# INSTALLATION/OPERATION & TECHNICAL MANUAL

FOR JACKSON MODELS:

Delta 5

Delta 5 D





Jackson WWS, INC.
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March 8, 2013 P/N 7610-003-37-08 (Revision D)

#### MANUFACTURERS WARRANTY

#### ONE YEAR LIMITED PARTS & LABOR WARRANTY

ALL NEW JACKSON DISHWASHERS ARE WARRANTED TO THE ORIGINAL PURCHASER TO BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP, UNDER NORMAL USE AND OPERATION FOR A PERIOD OF (1) ONE YEAR FROM THE DATE OF PURCHASE, BUT IN NO EVENT TO EXCEED (18) EIGHTEEN MONTHS FROM THE DATE OF SHIPMENT FROM THE FACTORY.

Jackson WWS agrees under this warranty to repair or replace, at its discretion, any original part which fails under normal use due to faulty material or workmanship during the warranty period, providing the equipment has been unaltered, and has been properly installed, maintained and operated in accordance with the applicable factory instruction manual furnished with the machine and the failure is reported to the authorized service agency within the warranty period. This includes the use of factory specified genuine replacement parts, purchased directly from a Jackson authorized parts distributor or service agency. Use of generic replacement parts may create a hazard and void warranty certification.

The labor to repair or replace such failed part will be paid by Jackson WWS, within the continental United States, Hawaii and Canada, during the warranty period provided a Jackson WWS authorized service agency, or those having prior authorization from the factory, performs the service. Any repair work by persons other than a Jackson WWS authorized service agency is the sole responsibility of the customer. Labor coverage is limited to regular hourly rates, overtime premiums and emergency service charges will not be paid by Jackson WWS.

Accessory components not installed by the factory carry a (1) one year parts warranty only. Accessory components such as table limit switches, pressure regulators, pre rinse units, etc. that are shipped with the unit and installed at the site are included. Labor to repair or replace these components is not covered by Jackson WWS.

This warranty is void if failure is a direct result from shipping, handling, fire, water, accident, misuse, acts of god, attempted repair by unauthorized persons, improper installation, if serial number has been removed or altered, or if unit is used for purpose other than it was originally intended.

#### TRAVEL LIMITATIONS

Jackson WWS limits warranty travel time to (2) two hours and mileage to (100) one hundred miles. Jackson WWS will not pay for travel time and mileage that exceeds this, or any fees such as those for air or boat travel without prior authorization.

## WARRANTY REGISTRATION CARD

The warranty registration card supplied with the machine must be returned to Jackson WWS within 30 days to validate the warranty.

#### REPLACEMENT PARTS WARRANTY

Jackson replacement parts are warranted for a period of 90 days from the date of installation or 180 days from the date of shipment from the factory, which ever occurs first.

#### PRODUCT CHANGES AND UPDATES

Jackson WWS reserves the right to make changes in design and specification of any equipment as engineering or necessity requires.

THIS IS THE ENTIRE AND ONLY WARRANTY OF JACKSON WWS. JACKSON'S LIABILITY ON ANY CLAIM OF ANY KIND, INCLUDING NEGLIGENCE, WITH RESPECT TO THE GOODS OR SERVICES COVERED HEREUNDER, SHALL IN NO CASE EXCEED THE PRICE OF THE GOODS OR SERVICES OR PART THEREOF WHICH GIVES RISE TO THE CLAIM.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING FOR FITNESS OR MERCHANTABILITY, THAT ARE NOT SET FORTH HEREIN, OR THAT EXTEND BEYOND THE DURATION HEREOF. UNDER NO CIRCUMSTANCES WILL JACKSON WWS BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, OR FOR THE DAMAGES IN THE NATURE OF PENALTIES, ARISING OUT OF THE USE OR INABILITY TO USE ANY OF ITS PRODUCTS.

#### ITEMS NOT COVERED

This warranty does not cover cleaning or deliming of the unit or any component such as, but not limited to, wash arms, rinse arms or strainers at anytime. Nor does it cover adjustments such as, but not limited to timer cams, thermostats or doors, beyond 30 days from the date of installation. In addition, the warranty will only cover the replacement of wear items such as curtains, drain balls, door guides or gaskets during the first 30 days after installation. Also, not covered are conditions caused by the use of incorrect (non-Commercial) grade detergents, incorrect water temperature or pressure, or hard water conditions.



CALL 1-888-800-5672 TO REGISTER THIS PRODUCT! FAILURE TO DO SO WILL VOID THE WARRANTY!

LLAME AL 1-888-800-5672 PARA REGISTRAR ESTE PRODUCTO!
AL NO HACERLO LA GARANTIA SERA ANULADA!

S.V.P. APPELER 1-888-800-5672 POUR ENREGISTRER CE PRODUIT, LA GARANTIE SERA ANNULEE POUR TOUT PRODUIT NON- ENREGISTREE

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REVISION/ PAGE	REVISION DATE	MADE BY	APPLICABLE ECN	DETAILS
А	05-25-2007	MAW	N/A	Release to production.
24	10-04-2007	MAW	7934	Changed cover on power junction box.
10	05-20-2009	ARL	QOF 339	Updated programming page diagram.
В	04-26-2012	RLC	QOF 386	Updated location of door switch on schematic.
С	04-27-2012	RLC	QOF 386	Added EnergyStar logo.
D	03-08-13	RLC	QOF NDB-219	Updated company logo

## NOMENCLATURE FOR THE MODELS COVERED IN THIS MANUAL



# Delta 5

Delta 5 - Low temperature, chemically sanitizing, with a booster tank. Detergent, rinse aid & sanitizer chemical feeder pumps

Delta 5 D - Dual door. Low temperature, chemically sanitizing, with a booster tank. detergent, rinse aid & sanitizer chemmical feeder pumps

Model:
Serial No.:
nstallation Date:
Service Rep. Name:
Phone No :

Jackson WWS, INC. provides technical support for all of the dishmachines detailed in this manual. We strongly recommend that you refer to this manual before making a call to our technical support staff. Please have this manual with you when you call so that our staff can refer you, if necessary, to the proper page. Technical support is available from 8:00 a.m. to 5:00 p.m. (EST), Monday through Friday. Technical support is not available on holidays. Contact technical support toll free at 1-888-800-5672. Please remember that technical support is available for service personnel only.

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# SECTION 1: SPECIFICATION INFORMATION

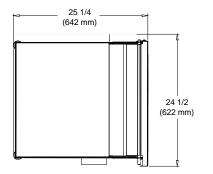
# **SECTION 1: SPECIFICATION INFORMATION**

# **SPECIFICATIONS OF THE DELTA 5**

F				ELECTRICAL REQUIREMENTS:					
OPERATING CAPACITY ( NSF RATED):		WASH PUMP MOTOR HP 3/4					<b>'</b> 4		
RACKS PER HOUR		29	*******	0				0,	•
DISHES PER HOUR		725				RINSE		TYPICA	l
GLASSES PER HOUR		725				HEATER		ELECTRIC	AL
			<u>VOLTS</u> 115	<u>PH</u> 1	<u>HZ</u> 60	RATINGS 2KW@110V	*16 A	CIRCUI 20 AMP	
OPERATING CYCLES (SECONDS):			110	•	00	21(1/10)	10 /	20 AWI	
NORMAL CYCLE:			* This d	ishmar	chine is	designed so the	nat the	wash moto	r is never
						sh heater is on.			
WASH TIME		45				amperages.			•
RINSE TIME TOTAL CYCLE TIME		25 90							
TOTAL CTOLE TIME		90	NOTE:	Tvpica	l Elect	rical Circuit is	based u	ıpon (1) 12:	5% of the
						of the machin			
						as listed in th			
WASH TANK OARASITY (SALLONS)		4.0				more stringer			
WASH TANK CAPACITY (GALLONS):		1.2				vays verify wi			
						nal and local o			
WASH PUMP CAPACITY (GPM):		61	provided in this manual simply for reference and may change						
			without	notice	e at an	y given time.			
OPERATING TEMPERATURES:									
			FRAME	DIME	NSION	S:			
WASH (MINIMUM)	(48.9°C)		WIDTH				10	200 0mm)	24.4/2"
WASH (RECOMMENDED) RINSE (MINIMUM)	(60.0°C) (48.9°C)		WIDTH DEPTH					322.3mm) 11.35mm)	24 1/2" 25 1/4"
RINSE (RECOMMENDED)	(60.0°C)			WITH	FRON	T DOOR OPEN		33.45mm)	36 3/4"
- ( /	(,		HEIGHT	-				0.6mm) <sup>′</sup>	39"
			MAXIMU						
WATER REQUIREMENTS:			CHAMB	ER CL	EARA!	NCE	(2	292.1mm)	11 1/2"
WATER LINE SIZE NPT		1/2"	FRAME	DIME	NSION	(DOUBLE DO	DR):		
DRAIN LINE SIZE NPT		2"	WIDTH			•	•	22.3MM)	24 1/2"
FLOW PRESSURE		20 ±5 PSI	DEPTH					4.375MM)	28 1/8"
MINIMUM CHI ODINE DEGLUDED (DDM).		50	DEPTH, HEIGHT		DOOF	ROPEN		1.275MM) 0.6MM)	51 5/8" 39"
MINIMUM CHLORINE REQUIRED (PPM):		50	CHAMB		FARAI	NCF		292.1MM)	39 11 1/2"
			NOTE:	Alway	s refei	to the mach	ne dat	a plate for	specific
			electric	al and	water	requirements.	The m	aterial pro	vided on
						rence only and	may b	e subject to	o change
			without	notice	э.				

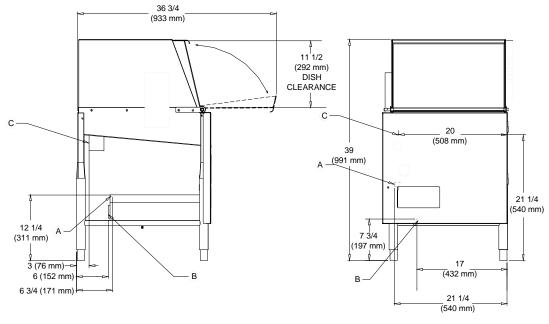
# **SECTION 1: SPECIFICATION INFORMATION**

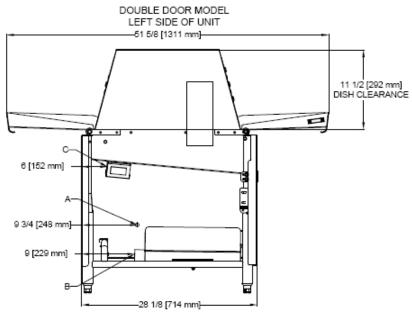
#### **DIMENSIONS**



- A Incoming Water Connection
- B Drain Connection 2" IPS
- C Electrical Connection Point

NOTE: All vertical dimensions are at lowest point due to adjustable bullet feet and may be raised an additional 2 3/4".





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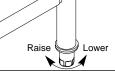


#### INSTALLATION INSTRUCTIONS

VISUAL INSPECTION: Before installing the unit, check the container and the machine for any damage. A damaged container could be an indication of damage to the unit. If there is damage to both the container and the unit, DO NOT throw away the container. The dishmachine has been inspected and packed at the factory with the expectation that it will arrive to you in new, undamaged condition. However, rough handling by carriers or others may damage the unit while in transit. If this situation does occur, do not return the unit to Ecolab; instead contact the carrier and ask them 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:** Remove the machine from the container and inspect for any missing parts. If an item appears to be missing, contact your Ecolab representative immediately to report it.

