

# T301 Basin Mixer Valve

## Installation, Servicing & User Care Instructions



Always read all the instructions carefully BEFORE installation and leave with the end user for future reference



**WRAS**  
APPROVED  
PRODUCT

## Introduction

The THERMOSTATIC MIXING VALVE (T301) is designed to comply with the N.H.S Estate Model Engineering Specification-D08.

The T301 is approved for use in the following designations.

The following abbreviated designation codes are used throughout this manual.

Approved for the following designations

Code	Operation Pressure	Application
HP-W	High Pressure	Wash Basin
LP-W	Low Pressure	Wash Basin

## Product Description

The T301 is a lever operated sequential mixing valve for basins. It uses proven thermostatic technology for temperature control. A single lever provides sequential operation from OFF through COLD and WARM to a maximum blend temperature preset at 41°C, which can be adjusted if required.

The T301 is designed for single or two hole basins. The supply connections are via flexible inlet tails which incorporate non return check valves and filters.

The installation must be in accordance with Water Regulations and Bylaws.

The T301 is designed to deliver water consistently at a safe temperature.

In keeping with every other mechanism, the mixer tap cannot be considered as being functionally infallible therefore the tap cannot totally replace the vigilance of nursing/supervisory staff where that is necessary. Provided it is installed, commissioned, operated and maintained within these recommendations, the risk of failure is not eliminated but can be reduced to a minimum.

## SITE REQUIREMENTS

Water pressure requirements - Running water pressure: Mains fed - 0.2 bar min. - 5.0 bar max. Maximum static water pressure: Gravity and mains - 10 bar. The T301 is designed for higher pressure systems found in the UK up to a maximum of 5 bar running (dynamic) pressure. For effective operation of the internal seals, the maximum static pressure must not be exceeded.

**Water minimum flow rate.** For best performance within the specified running pressure range a minimum flow of 8 litres per minute should be available to both inlets.

**Water temperature requirements.** Maximum hot water temperature: = 80°C

Recommended maximum: = 65°C Minimum hot water temperature: = 55°C

Maximum cold water temperature: = 20°C

## Safety: Warnings

The T301 is precision-engineered and should give continued superior and safe performance, provided that:

1. The T301 is installed, commissioned, operated and maintained in accordance with the recommendations given in this manual.
2. Periodic attention is given, as necessary, to maintain the product in good functional order

## Product Specifications

1. The installation, commissioning and maintenance of this product must be carried out in accordance with instructions given in this manual, and must be conducted by designated, qualified and competent personnel.
2. Installation must comply with all local/National Water Supply Authority Regulations/Bye-laws, and Building and Plumbing Regulations.
3. Warning: continued use of this product in conditions outside the limits listed in this section can severely affect the performance and reduce the effective service life and can present potential risk to users.

### Conditions for normal use (Table 2)

Operating Pressure Range	High Pressure	Low Pressure
Maximum Static Pressure (bar)	10	10
Flow Pressure, hot and cold (bar)	1.0-5.0	0.2-1.0
Hot Supply Temperature (°C)	52-65	52-65
Cold Supply Temperature (°C)	5-20	5-20
Minimum Temperature (°C) differential between blended water and hot or cold water supply	10	10

**NOTE: Mixers operating outside these conditions cannot be guaranteed by the scheme to operate as TMV3 taps or valves.**

