

Guarantee and Registration

Guarantee

All products are manufactured to the highest standards and 5-year guarantee covers any defect in manufacture.

Any part found to be defective during the above guarantee period will be replaced without charge providing that the product has been installed in accordance with our instructions, used as intended and maintained/serviced as recommended.

In the unlikely event that any problems are encountered with this product's performance on installation, you must obtain guidance/authorisation from our Customer Service Department before any remedial action is taken and be able to supply proof and date of purchase.

The guarantee excludes damage caused by accident, misuse or neglect and does not cover the following:

- Those components subject to wear and tear such as 'O' rings and washers etc,
- Damage caused by faulty installation,
- Damage caused by any waterborne debris,
- Damage caused by improper cleaning products,
- Damage caused by the use of non-Bristan parts,
- The product being used for a purpose other than intended.

The company reserves the right, in the event of a claim not covered by the guarantee, to charge the claimant for parts and labour at current rates. This guarantee is given in addition to and does not affect your statutory rights.

In the interests of continuous product development we reserve the right to alter the specification as necessary.

Registration

To register your product with us please complete and return the enclosed registration card.

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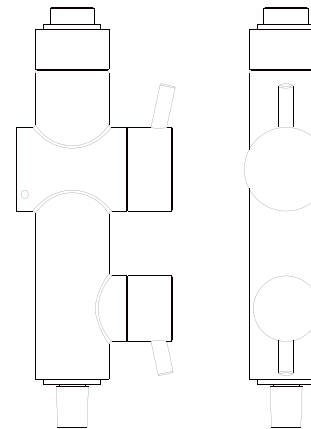
BRISTAN

Thermostatic Shower valve

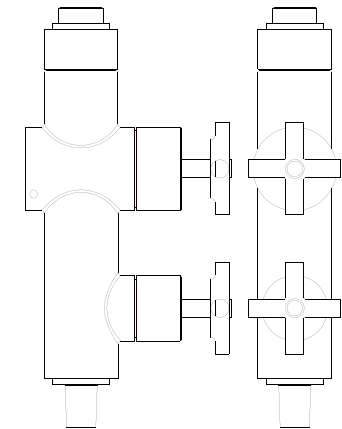
Installation, Operation And Maintenance Guide



Prism
(PM TLSHX C)



Quadrant
(QT TLSHX C)



Before starting any installation project please consider:

Prior to drilling into walls, check there are no hidden electrical wires, cables or water supply pipes with the aid of an electronic detector. If you use power tools do not forget:

- Wear eye protection
- Unplug equipment after use

DESIGN	000515663-0001
REGISTRATION	000515663-0002
GRANTED PATENTS	UK: Gb2426564 EU: Ep1893904

Introduction

This Shower Valve has been designed with crisp clean modern styling. With its revolutionary Hot and Cold water supplies contained within the 25 mm riser tube, it can be fitted with the minimum of disruption to existing decor. All supply piping can be hidden above the ceiling of the room where the valve is fitted or between floor joists.

Technical features are listed below:-

SUPPLY REQUIREMENTS

Minimum cold water supply temperature: **5°C**

Maximum cold water supply temperature: **20°C**

Maximum hot water supply temperature: **85°C**

(a temperature of 60-65°C is recommended for ablutionary installations)

This product has been tested to the TMV2 scheme which complies with BSEN1287 (LP) and BSEN1111 (HP) Thermostatic mixing valve standards.

Note! A suitable hot water temperature control device should be installed to reduce temperatures exceeding the above maximum hot water supply temperature.

