



*Hygiene Equipment  
Designed for People*

## Service manual – TR2810



The recommended frequency of the maintenance procedures will depend on how often the equipment is used and on the hardness of the water at the place of installation.

It is good practice to establish these routine procedures on a weekly basis and adjust the frequency based on the usage of the equipment.

#### **Head office**

TR Equipment AB, Sweden  
Phone: +46 140 38 50 60  
info@trequipment.se  
www.trequipment.se

#### **Group Subsidiaries**

TR Group Inc, US, Phone: +1 (800) 752 6900  
TR Equipment Ltd, UK, Phone: +44 (0) 844 335 8386  
TRanspoRehaMed GmbH, Germany, Phone: +49 (0) 212 645850-0



**TR EQUIPMENT**



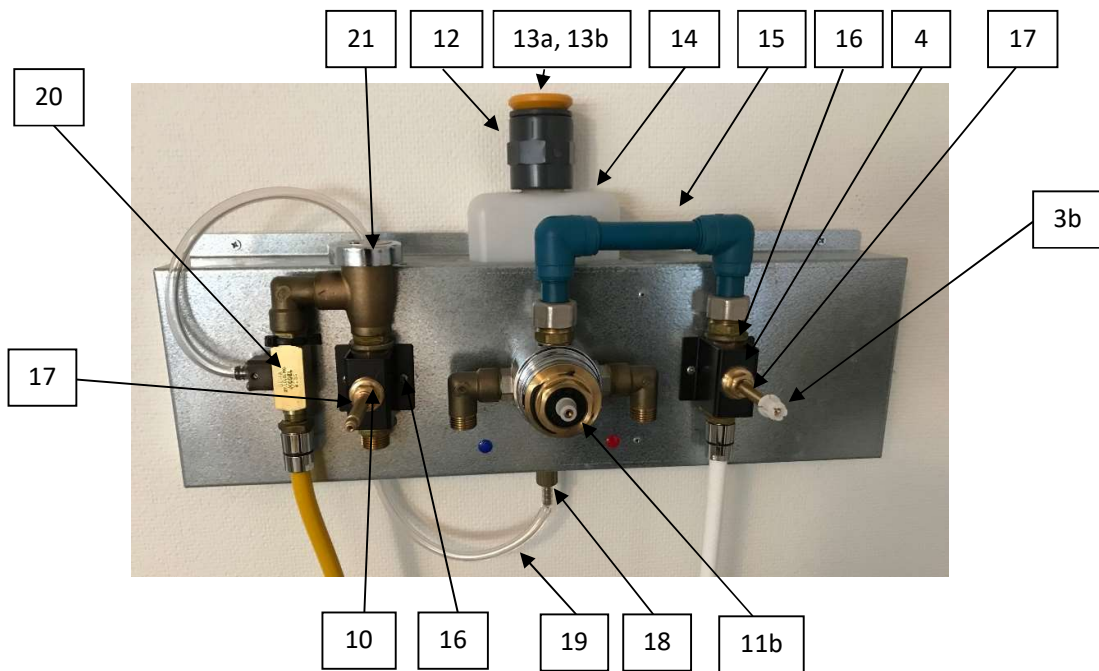
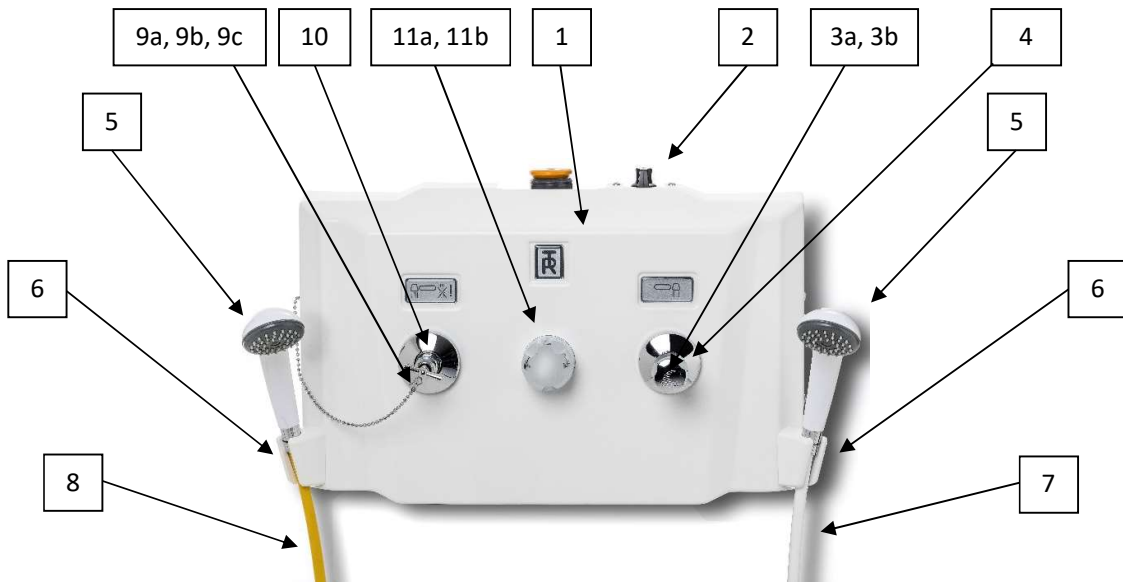
---

