STARLINE
PROFESSIONAL WASH SYSTEMS

# XP

## PASSTHROUGH DISHWASHER


# Service Manual

# Foreword

## User documentation

Please read this manual and keep it in a safe place for future reference.

**WARNING**
Before installation and commissioning, you must read the safety instructions and warnings carefully and all the warning labels attached to the equipment.

**IMPORTANT**
Failure to comply (even partially) with the instructions given in this manual will invalidate the product warranty and relieves the manufacturer of any responsibility.

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

## Warranty Registration

Complete the information below for quick reference.

Model Number_____Serial Number_____

Purchased from_____ Date of Purchase_____

If you require further information regarding authorised service providers or recommended detergent suppliers in your region, or have any other queries, please do not hesitate to contact us.

**IMPORTANT**
TO VALIDATE YOUR WARRANTY, PLEASE COMPLETE AND RETURN THE WARRANTY REGISTRATION CARD WITHIN 30 DAYS FROM THE DAY OF PURCHASE.



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# Contents

# Safety Instructions

**WARNING**

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**

- 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
- This appliance is not 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

**Power Cord Replacement**

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

# Installation

**WARNING**
Installer must be suitably qualified and ensure compliance with all codes and standards including AS/NZS3500.1.

Failure to comply even partially with installation instructions may void the warranty.

## Positioning

Unpack machine, check for damage and complete delivery. Install machine on sound waterproof self-draining floor and use adjustable feet to level machine. Allow room for detergent to one side of machine or in adjacent cupboard. 20litre container requires about 450H x 250W x 350D, but smaller containers are available from many suppliers.

## Benchwork

Refer Bench Details diagram.
In corner installations the front of the machine must face to the left of the corner. In corner installations high or angled bench return off wall may clash with door handle. Level and secure machine and benches. Adjust to ensure smooth travel of rack through machine.

## Water Supply

| | |
|---|---|
| Hot water temperature | 65°C ± 5°C |
| Connection | 20 mm (3/4" BSP Male) |
| Flow rate minimum | 20 litres per minute |
| Consumption per cycle | 2.6 litres approximately |
| Backflow prevention | Atmospheric Vacuum Breaker |
| Pressure | 200-350 KPa = 30-50 Psi. |

Above this range fit pressure limiter. Don't use small diameter plastic supply lines especially below this range when optional rinse booster pump may be required. FLUSH supply line before connection. Poor quality supply or excessive water hardness may affect performance or damage machine – filtration and/or softening is recommended.

## Waste

40 mm gravity drain – refer point B on installation diagrams – run waste directly behind the machine or through open base.

## Power

Electrical supply required is 15A 230V 50Hz via switched outlet adjacent to machine, which is supplied with cord set including 15A plug.

## Detergent

Insert detergent pump inlet hose into container of commercial low foam detergent. Close machine door and switch machine on. Machine starts filling. The detergent hoses will be primed during filling of the wash tank. When machine is full remove drain upstand to drain wash tank.
Commercial detergents can be hazardous – read instructions and handle with care.

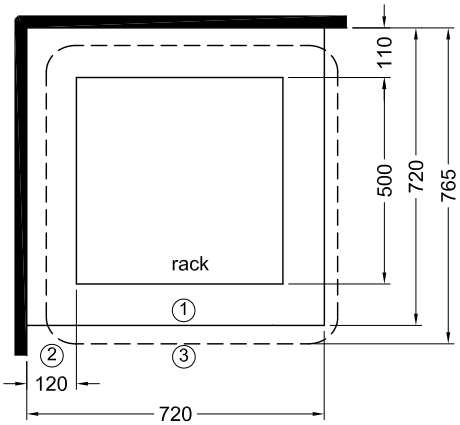
## Rinse Aid

Insert injector inlet hose into rinse aid container. Check amount of fluid rising up inside pipe during pulse at start of rinse cycle. Rotate Adjusting screw clockwise to reduce flow and anticlockwise to increase flow.

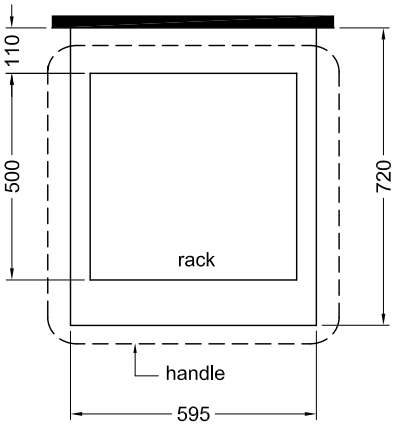
## Installation Checklist

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

benchwork minimum dimensions
corner installation




in-line installation

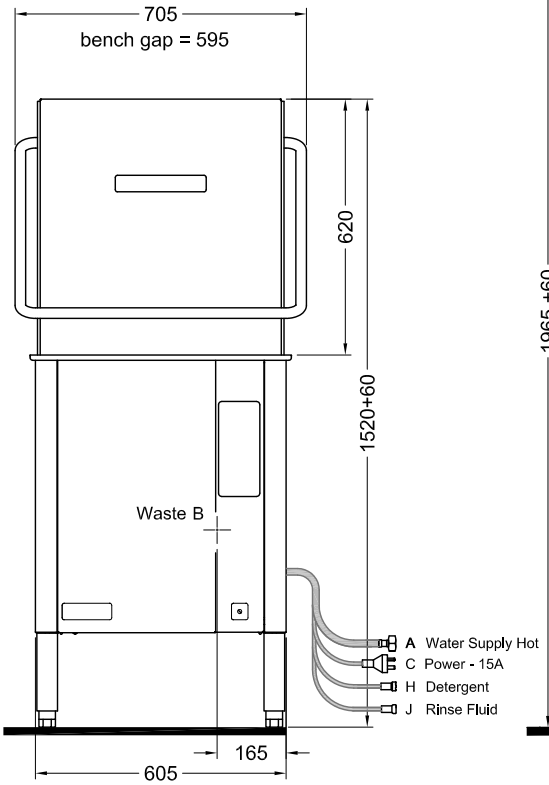


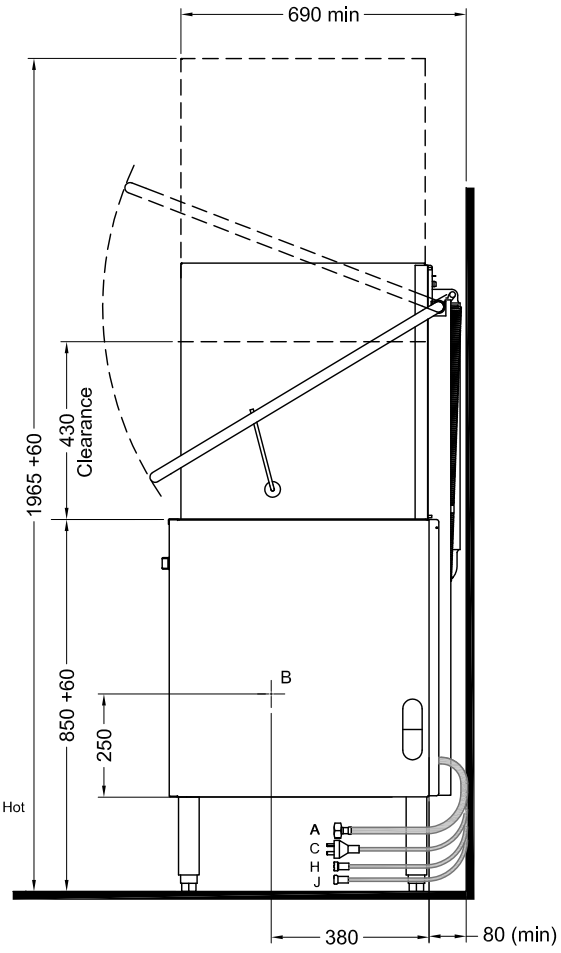

Corner installation

① machine must face left

② splashback return no higher than 150mm

③ allow 300 clearance beneath bench to front for service access



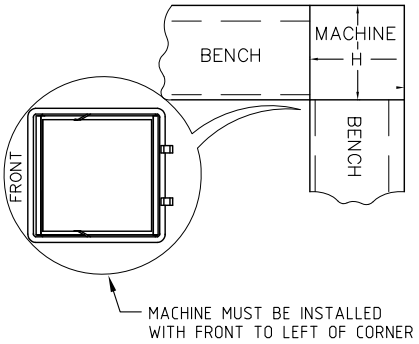



# PASSTHROUGH BENCH DETAILS

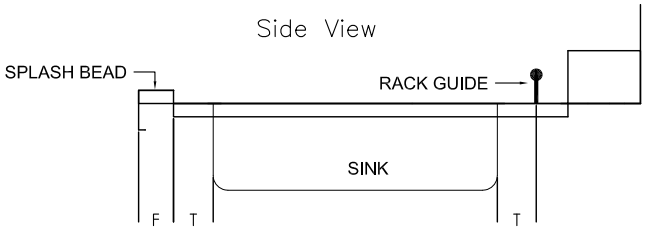
M2 0006 1-08-13 1 J

| | | M1 | M2/XP | AL | AL8 |
|---|---|---|---|---|---|
| M | BENCH DEPTH<br>MINIMUM - for straight through only | 600 | 700<br>(650) | 750<br>(700) | 750<br>(700) |
| R | RETURN<br>MINIMUM - for straight through only | 115 | 125<br>(90) | 150<br>(125) | 150<br>(125) |
| G | BENCH GAP | 510 | 595 | 640 | 790 |
| B | BENCH OPENING | 460 | 535 | 550 | 550 |
| F | SPLASH BEAD<br>MINIMUM | 25 | 40<br>(25) | 50<br>(25) | 50<br>(25) |
| D | RACK SIZE | 435 | 500 | 500 | 500 |
| E | RACK PATH | 450 | 520 | 520 | 520 |
| S | SINK WIDTH | 350 | 450 | 450 | 450 |
| T | CLEARANCE | 35 | 35 | 35 | 35 |
| H | DISTANCE TO WALL<br>FOR CORNER INSTALLATION | 620 | 720 | 760 | N/A |

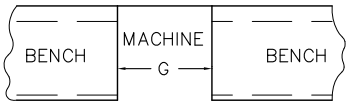
Corner Detail



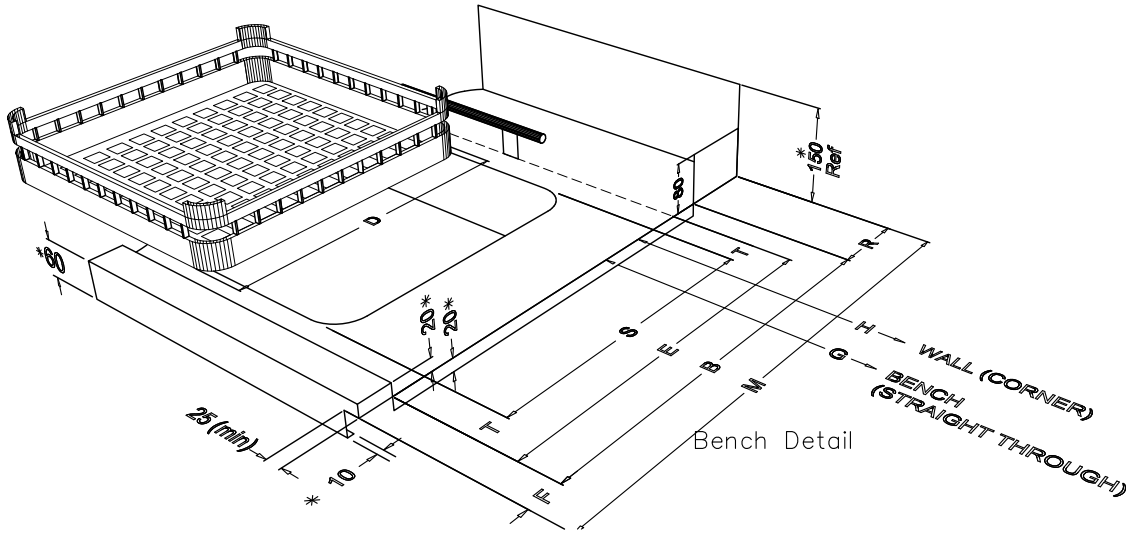

Side View




Straight through detail




All dimensions in millimetres




Notes:

1. These dimensions are recommendations. They apply to straight through or corner installations. They are designed to ensure that the dishrack slides over an adjacent sink directly into the dishwasher. We recommend use of the sink size shown and a rack guide to keep the rack up against the splash bead and prevent it from falling into the sink. This arrangement is particularly suitable when a pre-rinse gun is used (as recommended).

2. Bench depth can be reduced by reducing the size of the splash bead and in straight through installations (only) dimension R can be reduced to the minimum shown.

3. Drawing is for the left of the machine - other side is mirror image (sink may be to either side.

4. Dimension with ✳ are suggestions only and not critical.

# Installation Checklist

| CHECK | OK / NOTES | |
|---|---|---|
| **Delivery** | | |
| Supplied complete | | no transit damage |
| **Position** | | |
| Level and stable | | on sound, waterproof, self draining floor |
| **Water** | | |
| Isolator valve fitted | | Accessible, all fittings sound, no leaks |
| DCVs fitted (Washtech only) | | Correct direction |
| Temperature | | 65 ± 5°C |
| Flow rate | | Minimum 20 litres per minute |
| Pressure | | 200-350 kpa, limiter fitted if above this range |
| | | Booster fitted if below this range |
| Cold water when required | | Pressure not above 350 kpa |
| Hardness | | Filter or softening if required |
| **Power** | | |
| Isolating switch | | Fitted, functional and accessible |
| Supply as specified | | Voltage, current, circuit breaker |
| **Waste** | | |
| Usually 40 mm | | Sound, no leaks |
| Air gap on pumped drain | | |

**Chemicals**

| | product name | | container | no leaks | primed | conc.OK |
|---|---|---|---|---|---|---|
| Detergent | | | | | | |
| Rinse Aid | | | | | | |

| | | |
|---|---|---|
| **Machine operation** | | |
| Run several cycles | | |
| Confirm correct operation | | Including correct fill levels |
| **Operator training** | | |

Confirm Operator has copy of Operator Manual and is familiar with procedures

| | |
|---|---|
| Start-up | |
| Pre-rinse and racking | |
| Machine operation | |
| Drain | |
| Clean | |
| Shut-down | |

| | |
|---|---|
| Model / Serial | |
| Owner | |
| Location | |
| Technician | |
| Date | |
| Signed | |

# Maintenance Checklist

| CHECK | | OK / NOTES | | |
|---|---|---|---|---|
| **Installation –** use Installation Checklist on previous page to check all services, operator training and chemical issues | | | | |
| | Services | | water, power, drain etc. | |
| | Operator | | trained / has instructions | |
| | Chemicals | | squeeze tube checked – replacement recommended every 6 months, product type, container, leaks etc. | |
| **General conditions** | | | | |
| | Cleanliness of machine | | daily maintenance | |
| | Presence of pests | | | |
| | Leaks | | | |
| **Operation** | | | | |
| | | | Temp °C | Amps |
| Elements | Wash | | 60 | |
| | Rinse | | 83 | |
| Pumps | Wash | | n/a | |
| | Rinse | | n/a | |
| | Drain | | functional | n/a |
| Water Flow | Wash arms and jets | | jets clear, good rotation, bushes OK | |
| | Rinse arms and jets | | jets clear, good rotation, bushes OK | |
| Cycle | Fill levels | | pressure switch settings | |
| | Drain operation | | upstand/pump | |
| | Noise | | sounds OK | |
| | Recovery between cycles | | | |
| Controls | Door switch | | including auto start if fitted | |
| | Switches, lights, gauges | | all sound and functional including door/s | |
| Performance | Wash and rinse | | effective | |
| **Electrical** | | | | |
| | Safety test | | if required | |
| **Cabinet** | | | | |
| | Door / Handle / Catch | | operational | |
| | Rack slide | | good rack entry / withdrawal | |
| **Comment / Action Required** | | | | |

| | | | |
|---|---|---|---|
| Model / Serial | | Technician | |
| Owner | | Signed | |
| Location | | Date | |

# Dishwashing Procedures

**for best results**

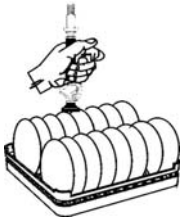
Note: these are general instructions to assist in getting the best performance from Starline dishwashers – some comments and / or illustrations may not apply to every unit.