Minimum temperature differential between hot supply and outlet temperature: **10°C**

(eg. shower temperature **43°C**: minimum hot supply **53°C**)

Factory pre-set temperature: **43°C**

Minimum dynamic pressure: **0.1 bar**

Maximum dynamic pressure: **5.0 bar**

Maximum static pressure: **10 bar**

Condition of use for Type 2 valves:

	High Pressure	Low Pressure
Maximum Static Pressure - Bar	10	10
Flow Pressure, Hot & Cold - Bar	0.5 to 5.0	0.1 to 1.0
Hot Supply Temperature - °C	55 to 65	55 to 65
Cold Supply Temperature - °C	Equal to or less than 25°C	Equal to or less than 25°C

NOTE: Valves operating outside these conditions can not be guarantee by the Scheme to operate as Type 2 valves.

SITE REQUIREMENTS

To ensure the correct operation of your in-line barrel valve it is important to fully understand your site installation. This thermostatic barrel valve will suit the following -

HIGH PRESSURE	LOW PRESSURE	MAINS PRESSURE
PUMPED PRESSURE	UNEQUAL PRESSURE	GRAVITY PRESSURE

IMPORTANT INFORMATION

The Shower Valve is factory fitted with filter/washers (items 14+18, shown on page 5) in the hot and cold supply inlets. they are required to protect the valve from damage. Failure to run the product with these in place will invalidate the guarantee.

The Shower Valve has the Flow limiters (items 16+17, shown on page 5) factory fitted if the product is to be used on a low pressure system they must be removed to ensure correct operation of the unit.

WATER REGULATIONS

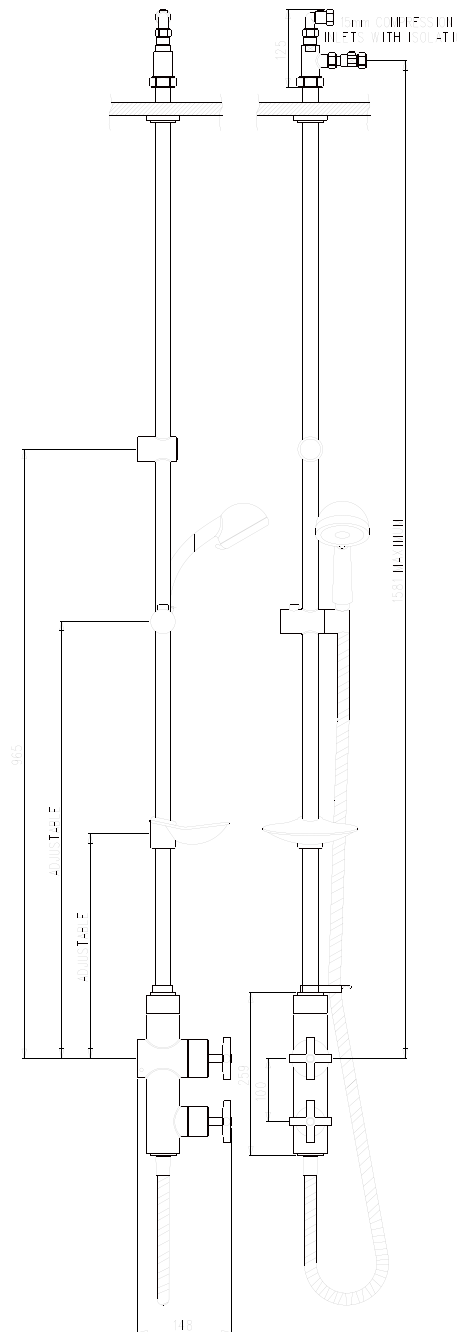
Shower installation in all respects must meet with the recommendations of Water Regulations Guide. If in doubt you should contact your local Water Authority for advice or The Institute of Plumbers.

Dimensional Drawing

LINE DRAWINGS

All dimensions in mm.

Dimension drawing shown with Quadrant handles.