## Table of Contents

<b>Spare parts list</b>	<b>4</b>
<b>Trouble shooting</b>	<b>5</b>
- Thermostatic mixer	5
- Cleaning injector	8
<b>Service Instructions</b>	<b>9</b>
- How to remove the plastic cover	9
- How to remove the shower panel from the wall	10
<b>Service instructions, Shower unit</b>	<b>11</b>
- How to replace the knob and valve bushing	11
- How to replace the valve	12
- How to replace the valve stem	13
- How to replace the plastic pipes	14
- How to replace the White shower hose	15
<b>Service instructions, Cleaning unit</b>	<b>16</b>
- How to replace the valve	16
- How to replace the valve stem	17
- How to replace the Vacuum breaker	18
- How to replace the injector	19
- How to replace the Yellow Cleaning hose	20
- How to calibrate the injector	21
<b>Service instructions, Thermostatic mixer</b>	<b>22</b>
- How to replace the Thermostatic mixer	23
- How to replace the mixer cartridge	24
- How to exercise the thermostatic mixer	25
<b>Maintenance</b>	<b>27</b>
<b>Annual maintenance checklist</b>	<b>29</b>



## Spare parts list





## Spare parts list

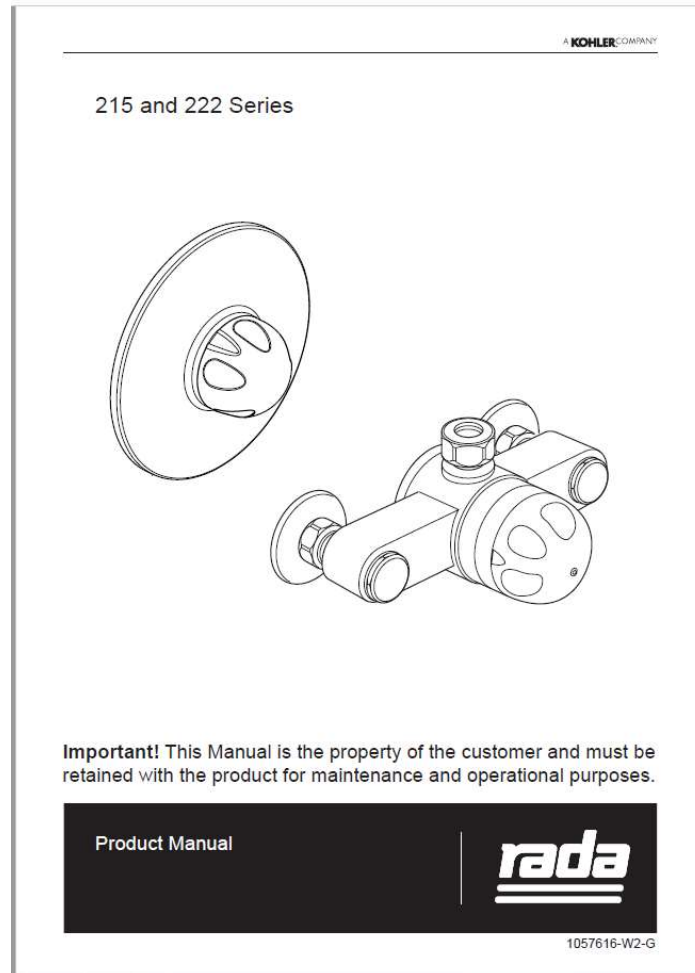
No.	Part	Part number
1	Plastic cover	7230166
2	Lock (factory mounted option)	850491
3a	Chromed knob	829293-03
3b	Plastic bushing, White (inside the knob)	829293-04
4	Valve ½" incl. stem, bushing, knob and chromed parts	829288
5	Shower handle	829171
6	Bracket for shower handle	829172
7	White Shower hose	829097
8	Yellow Cleaning hose	829096
9a	Key for cleaning valve	829289-02
9b	Key chain	850239
9c	Chain bracket	850237
10	Valve ½" incl. stem, key and chromed parts	829289
11a	Thermostatic mixer incl. cartridge	829284
11b	Cartridge for thermostatic mixer	829284-02
12	PVC adapter (3-parts)	829238, 6426288, 3426292
13a	Lid	7426293
13b	O-ring	829152
14	Cleaning bottle	850614
15	Pipe unit	2330566
16	Valve bracket	3430565
17	Valve stem ½"	829307
18	Hose connection	829088
19	Transparent hose	
20	Injector	829070
21	Vacuum breaker	829069



## Trouble shooting thermostatic mixer:

Provided that the thermostatic mixing valve has been correctly installed and is operated in accordance with the instructions contained in the RADA 215 & 222 guide, difficulties should not arise. If any maintenance is required it must be carried out by a competent tradesperson for whom the fault diagnosis chart and maintenance instructions are provided. Before replacing any parts make sure that the underlying cause of the malfunction has been identified.

**For full specification regarding trouble shooting, see separate manual from the manufacturer of the thermostatic mixer (supplied at delivery). See chapter MAINTENANCE, Fault diagnosis.**



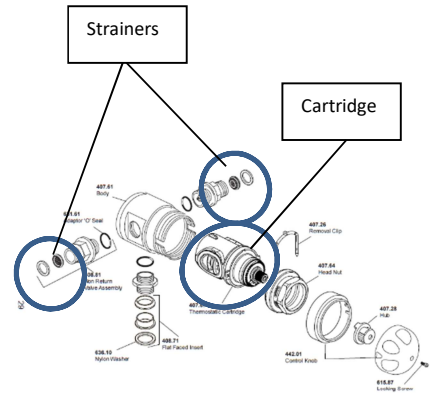


### Symptom 1

- Only hot or cold water from the mixer outlet.
- Outlet temperature too hot / too cold.

