Thermostatic mixing valves
TX91 to TX96

- Continuous PROTECTION AGAINST LEGIONELLA.
- SCALD PROTECTION.
- MAXIMUM LIMITATION of adjustable and boltable TEMPERATURE.
- LIMITED MAINTENANCE: no friction from moving metal parts means excellent resistance to scale and remarkable longevity.
- BIMETALLIC STRIP TECHNOLOGY: exceptional qualities of regulation and resistance to the scale (crucial factor for safety).

- SIMPLE AND FAST MAINTENANCE: removal cartridge without dismantling the thermostatic mixing valve, strainers and integrated check valves accessible directly on the cartridge.
- ADJUSTMENT PRECISION and COMFORT of the temperature stability with low and high flow rates.
- GUARANTEE: thermostatic mixing valve and cartridge guaranteed 2 years.
- Direct access to the calculation software: click here
THE BIMETALLIC STRIP TECHNOLOGY

Trubert is the inventor of the Bimetallic strip concept. Trubert is one of the most well-known names in thermostatic control and is our original brand name for thermostatic items.

The TRUBERT Eurotherm technique uses the principle of double control through indirect action of a bimetallic strip. This receives temperature information corresponding to the set point and will react instantaneously (±/- 1 sec.). The double control will take place as follows: the bimetallic strip acts on a pre-mixing valve with a very small flow rate, also called the distributor, this will regulate the flow of water in two slave valves with membranes, causing an amplification of the signal, but ensuring the same mixture proportion and thus the same temperature.

The slightest variation in use conditions will be passed along to the same operating chain: first the distributor and then the large water passages.

This technology is the basis of the WATTS INDUSTRIES FRANCE success, since it combines substantial regulation and scale-resistance qualities (a decisive element for safety).

The Bimetallic Strip Concept

Water mixing is obtained by two independent valves, one for hot water, one for cold water – which operate like two hydraulic relays. These two valves are controlled by a bimetallic strip that records output water temperature. Its position can also be adjusted by means of the thermostatic mixing valve’s control knob. The water runs at exactly the desired temperature. If it goes off by just one degree, the bimetallic strip instantly adjusts water mixing.

This operational principle provides many advantages:
- No load from water pressure is exerted on the bimetallic strip.
- Due to the bimetallic strip’s high sensitivity and nearly non-existent inertia, it is not subject to any load and the mixing valve reacts instantly.
- Nearly non-existent hysteresis and improved durability over time with the bimetallic strip.
- No friction from moving metal parts means excellent resistance to scale and remarkable longevity.
- Thanks to the relay operational principle, low and high flow rates receive the same adjustment quality (which is not true of all solutions available on the market).
- Anti-scalding feature: The hot water shuts off automatically if there is not enough cold water. ($\Delta$ Hot water/Mixed water > 10°C), avoiding the scalding.
ULTRAMIX COLLECTIVE THERMOSTATIC MIXING VALVES

ULTRAMIX thermostatic mixing valve - 56 to 400 L/min

Thermostatic mixing valves with a double regulation functioning according to a principle of servo-motor. Water mixing is obtained by two independent valves, one for hot water, one for cold water – which operate like two hydraulic relays. These two valves are controlled by a bimetallic strip that records output water temperature and can be adjustable also with the calibrated control knob.

This operational principle provides many advantages, and especially:

- No friction from moving metal parts means excellent resistance to scale and remarkable longevity.
- Thanks to the relay operational principle, low and high flow rates receive the same adjustment quality (which is not true of all solutions available on the market).

FLOW RATES MINIMUM lowest of the market: The use of only one shower is sufficient for its perfect operation whatever the diameter of the thermostatic mixing valve.

Built-in blocking control knob - Cover in front (gray PVC).

Standards temperature range: 10/50°C or 30/70°C, on request and for no extra charge: 5/40°C.
Blue control knob graduated.

Dynamic pressure flow rates under 3 bar.

TX91 to TX96: 1 mixed water outlet on the top.
TX91 and TX92: 1 bottom mixed water outlet to be plugged.
TX93, TX94, TX95 and TX96 with bottom drain plug.

Inlet hot water on the left, cold water on the right, possibility of reversed inlets for no extra charge (add “IN” at the end of the ref. codes).

- Anti-scalding feature: The hot water shuts off automatically if there is not enough cold water. (A Hot water/Mixed water > 10°C).
- Thermostatic mixing valve mechanism: the mechanism is directly integral with the thermostatic mixing valve cover.
- Approved check-valves: superior level hydraulic features, due to the valve closure member’s overall design.
- Filtering: Strainer anchored on watertight elastomer support. Perfect accessibility, disassembly without tools, easy cleaning requiring no special qualification.
- Total interchangeability: the ULTRAMIX range cartridges are interchangeable with the current range and the old range.
- ULTRAMIX is guaranteed 2 years.
- Rinsing kit included.

Characteristics:
The ULTRAMIX may be supply by any hot water production system, even by instantaneous production; if the generator is able to produce very low hot water flows.

Operating pressure:

max. mini. recommended
10 bar 1 bar 2-4 bar

Max. hot water temperature: 85°C.
Minimum temperature variation between inlets: 5°C.
Maximum pressure variation: 1,5 bar.

ULTRAMIX Collective Thermostatic Mixing Valve

Model TX91 TX92 TX93 TX94 TX95 TX96
A (mm) 117 117 144 182 218 242
B (mm) 120 120 142 160 200 217
C (mm) 81 81 96 108 129 144
D (mm) 93 93 108 116 128 140
E (mm) 19 19 23 24 36 36
F (mm) 98 98 116 145 175 198
diameter M3/4 M3/4 M1 M1 1/4 M1 1/2 M2
weight (kg) 1,8 1,8 2,8 4,6 7,8 10

Direct access to the calculation software: click here

Against legionella answer:

You can with the thermostatic mixing valve such as it is (with 30/70°C cartridge):
- adjust the temperature up to 55°C in the primary loop (recommended temperature).
- adjust the temperature to 39°C (until 50°C - according to uses) in the secondary loop.
- proceed to a thermal "shock": simply by freeing the control knob and position it a 70°C (without dismantling the thermostatic mixing valve, cartridge or control knob).