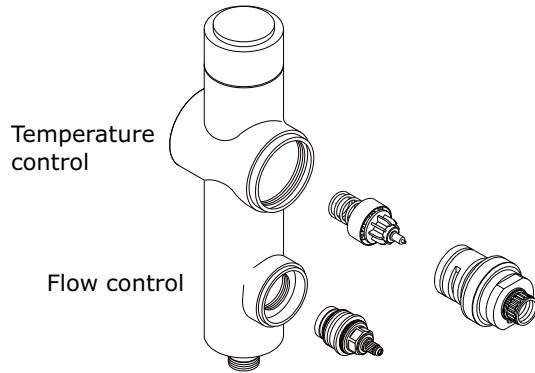
Cleaning Lubrication and re-assembly

- 1) Soak all metal parts in descalent, wash off in clean water.
- 2) Examine all o-rings and replace if necessary.
- 3) Use silicon based grease on all seals (light smear only). A maintenance kit is available, which contains all seals and grease from your local stockist or manufacturer.

RE-ASSEMBLY (You may find it easier to take the unit off the wall and hold it horizontally to re-assemble)

- 1) Replace the spring in the bottom of the valve followed by the piston assembly and thermostat.
- 2) Screw the head assembly (21) into the barrel valve, taking care not to cross thread, and fully tighten.
- 3) Replace the 1/4 turn valve (3), and fully tighten, after checking for correct operation and no damage.

NOTE- Do not adjust the back cap (9) unless you are installing a new cartridge. If this is the case, screw the bottom cap fully clockwise until it stops, then unscrew anti-clockwise 3/4 turn only.



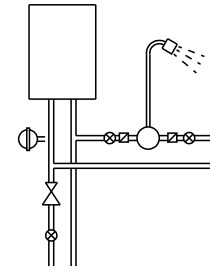
GENERAL FAULT DIAGNOSIS

If your Thermostatic Mixing Valve fails to operate either immediately upon installation or after a period of time, the following points should be checked;

- 1) Isolate supplies and ensure that both hot and cold supplies are reaching the valve body. You may need to dis-connect supply pipes to check this.
- 2) Ensure that there is no debris between the faces of the piston and it's mating faces, the bottom of the valve body and the cartridge.
- 3) Check that the valve has been installed correctly in accordance of its particular feed system (i.e use of flow limiters where necessary).
- 4) Check that the hot water temperature source is sufficient; preferred minimum of 60°C.

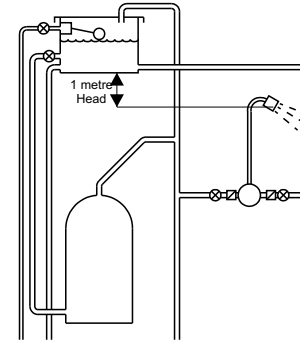
Compatible Systems

Instantaneous heated system (Gas or Electric)

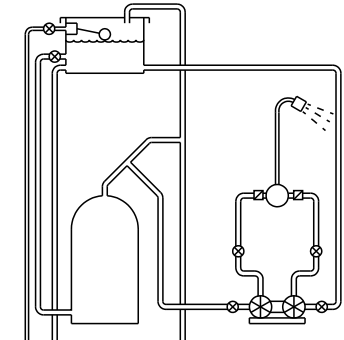


- Key
- Shower inc. non-return valves
 - ⊗ Isolating valve
 - ⊗ Tempering valve
 - △ Pressure regulating valve
 - ▣ Strainer
 - Expansion vessel (optional)
 - ⊗ Twin Impeller Pump

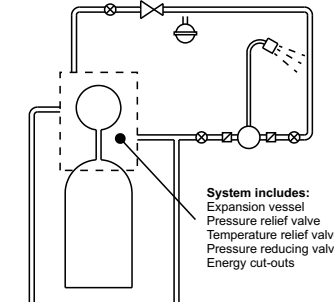
Gravity fed system



Pumped system

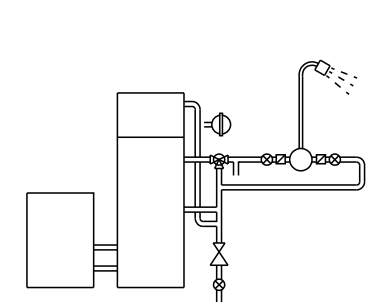


Unvented mains pressure system



- System includes:
- Expansion vessel
 - Pressure relief valve
 - Temperature relief valve
 - Pressure reducing valve
 - Energy cut-outs

