

# TW

## UNDERCOUNTER TRAYWASHER OPERATOR MANUAL



**WASHTECH**<sup>®</sup>  
PROFESSIONAL WASH SYSTEMS

## General Warnings



Non-compliance with warnings or failure to follow the instructions in this manual can result in loss of life, severe personal injury and / or serious damage to property.

Before installation, commissioning and / or repair of the machine you must carefully read the safety instructions and warnings and all warning labels attached to the machine.

Hazards can include high surface temperatures, hot water, caustic detergent, sharp edges including broken glass and knives left in the wash chamber, and dangerous electrical voltages.

All service work must be carried out by qualified personnel only who ensure compliance with all local codes and standards including AS/NZS 3500.1.

The electrical supply must be turned off at the wall before accessing the machine for servicing. All electrical terminals must be covered at all times to prevent access to the terminal. Appropriate electrical tests must be carried out after any and all service repairs.

## Important Information



Failure to comply even partially with the instructions given in this manual will invalidate the product warranty and relieve the manufacturer of any responsibility. This includes failure to supply the machine with good quality water at suitable pressure as specified.

The alteration of machine operation or design or replacement of parts not approved by the manufacturer may void warranties and approvals.

This machine is intended for commercial use only. It is designed for the cleaning of fresh food waste from cutlery, crockery, glassware, containers and food preparation equipment. Consult the manufacturer regarding suitability for other applications.

No part of the machine is designed to be stepped upon. It is not a waste disposal unit.

It is essential that operating procedures are followed including adequate pre-rinsing or scraping loose soil or waste from washware before it is placed in the machine, and regular cleaning and maintenance of the machine.

The information contained in this document is checked, reviewed and updated regularly to ensure that it is accurate and relevant to the model described. However discrepancies and errors can occur. We welcome your feedback.

This document subject to change without prior notice.

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# Safety Instructions

## Installation

- Use qualified, skilled personnel.
- Follow installation instructions.
- Connect to correct voltage and supply current.
- Provide fully accessible Electrical Isolation Switch & water supply valves.

## Training and Supervision

- Read and Understand the Operating instructions and train all staff.
- This appliance must not be operated by children or infirm persons.
- Machine panels must only be removed by suitably qualified and trained personnel – internal hazards include live electrics and very hot surfaces.
- No part of this appliance is intended for use as a stepladder.

## Hot Surfaces

- Some surfaces may be hot or very hot.

## Chemicals

- Commercial dishwashing detergents are hazardous – handle with care.
- Read and follow the safety information found on the labels of detergent containers and Material Safety Data Sheets.
- Use protective eyewear and clothing if decanting containers.

## Hot Water

- Do not put hands in wash water which may be over 60°C and contain hazardous caustic detergent.
- Rinse water can be over 90°C.
- Door safety switches are designed for emergency use only.

## Cleaning

- Do not hose down the machine or splash water over the exterior.
- Watch for broken glass etc. when cleaning the inside of the machine.

## Warnings



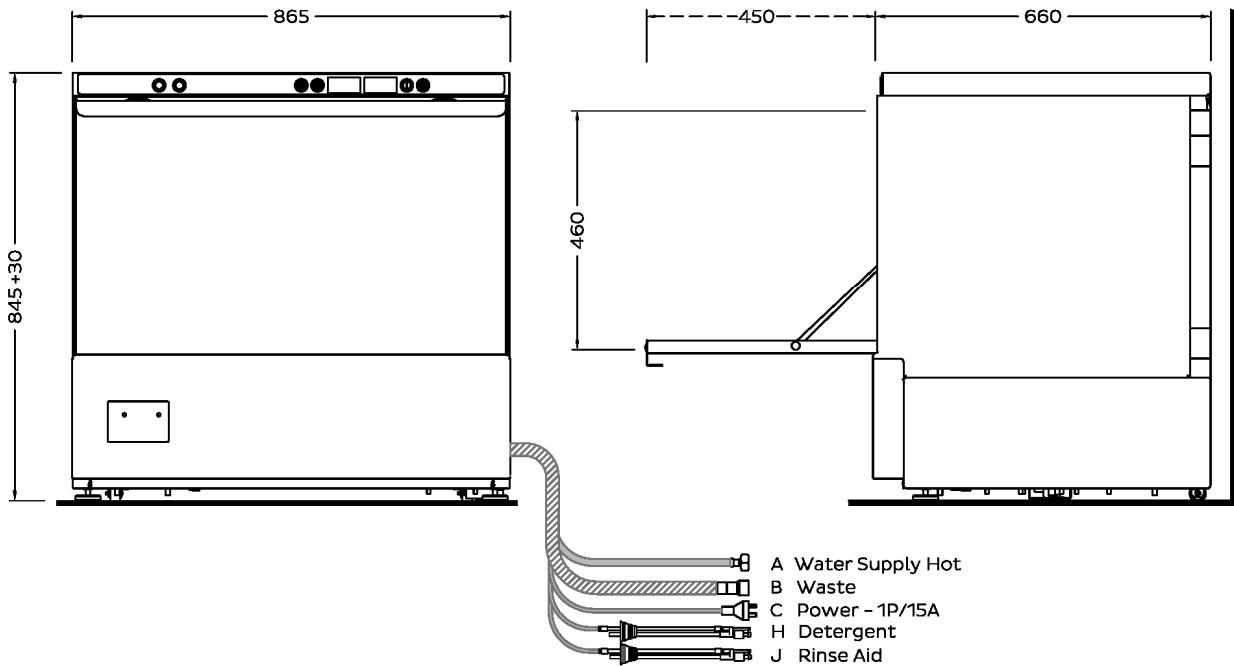
Equipment contains dangerous voltages and can be hazardous if installed or operated incorrectly. Non-compliance with Warnings or failure to follow the instructions contained in this manual can result in loss of life, severe personal injury or serious damage to property.

