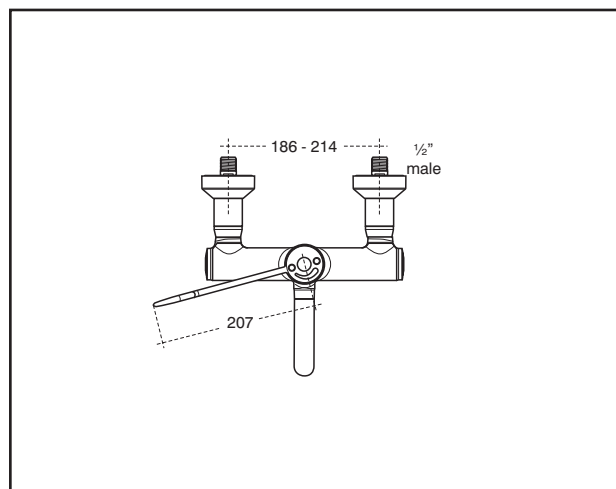
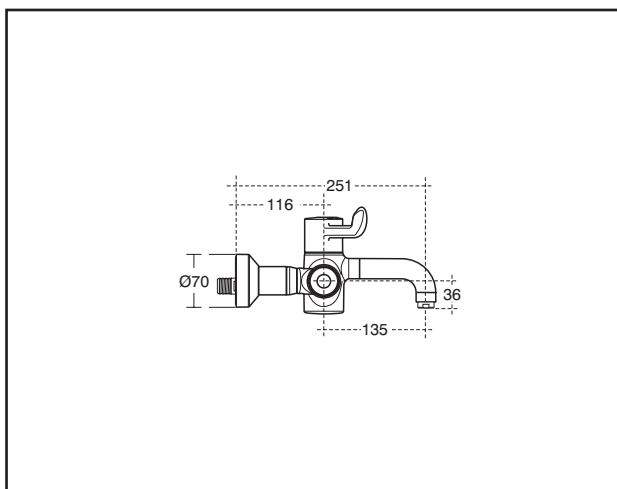


ARMITAGE SHANKS

MARKWIK21 WAL MOUNTED

THERMOSTATIC SURGEONS SET



SPECIFICATIONS

Recommended use	Healthcare
Colour availability	Chrome
Pressure rating	Maximum continuous operating pressure 1000 kPa static, 500 kPa dynamic. For best performance and longer life we recommend 100-500kPa. Balanced hot/cold water pressure is preferred but will work on unbalanced pressure up to a ratio of 5:1
Temperature rating	Maximum continuous working temperature 40-41°C
Suitable Hot Water Units	Storage tank: Yes a 20 kPa minimum pressure Continuous Flow: Yes a 20 kPa minimum pressure Gravity Feed: Yes a 20 kPa minimum pressure
Water Efficiency	WELS approval not applicable for thermostatic products
Standards	AS 4032.1: 2005 Thermostatic Valves

Dimensions are nominal measurements only.

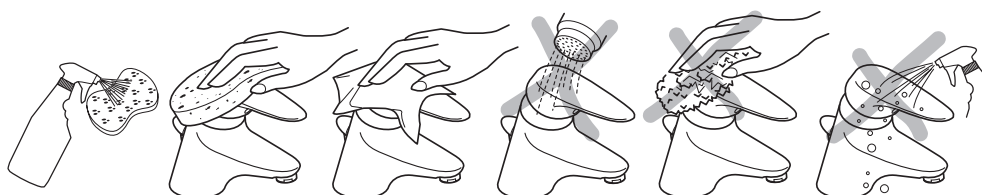


To see the complete Armitage Shanks range go to www.reece.com.au/bathrooms

CLEANING RECOMMENDATIONS

When cleaning chromed products use only a mild detergent, rinse & wipe dry with a soft cloth. Ideally clean after each use to maintain appearance.

Never use abrasive, scouring powders or scrapers. Never use cleaning agents containing alcohol, ammonia, hydrochloric acid, sulphuric acid, nitric acid, phosphoric acid or organic solvents. Use of incorrect cleaning products / methods may result in chrome damage which is not covered by the manufacturer's guarantee.



Disclaimer: Products in this specification manual must by regulation be installed by licensed and registered trade people. The manufacturer/distributor reserves the right to vary specifications or delete models from their range without prior notification. Dimensions and set-outs listed are correct at time of publication however the manufacturer/distributor takes no responsibility for printing errors.

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ARMITAGE SHANKS

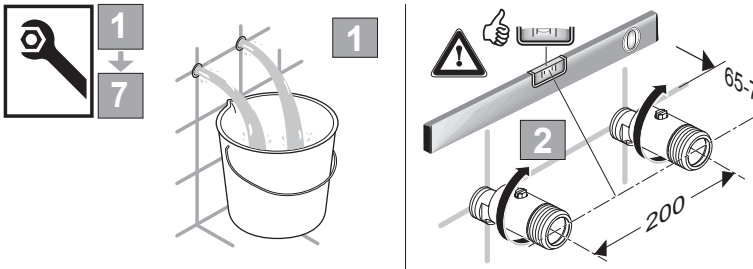
MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

Important Note

Mixer must be installed to the requirements of AS/NZS 3500 by a qualified plumber. Your mixer comes to you already factory assembled and tested. We do not recommend the dismantling of any internal part of the mixer. The mixers are factory tested and sealed so as to give the best performance.

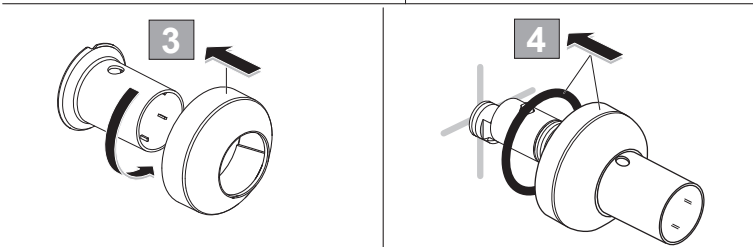
INSTALLATION INSTRUCTIONS

5 INSTALLATION GUIDE



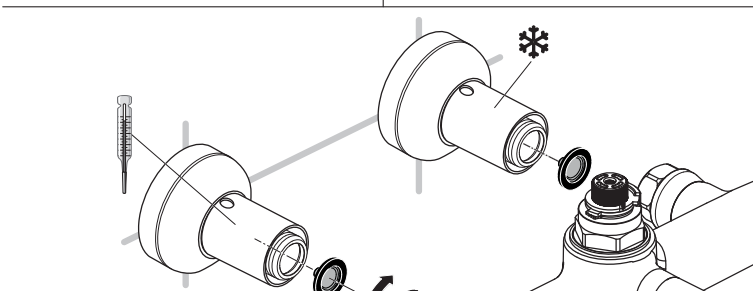
1. Flush pipe work of debris. HOT water supply should be on left side & COLD water supply on the right.

2. Screw the 'S' connectors into the 1/2" female supply nipples preinstalled in the wall. Use a suitable approved jointing medium. S-connectors should be fitted at 200 centres with 65 to 70 horizontal projection from the wall. Use a spirit level to ensure they are horizontal.

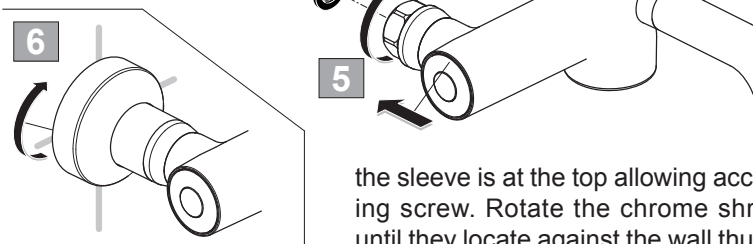


3. Assemble the chrome sleeves & shrouds by screwing together with a couple of turns.

4. Locate wall seals as shown. Place shroud assemblies onto the S-connectors.



5. Assemble the mixer to the inlets using strainer (mesh /filter) washers & tighten the captive nuts with a 30mm A/F spanner.