Mains pressurised hot water system



The above systems are typical types that this product will accommodate. If however your cold water supply to the valve is mains pressure then the following will apply:-

- a) Hot supply between 1 to 4 metres (0.1-0.4 bar). Mains cold supply up to 10 bar.
Fit 10 litre (yellow) limiter into cold inlet only.
- B) Hot and Cold supply above 5 metre (0.5 bar).
Fit 10 litre (yellow) limiter into cold inlet & 6 litre (grey) limiter into hot inlet elbow.

Installation (see page 5)

- 1) Before starting installation of the Shower Valve careful consideration must be taken To ensure when the Ø25 riser pipe is fed through the ceiling that this will not interfere with existing pipework, joists or electrical equipment and adequate space exists in the roof or between floors.
- 2) Once the position for location has been decided the wall plate (8) must be fixed to the wall using screws and rawlplugs provided (7+6).
- 3) Take a measurement of 965 mm from the centre of the wall plate (8) to a position vertically above the wall plate. Mark this position with a pencil and then drill and fit wall plugs (if required).
- 4) Fit riser wall support to wall using screw provided (page 5), after this has been done fit grey plastic insert into wall support with the slot in it facing the wall. Refit brass riser clamping screw. Keep the chromed indice in a safe place for final fitting once the rest of installation is complete.
- 5) Cut the hole through the ceiling so that the Ø25 mm riser pipe can pass through. To establish the required position of the hole in the ceiling feed one of the pieces of Ø25 riser through the riser wall support until it touches ceiling and scribe around it using a pencil (ensuring tube is parallel to the finished wall).
- 6) Remove riser tube and prepare for cutting.
- 7) Drill a small pilot hole through the ceiling (suggested diameter approx. Ø10mm)
- 8) Go into attic/room above installation to establish that the position still does not interfere with existing pipework, electric cables, joists etc.
- 9) If position chosen is suitable proceed to cut a Ø30mm (1 3/16") hole through ceiling.
- 10) Screw the two halves of the Ø15mm brass tube together ensuring you do not cross thread the pipe and making sure the o-ring is in place and it is not trapped when screwing together.
- 11) Screw the two halves of the Ø25mm chromed riser tube together ensuring you do not cross thread the tube and making sure the o-ring is in place and it is not trapped when screwing together.
- 12) The Ø15mm brass tube is now placed inside the Ø25 chrome tube .
- 13) Offer the tube through the wall support. Feed tube through ceiling after first sliding chrome ceiling rose over Ø25mm chrome pipe.
(If the tubes are too long please refer to section Cutting Tubes To Length on page 6)
- 14) Place Shower Valve (4) over Wall Plate (8) using the two M5 grub screws and tighten into place using 2.5mm hexagonal key provided.
- 15) Slide the Soap Dish, Hose Retainer, Chrome Cover, Compression Nut, and Ø25mm Copper Olive onto the Ø25 mm chrome tube in this order.



Before starting any installation project, consider "Safety" first. Look for the "safety note" sign and read the safety advice.

Service/Maintenance

If your thermostatic mixing valve fails to operate it could be the result of incorrect installation. Please refer to installation and site requirements.

If the valve has operated correctly for a time, but no longer performs acceptably, it may require servicing/cleaning. Proceed as follows;

- 1) Isolate water supplies by turning shut offs on items (15+20) through 90° using a flat blade screwdriver.
- 2a) (Quadrant) Remove the centre chrome cap and unscrew temperature and flow handles (24). Remove the flow shroud (2) and temperature shroud (23) by prising out small blanking cap on the side to reveal a fixing grub screw, loosen using 2.5mm hexagonal key and pull off the shrouds.
- 2b) (Prism) Unscrew levers on the temperature and flow handles (25&26) to reveal the fixing grub screw, loosen using 2.5mm hexagonal key and pull off the handles.
- 3) Remove the temperature headwork assembly using a 32mm a/f spanner.
- 4) Remove the 1/4 turn valve (3) using 17mm spanner.
- 5) Remove the thermostat, piston assembly and spring (21).
- 6) Remove all visible 'o' rings and washers from the body.