**LEVEL THE DISHMACHINE:** The dishmachine(s) covered in this manual are designed to operate on a level surface. Ensure that the machine is level from side to side and from front to back; adjust the unit's bullet feet as required. Failure to level the dishmachine may cause decreased washing performance.



Frame with Adjustable Foot

**PLUMBING THE DISHMACHINE:** All plumbing connections must comply with all applicable local, state and national plumbing codes. The plumber is responsible for flushing the incoming water line prior to connecting it to remove all foreign debris that may get trapped in the valves or cause an obstruction. Any valves that are fouled by matter left in the water line and the expenses resulting are not the responsibility of the manufacturer.

**CONNECTING THE DRAIN LINE:** The Omega 5 drain requires a minimum 2" NPT piping that is pitched at least 1/4" per foot. 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 5 gallons per minute.

**WATER SUPPLY CONNECTION:** Install the water supply line (1/2" NPT minimum) to the dishmachine line y-strainer using copper pipe. It is recommended that a water shut-off valve be installed between the main supply and the machine to allow for service. The water supply line must be capable of 20  $\pm 5$  PSI "flow" pressure at the recommended temperature as indicated on the data plate.



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 Omega 5 does not come with a water pressure regulator as standard equipment.

It is also recommended that a shock absorber (not supplied with the Omega 5) be installed in the incoming water line. This prevents line hammer (hydraulic shock), induced by the solenoid valve, which can cause damage to the equipment.



Y-Strainer

**PLUMBING CHECK:** Slowly turn on the water supply to the machine after connecting the incoming fill line and drain line. Check for leaks and repair as required. Leaks must be repaired prior to placing the machine in operation.

#### **ELECTRICAL INSTALLATION INSTRUCTIONS**

**ELECTRICAL POWER CONNECTION:** Electrical and grounding connections must comply with all applicable portions of the National Electric Code (ANSI/NFPA 70) and/or other electrical codes that may apply.

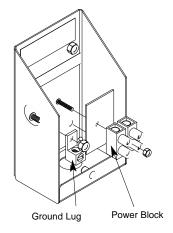
Disconnect the electrical power supply and lockout the disconnect switch to indicate that you are working on the circuit.

The dishmachine data plate is located on the left front corner of the machine. Refer to this data plate for information concerning the unit's specific electrical requirements.

To install the incoming power lines, open the connection box by removing the connection box lid. Install 1/2" conduit into the pre-punched holes in the back of the connection box. Route the power wires and connect to the power block and grounding lug. Install the service wires (L1 and N) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. Wires should be firmly secured in place.

It is recommended that "De-Ox" or another similar anti-oxidation agent be used on all voltage connections.

**VOLTAGE CHECK:** Ensure that the machine is off and apply power to the machine. Check the incoming power at the terminal block and ensure it corresponds to the voltage on the machine data plate. 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 personnel of the location of the service breaker. Replace all covers and tighten the screws.



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.

#### **OPERATION INSTRUCTIONS**

OPERATIONAL START-UP AND CHECK: Before proceeding with the start-up, verify the following:

- 1. Open the door and verify that the sump strainer is correctly installed in the sump.
- 2. Verify that the drain stopper is in position.
- 3. Check that the plugs are securely screwed into the ends of the wash arm.
- 4. Check that the wash arm is securely screwed into the stationary base and that it rotates freely.
- 5. Check the levels in all chemical containers and replace if necessary.

#### **INSTALLATION/INITIAL START-UP PROCEDURE:**

- 1. Turn on dishmachine
- a) Turn on the incoming power to the machine at the circuit disconnect box.
- b) Turn on the dishmachine by pressing the ON/OFF button. The red light will come on.
- c) Check voltage at incoming terminals L1& L2. The voltage measured at these points should match data plate voltage.
- d) If voltages are in required range, close the control box cover.
- 2. Fill Rinse Booster Heater with Water
- a) Before the heater element can be energized, the rinse booster heater must be initially filled with water. Damage to the heater element will occur if the element is not submerged in water. To initially fill the booster heater with water:
- i) Press and hold the FILL button to turn on the incoming water solenoid valve. Continue holding the button until you hear water entering the wash chamber through the airgap, then release the button. The rinse booster heater is now filled with water.
  - ii) Turn off the unit by pressing the on/off switch.
- 3. Enable Heater Element
- a) For the initial start-up only, the heater element must be enabled. The machine is shipped from the factory with the heater element disabled. This is done to ensure that the heater element is not damaged by energizing the element without the element being submerged in water. To enable the heater element:
  - i) Remove the booster heater cover panel.
  - ii) Connect the tagged white/blue wires.
  - iii) Replace heater cover.
  - iv) Press the on/off switch, heaters will energize to maintain booster heater temperature.

**Note:** Water must be in the sump while the machine is running to avoid running the pump dry and causing damage to the pump seal.

4. Adjust dishmachine fill level.

If the water level is not between the linses on the drain standpipe, it will require adjustment. Check to ensure that the recommended water pressure is being supplied to the machine (20 ±5 PSI is required). If the water pressure is correct then the electronic timer will need adjustment. Use the following steps to adjust the fill time.

- A. Open control box cover.
- B. Adjust fill time as per instructions on [aseio of this section.
- C.Open and close the door to run a cycle, then check the water level. Adjust as necessary then close the control box cover.

#### **OPERATION INSTRUCTIONS (CONTINUED)**

**NOTE:** The machine must run a complete cycle to drain and fill. If the machine is not allowed to drain, the water will build up inside the tub. After the initial fill, the rinse water for the current cycle will become the wash water for the next cycle.

The dishmachine is now ready to proceed with the washing of dishes.

**WARNING:** Certain materials, including silver, silver plate, aluminum and pewter, are attacked by sodium hypochlorite sanitizers (bleach).

**PREPARING DISHES:** Preparation of the ware will help ensure good results and less re-washes. If not done properly the dishes will not be clean and will reduce the efficiency of the dishmachine.

The following steps should be followed to ensure good results:

- A. Remove all scraps and gross soil into a garbage can.
- B. Separate and pre-soak silverware.
- C. Separate and pre-soak the egg and casserole dishes.
- D. Scrape all ware with a brush or spatula.
- E. Flush cups, bowls and glasses with running water.
- F. Prewash dishware by soaking or spraying with a pre-rinse hose.
- G. Place dishes and cups in dish rack. Cups should be upside down (so they don't hold water).
- H. Place glasses and flatware in their respective racks. Scatter flatware loosely in rack. Glasses should be placed upside down in a properly sized rack. For optimal results, flatware should be washed twice, the first being horizontal, the second in a special rack to hold flatware vertical.

#### DAILY MACHINE PREPARATION: Before proceeding with start-up, verify the following:

- A. Open door and verify that the sump strainer is in place in the sump.
- B. Verify that the drain stopper is in position.
- C. Check that the plugs are securely screwed into the ends of all wash arms.
- D. Check that the wash arms are securely screwed into the stationary bases and rotate freely.
- E. Check levels in all chemical containers and replace if empty.
- F. For initial fill, close doors then depress the "FILL" switch to the "FILL" position.

#### WASHING A RACK OF WARE:

- A. Open doors, place a full rack into the machine, and close doors. Push the start switch and hold until unit starts (about 2 seconds).
- B. After cycle is completed open doors and remove rack.
- C. Repeat steps A and B.

#### SHUT DOWN AND CLEANING:

- A. At the end of mealtime, move the "ON/OFF" switch to the "OFF" position.
- B. Open doors and manually remove drain stopper to drain the unit.
- C. Remove and clean upper and lower wash arms.
- D. Remove and clean the sump strainer.

# CHEMICAL DISPENSING EQUIPMENT



**WARNING:** CHLORINE-BASED SANITIZERS CAN BE DETRIMENTAL TO YOUR MACHINE IF THE CHEMICAL SOLUTION IS TOO STRONG. SEE YOUR CHEMICAL PROFESSIONAL TO ENSURE YOUR DISPENSER IS SET UP CORRECTLY.

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.

#### TO PREPARE CHEMICAL FEEDER PUMPS FOR OPERATION

The Delta 5 dismachines are supplied with detergent, rinse additive and sanitizer dispensing chemical feeder pumps. Locate the open ends of the chemical tubes with the tube stiffeners and place each one in the appropriate container.

- A. **Red** Tubing = **Detergent**
- B. Blue Tubing = Rinse Aid
- C. White Tubing = Sanitizer

#### PRIMING CHEMICAL FEEDER PUMPS

Chemical feeder pumps need priming when the machine is first installed or if for some reason the chemical lines have been removed and air is allowed to enter.



**CAUTION:** Water must be in the sump and wash tank prior to the dispensing of chemicals. Sanitizer in concentration is caustic and may cause damage without dilution.

- 1. Verify that the proper chemical tube stiffener inlet is in the proper container.
- 2. Use the prime switches located on the control panel at the bottom of the unit to prime each pump. The switches are clearly marked as to what chemical feeder pump they are assigned to.
- 3. To prime the pumps, hold the switch in the momentary position until chemical can be observed entering the sump.
- 4. Detergent is dispensed as required during the wash cycle by the universal timer. The amount of detergent may need to be increased or decreased depending on water quality and type of detergent.
- 5. Rinse additive is dispensed as required into the final rinse. The amount of rinse aid may need to be adjusted depending on water hardness and results.
- 6. Sanitizer (either chlorine or iodine) is dispensed into the final rinse. The amount of sanitizer may need to be adjusted depending on the concentration and type of sanitizer used.
- 7. Please refer to the next page for instruction on adjusting the chemical feeder pumps on the universal timer.



WARNING: Some of the chemicals used in dishwashing may cause chemical burns if they come in contact with your skin. Wear protective gear when handling these chemicals. If you do come in contact with these chemicals, immediately flush the affected area with fresh water.

## PROGRAMMING INSTRUCTIONS FOR CHEMICAL FEEDER PUMPS (FOR INSTALLATION TECHNICIAN ONLY)

To access the programming mode, the machine must be ON, and idle (between cycles).

On the timer board, press and hold both the MOVE and ENTER buttons on the timer board simultaneously for two seconds.

The PROGRAM light will illumniate.

Once in the programming mode, the MOVE button is used to scroll between the programming categories and the ENTER button is used to select the category.

Press the MOVE button to move the blinking light between FILL, RINSE AID, DETERGENT or SANITIZER.

Press the ENTER button for the chosen category.

The PROGRAM light will illuminate.

To change the value of a parameter, use the MOVE button to illuminate the light next to the time option (time is in seconds). In the time categories, each second in use will light up. To deselect the option, press ENTER and the light will go off, press ENTER again and it will illuminate. Once you have set your time category, press the MOVE button to the ACCEPT option and press ENTER. This will save the changed parameters.

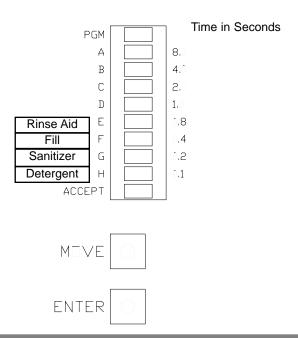
Once you press the ENTER button when the ACCEPT option is illuminated, you will exit the programming mode. To change any other values, you will have to return to the programming mode. To revert back to a previous setting, you must return to that option and change the parameter back to the previous setting.

Once in the programming mode, if there have been no keypad inputs for approximately 2 minutes, the system will automatically exit out of the programming mode. Any changes to parameters will be saved when the programming mode is automatically exited.

The wash and drain settings are not adjustable.

All time adjustments are in seconds. Refer to the chart below for the adjustable outputs.

