

TECHNICAL MANUAL

INSTALLATION MANUAL FOR EXPORT UNITS SERVICE MANUAL FOR DOMESTIC UNITS

ELECTRICALLY HEATED MODELS:

CREW 44



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Schematic, CREW 44 (208-230/60/1 Phase)

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Operating Parameters

Model Designation: CREW 44

Operating Capacity: <i>Racks per Hour</i> <i>Dishes per Hour</i> <i>Glasses per Hour</i>	218 3488 7848
Tank Capacity (gallons): Wash Tank	35.6
Electrical Loads (as applicable): <i>Wash Motor HP</i> <i>Drive Motor HP</i>	3.0 0.25
Wash Heater KW	15 or 18

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 is subject to change without notice.

HOT WATER SANITIZING Water Temperatures (Fahrenheit):	
Minimum Wash Temperature	160
Minimum Rinse Temperature	180
Incoming Water Temperature	
12 KW Booster	140
18 KW Booster	110
CHEMICAL SANITIZING Water Temperatures (Fahrenheit):	
Minimum Wash Temperature	120
Minimum Rinse Temperature	120
Incoming Water Temperature	
12 KW Booster	80
18 KW Booster	50
Other Water Requirements:	
Water Flow Pressure (PSI)	15
Flow Rate Minimum (GPM)	1.18
Water Line Size (NPT)	1/2"
Drain Line Size (NPT)	1-1/2"

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Notes Regarding Electrical Requirements

All electrical ratings provided in this manual are for reference only. Always refer to the machine data plate to get the exact electrical information for your machine. <u>All electrical work performed on machines should be done in accordance with applicable local, state, territorial and national codes.</u> Work should only be performed by qualified electricians and authorized service agents. A list of Jackson Authorized Service Agencies is located in the back of this manual.

Note that all electrical wiring used in the CREW series of machines must be rated, at a minimum, for 100C (212F). Furthermore, use copper conductors only.

Where applicable, heating element amperage draws have been adjusted for the assumed input voltage. Jackson assumes incoming voltages will be either 208, 230 or 460 volts. Some of the heating elements used in our machines are actually rated for other voltages, such as 240 or 480 volts. Always verify the amperage draw of the machine in operation when sizing circuit protection.

If your machine is equipped with the optional rinse heater, note the rinse heater has its own electrical connection and therefore requires a separate service. Amperage loads for motors and heaters are called out on the machine data plate for the installation/service technician.

The electrical configurations of the CREW series of machines are as follows:

Available Electrical Characteristics:

- 208 volt, 60 Hz, single phase
- 230 volt, 60 Hz, single phase
- 208 volt, 60 Hz, three phase
- 230 volt, 60 Hz, three phase
- 460 volt, 60 Hz, three phase

Available Wash Tank Heaters:

- 15KW (standard)
- 18KW (optional)

Available Rinse Heaters ("Booster Heaters"):

- None (standard)
- 12KW (40F rise in temperature)
- 18KW (70F rise in temperature)

Electrical Requirements for CREW 44

Volts	Ph	Freq	Wash Motor Amps	Drive Motor Amps	Wash Heater Amps	FLA	MCA	MOP
208	1	60	10.0 A	1.8 A	72.1 A	83.9 A	86.4 A	96.4 A
230	1	60	10.0 A	1.8 A	59.9 A	71.7 A	74.2 A	84.2 A
208	3	60	8.6 A	1.1 A	41.6 A	51.3 A	53.5 A	62.1 A
230	3	60	8.4 A	1.1 A	34.6 A	44.1 A	46.2 A	54.6 A
460	3	60	4.2 A	0.6 A	17.3 A	22.1 A	23.2 A	27.4 A

CREW 44, 15 KW Wash Heater

CREW 44, 18 KW Wash Heater

Volts	Ph	Freq	Wash Motor Amps	Drive Motor Amps	Wash Heater Amps	FLA	MCA	МОР
208	1	60	10.0 A	1.8 A	86.5 A	98.3 A	100.8 A	110.8 A
230	1	60	10.0 A	1.8 A	78.3 A	90.1 A	92.6 A	102.6 A
208	3	60	8.6 A	1.1 A	50.0 A	59.7 A	61.9 A	70.5 A
230	3	60	8.4 A	1.1 A	45.2 A	54.7 A	56.8 A	65.2 A
460	3	60	4.2 A	0.6 A	22.6 A	23.2 A	23.7 A	27.9 A

<u>CREW 44S</u>

Volts	Ph	Freq	Wash Motor Amps	Drive Motor Amps	FLA	MCA	МОР
208	1	60	10.0	1.8 A	11.8 A	14.3 A	24.3 A
230	1	60	10.0	1.8 A	11.8 A	14.3 A	24.3 A
208	3	60	8.6	1.1	9.7 A	11.9 A	20.5 A
230	3	60	8.4	1.1	9.5 A	11.6 A	20.0 A
460	3	60	4.2	0.6	4.8 A	5.9 A	10.1 A

Note: On the 208 volt machines, the rinse heater is actually rated at 17.2 KW

Electrical Requirements for Booster Tanks

40 I RISE - 12 RW DOUSLEL							
Volts	Volts Ph F		Rinse Heater Amps	FLA			
208	1	60	57.7 A	57.7 A			
230	1	60	47.9 A	47.9 A			
208	3	60	33.3 A	33.3 A			
230	3	60	27.7 A	27.7 A			
460	3	60	13.8 A	13.8 A			

40° F Rise - 12 KW Booster

70° F Rise - 18 KW Booster

Volts	Ph	Freq	Rinse Heater Amps	FLA
208	1	60	82.7 A	82.7 A
230	1	60	71.9 A	71.9 A
208	3	60	47.7 A	47.7 A
230	3	60	41.5 A	41.5 A
460	3	60	20.7 A	20.7 A

Note: On the 208 volt machines, the rinse heater is actually rated at 17.2 KW

INSTALLATION INSTRUCTIONS

VISUAL INSPECTION: Before installing the unit, check the container and the machine for damage. A damaged container may be an indication there is possible damage to the product. If there is any type of damage to both the container and the unit, DO NOT THROW AWAY THE CONTAINER. The dish-machine has been previously inspected at the factory and is expected to arrive to you in new, undamaged condition. However, rough handling by carriers or others may result in damage to the unit while it is in transit. If such a situation occurs, DO NOT RETURN THE UNIT TO JACKSON. Instead, contact the carrier and ask them to send a representative to the site to inspect the damage. You should request that an inspection report be completed. You must contact the carrier within 48 hours of receiving the machine in order to report possible freight damage. You are also encouraged to contact the dealer through which you purchased the unit.