You also can by putting the cartridge in position "rinsing" i.e. turned over cartridge, fixed at back, (rinsing kit and simple procedure delivered with each ULTRAMIX):
- rinse the thermostatic mixing valve and the drains (important before activation).
- inject a disinfectant (chlorine) into the water supply system without danger of damaging the thermostatic mechanism, because is not any more in contact with water.
- proceed to a thermal "shock" with more 70°C, without risk to damage the thermostatic mechanism prematurely, because is not any more in contact with water.

WATTS REDUCES THE RISKS OF LEGIONELLA BACTERIA
Grouped installation, great number of points of use (1 to 50),
flow rate until 400 L/min:
- ULTRAMIX: TX91, TX92, TX93, TX94, TX95, TX96
  TX9137, TX9237, TX9337, TX9437, TX9537, TX9637

Water mixing is obtained by two independent valves, one for hot water, one for cold water –
which operate like two hydraulic relays.
These two valves are controlled by a bimetallic strip that records output water temperature.
Its position can also be adjusted by means of the thermostatic mixing valve's control knob.

This operational principle provides many advantages:
• No friction from moving metal parts means excellent resistance to scale and remarkable longevity.
• Thanks to the relay operational principle, low and high flow rates receive the same adjustment quality
  (which is not true of all solutions available on the market).
• Anti-scalding feature: The hot water shuts off automatically if there is not enough cold water.
• Comfort: not hot and cold shower, if the hot water supply is stopped, the cold water is turned off immediately.

FEATURES AND BENEFITS:
Recommended device for all applications where the mixed water temperature must be kept exact and constant, and adjusted
at any time.
Standards temperature range: 10/50°C or 30/70°C (on request and for no extra charge: 5/40°C).
Thermostatic mechanism: A guarantee of safety and proven reliability for over forty years, the ULTRAMIX thermostatic
mixing valve mechanism is the same as that used in the former range. It is directly integral with the thermostatic mixing valve
cover.
Approved check-valves NF: Superior level hydraulic features, due to the valve closure member's overall design.
Filtering: Strainer anchored on watertight elastomer support.
Perfect accessibility, disassembly without tools, easy cleaning requiring no special qualification.

PROTECTION AGAINST LEGIONELLA:
There are only 2 methods recommended to fight the Legionella bacteria:

DGS* regulation
1. raise the temperature
2. disinfect (chemical shock)
The ULTRAMIX Answer
- Yes at 100%
- Yes at 100%

* DGS: General health service - France

RIGHT OR LEFT CONNECTIONS ?:
All our mixing valves for public installations (T9107, T9715, ULTRAMIX and flange models) are designed for being supplied with
HOT water at the LEFT and the COLD water supply at the RIGHT.
On special request, when this arrangement is impossible, some mixing valves can be fitted the other way round with a special
cartridge of “IN” (inverse) type.

SANITARY CONFORMITY (ACS)
These certificate assure the conformity approval according to local requirements - A.C.S. (F) of our device.
THE «MULTI-LEVELS» APPROACH

THE RIGHT TEMPERATURE

FOR EACH APPLICATION

Key points of the regulation:
- Increased hot temperature from the heater (use water heaters with minimal or no storage).
- Use of recirculation systems: circulating loop and balancing valves.
- Ensure that the target temperature is achieved throughout all levels of the loop.
- Thermostatic mixing valves must be as close as possible to the point of use.
- Thermostatic mixing valves must have integrated check-valves.
- Dismantle and clean hoses, taps, showerheads and thermostatic mixing valves minimum once a year.
- Hot and cold water distribution pipes must be insulated sufficiently (never together).
- To maintain cool water in lower part of 20°C.
* according to National Regulation

Flow diagram for a «multi-levels» complete mixed water circuit

VM: micrometer valves to stabilize circuit temperature.
VM1A: Open between 70 and 90%.
VM1B: Open between 30 and 10%.
Remarks: If there is a connection point on the boiler (R), the return circuit should be connected here (A).

Recycling of the loop: with a minimum of six times the mixed water’s volume per hour.
Delivery of the pump: total manometric height, minimum 4 meters + head loss of the loop.

SYMBOLS

| Hot water | Water hammer arrestor | Safety valve | Drain | Thermometer |
| Cold water | Stop valve | Pump | Pressure reducing valve | Manometer |
| Mixed water | Non-return valve | Thermostatic mixing valve | Isolating valve | |
| Flow direction | Water drain cock | |

Table 1 Development of legionella according to water temperature

<table>
<thead>
<tr>
<th>Water Temperature</th>
<th>Development of Legionella</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20°C / 68°F</td>
<td>Lethargic state</td>
</tr>
<tr>
<td>20-46°C / 68-115°F</td>
<td>Growth (no multiplication from 47°C on)</td>
</tr>
<tr>
<td>50°C / 122°F</td>
<td>90% of bacteria will die in a period of 2 hours</td>
</tr>
<tr>
<td>60°C / 140°F</td>
<td>90% of bacteria will die in 2 minutes</td>
</tr>
<tr>
<td>80°C / 178°F</td>
<td>90% of bacteria will die in less than 1 minute</td>
</tr>
</tbody>
</table>

Statutory calculation

Calculation of the loop’s pump flow capacity =

\[ Q (\text{m}^3/\text{h}) = \frac{P (\text{kW})}{1,163 (td - tr)} \]

The flow is calculated according to calorific losses on the surface of the whole piping, it depends on the thickness of the isolation.