Installation and servicing must be carried out by a suitably qualified person in compliance with all local codes and standards including AS/NZS 3500.1.

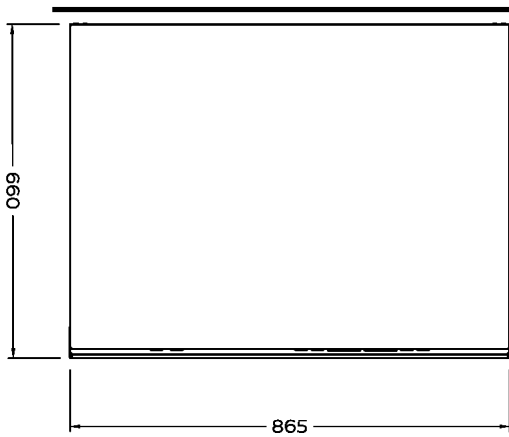
# Installation Diagram

## TW Installation Diagram

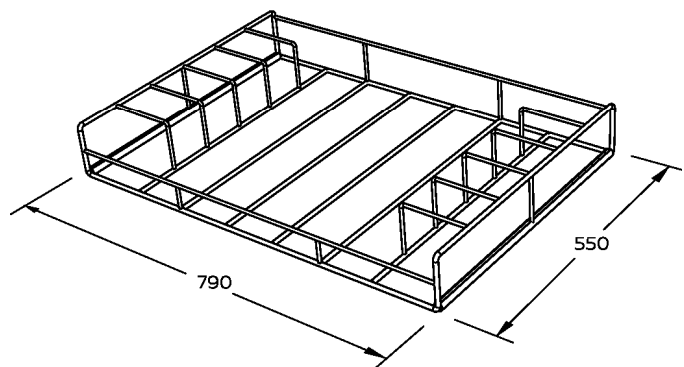
- Part #: TW0020
- Date: 13/06/2018
- Version: 1-A



Bench Detail



Internal Grid



### Services

A	Hot water 65°C	200-350 kPa	3/4"
B	Waste	Flexihose supplied	25mm
C	Electrical connection	230-240V, 50Hz, 1P-N+E-	15A

Note: Isolating switch must be within 1m of, and not directly behind the machine. Isolating water valve must be readily accessible

# Installation Instructions

## Machine Positioning

- Unpack machine, check for damage and complete delivery.
- Install machine on sound waterproof self-draining floor and use adjustable feet to level machine.



NOTE: Failure to level the machine correctly may result in leaking during the cycle, overflowing from the door sill, poor hygiene through the wash tank not being able to drain correctly, and/or visibly uneven door.

- Allow room for detergent to one side of machine or in adjacent cupboard. 20 litre container requires approximately W 250mm x D 350mm x H 450 mm, but smaller containers are available from many suppliers.

## Inlet Water

Incoming water should be within the following standard requirements:

- Temperature: 65°C.



NOTE: Low temperatures will increase the recovery time between cycles and depending on the chemical being used, may result in excessive foaming if the machine is started before the wash water is up to a suitable temperature.

NOTE: Excessively high temperatures may damage the solenoid which can result in flooding should this component fail. High temperature solenoids are available and can be retrofitted if necessary.

- Connection: 20 mm (3/4" BSP) male – flexible hose supplied.



NOTE: Flush supply line before connection. Poor quality supply or excessive water hardness may affect performance or damage machine – filtration and/or softening is recommended.

- Flow rate: minimum 20 litres per minute.
- Pressure: between 200 and 350 KPa



NOTE: NOTE: If above 350kPa fit pressure limiter valve (LPV). Do not use small diameter plastic supply lines.

Note: if below 200 KPa fit a rinse booster pump.

- Consumption: Approximately 3.3 litres per cycle.
- Backflow prevention: Atmospheric Vacuum Breaker (AVB) fitted standard.
- Watermark Certification #08603.

## Water Quality Requirements

The incoming water should also be within the following parameters:

Hardness	ppm	pH				
min	20	7				
max	100	8				
Ions	Cl <sup>-</sup>	SO <sub>4</sub>	Fe	Mn	Cu	Cl <sub>2</sub>
Max mg/L	100	400	0.1	0.5	0.05	0.1



NOTE: Levels above or below the stated requirements can be expected to increase component wear and reduce the expected useful life of the dishwasher. If in doubt, it is best to consult a water specialist and have the incoming water professionally tested and treated if necessary.

## Power

- Electrical supply required is 1P+N+E, 230V 50Hz 15A per phase via switched outlet adjacent to machine.



NOTE: Equipment contains dangerous voltages and can be hazardous if installed or operated incorrectly. Non-compliance with warnings or failure to follow the instructions contained in this manual can result in loss of life, severe personal injury or serious damage to property.

# Installation Instructions

## Chemical

- This dishwasher is supplied with Detergent and Rinse Fluid injector pumps
- To connect to chemicals, insert pump inlet hose into container of commercial low foam detergent and rinse fluid.
- To prime the detergent, press the detergent prime switch on the machine control panel until supply hose is refilled.
- To prime the rinse fluid, press the rinse fluid prime switch on the machine control panel until supply hose is refilled.