#### Rectification:

- Check if the inlets are reversed (hot supply to cold supply)
- Check if hot water reaches the thermostatic mixer.
- Check the strainers for any blockage (see blow chart).
- Check if the cartridge needs to be cleaned (see blow chart).



### Symptom 2

- Fluctuating or reduced flow rate.

#### Rectification:

- Check strainers and inlet/outlet fittings for flow restriction (see blow chart above).
- Make sure that the minimum flow rate is sufficient for the supply conditions.
- Make sure that the dynamic inlet pressures are nominally balanced.
- Make sure that the inlet temperature differentials are sufficient.
- Check thermostatic performance; renew thermostatic cartridge if necessary.

### Symptom 3

- No flow from mixing valve outlet.

#### Rectification:

- Check strainers and inlet/outlet fittings for blockage (see blow chart above).
- Hot or cold supply failure; thermostat holding correct shutdown function; rectify then check thermostatic performance; renew thermostatic cartridge if necessary.



## Symptom 4

- Blend temperature drift / changes in supplied water temperature

### **Rectification:**

Indicates operating conditions changed

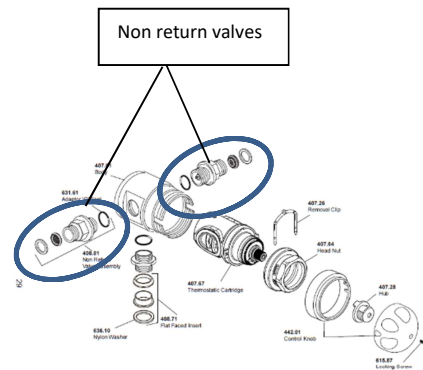
- Refer to symptom 2
- Hot supply temperature fluctuation.
- Supply pressure fluctuation

## Symptom 5

- Hot water in cold supply or vice versa.

### **Rectification:**

- The non-return valves on the thermostatic mixer require maintenance.



## Symptom 6

- Maximum blend temperature setting too hot or too cool.  
Correct outlet temperature for the TR shower Panel TR2810 is 38° Celsius / 100,4° Fahrenheit.

### **Rectification:**

Indicates incorrect maximum temperature setting.

See section: “Commissioning” and “Maximum temperature setting” to adjust the setting.

**Must be performed by a technically competent person.**

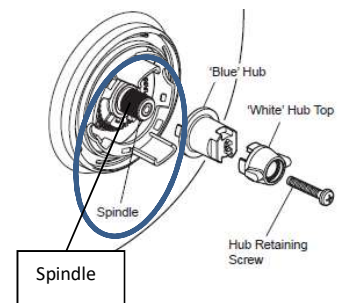
## Symptom 7

- Water leaking from valve body.

### **Rectification:**

Seal(s) worn or damaged, obtain service pack and renew all seals.

If leak persists around the temperature spindle, renew the thermostatic cartridge.





## Trouble shooting Cleaning injector/mixer:

At delivery, the injector is preset at a 2% injection rate.



### Symptom 1

- The injector fails to draw chemical in the initial installation.

#### Rectification:

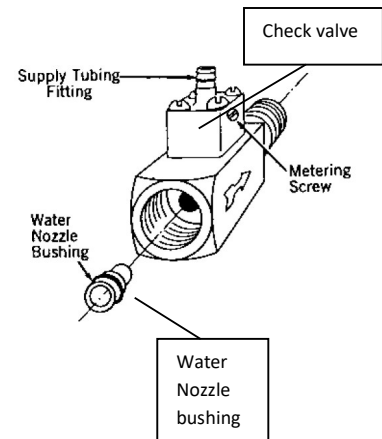
- Check if the hose is kinked.
- Check if warm water is supplied instead of cold water.
- Check if there is any blockage in the water supply.

### Symptom 2

- The injector stops working after having worked properly.

#### Rectification:

- See Rectification for Symptom 1.
- Check if the Water nozzle bushing is clogged or blow back out.
- Check if the check valve is clogged. Remove the 4 knob screws To disassemble. Inspect and clean ball, spring and O-ring.
- If actions above don't help, replace the injector.





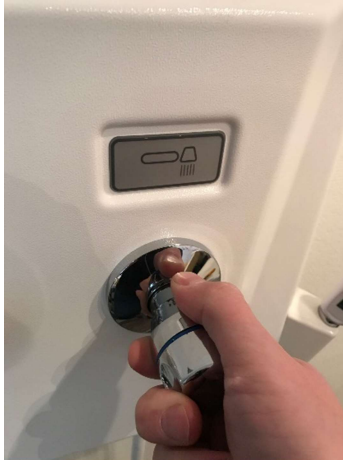


## Service instructions

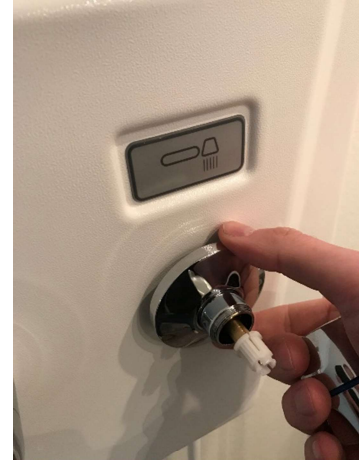
How to remove the plastic cover.



Loosen and remove the 4 screws on the sides.



Remove the knob by pulling it backwards.