Loss “P”:

\[ P = L \cdot k \cdot (te - ta) \]

\[ L \] in m, \[ k \] : coeff k (insulating) (this coefficient varies according to the diameter and the nature of the pipe), \[ te \] : temperature of sanitary hot water, \[ ta \] : room temperature

(for example: +10°C in the basement, +20°C upstairs).

This discharge is usually determined according to a \( \Delta T^\circ \) near 5°C.

\[ tr \] : temperature of the return, will never be less than 50°C.

*Source: CSTC Belgium Nov. 2002. The canalization’s capacity is the inner section multiplied by the length.
How is a capacity of 3 litres ensured?

To respect the volume of 3 litres between the distribution point and the furthest drawing point, you must calculate the length of the pipe that contains a capacity of 3 litres.

This length varies considerably depending on the inside diameter of the tube used.

As a practical rule, you can use the formula opposite to calculate the length of the pipe \( L \) in millimetres (\( \text{mm} \)) according to the inside diameter of the tube.

Example for a 14x16 copper tube:

\[
\frac{12.000.000}{3.14 \times 196} = \frac{12.000.000}{615.44} = 19.49 \text{ mm}
\]

Example for a 13x16 PEX tube:

\[
\frac{12.000.000}{3.14 \times 169} = \frac{12.000.000}{530.66} = 22.61 \text{ m}
\]
How to adjust a thermostatic mixing valve onto a mixed water loop: WATTS INDUSTRIES recommends to minima,
the installation of a thermometer of control of the temperature on the mixed water piping and one on the return of loop,
and that this temperature is checked at least once a month under the normal conditions of operation.
This thermometer must be installed at a distance from at least 1 meter of the thermostatic mixing valve.

**Step 1:** Mixed water temperature adjustment: this adjustment is done autonomously without the loop circulation pump.
1. Stop the loop circulation pump.
2. Close the pump isolation valves.
3. Open sufficient points of use on the mixed water circuit to obtain the minimum flow of the thermostatic mixing valve.
4. Turn the thermostatic mixing valve axis control shaft to reduce or increase the mixed water temperature.
5. Once the required temperature is obtained, replace the control knob (according to the model).

**Step 2:** Mixed water loop temperature adjustment:
1. Open the pump isolation valves.
2. Start the circulation pump.
3. Now proceed with the balancing: the \(\Delta T\) difference between the mixed water outlet and the return should be 5°C.
To achieve this, manually adjust the VM1A balance valve (between 70 and 90% of its total opening) and the VM1B valve (between 30 and 10% of its total opening).

**Remarks:**
1. If there is a connection point on the boiler (R) the return circuit should be connected here (A).
2. Possibly, it can be interesting to envisage two micrometric valves VM2, in particular in the case of a restoration of installation: the pump will not have to take account of the additional headloss due to the thermostatic mixing valve. In this case VM1A and VM1B are useless, the adjustment being done then on valves VM2.

**AGAINST LEGIONELLA ANSWER:**
- You can with the thermostatic mixing valve such as it is (with 30/70°C cartridge):
  - adjust the temperature up to 55°C in the primary loop (recommended temperature).
  - adjust the temperature to 39°C (until 50°C - according to uses) in the secondary loop.
  - proceed to a thermal "shock": simply by freeing the control knob and position it a 70°C (without dismantling the thermostatic mixing valve, cartridge or control knob).
- You also can by putting the cartridge in position "rinsing" i.e. turned over cartridge, fixed at back,
  (see simple procedure and the ricing kit delivered with the thermostatic mixing valve):
  - rinse the thermostatic mixing valve and the drains (important before activation).
  - inject a disinfectant (chlorine) into the water supply system without danger of damaging the thermostatic mechanism, because is not any more in contact with water.
  - proceed to a thermal "shock" with more 70°C, without risk to damage the thermostatic mechanism prematurely, because is not any more in contact with water.
**ULTRAMIX COLLECTIVE THERMOSTATIC MIXING VALVES**

### Adjustment range 10/50°C: to supply from 1 to 50 sanitary points of use.

<table>
<thead>
<tr>
<th>flow rate (L/min)</th>
<th>diameter</th>
<th>points of use*</th>
<th>finish</th>
<th>art. number</th>
<th>weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>grey epoxy</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>chrome plated</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>grey epoxy</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>chrome plated</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>grey epoxy</td>
<td>2,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>chrome plated</td>
<td>2,8 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>grey epoxy</td>
<td>4,6 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>chrome plated</td>
<td>4,6 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>grey epoxy</td>
<td>7,8 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>chrome plated</td>
<td>7,8 kg</td>
</tr>
<tr>
<td>mini 6 - maxi 400</td>
<td>M 2&quot;</td>
<td>50x60</td>
<td>1 to 50</td>
<td>grey epoxy</td>
<td>10,0 kg</td>
</tr>
<tr>
<td>mini 6 - maxi 400</td>
<td>M 2&quot;</td>
<td>50x60</td>
<td>1 to 50</td>
<td>chrome plated</td>
<td>10,0 kg</td>
</tr>
</tbody>
</table>

* For information only. Take the coefficient of combined flow into consideration.

