Manufactured in the United States by:

Jackson

INSTALLATION & OPERATION MANUAL

FOR ECOLAB MODELS:

WH-44

WH-44CS

WH-44CSS

WH-44S

WH-66

WH-66CS

WH-66CSS

WH-66S

AND ASSOCIATED OPTION PACKAGES INCLUDING:

SIDE LOADER

ECOLAB®

April 19, 2007
P/N 7610-002-03-36 (Revision G)

www.ecolab.com

REVISION	REVISION DATE	MADE BY	APPLICABLE ECN	DETAILS
E	09-22-05	MAW	7336, 6685, 7096, 6999, 6964, 7006	Made changes per Ecolab requests. Changed to new format. Removed emboss from doors & control box cover. Add extra table limit switches. Change Limit switch actuators. Change thermostat bracket and thermostats from 05930-121-71-36 to 05930-011-49-43. Added Auto Fill Plumbing Option.
F	02-08-06	MAW	7616, 7558	Updated schematic 09905-002-10-47. Replaced rinse drain weldment 05700-021-68-28 with 05700-002-51-12.
G	04-18-06	MAW	7462, 7367 7571, 7463 7741, 7732 7743, 7769 7746	Added decals for wash, rinse and psi. Added new prewash door weldments. Changed door assemblies. Replace thermostat 05930-121-67-72 with 05930-510-02-79. Added rinse fill motor assembly. Added WH-44 extended pawl bar assembly option. Added Drive Tie Kit. Updated WH-44 control box drawings. Added plumbing assembly number.
	08-11-06	MAW	N/A	Updated the exhaust fan schematic.
	12-01-06	MAW	7875	Replaced 05940-021-89-41 terminal board with 05940-003-30-40 rinse terminal board.
PG. 99, 100	04-19-2007	MAW	7898	Added 09905-003-32-20 fan load decal.

NOMENCLATURE FOR THE MODELS COVERED IN THIS MANUAL

WH-44CSS

WH = WH Series of rack conveyors

44 = 44” wide machine from tub edge to tub edge
66 = 66” wide machine from tub edge to tub edge

No Suffix = Electrically-heated, hot water sanitizing dishmachine
CS = Electrically-heated, chemical sanitizing dishmachine
CSS = Steam-heated, chemical sanitizing dishmachine
S = Steam-heated, hot water sanitizing dishmachine

Model:_____

Serial No.:_____

Installation Date:_____

Service Rep. Name:_____

Phone No.:_____

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SPECIFICATION INFORMATION

SECTION 1: SPECIFICATION INFORMATION

WH-44 MODELS OPERATING SPECIFICATIONS

PERFORMANCE:

RACKS PER HOUR:

WH-44	215
WH-44CS	215
WH-44CSS	215
WH-44S	215

DISHES/GLASSES PER HOUR:

WH-44	5375
WH-44CS	5375
WH-44CSS	5375
WH-44S	5375

CAPACITIES:

WASH TANK (GALLONS)	15.4
WASH PUMP (GPM)	270

VENTING REQUIREMENTS:

INPUT END (CFM)	200
OUTPUT END (CFM)	400
TOTAL (CFM)	600

CONVEYOR SPEED (FPM):

WH-44	6.0
WH-44CS	6.0
WH-44CSS	6.0
WH-44S	6.0

GALLONS PER RACK:

WH-44	1.08
WH-44CS	1.08
WH-44CSS	1.08
WH-44S	1.08

WATER REQUIREMENTS:

*NOTE: TEMPERATURES LISTED ARE MINIMUMS

WASH TEMPERATURE (WH-44 & WH-44S)	160°F
WASH TEMPERATURE (WH-44CS & WH-44CSS)	140°F
RINSE TEMPERATURE (WH-44 & WH-44S)	180°F
RINSE TEMPERATURE (WH-44CS & WH-44CSS)	140°F
FLOW PRESSURE (PSI)	20 ± 5
FLOWRATE (GPM)	3.9

STEAM REQUIREMENTS:

STEAM FLOW PRESSURE (PSIG)	10-20
CONSUMPTION AT 15 PSIG (LBS/HR)	60

SANITIZER REQUIREMENTS (PPM):

WH-44CS	50
WH-44CSS	50

ELECTRICAL REQUIREMENTS:

DRIVE MOTOR HP	1/4
WASH MOTOR HP	2

NOTE: Typical Electrical Circuit is based upon (1) 125% of the full amperage load of the machine and (2) typical fixed-trip circuit breaker sizes as listed in the NEC 2002 Edition. Local codes may require more stringent protection than what is displayed here. Always verify with your electrical service contractor that your circuit protection is adequate and meets all applicable national and local codes. These numbers are provided in this manual simply for reference and may change without notice at any given time.

WH-44 & WH-44CS:

VOLTS	PH	HZ	RINSE HEATER RATINGS	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208V	1	60	15KW@208V	83 A	110 AMP
230V	1	60	15KW@230V	76 A	100 AMP
208V	3	60	15KW@208V	49 A	70 AMP
230V	3	60	15KW@230V	45 A	60 AMP
460V	3	60	15KW@460V	23 A	30 AMP

WH-44S & WH-44CSS:

VOLTS	PH	HZ	RINSE HEATER RATINGS	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208V	1	60	N/A	11 A	15 AMP
230V	1	60	N/A	11 A	15 AMP
208V	3	60	N/A	7 A	15 AMP
230V	3	60	N/A	7 A	15 AMP
460V	3	60	N/A	4 A	15 AMP

NOTE: Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and may be subject to change without notice.

SECTION 1: SPECIFICATION INFORMATION

WH-66 MODELS OPERATING SPECIFICATIONS

PERFORMANCE:

RACKS PER HOUR:

WH-66	215
WH-66CS	215
WH-66CSS	215
WH-66S	215

DISHES/GLASSES PER HOUR:

WH-66	5375
WH-66CS	5375
WH-66CSS	5375
WH-66S	5375

CAPACITIES:

PREWASH TANK (GALLONS)	17.25
WASH TANK (GALLONS)	15.4
WASH PUMP (GPM)	270

VENTING REQUIREMENTS:

INPUT END (CFM)	200
OUTPUT END (CFM)	400
TOTAL (CFM)	600

CONVEYOR SPEED (FPM):

WH-66	6.0
WH-66CS	6.0
WH-66CSS	6.0
WH-66S	6.0

GALLONS PER RACK:

WH-66	1.08
WH-66CS	1.08
WH-66CSS	1.08
WH-66S	1.08

WATER REQUIREMENTS:

*NOTE: TEMPERATURES LISTED ARE MINIMUMS	
RECOMMENDED PREWASH (ALL MODELS)	140°F
WASH TEMPERATURE (WH-66 & WH-66S)	160°F
WASH TEMPERATURE (WH-66CS & WH-66CSS)	140°F
RINSE TEMPERATURE (WH-66 & WH-66S)	180°F
RINSE TEMPERATURE (WH-66CS & WH-66CSS)	140°F
FLOW PRESSURE (PSI)	20 ± 5
FLOWRATE (GPM)	3.9

STEAM REQUIREMENTS:

STEAM FLOW PRESSURE (PSIG)	10-20
CONSUMPTION AT 15 PSIG (LBS/HR)	60

SANITIZER REQUIREMENTS (PPM):

WH-66CS	50
WH-66CSS	50

ELECTRICAL REQUIREMENTS:

DRIVE MOTOR HP	1/4
WASH MOTOR HP	2
PREWASH MOTOR HP	1

NOTE: Typical Electrical Circuit is based upon (1) 125% of the full amperage load of the machine and (2) typical fixed-trip circuit breaker sizes as listed in the NEC 2002 Edition. Local codes may require more stringent protection than what is displayed here. Always verify with your electrical service contractor that your circuit protection is adequate and meets all applicable national and local codes. These numbers are provided in this manual simply for reference and may change without notice at any given time.

WH-66 & WH-66CS:

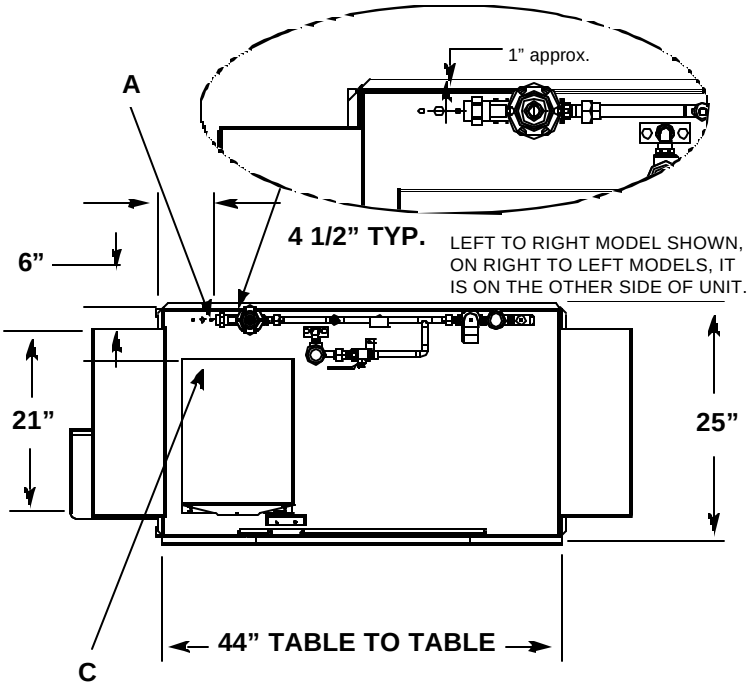
VOLTS	PH	HZ	RINSE HEATER RATINGS	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208V	1	60	15KW@208V	89 A	125 AMP
230V	1	60	15KW@230V	82 A	110 AMP
208V	3	60	15KW@208V	52 A	70 AMP
230V	3	60	15KW@230V	48 A	60 AMP
460V	3	60	15KW@460V	24 A	30 AMP

WH-66S & WH-66CSS:

VOLTS	PH	HZ	RINSE HEATER RATINGS	TOTAL AMPS	TYPICAL ELECTRICAL CIRCUIT
208V	1	60	N/A	17 A	25 AMP
230V	1	60	N/A	17 A	25 AMP
208V	3	60	N/A	11 A	15 AMP
230V	3	60	N/A	11 A	15 AMP
460V	3	60	N/A	6 A	15 AMP

NOTE: Always refer to the machine data plate for specific electrical and water requirements. The material provided on this page is for reference only and may be subject to change without notice.

WH-44 DIMENSIONS



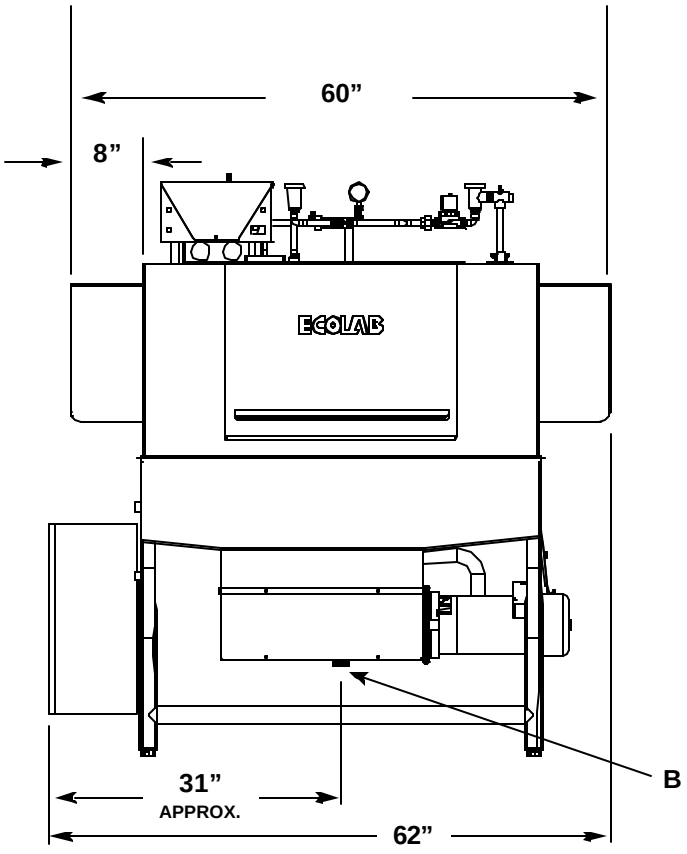
LEGEND

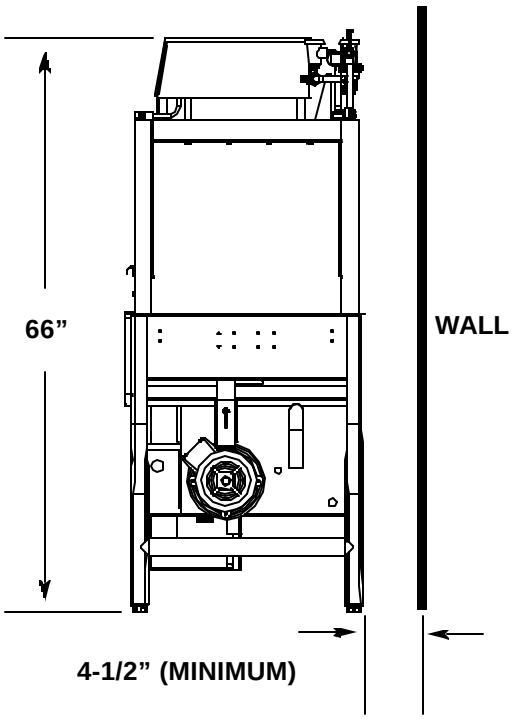
A = 1/2" IPS Water Inlet Connection
Approx. 59 1/2" above finished floor

B = 1 1/2" IPS Drain Connection
Approx. 5 3/4" above finished floor

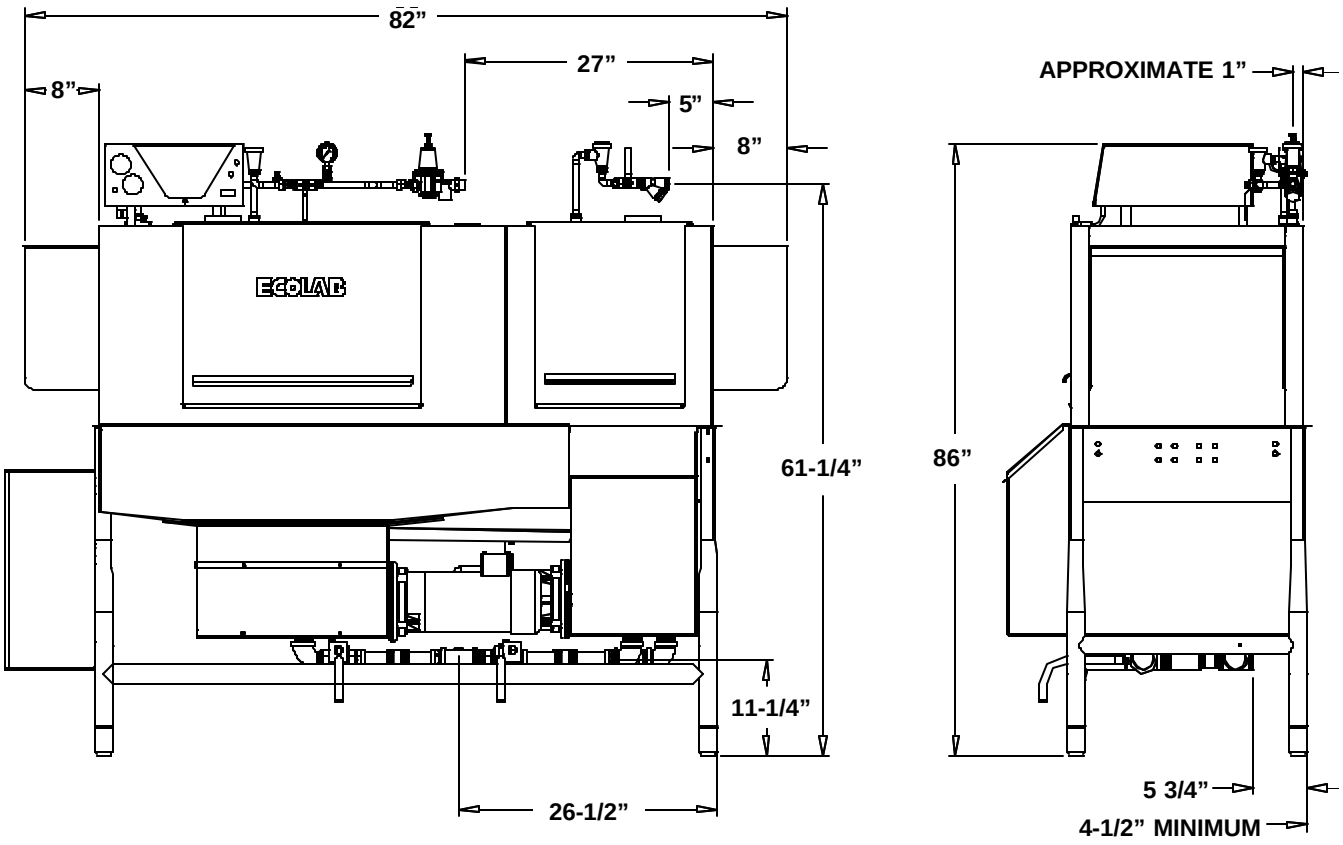
C = Electrical Connection
Approx. 59 1/2" above finished floor

HEIGHT WITH DOOR OPEN: 72"



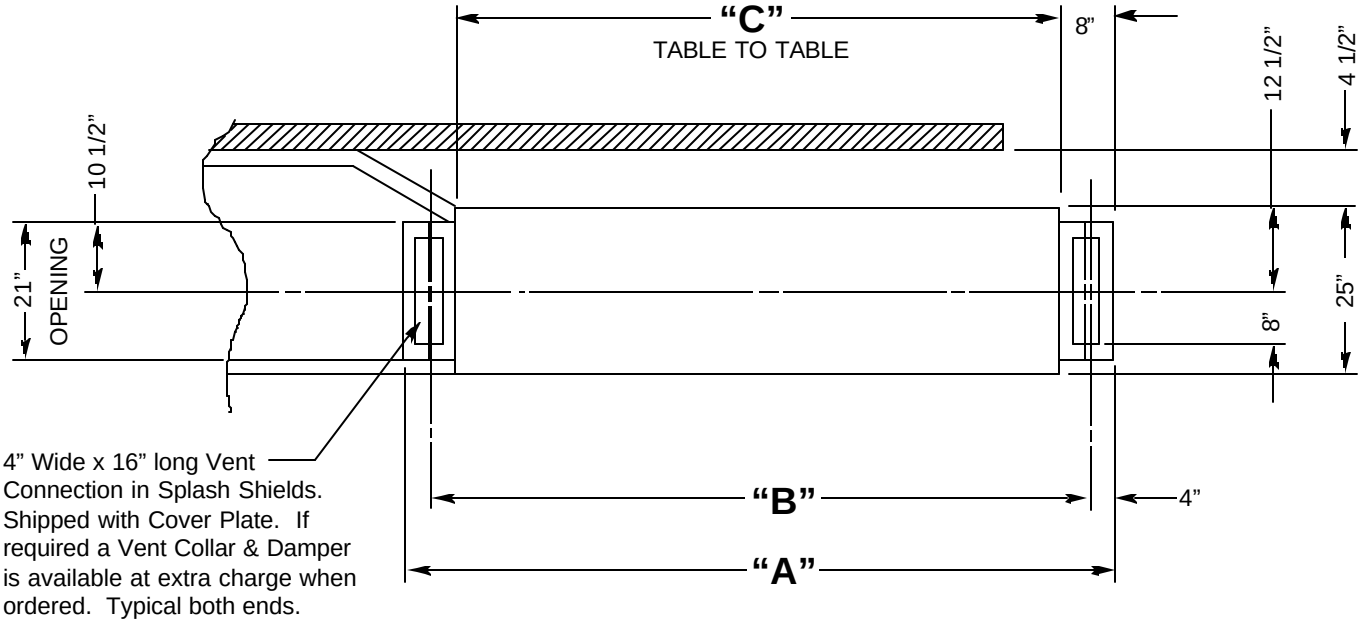


WH-66 DIMENSIONS

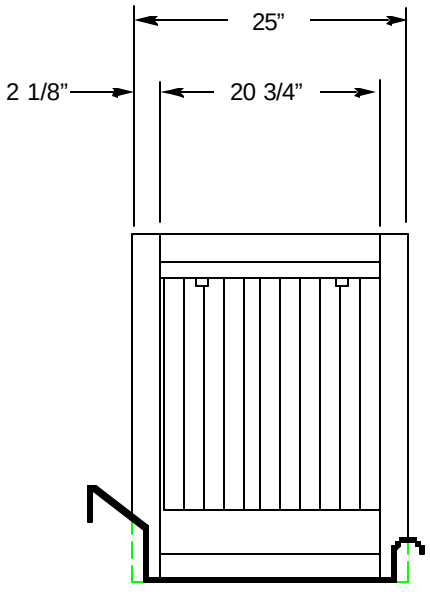


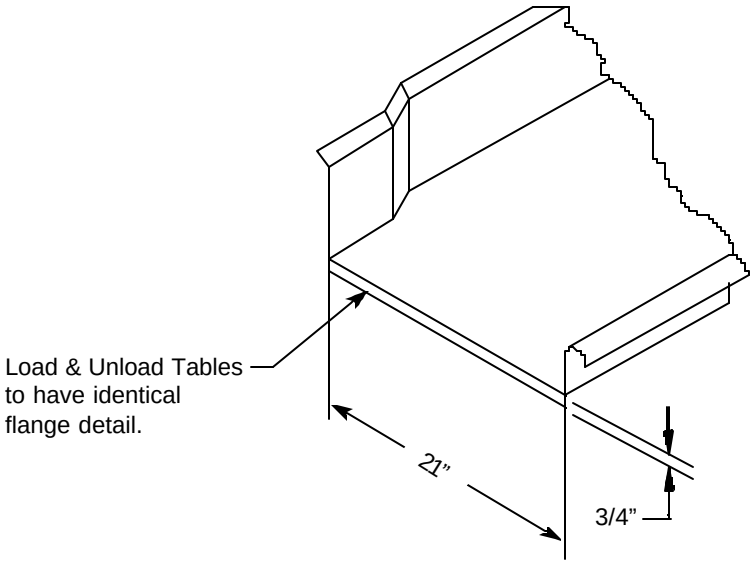
WH-66 DIMENSIONS (RIGHT TO LEFT OPERATION SHOWN)

DISHTABLE DIMENSIONS



PLAN VIEW





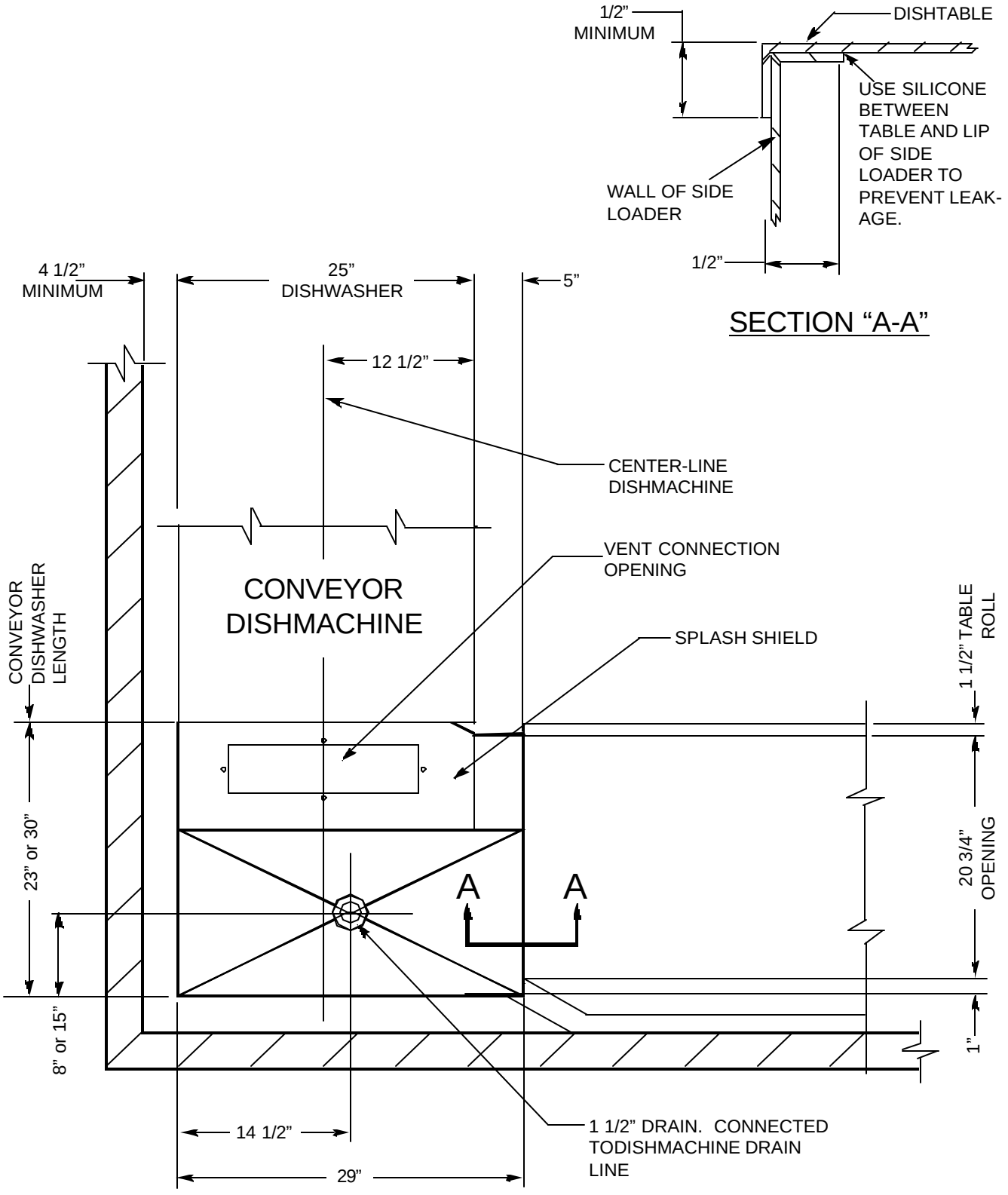
DIMENSIONS:

"A" = 60"

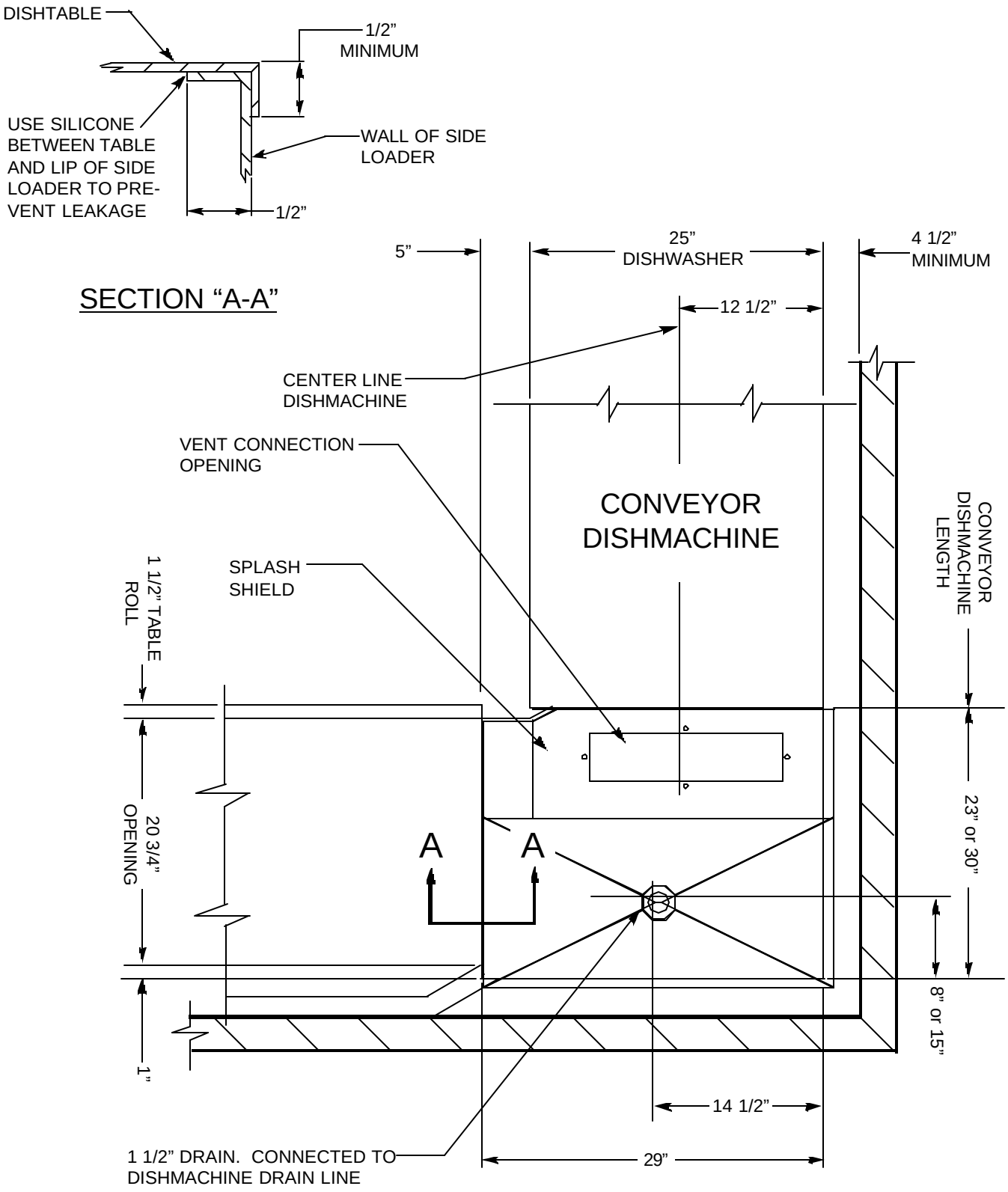
"B" = 51-1/2"

"C" = 44"

SIDE LOADER (LEFT TO RIGHT) DIMENSIONS



SIDE LOADER (RIGHT TO LEFT) DIMENSIONS



SIDE LOADER INSTALLATION DIMENSIONS

NOTE: ALL DIMENSIONS ARE TYPICAL.

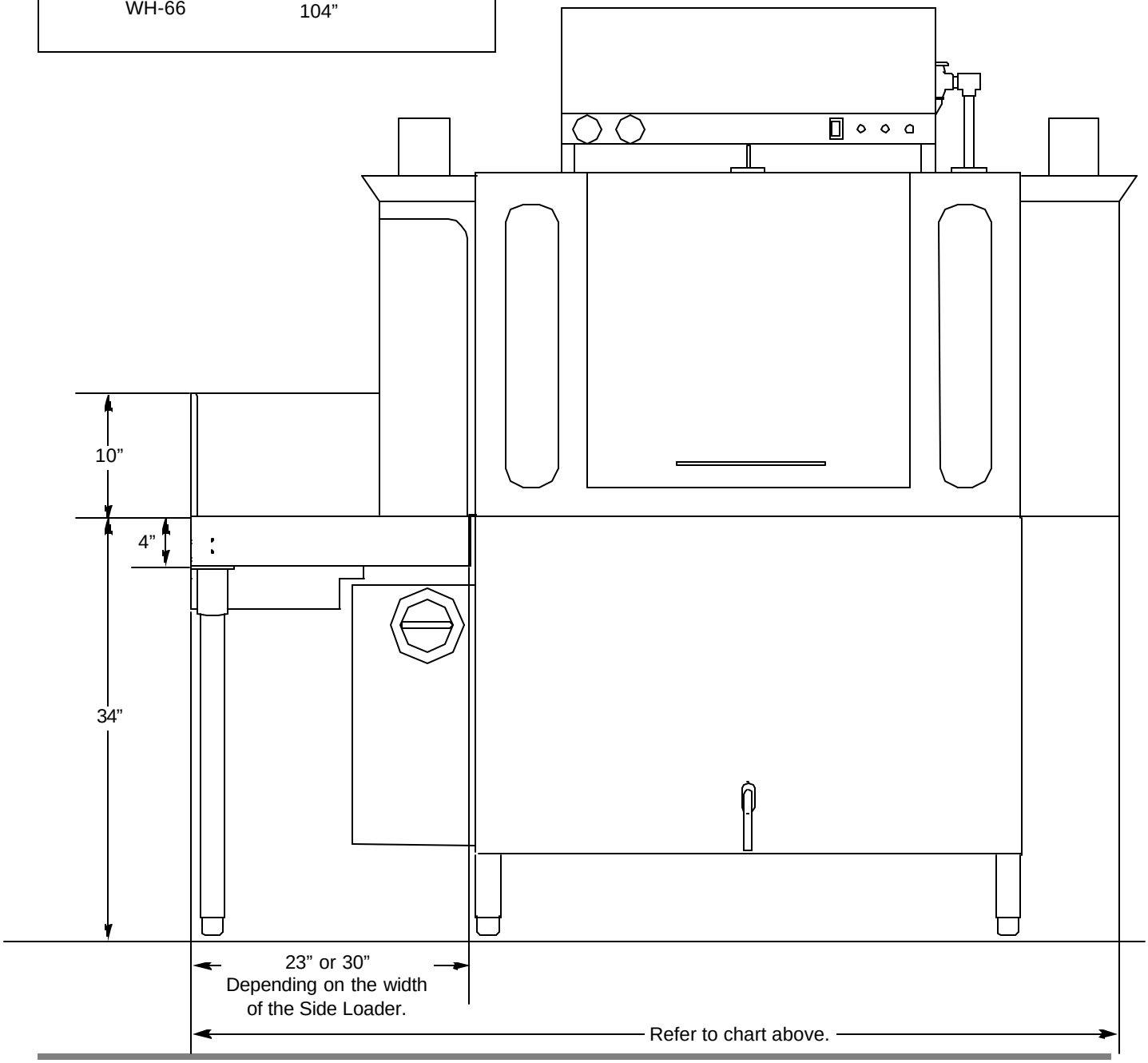
23" SIDE LOADER DIMENSIONS

MODEL	DIMENSIONS
WH-44	75"
WH-66	97"

30" SIDE LOADER DIMENSIONS

MODEL	DIMENSIONS
WH-44	82"
WH-66	104"

(Left to Right installation shown for reference.)



SECTION 2:
INSTALLATION/OPERATION INSTRUCTIONS

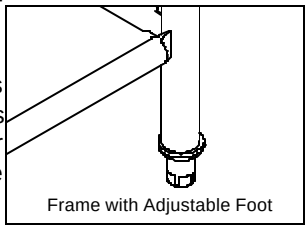
SECTION 2: INSTALLATION/OPERATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS

NOTE: THE INSTRUCTIONS PROVIDED HEREIN, UNLESS OTHERWISE SPECIFIED ARE FOR THE DISHMACHINES ONLY. THERE ARE SEPARATE DIRECTIONS FOR THE GAS BOOSTER.

VISUAL INSPECTION: Before installing the unit, check the container and machine for damage. A damaged container is an indicator that there may be some damage to the machine. If there is damage to both the container and machine, do not throw away the container. The dishmachine has been inspected and packed at the factory and is expected to arrive to you in new, undamaged condition. However, rough handling by carriers or others may result in there being damage to the unit while in transit. If such a situation occurs, do not return the unit to Ecolab; instead, contact the carrier and ask them to send a representative to the site to inspect the damage to the unit and to complete an inspection report. You must contact the carrier within 48 hours of receiving the machine. Also, contact your Ecolab representative.

UNPACKING THE DISHMACHINE: Once the machine has been removed from the container, ensure that there are no missing parts from the machine. This may not be obvious at first. If it is discovered that an item is missing, contact Ecolab immediately to have the missing item shipped to you.

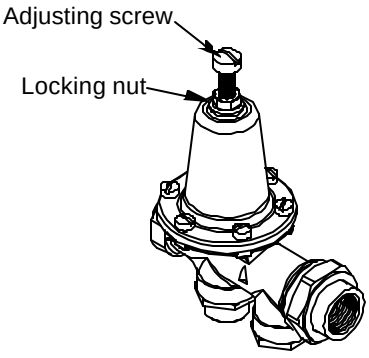

Frame with Adjustable Foot

LEVEL THE DISHMACHINE: The dishmachine is designed to operate while being level. This is important to prevent any damage to the machine during operation and to ensure the best results when washing ware. The unit comes with adjustable bullet feet, which can be turned using a pair of channel locks or by hand if the unit can be raised safely. Ensure that the unit is level from side to side and from front to back before making any connections.

PLUMBING THE DISHMACHINE: All plumbing connections must comply with all applicable local, state, and national plumbing codes. The plumber is responsible for ensuring that the incoming water line is thoroughly flushed prior to connecting it to any component of the dishmachine. It is necessary to remove all foreign debris from the water line that may potentially get trapped in the valves or cause an obstruction. Any valves that are fouled as a result of foreign matter left in the water line, and any expenses resulting from this fouling, are not the responsibility of the manufacturer.

CONNECTING THE DRAIN LINE: The drain for the models covered in this manual are gravity discharge drains. All piping from the machine to the drain must be a minimum 1 1/2" MNPT and shall not be reduced. There must also be an air gap between the machine drain line and the floor sink or drain. If a grease trap is required by code, it should have a flow capacity of 30 gallons per minute.

WATER SUPPLY CONNECTION: Ensure that you have read the section entitled "PLUMBING THE DISHMACHINE" above before proceeding. Install the water supply line (1/2" pipe size minimum) to the dishmachine line strainer using copper pipe. It is recommended that a water shut-off valve be installed in the water line between the main supply and the machine to allow access for service. The water supply line is to be capable of 25 PSI "flow" pressure at the recommended temperature indicated on the data plate.



Incoming Plumbing Connection

In areas where the water pressure fluctuates or is greater than the recommended pressure, it is suggested that a water pressure regulator be installed. The models covered in this manual come with water pressure regulators as standard equipment. Please notify Ecolab immediately if this component is not present on your machine.

Do not confuse static pressure with flow pressure. Static pressure is the line pressure in a "no flow" condition (all valves and services are closed). Flow pressure is the pressure in the fill line when the fill valve is opened during the cycle.

It is also recommended that a shock absorber (not supplied) be installed in the incoming water line. This prevents line hammer (hydraulic shock), induced by the solenoid valve as it operates, from causing damage to the equipment.

STEAM LINE CONNECTIONS: Some machines covered in this manual are designed to use low pressure steam as a source of heat for wash tank water. The machines come with lines by which an outside source steam needs to be connected. Connect all incoming steam lines in accordance with the steam booster manufacturer's instructions. Ensure that all applicable codes and regulations are adhered to. See machine data plate for information concerning steam flow pressure.

INSTALLATION INSTRUCTIONS (CONTINUED)

PLUMBING CHECK: Slowly turn on the water supply to the machine after the incoming fill line and the drain line have been installed. Check for any leaks and repair as required. All leaks must be repaired prior to placing the machine in operation.

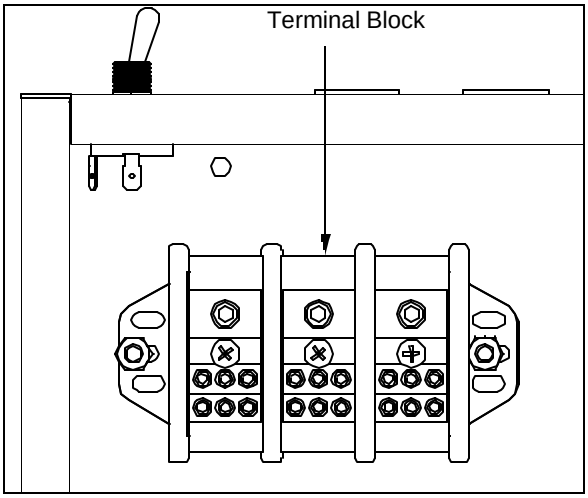
The WH-44CS, WH-44CSS, WH-66CS and WH-66CSS machine(s) requires that a separate chemical feeder be connected to it to provide the required detergent and sanitizer. This feeder needs to be able to operate against a head of 25 PSI and provide 7.34 ml of a 10% Chlorine sanitizer per minute.

ELECTRICAL POWER CONNECTION: Electrical and grounding connections must comply with the applicable portions of the National Electrical Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

Disconnect electrical power supply and place a tag at the disconnect switch to indicate that you are working on the circuit.

The dishmachine data plate is located on the right side and to the front of the machine. Refer to the data plate for machine operating requirements, machine voltage, total amperage load and serial number.

To install the incoming power lines, open the control box. Install conduit into the pre-punched holes in the back of the control box. Route power wires and connect to power block and grounding lug. Install the service wires (L1, L2, and L3 (3 phase only)) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. Tighten the connections. It is recommended that “DE-OX” or another similar anti-oxidation agent be used on all power connections.



Incoming Power Connection

VOLTAGE CHECK: Ensure that the power switch is in the OFF position and apply power to the dishmachine. Check the incoming power at the terminal block and ensure it corresponds to the voltage listed on the data plate. If not, contact a qualified service agency to examine the problem. Do not run the dishmachine if the voltage is too high or too low. Shut off the service breaker and mark it as being for the dishmachine. Advise all proper personnel of any problems and of the location of the service breaker. Replace the control box cover and tighten down the screws.

VENTILATION OF DISHMACHINE: The dishmachine should be located with provisions for venting into an adequate exhaust hood or ventilation system. This is essential to permit efficient removal of the condensation exhaust. Ensure that the exhaust system is acceptable in accordance with all applicable codes and standards.

This units covered in this manual have the following exhaust requirements:

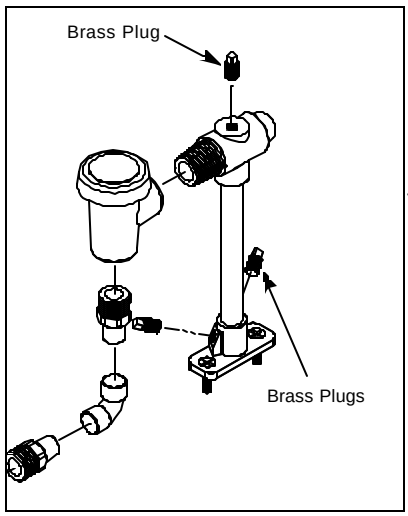
Load End:	200 CFM
Unload End:	400 CFM

The exhaust system must be sized to handle this volume for the dishmachine to operate as it was designed to.

INSTALLATION INSTRUCTIONS (CONTINUED)

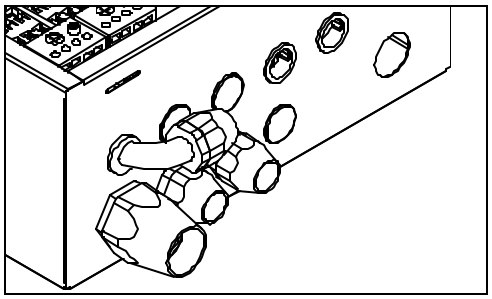
CHEMICAL FEEDER EQUIPMENT: Detergent may be introduced into the unit through the removal of the bulkhead plug in the rear of the tub and replacing it with the third party detergent injection fitting. Remove the bulkhead plug in the side of the tub to install the detergent concentration probe.

Detergent Connection Point
(Machine rear view)



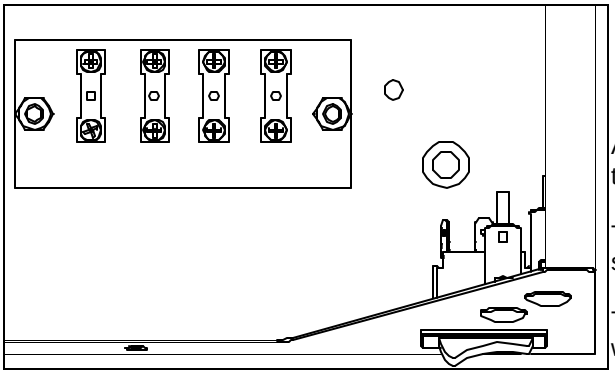
Incoming Plumbing Rinse Injector

The 1/8" brass plugs on the incoming plumbing rinse injector may be removed to install rinse aid injection fittings.



Back of Control Box

All wires for the chemical injectors should be routed through the back of the control box.



Aid Connection Points

A terminal strip inside the control box provides the following connection points for chemical dispensers:

Terminals in the control box marked "CVS" provide a constant voltage signal whenever the drive motor is operating.

Terminals in the control box marked "DET" provide a voltage signal whenever the wash motor is operating.

DETERGENT DISPENSER CONNECTION: Line voltage exists at these terminals whenever the wash pump motor is energized.

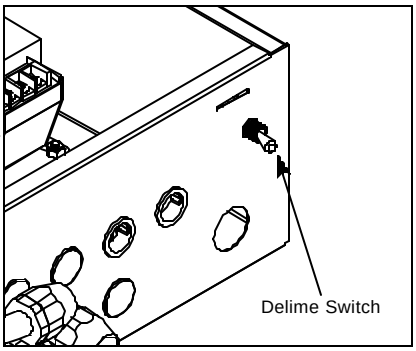
CONSTANT VOLTAGE CONNECTION: Line voltage exists at these terminals whenever power is supplied to the dish machine.

SWITCHED VOLTAGE CONNECTION: Line voltage exists at these terminals whenever the dish machine power switch is in the ON position.

RINSE AID DISPENSER CONNECTION: Line voltage exists at these terminals whenever the final rinse solenoid valve is energized.

DELIMING OPERATIONS: In order to maintain the dishmachine at its optimum performance level, it will be required to remove lime and corrosion deposits on a frequent basis. A deliming solution should be available from your detergent supplier. Read and follow all instructions on the label of the deliming solution.

To proceed with the deliming operation, fill the dishmachine and add the correct amount of deliming solution as recommended by the deliming solution manufacturer. The water capacity of the various tanks of the dishmachine can be verified on the specification sheet(s) of this manual.



Back of Control Box

Perform the following operations to delime the dishmachine:

1. Turn the AUTOMATIC/DELIME switch on the back of the control box to the DELIME position.

2. Disconnect or turn off all chemical feeder pumps.

3. Close all doors (after adding the deliming solution).

4. Run the machine for the recommended period of time.

5. Turn the unit off and open the doors.

6. Wait five minutes, then inspect the inside of the machine. If the machine is not delimed, run another time cycle as per the deliming solution's instructions.

7. When clean, drain and re-fill the machine.

8. Run in MANUAL for 10 minutes to remove residual deliming solution.

9. Drain and re-fill the machine.

This equipment is not recommend for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials and components. Use of deionized water or other aggressive fluids will void the manufacturer's warranty.

DISHMACHINE OPERATING INSTRUCTIONS

PREPARATION: Before proceeding with the start-up of the unit, verify the following:

1. Close door(s) on dishmachine.

2. Close the drain valve(s).

POWER UP: To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage will have to be verified. For the “CSS” machines ensure that the steam service is connected and that steam is flowing to the machine. Without steam, the water will not reach the required minimum temperatures that the machine is designed to operate.

FILLING THE WASH TUB

FOR MACHINES WITH MANUAL FILL VALVES: For the initial fill, open the manual bypass valve on the incoming plumbing and fill the water to the appropriate level (just below the pan strainer). Once the level is attained, close the manual bypass valve. From this point, the machine will automatically maintain the water level.

FOR MACHINES WITH AUTOMATIC FILL: Ensure that the delime switch is in the NORMAL position, and place the power switch into the ON position. The machine should fill automatically and shut off when the appropriate level is reached (just below the pan strainer).

WARE PREPARATION: Proper preparation of ware will help ensure good results and less re-wash. If not done properly, ware may not come out clean and the efficiency of the dishmachine will be reduced. It is important to remember that a dishmachine is not a garbage disposal and that simply throwing unscrapped dishes into the machine defeats the purpose of washing the ware. Scraps should be removed from ware prior to being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside down in racks so that they do not hold water during the cycle. The dishmachine is meant not only to clean, but to sanitize as well, to destroy bacteria that could be harmful to human beings. In order to do this, ware must be properly prepared prior to being placed in the machine.

DAILY MACHINE PREPARATION: Refer to the section entitled “PREPARATION” at the top of this page and follow the instructions there. Afterwards, check that all of the chemical levels are correct and/or that there is plenty of detergent available for the expected workload.

WASHING A RACK OF WARE: To wash a rack, slide a rack of soiled ware into the load end of the machine. Once the the machine is started, it will pull the rack through the machine and push it out the unload end. Once a rack has started through, you may put another rack in.

OPERATIONAL INSPECTION: Based upon usage, the pan strainers may become clogged with soil and debris as the workday progresses. Operators should regularly inspect the pan strainers to ensure they have not become clogged. If the strainers do, they will reduce the washing capability of the machine. Instruct operators to clean out the pan strainers at regular intervals or as required by work load.

SHUTDOWN AND CLEANING: At the end of the workday, place the power switch in the OFF position, secure the flow of steam to the machine and open the door(s). Open the drain valves and allow the machine to drain completely. Remove the pawl bar assembly (clean as required). Remove the pan strainers and, if equipped, the prewash strainers, run off sheets and scrap basket strainer. Remove the wash and, if equipped, the prewash arms and verify that the nozzles and arms are free from obstructions. Flush the arms with fresh water. Remove the pump suction strainers and clean out as required. Remove the rinse tray assembly and clean. Remove the curtains and scrub with a mild detergent and warm water. Wipe out the inside of the unit and then reassemble with the components previously removed.

SIDE LOADER OPTION INSTALLATION & OPERATION INSTRUCTIONS

SIDE LOADER OPERATING INSTRUCTIONS:

This accessory assists in the delivery of a full dish rack from the break down (scrapping) table to the dishmachine. It will convert the direction of travel 90°. Since the Side Loader is shipped mounted on the conveyor dishwasher there is no additional installation required for this option. As it is operated mechanically by the dishwasher it does not require any plumbing or electrical connections.

This Side Loader does not require or add any additional electrical or mechanical devices to the unit which could create operational or maintenance problems. As designed the drive mechanism is powered by the conveyor drive motor on the dishmachine. An extension on the pawl bar provides the drive to push the racks into the unit.

PREPARATION:

Before proceeding with the start-up of the unit, verify that the Side Loader pan strainer is installed.

WARE PREPARATION:

Proper preparation of ware will help ensure good results and less re-washes. If not done properly, ware may not come out clean and the efficiency of the dishmachine will be reduced. It is important to remember that a dishmachine is not a garbage disposal and that simply throwing unscrapped dishes into the machine simply defeats the purpose altogether of washing the ware. Scraps should be removed from ware prior to being loaded into a rack. Pre-rinsing and pre-soaking are good ideas, especially for silverware and casserole dishes. Place cups and glasses upside down in racks so that they do not hold water during the cycle. The dishmachine is meant not only to clean, but to sanitize as well, to destroy bacteria that could be harmful to human beings. In order to do this, ware must be properly prepared prior to being placed in the machine.

WASHING A RACK OF WARE:

Once a rack is fully loaded it should be positioned against the front of the dish table. The rack should then be moved into the Side Loader until it activates the actuator switch. Once the the machine is started, it will pull the rack through the machine and push it out the unload end. Once a rack has started through, you may put another rack in.

OPERATIONAL INSPECTION:

Based upon usage, the pan strainer may become clogged with soil and debris as the workday progresses. Operators should regularly inspect the pan strainer to ensure it has not become clogged. If the strainer does become clogged, it will reduce the washing capability of the machine. Instruct operators to clean out the pan strainer at regular intervals or as required by work load.

SHUTDOWN AND CLEANING:

At the end of the workday, remove the pan strainer and clean as required. Wipe out the inside of the Side Loader and then reinsert the strainer.

CHANGING THE WH-44 DIRECTION OF TRAVEL

The WH-44 dishmachine has the ability to have its direction of travel changed from left to right, or from right to left. Direction of travel is determined by which end the rack of ware is put into the machine and which end the rack comes out.

There may come times when it is necessary to change the direction of travel after the unit is installed. The instructions provided here are for maintenance personnel only. Unauthorized persons should not attempt any of the steps contained in these instructions.

Warning: many of the instructions and steps within this document require the use of tools and may also require that personnel change the wiring of the machine. Only authorized personnel should ever perform any maintenance evolution on the dishmachine!

PREPARATION

1. Power must be secured to the unit at the service breaker. Tag or lock out the service breaker to prevent accidental or unauthorized energizing of the machine.
2. Disconnect incoming water at the water pressure regulator or Y-strainer.
3. Disconnect the service drain line from the drain plumbing of the dishmachine itself. Ensure that the unit is completely drained before doing this.
4. Remove the locking screw from the control box.
5. Remove the front dress panel.

TOOLS REQUIRED

The following tools will be needed to perform this maintenance evolution:

1. 5/16” nutdriver
2. 7/16” nutdriver
3. 7/16” combination wrench
4. 7/16” socket with drive ratchet and 4” extension
5. 12” pipe wrench
6. 10” adjustable wrench
7. Wire cutters
8. Phillipshead screwdriver

TIME REQUIRED

It is estimated that it will take (1) person three hours to perform this task, not including all of the items indicated in the section entitled “PREPARATION”.

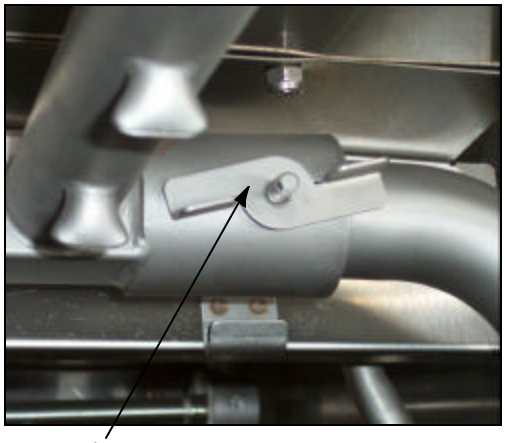
IMPORTANT NOTES

1. Do not lose hardware! Place hardware in a safe spot away from the machine, ensuring that it does not fall loose into the machine tub. Hardware that is drawing into the suction of the wash pump will damage the equipment. If you do need more hardware, contact your ECOLAB representative to purchase new items.

2. Read these instructions thoroughly before attempting this maintenance evolution. Become familiar with the parts and what actions need to be taken. This will save time in the long run!

