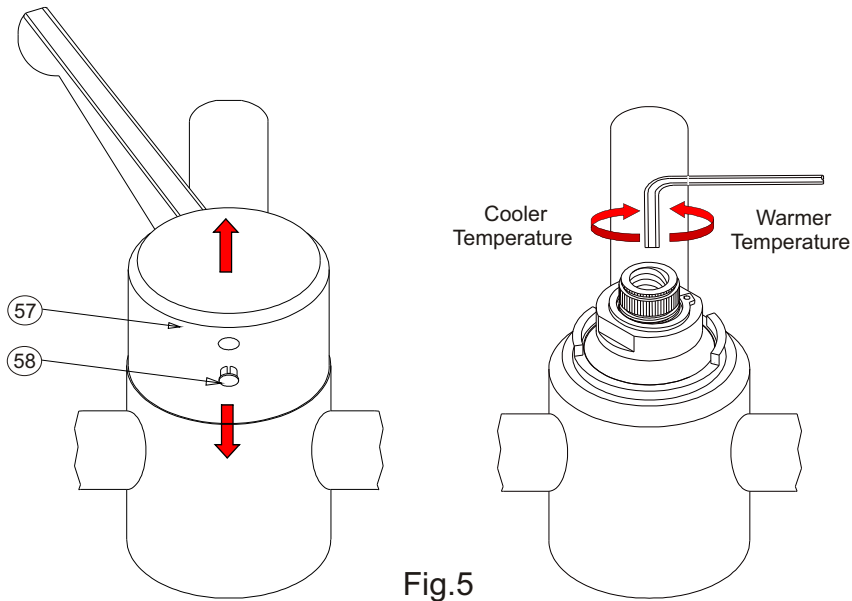


Fig.5

Flow limiters

As supplied the fitting has flow limiters fitted to both inlets so it is suitable for high-pressure use. For use on low pressure they may need to be removed see table below. The procedure described above for cleaning the filters should be followed. After removal of the filter the flow limiters are visible and should be removed using a small pointed instrument.

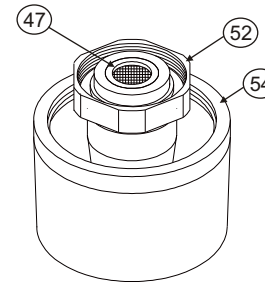


Fig.3

SUPPLY PRESSURES	FLOW LIMITERS
* BREEAM compliant Flow - Hot Rate < 6.0l/min at 3.0 bar - Cold	Green 2.75l in hot side Yellow limiter 10l in cold side
High Pressure Hot Low Pressure Cold	Grey 6l in hot side Remove Limiter
Low Pressure Hot High Pressure Cold	Remove Limiter Yellow limiter 10l in cold side
Low Pressure Hot Low Pressure Cold	Remove both limiters
High Pressure Hot High Pressure Cold	Grey 6l in hot side Yellow limiter 10 in cold side

* Please note this product is factory fitted with both a lime green 2.75l flow limiter (hot side) & yellow 10l flow limiter (cold side).
NOTE: High Pressure = Greater than 1.0 Bar

Use of flow limiters

This product will be factory fitted with a 2.75 litre & 10 litre flow limiters and also supplied with a standard 6 litre flow limiter for reduced flow economy rates. The 2.75l flow limiter is fitted to comply with BREEAM flow rates for a basin mixer of no less than 6l/min at 3.0 bar.

The Green 2.75l flow limiter (48) is positioned in the hot side and the Yellow 10l flow limiter (49) positioned in the cold side, this is required when a high pressure system is used.

Changing flow Limiters

To replace the flow limiters on the *hot side only*; unscrew the shroud (54) and pull it back along the elbow taking care not to scratch the chrome, unscrew the securing nut (52) which will then split the parts into two assemblies. The assembly needed is shown in Fig.3 (above), now remove the filter (47) using a small flat bladed screw driver and this will expose the Green 2.75l flow limiter (48), now replace this part with the Grey 6.0l flow limiter (55) which will first be inserted into the supplied spacer (56) making sure the limiter is inserted in the correct way with the O-ring on the top side. Now re-assemble the parts as per notes using Fig.4 as a reference.