### Adjustment range 30/70°C: to supply sanitary hot water loop at 55°C or more.

<table>
<thead>
<tr>
<th>flow rate (L/min)</th>
<th>diameter</th>
<th>points of use*</th>
<th>finish</th>
<th>art. number</th>
<th>weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>grey epoxy</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>chrome plated</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>grey epoxy</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>chrome plated</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>grey epoxy</td>
<td>2,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>chrome plated</td>
<td>2,8 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>grey epoxy</td>
<td>4,6 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>chrome plated</td>
<td>4,6 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>grey epoxy</td>
<td>7,8 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>chrome plated</td>
<td>7,8 kg</td>
</tr>
<tr>
<td>mini 6 - maxi 400</td>
<td>M 2&quot;</td>
<td>50x60</td>
<td>1 to 50</td>
<td>grey epoxy</td>
<td>10,0 kg</td>
</tr>
<tr>
<td>mini 6 - maxi 400</td>
<td>M 2&quot;</td>
<td>50x60</td>
<td>1 to 50</td>
<td>chrome plated</td>
<td>10,0 kg</td>
</tr>
</tbody>
</table>

* For information only. Take the coefficient of combined flow into consideration.

---

**TX91E - TX91C - TX91E37 - TX91C37**

Collective thermostatic mixing valve
eurotherm ULTRAMIX - 3 to 56 L/min

---

**Dynamic flows pressure at inlets**

<table>
<thead>
<tr>
<th>Under</th>
<th>1 bar</th>
<th>2 bar</th>
<th>3 bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow rate in L/min.</td>
<td>24</td>
<td>41</td>
<td>56</td>
</tr>
<tr>
<td>Flow rate in l/sec.</td>
<td>0.40</td>
<td>0.68</td>
<td>0.93</td>
</tr>
</tbody>
</table>

**Advised maximum flows**

| Acceptable minimum flow | __________ 3 l/min |
| Acceptable maximum flow | __________ 56 l/min |
| Maximum pressure variation between inlets | __________ 1,5 bar |

Rinsing kit included.

---

**1 - Body (chrome plated or epoxy)**
**2 - Cartridge TX1 (10/50°C)**
**3 - Cartridge TX137 (30/70°C)**
**3.2 - Fixing kit for control knob**
**4 - Cover**
**5 - Complete maintenance kit**
**5 - Simplified maintenance kit (without screws)**

---

**Flow rate (L/min) - M 3/4"**

<table>
<thead>
<tr>
<th>flow rate (L/min)</th>
<th>diameter</th>
<th>points of use*</th>
<th>adjustment range</th>
<th>finish</th>
<th>art. number</th>
<th>weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>10/50°C</td>
<td>grey epoxy</td>
<td>22TX91E 1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>10/50°C</td>
<td>chrome plated</td>
<td>22TX91C 1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>30/70°C</td>
<td>grey epoxy</td>
<td>22TX91E37 1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>30/70°C</td>
<td>chrome plated</td>
<td>22TX91C37 1,8 kg</td>
</tr>
</tbody>
</table>

---

**Bottom outlet to be plugged**
ULTRAMIX COLLECTIVE THERMOSTATIC MIXING VALVES

TX92E - TX92C - TX92E37 - TX92C37
Collective thermostatic mixing valve
eurotherm ULTRAMIX - 3 to 80 L/min

Dynamic flows pressure at inlets
Under ________________ 1 bar ___ 2 bar ___ 3 bar
Flow rate in l/min. ________________ 31 ___ 56 ___ 80
Flow rate in l/sec. ________________ 0,51 ___ 0,93 ___ 1,33

Advised maximum flows
Acceptable minimum flow ________________ 3 l/min
Acceptable maximum flow ________________ 80 l/min
Maximum pressure variation between inlets ________________ 1,5 bar

Rinsing kit included.

<table>
<thead>
<tr>
<th>Flow rate (L/min)</th>
<th>Diameter</th>
<th>Points of use</th>
<th>Adjustment range</th>
<th>Finish</th>
<th>Art. number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 60</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>10/50°C</td>
<td>22TX92E</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 60</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>10/50°C</td>
<td>22TX92C</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 60</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>30/70°C</td>
<td>22TX92E37</td>
<td>1,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 60</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>30/70°C</td>
<td>22TX92C37</td>
<td>1,8 kg</td>
</tr>
</tbody>
</table>

TX93E - TX93C - TX93E37 - TX93C37
Collective thermostatic mixing valve
eurotherm ULTRAMIX - 3 to 120 L/min

Dynamic flows pressure at inlets
Under ________________ 1 bar ___ 2 bar ___ 3 bar
Flow rate in l/min. ________________ 56 ___ 91 ___ 120
Flow rate in l/sec. ________________ 0,93 ___ 1,51 ___ 2,00

Advised maximum flows
Acceptable minimum flow ________________ 3 l/min
Acceptable maximum flow ________________ 120 l/min
Maximum pressure variation between inlets ________________ 1,5 bar

Rinsing kit included.

<table>
<thead>
<tr>
<th>Flow rate (L/min)</th>
<th>Diameter</th>
<th>Points of use</th>
<th>Adjustment range</th>
<th>Finish</th>
<th>Art. number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>10/50°C</td>
<td>22TX93E</td>
<td>2,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>10/50°C</td>
<td>22TX93C</td>
<td>2,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>30/70°C</td>
<td>22TX93E37</td>
<td>2,8 kg</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>30/70°C</td>
<td>22TX93C37</td>
<td>2,8 kg</td>
</tr>
</tbody>
</table>
### TX94E - TX94C - TX94E37 - TX94C37

**Collective thermostatic mixing valve**
eurotherm ULTRAMIX - 5 to 175 L/min

<table>
<thead>
<tr>
<th>Flow rate (L/min)</th>
<th>Diameter</th>
<th>Points of use</th>
<th>Adjustment range</th>
<th>Finish</th>
<th>Art. number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>10/50°C grey epoxy</td>
<td>22TX94E</td>
<td>4,6 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>10/50°C chrome plated</td>
<td>22TX94C</td>
<td>4,6 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>30/70°C grey epoxy</td>
<td>22TX94E37</td>
<td>4,6 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>30/70°C chrome plated</td>
<td>22TX94C37</td>
<td>4,6 kg</td>
</tr>
</tbody>
</table>