UNPACKING THE MACHINE: The machine should be unboxed and removed from the pallet prior to installing. Also remove the wooden lift beams and their associated brackets after the unit has been positioned. Open the front door and remove all of the materials from the inside. Once unpacked, verify there are no missing parts to the best of your ability. If you discover a part is missing, contact Jackson immediately.

LEVEL THE DISHMACHINE: The dish-machine is designed to operate while level. This is important to prevent any damage to the machine during operation and to ensure the best results possible. The unit comes equipped with adjustable bullet feet, which can be turned using a pair of pliers. Verify the unit is level from front to back and side to side prior to making any electrical or plumbing connections.

PLUMBING THE MACHINE: All plumbing connections must be made to adhere to local, state, territorial and national codes. The installing plumber is responsible for ensuring the incoming water lines are flushed of debris prior to connecting to the machine. Note that chips and materials from cutting processes can become lodged in the solenoid valves and prevent them from opening or closing. Any valves that are found to be fouled or defective because of foreign matter left in the water line, and any subsequent water damage, are not the responsibility of the manufacturer.

Water hardness should be a maximum of 6 grains per gallon. Hard water should be treated prior to be used by the machine. Iron in the water line can cause staining. A filter designed to remove iron from the water supply is highly recommended for supplies in excess of 0.1 ppm.

Your dish-machine comes with a Water Pressure Regulating Valve. The CREW incorporates a flow pressure of 15 PSI for the incoming water line. Do not confuse static pressure with flow pressure. Static pressure is the pressure when there is no flow and the valves are closed; flow pressure is when the water is running into the machine. The WPRV should be adjusted to the proper flow pressure at a minimum.

The water supply line shall be 1/2" NPT minimum and must be able to provide water at the minimum temperature indicated on the machine data plate.

It is recommended a shut-off valve be installed to allow isolating the dish-machine from the water system in the event maintenance or other activities require it. Also, it is suggested that a shock absorber be installed on the incoming water line. This prevents water hammer (hydraulic shock), induced by the solenoid valve as it operates, from causing damage to the equipment.

INSTALLATION INSTRUCTIONS (CONTINUED)

CONNECTING THE DRAIN LINE: The drain for the CREW is a gravity discharge drain. All piping to the machine drain must be a minimum 1-1/2" NPT 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.

STEAM LINE CONNECTIONS: Some machines covered in this manual are designed to use low pressure steam as a source of heat for the wash tank. Those machines come with lines by which an outside source of steam (i.e steam booster) is connected. Connect all steam lines from the booster to the machine in accordance with the booster manufacturer's instructions. Ensure that all applicable codes and regulations are adhered to. See the machine data plate for information related to steam flow requirements.

ELECTRICAL POWER CONNECTIONS: All electrical connections are to be made in accordance with applicable portions of local, state, territorial and national codes.

DISCONNECT ELECTRICAL POWER SUPPLIES AND TAG OUT IN ACCORDANCE WITH APPROPRIATE PROCEDURES AND CODES AT THE DISCONNECT SWITCH TO INDICATE YOU ARE WORKING ON THAT CIR-<u>CUIT.</u>

This manual provides reference information regarding electrical requirements and loads, but that information may change without notice. Always refer to the machine data plate for voltage requirements, machine voltage, total amperage load and serial number. If you cannot read your data plate because it has been damaged, you should contact Jackson.

The main power terminal blocks (for the dish-machine and for the rinse booster heater, if applicable) are located at the top of the machine. You will have to remove the top cover to access these connections. Route incoming power lines within conduit that will connect via fittings to the pre-punched holes in the back of the unit. Install power and ground wires to lugs as indicated by the appropriate decals in the control box. Use copper conductors only. Use of a anti-oxidation agent is permissible on the power connections. Tighten all connections.

Verify the incoming voltage matches the voltage indicated on the decal next to the incoming power prepunched hole.

Please note the dish-machine has a separate power connection from the rinse booster heater and the circuit protection requirements are different for each. Refer to the machine data plate for information on minimum circuit protection.

DISHMACHINE VENTILATION: The dish-machine 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 the exhaust system is acceptable in accordance with applicable codes and standards.

Note: any damage that is caused by steam and/or moisture due to improper ventilation is NOT covered under the warranty.

INSTALLATION INSTRUCTIONS (CONTINUED)

The CREW has the following ventilation requirements:

- Load End: 200 CFM
- Unload End: 200 CFM

The exhaust system must be sized to handle this volume for the dish-machine to operate in the manner it was designed to.

THERMOSTATS: The thermostats on your CREW unit have been set at the factory for the wash tank. They should only be adjusted by an authorized service agent.

CHEMICAL FEEDER EQUIPMENT: Your CREW dish-machine DOES NOT COME WITH AN INTEGRAL CHEMICAL SUPPLY/FEEDER SYSTEM. You must connect the CREW to a third party chemical dispenser that meets the requirements of NSF Standard 29 for the machine to operate correctly.

You should contact your chemical supplier about connecting a dispenser to your dish-machine. Chemical dispensers must be set for the type and concentration of chemicals being used and there are several factors that have to be taken into account.

