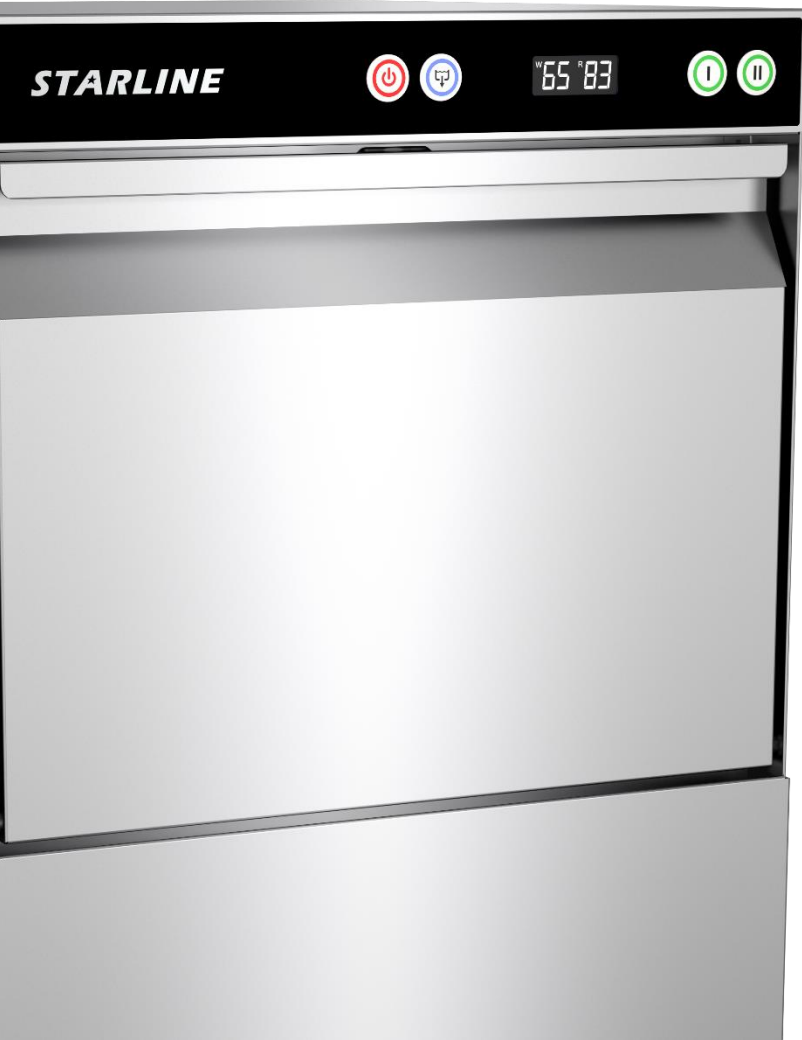


STARLINE *by* **WASHTECH**

OPERATOR MANUAL **XV**



WARNINGS

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.

This machine is not a waste disposal unit.

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

Regular servicing is essential for optimum performance and long machine life. Maintenance by a dishwasher technician is recommended every 6 months or 15,000 cycles to ensure all systems are operating correctly and consumable items – such as chemical squeeze tubes – are replaced prior to degradation of performance and/or failure.

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 is 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, and (if applicable for the model) check that the phase rotation is correct.
- 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.

SERVICE/REPAIR

- Under no circumstances should the user attempt to carry out repairs.
- All service/repair work must be carried out by qualified personnel only.