**Dynamic flows pressure at inlets**

- Under 1 bar: __________________________ 1 bar
- Flow rate in l/min: 91
- Flow rate in l/sec: 1,51

**Advised maximum flows**

- Acceptable minimum flow: 5 l/min
- Acceptable maximum flow: 175 l/min
- Maximum pressure variation between inlets: 1,5 bar

### TX95E - TX95C - TX95E37 - TX95C37

**Collective thermostatic mixing valve**
eurotherm ULTRAMIX - 5 to 260 L/min

<table>
<thead>
<tr>
<th>Flow rate (L/min)</th>
<th>Diameter</th>
<th>Points of use</th>
<th>Adjustment range</th>
<th>Finish</th>
<th>Art. number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>10/50°C grey epoxy</td>
<td>22TX95E</td>
<td>7,8 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>10/50°C chrome plated</td>
<td>22TX95C</td>
<td>7,8 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>30/70°C grey epoxy</td>
<td>22TX95E37</td>
<td>7,8 kg</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>30/70°C chrome plated</td>
<td>22TX95C37</td>
<td>7,8 kg</td>
</tr>
</tbody>
</table>

**Dynamic flows pressure at inlets**

- Under 1 bar: __________________________ 1 bar
- Flow rate in l/min: 130
- Flow rate in l/sec: 2,16

**Advised maximum flows**

- Acceptable minimum flow: 5 l/min
- Acceptable maximum flow: 260 l/min
- Maximum pressure variation between inlets: 1,5 bar

Rinsing kit included.
T X96E - T X96C - T X96E37 - T X96C37
Collective thermostatic mixing valve
eurotherm ULTRAMIX - 6 to 400 L/min

Dynamic flows pressure at inlets
Under ______________________ 1 bar ______________________ 2 bar ______________________ 3 bar
Flow rate in l/min. _______________ 231 ______________________ 328 ______________________ 400
Flow rate in l/sec. _______________ 3,85 ______________________ 5,46 ______________________ 6,66

Advised maximum flows
Acceptable minimum flow ______________________ 6 l/min
Acceptable maximum flow ______________________ 400 l/min
Maximum pressure variation between inlets ______________________ 1,5 bar

This kit includes all the usual wearing parts:
the cover-cartridge gasket 1, 2 filter-support (elastomer) 2, gaskets for cover screws 3, + 2 stainless steel stabilisers 4, the check valve units and assembled check valve carriers 5, and the cover screws 6 (the number of screws varies according to the size of the ULTRAMIX).

For reversed cartridges add "IN" with the article number, available on request.

* For installation requiring a stronger flow, cartridges T X1 and T X2 like T X137 and T X237 are compatible and interchangeable (T X1, T X137, maxi 56 L/min) - T X2, T X237, maxi 80 L/min).

For any other information, please contact EXPORT and O.E.M. department at Hautvillers Ouville +33 (0)3.22.24.70.11

ULTRAMIX COLLECTIVE THERMOSTATIC MIXING VALVES
ULTRAMIX High Protection thermostatic mixing valve anti-vandalism and inviolability

The thermostatic mixing valve ULTRAMIX "HP" has the same characteristics than the ULTRAMIX, but it is equipped with anti-vandalism safety device.

Mixing valve specifically conceived for the collective applications where the risks of deterioration are high.

The mechanism and its adjustment are protected by a metal frontage made inviolable by a specific high protection lock, chrome plated finish.

Anti-scalding feature and comfort: if there is not enough cold or hot water the mixing valve shuts off automatically and instantaneously.

Dismountable thermostatic mechanism equipped with filters and check valves NF.

Adjustment range: 10/50°C, for thermal disinfection: 30/70°C (on request).

Rinsing kit included. Replacement cartridges below.

<table>
<thead>
<tr>
<th>Flow rate (L/min)</th>
<th>Diameter</th>
<th>Points of use*</th>
<th>Range 10/50°C</th>
<th>Art. number</th>
<th>Weight</th>
<th>Art. no. replacement cartridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>high protection</td>
<td>22TX91CHP 2,6 kg</td>
<td>22TX1 or 22TX137 (30/70°C)</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>high protection</td>
<td>22TX92CHP 2,6 kg</td>
<td>22TX2 or 22TX237 (30/70°C)</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>high protection</td>
<td>22TX93CHP 3,7 kg</td>
<td>22TX3 or 22TX337 (30/70°C)</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>high protection</td>
<td>22TX94CHP 5,3 kg</td>
<td>22TX4 or 22TX437 (30/70°C)</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>high protection</td>
<td>22TX95CHP 8,7 kg</td>
<td>22TX5 or 22TX537 (30/70°C)</td>
</tr>
<tr>
<td>mini 6 - maxi 400</td>
<td>M 2&quot;</td>
<td>50x60</td>
<td>1 to 50</td>
<td>high protection</td>
<td>22TX96CHP 10,8 kg</td>
<td>22TX6 or 22TX637 (30/70°C)</td>
</tr>
</tbody>
</table>

* For information only. Take the coefficient of combined flow into consideration.

ULTRAMIX FNC special security mixing valve

The thermostatic mixing valve ULTRAMIX "FNC" has the same characteristics than the ULTRAMIX, but it integrates a safety device and allows drawing even in the case of a hot water cut.

Special model for the installations with safety showers or emergency eye-washer.

Anti-scalding feature: if there is not enough cold water the mixing valve shuts off automatically and instantaneously.

Dismountable thermostatic mechanism equipped with filters and check valves NF.