NOTE: Externally adjustable chemical pumps are fitted and pre-set at an average level, these need to be calibrated on site according to the chemical being used and site specific conditions such as the water quality and how the machine is being used. Failure to do so may result in excessive dosing which can result in foaming and overflowing, or insufficient dosing which can cause inferior wash results and impact components through a build up of grease. If in doubt, contact your chemical company for assistance.



NOTE: Commercial detergents can be hazardous – read instructions, store safely and handle with care. Care needs to be taken when changing chemicals, ensuring that the detergent is not accidentally connected to the rinse fluid inlet line.

NOTE: If uncertain, please consult a chemical specialist for assistance in selecting the right chemicals and calibrating machine settings to suit this along with your unique site conditions and requirements.

## Waste

- A drain pump and drain vent loop are fitted standard on this machine.
- The recommended installation of the drain hose is into a standpipe.
- For drain hose installation into a standpipe, the hose should be lifted no higher than 350mm above the machine base to avoid water returning to the wash tank after draining.
- For drain hose installation into a sink waste connection, the drain hose must be secured to a point at least 50mm higher than the sink drain connection. This will avoid water potentially back-flowing from the sink into the dishwasher. For undercounter installed machines with a sink waste connection a small amount of water will return to the wash tank after draining.

NOTE: Failure to correctly connect the drain hose and ensure correct plumbing is in place beyond this may result in blockages, backflow from the sink and/or flooding of the machine.



NOTE: Either copper or P.V.C. may be used for the waste connection – P.V.C. is more resistant to some harsh detergents. Some authorities however suggest that copper is required because the machine rinses at up to 90°C. It is important to note that rinse water mixes with the 65°C wash water before discharge and then flows into the sink trap where the water is further cooled before entering the drainage plumbing. We recommend consulting your local authority to ensure your site remains compliant.

## Installation Checklist

- Complete attached Installation Checklist to ensure machine is installed and running correctly, and operator is familiar with operating procedures.

# Installation Checklist

Check	Notes
<b>DELIVERY</b>	
SUPPLIED COMPLETE?	<input type="checkbox"/> CHECK THERE HAS NOT BEEN ANY TRANSIT DAMAGE
<b>POSITION</b>	
LEVEL AND STABLE?	<input type="checkbox"/> ON SOUND, WATERPROOF, SELF-DRAINING FLOOR
<b>WATER</b>	
ISOLATOR VALVE FITTED?	<input type="checkbox"/> ACCESSIBLE, ALL FITTINGS SOUND, AND NO LEAKS
TEMPERATURE CORRECT?	<input type="checkbox"/> HOT WATER INLET 65 °C
PRESSURE CORRECT (200 – 350 kPa)?	<input type="checkbox"/> LIMITER FITTED IF ABOVE RANGE
FLOW RATE CORRECT (≥ 20L PER MIN)?	<input type="checkbox"/> FLOW RATE AT OR ABOVE MINIMUM RANGE
QUALITY WITHIN REQUIREMENTS?	<input type="checkbox"/> FILTER OR SOFTENER IN PLACE IF OUTSIDE REQUIREMENTS
<b>POWER</b>	
ISOLATING SWITCH?	<input type="checkbox"/> FITTED, FUNCTIONAL AND ACCESSIBLE
CORRECT SUPPLY (1p/15A 240V 50Hz)?	<input type="checkbox"/> VOLTAGE, CURRENT AND CIRCUIT BREAKER
<b>WASTE</b>	
CONNECTION TO STANDPIPE/SINK WASTE?	<input type="checkbox"/> CORRECT CONNECTION TO PLUMBING
SUITABLE AIR GAP?	<input type="checkbox"/> REFER INSTALLATION INSTRUCTIONS - WASTE
<b>CHEMICALS</b>	
	CHEMICAL NAME      CONTAINER      NO LEAKS      PRIMED      CALIBRATED
DETERGENT	_____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
RINSE FLUID	_____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>MACHINE OPERATION</b>	
MACHINE RUNNING CORRECTLY?	<input type="checkbox"/> MULTIPLE CYCLES RUN, NO ISSUES
CHEMICAL DOSAGE CORRECT?	<input type="checkbox"/> CORRECTLY FLOWING INTO MACHINE, NO FOAMING
ALL OPERATIONS CORRECT?	<input type="checkbox"/> FILL LEVEL CORRECT, NO DRAINAGE ISSUES
<b>OPERATOR TRAINING</b>	
ENSURE THAT THE CUSTOMER HAS BEEN GIVEN THE OPERATION MANUAL AND WALL CHART. ALSO ENSURE THE CUSTOMER IS AWARE OF THE IMPORTANCE OF USING AND CLEANING THE MACHINE CORRECTLY.	
START UP	<input type="checkbox"/> FOLLOW CORRECT START UP PROCEDURE
PRE-RINSE AND RACKING	<input type="checkbox"/> BETTER TO RINSE PLATES THAN REMOVE WASTE FROM MACHINE
MACHINE USE AND CYCLE SELECTION	<input type="checkbox"/> USE LONG CYCLE WHERE POSSIBLE
DRAINING THE MACHINE	<input type="checkbox"/> DRAIN THE MACHINE DAILY
SHUT-DOWN AND DAILY CLEANING	<input type="checkbox"/> CHECK WASH ELEMENTS HAVE COOLED BEFORE CLEANING
WEEKLY MAINTENANCE	<input type="checkbox"/> FULL MACHINE CLEAN INCLUDING WASH/RINSE ARMS
PLANNED SERVICNG	<input type="checkbox"/> IMPORTANCE OF HAVING MACHINE SERVICED REGULARLY



# Installation Troubleshooting

## Door not closing properly

- Level the dishwasher.