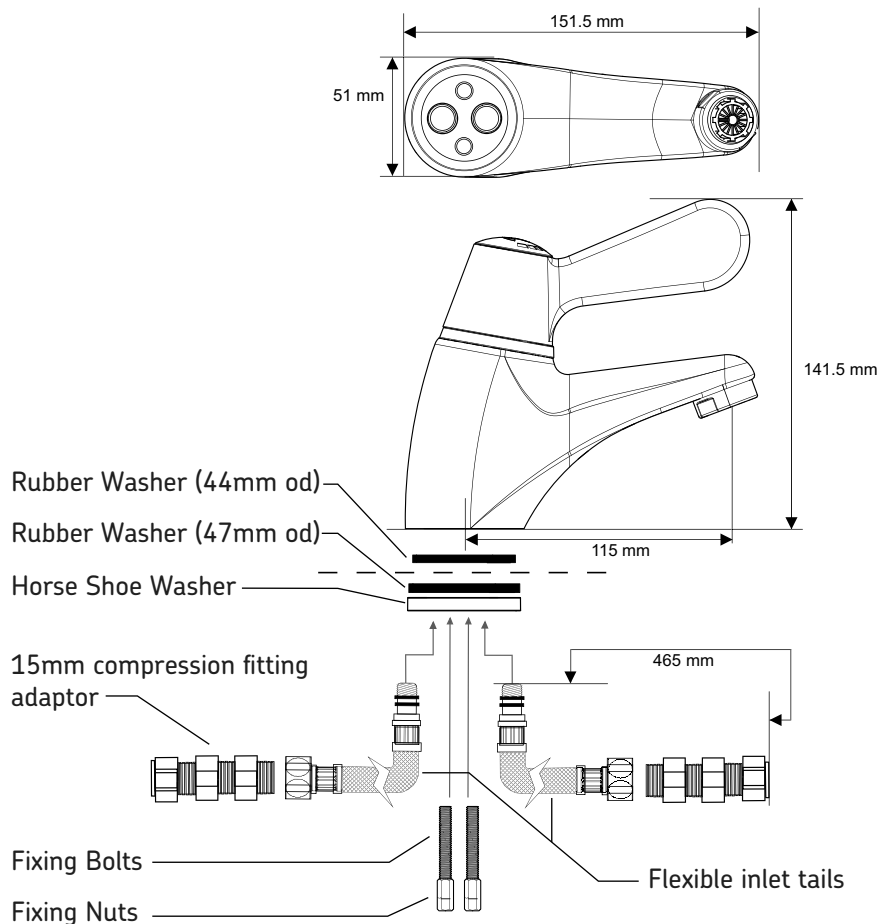
The maximum differential between the Dynamic Flow Pressures for hot and cold supplies must be 1 - 5 Bar for High pressures and 0.2-1.0 Bar for Low pressures.

For optimum performance then the maximum differential Dynamic Flow Pressures between hot and cold supplies must be 3 Bar for High pressures and 0.6 Bar for Low pressures. Ensure the pressures are within the conditions of normal use.

**We recommend that independant filters, pressure reducing valves, isolation and check valves are fitted in an accessible location (not supplied).**

The T301 MUST NOT be subjected to water temperatures above 80°C.

BS EN 806 Pt.2 Cl3.6 recommends that the temperature of stored water should never exceed 65°C. A stored water temperature of 60°C and a distributed water temperature above 55°C is considered sufficient to meet all normal requirements and will minimise the effects of scale in hard water areas. See 'Water Supply (Water Fittings) Regulations G18.2' and 'HSE Code of Practice L8'.



## Connections:

The hot and cold inlet supply connections are via the 15mm compression fitting adaptor or the 1/2" BSP fittings on the check valve and filter assemblies. These are connected to the ends of flexible inlet tails.

The 15mm compression fitting adaptor allows connection to either flat-faced 1/2" BSP external or 15mm compression union. The hot supply connection is through the flexible inlet tail nearest the spout of the T301 tap, identified with a red mark.

Note: Isolation valves must be fitted adjacent to the inlets.

**We recommend that independant filters, isolation and check valves are fitted in an accessible location (not supplied).**

For optimum performance hot and cold water inlet pressures should be balanced.

Ensure the pressure is within the conditions of normmal use.