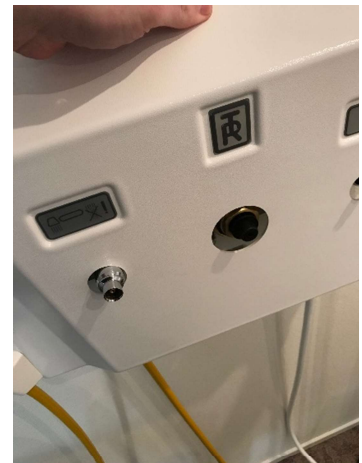
Remove the 2 chromed discs by pulling them backwards.



Loosen and remove the knob screw.



Remove the mixer knob by pulling it backwards.



Remove the cover by pulling it backwards.



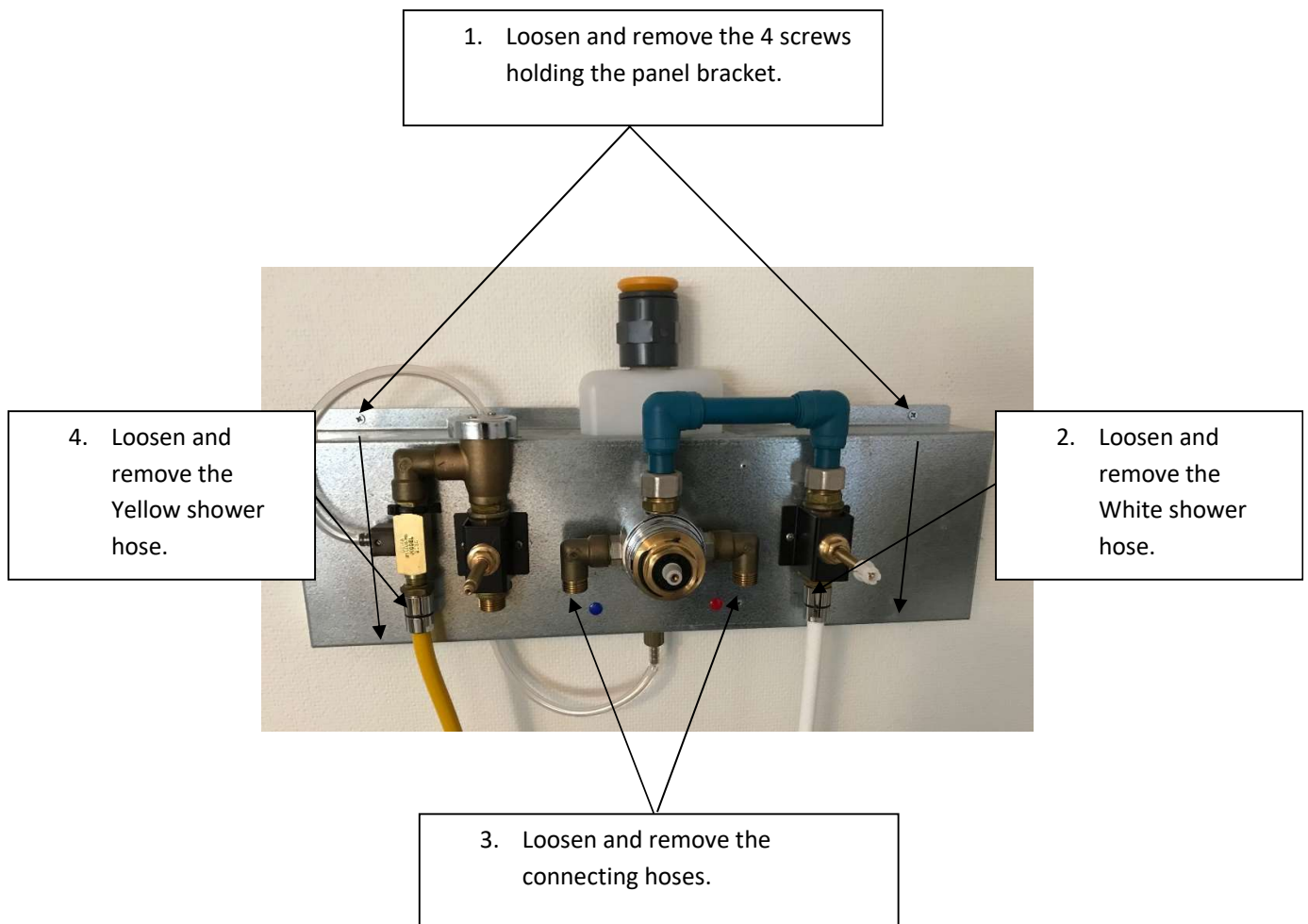
## Service instructions

How to remove the panel from the wall.

Always remove the shower panel from the wall before maintenance and repairs.

Always turn OFF the water supply before maintenance.

- Remove the Plastic cover according to instruction on page 9.



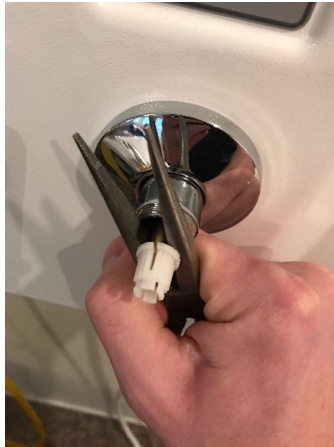


## Service instructions, Shower unit

How to replace the knob and valve bushing.



Grab the knob and pull it backwards.



Place a tool behind the bushing and pull it backwards.



Place the new bushing on the valve stem and push it in place.



Place the knob on the bushing and push it in place until you get a click.



## Service instructions, Shower unit

### How to replace the valve.

- Remove the plastic cover according to instructions on page 9.
- Remove the panel from the wall according to instructions on page 10.



Unscrew the valve bracket by using a Screwdriver and a Spanner.