## Machine not starting or filling

- Ensure water supply to machine is turned on.
- Ensure power supply to machine is turned on.
- Check that the water inlet hose isn't twisted or kinked.

## Cycle taking too long

- Check inlet water temperature is not too low as per our specifications.
- This machine ships with Thermostop enabled, which allows a cycle to be started at any time, even if the rinse water is not up to required temperature. To ensure a hygienic result, the wash cycle continues to run until the rinse temperature reaches the required 83 °C. At this stage washing will stop and the machine will begin rinsing to complete the cycle.

## Poor wash results

- Check that there are adequate pre-rinse processes in place and staff use longer cycle options for more heavily soiled items.
- Ensure high quality non-foaming commercial dishwasher detergent has been connected at the correct dosage for your site, water quality and application. If uncertain, [consult a chemical specialist](#).
- Check that the wash arm is spinning freely and is not being obstructed.
- Ensure that the wash temperature is between 60°C and 65°C.

## Chemical residue on items after the cycle

- Check that nothing is obstructing the wash/rinse arms from rotating.
- Check the rinse fluid dosage is not too high. If uncertain, please [consult a chemical specialist](#).
- Check detergent dosage is within the requirements.

## Dishwasher is foaming

- Ensure there is no other soap being transferred into the machine from the sink.
- Ensure high quality non-foaming commercial dishwasher detergent has been connected at the correct dosage for your site and application. If uncertain, please [consult a chemical specialist](#).
- Allow wash water to heat to at least 60 °C prior to starting the first cycle as some commercial dishwasher chemical will foam at low temperatures.

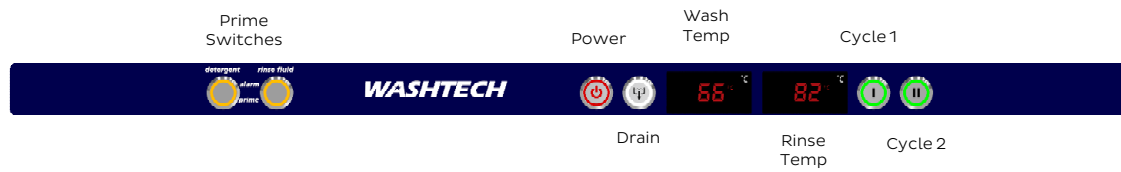
## Other equipment in the kitchen has needed filters or has scale

- Due to the high temperatures in dishwashers, scale will build up in the wash tank, on the arms and in the rinse tank. The incoming water should be treated. If uncertain, please [consult a water specialist](#).
- As with combi-ovens, high chloride levels will do irreversible damage to a number of the components inside a commercial dishwasher. The incoming water should be appropriately treated. If uncertain, please [consult a water specialist](#).

## Cycle times not suitable for items being washed

- Some sites may require longer/shorter cycles depending on the items being washed and the soil levels. Cycle lengths can be adjusted by a qualified service agent accessing the WI-200 Electronic timer. For adjustment instructions refer to the adjustment section of the Service Manual for the model or the WI-200 Service Manual.

# Operator Use Guide



## START

- Turn on at wall
- Ensure the Drain Filter (3) and Wash Pump Filters (2) are firmly in place.
- Check the Scrap Trays (1) are in place and shut door.
- Press the Power button, the button will glow red and the machine will fill automatically.

## OPERATION

- Load items into the machine and shut door.
- Select either Cycle 1 (2 minutes) or Cycle 2 (4 minutes) button to start a cycle.
- Both Cycle buttons glow green while machine operates.
- When Cycle lights go out, the cycle is complete.

NOTE: The machine may be started while the rinse water is being heated – the machine will continue to run the wash cycle until the rinse water is up to temperature.

## SHUT DOWN - EVERY NIGHT

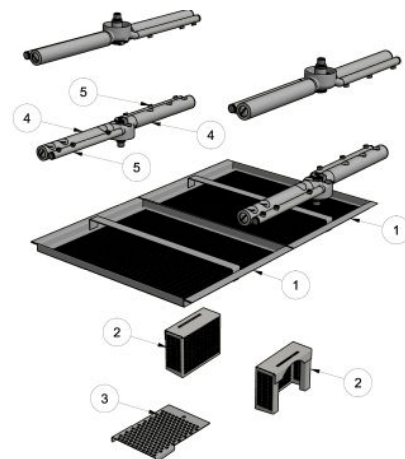
- Open the door and press the Drain button, leave the door open.
- Allow to drain for approximately 1 minute or until the tank is empty.
- Turn the Drain and then the Power buttons off.
- Once the machine has cooled down, clean the wash tank, then remove and rinse Scrap Trays (1) and Wash Pump Filters (2) before replacing back in machine.

## CLEANING – AT LEAST ONCE A WEEK

Remove, rinse and replace when machine has cooled down:

Scrap Trays	1
Wash Pump Filters	2
Drain Filter	3
Wash Arms	4
Rinse Arm	5

Inspect and clear all jets in the upper and lower Wash/Rinse Arms using a small object such as a toothpick where necessary to remove any blockages prior to rinsing.



## SUGGESTED BEST PRACTICE

- Pre-rinse      Scrape and/or rinse trays, plates & glasses in cool water.
- Chemical      Chemical alarm lights indicate when a chemical drum is empty. Replace chemical and press the corresponding prime switch until supply pipe is refilled.
- Use a good quality non foaming commercial detergent and drying agent – do not use domestic detergents which will cause the machine to foam.