## Installation

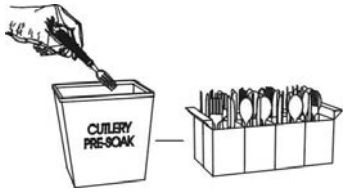
Read the Operator Manual. Correct installation, including an adequate supply of water at the correct temperature and pressure is essential for effective operation of your machine. Refer installation instructions for details. Drain hose outlet height is important on some models. Always install on a sound self-draining floor. Water softening is recommended in hard water areas - especially for glasswashing.

## Pre-rinsing

Pre-scraping of dishes is required by hygiene regulations. The best method is to pre-rinse with a pre-rinse spray unit - or alternatively by scraping or dunking in water.



## Cutlery Procedures

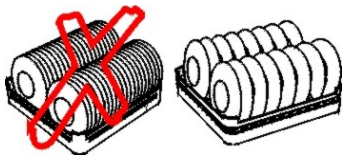



Pre-soak cutlery in warm water, preferably containing cutlery pre-soak compound - refer your chemical supplier.

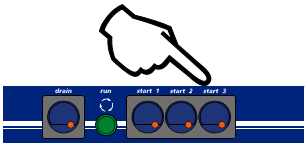
Do not overfill cutlery containers. Cutlery should be loose with handles down. Sort after washing rather than before. Cutlery of only one type nests together and obscures wash water.

## Racking Procedures

Do not overload racks, minimize the overlap of crockery. Cycle times are short and water consumption per cycle low - so there is no advantage in overloading racks.



## Cycle Times




For multi-cycle machine use the longest cycle whenever possible. Note that water consumption does not increase with longer cycles. Only choose shorter, faster cycles when necessary.

## Detergent

Use of correct type and quantity of low foaming commercial grade detergent is essential to the performance of the machine. We strongly recommend that you use a professional dishmachine chemical supplier - and will be pleased to recommend a supplier in your region. Discuss with them the use of cutlery pre-soak solution, detergent and drying agent.

# Dishwashing Procedures

for best results

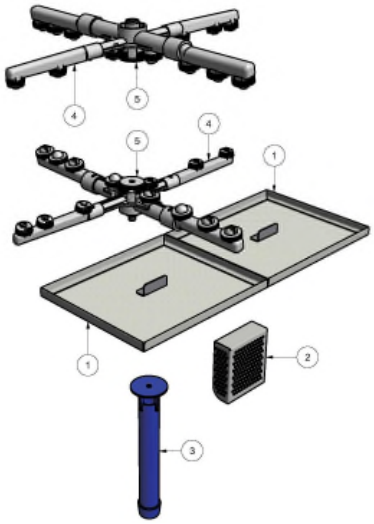
## Drying

Single tank commercial dishwashers do not have a drying cycle. However, the machines do rinse at high temperatures which promote fast drying particularly when drying agents are used. We recommend prompt removal of the rack from the machine - leave the rack on the bench for 2 to 3 minutes before emptying. This time will be reduced with correct use of drying agent (rinse fluid) which reduces water surface tension and allows water to drain quickly from washware. For advice on drying agents and injectors refer to your chemical supplier.

## Daily Cleaning

It is essential that the machine is drained and cleaned at the end of each day. Drain the machine then remove, clean and replace filters as per the operating instructions. Regularly check the wash and rinse jets and clean them if necessary – see below.

## Regular Cleaning



Remove scrap trays① and wash pump inlet filter②, and rinse or brush clean.

Remove wash/rinse arms④ by undoing the central thumbscrews⑤. Flush the arms with water and/or use a toothpick or paperclip to clear jets.
If necessary, remove wash and rinse jets from the arms by twisting jets anticlockwise, clean and replace.

## Regular Servicing

Regular servicing of the dishwasher is absolutely essential to keep the machine in top working condition and obtain the best performance.

Please contact Washtech or your Authorised Service Provider to organize regular servicing of the dishwasher - discuss a Preventative Maintenance Agreement for optimum performance and long machine life.

Note: these are general instructions to assist in getting the best performance from Starline dishwashers – some comments and / or illustrations may not apply to every unit.

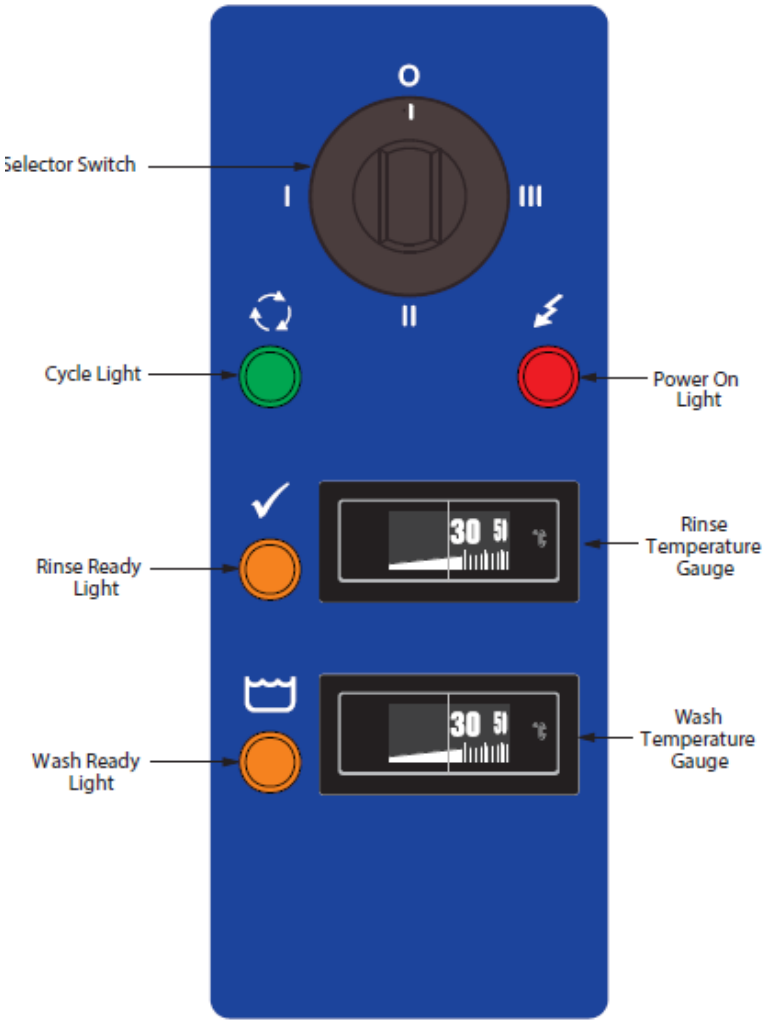
# Troubleshooting Chart

| PROBLEM | POSSIBLE CAUSES | REMEDY (Check/Adjust/Replace) |
|---|---|---|
| **Filling** | | |
| Not filling | Water supply valve shut | Water supply valve |
| | Door switch faulty | Door switch |
| | Solenoid valve faulty | Solenoid valve |
| | Rinse lines blocked | Rinse pump, solenoid valve filter |
| | Pressure switch faulty | Pressure switch |
| Won't stop filling | Solenoid valve faulty | Solenoid valve |
| | Pressure switch set too high/faulty | Pressure switch |
| | Pressure bell blocked, hose broken | Pressure bell, hose, hose connections |
| Filling during wash cycle | Pressure switch refill level too high | Pressure switch |
| | Upstand does not fit properly | Drain upstand |
| **Heating** | | |
| Rinse not heating | Over-temp thermostat tripped | Over-temp thermostat, rinse element |
| | Rinse thermostat settings or fault | Rinse thermostat |
| | Rinse element faulty | Rinse element |
| Overheating | Thermostat adjustment | Thermostat |
| | Thermostat probe out of pocket | Insert & secure probe |
| Wash water cold | Wash thermostat set too low | Wash thermostat |
| | Wash element faulty | Wash element |
| | Machine not rinsing | Solenoid valve, water supply |
| | Rinsing but not hot | Thermostats & elements, water supply |
| | Rinsing cycle too short | Timer |
| **Cycle start** | | |
| Does not start | Not up to temperature | Give machine reasonable time initially |
| | Rinse thermostat faulty | Rinse thermostat |
| | Door switch faulty | Door switch |
| **Cycle finish** | | |
| Rinse doesn't stop | Solenoid jammed open | Solenoid valve |
| | Timer stuck | Timer |
| | Pressure switch faulty | Pressure switch |
| Wash continues | Timer jammed | Timer / Timer motors |
| **Cycle time** | | |
| Cycle too long | Timer faulty | Timer / Timer motors |
| **Cycles selection (for multi-cycle machines)** | | |
| Time not changed | Selector switch faulty | Selector switch |
| | Advance timer motor faulty | 6 sec advance timer motor |
| | Timer micro switches faulty | T4 or T5 timer micro switches |
| **Delays** | | |
| At start or between cycles | Rinse element faulty | Rinse element |
| | Water supply cold | Supply hot water |
| | Water supply pressure excessive | Restrict supply pressure |
| | Rinse cycle too long | Timer |

# Troubleshooting Chart

| PROBLEM | POSSIBLE CAUSES | REMEDY (Check/Adjust/Replace) |
|---|---|---|
| **Drainage** | | |
| Flooding | Drain waste blocked | Drain waste |
| **Leaks** | | |
| Leak from pumps | Seal failure | Pump seal |
| Leak from hoses | Hose damage | Hoses |
| | Hose clamp loose | Hose clamps |
| Splash from door | Wash arm end caps missing | End caps |
| | Wash jets blocked | Wash arm jets |
| | Wash jets missing | Wash arm jets |
| | Arms not rotating | Arms and bushes |
| | Arms not level | Arms |
| **Wash Arms** | | |
| Not rotating | Wash jets not clean | Wash jets |
| | Arm bushes worn | Bushes |
| | Wash pump not working | Wash pump |
| **Rinse Arms** | | |
| Not rotating | Rinse jets not clean | Rinse jets |
| | Arm bushes worn | Bushes |
| | Water supply pressure low | Water supply |
| | Rinse pump not working (if fitted) | Rinse pump (if fitted) |
| **Noise** | | |
| Noisy rinse cycle | Rinse pump squeals | Low pressure / blocked water supply |
| Noisy wash cycle | Wash pump noisy | Wash pump including inlet filter |
| **Performance** | | |
| Poor wash result | Detergent not used | Use quality low foam product |
| | Detergent pump faulty | Detergent pump |
| | Squeeze tube to be replaced | Detergent pump squeeze tube |
| | Overloading racks | Do not overload racks |
| | Not pre-rinsing | Use Fisher pre-rinse |
| | Wash arms not rotating | Remove and clean arms/check bushes |
| | Wash jets blocked | Remove arms and clean jets |
| | Low wash pressure through arms | Wash pump impellor |
| | Wash temperature low | Check wash /rinse heating |
| | Excessive soiling | Pre-rinse/use long cycle |
| | Unrealistic expectation | E.g. baked on soiling requires pre-soaking |
| Poor rinse results | Rinse jets blocked | Remove arms and clean jets |
| | Rinse arms not turning | Remove arms, clean jets, check bushes |
| | Poor racking procedures | Do not overload racks |
| | Excessive wash tank soil build up | Pre-rinse, change wash water regularly |
| Not drying | Poor wash/rinse performance | Refer above |
| | Low temperatures | Check heating systems |
| | Drying agent not used | Use quality drying agent/rinse fluid |

# XP Operating Instructions




### Start up

Fit drain upstand, wash pump filter, scrap tray and shut door.
Turn wall power switch on and select any cycle (1, 2 or 3).
Power light glows red and machine fills automatically.
Wash Ready light (water symbol) glows amber when wash tank is ready.
Rinse Ready light (tick symbol) glows amber when the machine is up to required temperature.

### Operation

Select required cycle (1, 2 or 3 for 1, 2 or 3 minute cycle accordingly).
Try cycle 3 initially and switch to faster cycles only if necessary.
Load rack into machine and close door to start the machine.
Cycle light glows green while machine operates.
When Cycle light goes out, cycle is complete

NOTE: Machine might operate longer than specified above if hot water supply temperature is below required.