#### Timer Programming Board



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#### **DETERGENT CONTROL**

Detergent usage and water hardness are two factors that contribute greatly to how efficiently your dishmachine will operate. Using detergent in the proper amount can become, in time, a source of substantial savings. A qualified water treatment specialist can tell you what is needed for maximum efficiency from your detergent, but you should still know some basics so you'll understand what they are talking about.

First, you must understand that hard water greatly effects the performance of the dishmachine. Water hardness is the amount of dissolved calcium and magnesium in the water supply. The more dissolved solids in the water, the greater the water hardness. Hard water works against detergent, thereby causing the amount of detergent required for washing to increase. As you use more detergent, your costs for operating the dishmachine will increase and the results will decrease. The solids in hard water also may build-up as a scale on wash and rinse heaters, decreasing their ability to heat water. Water temperature is important in removing soil and sanitizing dishes. If the water cannot get hot enough, your results may not be satisfactory. This is why Jackson recommends that if you have installed the machine in an area with hard water, that you also install some type of water treatment equipment to help remove the dissolved solids from the water before it gets to the dishmachine.

Second, hard water may have you adding drying agents to your operating cycle to prevent spotting, when the real problem is deposited solids on your ware. As the water evaporates off of the ware, the solids will be left behind to form the spotting and no amount of drying agent will prevent this. Again, using treated water will undoubtedly reduce the occurrences of this problem.

Third, treated water may not be suitable for use in other areas of your operation. For instance, coffee made with soft water may have an acid or bitter flavor. It may only be feasible to install a small treatment unit for the water going into the dishmachine itself. Discuss this option with your qualified water treatment specialist.

Even after the water hardness problems have been solved, there still must be proper training of dishmachine operators in how much detergent is to be used per cycle. Talk with your water treatment specialist and detergent vendor and come up with a complete training program for operators. Using too much detergent has as detrimental effects as using too little. The proper amount of detergent must be used for job. It is important to remember that certain menu items may require extra detergent by their nature and personnel need to be made aware of this. Experience in using the dishmachine under a variety of conditions, along with good training in the operation of the machine, can go a long way in ensuring your dishmachine operates as efficiently as possible.

Certain dishmachine models require that chemicals be provided for proper operation and sanitization. Some models even require the installation of third-party chemical feeders to introduce those chemicals to the machine. Jackson does not recommend or endorse any brand name of chemicals or chemical dispensing equipment. Contact your local chemical distributor for questions concerning these subjects.

Some dishmachines come equipped with integral solid detergent dispensers. These dispensers are designed to accommodate detergents in a certain sized container. If you have such a unit, remember to explain this to your chemical distributor upon first contacting them.

As explained before, water temperature is an important factor in ensuring that your dishmachine functions properly. The data plate located on each unit details what the minimum temperatures must be for either the incoming water supply, the wash tank and the rinse tank, depending on what model of dishmachine you have installed. These temperatures may also be followed by temperatures that Jackson recommends to ensure the highest performance from you dishmachine. However, if the minimum requirements are not met, the chances are your dishes will not be clean or sanitized. Remember, a dish can look clean, but it may not be sanitized. Instruct your dishmachine operators to observe the required temperatures and to report when they fall below the minimum allowed. A loss of temperature can indicate a much larger problem such as a failed heater or it could also indicate that the hot water heater for your operation is not up to capacity and a larger one may need to be installed.

There are several factors to consider when installing your dishmachine to ensure that you get the best possible results from it and that it operates at peak efficiency for many years. Discuss your concerns with your local chemical distributor and water treatment specialist before there is a problem.



## **SECTION 3: PREVENTATIVE MAINTENANCE**

#### PREVENTATIVE MAINTENANCE

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. Jackson highly recommends that any maintenance and repairs not specifically discussed in this manual should be performed by QUALIFIED SERVICE PERSONNEL ONLY. Performing maintenance on your dishmachine may void your warranty if it is still in effect.

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 prescrapping 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.

You may wish to also refer to the page entitled "Detergent Control" in order to learn more about how your water hardness will effect the performance of your machine. Hard water makes dishmachines work harder and decreases efficiency.

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. If a problem is discovered; secure the dishmachine using proper shut down procedures as listed in this manual and contact a QUALIFIED SERVICE AGENCY.

Some problems, however, may having nothing to do with the machine itself and no amount of preventative maintenence 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 and you should discuss it with a QUALIFIED SERVICE AGENCY to determine what can be done.

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.

# SECTION 4: TROUBLESHOOTING

# **SECTION 4: TROUBLESHOOTING SECTION**

#### **COMMON PROBLEMS**



**WARNING:** Inspection, testing and repair of electrical equipment should be performed only by qualified service per sonnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. **Exercise extreme caution at all times.** If test points are not easily accessible, disconnect power, attach test equipment and reapply power to test. When replacing electrical parts, disconnect power at source circuit breaker.

#### Problem: Water overflow from bottom of door.

- 1. Clogged drain. Remove obstruction.
- 2. Machine not level. Level machine, or increase height to the front.
- 3. Excessive inlet pressure. Install pressure reducing valve, or adjust if one is present. Ensure flow is 20 ±5 PSI.
- 4. Detergent foaming. Reduce detergent quantity.
- 5. Excessive fill time. Adjust timer fill time as per Section 2.

#### Problem: Wash motor doesn't operate on manual wash.

- 1. Loose or broken wires. Reconnect or replace wires in motor.
- 2. Defective manual wash switch. Replace.
- 3. Defective motor starting relay. Replace.

#### Problem: Motor operates on manual wash/delime but not on automatic.

1. Defective circuit in manual wash switch. Replace switch.

#### Problem: No water comes through the rinse arms when the "FILL" switch is depressed.

- 1. Water not turned on. Turn water on.
- 2. Defective solenoid valve. Replace solenoid valve.

## Problem: Little or no water coming through the rinse assemblies.

- 1. Limed up rinse heads or piping. Delime rinse heads.
- 2. Low water pressure. Increase pipe size to machine. Adjust pressure regulator.

#### Problem: Rinse water runs continuously with breaker turned off.

- 1. Defective plunger in solenoid valve. Replace.
- 2. Defective diaphragm in solenoid valve. Replace diaphragm.

## Problem: Wash temperature not at required reading on thermometer.

- 1. Check that white/blue wires are connected. See note on page 12.
- 2. Defective thermometer. Replace.
- 3. Defective thermostat. Adjust thermostat. Replace thermostat.
- 4. Rinse heater defective. Replace heater element.
- 5. Defective heater contactor R2. Replace.
- 6. Incoming inlet water temperature below required minmum.
- 7. Defective heater delay relay (R4). Replace

# **SECTON 4: TROUBLESHOOTING SECTION**

#### **COMMON PROBLEMS**



**WARNING:** Inspection, testing and repair of electrical equipment should be performed only by qualified service personnel. Certain procedures in this section require electrical tests or measurements while power is applied to the machine. **Exercise extreme caution at all times.** If test points are not easily accessible, disconnect power, attach test equipment and reapply power to test. When replacing electrical parts, disconnect power at source circuit breaker.

#### Problem: Rinse water not at required temperature range.

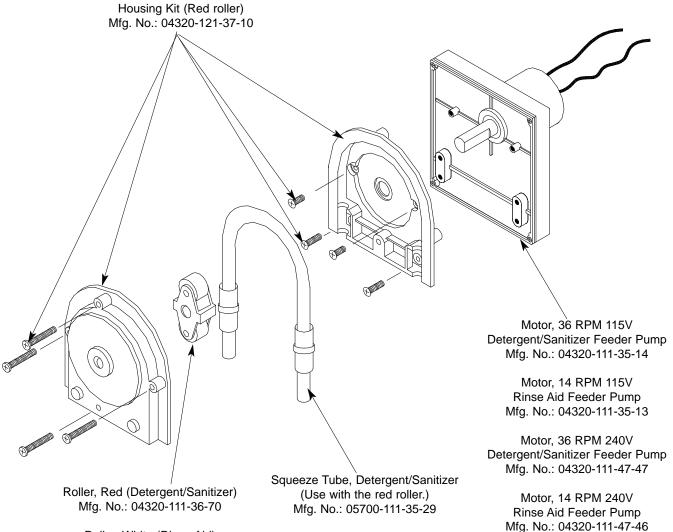
- 1. Check that white/blue wires are connected. See note in installation instructions.
- 2. Thermometer is defective. Replace.
- 3. Thermostat is defective. Adjust the thermostat. Replace if necessary.
- 4. Incoming rinse water does not meet minimum criteria indicated on machine data plate. Adjust as required.

#### Problem: No indication of pressure.

- 1. Water turned off. Turn water on.
- 2. Pressure gauge defective. Replace pressure gauge.

# SECTION 5: PARTS SECTION CHEMICAL FEEDER PUMP ASSEMBLY

Squeeze Tube Lubricant



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

Roller, Black Mfg. No.: 04320-111-65-27 Clear Squeeze Tube, Rinse Aid (Use with the white roller.) Mfg. No.: 05700-011-76-41

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

Mfg. No.: 04320-011-63-33

Motor, 14 RPM 24V

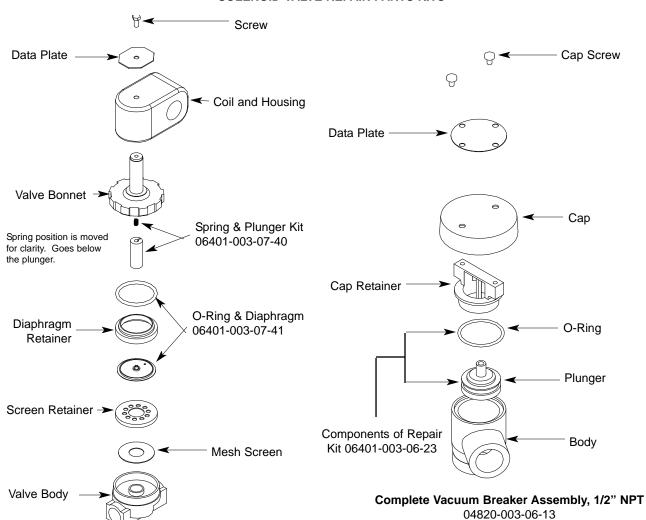
Rinse Aid Feeder Pump

1/4" Sight Tube 3/8" Sight Tube

Ecolab No.: 92001017 Ecolab No.: 96569496 Mfg. No.: N/A

Mfg. No.: 05700-111-35-33

#### SOLENOID VALVE REPAIR PARTS KITS



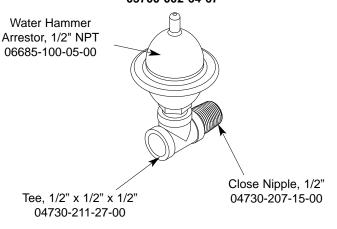
Complete 110 Volt Solenoid Valve Assembly, 1/2" 04810-100-12-18

Coil & Housing only, 1/2" 06401-003-07-43

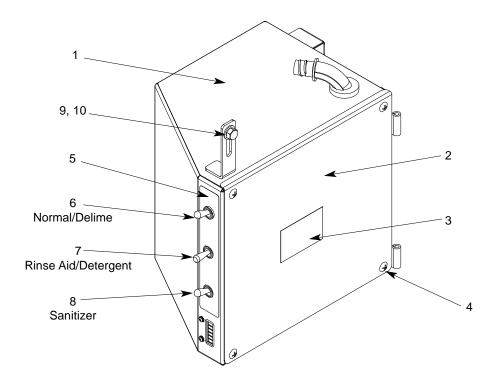
Complete 220 Volt Solenoid Valve Assembly, 1/2" 04810-100-09-18