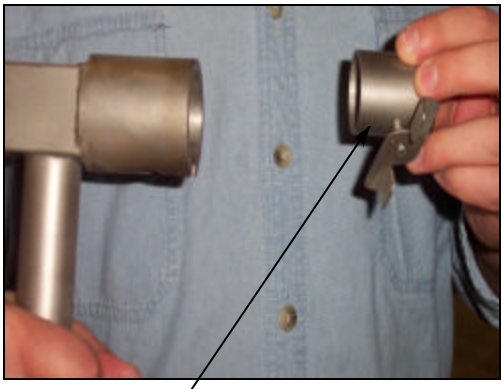
STEPS

1. Remove the upper wash arm assembly by loosening the spin nut. The spin nut has a stop so it will not come off. Once it is loosened, the wash arm assembly should slide off.



Spin nut

2. Remove the end cap from the wash arm assembly and place in the opposite end, securing it snugly.

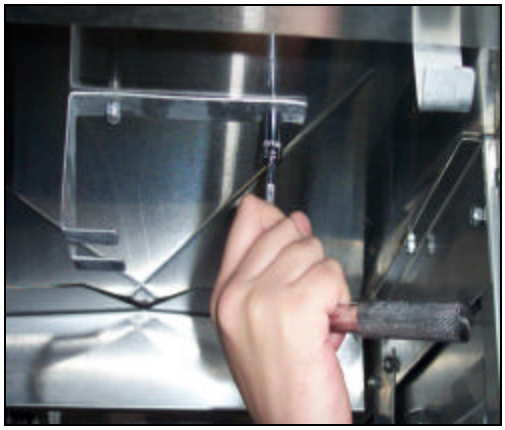


End cap

3. With the end cap securely in the opposite end of the wash arm assembly, set the assembly gently to the side. Go back inside the unit to where the upper wash arm assembly secured in the unit and turn the spin nut so that it is all the way down. This needs to be done because in a further step, if the spin nut is out, it will get in the way. Do not over-tighten the spin nut as it only needs to be out of the way, not secured.

CHANGING THE WH-44 DIRECTION OF TRAVEL (CONTINUED)

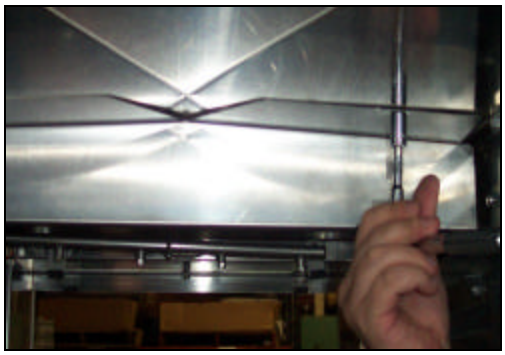
4. Remove the upper wash arm assembly bracket.



Removing bracket

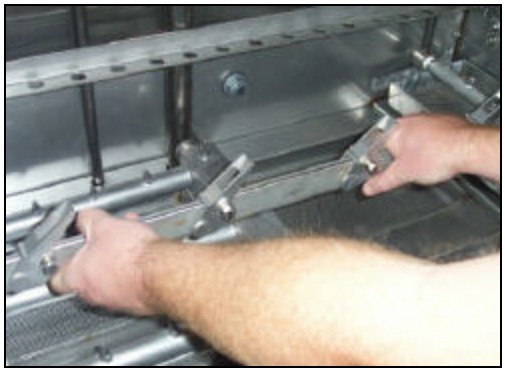
Remove the locknuts from the studs on the opposite end of the hood and secure the bracket to underside. The folded part of the bracket should be facing the rear of the machine. Immediately tighten down the locknuts.

5. Remove the splash shield, which is bolted to the underside of the hood next to the wash manifold and turn it 180°.



Removing and turning splash shield

6. Remove the pawl bar and set to the side.



Remove the pawl bar by grasping firmly and lifting up.

7. Remove the lower wash arm assembly by turning the locking screw to unlatch it. The entire assembly should then lift out.

Locking screw

8. Remove the lower wash arm support bracket. Place it to the side with its locknuts.

CHANGING THE WH-44 DIRECTION OF TRAVEL (CONTINUED)

Removing the locknuts for the lower wash arm support bracket.

9. Remove the lower rinse arm support bracket, which is mounted directly opposite of the lower wash arm support bracket.

Removing the lower rinse arm support bracket

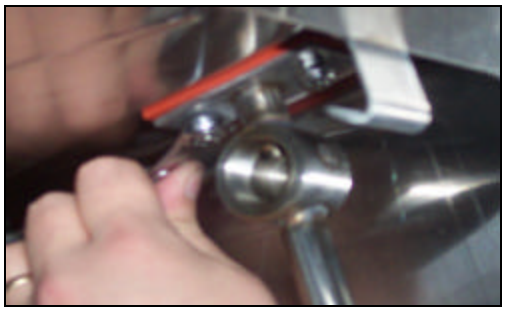
10. Remove the lower and upper rinse arms by unscrewing them and then gently pulling them out.

Unscrewing and removing the lower rinse arm

11. Behind the rinse manifold, remove the nut on the bracket.

Removing the bracket nut

12. Remove the nuts from the rinse manifold mounting bracket located on the underside of the hood. These nuts are mounted directly to the rinse injector weldment on the hood top.



Removing the locknuts from the rinse manifold mounting bracket

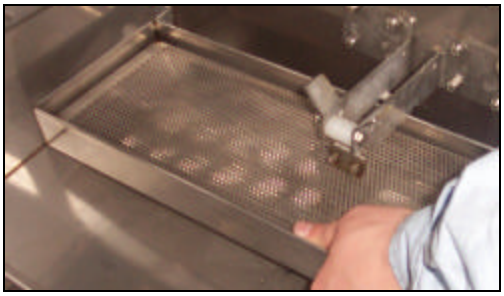
13. The rinse manifold must be removed. This may prove difficult while the rinse injector is still mounted. With great care, it is possible to gently lift the rinse injector off of the hood to allow the rinse manifold to be removed from the unit. Ensure that the gasket in the underside of the hood stays with the rinse manifold as it must be replaced when re-installing the manifold. If the gasket becomes lost or torn, order a new one immediately.

Lifting the rinse injector to make room

14. Remove the entire rinse tray assembly, including the pan

and the strainer within in. The assembly should lift right out. (See next page for photograph detailing this step)

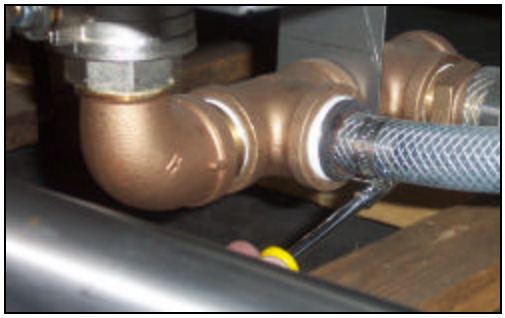
15. Remove the front and rear rinse pan locator brackets. **Note: the brackets are mounted to the bolts that secure the tub weldment to the frame.** Once the locknuts are removed, pull the locator brackets off and immediately replace the locknuts back onto the bolts. Failure to do so at a minimum may cause excessive leaking of the tub once the unit is placed back in operation.



Lifting out the rinse tray assembly

Removing a rinse tray guide bracket

16. On the drain plumbing, the rinse drain tube needs to be removed from the plumbing, as well as the wash drain tube. Both of these tubes are secured with hose clamps. Loosen the hose clamps and pull the tubes off.

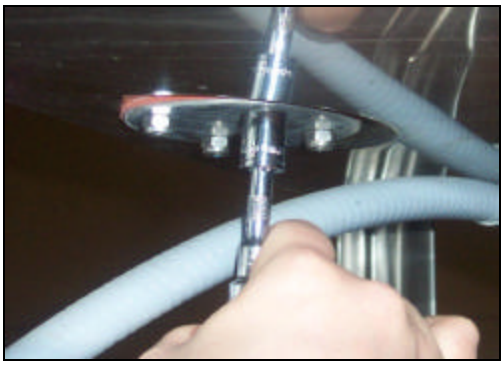


Loosening the rinse drain hose from the rinse drain nipple

17. The tee that the rinse drain nipple is in must be turned 180° so that it is facing the opposite direction. This may require dismantling the plumbing by removing the tee with the wash drain barb in it. Put the plumbing back together, after ensuring that the rinse drain tee has been rotated. Use thread tape to protect the threads while putting the plumbing back together. Ensure that the wash drain barb is in the exact same position it was prior to this step.

18. On the underside of the tub, remove the rinse drain weldment and the rinse drain plug. Switch their locations so that the rinse drain weldment is in the spot that the rinse drain plug was in.

Removing the rinse drain weldment



Removing the rinse drain plug

19. Reconnect the rinse drain hose and the wash drain hose to the drain plumbing.

20. On the opposite end from where they were removed, install the front and rear rinse pan assembly locating brackets. **Note: the brackets are mounted to the bolts that secure the tub weldment to the frame.** Install the brackets one at a time and ensure that they are firmly tightened down once installed.

21. Remove the hole cover weldment from the top of the hood. The cover is located on the end of the hood opposite of the rinse injector weldment. Once removed, set to the side along with its gasket.

CHANGING THE WH-44 DIRECTION OF TRAVEL (CONTINUED)

Removing the hole cover weldment

22. Separate the rinse plumbing from the rest of the incoming plumbing by loosening the union. Ensure that the gasket on the bottom of the rinse injector stays with the assembly as you remove it.

Loosening the union on the incoming plumbing

23. Remove the remaining half of the union from the incoming plumbing.

24. Remove the incoming water pressure regulator from the incoming plumbing and replace with the union half that was removed in step 23. Place the water pressure regulator on the end that the union half was removed from.

25. Place the removed rinse plumbing assembly (with the gasket) in the hole left open from when you removed the hole cover weldment in step 21. Tighten the two halves of the union together.

26. Place the hole cover weldment (with its gasket) over the hole from where the rinse plumbing assembly was originally installed. Tighten down with the locknuts.

27. Re-install the rinse manifold (with its gasket) by connecting it to the rinse injector weldment at its new location. Remove the locknut from the stud for the bracket down near the rack rails and then secure the bracket to the machine using the same lock nut.

28. Re-install the lower wash arm support bracket to the pawl bar support on the end of the tub opposite from where it was removed.

29. Re-install the upper and lower rinse arms. Reinstall the lower rinse arm support bracket.

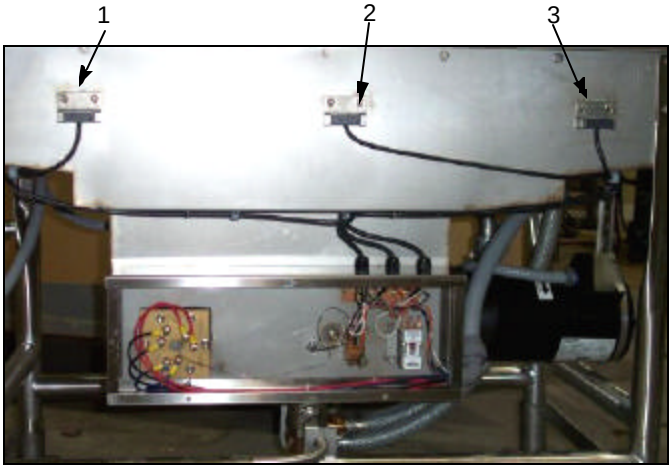
30. Re-install the lower wash arm assembly, turning it 180° and locking it in place with the locking screw.

31. Re-install the pawl bar. Ensure that the pawl bar is placed so that when racks are placed in the unit, the pawl bar dogs fold down.

32. Re-install the upper wash arm assembly. If you performed all of the actions outlined in step 2, when you install it, it will be directly over the lower wash arm assembly.

33. Remove the heater box cover by unscrewing the two screws holding it on.

Removing the heater box cover



Front of rack conveyor showing the conveyor switches

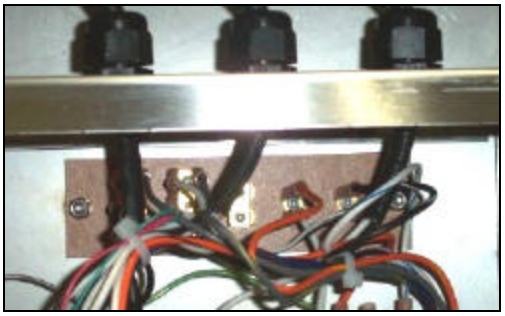
CHANGING THE WH-44 DIRECTION OF TRAVEL (CONTINUED)

Conveyor Switch Chart:

Unit Direction	Switch #1	Switch #2	Switch #3
Left to Right	Wash Switch #1	Wash Switch #2	Rinse Switch
Right to Left	Rinse Switch	Wash Switch #2	Wash Switch #1

The chart above lists the conveyor switches and their functions, depending on the direction of travel for the machine. As you can see, when you change the direction of the conveyor, you must also alter the way the conveyor switches operate.

There is no need to remove the switches, only to change the wiring inside the heater box.



Terminal board inside the heater box

34. **Note:** Before beginning any part of this maintenance evolution that deals with the wiring of the machine, ensure that it is performed by qualified technicians only. Always refer to the machine schematic, located inside the control box, for any questions.

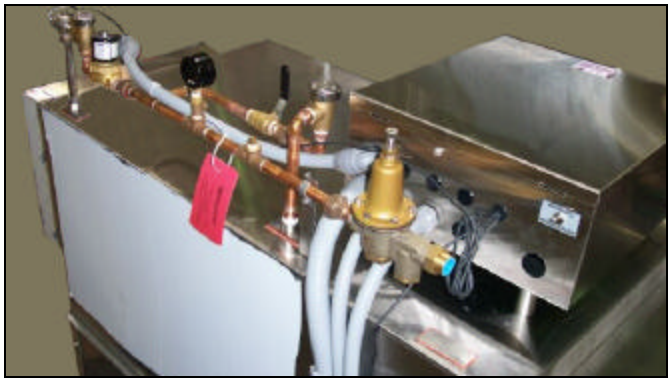
Wash Switch #1 and the Rinse Switch need to have their wire positions changed on the terminal board pictured above. Locate the **gray/yellow** wire for Wash Switch #1 (do not confuse it with the gray/yellow wire for Wash Switch #2) and the **orange/yellow** wire for the Rinse Switch. Exchange their positions on the terminal board.

35. Verify that the plumbing has been reassembled correctly and that the hole cover weldment has been replaced and none of the gaskets are torn or pinched as this could lead to leaking when the machine operates.

35. Re-install the heater box cover.

SPECIAL PARTS

Gasket, Rinse Injector:
Order using part number 5330-111-42-81



Incoming plumbing assembly for a Left to Right machine (note hole cover weldment in lower right corner)

Incoming plumbing assembly for a Right to Left machine (note hole cover weldment in upper left corner)

AFTER MAINTENANCE ACTIONS

1. Reconnect the incoming water and drain lines and then restore power to the unit. Run the unit for at least 1/2 hour to ensure there are no leaks. Test the unit with an empty rack to ensure that it pulls the rack all of the way through the unit. If any problems arise you can contact your ECOLAB representative.

2. Replace the front dress panel once the unit is ready for service again.

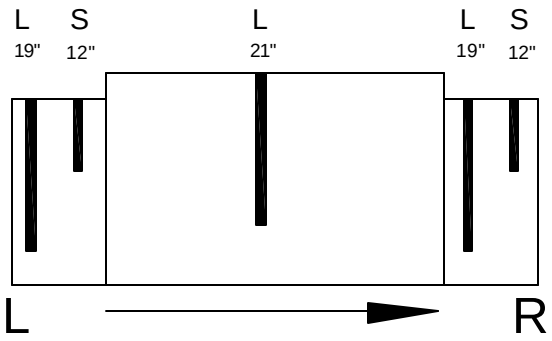
SPECIAL NOTES

1. There is a possibility that you may be required to shorten or lengthen the conduit and wire lengths for the inlet solenoid on the rinse plumbing once it is moved. This work should be performed by qualified technicians who will do the work according to applicable local, state and national codes. Questions concerning this should be directed to Jackson Technical Service.

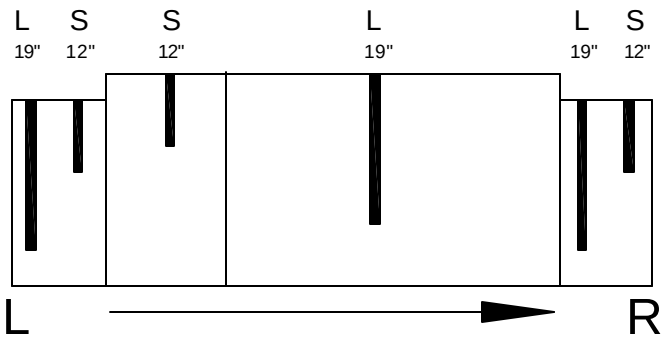
CURTAIN INSTALLATION DIAGRAMS

Please refer to the chart for placement of the curtains.

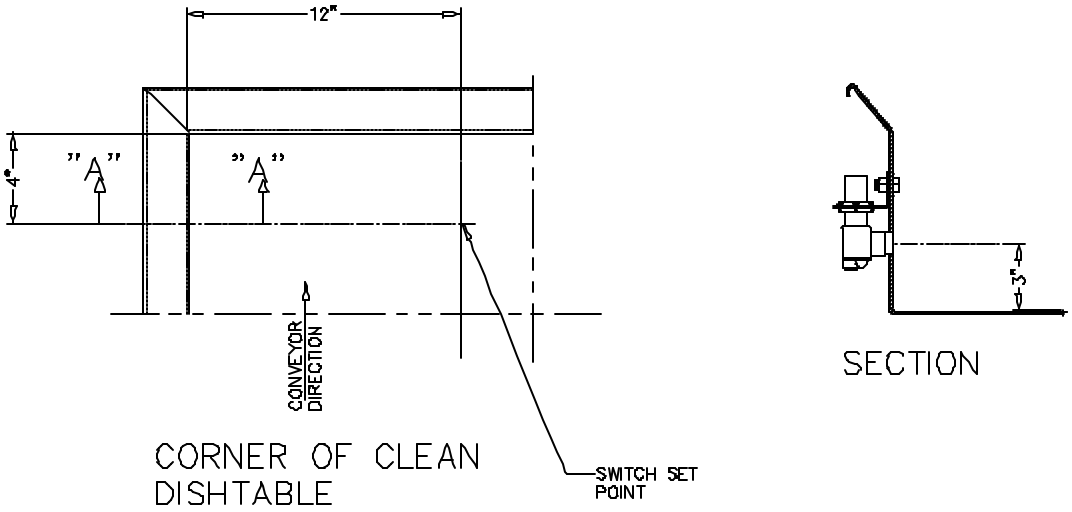
WH-44



WH-66



PHOTOELECTRIC LIMIT SWITCH INSTALLATION INSTRUCTIONS



BRACKET MOUNTING TEMPLATE

Installation Instructions:

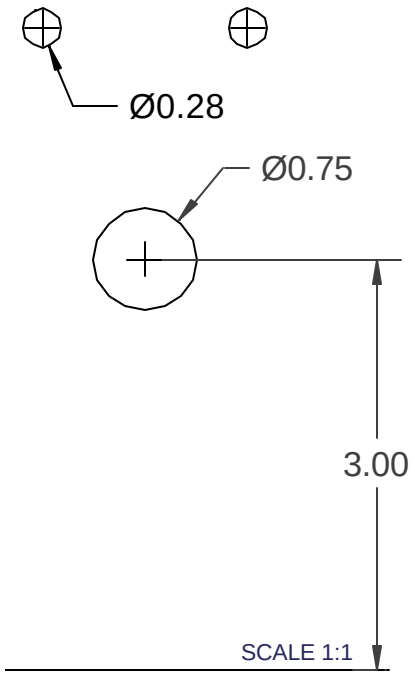
1. Locate and drill a 3/4” diameter hole through the back of the dishtable, 4” from the end and 3” above the surface of the table.

2. Using the switch mounting bracket template (a photocopy of it may prove beneficial), locate and drill the 9/32” diameter hole on either side of the 3/4” hole.

3. Mount the switch bracket to the outside of the dishtable using the 1/4”-20 hardware supplied. The cable entering the switch body should be pointing upwards so that the switch sensitivity adjustment screw is downwards for adjusting from the underside of the table.

4. Wiring instructions:
a. White wire from the conveyor control panel to red/black wire from proximity switch.
b. Door switch wire from the conveyor control panel to the black wire from the proximity switch.
c. Black/white wire from the conveyor control panel to the red/white wire from the proximity switch.

5. Adjust the sensitivity of the proximity switch by turning the adjustment screw on the switch. The proper setting is reached when the switch will sense an object approximately 12” from the switch.



Unless noted, all dimensions are in inches.

STRIKER PLATE LIMIT SWITCH INSTALLATION INSTRUCTIONS

Installation Instructions:

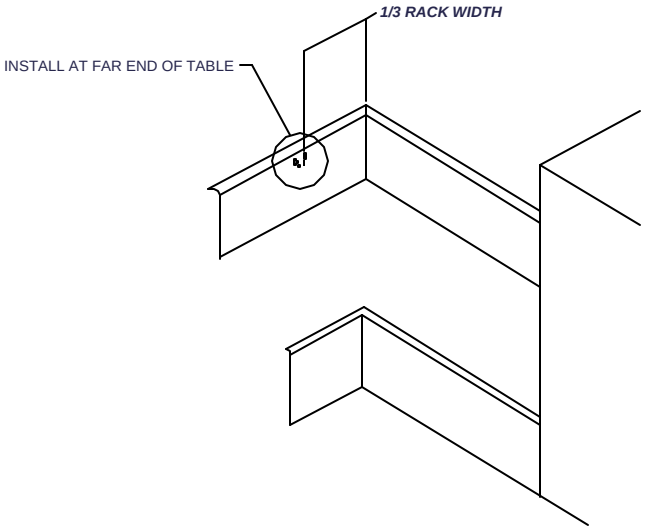
1. Wiring: The switch is wired common and normally open because of the hinge design. By interrupting the line in series with the door switches, the dishmachine ceases to operate. Refer to the machine schematic for details on how to wire the switch.

2. Parts of the table switch are mounted in the dishtable, at the end of the table and under the table. See the drawing(s) for the relationship of the switch to the table.

3. Move the limit switch as far down on the two slots as possible and see that the limit switch is straight on the base plate. This might require adjustment of the nut on the connector for the limit switch.

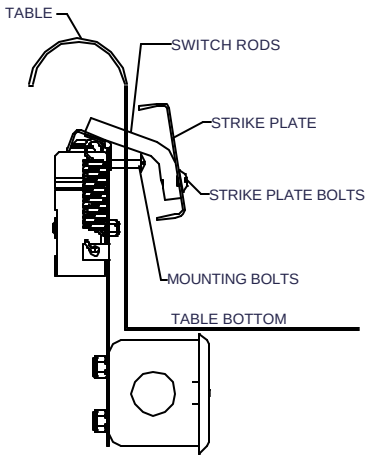
4. Then adjust the inside and the outside connector nuts for the connector box so that it lines up even with the limit switch and the base plate.

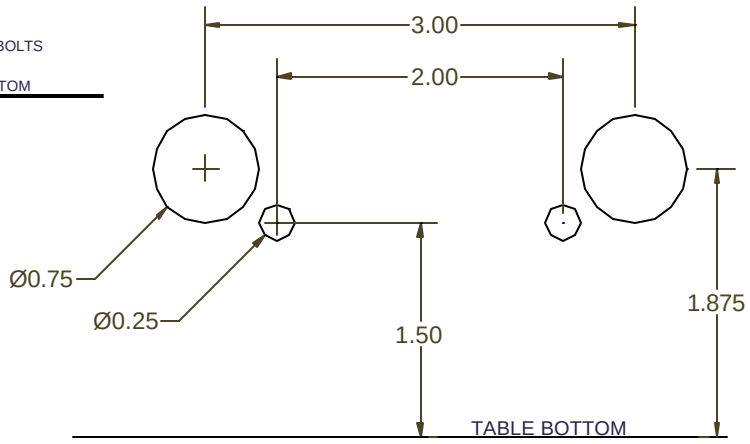
5. Tighten down the nuts for the seal so that they are tight.



6. If you have any difficulty you might have to adjust the connectors to the seal, screwing in or screwing out until the installation is straight on the table and the limit switch is actuated correctly by the rack.

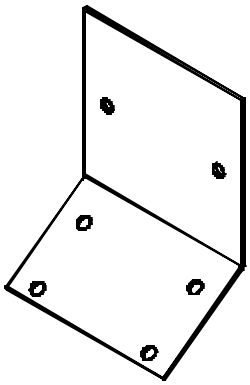
TABLE LIMIT SWITCH THROUGH ROD HOLES



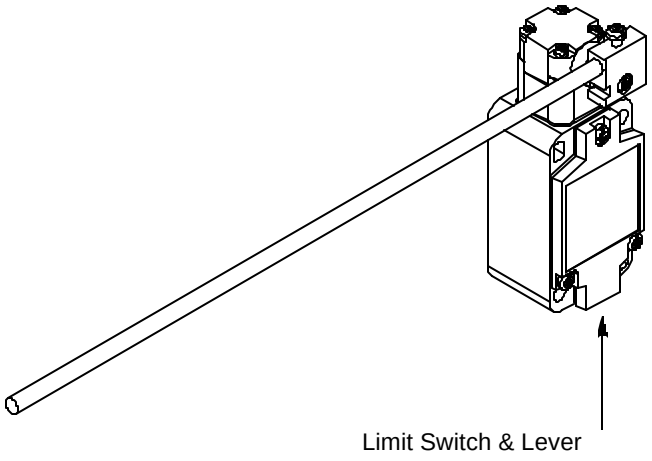


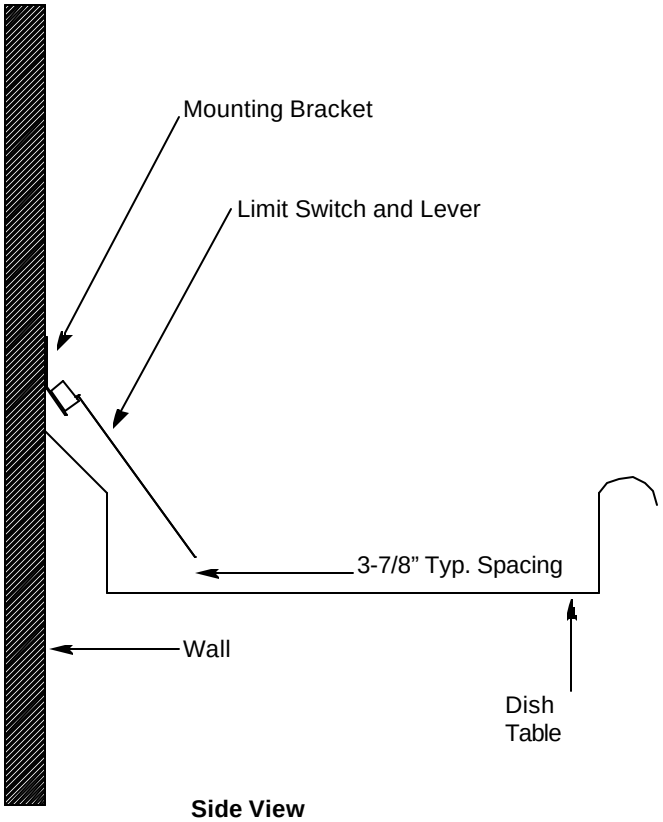
Unless noted, all dimensions are in inches.

WHISKER LIMIT SWITCH INSTALLATION INSTRUCTIONS

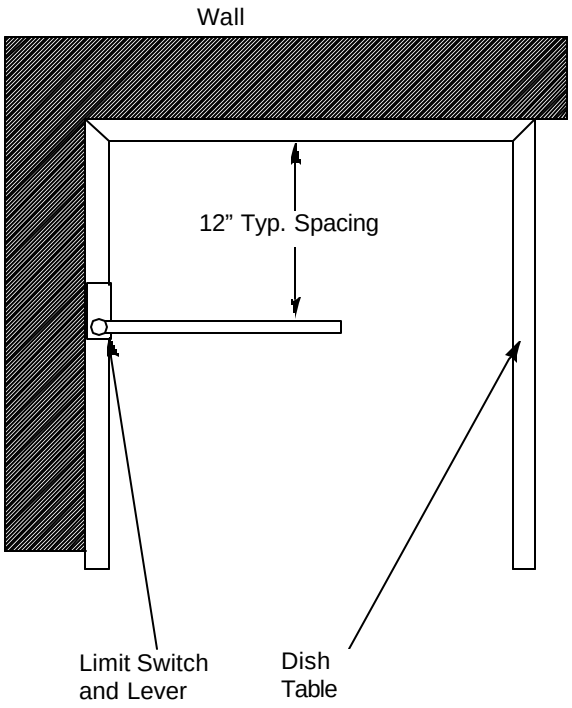


Switch Mounting Bracket





Side View



Top View

Installation Instructions:

1. Wiring: Refer to the machine schematic.
2. Mounting: Mount the switch as indicated in the drawing(s) above.

SECTION 3:
PREVENTATIVE MAINTENANCE

SECTION 3: PREVENTATIVE MAINTENANCE

DISHMACHINE/SIDE LOADER PREVENTATIVE MAINTENANCE & TORQUE SETTINGS

The dishmachines covered in this manual are designed to operate with a minimum of interaction with the operator. However, this does not mean that some items will not wear out in time.

There are many things that operators can do to prevent catastrophic damage to the dishmachine. One of the major causes of component failure has to do with prescraping procedures. A dishmachine is not a garbage disposal; any large pieces of material that are put into the machine shall remain in the machine until they are either broken up (after spreading out on your ware!) or physically removed. Strainers are installed to help catch debris, but they do no good if they are clogged. Have operators regularly inspect the pan strainers to ensure (1) that they are free of soil and debris and (2) they are laying flat in the tub.

When cleaning out strainers, do NOT beat them on waste cans. The strainers are made of metal and can be forgiving; but once severe damage is done, it is next to impossible for the strainer to work in the way it was designed to. Wipe out strainers with a rag and rinse under a faucet if necessary. For stubborn debris, a toothpick should be able to dislodge any obstructions from the perforations. Always ensure that strainers are placed back in the machine before operation and that they lay flat in the tub.

Again, it is important to remind operators that trying to perform corrective maintenance on the dishmachine could lead to larger problems or even cause harm to the operator.

Some problems, however, may having nothing to do with the machine itself and no amount of preventative maintenance is going to help. A common problem has to do with temperatures being too low. Verify that the water temperatures coming to your dishmachine match the requirements listed on the machine data plate. There can be a variety of reasons why your water temperature could be too low.

By following the operating and cleaning instructions in this manual, you should get the most efficient results from your machine. As a reminder, here are some steps to take to ensure that you are using the dishmachine the way it was designed to work:

1. Ensure that the water temperatures match those listed on the machine data plate.
2. Ensure that all strainers are in place before operating the machine.
3. Ensure that all wash and/or rinse arms are secure in the machine before operating.
4. Ensure that drains are closed/sealed before operating.
5. Remove as much soil from dishes by hand as possible before loading into racks.
6. Do not overfill racks.
7. Ensure that glasses are placed upside down in the rack.
8. Ensure that all chemicals being injected to machine have been verified as being at the correct concentrations.
9. Clean out the machine at the end of every workday as per the instructions in the manual.
10. Always contact a QUALIFIED SERVICE AGENCY whenever a serious problem arises.
11. Follow all safety procedures, whether listed in this manual or put forth by local, state or national codes/regulations.

TORQUE SETTINGS

When replacing components either in the control box or the heater box area, the manufacturer has suggestions on how much to torque the screws and nuts used in securing items to the machine. Refer to the table below for the torque specifications:

ITEMS	TORQUE SPEC
Relays	16 In/lbs
Heater Contactor	35 In/lbs
Heater Nuts	16 In/lbs
Terminal Block	50 In/lbs

SECTION 3: PREVENTATIVE MAINTENANCE

GEAR DRIVE MAINTENANCE

Note: The maintenance procedures detailed here are manufacturer's instructions for the WINSMITH brand of gear reducer that is installed on the rack conveyors covered in this manual.

Lubrication & Maintenance:
Factory filling - WINSMITH speed reducers are oil filled at the factory to the proper level for the standard mounting position that you will find it in on the unit. The oil level should be checked and adjusted (if necessary) prior to operation, using the oil level plug provided and while the unit is oriented in its operating position.

Ambient temperature - If the operating ambient temperature is other than 51 - 95°F, then refer to the lubrication chart and refill the unit with the correct grade based on actual ambient temperature and operating speed. See "Oil changing" below for additional information.

Oil changing - When changing the oil for any reason, it should be remembered that oils of various types may not be compatible. Therefore, when changing to a different oil, it is recommended that the housing be completely drained and thoroughly flushed with a light flushing oil prior to refilling with the appropriate lubricant. The oil level should be rechecked after a short period of operation and adjusted, if necessary. When changing double reduction models, each housing should be drained and filled independently, even though there may be a common level.

Initial oil change: The new oil in a speed reducer should be changed at the end of 250 hours of operation. This is equivalent to 30 days of operation for 8 hours per day; 15 days of operation for 16 hours per day, or 10 days of operation for 24 hours per day.

Subsequent oil changes: Under normal conditions, after the initial oil change, the oil should be changed after every 2500 hours of operation, or every 6 months, whichever occurs first. Under severe conditions (rapid temperature changes, moist, dirty or corrosive environment) it may be necessary to mchange oil at intervals of one to three months. Periodic examination of oil samples taken from the unit will help establish the appropriate interval.

Synthetic oils: Synthetic lubricants can be advantageous over mineral oils in that they generally are more stable, have a much longer life, and operate over a wider temperature range. These oils are appropriate for any application but are especially useful when units are subjected to low start-up temperatures or high operating temperatures. However, continuous operation above 225°F may cause damage to seals or other components. It is recommended that the initial oil be changed or filtered after the first 1500 hours of operation to remove metal particles that accumulate during break-in. Subsequent oil changes should be made after 5000 hours operation if units are operating in a clean environment. This can be extended to 10,000 hours if using new reformulated Mobil SHC lubricants (orange in color) and the lubricant remains free of contamination over this period. See comments under "Subsequent oil changes" for discussion of severe ambient conditions.

Long term storage or infrequent operation: If a speed reducer is to stand idle for an extended period of time, either prior to installation or during use, it is recommended that the unit be filled completely with oil to protect interior parts from rust and corrosion due to internal condensation. Be sure to drain the oil to the proper level before placing the speed reducer in service.

Grease fittings: Some units are equipped with grease fittings to lubricate bearings not adequately lubricated by the oil splash. These fittings must be lubricated every 3 - 6 months depending on operating conditions. bearing greases must be compatible with the type of gear lubricant being used (i.e. mineral, synthetic, food grade, etc.). For mineral oils, use a high quality lithium base NLGOI #2 bearing grease. For synthetic oils, use a synthetic bearing grease such as Mobil Synthetic Universal gease, Mobilith SHC 100 or a sutable equivalent. For food grade lubricants, use Chevron FM grease, NGLI 2, or equivalent.

Low input speeds (under 1600 RPM): When input speeds are less than 1600 RPM, grease fittings will be required to lubricate any bearings not partially covered by the normal oil level.

Oil temperature: Speed reducers in normal operation can generate temperatures up to 200°F depending on the type of reducer and the severity of the application 9loading, duration of service, ambient temperatures). Excessive oil temperatures may be the result of several factors including overloading, overfilling, underfilling or inadequate cooling.

Nominal Ratio

Size	5	7.5	10	15	20	25	30	40	50	60	80	100
920	0.347	0.263	0.225	0.216	0.202	0.191	0.215	0.200	0.188	0.182	0.164	0.161

Lubricant selections are provided by the lubricant manufacturer based on AGMA recommeded viscosity grades. Viscosity grades are based on Lubrication Standard ANSI/AGMA 9005-D94.

SECTION 4:
TROUBLESHOOTING SECTION

SECTION 4: TROUBLESHOOTING

DISHMACHINE/SIDE LOADER COMMON PROBLEMS

WARNING: Inspection, testing and repair of electrical equipment should only be performed by a qualified service technician. Many of the tests require that the unit have power to it and live electrical components be exposed. USE EXTREME CAUTION WHEN TESTING THE MACHINE.

Problem: Nothing on dishmachine operates. The power switch is ON and the power indicator light is OFF.

1. Machine is not wired correctly to incoming power source. Have an electrician verify wiring.
2. Machine circuit breaker is tripped. Reset the circuit breaker. If it trips again, contact an electrician to verify the machine amp draw.
3. Service breaker is tripped. Reset the service breaker. If it trips again, contact an electrician to verify the machine amp draw.

Problem: Machine will not fill. The power switch is ON and the power indicator light is ON.

1. No water supply to machine. Verify that water lines have been connected to the machine.
2. Dishmachine doors are not closed. Close doors completely.
3. Incoming water solenoid valve damaged/faulty. Verify that the valve is operating. If not, replace.
4. Tank floats faulty. Verify the wiring of the floats. Verify that no debris is jamming the floats. Replace if necessary.

Problem: Machine fills, but fill is weak.

1. Low incoming water pressure. Verify that incoming water pressure during fill is 20 ±5 PSI.
2. Incoming water solenoid is clogged. Verify that debris is not entrapped in valve. If so, remove debris.

Problem: Low wash tank temperature.

1. Low incoming water temperature. Verify that the incoming water temperature matches what is indicated on the machine data plate.
2. Heater not energizing. Verify that the wash tank heater is operating. If not, replace.
3. Low incoming voltage. Have an electrician verify that the power coming to the machine is the same as indicated on the data plate.

Problem: Low wash arm pressure, poor spray pattern.

1. Clogged wash arm nozzles. Verify that nozzles are not clogged with debris. If so, remove debris.
2. Clogged wash tank or wash pump strainers. Clean out strainers if necessary.
3. Worn wash pump impeller. Verify status of impeller, replace if necessary.

Problem: Low prewash arm pressure, poor spray pattern.

1. Clogged prewash arm nozzles. Verify that nozzles are not clogged with debris. If so, remove debris.
2. Clogged prewash tank or prewash pump strainers. Clean out strainers if necessary.
3. Worn prewash pump impeller. Verify status of impeller, replace if necessary.

Problem: Inadequate rinse.

1. Low incoming water pressure. Verify that incoming water pressure during fill is 20 ±5 PSI.
2. Incoming water solenoid is clogged. Verify that debris is not entrapped in valve. If so, remove debris.

Problem: Pawl bar moves with no load, but does not move when loaded.

1. Clutch on drive assembly is out of adjustment. Adjust as required.

DISHMACHINE/SIDE LOADER COMMON PROBLEMS (CONTINUED)

Problem: Pawl bar does not move.

1. Failed or broken overload spring. Replace spring if necessary.
2. No power to the drive motor/failed drive motor. Verify power and wiring connections to the motor. If necessary, replace the motor.
3. Pawl bar not properly installed. Verify that the pawl bar is installed correctly.

Problem: Racks go through the machine, but results are poor.

1. Verify that detergent is being dispensed into the machine at the appropriate quantities for the water volume. If not, get detergent to appropriate level and review results of washing ware.
2. Clogged strainers/scrap basket. Clean out strainers and scrap basket and replace.
3. Ware not being properly prescrapped. Review paragraph entitled “Ware Preparation” in the operating instructions.
4. Wash or rinse arms missing end plugs or caps. Verify and replace as required.
5. Low tank heat (see previous page).
6. Inadequate rinse (see previous page).
7. Incorrect voltage coming to the machine. Verify that the voltage matches that on the machine data plate.
8. Wash pump cavitation due to low water level. Verify that the drains are shut and that the water level is correct.

Problem: Spotting of silverware, glasses and dishes.

1. Incorrect final rinse temperature. Verify that the rinse water temperature matches that which is listed on the machine data plate.
2. Clogged wash and/or rinse nozzles and arms. Remove the arms and verify that they and their nozzles are free from debris.
3. Excessively hard water. Install a water softener to reduce hardness.
4. Loss of water pressure due to clogged/obstructed wash pump. Turn the power off to the machine at the source. Drain the wash tank of water and verify that the pump intake is free from debris.
5. Improper scrapping procedures. Review the paragraph entitled “Ware Preparation” in the operating instructions.
6. incorrect detergent/chemical concentrations. Verify that the detergent/chemical concentrations are correct for the associated water volume.

SECTION 5:
SERVICE PROCEDURES

RINSE SOLENOID VALVE REPAIR PARTS KIT

These dishmachines are equipped with electrical solenoid valves to allow for automatic fill and rinse. These valves are designed to specific tolerances and design aspects that must be met in order to function properly.

Ecolab offers repair kits for replacing some of the wear items associated with solenoid valves which will allow you to save money in that replacement of these parts can take place *without* removing the solenoid valve from the plumbing assembly.

The instructions provided here are for maintenance personnel only. Unauthorized persons should not attempt any of the steps contained in these instructions.

Warning: many of the instructions and steps within this document require the use of tools. Only authorized personnel should ever perform any maintenance procedure on the dishmachine!

PREPARATION

1. Power must be secured to the unit at the service breaker. Tag or lock out the service breaker to prevent accidental or unauthorized energizing of the machine.

2. Ensure that incoming water to the machine is secured either by use of a shut-off valve or disconnecting the incoming water line.

TOOLS REQUIRED

The following tools will be needed to perform this maintenance evolution:

1. Small flathead screwdriver
2. Medium flathead screwdriver
2. Needle nose pliers
3. 5/16” nutdriver
4. Channel locks
5. 12” pipe wrench

TIME REQUIRED

It is estimated that it will take (1) person twenty minutes to perform this task, not including all of the items indicated in the section entitled “PREPARATION”.

IMPORTANT NOTES

1. Read these instructions thoroughly before attempting this maintenance evolution. Become familiar with the parts and what actions need to be taken. This will save time in the long run!

2. The procedures demonstrated in this manual are shown being performed on an ES-4400 rack conveyor dishmachine. The actual maintenance steps, however, apply to any Parker style solenoid valve found on a Ecolab dishmachine.

STEPS

1. Remove the top screw with the 5/16” nutdriver. Remove the screw and the data plate and set to the side.

Removing the top screw

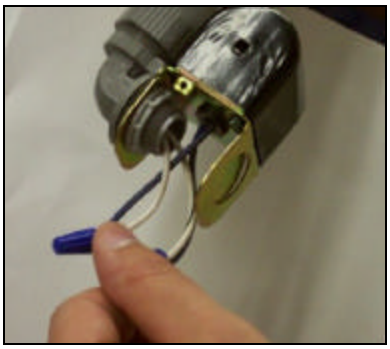
2. With the top screw and data plate removed, grasp the solenoid coil and gently pull up. The coil should slide up, allowing you to remove it from the valve bonnet. If you are wanting to replace the coil, continue on with Step 3. If you are wanting to replace some of the internal components of the valve, proceed to step 12.

Removing the coil

3. **NOTE:** Replacing the solenoid coil requires working with the wiring of your machine. It is important that all wiring maintenance be performed by qualified personnel. Always verify the wiring steps presented in this instruction with the schematic that shipped with the unit. A current schematic can also be found in the unit’s installation manual. Before beginning any step that involves working with wiring, ensure that the steps located in the section entitled “Preparation” have been performed. Power must be secured to the machine at the service breaker. Failure to do so could result in severe injury to maintenance personnel.

Prying open the coil wire cover

4. When replacing the coil, ensure that when removing the coil wire cover that care is taken not to damage the wires inside. Using the medium flathead screwdriver, gently use it to open the cover enough to where it could be pulled off.



Straightening the wires

5. Once the coil wire cover has been removed and set to the side, take the internal wires and pull them out straight.

Removing the wire nuts

6. Remove the wire nuts from the wires and separate them.

Loosening the conduit nut

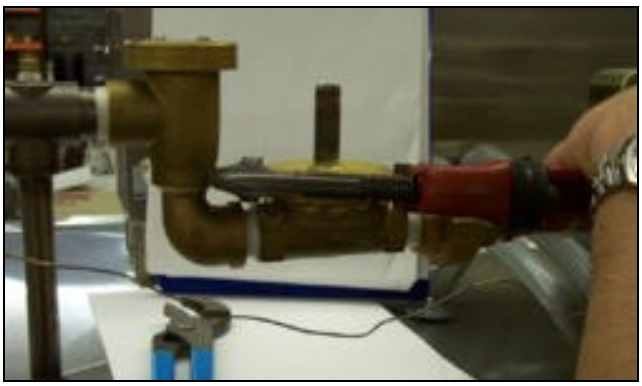
7. Using a pair of channel locks, gently loosen the conduit retaining ring for the conduit nut. Once it is loosened, use your fingers to unscrew and remove it.

8. Pull the conduit away and discard the bad coil. Take the new coil and attach the conduit, reinstall & tighten the conduit nut, and pull the wires through so that you will be able to wire the valve back up.

9. Reconnect the wires from the conduit to the wires from the solenoid as they had been connected previously. Ensure that the wire nuts are on tight.

10. Slide the coil wire cover back on, taking care not to damage the wires.

11. If you are done performing maintenance on the valve, continue on to step 23. Otherwise, please go on to step 12.L

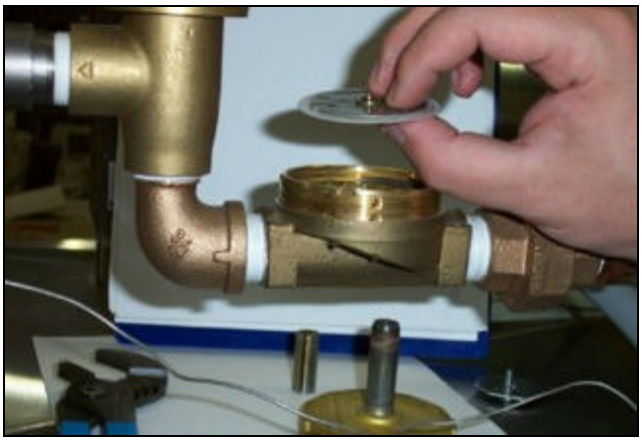


Loosening the valve bonnet

12. To remove the valve bonnet, grasp it with the jaws of the pipe wrench and turn to the left. **Note:** on some models you may have to remove the valve in order to perform this and any further steps. Be careful not to damage the plumbing assembly. Only use the pipe wrench enough to where you can spin the valve bonnet off with your hand.

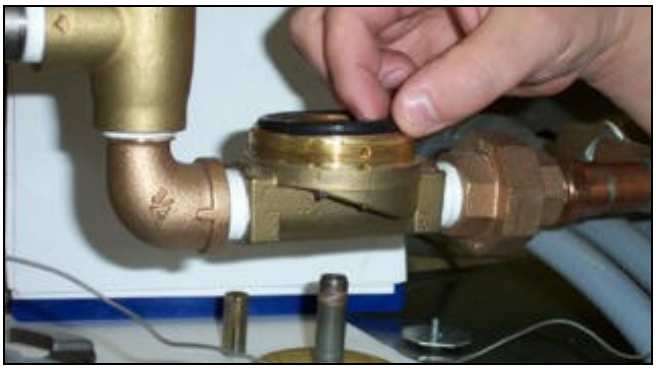
Removing the valve bonnet

13. Slowly remove the valve bonnet. **Note:** The spring for the plunger is located directly under the bonnet and may come free if you are not careful. Remove the plunger, spring and valve bonnet and place to the side.



Removing the diaphragm

17. Remove the diaphragm retainer and then the diaphragm itself. Many problems associated with a solenoid valve can be traced to a clogged pilot port in the diaphragm.

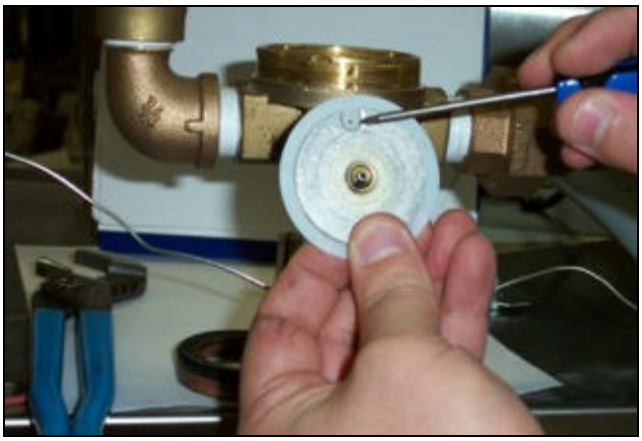


Removing the O-ring

14. Remove the O-ring and inspect it. If it has any tears or cuts or excessive flat spaces, it should be replaced.

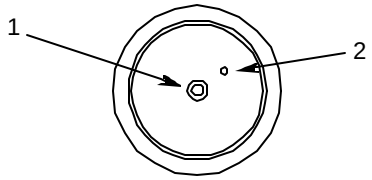
15. Examine the threads for the valve bonnet. Check them for scoring or signs of damage. Take a cloth and clean them out to remove any foreign particles that might get lodged in the threads and cause a leak. Severely damage threads should not be repaired; instead it is recommended that the entire valve should be replaced. These instructions do not provide information on replacing the solenoid valve.

16. **Note:** Even though an O-ring may not appear damaged, it is a good idea to go ahead and replace it if you have a new one. This will help ensure that your valve remains leak-free in the future!



Pointing out the extension hole

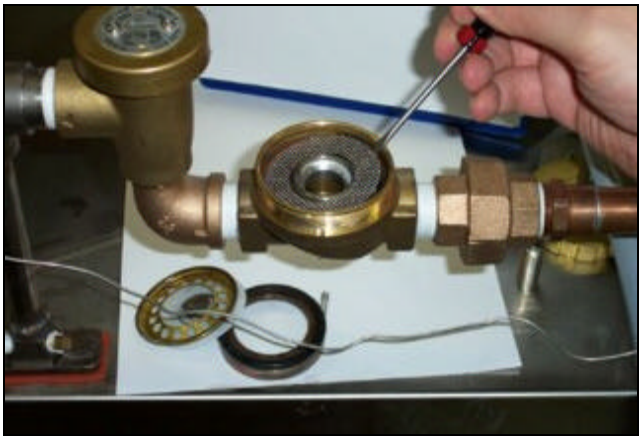
18. As indicated in the photo above, the extension hole can become clogged. If it is difficult to clean out, you can use a heated straight pin to push through the hole. The center hole, the pilot port, must also be clear. If the diaphragm is torn or bent in any way, it must be replaced.



Diaphragm showing (1) pilot port and (2) extension hole

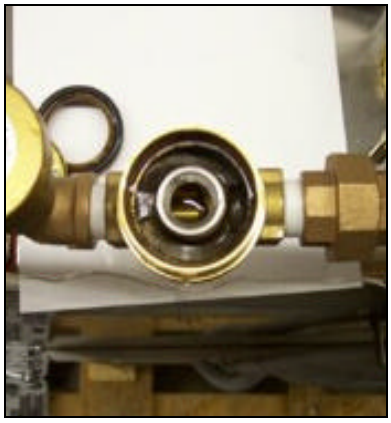
Removing the screen retainer

19. Using the small flathead screwdriver, lift out the screen retainer. Verify that the holes in it are free of clogs and debris.



Removing the mesh strainer screen

20. Again using the small flathead screwdriver, carefully remove the mesh screen from inside the valve body. The screen should be taken and rinsed out to remove any debris fouling it.



View inside the solenoid valve body

21. With the mesh screen removed, look down into the valve and verify it is not clogged. Remove any foreign objects from the valve body that would obstruct flow.

22. Reassemble the valve, reversing the steps needed to take it apart. Replace defective replacement parts with new parts from ordered kits. Ensure that components are sufficiently tightened to prevent leakage.

AFTER MAINTENANCE ACTIONS

Reconnect the incoming water (if disconnected) and turn on. Then restore power to the unit. Run the unit for at least 10 minutes to ensure there are no leaks. If any problems arise please contact your Ecolab representative.

SPECIAL PARTS

Repair kit includes: Plunger, Spring, O-ring, and Diaphragm.

1/2” Repair Kit
Ecolab No.: 85283489
Mfg. No.: N/A

3/4” Repair Kit
Ecolab No.: 85283406
Mfg. No.: N/A

110/240 Volt Coil & Housing Only
Ecolab No.: 85289411
Mfg. No.: N/A

1/2” 110/240 Volt Solenoid Valve Complete Assembly
Ecolab No.: 96580683
Mfg. No.: N/A

3/4” 110/240 Volt Solenoid Valve Complete Assembly
Ecolab No.: 85260511
Mfg. No.: N/A

VACUUM BREAKER REPAIR PARTS KIT

These dishmachines are equipped with vacuum breakers to serve as back-flow prevention devices. ASSE requirements specify what type of back-flow prevention is necessary on dishmachines. Vacuum breakers, unlike air gaps, have certain parts that have specific tolerances and design aspects that must be met in order to function properly.

Ecolab offers repair kits for replacing some of the wear items associated with vacuum breakers which will allow you to save money in that replacement of these parts can take place *without* removing the vacuum breaker from the plumbing assembly.

The instructions provided here are for maintenance personnel only. Unauthorized persons should not attempt any of the steps contained in these instructions.

Warning: many of the instructions and steps within this document require the use of tools. Only authorized personnel should ever perform any maintenance procedure on the dishmachine!

PREPARATION

1. Power must be secured to the unit at the service breaker. Tag or lock out the service breaker to prevent accidental or unauthorized energizing of the machine.

2. Ensure that incoming water to the machine is secured either by use of a shut-off valve or disconnecting the incoming water line.

TOOLS REQUIRED

The following tools will be needed to perform this maintenance evolution:

1. Small flathead screwdriver
2. Needle nose pliers

TIME REQUIRED

It is estimated that it will take (1) person twenty minutes to perform this task, not including all of the items indicated in the section entitled “PREPARATION”.

IMPORTANT NOTES

1. Read these instructions thoroughly before attempting this maintenance evolution. Become familiar with the parts and what actions need to be taken. This will save time in the long run!

STEPS

1. **Note:** These instructions only apply to vacuum breakers (1/2” NPT and 3/4” NPT) as pictured below. The repair kits indicated in these instructions will only work on those style of back-flow preventers. If you have a machine with a different style of vacuum breaker, contact your Ecolab representative about replacement components.

Vacuum breaker

2. **Note:** Even though the photos in these instructions show a vacuum breaker that has been removed from the plumbing assembly, these maintenance steps could be performed with it installed so long as the requirements in the section entitled “PREPARATION” have been met.

3. Remove the top cap by gripping firmly and turning to the left. The cap should come off after a few turns.

Removing the cap

4. Set the cap to the side.

5. Using the needle nose pliers, gently lift out the plunger and set to the side. Examine the brass seating surface inside the vacuum breaker. The plunger is required to sit flat on this surface so it must be free of defects. If there is debris, remove it. If it is chipped or cracked then the vacuum breaker must be replaced. Failure to do so may result in the vacuum breaker not working according to its design and could result in damage to the dishmachine.