**After removing rack from machine, DO NOT shut door as machine will start up again.**

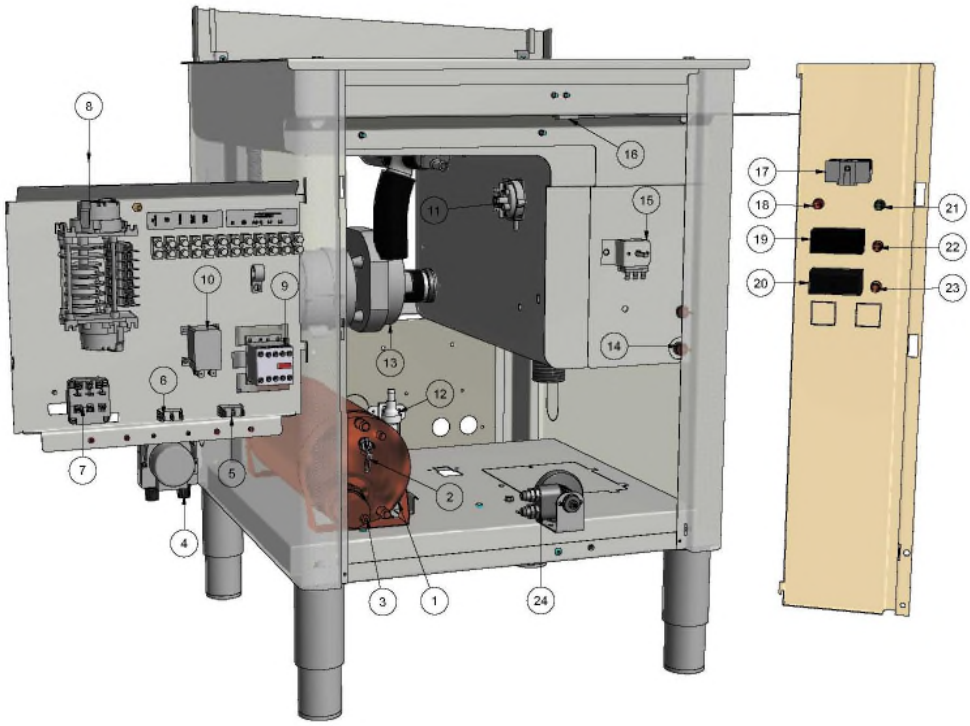
### Shut down every night

Turn machine and wall power switches off.
Remove drain upstand to drain wash tank.
Remove scrap tray and wash pump filter and rinse clean.
Replace drain upstand, filter and scrap tray.

# Components

**WARNING**
All service/repair work must be carried out by qualified personnel only.

## Location and Access




1. Rinse Tank Assembly
2. Rinse Safety Thermostat
3. Rinse Heating Element
4. Detergent Pump
5. Test Switch
6. Detergent Prime Switch
7. Rinse Thermostat
8. Timer
9. Heating Contactor
10. Door Switch Relay
11. Wash Tank Pressure Switch
12. Water Supply Solenoid Valve
13. Wash Pump
14. Wash Heating Element
15. Wash Thermostat
16. Door Switch
17. Power/Selector Switch
18. Power On Indicator Light
19. Rinse Temperature Gauge
20. Wash Temperature Gauge
21. Cycle Indicator Light
22. Rinse Ready Indicator Light
23. Wash Ready Indicator Light
24. Rinse Aid Injector

# Timer

**Part Number**

32822

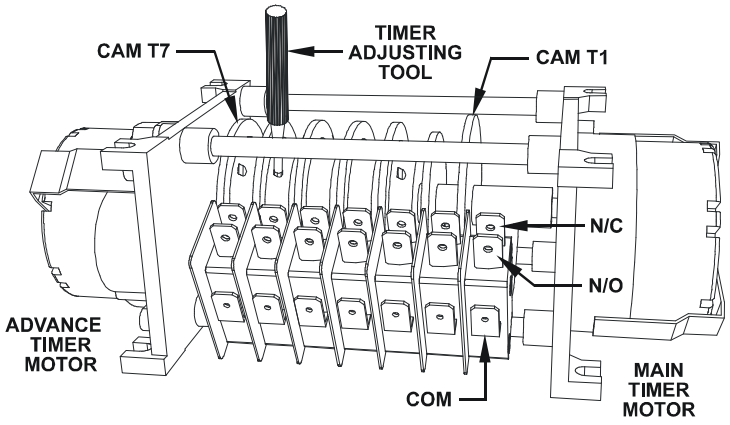
**Function**

Provides an automatic timing sequence of the wash, rinse, detergent and rinse aid injection stages in a dishwashing cycle.

**Description**

The electromechanical timer has a main drive motor and gearbox which produce a full rotation of the seven cams in 180 seconds. The advance motor and gearbox speed the rotation of the timer to produce shorter cycles of 60 and 120 seconds. The timer cams operate individual changeover switches in sequence during the rotation. The cams are numbered from the main motor end. T1 controls the main motor, T2 – wash, T3 – rinse, T4 – rapid advance motor for 60s cycle, T5 – rapid advance motor for 120s cycle, T6 – detergent injector if fitted, T7 – may be used for electric rinse fluid injector if required.

**Diagram**




**Replacement**

To replace the timer take note of the position of each connection, preferably on paper. Disconnect all wires and remove the timer from the tray. Compare the cam setting of the old and new timer to ensure that special settings are duplicated. Fit new timer taking care to locate cam T1 in the same relative position. Reconnect the wires ensuring that no termination is under strain. Test the machine to confirm correct operation.

**Adjustment**

The timer cams T2, T3, T6 and T7 are adjustable. The time settings on these cams can be increased by making the gap in a cam wider, or reduced by reducing the gap. Use a timer adjusting tool, supplied with the machine to modify a gap in the timer cams.

**NOTE:** To increase (or decrease) detergent injection time adjust only the red sector of the cam T6. The yellow sector sets the beginning of the detergent injection at the start of the shortest wash cycle. If injection time is extended by yellow sector adjustment it will be skipped on fast cycles.

**IMPORTANT**

The factory setting of the cam T3 allows for a 12 sec hot rinse. Reduction of this time is prohibited by Health regulations. Extending this setting will increase hot water consumption of the machine and may result in delays between the cycles as this additional water is heated.

# Rinse Thermostat

**Part Number**

3020

**Function**

Controls the rinse heating elements and prevents operation of machine if the rinse temperature is below that required.

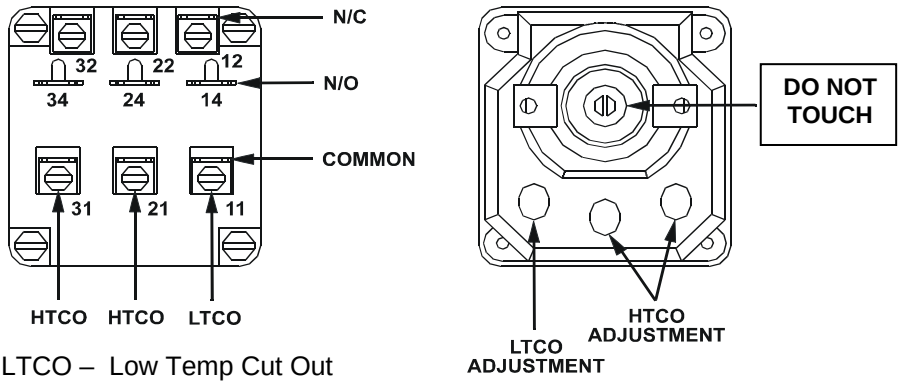
**Description**

The rinse thermostat is a specially calibrated 3 pole capillary type temperature operated device. The thermostat does not have a control knob and it is factory set to the temperatures required by Hygiene Regulations. The first pole's LTCO changeover contact is set to operate at 83 ±3°C, the other two poles HTCO contacts are set to 90±3°C. Switching capacity: 16(4) A 380 V.

**IMPORTANT**

Do not break the seal or attempt to adjust the central multi pole adjusting screw that is sealed with red compound.

**Diagrams**




LTCO – Low Temp Cut Out
HTCO – High Temp Cut Out

**Replacement**

Take note of the connections to the wiring loom before disconnecting. Remove the capillary bulb from the rinse tank pocket. Select a new thermostat and carefully unwind enough capillary to reach from the pocket to the thermostat mounting position. Carefully position the tube with no kink or stress on the tube, also have due regard for the protection of the tube against contact with live electrical terminals – secure or insulate as appropriate.

**Adjustment**

**The thermostat is factory set to the specified above settings and it should not normally be adjusted**. If you are **sure** adjustment is required, remove the grey tape covering three adjusting screws for LTCO and HTCO settings (one or both HTCO poles are used depends on model – check which HTCO terminals are wired before making adjustments). Insert the thermo junction into the rinse tank pocket for the machine's temperature gauge. Energize the elements and check all temperatures on temperature rise. Clockwise rotation of the screws increases the setting, anticlockwise – decreases it. **Every half turn of the adjusting screw changes the settings by approximately 6 degrees.**

**IMPORTANT**

To make adjustments to the thermostat you will need a good quality thermometer fitted with a "type K" thermo junction. The use of a stainless steel probe is not permitted as slow response time in the device will cause inaccurate settings.

# Wash Thermostat

**Part Number**

30201

**Function**

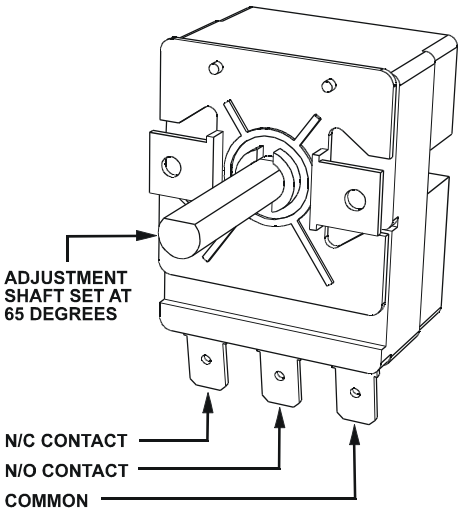
Controls the wash element

**Description**

The wash thermostat is a single pole capillary type device. It has a single changeover contact and a rotating shaft for a manual temperature adjustment.

Factory default setting is 65°C.
Contact switching capacity: 16(4) A 380 V.

**Diagram**




**Replacement**

Drain the wash tank. Take note of the connections to the wiring loom before disconnecting. Release thermostat's gland nut, move the capillary bulb out of the mounting bracket inside the tank and remove the bulb from the wash tank (remove the probe from the pocket in the wash tank on the models supplied with a pocket for the thermostat probe). Replace in reverse order.

**Adjustment**

Insert the probe of a digital thermometer into the wash tank. Check the thermostat settings on a temperature rise. Adjustment is performed by rotating the adjustment shaft of the thermostat. Clockwise rotation of the shaft increases the setting, anticlockwise– decreases it.

**NOTE**: the adjustment shaft in a flat horizontal position is a factory default setting corresponding to 65°C (see the diagram).

# Solenoid Valve

**Part Number**

3342

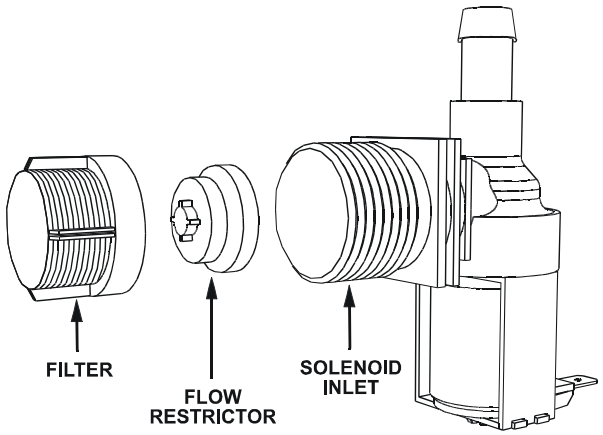
**Function**

Controls flow of water into machine during filling of wash tank and final rinsing.

**Description**

Electromagnetically operating water valve for use with cold and hot water.

**Diagram**




**Replacement**

Disconnect the wires from the solenoid connectors.
Remove hot water supply hose.
Release a hose clamp on the outlet solenoid hose and remove the hose.
Slide the solenoid valve up off the mounting bracket.
Replace in reverse order.

**Adjustment**

Remove the flow restrictor for installations with flow rate of hot water supply below 20 litres per minute.

# Pressure Switch

**Part Number**

600 30308

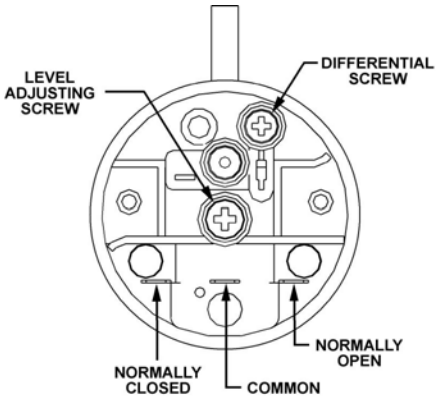
**Function**

Controls filling of wash tank and protects wash elements.

**Description**

The pressure switch is attached to the pressure bell. As the water level in the wash tank rises air is trapped in the bell and increasing pressure is transmitted to the pressure switch. When the tank is full the pressure switch shuts off the fill solenoid valve and switches on the wash element. It allows a water level differential so that the tank level may drop with the operation of the wash pump, without causing refilling of the machine.

**Diagram**




LEVEL ADJUSTING SCREW
CW rotation increases upper level setting

DIFFERENTIAL SCREW
CW rotation increases differential and reduces lower level settings

**Adjustment**

Before making any adjustments drain wash tank, remove pressure tube from pressure bell, blow gently into tube to check switching of pressure switch and then fit tube back.

Turn the power switch on, machine should start to fill. The machine should cease filling when the water attains a level about 10mm below an overflow level of the upstand. Adjust fill level if necessary by Level adjusting screw on the pressure switch.

Remove drain upstand to begin draining the wash tank. Fit back the upstand when Wash Ready light goes off and measure the refill water level. A refill level should be set 10-20mm above the wash element. Adjust if necessary by Differential screw on the pressure switch. Close door to refill the wash tank and re-check the fill level.

**Replacement**

To remove the switch take note of the electrical connections and remove the wires. Slide the switch from the mounting bracket and remove the rubber tube from the switch connector. Replace in reverse order. Whilst in the process of replacing the pressure switch, ensure that the pressure tube is in good order and clear of obstruction.

**!**

**IMPORTANT**
Ensure the tube from the air bell always goes up to the pressure switch.
Do not use thin wall vacuum tube for replacement.

# Wash Pump

**Part Number**

600 30299

**Function**

Pumps water from the wash tank to the wash arms providing a recirculating wash cycle.