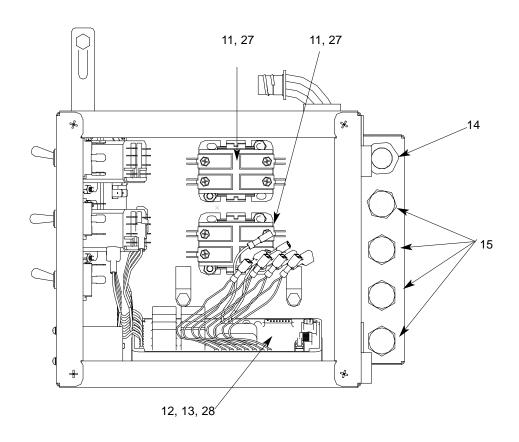
> Coil & Housing only, 1/2" 06401-003-07-44

# Water Hammer Arrestor Assembly 05700-002-64-67

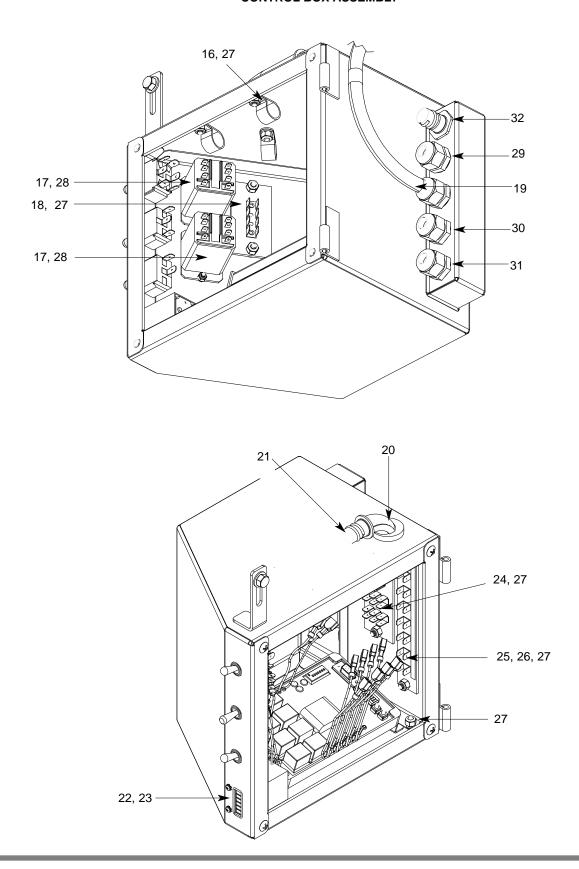


# SECTION 5: PARTS SECTION CONTROL BOX ASSEMBLY





# SECTION 5: PARTS SECTION CONTROL BOX ASSEMBLY

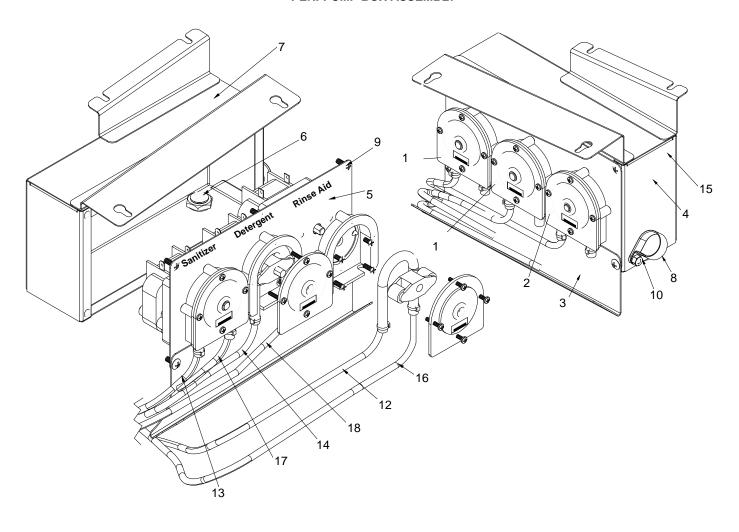


Delta 5 Installation & Operation Manual 7610-003-37-08 Issued: 05-25-2007 Revised: 03-08-2013

# SECTION 5: PARTS SECTION CONTROL BOX ASSEMBLY (CONTINUED)

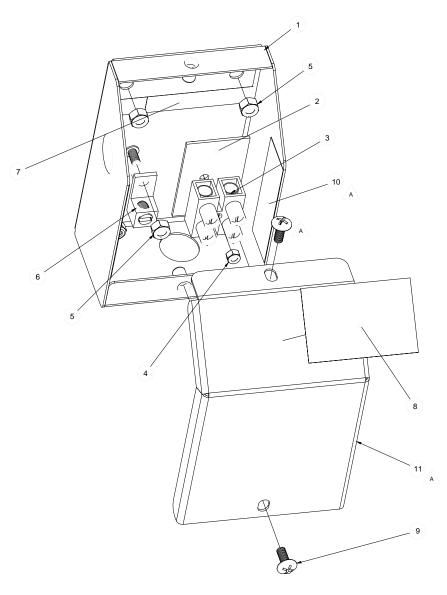
ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Control Box Weldment	05700-003-38-84
2	1	Control Box Cover	05700-003-30-54
3	1	Decal, Warning - Disconnect Power	09905-100-75-93
4	4	Screw, 10-32 x 1/2" Long, Phillips Tusshead	05305-011-39-36
5	1	Decal, Peri-pump Prime	09905-003-32-56
6	1	Switch, Delime/Normal	05930-301-21-18
7	1	Detergent/Rinse Aid Pump Prime Switch	05930-011-35-27
8	1	Sanitizer Pump Prime Switch	05930-111-38-21
9	1	Locknut, 1/4"-20 S/S Hex with Nylon Insert	05310-374-01-00
10	1	Washer, 1/4"-20 S/S	05311-174-01-00
11	2	Contactor	05945-109-05-69
12	1	Timer, Universal	05945-003-33-09
13	1	Bracket, Timer	05700- 003-02-08
14	4	Fitting, Conduit, Heyco 1/2"	05975-011-49-03
15	1	Fitting, 1/2" Straight Snap In	05975-011-65-51
16	5	Clamp, 5/8" Nylon	04730-011-39-01
17	2	Relay, 2 Pole	05945-111-35-19
18	1	Terminal Board	05940-021-94-85
19	1	Harness, Switch Panel	05700-003-35-37
20	1	Fitting, 1/2" 90 Deg. Snap In	05975-003-33-28
21	1	Conduit, 1/2" x 40"	05700-003-35-48
22	1	Cycle Counter, 115V	05990-111-35-38
23	2	Screw, 4-40 x 1/4" Phillips Pan Head	05305-002-32-38
24	1	Terminal Board	05940-002-78-97
25	1	Terminal Board	05940-001-97-91
26	1	Decal, Terminal Board 8 Position	09905-003-09-30
27	18	Locknut, 10-24 S/S Hex with Nylon Insert	05310-373-01-00
28	4	Locknut, 6-32 S/S Hex with Nylon Insert	05310-373-03-00
29	1	Harness, Wash Pump	05700-003-35-34
30	1	Harness, Drain Solenoid	05700-003-35-36
31	1	Harness, Peri-pump	05700-003-35-35
32	1	Conduit, 1/2" x 14"	05700-003-35-49

## PERI-PUMP BOX ASSEMBLY



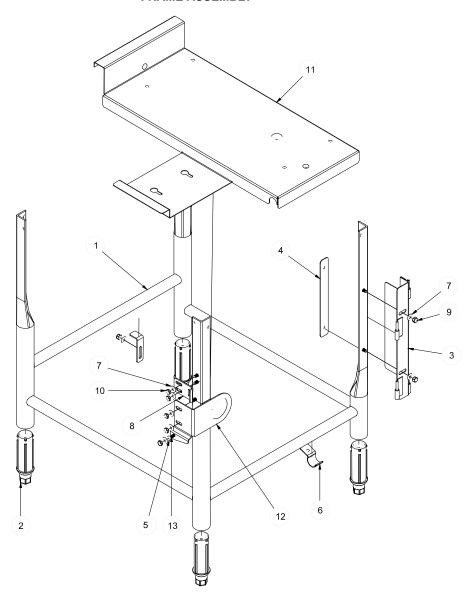
ITEM	QTY	DESCRIPTION	Mfg. No.
1	2	Peri-pump Assembly, 36 RPM	05700-002-96-08
2	1	Peri-pump Assembly, 14 RPM	05700-002-96-09
3	1	Drip Channel	05700-003-32-89
4	1	Weldment, Peri-pump Box	05700-003-32-00
5	1	Weldment, Peri-pump Box Cover	05700-003-33-80
6	1	Fitting, Conduit, Heyco 1/2"	05975-011-65-51
7	1	Clamp, 5/8" Nylon (Located inside of box)	04730-011-39-01
8	1	Clamp, 1" Nylon	04730-002-41-88
9	5	Screw, 10-32 x 1/2" Long, Phillips Tusshead	05305-011-39-36
10	3	Locknut, 10-24 S/S Hex with Nylon Insert	05310-373-01-00
11	3	Tube Stiffener (Not Shown)	05700-002-66-49
12	1	Tubing, 1/4" OD x 60" Long, Blue	05700-002-52-34
13	1	Tubing, 1/4" OD x 60" Long, White	05700-002-52-33
14	1	Tubing, 1/4" OD x 60" Long, Red	05700-011-63-18
15	1	Terminal Board (Not Shown)	05940-001-97-91
16	1	Tubing,1/4 OD x 120 Long Blue	05700-011-37-17
17	1	Tubing,1/4 OD x 120 Long Write	05700-011-37-13
18	1	Tubing,1/4 OD x 120 Long Red	05700-011-37-15

# **ELECTRICAL CONNECTION BOX ASSEMBLY**



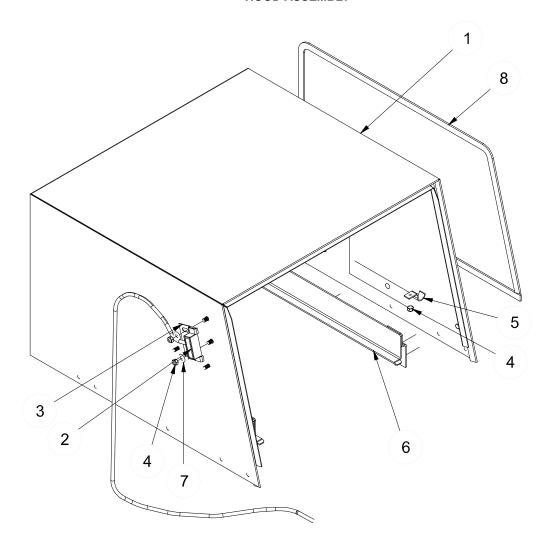
ITEM	QTY	DESCRIPTION	ECOLAB No.	Mfg. No.
1	1	Box, Power Junction Weldment	96633058	05700-003-30-58
2	1	Terminal Block Spacer	96025127	05700-011-40-05
3	1	Terminal Block	96025119	05940-500-09-61
4	1	Locknut, 6-32 with Nylon Insert	88460050	05310-373-03-00
5	5	Locknut, 10-24 with Nylon Insert	88429063	05310-373-01-00
6	1	Lug, Ground	83118000	05940-200-76-00
7	1	Decal, Power Connection	96028402	09905-011-47-64
8	1	Decal, Warning to Disconnect Power	96039821	09905-100-75-93
9	1	Screw, 10-32 x 1/2" Long, Phillips Trusshead	N/A	05305-011-39-36
10	2	Decal, Copper Conductors Only	96021365	09905-011-47-35
11	1	Cover, Solenoid Box	96634672	05700-003-46-72