# Operator Troubleshooting

Issue	Cause									
	POOR PRE-SCRAPING	CARRY OVER OF SOAP FROM SINK	OVERLOADING RACKS	INADEQUATE CLEANING	DRAIN UPSTAND NOT PLUGGED IN	WASH/RINSE JETS BLOCKED	WASH/RINSE ARMS NOT ROTATING	DETERGENT DOSAGE LOW/HIGH*	RINSE FLUID DOSAGE LOW/HIGH*	POOR WATER QUALITY**
DISHES NOT CLEAN	●		●	●		●	●	●		■
STAINING	●					●	■	●		■
FOAMING		●		■				■	■	
PROTEIN BLOOM	■		■	●		■	■	■		
DIRTY MACHINE	●			●		■	■	■		■
FOOD RESIDUE ON WARE	■		●	■		■	■	●		
FILM/SPOTS ON WARE			■	■		■	●	●		■
DETERGENT RESIDUE						■	●	●		
GREASY FILM/NO FIZZ			■						●	■
HIGH DETERGENT USE				■	●			●		
HIGH RINSE FLUID USE				■					●	
WET WASHWARE			●	■					●	
SCALE BUILD UP IN MACHINE				●				■		●

- Likely cause
- Possible cause

\* For issues most likely due to incorrect chemical dosages or other chemical issues we recommend you consult your chemical supplier and/or a local chemical expert prior to calling in a dishwasher technician.

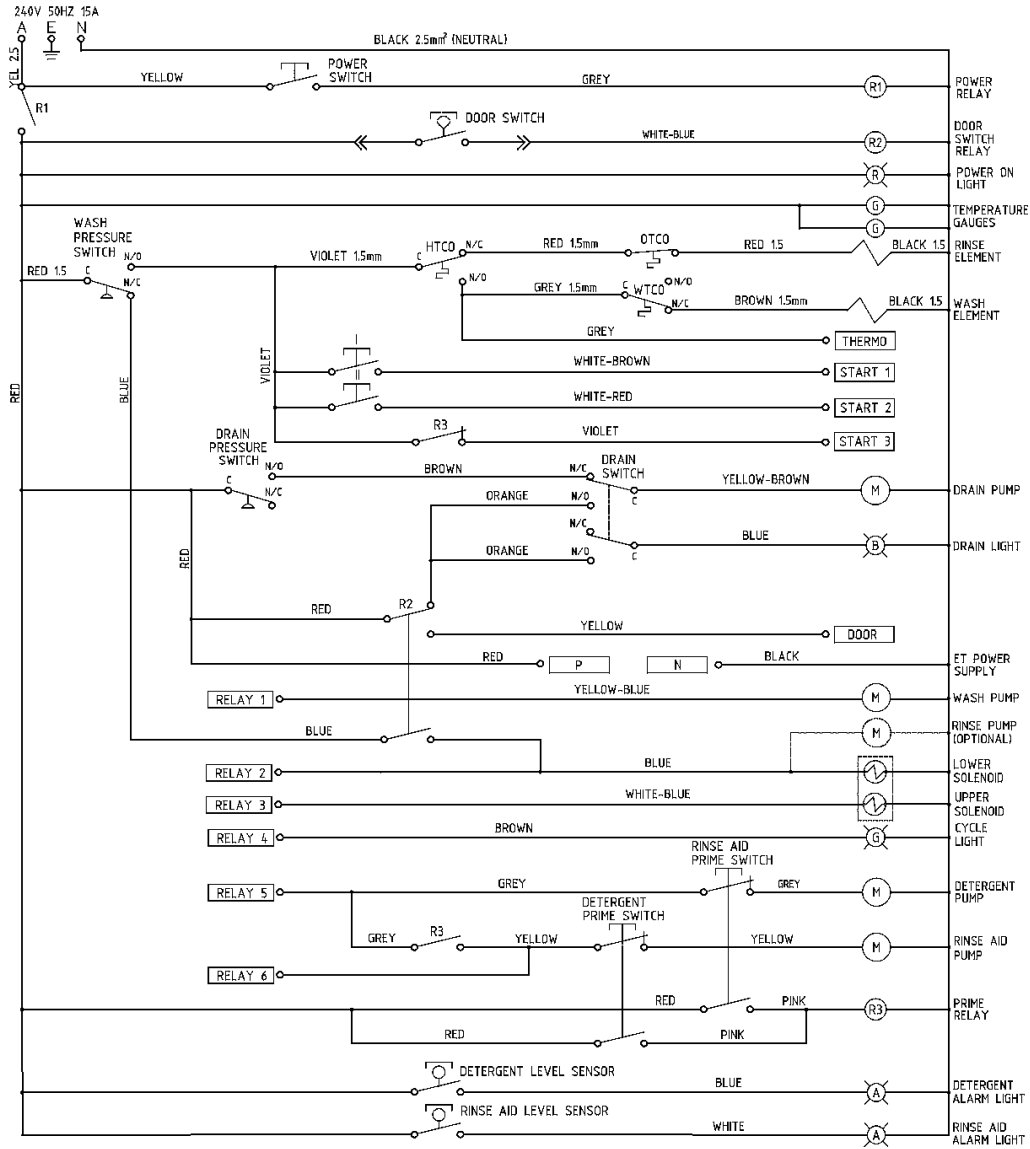
\*\* For issues that are likely due to poor water quality (scale building up, filters being required on other kitchen equipment etc.) we recommend you consult a local water specialist prior to calling in a dishwasher technician.