**Installation must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.**

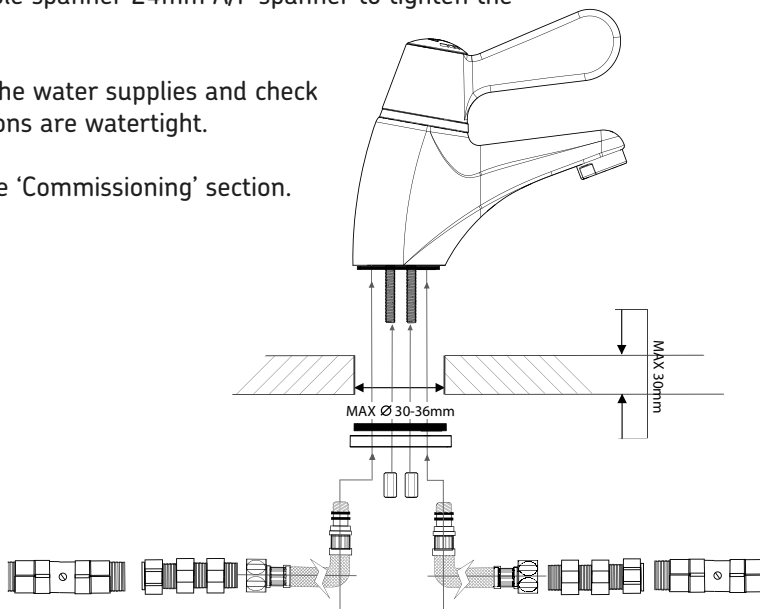
### General Information

1. Please check that all components are in the box prior to installation of this product. Before starting the installation of this product, ensure that the site conditions are suitable for installation of this product. The hot supply connection is through the flexible inlet tail nearest the spout of the T301 tap, identified with a red mark.
2. We recommend that isolation valves (not supplied) must be fitted as close as is practicable to the water supply inlets of the T301 mixing valve for maintenance and servicing purposes.
3. Care must be taken during installation to prevent any risk of damage.
4. This product is intended to be installed in a single or twin tap hole wash hand basin. The hole in the basin must be a minimum of 30mm up to a maximum of 36 mm diameter, with a basin thickness of 30mm maximum.
5. The T301 should be positioned for easy access during use and maintenance. All routine maintenance procedures can be conducted with the T301 in place.
6. Pipework dead-legs should be kept to a minimum.
7. Supply pipework layout should be arranged to minimise the effect of hydraulic restriction or other outlet usage upon the dynamic pressures at the T301 inlets. Recommended minimum supply line pipe diameter is 1/2" or 15mm.
8. Inlet threaded joint connections should be made with PTFE tape or liquid sealant. Do not use oil-based, non-setting jointing compounds.
9. To eliminate pipe debris it is essential that supply pipes are thoroughly flushed through before connection to the T301.

## Installation

1. Remove the check valve and filter assemblies from the union nut.  
Note: Take care not to loose the sealing washers.
2. Screw the fixing bolts fully into the T301 body.
3. Place the Rubber Washer (44mm od) in the groove in the base of the T301 body.
3. Screw the red flexible inlet tail into the T301 hole marked with a 'RED DOT' (nearest to the spout) and tighten. Screw the blue hose into the remaining hole marked with a 'BLUE DOT' and tighten. Position the T301 onto the basin.
4. Make sure that the T301 is correctly positioned, fit the rubber washer (47mm od) on the underside of the basin, place the horse shoe washer on top of the rubber washer and screw the fixing nuts onto the fixing bolts. Tighten the fixing nuts until the tap is secure. **DO NOT OVERTIGHTEN THE FIXING NUTS.**
5. Connect the check valve and filter assemblies onto the isolating valves (not supplied) which are connected to the supply pipework.  
Use a suitable 22mm A/F spanner to tighten the check valve assemblies.
6. Locate the sealing washer inside the union nut on the flexible inlet tail and screw onto the check valve and filter assemblies.  
The red inlet tail must be connected to the hot supply (Refer to 3 above).  
Use a suitable spanner 24mm A/F spanner to tighten the union nuts.
7. Restore the water supplies and check all connections are watertight.

Refer to the 'Commissioning' section.