POWER CORD REPLACEMENT

- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

WARNINGS



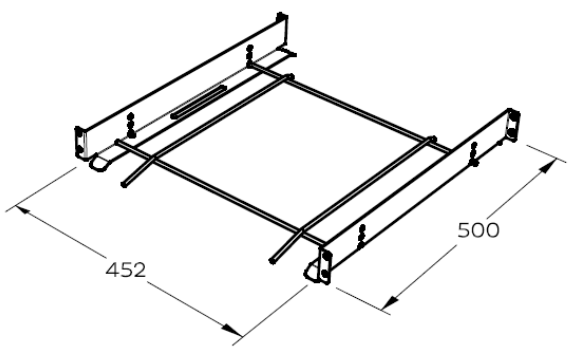
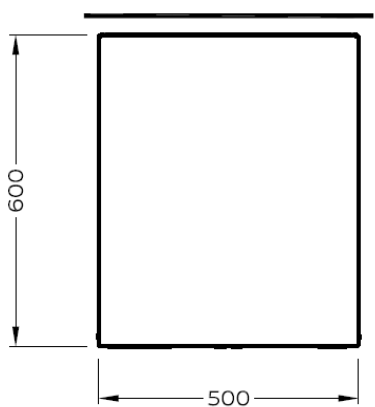
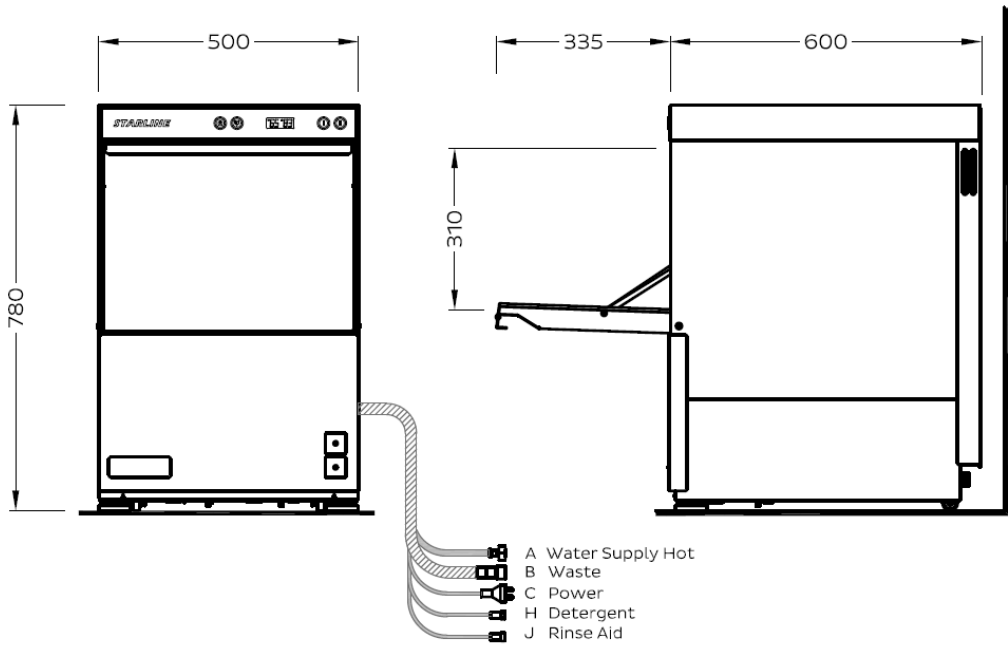
Equipment contains dangerous voltages and can be hazardous if installed or operated incorrectly. Non-compliance with Warnings or failure to follow the instructions contained in this manual can result in loss of life, severe personal injury or serious damage to property.

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

XV SERIES-2

- Part #: XV2 INST
- Date: 2/8/2023
- Version: 3-A



SERVICES

• A	Hot Water	200-350kPa	3/4"
• B	Waste	Flexihose supplied	25mm
• C	Electrical Connection	230V, 50Hz, 1P-N+E~	15A