Removing the plunger

6. Your repair kit comes with a new plunger. Examine the old one and ensure that the mating surface is not damaged or cut. Also inspect the rubber seal on the top of the plunger to ensure it is in good condition and not torn.

Examining the seal ring on the plunger

Examining the plunger seating surface

7. If any of these conditions are present, replace the old plunger with the new one from your kit. Verify that the new plunger is also free from defects. If it is not, contact your Ecolab representative immediately.

8. The plunger should drop into the vacuum breaker and seat. Ensure it is not flipped upside down (the orange seal ring should be up towards the top of the vacuum breaker).

9. Pick up the cap and examine it. With a soft towel, remove any grit, grime or debris that may have gotten caught in the threads of both the cap retainer or the vacuum breaker body. There is an O-ring that should be present on the cap retainer as well. Regardless of the condition of the plunger, this O-ring should be replaced once the cap is removed. Using a small flathead screwdriver, remove the old O-ring.

Replacing the O-ring

10. With the new O-ring in place, screw the cap back on the vacuum breaker body. The cap needs to only be hand tight (snug).

AFTER MAINTENANCE ACTIONS

1. Reconnect the incoming water (if disconnected) and turn on. Then restore power to the unit. Run the unit for at least 10 minutes to ensure there are no leaks. If any problems arise please contact your Ecolab representative.

SPECIAL PARTS

To order the kit with components and instructions:

Components of 1/2” Repair Kit
Ecolab No.: 85284156
Mfg. No.: 06401-003-06-23

Components of 3/4” Repair Kit
Ecolab No.: 85284164
Mfg. No.: 06401-003-06-24

REPLACING THE PUMP GASKET & SEAL

These rack conveyor machines come equipped with powerful motors and pumps to ensure ware washing results. Occasionally, some of the parts on these components may need replacing to maintain optimum performance. Two components in particular are the wash pump gasket and the mechanical seal.

The instructions provided here are for maintenance personnel only. Unauthorized persons should not attempt any of the steps contained in these instructions.

Warning: many of the instructions and steps within this document require the use of tools. Only authorized personnel should ever perform any maintenance procedure on the dishmachine!

PREPARATION

1. Power must be secured to the unit at the service breaker. Tag or lock out the service breaker to prevent accidental or unauthorized energizing of the machine.

2. Ensure that incoming water to the machine is secured either by use of a shut-off valve or disconnecting the incoming water line.

3. Ensure that the dishmachine has been completely drained of water and has been allowed to cool down prior to beginning this maintenance procedure.

TOOLS REQUIRED

The following tools will be needed to perform this maintenance evolution:

1. 7/16” socket and ratchet with extension
2. 9/16” socket and ratchet with extension
3. 5/16” Allen wrench
4. 5/16” nutdriver
5. Large flathead screwdriver

TIME REQUIRED

It is estimated that it will take (1) person one and a half hours to perform this task, not including all of the items indicated in the section entitled “PREPARATION”.

IMPORTANT NOTES

1. Read these instructions thoroughly before attempting this maintenance procedure. Become familiar with the parts and what actions need to be taken. This will save time in the long run!

2. The procedures demonstrated in this manual are shown being performed on an ES-4400 rack conveyor dishmachine. The actual maintenance steps, however, apply to any wash, prewash or power rinse motor found on an Ecolab rack conveyor dishmachine.

STEPS

1. **Note:** in this procedure, it is not necessary to always remove the wiring from the motor. However, the motor should be treated with the greatest of care when being pulled away and set on the floor for maintenance, as demonstrated in these instructions.

2. Remove the (4) nuts holding the mounting plate in position.

Removing the mounting plate nuts with the 9/16” socket

3. Loosen the band clamp on the back end of the motor.

Loosening the band clamp on the back end of the motor.

4. With the band clamp loosened, carefully remove it from the back end of the motor. Once the clamp is removed, examine it to determine if it needs to be replaced as well. If it is broken in any spots or shows signs of metal fatigue, it is best to order a new one. The purpose of the clamp and the attached support bracket is to keep the weight of the motor from pulling on the tub, damaging it. It is absolutely necessary that this component be replaced once the maintenance procedure is completed.

Removing the rear clamp

5. Remove the motor support bracket.

Removing the motor support bracket

6. With the motor support bracket removed, gently pull back on the motor. You may have to move it from side to side, but it should start to move back. Pull it completely away from the mounting studs on the tub and set down gently to work on it.

7. Remove the gasket from the tub. If you are going to replace it with a new one, do so at this time. Otherwise, carefully examine the gasket for tears and other damage. If it is acceptable, set to the side. If you are not going to replace the seal, go to step 16.

Removing the pump gasket

8. Using a large screwdriver (flathead preferred, but a phillip-shead will work just as well) and the 7/16" socket, loosen and then remove the bolt holding the impeller to motor shaft. Refer to the picture below.

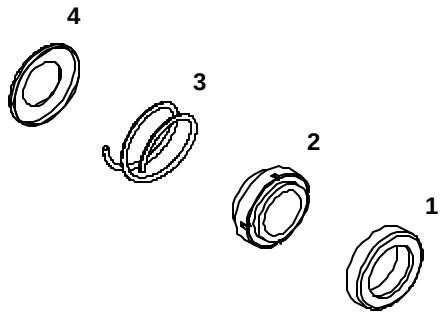
Removing the bolt that holds the impeller to the shaft

9. With the bolt and washer removed, grasp the sides of the impeller and pull up gently. The impeller should slide off of the shaft. Remove the woodruff key as well and set to the side.

Removing the impeller

Removing the woodruff key

10. Note that the mechanical seal will consist of the following parts:



1. A rubber seal with a ceramic ring set inside it that will seat in the center of the mounting plate.

2. A rubber seal with a stainless steel covering on the outside that seals the motor shaft and seats against the ceramic ring.

3. A spring.

4. A stainless steel spring cap to capture the top of the spring and hold it in place.

11. Most of the mechanical seal should simply come off, leaving the rubber seal with the ceramic ring inside the pump mounting plate.

12. Using a screwdriver, pry out the remaining part of the mechanical seal, taking care not to score or damage the motor shaft.

13. Once the hole is free of any parts of the mechanical seal, verify that the hole is clean and free of debris.

14.Gently press the new seal and ceramic over the shaft and slide down into the mounting plate hole. NOTE: Do not touch the surface of the seal with your bare fingers; place a rag or paper towel between your fingers and the seal. Gently slide the shaft seal over the shaft and push it down against the mounting plate seal. Place the spring and cap over the shaft.

15. Place the woodruff key back into the groove of the motor shaft and re-install the impeller, being careful to align the woodruff key with the slot in the impeller. Replace the bolt and washer, then tighten.

16. Install the motor by placing it on the studs and sliding it forward until it is against the wash tank wall. Replace the nuts and washers and tighten.

17. Re-install the pump motor support bracket and tighten down the nuts used to secure it to the tub.

18. Replace the band clamp on the motor and support bracket, tighten until snug.

AFTER MAINTENANCE ACTIONS

Reconnect the incoming water (if disconnected) and turn on. Then restore power to the unit. Run the unit for at least 10 minutes to ensure there are no leaks. If you hear any grinding sounds while the motor is running, immediately shut off the unit and secure power and water. There is a serious problem that must be addressed. If any problems arise you can contact your Ecolab representative.

SPECIAL PARTS

Mechanical Seal
Ecolab No.: 96563812
Mfg. No.: 06401-003-06-73

Motor Mounting Gasket
Ecolab No.: 96020060
Mfg. No.: 06401-003-06-75

Motor Support Clamp
Ecolab No.: 96021852
Mfg. No.: 04730-002-32-15

REPLACING THE WASH HEATER

Ecolab rack conveyor machines come equipped with heaters to ensure proper ware washing results. Occasionally, some of these components may need replacing to maintain optimum performance.

Ecolab offers all of the repair parts necessary for performing this task.

The instructions provided here are for maintenance personnel only. Unauthorized persons should not attempt any of the steps contained in these instructions.

Warning: many of the instructions and steps within this document require the use of tools. Only authorized personnel should ever perform any maintenance procedure on the dishmachine!

PREPARATION

1. Power must be secured to the unit at the service breaker. Tag or lock out the service breaker to prevent accidental or unauthorized energizing of the machine.

2. Ensure that incoming water to the machine is secured either by use of a shut-off valve or disconnecting the incoming water line.

3. The unit must be drained completely.

TOOLS REQUIRED

The following tools will be needed to perform this maintenance evolution:

1. 3/8” Nutdriver
2. Ratchet
3. 1/2” Socket
4. 3/8” Socket
5. Phillipshead Screwdriver
6. Needlenose Pliers
7. Torque Wrench
8. Siliconee Sealant
9. Amp Meter

TIME REQUIRED

It is estimated that it will take (1) person ninety minutes to perform this task, not including all of the items indicated in the section entitled “PREPARATION”.

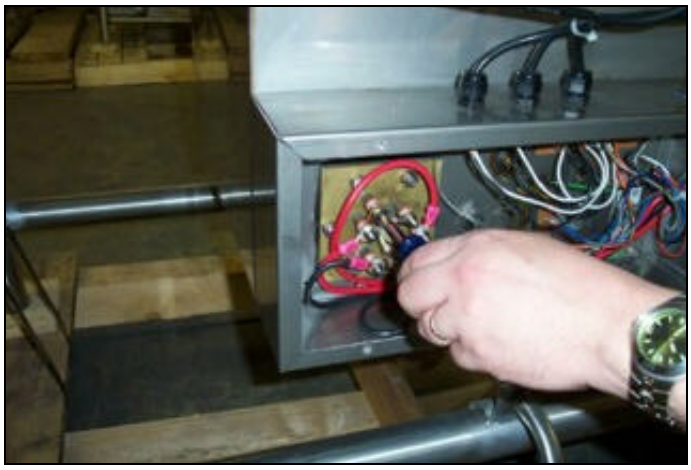
IMPORTANT NOTES

1. Read these instructions thoroughly before attempting this maintenance task. Become familiar with the parts and what actions need to be taken. This will save time in the long run!

STEPS

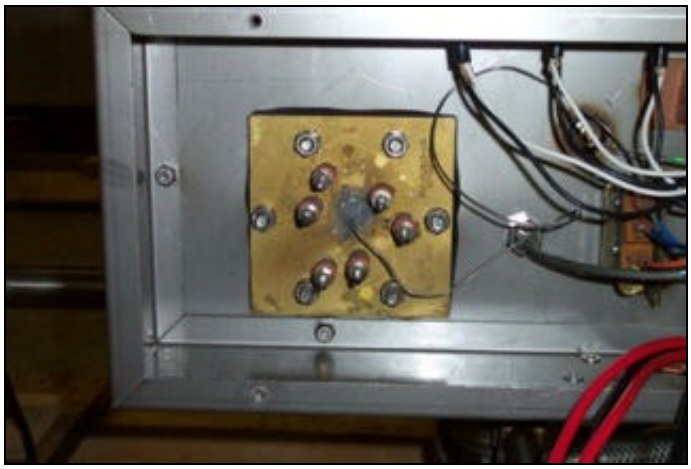
1. Remove the front dress panel.

2. Remove the heater box cover to expose the heater. Set the cover and hardware to the side.



Removing the power lines.

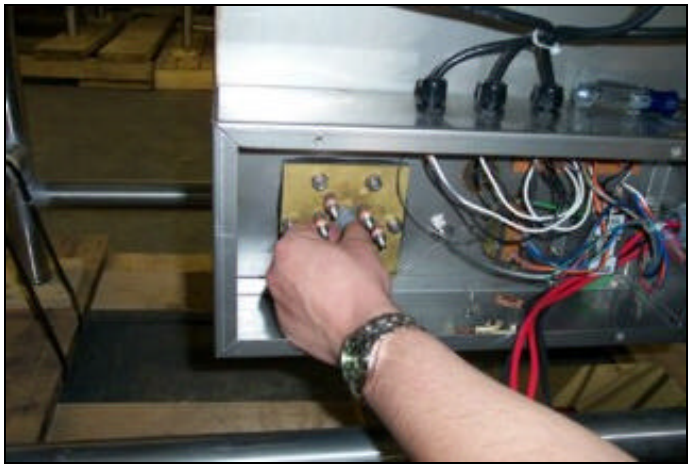
3. Remove the incoming electrical lines from the heater. Set the hardware to the side.



Heater without power lines attached.

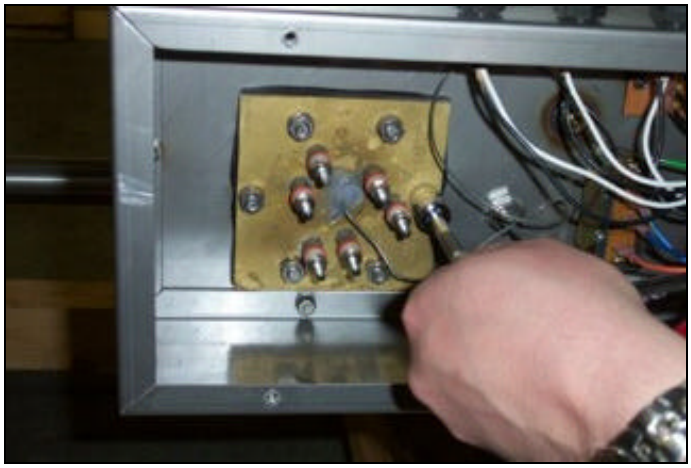
4. Push the incoming electrical lines out of the way.

5. The thermostat probe needs to be removed from the well inside the heater. The probe is secured in place with silicone that must be peeled away prior to attempting to remove it. It is important that you do not damage the probe during this part of the maintenance action. If you do, then the thermostat will have to be replaced as well.



Removing silicone from thermostat well

6. Using your hand or needlenose pliers, remove the silicone so that the thermostat probe may be gently removed.



Removing the nuts and lockwashers

Removing the heater

Removing the gasket

7. With the thermostat probe out of the way, use the 1/2” socket and ratchet to remove the nuts holding the heater to the tub. Remove all nuts and lockwashers.

8. Remove the heater from the tub weldment.

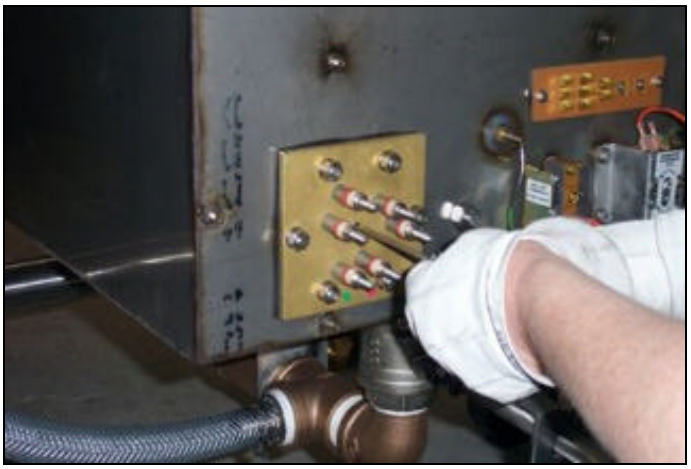
9. Remove the gasket.

Applying the torque wrench to the nuts

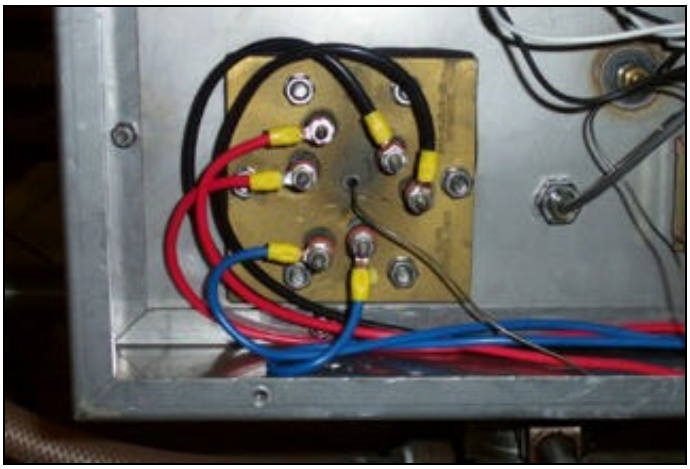
10. Before proceeding any further, it is important to verify that the tub wall is free of any excess debris so that when the new gasket is applied, there are no gaps that could lead to leaking around the heater.

11. Apply the new heater gasket from your service kit.

12. Slide the heater onto the studs and apply by hand the lockwashers and nuts. Tighten the nuts by hand and then use the torque wrench set to 154 in-lbs to ensure that the nuts are secure.



Putting the thermostat probe in the heater well



Three phase wiring

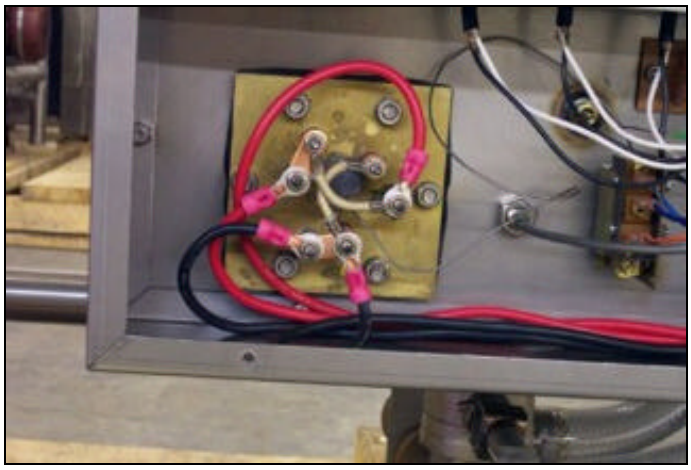
Applying silicone to the heater well

13. The thermostat probe needs to be placed into the well of the new heater. Again, use caution when doing this so that the probe or the capillary tube do not become broken. If this occurs, then the thermostat will have to be replaced.

14. Apply silicone to seal the well and hold the thermostat probe in place.

15. Reattach the incoming power lines to the heater, ensuring that you wire the heater correctly for either single or three phase operation.

Tightening the nuts holding the power lines



Single phase wiring

16. Using the torque wrench or a torque nutdriver (if available) torge the nuts holding the wires, jumpers and bus bars to 16 in-lbs.

17. Ensuring that all non-essential personnel are clear of the area, close the drain valve(s) and restore power and water to

the unit. Turn the unit on and allow it to fill normally.

18. Verify that there are no leaks around the heater. If there are, attempt to tighten it down as the tub will change shape slightly as it heats up.

19. Use the amp meter to take readings off of the power lines to the heater, verifying the amperage draw to the machine data plate.

20. Wait until the heater contactor kicks out (meaning that the tub has reached the appropriate temperature) and place the unit in DELIME mode by flipping the switch on the back of the control box. Allow the unit to operate for at least ten minutes to verify that there are no leaks and that the heater is maintaining the tank temperature.

21. If the unit appears to be operating correctly, return it to AUTO mode and turn off.

22. Replace the heater box cover.

23. Replace the front dress panel.

AFTER MAINTENANCE ACTIONS

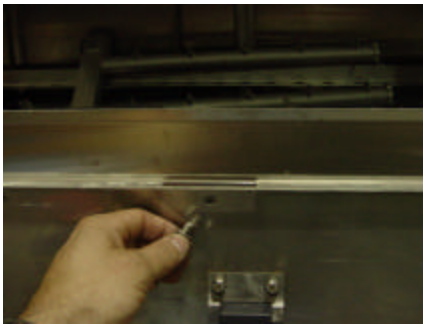
Service perosnnel may want to drain the machine and allow it to cool down. Secure power to the unit at the service breaker and then verify the torque of all fasteners covered in this instruction.

SPECIAL PARTS

Heater Replacement Kit Chart

Model	Volts	Phase	KW	Part Number
All	208	1	15	06401-003-10-21
	230	1	15	06401-003-10-22
	208	3	15	06401-003-10-21
	230	3	15	06401-003-10-22
	460	3	15	06401-003-10-31
	208	1	10	06401-003-12-94
	230	1	10	06401-003-12-95
	208	3	10	06401-003-12-94
	230	3	10	06401-003-12-95
	460	3	10	06401-003-12-96

First, remove three bolts, locknuts and flat washers at middle hood/tub junction.



Next, remove door splash shield.

Then, install new rack rail splash shield using the bolt, locknut and flat washer of the existing actuator weldment.

Rack Rail Stabilizer
Ecolab No.: 96582986
Mfg. No.: 05700-011-34-63

MAINTENANCE INSTRUCTIONS

REPLACING CONVEYOR MOTOR

The instructions provided here are for maintenance personnel only. Unauthorized persons should not attempt any of the steps contained in these instructions.

Warning: many of the instructions and steps within this document require the use of tools. Only authorized personnel should ever perform any maintenance procedure on the dishmachine!

PREPARATION

1. Power must be secured to the unit at the service breaker. Tag or lock out the service breaker to prevent accidental or unauthorized energizing of the machine.

2. Ensure that incoming water to the machine is secured either by use of a shut-off valve or disconnecting the incoming water line.

3. Ensure that the dishmachine has been completely drained of water and has been allowed to cool down prior to beginning this maintenance procedure.

TOOLS REQUIRED

The following tools will be needed to perform this maintenance evolution:

1. 7/16” socket and ratchet with extension
2. 9/16” socket and ratchet with extension
3. 5/16” Allen wrench
4. 5/16” nutdriver
5. Large flathead screwdriver
6. Small flathead screwdriver

TIME REQUIRED

It is estimated that it will take (1) person one and a half hours to perform this task, not including all of the items indicated in the section entitled “PREPARATION”.

IMPORTANT NOTES

1. Read these instructions thoroughly before attempting this maintenance procedure. Become familiar with the parts and what actions need to be taken. This will save time in the long run!

2. The procedures demonstrated in this manual are shown being performed on an ES-4400 rack conveyor dishmachine. The actual maintenance steps, however, apply to any wash, prewash or power rinse motor found on an Ecolab rack conveyor dishmachine.

3. These basic instructions will apply to all prewash, wash and power rinse motors found on ES & WH series machines.

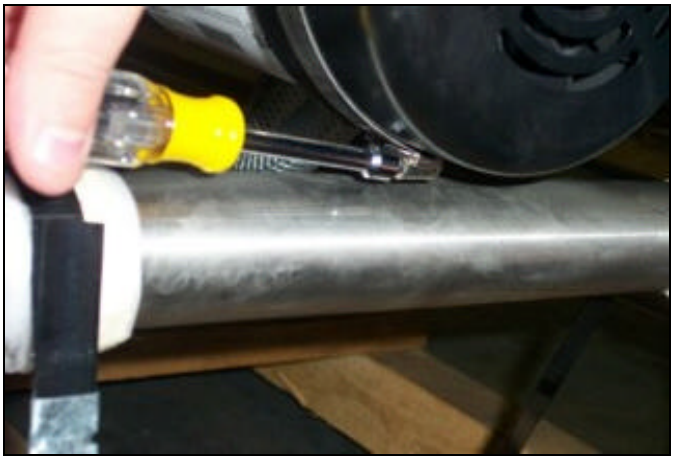
STEPS

1. Remove the (4) nuts holding the mounting plate in position.

Removing the mounting plate nuts with the 9/16” socket

2. Loosen the band clamp on the back end of the motor.

3. With the band clamp loosened, carefully remove it from the back end of the motor. Once the clamp is removed, examine it to determine if it needs to be replaced as well. If it is broken in any spots or shows signs of metal fatigue, it is best to order a new one. The purpose of the clamp and the attached support bracket is to keep the weight of the motor from pulling on the tub, damaging it. It is absolutely necessary that this component be replaced once the maintenance procedure is completed.



Loosening the band clamp on the back end of the motor.

Removing the rear clamp

4. Remove the motor support bracket.

Removing the motor support bracket

5. With the motor support bracket removed, gently pull back on the motor. You may have to move it from side to side, but it should start to move back. Pull it completely away from the mounting studs on the tub and set down gently to work on it.

6. Remove the gasket from the tub.

7. Use a screwdriver to remove the wiring cover from the motor wiring box. Take note of how the motor is wired up because you will have to wire it up the exact same way when you install the new motor.

8. Remove the conduit fitting from the motor wiring box.

9. Pull the conduit away from the motor and set old motor to the side. Dispose of the old motor in accordance with warranty or national/state/local guidelines, whichever may apply.

Removing the pump gasket

10. Remove the wiring cover on the new motor assembly and pull the wires free. Install the conduit fitting.

11. Run the conduit to the motor, pulling the machine wires through and into the motor wiring box.

12. Rewire the motor exactly the same way the old one was wired and/or refer to the motor schematic to determine how the motor should be wired for the incoming power. If you require help on this, do not hesitate to contact Jackson Technical Service. Ensure that all wiring is done in accordance with national, state and local codes as applicable.

Remounting the wash motor assembly

13. Place the new motor gasket on the tub over the mounting studs.

14. Carefully lift the motor assembly and slide it onto the mounting studs.

15. Re-install the mounting hardware and tighten down.

16. Attach the motor support rear clamp.

17. Adjust the motor support bracket so that the motor assembly is level and tighten down.

18. Attach the motor wiring cover.

AFTER MAINTENANCE ACTIONS

Reconnect the incoming water (if disconnected) and turn on. Then restore power to the unit. Run the unit for at least 10 minutes to ensure there are no leaks. If you hear any grinding sounds while the motor is running, immediately shut off the unit and secure power and water. There is a serious problem that must be addressed. If any problems arise you can contact Ecolab.

SPECIAL PARTS

Bracket, Motor Support
05700-021-73-42

Clamp, Motor Support
04730-002-32-15

SECTION 6:
PARTS SECTION

HARDWARE- Stainless Steel

Ecolab No.	Description	Mfg. No.
96023832	SCREW 4-40X1/4"	05305-002-32-38
96584354	SCREW 4-40X3/8"	N/A
88120365	SCREW 4-40X1/2"	N/A
96570478	SCREW 4-40X3/4"	N/A
96028436	SCREW 4-40 X 1"	N/A
88125554	SCREW 6-32X3/8"	N/A
88120068	SCREW 6-32X1/2"	N/A
96025010	SCREW 6-32X3/4"	05305-011-37-05
96032883	SCREW 6-32X1-1/2"	N/A
88120639	SCREW 8-32X3/8"	05305-172-02-00
88123740	SCREW 8-32X1/2"	05305-172-07-00
88120175	SCREW 8-32X5/8"	N/A
88122254	SCREW 8-32X3/4"	05305-172-06-00
88120878	SCREW 10-32X3/8"	05305-173-12-00
88120142	SCREW 10-32X1/2"	N/A
88120217	SCREW 10-32X3/4"	05305-011-62-17
88120282	SCREW 10-32X1"	N/A
88120936	SCREW 10-32X1-1/2"	N/A
88120753	SCREW 10-24X3/8"	05305-173-03-00
88120746	SCREW 10-24X1/2"	N/A
88120191	SCREW 10-24X3/4"	N/A
88120019	SCREW 10-24X1"	N/A
88120000	SCREW 10-24X6"	N/A
88220007	SCREW SOCKET 1/4-20X3/8"	N/A
88020433	SCREW 1/4-20X1/2"	05305-274-02-00
88000013	SCREW 1/4-20X5/8"	05305-274-24-00
88020458	SCREW 1/4-20X3/4"	05305-274-04-00
88030069	SCREW 1/4-20X1-1/2"	05305-274-23-00
88000104	SCREW 1/4-20X2-1/2"	05305-274-13-00
88021027	SCREW 3/8-16X3/4"	05306-011-71-60
88021050	SCREW 3/8-16X1-1/4"	05305-276-10-00
88926002	SCREW SOCKET 3/8-16X1-1/2"	N/A
88021076	SCREW 3/8-16X1-3/4"	05306-011-36-94
88420047	NUT HEX 4-40	N/A
88420062	NUT HEX 6-32	N/A
88420070	NUT HEX 8-32	N/A
88420088	NUT HEX 10-32	N/A
88420120	NUT HEX 10-24	N/A
88420104	NUT HEX 1/4-20	05310-274-01-00
88422043	NUT HEX 5/16-18	05310-275-01-00
88422068	NUT HEX 3/8-16	05310-276-01-00
88429121	NUT LOCK 4-40	N/A
88460050	NUT LOCK 6-32	05310-373-03-00
88429105	NUT LOCK 8-32	05310-272-02-00
88460068	NUT LOCK 10-32	05310-373-02-00
88429063	NUT LOCK 10-24	05310-373-01-00

Ecolab No.	Description	Mfg. No.
88429113	NUT LOCK 1/4-20	05310-374-01-00
88419056	NUT LOCK 5/16-18	N/A
88419007	NUT LOCK 3/8-16	05310-011-72-55
88520000	WASHER FLAT 1/4	005311-002-78-93
88530597	WASHER FLAT 5/16	05311-175-01-00
88530605	WASHER FLAT 3/8	05311-176-01-00
88521059	WASHER LOCK #8	05311-272-01-00
88521075	WASHER LOCK #10	N/A
88521083	WASHER LOCK 1/4	05311-274-01-00
88521117	WASHER LOCK 5/16	05311-275-01-00
88521109	WASHER LOCK 3/8	05311-276-01-00
88520069	WASHER LOCK 1/2	05311-011-71-93
88500000	WASHER BEV 3/8 SQUARE	05311-011-35-36
88900733	PIN COTTER 1/16X1/2"	05315-011-68-56
96027495	PIN COTTER 3/32X3/4"	05315-207-01-00
88900501	PIN COTTER 1/8X3/4"	05315-011-60-09
88930581	PIN COTTER 1/8X1-1/2"	05315-002-05-86
88920087	PIN COTTER 3/16X1-3/4"	N/A

HARDWARE MISC.

83109041	CABLE TIE 7"	05975-602-05-16
83109199	CABLE TIE 15" 100PK	N/A
83109025	CABLE TIE W/SCREW HOLE	N/A
89990121	GREASE SILICONE 3OZ TUBE	N/A
89992176	SILICONE CAULK WHITE 3OZ TUBE	N/A
89991996	TEFLON TAPE ROLL	N/A
83109125	ELECTRICAL TAPE	N/A
96022447	ENDCAP, DOOR HANDLE	05340-011-35-00
96552336	DOOR GUIDE, PLASTIC, 23 1/2” Long	05700-111-33-59

ELECTRICAL

83300541	CONDUIT 1/2"	05975-111-46-57
83312017	NUT, CONDUIT 1/2"	N/A
83311506	CONNECTOR, CONDUIT 1/2"	05975-011-45-13
83311753	ELBOW, 90DEG, CONDUIT 1/2"	05975-111-01-00
83311852	ELBOW 45DEG, CONDUIT 1/2"	05975-011-45-23
83115003	PLUG, PLASTIC 1/2"	N/A
96540067	PLUG, METAL 1/2"	N/A
83199570	PLUG, RUBBER 1/2"	N/A
83116814	PLUG, METAL 1-1/2"	N/A
87301412	HANGER, CONDUIT METAL	N/A
96203153	TERMINAL FEMALE 1/4" W/PIGGY BACK	N/A
83100002	TERMINAL FEMALE 1/4" 14-8GA	N/A
83102269	TERMINAL FEMALE 1/4" 16-14GA	N/A
83102244	TERMINAL FEMALE 1/4" 22-18GA	N/A
83101022	CONNECTOR BUTT SPLICE 16-14GA	N/A
83101014	CONNECTOR BUTT SPLICE 22-18GA	N/A
83102152	TERMINAL SPADE #8HOLE 16-14GA	N/A
83102129	TERMINAL SPADE #8HOLE 22-16GA	N/A

Ecolab No.	Description	Mfg. No.
96570221	TERMINAL SPADE #10HOLE 14-16GA	N/A
96032271	TERMINAL SPADE .25HOLE 12-10GA	N/A
96032701	TERMINAL SPADE .25HOLE 16-14GA	N/A
83100073	TERMINAL EYELET #8HOLE 16-14GA	N/A
83100339	TERMINAL EYELET #10HOLE 16-14GA	N/A
83101113	WIRE NUT 18-12GA	N/A
83101089	WIRE NUT 14-10GA CRIMP	N/A

PLUMBING

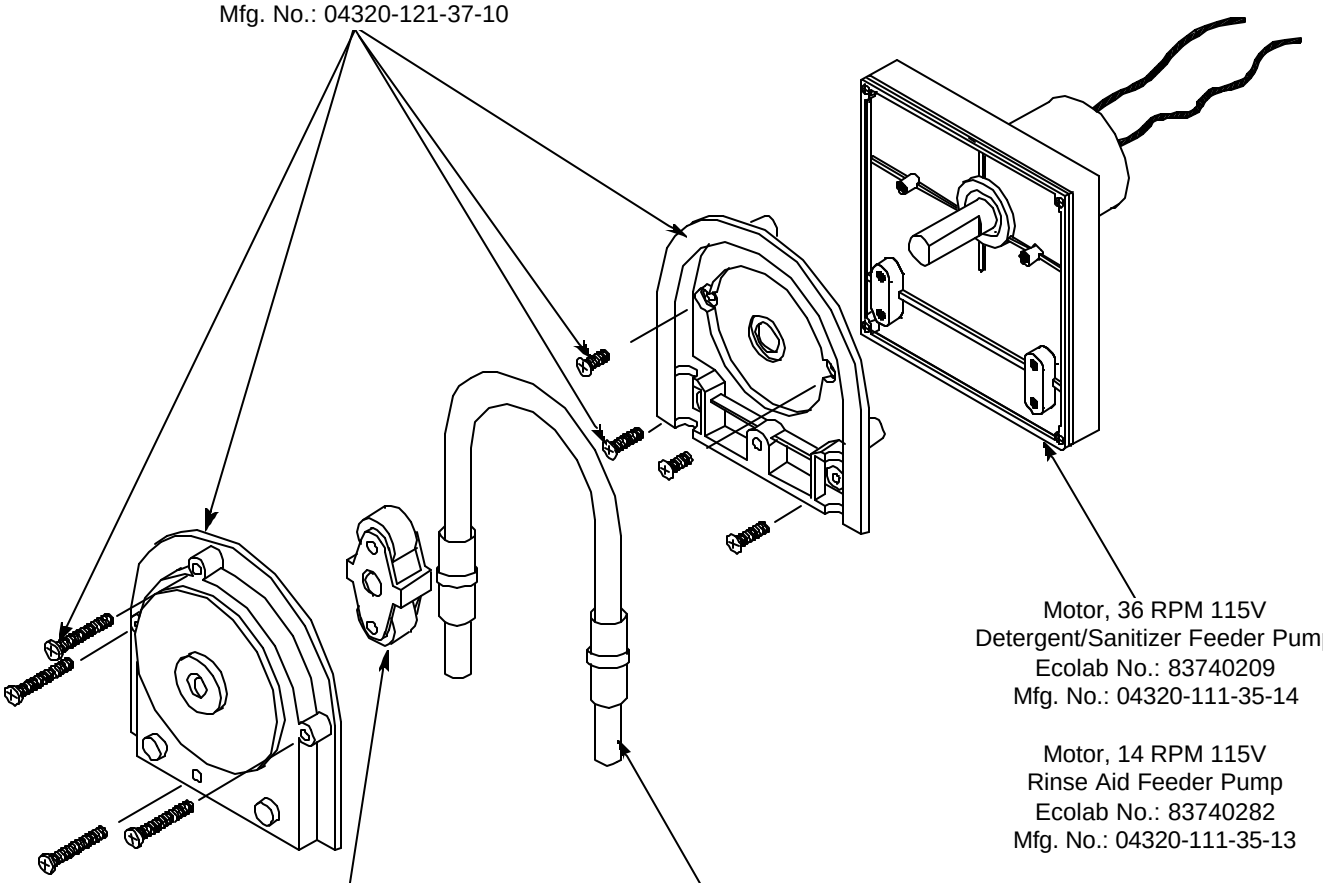
89009138	THERMOMETER, SCREW-IN, ES2000/4000	06685-111-35-30
96021316	THERMOMETER, 96"LEAD, CONVEYOR	06685-111-68-49
85390193	GAUGE PRESSURE 0-30PSI, BOTTOM MOUNT	06685-011-64-29
96582086	GAUGE PRESSURE 0-100PSI, BOTTOM MOUNT	06685-111-88-34
85390417	GAUGE PRESSURE 0-100PSI, BACK MOUNT	06685-011-48-32
96022421	WASH ARM PRESSURE TEST KIT	N/A
85230191	NEEDLE VALVE, 1/4" PIPE	N/A
85250587	VALVE BALL 1/2"PIPE	N/A
85200269	VALVE GLOBE 1/2"PIPE	04820-100-15-00
85250595	VALVE BALL 3/4"PIPE	N/A
85221018	REGULATOR WATER 1/4"PIPE, 180F	04820-011-69-05
85220077	REGULATOR WATER 1/2"PIPE, 140F	04820-100-04-07
85220010	REGULATOR WATER 3/4"PIPE, 180F	04820-100-01-06
85284214	REPAIR KIT 3/4" WATER REGULATOR	N/A
96027024	STRAINER Y 1/2" PIPE	04730-217-01-10
85300325	STRAINER Y 3/4" PIPE	04730-717-02-06
85300301	SCREEN, COARSE 3/4”	N/A
85300333	SCREEN, FINE 3/4”	N/A

TUBING

85015105	TUBING 1/4" CLEAR	05700-011-37-12
85015097	TUBING 1/4" RED	05700-011-37-14
85015089	TUBING 1/4" BLUE	05700-011-37-16
92661024	COPPER TUBE 1/4" 50 FT	N/A
92661016	COPPER TUBE 3/8" 25 FT	N/A
92661032	COPPER TUBE 1/2" 50 FT	N/A

TUBING MISC.

92630000	WASH TANK CONNECTOR, 45DEG 1/2" HOSE	04730-002-69-80
92002008	WASH TANK CONNECTOR, 18DEG 5/8" HOSE	04820-111-51-14
92002019	WASH TANK CONNECTOR, 45DEG 5/8" HOSE	04730-011-45-21
96581475	CHECK VALVE, ELBOW, RINSE LINE	N/A
92171271	RINSE INJECTOR CHECK VALVE KIT	N/A
96572573	PICK-UP TUBE STIFFENER	05700-002-66-49
87301149	CLAMP, HOSE 7/32-5/8"	05700-000-35-06
87301131	CLAMP, HOSE 5/16-7/8"	04730-011-36-05
96020078	CLAMP, HOSE 11/16-1.5"	N/A
87301362	CLAMP, HOSE 7/8-2.75"	04730-719-01-37
87301503	CLAMP, HOSE 4.75-6.5"	04730-011-34-90



Squeeze Tube Lubricant
Ecolab No.: 89990121

Housing Kit (Red roller)
Ecolab No.: 96562871
Mfg. No.: 04320-121-37-10

Motor, 36 RPM 115V
Detergent/Sanitizer Feeder Pump
Ecolab No.: 83740209
Mfg. No.: 04320-111-35-14

Motor, 14 RPM 115V
Rinse Aid Feeder Pump
Ecolab No.: 83740282
Mfg. No.: 04320-111-35-13

Motor, 36 RPM 240V
Detergent/Sanitizer Feeder Pump
Ecolab No.: 96029293
Mfg. No.: 04320-111-47-47

Motor, 14 RPM 240V
Rinse Aid Feeder Pump
Ecolab No.: 96029897
Mfg. No.: 04320-111-47-46

Motor, 14 RPM 24V
Rinse Aid Feeder Pump
Ecolab No.: 96030317
Mfg. No.: 04320-011-63-33

Roller, Red (Detergent/Sanitizer)
Ecolab No.: 96037924
Mfg. No.: 04320-111-36-70

Roller, White (Rinse Aid)
Ecolab No.: 84800041
Mfg. No.: 04320-002-82-28

Roller, Black
Ecolab No.: 96029533
Mfg. No.: 04320-111-65-27

Squeeze Tube, Detergent/Sanitizer
(Use with the red roller.)
Ecolab No.: 96562673
Mfg. No.: 05700-111-35-29

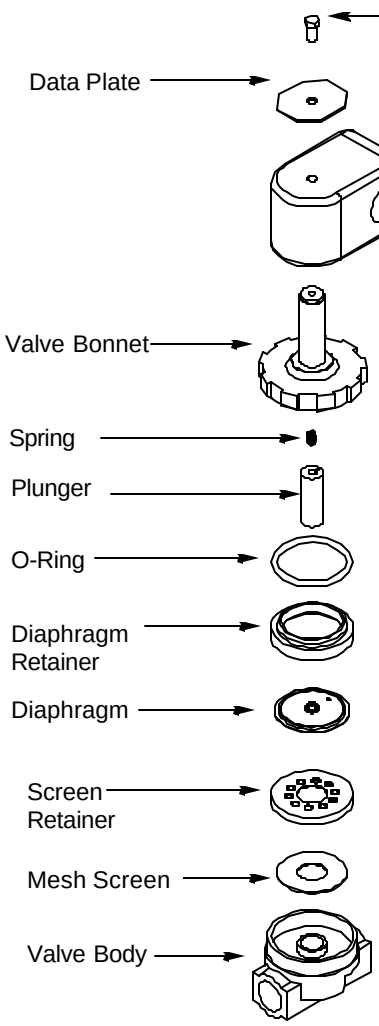
Clear Squeeze Tube, Rinse Aid
(Use with the white roller.)
Ecolab No.: 85017119
Mfg. No.: 05700-011-76-41

Tube, Small 7/32”
(Use with the black roller.)
Ecolab No.: 85016079
Mfg. No.: 05700-011-65-21

1/4” Sight Tube	Ecolab No.: 92001017	Mfg. No.: N/A
3/8” Sight Tube	Ecolab No.: 96569496	Mfg. No.: 05700-111-35-33

SECTION 6: PARTS SECTION

SOLENOID VALVE



Repair kit includes: Plunger, Spring, O-ring, and Diaphragm.

1/2" Repair Kit
Ecolab No.: 85283489
Mfg. No.: N/A

3/4" Repair Kit
Ecolab No.: 85283406
Mfg. No.: N/A

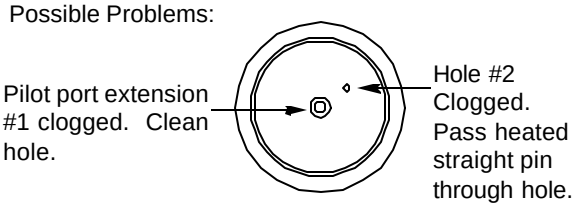
1/2" 110/240 Volt Solenoid Valve
Complete Assembly
Ecolab No.: 96580683
Mfg. No.: N/A

3/4" 110/240 Volt Solenoid Valve
Complete Assembly
Ecolab No.: 85260511
Mfg. No.: N/A

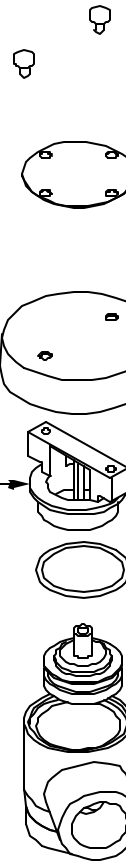
TO DISASSEMBLE - These valves may be taken apart by unscrewing the bonnet and the enclosing tube assembly from the valve body assembly. After unscrewing, carefully lift off the bonnet and enclosing tube assembly. Don't drop the plunger. The o-ring seal and diaphragm cartridge can now be lifted out. Be careful not to damage the machined faces while the valve is apart.

TO REASSEMBLE - Place the diaphragm cartridge in the body with the pilot port extension UP. Hold the plunger with the synthetic seat against the pilot port. Make sure the o-ring is in place, then lower the bonnet and enclosing tube assembly over the plunger. Screw the bonnet assembly snugly down on the body assembly.

Possible Problems:



VACUUM BREAKER REPAIR PARTS KITS



Data Plate (3/4")
Ecolab No.: 96850342
Mfg. No.: N/A

1/2" Cap
Ecolab No.: 85284065
Mfg. No.: N/A

3/4" Cap
Ecolab No.: 96560230
Mfg. No.: N/A

1/2" Brass Bonnet
Ecolab No.: 85284073
Mfg. No.: N/A

3/4" Brass Bonnet
Ecolab No.: 85280063
Mfg. No.: N/A

3/4" Plastic Bonnet
Ecolab No.: 96560222
Mfg. No.: N/A

O-Ring

Plunger

Body

Components of 1/2" Repair Kit
Ecolab No.: 85284156
Mfg. No.: 04820-001-60-56

Components of 3/4" Repair Kit
Ecolab No.: 85284164
Mfg. No.: 04820-001-60-57

To order the kit with components and instructions:

1/2" Repair Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-06-23

3/4" Repair Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-06-24

1/2" Complete Vacuum Breaker Assembly
Ecolab No.: 85242543
Mfg. No.: 04820-003-06-13

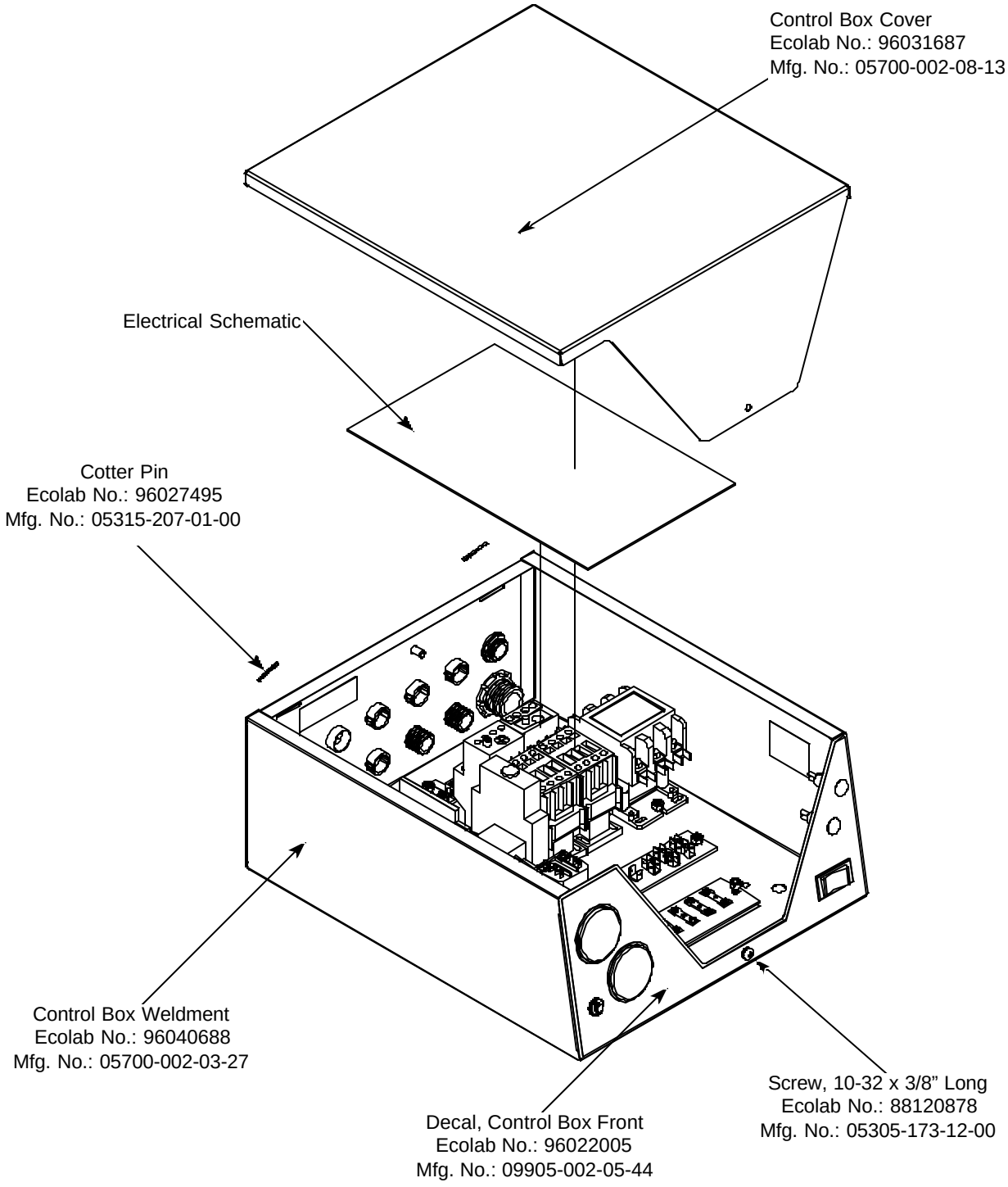
3/4" Complete Vacuum Breaker Assembly
Ecolab No.: 85242626
Mfg. No.: 04820-002-53-77

1/4" Complete Vacuum Breaker Assembly
Ecolab No.: 85242501
Mfg. No.: 04810-011-51-62

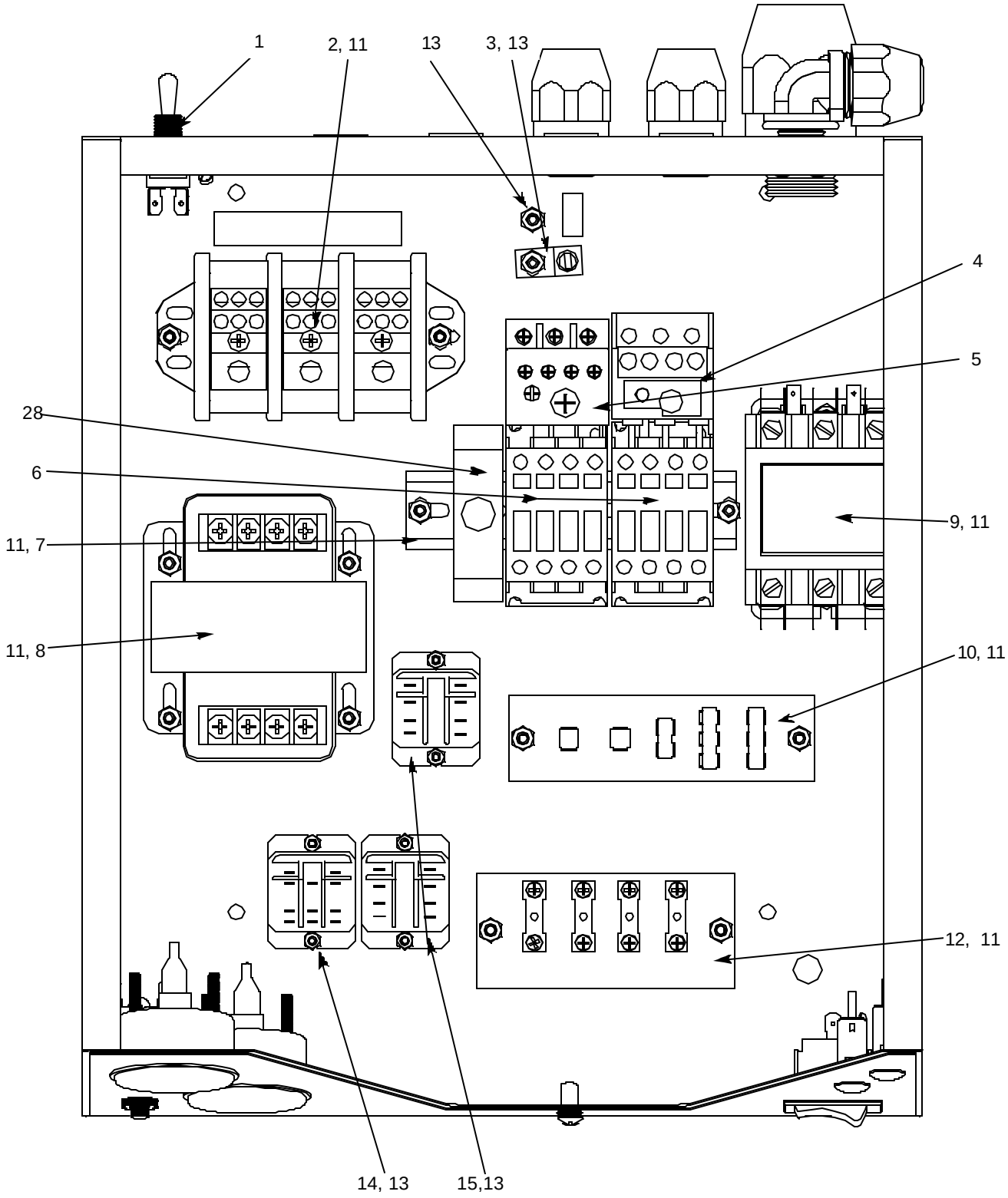
1/4" Complete Vacuum Breaker Assembly
Bottom Inlet & Outlet
Ecolab No.: 85242000
Mfg. No.: 04810-002-74-72

3/8" Complete Vacuum Breaker Assembly
Ecolab No.: 85242527
Mfg. No.: 04820-002-75-73

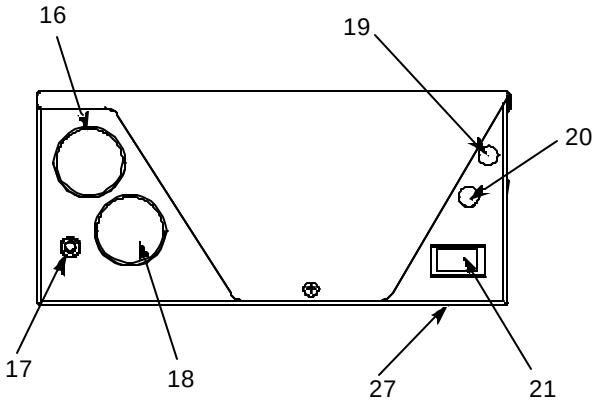
WH-44 CONTROL BOX ASSEMBLY

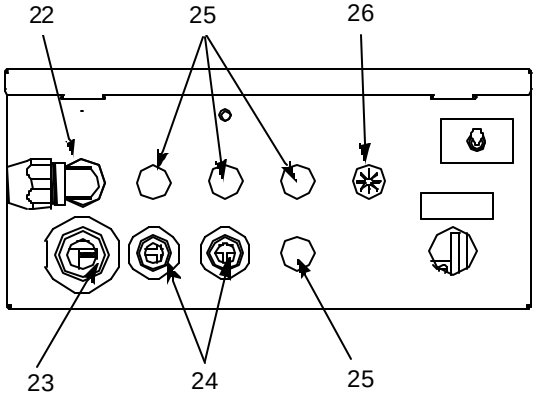


WH-44 CONTROL BOX ASSEMBLY (CONTINUED)