**IF PROBLEMS PERSIST CONTACT MOFFAT SERVICE ON 1300 264 217**

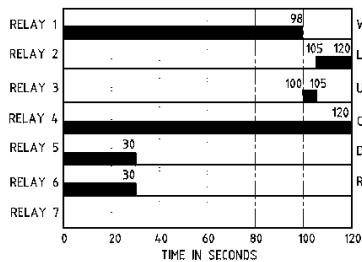
# Schematic Diagram

## TW ET Schematic Diagram

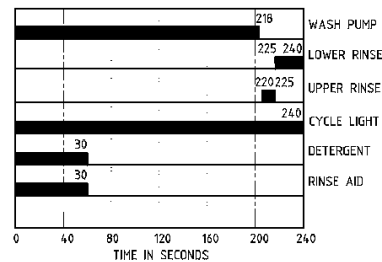
- Part #: 160106
- Date: 13/03/2019
- Version: 1-C



TIMING DIAGRAM - CYCLE 1



TIMING DIAGRAM - CYCLE 2



NOTE: Ensure that BREAK TANK is set to ON in timer settings menu

# Accessories

## TW Accessories

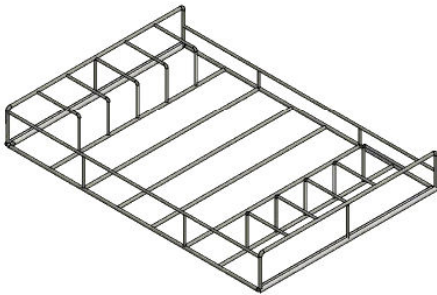
- Part #: TW ACW
- Date: 10/07/2018
- Version: 1-A



**C440201**  
**RUBBER FOOT D.60 X 10**



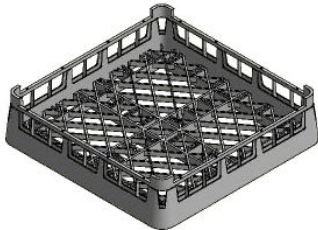
**600 60080**  
**HOSE SS 2M**



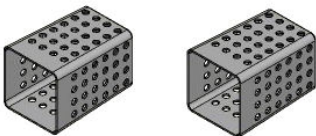
**361 100030**  
**TW2 Rack**



**600 70028**  
**DISHRACK P12/18 500 mm 18 DISH**



**600 70029**  
**CUPRACK CB 500mm x 75mm high**



**C660503**  
**2 x CUTLERY CONTAINER G**

# Spare Parts

DESCRIPTION	PART NO	REC. STOCK
<b>Cabinet &amp; Door</b>		
• Circlip External 7.6 mm	600 80082	1
• Circlip External 13 mm	600 80083	1
• Door Stop Bracket	278 20066	2
• Door Stay	361 20054	2
• Rear Wheels Assembly Kit	400 10219	1
• Front Cover	361 20016	1
• Rear Panel	361 20072	1
• Removable Rear panel	361 20071	1
<b>Controls &amp; Indicators</b>		
• Detergent Prime Button	600 30568	2
• Detergent/Rinse Aid Level Sensor	600 30294	2
• Door Reed Switch	600 30183	1
• Power Button	600 30567	1
• Start fast button	600 30564	1
• Start run button	600 30565	1
• Relay 12V 2 Pole	600 30444	1
• Pressure Switch	600 30079	1
• Relay Base	600 30081	1
• Electronic Timer	600 30546	1
• Drain Switch	600 30517	1
• Temperature Gauge	600 30515	2
<b>Heating Components</b>		
• Over Temperature Thermostat	600 30088	1
• Rinse Element 3KW	600 30495	1
• Rinse Tank Assembly	400 10208	1
• Rinse Thermostat	3020	1
• Wash Element 2.5KW	600 30159	1
<b>Hoses</b>		
• Detergent Squeeze Tube	600 30134	1
• Rinse Aid Squeeze Tube	600 30119	1
• Rinse Hose	600 60073	2000mm
• Upper Wash Hose	400 90012	1
• Lower Wash Hose	400 90012	1
• Pressure Switch Hose	3067	200mm
• Drain Hose	400 90012	1
• Wash Pump Inlet Hose	1262	1
• Wash Pump Outlet Hose	6196	40mm
• Wash Pump Tee Hose	6195	40mm