INSTALLATION INSTRUCTIONS

MACHINE POSITIONING

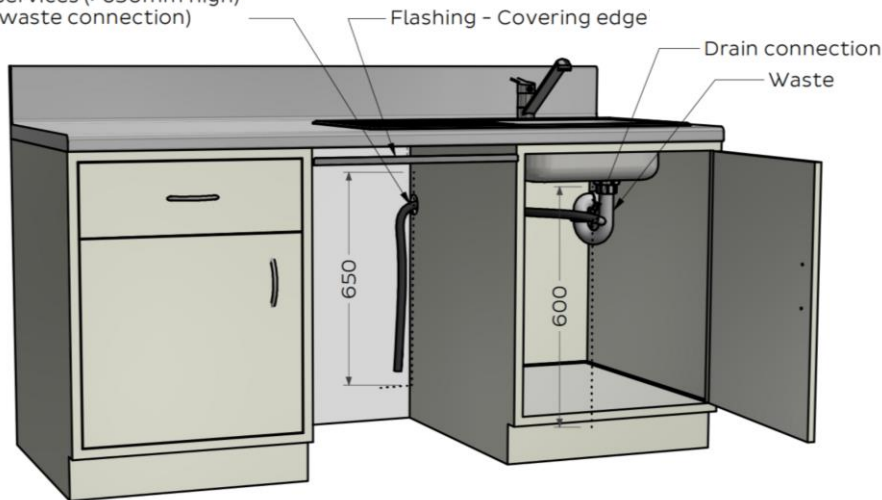
- Unpack machine, check for damage and complete delivery.
- Install machine on sound waterproof self-draining floor
- Use the adjustable feet/legs to ensure that the machine is level.



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.
- Where being installed into cabinetry, allow at least 15mm around the sides and top of the machine to allow the heat generated by the machine to escape.
- Where installed under benchtops made from laminate, timber or other materials not intended for exposure to steam ensure machine is installed proud of the benching and/or fit a suitable flashing above.

Access for services (>650mm high)
(and above waste connection)



Isolating switches and valves must be easily accessible and not directly behind the machine.

WASTE

- Connect drain pump hose supplied to vented upstand or sink waste connection.
- To optimise drainage the drain hose will ideally be travel directly up from the machine to >650mm and then down to a lower drain connection point at approximately no more than 600mm high.

NOTE: Avoid leaving the drain hose coiled on the ground and rising only to reach the connection. This will result in excess water flowing back into the machine and reduce the expect life of the drain hose.



NOTE: Either copper or PVC may be used for the waste connection – PVC is more resistant to some harsh detergents. Some authorities 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.

POWER

- Electrical supply required as per specification 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.

NOTE: The switch must be easily accessible and therefore not directly behind the machine.

INSTALLATION INSTRUCTIONS

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: If water pressure is above 350kPa fit pressure limiter valve. Do not use small diameter plastic supply lines.

- Consumption: Approximately 1.5 litres per cycle.
- Backflow prevention: Atmospheric Vacuum Breaker (AVB) fitted standard.

WATER QUALITY REQUIREMENTS

The incoming water should also be within the following parameters:

Hardness	ppm	pH				
min	20	7				
max	100	8				
ions	Cl ⁻	SO ₄	Fe	Mn	Cu	Cl ₂
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.

CHEMICAL

- This dishwasher is supplied with Detergent and Rinse Fluid injector pumps which are factory pre-set to a standard detergent injection
- To connect to chemicals, insert pump inlet hose into containers of commercial low foam detergent and rinse fluid.

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 these along with your unique site conditions and requirements.

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				
DELIVERY					
SUPPLIED COMPLETE?	<input type="checkbox"/> CHECK THERE HAS NOT BEEN ANY TRANSIT DAMAGE				
POSITION					
LEVEL AND STABLE?	<input type="checkbox"/> ON SOUND, WATERPROOF, SELF-DRAINING FLOOR				
WATER					
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				
POWER					
ISOLATING SWITCH?	<input type="checkbox"/> FITTED, FUNCTIONAL AND ACCESSIBLE				
CORRECT SUPPLY?	<input type="checkbox"/> VOLTAGE, CURRENT, CIRCUIT BREAKER ALL CORRECT				
WASTE					
CONNECTION TO STANDPIPE/SINK WASTE?	<input type="checkbox"/> CORRECT CONNECTION TO PLUMBING				
CHEMICALS					
	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"/>
MACHINE OPERATION					
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				
OPERATOR TRAINING					
ENSURE THAT THE CUSTOMER HAS BEEN GIVEN THE OPERATION MANUAL AND WALL CHART, AND IS AWARE OF THE IMPORTANCE OF BOTH USING AND CLEANING THE MACHINE CORRECTLY.					
START UP	<input type="checkbox"/>				
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 is not twisted or kinked.