Loosen and remove the valve from the plastic pipe unit by using a spanner.

### Assembling of new parts:

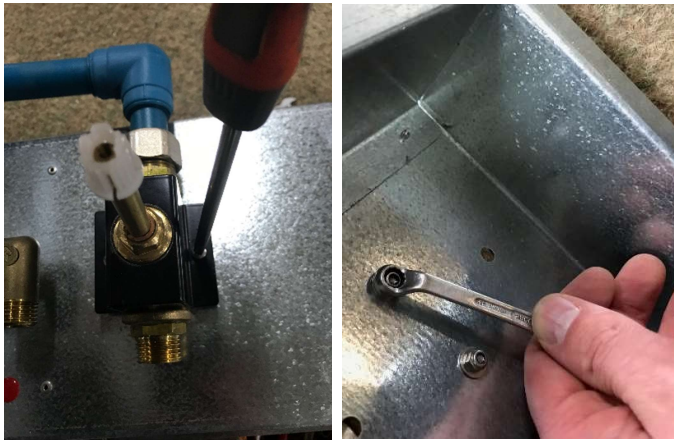
- Attach the new ½" Valve and fasten it with a spanner. If necessary, also replace the sealing between the valve and the Plastic pipe unit.
- Attach the Valve bracket on the Valve and tighten it by using a screwdriver and a Spanner.



## Service instructions, Shower unit

### How to replace the Valve stem

- Remove the plastic cover according to instructions on page 9.
- Remove the panel from the wall according to instructions on page 10.
- **The valve must be fully open before replacing the valve stem.**



Unscrew the valve bracket by using a Screwdriver and a Spanner.



Loosen and remove the valve stem from the valve by using a spanner.

### Assembling of new parts:

- Attach the new ½" Valve stem and fasten it with a spanner.
- Attach the Valve bracket and tighten it by using a screwdriver and a Spanner.



## Service instructions, Shower unit

### How to replace the Plastic pipes unit.

- Remove the plastic cover according to instructions on page 9.
- Remove the panel from the wall according to instructions on page 10.



Loosen and remove the Plastic pipe unit from the Thermostatic mixer and Valve by using a wrench.

### Assembling of new parts:

- Attach the new Plastic pipe unit onto the Thermostatic mixer and valve and fasten it by using a wrench.
- If necessary, also replace the sealing between the Plastic pipe unit and Thermostatic mixer and Valve.



## Service instructions, Shower unit

### How to replace the White shower hose.

- Remove the plastic cover according to instructions on page 9.



Unscrew the shower hose by using a spanner.

### Assembling of new parts:

- Attach the new White shower hose and fasten it by using a wrench.
- If necessary, also replace the sealing between the White shower hose and Valve.



## Service instructions, Cleaning unit

### How to replace the Valve.

- Remove the plastic cover according to instructions on page 9.
- Remove the panel from the wall according to instructions on page 10.



Unscrew the valve bracket by using a Screwdriver and a Spanner.



Cut the cable tie to remove the unit from the bracket.

Loosen the Valve and bushings with a wrench.

### Assembling of new parts:

- Assemble bushings and valve, use Loctite 577. Fasten the bushings with a spanner.
- Assemble the Valve unit incl. bushings to the Vacuum breaker, use Loctite 577 for proper sealing.
- Fasten the complete Cleaning unit on the bracket with a cable tie.





## Service instructions, Cleaning unit

### How to replace the Valve stem.

- Remove the plastic cover according to instructions on page 9.
- Remove the panel bracket from the wall according to instructions on page 10.
- **The valve must be fully open before replacing the valve stem.**



Unscrew the Valve bracket by using a Screwdriver and a Spanner.



Loosen and remove the Valve stem by using a spanner.

### Assembling of new parts:

- Attach the new Valve stem on the valve and fasten it with a spanner.
- Attach the Valve bracket on the Valve and tighten it by using a screwdriver and a Spanner.



## Service instructions, Cleaning unit

### How to replace the Vacuum breaker.

- Remove the plastic cover according to instructions on page 9.
- Remove the panel bracket from the wall according to instructions on page 10.



Unscrew the valve bracket by using a Screwdriver and a Spanner.



Cut the cable tie to remove the unit from the bracket.

Loosen the Vacuum breaker from the Valve and Injector unit by using a wrench.

### Assembling of new parts:

- Assemble the new Vacuum breaker to the Injector unit and Valve, use Loctite 577 for proper sealing.
- Fasten the complete Cleaning unit on the bracket with a cable tie.



## Service instructions, Cleaning unit

### How to replace the Injector unit.

- Remove the plastic cover according to instructions on page 9.
- Remove the panel bracket from the wall according to instructions on page 10.



Unscrew the valve bracket with a Screwdriver and a Spanner.



Cut the cable tie to remove the unit from the bracket.

Loosen the Injector unit from the Vacuum breaker with a spanner.

### Assembling of new parts:

- Assemble the new Injector unit to the Vacuum breaker, use Loctite 577 for proper sealing.
- Fasten the complete Cleaning unit on the bracket with a cable tie.



## Service instructions, Cleaning unit

### How to replace the Yellow Cleaning hose.

- Remove the plastic cover according to instructions on page 9.



Unscrew the Cleaning hose with a spanner.

### Assembling of new parts:

- Attach the new White shower hose and fasten it by using a wrench.
- If necessary, also replace the sealing between the Yellow Cleaning hose and Valve.