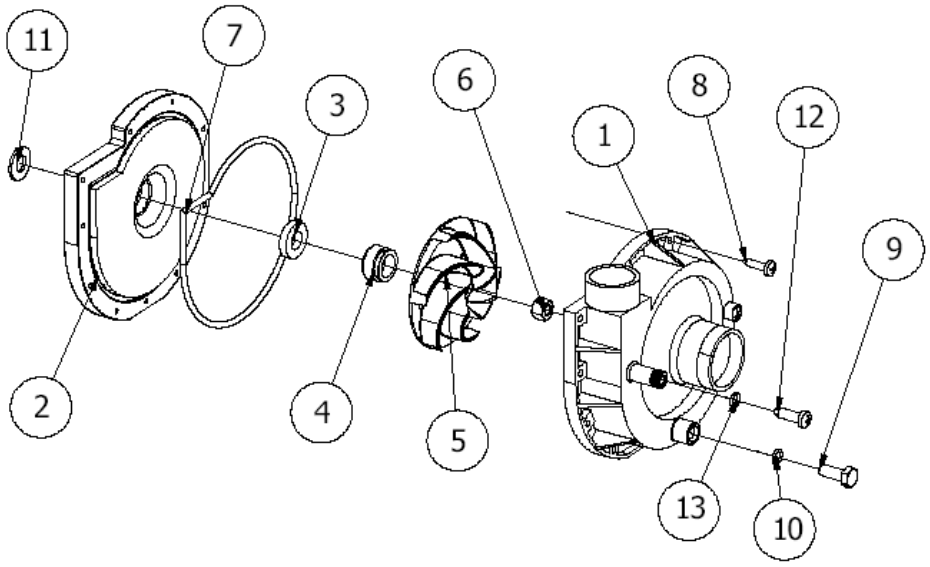
**Description**

Electric Pump ZF 320V SX

| | | | |
|---|---|---|---|
| Power: | HP 0.93 Kw 0.68 | Speed | 2800 rpm |
| Voltage: | 230 V 50Hz | Protection: | IP 20 |
| Amperes: | 3.0 A | Hm Min: | 1.0 m |
| Capacitor: | 12.5 uF | Hm Max: | 12.3 m |

**Diagram**

Hydraulic parts




| ITEM | DESCRIPTION | PART # | ITEM | DESCRIPTION | PART # |
|---|---|---|---|---|---|
| 1 | Volute | 600 41116 | 7 | O-ring | 600 41113 |
| 2 | Pump flange | 600 41117 | 8 | Screw | - |
| 3 | Fixed seal | 600 41110 | 9 | Plug screw | - |
| 4 | Rotating seal | 600 41111 | 10 | O-ring plug | - |
| 5 | Impeller | 600 41115 | 12 | Screw hose connector | - |
| 6 | Nut | 600 41112 | 13 | O-ring hose connector | - |

**Replacement**

Drain the wash tank and switch off the power.
Disconnect the wires from the pump connectors and the pump capacitor. .
Release the hose clamps on the inlet and outlet pump hoses and remove the pump.
Replace in reverse order.

# Detergent Pump

## Part Number

600 30094

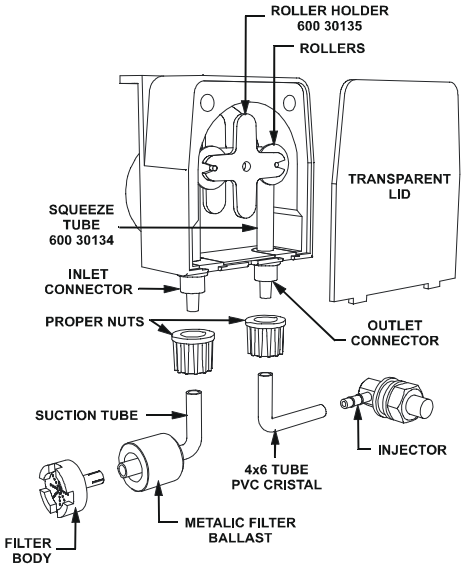
## Function

When fitted the pump automatically injects detergent into wash tank during filling of the machine and at the start of each wash cycle.

## Description

Peristaltic pump with flow rate of 0.33 ml per second, 230 V / 50 Hz.

## Replacement




Peristaltic pumps provide reliable and accurate detergent dosing. However over time the squeeze tube in the pump will flatten and become ineffective, and/or split and leak. We therefore recommend quarterly inspection of the squeeze tube and replacement every six months in high use situations, particularly when chlorinated detergents are used.

**To replace squeeze tube** – wear safety glasses and gloves, switch machine off, remove the transparent lid, ease the squeeze tube off rollers and replace the new one.

**CAUTION – caustic based detergents are hazardous.**

**To replace complete pump** – disassemble the pump after unscrew the two screws on the support bracket; assemble the new pump in reverse order. To prime pump on electromechanical machines, press and hold detergent prime switch - either on top control panel or behind front cover. On electronic machines, drain and refill the machine - detergent will come up to full strength after several cycles.

## Adjustment

Standard machine controls operate the detergent pump continuously during filling of the wash tank. The concentration during fill is equal to the detergent dosed (ml/min) / the water filling rate (L/min).
The detergent pump is also set to operate during the wash cycle. Factory timer settings in seconds of pump operation per wash are as follows:

| Model(s) | GM, XG | GL, GLV, UD, UE, M1, M2 | AL, AL8, PW1, TW | PW2, PW3 |
|---|---|---|---|---|
| **Dosing Time** | 10 sec | 15 sec | 20 sec | 30 sec |

If the recommended concentration of your detergent differs from 2ml/L then the dosing time should be adjusted – refer to instructions on the Timer page for electromechanical machines or Electronic Controller pages for electronic machines.

Dosing Time Equation: **T = 3V x C**, where **T** = Dosing time (sec),

**V** = Water used per cycle (L), **C** = Detergent concentration (ml/L).

On glasswashers where cold final rinse is used longer injection times are required to compensate for the dilution of wash water by the cold rinse.

# Rinse Aid Injector

**Part Number**

600 30324

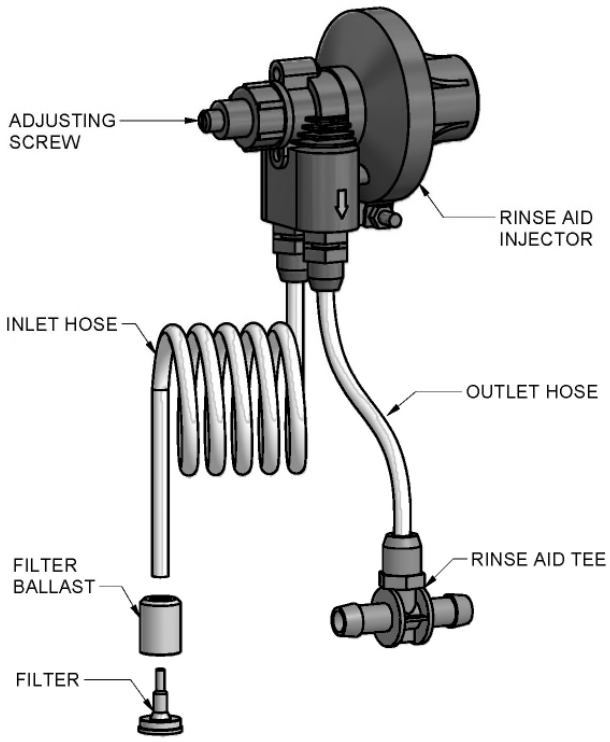
**Function**

Adjustable flow rate hydraulic rinse pump for rinse-aid chemical dosing.

**Description**

The rinse aid injector with adjustable flow rates from 0 to 3 ml per pulse. The injector works by using the water pressure in the rinse line. The pressure in the input line causes the suction of a determined amount of chemical for each cycle. At the beginning of the cycle a spring injects the chemical in the rinse pipeline.

**Diagram**




**Adjustment**

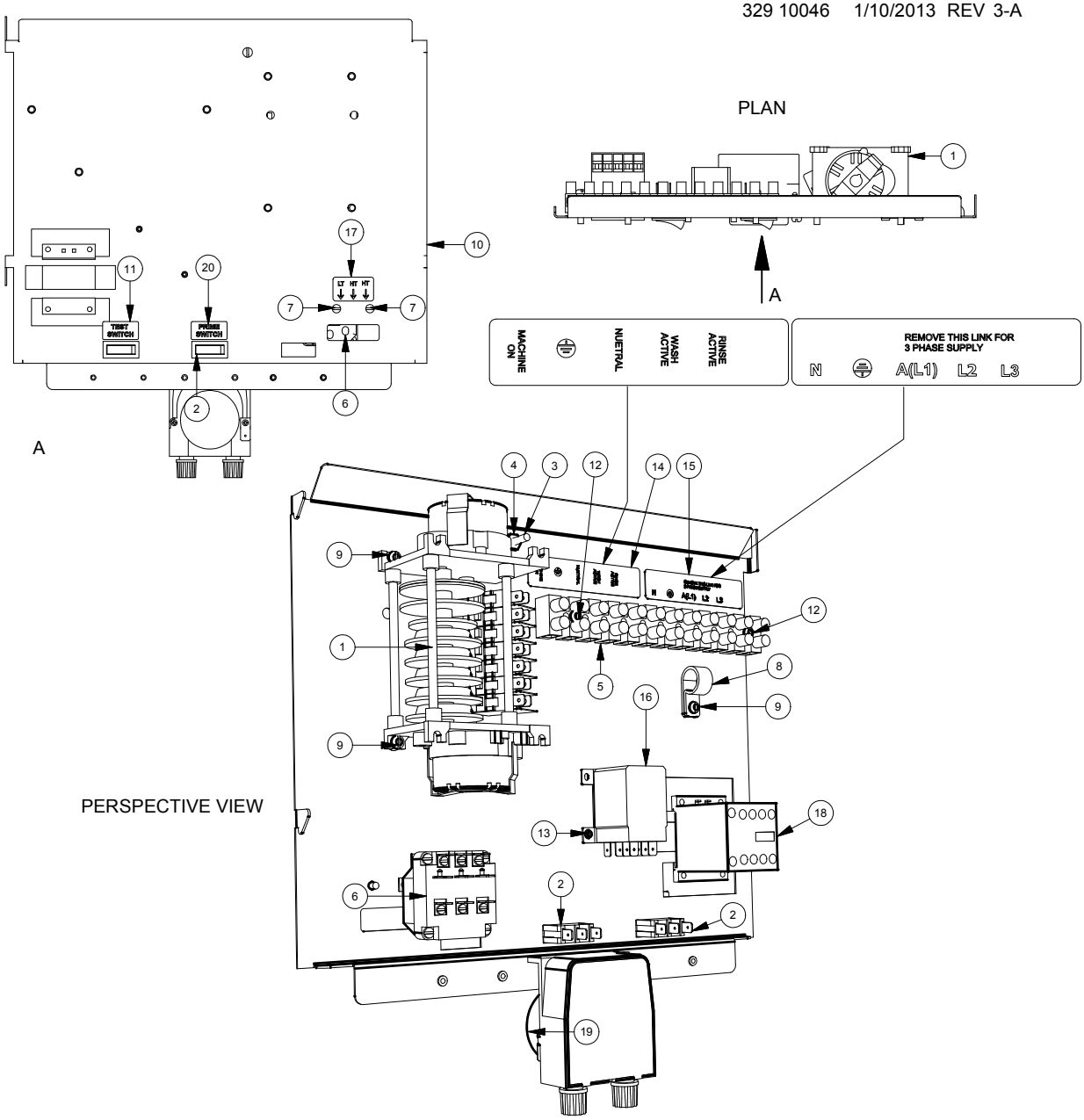
Turning the adjusting screw out increases the flow of rinse fluid injected per cycle by about 0.25 ml. The factory setting is 5 turns out from fully closed - about 0.8 ml, which equates to about 0.4 ml / litre on a glasswasher using 2 litres per cycle.

The volume of rinse fluid required will depend on factors such as product type, water hardness and whether glasses or dishes are being washed, but about 0.5 ml per litre of water is typical. Excessive use can cause de-fizzing of carbonated drinks, streaky or greasy washware and/or foaming of wash water. If in doubt - reduce injection quantities.