Detergent usage and water hardness are two factors that contribute greatly to how efficiently your dishmachine will operate. Using the proper amount of detergent can become, in time, a source of substantial savings. A qualified water treatment specialist can explain in detail to you what is needed to gain the maximum efficiency from your detergent.

The CREW dish-machine is able to operate in either hot water sanitizing mode or chemical sanitizing mode. Your unit should be clearly marked as to the mode it is in. If you cannot determine this, contact Jackson immediately for assistance.

It is important to remember that if you decide to operate the unit in chemical sanitizing mode, you must ensure an appropriate chlorine-based sanitizer is used in the final rinse line.





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INSTALLATION INSTRUCTIONS (CONTINUED)

ELECTRICAL CONNECTION POINTS FOR TABLE LIMIT SWITCH, VENTILATION FAN SIGNAL & CHEMICAL DISPENSING SYSTEMS

SIGNAL BOARD IS LOCATED IN THE MAIN CONTROL BOX BEHIND THE LOWER DRESS PANEL





CHEMICAL DISSPENSER TUBE CONNECTION POINTS TO RINSE INJECTOR

P: PRESSURE SWITCH (1/4" NPT)

S: SANITIZER (1/8" NPT)

R: RINSE AID (1/8" NPT)

CURTAIN INSTALLATION INSTRUCTIONS

On the CREW 44 models, there are 5 locations for the placement of curtains inside the machine, starting from the load end and going all the way to the unload end. The table to the left indicates what size curtain goes on which curtain hook. If you are missing any of the curtain components, it is very important you obtain replacement parts in order to make sure your unit runs correctly. Curtains are used to control the air currents inside your unit and they greatly assist in maintaining the heat necessary to keep energy costs down.

DETERMINING CONVEYOR DIRECTION: Your CREW machine will be configured for either Left to Right or Right to Left operation. Direction is always from the Load End to the Unload End, as shown in the examples.



IMPORTANCE OF PROPER CURTAIN PLACEMENT: The curtains inside the CREW machine are required to be installed in a particular fashion. Note the approximate locations for each type of curtain in the above illustrations. S=Short, L=Long & XL=Extra Long. See the chart below for actual curtain lengths and part numbers.

Legend	Length	Part Number	QTY
S	12"	08415-131-73-44	1
L	19"	08415-002-14-41	2
XL	24.25"	08415-002-47-37	2
Curtain Rod	20.50"	05700-003-77-52	5

OPERATION INSTRUCTIONS

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

- The drain stopper is installed;
- The strainers are installed;
- The pawl bar is installed and secure;
- The actuator switches move with relative freedom and do not bind;
- The curtains are installed correctly

POWER UP: To place the unit in standby, press the Start Button on the front of the machine.

- The unit will automatically determine if there is a proper water level in the wash tank. If not, the unit will begin to fill until the appropriate level is reached.
- If the wash tank temperature is not at the minimum level for the mode of operation, the wash heater will energize. Refer to the machine data plate for a better understanding of the minimum temperatures needed to operate the unit correctly. It may take several minutes for the wash tank to heat up, depending on the initial temperature of the water.
- If your machine is equipped with a rinse booster option, note the booster shall turn on when the unit turns on.
- If your machine is heated with a steam booster, then you will need to turn on the steam booster in accordance with the manufacturer's instructions.
 - It is important that you do not attempt to start the unit until:
 - The unit stops filling;
 - The unit has reached the appropriate wash tank temperature.

FIRST RACK: The first rack of ware that you place into the unit usually has the effect of very quickly reducing the temperature of the wash tank. This is because you are introducing cold materials into the dishmachine environment and the unit has to circulate water to get the heating cycle going. You may have to run the first rack through the unit again. Any time the unit has not been operated for an extended period of time this is possible, but unlikely. This is usually dependent on the type of ware you are using, its temperature and the ambient temperature of the kitchen area. Always observe the temperatures of the wash and rinse when first starting the unit to ensure proper operation.

WARE PREPARATION: Proper preparation of ware is essential for the smooth, efficient operation of your dish-machine. If done properly, you can expect to have fewer re-washes and use substantially less detergent. Any ware placed inside the machine should have all solid food waste and scraps removed. It is recommended that ware also be sprayed down prior to entry into the dish-machine.

Place cups and glasses upside down in racks so they do not hold water during the cycle. Presoak flatware in warm water to assist in getting stuck-on material off. Load plates and saucers in the same direction (with the surface food is placed on facing towards the unload end of the machine).

WASHING A RACK OF WARE: The CREW machine is designed to wash ware placed in a rack. Under no circumstance should any materials be placed inside the CREW machine that have not been properly secured

OPERATION INSTRUCTIONS (CONTINUED)

into a dish rack.

To start the cycle, gently push the rack into the unit on the load end. Once the wash actuator has moved sufficiently, the unit will automatically begin to convey the dish rack through the unit. The entire cycle is automatic.

OPERATIONAL INSPECTIONS: It is recommended that operators periodically review the following items while the machine is operating. All of these items are important to operating the machine in an efficient manner.

- Review wash and rinse temperatures and compare to the minimums required by the data plate. Low temperatures can be an indication of a faulty thermostat, a thermostat that needs adjustment or some other condition that needs to be addressed.
- Verify the pan strainers are not becoming clogged. Keeping these free of soil and debris allows for much better flow of water through the machine and prevents any sort of redeposit issues.
- Water pressure. The CREW is designed to run at a minimum of 15 PSI; any lower than that and you won't have enough rinse water to properly remove detergent from your ware.
- Wash and rinse arm nozzles should be free of debris. Open nozzles are essential to the operation of the dish-machine.

SHUTDOWN: To shut the unit down, press the Start Switch on the front of the machine. To drain the machine, open the front door and pull up on the drain release inside the unit. If you have a steam booster for heating the dish-machine, shut it down in accordance with its manufacturer's instructions.