6. Slide the chrome sleeves forwards onto the captive nuts to engage. Ensure the hole in

the sleeve is at the top allowing access to the isolating screw. Rotate the chrome shrouds clockwise until they locate against the wall thus concealing the S-connectors

Check that all joints are securely tightened, test for leaks.

DO NOT apply heat near this product. Heat generated by soldering could damage plastic parts and seals.



ARMITAGE SHANKS

MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

5.1 Flushing with hydro-purging kit

IMPORTANT NOTE:

Before operating the product, it is strongly recommended to flush the pipe work to remove any residues or debris remaining after installation. A purge kit is available for this purpose. Fig 3

A purging kit - 9506138 (A4556AA) (not included) designed to flush out debris from the pipe-work after installation is available.

The following procedure should be used to flush the pipe work:

1. Unscrew and slide back shrouds, close both isolating valves.
2. Remove both maintenance carriers as described in section 10.
3. Screw the purge kit bodies into both sides of product. Screw elbows onto the ends of the purge kit bodies.
4. Open isolating valves and allow water to discharge into a vessel

Note: suitable tubing can be push fitted onto elbows if required.

5. Once system has been purged, reverse this procedure.

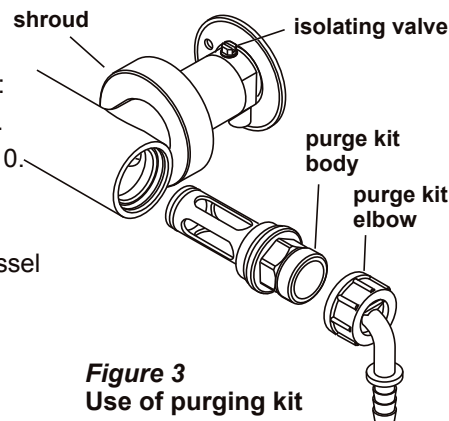


Figure 3
Use of purging kit

5.2 Fixation of handle

- 1 To prevent damage, mixers are supplied without the handle fitted. To fit the handle first carefully prise off plastic protective cover from cartridge spindle & discard. (Use a small flat bladed screwdriver if necessary).
- 2 Two rotational stop rings are fitted to the spindle. Removal of these rings is not necessary for handle fixation. However, top ring can be removed when temperature adjustment proves necessary.
(Cartridge orientation may differ from that shown in this diagram).
- 3 Ensure tab of upper stop ring is firmly against anticlockwise rotation stop. If not rotate the spindle anticlockwise until it is. The cartridge is now in the fully open position. (If necessary, use the spline drive in the handle to rotate the spindle).

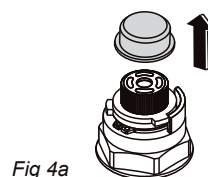


Fig 4a

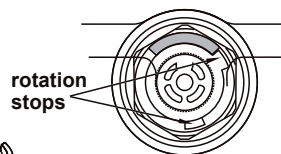


Fig 4b



Fig 4c

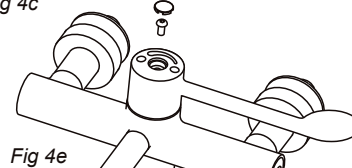


Fig 4e

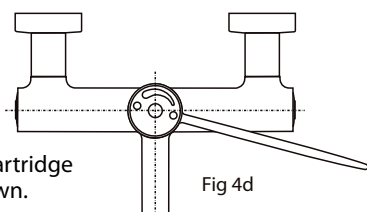


Fig 4d

- 4 Fit handle to cartridge spindle as shown.
- 5 Fit handle screw & tighten with a 4mm Allen Key. Finally, fit cover cap to handle.
- 6 Rotate handle clockwise to closed position. Handle should stop in approximate position shown.

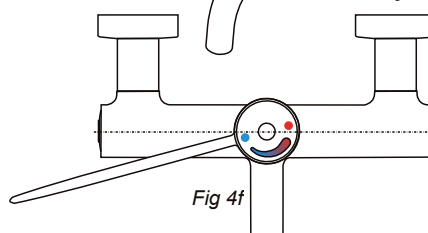


Fig 4f

Plumbers, please ensure a copy of the installation instructions is left with the end user for future reference

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6 OPERATION

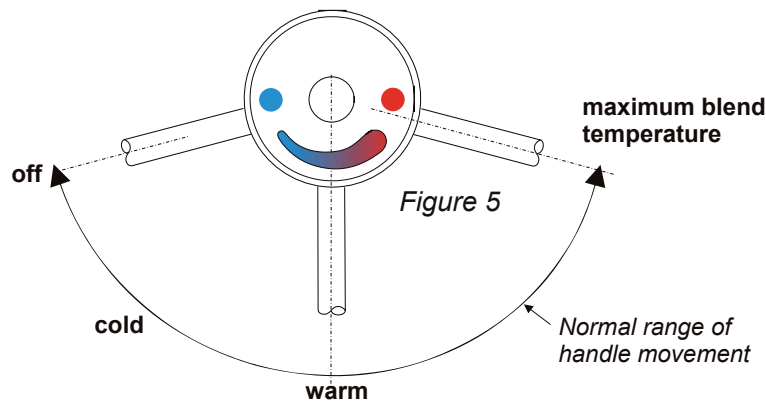


Figure 5 Showing the handle control positions.
As the handle is rotated anti-clockwise from the off position the delivered water progresses from cold through warm to the maximum temperature of approximately 41°C

7 COMMISSIONING AND AUDITS

The following procedure should be conducted after installation to ensure the product is functioning correctly.

7.1 Purpose of commissioning

- To confirm the correct designation of product versus application.
- To confirm the correct supply water conditions for the product / installation.
- To adjust the mixed temperature if necessary to suit the water supply conditions of the installation.
- To check the product is performing properly.
- To start an audit log and record appropriate data.

This product is factory set at $40 \pm 1^\circ\text{C}$ with supplies of circa; 300 KPa balanced pressure and temperatures of 15°C cold & 65°C hot (i.e. an inlet Δt of 50°C & a hot / mix Δt of 24°C)

7.2 Commissioning Process (see decision tree FC1)

- Establish that the supply conditions are within the requirements outlined above. If not investigate.
- When conditions are acceptable record them, together with hot and cold temperatures. Establish Δt .

Check the outlet mix temperature is within $40 \pm 2^\circ\text{C}$, if not (probably due to $\Delta t > 5^\circ\text{C}$ difference to factory setting) adjust appropriately. (see 9.1)

- If mixed temperature is correct undertake an 'in field' cold water isolation (CWI) test: (see 7.5)
 - Pass – restore supply and record mixed temperature,
 - Fail – See 7.5 in-field 'Cold Water Isolation' test.

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7.2 cont. Commissioning process (decision tree FC1)