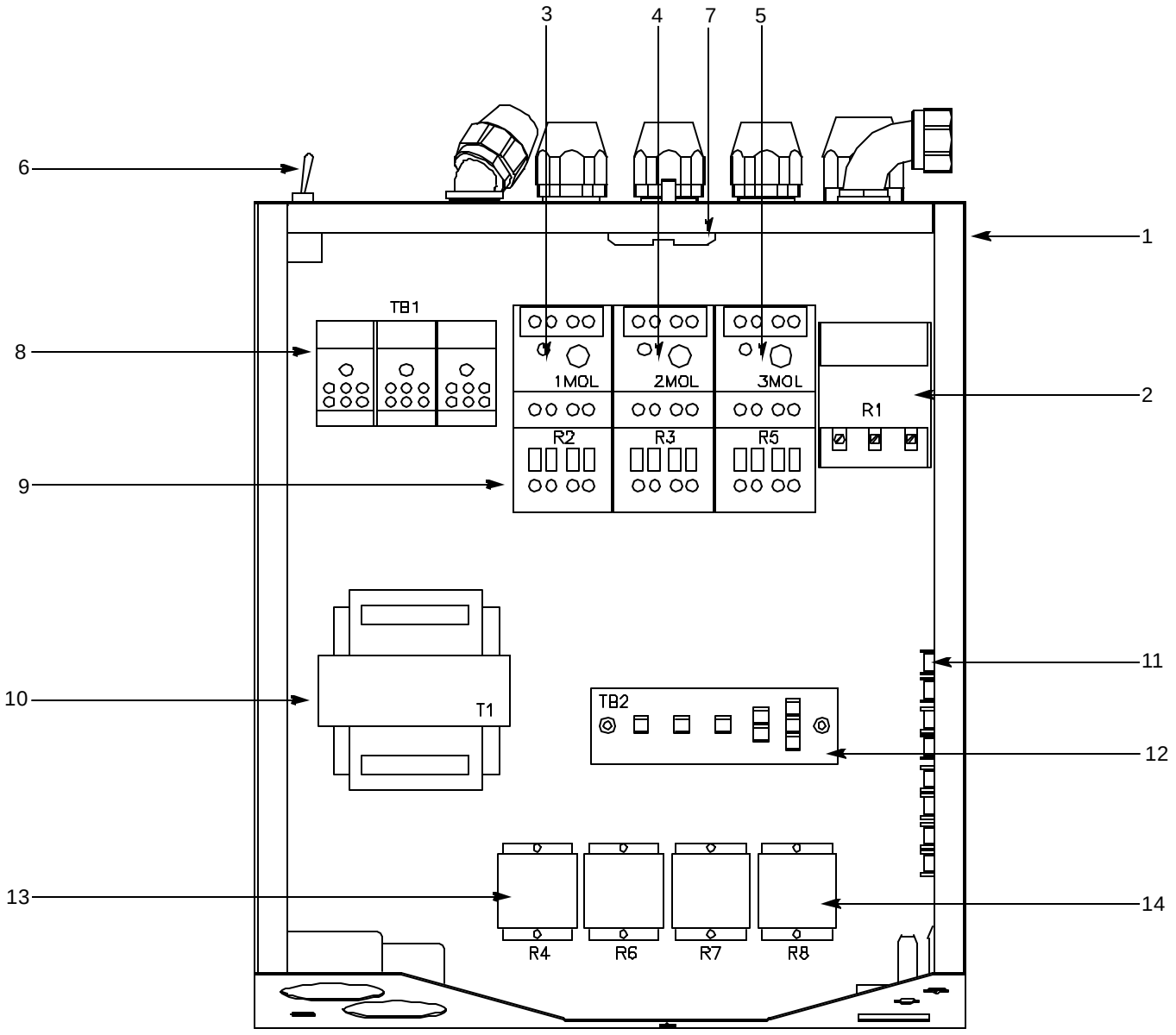
ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Switch, Master	96582030	05930-301-22-18
	1	Decal, Switch Manual/Delime	N/A	09905-011-74-61
2	1	Terminal Block, 3 Pole	96021233	05940-011-48-27
	1	Decal, L1, L2, L3	N/A	09905-101-12-66
3	1	Wire Lug, 2 AWG to 14 AWG	83118000	05940-200-76-00
	1	Decal, Ground	N/A	09905-011-86-86
4	1	Overload, 5.5 - 8.5 RT1M (3 phase only)	N/A	See Chart
5	1	Overload, 1 - 1.5 RT1G (3 phase only)	N/A	See Chart
6	2	Contactor	96021209	05945-111-68-38
7	1	Din Rail	96021183	05700-021-72-75
8	1	Transformer, 150VA, 60 Hz	96021167	05950-011-68-35
9	1	Contactor, Heater (Electric Units Only)	96021175	05945-002-24-70
10	1	Terminal Board	N/A	05940-002-78-97
11	15	Locknut, 1/4”-20 with Nylon Insert	88429113	05310-374-01-00
12	1	Terminal Board, Screw Down	96021142	05940-003-30-40
13	8	Locknut, 10-24 with Nylon Insert	88429063	05310-373-01-00
14	1	Relay, 120V, 3PDT, Top Mount	96021159	05945-111-72-51
15	2	Relay, Control	96582895	05945-111-35-19
16	1	Rinse Thermometer, 96” Lead	96021316	06685-111-68-49
	1	Decal, 180 Deg. Rinse (WH-44)	N/A	09905-002-97-62
	1	Decal, 140 Deg. Rinse (WH-44-CS)	N/A	09905-003-10-03
17	1	Circuit Breaker (208-230V Models (Only)	96021290	05925-011-68-34
16	1	Wash Thermometer, 96” Lead	96021316	06685-111-68-49
	1	Decal, 160 Deg. Wash (WH-44)	N/A	09905-003-00-69
	1	Decal, 140 Deg. Wash (WH-44-CS)	N/A	09905-003-10-02
19	1	Light, Amber	96583703	05945-111-44-44
20	1	Light, Red	83630392	05945-111-44-45
21	1	Switch, Power	96584024	05930-301-46-00
22	1	Fitting, 1/2” NPT x 90°	83311548	05975-011-45-14
23	1	Fitting, 1” Straight	96031737	05975-011-70-75
24	2	Fitting, 1/2” Straight	83311506	05975-011-45-13
25	4	Plug, Heyco, 2700 G-875	96024567	05975-011-47-81
26	1	Bushing, Heyco Split	N/A	05975-200-40-00
27	1	Grommet, 1/2” OD x 3/8” ID	96030341	05325-011-46-73
28	1	Timer, Multi-Function Delay	96031513	05945-011-65-44
	1	Fuse (460V Models) (Not Shown)	96022835	05920-011-72-88
	1	Fuse Holder (460V Models)(Not Shown)	96022843	05920-011-72-89
	1	Decal, Copper Conductors	N/A	09905-011-47-35





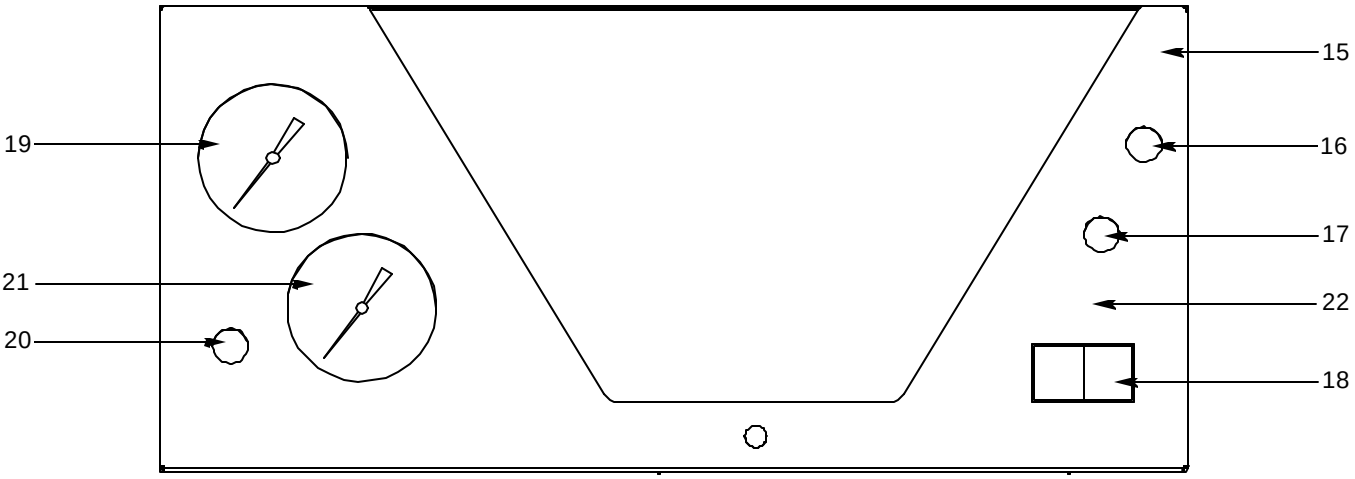
SECTION 6: PARTS SECTION

WH-66 CONTROL BOX ASSEMBLY



ITEMS NOT SHOWN BUT AVAILABLE AS SERVICE PARTS:

ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
	1	Control Box Legs	96021381	05700-011-71-47
	1	Din Rail, Cut to 5-3/4” Long	96021183	05700-021-72-75
	1	Control Box Cover	96031687	05700-002-08-13
	2	Cotter Pin	96027495	05315-207-01-00



ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Electrical Box Weldment	96040688	05700-002-03-27
2	1	Heater Contactor (electrically-heated only)	96021175	05945-002-24-70
3	1	Drive Motor Overload	N/A	See Chart
4	1	Wash Motor Overload	N/A	See Chart
5	1	Prewash Motor Overload	N/A	See Chart
6	1	Master Switch	96582030	05930-301-22-18
7	1	Fuse Holder (460V Models Only)	96022843	05920-011-72-89
	1	Fuse	96022835	05920-011-72-88
8	1	Terminal Block	96021233	05940-011-48-27
9	3	Motor Contactor	96021209	05945-111-68-38
10	1	Transformer	96021167	05950-011-68-35
11	1	Terminal Board	96021142	05940-003-30-40
12	1	Terminal Board	N/A	05940-002-78-97
13	1	Top Mount Relay	96021159	05945-111-72-51
14	3	Control Relay	96582895	05945-111-35-19
15	1	Decal	96040696	09905-002-38-05
16	1	Light, Amber	96583703	05945-111-44-44
17	1	Light, Red	83630392	05945-111-44-45
18	1	Manual Wash Switch	96584024	05930-301-46-00
19	1	Rinse Thermometer, 96” Lead	96021316	06685-111-68-49
	1	Decal, 180 Deg. Rinse (WH-66)	N/A	09905-002-97-62
	1	Decal, 140 Deg. Rinse (WH-66-CS)	N/A	09905-003-10-03
20	1	Circuit Breaker (208/230V Models)	96021290	05925-011-68-34
21	1	Wash Thermometer, 96” Lead	96021316	06685-111-68-49
	1	Decal, 180 Deg. Rinse (WH-66)	N/A	09905-003-00-69
	1	Decal, 140 Deg. Rinse (WH-66-CS)	N/A	09905-003-10-02
22	1	Decal, Control Box Front	96022005	09905-002-05-44

MOTOR OVERLOADS CHART

DRIVE MOTORS:

MODEL(S)	VOLTS	PHASE	ECOLAB No.	Mfg. No.
WH-44's	208	1	N/A	N/A
	230	1	N/A	N/A
	208	3	96021217	05945-111-68-39
	230	3	96021217	05945-111-68-39
	460	3	N/A	05945-002-71-09
WH-66's	208	1	N/A	N/A
	230	1	N/A	N/A
	208	3	96021217	05945-111-68-39
	230	3	96021217	05945-111-68-39
	460	3	N/A	05945-002-71-09

PREWASH MOTORS:

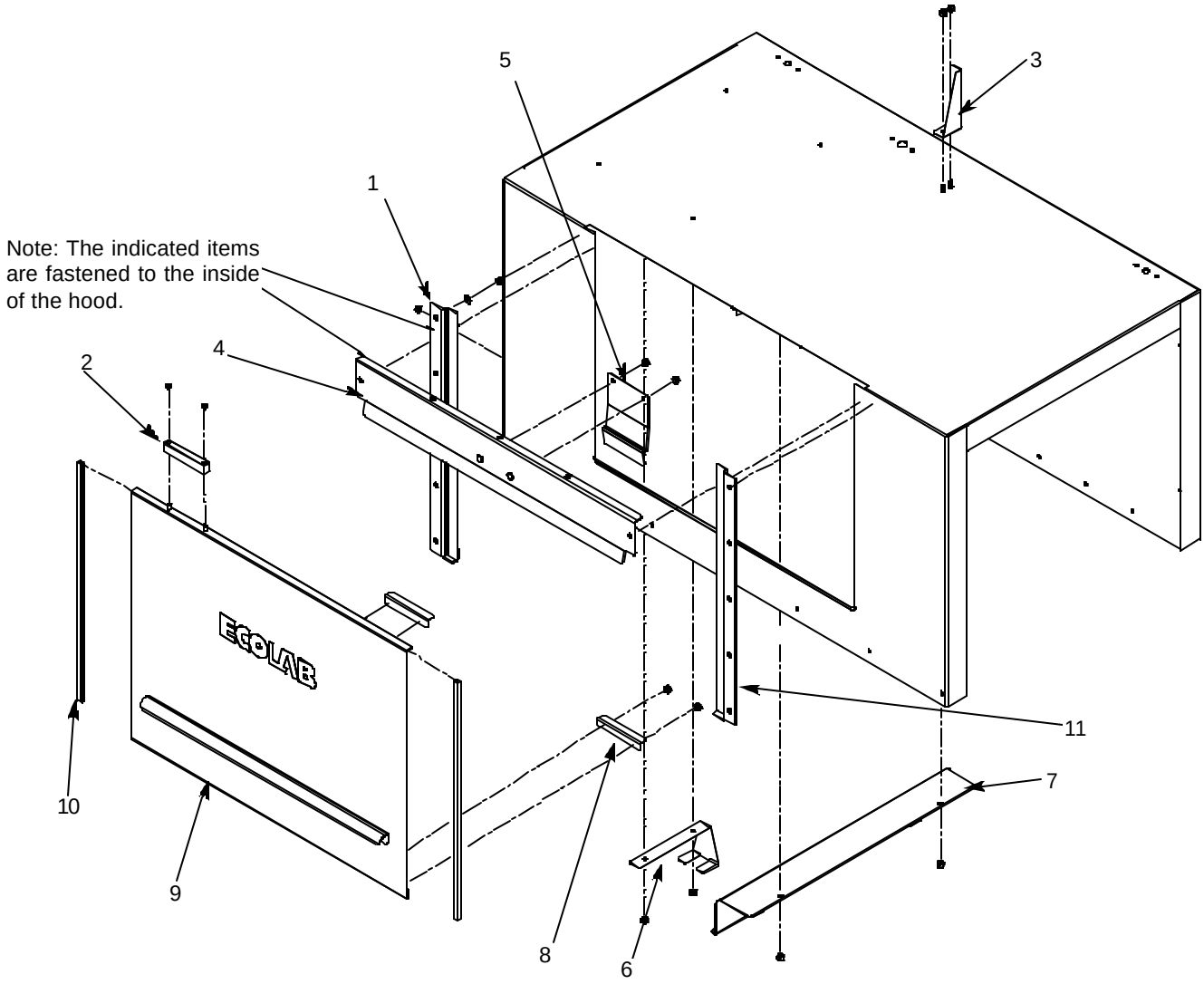
MODEL(S)	VOLTS	PHASE	ECOLAB No.	Mfg. No.
WH-44's	208	1	N/A	N/A
	230	1	N/A	N/A
	208	3	N/A	N/A
	230	3	N/A	N/A
	460	3	N/A	N/A
WH-66's	208	1	N/A	N/A
	230	1	N/A	N/A
	208	3	96022884	05945-111-68-41
	230	3	96022884	05945-111-68-41
	460	3	N/A	05945-304-02-09

WASH MOTORS:

MODEL(S)	VOLTS	PHASE	ECOLAB No.	Mfg. No.
WH-44's	208	1	N/A	N/A
	230	1	N/A	N/A
	208	3	96021225	05945-111-68-40
	230	3	96021225	05945-111-68-40
	460	3	96022884	05945-111-68-41
WH-66's	208	1	N/A	N/A
	230	1	N/A	N/A
	208	3	96021225	05945-111-68-40
	230	3	96021225	05945-111-68-40
	460	3	96022884	05945-111-68-41

SECTION 6: PARTS SECTION

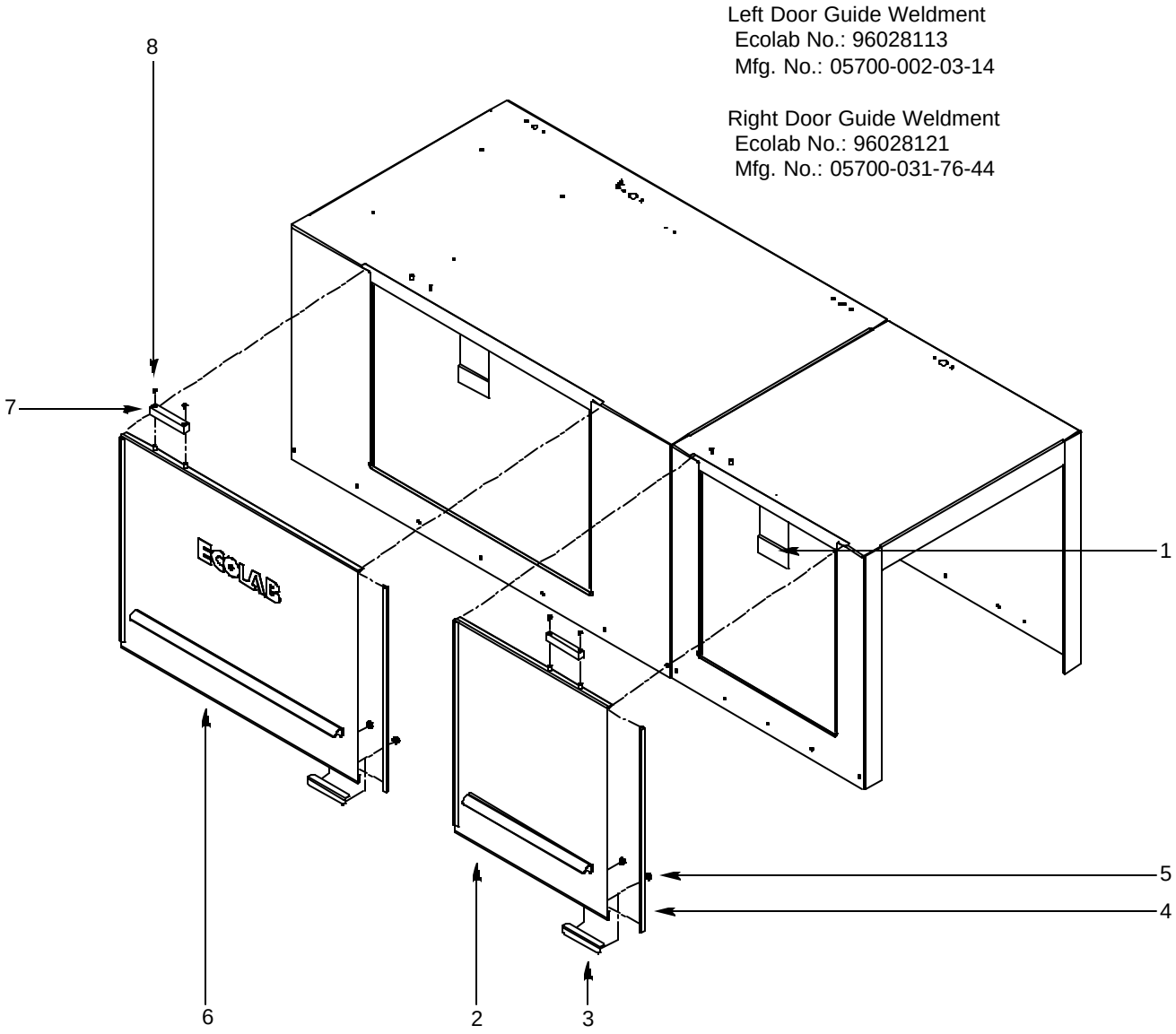
WH-44 DOOR ASSEMBLY



ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Door Guide, Left	96020540	05700-002-03-14
2	1	Magnet, Reed Switch	96025200	5930-111-51-68
3	1	Plumbing Support Bracket	96031802	05700-002-05-01
4	1	Support, Door	96031836	05700-002-03-45
5	1	Door Catch	96031844	05700-002-03-15
6	1	Upper Wash Arm Bracket	96027545	05700-021-73-97
7	1	Splash Shield Weldment	N/A	05700-002-03-54
8	2	Door Stop Weldment	96041611	05700-002-05-46
9	1	Door	96031893	05700-002-03-32
10	2	Door Glide	96620328	05700-002-03-28
11	1	Door Guide, Right	96031786	05700-002-03-44

SECTION 6: PARTS SECTION

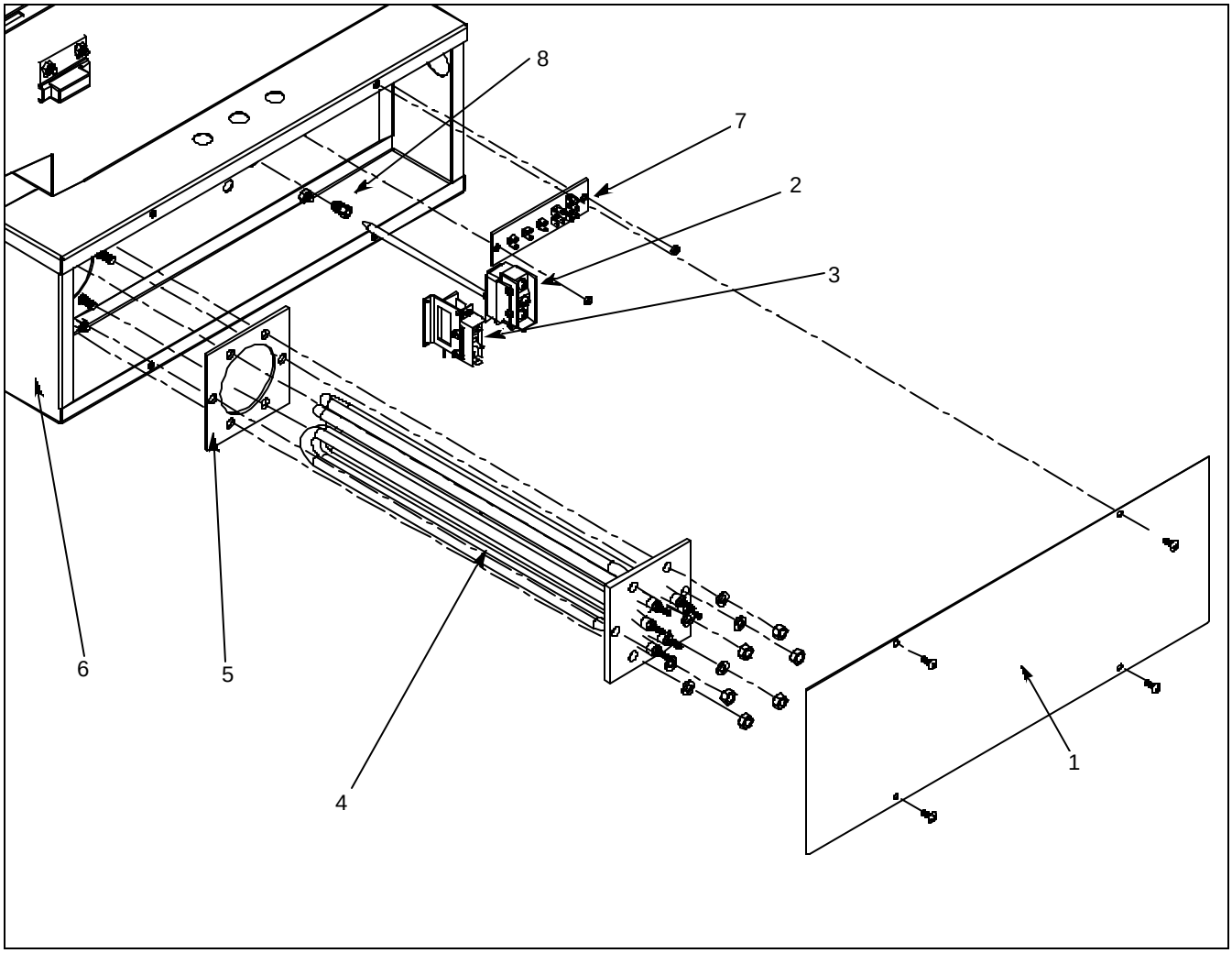
WH-66 DOOR ASSEMBLY



ITEM	QTY	DESCRIPTION	ECOLAB NO.	Mfg. No.
1	2	Door Catch Weldment	96022525	05700-031-84-80
2	1	Prewash Door Weldment		
		Left to Right Model	N/A	05700-003-13-42
		Right to Left Model	N/A	05700-003-13-40
3	2	Door Stop	96041611	05700-002-05-46
4	4	Door Guide	96620328	05700-002-03-28
5	4	Locknut, 1/4”-20 with Nylon Insert	88429113	05310-374-01-00
6	1	Wash Door Weldment	96031893	05700-002-03-32
7	2	Door Switch Magnet	96025200	05930-111-51-68
8	4	Screw, 8-32 x 1/4” Long	88125620	05305-172-09-00
*	1	Wash Door Hood Support	96022565	05700-031-84-13
*	1	Prewash Door Hood Support	96040845	05700-031-84-14

SECTION 6: PARTS SECTION

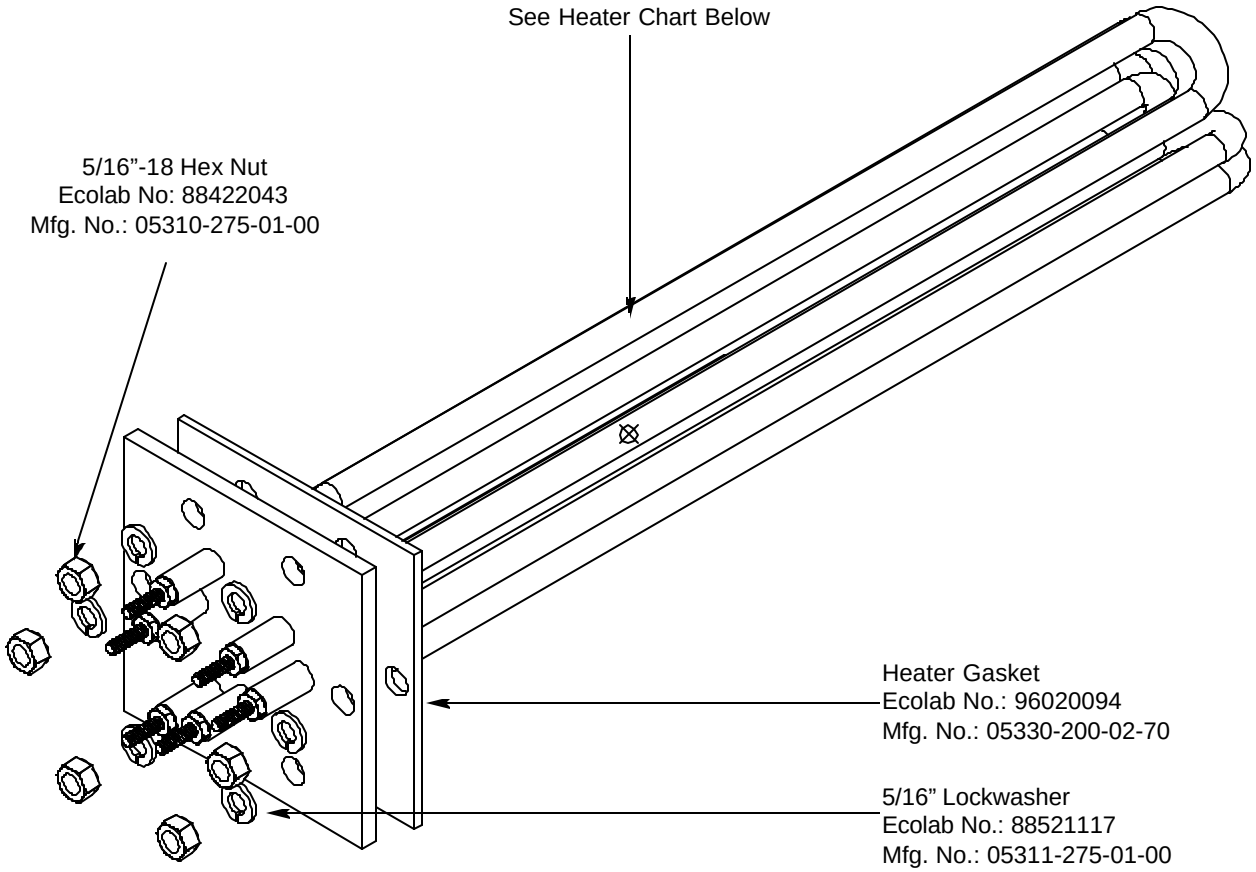
HEATER BOX ASSEMBLY



ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Heater Box Cover	96026000	05700-002-02-04
2	1	Kit, Thermostat, Wash Regulating (Electrically Heated)	N/A	06401-003-18-20
2	1	Kit, Thermostat, Wash Regulating (Steam Heated)	N/A	06401-003-18-21
3	1	Thermostat, High Limit	96020110	05930-011-49-43
4	1	See Next Page	N/A	N/A
5	1	Gasket	96020094	05330-200-02-70
6	1	Heater Box Weldment	96026018	05700-002-03-40
7	1	Terminal Board	N/A	05940-002-78-97
8	1	Fitting, 1/4”, Imperial Brass	96024344	05310-924-02-05

SECTION 6: PARTS SECTION

WASH HEATERS



Heater Chart

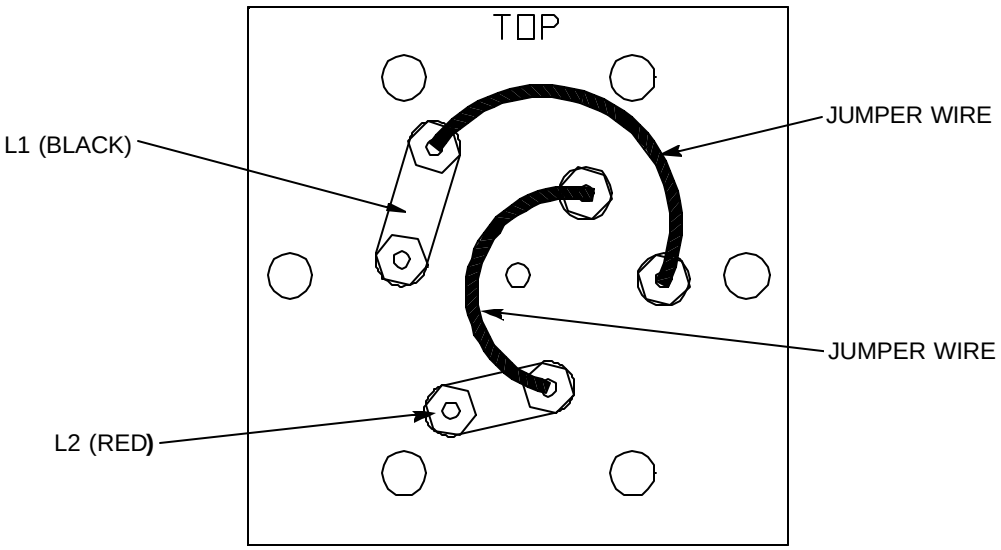
Model	Volts	Phase	KW	ECOLAB No.	Mfg. No.	Kit. No.
All	208	1	15	96020086	04540-121-68-45	06401-003-10-21
All	230	1	15	96022173	04540-121-68-46	06401-003-10-22
All	208	3	15	96020086	04540-121-68-45	06401-003-10-21
All	230	3	15	96022173	04540-121-68-46	06401-003-10-22
All	460	3	15	96022181	04540-121-68-47	06401-003-10-31

* - Steam models do not use electric heaters in the wash tank or power rinse tank.

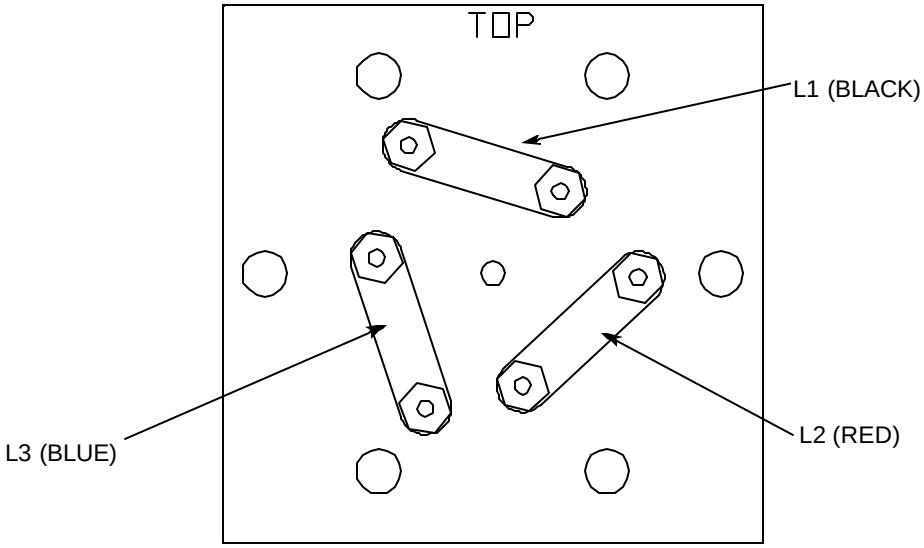
SERVICE NOTE: When replacing the tub heaters, it is HIGHLY recommended that you also change out the gasket as well. Once installed, gaskets become compressed and are subjected to extreme temperature changes. Replacing the gasket with a new one when replacing the heater may prevent future leaks.

SERVICE NOTE: The nuts used to secure the heater to the tub should be torqued to 16 in-lbs. After tightening, the unit should be allowed to heat up and operate normally for approximately 30 minutes. Secure power to the machine and check the nuts once more to ensure that they are torqued to 16 in-lbs.

BUS BAR, JUMPER WIRES AND LEAD LOCATIONS FOR WASH HEATER TO BE WIRED FOR 1 PHASE AC.



BUS BAR AND LEAD LOCATIONS FOR WASH HEATER TO BE WIRED FOR 3 PHASE AC.



SECTION 6: PARTS SECTION

HEATER SYSTEM EXPLANATION

The wash tank heater system is electrically connected in the circuit so that they are dependent upon the dishwasher being properly filled with and maintaining a safe water level, two thermostats (mounted in the heater box behind the dress panel), float switch (mounted in the wash tank), and the heater relay (mounted in control box) with the heater being activated by the thermostats.

Once the dishwasher has been filled to the correct level, the heater should operate automatically. Should the tank heat be too high, too low or no indication of temperatures at all, the following checkout should be made.

Note: The following checkout should be made by either a qualified service person or electrician.

A.- Checkout of the heater system

1.- If the temperature is too high, adjust thermostat using instructions on the page entitled “Thermostats”.

2.- If temperature is too low, adjust thermostat as above, then:

a.- Turn off power to machine by placing customer’s circuit breaker in the “OFF” position. Turn off machine circuit breaker located on right side of control box.
b.- Remove cover from control box on top of dishwasher.
c.- Make sure water temperature is below 140°F (preferably about 130°F.).
d.- Turn on both circuit breakers. Observe heater relay (R1) while the power switch is turned “ON” and “OFF”. If relay contacts move in and out, the heater relay is operating correctly: if not proceed to “C”.

B.- If heater relay (R1) closes:

1.- Check power supply at incoming terminal board L1, L2 & L3. It should be the same voltage as indicated on the machine data plate.

2.- Check power at connections on heater relay (R1). The voltage should agree with the voltage on the machine data plate. If not, check wires for breaks or bad connections.

3.- Check power at terminals of heater which should agree with the data plate. If not check wires for breaks or bad connections.

4.- Temperatures should rise as explained in “C-1”, and amperage may be checked according to those instructions. Replace any defective elements.

C.- If heater relay (R1) does not close.

1.- Measure coil voltage and observe contactor. Test amp draw to the related device . If it moves slowly, it would indicate that the element is faulty. If it moves constantly higher at a good rate, elements should be good.

Note: A check with an amp probe at heater relay (R1) terminals should be made to verify the amp draw on each leg. This should be appropriate for the voltage and phase indicated on the data plate.

HEATER PROTECTION & AUTOMATIC FILL:

This control is activated when the power switch is turned “ON”. The primary function is to automatically energize the wash tank heat circuit. It will also cutoff the wash tank heat circuit should the water be accidentally drained from the machine with the power switch still “ON”. The power switch should always be turned-off before draining the unit.

This water level control consists of two (2) floats that operate when the power switch is turned on and works in conjunction with the thermostats and heater relays.

When the power switch is turned “ON” water starts to enter the dishmachine. When it reaches the proper level the normally open contacts in the water level float switch close activating the heating circuit for tank heat.

If the water level falls below the correct level while power is still on, the float switch will sense the lack of water and de-activate the heater.

THERMOSTATS:

This unit has a probe-direct sensing type thermostat with fixed set point and adjustable range. The same type thermostat is used as the high limit sensor for the wash tank heater. It operates a precision single pole double throw switch through a lever for close tolerance narrow differential switching capability.

The thermostat range is from 140°F to 240°F with a maximum bulb exposure temperature of 300°F.

Calibration:

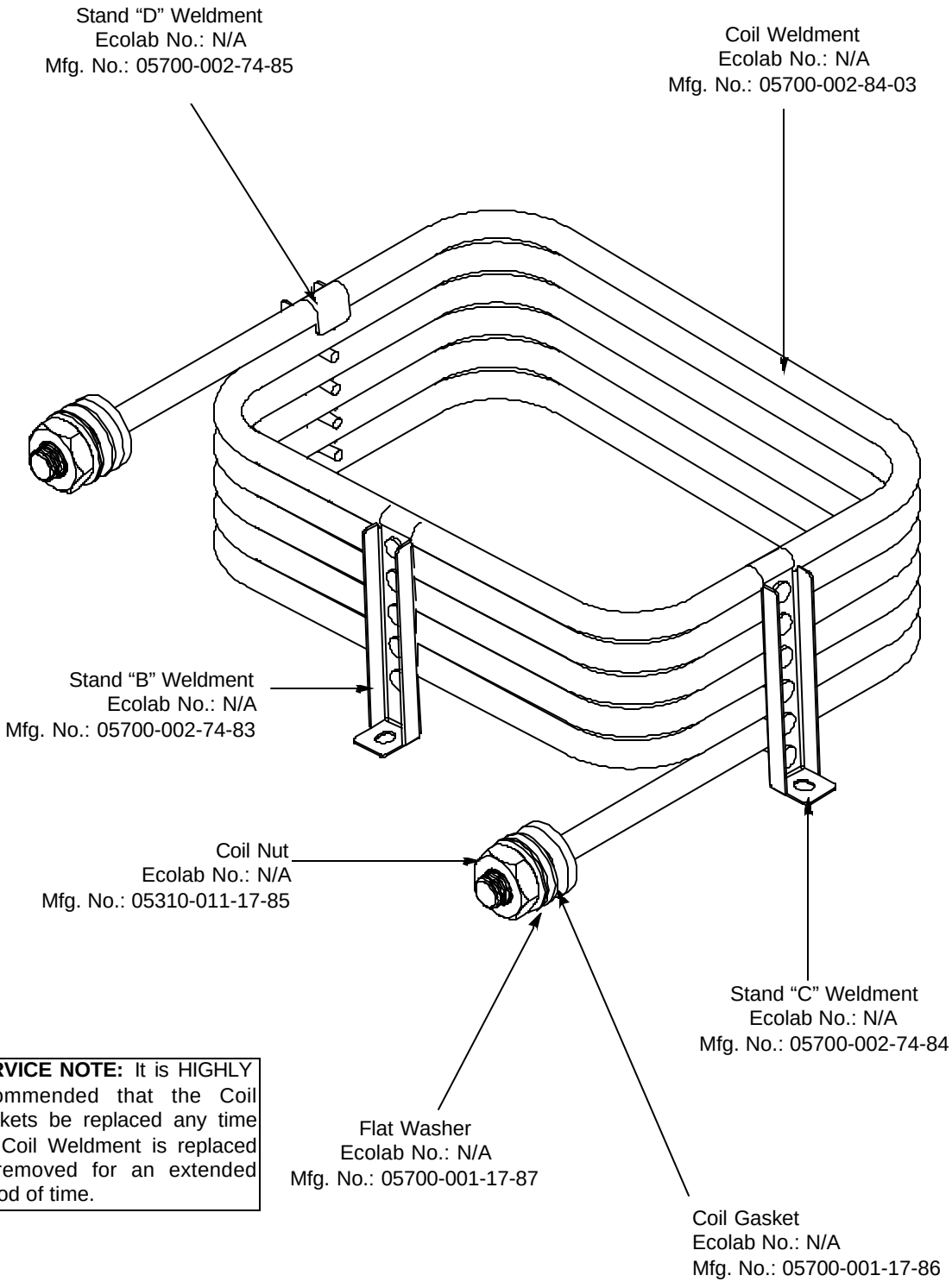
Wash Thermostat:
Set Point: 165°F (Adjustable range)

Hi-LImit Thermostat:
Fixed set point: 210°F (Non-adjustable)

The hi-limit thermostat is used to protect the heater element in the event of a run away regulating thermostat or a dry fire situation. It is set for 210°F +0°F or -10°F with a fixed set point. **This part is not adjustable.**

The wash tank regulating thermostat will maintain the correct wash water temperature to meet NSF requirements. These specify that the wash be no lower than 140°F on chemical sanitizing models and no lower than 160°F on hot water sanitizing machines.

STEAM MODEL WASH TANK COIL ASSEMBLY

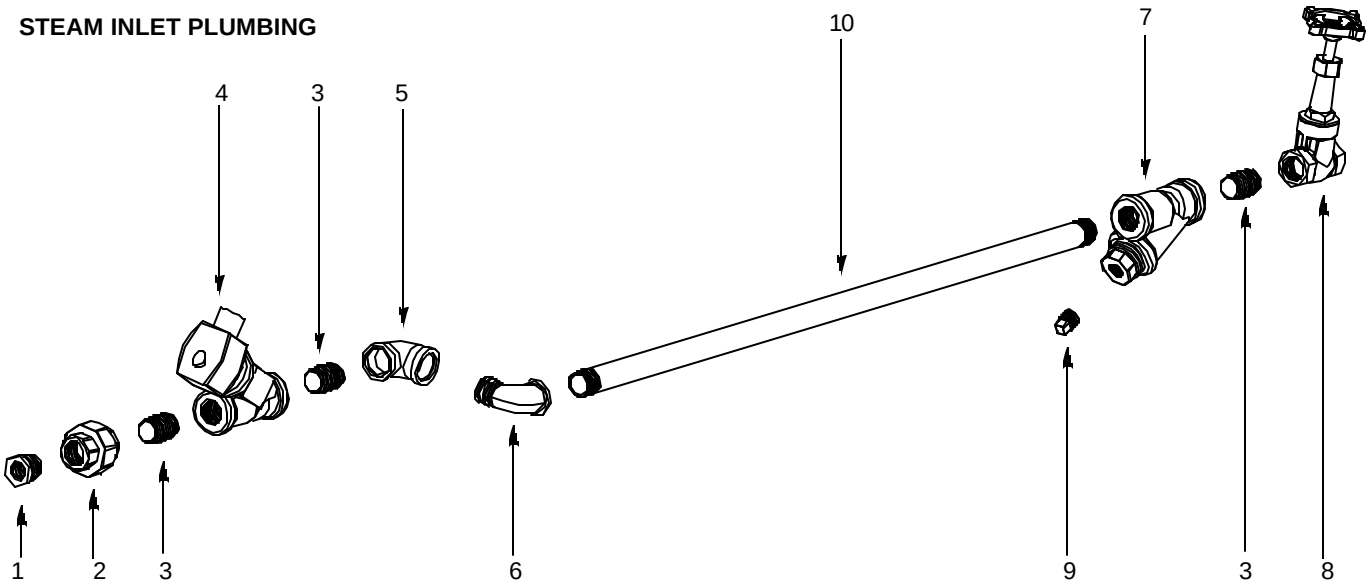


SERVICE NOTE: It is HIGHLY recommended that the Coil Gaskets be replaced any time the Coil Weldment is replaced or removed for an extended period of time.

SECTION 6: PARTS SECTION

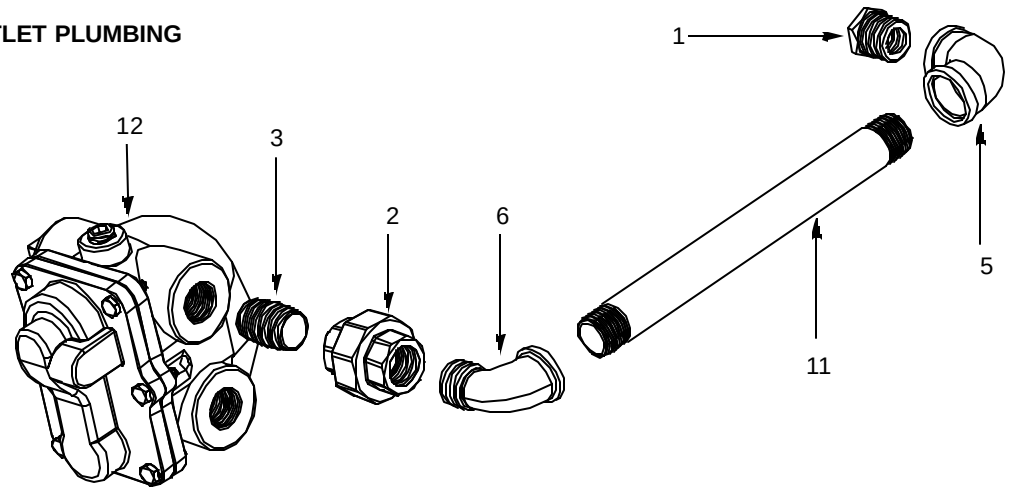
STEAM PLUMBING (LEFT TO RIGHT)

STEAM INLET PLUMBING



ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	-	Reducer, 3/4” NPT to 1/2” NPT, Black Iron	N/A	04730-911-02-34
2	-	Union, 3/4” NPT, Black Iron	N/A	04730-912-01-00
3	-	Nipple, Close, 3/4” NPT, Black Iron	N/A	04730-907-01-00
4	-	Valve, Solenoid, 3/4” NPT, Steam, 120 V	N/A	04820-011-87-39
5	-	Elbow, 3/4” NPT, 90°, Black Iron	N/A	04730-906-10-34
6	-	Elbow, 3/4” NPT, 90°, Black Iron, Street	N/A	04730-011-87-37
7	-	Y-Strainer, 3/4” NPT, Steam, Black Iron	N/A	04730-217-01-32
8	-	Valve, Gate, 3/4” NPT, Steam	N/A	04820-100-19-00
9	-	Plug, 3/8” NPT, Black Iron	N/A	04730-909-02-34
10	-	Nipple, 3/4” NPT x 32” Long, Black Iron	N/A	04730-002-21-27
11	-	Nipple, 3/4” NPT x 10” Long, Black Iron	N/A	04730-907-06-34
12	-	Steam Trap, 3/4” NPT	N/A	06680-500-02-77

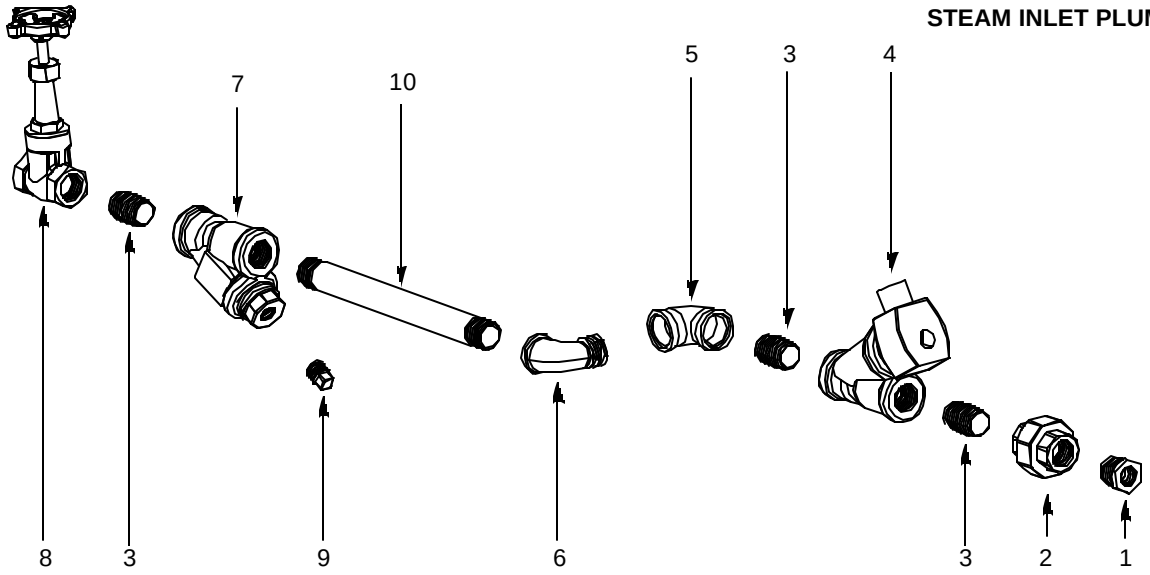
STEAM OUTLET PLUMBING



SECTION 6: PARTS SECTION

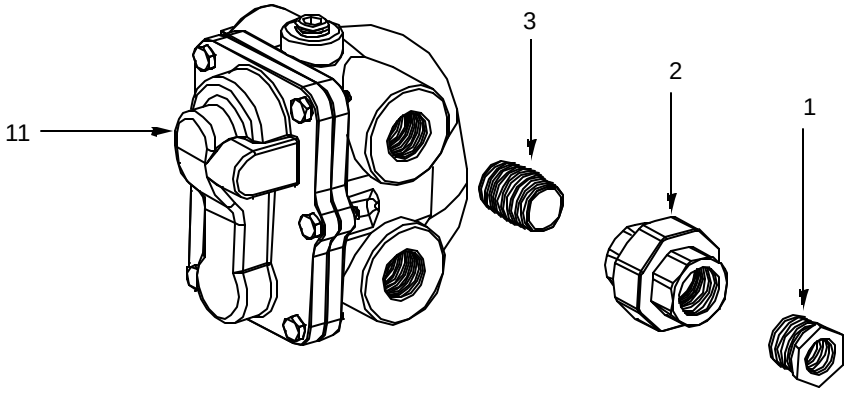
STEAM PLUMBING (RIGHT TO LEFT)

STEAM INLET PLUMBING

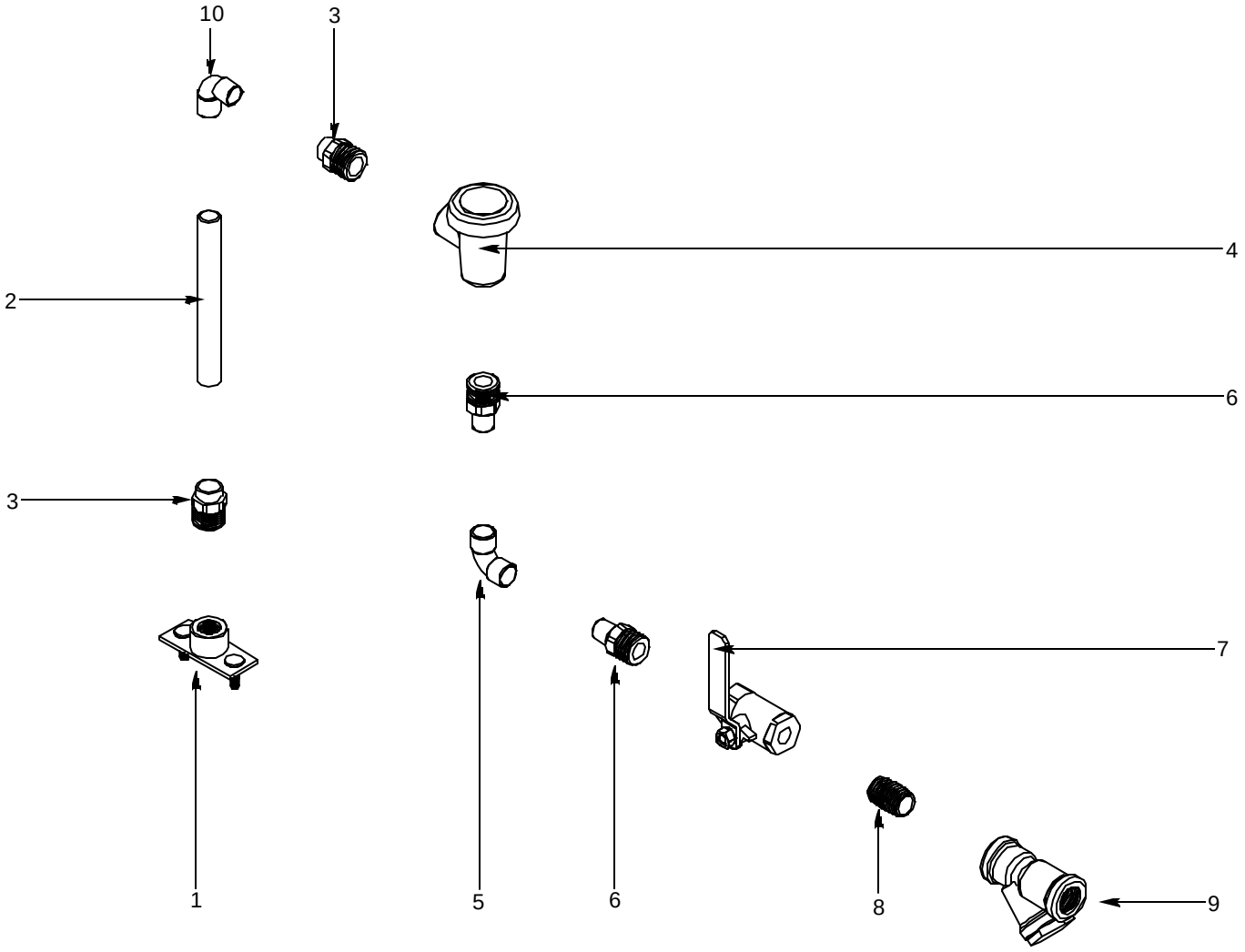


ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	-	Reducer, 3/4” NPT to 1/2” NPT, Black Iron	N/A	04730-911-02-34
2	-	Union, 3/4” NPT, Black Iron	N/A	04730-912-01-00
3	-	Nipple, Close, 3/4” NPT, Black Iron	N/A	04730-907-01-00
4	-	Valve, Solenoid, 3/4” NPT, Steam, 120 V	N/A	04820-011-87-39
5	-	Elbow, 3/4” NPT, 90°, Black Iron	N/A	04730-906-10-34
6	-	Elbow, 3/4” NPT, 90°, Black Iron, Street	N/A	04730-011-87-37
7	-	Y-Strainer, 3/4” NPT, Steam, Black Iron	N/A	04730-217-01-32
8	-	Valve, Gate, 3/4” NPT, Steam	N/A	04820-100-19-00
9	-	Plug, 3/8” NPT, Black Iron	N/A	04730-909-02-34
10	-	Nipple, 3/4” NPT x 32” Long, Black Iron	N/A	04730-002-21-27
11	-	Steam Trap, 3/4” NPT	N/A	06680-500-02-77