Adjustment range: 10/50°C. Its setpoint temperature is not sensitive to flow rate variations in the installation, whether at minimum or maximum.

Rinsing kit included. Replacement cartridges below.

<table>
<thead>
<tr>
<th>Flow rate (L/min)</th>
<th>Diameter</th>
<th>Points of use*</th>
<th>Range 10/50°C</th>
<th>Art. number</th>
<th>Weight</th>
<th>Art. no. replacement cartridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>special security</td>
<td>22TX91FNC 2,3 kg</td>
<td>22TX1FNC</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>special security</td>
<td>22TX92FNC 2,3 kg</td>
<td>22TX2FNC</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>special security</td>
<td>22TX93FNC 3,5 kg</td>
<td>22TX3FNC</td>
</tr>
<tr>
<td>mini 5 - maxi 175</td>
<td>M 1&quot;1/4</td>
<td>33x42</td>
<td>1 to 21</td>
<td>special security</td>
<td>22TX94FNC 5,0 kg</td>
<td>22TX4FNC</td>
</tr>
<tr>
<td>mini 5 - maxi 260</td>
<td>M 1&quot;1/2</td>
<td>40x49</td>
<td>1 to 32</td>
<td>special security</td>
<td>22TX95FNC 8,6 kg</td>
<td>22TX5FNC</td>
</tr>
<tr>
<td>mini 6 - maxi 400</td>
<td>M 2&quot;</td>
<td>50x60</td>
<td>1 to 50</td>
<td>special security</td>
<td>22TX96FNC 11,1 kg</td>
<td>22TX6FNC</td>
</tr>
</tbody>
</table>

* For information only. Take the coefficient of combined flow into consideration.

ULTRAMIX OMDA thermostatic mixing valve for hydrotherapy, balneo, or medical applications

The thermostatic mixing valve ULTRAMIX "OMDA" has the same characteristics than the ULTRAMIX, but it is equipped a RILSAN protection kilned at 250°C protects the the mixing valve body at the place of the seats and hot and cold water supply pipes.

Special model specifically conceived to withstand seawater, softened water and distilled water.

Mixing valve cartridge: screws, jets of diaphragm and hoppers made in stainless steel.

Anti-scalding feature and comfort: if there is not enough cold or hot water the mixing valve shuts off automatically and instantaneously.

Dismountable thermostatic mechanism equipped with filters and check valves NF.

Adjustment range: 10/50°C. Its setpoint temperature is not sensitive to flow rate variations in the installation, whether at minimum or maximum.

Apparent mixing valves or inset mixing valves: (22TX8256OMDA-22TX8280OMDA-22TX83OMDA). Rinsing kit included. Replacement cartridges below.

<table>
<thead>
<tr>
<th>Flow rate (L/min)</th>
<th>Diameter</th>
<th>Points of use*</th>
<th>Range 10/50°C</th>
<th>Art. number</th>
<th>Weight</th>
<th>Art. no. replacement cartridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>mini 3 - maxi 56</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 7</td>
<td>special seawater</td>
<td>22TX91OMDA 2,3 kg</td>
<td>22TX1OMDA</td>
</tr>
<tr>
<td>mini 3 - maxi 80</td>
<td>M 3/4&quot;</td>
<td>20x27</td>
<td>1 to 10</td>
<td>special seawater</td>
<td>22TX92OMDA 2,3 kg</td>
<td>22TX2OMDA</td>
</tr>
<tr>
<td>mini 3 - maxi 120</td>
<td>M 1&quot;</td>
<td>26x34</td>
<td>1 to 15</td>
<td>special seawater</td>
<td>22TX93OMDA 3,5 kg</td>
<td>22TX3OMDA</td>
</tr>
</tbody>
</table>

* For information only. Take the coefficient of combined flow into consideration.
### High Protection Kit

Allows to transform the Ultramix thermostatic mixing valves (all temperature setting, chrome plated, epoxy) and old range series 9000 into a high protection thermostatic mixing valve.

The kit includes: chrome plated metal frontage, high protection lock and key for ditto.

<table>
<thead>
<tr>
<th>High protection kit for thermostatic mixing valve type</th>
<th>art. number</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX91, TX92, old range 9200</td>
<td>22TB120007</td>
</tr>
<tr>
<td>TX93, old range 9300</td>
<td>22TB120008</td>
</tr>
<tr>
<td>TX94, old range 9400</td>
<td>22TB120009</td>
</tr>
<tr>
<td>TX95, old range 9500</td>
<td>22TB120010</td>
</tr>
<tr>
<td>TX96, old range 9600</td>
<td>22TB120011</td>
</tr>
</tbody>
</table>

### DIMENSIONING OF MIXING VALVES IN GROUP MIXING

The precision, sensitivity, flow rate and durability of the mixing valve can be ensured only insofar as it is looked after, and before all else, correctly chosen.

To define the size of the most suitable mixing valve for a determined use, the following elements must be known: the total instant flow rate (see paragraph below) and dynamic pressure available at the outflow for the hot water, and for the cold water, the mixing valve’s supply pipes. It can be measured or calculated, by using the DARIES abacus. This abacus can also be used to make sure the water speed is not excessive. Never admit a static pressure of more than 10 bar.

#### CASE OF ULTRAMIX THERMOSTATIC MIXING VALVES

Calculation method:

1 - Define the Cumulated Flow rate of mixed water by multiplying the quantity of appliances to be supplied by the usual unit flow rates (table below). (Consult us for any other application as necessary).

2 - Calculating the total instant flow rate to be supplied by the mixing valve. Depending in the nature of the work, choose the decrease ratio of the flow rates corresponding with the quantity of appliances to be supplied (table below). Multiply this ratio by the cumulated flow rate to obtain the instant flow rate.