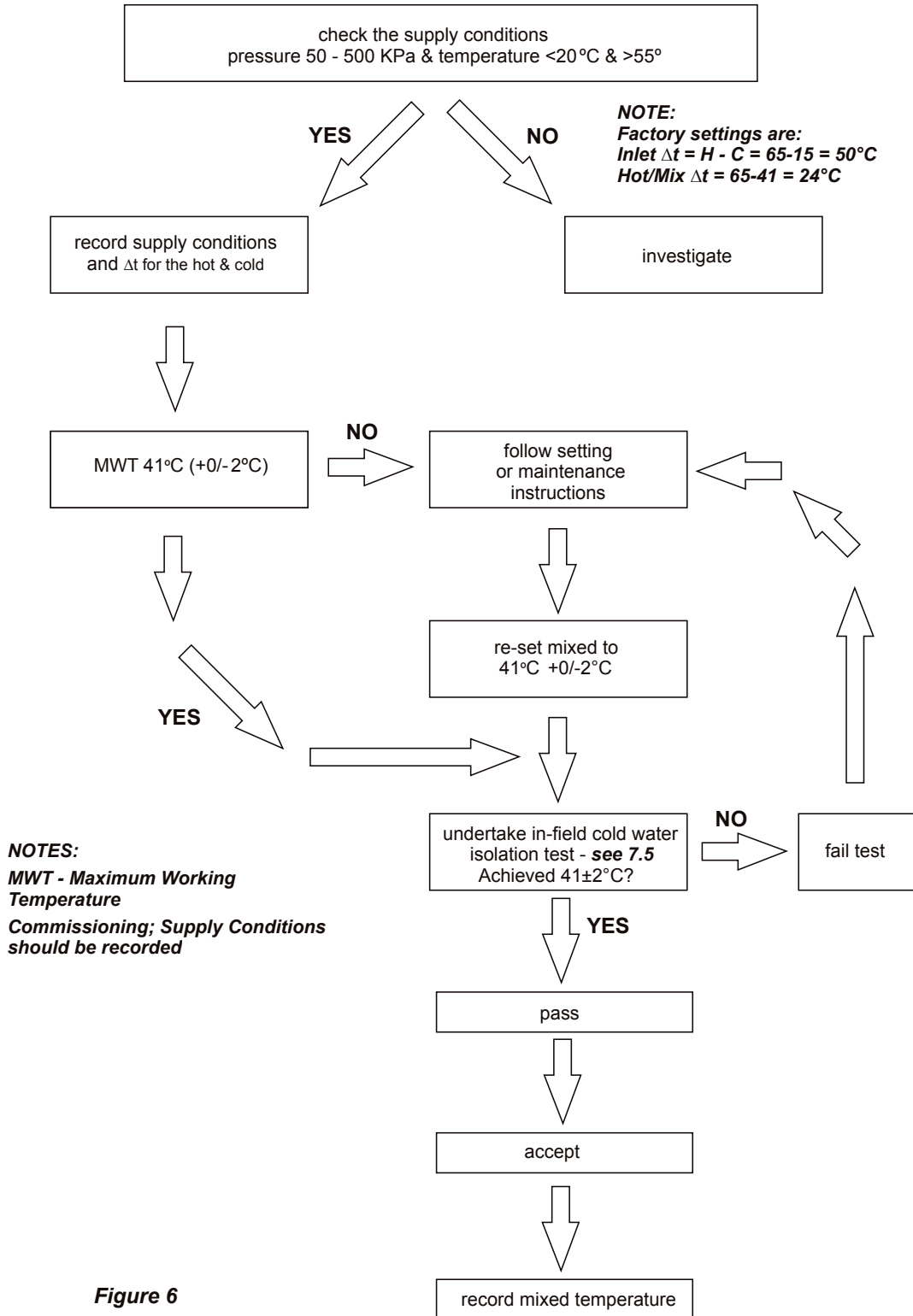


Figure 6

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7.3 Audit Checks on TMV's

The purpose of a performance audit of a product is:

- ♦ To check the product continues to perform properly.
- ♦ To flag the need for the product to be adjusted due to supply condition changes or mechanism ageing.
- ♦ To ultimately identify the need for product maintenance.

Note - Additionally these audits facilitate regular verification of the supply conditions.
(See decision tree FC3)

Audit of Supplies To Fittings (FC3)

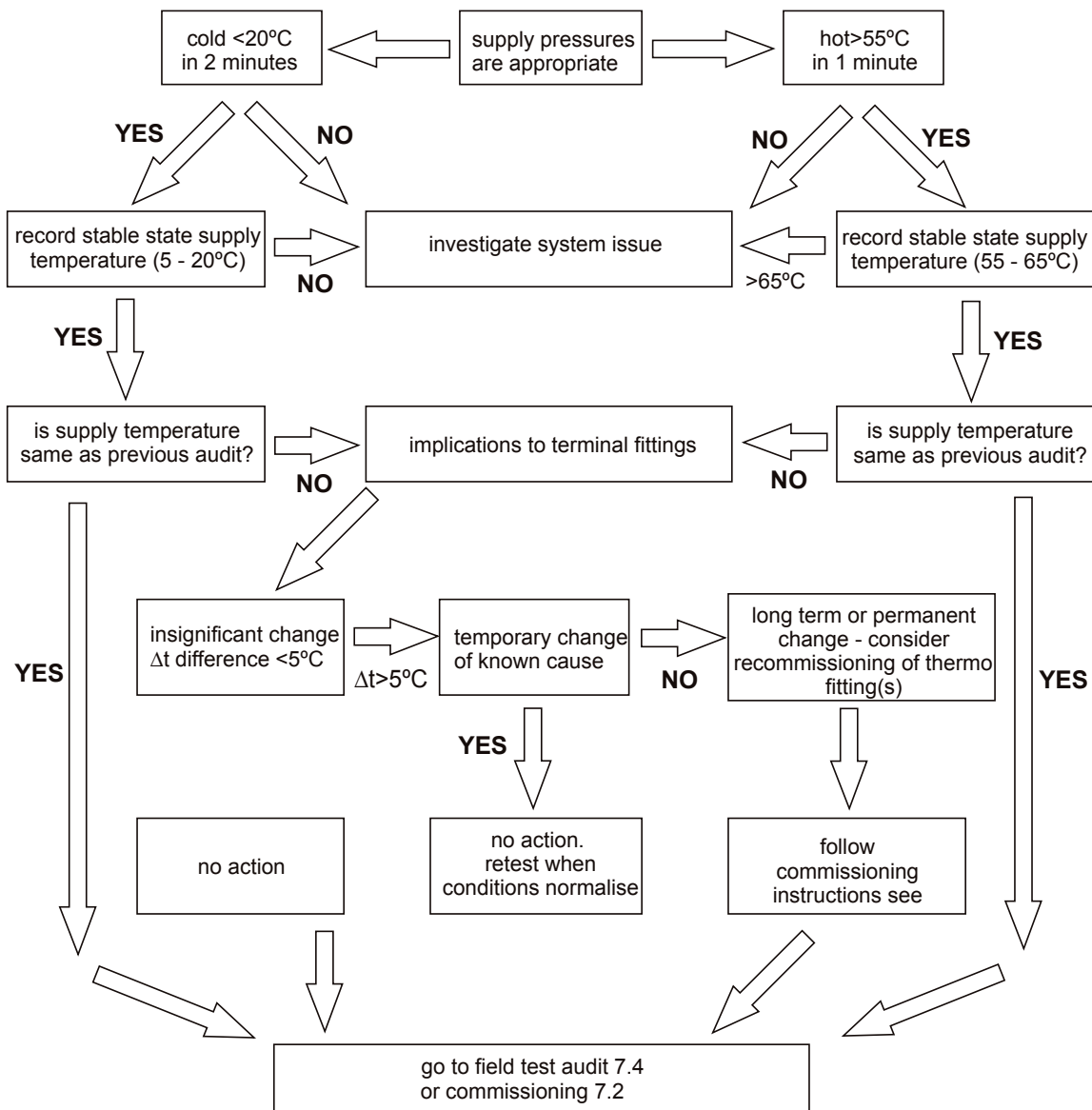


Figure 7

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MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

7.4 Audit procedure (see decision tree FC2)

- Verify the water supplies conditions are similar to when the product was commissioned i.e. inlet Δt as previous $+ / - 5^{\circ}\text{C}$

Note: If inlet Δt change is $> 5^{\circ}\text{C}$ consider the cause of the change. If it is seen as a long term or permanent change, re-commission the product. If however, it is only a temporary change, retest when normal conditions resume.

- If inlet Δt differs from the commissioning Δt by $< 5^{\circ}\text{C}$ carry out field 'cold water isolation' (CWI) test (**see 7.5 in field Cold Water Isolation test failure**).
- Pass - restore the cold supply and move on to check the mix temperature.
Note: If the product fails CWI test, refer to 7.5 and then re-commission the valve.
- Mixed Temperature is as commissioned $\pm 2^{\circ}\text{C}$, Accept and record the temperature.
Note: If mixed Deviation $> \pm 2^{\circ}\text{C}$ (1st instance) reset mix as instructions and redo the test from start. See 9.1 Adjustment of the mix temperature.
- 2nd & subsequent instances follow maintenance instructions.