# FRAME ASSEMBLY



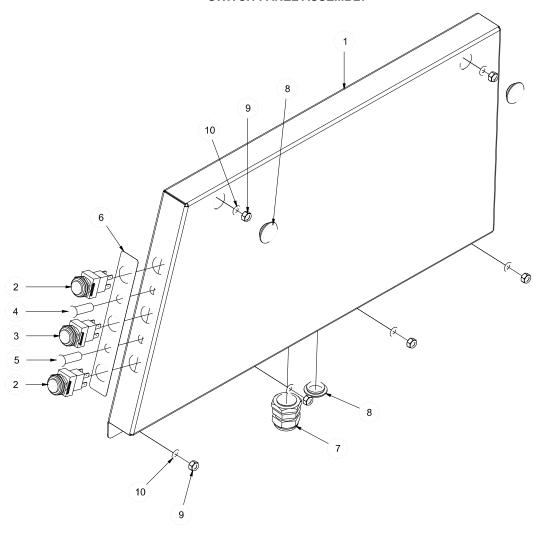
ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Frame Weldment	05700-003-09-40
2	1	Frame Weldment Double Door	05700-003-28-12
3	4	Foot, 3" Adjustable	05340-002-14-55
4	1	Plate, Hinge Weldment	05700-003-10-11
5	1	Washer, Hinge Weldment	05700-002-54-62
6	1	Spacer, PB Bolt	05700-000-29-40
7	1	Clamp, Pipe	05700-000-35-05
8	8	Washer, 1/4"-20 S/S	05311-174-01-00
9	1	Keeper, Door Panel Latch	05700-003-09-31
10	4	Locknut, 1/4"-20 S/S Hex with Nylon Insert	05310-374-01-00
11	5	Nut, Hex 1/4"-20	05310-274-01-00
12	1	Booster Mounting Plate Weldment	05700-002-51-93
13	1	Bracket, Temperature Gauge	05700-003-14-53
14	1	Bolt, 1/4"-20 x 1/2" Long	05305-274-02-00

# SECTION 5: PARTS SECTION HOOD ASSEMBLY



ITEM QTY DESCRIPTION Mfg. No.	
1 1 Hood Weldment 05700-00	3-09-56
1a 1 Hood Weldment Double Door 05700-00	3-28-17
2 1 Switch, 115V Reed 05930-00	2-36-80
3 1 Bracket, Limit Switch 05700-02	1-71-18
4 4 Locknut, 10-24 with Nylon Insert 05310-37	3-01-00
5 2 Clamp, Pipe 5/8" 05700-00	0-35-06
6 2 Rack Rail Weldment 05700-00	2-45-67
7 2 Washer, 1/4"-20 I.D. 05311-17	4-01-00
8 1 Gasket, Side Panel (5.3 Feet) 05700-00	3-35-51

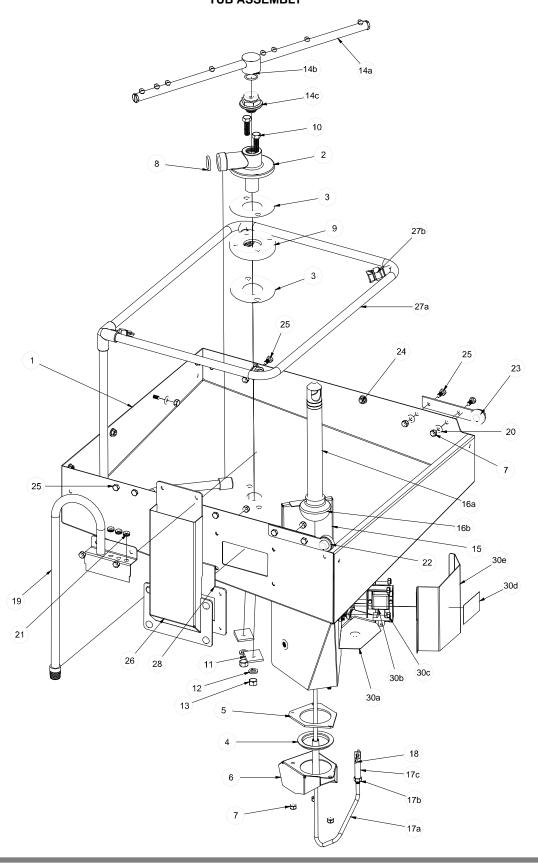
## **SWITCH PANEL ASSEMBLY**



ITEM	QTY	DESCRIPTION	Mfg. No.
		Complete Side Panel Assembly	05700-003-24-38
		Complete Side Fanel Assembly (Double Door)	05700-003-24-40
1	1	Side Panel Weldment	05700-003-24-36
1a	1	Side Panel Weldment (Double Door)	05700-003-24-37
2	2 (3)	Switch, Prime Assembly	05700-003-14-91
3	1	Switch, On/Off Assembly	05700-003-14-92
4	1 (2)	Light, Amber	05945-504-06-18
5	1 (2)	Light, Red	05945-504-07-18
6	1	Decal, Switch Panel	09905-003-08-63
7	1	Fitting, .25546	05975-011-65-51
8	3 (2)	Plug, 3/4" hole	04730-011-60-21
9	6	Locknut, 10-24 with Nylon Insert	05310-373-01-00
10	6	Washer, #10	05311-173-02-00
11	1	Decal Switch Panel (Double Door Only)	09905-003-38-95
12	1	Fitting (Double Door Only)	05975-011-49-03
13	1	switch (Double Door Only)	05930-002-36-80
14	1	bracket (Double Door Only)	05700-021-71-18
15	1	Terminal Board	05940-001-97-91

ALL NUMBERS THAT ARE IN PARENTHISES ARE FOR THE DOUBLE DOOR

# SECTION 5: PARTS SECTION TUB ASSEMBLY



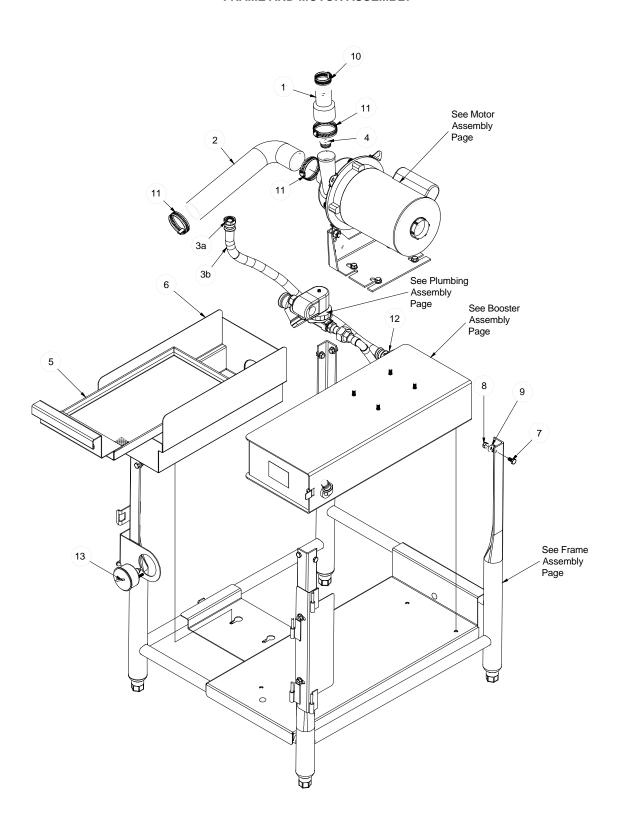
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## **TUB ASSEMBLY CONTINUED**

ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Tub Weldment	05700-003-09-51
1a	1	Tub Weldment (Double Door)	05700-003-28-15
2	1	Lower Manifold Weldment	05700-002-45-51
3	2	Manifold Gasket	05700-111-35-03
4	1	Drain Seat Insert	05700-021-34-38
5	1	Spillway Gasket	05700-111-34-52
6	1	Spillway Weldment	05700-031-37-86
7	23	Locknut, 1/4"-20 S/S Hex with Nylon Insert	05310-374-01-00
8	1	Manifold O-Ring	05330-111-35-15
9	1	Modified Casting Wedge	09515-011-46-61
10	2	Bolt, 3/8"-16 x 1 1/4" S/S	05305-276-10-00
11	2	Washer, 3/8" Bevel-Square Iron	05311-011-35-36
12	2	Lockwasher, 3/8"	05311-276-01-00
13	2	Nut, 3/8"-16 S/S Hex	05310-276-01-00
14	1	Complete Wash Arm Assembly	05700-003-31-60
14a	1	Wash Arm Weldment w/ End Plugs	05700-003-31-61
	1	Wash Arm End Plugs	05700-003-31-59
14b	1	Wash Arm O-ring	05330-002-60-69
14c	1	Wash Arm Bearing Assembly	05700-021-35-97
15	1	Sump Strainer	05700-002-60-50
16a	1	Stand Pipe Weldment	05700-021-33-29
16b	1	Stopper, Stand Pipe	05700-121-35-54
17	1	Drain Link Assembly	05700-002-45-52
17a	1	Drain Link	05700-002-40-83
17b	1	Nut, Hex, 5/16"-18	05310-275-01-00
17c	1	Drain Link Connector	05700-002-38-10
18	1	Hair Pin, 1/8" to 1"	05315-011-60-09
19	1	Fill Tube Weldment	05700-002-45-61
20	18	Washer, 1/4"-20 I.D.	05311-174-01-00
21	3	Chemical Tube Grommet	05325-002-42-65
22	1 (2)	Pivot Plate, Left Door Complete Assembly	05700-002-45-62
22a 22b	1 1	Door Pivot Plate Left Weldment	05700-002-45-63
23		Door Pivot Plate Bearing	03110-002-45-09
23 23a	1 (2) 1	Pivot Plate, Right Door Complete Assembly  Door Pivot Plate Right Weldment	05700-002-52-95 05700-002-52-94
23b	1	Door Pivot Plate Bearing	03110-002-32-94
24	3	Bolt, 1/4"-20 x 1/2" Long	05305-274-02-00
25	6	Screw, 1/4"-20 x 5/8" Long	05305-274-02-00
26	1	Air Gap Weldment	05700-003-23-48
27	1	Halo Assembly	05700-003-23-49
27a	1	Halo Weldment	05700-003-16-65
27b	4	Spray Nozzle and Receptacle	04730-002-55-61
28	1	Gasket, Air Gap	05330-003-24-17
29	2	Clamp, 1" Nylon (Not Shown, located on bottom of tub.)	04730-002-41-88
30	1	Drain Solenoid Box Assembly	05700-003-09-61
30a	1	Solenoid Box Weldment	05700-003-35-88
30b	1	Drain Solenoid, 115V	04810-200-11-00
30c	4	Locknut, 10-24 with Nylon Insert	05310-373-01-00
30d	1	Decal, Warning	09905-100-75-93
30e	1	Solenoid Box Cover	05700-003-30-25

ALL NUMBERS THAT ARE IN PARENTHISES ARE FOR THE DOUBLE DOOR

## FRAME AND MOTOR ASSEMBLY



### **SECTION 5: PARTS SECTION**

### FRAME AND MOTOR ASSEMBLY (CONTINUED)

ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Discharge Tube Connector	05700-011-70-34
2	1	Pump Suction Hose	05700-002-40-82
3	1	Discharge Hose Assembly	05700-002-45-58
3a	2	Fitting, 1/2" Pushlock, Female, Brass	04730-011-93-99
3b	1	Hose, 1/2" x 22 1/2" Long	05700-002-45-59
4	1	Wash Restrictor	05700-002-84-69
5	1	Accumulator Strainer Weldment	05700-003-33-25
6	1	Accumulator Weldment	05700-002-51-95
7	8	Bolt, 1/4"-20 x 1/2" Long	05305-274-02-00
8	18	Locknut, 1/4"-20 S/S Hex with Nylon Insert	05310-374-01-00
9	18	Washer, 1/4"-20 S/S	05311-174-01-00
10	1	Hose Clamp, 13/16 TO 1 1/2"	04730-719-06-09
11	3	Hose Clamp, 1 1/16" to 2 1/4"	04730-719-18-00
12	1	Close Nipple, 1/2" Brass	04730-207-15-00
13	1	Gauge, Thermometer	06685-111-68-48