#### 1 - Usual bathroom appliance unit flow rates (needs of mixed water)

<table>
<thead>
<tr>
<th>CASE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature displayed on the mixing valve</td>
<td>38°C</td>
<td>38°C</td>
<td>45°C</td>
<td>45°C</td>
<td>50°C</td>
<td>50°C</td>
</tr>
<tr>
<td>Type of tap on the sanitary appliances</td>
<td>outlet</td>
<td>flow control</td>
<td>mixing valve tap</td>
<td>flow control</td>
<td>mixing valve tap</td>
<td>flow control</td>
</tr>
<tr>
<td>Wash basin</td>
<td>12 L</td>
<td>6 L</td>
<td>10 L</td>
<td>6 L</td>
<td>8,4 L</td>
<td>6 L</td>
</tr>
<tr>
<td>Shower</td>
<td>12 L</td>
<td>8,4 L</td>
<td>10 L</td>
<td>7 L</td>
<td>8,4 L</td>
<td>6 L</td>
</tr>
<tr>
<td>Kitchen sink</td>
<td>12 L</td>
<td>8,4 L</td>
<td>10 L</td>
<td>7 L</td>
<td>8,4 L</td>
<td>6 L</td>
</tr>
<tr>
<td>Bathtub</td>
<td>20 L</td>
<td>-</td>
<td>16 L</td>
<td>-</td>
<td>14 L</td>
<td>-</td>
</tr>
<tr>
<td>Bidet</td>
<td>12 L</td>
<td>8,4 L</td>
<td>10 L</td>
<td>7 L</td>
<td>8,4 L</td>
<td>6 L</td>
</tr>
<tr>
<td>Sink for washing up/pot and other applications</td>
<td>20 L</td>
<td>14 L</td>
<td>16 L</td>
<td>11 L</td>
<td>14 L</td>
<td>10 L</td>
</tr>
</tbody>
</table>

#### 2 - Decrease coefficients of flow rates K (simultaneity coefficients)

| Quantity of appliances | 1 or 2 | 3 | 4 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 |
|------------------------|--------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| Residences             | 1      | 0,70 | 0,60 | 0,50 | 0,33 | 0,27 | 0,23 | 0,21 | 0,19 | 0,17 | 0,16 | 0,14 | 0,13 | 0,12 |
| Guest houses            | 1      | 1   | 1   | 1   | 0,82 | 0,67 | 0,57 | 0,52 | 0,47 | 0,42 | 0,40 | 0,35 | 0,32 | 0,30 |
| Campsites-hospitals     | 1      | 1   | 1   | 1   | 1    | 0,86 | 0,76 | 0,68 | 0,57 | 0,49 | 0,42 |
| Spa installations       | 1      | 1   | 1   | 1   | 1    | 1    | 0,86 | 0,76 | 0,68 | 0,57 | 0,49 | 0,42 |
| Stadiums and gymnms     | 1      | 1   | 1   | 1   | 1    | 1    | 0,86 | 0,76 | 0,68 | 0,57 | 0,49 | 0,42 |
| Factory-school          | 1      | 1   | 1   | 1   | 1    | 1    | 0,86 | 0,76 | 0,68 | 0,57 | 0,49 | 0,42 |
| Swimming pool-barracks  | 1      | 1   | 1   | 1   | 1    | 1    | 0,86 | 0,76 | 0,68 | 0,57 | 0,49 | 0,42 |

| Quantity of appliances | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | > 200 |
|------------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Residences             | 0,11 | 0,105 | 0,10 | 0,097 | 0,093 | 0,087 | 0,083 | 0,08 | 0,078 | 0,076 | 0,074 | 0,072 | 0,07 | 0,07 |
| Guest houses            | 0,27 | 0,26 | 0,25 | 0,242 | 0,232 | 0,217 | 0,207 | 0,20 | 0,195 | 0,19 | 0,185 | 0,18 | 0,175 | 0,175 |
| Campsites-hospitals     | 0,38 | 0,35 | 0,32 | 0,30 | 0,28 | 0,26 | 0,24 | 0,22 | —    | —    | —    | —    | —    | —    | —    |
| Spa installations       | 0,27 | 0,26 | 0,25 | 0,242 | 0,232 | 0,217 | 0,207 | 0,20 | 0,195 | 0,19 | 0,185 | 0,18 | 0,175 | 0,175 |
| Stadiums and gymnms     | 0,38 | 0,35 | 0,32 | 0,30 | 0,28 | 0,26 | 0,24 | 0,22 | —    | —    | —    | —    | —    | —    | —    |
| Factory-school          | 0,27 | 0,26 | 0,25 | 0,242 | 0,232 | 0,217 | 0,207 | 0,20 | 0,195 | 0,19 | 0,185 | 0,18 | 0,175 | 0,175 |
| Swimming pool-barracks  | 0,38 | 0,35 | 0,32 | 0,30 | 0,28 | 0,26 | 0,24 | 0,22 | —    | —    | —    | —    | —    | —    | —    |
SIMULTANEITY COEFFICIENT (K) depends on the type of work and the number of taps to be supplied.

We consider 3 types of work:
- stadiums – gymnasiums – factories – schools – swimming pools – army barracks
- guest houses – campsites – hospitals – spa installations
- accommodations

3 - Choose the thermostatic mixing valve that will ensure regulation at this instant flow rate, under the available dynamic pressure (b. = bar) for its operation (table below).