CYCLE TAKING TOO LONG

- 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. Then the machine will begin rinsing and complete the cycle.
- Check inlet water temperature is not too low as per our specifications.
- Check power supply, uprating will increase heating power and reduce recovery times.

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.
- Ensure that water quality is adequate. [Consult with a water specialist if not.](#)

CHEMICAL RESIDUE AFTER CYCLE

- Check that nothing is obstructing the wash and rinse arms jets and/or rotation.
- Check detergent dosage is within the requirements.
- Check the rinse fluid dosage is not too high. If uncertain, [consult your chemical specialist](#).

DISHWASHER FOAMING

- Check that water pressure and flow rate to the machine are adequate. Insufficient water supply will effectively overdose the chemicals, and compromise the rinse performance.
- 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.

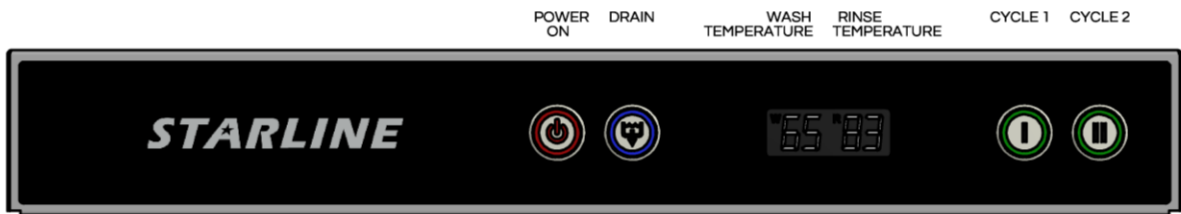
OTHER UNITS HAVE WATER FILTERS AND/OR SCALE ISSUES

- 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 or shorter cycles depending on the items being washed and the soil levels.
- Cycle lengths can be adjusted by a qualified service agent. For adjustment instructions refer to the adjustment section of the service manual for this model.

OPERATOR USE GUIDE



START

- Turn on at wall.
- Ensure the Wash / Drain Filter Basket (1) is in place and shut the door.
- Press the Power switch, the switch will glow red and the machine will fill automatically.

OPERATION

- Load rack into the machine and shut door.
- Press either Cycle 1 (1min) or Cycle 2 (2min) to start the dishwasher.
- Cycle button glows green while machine operates.
- When Cycle light goes 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

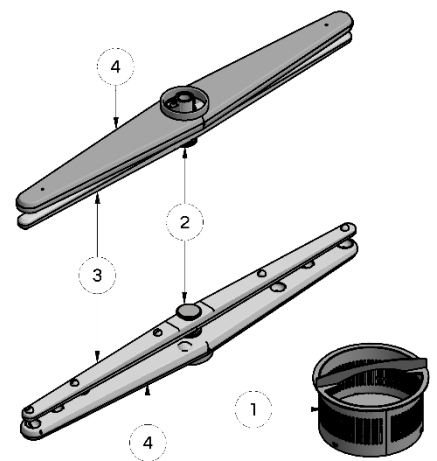
- Open the door, press the Drain switch and leave the door open.
- Allow to drain for approximately 1 minute or until the tank is empty.
- Turn the Drain and then the Power switches off.
- Once the machine has cooled down, clean the wash tank, then remove and rinse Wash / Drain Filter Basket (1)
- Check and clear any waste from inside the drain sump.
- Replace Wash / Drain Filter back into machine.

CLEANING – AT LEAST ONCE A WEEK

Remove, rinse and replace when machine has cooled down:

Wash / Drain Filter Basket	1
Wash / Rinse Arm Thumbscrew	2
Rinse Arms	3
Wash Arms	4

Unscrew thumbscrew (3) to remove Wash/Rinse Arm. Inspect and clear all jets in the arm 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	Use a good quality non foaming commercial detergent and drying agent – do not use domestic detergents which will cause the machine to foam.
Service	Commercial dishwashers should be serviced at least every 6 months or 15,000 cycles.