CLEANING: It is recommended the unit be cleaned at least once every 24 hours or at the end of the day. Cleaning assists in maintained the efficient operation of the unit by removing soil and debris that might otherwise become trapped in nozzles or get deposited onto ware.

- Curtains: should be removed and scrubbed with mild detergent/soap and a brush and allowed to air dry.
- Strainers: should be removed and have debris scooped out. Never hit strainers to remove debris; this can cause them to warp and not seat correctly. Rinse under water should remove the rest of any debris trapped in the part.
- Wash Arms: the wash arms can be removed using a 7/16" driver; however, the CREW is designed so the wash arms are literally self-cleaning. Operators have the ability to flush the arms by removing the plastic end caps and running a rack through the unit. This should only be done as a cleaning function with an empty rack and a tub that is filled with water.
- Internal Chamber: Mild detergent/soap and a dishrag should be all that is needed to clean the inside of the machine. Strainers and the pawl bar should be removed to provide as much room as possible.
- External Areas: The outside of the unit should be cleaned with a standard countertop or general cleaner. Never attempt to clean inside any compartments, boxes or chambers that are secured with a cover. These normally contain live electrical components.
- DO NOT CLEAN THE UNIT WITH ANY TYPE OF METALLIC SCRUBBING SPONGE!

DELIMING INSTRUCTIONS

To proceed with the deliming operation, fill the dish-machine and the correct amount of deliming solution as recommended by the manufacturer of the chemicals. The tank capacities of the machine can be found on the specifications page of this manual.

After the chemicals are added, perform the following steps:

- 1. Flip the NORMAL/DELIME Switch to DELIME.
- 2. Disconnect or turn off chemical feeder pumps.
- 3. Close all doors.
- 4. Press the Start Switch and run the machine for the length of time required by the chemical solution manufacturer.
- 5. Press the Start Switch to shut the unit off.
- 6. Open the door and step away for 5 minutes.
- 7. Inspect the inside of the unit to determine if your expectations have been met. If not, you may need to run the deliming solution through the unit for more time.
- 8. Once clean, drain the machine completely.
- 9. Close the door.
- 10. Refill the unit.
- 11. Press the Start Switch and run the unit in Manual for 10 minutes.
- 12. Press the Start Switch to turn off the unit.
- 13. Open the front door.
- 14. Drain the unit.
- 15. Flip the NORMAL/DELIME Switch to NORMAL.
- 16. Your machine is ready to use.

This equipment is not recommended 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.



TROUBLESHOOTING

Green LED lights are illuminated on the PLC when in operation. The POWER, OK & RUN lights indicate that 24VDC power is available to the PLC and that is functioning properly. If the RUN light is out, the operational program of the PLC may have been corrupted or lost. Temporary power surges may have occurred. Secure all power to the machine , wait for 30 seconds and restore power. Verify that the Green light is illuminated to the 24vdc power supply immediately to the left of the PLC. If the RUN light is still off, replace the PLC.

Refer to the illustration below for the designation of each LED. Inputs correspond to the connections behind the top flip up panel of the PLC and are marked 11 thru I8. Outputs correspond to the connections behind the bottom flip up panel of the PLC and are marked Q1 thru Q8.

Note: All outputs are fused. Q1 & Q2 outputs utilize 1.0 Amp fuses and Q3-Q8 utilize .75 Amp fuses.









DETAIL OF FUSE LOCATIONS FOR PART NUMBER 05920-002-42-13

Item	QTY	Description	Part Number
1	1	CONTROL BOX WELDMENT	05700-003-77-14
2	1	TRANSFORMER 208/230/460 TO 120VAC	05950-011-68-35
3	1	POWER SUPPLY 24VDC	05950-003-76-32
4	1	CONTACTOR, 24VDC 3 POLE (USED ON 3-PHASE UNITS) CONTACTOR, 24VDC 4 POLE (USED ON 1-PHASE UNITS)	05945-003-75-02 05945-003-73-22
5	1	PLC	05945-003-75-84
6	1	FUSE HOLDER, 6 SLOT	05920-002-42-13
7	2	FUSE, 1.0 AMP	05920-003-76-37
8	4	FUSE, 0.75 AMP	05920-003-76-36
9	1	FAN, 24 VDC	05999-002-47-12
10	2	FAN FINGER GUARD	05999-003-12-92
11	1	TERMINAL BLOCK 3 POLE	05940-011-48-27
12	1	GROUND LUG	05940-200-76-00
13	1	SIGNAL TERMINAL BOARD	05940-003-77-43
14	1	DC TERMINAL BOARD	05940-003-77-65
15	1	FUSE HOLDER	05920-011-72-89
16	1	DIN RAIL	05700-003-77-42
17	2	OVERLOADS (USED ON 3-PHASE ONLY)	SEE OVERLOAD PAGE
18	2	CONTACTOR, 24VDC	05945-0075-22
19	4	RELAY SOCKET, 20A 300V	05945-003-76-33
20	4	RELAY, SPDT 24VDC	05945-003-76-34
21	2	TERMINAL BOARD	05940-021-94-85
22	1	RELAY SOCKET, 16A 300V	05945-003-79-58
23	1	RELAY, DPDT 24VDC	05945-003-79-57
24	1	GROMMET, 1.25" OD x 1.00" ID	05975-111-58-01
25	1	LOUVERED PLUG, 2.50" OD	05975-003-77-39

PARTS SECTION: CONTROL BOX ASSEMBLY (CONTINUED)

PARTS SECTION: OVERLOADS

WASH MOTORS:

Overloads are specified for 3 phase units only.

For GE brand, MT03* series overloads, the process for setting is as follows:

- Determine the Full Load Amps for the wash motor
- Set the overload at the closest setting without going over for the FLA of the motor.
- The overload already compensates for the FLA and will have a set point that is 125% of the FLA.