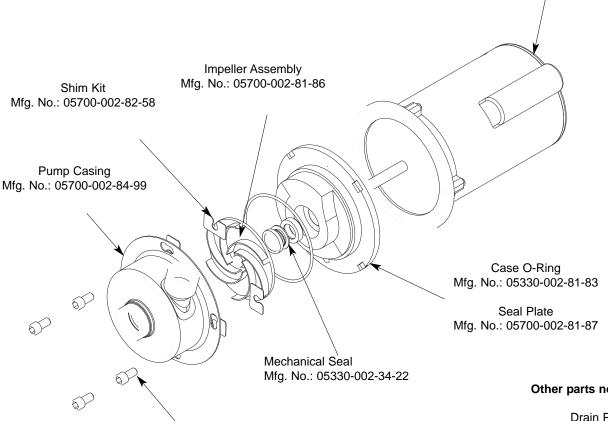
## **SECTION 5: PARTS SECTION**

#### **MOTOR & PUMP ASSEMBLY**

Complete Pump & Motor Assembly Mfg. No.: 06105-002-16-29

> Pump Only Assembly Mfg. No.: 05700-002-79-49

Motor Only Mfg. No.: 06105-002-79-61



Case Capscrew Mfg. No.: 05305-002-81-88

#### Other parts not shown.

Drain Plug Mfg. No.: 04730-002-81-89

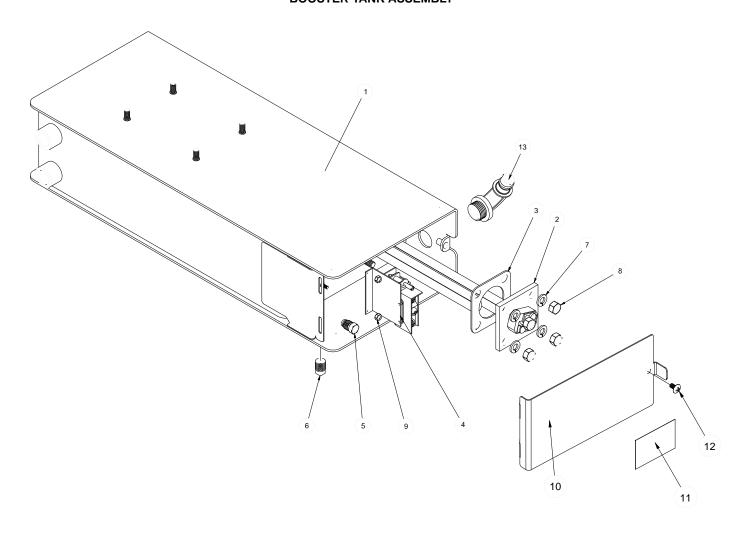
Motor Mounting Bracket Mfg. No.: 05700-002-55-52

Lockwasher, 3/8" Mfg. No.: 05311-276-01-00

Nut, Hex 3/8"-16 S/S Mfg. No.: 05310-276-01-00

Bolt, 3/8" x 3/4" Long Hex Head Mfg. No.: 05306-011-71-60

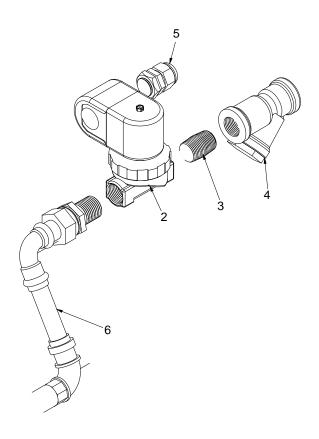
## SECTION 5: PARTS SECTION BOOSTER TANK ASSEMBLY



ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Booster Tank Weldment	05700-002-45-56
2	1	Heater, 120V, 2000 Watts	04540-002-45-13
3	1	Heater Gasket	05330-100-01-10
4	1	Thermostat	05930-003-13-65
5	1	Fitting, Imperial Brass	05310-924-02-05
6	1	Plug, 1/4" Brass	04730-209-01-00
7	4	Lockwasher, 5/16"	05311-275-01-00
8	4	Nut, 5/16"-18 S/S Hex	05310-275-01-00
9	2	Locknut, 6-32 S/S Hex w/ Nylon Insert	05310-373-03-00
10	1	Booster Tank Cover	05700-002-39-07
11	1	Decal, Warning, Disconnect Power	09905-100-75-93
12	1	Screw, 10-32 x 3/8"	05305-173-12-00
13	1	Fitting, 1/2" NPT x 90 Deg. Elbow	05975-003-35-32
13a	1	Nut, 1/2" NPT Nylon	05975-003-35-33

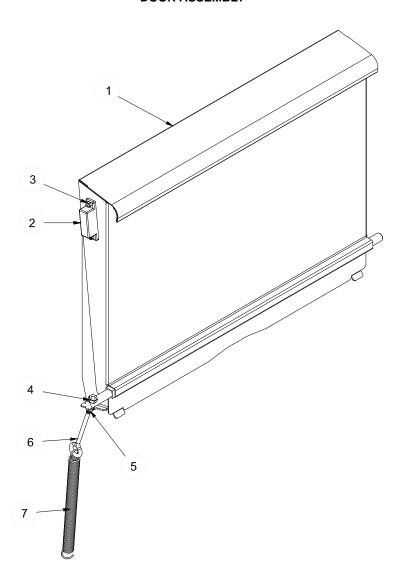
#### **SECTION 5: PARTS SECTION**

#### **INCOMING PLUMBING ASSEMBLY**



ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Incoming Plumbing Assy.	05700-003-38-08
2	1	Y-Strainer	04730-217-01-10
3	1	Nipple, Close, 1/2" NPT, Brass	04730-207-15-00
4	1	Valve, Solenoid, 1/2" NPT, 115V	04810-100-12-18
5	1	Plumbing, incoming Union	05700-003-39-37
6	1	Fitting, Liquidtiht	05975-011-49-03

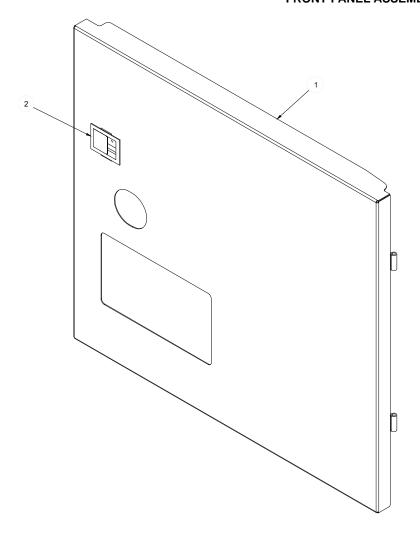
## SECTION 5: PARTS SECTION DOOR ASSEMBLY

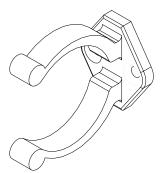


ITEM	QTY	DESCRIPTION	Mfg. No.
		Complete Door Assembly	05700-003-35-30
1	2 (2)	Door Weldment	05700-003-35-29
2	2 (2)	Magnet, Reed Switch	05930-002-68-53
3	4 (2)	Locknut, 6-32 S/S Hex with Nylon Insert	05310-373-03-00
4	2 (4)	Locknut, 1/4"-20 S/S Hex with Nylon Insert	05310-374-01-00
5	2 (2)	Nut, Hex 1/4"-20 S/S	05310-274-01-00
6	2 (2)	Bolt, 1/4"-20 Eye, S/S	05306-002-55-59
7	2 (2)	Spring, Door	05340-011-44-58

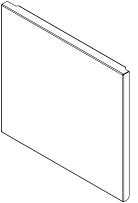
ALL NUMBERS THAT ARE IN PARENTHISES ARE FOR THE DOUBLE DOOR

## SECTION 5: PARTS SECTION FRONT PANEL ASSEMBLY





Double Door Only Panel Clips 2 per machine 05340-003-22-95



(Double Door Only) Back Panel Weldment 1 per machine 05700-003-24-42

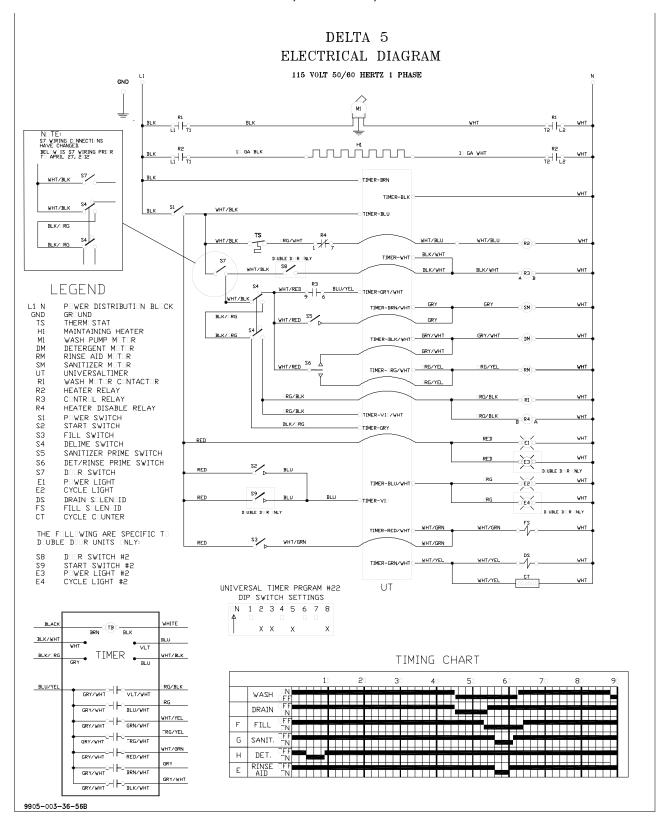
ITEM	QTY	DESCRIPTION
		Complete Panel Assembly
1	1	Panel Weldment
2	1	Handle
3	1	Back panel weldment
4	2	Panel clips

Mtg. No.	
05700-003-09-	53
05700-003-09-	54
05340-001-96-3	30
05700-002-24-4	12
05700-033-22-9	95

# SECTION 6: ELECTRICAL SCHEMATICS

#### **SECTION 6: ELECTRICAL SCHEMATICS**

#### DELTA 5 115V, 50/60 HERTZ, SINGLE PHASE



#### ALABAMA TO FLORIDA

#### **ALABAMA**

#### JONES-McLEOD APPLIANCE SVC BARKERS FOOD MACHINERY

1616 7TH AVE. NORTH BIRMINGHAM, AL 35203 (205) 251-0159 800-821-1150 FAX: (205) 322-1440 service@jones-mcleod.com