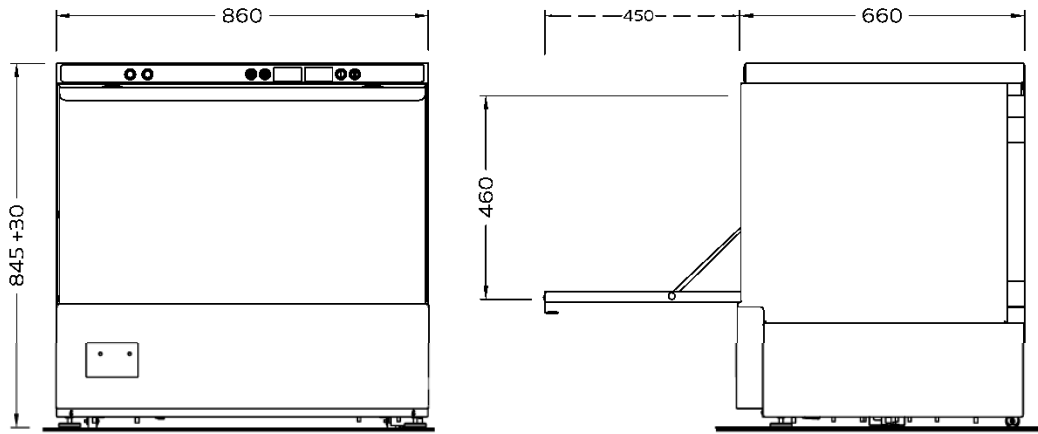
# Spare Parts

DESCRIPTION	PART NO	REC. STOCK
<b>Pumps and Solenoids</b>		
• Detergent Pump	600 30526	1
• Rinse Aid Pump	600 30480	1
• Drain Pump	600 60102	1
• AVB	600 60053	1
• Solenoid Valve	3341	1
• Wash Pump	3888	1
<b>Wash Tank Components</b>		
• Drain Cover	361 20085	1
• Wash Inlet Filter	361 10021	1
• Scrap Tray	361 10020	1
• Capscrew	400 30344	1
• Capscrew Securing Bracket	400 20191	1
• Rinse Arm End Plug	400 30200	2
• Rinse Arm Jet	600 20013	2
• Split Ring Acetal	400 30190	1
• Wash Arm End Plug	600 80072	2
• Wash / Rinse Arm Assembly	400 10311	1
• Wash / Rinse Arm Bush	400 30365	2
• Wash / Rinse Arm Spindle	400 30356	1

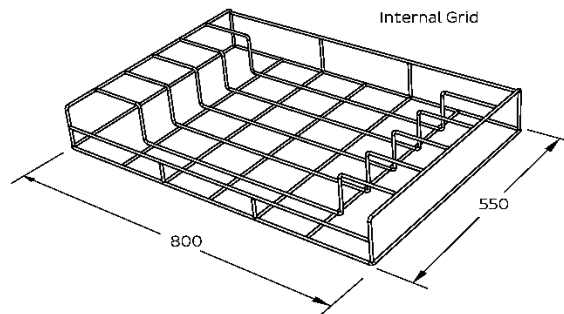
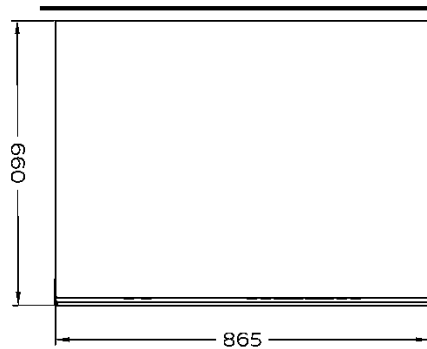
# Appendices

## TW2 INSTALLATION DIAGRAM

TW INST 03-09-19 3C

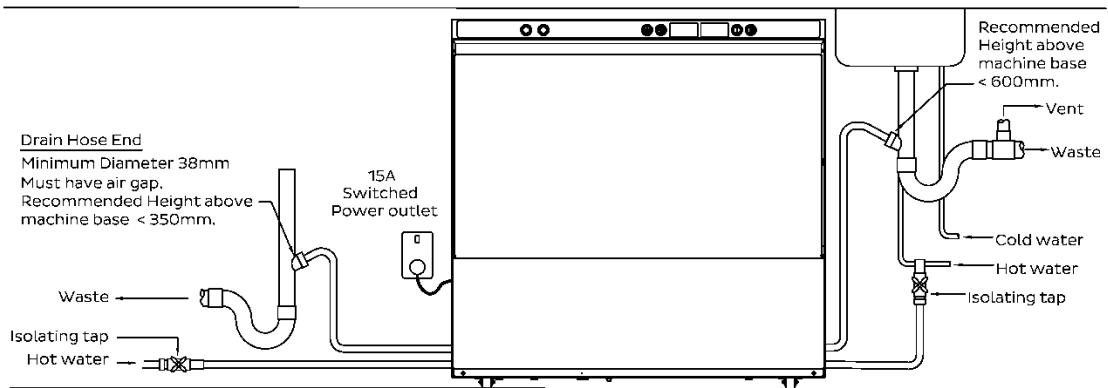


Bench Detail



**STRONGLY RECOMMENDED**  
Drain connection with separate waste

**ALTERNATIVE**  
using sink Waste



**Services**

A	Hot water 65°C	200-350 kPa	3/4"
B	Waste	Flexihose supplied	25mm
C	Electrical connection	230-240V, 50Hz, 1P-N+E~	15A