Example: Wash Motor is rated at 7 FLA on the data plate. The replacement MT03* overload would be set at 7. It would actually trip at 8.75 Amps.

Wash Motor Voltage	Jackson Part Number	GE Part Number
208	05945-003-76-29	MT03N
230	05945-003-76-29	MT03N
460	05945-003-76-27	MT03L

Blue Selector switch should be set to H for manual reset.

DRIVE MOTORS:

Overloads are specified for 3 phase units only.

For GE brand, MT03* series overloads, the process for setting is as follows:

- Determine the Full Load Amps for the drive motor.
- Set the overload at the closest setting without going over for the FLA of the motor.
- The overload already compensates for the FLA and will have a set point that is 125% of the FLA.

Example: Drive Motor is rated at 2 FLA on the data plate. The replacement MT03* overload would be set at 2. It would actually trip at 2.5 Amps.

Drive Motor Voltage	Jackson Part Number	GE Part Number
208	05945-003-76-23	MT03F
230	05945-003-76-23	MT03F
460	05945-003-76-21	MT03D

Blue Selector switch should be set to H for manual reset.

Connections should be tightened to 7 in-lbs.

TAKIS SECTION. MISCELEANEOUS ELECTRICAL COMPONENTS				
Description	Part Number			
FITTING, 1", 90 DEGREE NPT HUB	05975-003-77-44			
FITTING, 3/4" STR QT 8495 SNAP	05975-003-77-46			
FITTING, 3/4" 90 DEGREE QT 8510 SNAP	05975-003-77-45			
FITTING, 1/2" NPT 90 DEGREE 8507	05975-003-35-32			
FITTING, 1/2" NPT STR 8490	05975-003-33-27			
FITTING, ,231 X .394, LIQUIDTITE	05975-011-49-03			
CLAMP, 1" FLEX2 CONDUIT 1031	05975-003-77-88			
CLAMP, 3/4" FLEX2 CONDUIT 1029	05975-003-77-89			
PLUG, 2.5" HOLE, LOUVERED 2596	05975-003-77-39			
PLUG, HEYCO 2700 G-875	05975-011-47-81			
PLUG, HEYCO, 2723	05975-002-29-94			
PLUG, HEYCO, 2683	05340-011-46-79			
PLUG, HEYCO, 2790	05975-011-59-49			
BUSHING, HEYCO, 2236	05975-003-10-46			
GROMMET, 1.250 OD X 1.000 ID	05975-111-58-01			
GROMMET, 7/8 SPLIT, HEYCO, 2119	05975-200-40-00			

PARTS SECTION: MISCELLANEOUS ELECTRICAL COMPONENTS



PROXIMITY SWITCH 24VDC P/N: 05930-003-76-51 TEMPERATURE RTD P/N: 06680-002-16-80

THERMOSTAT P/N: 05930-510-02-79



START SWITCH P/N: 05930-003-76-52

DELIME SWITCH P/N: 05930-301-46-00

> FLOAT SWITCH P/N: 06680-003-62-65





PARTS SECTION: WASH HEATER & HEATER SHROUD ASSEMBLIES

Item	QTY	Description	Part Number
1	1	HEATER SHROUD WELDMENT LOWER	05700-003-74-21
2	1	HEATER SHROUD WELDMENT UPPER	05700-003-74-24
3	1	GASKET, SUCTION CASTING	05330-003-75-89
4	1	GASKET, PUMP SUCTUON	05330-003-75-87
5	1	GASKET, HEATER	05330-200-02-70
6	1	HEATER BOX RAILS	05700-003-74-72
7	1	WASH PUMP SUCTION WELDMENT	05700-003-77-63
8	2	WASHER, S/S (NOT SHOWN)	05311-174-01-00
9	9	LOCKNUT, 1/4"-20 HEX W/NYLON INSERT	05310-374-01-00
10	6	NUT, HEX 5/16-18 S/S	05310-275-01-00
11	6	LOCKWASHER, 5/16" SPLIT S/S	05310-275-01-00
12	1	WASH HEATING ELEMENT (15kW Standard / 18kW Optional)	SEE HEATER CHART

VOLTAGE	PHASE	KW	PART NUMBER	CONTACTOR
208	1	15	04540-121-68-45	05945-003-73-22
230	1	15	04540-121-68-46	05945-003-73-22
208	3	15	04540-121-68-45	05945-003-75-02
230	3	15	04540-121-68-46	05945-003-75-02
460	3	15	04540-121-68-47	05945-003-75-02
208	1	18	04540-121-79-30	05945-003-73-22
230	1	18	04540-121-79-31	05945-003-73-22
208	3	18	04540-121-79-30	05945-003-75-02
230	3	18	04540-121-79-31	05945-003-75-02
460	3	18	04540-121-79-32	05945-003-75-02

PARTS SECTION: WASH HEATERS

SERVICE NOTES: when replacing wash heaters, it is highly recommended you also change out the gasket as well. Once installed, gaskets become compressed and are subject to extreme temperature changes. Replacing the gasket with a new one when replacing the heater may prevent future leaks.

The nuts used to secure the heater to the casting should be torque 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 verify they are torque to 16 in-lbs.