### 3 - Table of maximum working flow rates

<table>
<thead>
<tr>
<th>Model</th>
<th>T9715</th>
<th>T9107</th>
<th>TX91</th>
<th>TX92</th>
<th>TX93</th>
<th>TX94</th>
<th>TX95</th>
<th>TX96</th>
<th>T70 size G</th>
<th>T70 size H</th>
<th>T70 size J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. working flow rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in l/min. under 3 bar</td>
<td>42</td>
<td>42</td>
<td>56</td>
<td>80</td>
<td>120</td>
<td>175</td>
<td>260</td>
<td>400</td>
<td>360</td>
<td>700</td>
<td>1200</td>
</tr>
<tr>
<td>in l/sec. under 3 bar</td>
<td>0,70</td>
<td>0,70</td>
<td>0,93</td>
<td>1,33</td>
<td>2,00</td>
<td>2,92</td>
<td>4,33</td>
<td>6,67</td>
<td>6,00</td>
<td>11,67</td>
<td>20,00</td>
</tr>
<tr>
<td>Pipe diameter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>corresponding with the</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>26</td>
<td>33</td>
<td>40</td>
<td>50</td>
<td>66</td>
<td>80</td>
<td>102</td>
</tr>
<tr>
<td>size of the mixing valve:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mm</td>
<td>1/2”</td>
<td>3/4”</td>
<td>3/4”</td>
<td>3/4”</td>
<td>1”</td>
<td>1”1/4</td>
<td>1”1/2</td>
<td>2”</td>
<td>2”1/2</td>
<td>3”</td>
<td>4”</td>
</tr>
<tr>
<td>Number of points of use for example</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(see simultaneity coefficient)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>from</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>15</td>
<td>21</td>
<td>32</td>
<td>50</td>
<td>36</td>
<td>70</td>
<td>120</td>
</tr>
<tr>
<td>to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum flow rate</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>10</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>in l/min.</td>
<td>0,05</td>
<td>0,05</td>
<td>0,05</td>
<td>0,05</td>
<td>0,05</td>
<td>0,08</td>
<td>0,08</td>
<td>0,10</td>
<td>0,17</td>
<td>0,20</td>
<td>0,23</td>
</tr>
<tr>
<td>in l/sec.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cartridge**

With WATTS INDUSTRIES the thermostatic mechanisms are independent of the other parts of the mixing valves.

This modular system, extremely simple and practical, facilitates the first actuation and later maintenance (possibility of exchange of cartridge).

Any defect of installation is immediately detected and a rapid put in conformity allows.

All the «cartridges» Eurotherm of collective thermostatic mixing valves ULTRAMIX have STAINLESS STEEL filters and approved check valves NF.

**Maintenance**

With WATTS Eurotherm, one meets a very low number of installations with problem, the mixing valves being seldom blamed. The principle of compact mechanism in the form of interchangeable cartridge allows a handing-over under operation of the mixing valves in record time.

This great simplicity of maintenance makes it possible to utilize a person without particular qualification and not to immobilize an installation more few minutes, so much the exchange of the mechanism is fast.

Moreover, the body of the mixing valve is never dismounted of the installation.
CALCULATION SOFTWARE

The WATTS INDUSTRIES software is designed to validate the calculation carried out manually in order to choose the right thermostatic mixing valve (according to pressures, pipe diameters, desired flowrate and number of points of use).

To access to the calculation software on our web site, enter this URL: http://www.wattsindustries.com
On the first page, click on Local companies and on France - Watts Industries France (Porquet - Gripp)

Calculation method:

1 - The software defines the Accumulated Flowrate of mixed water by multiplying the number of equipment items to be supplied by the usual unit flows.

2 - It calculates the Total Instantaneous Flowrate to be provided by the thermostatic mixing valve. Depending on the type of worksite (3 types), it chooses the reduction coefficient of flows corresponding to the quantity of equipment items to be supplied. It multiplies this coefficient by the accumulated flowrate in order to obtain the instantaneous flowrate.

3 - Then the software chooses the thermostatic mixing valve which will ensure the regulation at this instantaneous flowrate under the dynamic pressure (b. = bar) available for its operation.

Why choose a WATTS thermostatic mixing valve?

Easy to install, simple to maintain, attractively designed, WATTS INDUSTRIES thermostatic mixing valves are the basic element for genuine comfort in all plumbing facilities. An installation fitted with a WATTS INDUSTRIES appliance has the guarantee of a brand that has been specialised in this technology for more than 50 years. Its manufacturer is one of the world’s oldest specialists. Eurotherm, a real reference for pros!
The working simplicity of Eurotherm mixing valves results from their ease of operation and the incomparable quality of results.

- Outstanding customer Service: product widely distributed across Europe.
- Guarantee: mixing valve and cartridge guaranteed for 2 years.
- Manufacturer: WATTS INDUSTRIES FRANCE has ISO 9001 certification through the BVQI.
- Market background and know-how: present since 1947.

Mixing cold and hot water in order to obtain water which is mixed at a stabilized temperature within one degree: this is the important part. A thermostatic mixing valve means substantially reduced water consumption, absolute safety – no water which is suddenly uncomfortably hot or cold – guaranteed regulation of flowrates, from the very lowest to the highest, piping and valves protected from limestone deposits, a larger reserve of mixed water at the desired temperature.

WATTS INDUSTRIES:
the most complete range in thermostatic mixing valves

PRODUCT INFORMATIONS & TECHNICAL ASSISTANCE :
please contact EXPORT and O.E.M. department at Hautvillers Ouville
Phone +33 (0)3.22.24.70.11 - info@wattsindustries.fr - Fax +33 (0)3.22.23.16.83
Product range Watts Industries

- System disconnectors
- Backflow protection devices
- Check valves
- Safety units
- Safety relief valves
- Pressure reducing valves
- Automatic control valves
- Butterfly valves
- Shut off valves
- Measuring gauges
- Temperature control
- Expansion vessels
- Process switches
- Fuel products
- Gas products
- Electronic controls
- Installation protection products
- Radiator valves
- System products
- Manifolds and fittings