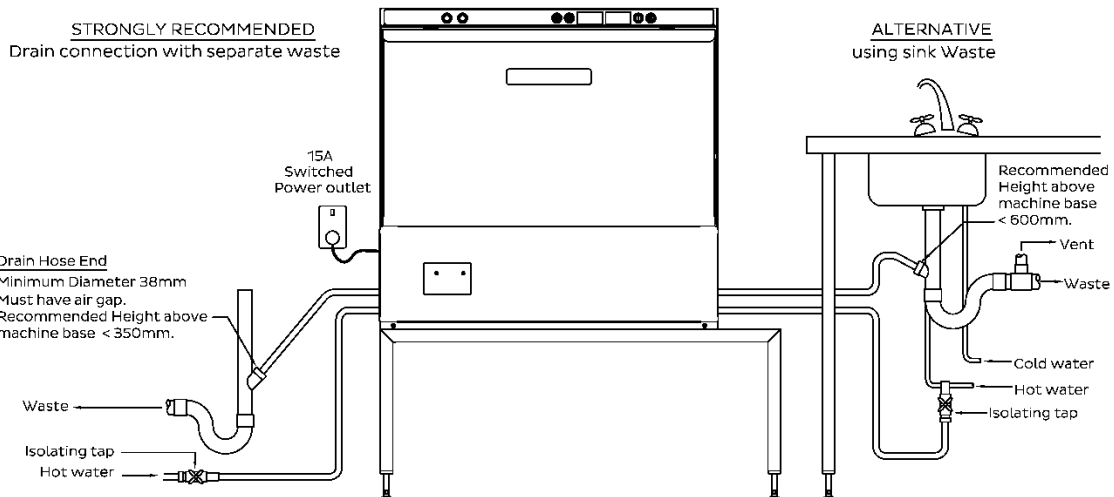
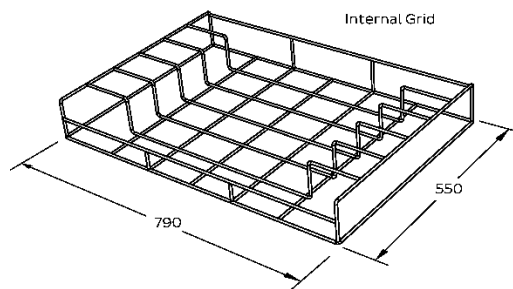
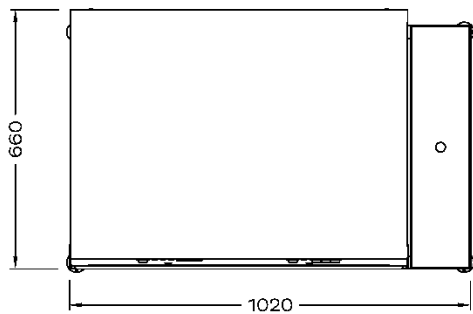
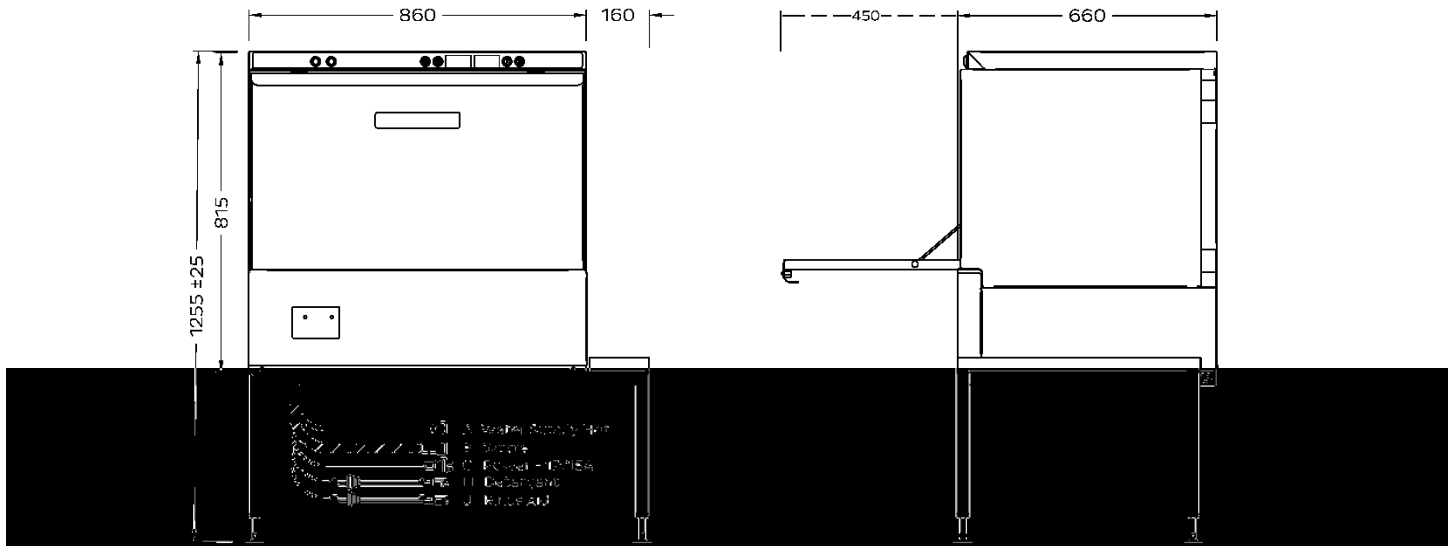
Note: Isolating switch must be within 1m of, and not directly behind the machine. Isolating water valve must be readily accessible  
If the drain connection is too high then a small amount of drain water may return to the machine after draining finishes



# Appendices

## TW2 (C/W STAND) INSTALLATION DIAGRAM

TW-STAND INST 03-09-19 3A



**Services**

A	Hot water 65°C	200-350 kPa	3/4"
B	Waste	Flexihose supplied	25mm
C	Electrical connection	230-240V, 50Hz, 1P-N+E-	15A

Note: Isolating switch must be within 1m of, and not directly behind the machine. Isolating water valve must be readily accessible. If the drain connection is too high then a small amount of drain water may return to the machine after draining finishes.

# Appendices

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# Notes

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#### ISO9001

All Washtech products are designed and manufactured by Washtech using the internationally recognised ISO9001 quality management system, covering design, manufacture and final inspection, ensuring consistent high quality at all times.

In line with policy to continually develop and improve its products, Washtech Ltd reserves the right to change specifications and design without prior notice.

an Ali Group Company



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