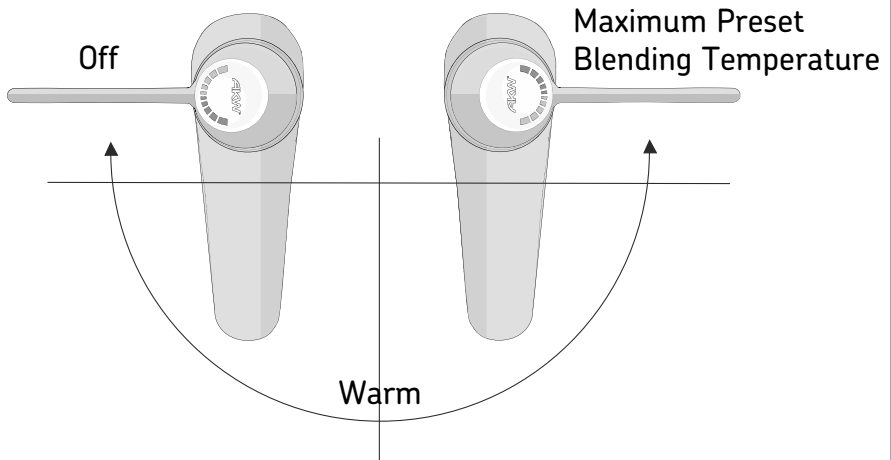


## Operation

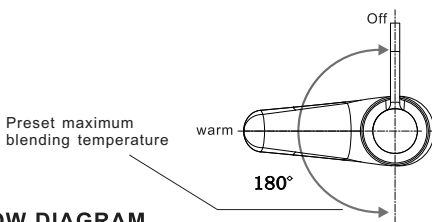
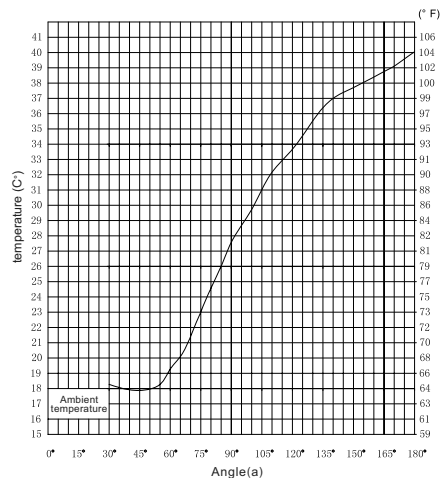
The T301 has a single lever that provides sequential operation from OFF through WARM to a maximum preset blending temperature.

The maximum temperature is preset to approximately 41°C under ideal installation conditions at the factory.

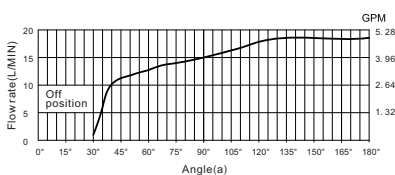
To change this setting refer to the information given in section: 'Commissioning'.



## TEMPERATURE DIAGRAM



## FLOW DIAGRAM



Flow rate curve is for reference only. The actual pressure drop may vary depending on system temperature and pressure.

## Method for Commissioning Thermostatic Mixing Valves

**Mixed Water Temperature (Table 2)**

Application	Abbreviated Designation	Mixed Temperature °C
Wash Basin	-HP-W, -LP-W	41 MAX

**Purpose**

Since the installed supply conditions are likely to be different from those applied in the laboratory tests it is appropriate, at commissioning, to carry out some simple checks and tests on each mixing valve to provide a performance reference point for future in-service tests.

**Procedure**

Check that:

- a) the designation of the T301 mixing valve matches the intended application.
- b) the supply pressures are within the range of operating pressures for the designation of the valve.
- c) the supply temperatures are within the range permitted for the valve and by guidance information on the prevention of legionella etc.

To adjust the temperature of the mixed water see page 9 and then carry out the following sequence:

- a) record the temperature of the hot and cold water supplies (see page 14).
- b) record the temperature of the mixed water at the largest draw-off flow rate.
- c) record the temperature of the mixed water at a smaller draw-off flow rate.
- d) isolate the cold water supply to the mixing valve and monitor the mixed water temperature.
- e) record the maximum temperature achieved as a result of (d) and the final stabilised temperature.
- f) record the equipment, thermometer etc. used for these measurements.

**NOTE: The final stabilised mixed water temperature during installation should not exceed the values in Table 3.**





**Commissioning must be carried out in accordance with these instructions, and must be conducted by designated, qualified and competent personnel.**

### **Maximum Temperature**

The maximum blend temperature obtainable by the user should be limited to prevent accidental selection of a temperature that is too hot.

The T301 tap is fully performance tested and the maximum temperature is preset to 41°C under ideal installation conditions at the factory. Site conditions and personal preference may dictate that the maximum temperature has to be reset following installation.

### **Maximum Temperature Setting**

Make sure that an adequate supply of hot water is available at the hot inlet of the T301.

The minimum temperature of the hot water must be at least 10°C above the desired blend. However, during resetting this should be close to the typical storage maximum to offset the possibility of any blend shift due to fluctuating supply temperatures.

Make sure that both inlet isolating valves are fully open.

Temperatures should always be measured using a thermometer with proven accuracy.

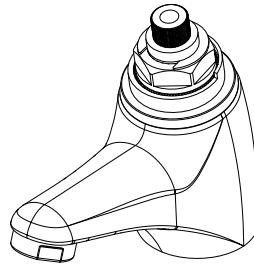
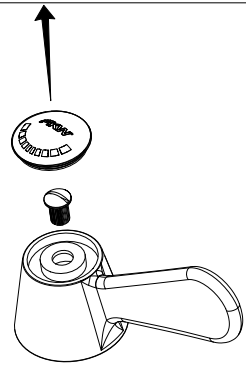
### **Guide to maximum stabilised temperatures recorded during site tests (Table 3)**

Application	Mixed Temperature °C
Wash Basin	43

### Step 1

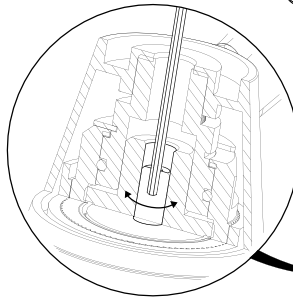
#### To Adjust Temperature Setting

1. Remove cover cap
2. Use a screwdriver to loosen the centre screw in the lever.
3. Move the lever to full hot, note its position and remove the lever.
4. Let the water run until the temperature stabilises.