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 temperature as stipulated in the manufacturer installation instructions.

It is a requirement that all TMV2 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 (+/-2°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.

Maximum Temperature Setting

The shower valve is factory set to 43°C maximum but may require calibration on installation. If necessary adjust as follows -

- 1) Turn the lever/knob anti-clockwise to the maximum temperature position.
- 2) Remove the lever/knob. See Service/Maintenance page 8.
- 3) Turn valve on to maximum flow.
- 4) Using a 2.5mm hexagonal key through the head of the cartridge, turn the adjusting screw to alter the temperature.

Turn the adjusting screw clockwise for cooler temperature.

Turn the adjusting screw anti-clockwise for warmer temperature.

The temperature should be set to a maximum of 43°C for user safety.

Please Note:- Hotter temperatures may cause serious injury.

Recommended outlet temperatures

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

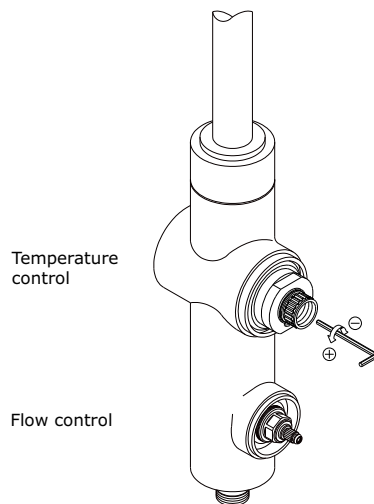
44°C for bath fill but see notes below; 41°C for shower; 41°C for washbasins; 38°C for bidets. **The mixed water temperature must never exceed 46°C.**

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

NOTE: 46°C is the maximum 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 and 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.



Installation(continued)

16) Slide the Ø15mm brass tube into Shower Valve Body(4) you must push it past the O-ring(10) inside the body to make a watertight seal.

17) Slide the Ø25mm chrome riser tube into the Shower valve body and secure in place with the Compression fitting.(Use 38mm a/f spanner).

18) To fit the supply manifold assembly (13) onto the tubes above the room where the valve is fitted you must first place the nut and olive over the Ø25mm chrome riser pipe.

19) Push the manifold assembly over the Ø15mm tube and carefully push down onto the Ø25mm tube taking care to not damage the o-ring (12) inside the manifold body as this must provide a watertight seal. Secure the Ø25mm tube using the Compression nut. (Use 38mm a/f spanner). Ensure a watertight seal.

Note:- The hot water will be fed to the valve via the Ø15mm tube and the Isolation elbow (15). The cold water is fed to the valve via the Ø25mm tube and isolation straight (20) forming a cooling 'jacket' around the hot supply).

20) Hot and Cold water supplies are to be fed to the manifold assembly and fitted to the isolation elbow (15) and isolation straight (20) using the Ø15mm compression fittings on the end of each of these units.

21) It is advisable to flush the system before you start using the Shower Valve this can easily be done by isolating the water feed at the isolation elbow (15) and isolation straight (20) disconnect them from the manifold assembly (13) and by opening up the isolation valves and allow water to be run into a suitable container until all debris is removed from water supplies.

22) Re-connect isolating units to inlet manifold not forgetting to refit washer/filters (14+18) And in the case of low pressure systems (0.5 bar and below) remove yellow and grey flow limiters (16+17) from the inlet bores of the manifold (13).

NOTE:-Failure to refit items 14+18 will invalidate the guarantee.