PARTS SECTION: DOOR ASSEMBLY

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Item	QTY	Description	Part Number
1	2	DOOR GUIDE BRACKET	05700-003-72-32
2	2	DOOR GUIDE	09330-003-73-94
3	1	DOOR WELDMENT	05700-003-76-87
4	1	END PIECE, DOOR RIGHT SIDE	09330-003-73-83
5	1	END PIECE, DOOR LEFT SIDE	09330-003-73-84
6	1	DOOR STOP AND SUPPORT WELDMENT	05700-003-72-51
7	26	LOCKNUT, 1/4"-20 HEX W/NYLON INSERT	05310-374-01-00
8	10	SCREW, 1/4"-20 X 1", 82 COUNTERSINK, PHILLIPS	05305-011-81-58
9	26	SCREW, 10-32 X 1" PHILLIPS PAN HEAD	05305-002-19-42
10	1	MAGNET	05930-002-88-42

PARTS SECTION: DOOR ASSEMBLY (CONTINUED)

PARTS SECTION: WASH DOOR SPRING ASSEMBLY



Item	QTY	Description	Part Number
1	1	CASTING, DOOR SPRING MOUNT	09515-003-73-78
2	1	SPRING, DOOR	05315-002-67-29
3	2	SPINDLE, DOOR SPRING	05700-002-67-28
4	1	PIN, DOOR SPRING	05700-002-83-55
5	1	DOOR SPRING BRACKET WELDMENT	05700-003-74-10
6	2	WASHER, 1/4" S/S	05311-174-01-00
7	6	LOCKNUT, 1/4"-20 HEX W/NYLON INSERT	05310-374-01-00
8	1	PIN, COTTER, 3/32" X 3/4"	05315-207-01-00





Item	QTY	Description	Part Number
1	1	STRAINER, INLET, 1/2"	04730-217-01-10
2	3	NIPPLE, 1/2", CLOSE, BRASS	04730-207-15-00
3	1	TEE, BRASS, 1/2" X 1/2" X 1/2"	04730-211-27-00
4	1	REGULATOR, 1/2"	04820-100-04-07
5	1	VALVE, 1/2" NPT BRASS, 24VDC COIL	04810-003-75-16
6	2	HOSE, 1/2" X 42" S/S BRAIDED W/PTFE, MALE SWIVEL	04720-003-76-09
7	1	BRACKET, INLET PLUMBING SUPPORT (NOT SHOWN)	05700-003-74-42
8	1	BRACKET, UPPER INLET PLUMBING SUPPORT (NOT SHOWN)	05700-003-74-86

PARTS SECTION: WASH TANK FILL ASSEMBLY



Item	QTY	Description	Part Number
1	2	ELBOW, 90 DEGREE, 1/2" STREE, BRASS	04730-206-08-00
2	1	VACUUM BREAKER, 1/2"	04820-003-06-13
	1	VACUUM BREAKER REPAIR KIT	06401-003-06-23
3	1	NIPPLE, 1/2" CLOSE, BRASS	04730-207-15-00
4	1	GASKET, RINSE MANIFOLD	05330-003-75-91
5	1	VALVE, 1/2" NPT BRASS, 24VDC COIL	04810-003-75-16
6	1	TUBE WELDMENT, TANK FILL	05700-003-76-81
7	1	TANK FILL INJECTOR WELDMENT	05700-003-76-84
8	2	LOCKNUT, 1/4"-20 HEX WITH NYLON INSERT (NOT SHOWN)	05310-374-01-00



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Item	QTY	Description	Part Number
1	1	PUMP & MOTOR ASSEMBLY	SEE TABLE BELOW
2	1	GASKET, PUMP SUCTION	05330-003-75-87
3	1	GASKET, PUMP DISCHARGE	05330-003-75-88
4	2	HOSE CLAMP, RANGE 2-9/16" TO 3-1/2"	04730-003-15-40
5	1	HOSE, WASH PUMP DISCHARGE	05700-003-77-62
6	1	(L-R MACHINES) LOWER MANIFOLD (R-L MACHINES) LOWER MANIFOLD	05700-003-74-29 05700-003-74-28
7	1	CASTING, WASH MANIFOLD	09515-003-71-50
8	1	TUBE, MANIFOLD RISER	05700-003-72-37
9	1	WASH MANIFOLD WELDMENT, UPPER	05700-003-73-66
10	2	WASH ARM WELDMENT, RIGHT	05700-003-75-80
11	2	WASH ARM WELDMENT, LEFT	05700-003-75-79
12	12	CAP, THREADED	04730-603-12-00
13	3	O-RING, SILICONE, .103 DIA., 2-1/2" X 2-11/16" OD	05330-003-73-71
14	4	O-RING, SILICONE, .139 DIA., 2-1/4" ID X 2-1/2" OD	05330-003-73-72

PARTS SECTION: WASH MANIFOLD AND ARM ASSEMBLY (CONTINUED)

PUMP & MOTOR ASSEMBLY	Part Number
WASH PUMP, 3HP 208V 60HZ 3-PHASE	06105-003-76-11
WASH PUMP, 3HP 230V 60HZ 3-PHASE	06105-003-76-11
WASH PUMP, 3HP 460V 60HZ 3-PHASE	06105-003-76-11
WASH PUMP, 3HP 208V 60HZ 1-PHASE	06105-003-76-13
WASH PUMP, 3HP 230V 60HZ 1-PHASE	06105-003-76-13

PARTS SECTION: RINSE ASSEMBLY



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Item	QTY	Description	Part Number
1	3	ELBOW, 90 DEGREE 1/2 STREET BRASS	04730-206-08-00
2	1	VACUUM BREAKER 1/2"	04820-003-06-13
3	1	UPPER RINSE ARM	05700-003-76-02
4	1	LOWER RINSE ARM	05700-003-76-04
5	1	RINSE MANIFOLD	05700-003-76-79
6	1	RINSE INJECTOR (L-R UNITS) RINSE INJECTOR (R-L UNITS)	05700-003-76-82 05700-003-76-83
7	1	NIPPLE- 1/2 CLOSE BRASS	04730-207-15-00
8	1	VALVE, BALL TEST COCK 1/4" BRONZE	04810-011-72-67
9	1	TEE, 1/2 FNPT X 1/2 FNPT 1/4 FNPT	04730-002-22-56
10	2	PLUG, 1/8 N.P.T. BRASS	04730-209-07-37
11	1	GASKET, RINSE MANIFOLD	05330-003-75-91
12	1	FITTING, IMPERIAL BRASS	05310-924-02-05
14	1	PLUG, 1/4 211P-4	04730-209-01-00
15	3	O-RING, SILICON .103 DIA.,11/16 X 7/8 OD	05330-003-77-82
16	1	ELBOW, BRASS 90 DEGREE 1/4 NPTM x 1/4 NPTF	04730-003-77-83
17	6	LOCKNUT, 1/4-20 HEX W/NYLON INSERT	05310-374-01-00
18	2	BOLT, 1/4-20 X 1/2 LONG	05305-274-02-00
19	2	LOCKWASHER, SPRING 1/4	05311-274-01-00
20	1	ELBOW WELDMENT, TEMP GAUGE	05700-003-77-12
21	1	GAUGE, 0-100# PRESSURE	06685-111-88-34
22	1	DECAL 15-25 PSI	09905-002-97-74
23	2	END PLUG	05700-011-35-92
24	1	HOSE, 1/4x30" SS BRAIDED W/PTFE, MALE SWIVEL	04720-003-76-10