7.5 In-field 'Cold Water Isolation' (CWI) test.

Note: To gain access to the cold water isolating valve, unscrew the right hand shroud (14) & slide forward to expose the isolating screw on top of the cold inlet leg (**see fig 12, section 10**). Using a flat-blade screw driver, the screw can be rotated 90° anti-clockwise to isolate the cold water supply.

Before commencing the CWI test, ensure:

- The water supply conditions are met either:
 - For commissioning a new product
 - Or the inlet Δt is within $\pm 5^{\circ}\text{C}$ to when the product was commissioned (**see 7.4**).

NOTE It is important that the hot temperature is greater than 55°C

- Mixed water outlet temperature is correct (**see table 2, section 8**).

Fitting Field Test Audit (FC2)

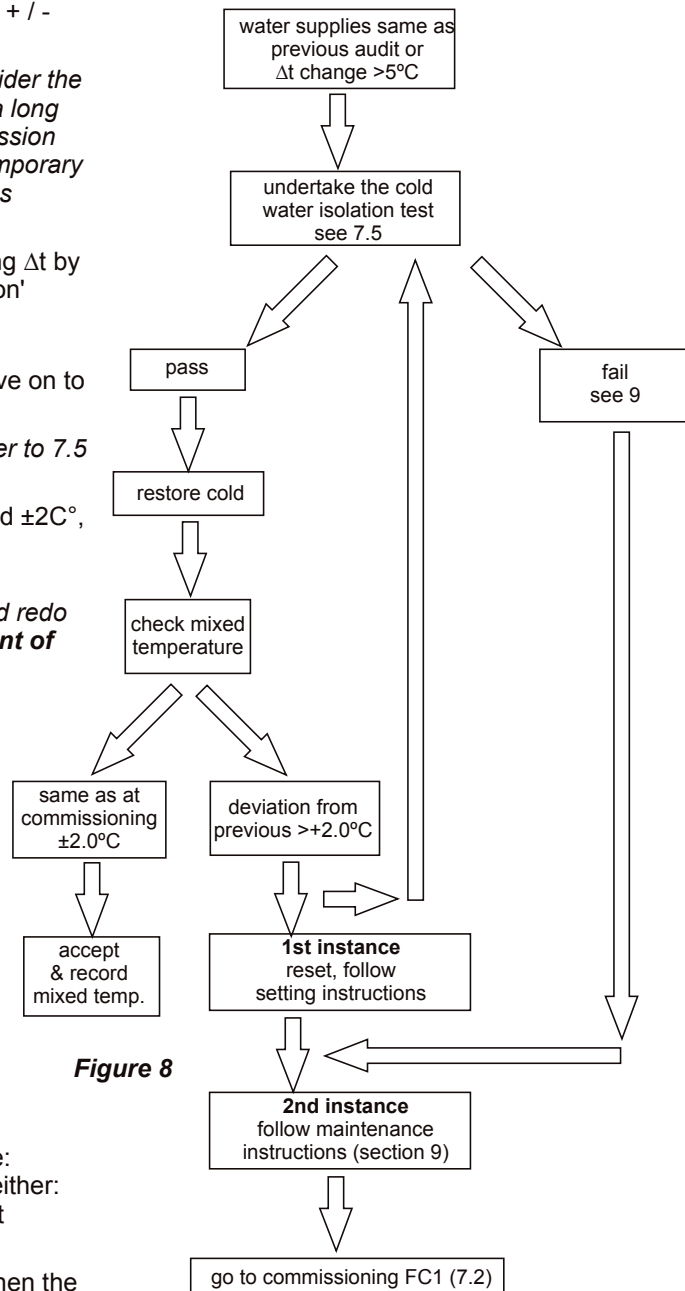


Figure 8

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MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

To perform a CWI test, operate the product by rotating the lever fully to the right.

Then conduct the following procedure:

1. Record the steady state temperature of both hot and cold water supplies. Note the Δt .
2. Record the temperature of the mixed water at the outlet.
3. Isolate the cold water supply (by rotating the isolating screw 90° & monitor the flow of water from the outlet).

If the flow ceases, CWI test passed:

1. Restore the cold water supply by rotating the isolator screw 90° clockwise.
2. Slide the shroud back & screw onto the wall plate.
3. Re-check the temperature of the stabilised mixed water at the outlet to ensure it is still correct.

Accept & record mixed temperature.

If there is an ongoing flow of water from the mixed water outlet, then 5 seconds after CWI collect the discharging water into a measuring vessel for 60 seconds. To pass the CWI test the volume of collected water should be less than 120ml.

If the product fails CWI test, see FC2 (**see section 7.4**). Follow product maintenance (**see section 9**) and servicing (**see section 8**) instructions.

8 SERVICING

The need for servicing is normally identified as a result of the regular performance auditing.

Application	Maximum mixed water temperature during normal operation	Permitted maximum stabilised temperature recorded during site testing – excluding transient spikes
Washbasin	41°C	43°C

Table 2 A guide to maximum temperature sets

8.1 FREQUENCY OF REGULAR SERVICING

The purpose of servicing regularly is to monitor any changes in performance due to changes in either the system or the product. This may highlight the need to adjust either the supply system or the product. These products should be audited 6 to 8 weeks and again 12 to 15 weeks after commissioning. The results are to be compared against original commissioning settings.

If there are no significant changes at the mixed temperature outlet then a 6 monthly servicing cycle may be adopted. Otherwise, servicing checks should be carried out more frequently (e.g. every 4 months).

Follow the recommended auditing and maintenance procedures detailed in sections 7 & 9.

During servicing, note the following:

1. Repeat the procedure of recording and checking supply temperatures. (The same type of measuring equipment should be used)
2. If the temperature has changed significantly from the previously recorded values, the following should be checked:
 - a. All in-line or integral valve filters are clear of obstruction.
 - b. All in-line or integral check valves are clean and working properly to prevent backflow.
 - c. Any isolating valves are fully open.
 - d. The thermostat is free of debris
3. When satisfied with the mixed outlet temperatures re-record the temperatures.

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9 MAINTENANCE

When installed in a healthcare application, we recommend that the commissioning and maintenance procedures, detailed under 7 & 8, be carried out.

9.1 Adjustment of the mix temperature

♦ **Note: Cartridge is factory pre-set at $40 \pm 1^\circ\text{C}$ at 300 Kpa.**

1. Move the lever to the fully on (max) position.
2. Remove the lever by prising out the cover button and unscrewing the retaining screw using a 4mm Allen key.
3. Remove the upper Anti clockwise stop ring (slide off spindle).
4. Rotate spindle (using lever handle) to achieve correct mix temperature. ($40 \pm 1^\circ\text{C}$) Rotate clockwise to reduce and anti-clockwise to increase
5. Refit the upper stop ring against cartridge stop face.

Note:1. This is the normal maximum temperature range for the product and as such there is a wide zone of spindle movement that gives this mix temperature. For best performance you should refit the stop at the first point of anticlockwise rotation that achieves the desired setting.

Note:2. If you are unable to achieve $40 \pm 1^\circ\text{C}$ Max and you have the correct Δ 's it may be due to fine debris.

See 9.2 Removal and inspection of cartridge.

6. Upon successful completion of the temperature adjustment, conduct the **Cold Water Isolation (CWI) test (See 7.5)** to ensure product is working properly.
7. Refit the lever and record the mix temperature.

