“Brawa-Mix 97” Thermostatic Valve

Installation & Operation Instructions

WRc Certificate No. BC300/0507

To ensure correct operation, this Thermostatic Mixing Valve shall be installed and maintained in accordance with the following instructions.

Table 1: Conditions for Normal Use

Operating Pressure Range	High	Low
Max. static Pressure (bar)	10	10
Flow pressure, hot & cold (bar)	1 to 5	0.2 to 1
Hot supply temperature (°C)	52 to 65	52 to 65
Cold supply temperature (°C)	5 to 20	5 to 20

Installation

- The valve can be installed in any orientation.
- Maximum differential pressure between hot & cold water supply 5 bar.
- Control range 35-46 °C
- Minimum temperature differential between hot water inlet and mixed outlet 10 °C to ensure performance.
- In order to protect the closely machined internal surfaces of the “Brawa-Mix 97” and also the check valves within the fittings kit, we would strongly recommend the use of Y type line strainers (e.g. 1120006, 1121006).
- In the event of solder tailpipes being used, the flushing body (Item No. 1309351) should be fitted during soldering, to avoid heat damage to the “Brawa-Mix 97” valve.
- In order to avoid malfunction it is essential that no jointing compounds are used to install the valve.
- Service isolating valves must be installed on hot and cold supply pipes.
- We recommend that 20 to 30 alternating hold & cold shut off operations be carried out before commissioning.

Flushing Prior To Operation

- It is essential that the pipework systems are thoroughly flushed prior to the operation of the valve.
- Break unions and remove valve body.
- Install recommended flushing body (Item No. 1309351)
- Open cold water isolation valve to flush cold water line, close when water flows cleanly.
- Open hot water isolation valve to flush hot water line, close when water flows cleanly.
- Check and clean hot & cold water strainers.
- Remove flushing body.
- Reinstall valve body and tighten unions.

Commissioning Procedure

a Check that the designation of the “Brawa-Mix 97” matches the intended application.
b Check that the supply pressures are within the range of operating pressures for the designation of the valve.
c Check that the supply temperatures are within the range permitted of the valve and by guidance information on the prevention of legionella etc.
d Open hot and cold water isolation valves fully.
e Adjust the mixed water to the correct maximum temperature as laid down in Table 1 by turning the temperature adjustment handwheel – or +.

The “Brawa-Mix 97” is certificated for use as a “Type 3” valve on the following outlet designations only when fitted with the appropriate sized tailpipe set.

15 mm or 22 mm	22 mm only
HP-S (41 max.)	HP-T44 (44 max.)
HP-W (41 max.)	HP-T46 (46 max.)*
LP-W (41 max.)	LP-SE (41 max.)

(41, 44 or 46 max.) relates to the maximum set mixed water temperature as defined within HGN “SAFE” Hot Water & Surface Temperatures.

* Refer to the above HGN for guidance when using designation HP-T46.

f Once the correct temperature is obtained, remove adjustment handwheel by loosening the captive screw and tighten the lock nut.
g Replace the adjustment handwheel and tighten the captive screw.
h Record the temperature of the hot and cold supplies.
i Record the temperature of the mixed water at the largest draw-off flow rate.
j Record the temperature of the mixed water at a smaller draw-off flow-rate, which shall be measured.
k Isolate the cold water supply and monitor the mixed water temperature. Record the maximum temperature achieved as a result, and the final temperature.
NOTE: The final mixed water temperature should not exceed the values in Table 2 below, and any higher temperature should occur only briefly.
l Record the equipment, thermometer etc. used for the measurements.

Table 2: Guide to the maximum continuous temperatures 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 tests

- 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.

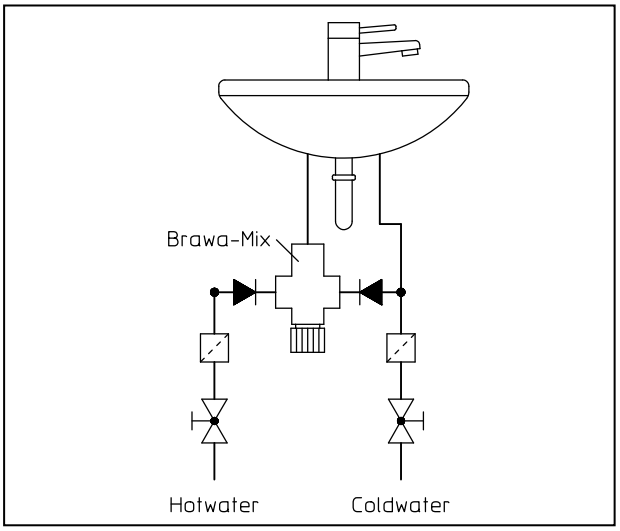
Service Test Procedure

Carry out the procedures h, i and j of the above commissioning procedure, using the same measuring equipment, or equipment to the same specifications.

- 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:
  1. that in-line or integral strainers are clean.
  2. that any in-line or integral check valves or any other anti-backsiphonage devices are in good working order.
  3. that any isolating valves are fully open.
- With an acceptable mixed water temperature, complete procedures k and l of the above commissioning procedure.
- If at step k the final mixed water temperature is greater than the values in Table 2 above, and/or the maximum temperature exceeds the corresponding value from the previous test results by more than 2 K, the need for servicing work is indicated.
- In-service tests should be carried out with a frequency which identifies a need for service work before an unsafe temperature can result.

Frequency of In-Service Tests

- 6 to 8 weeks after commissioning carry out tests above.
- 12 to 15 weeks after commissioning carry out tests above.
- Depending on the results of the above tests, proceed as follwows:
  1. If no significant changes (e.g. ⩽ 1 K) in mixed water temperatures are recorded between commissioning and the first or second in-service tests, then the next in-service test can be deferred to 24 or 28 weeks after commissioning.
  2. 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.



  3. 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.
  4. 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 Inservice tests is that the intervals between 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.

Recommended Spares

- It is recommended that replacement disc strainers and/or strainer baskets are held for integral strainers and ”Y” type strainers respectively.

Problem Solving

Problem	Possible Cause	Recommended Action
No or poor mixed water flow	a) Lack of water supply b) Insufficient water pressure c) Blocked strainers d) Jointing compound used	a) & b) Check hot & cold water supplies (incl. pressure) c) Clean or replace strainers d) If blocked, replace valve
Poor response on cold water failure	a) Hot water inlet temperature too low b) Insufficient hot/mixed water temperature differential	a) Increase hot water inlet temperature b) Increase differential to above mimimum 10 K)
Mixed water temperature too hot or to cool	Incorrect temperaure setting	Adjust valve in accordance with Installation & Operation Instruction sheet
Fluctuating mixed water temperature	Lack of available hot or cold flow, often due to poor balancing of cold water system	a) Check isolating valve are fully open b) Check for flow stavation at the “Brawa-Mix 97” when cold taps are opened

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