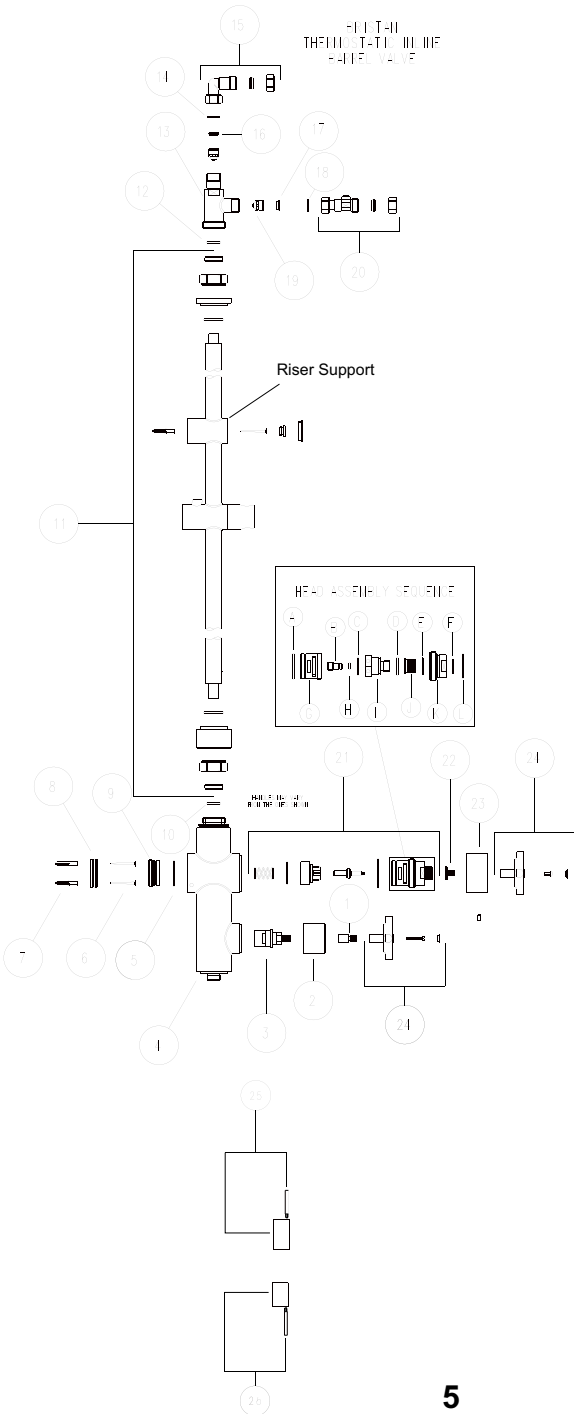
23) Turn on water supplies and check for leaks . Correct if required.

24) The chrome ceiling rose needs pushing up to the ceiling and the indice needs fitting to the riser wall support bracket after you have tightened down the brass tube retaining screw (see page 5).

25) Screw the flexi hose onto the handset then screw the flexi hose to the bottom outlet of the Shower Valve. Please note there should be a rubber sealing washer between each of these connections to prevent water leaks. The hose end with the hexagon swivel nut is the end to connect to the Shower valve.

26) The Shower Valve is factory set with a maximum temperature of **43°celcius**,depending on the system it is connected to it may require re-calibrating to achieve the correct maximum working temperature. Please refer to Maximum Temperature Setting on page 7.