## Service instructions, Cleaning unit

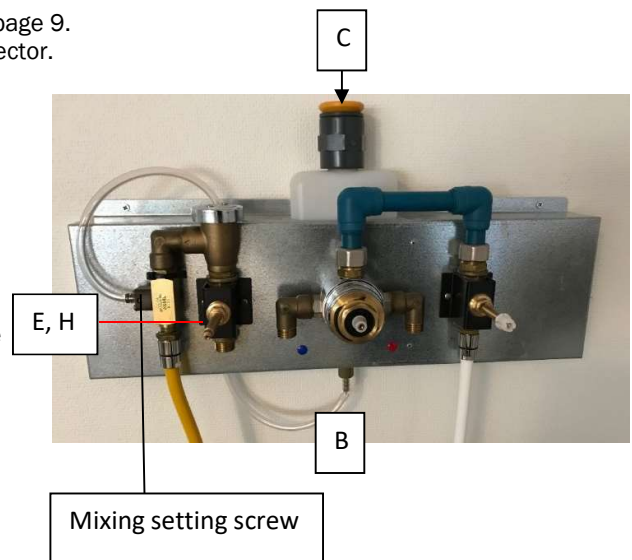
### How to calibrate the cleaning unit.

The detergent is automatically mixed with the water, in a pre-set mixture, at the factory, of 2 %.

If an alternatively calibration is needed follow the instructions below to achieve a mixture of 2 % or what is recommended by your detergent supplier.

To calibrate the mixing setting screw (9) placed on the injector inside the Panel, requires a thin screwdriver a measuring cup with a capacity of at least 20 cl/8 ounces and a bucket with at least 10 litres/3 gallons capacity.

- A. Remove the Panel cover according to the instructions on page 9.
- B. Empty the detergent bottle by loosen its hose from the injector. When empty connect the hose to the injector again.
- C. Fill the measuring cup with 20 cl/8 ounces concentrated detergent, open the detergent bottle lid and pour it into the bottle.
- D. Hold the cleaning spray handle with yellow hose over the 10 litres/3 gallons bucket for filling.
- E. Turn the cleaning safety valve to full open position and spray into the bucket.
- F. Observe level when bucket fills, while bottle empties. Bucket should reach 10 litres/3 gallons mark at the same time that bottle empties. If bucket fills first, turn the detergent mixing setting screw slightly anti-clockwise, using the screwdriver. If bottle empties first, turn the detergent mixing setting screw slightly clockwise.
- G. Repeat procedure A-F until the mixture is as required.
- H. Close cleaning safety valve, and return the cleaning handle to the bracket on side of Panel
- I. Attach the Panel cover.



The cleaning system is now ready for use. Once the proper concentration setting is established, no further calibration is required unless a different detergent, is used.

Note: Mixture should be calibrated in accordance with guidance from your detergent supplier and individual cleaning requirements.

#### **Warning:**

Avoid skin or eye contact with cleaning mixture, which can be highly corrosive. Always read and follow detergent supplier instructions carefully.



## Service instructions, Thermostatic mixer

### How to replace the Thermostatic mixer.

- Remove the plastic cover according to instructions on page 9.
- Disconnect the water supply hoses from the Thermostatic mixer.
- Remove the panel from the wall according to instructions on page 10.



Disconnect the connecting hoses, loosen and remove the Thermostatic mixer from the Shower panel bracket by removing the two screws on the backside of the Shower panel bracket. Also remove and clean the two 90° Brass bushings from the Thermostatic mixer.

### Assembling of new parts:

- Assemble the two 90° Brass bushings on the Thermostatic mixer. Use Loctite 577 for proper sealing.
- Attach the new Thermostatic mixer on the Shower panel bracket and fasten it with the two screws from the backside of the bracket.
- Attach the connecting hoses again. If necessary, replace the gaskets between the brass bushings and the connecting hoses.

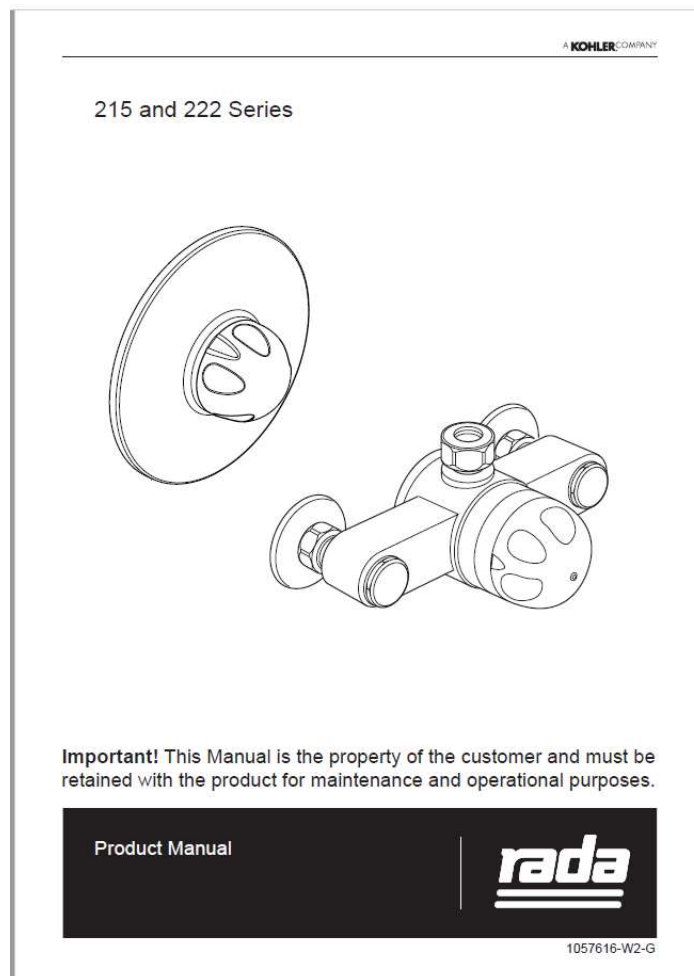


## Service instructions, Thermostatic mixer

### How to replace the mixer cartridge.

- Remove the plastic cover according to instructions on page 9.
- Make sure the water supply to the Thermostatic mixer is turned OFF.
- Remove the panel from the wall according to instructions on page 10.