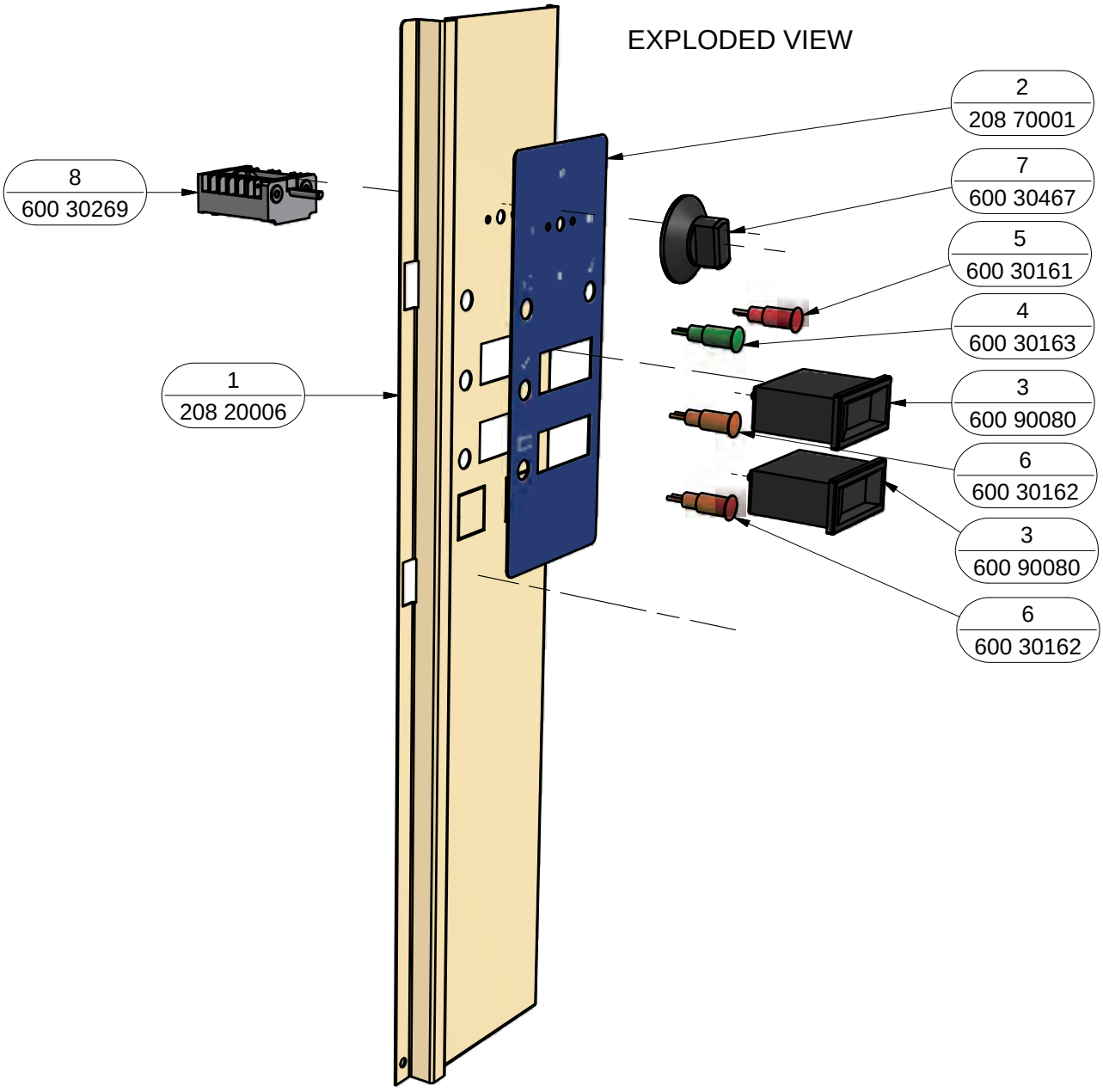
# Assembly Diagrams

## XP WIRING TRAY ASSY

329 10046 1/10/2013 REV 3-A

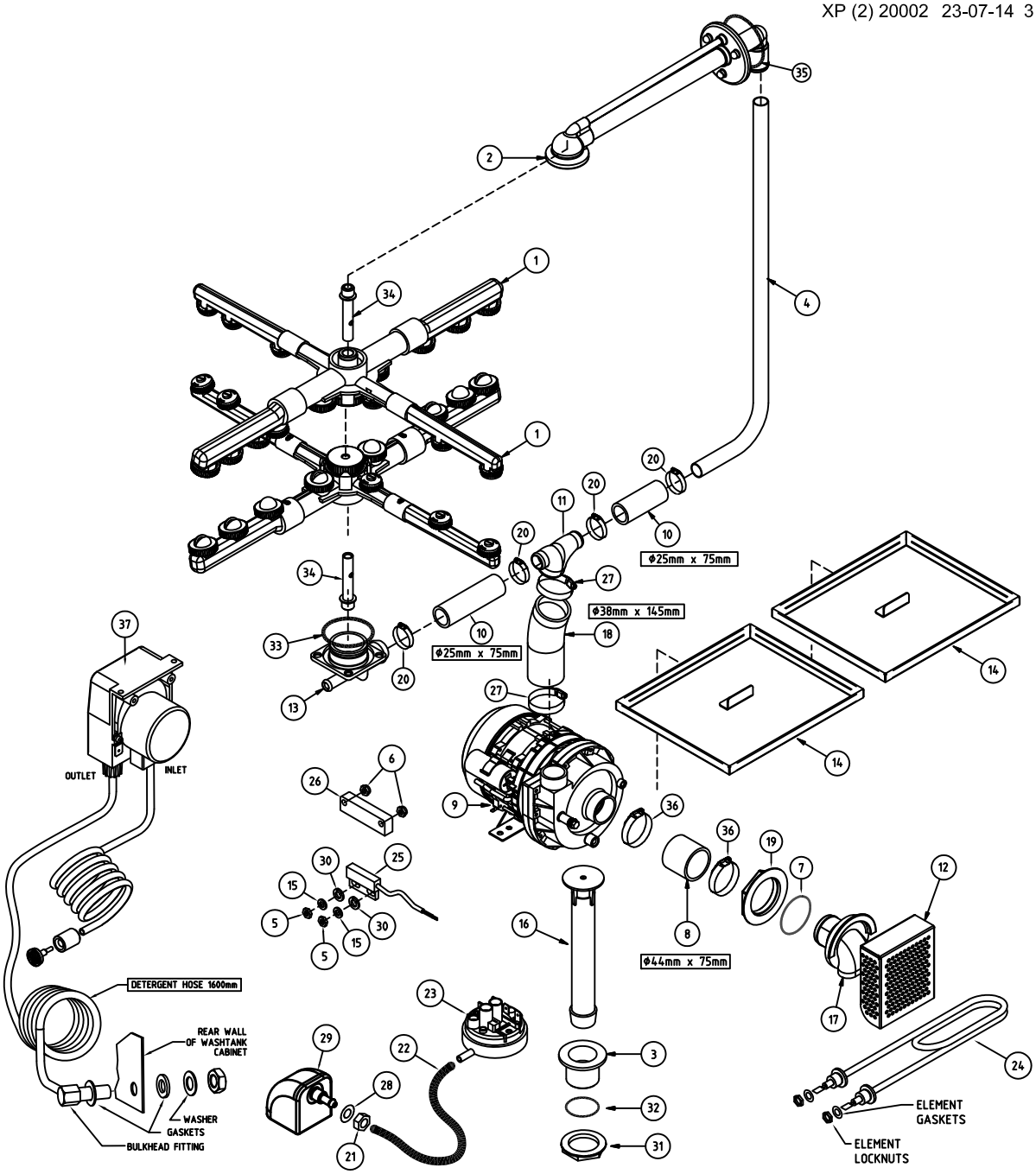



| Parts List | | | | Parts List | | | |
|---|---|---|---|---|---|---|---|
| ITEM | PART NUMBER | DESCRIPTION | QTY | ITEM | PART NUMBER | DESCRIPTION | QTY |
| 1 | 32822 | TIMER4907DV(180/6 SEC)3 CYCLE | 1 | 11 | REF | LABEL TEST SWITCH | 1 |
| 2 | 3035 | SWITCH SINGLE POLE BIASED BLACK | 2 | 12 | 8802 | MS PAN POZI ZP M4x25 | 2 |
| 3 | 8816 | MS RH BRASS 3/16 X 3/4 | 1 | 13 | 600 80052 | MS RH ZP M3x6 | 2 |
| 4 | 8151 | NUT HX BRASS 3/16" PRESSED | 1 | 14 | REF | CHEMICAL CONNECTIONS LABEL | 1 |
| 5 | 3229 | TERMINAL STRIP 12 WAY | 1 | 15 | REF | POWER CONNECTIONS LABEL | 1 |
| 6 | 3020 | 3 POLE THERMOSTAT | 1 | 16 | 600 30223 | JQX-12F POWER RELAY | 1 |
| 7 | 8800 | MS PAN POZI ZP M4x6 | 2 | 17 | Label | LABEL THERMOSTAT ADJUSTMENTS | 1 |
| 8 | 600 30131 | P CLIP 20.8mm | 1 | 18 | 600 30337 | CONTACTOR 20A 3NO/NC 230-240V | 1 |
| 9 | 8801 | MS PAN POZI ZP M4x12 | 5 | 19 | 600 30094-2 | PERI PUMP 1.5L/H SEKO-KIT | 1 |
| 10 | 326 10216 | M2 (3) WIRING TRAY SUB ASSEMBLY | 1 | 20 | REF | LABEL PRIME SWITCH | 1 |




| Parts List | | | |
|---|---|---|---|
| ITEM | PART NUMBER | DESCRIPTION | QTY |
| 1 | 208 20006 | XP (3) CONTROL PANEL | 1 |
| 2 | 208 70001 | XP CONTROL LABEL | 1 |
| 3 | 600 90080 | TEMP GAUGE RECTANGULAR 58x25 | 2 |
| 4 | 600 30163 | LENS & NEON ASSY (GREEN) 12mm | 1 |
| 5 | 600 30161 | LENS & NEON ASSY (RED) 12mm | 1 |
| 6 | 600 30162 | LENS & NEON ASSY (AMBER) 12mm | 2 |
| 7 | 600 30467 | KNOB SELECTOR SWITCH | 1 |
| 8 | 600 30269 | SWITCH 4 WAY QUICK CONNECT | 1 |

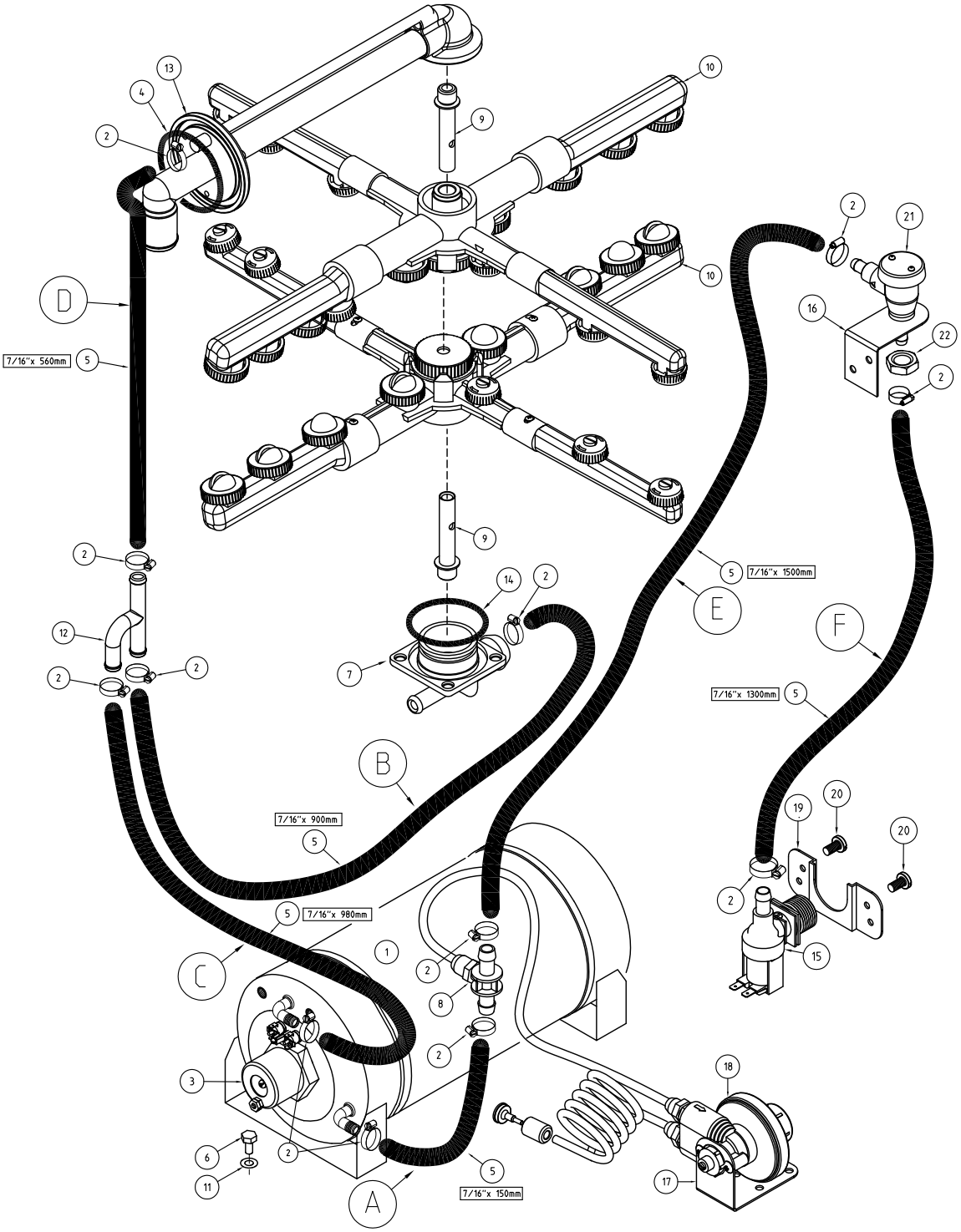
XP (2) 20002 23-07-14 3B




| ITEM | CODE | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 600 41148 | WASH/RINSE ARM | 2 |
| 2 | 326 10040 | M2(3) UPPER MANIFOLD ASSY | 1 |
| 3 | 400 30042 | WASTE DRAIN PLASTIC 40mm PLASTIC | 1 |
| 4 | 326 30020 | M2 UPPER WASH MANIFOLD | 1 |
| 5 | 8112 | NUT HEX SS 304 M4 | 2 |
| 6 | 600 80079 | NYLOC NUT M4 304 | 2 |
| 7 | ARP331 | O-RING ARP331 | 1 |
| 8 | 6194 | HOSE ϕ44mm 2 PLY RADIATOR HOSE | 1 |
| 9 | 600 30299 | PUMP WASH 1HP ZF 320V SX | 1 |
| 10 | 6196 | HOSE 25mm 2 PLY RADIATOR | 2 |
| 11 | 400 90069 | TEE 25/38MM REDUCER | 1 |
| 12 | 326 20010 | M2(3) WASH INLET FILTER | 1 |
| 13 | 400 90078 | WASH TEE CASTING | 1 |
| 14 | 327 15001 | XP (2) FILTER ASSEMBLY | 2 |
| 15 | 8567 | WASHER SPRING SS 304 MS | 2 |
| 16 | 400 10144 | 277mm LONG UPSTAND 'K' | 1 |
| 17 | 400 90114 | M2 WASH PUMP INLET | 1 |
| 18 | 6195 | HOSE 38mm 2 PLY RADIATOR | 1 |
| 19 | 400 90115 | 1 3/4" S/S BACKNUT | 1 |

| ITEM | CODE | DESCRIPTION | QTY |
|---|---|---|---|
| 20 | ASS16 | HOSECLIP ASS16 | 4 |
| 21 | 600 80009 | NUT SS 304 HEX M10 | 1 |
| 22 | 3067 | HOSE PRESSURE SW VACUUM 4mm | 1 |
| 23 | 600 30308 | PRESSURE SWITCH METAFLEX 140/60mm | 1 |
| 24 | 600 30159 | ELEMENT WASH 2.5KW STRAIGHT | 1 |
| 25 | 600 30183 | REED SWITCH STEM | 1 |
| 26 | 600 30182 | MAGNETIC UNIT | 1 |
| 27 | ASS24 | ASS24 HOSE CLIP | 2 |
| 28 | ARP205 | O RING 205 | 1 |
| 29 | 400 90135 | SQUARE PRESSURE BELL CASTING | 1 |
| 30 | 600 80081 | M4 WASHER 304 | 2 |
| 31 | 6037 | BACKNUT 126x40mm | 1 |
| 32 | 1896 | DRAIN WASTE GASKET | 1 |
| 33 | ARP333 | O-RING | 1 |
| 34 | 400 30223 | WASH & RINSE SPINDLE | 2 |
| 35 | ARP336 | O-RING ARP336 | 1 |
| 36 | ASS28 | ASS28 HOSECLIP | 2 |
| 37 | 600 30094 | PERI PUMP 1.5L/H SEKO-KIT | 1 |