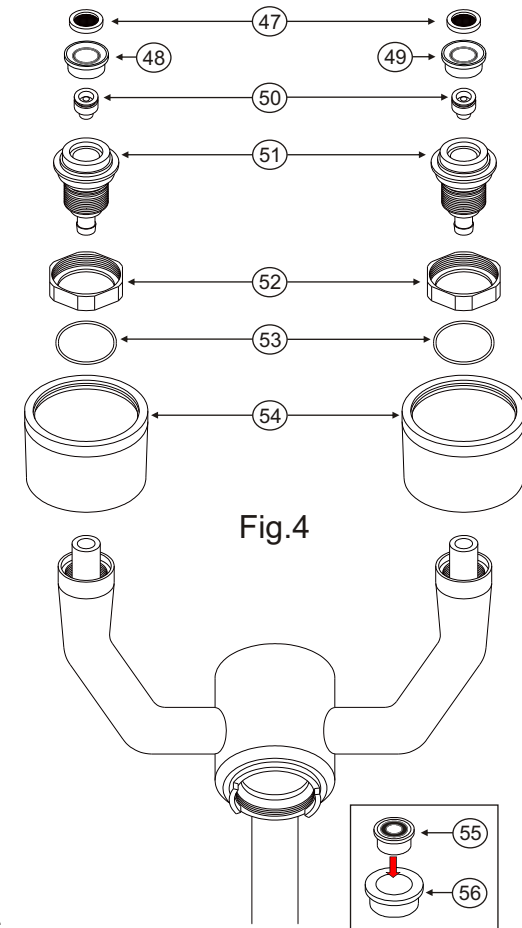


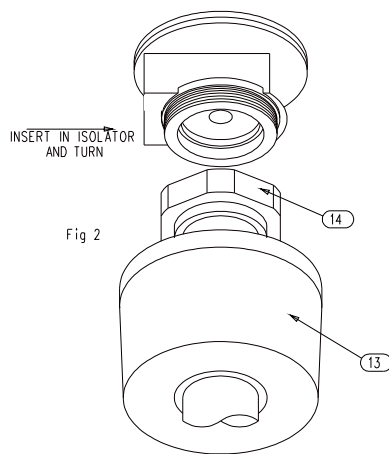
Fig.4

Installation

A competent person must always carry out the installation of this product in accordance with these instructions. The installation must comply with the current local water company regulations.

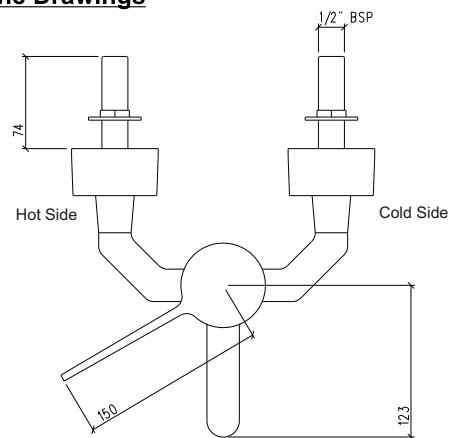
The following points should always be considered when carrying out an installation

- 1) Care must be taken to prevent any risk of injury or damage to persons or property.
- 2) The product has integral isolation for servicing the unit, further isolation could be included if considered necessary.
- 3) To eliminate pipe debris entering the valve the system must always be thoroughly cleaned and flushed particularly if it is new, or extensive modification has taken place. The product must never be used without the in line filters fitted; failure to fit the filters may invalidate the guarantee.
- 4) The fitting is supplied with a single check valve in each inlet; it should be fitted so that the relevant air gap specified in the water regulations is achieved above the spillover level of the basin or trough.
- 5) The surface to which the unit is to be fixed needs two holes minimum 23mm diameter maximum 30mm diameter (see page 8 for centres).
- 6) If fitted in a health care environment the relevant Health Technical Memorandum must be consulted to ensure correct positioning of the outlet in relation to the basin or trough.
- 7) The unit is supplied suitably configured for fitting onto a high pressure system if a low pressure system is to be used the flow limiters must be removed see page 6 for flow limiter information.
- 8) When viewed from the front and the unit is connected to the supplies the Hot supply must be connected to the left hand inlet and the cold to the right hand inlet.

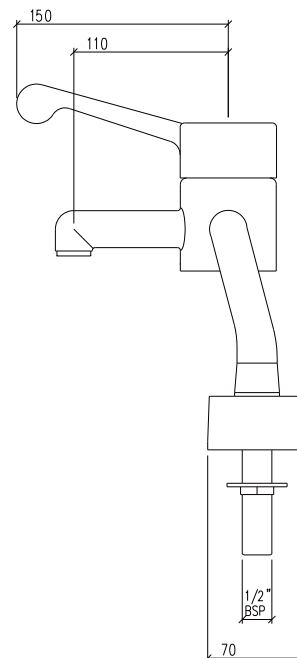
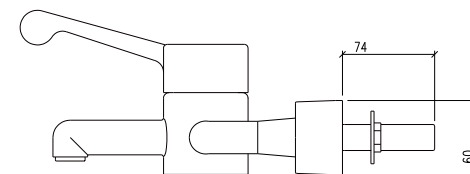
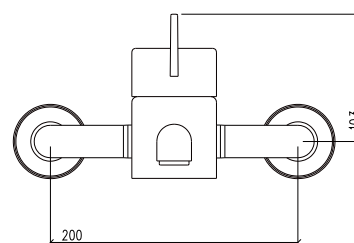


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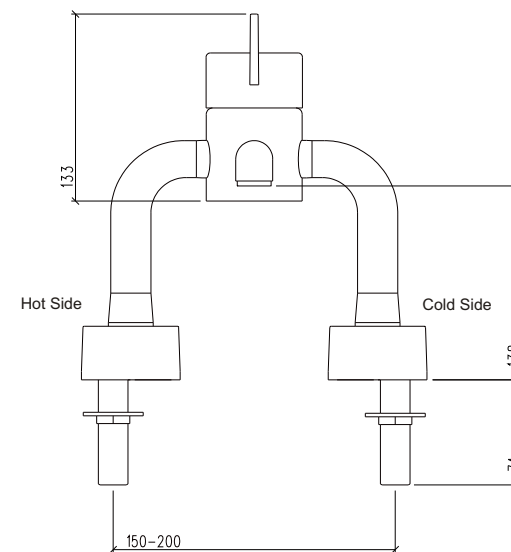
Line Drawings



SF1056CP



SF1057CP



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All dimensions in mm.