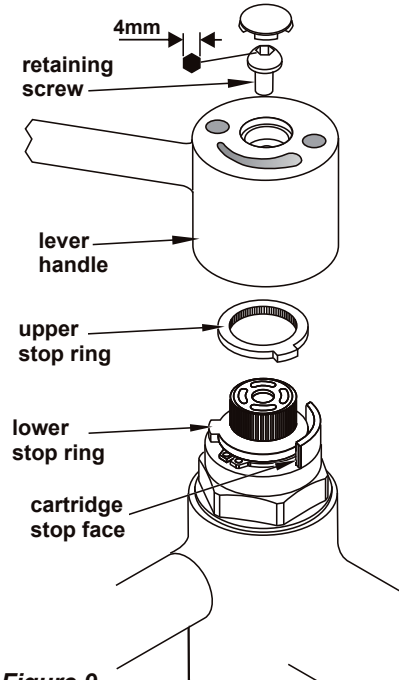


Figure 9
Adjusting the pre-set temperature

9.2 Removal and inspection of cartridge

After checking that supply conditions are within the specified parameters (see table 1), if the fitting malfunctions or should the test results fail to fall within the specified limits consider replacing the cartridge with a new one. **See 9.3 Important notes on debris.**

Isolate the fitting by turning the isolating valves 90° anti-clockwise (viewed facing the iso-valve).

Remove the lever handle as described in 9.1. Unscrew the cartridge from the body with a 36mm a/f deep socket. Inspect cartridge for damage.

Replace cartridge if necessary and reassemble cartridge into body.

The replacement cartridge should be tightened to a torque of 15Nm. (To re-secure the cartridge we recommend the use of Loctite 2400 or equivalent applied to the thread of the cartridge)

Replace lever handle (**see sect 5.2**) and reinstate the supplies.

After fitting the new cartridge start the test procedure from the section on commissioning.

- ♦ Redo the Cold Water Isolation (CWI) test (**See 7.5**).
- ♦ Once satisfied with the CWI test, re-check and if necessary, adjust the maximum mix temperature, see (**See 9.1**).
- ♦ Record the mix temperature.

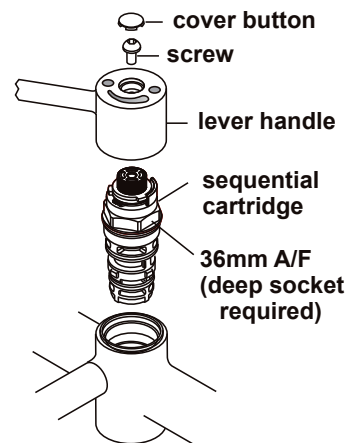


Figure 10
Exploded view showing sequential cartridge

NOTE: During servicing (or replacing): the thermostatic cartridge fitted in this product does NOT require lubrication.

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MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

9.3 Important notes on debris

Although this product is protected by built-in filters, debris can still find its way to the thermostat housing area. This can happen during servicing for example. Remove cartridge (see section 9.2) and carry out an inspection.

9.4 Thermostatic Cartridge Ageing

Following many years of normal service you may notice the following:

1. The need to carry out more frequent adjustment of mixed temperature.
2. The thermostatic element may not pass the CWI test.

These issues could be due to the ageing of the thermostat which loses some expansion capability over time.

These are the principle objectives of testing, as they serve to indicate to maintenance staff the declining performance capability of the thermostatic cartridge.

For this reason the audit testing flow chart highlights that 2nd Instance CWI test failure or 2nd instance mixed deviation even with stable 'as commissioned' supply conditions and correct inlet supply Δt 's, is potentially the first indication of the need to replace the cartridge.

9.5 Armitage Bioguard Outlet

Traditional "flow straightener" type outlets have recently been identified by extensive research as an area most likely to harbour bacteria. This product uses an Armitage Bioguard outlet which replaces this traditional flow straightener with a fully open copper-lined waterway. This greatly reduces the risk of bacteria build-up whilst the copper lining has natural anti-microbial properties.

Outlet is suitable for autoclaving.

In the interests of infection control and health hygiene, the Armitage Bioguard Outlet is a supplement to, not a substitute for, standard infection control practices. Continue to follow all current protocols, including those practices related to cleaning and disinfection of surfaces.

Patent pending for Armitage Bioguard antibacterial outlet, application No: 10 2012 107 243.4

OUTLET FILTER: The Armitage Bioguard outlet can be removed (as described below) & replaced with a universal filter adaptor, see section 14. The adaptor will accept most filter types which are externally threaded M24x1.

9.6 Outlet cleaning

On a regular basis the outlet should be inspected and cleaned.

To unscrew and remove the outlet, use an adjustable spanner on the flats (20mm). To refit, hand tighten and then use the spanner until the outlet has bottomed in the bore. Take care not to over tighten.

In areas where lime scale build-up is prevalent this should be avoided by regular cleaning. If it should build up, it will have to be removed. An inhibited proprietary scale solvent can be used such as kettle descaling solvent but it is important to follow the manufacturer's guidelines. After descaling it is important to rinse the parts thoroughly in clean water. Clean carefully and do not use abrasive materials or scrapers

Note: Lime scale deposits should be removed prior to using any disinfection treatments.

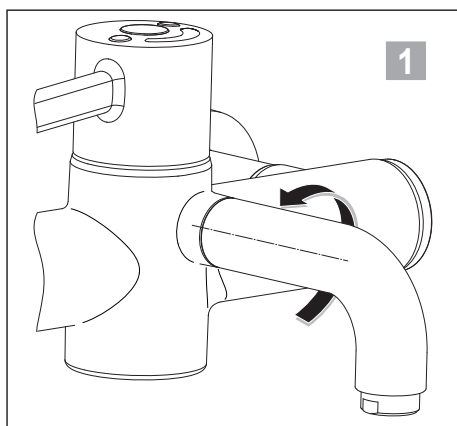
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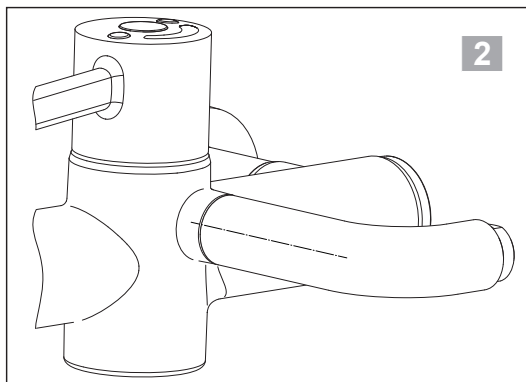
9.7 Spout removal

This mixer is fitted with a quick easily removable spout to assist with cleaning, disinfection by immersion or sterilisation by autoclaving.

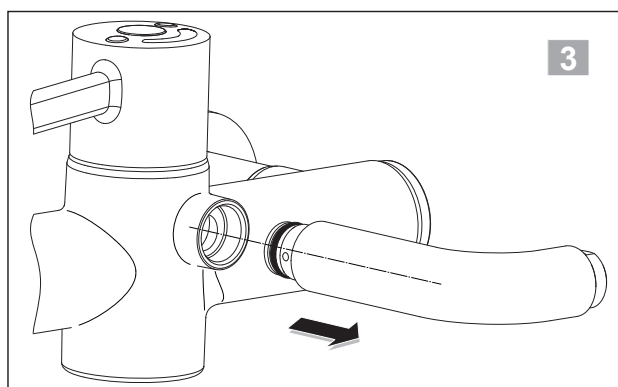
Procedure assumes availability of a replacement spout. For both practical functional reasons along with environmental contamination reasons, the mixer should not be left without a spout in place.



1. Ensure the handle is in the off position.
To remove the spout: gently rotate the end of the spout anticlockwise by 90°.



2. The spout should now be in the horizontal position as shown.



3. Gently pull the spout away from the body as shown.

Quarantine this spout for cleaning protocols.

Ensure replacement spout complies with cleaning protocols.

To refit a spout, reverse this procedure.

Cleaning / disinfecting / sterilising the removed spout.

Physical **cleaning** is only necessary if evidence of solid deposits e.g. calcium or similar can be seen around the outlet.

Disinfection can be achieved by immersing in an appropriate bactericidal solution, using this method we would strongly recommend removal of the Armitage Bioguard outlet from the spout prior to immersion. For disinfection solution see section 9.9.

Sterilisation can be achieved by autoclaving for the desired period. Complete spout can be autoclaved (NB; the seals can withstand this process).