#### JONES-McLEOD APPLIANCE SVC

854 LAKESIDE DRIVE MOBILE, AL 36693 (251) 666-7278 800-237-9859 FAX: (251) 661-0223

#### **ALASKA**

#### **RESTAURANT APPLIANCE SER-**VICE

7219 ROOSEVELT WAY NE SEATTLE, WA 98115 (206) 524-8200 800-433-9390 FAX: (206) 525-2890 info@restappl.com

#### **ARIZONA**

#### **AUTHORIZED COMMERCIAL** FOOD EQMT. SVC

4832 SOUTH 35TH STREET PHOENIX, AZ 85040 (602) 234-2443 800-824-8875 FAX: (602) 232-5862 acsboss@aol.com

#### GCS SERVICE INC.

PHOENIX, AZ (602) 474-4510 800-510-3497 FAX: (602) 470-4511

#### **ARKANSAS**

#### **BROMLEY PARTS & SVC**

10TH AND RINGO P.O. BOX 1688 LITTLE ROCK, AR 72202 (501) 374-0281 800-482-9269 FAX: (501) 374-8352 service@bromleyparts.com parts@bromleyparts.com

#### GCS SERVICE.INC.

3717 CHERRY ROAD MEMPHIS, TN 38118 (901) 366-4587 800-262-9155 FAX: (901) 366-4588

#### **CALIFORNIA**

## **SERVICES**

5367 SECOND STREET IRWINDALE, CA 91706 (626) 960-9390 800-258-6999 FAX: (626) 337-4541 service@barkers.com

#### GCS SERVICE INC.

LOS ANGELES, CA (213) 683-2090 800-327-1433 FAX: (213) 683-2099

#### GCS SERVICE INC.

SANTA ANA. CA (714) 542-1798 800-540-0719 FAX: (714) 542-4787

#### GCS SERVICE INC.

S. SAN FRANCISCO, CA (650) 635-0720 800-969-4427 FAX: (650) 871-4019

#### COMMERCIAL APPLIANCE SER-VICE. INC.

6507 PACIFIC AVENUE, SUITE 102 STOCKTON, CA 95207 (916) 567-0203 (800) 464-2222 (916) 567-0266 FAX

#### GCS SERVICE INC.

SAN DIEGO, CA (858) 549-8411 800-422-7278 FAX: (858) 549-2323

#### INDUSTRIAL ELECTRIC SVC.

5662 ENGINEER DRIVE **HUNTINGTON BEACH, CA 92649** (714) 379-7100 (800-457-3783 FAX: (714) 379-7109

#### P & D APPLIANCE SVC

100 SOUTH LINDEN AVE. S. SAN FRANCISCO, CA 94080 (650) 635-1900 800-424-1414 FAX: (650) 635-1919 pndappl@aol.com

#### P & D APPLIANCE

4220-C ROSEVILLE ROAD NORTH HIGHLANDS, CA 95660 (916) 974-2772 800-824-7219 FAX:(916) 974-2774

#### COMMERCIAL APPLIANCE SER-VICE. INC.

281 LATHROP WAY, #100 SACRAMENTO, CA 95815 (916) 567-0203 (800) 464-2222 (916) 567-0324 FAX

#### **COLORADO**

#### GCS SERVICE INC.

SHERIDAN, CO (303) 371-9054 800-972-5314 FAX: (303) 371-4754

#### **HAWKINS COMMERCIAL APPLI-ANCE SERVICE**

3000 S. WYANDOT ST. ENGLEWOOD, CO 80110 (303) 781-5548 (800) 624-2117 FAX: (303) 761-5561 johns@hawkinscommercial.com

#### METRO APPLIANCE SERVICE

1640 S BROADWAY DENVER, CO 80210 (303) 778-1126 800-525-3532 FAX: (303) 778-0268 metroappls@aol.com

#### CONNECTICUT

#### GCS SERVICE INC.

HARTFORD, CT (860) 549-5575 800-423-1562 FAX: (860) 527-6355

## SUPERIOR KITCHEN SERVICE

22 THOMPSON ROAD WINDSOR, CT 06088 (888) 590-1899 (888) 590-1996 FAX

#### **DELAWARE**

#### FOOD SERVICE EQMT.

2101 PARKWAY SOUTH BROOMALL, PA 19008 (610) 356-6900 FAX: (610) 356-2038 dancerule@aol.com

#### GCS SERVICE INC.

PHILADELPHIA, PA (215)925-6217 800-441-9115 FAX: (215) 925-6208

#### **ELMER SCHULTZ SERVICE**

36 BELMONT AVE. WILLMINGTON, DE 19804 (302) 655-8900 800-225-0599 FAX: (302) 656-3673 elmer2@erols.com

#### **EMR SERVICE DIVISION**

106 WILLIAMSPORT CIRCLE SALISBURY, MD 21804 (410) 543-8197 FAX: (410) 548-4038

#### **FLORIDA**

#### **COMMERCIAL APPLIANCE SER-**VICE

8416 LAUREL FAIR CIRCLE BLDG 6, SUITE 114 TAMPA, FL 33610 (813) 663-0313 800-282-4718

FAX: (813) 663-0212 commercialappliance@worldnet.att.

#### **GCS SERVICE INC**

MIAMI, FL (305) 621-6666 800-766-8966 FAX: (305) 621-6656

#### **GCS SERVICE INC**

ORLANDO, FL (407) 841-2551 800-338-7322 FAX: (407) 423-8425

#### NASS PARTS AND SERVICE, INC.

1144 BELVILLE ROAD, UNIT 359 DAYTONA BEACH, FL 32114 (386) 226-2642 (800) 432-2795 (386) 736-7695 FAX

#### **GCS SERVICE INC**

TAMPA, FL (813) 626-6044 800-282-3008 FAX: (813) 621-1174

#### FLORIDA TO MARYLAND

## JONES-McLEOD APPLIANCE SVC

854 LAKESIDE DRIVE MOBILE, AL 36693 (251) 666-7278 800-237-9859 FAX: (251) 661-0223 service@jones-mcleod.com

#### NASS PARTS AND SERVICE, INC.

1108 SOUTH WOODS AVENUE ORLANDO, FL 32805 (407) 425-2681 (800) 432-2795 (407) 425-3463 FAX

#### NASS PARTS AND SERVICE, INC. 800-433-9390

1376 HEIDE AVENUE PALM BAY, FL 32907 (321) 952-2012 (800) 432-2795 (321) 953-0266 FAX

#### **GEORGIA**

#### **GCS SERVICE INC**

ATLANTA, GA (770) 452-7322 800-334-3599 FAX: (770) 452-7473

## HERITAGE FOODSERVICE GROUP OF ATLANTA

2100 NORCROSS PKWY. SUITE 130 NORCROSS, GA 30071 (770) 368-1465 866-388-9837 FAX: (866) 388-9838

## WHALEY FOODSERVICE REPAIRS

109-A OWENS INDUSTRIAL DRIVE SAVANNAH, GA 31405 (912) 447-0827 888-765-0036 FAX: (912) 447-0826

#### PIERCE PARTS & SERVICE

2422 ALLEN ROAD MACON, GA 31216 (478) 781-6003 800-368-2512 FAX: (478) 781-7186

#### HAWAII

FOOD EQMT. PARTS & SERVICE CO.
300 PUUHALE RD.
HONOLULU, HI 96819
(808) 847-4871
FAX: (808) 842-1560
fepsco@hula.net

#### IDAHO

## **RESTAURANT APPLIANCE SVC.** 7219 ROOSEVELT WAY NE SEATTLE, WA 98115

(206) 524-8200 800-433-9390 FAX: (206) 525-2890 info@restappl.com

#### **RON'S SERVICE**

703 E 44TH STREET STE 10 GARDEN CITY, ID 83714 (208) 375-4073 FAX: (208) 375-4402

#### **ILLINOIS**

#### **CONES REPAIR SVC.**

2408 40TH AVE. MOLINE, IL 61265 (309) 797-5323 800-716-7070 FAX: (309)797-3631 jackb@cones.com

#### EICHENAUER SERVICES INC.

130 S OAKLAND ST. DECATUR, IL 62522 (217) 429-4229 800-252-5892 FAX: (217) 429-0226 esi@esiquality.com

#### GCS SERVICE INC.

ELMHURST, IL (630) 941-7800 800-942-9689 FAX: (630) 941-6048

#### GCS SERVICE INC.

ST. LOUIS, MO (314) 683-7444 800-284-4427 FAX: (314) 638-0135

#### **GENERAL PARTS, INC.**

248 JAMES STREET BENSONVILLE, IL 60106 (630) 595-3300 (800) 880-3604 FAX: (630)595-0006

#### **INDIANA**

#### GCS SERVICE INC.

INDIANAPOLIS, IN (317) 545-9655 800-727-8710 FAX: (317) 549-6286

B622 LA PAS TRAIL INDIANAPOLIS, IN 46268 (317) 290-8060 (800) 410-9794 (317) 290-8085 FAX

#### IOWA GOODWIN TUCKER GROUP

#### 2900 DELAWARE AVENUE

DES MOINES, IA 50317 (515) 262-9308 800-372-6066 FAX: (515) 262-2936 parts@goodwintucker.com

#### CONES REPAIR SVC.

1056 27TH AVENUE SW CEDAR RAPIDS, IA 52404 (319) 365-3325 800-747-3326 FAX: (319) 365-0885

#### **KANSAS**

#### GCS SERVICE INC.

KANSAS CITY, MO (816) 920-5999 800-229-6477 FAX: (816) 920-7387

#### GENERAL PARTS, INC.

1101 E. 13TH STREET KANSAS CITY, MO 64106 (816) 421-5400 (800) 279-9967 (816) 421-1270 FAX

#### **KENTUCKY**

#### **CERTIFIED SERVICE CENTER**

127 DISHMAN LANE BOWLING GREEN, KY 42101 (270) 783-0012 (877) 907-0012 FAX: (270) 783-0058

## CERTIFIED SERVICE CENTER RAMCO BUSINESS PARK

4283 PRODUCE ROAD LOUISVILLE, KY 40218 (502) 964-7007 800-637-6350 FAX: (502) 964-7202 cwalker@certifiedsc.com droenigk@certifiedsc.com

#### **CERTIFIED SERVICE CENTER**

1051 GOODWIN DRIVE LEXINGTON, KY 40505 (606) 254-8854 800-432-9269 FAX: (606) 231-7781 jatkins@certifiedsc.com

#### GCS SERVICE INC.

LOUISVILLE, KY (502) 367-1788 800-752-6160 FAX: (502) 367-0400

#### GCS SERVICE INC.

LEXINGTON, KY (606) 255-0746 800-432-9260 FAX: (606) 255-0748

#### **LOUISIANA**

#### HERITAGE SERVICE GROUP

1532 RIVER OAKS WEST NEW ORLEANS, LA 70123 (504) 734-8864 (800) 499-2351 (504) 733-2559 FAX

#### MAINE

#### GCS SERVICE INC.

CHELSEA, MA (617) 889-9393 800-225-1155 FAX: (617) 889-1222

#### MASSACHUSETTS RESTAU-RANT SUPPLY

34 SOUTH STREET SOMERVILLE, MA 02143 (617) 868-1930 800-338-6737 FAX: (617) 686-5331

#### PINE TREE FOOD EQUIPMENT

175 LEWISTON ROAD GRAY, ME 04039 (207) 657-6400 (800) 540-5427 (207) 657-5464 FAX

#### MARYLAND

#### **EMR SERVICE DIVISION**

700 EAST 25TH STREET BALTIMORE, MD 21218 (410) 467-8080 800-879-4994 FAX: (410) 467-4191 baltparts@emrco.com

#### MARYLAND TO NEW YORK

**EMR SERVICE DIVISION** 

106 WILLIAMSPORT CIRCLE SALISBURY, MD 21804 (410) 543-8197 888-687-8080 FAX: (410) 548-4038 baltparts@emrco.com

#### **EMR SERVICE DIVISION**

5316 Sunnyside Ave.

Beltsville, MD 20715 (301) 931-7000 800-348-2365 FAX: (301) 931-3060 baltparts@emrco.com GCS SERVICE INC. SILVER SPRING, MD (301) 585-7550 (DC) (410) 792-0338 (BALT)

### FAX: (301) 495-4410 **MASSACHUSETTS**

(800) 638-7278

ACE SERVICE CO.