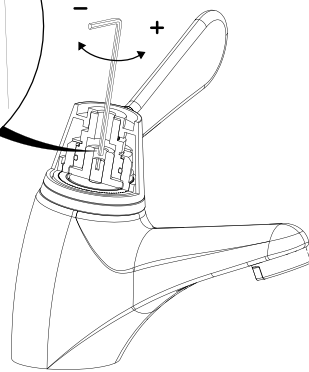


### Step 2

1. Insert the 2mm A/F hexagonal wrench key (supplied) into the grub screw in the centre of the head assembly (refer to illustration).



2. Rotate the grub screw as necessary until the required maximum blend temperature is achieved. Rotate the grub screw anticlockwise to increase the temperature or clockwise to decrease the temperature (refer to illustration).



3. Refit the lever in its original position. If required the lever can be fitted in any position that allows unobstructed movement of the lever over its operating range.
4. Move the lever to the off position.
5. Use the screwdriver to tighten the screw in the lever.

The purpose of in-service testing is to regularly monitor the thermal performance of the T301 mixing valve. Deterioration in performance can indicate the need for service work to be carried out on the system.

If the authority concerned does not have a planned test and maintenance schedule then the suggestions below should form the basis of a new system.

### **At intervals of 6-8 weeks and 12-15 weeks after commissioning:**

1. Check supply parameters are still within the expected values if not check system for faults.
2. Carry out commissioning procedures using the same test equipment, if the mixed water temperature has changed a significant amount (by more than 1°C) check to ensure in line filters are clean, that the check valves are working and all isolation valves are fully open.

If no fault can be found check and record the mixed water temperatures and re-adjust mixed water temperature to the values in table 3, complete the commissioning procedure. If the mixed water temperature exceeds the values of the maximum recorded temperature by more than 2°C the need for service work is indicated.

Depending on the results of these two tests the following should be adopted

- a) If a small change (e.g. 1°C to 2°C) occurs in one of these tests or there is no significant change (e.g. 1°C maximum) then the next in service test should be 24 to 28 weeks after commissioning.
- b) If small changes occur in both test or a larger change occurs in one test (exceeding 2°C) then the next in service test should be carried out 18 to 21 weeks after commissioning.

These results can then be used to set a service interval which tests have shown can be used with no more than a small change in mixed water temperature. This method of determining service intervals is used to take into account various in-service conditions (i.e. water condition) that the valve may experience.

Fault	Diagnosis
<p>Water temperature is too hot or cold</p>	<p>No hot water is reaching the T301 - check supply.                      Inlet tails are reversed - Check connections.                      Filters are blocked - Check filters                      Conditions are outside of the specifications.                      Isolation valve is closed - check valves.                      Temperature set too high during commissioning - check setting.                      Airlock in the inlet pipework - check for airlocks.                      Water supply is not balanced - check supply pressure is balanced.</p>
<p>Low flow</p>	<p>Filters are blocked - check filters                      Isolation valve is closed - check valves.                      Conditions are outside of the specifications.                      Supply pressure too low - check the supply is above 0.2 bar.</p>
<p>No flow</p>	<p>No hot water is reaching the T301 - check supply.                      Filters are blocked - Check filters                      Isolation valve is closed - check valves.</p>
<p>Water goes cold in use</p>	<p>No hot water is reaching the T301 - check any boiler or water tank that is supplying hot water.</p>
<p>Water is leaking from the T301                       Cannot turn T301 off</p>	<p>Seals worn or damaged - request service</p>



life. style. choice.

# Warranty Card

## To be completed by the Installer

(Product Identification can be found on the outer packaging)



Model/Part Number .....

Serial Number (SN) .....

Batch number (BN) .....

Installation Date .....

Installed By .....<sup>®</sup>

Address .....

.....

.....

Contact .....

.....

Signed .....

Please complete the warranty card within 30 days and return to us in the prepaid envelope for your free warranty to start.

## Record Commissioning Tests

**Note:** All installation, commissioning and in-service testing must be undertaken by a suitably qualified engineer.

### Commissioning Tests

Record the following information to provide a performance reference point for future in-service tests.