PARTS SECTION: RINSE ASSEMBLY (CONTINUED)

PARTS SECTION: CREW 44 PAWL BAR ASSEMBLY



Item	QTY	Description	Part Number
1	1	PAWL BAR WELDMENT	05700-031-72-77
2	24	SPACER, PAWL BAR DOG	05700-011-71-45
3	12	PAWL BAR DOG CASTING	09515-021-69-00
4	12	LOCKNUT, 3/8"-16 W/NYLON INSERT	05310-011-72-55
5	12	BOLT, 3/8"-16 X 1-3/4" LONG	05306-011-36-94
	1	ENTIRE ASSEMBLY	06401-131-81-00
	1	ENTIRE ASSEMBLY FOR SECURITY PACKAGE	06401-231-81-00

PARTS SECTION: PAWL BAR BRACKET ASSEMBLY



The PAWL BAR ROLLER REPLACEMENT KIT comes with items 2, 3, 5 and 6.

Item	QTY	Description	Part Number
1	1	PAWL BAR BRACKET WELDMENT	05700-003-74-39
2	1	SCREW, 1/4"-20 X 1-3/4" HEX HEAD	05305-274-10-00
3	7	LOCKNUT, 1/4"-20 HEX W/NYLON INSERT	05310-374-01-00
4	6	WASHER, S/S	05311-174-01-00
5	1	ROLLER, BRACKET ROD	05700-011-68-16
6	1	SHAFT, ROLLER, 3/8" X 1.13"	05700-011-68-14
		PAWL BAR ROLLER REPLACEMENT KIT	06401-003-11-80


PARTS SECTION: PAWL BAR GUTTER ASSEMBLY

Item	QTY	Description	Part Number
1	1	TOP GUIDE BLOCK	05700-011-69-49
2	1	BOTTOM GUIDE BLOCK	05700-011-69-50
3	1	PAWL BAR GUTTER WELDMENT	05700-021-66-86
4	1	DRIVE GUTTER GASKET (NOT SHOWN)	05330-011-68-55
	1	GUTTER WELDMENT REPLACEMENT KIT (W/HARDWARE)	06401-003-09-95
	1	GUIDE BLOCK REPLACEMENT KIT	06401-003-10-15

PARTS SECTION: RACK PADDLE ASSEMBLY



Item	QTY	Description	Part Number
1	1	RACK PADDLE WELDMENT	05700-003-76-71
2	1	BUMPER, RACK PADDLE	09330-003-74-82
3	2	SCREW, 1/4"-20 X 7/8" SS HH	05305-274-05-00
4	2	LOCKNUT, 1/4"-20 LOW PROFILE W/NYLON INSERT	05310-374-02-00
5	1	LOCKNUT, 1/4"-20 HEX W/NYLON INSERT	05310-374-01-00
6	1	SCREW, 1/4"-20 X 2-3/4" HEX HEAD	05305-003-31-63
7	1	MAGNET	05930-003-31-63
8	1	WASH/RINSE END CAP	05700-011-60-92
	1	ENTIRE ASSEMBLY	05700-003-76-74

PARTS SECTION: RINSE PADDLE ASSEMBLY, L-R



Item	QTY	Description	Part Number
1	1	RINSE PADDLE WELDMENT L-R	05700-003-76-69
2	1	STUD, 1/4"-20 X 8.50" LONG, S/S, DOUBLE ENDED THREAD	05306-003-76-31
3	2	LOCKNUT, 1/4"-20 HEX W/NYLON INSERT	05310-374-01-00
4	2	BUMPER, RACK PADDLE	09330-003-74-82
5	4	LOCKNUT, 1/4"-20 LOW PROFILE W/NYLON INSERT	05310-374-02-00
6	4	SCREW, 1/4"-20 X 7/8" LONG SS HH	05305-274-05-00
7	1	MAGNET	05930-003-31-63
8	1	WASH/RINSE END CAP	05700-011-60-92
	1	ENTIRE ASSEMBLY	05700-003-76-72



NOTE: Order the O-Ring for the Drain Stopper using part number 05330-400-05-00.