STEAM OUTLET PLUMBING

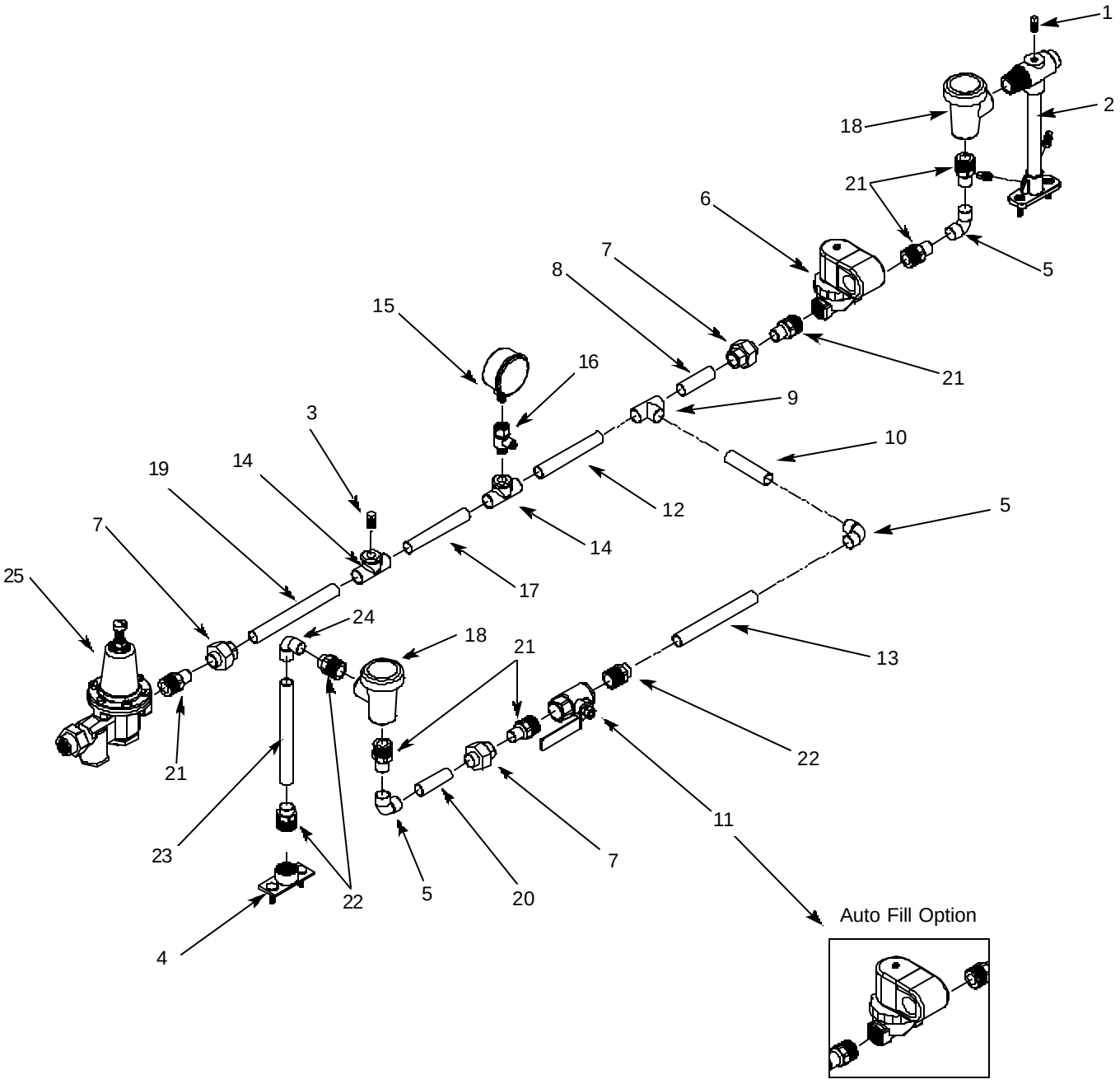


PREWASH INCOMING PLUMBING ASSEMBLY (WH-66 MODELS ONLY)



ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Fill Line Injector Weldment	96020471	05700-002-04-71
2	1	Tube, Copper, 1/2” x 5.645” Long	Buy Locally	05700-002-04-90
3	2	Adapter, Male	96580907	04730-401-03-01
4	1	Vacuum Breaker	85242543	04820-003-06-13
5	1	Elbow, 607, 1/2” CTOC	Buy Locally	04730-406-01-01
6	2	Adapter, 1/2” FTG x Male	96030739	04730-011-59-53
7	1	Ball Valve, 1/2” NPT	85200269	04820-100-15-00
8	1	Nipple, 1/2”, Close, Brass	85141208	04730-207-15-00
9	1	Y-Strainer, 1/2” NPT	96027024	04730-217-01-10
10	1	Elbow, 1/2” S. CU to Ftg	96026224	04730-406-31-01

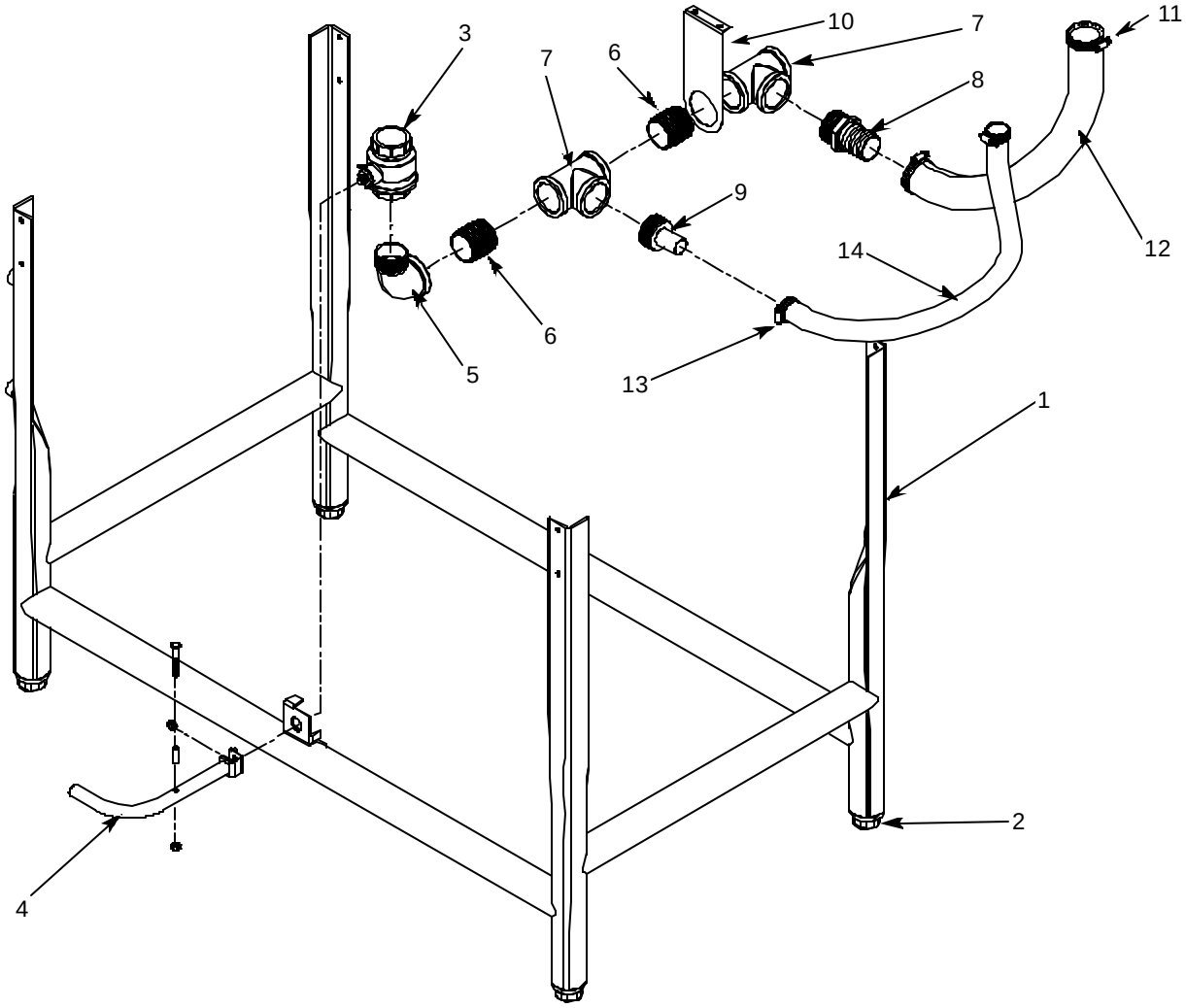
INCOMING RINSE PLUMBING ASSEMBLY



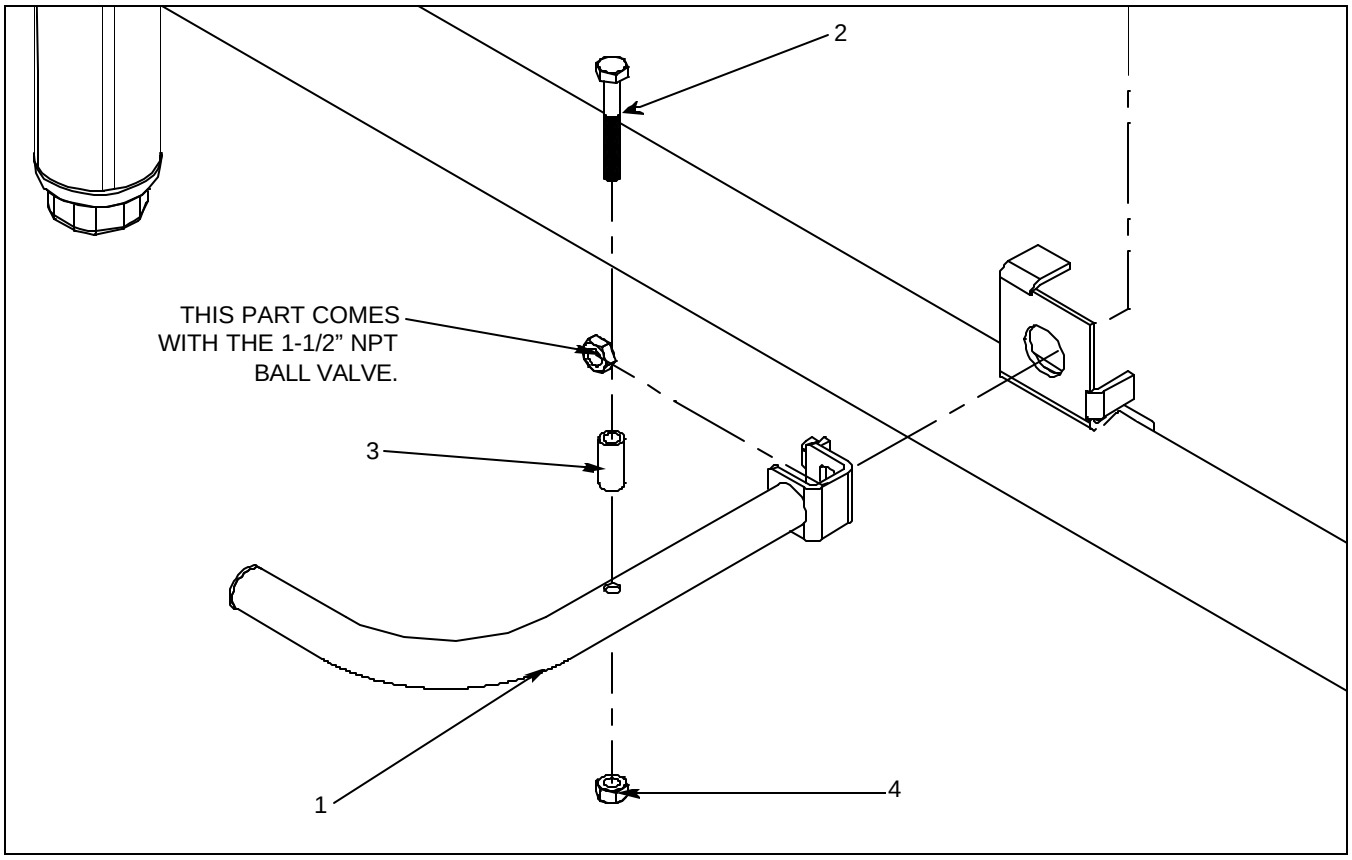
ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	3	Plug, 1/8" NPT, Brass	86138005	04730-209-07-37
2	1	Rinse Injector Weldment	96021690	05700-002-03-42
	1	Gasket	96020482	05330-111-42-81
3	1	Plug, 1/4" NPT, Brass	86135019	04730-209-01-00
4	1	Fill Line Injector Weldment	96020471	05700-002-04-71
	1	Gasket	96020482	05330-111-42-81
	1	Items 5 through 25 (Manual Fill Only)	N/A	05700-003-20-58
5	3	Elbow, 607, 1/2" Copper to Copper	Buy Locally	04730-406-01-01
6	1	Valve, Solenoid, 1/2" NPT, 240 Volt	96580683	04810-100-09-18
7	3	Union, 1/2", Copper to Copper	85726081	04730-412-05-01
8	1	Tube, Copper, 1/2" x 2.08" Long	Buy Locally	05700-002-04-88
9	1	Tee, Copper, 1/2"	Buy Locally	04730-411-01-01
10	1	Tube, Copper, 1/2" x 3.06" Long	Buy Locally	05700-002-04-91
11	1	Valve, Ball, 1/2" (Manual Fill)	85200269	04820-100-15-00
11	1	Valve, Solenoid, 1/2" NPT, 110 Volt (Auto Fill Option)	96580683	04810-100-12-18
12	1	Tube, Copper, 1/2" x 4.185" Long	Buy Locally	05700-002-04-89
13	1	Tube, Copper, 1/2" x 5.27" Long	Buy Locally	05700-002-04-92
14	2	Tee, 1/2" x 1/2" x 1/4"	96030747	04730-411-25-01
15	1	Gauge, Pressure, 0-100 PSI	96582086	06685-111-88-34
	1	Decal, 15-25 PSI	N/A	09905-003-97-74
16	1	Test Cock, Valve, Ball, 1/4" NPT	96030762	04810-011-72-67
17	1	Tube, Copper, 1/2" x 4" Long	Buy Locally	05700-002-04-87
18	2	Vacuum Breaker, 1/2" NPT	85242543	04820-003-06-13
19	1	Tube, Copper, 1/2" x 5.645" Long	Buy Locally	05700-002-04-90
20	1	Tube, Copper, 1/2" x 2" Long	Buy Locally	05700-001-04-66
21	6	Adapter, 1/2" Fitting x Male	96030739	04730-011-59-53
22	3	Adapter, Male	96580907	04730-401-03-01
23	1	Tube, Copper, 1/2" x 5.92" Long	Buy Locally	05700-002-04-93
24	1	Elbow, Copper, 1/2" to Fitting	96026224	04730-406-31-01
25	1	Regulator, Watts, 1/2"	85220077	04820-100-04-07

SECTION 6: PARTS SECTION

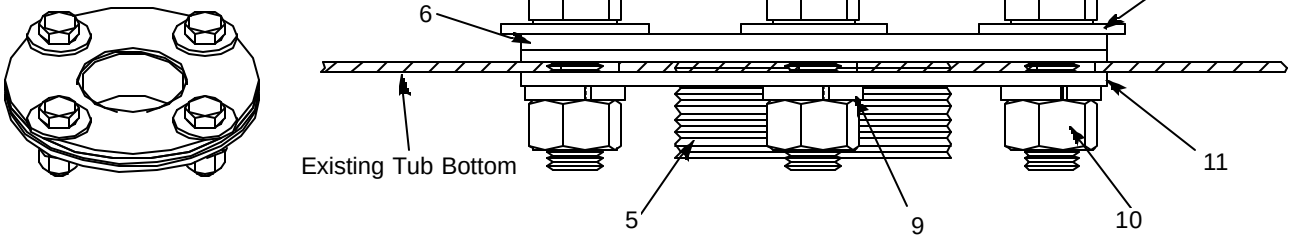
WH-44 DRAIN PLUMBING ASSEMBLY/FRAME WELDMENTS



ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Frame Weldment, WH-44	N/A	05700-031-67-15
	1	Frame Weldment with Extended Legs, WH-44	N/A	05700-002-62-85
	1	Frame, WH-66's (Left to Right)	N/A	05700-002-32-01
		(Right to Left)	N/A	05700-031-68-09
2	4	Bullet Foot	96023692	05340-011-71-74
	4	Bullet Foot, Flanged	N/A	05340-002-15-47
3	1	Ball Valve, 1-1/2" NPT	96020151	04820-111-71-46
4	1	Ball Valve Handle Assembly	N/A	05700-021-83-53
5	1	Elbow, Brass, Street, 1-1/2" NPT	96030085	04730-206-32-00
6	2	Nipple, Brass, Close, 1-1/2" NPT	96020193	04730-207-40-00
7	2	Tee, Brass, 1-1/2" x 1-1/2" x 1-1/2"	96020201	04730-011-69-93
8	1	Barb, 1-1/2" NPT x 1-1/2" Barb	96020227	04730-011-69-92
9	1	Rinse Nipple Weldment	96026380	05700-021-84-61
10	1	Drain Plumbing Support	96022553	05700-021-69-83
11	2	Hose Clamp	96020417	04730-719-18-00
12	1.833 Ft.	Tubing, 1-1/2" ID Polybrade	96020268	04720-011-69-17
13	2	Hose Clamp, 13/16" x 1-1/2"	96020292	04730-719-06-09
14	2.25 Ft.	Tubing, 1" ID Polybrade	96020284	04720-011-69-16

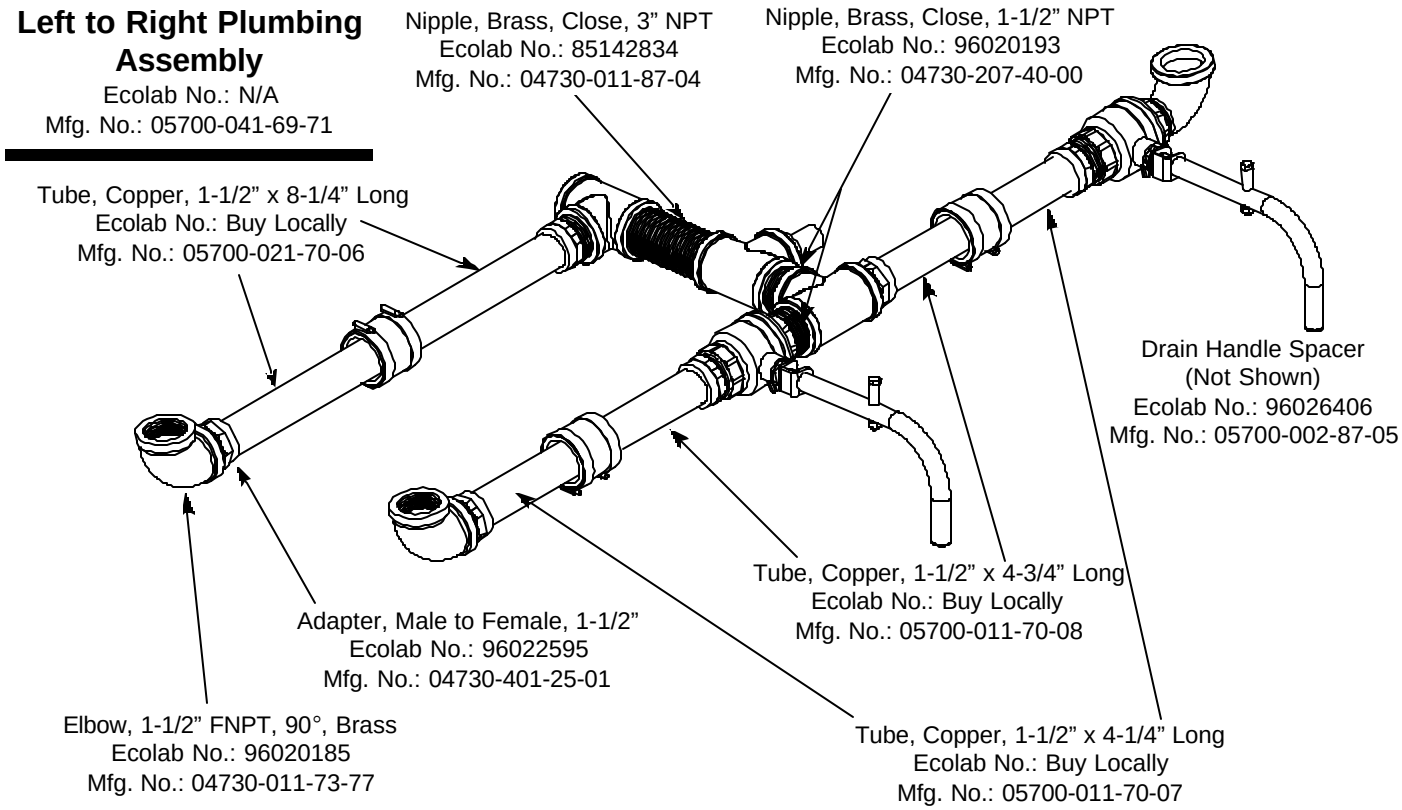


ITEM	QTY	DESCRIPTION	ECOLAB NO.	Mfg. No.
1	1	Ball Valve Handle Weldment	96020177	05700-021-70-42
2	1	Bolt, 1/4"-20 x 2" Long	88010087	05306-011-84-72
3	1	Sleeve	96584891	05700-000-01-53
4	1	Locknut, 1/4"-20 with Nylon Insert	88429113	05310-374-01-00
	1	* (Not Shown) Drain Handle Spacer	96026406	05700-002-87-05
	1	Drain Repair Kit	96031448	05700-002-10-59
5	1	Weldment, Tub Drain Replacement Plate	N/A	05700-002-10-58
6	1	Gasket, Tub Drain Repalcement Plate	96038609	05700-002-10-56
7	1	Bolt, Hex Head, 3/8"-16 x 1" Long	96034053	05305-276-03-00
8	1	Flat Washer, 3/8"	96581376	05311-176-02-00
9	1	Split Lock Washer 3/8"	88521109	05311-276-01-00
10	1	Hex Nut, 3/8"-16	88422068	05310-276-01-00
11	1	Tub Drain Plate A	N/A	05700-002-12-58



Left to Right Plumbing Assembly

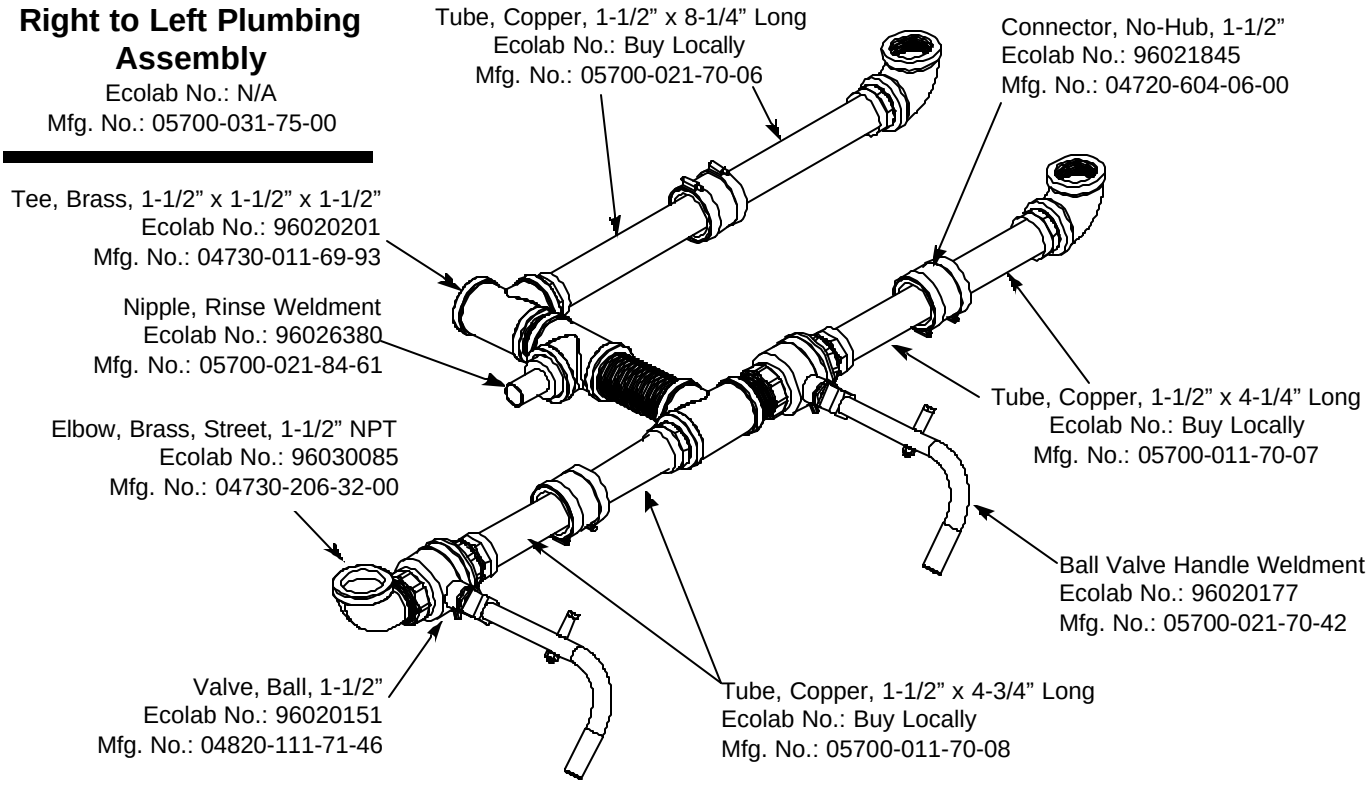
Ecolab No.: N/A
Mfg. No.: 05700-041-69-71



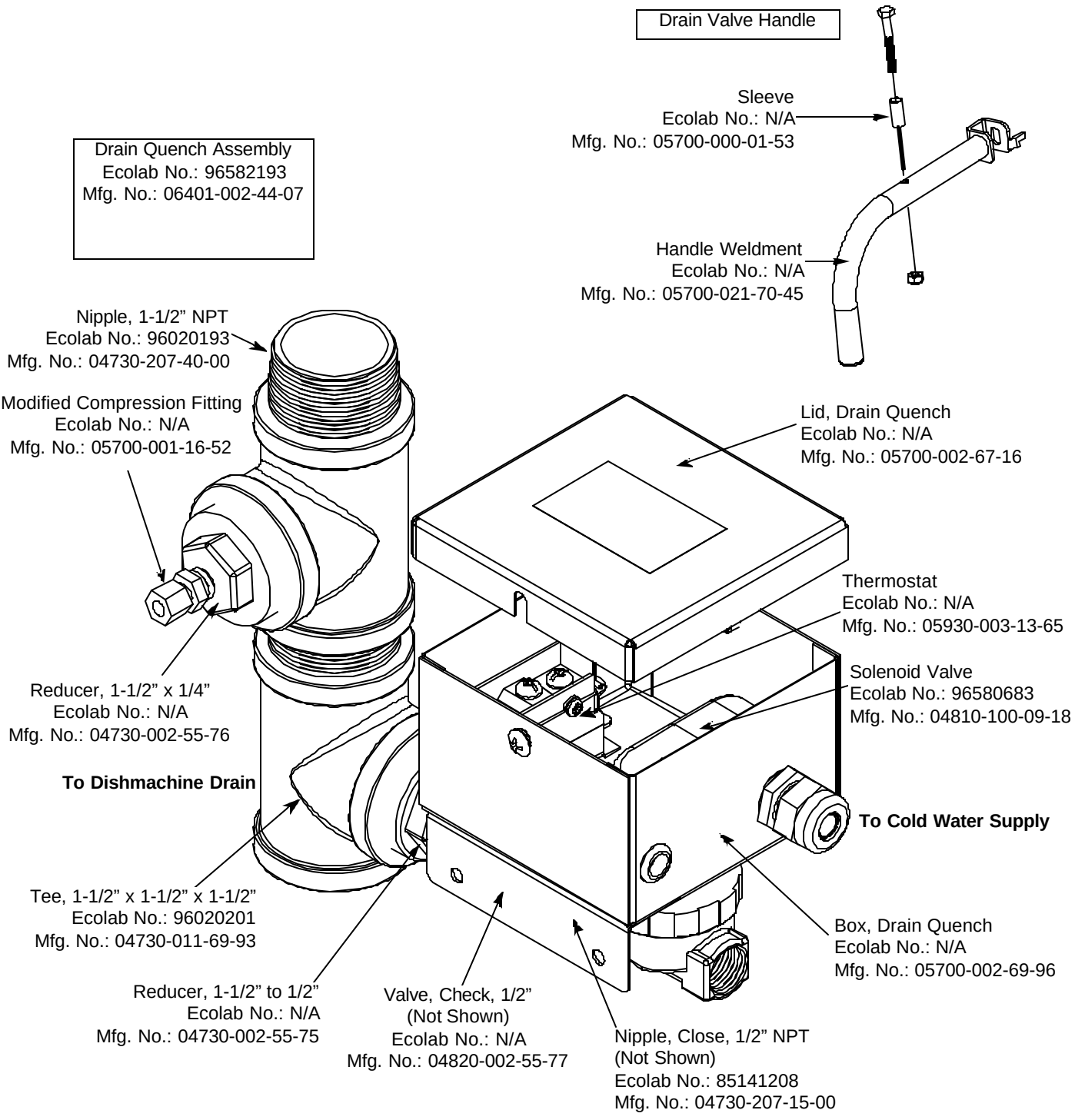
All parts are common to both assemblies.

Right to Left Plumbing Assembly

Ecolab No.: N/A
Mfg. No.: 05700-031-75-00



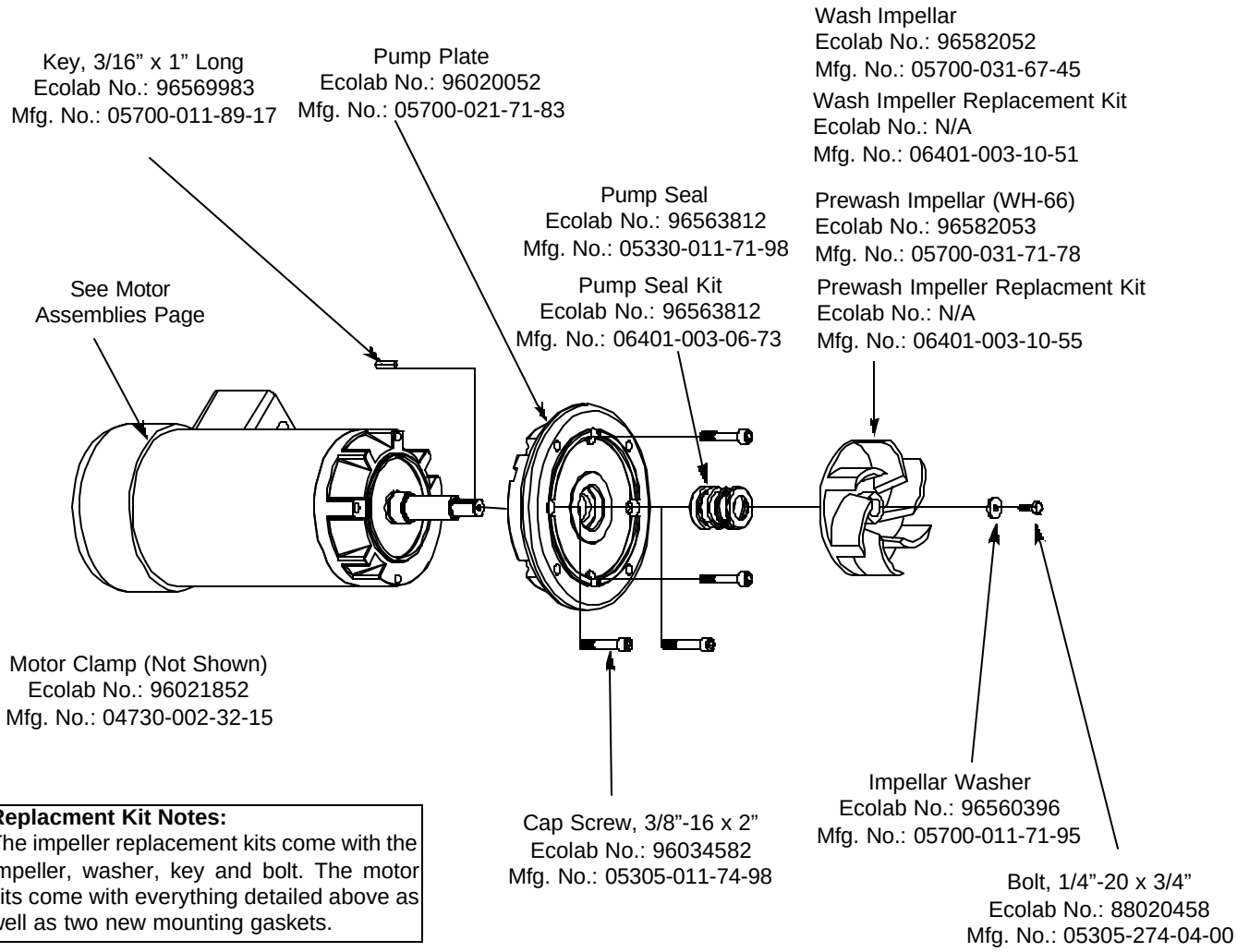
WH-66 DRAIN VALVE HANDLE ASSEMBLY/DRAIN QUENCH SYSTEM



From the existing drain, attach the two additional Tees using the 1-1/2" NPT Close Nipples. Tighten the Reducers into the Tees as shown above. Attach the Modified Compression Fitting into the 1-1/2" to 1/4" Reducer. Position the bulb of the thermostat so that it rests approximately 1/4" from the bottom of the Tee. Tighten the Modified Compression Fitting as required. Attach to the incoming cold water line. Use pipe dope or thread tape as required to prevent any leaks.

SECTION 6: PARTS SECTION

MOTOR ASSEMBLIES



Replacment Kit Notes:
The impeller replacement kits come with the impeller, washer, key and bolt. The motor kits come with everything detailed above as well as two new mounting gaskets.

WASH MOTOR CHART

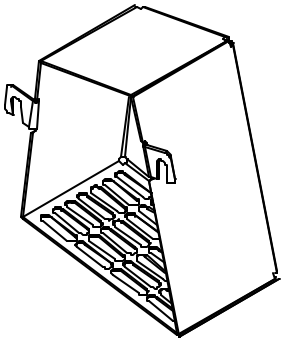
Volts	Phase	Hz	Ecolab No.	Motor Part Number	Kit Part Number
208 - 230	1	60	96022454	06105-021-70-57	06401-003-09-97
208 - 230	3	60	96020045	06105-121-70-58	06401-003-09-98
460	3	60	96020045	06105-121-70-58	06401-003-09-98

PREWASH MOTOR CHART

Model(s)	Volts	Phase	Hz	Ecolab No.	Part Number	Kit Part Number
WH-66's	208	1	60	96022397	06105-121-70-55	06401-003-10-40
	230	1	60	96022397	06105-121-70-55	06401-003-10-40
	208	3	60	96021951	06105-121-70-56	06401-003-10-38
	230	3	60	96021951	06105-121-70-56	06401-003-10-38
	460	3	60	96021951	06105-121-70-56	06401-003-10-38

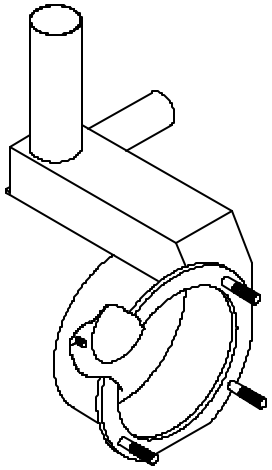
The pump weldment is secured to the pump plate (through the actual tub wall) using the following fasteners:

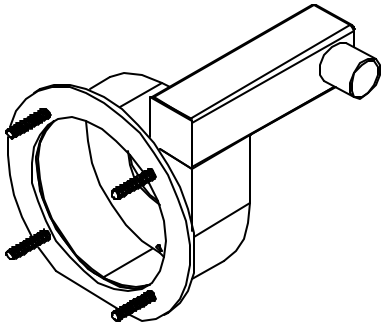
DESCRIPTION	ECOLAB No.	Mfg. No.
Nut, Hex, 3/8”-16	88422068	05310-276-01-00
Washer, Flat, 3/8”	88530605	05311-176-01-00
Lockwasher, Split, 3/8”	88521109	05311-276-01-00



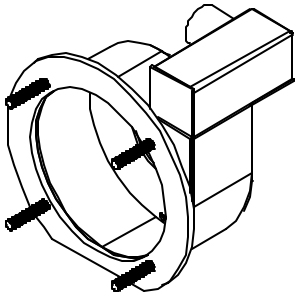
Intake Suction Scoop Weldment
Ecolab No.: 96029640
Mfg. No.: 05700-021-87-60

The wash pump weldment is a single part. Separate pieces of the weldment are not available for purchase. The weldment is used for the wash pump in all models covered in this manual. The weldment may be ordered using Ecolab No.: 96021621 or Mfg. No.: 05700-041-68-88.

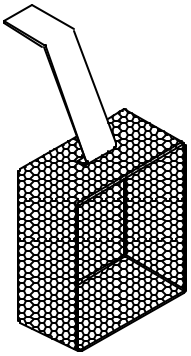




Prewash Pump Weldment
WH-66 Left to Right models Ecolab No.: 96027677
Mfg. No.: 05700-002-10-62



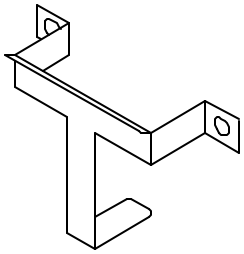
Prewash Pump Weldment
WH-66 Right to Left models
Ecolab No.: N/A
Mfg. No.: 05700-002-11-96



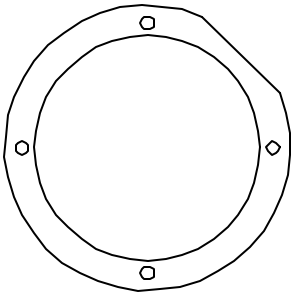
Prewash Intake Strainer Weldment
Ecolab No.: 96020771
Mfg. No.: 05700-021-74-96

The prewash pump weldment is a single part. Separate pieces of the weldment are not available for purchase. The weldment is used for the prewash pump in all models covered in this manual.

Kit, Motor Brkt Replace
Ecolab No.: N/A
Mfg. No.: 05700-021-73-42



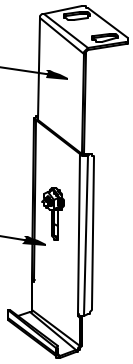
Prewash Strainer Bracket
Ecolab No.: N/A
Mfg. No.: 05700-021-74-94



Motor Mounting Gasket
Ecolab No.: 96020060
Mfg. No.: 05330-011-71-62

Upper Support Bracket
Ecolab No.: N/A
Mfg. No.: 05700-021-73-68

Lower Support Bracket
Ecolab No.: N/A
Mfg. No.: 5700-021-73-71



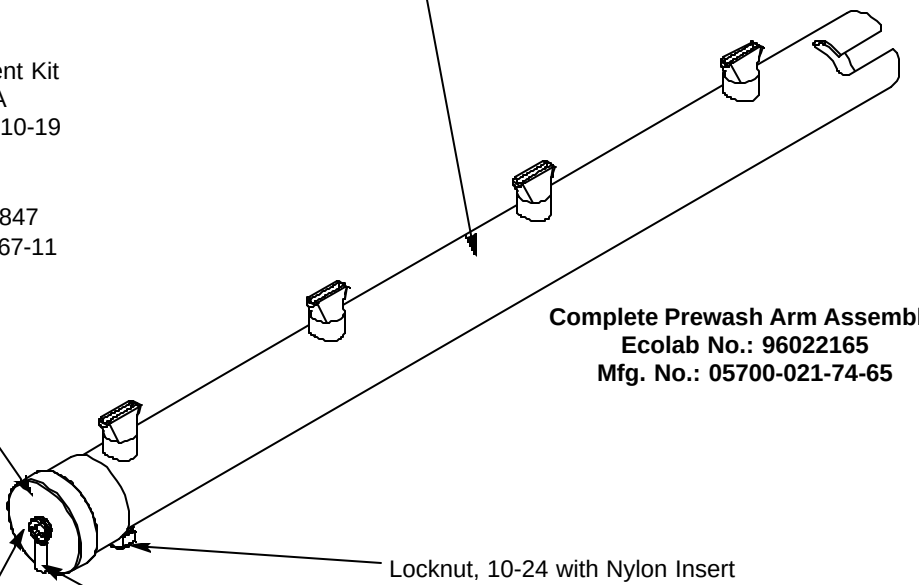
PREWASH ARM ASSEMBLY

Replacement Kit Note:
The replacement kit for the end cap includes the endcap, lanyard, mounting screw and the locknut.

Prewash Tube Weldment
Ecolab No.: 96584271
Mfg. No.: 05700-001-16-89

End Cap Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-19

End Cap
Ecolab No.: 96020847
Mfg. No.: 05700-011-67-11



Complete Prewash Arm Assembly
Ecolab No.: 96022165
Mfg. No.: 05700-021-74-65

Locknut, 10-24 with Nylon Insert
Ecolab No.: 88429063
Mfg. No.: 05310-373-01-00

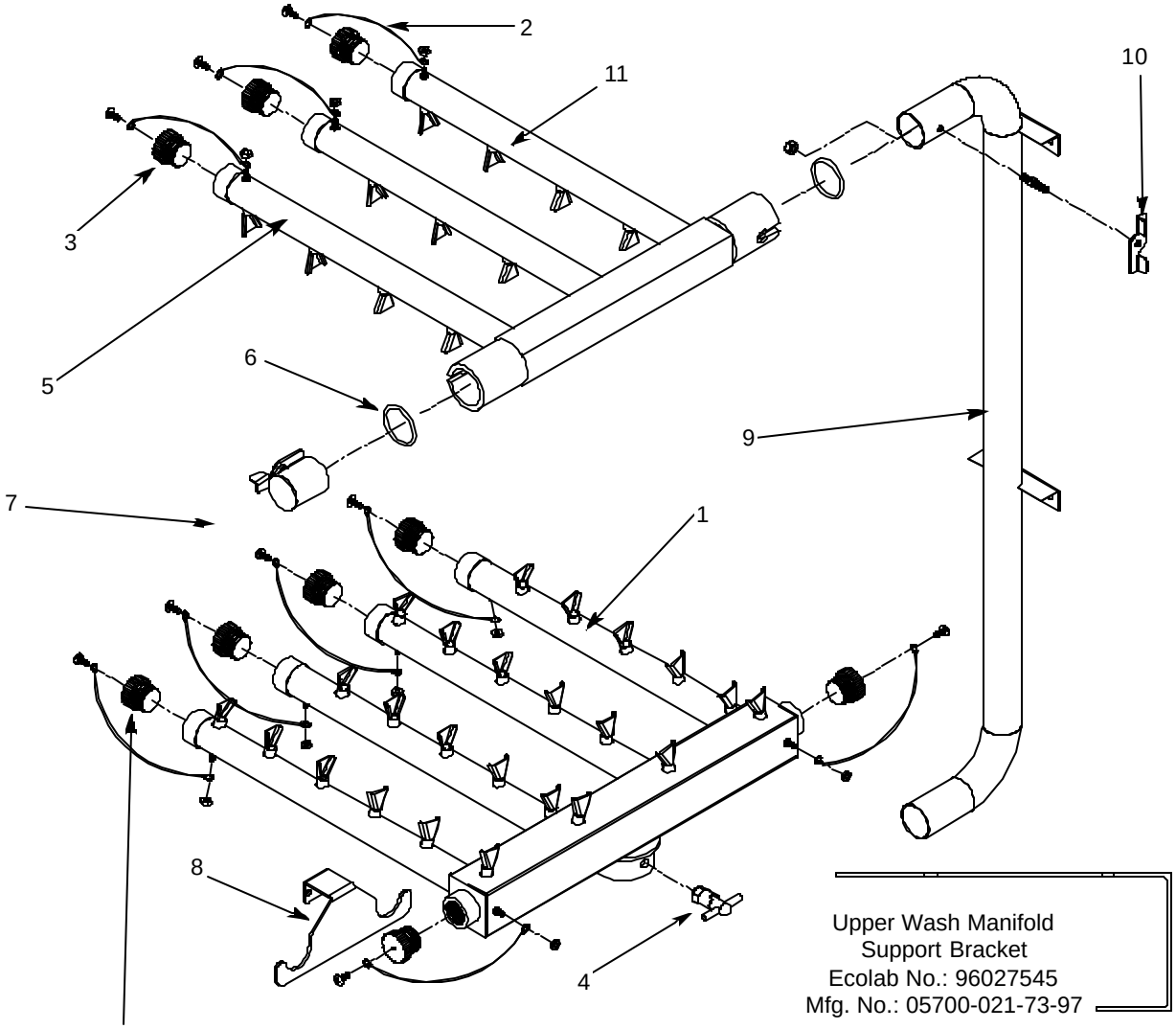
Screw, 10-32 x 3/8"
Long Phillips Panhead
Ecolab No.: 88220066
Mfg. No.: 05305-173-26-00

Lanyard
Ecolab No.: 96021647
Mfg. No.: 05340-011-72-46

Service Note:
When replacing the 10-32 screws in the End Caps, it is recommended that a thread locking fluid be used to ensure that the screws do not back out during normal operation.

SECTION 6: PARTS SECTION

WASH ARM/MANIFOLD ASSEMBLY



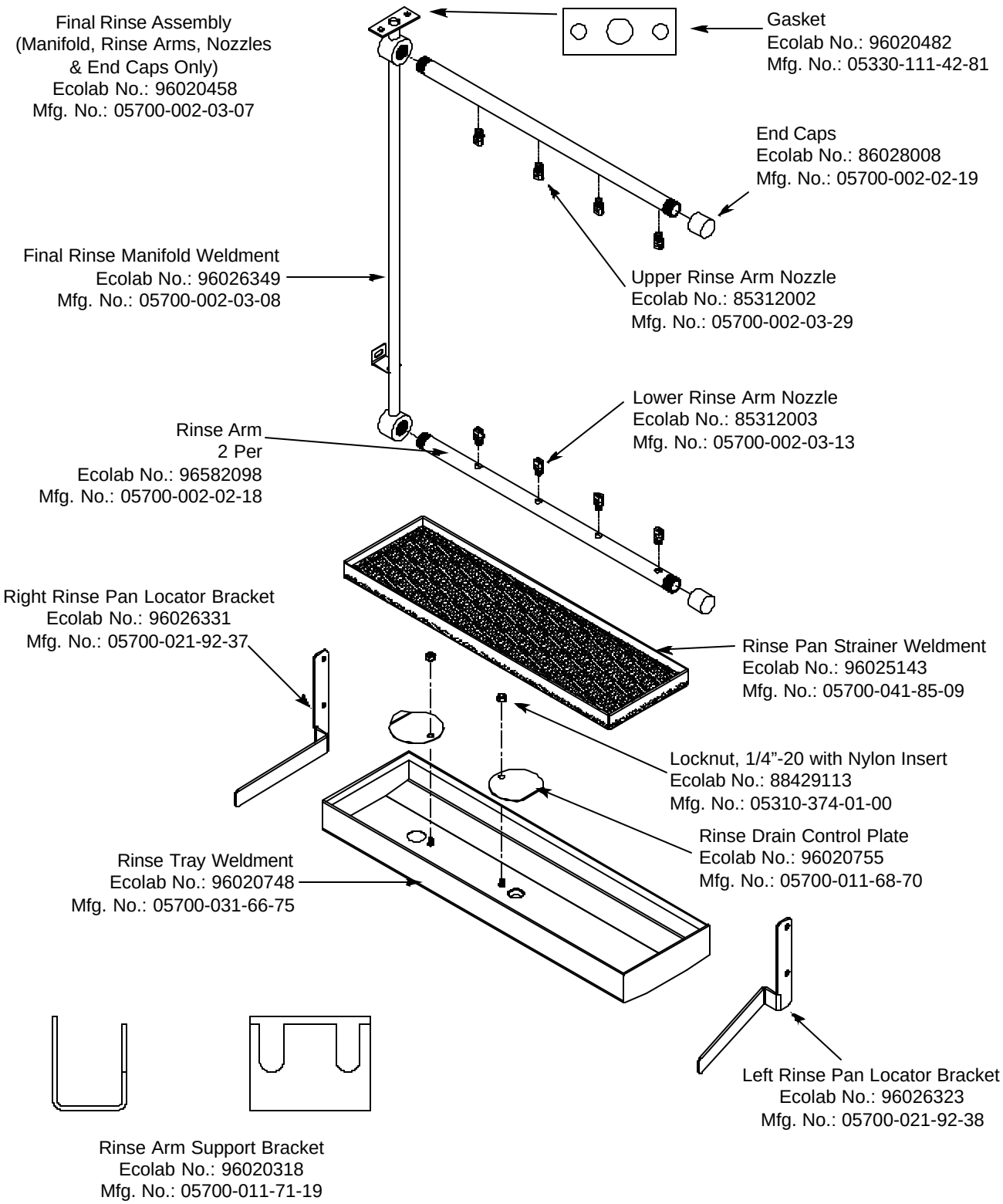
End Cap Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-19

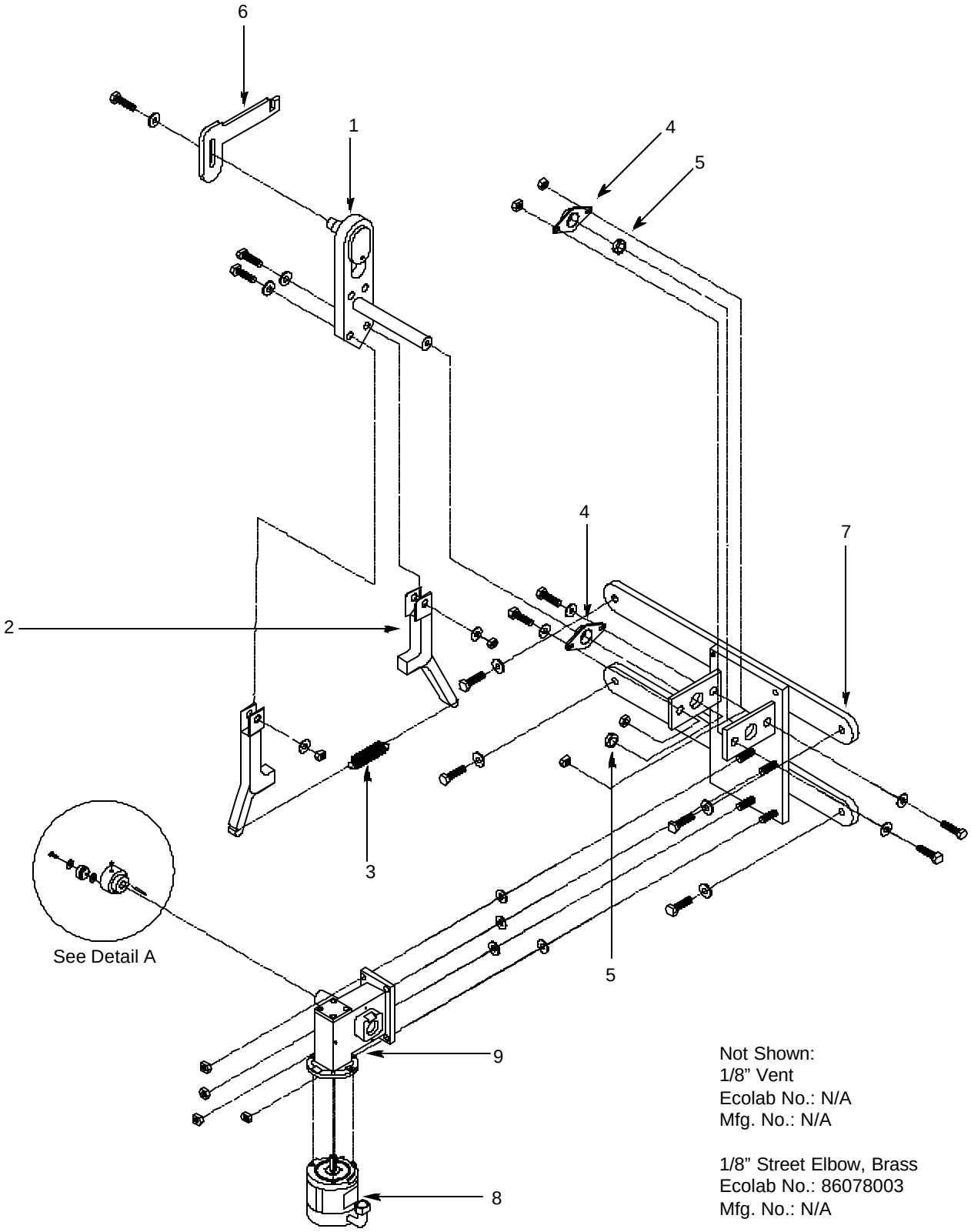
Replacement Kit Note:
The replacement kit for the end cap includes the endcap, lanyard, mounting screw and the locknut.

ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Lower Wash Arm Weldment	N/A	05700-031-67-29
2	9	Lanyard	96021647	05340-011-72-46
3	9	End Cap, Manifold	96020847	05700-011-67-11
4	1	Key, Manifold Quick Release	96570528	05700-011-94-45
5	1	Upper Wash Arm Weldment	N/A	05700-031-67-34
6	2	O-ring, 1-1/2” ID x 1-3/4” OD	96022116	05330-011-74-56
7	1	Cap Weldment	96020805	05700-021-69-68
8	1	Wash Arm Support Bracket	96026307	05700-002-02-28
9	1	Wash Manifold	96027644	05700-002-03-09
10	1	Wingnut Weldment	96582034	05700-002-46-02
11	1	Complete Upper Wash Arm Assembly	96020797	05700-031-74-99
12	1	Complete Lower Wash Arm Assembly	96020821	05700-031-74-66

SERVICE NOTE: When replacing the 10-32 screws in the End Caps, it is recommended that a thread locking fluid be used to ensure that the screws do not back out during normal operation.