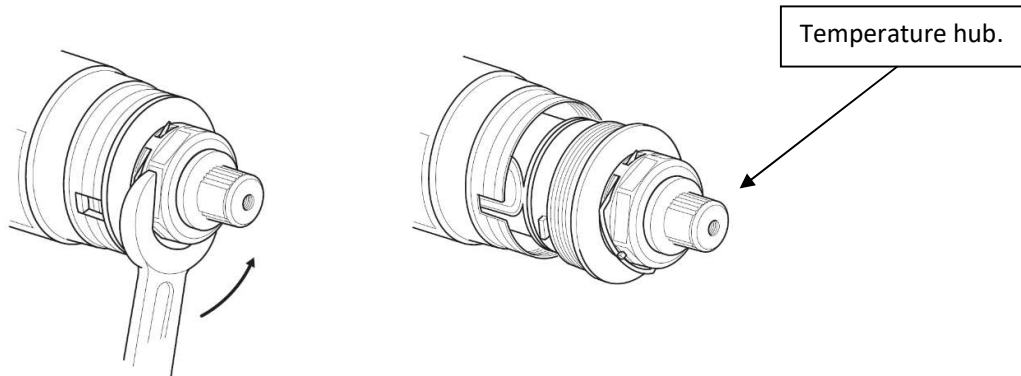
**For full specification regarding replacement of the mixer cartridge, see separate manual from the manufacturer of the thermostatic mixer (supplied at delivery), Chapter MAINTENANCE, Thermostatic cartridge, Removal.**





## Service instructions, Thermostatic mixer

### How to replace the mixer cartridge.



- Remove the cartridge by turning it Counter clockwise with a spanner. **Do not remove the temperature hub.**
- With the removal clip in place, unscrew the head nut using a 35mm wrench, this will begin to draw the thermostatic cartridge out of the body.
- Rotate the thermostatic cartridge 180°, which reverses the position of the cartridge hot and cold inlets.
- Carefully push the thermostatic cartridge back into the valve body, checking that the two cartridge inlet port seals remain in place, and locate the cartridge lugs into the body slots.

#### **Important!**

Make sure that the markings on the cartridge correspond with the hot and cold inlet pipe work.

- Carefully align and then tighten the head nut, do not over-tighten (max torque 2.5N/m – 1.85 lbf ft).
- Complete the installation, or, if the mixing valve body has already been installed, restore the hot and cold supplies and check for any leaks.
- If the temperature hub has been removed or if the maximum temperature needs resetting, check, and if necessary, refer to section **Commissioning. This must be performed by a technically competent person!**

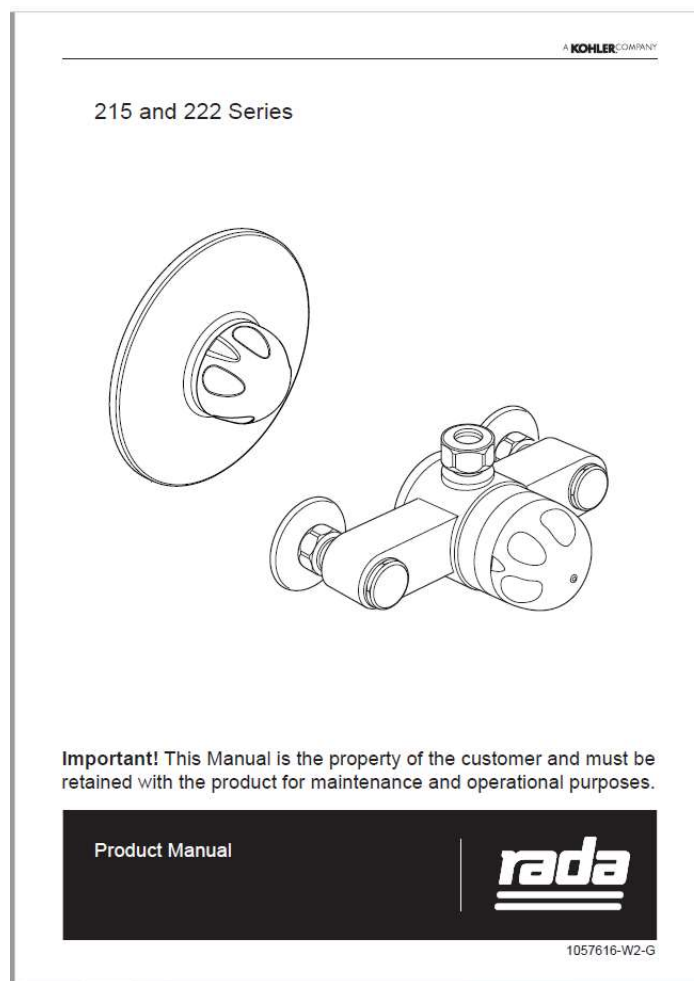




## Service instructions, Thermostatic mixer

How to exercise the thermostatic mixer

For full specification regarding how to exercise the thermostatic mixer, see separate manual from the manufacturer of the thermostatic mixer (supplied at delivery), Chapter COMMISSIONING, Exercising the thermostat.