Additional spouts are available so during cleaning protocols an alternative spout can be fitted while the original is removed. This ensures continuity of use of the mixer.

For additional spout part numbers, see section 13.



IMPORTANT:
Do not leave the mixer outlet open without a spout fitted.

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MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

9.8 Demounting mixer

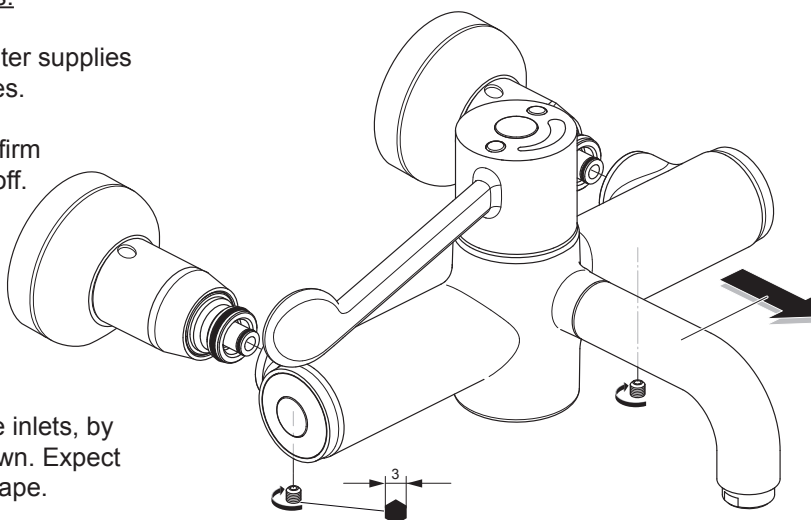
The designs of these mixers have been enhanced to permit easy demounting of the mixer from the inlets.

This updated design permits quick & easy removal of the mixer for cleaning, disinfection (as section 9.7 notes) & maintenance purposes.

Prior to commencing this procedure, you should have available either a replacement mixer (without inlets) or a pair of protective cover caps. See section 13.

Method for demounting mixers:

1. Isolate the hot and cold water supplies using the integral ball valves. See section 10. Operate mixer lever to confirm water supplies are closed off.
2. Undo the 2 grub screws securing the mixer using a 3mm hexagon key. (Take care not to lose the screws).
3. Remove the mixer from the inlets, by gently pulling away as shown. Expect some trapped water to escape.
4. During cleaning protocols: Fit a replacement mixer (without inlets) to ensure continuity of use. Alternatively fit cover caps to protect & seal the inlets.
5. To refit the mixer; reverse this procedure. Tighten screws securely
6. Follow the commissioning procedure to ensure the product is functioning correctly. See section 7.



Disinfection by full immersion in an appropriate bactericidal solution is recommended for this assembly. Prior to immersion, the fitting should be clean and dismantled to a level that prevents air locking. In some cases it may be considered appropriate to dismantle the fitting prior to demounting.

The level of dismantling should be established as a result of practice and will be largely dependant upon the water quality and service life. As a minimum we recommend removal of the lever handle, thermostatic cartridge & the maintenance carriers in each side of the body. Cleaning the filter screens on the latter is of great importance, see section 10. All components can be immersed together unassembled.

Disinfected mixers should be promptly replaced or stored using an appropriate method until required. For disinfection solution see section 9.9



Take care to avoid damaging the inlet seals. Damage to these seals would compromise the insulate feature & affect the mixer's thermostatic performance. See section 12 for spare "demountable seal kit".

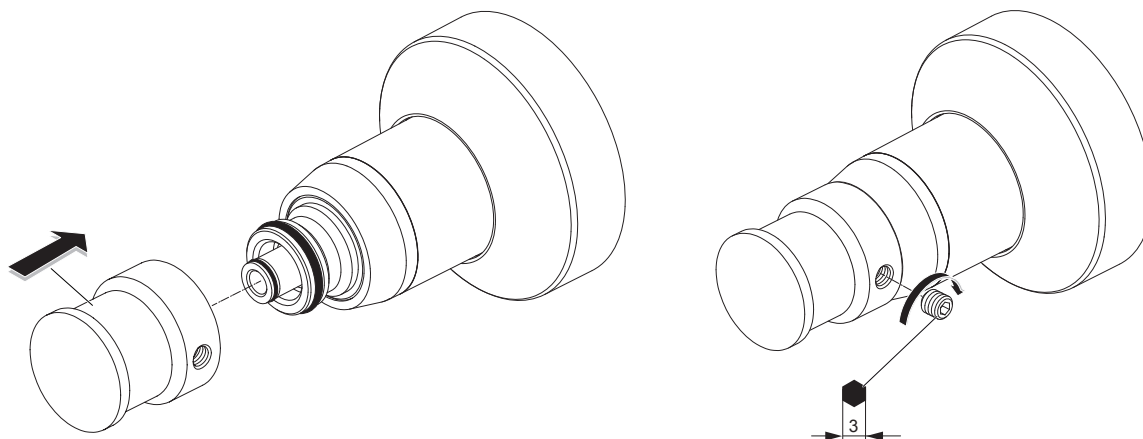
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Protective cover caps

If a replacement mixer is not available, a pair of protective cover caps should be fitted to the inlets. For product code see section 13.

For both practical and functional reasons along with environmental contamination reasons, the inlets should not be left open.



Push the caps onto the inlets until they stop against the shoulder. Take care not to damage the o-ring seals. Secure the caps with grub screws as shown using a 3mm hexagonal key. Leave the hot & cold supplies isolated. Cover caps should be disinfected / sterilised when necessary.



IMPORTANT:
Do not leave the mixer inlets open without a body or cover caps fitted.

9.9 Disinfection solution

As discussed in sections 9.7 & 9.8, for disinfection, we recommend parts be immersed in an appropriate bactericidal solution.

The frequency of such disinfection actions will be derived from regular sampling carried out under the regime of the Responsible Person (Water). We would not expect to need greater than 6 monthly frequencies, hopefully considerably less.

The need for excessive use of this procedure would be indicative of the need for some root cause analysis as there could be some system or behavioural problems that need addressing.

IMPORTANT ADMINISTRATION NOTE:

Where an audit log document (report or electronic record) is being kept for a mixer, consideration should be given to the mixer's traceability during the demounting & disinfecting process.

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MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

10 INTEGRAL ISOLATING VALVES, CHECK VALVES STRAINERS & REGULATORS

The integral isolation valves facilitate a number of activities:

- Cleaning strainers
- Servicing the thermostatic cartridge
- Audit cold water isolation test
- Demounting the mixer from its inlets
- Control flow during hydro-purge

IMPORTANT NOTE:

The integral isolating valve(s) shown below should be used regularly for all servicing & testing of this product. This is in preference to using any external inline isolating valves which may have been fitted upstream of the inlet legs. Regular exercising of both isolating valves is essential.

Strainers

To ensure trouble free operation of the fitting, the strainer elements should be checked and cleaned in accordance with the commissioning and servicing guide. (see section 7 & 8)

To access the strainer element, first unscrew and slide back the shrouds and close the isolation valves. Prise out the cover cap then unscrew the end cap using a 10mm Allen key and withdraw the maintenance carrier. The strainer element should be washed with clean water & disinfected before refitting.