Exploded view drawing & parts list



QT TLSHX C / PM TLSHX C VALVE PARTS LIST		
No.	DESCRIPTION	PART No.
1	FLOW SPLINE ADAPTOR	240445
2	FLOW SHROUD	780498ECP
3	1/4 TURN VALVE	930030
4	INLINE BODY	100200CP
5	O-RING	480028
6	WOODSCREWS	560609
7	WALL PLUGS	760024
8	WALL PLATE	220051
9	BACK CAP	560514
10	O RING	480113
11	INLINE KIT	KIT IBV-CP-2
12	O RING	480113
13	MANIFOLD ASSY.	780468
14	FILTER	780321
15	ISOLATION ELBOW	780494FC
16	FLOW LIMITER 6Ltr/M	MR01-GA-6
17	FLOW LIMITER 10Ltr/M	MR01-GA-10
18	FILTER	780321
19	CHECK VALVE	970010
20	ISOLATION STRAIGHT	780493FC
21	HEAD ASSY.(SPARE)	SK1400-4
22	TEMP.SPLINE ADAPTOR	240444
23	TEMP.SHROUD	780499CP-S
24	QUADRANT HANDLE ASSY	780955CP
25	PRISM TEMP. HANDLE	780419CP-S
	PRISM TEMP. LEVER	780434CP
26	PRISM FLOW HANDLE	780418ECP
	PRISM FLOW LEVER	780433CP
A	O RING	480028
B	ADJUSTING SCREW	560552
C	O RING	480212
D	O RING	480118
E	PTFE WASHER	460181
F	CIRCLIP	360082
G	HALF CARTRIDGE	320023
H	O RING	480010
I	NON SHUT OFF HEAD	780436
J	FLOW NUT	320026
K	HEAD	680359
L	O RING	480125

THIS VIEW SHOWS THE QUADRANT HANDLE ARRANGEMENT. THE PRISM MODEL HANDLES ARE HELD IN PLACE WITH A GRUB SCREW LOCATED UNDERNEATH THE LEVERS ON THE HANDLES. (2.5MM HEXAGONAL KEY REQUIRED)

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Performance

The Shower valve has been tested for its flow rates with an open outlet (no hose or handset fitted) .

LOW PRESSURE SYSTEMS.

BAR PRESSURE	0.1	0.2	0.3	0.4	0.5
LITRES/MIN. (FLOW LIMITERS NOT FITTED)	7.0	10.0	12.5	14.5	16.5

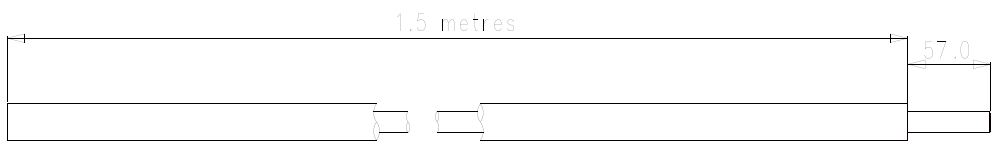
HIGH PRESSURE SYSTEMS.

BAR PRESSURE	0.5	1	2	3	4	5
LITRES/MIN.(FLOW LIMITERS FITTED)	9.0	11.0	11.0	11.0	11.0	12.0
LITRES/MIN.(FLOW LIMITERS NOT FITTED)	16.5	22.0	31.0	40.0	45.0	49.5

CUTTING TUBES TO LENGTH.

In the event of the Ø25mm chrome riser tubes and Ø15mm brass inner being too long it is possible to cut the tubes, but the following points need to be taken into consideration:

- 1) Before doing any cutting of the pipes you must realise that the length differential between the Ø15mm brass tube and the Ø25mm chrome tube must be maintained. The Ø15mm tube is longer than the Ø25mm chrome tube by **57mm this size must be maintained within a tolerance of + or - 2mm**. Therefore if 20mm is cut off outer tube 20mm must be cut off inner tube to maintain the differential.
- 2) The brass Ø15mm inner tube must end up with a rolled edge to stop it cutting into the o-ring seal which would cause the unit to leak. To achieve this use a pipe cutter that is available from most reputable plumbing outlets.
- 3) The Ø25mm chrome tube can be cut using the method above or alternatively by hacksawing using a junior hacksaw. Care should be taken to ensure that you cut the pipe square and that after hacksawing any burrs are removed from the inner and outer edges and do not leave any debris in the tube. Make sure that you can still get the copper olive over the pipe.



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