## Service instructions, Thermostatic mixer

### How to exercise the thermostatic mixer

Thermostatic mixing valves with wax thermostats are inclined to lose their responsiveness if not used. Valves which have been in storage, installed but not commissioned, or simply not used for some time should be exercised before setting the maximum temperature or carrying out any tests.

A simple way to provide this exercise is:



1. Make sure that the hot and cold water are available at the valve inlets, and the outlet is open.
2. Move the temperature control rapidly from cold to hot and back to cold several times, pausing at each extreme.



## Maintenance, Before every use

### Visual inspection

- Make sure there are no leaks on connecting hot and cold hoses.
- Make sure there is no leaks on the White shower hose.
- Make sure there is no leaks on the Yellow cleaning hose.
- Make sure the shower panel is securely mounted on the wall.
- Always physically check the showering temperature by hand before and during showering and that the thermostatic mixer functions properly.
- Make sure there is enough cleaning liquid in the liquid container.

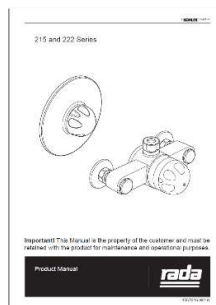
## Maintenance, daily maintenance

- Clean the strainers on the shower handle by rubbing it with your thumb.



## Maintenance, monthly maintenance

- Monthly maintenance must be performed by an on-site engineer or trained staff.
- Make sure the connecting hot and cold-water hoses are fitted correctly and do not leak.
- Make sure the shower panel is securely mounted on the wall.
- Make sure all fasteners are correctly mounted.
- For maintenance on the thermostatic mixer, see separate manual enclosed at delivery. Chapter MAINTENANCE.
- Exercise the thermostatic mixer according to the instructions on page 25.
- Make sure the cleaning injector works properly.



Manual from the manufacturer of the thermostatic mixer. Supplied at delivery.



## Maintenance, Annual maintenance

- Annual maintenance and inspection must be performed by the manufacturer or **qualified staff authorized by the manufacturer.**
- Repeat Before every use, Daily maintenance and monthly maintenance.
- Moveable components must be maintained and inspected regularly because they are classified as wearing parts (e.g fittings, hoses, connections, check valves and thermostatic mixer.

## Maintenance, Every 5 years

- Exchanging/replacing all connecting hot- and cold-water hoses.
- Replace the mixer cartridge and check valves.

**Important:**

In healthcare applications such as hospitals, residential care homes, etc. and in any other applications where the user is similarly at risk, irrespective of supply and usage conditions or the evidence of in-service tests. TR Equipment recommends the critical components replaced at intervals of no more than 5 years.

The recommended frequency of these maintenance procedures will depend on the hardness of your water supply and how often the equipment is used. It is good practice to establish these routine procedures on a weekly basis and then adjust the frequency as your conditions indicate.

**Warning:**

Scalding risk when flushing with hot water!

**Important:**

Shower hoses on the TR2810 Shower panel manage 60 °C /140 °F for 10 minutes.



## Check list

### Annual maintenance TR2810 Shower panel

#### Visual control

Is the shower panel securely mounted on the wall? Yes <input type="checkbox"/> No <input type="checkbox"/>	Comment:	Action:
Any visible damages on the shower panel? Yes <input type="checkbox"/> No <input type="checkbox"/>	Comment:	Action:
Are the strainers on the shower handles cleaned properly? Yes <input type="checkbox"/> No <input type="checkbox"/>	Comment:	Action:

#### Plumbing connections

Any leaks from the connecting hot and cold-water hoses? Yes <input type="checkbox"/> No <input type="checkbox"/>	Comment:	Action:
Any leaks from the White shower hose? Yes <input type="checkbox"/> No <input type="checkbox"/>	Comment:	Action:
Any leaks from the Yellow cleaning hose? Yes <input type="checkbox"/> No <input type="checkbox"/>	Comment:	Action:

#### Thermostatic mixer



<p>Is the maximum temperature from the mixer 38°?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Comment:</p>	<p>Action:</p>
<p>Perform a scalding test, Shut <b>OFF</b> the Cold water supply to the tub. The mixer shall shut OFF when only Hot water is supplied.</p> <p>Scalding function working?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Comment:</p>	<p>Action:</p>
<p>Has the thermostatic mixer been exercised?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Comment:</p>	<p>Action:</p>

**If the mixer doesn't shut OFF when only HOT water is supplied, the mixer or cartridge MUST BE REPLACED!**

**Cleaning unit**

<p>Any leakage from the Vacuum breaker?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Comment:</p>	<p>Action:</p>
<p>Does the cleaning injector mix water and cleaning liquid?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Comment:</p>	<p>Action:</p>
<p>Any leakage from the Valve?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	<p>Comment:</p>	<p>Action:</p>



**Shower unit**

Any leakage from the Valve? Yes <input type="checkbox"/> No <input type="checkbox"/>	Comment:	Action:
---	----------	---------

Shower panel Approved / Ok to use      Yes       No

-----  
Company / Person:

-----  
Serial number:

-----  
Maintenance date:

-----  
Signature:

**Head office**  
TR Equipment AB, Sweden  
Phone: +46 140 38 50 60  
info@trequipment.se  
www.trequipment.se

**Group Subsidiaries**  
TR Group Inc, US, Phone: +1 (800) 752 6900  
TR Equipment Ltd, UK, Phone: +44 (0) 844 335 8386  
TRanspoRehaMed GmbH, Germany, Phone: +49 (0) 212 645850-0

