

FREQUENCY OF IN-SERVICE TESTS (Annex F of D08)

General

In the absence of any other instruction or guidance on the means of determining the appropriate frequency of in-service testing, the following procedure may be used:

- 6 to 8 weeks after commissioning carry out the tests detailed in "In-Service Tests"
- 12 to 15 weeks after commissioning carry out the tests detailed in "In-Service Tests"

Depending on the results of the above tests, several possibilities exist:

- If no significant changes (e.g. ≤ 1 K) in mixed water temperatures are recorded between commissioning and 6 to 8 week testing, or between commissioning and 12-15 week testing the next in-service test can be deferred to 24 to 28 weeks after commissioning.
- If small changes (e.g. 1 to 2 K) in mixed water temperatures are recorded in only one of these periods, necessitating adjustment of the mixed water temperature, then the next in-service test can be deferred to 24 to 28 weeks after commissioning.
- If small changes (e.g. 1 to 2 K) in mixed water temperatures are recorded in both of these periods, necessitating adjustment of the mixed water temperature, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.
- If significant changes (e.g. > 2 K) in mixed water temperatures are recorded in either of these periods, necessitating service work, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.

The general principle to be observed after the first 2 or 3 in-service tests is that the intervals of future tests should be set to those which previous tests have shown can be achieved with no more than a small change in mixed water temperature.

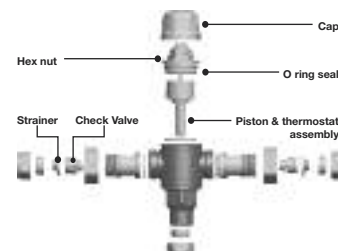
MAINTENANCE

If required, the internal working parts can be removed and cleaned as follows:

- Isolate hot and cold water supply
- Remove valve body by undoing the union nuts
- Remove check valve and strainer, check for damage and rinse with clean potable water

To clean internal components of the main body:

- Remove cap.
 - Remove valve head works by carefully unscrewing large hex nut.
 - Slide piston and thermostat assembly out of body.
- Clean internal surfaces and O ring seal with a weak scale remover (approved for use on potable water applications).
 - Re-assemble and re-test as described in commissioning.



CRANE

FLUID SYSTEMS

THERMOSTATIC MIXING VALVES

D1088 & D1089



THE D1088/D1089

- Are self-acting Thermostatic Mixing Valves designed to blend hot and cold water, to ensure a constant, safe outlet temperature and prevent scalding.
- Have been specifically designed and manufactured to meet the rigorous requirements of the current TMV3 standard.
- Are WRAS approved.
- Have been independently tested and certified as meeting the requirements of the D08 specification under the TMV3 scheme.
- The D1089 includes right angle isolation valves.

LIMITS OF USE

The D1088/1089 have been approved for use on the following designated systems

CODE	OPERATING PRESSURE	APPLICATION
HP-S	High Pressure	Shower Temperature 41°C
HP-W	High Pressure	Washbasin Temperature 41°C
HP-B	High Pressure	Bidet Temperature 38°C
HP-T44	High Pressure	Bath Fill Temperature 44°C
HP-T46	High Pressure	Bath Fill Temperature 46°C
LP-S	Low Pressure	Shower Temperature 41°C
LP-W	Low Pressure	Washbasin Temperature 41°C
LP-B	Low Pressure	Bidet Temperature 38°C

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FLUID SYSTEMS



FM311
ISO 9001

- Designed and manufactured under quality management systems in accordance with BS EN ISO 9001-2008

The Company reserve the right to amend any product without notice.

CFS-TMV 1009
IOM/OED/15860H-V1

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CONDITIONS OF USE

OPERATING PRESSURE RANGE	HIGH PRESSURE	LOW PRESSURE
Flow Pressure - Hot & Cold	1 to 5 bar	0.2 - 1 bar
Hot Supply Temperature	52 to 65°C	52 to 65°C
Cold Supply Temperature	5 to 20°C	5 to 20°C

Note: Valves may operate outside these conditions but TMV3 scheme approval does not apply.

TECHNICAL SPECIFICATION

FACTORY SETTING	38°C
TEMPERATURE SETTING RANGE	35 - 46°C
MINIMUM HOT TO MIX TEMPERATURE	10°C
TEMPERATURE STABILITY	± 2°
MAXIMUM WORKING PRESSURE	10 bar
FLOW RATE @ 1 BAR PRESSURE LOSS	21l/min

INSTALLATION

These instructions are issued as guidelines only and may not cover all installation conditions – if unsure please contact our Technical Helpline before installation.