XP-S 20001 29-07-14 3 A

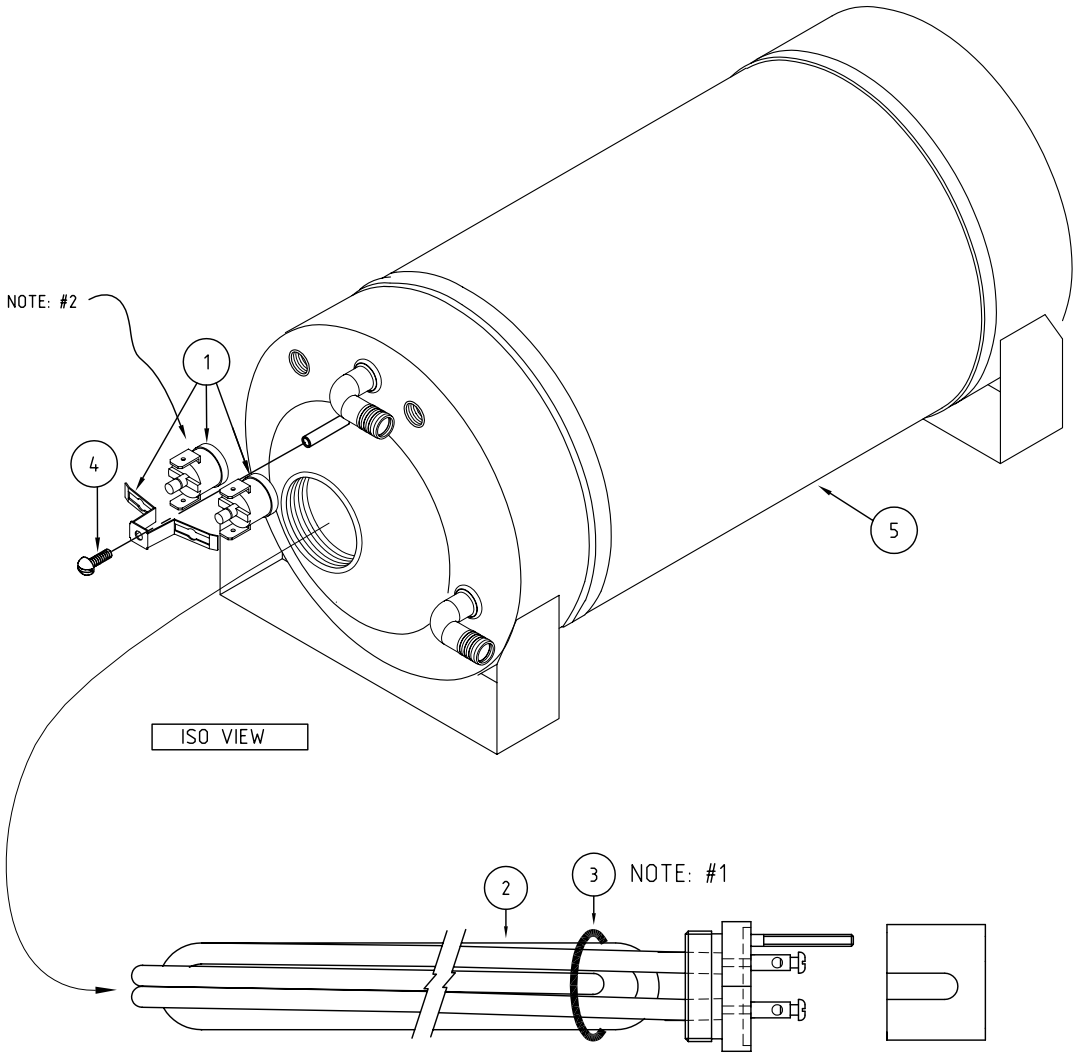



| ITEM | CODE | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 400 10117 | RINSE TANK ASSY 5kW 2 THERMOSTATS | 1 |
| 2 | ASS6 | HOSECLIP ASS6 | 10 |
| 3 | 3005 | 5KW RINSE ELEMENT | 1 |
| 4 | ARP336 | O-RING | 1 |
| 5 | 600 60073 | HOTOTAL HOSE 11mm X 19mm | 2.8m |
| 6 | 88461 | MS HX SS 304 M6 X 12 | 1 |
| 7 | 400 90078 | WASH TEE CASTING | 1 |
| 8 | 600 30324 | RINSE AID KIT | 1 |
| 9 | 400 30223 | WASH & RINSE SPINDLE | 2 |
| 10 | 600 41148 | WASH/RINSE ARM | 2 |
| 11 | 8566 | WASHER SPRING SS 304 M6 | 1 |
| 12 | 600 60230 | SS RINSE TEE | 1 |

| ITEM | CODE | DESCRIPTION | QTY |
|---|---|---|---|
| 13 | 326 10040 | M2(3) UPPER MANIFOLD ASSY | 1 |
| 14 | ARP333 | O-RING | 1 |
| 15 | 3342 | SOLENOID VALVE GL 1 WAY 90° | 1 |
| 16 | 400 20113 | AVB MOUNTING BRKT | 1 |
| 17 | 400 20176 | RINSE AID INJECTOR BRACKET | 1 |
| 18 | 600 30324 | RINSE AID INJECTOR | 1 |
| 19 | 1247 | INLET SOLENOID SUPPORT | 1 |
| 20 | 8800 | MS PAN POZI ZP M4 X 6 | 2 |
| 21 | 400 10125 | VACUUM BREAKER ASSY | 1 |
| 22 | 1955 | NUT BULKHEAD 1/2" | 1 |

# 5 KW ASSY R/TANK 1/2" 2 THERMOSTATS

400 10117 11-11-05 1A

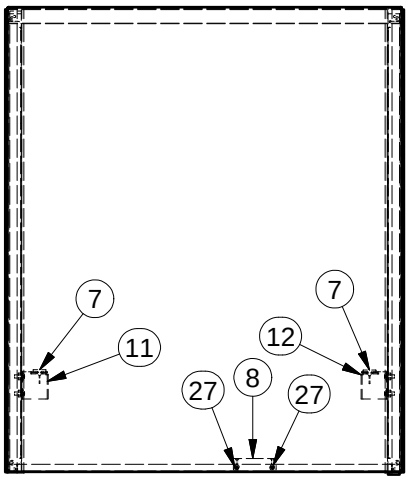



| ITEM | CODE | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 600 30088 | THERMOSTAT TY60/R-95C [with E brkt] | 2 |
| 2 | 3005 | ELEMENT 5kW RINSE | 1 |
| 3 | 3006 | GASKET ELEMENT 54.0:1.6mm | 1 |
| 4 | 600 80052 | MS PAN SLOT ZP M3X6. | 1 |
| 5 | 400 10114 | RINSE TANK NEW SUB ASSY 1/2" | 1 |

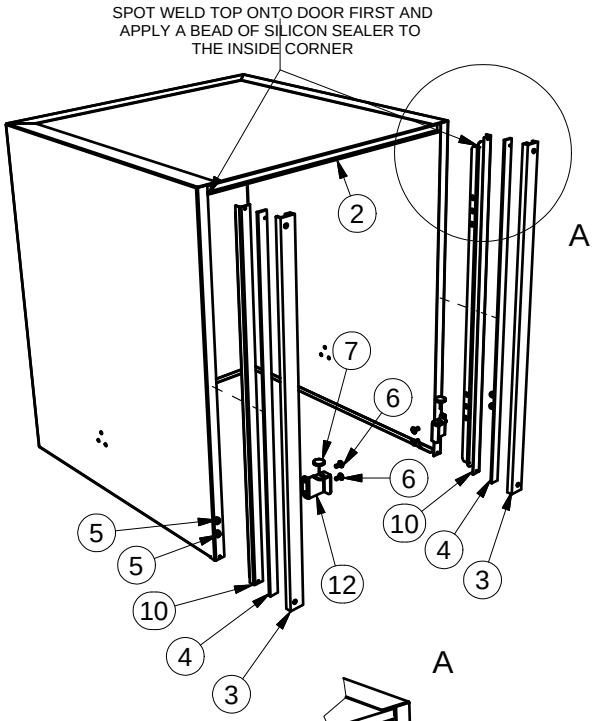
NOTE: 1. USE GRAPHITE JOINING COMPOUND ON BOTH SIDES OF GASKET BEFORE INSERTING ONTO ELEMENT.

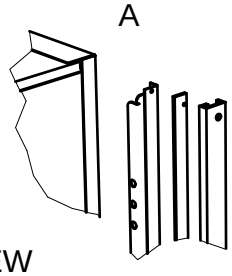
NOTE: 2. USE HEAT TRANSFER COMPOUND UNDER THERMOSTAT HEAD.

FRONT VIEW



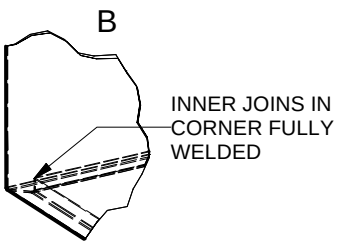

EXPLODED PERSPECTIVE VIEW

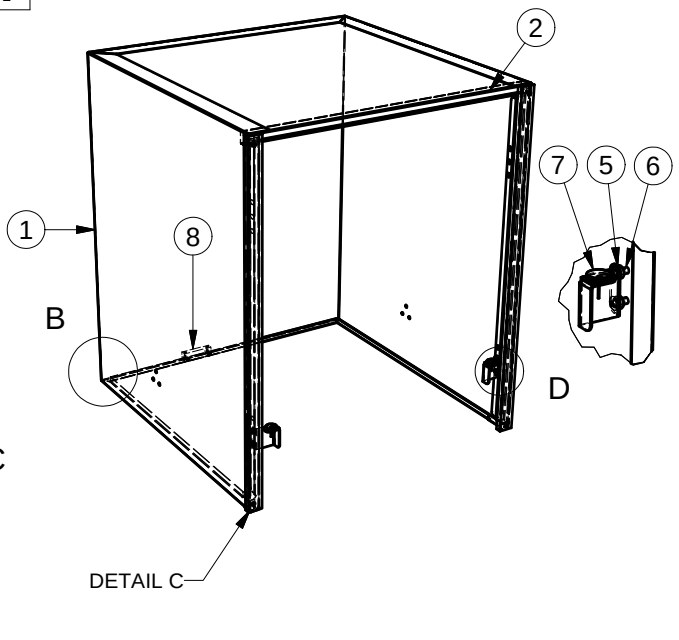


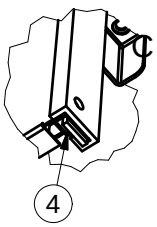




| Parts List | | | |
|---|---|---|---|
| ITEM | PART NU | DESCRIPTION | QTY |
| 1 | 326 20025 | M2 (3) DOOR | 1 |
| 2 | 326 20024 | M2(3) DOOR UPPER INFILL | 1 |
| 3 | 326 30004 | M2 DOOR SLIDE | 2 |
| 4 | 326 20007 | M2(3) DOOR STRIP SPACER | 2 |
| 5 | 600 80016 | HANK BUSH 304 SS M5 | 4 |
| 6 | 600 80017 | M5 x 12 SS TRUSS HEAD SCREW | 4 |
| 7 | 1825 | ANTI RATTLE BUTTON | 2 |
| 8 | 600 30182 | MAGNET | 1 |
| 10 | 351 20074 | AL(3) DOOR BACK RAIL SUPPORT | 2 |
| 11 | 301 20009 | M1(3) DOOR STOP BRACKET (LH) | 1 |
| 12 | 301 20035 | M1(3) DOOR STOP (RH) | 1 |
| 27 | 600 80059 | SCREW 6g 12mm T304 SS SELF TAP | 2 |

PERSPECTIVE VIEW

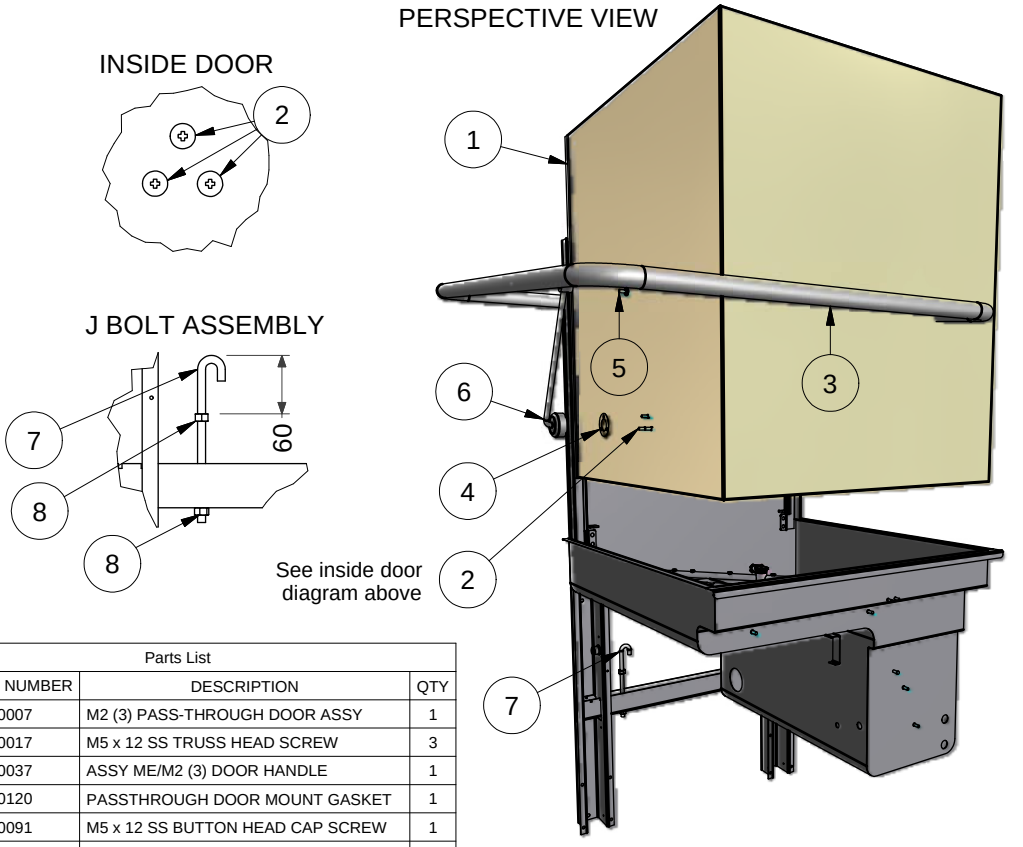


# M2-3\XP DOOR LINK & J BOLT ASSY

326 10010 4/03/2011 REV 3-D




| Parts List | | | |
|---|---|---|---|
| ITEM | PART NUMBER | DESCRIPTION | QTY |
| 1 | 326 10007 | M2 (3) PASS-THROUGH DOOR ASSY | 1 |
| 2 | 600 80017 | M5 x 12 SS TRUSS HEAD SCREW | 3 |
| 3 | 326 10037 | ASSY ME/M2 (3) DOOR HANDLE | 1 |
| 4 | 400 90120 | PASSTHROUGH DOOR MOUNT GASKET | 1 |
| 5 | 600 80091 | M5 x 12 SS BUTTON HEAD CAP SCREW | 1 |
| 6 | 326 10016 | M2(3) DOOR STAY ASSY | 1 |
| 7 | 8899 | M8 x170 J BOLT | 2 |
| 8 | 8119 | NUT HX ZP M8 | 2 |

NOTE: APPLY LOCTITE GRADE 243 TO ALL FASTENERS BEFORE ASSEMBLY

## INSTRUCTIONS FOR DOOR SPRING REPLACEMENT

Hazard Warning - service work to be carried out only by qualified persons. Ensure machine is isolated from Electrical Supply.