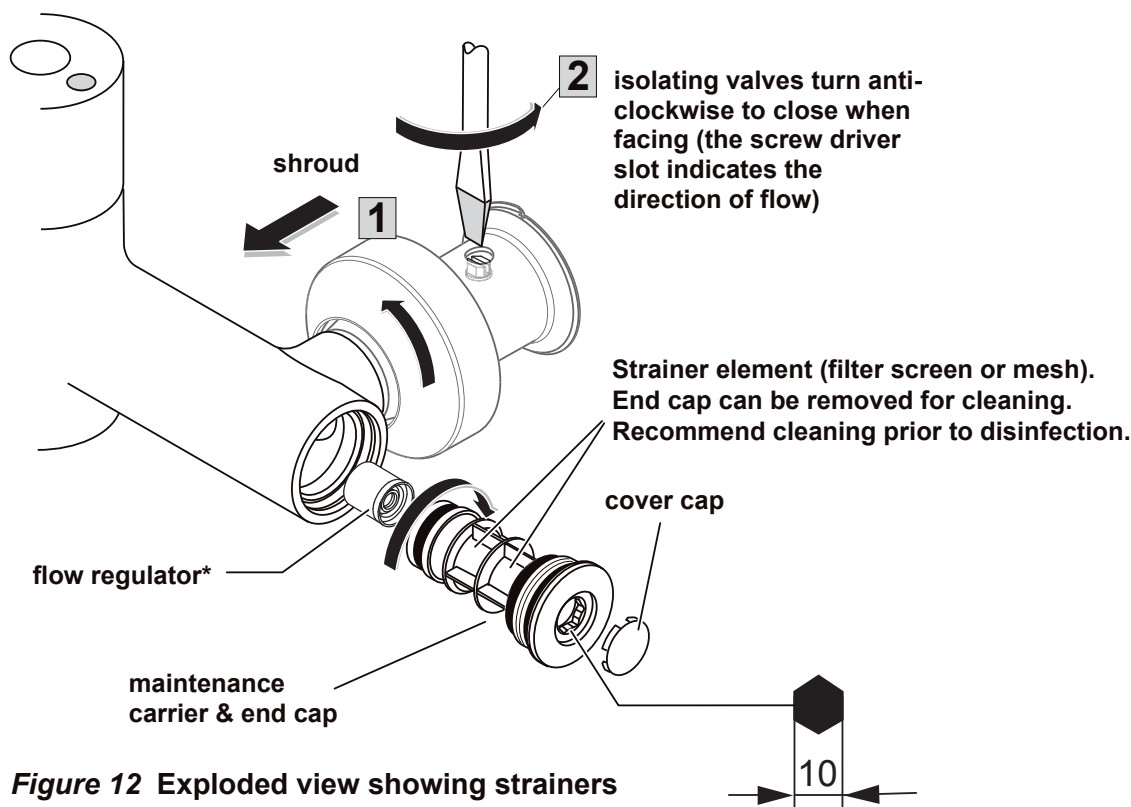


Figure 12 Exploded view showing strainers and flow regulator

*To achieve a suitable flow rate where supply pressures are very low it may be necessary to remove the flow regulator (item 7 figure 13).

NOTE: The flow regulator fitted in each maintenance carrier is nominally rated 5L/min. Therefore mixer is flow regulated to max 10L/min

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Check valves

To prevent back siphonage of water to the supply pipes, check valves are fitted inside the inlet tails (20) – see figure 13. These check valves can be maintained/replaced, but **MUST NOT BE REMOVED**.

To gain access to the check valves, refer to illustrations in section 5.

It will be necessary to demount the product from the wall.

Expect a small amount of water to escape during this procedure.

- Unscrew the chrome shrouds.
- Isolate both water supplies.
- Slide chrome sleeves towards the wall to disengage from captive nuts.
- Using a 30mm A/F spanner, undo the captive nuts.
- Keep the sealing washers in a safe location.
- With product removed, look inside the captive nuts. Diameter 12mm
Circlips will be visible inside both inlets.
- To remove the Circlips, use a pair of internal Circlip pliers. This will release the check valves.
Carefully pull the check valves out from the bores.
- Check/clean or replace the check valves.
- Reverse this procedure to refit.

10.1 Field tests & reports

Commissioning, field performance tests, repairs & ongoing maintenance should be recorded in accordance to AS 4032.3 for each thermostatic mixer installed (or in some cases to the relevant monitoring authority).

Statutory requirements in AS 4032.3 should be observed with regards to maintenance protocols, performance testing, data recording & calibrated measuring equipment.

The documentation used by the tester (or installer) for recording data can be either manual (paper) or electronic system. The reporting documents can be:

- An established format already accepted on site by the local facility manager*.
- The typical format shown in appendix E of AS 4032.3.
- A format specified by the relevant monitoring authority.

A copy of the reports should be:

- Retained by the tester.
- Forwarded to the local facility manager & be available on site for inspection.
- If necessary, forwarded to the relevant monitoring authority.

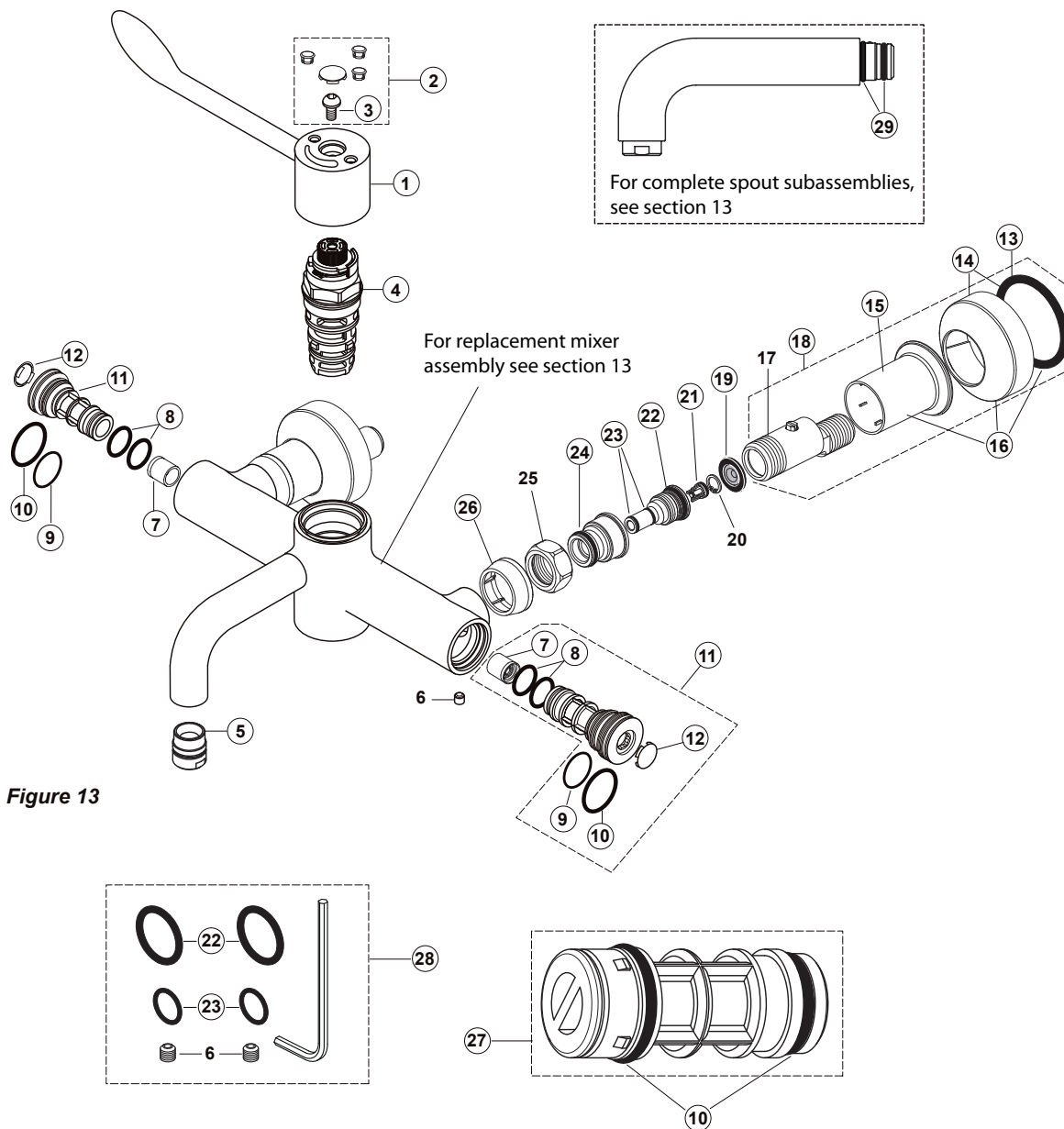
Prior to field testing or maintenance work on site, the local facility manager should be notified that the water service may be affected & delivery temperatures may vary during the testing period.