- Crane products are designed for installation and use within suitably designed systems reflecting CIBSE, BSRIA and HVAC guidelines. Particular care should be taking with regards to accessibility to valve for setting/adjustment, tube cutting, jointing & bracketing/supports.
- The D1088/1089 are suitable for single outlet applications only.
- For the D1088, where isolation valves are not supplied, isolation valves in the water supply inlets should be fitted as close as practical to the TMV
- The D1088/1089 can be installed in any orientation.
- Flush hot & cold supply pipework before connection.

PRE-COMMISSIONING CHECKS

Remove cap. The triangular recess in the cap top is used for adjusting temperature.

With the hot & cold isolation valves and the terminal outlet fully open, adjust the outlet temperature using the cap.

Turn clockwise to decrease temperature and anti-clockwise to increase temperature.

Once the correct outlet temperature is set the internal mechanism must be tested at least 3 times by:

alternately isolate the hot & cold water supply. This causes the internal piston to travel its full stroke and will ensure correct operation of the valve.

With hot & cold isolation valves and the terminal outlet fully open retest the flow temperature. If the set temperature has moved, repeat the commissioning process

A fail safe test must be carried out by isolating the cold supply. Once isolated, the flow must reduce, within a couple of seconds, to a trickle – depending on site conditions, supply temperature/pressure

Then repeat fail safe test isolating the hot supply. Once isolated, the flow must reduce to a trickle within a couple of seconds – depending on site conditions.

If either the cold or hot fail safe function does not operate, check;

Supply pressures

Supply temperatures

Hot water supply is at least 10°C above required mix temperature, ie minimum hot to mix temperature

COMMISSIONING

Since the installed supply conditions are likely to be different from those applied in the laboratory tests, it is appropriate, at commissioning, to carry out some simple checks and tests on each mixing valve to provide a performance reference point for future in-service tests.

- the designation (TMV3) of the Thermostatic Mixing Valve matches the intended application.
- the supply pressures are within the range of operating pressures for the designation of the valve
- the supply temperatures are within the range permitted for the valve and within guidance information on the prevention of legionella etc.
- record the temperature of the hot and cold water supplies
- record the temperature of the mixed water at the largest draw-off flow rate
- record the temperature of the mixed water at a smaller draw-off flow rate.
- isolate the cold water supply to the mixing valve and monitor the mixed water temperature
- record the maximum temperature achieved as a result of (g) and the final stabilised temperature

NOTE: The final stabilised mixed water temperature should not exceed the values in the following table

- record the equipment, thermometer etc. used for the measurements.

Guide to maximum stabilised temperatures recorded during site tests

APPLICATION	MIXED WATER TEMPERATURE ° C
Bidet	40
Shower	43
Washbasin	43
Bath (44°C Fill)	46
Bath (46°C Fill)	48

IN SERVICE TESTING

Purpose

The purpose of in-service tests is to regularly monitor and record the performance of the Thermostatic Mixing Valve. Deterioration in performance can indicate the need for service work on the valve and/or the water supplies.

Service Work Procedure

Using the same measuring equipment or equipment to the same specification as used in the commissioning of the valve, adjust the temperature of the mixed water in accordance with the requirement of the application. Carry out the following sequence:

- record the temperature of the hot and cold water supplies
- record the temperature of the mixed water at the largest draw-off flow rate
- record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured

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

- that any in-line or integral strainers are clean
- any in-line or integral check valves or other anti-back siphonage devices are in good working order
- any isolating valves are fully open

With an acceptable mixed water temperature, complete the following procedure:

- record the temperature of the hot and cold water supplies
- record the temperature of the mixed water at the largest draw-off flow rate
- record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured
- isolate the cold water supply to the mixing valve and monitor the mixed water temperature
- record the maximum temperature achieved as a result of (d) and the final stabilised temperature
- record the equipment, thermometer etc. used for the measurements

If at step (e) the final mixed water temperature is greater than the values in the above table and/or the maximum temperature exceeds the corresponding value from the previous results by more than about 2 K, the need for service work is indicated

NOTE: In-service tests should be carried out with a frequency, which identifies a need for service work before an unsafe water temperature can result. In the absence of any other instruction or guidance, the following procedure described in Annex F of D08 may be used.