FINAL RINSE ASSEMBLY & ASSOCIATED PARTS

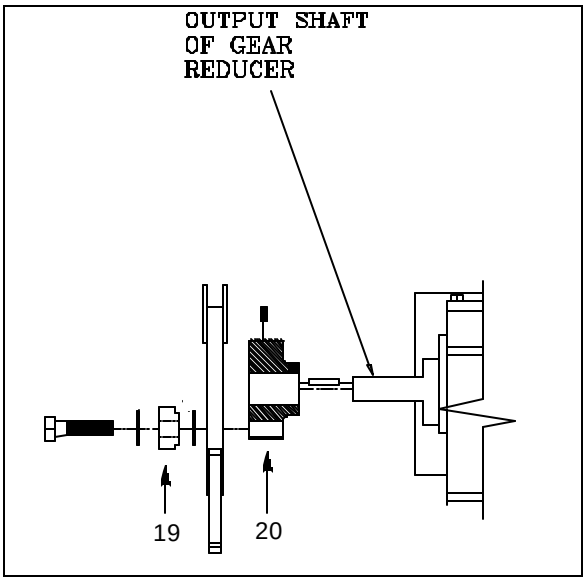




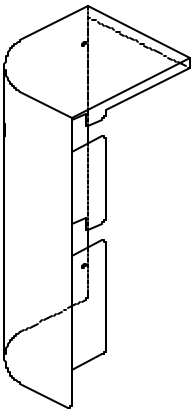
Not Shown:
1/8” Vent
Ecolab No.: N/A
Mfg. No.: N/A

1/8” Street Elbow, Brass
Ecolab No.: 86078003
Mfg. No.: N/A

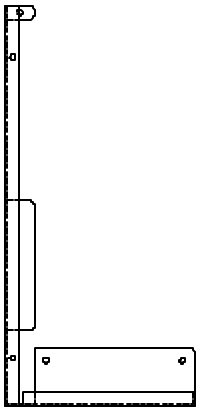
ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Drive Plate and Rod Weldment	N/A	05700-002-01-97
2	2	Coupling & Expansion Leg Weldment	N/A	05700-021-67-50
3	1	Drive Spring	96021035	05315-011-83-51
		Kit, Drive Tie Assembly (Includes items 1-3 and mounting hardware)	96026497	06401-003-20-16
4	2	Pillow Block	96020920	06401-003-08-50
5	2	Shaft Collar	96040506	05700-011-89-18
6	1	Pawl Bar Drive Linkage Casting	96026489	09515-021-87-73
7	1	Drive Motor Mounting Bracket	96026505	05700-031-73-56
8	1	Drive Motor (208-230 Volt, 60 Hz, Single Phase)	83710061	06401-003-08-42
		Drive Motor (208-230 Volt, 60 Hz, Three Phase)	83710060	06401-003-08-40
		Drive Motor (460 Volt, 60 Hz, Three Phase)	83710060	06401-003-08-40
9	1	Gear Drive	96021936	06105-011-71-88
10	1	Roller Bearing	96566112	03120-011-71-81
11	1	Drive Hub	96020862	05700-011-67-97



Detail A



Drive Motor Cover Front Weldment
Ecolab No.: 96026521
Mfg. No.: 05700-002-01-98



Rear Drive Motor Cover Assembly
Ecolab No.: N/A
Mfg. No.: 05700-002-41-21

Front Drive Motor Cover Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-11-64

Rear Drive Motor Cover Replacment Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-18

Replacement Kits Notes:
The replacement kits for the drive motor covers come with the weldments and the mounting hardware.

LUBRICATION CHART FOR GEAR DRIVE

Note: The maintenance procedures detailed here are manufacturer's instructions for the WINSMITH brand of gear reducer that is installed on the rack conveyors covered in this manual.

Ambient Temperature	-30 - 15°F	16 - 50°F	51 - 95°F	51 - 95°F	96 - 131°F	96 - 131°F
Final Stage Worm Speed[1]	up to 2000 FPM	up to 2000 FPM	up to 450 FPM	above 450 FPM	up to 450 FPM	above 450 FPM
ISO Viscosity Grade	220	460	680	460	680	460[1]
AGMA Lubricant No.	5S	#7 Compounded	#8 Compounded	#7 Compounded	8S	7S
Mobil	SHC 630	600W Super Cylinder	Extra Hecla Super	600W Super Cylinder	SHC 636	SHC 634
American Lubricants	SHC-90W	AGMA #7 Gear Oil	AGMA #8 Gear Oil	AGMA #7 Gear Oil	N/A	N/A
Castrol	Tribol 800/220	Tribol 1105-7C	Tribol 1105-8C	Tribol 1105-7C	Tribol 800/680	Tribol 800/460
Chevron	Tegra 220	Cylinder Oil W460	Cylinder Oil W680	Cylinder Oil W460	Tegra 680	Tegra 460
Conoco	Syncon R & O 220	Inca Oil 460	Inca Oil 680	Inca Oil 460	N/A	Syncon R & O 460
Exxon (Esso)	Teresstic SHP220	Spartan EP 460	Spartan EP 680	Spartan EP 460	Teresstic SHP 680	Teresstic SHP 460
Fiske Brothers	SPO-MG	SPO-277	SPO-288	SPO-277	N/A	N/A
Shell	Omala RL 220	Valvata J 460	Valvata J 680	Valvata J 460	Omala RL 680	Omala RL 460
Texaco	Pinnacle 220	Vanguard 460	Vanguard 680	Vanguard 460	Pinnacle 680	Pinnacle 460

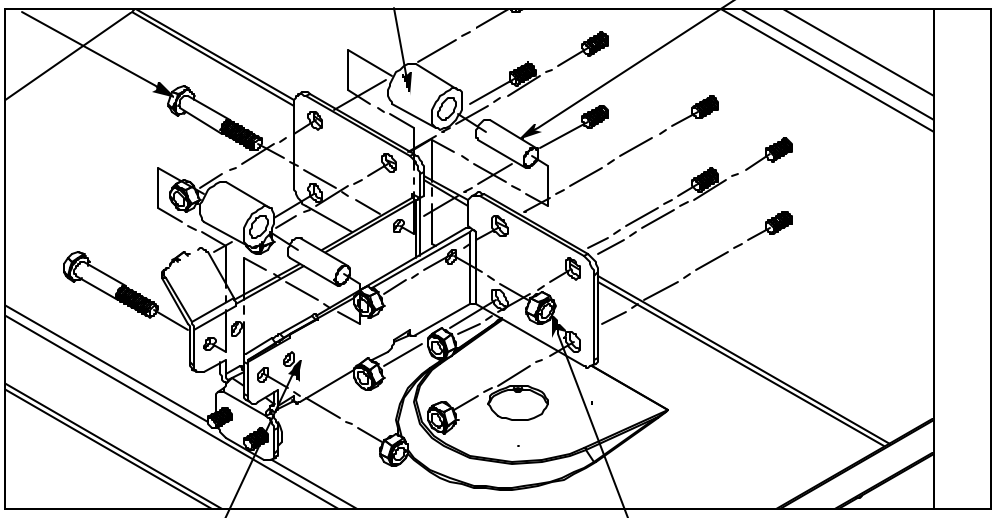
[1] The sliding velocity in feet per minute (FPM) for standard ratios is determined by multiplying the speed of the worm in RPM by the factor from the table below. For selecting proper lubricant, use the speed of the worm in the final stage (input RPM divided by the first stage ratio).

PAWL BAR ROLLER BRACKET

Bolt, 1/4”-20 x 1-3/4” Long
Ecolab No.: 96035472
Mfg. No.: 05305-274-10-00

Roller, UHMW
Ecolab No.: 96022272
Mfg. No.: 05700-011-68-16

Roller Shaft
Ecolab No.: 96582770
Mfg. No.: 05700-011-68-14

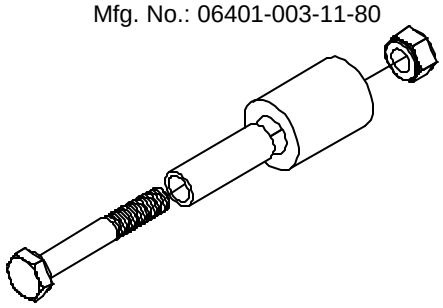


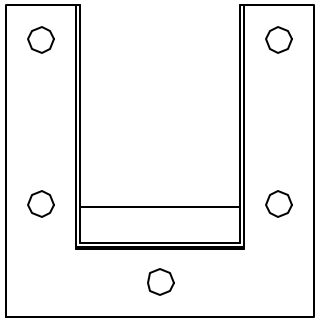
Pawl Bar Roller Bracket with Tabs
Ecolab No.: 96026075
Mfg. No.: 05700-031-84-68

Locknut, 1/4”-20 with Nylon Insert
Ecolab No.: 88429113
Mfg. No.: 05310-374-01-00

Replacement Kit Notes:
The replacement kit for the pawl bar roller comes with the roller, roller shaft, hardware and locknut as shown.

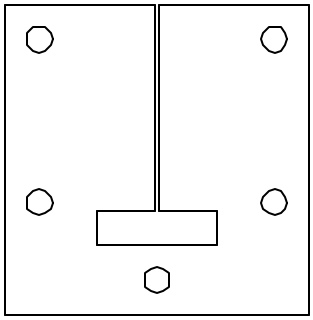
Pawl Bar Roller Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-11-80





Pawl Bar Gutter Weldment
Ecolab No.: 96020706
Mfg. No.: 05700-021-66-86

Pawl Bar Gutter Weldment
Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-09-95



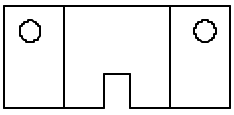
Pawl Bar Gutter Gasket
Ecolab No.: 96020714
Mfg. No.: 05330-011-68-55

Service Note:
It is highly recommended that when changing out one guide block, that the other be changed out as well, along with the gasket.

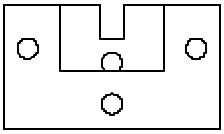
Guide Block Replacment Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-15

Replacement Kits Notes:
The pawl bar gutter weldment replacement kit contains the weldment, a gasket and the mounting hardware. The guide block kit contains both blocks and a gasket.

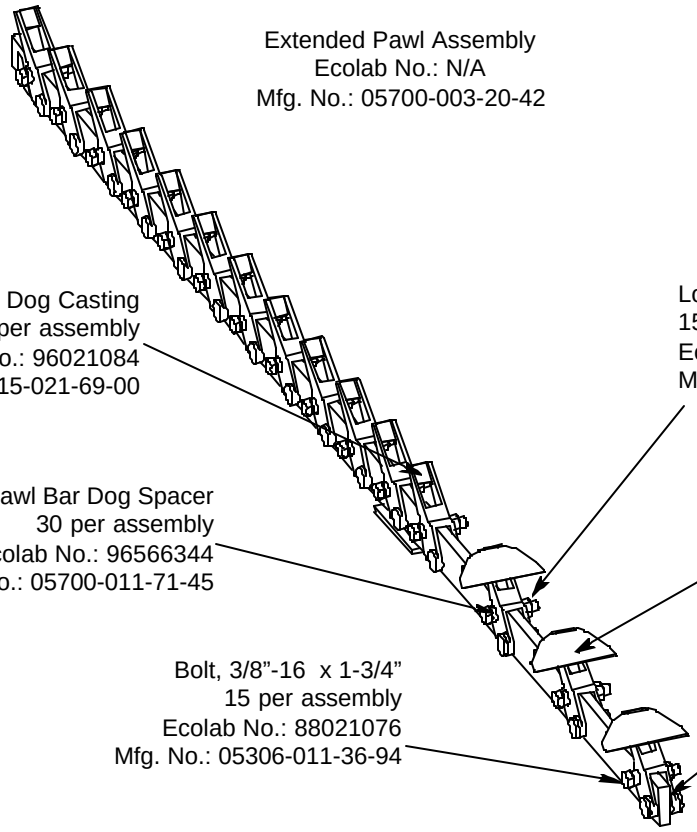
Top Guide Block
Ecolab No.: 96020722
Mfg. No.: 05700-011-69-49



Bottom Guide Block
Ecolab No.: 96020730
Mfg. No.: 05700-011-69-50



WH-44 EXTENDED PAWL BAR OPTION & COMPONENTS



Extended Pawl Assembly
Ecolab No.: N/A
Mfg. No.: 05700-003-20-42

Pawl Bar Dog Casting
12 per assembly
Ecolab No.: 96021084
Mfg. No.: 09515-021-69-00

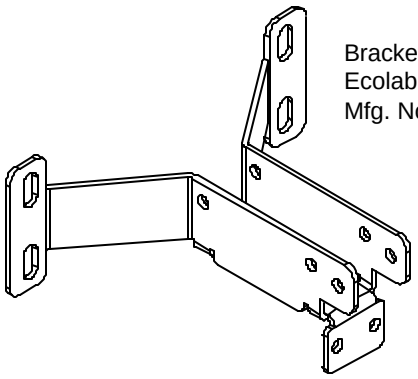
Lock Nut, 3/8”-16 w/Nylon Insert
15 per assembly
Ecolab No.: 88419007
Mfg. No.: 05310-011-72-55

Pawl Bar Dog Spacer
30 per assembly
Ecolab No.: 96566344
Mfg. No.: 05700-011-71-45

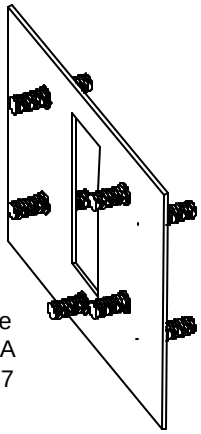
Pawl Bar Wing Weldment
3 per assembly
Ecolab No.: 96036851
Mfg. No.: 05700-021-86-79

Bolt, 3/8”-16 x 1-3/4”
15 per assembly
Ecolab No.: 88021076
Mfg. No.: 05306-011-36-94

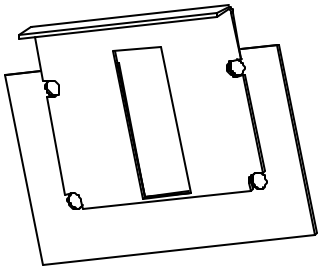
Pawl Bar Weldment
Ecolab No.: N/A
Mfg. No.: 05700-003-20-43



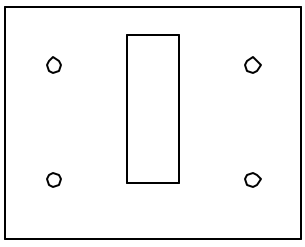
Bracket, Pawl Bar Roller
Ecolab No.: N/A
Mfg. No.: 05700-003-20-02



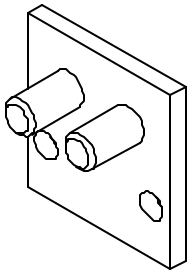
Weldment, Pawl Bar Gutter Plate
Ecolab No.: N/A
Mfg. No.: 05700-003-20-27



Weldment, Tub Drive Slot
Ecolab No.: N/A
Mfg. No.: 05700-003-20-28

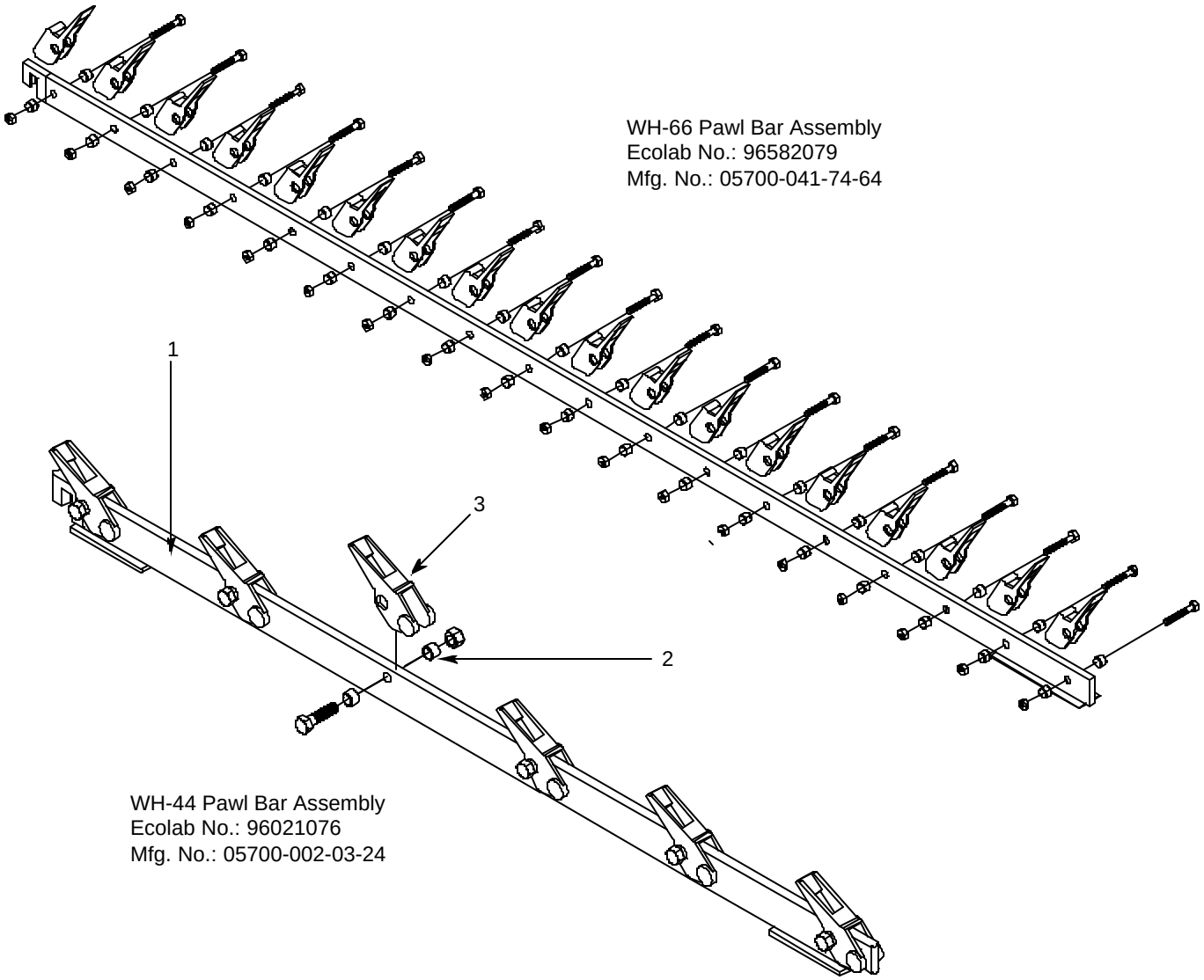


Gasket, Tub Drive Slot
Ecolab No.: N/A
Mfg. No.: 05330-003-20-30



Weldment, Pawl Bar Guide
Ecolab No.: N/A
Mfg. No.: 05700-003-20-20

PAWL BAR ASSEMBLIES

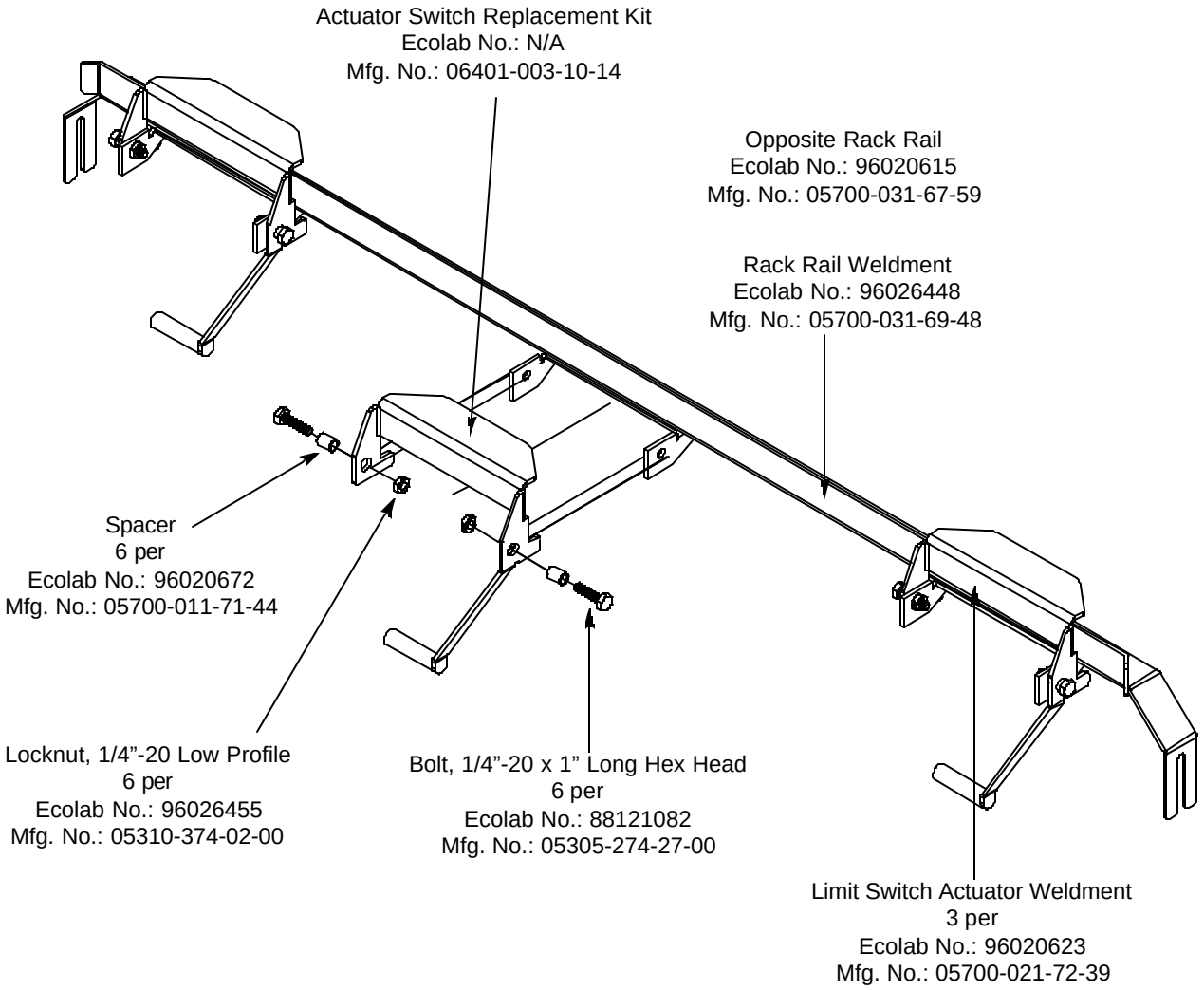


ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Pawl Bar Weldment (WH-44's)	96026463	05700-002-03-25
	1	Pawl Bar Weldment (WH-66's)	N/A	05700-031-72-78
2	12	Pawl Bar Dog Spacer (WH-44's)	96566344	05700-011-71-45
	36	Pawl Bar Dog Spacer (WH-66's)	96566344	05700-011-71-45
3	6	Pawl Bar Dog Casting (WH-44's)	96021084	09515-021-69-00
	18	Pawl Bar Dog Casting (WH-66's)	96021084	09515-021-69-00

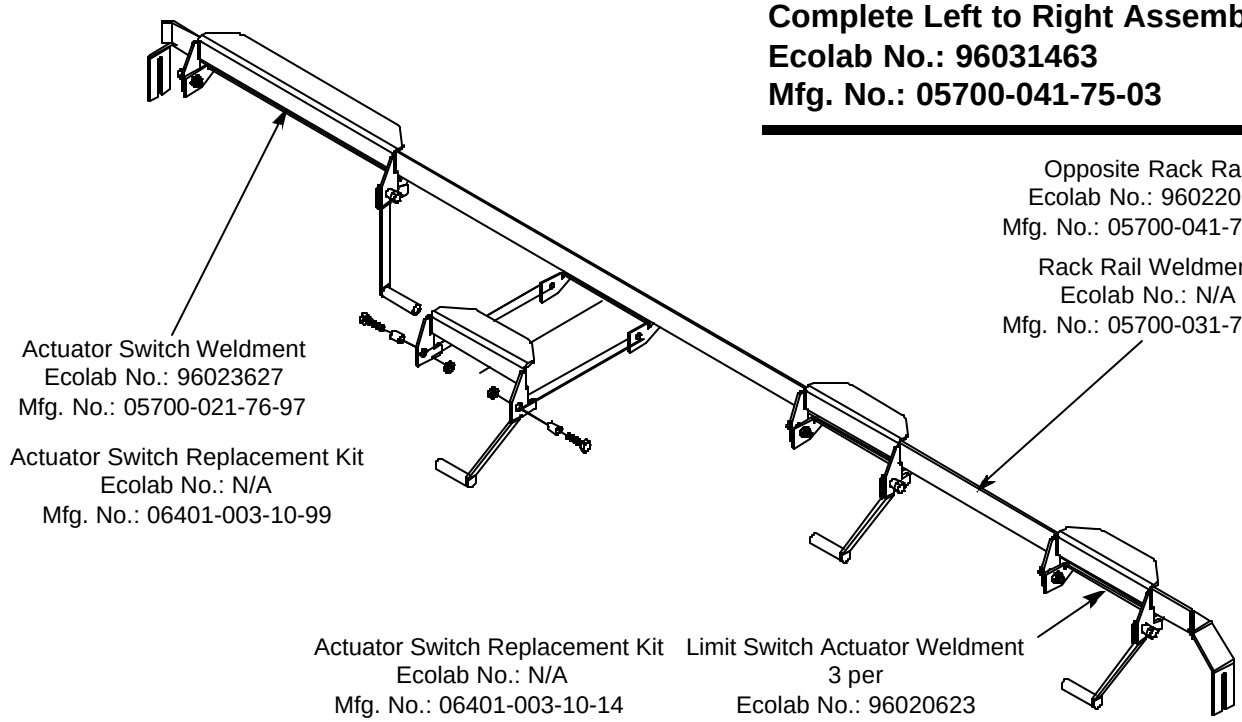
WH-44 RACK RAIL ASSEMBLY

Complete Assembly
Ecolab No.: 96022033
Mfg. No.: 05700-031-81-37

Replacement Kit Note:
The replacement kit for the actuator switch comes with the switch, two spacers and the mounting hardware.



Complete Left to Right Assembly
Ecolab No.: 96031463
Mfg. No.: 05700-041-75-03



Opposite Rack Rail
Ecolab No.: 96022066
Mfg. No.: 05700-041-71-37

Rack Rail Weldment
Ecolab No.: N/A
Mfg. No.: 05700-031-76-27

Actuator Switch Weldment
Ecolab No.: 96023627
Mfg. No.: 05700-021-76-97

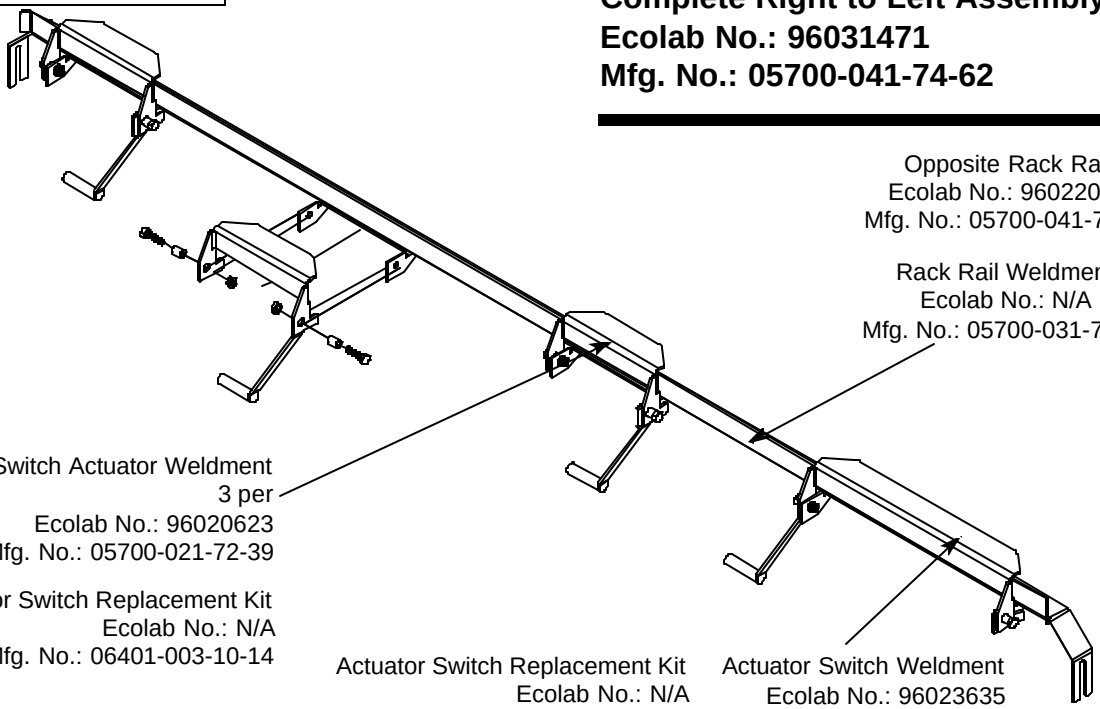
Actuator Switch Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-99

Actuator Switch Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-14

Limit Switch Actuator Weldment
3 per
Ecolab No.: 96020623
Mfg. No.: 05700-021-72-39

Replacement Kit Notes:
The replacement kits for the actuator switches come with the switch, two spacers and the mounting hardware.

Complete Right to Left Assembly
Ecolab No.: 96031471
Mfg. No.: 05700-041-74-62



Opposite Rack Rail
Ecolab No.: 96022066
Mfg. No.: 05700-041-71-37

Rack Rail Weldment
Ecolab No.: N/A
Mfg. No.: 05700-031-76-28

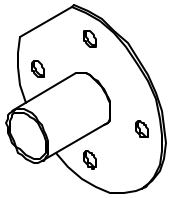
Limit Switch Actuator Weldment
3 per
Ecolab No.: 96020623
Mfg. No.: 05700-021-72-39

Actuator Switch Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-14

Actuator Switch Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-86

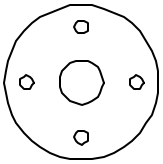
Actuator Switch Weldment
Ecolab No.: 96023635
Mfg. No.: 05700-002-91-09

Replacement Kits Notes:
The kits for the drain weldments and drain plugs come with the weldments/parts, a new gasket and the mounting hardware.

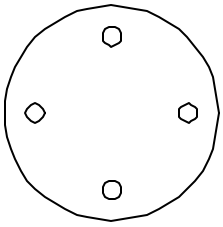


Rinse Drain Weldment
Ecolab No.: N/A
Mfg. No.: 05700-002-51-12

Rinse Drain Weldment
Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-05

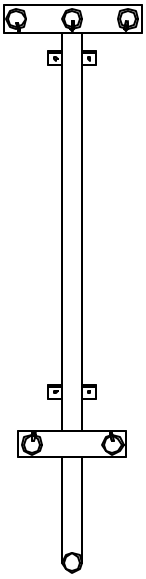


Rinse Drain Plate Gasket
Ecolab No.: 96031927
Mfg. No.: 05330-011-72-27

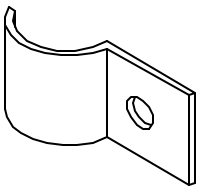


Rinse Drain Plug
Ecolab No.: 96022579
Mfg. No.: 05700-011-68-59

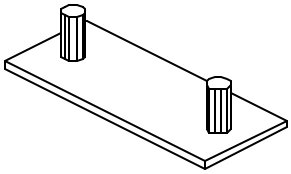
Rinse Drain Plug Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-06



Prewash Manifold Weldment
(WH-66 Models Only)
Ecolab No.: N/A
Mfg. No.: 05700-002-42-72



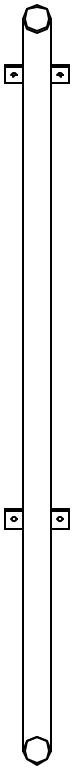
Pipe Clamp
Ecolab No.: 96572466
Mfg. No.: 05700-000-35-05



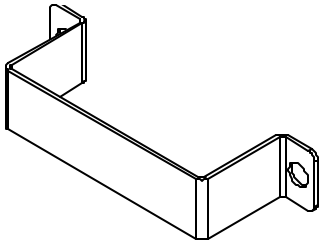
Hole Direction Cover Weldment
Ecolab No.: 96038526
Mfg. No.: 05700-002-32-50

Hole Direction Plate Replacment Kit
06401-003-10-00

Replacment Kit Note:
The kit for the hole direction plate comes with the plate, a new gasket and the mounting hardware.

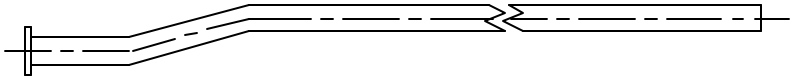


Wash Manifold Weldment
Ecolab No.: 96020383
Mfg. No.: 05700-031-71-13



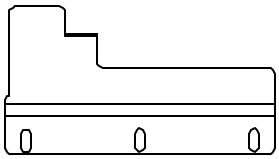
Conduit Bracket
Ecolab No.: 96031938
Mfg. No.: 05700-021-70-88

Conduit Bracket Long
Ecolab No.: N/A
Mfg. No.: 05700-002-14-96

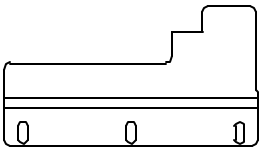


Wash Fill Tube Weldment
Ecolab No.: 96026299
Mfg. No.: 05700-002-03-06

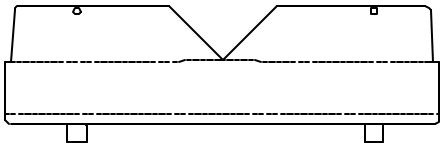
Prewash Fill Tube Weldment
(WH-66 Models Only)
Ecolab No.: N/A
Mfg. No.: 05700-002-43-18



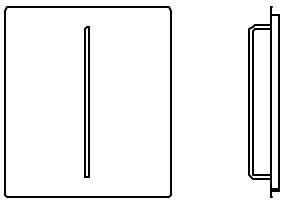
Plate, Left Water Directional
Ecolab No.: N/A
Mfg. No.: 05700-021-79-27



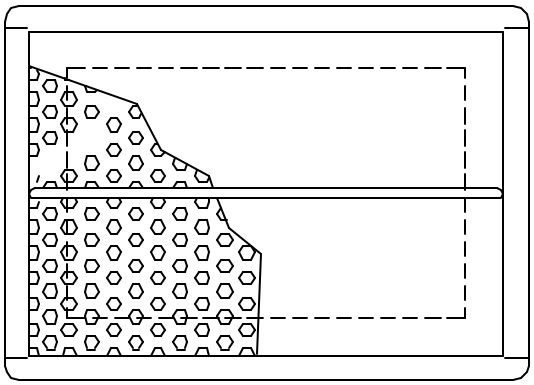
Plate, Right Water Directional
Ecolab No.: N/A
Mfg. No.: 05700-021-79-23



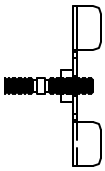
Splash Shield Weldment
Ecolab No.: 96024039
Mfg. No.: 05700-031-85-16



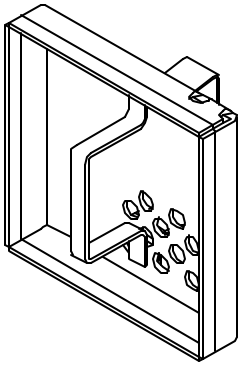
Run Off Sheet Weldment
Ecolab No.: 96022381
Mfg. No.: 05700-021-71-39



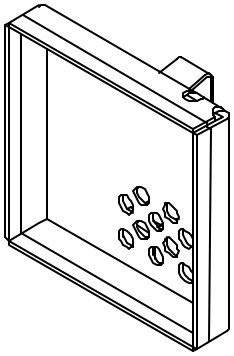
Tub Strainer Weldment
Ecolab No.: 96026083
Mfg. No.: 5700-002-03-21



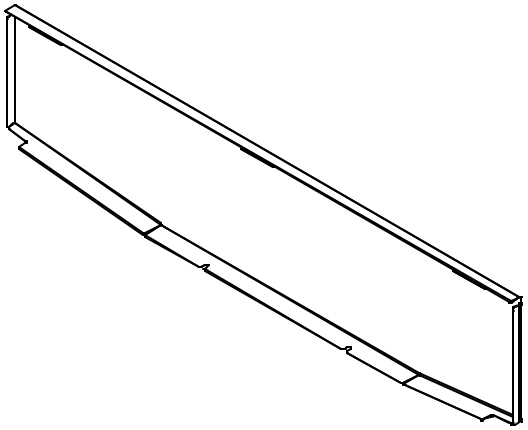
Shoulder Bolt Wingnut Weldment
Ecolab No.: 96582034
Mfg. No.: 05700-002-46-02



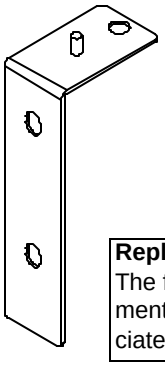
Drain Guard Strainer Weldment
Ecolab No.: 96030648
Mfg. No.: 05700-002-09-15



Screen Strainer with Handle
Weldment
Ecolab No.: 96028170
Mfg. No.: 05700-002-09-04



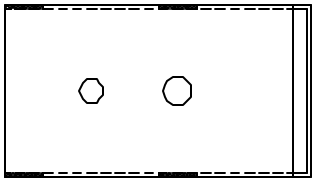
1	Dress Panel WH-44's	96031968	05700-002-03-33
1	Dress Panel WH-66's (Left to Right)	96021829	05700-031-71-85
	(Right to Left)	96040951	05700-002-41-05



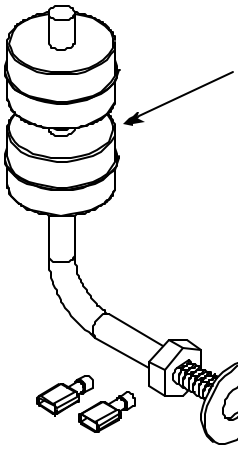
Float Support Bracket
Ecolab No.: N/A
Mfg. No.: 05700-021-85-15

Float Switch Support Bracket
Replacement Kit
06401-003-11-77

Replacment Kit Note:
The float switch support bracket replacement kit contains the bracket and associated hardware for mounting.



Float Switch Cover
Ecolab No.: 96023700
Mfg. No.: 05700-021-75-71



Prewash Float Switch, 60" Lead
Ecolab No.: 96021407
Mfg. No.: 06680-121-70-16

Wash Float Switch, Dual
Ecolab No.: 96585682
Mfg. No.: 06680-121-70-71

1/2" Flat Washer
Ecolab No.: 88520069
Mfg. No.: 05700-011-71-93

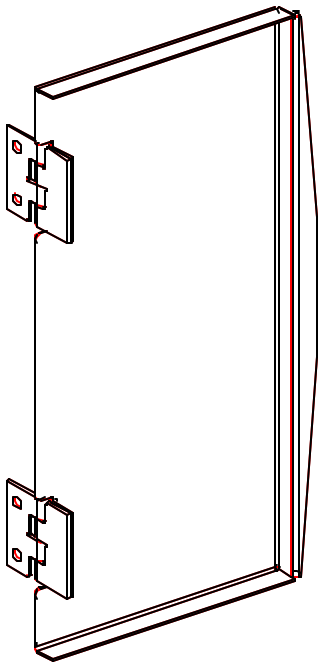
Hex Nut (1/2"-13 Thread)
Ecolab No.: 88430517
Mfg. No.: 05310-011-72-58

Wash Tank Float Switch Replacment Kit
06401-003-11-75

Prewash Tank Float Switch Replacment Kit
06401-003-11-76

Replacment Kit Note:
The float switch replacement kits contain the float switch with associated terminals, the flat washer and the nut.

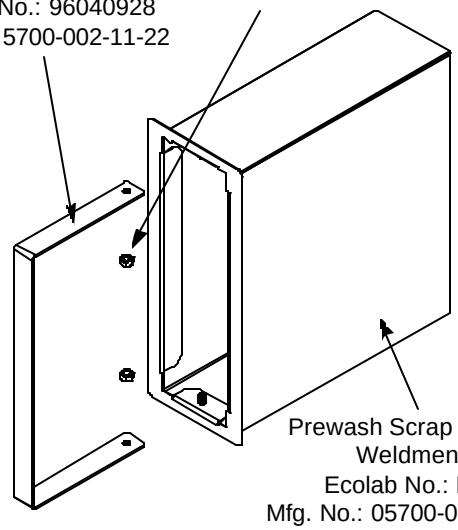
Service Agent Note:
Remember than when reinstalling the float switch that the flat washer goes inside against the tub wall while the nut is on the outside of the tub.



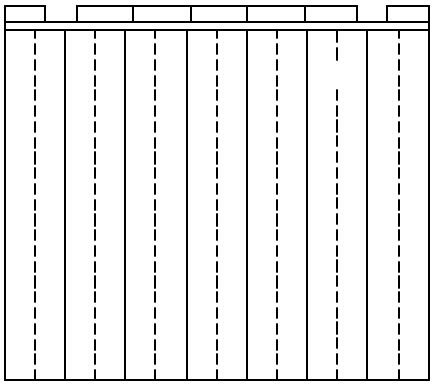
Scrap Basket Lid
Ecolab No.: 96022371
Mfg. No.: 05700-002-51-21

Locknut, 1/4"-20 with Nylon Insert
Ecolab No.: 88429113
Mfg. No.: 05310-374-01-00

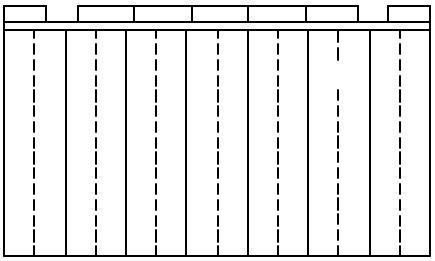
Scrap Basket Handle
Ecolab No.: 96040928
Mfg. No.: 5700-002-11-22



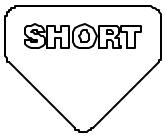
Prewash Scrap Basket
Weldment
Ecolab No.: N/A
Mfg. No.: 05700-002-11-20



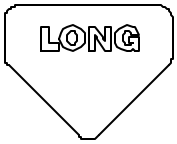
Curtain, 21” Long x 20-1/2” Wide
Ecolab No.: 96021548
Mfg. No.: 08415-131-73-45



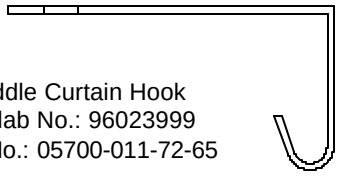
Curtain, 12” Long x 20-1/2” Wide
Ecolab No.: 96021555
Mfg. No.: 08415-131-73-44



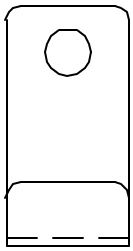
Short Curtain Decal
Ecolab No.: 96025978
Mfg. No.: 09905-011-73-82



Long Curtain Decal
Ecolab No.: 96025986
Mfg. No.: 09905-011-73-84



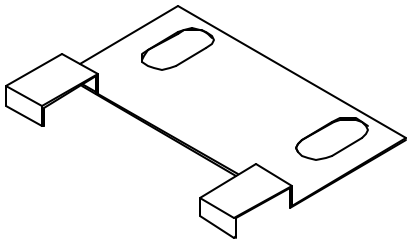
Middle Curtain Hook
Ecolab No.: 96023999
Mfg. No.: 05700-011-72-65



Curtain Hook
Ecolab No.: 96023981
Mfg. No.: 05700-011-68-80

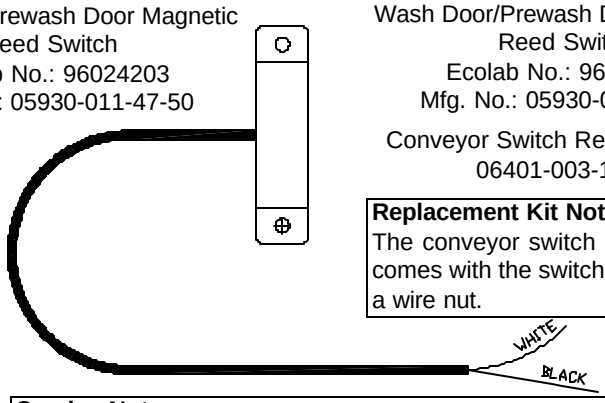
Curtain Rod
Ecolab No.: 96021563
Mfg. No.: 05700-021-73-43

Magnetic Reed Switch
Ecolab No.: 96021464
Mfg No.: 05930-111-68-44



Limit Switch Bracket
Ecolab No.: 96021472
Mfg. No.: 05700-021-71-18

Wash Door/Prewash Door Magnetic Reed Switch
Ecolab No.: 96024203
Mfg. No.: 05930-011-47-50



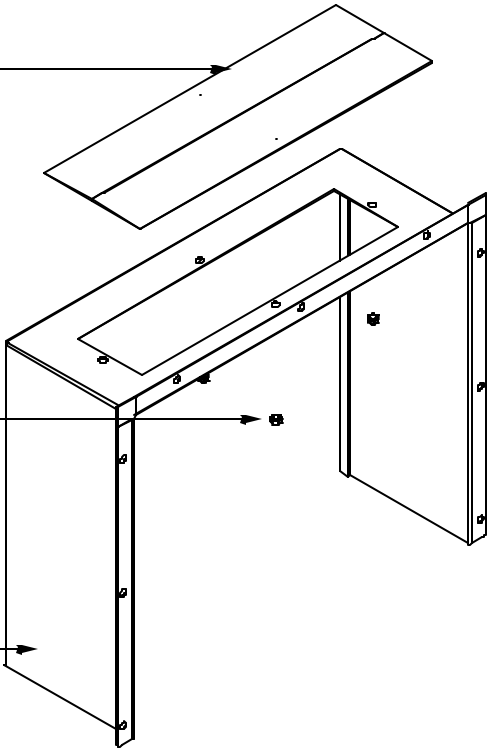
Wash Door/Prewash Door Magnetic Reed Switch
Ecolab No.: 96039102
Mfg. No.: 05930-002-36-80

Conveyor Switch Replacement Kit
06401-003-11-79

Replacement Kit Note:
The conveyor switch replacement kit comes with the switch, a terminal and a wire nut.

Service Note:
The cord for the conveyor switch needs to be cut to length in the field and have the pink terminal applied there.

VENT COWL ASSEMBLY/VENT SCOOP OPTION



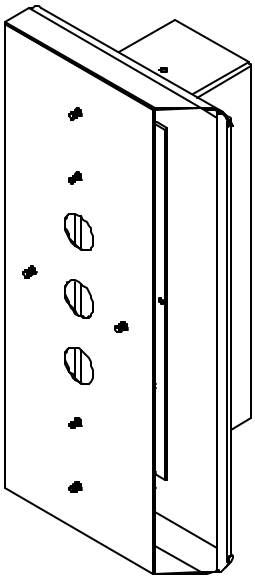
Vent Cowl Cover Weldment
Ecolab No.: 96022728
Mfg. No.: 05700-011-74-67

Vent Cowl Cover Replacement Kit
Ecolab No.: N/A
Mfg. No.: 06401-003-10-16

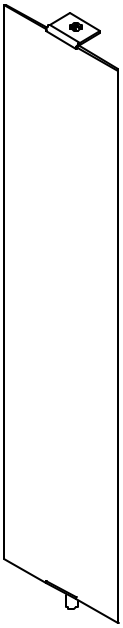
Locknut, 1/4”-20 Hex with Nylon Insert
4 per
Ecolab No.: 88429113
Mfg. No.: 05310-374-01-00

Vent Cowl Weldment
Ecolab No.: 96031778
Mfg. No.: 05700-002-03-12

VENT SCOOP OPTION

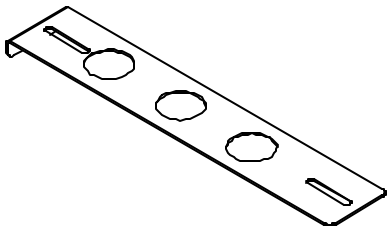


Vent Scoop Weldment
Ecolab No.: 96022694
Mfg. No.: 05700-002-12-18



Vent Cowl Baffle Weldment
Ecolab No.: 96582060
Mfg. No.: 05700-002-11-47

Complete Vent Scoop Assembly
Ecolab No.: 96020359
Mfg. No.: 05700-002-04-08

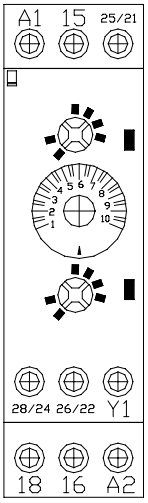


Scoop Damper
Ecolab No.: 96582059
Mfg. No.: 05700-002-36-55

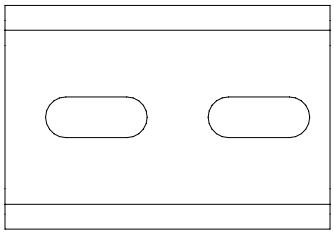
Wing Nut, 10-24
Ecolab No.: 96582058
Mfg. No.: 05310-993-01-00

SECTION 6: PARTS SECTION

EXHAUST FAN CONTROL/TABLE LIMIT SWITCH OPTIONS



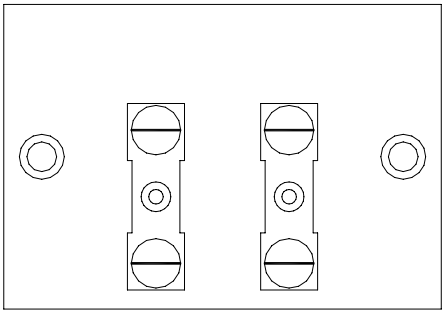
Delay Timer
Ecolab No.: 96031513
Mfg. No.: 05945-011-65-44



2" Din Rail
Ecolab No.: N/A
Mfg. No.: 05700-002-36-09

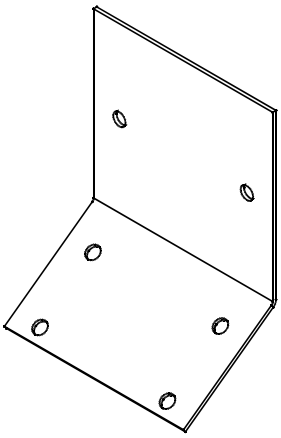
FAN LOAD ON TIMER OUTPUT
5A, 1/4HP, 240 V AC MAX

Decal, Fan Load
Ecolab No.: N/A
Mfg. No.: 09905-003-32-20



Terminal Board
Ecolab No.: 96030390
Mfg. No.: 05940-011-84-41

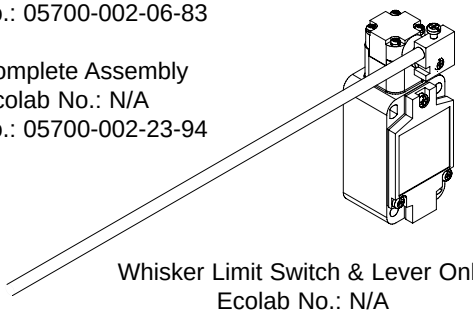
Kit, Exhaust Fan - Electric & Steam Models
Ecolab No.: N/A
Mfg. No.: 05700-031-90-53



Whisker Limit Switch Mounting Bracket
Ecolab No.: N/A
Mfg. No.: 05700-000-14-55

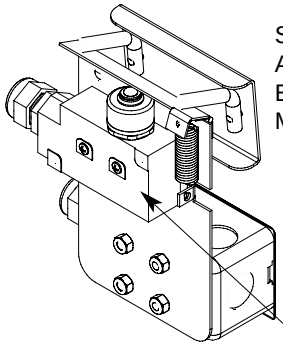
12' Complete Assembly
Ecolab No.: 96023726
Mfg. No.: 05700-002-06-83

15' Complete Assembly
Ecolab No.: N/A
Mfg. No.: 05700-002-23-94



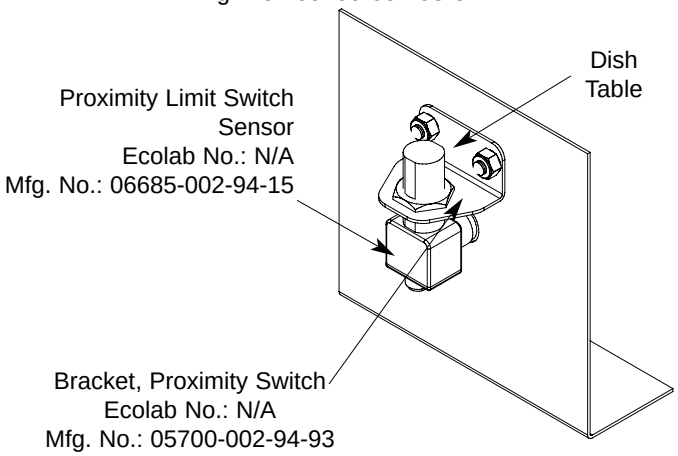
Whisker Limit Switch & Lever Only
Ecolab No.: N/A
Mfg. No.: 05930-303-40-01

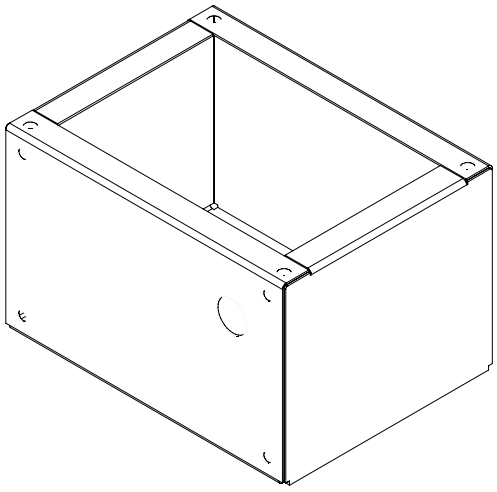
Photoelectric Limit Switch Assembly
Ecolab No.: N/A
Mfg. No.: 05700-002-93-81



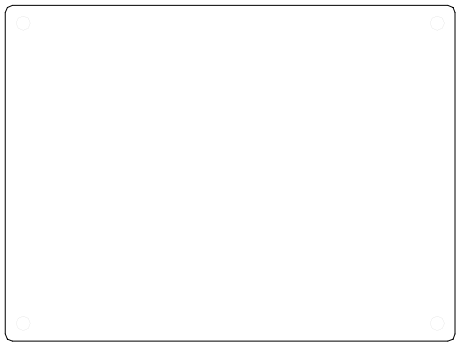
Striker Plate Limit Switch Assembly
Ecolab No.: 96202866
Mfg. No.: 05700-002-62-94

Limit Switch
Ecolab No.: N/A
Mfg. No.: 05930-002-62-81

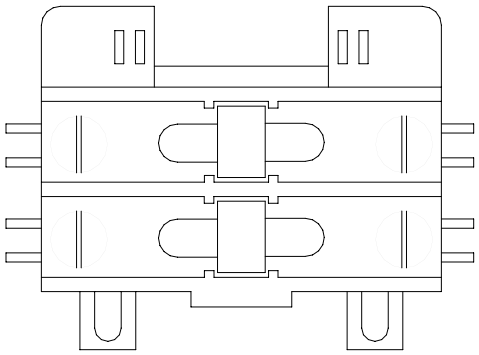




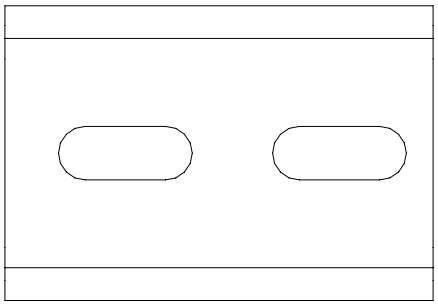
Time Delay Switch Box
Ecolab No.: N/A
Mfg. No.: 05700-002-35-49



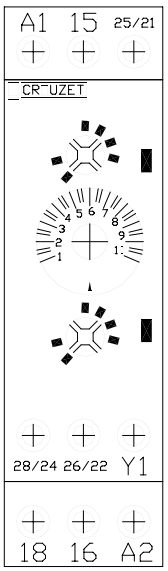
Time Delay Switch Box Cover
Ecolab No.: N/A
Mfg. No.: 05700-002-35-46



Contactor, 2 Pole
Ecolab No.: 83008250
Mfg. No.: 05945-109-05-69



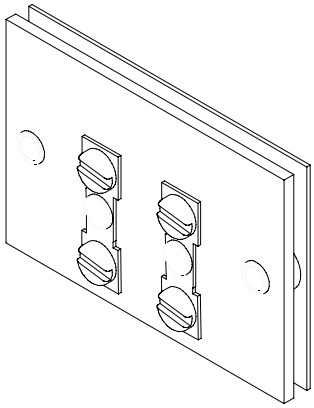
Din Rail, 2” Long
Ecolab No.: N/A
Mfg. No.: 05700-002-36-09



Delay Timer
Ecolab No.: 96031513
Mfg. No.: 05945-011-65-44

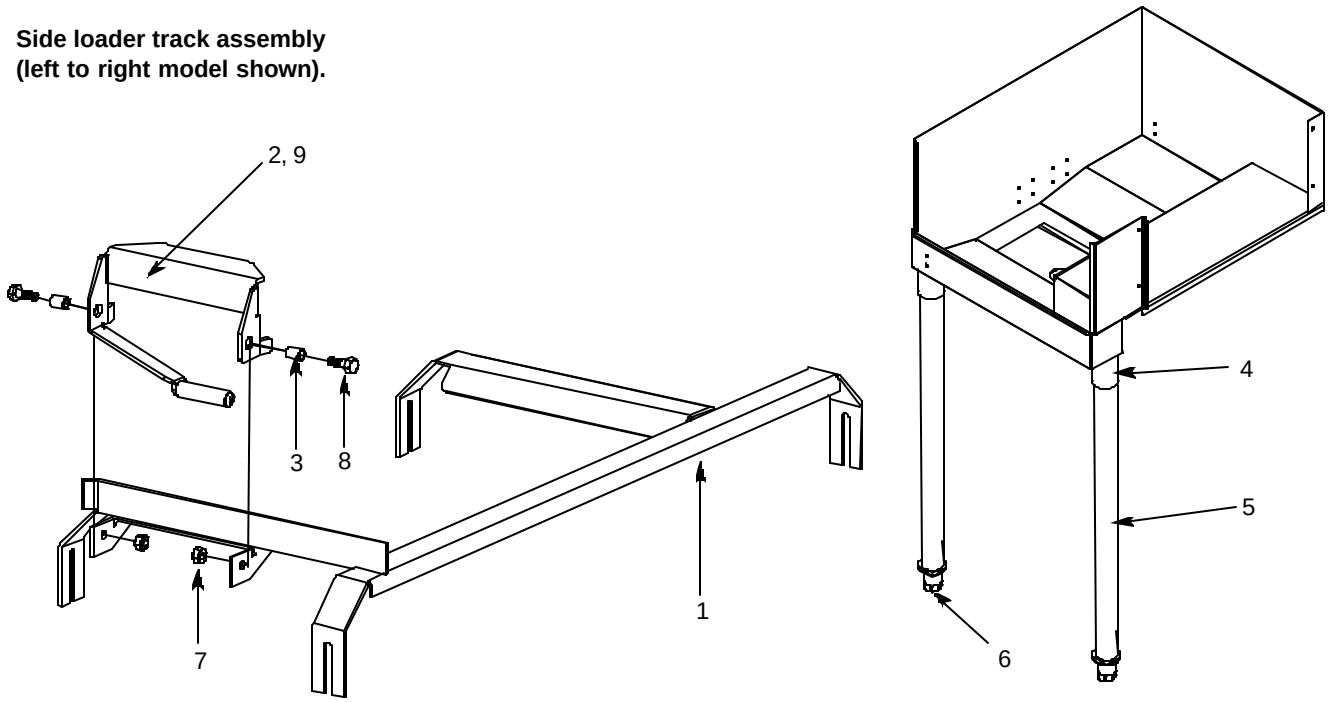
FAN LOAD ON TIMER OUTPUT
5A, 1/4HP, 240 V AC MAX

Decal, Fan Load
Ecolab No.: N/A
Mfg. No.: 09905-003-32-20



Terminal Board
Ecolab No.: 96030390
Mfg. No.: 05940-011-84-41

Side loader track assembly (left to right model shown).