It is important to note that if the mixer is dismantled, repaired or adjusted, the commissioning procedure should be repeated.

(* Where facility manager can be site owner, site occupier or responsible person.)

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11 SPARE PARTS



Plumbers, please ensure a copy of the installation instructions is left with the end user for future reference

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12 SPARE PARTS LIST

Ref.	Description	Part No.
1	Lever Handle	E960668AA
2	Index kit	E960615AA
3	Handle screw	A961950NU
4	Sequential, thermostatic cartridge	A962280NU
4a	Sequential, thermostatic cartridge (10 bulk pack)	F960879NU
5	Armitage Bioguard outlet with o-ring seal	F961091AA
6	Grub screw M6 x 6 - (available within item 28)	-
7	Flow regulator 5L/min (Pair)	A962689NU
8	O-ring dia 17.6 x 2.4	A962497NU
9	O-ring 25.0 x 1.5	A962496NU
10	O-ring dia 34.0 x 2.0	A960183NU
11	End cap, maintenance carrier & filter (complete with o-rings)	F961092AA
12	Index button	E960641AA
13	O-ring Ø 53,5 x 5	A963840NU
14	Escutcheon + Pos. 13	A961906AA
15	Escutcheon inside	A961927AA
16	Escutcheon complete.	B960575AA
17	S-Connector	-
18	S-Connector complete	A860965AA
19	Strainer (screen)	A961892NU
20	Circlip	-
21	Non-return valve DN8	A960944NU
22	O-ring dia 17 x 2.5 (set of 3) + Pos. 24 - (available within item 28)	A962377NU
23	O-ring dia 8.1 x 1.6 - (available within item 28)	A962345NU
24	O-ring dia 17 x 2 (set of 2)	A960810NU
25	Coupling nut G 3/4	-
26	Cover for nut	A860972AA
27	Strainer & O-ring kit (10 bulk pack)	F961078NU
28	Demountable seal kit with grub screws, o-rings & hex hey	F961004NU
29	O-ring Ø15 x 2.5 (for removable spout) (pair)	F961003NU

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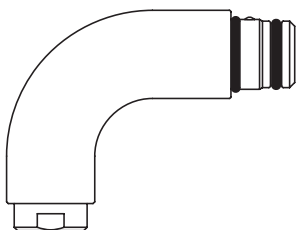
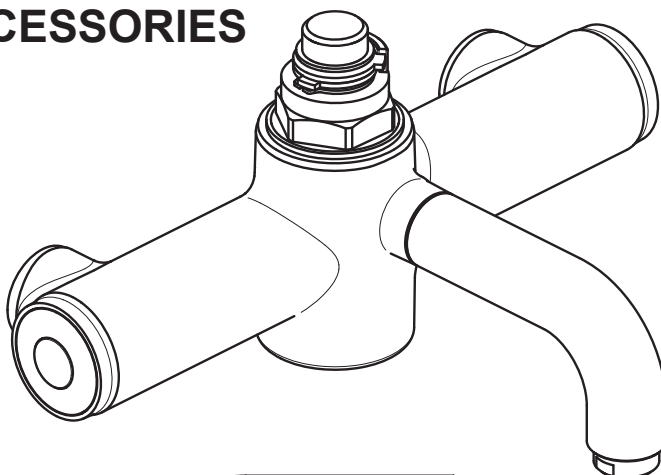
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MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

13 MARKWIK 21 ACCESSORIES

F961088AA

Replacement wall mount mixer without inlet legs & without lever handle. Fitted with F961090AA spout. See section 9.8



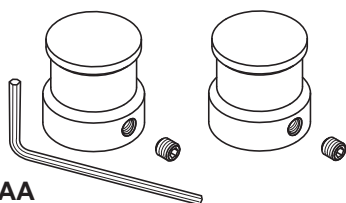
F961089AA

Wall mount spout complete. Short version with 100mm reach. Fitted with Armitage Bioguard outlet & o-rings at the mixer coupling end. See section 9.7



F961090AA

Wall mount spout complete. With normal 135mm reach. Fitted with Armitage Bioguard outlet & o-rings at the mixer coupling end. See section 9.7



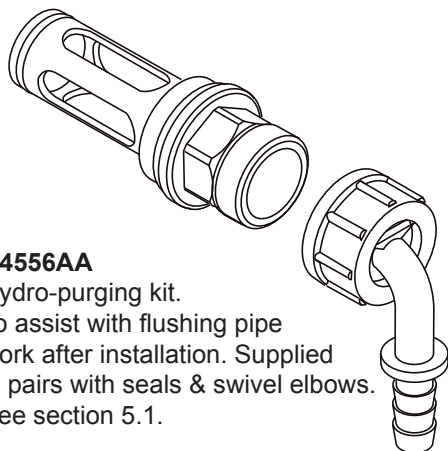
A6255AA

Cover caps kit. To protect & seal the inlet legs when a mixer has been demounted & removed. See section 9.8



F961087AA

Universal filter adaptor. Replaces the Armitage Bioguard outlet to permit attachment of an outlet filter. Threaded M24x1 (internal).



A4556AA

Hydro-purging kit. To assist with flushing pipe work after installation. Supplied in pairs with seals & swivel elbows. See section 5.1.

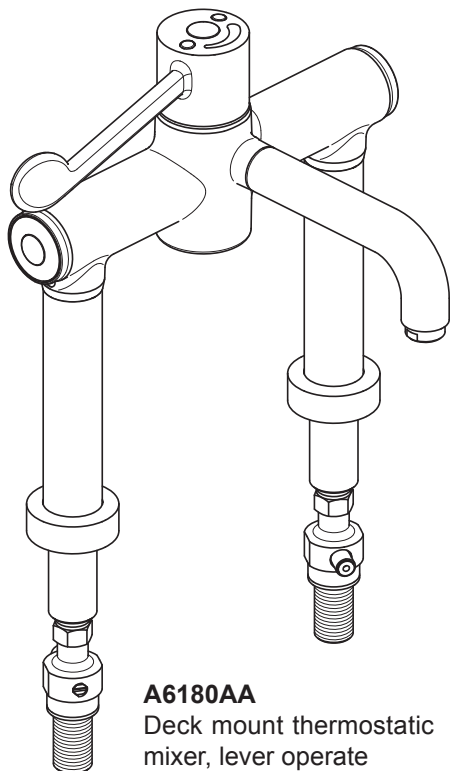
Plumbers, please ensure a copy of the installation instructions is left with the end user for future reference

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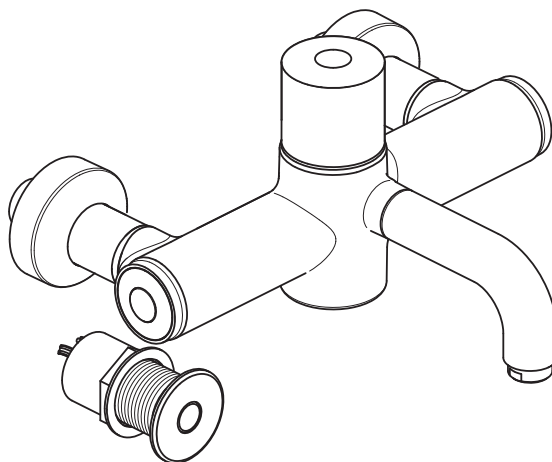
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ARMITAGE SHANKS MARKWIK21 WALL MOUNTED THERMOSTATIC SURGEONS SET

OTHER PRODUCTS WITHIN THE MARKWIK 21 RANGE



A6180AA
Deck mount thermostatic
mixer, lever operate



A6531AA
Panel mount thermostatic mixer,
sensor operated - proximity

removable spouts fitted with Armitage Bioguard outlet.