OPERATOR TROUBLESHOOTING

ISSUE	CAUSE										
	POOR PRE-SCRAPING	CARRY OVER OF SOAP FROM SINK	OVERLOADING RACKS	INADEQUATE MACHINE CLEANING	INSUFFICIENT WATER PRESSURE/FLOW	INSUFFICIENT WASH TEMPERATURE	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				●					■		●
FILTERS ON OTHER EQUIPMENT											●

- 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.

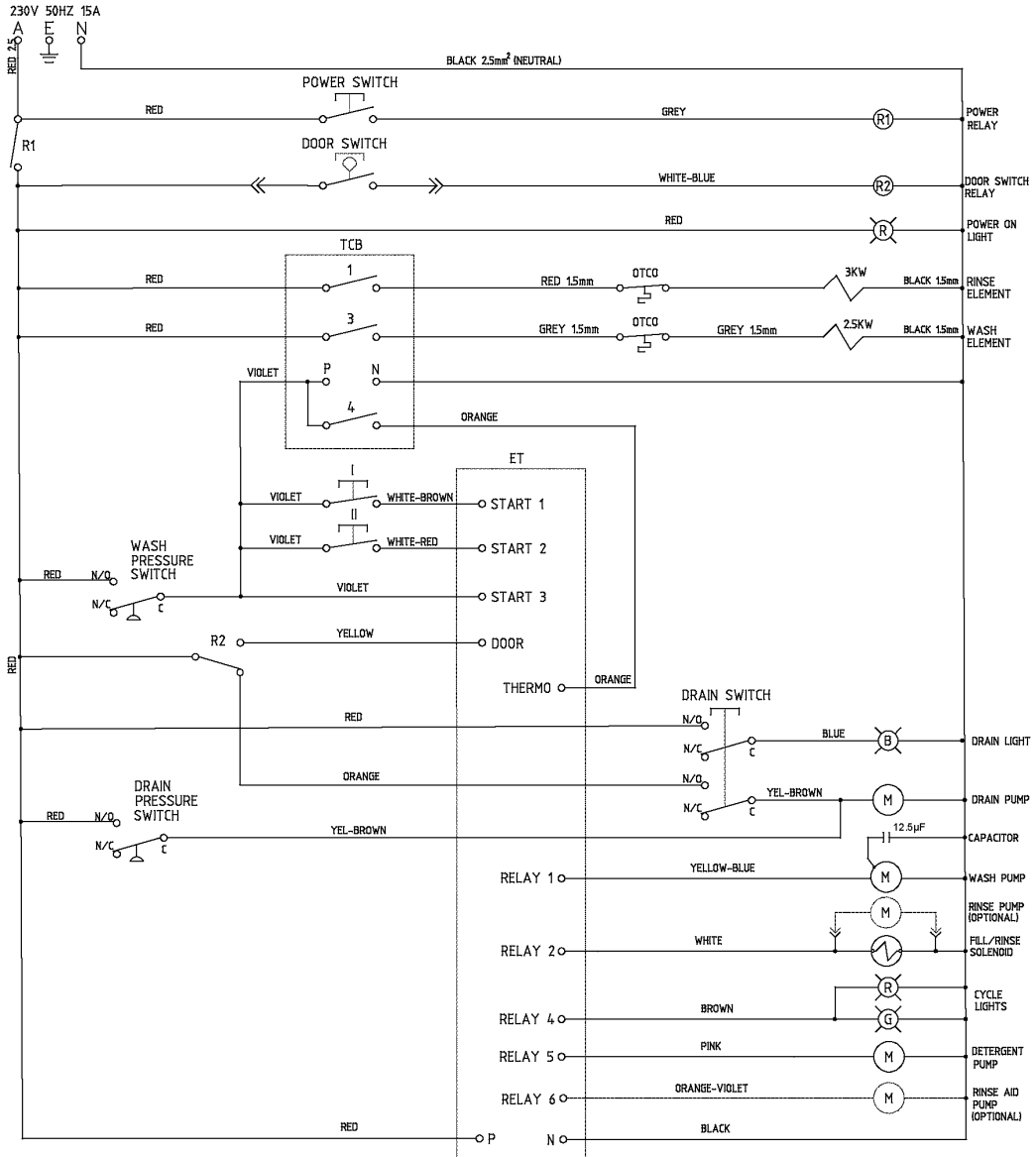
** For issues that are likely due to poor water quality (scale building up, filters being required on other kitchen equipment etc.), we recommend you consult a local water specialist prior to calling in a dishwasher technician.