95 HAMPTON AVE. NEEDHAM, MA 02494 (781) 449-4220 800-225-4510 MA & NH FAX: (781) 444-4789 taceservice@aol.com

## **SUPPLY**

34 SOUTH STREET SOMERVILLE, MA 02143 (617) 868-1930 800-338-6737 FAX: (617) 868-5331

#### GCS SERVICE INC.

CHELSEA, MA (617) 889-9393 800-225-1155 FAX: (617) 889-1222

#### GCS SERVICE INC.

HARTFORD, CT (860) 549-5575 800-723-1562 FAX: (860) 527-6355

#### SUPERIOR KITCHEN SERVICE INC.

399 FERRY STREET EVERETT, MA 02149 (617) 389-1899 (888) 590-1899 (617) 389-1996 FAX

#### **MICHIGAN**

GCS SERVICE INC.

LIVONIA, MI (248) 426-9500 800-772-2936 FAX: (248) 426-7555

#### JACKSON SERVICE COMPANY

3980 BENSTEIN RD. COMMERCE TWSHP, MI 48382 (248) 363-4159 800-332-4053 FAX: (248) 363-5448

#### GCS SERVICE INC.

GRAND RAPIDS, MI (616) 241-0200 800-823-4866 FAX: (616) 241-0541

#### **MINNESOTA**

#### GCS SERVICE INC.

MINNEAPOLIS, MN (612) 546-4221 800-345-4221 FAX: (612) 546-4286

#### GENERAL PARTS, INC.

MASSACHUSETTS RESTAURANT 11311 HAMPSHIRE AVENUE SOUTH BLOOMINGTON, MN 55438-2456 (952) 944-5800 (800) 279-9980 (800) 279-9980 FAX

#### MISSISSIPPI

#### GCS SERVICE INC.

JACKSON, MS (601) 956-7800 800-274-5954 FAX: (601) 956-1200

#### GCS SERVICE INC.

MEMPHIS. TN (901) 366-4587 800-262-9155 FAX: (901) 366-4588

#### MISSOURI

GCS SERVICE INC. KANSAS CITY, MO (816) 920-5999 800-229-6477 FAX: (816) 920-7387

#### GCS SERVICE INC.

ST. LOUIS, MO (314) 638-7444 800-284-4427 FAX: (314) 638-0135

#### KAEMMERLIN PARTS & SVC.

2728 LOCUST STREET ST. LOUIS, MO 63103 (314) 535-2222 FAX: (314) 535-6205 petek@kps.stl.com

#### **GENERAL PARTS, INC.**

1101 EAST 13TH STREET KANSAS CITY, MO 64106 (816) 421-5400 (800) 279-9967 (816) 421-1270 FAX

#### **MONTANA**

#### RESTAURANT APPLIANCE SVC.

7219 ROOSEVELT WAY NE SEATTLE, WA 98115 (206) 524-8200 800-433-9390 FAX: (206) 525-2890 info@restappl.com

#### **NEBRASKA**

#### **GOODWIN - TUCKER GROUP**

7535 D STREET OMAHA, NE 68124 (402) 397-2880 800-228-0342 FAX: (402) 397-2881 askme@goodwintucker.com

#### **NEVADA**

#### HI TECH COMMERCIAL SERVICE

1840 STELLA LAKE STREET NORTH LAS VEGAS, NV 89106 (702) 649-4616 (877) 924-4832 FAX: (702) 649-4607 larry@hitechnv.com

5454 LOUIE LANE RENO, NV 89511 (775) 852-9696 FAX: (775) 852-5104

#### GCS SERVICE INC.

LAS VEGAS, NV (702) 450-3495 800-500-9060 FAX: (702) 450-3491

#### **NEW HAMPSHIRE**

#### GCS SERVICE INC.

CHELSEA, MA (617)889-9393 800-225-1155 FAX: (617) 889-1222

#### ACE SERVICE CO.

95 HAMPTON AVE. NEEDHAM, MA 02494 (781) 449-4220 800-225-4510 MA & NH FAX: (781) 444-4789 taceservice@aol.com

#### **MASSACHUSETTS RESTAURANT SUPPLY**

34 SOUTH STREET SOMERVILLE, MA 02143 (617) 868-1930 800-338-6737 FAX: (617) 868-5331

#### **NEW JERSEY**

#### **JAY HILL REPAIRS**

90 CLINTON RD. FAIRFIELD, NJ 07004 (973) 575-9145 800-836-0643 FAX: (973) 575-5890 jhrepair@aol.com

#### GCS SERVICE INC.

EAST RUTHERFORD, NJ (973) 614-0003 800-399-8294 FAX: (973) 614-0230

#### GCS SERVICE INC.

PHILADELPHIA, PA (215) 925-6217 800-441-9115 FAX: (215) 925-6208

#### **ELMER SCHULTZ SERVICES**

201 W. WASHINGTON AVE. PLEASANTVILLE, NJ 08232 (609) 641-0317 800-378-1641 FAX:(609) 641-8703 elmer2@erols.com

#### **NEW YORK**

#### APPLIANCE INSTALLATION AND SERVICE CORP.

1336 MAIN STREET BUFFALO, NY 14209 (716) 884-7425 800-722-1252 FAX: (716) 884-0410 ais@worldnet.att.net

#### **NEW YORK TO PENNSYLVANIA**

#### B.E.S.T. INC.

3003 GENESEE STREET BUFFALO, NY 14225 (716) 893-6464 800-338-5011 FAX: (716) 893-6466 bestserv@aol.com

#### **DUFFY'S EQUIPMENT SVC.**

3138 ONEIDA STREET SAUQUOIT, NY 13456 (315) 737-9401 800-443-8339 FAX: (315) 737-7132 duffyequip@aol.com

#### **NORTHERN PARTS & SVC.**

21 NORTHERN AVENUE PLATTSBURGH, NY 12903 (518) 563-3200 800-634-5005 FAX: (800) 782-5424 info@northernparts.com

#### GCS SERVICE INC.

BROOKLYN, NY (718) 486-5220 800-969-4271 FAX: (718) 486-6772

#### **ALL SERVICE KITCHEN**

EQUIPMENT REPAIR 10 CHARLES ST. NEW HYDE PARK, NY 11040 (516) 378-1176 FAX: (516) 378-1735

#### **ALL ISLAND REPAIRS**

40-9 BURT DRIVE DEER PARK, NY 11729 (631) 242-5588 FAX: (631) 242-6102

#### **NORTH CAROLINA**

#### **AUTHORIZED APPLIANCE**

SERVICECENTER 1020 TUCKASEEGEE RD. CHARLOTTE, NC 28208 (704) 377-4501 (800) 532-6127 FAX:(704) 377-4504

#### **AUTHORIZED APPLIANCE**

SERVICECENTER 800 N. PERSON ST. RALEIGH, NC 27604 (919) 834-3476 FAX:(919) 834-3477

## AUTHORIZED APPLIANCE SERVICECENTER

904 S. MARSHALL ST. WINSTON-SALEM, NC 27403 (336) 725-5396 FAX:(336) 721-1289

## AUTHORIZED APPLIANCE SERVICECENTER

104 HINTON AVE. WILMINGTON, NC 28403 (910) 313-1250 FAX:(910) 313-6130

#### WHALEY FOODSERVICE

8334-K ARROWRIDGE BLVD CHARLOTTE, NC 28273 (704) 529-6242 FAX: (704) 529-1558 info@whaleyfoodservice.com

## WHALEY FOODSERVICE REPAIRS

203-D CREEK RIDGE RD. GREENSBORO, NC 27406 (336) 333-2333 FAX: (336) 333-2533 info@whaleyfoodservice.com

## WHALEY FOODSERVICE REPAIRS

335-105 SHERWEE DRIVE RALEIGH, NC 27603 (919) 779-2266 FAX: (919) 779-2224 info@whaleyfoodservice.com

## WHALEY FOODSERVICE REPAIRS

6418-101 AMSTERDAM WAY WILMINGTON, NC 28405 (910) 791-0000 FAX: (910) 791-6662 info@whaleyfoodservice.com

#### **NORTH DAKOTA**

#### GCS SERVICE INC.

MINNEAPOLIS, MN (612) 546-4221 800-345-4221 FAX: (612) 546-4286

#### **GENERAL PARTS, INC.**

10 SOUTH 18TH STREET FARGO, ND 58103 (701) 235-4161 (800) 279-9987 (701) 235-0539 FAX

#### OHIO

### CERTIFIED SERVICE CENTER

890 REDNA TERRACE CINCINNATI, OH 45215 (513) 772-6600 800-543-2060 FAX: (513) 612-6600 sbarasch@certifiedsc.com

## **CERTIFIED SERVICE CENTER** 171J-K NORTH HAMILTON RD.

COLUMBUS, OH 43213 (614) 751-3769 (866) 862-1252 FAX: (614) 751-5792 jadkins@certifiedsc.com

#### **CERTIFIED SERVICE CENTER**

6025 N. DIXIE DRIVE DAYTON, OH 45414 (937) 898-4040 (800) 257-2611 FAX: (937) 898-4177 dharvey@certifiedsc.com

## COMMERCIAL PARTS & SVC. OF COLUMBUS

5033 TRANSAMERICA DRIVE COLUMBUS, OH 43228 (614) 221-0057 800-837-8327 FAX: (614) 221-3622

#### GCS SERVICE INC.

COLUMBUS, OH (614) 476-3225 800-282-5406 FAX: (614) 476-1196

## ELECTRICAL APPLIANCE REPAIR SVC.

5805 VALLEY BELT ROAD CLEVELAND, OH 44131 (216) 459-8700 800-621-8259 FAX: (216) 459-8707 tomr@electapplrep.com

#### **OKLAHOMA**

#### HAGAR RESTAURANT EQMT.

1229 W MAIN STREET OKLAHOMA CITY, OK 73106 (405) 235-2184 800-445-1791 FAX: (405) 236-5592

#### **OREGON**

#### **RON'S SERVICE**

16364 SW 72ND AVE PORTLAND, OR 97224 (503) 624-0890 800-851-4118 FAX: (503) 684-6107 Irobinson@ronsservice.com

#### **PENNSYLVANIA**

## A.I.S. COMMERCIAL PARTS & SERVICE

1816 WEST 26TH STREET ERIE, PA 16508 (814) 456-3732 800-332-3732 FAX: (814) 452-4843 aiserie@aol.com

#### **ELMER SCHULTZ SVC.**

540 NORTH 3RD STREET PHILADELPHIA, PA 19123 (215) 627-5400 FAX: (215) 627-5408 elmer2@erols.com

#### GCS SERVICE INC.

PHILADELPHIA, PA (215) 925-6217 800-441-9115 FAX: (215) 925-6208

#### GCS SERVICE INC.

HARRISBURG, PA (717) 564-3282 800-367-3225 FAX: (717) 564-9286

#### GCS SERVICE INC.

PITTSBURGH, PA (412) 787-1970 800-738-1221 FAX: (412) 787-5005

#### K & D PARTS AND SERVICE CO.

1833-41 N CAMERON STREET HARRISBURG, PA 17103 (717) 236-9039 800-932-0503 FAX: (717) 238-4367 kdparts-service@paonline.com

#### **CLARK SERVICE & PARTS**

306 AIRPORT DRIVE BOX 10 SMOKETOWN, PA 17576 (717) 392-5590 (717) 392-5735

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