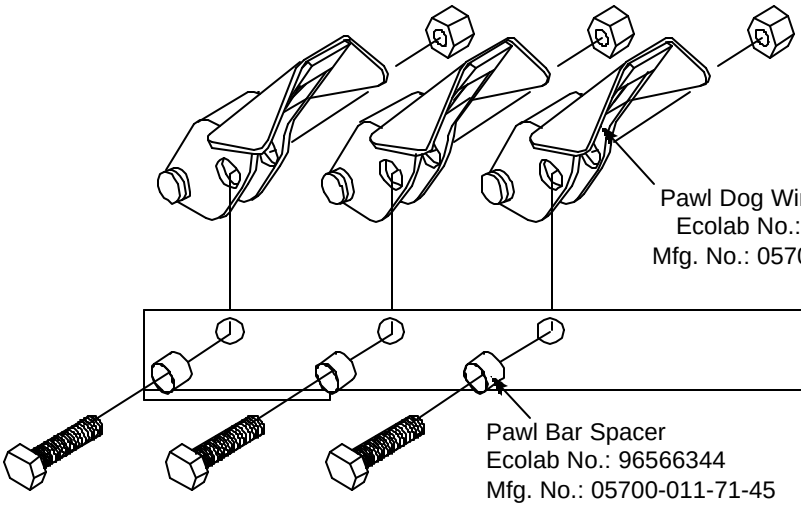
ITEM	QTY	DESCRIPTION	Ecolab No.	Mfg. No.
1	1	Track Weldment (Left to Right) 24”	N/A	05700-031-78-98
	1	Track Weldment (Right to Left) 24”	N/A	05700-031-95-20
	1	Track Weldment (Left to Right) 30”	N/A	05700-003-04-57
	1	Track Weldment (Right to Left) 30”	N/A	05700-003-04-58
2	1	Actuator Switch Replacement Kit	N/A	06401-003-10-64
3	2	Spacer	96020672	05700-011-71-44
4	1	Leg Socket Replacement Kit	N/A	06401-003-09-79
5	1	Leg Support Replacement Kit	N/A	06401-003-09-80
6	1	Bullet Foot	96552666	05340-108-01-03
7	2	Locknut, 1/4”-20 with Nylon Insert Low Profile	88429113	05310-374-01-00
8	2	Bolt, 1/4”-20 x 3/4” Long Hex Head	88020458	05305-274-04-00
9	1	Loader Actuator Weldment	N/A	05700-002-91-12

Replacement Kits Notes:

The actuator switch replacement kit comes with the actuator weldment, mounting hardware and (2) spacers.

The leg socket replacement kit has the leg socket, mounting hardware and set screw.

The leg support replacement kit has the leg and the bullet foot included.



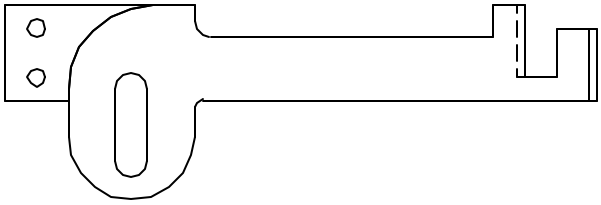
Replacement Kit Note:
The kits for the pawl bars come with the bar weldment, (3) dogs and the hardware.

Replacement Kit Note:
The replacement kits for the drive linkages come also with the hardware for mounting them to the pawl bars.

Pawl Dog Wing Weldment
Ecolab No.: 96036851
Mfg. No.: 05700-021-86-79

Pawl Bar Spacer
Ecolab No.: 96566344
Mfg. No.: 05700-011-71-45

Kit, Pawl Bar Replacement: 06401-131-86-90
Kit, 30" Pawl Bar Replacement: 06401-231-86-90

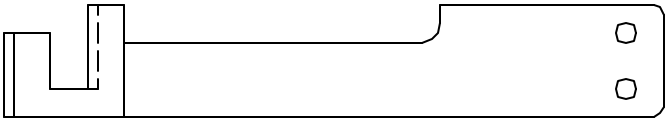


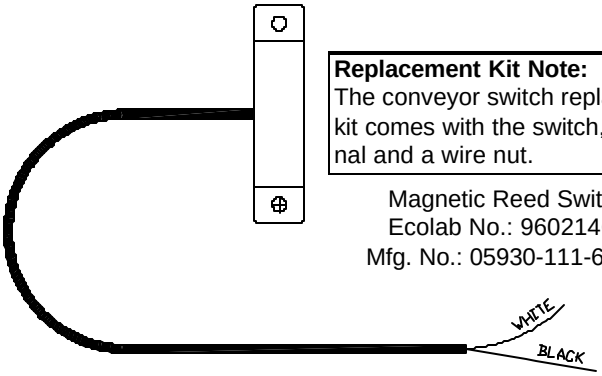
Drive Linkage Weldment (L-R)
Ecolab No.: N/A
Mfg. No.: 05700-002-56-15

Drive Linkage Replacment Kit (L-R)
Ecolab No.:N/A
Mfg. No.: 06401-003-11-59

Drive Linkage Weldment (L-R)
Ecolab No.: N/A
Mfg. No.: 05700-001-99-16

Drive Linkage Replacement Kit (R-L)
Ecolab No.:N/A
Mfg. No.: 06401-003-11-60

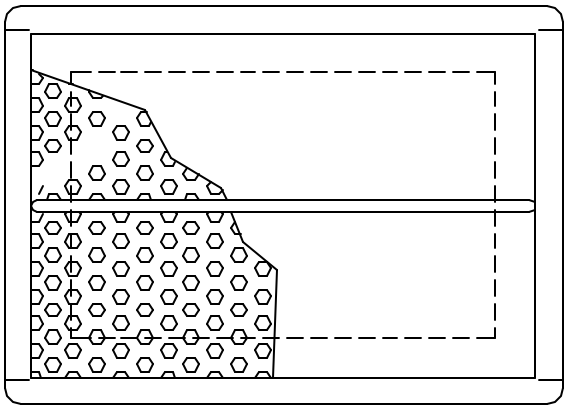




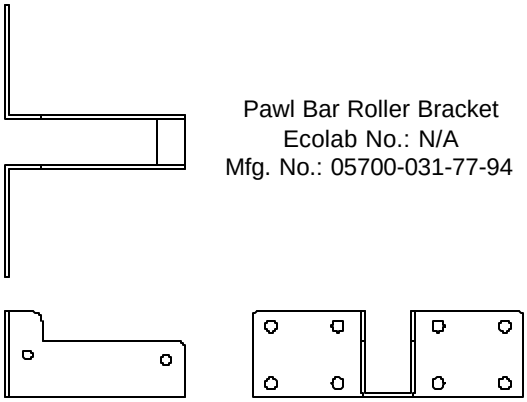
Replacement Kit Note:
The conveyor switch replacement kit comes with the switch, a terminal and a wire nut.

Magnetic Reed Switch
Ecolab No.: 96021464
Mfg. No.: 05930-111-68-44

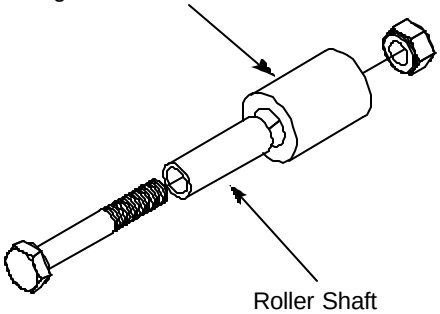
Service Note:
The cord for the conveyor switch needs to be cut to length in the field and have the pink terminal applied there.



Front Strainer Weldment
Ecolab No.: 96031315
Mfg. No.: 05700-021-85-10



Pawl Bar Roller Bracket
Ecolab No.: N/A
Mfg. No.: 05700-031-77-94

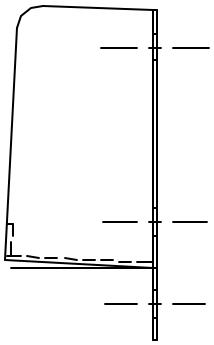


Bracket Rod Roller
Ecolab No.: 96022272
Mfg. No.: 05700-011-68-16

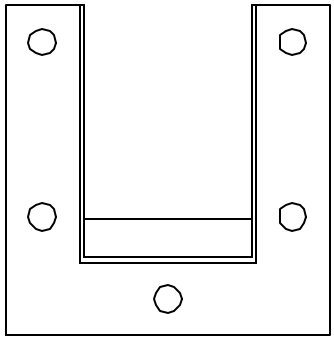
Roller Shaft
Ecolab No.: 96582770
Mfg. No.: 05700-011-68-14

Replacement Kit Notes:
The replacement kit for the pawl bar roller comes with the roller, roller shaft, hardware and locknut as shown.

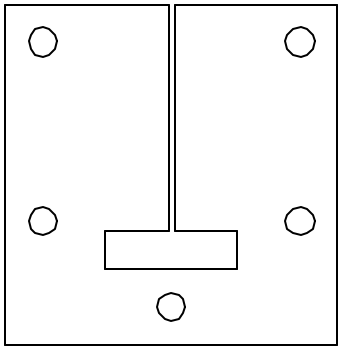
Pawl Bar Roller
Replacement Kit
06401-003-11-80



Pawl Bar Gutter Weldment
Replacement Kit
06401-003-09-95

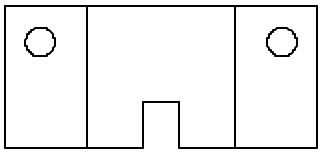


Pawl Bar Gutter Weldment
Ecolab No.: 96020706
Mfg. No.: 05700-021-66-86

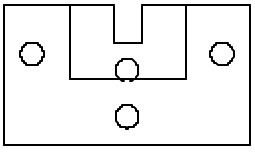


Drive Gutter Gasket
Ecolab No.: 96020714
Mfg. No.: 05330-011-68-55

Guide Block Replacment Kit
06401-003-10-15



Top Guide Block
Ecolab No.: 96020722
Mfg. No.: 05700-011-69-49

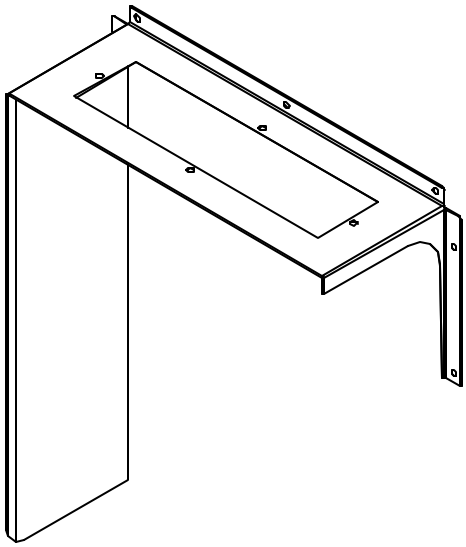


Bottom Guide Block
Ecolab No.: 96020730
Mfg. No.: 05700-011-69-50

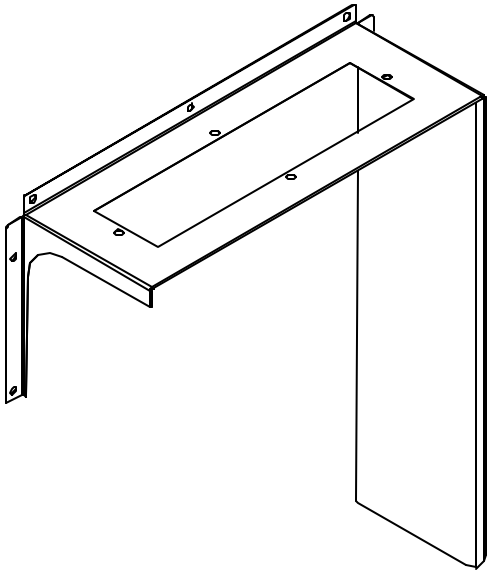
Replacement Kit Notes:
The pawl bar gutter kit includes the weldment, lock-nuts and the gasket. The guide block kits includes the blocks and the gasket.

Service Note:
Because of wear patterns that develop over time, it is highly recommended that when replacing either of the guide blocks, that the other be replaced as well from the kit.

Vent Cowl (Left to Right)
Ecolab No.: N/A
Mfg. No.: 05700-002-31-44

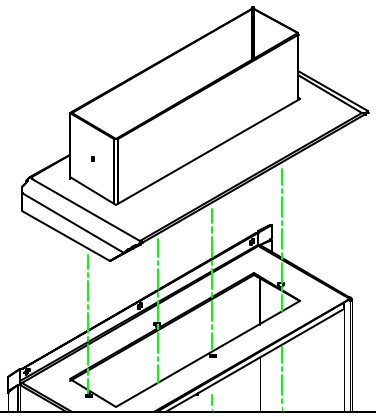


Vent Cowl (Right to Left)
Ecolab No.: N/A
Mfg. No.: 05700-0002-31-45



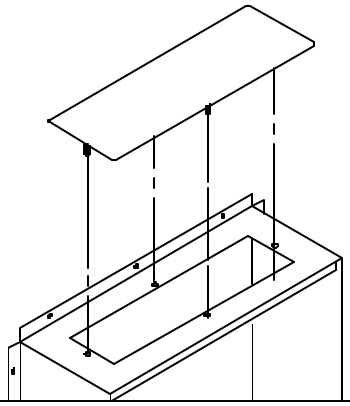
VENT SCOOP OPTION

Vent Scoop Assembly
Ecolab No.: 96020359
Mfg. No.: 05700-002-04-08



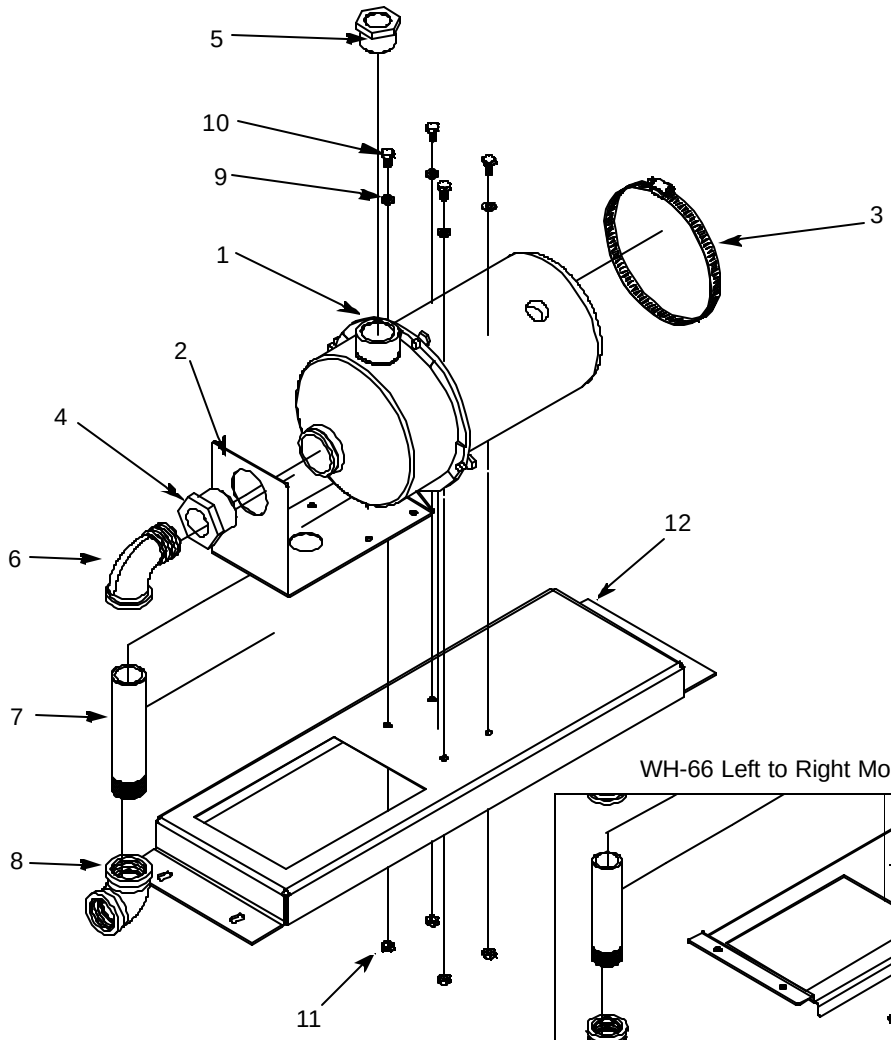
STANDARD ASSEMBLY

Vent Cowl Cover
Ecolab No.: 96022728
Mfg. No.: 05700-011-74-67

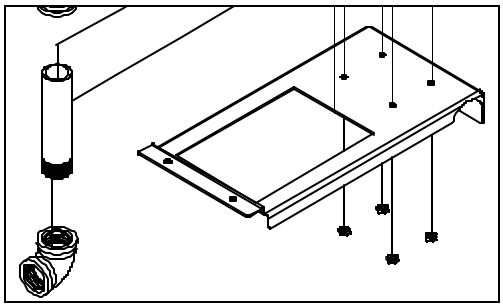


SECTION 6: PARTS SECTION

RINSE FILL MOTOR OPTION



WH-66 Left to Right Models Only

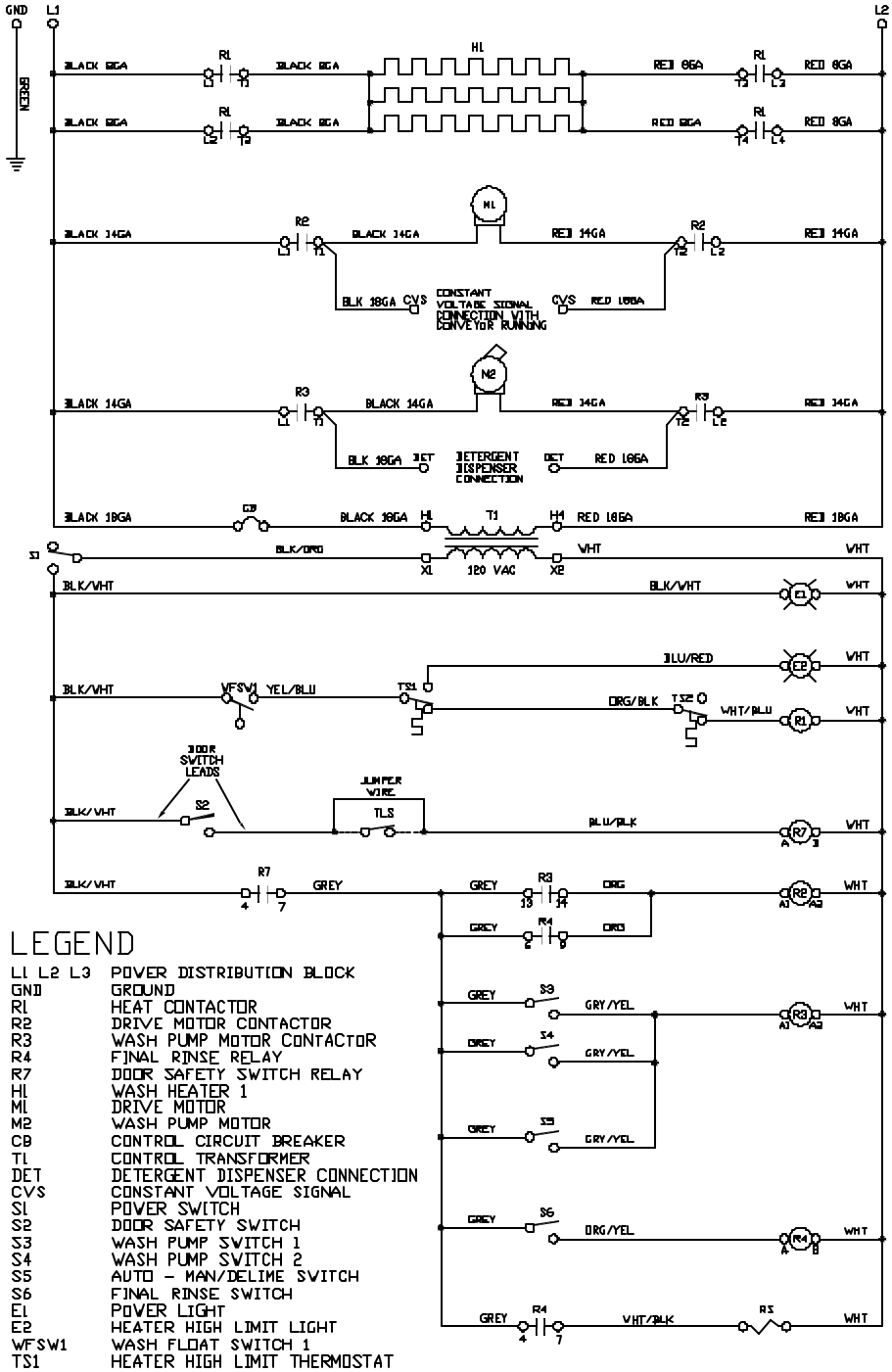


ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
	1	Rinse Fill Motor Assembly	N/A	05700-002-40-25
	1	Rinse Fill Motor Assembly (WH-66 Left to Right Models Only)	N/A	05700-002-48-22
1	1	Motor	N/A	06105-002-72-71
2	1	Bracket, Pump Mounting	N/A	05700-002-63-59
3	1	Clamp, Hose 5 5/8” to 6”	N/A	04730-011-34-90
4	1	Reducer Bushing, 1 1/4” to 1”	N/A	04730-002-73-62
5	1	Reducer Bushing 1” to 3/4”	N/A	04730-011-65-14
6	1	Elbow, 90 Deg., 1” Street	N/A	04730-002-11-99
7	1	Nipple, 1” NPT x 6” Long Brass	N/A	04730-002-12-00
8	1	Elbow, 90 Deg. Brass Female	N/A	04730-002-12-55
9	4	Lockwasher, 1/4”	N/A	05311-274-01-00
10	4	Bolt, 1/4”-20 x 1/2” Long	N/A	05305-274-02-00
11	4	Nut, Hex S/S 1/4”-20	N/A	05310-274-01-00
12	1	Rinse Motor Mounting Bracket	N/A	05700-002-38-90
12	1	Rinse Motor Mounting Bracket (WH-66 Left to Right Models Only)	N/A	05700-002-39-33

SECTION 7:
ELECTRICAL SCHEMATICS

SECTION 7: ELECTRICAL SCHEMATICS

WH-44/WH-44CS (208-230 VOLTS/60 HZ/1 PHASE)



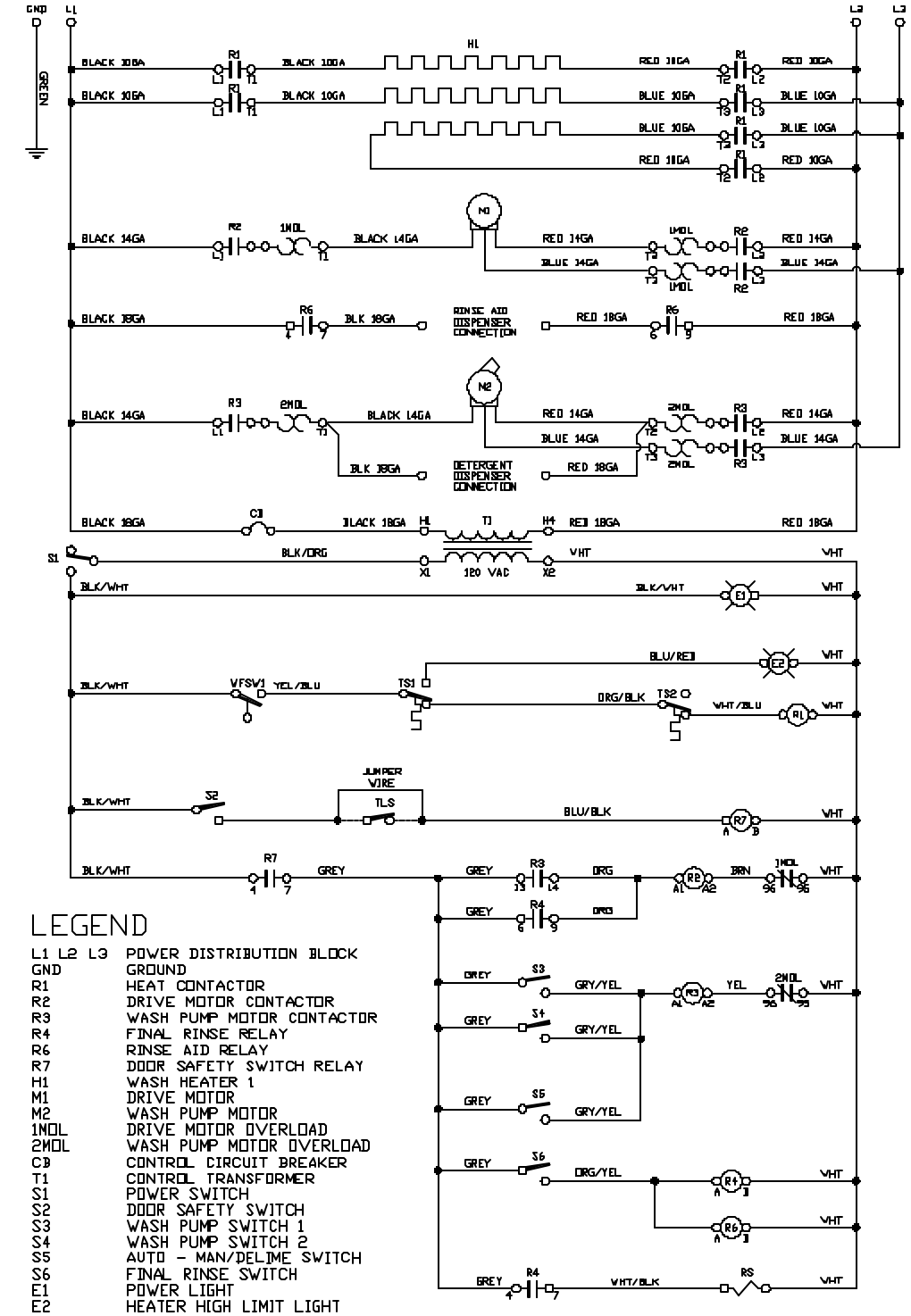
LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R7	DOOR SAFETY SWITCH RELAY
H1	WASH HEATER 1
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
DET	DETERGENT DISPENSER CONNECTION
CVS	CONSTANT VOLTAGE SIGNAL
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID

9905-002-10-47b

SECTION 7: ELECTRICAL SCHEMATICS

WH-44/WH-44CS (208-230 VOLTS/60 HZ/3 PHASE)



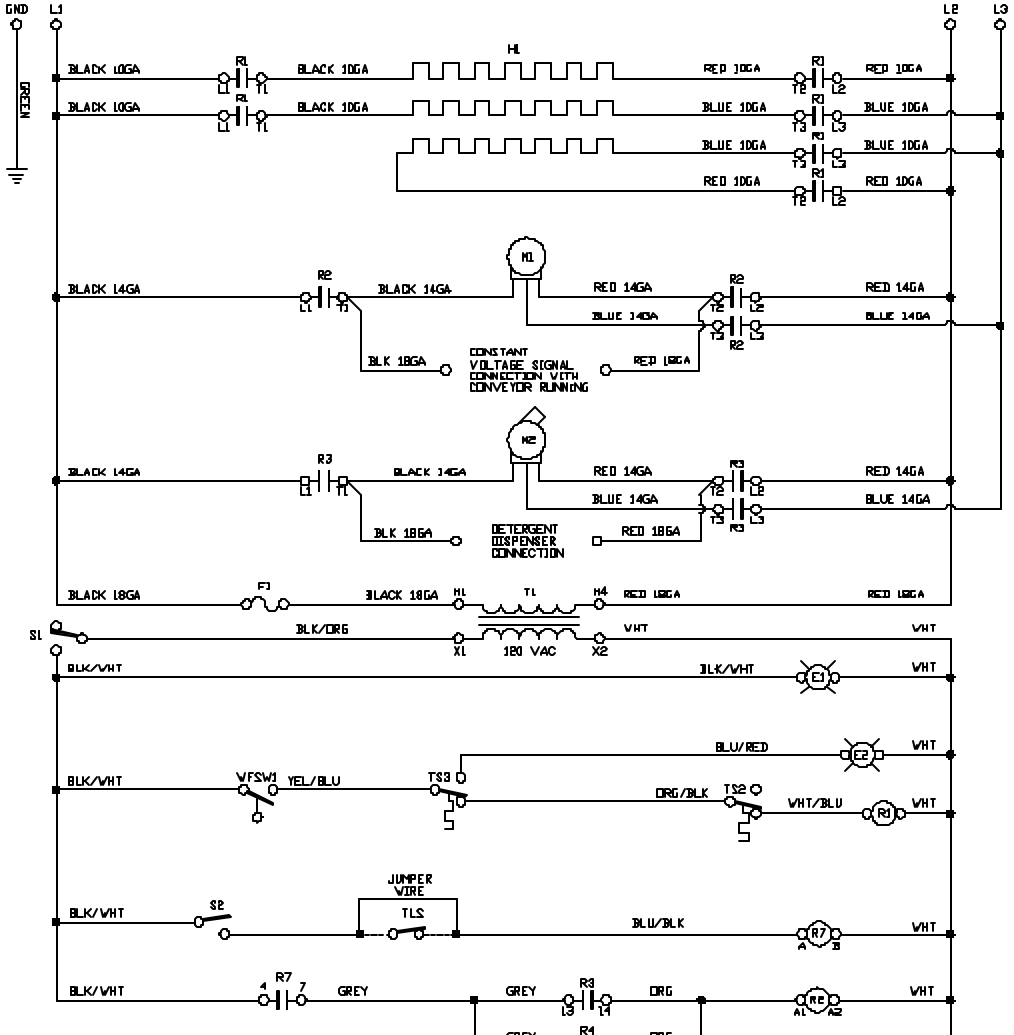
LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R6	RINSE AID RELAY
R7	DOOR SAFETY SWITCH RELAY
H1	WASH HEATER 1
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID

9905-002-10-48b

SECTION 7: ELECTRICAL SCHEMATICS

WH-44/WH-44CS (460 VOLT/60 HZ/3 PHASE)

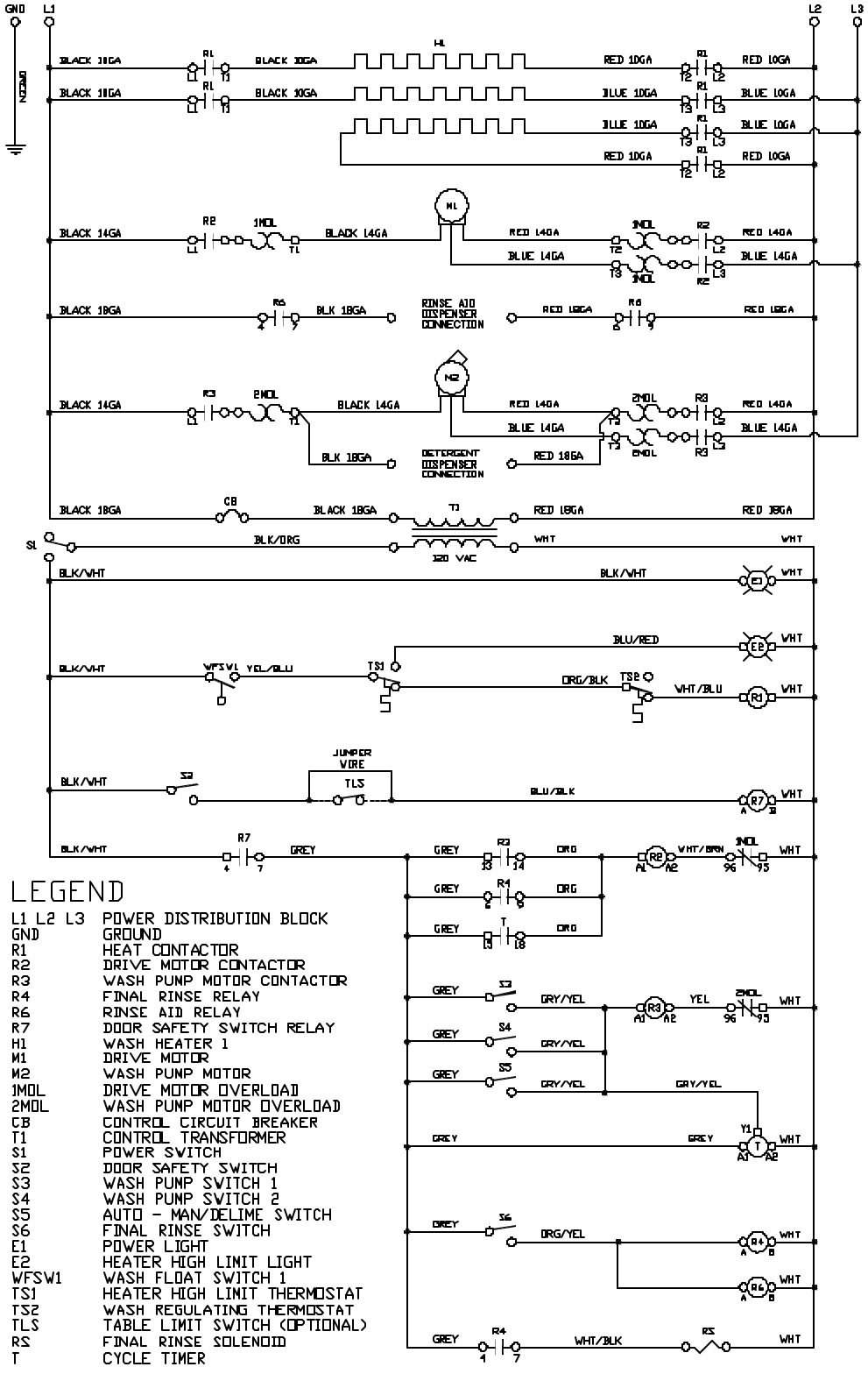


LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R7	DOOR SAFETY SWITCH RELAY
H1	WASH HEATER
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
F1	CONTROL FUSE
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID

9905-002-07-04a

WH-44/WH-44CS W/TIMER & EXTENDED PAWL BAR (208-230 VOLTS/60 HZ/3 PHASE)



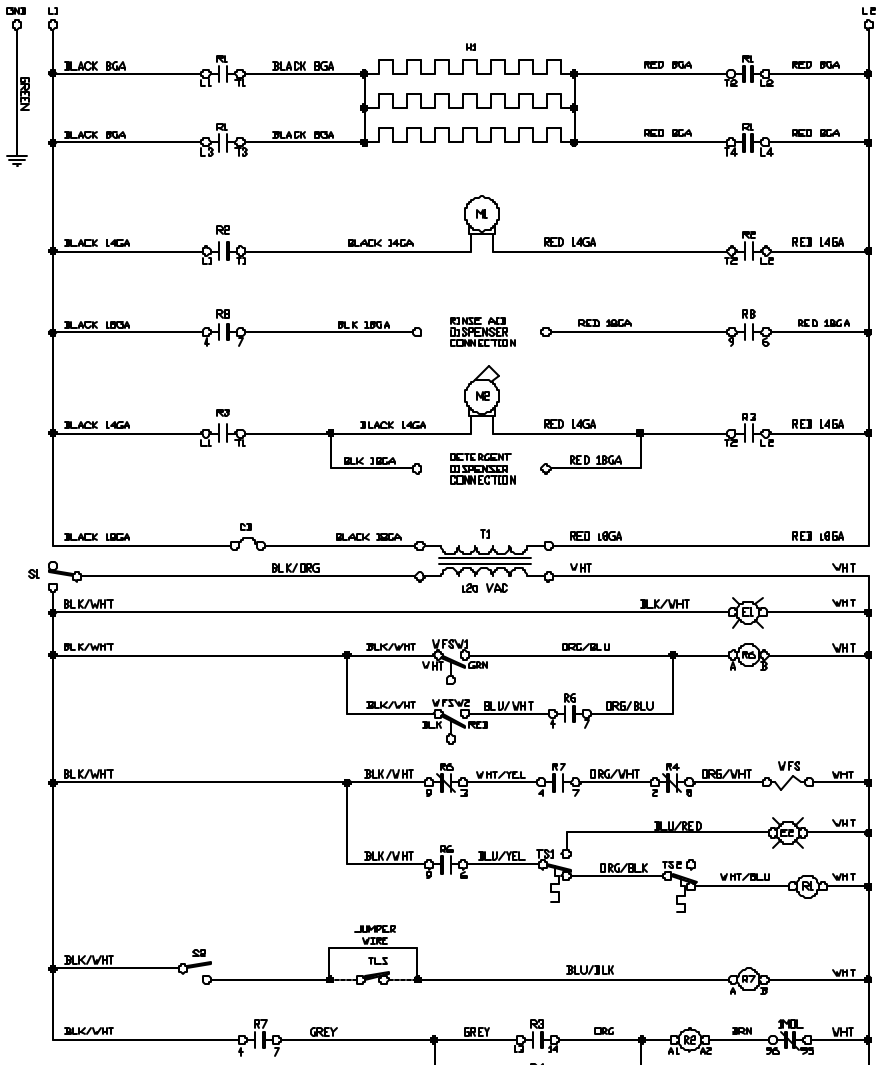
LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R6	RINSE AID RELAY
R7	DOOR SAFETY SWITCH RELAY
H1	WASH HEATER 1
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID
T	CYCLE TIMER

9905-003-20-23a

SECTION 7: ELECTRICAL SCHEMATICS

WH-44/WH-44CS AUTOMATIC FILL OPTION (208-230 VOLTS/60 HZ/1 PHASE)

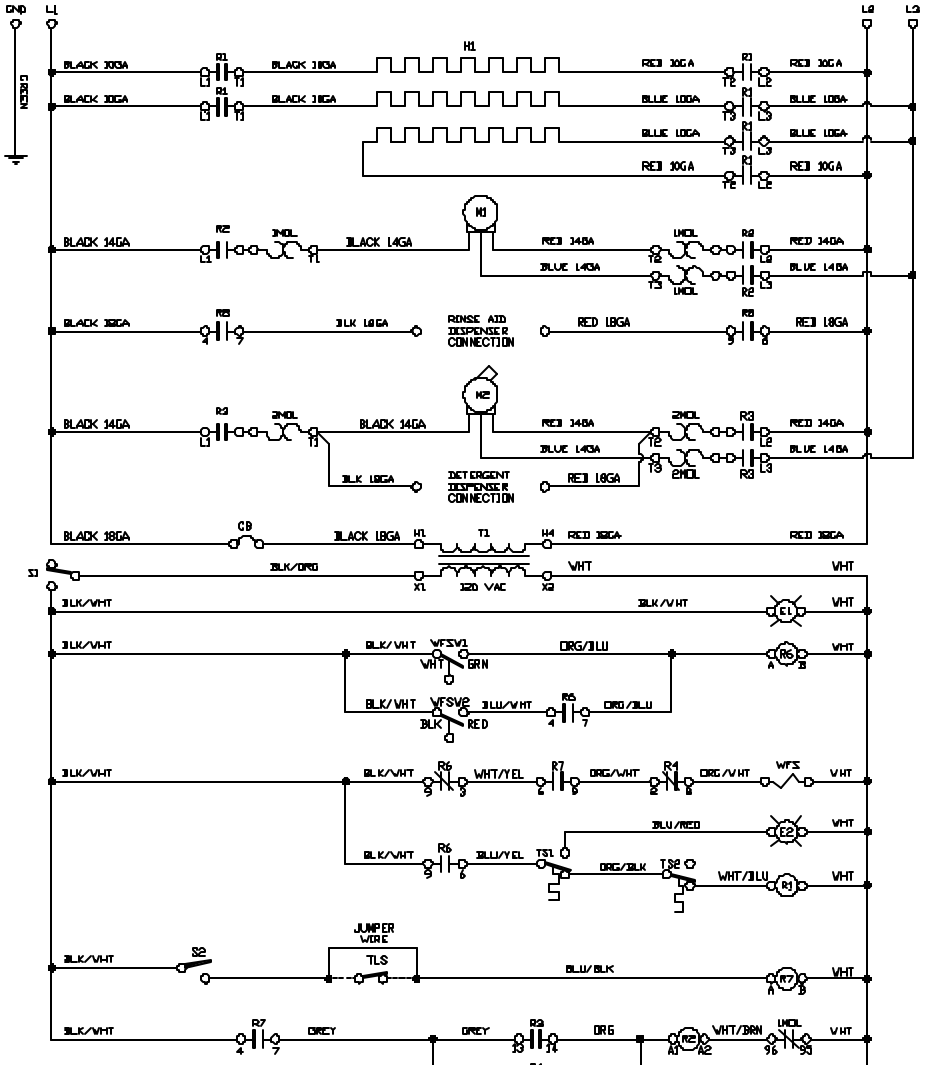


LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R6	WASH TANK FILL RELAY
R7	DOOR SAFETY SWITCH RELAY
R8	RINSE AID RELAY
H1	WASH HEATER 1
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
WFSW2	WASH FLOAT SWITCH 2
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
WFS	WASH FILL SOLENOID
RS	FINAL RINSE SOLENOID

9905-002-47-57

WH-44/WH-44CS AUTOMATIC FILL OPTION (208-230 VOLTS/60 HZ/3 PHASE)

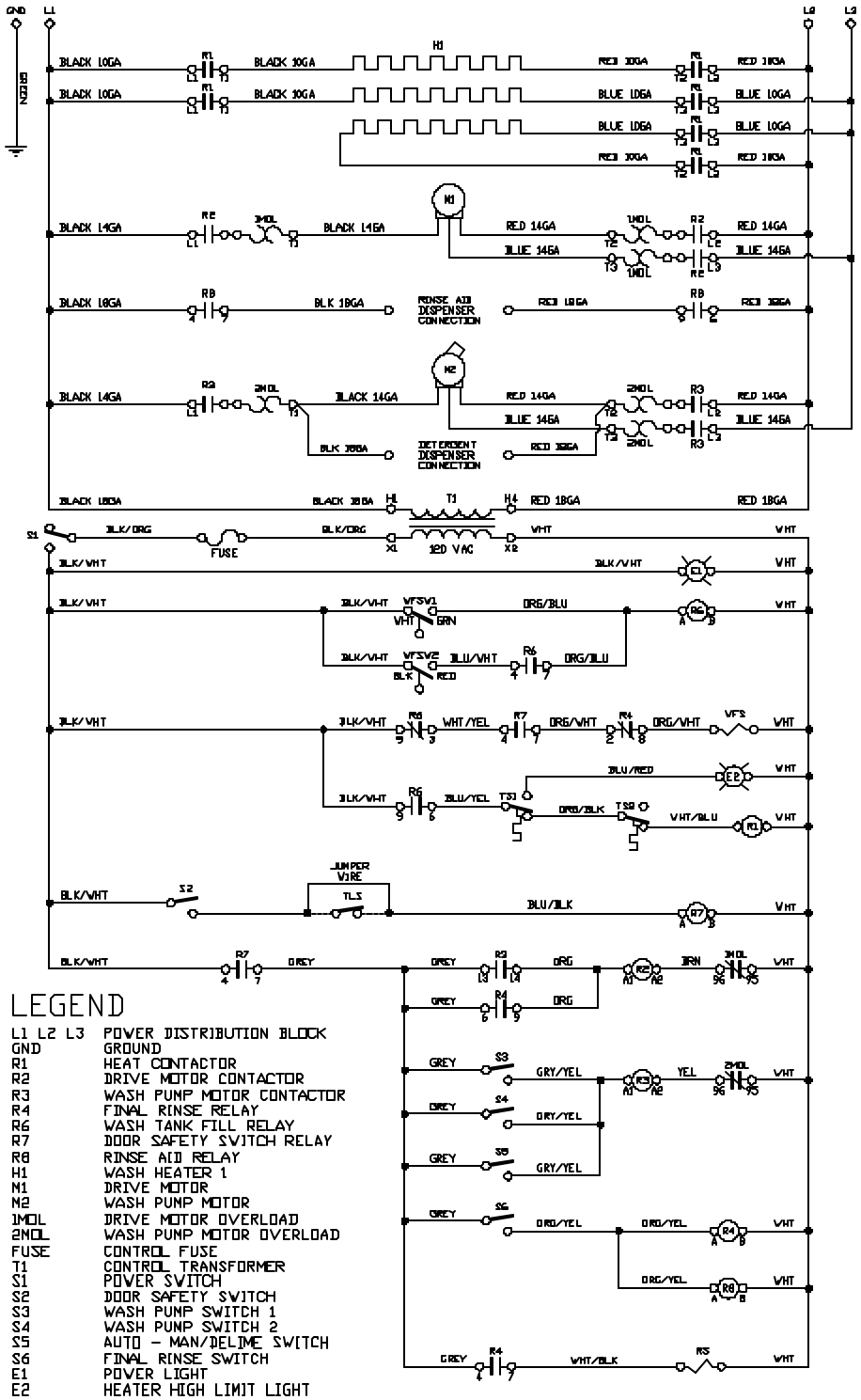


LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R6	WASH TANK FILL RELAY
R7	DOOR SAFETY SWITCH RELAY
R8	RINSE AID RELAY
H1	WASH HEATER 1
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
WFSW2	WASH FLOAT SWITCH 2
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
WFS	WASH FILL SOLENOID
RS	FINAL RINSE SOLENOID

9905-002-51-88b

WH-44/WH-44CS AUTOMATIC FILL OPTION (460 VOLT/60 HZ/3 PHASE)

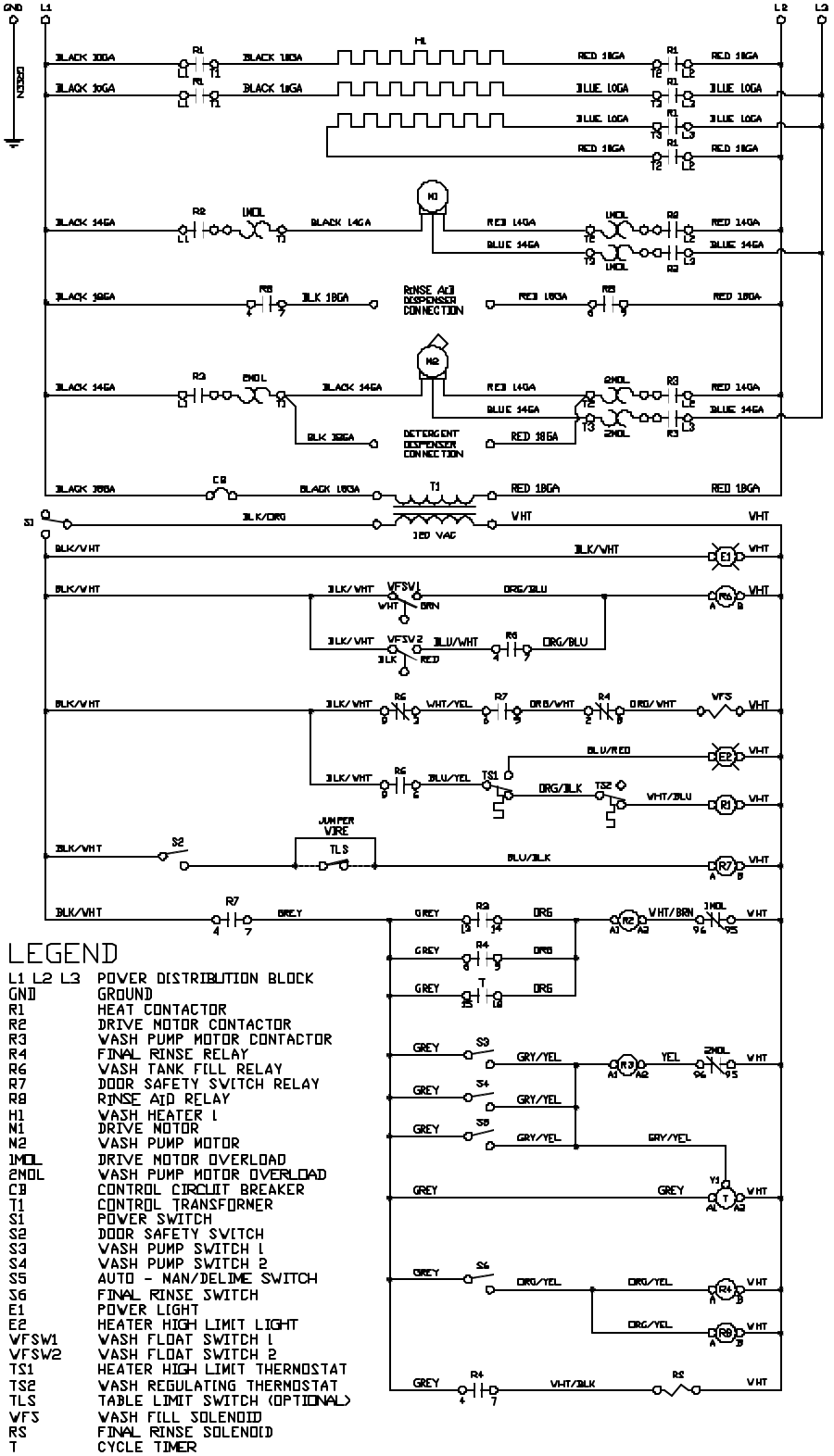


LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R6	WASH TANK FILL RELAY
R7	DOOR SAFETY SWITCH RELAY
R8	RINSE AID RELAY
H1	WASH HEATER 1
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
FUSE	CONTROL FUSE
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
VFSV1	WASH FLOAT SWITCH 1
VFSV2	WASH FLOAT SWITCH 2
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
VFS	WASH FILL SOLENOID
RS	FINAL RINSE SOLENOID