IF PROBLEMS PERSIST CONTACT YOUR SERVICE PROVIDER

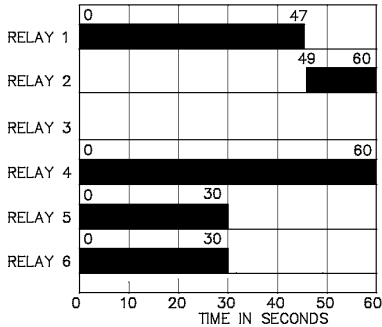
SCHEMATIC DIAGRAM

XV/XU SCHEMATIC

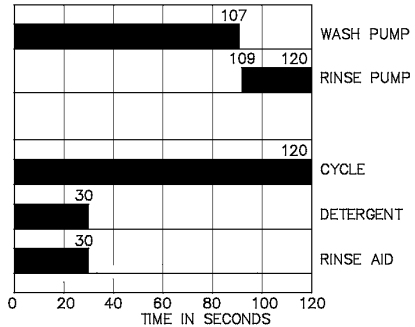
- Part #: 120130
- Date: 31/8/2022
- Version: 1-A



TIMING DIAGRAM
CYCLE 1



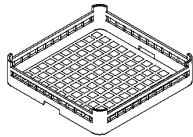
TIMING DIAGRAM
CYCLE 2



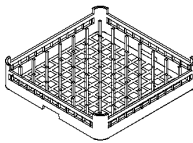
ACCESSORIES

XV SERIES-2

- Part #: XV2 ACS
- Date: 2/08/2023
- Version: 1-A



600 70080
CUPRACK 450mm PLASTIC



600 70081
DISHRACK 450mm PLASTIC



C660503
CUTLERY CONTAINER G



600 60080
HOSE SS 2M



C440201
RUBBER FOOT D.60 X 10



400 10437
DRAIN FILTER ASSEMBLY

SPARE PARTS

DESCRIPTION	PART NO
CABINET & DOOR	
• Front Panel	282 20010
• Lower Rear Panel	282 20004
• Door	282 10006
• Door Catch Plunger Assembly	400 10104
CONTROLS & INDICATOR	
• Door Reed Switch	600 30183
• Drain Switch	600 30517
• Power Relay	600 30223
• Power Switch	600 30567
• Pressure Switch	600 30478
• Relay 2 pole 240V	600 30080
• Relay Base	600 30081
• Start Button	600 30566
• Temperature Controller	600 30640
• Temperature Display	600 30643
• Temperature Display Loom	600 30646
• Terminal Strip 4 Way	32271
• Timer Electronic	600 30513
HEATING COMPONENTS	
• Over Temperature Thermostat	600 30088
• Rinse Element 3 kW	600 30495
• Rinse Tank Assembly	217 10021
• Wash Element 2.5 kW	600 30226
HOSES	
• Detergent Hose	600 30148
• Pressure Switch Hose	3067
• Rinse Hose	600 60073
• Drain Hose	600 60105
• Drain Pump Inlet Hose	6197
• Drain Pump Outlet Hose	600 60109
• Wash Pump Inlet Hose	6196
• Wash Pump Outlet Hose	400 90121
PUMPS AND SOLENOIDS	
• Detergent Pump	600 30526
• Detergent Squeeze Tube	600 30134
• Rinse Aid Injector	600 30324
• AVB	600 60053
• Solenoid Valve	3342
• Wash Pump	
• Drain Pump	600 60102
WASH TANK COMPONENTS	
• Drain Pump Filter Assembly	400 10437
• Wash Arm Assembly	400 10458
• Rinse Arm Assembly	400 10457
• Wash / Rinse Arm Bush	400 40064
• Wash Spindle	600 40007

NOTES

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

Washtech continually seeks to develop and improve our products, thus Washtech reserves the right to change specifications and design without prior notice.



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The Spirit of Excellence