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DOOR BRACKET ASSEMBLY P/N: 05700-003-75-76



PARTS SECTION: VENTILATION COWL PARTS

Item	QTY	Description	Part Number
1	1	VENTILATION COWL	05700-003-77-50
2	1	VENTILATION SCOOP	05700-003-75-74
3	1	VENTILATION DUCT ADAPTER	05700-003-75-73
4	1	DAMPER, VENTILATIONSCOOP	05700-003-74-76
5	2	CURTAIN HOOK	05700-003-17-98



PARTS SECTION: DRIVE ASSEMBLY

PARTS SECTION: DRIVE ASSEMBLY

Item	QTY	Description	Part Number
1	1	HUB, DRIVE	05700-011-67-97
2	1	BEARING, ROLLER WC88013	17181
3	1	GEAR, 50/1 DRIVE MOTOR	06105-011-71-88
4	2	W-COUPLING & EXPANSION LEGS WELD	05700-021-67-50
5	1	BLOCK, PILLOW	03120-021-71-87
6	1	W-DRIVE SUPPORT WELDMENT	05700-003-75-61
7	1	F-SOCKET, DRIVE	05700-021-67-39
8	1	F-PLATE, SPACER	16758
9	1	PLATE, DRIVE ROD	05700-021-67-42
10	1	SPRING, DRIVE	05315-011-83-51
11	3	WASHER, 1/2 FLAT S/S	5311-011-71-93
12	1	BOLT, 1/2-13 X 1 3/4	05305-011-71-94
13	12	3/8 LOCKWASHER	05311-276-01-00
14	8	WASHER 3/8" FLAT S/S	05311-176-01-00
15	12	NUT, HEX 3/8-16 S/S	05310-276-01-00
16	4	BOLT, 3/8-16 X 1 3/4" LG	05306-011-36-94
17	4	3/8-16 X 3/4" LONG	05306-011-71-60
18	2	WASHER, S/S 1/4-20 I.D.	05311-174-01-00
19	4	LOCKNUT, 1/4-20 HEX W/NYLON INSERT	05310-374-01-00
20	2	BOLT, HEX HEAD 1/4 - 20 X 3/4	05305-274-04-00
21	3	LOCKWASHER, SPRING 1/4	05311-274-01-00
22	1	WASHER, 5/16 - 18 S/S	05311-175-01-00
23	1	SET SCREW, 5/16-18 X 1/4	05305-002-98-39
24	1	COLLAR, SHAFT CONVEYOR DRIVE	05700-011-89-18
25	1	W-DRIVE LEVER WELDMENT	05700-003-78-03
26	2	SCREW, 10-32 X .75 SHOULDER .25	05305-011-86-65
27	2	SCREW, 1/4-20 x 5/8 S/S HEX HEAD	05305-274-24-00
28	1	STUD, 1/4-20 x 5.75 ALL THREAD	05307-003-79-67
29	4	NUT, HEX 1/4 - 20	05310-274-01-00

PARTS SECTION: BOOSTER HEATER OPTION



Item	QTY	Description	Part Number
1	1	BOOSTER HEATER	SEE CHART
2	2	HOSE, 1/2 x 42" SS BRAIDED W/PTFE, MALE SWIVEL	04720-003-76-09
3	2	COUPLING, 1/2" X 3/4", BRASS	04730-204-07-00
4	2	ELBOW, 90 DEGREE 1/2 STREET BRASS	04730-206-08-00
5	2	ELBOW, 1/2 NPT 90 BRASS	04730-011-42-96
6	2	NIPPLE, 1/2" X 6" LONG TUBE, APEX	04730-003-62-38
7	1	FITTING, 3/4" STRAIGHT SNAP IN (NOT SHOWN)	05975-003-77-46

BOOSTER HEATER	Part Number
12 kW (40 degree F Rise) 208V 3-PHASE	04540-003-76-58
12 kW (40 degree F Rise) 240V 3-PHASE	04540-003-76-60
12 kW (40 degree F Rise) 480V 3-PHASE	04540-003-76-62
12 kW (40 degree F Rise) 208V 1-PHASE	04540-003-76-57
12 kW (40 degree F Rise) 240V 1-PHASE	04540-003-76-59
17.3 kW (70 degree F Rise) 208V 3-PHASE	04540-003-76-64
18 kW (70 degree F Rise) 240V 3-PHASE	04540-003-76-66
18 kW (70 degree F Rise) 480V 3-PHASE	04540-003-76-68
18 kW (70 degree F Rise) 208V 1-PHASE	04540-003-76-63
18 kW (70 degree F Rise) 240V 1-PHASE	04540-003-76-64

BOOSTER HEATER SCHEMATIC (3-PHASE)

USE THIS SCHEMATIC FOR THE FOLLOW-ING BOOSTER HEATER OPTIONS:

- 208V 60HZ 3-PHASE 12kW (40° RISE)
- 230V 60HZ 3-PHASE 12kW (40° RISE)
- 460V 60HZ 3-PHASE 12kW (40° RISE)
- 208V 60HZ 3-PHASE 18kW (70° RISE)
- 230V 60HZ 3-PHASE 18kW (70° RISE)
- 460V 60HZ 3-PHASE 18kW (70° RISE)





BOOSTER HEATER SCHEMATIC (1-PHASE 12kW)

USE THIS SCHEMATIC FOR THE FOLLOW-ING BOOSTER HEATER OPTIONS:

- 208V 60HZ 1-PHASE 12kW (40° RISE)
- 230V 60HZ 1-PHASE 12kW (40° RISE)



BOOSTER HEATER SCHEMATIC (1-PHASE 18kW)

USE THIS SCHEMATIC FOR THE FOLLOW-ING BOOSTER HEATER OPTIONS:

- 208V 60HZ 1-PHASE 18kW (70° RISE)
- 230V 60HZ 1-PHASE 18kW (70° RISE)



TEMPERATURE BOARD





Item	QTY	Description	Part Number
1	1	CYCLIC TEMPERATURE BOARD	06685-002-74-86
2	1	GAUGE COVER, RED LEXAN	05700-002-75-62
3	8	NUT, THUMB 6-32 NYLON	05310-002-83-12
4	1	DECAL, TEMPERATURE DISPLAY	09905-003-79-03
5	2	RTD TEMPERATURE PROBE (NOT SHOWN)	06680-002-16-80



LEGEND

GND

Н1

M1

M2

ΜЗ

1MDL

2MDL

S1

22

23

<u>S</u>4

52

Τ1

Τ2

E1

TS1

WFS

FRS

R1

R2

RЗ

R4

HC1

C1

С2

ΤL

PLC1

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SCHEMATIC, CREW 44 (208/230 VOLT, 60 HZ, 1 PHASE)