When replacing a broken door spring it is advisable that if possible the machine is disconnected from the services and moved out so work can be carried out from the back of the machine.

Begin with the door in the down position and remove Item 5 M5 x 12 SS BUTTON HEAD CAPSCREW from the handle at both sides of the door. Whilst holding the door handle down, remove item 6 M2(3) DOOR STAY ASSY from the door handle at both sides of the door and then allow the door handle to rise to a vertical position.

NOTE:- IT IS IMPORTANT THAT THE DOOR HANDLE IS HELD DOWN WHEN CARRYING OUT THE ABOVE STEPS AS RELEASING IT TOO SOON MAY CAUSE IT TO SWING UPWARDS IN AN UNCONTROLLED MANNER, CAUSING INJURY.

Move to the back of the machine and remove any parts of broken spring and check the J bolt and the spring hanger bracket for signs of wear. If the spring hanger brkt is badly worn please refer to Technical Bulletin TB 9011 for the fitting of retrofit spring hanger brackets.

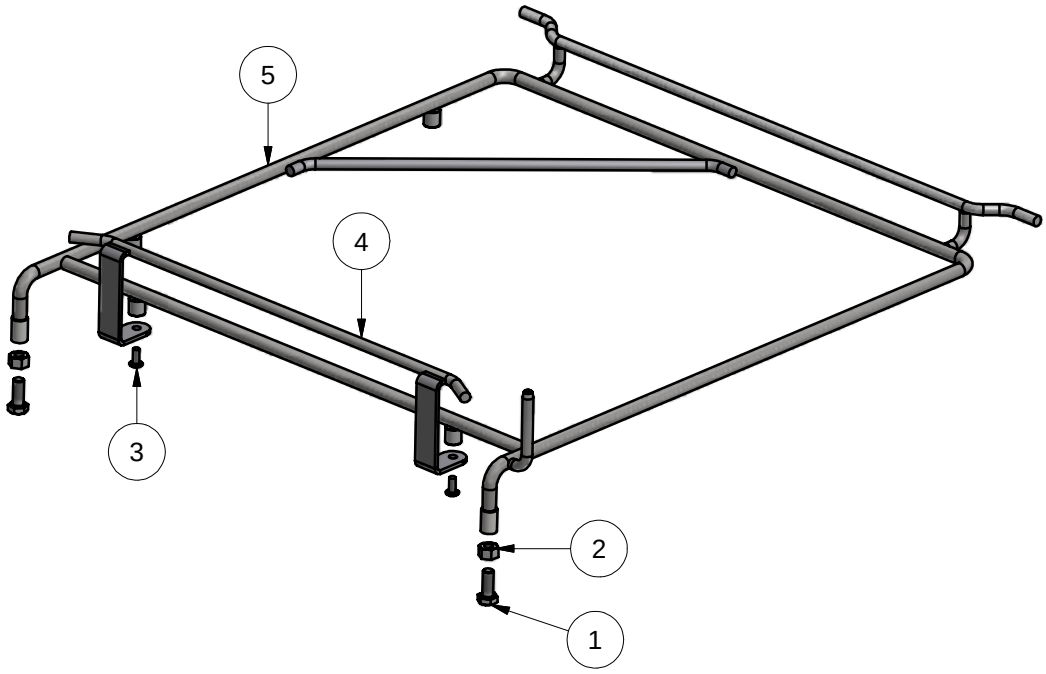
Hook the new spring in place on the J bolt and pull it up to hook onto the spring hanger brkt welded on the handle If this is not possible the lower nut holding the J bolt in place should be unscrewed until the spring can be attached and then the lower nut should be tightened up to its original position

Once the new spring is fitted the handle can be lowered so that the door stays can be refitted and the capscrews fitted and tightened up. The capscrews should have loctite or similar applied to them before fitting.

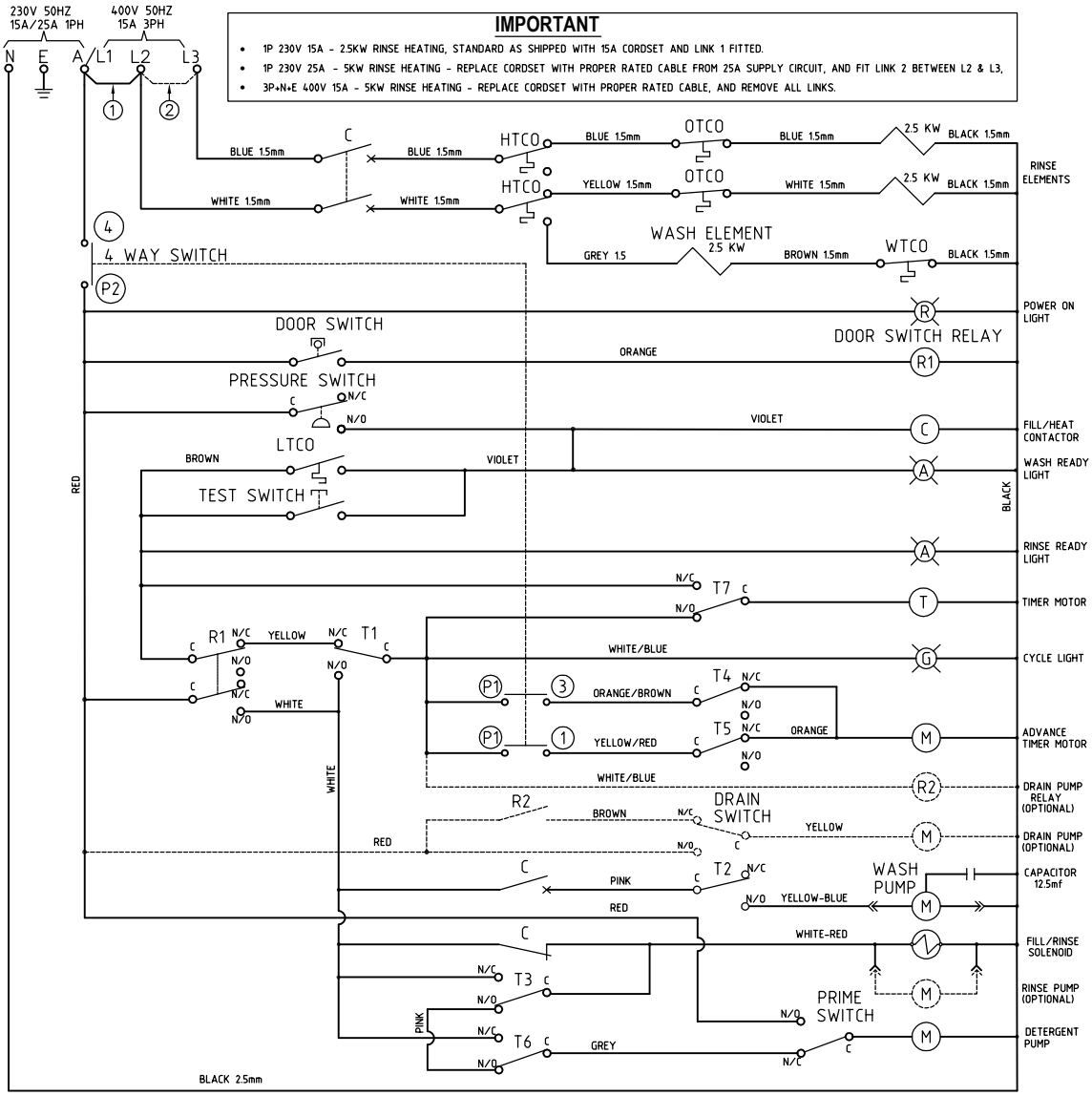
The door springs should be adjusted so that they hold the door against the door stops in the up position and the door does not lift by itself when in the down position.

If the machine cannot be moved out, the front panel must be removed and the lower nut on the J bolt accessed from the front of the machine It will be necessary to immobilise the J bolt using vice grips clamped onto it to prevent it turning when adjusting the lower nut. The upper nuts should not be moved if at all possible.

EXPLODED VIEW

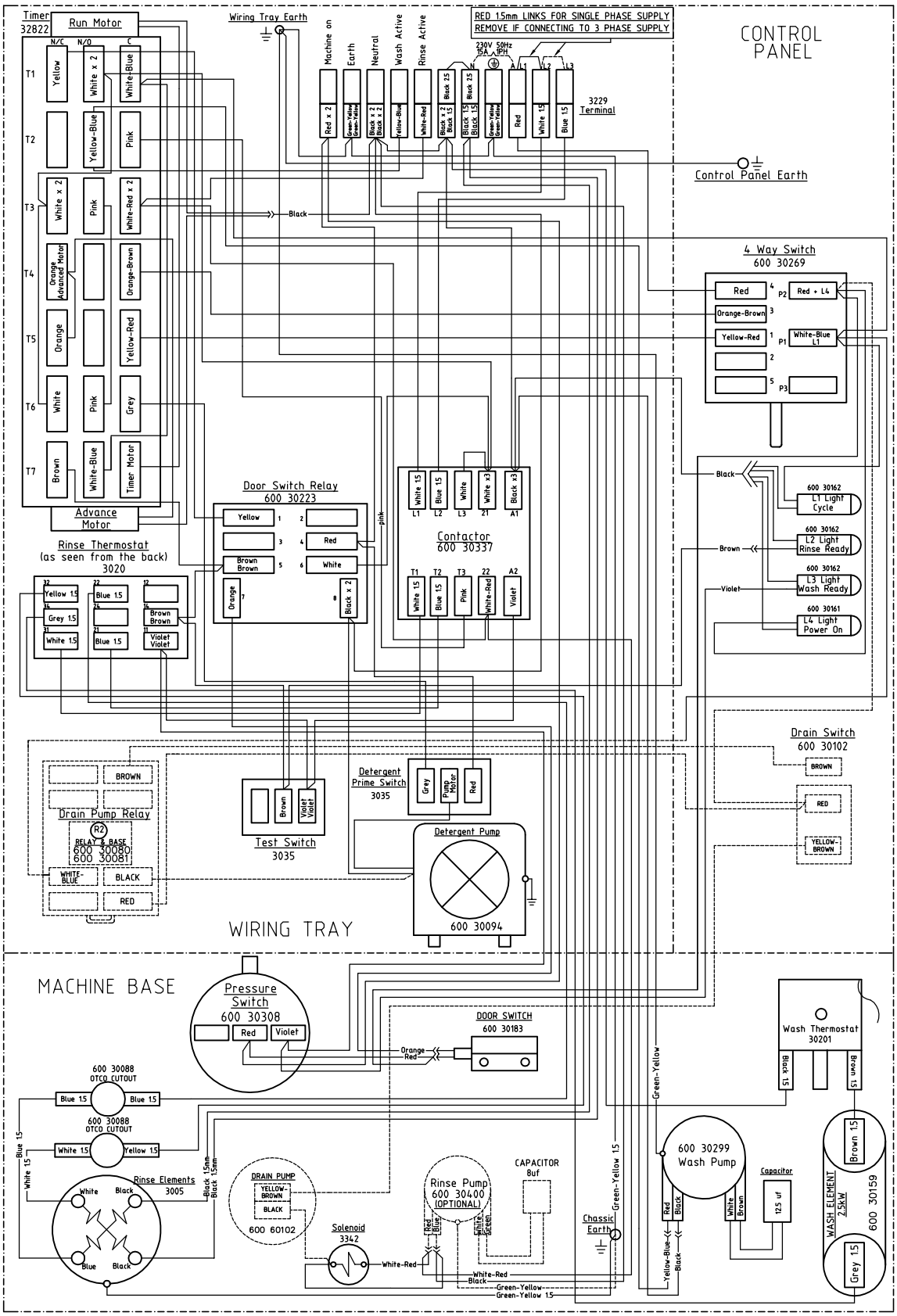



| Parts List | | | |
|---|---|---|---|
| ITEM | PART NUMBER | DESCRIPTION | QTY |
| 1 | 600 80030 | M8x20mm Hex-Head Bolt | 2 |
| 2 | 600 80063 | NUT NYLOC SS M8 | 2 |
| 3 | 600 80017 | M5 x 12 SS TRUSS HEAD SCREW | 2 |
| 4 | 328 10008 | M2 RACK GUIDE ROD ASSEMBLY | 1 |
| 5 | 329 10025 | XP RACKSLIDE SUB-ASSEMBLY | 1 |


IMPORTANT
• 1P 230V 15A - 2.5KW RINSE HEATING, STANDARD AS SHIPPED WITH 15A CORDSET AND LINK 1 FITTED.
• 1P 230V 25A - 5KW RINSE HEATING - REPLACE CORDSET WITH PROPER RATED CABLE FROM 25A SUPPLY CIRCUIT, AND FIT LINK 2 BETWEEN L2 & L3.
• 3P+N+E 400V 15A - 5KW RINSE HEATING - REPLACE CORDSET WITH PROPER RATED CABLE, AND REMOVE ALL LINKS.
230V 50HZ 15A/25A 1PH
400V 50HZ 15A 3PH
N E A L1 L2 L3
HTCO
OTCO
2.5 KW
RINSE ELEMENTS
WASH ELEMENT
WTCO
4 WAY SWITCH
DOOR SWITCH
DOOR SWITCH RELAY
POWER ON LIGHT
PRESSURE SWITCH
LTCO
TEST SWITCH
FILL/HEAT CONTACTOR
WASH READY LIGHT
RINSE READY LIGHT
TIMER MOTOR
CYCLE LIGHT
ADVANCE TIMER MOTOR
DRAIN PUMP RELAY (OPTIONAL)
DRAIN SWITCH
DRAIN PUMP (OPTIONAL)
WASH PUMP
CAPACITOR 12.5mf
FILL/RINSE SOLENOID
RINSE PUMP (OPTIONAL)
PRIME SWITCH
DETERGENT PUMP
BLACK 2.5mm
ADJUSTABLE CAM
PRESET CAM
*T1 IS CAM CLOSEST TO 180 SEC. TIMER MOTOR
DEGREES
TIMER
WASH 3
RINSE
WASH 1
WASH 2
DETERGENT
THERMOSTOP
TYPE: 4901DV 60,120,180 SEC, CODE 32822
TIME IN SECONDS

