FM Mattsson
Box 480
SE-792 27 MORA
SWEDEN
www.fmmattsson.com

NHS Requirements

Type 3

For products installed in any UK National Health Service Installation

Rev. 008 – 22.05.11 - FMM nr 0883 9212

DESIGNATION

Type 3 Thermostatic Mixing Valves.
Designation and application by. DH Health Technical Memorandum 04-01: Supplement D 08:

Model	Application	
FMM 5190-9008	LP - SE	HP - S
FMM 5190-9010	LP - SE	HP - S
FMM 5193-91XX	LP - SE41/T44	HP - S41/T44
FMM 8210-7800	LP - SE	HP - SE
FMM 8211-7800	LP - SE	HP - SE
FMM 8262-7800	LP - WE	HP - WE
FMM 9000E II 8210-8800	LP - SE	HP - S
FMM 9000E II 8211-8800	LP - SE	HP - S

IMPORTANT
The information contained in this manual is supplementary to and should be read in conjunction with the relevant product.
Manual supplied with the product, where there is conflicting information **(e.g. Maximum temperature setting)**, you must follow the guidelines laid down in this manual.

Glossary of terms
The following abbreviations are used throughout this product manual. Detailed descriptions are given below.

HP	High pressure.
S	Shower.
W	Washbasin.
T 44	Bath with fill temperature 44°C maximum.
T 46	Bath with fill temperature 46°C maximum.
WE	Washbasin with a Thermostatic Mixing Valve having an economy flow rate.

DESCRIPTION

This product has been certified to the DH Health Technical Memorandum 04-01: Supplement Performance specification D 08: thermostatic mixing valves (health-care premises). The information in this manual must be read in conjunction with product manual for the component. Where there is conflicting information (e.g. Maximum temperature setting) then you must follow the guidelines laid down in this manual.

COMMISSIONING

Commissioning must be carried out in accordance with these instructions.

Maximum temperature
The maximum blend temperature obtainable by the user should be limited, to prevent accidental selection of a temperature that is too hot.
Site conditions and personal preference may dictate that the maximum temperature has to be reset following installation.
For healthcare applications refer to the maximum temperature settings shown in the table.

Guide to maximum continuous temperatures during site tests
Table 1

Application	Mixed water temperature °C
Shower	43 Maximum
Bath (44°C fill	46 Maximum
Washbasin	43 Maximum

Mixed water temperature settings
Table 2

Application	Abbreviated designation (•)	Set Mixed water temp °C (*)
Shower	- HP -S, SE; -LP -S, SE	41 Maximum
Bath (44°C fill)	- HP -T44; -LP -T44	44 Maximum
Washbasin	-HP -WE; -LP -WE	41 Maximum

The fitting of isolation valves is required as close as is practicable to the water supply inlets of the Thermostatic Mixing Valve.

All models have check valves and stainless steel strainers in both inlets.

(•) For glossary of terms, refer to Description. (*) Mixed water temperature at discharge point.
Note! For washbasins, it is assumed that you are washing under running water.
Note! 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).

Conditions of use

Conditions of use for Type 3 valves

	High Pressure	Low Pressure
Maximum Static Pressure – Bar	10	10
Flow Pressure, Hot & Cold - Bar	1 to 5	0.2 to 1
Hot Supply Temperature - °C	55 to 65	55 to 65
Cold Supply Temperature - °C	5 to 20	5 to 20
Valve Temperature differential characteristics	8	8

Valves operating outside these conditions of use cannot be guaranted to operate as Type 3 valves.
If water is fed by gravity then supply pressurers hould be verified to ensure the conditions are appropriate.
Valves must be accessable for installation, maintainance and commissiouning.

Commissioning checks for NHS Applications

(Temperatures should always be recorded using a thermometer with proven accuracy).

Undertake the following checks:

(a) The designation of the Thermostatic Mixing Valve matches the intended application.
(b) The supply pressures are within the range of operating pressures for the designation of the valve.
(c) The supply temperatures are within the range permitted for the valve and by guidance information on the prevention of legionella etc.

Adjust the temperature of the mixed water in accordance with the manufacturer's instructions and the requirement of the application and then carry out the following sequence:

(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 smaller draw-off flow rate, which shall be measured.
(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.

> Note! The final mixed water temperature should not exceed the values shown in Table 1. Any higher temperatures should only occur briefly.

(f) Record the equipment, thermometer etc. used for the measurements.

The Thermostatic Mixing Valve must be installed in compliance with the Water Supply (Water fittings) Regulations 1999.

MAINTENANCE
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.

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 manufacturer's instructions and the requirement of the application. Carry out the following sequence:

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 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) d), record the change and before re-adjusting the mixed water temperature check:

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

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

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 a smaller draw-off flow rate, which shall be measured
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 stabilised temperature
f) record the equipment, thermometer etc. used for the measurements

If at step (e) the final mixed water temperature is greater than the values in Table 17 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 procedure described in Annex F of D 08 may be used

Annex F of D 08 (informative) Frequency of in-service tests

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:

a) 6 to 8 weeks after commissioning carry out the tests detailed in "In-Service Tests"
b) 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:

a) 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.
b) 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.
c) 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.
d) 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.

INLET OUTLET FITTINGS

Stop valves must be installed on the inlets of the mixer to simplify future maintenance and service.
Elbow connectors with ball valve, filter and checkvalve are attached to the inlet tubes adjacent to the mixer FMM 5193. (Ball valve FMM 2294). See the product manual.
The Mixers are 5190 and 5193 designed for central, multi-point outlets to which outlet valves are installed.