9905-002-47-97

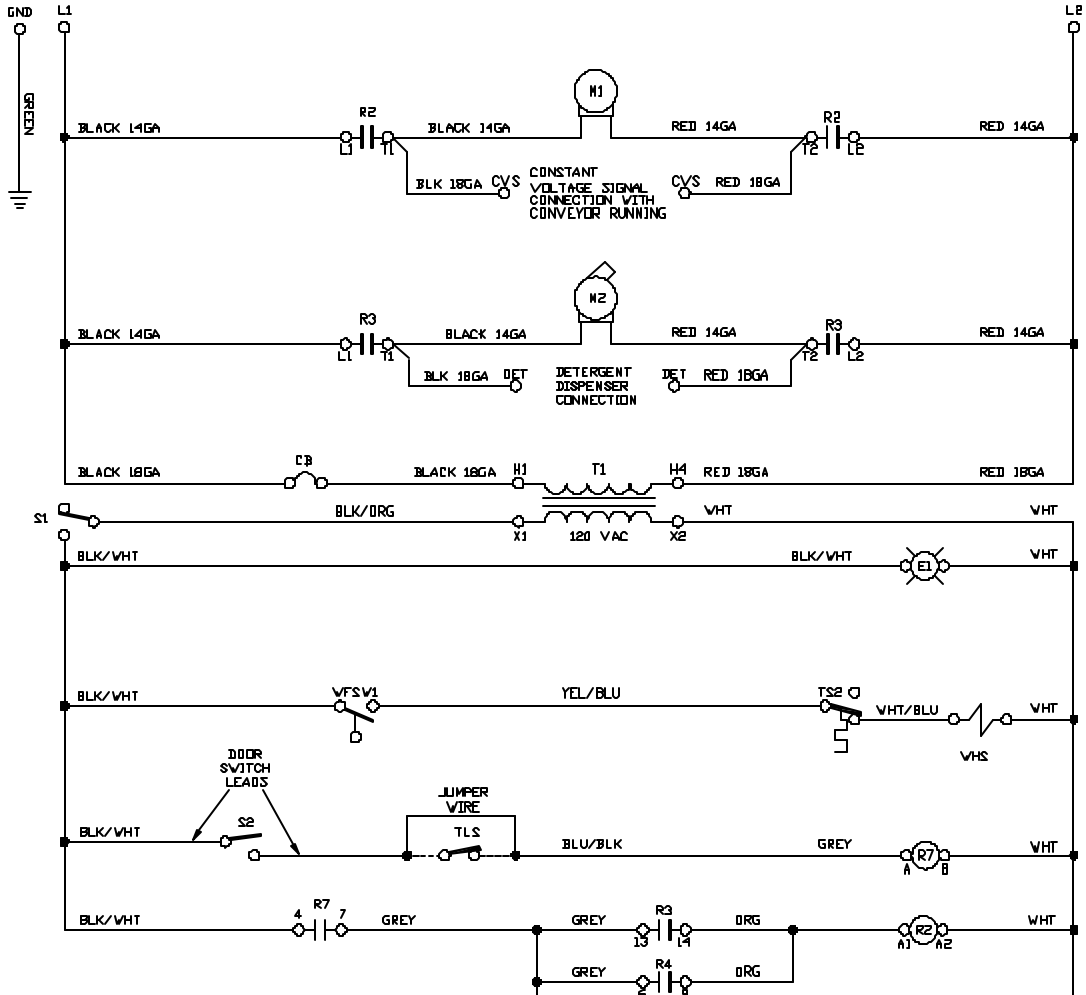
WH-44/WH-44CS AUTO FILL OPTION W/TIMER & EXTENDED PAWL BAR (208-230 VOLTS/60 HZ/3 PHASE)



LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEAT CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R6	WASH TANK FILL RELAY
R7	DOOR SAFETY SWITCH RELAY
R8	RINSE AID RELAY
H1	WASH HEATER 1
N1	DRIVE MOTOR
N2	WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
WFSW2	WASH FLOAT SWITCH 2
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
WFS	WASH FILL SOLENOID
RS	FINAL RINSE SOLENOID
T	CYCLE TIMER

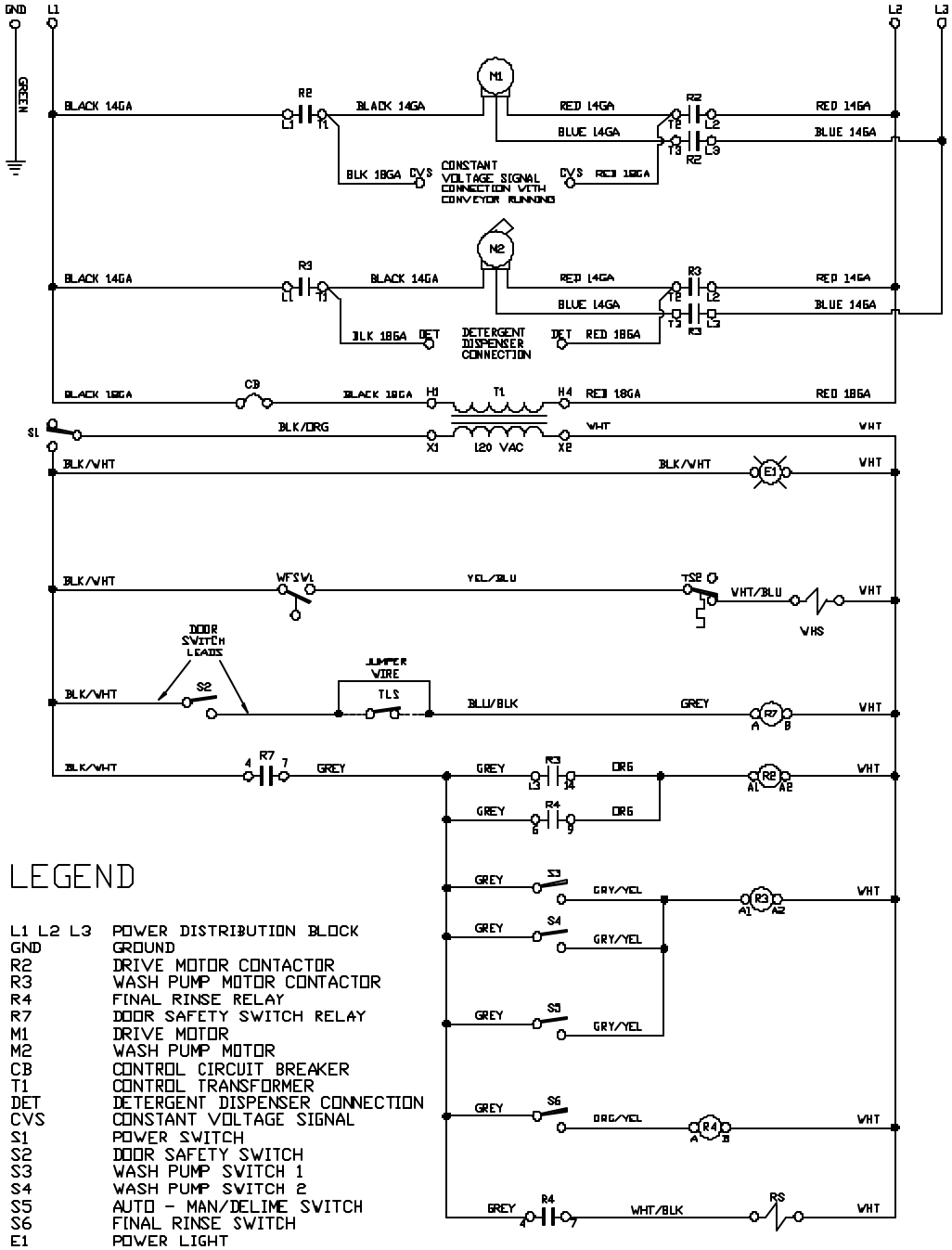
9505-003-20-89a



LEGEND

L1 L2	POWER DISTRIBUTION BLOCK
GND	GROUND
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R7	DOOR SAFETY SWITCH RELAY
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
DET	DETERGENT DISPENSER CONNECTION
CVS	CONSTANT VOLTAGE SIGNAL
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
WFSW1	WASH FLOAT SWITCH 1
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID
WHS	WASH HEAT SOLENOID

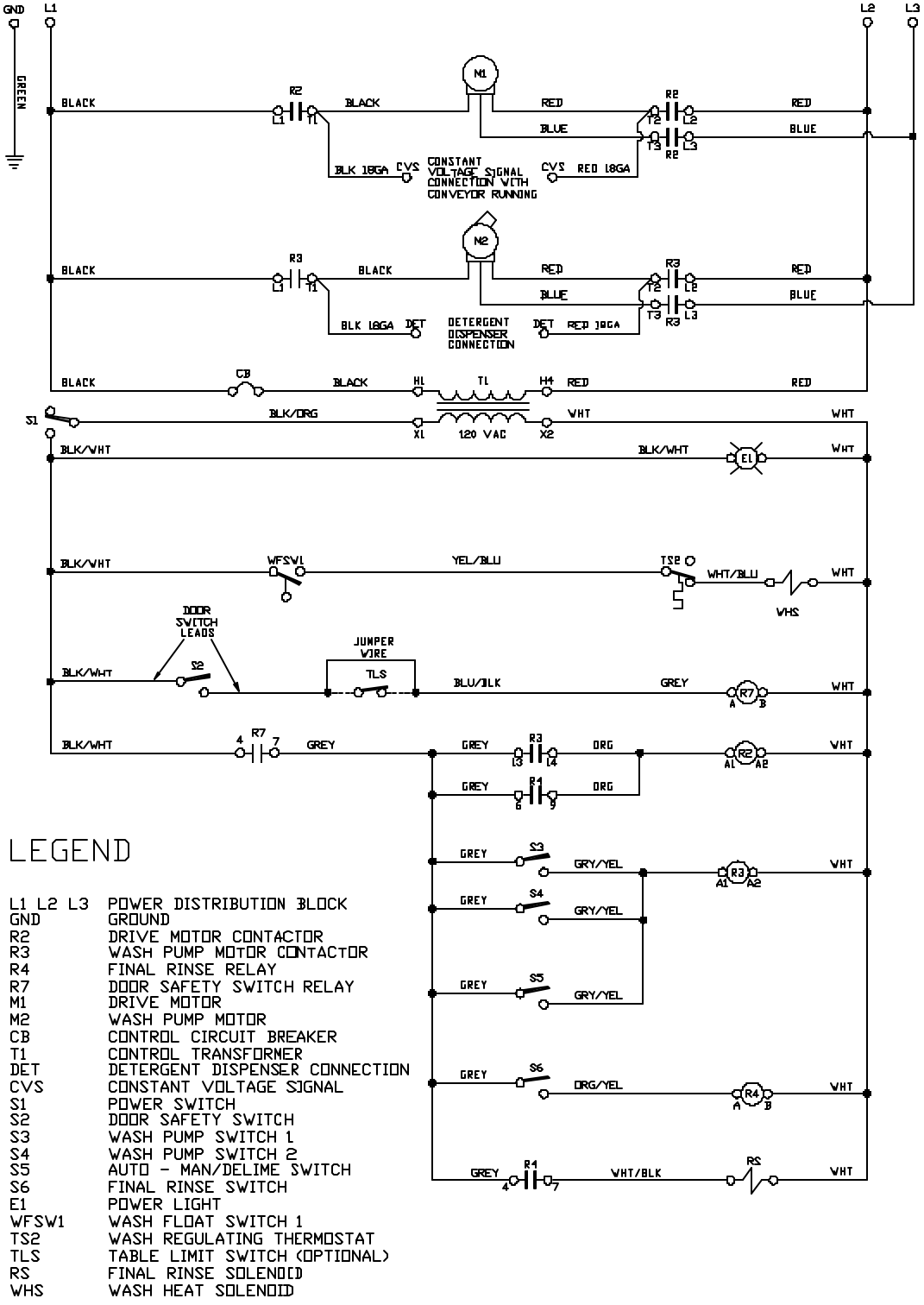
WH-44S/WH-44CSS (208-230 VOLTS/60 HZ/3 PHASE)



LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R7	DOOR SAFETY SWITCH RELAY
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
DET	DETERGENT DISPENSER CONNECTION
CVS	CONSTANT VOLTAGE SIGNAL
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
WFSW1	WASH FLOAT SWITCH 1
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID
WHS	WASH HEAT SOLENOID

9905-002-20-47



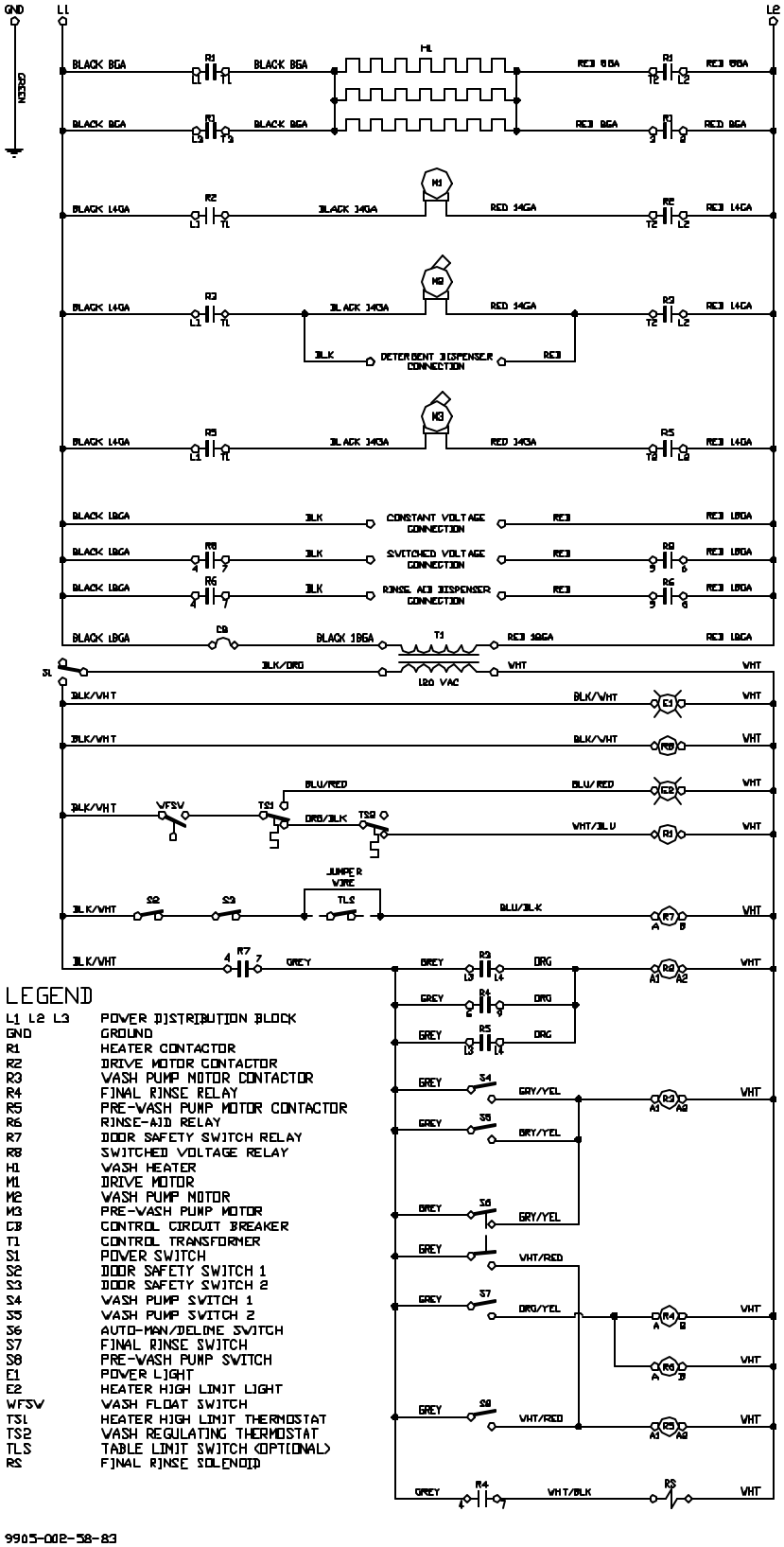
LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R7	DOOR SAFETY SWITCH RELAY
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
DET	DETERGENT DISPENSER CONNECTION
CVS	CONSTANT VOLTAGE SIGNAL
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH
S3	WASH PUMP SWITCH 1
S4	WASH PUMP SWITCH 2
S5	AUTO - MAN/DELIME SWITCH
S6	FINAL RINSE SWITCH
E1	POWER LIGHT
WFSW1	WASH FLOAT SWITCH 1
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID
WHS	WASH HEAT SOLENOID

09905-002-20-49

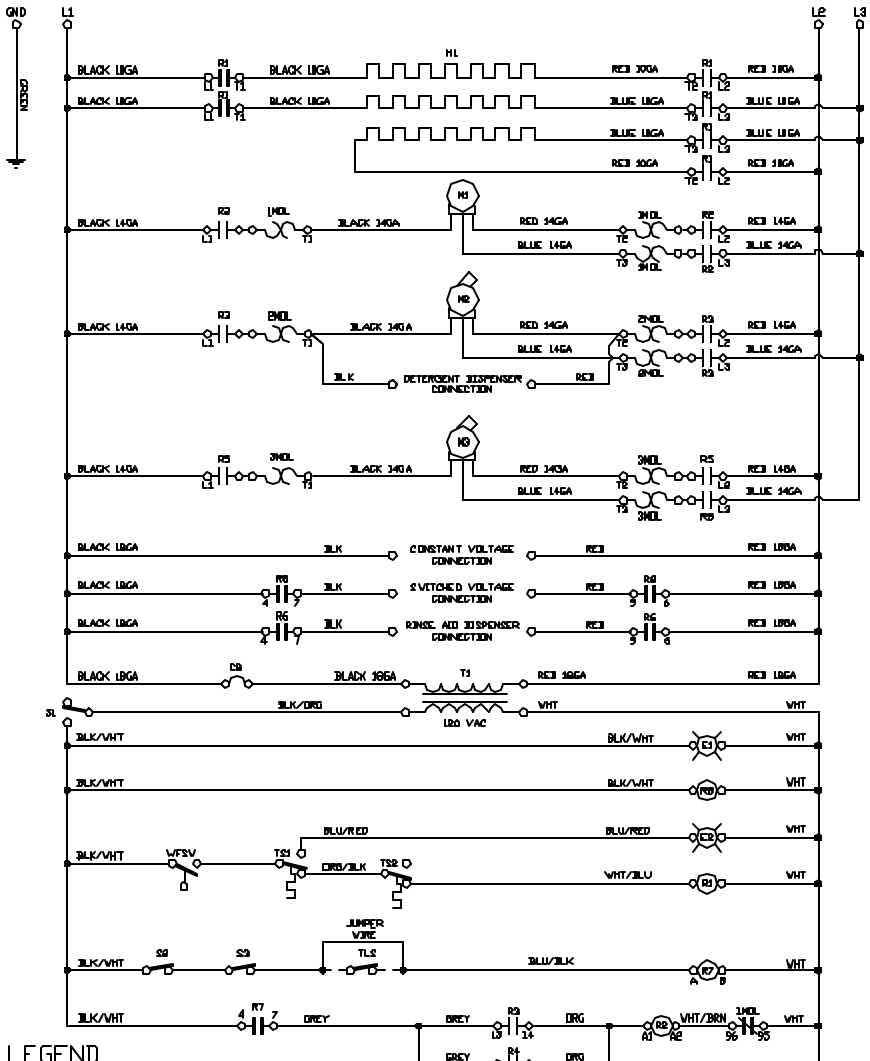
SECTION 7: ELECTRICAL SCHEMATICS

WH-66/WH-66CS (208-230 VOLTS/60 HZ/1 PHASE)



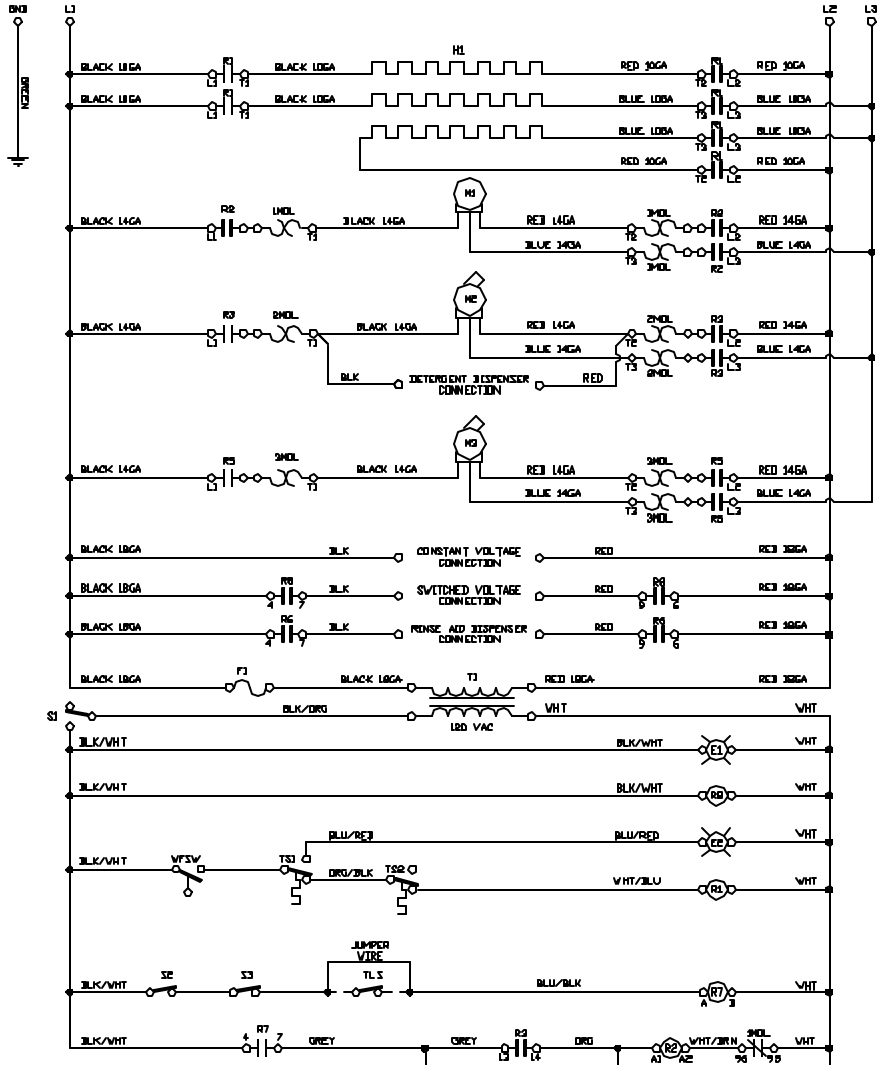
SECTION 7: ELECTRICAL SCHEMATICS

WH-66/WH-66CS (208-230 VOLTS/60 HZ/3 PHASE)



SECTION 7: ELECTRICAL SCHEMATICS

WH-66/WH-66CS (460 VOLT/60 HZ/3 PHASE)



LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEATER CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R5	PRE-WASH PUMP MOTOR CONTACTOR
R6	RINSE-AID RELAY
R7	DOOR SAFETY SWITCH RELAY
R8	SWITCHED VOLTAGE RELAY
H1	WASH HEATER
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
M3	PRE-WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
3MOL	PRE-WASH PUMP MOTOR OVERLOAD
F1	CONTROL FUSE
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH 1
S3	DOOR SAFETY SWITCH 2
S4	WASH PUMP SWITCH 1
S5	WASH PUMP SWITCH 2
S6	AUTO-MAN/DELIME SWITCH
S7	FINAL RINSE SWITCH
S8	PRE-WASH PUMP SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSV	WASH FLOAT SWITCH
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID

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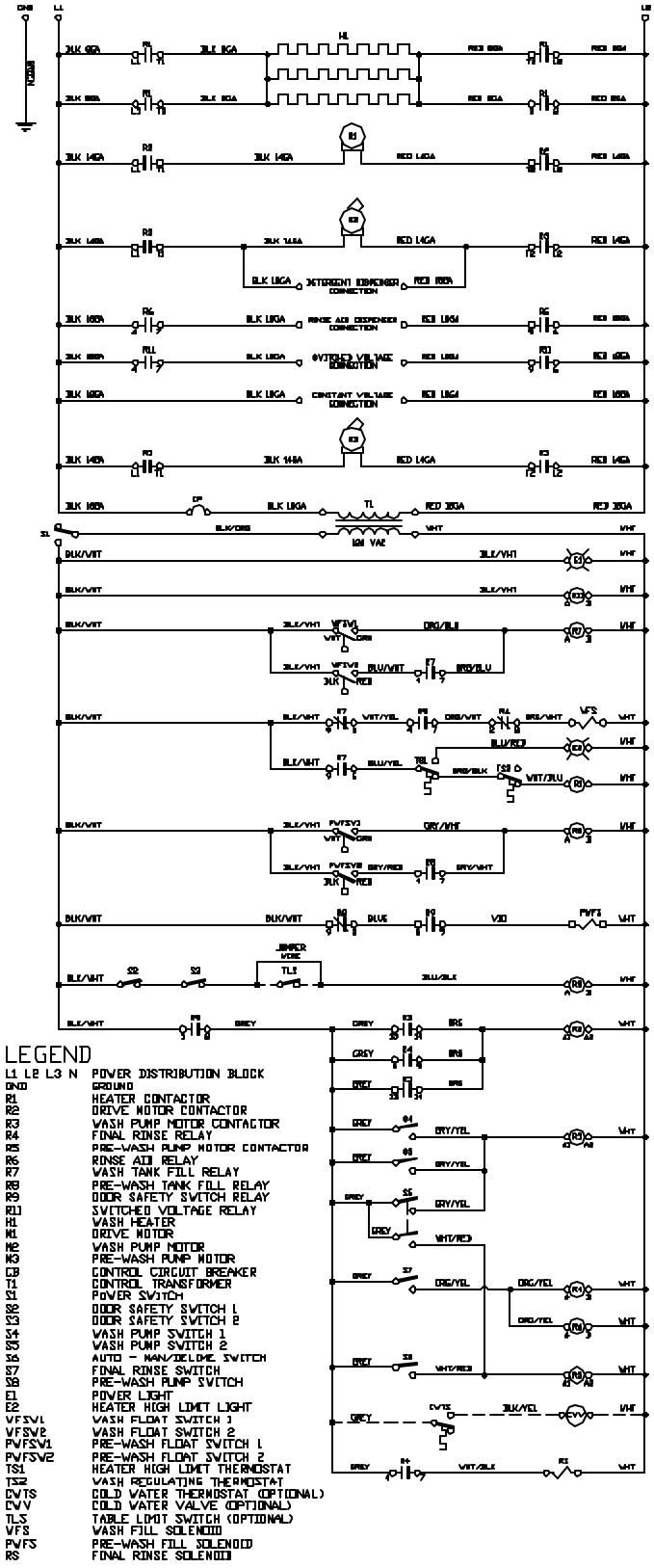
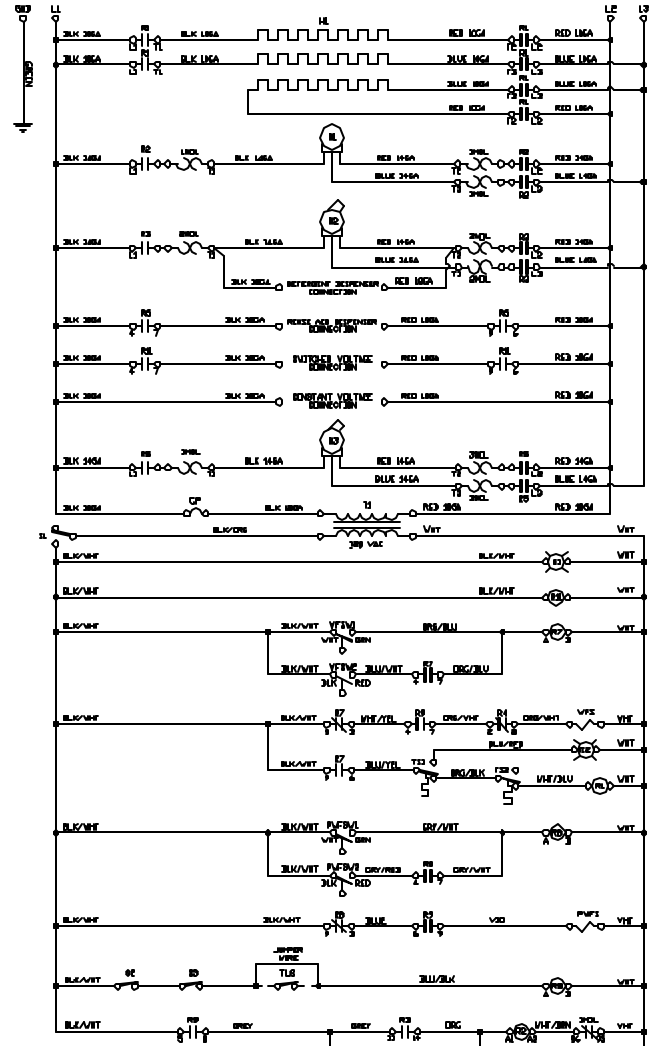

LEGEND
L1 L2 L3 N POWER DISTRIBUTION BLOCK
GND GROUND
R1 HEATER CONTACTOR
R2 DRIVE MOTOR CONTACTOR
R3 WASH PUMP MOTOR CONTACTOR
R4 FINAL RINSE RELAY
R5 PRE-WASH PUMP MOTOR CONTACTOR
R6 RINSE AID RELAY
R7 WASH TANK FILL RELAY
R8 PRE-WASH TANK FILL RELAY
R9 DOOR SAFETY SWITCH RELAY
R10 SWITCHED VOLTAGE RELAY
H1 WASH HEATER
M1 DRIVE MOTOR
M2 WASH PUMP MOTOR
M3 PRE-WASH PUMP MOTOR
CB CONTROL CIRCUIT BREAKER
T1 CONTROL TRANSFORMER
S1 POWER SWITCH
S2 DOOR SAFETY SWITCH 1
S3 DOOR SAFETY SWITCH 2
S4 WASH PUMP SWITCH 1
S5 WASH PUMP SWITCH 2
S6 AUTO - MAN/DELIME SWITCH
S7 FINAL RINSE SWITCH
S8 PRE-WASH PUMP SWITCH
E1 POWER LIGHT
E2 HEATER HIGH LIMIT LIGHT
WFSV1 WASH FLOAT SWITCH 1
WFSV2 WASH FLOAT SWITCH 2
PWFSV1 PRE-WASH FLOAT SWITCH 1
PWFSV2 PRE-WASH FLOAT SWITCH 2
TS1 HEATER HIGH LIMIT THERMOSTAT
TS2 WASH REGULATING THERMOSTAT
CWTS COLD WATER THERMOSTAT (OPTIONAL)
CWV COLD WATER VALVE (OPTIONAL)
TLS TABLE LIMIT SWITCH (OPTIONAL)
WFS WASH FILL SOLENOID
PWFS PRE-WASH FILL SOLENOID
RS FINAL RINSE SOLENOID
9905-003-09-92a

WH-66/WH-66CS AUTOMATIC FILL OPTION (208-230-460 VOLTS/60 HZ/3 PHASE)



LEGEND

L1 L2 L3 N	POWER DISTRIBUTION BLOCK
GND	GROUND
R1	HEATER CONTACTOR
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R5	PRE-WASH PUMP MOTOR CONTACTOR
R6	RINSE AID RELAY
R7	WASH TANK FILL RELAY
R8	PRE-WASH TANK FILL RELAY
R9	DOOR SAFETY SWITCH RELAY
R11	SWITCHED VOLTAGE RELAY
H1	WASH HEATER
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
M3	PRE-WASH PUMP MOTOR
DMOL	DRIVE MOTOR OVERLOAD
WMOL	WASH PUMP MOTOR OVERLOAD
PMOL	PRE-WASH PUMP MOTOR OVERLOAD
CP	CONTROL CIRCUIT PROTECTION
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH 1
S3	DOOR SAFETY SWITCH 2
S4	WASH PUMP SWITCH 1
S5	WASH PUMP SWITCH 2
S6	AUTO - MAN/DELIME SWITCH
S7	FINAL RINSE SWITCH
S8	PRE-WASH PUMP SWITCH
E1	POWER LIGHT
E2	HEATER HIGH LIMIT LIGHT
WFSW1	WASH FLOAT SWITCH 1
WFSW2	WASH FLOAT SWITCH 2
PWFSW1	PRE-WASH FLOAT SWITCH 1
PWFSW2	PRE-WASH FLOAT SWITCH 2
TS1	HEATER HIGH LIMIT THERMOSTAT
TS2	WASH REGULATING THERMOSTAT
CWTS	COLD WATER THERMOSTAT (OPTIONAL)
CWV	COLD WATER VALVE (OPTIONAL)
TLS	TABLE LIMIT SWITCH (OPTIONAL)
WFS	WASH FILL SOLENOID
PWFS	PRE-WASH FILL SOLENOID
RS	FINAL RINSE SOLENOID

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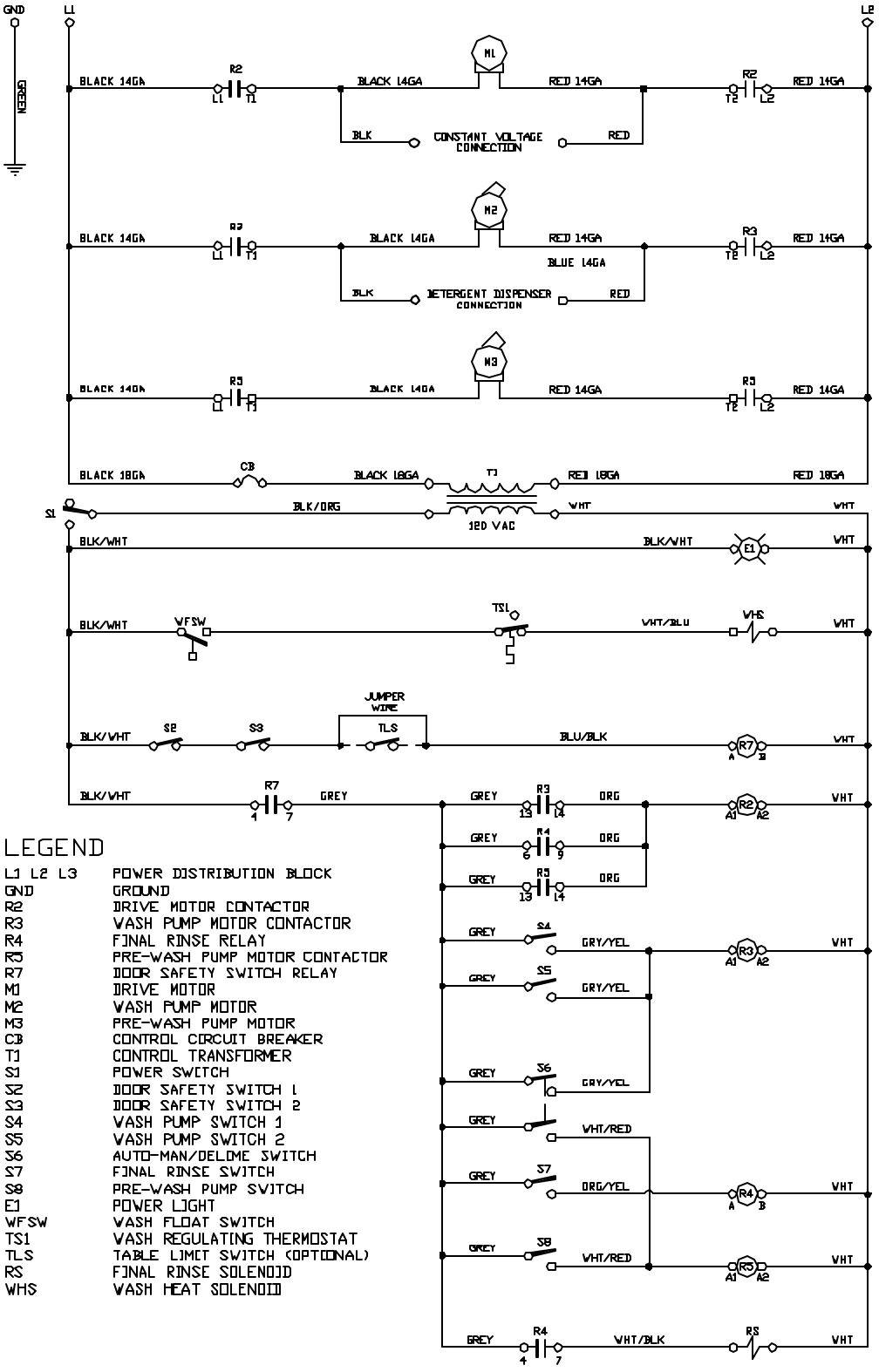
SECTION 7: ELECTRICAL SCHEMATICS

WH-66S/WH-66CSS (208-230 VOLTS/60 HZ/1 PHASE)



LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R5	PRE-WASH PUMP MOTOR CONTACTOR
R7	DOOR SAFETY SWITCH RELAY
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
M3	PRE-WASH PUMP MOTOR
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH 1
S3	DOOR SAFETY SWITCH 2
S4	WASH PUMP SWITCH 1
S5	WASH PUMP SWITCH 2
S6	AUTO-MAN/DELIME SWITCH
S7	FINAL RINSE SWITCH
S8	PRE-WASH PUMP SWITCH
E1	POWER LIGHT
WFSW	WASH FLOAT SWITCH
TS1	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID
WHS	WASH HEAT SOLENOID

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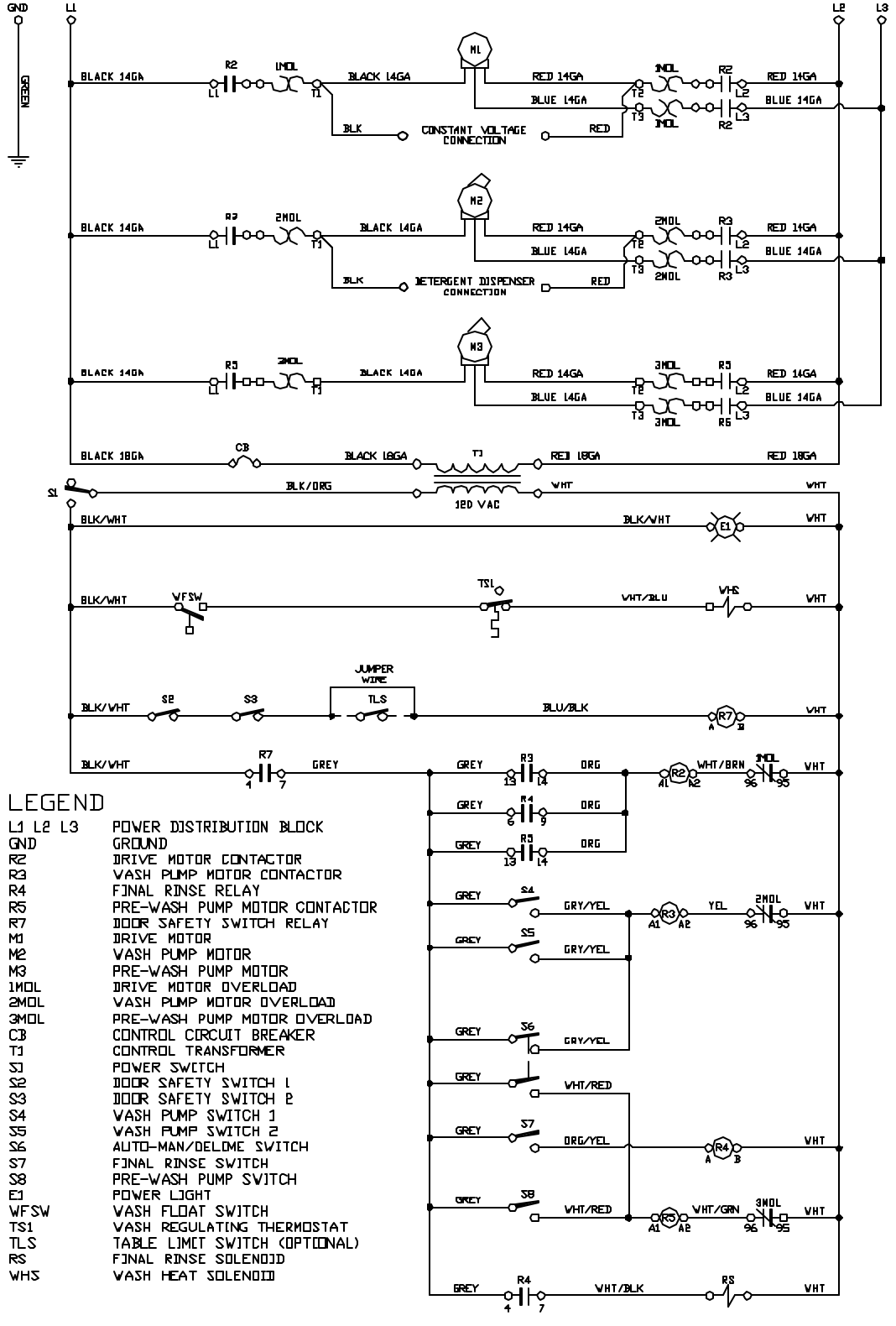
SECTION 7: ELECTRICAL SCHEMATICS

WH-66S/WH-66CSS (208-230 VOLTS/60 HZ/3 PHASE)



LEGEND

L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R5	PRE-WASH PUMP MOTOR CONTACTOR
R7	DOOR SAFETY SWITCH RELAY
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
M3	PRE-WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
3MOL	PRE-WASH PUMP MOTOR OVERLOAD
CB	CONTROL CIRCUIT BREAKER
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH 1
S3	DOOR SAFETY SWITCH 2
S4	WASH PUMP SWITCH 1
S5	WASH PUMP SWITCH 2
S6	AUTO-MAN/DELIME SWITCH
S7	FINAL RINSE SWITCH
S8	PRE-WASH PUMP SWITCH
E1	POWER LIGHT
WFSW	WASH FLOAT SWITCH
TS1	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID
WHS	WASH HEAT SOLENOID

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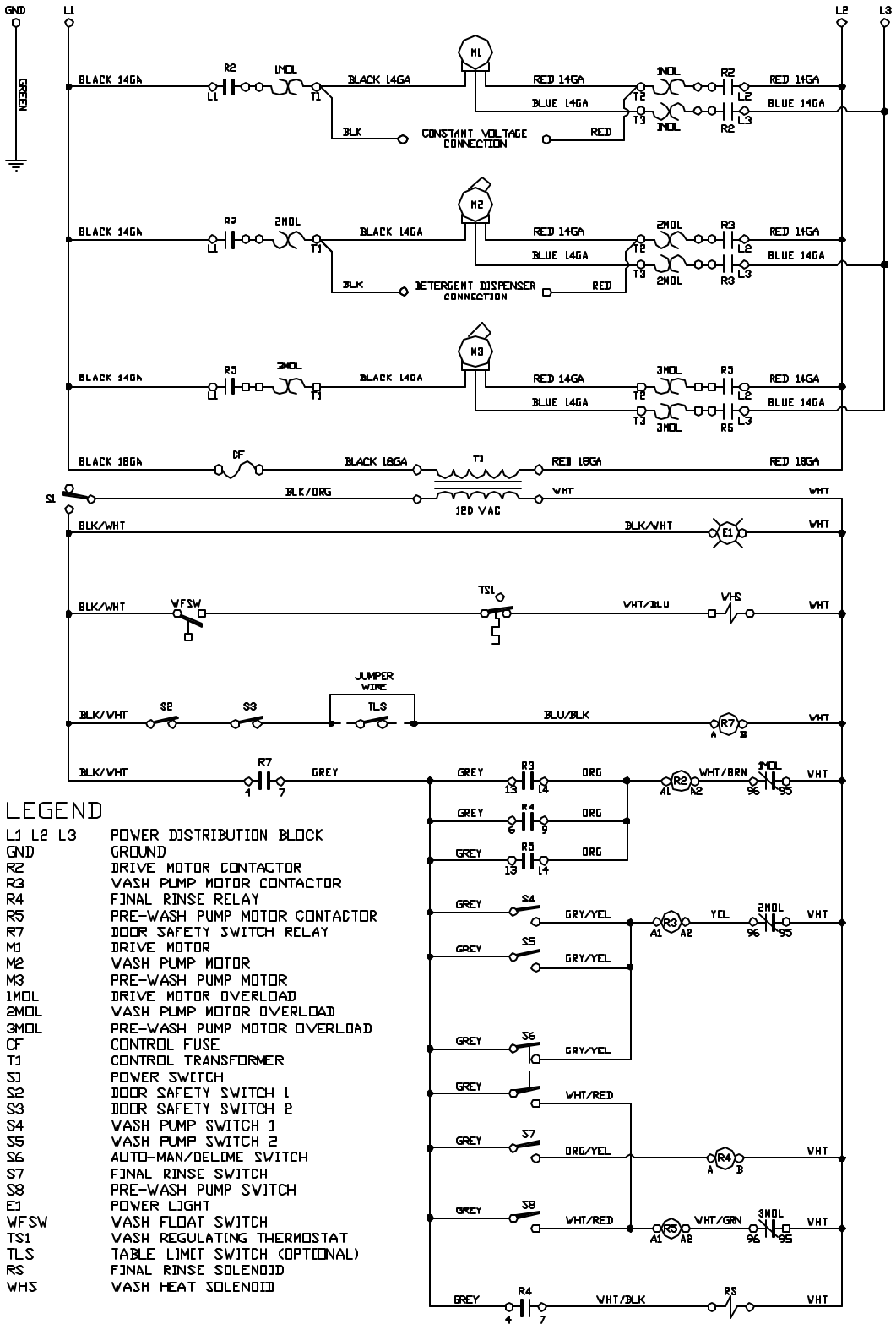
SECTION 7: ELECTRICAL SCHEMATICS

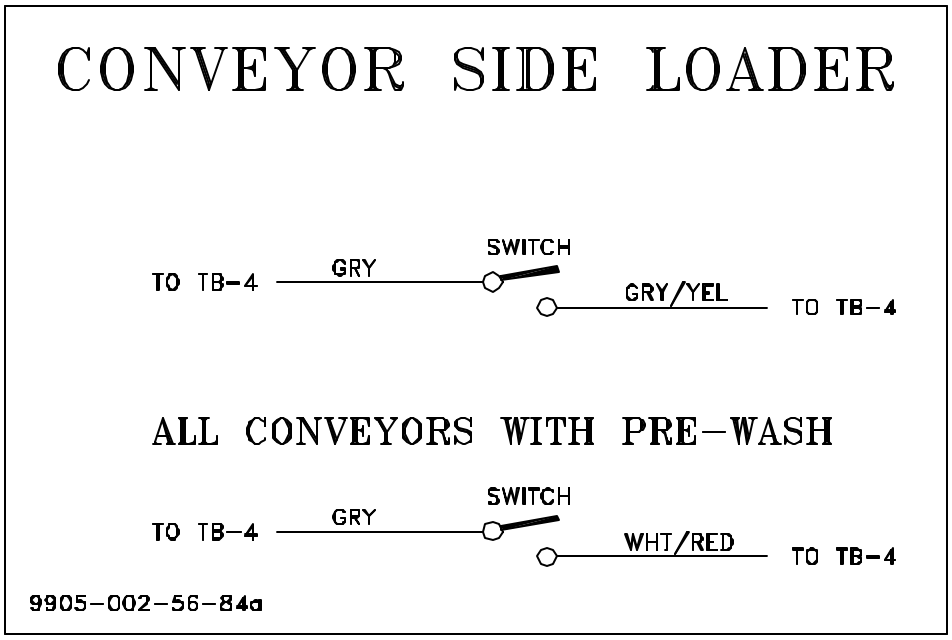
WH-66S/WH-66CSS (460 VOLT/60 HZ/3 PHASE)

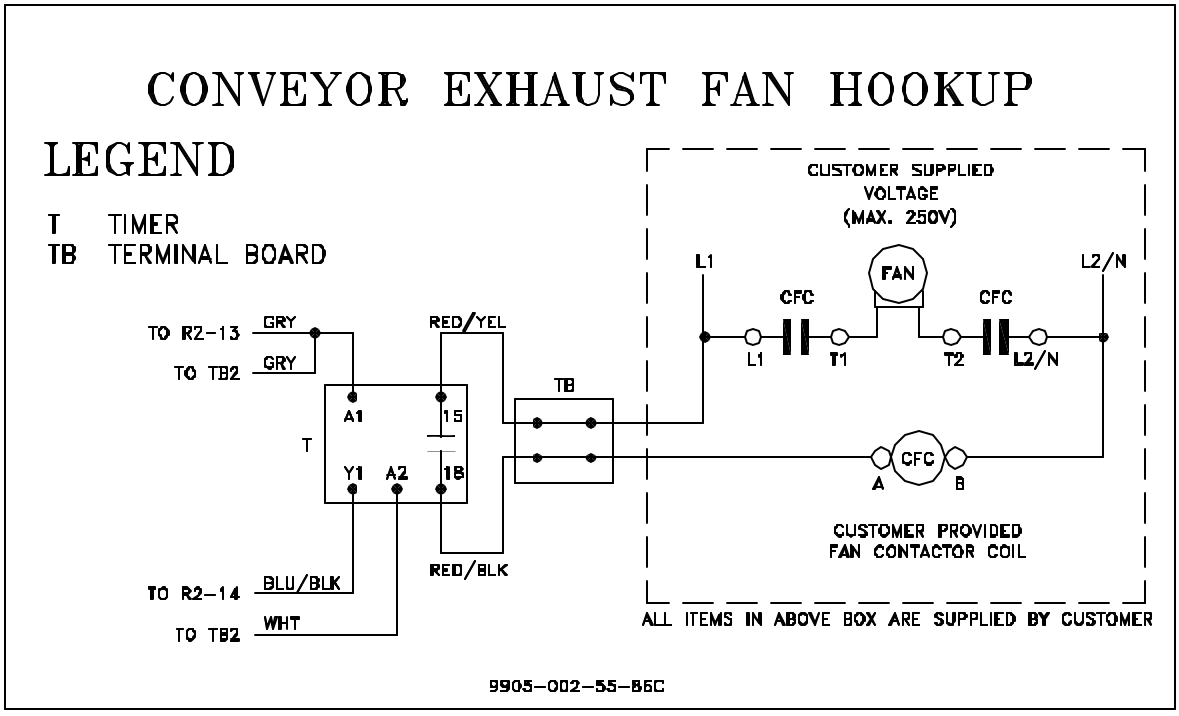


LEGEND

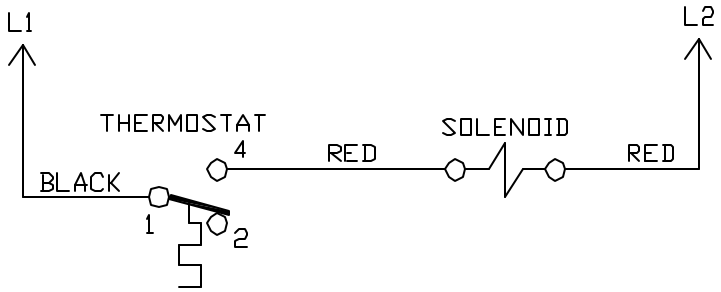
L1 L2 L3	POWER DISTRIBUTION BLOCK
GND	GROUND
R2	DRIVE MOTOR CONTACTOR
R3	WASH PUMP MOTOR CONTACTOR
R4	FINAL RINSE RELAY
R5	PRE-WASH PUMP MOTOR CONTACTOR
R7	DOOR SAFETY SWITCH RELAY
M1	DRIVE MOTOR
M2	WASH PUMP MOTOR
M3	PRE-WASH PUMP MOTOR
1MOL	DRIVE MOTOR OVERLOAD
2MOL	WASH PUMP MOTOR OVERLOAD
3MOL	PRE-WASH PUMP MOTOR OVERLOAD
CF	CONTROL FUSE
T1	CONTROL TRANSFORMER
S1	POWER SWITCH
S2	DOOR SAFETY SWITCH 1
S3	DOOR SAFETY SWITCH 2
S4	WASH PUMP SWITCH 1
S5	WASH PUMP SWITCH 2
S6	AUTO-MAN/DELOME SWITCH
S7	FINAL RINSE SWITCH
S8	PRE-WASH PUMP SWITCH
E1	POWER LIGHT
WFSW	WASH FLOAT SWITCH
TS1	WASH REGULATING THERMOSTAT
TLS	TABLE LIMIT SWITCH (OPTIONAL)
RS	FINAL RINSE SOLENOID
WHS	WASH HEAT SOLENOID

9905-002-8B-73a


CONVEYOR SIDE LOADER
TO TB-4
GRY
SWITCH
GRY/YEL
TO TB-4
ALL CONVEYORS WITH PRE-WASH
TO TB-4
GRY
SWITCH
WHT/RED
TO TB-4
9905-002-56-84a


CONVEYOR EXHAUST FAN HOOKUP
LEGEND
T TIMER
TB TERMINAL BOARD
CUSTOMER SUPPLIED
VOLTAGE
(MAX. 250V)
L1
FAN
L2/N
CFC
CFC
L1
T1
T2
L2/N
TO R2-13
GRY
TO TB2
GRY
RED/YEL
TB
A1
15
T
Y1
A2
18
CFC
A
B
CUSTOMER PROVIDED
FAN CONTACTOR COIL
TO R2-14
BLU/BLK
TO TB2
WHT
RED/BLK
ALL ITEMS IN ABOVE BOX ARE SUPPLIED BY CUSTOMER
9905-002-55-86C

Drain Quench System



CONNECT BLACK WIRE TO MOTOR CONTACTOR - L1 WITH PIGGYBACK TERMINAL PROVIDED

CONNECT WHITE WIRE TO MOTOR CONTACTOR - L2 WITH PIGGYBACK TERMINAL PROVIDED

BRINKER FAN DELAY