130206 3/06/14 1 A

Refers to XP-2(S) Schematic Diagram 090132



# Spare Parts XP(S)

| DESCRIPTION | PART NO | REC. STOCK |
|---|---|---|
| **Cabinet & Door** | | |
| Door Switch Magnet | 600 30182 | 1 |
| Spring Door 27 x 735 x 5 | 326 30019 | 1 |
| **Controls & Indicators** | | |
| Contactor | 600 30337 | 1 |
| Auxiliary Contact | 600 30339 | 1 |
| Door Reed Switch | 600 30183 | 1 |
| Door Switch Relay | 600 30223 | 1 |
| Knob Selector Switch | 600 30467 | |
| Power Light | 600 30161 | 1 |
| Pressure Switch | 600 30308 | 1 |
| Ready Light | 600 30162 | 1 |
| Run Light | 600 30163 | 1 |
| Switch 4 position | 600 30269 | 1 |
| Terminal Strip 12 Way | 3229 | |
| Test Switch | 3035 | |
| Timer | 32822 | 1 |
| Temperature Gauge | 600 90080 | 1 |
| **Heating Components** | | |
| Over Temperature Thermostat | 600 30088 | 1 |
| Rinse Element 5 KW | 3005 | 1 |
| Rinse Tank Assembly | 400 10117 | |
| Rinse Thermostat | 3020 | 1 |
| Wash Element 2.5 KW | 600 30159 | 1 |
| Wash Thermostat | 30201 | 1 |
| **Hoses & Fittings** | | |
| Lower Wash Connection Hose | 6196 | 100mm |
| Pressure Switch Hose | 3067 | 300mm |
| Rinse Hose | 600 60073 | 2000mm |
| Upper Wash Connection Hose | 6196 | 100mm |
| Upper Wash Manifold | 326 30020 | |
| Wash Pump Inlet Hose | 6194 | 100mm |
| Wash Pump Outlet Hose | 6195 | 150mm |

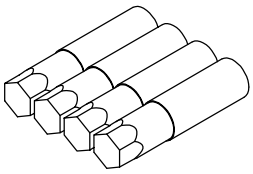
# Spare Parts XP(S)

| DESCRIPTION | PART NO | REC.STOCK |
|---|---|---|
| **Pumps & Solenoids** | | |
| Detergent Pump 1.5 L/H | 600 30094 | 1 |
| Detergent Pump Hose | 600 30148 | 1 |
| Detergent Squeeze Tube | 600 30134 | 1 |
| Rinse Aid Injector | 600 30324 | 1 |
| Solenoid Valve | 3342 | 1 |
| Wash Pump ZF 320V SX | 600 30299 | 1 |
| Wash Pump Capacitor 12.5 mF | 3892 | |
| **Wash Tank Components** | | |
| Drain Upstand | 400 10144 | 1 |
| Rinse Nozzle Closed Head | 600 40050 | 1 |
| Rinse Nozzle Opened Head | 600 40049 | 1 |
| Rinse Nozzle O-Ring (OR R6 NBR) | 600 40051 | 2 |
| Scrap Tray | 327 15001 | 1 |
| Wash Nozzle Opened head | 600 40015 | 1 |
| Wash Nozzle O-Ring (OR 2050 NBR) | 600 40048 | 1 |
| Wash Pump Filter | 326 20010 | 1 |
| Wash / Rinse Arm Assembly | 600 41148 | |
| Wash / Rinse Spindle | 400 30223 | |

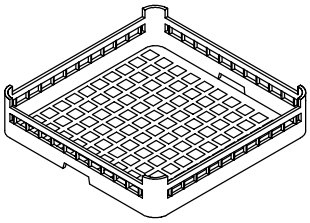
**Note:**
For more parts look in the section "Assembly Diagrams".

# Accessories

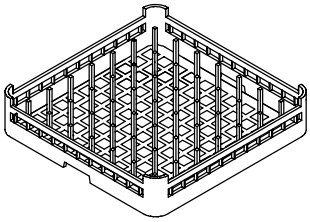




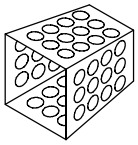
**600 90023**
**ASSY SL/M1/M2 LEG (INOX 50x240xM12)**



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



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

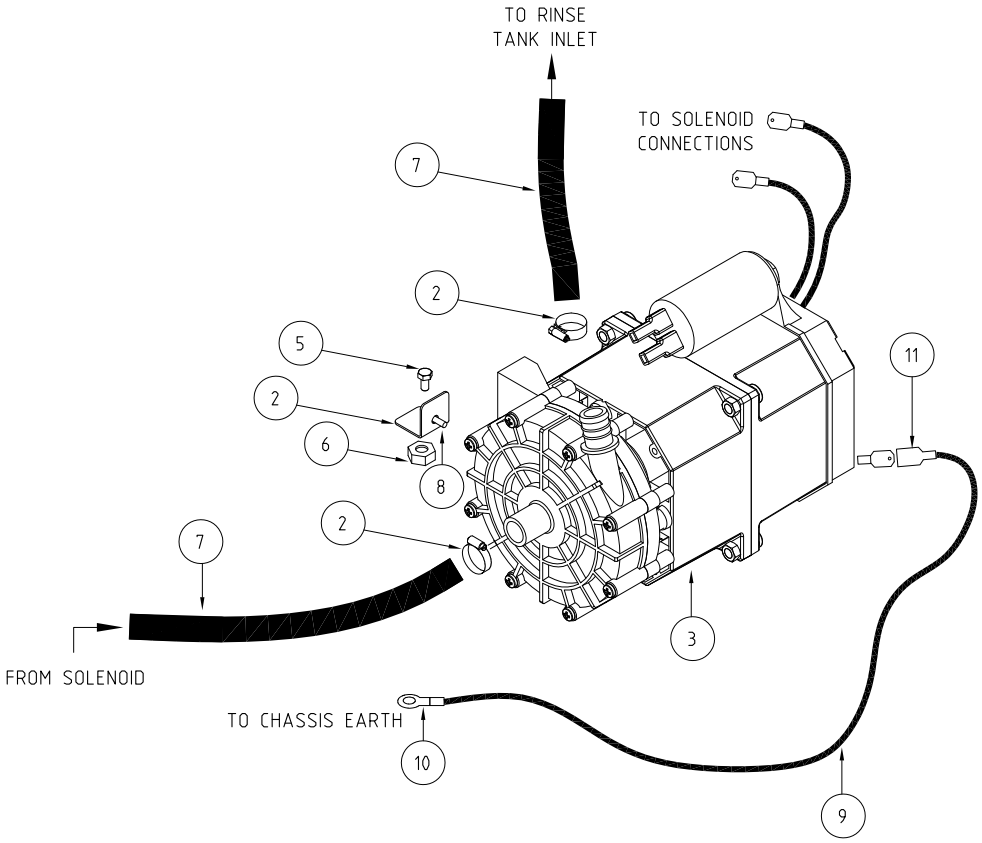


**C660503**
**CUTLERY CONTAINER G**

# Appendices

## RINSE PUMP KIT TYPE L - P/N 0440021

400 90142-1 31-05-10 1H

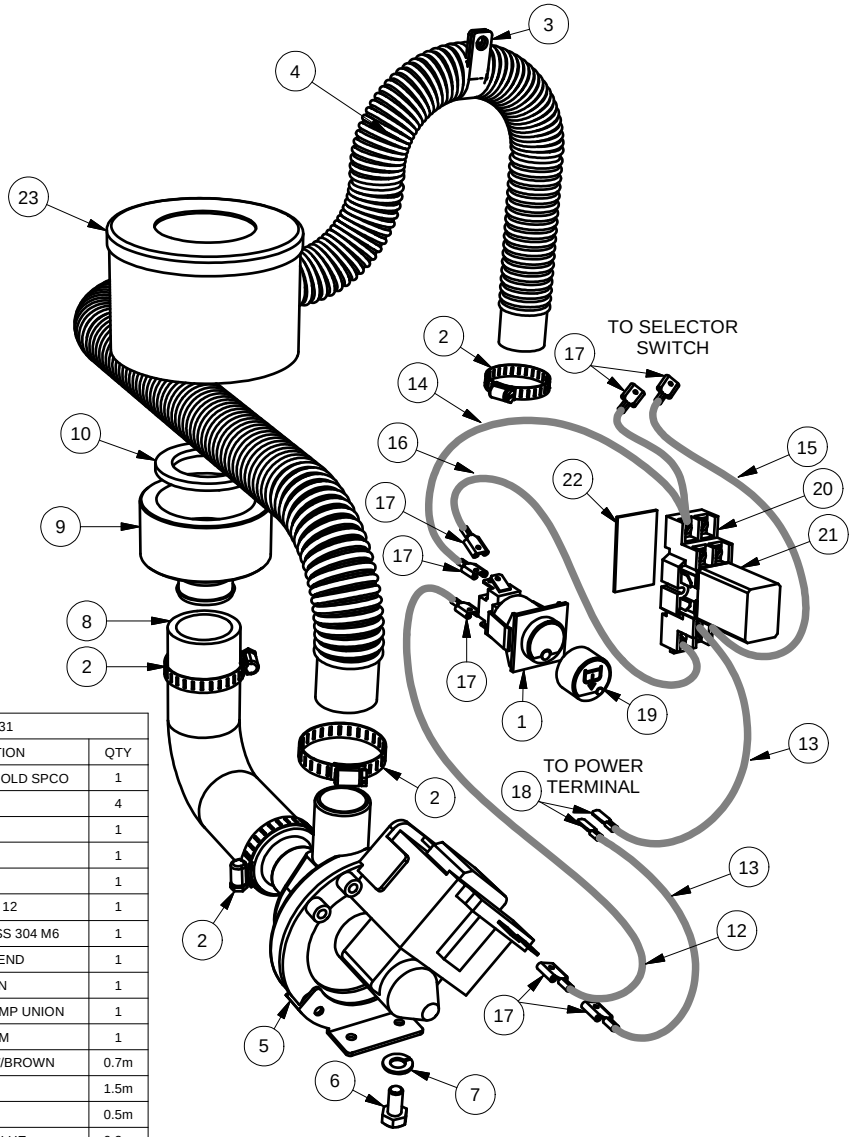



| PARTS LIST - LGB RINSE PUMP KIT 0440021 | | | |
|---|---|---|---|
| ITEM | CODE | DESCRIPTION | QTY |
| 1 | 273 20013 | BRACKET -RINSE PUMP | 2 |
| 2 | ASS06 | HOSE CLIP ASS6 | 2 |
| 3 | 600 30400 | 0.25 kW RINSE PUMP WITH CAPACITOR 5uf | 1 |
| 4 | H1909B | DOUBLE ADAPTOR | 2 |
| 5 | 88461 | BOLT M6 x 12 S/S HEX | 1 |
| 6 | 8106 | NUT M6 HEX SS | 1 |
| 7 | 600 60073 | HOSE HOTAL 11mm x 19mm | 0.7M |
| 8 | 8801 | MS PAN POZI ZP M4x12 | 1 |
| 9 | 600 30014 | WIRE 0.75mm GREEN/YELLOW | 0.5M |
| 10 | H4115 | RING TERMINAL RED | 1 |
| 11 | H3560 | TERMINAL SPADE RED | 1 |
| 12 | 400 90142 | RINSE PUMP KIT RETROFIT DIAGRAM | 1 |

1. Install rinse pump using the bracket and bolts provided
2. Remove hose from solenoid and reconnect it to rinse pump outlet using hose clamp provided
3. Connect hose #7 supplied in kit from pump inlet to solenoid using hose clamp provided
4. Earth pump on chasis earth stud with green\yellow wire provided in wiring loom.
5. Connect pump wiring according to electrical diagrams provided in service manual or schematic diagram, supplied with the machine.

# DRAIN PUMP KIT 0440031 - M2/AL/AL8/PW1/XP

400 90144 24/11/2010 REV 1-F




| DRAIN PUMP KIT 0440031 | | | |
|---|---|---|---|
| ITEM | PART NUMBER | DESCRIPTION | QTY |
| 1 | 600 30102 | SWITCH C/RINSE ROLD SPCO | 1 |
| 2 | ASS16 | HOSE CLAMP | 4 |
| 3 | 600 30173 | P CLIP | 1 |
| 4 | 600 60105 | HOSE DRAIN 2.5M | 1 |
| 5 | 600 60102 | DRAIN PUMP | 1 |
| 6 | 88461 | MS HX SS 304 M6 x 12 | 1 |
| 7 | 8566-1 | WASHER SPRING SS 304 M6 | 1 |
| 8 | 600 90074 | UD UHB25 HOSE BEND | 1 |
| 9 | 38823 | DRAIN PUMP UNION | 1 |
| 10 | 38824 | GASKET DRAIN PUMP UNION | 1 |
| 11 | 400 900144 | RETROFIT DIAGRAM | 1 |
| 12 | 600 30032 | WIRE 0.75 YELLOW/BROWN | 0.7m |
| 13 | 600 30016 | WIRE 0.75 BLACK | 1.5m |
| 14 | 600 30015 | WIRE 0.75 RED | 0.5m |
| 15 | 600 30033 | WIRE 0.75 WHITE/BLUE | 0.2m |
| 16 | 600 30023 | WIRE 0.75 BROWN | 0.2m |
| 17 | H3560 | TERMINAL RED SPADE | 7 |
| 18 | H4207 | TERMINAL RED FLAT | 2 |
| 19 | 600 30297 | BUTTON WITH DRAIN SYMBOL | 1 |
| 20 | 600 30081 | BASE 2 POLE RELAY | 1 |
| 21 | 600 30080 | RELAY 2 POLE (240VAC) | 1 |
| 22 | REF | 3M VHB TAPE | 40mm |
| 23 | 400 10021 | ASSY DRAIN PUMP FILTER | 1 |

1. Pre-assemble the drain pump with the flexible outlet hose #4, the inlet hose #8, the drain pump union #9. Secure the hoses with the supplied hose clamps #2.

2. Secure drain pump to base with M6 bolt #6 and the spring washer #7, provided in the kit.

3. Fit the drain union gasket #10 into the drain pump union #9. and screw the drain pump union #9 on to the drain waste of the machine.

4. Secure drain outlet hose above the water level using P clip #3 supplied in the kit.

5. Cut out the right side hole below the wash temperature gauge in the control panel label (if see from the front). and fit the drain switch #1. Fit the base and the relay #20 & 21 at the back of control panel using double-sided adhesive tape provided.

6. Wire the drain pump, the drain switch and the drain relay according to electrical diagrams, provided in service manual or schematic diagram, supplied with the machine.

# Revisions

### Manual Revisions

| REVISION STATUS | REVISION DATE | FROM SERIAL NO: | CHANGE DESCRIPTION |
|---|---|---|---|
| 1A | 22/07/14 | 137000 | |
| 1B | 01/10/14 | 138465 | new rack slide |

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