**Date of Commissioning** ..... | ..... | .....

Max temperature is set to- (Factory Setting 41°C) ..... °C

Temperature of hot water supply ..... °C

Temperature of cold water supply ..... °C

Temperature of mixed water at the largest draw-off flow rate ..... °C

Temperature of mixed water at the smallest draw-off flow rate ..... °C

Mains water supply running pressure (within range 0.5-10 bar) ..... Bar

With T301 turned on at max flow and max temperature setting, record the water temperature when it is stabilized  
..... °C

**Record details of test equipment (brand, model, serial number and calibration information) used to provide the above information, if necessary record on back page:**

.....  
.....  
.....

Please use same test equipment as previously used for commissioning test.

Date of future servicing				
Record Max Temperature				
Serviced by				

This warranty is in addition to your statutory and other legal rights.

To validate and start the warranty, you must return your completed registration card.

AKW warranty covers your T301 mixer valve against any defect in materials or manufacturing for 2 years from the date of installation. Within this period we will resolve defects free of charge by repairing or replacing as we may choose. To be free of charge work must be only undertaken by AKW or our approved agents in the UK or the Republic of Ireland and with prior agreement.

Any action taken under this warranty does not extend the stated 2-year expiry date.

### **Not covered by this warranty**

Damage or defects arising from incorrect installation, improper use, lack of maintenance including the build-up of limescale or any unauthorised modifications.

Actions taken to dismantle, repair or modify beyond that shown in this installation guide, by persons who are not AKW authorised service staff or agents.

Damage resulting from water freezing

### **Before using the T301 Basin Mixer Valve**

Please take time to read and understand the operating and safety instructions detailed in this manual.

### **What to do if something goes wrong?**

If your shower does not work correctly first follow the **Problem solving** chart on page 12, then contact your installer.

Should this not resolve your problem, contact AKW Customer Services (see back page) who will provide further advice and if necessary arrange for our service engineer to visit or discuss our comprehensive after-sales service. As part of our quality and training program calls may be monitored or recorded.

None of the forgoing affects your statutory rights.

## Cleaning and After Care

Clean using warm, soapy water only.  
Do not use scourers or abrasive cleaners which may affect the surface finish.  
Never use corrosive acidic or alkaline cleaning materials on fittings or surfaces.  
Always flush cleaning materials away with copious amounts of water and wipe down.

\*Not covered by the stated warranty is any damage or defects that result from incorrect installation, improper use, accidental damage or lack of maintenance including the buildup of grime, dirt or limescale and waterborne debris.

Damage resulting from inappropriate cleaning, staining or grime ingress.  
Damage or defects that result from repairs, modifications undertaken by unauthorised persons who are not AKW authorised service staff or agents.

## What to do if something goes wrong?

In the unlikely event that you should encounter a problem with this product, please contact your local installer first before contacting the AKW Technical Team who will only provide further advice and if necessary arrange for our service engineer to visit or discuss our comprehensive after-sales service. As part of our quality and training programme calls may be monitored or recorded. None of the foregoing affects your statutory rights.

Failure to install this AKW product in accordance with supplied instructions or the making of unauthorised modifications will invalidate any warranty and may affect product safety.

These instructions are provided to advise the minimum standards of installation and recommends what is the best practice for the installation. Due to the very wide variability of possible installation conditions AKW cannot provide all circumstances for the installation. AKW cannot accept any liability in connection with this information or its use. This information is provided on the condition that the person receiving it shall make their own tests to determine the suitability for their particular purpose. Failure to install this AKW product in accordance with supplied instructions or the making of unauthorised modifications will invalidate any warranty and may affect product safety. None of the foregoing affects your statutory rights.

## Orderline

01905 823299

AKW Kitchen Department

01905 823262



General Enquiries

01905 823298

Technical Help line

01905 560219

[technicalenquiries@akw-ltd.co.uk](mailto:technicalenquiries@akw-ltd.co.uk)

Fax

01905 823297

Website

[www.akw-ltd.co.uk](http://www.akw-ltd.co.uk)

Quotes & orders email

[orders@akw-ltd.co.uk](mailto:orders@akw-ltd.co.uk)

Enquiries email

[sales@akw-ltd.co.uk](mailto:sales@akw-ltd.co.uk)

Post

AKW, Pointon Way,

Hampton Lovett,

Droitwich Spa,

WR9 0LR



For the latest AKW products and news, scan this QR code with your device.