TECHNICAL MANUAL

FOR JACKSON MODEL:

JP-24BPNSU

DESCRIPTION, OPERATION, INSTALLATION
AND MAINTENANCE INSTRUCTIONS

Jackson
An Enodis Company

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November 11, 2005
P/N 7610-002-38-50 (Revision D)

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 MSC 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 MSC, within the continental United States, Hawaii and Canada, during the warranty period provided a Jackson MSC authorized service agency, or those having prior authorization from the factory, performs the service. Any repair work by persons other than a Jackson MSC 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 MSC.

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 MSC.

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 MSC limits warranty travel time to (2) two hours and mileage to (100) one hundred miles. Jackson MSC 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 MSC 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 MSC 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 MSC. 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 MSC 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.

REVISION	REVISION DATE	MADE BY	APPLICABLE ECN	DETAILS
A	02-13-01	CBW	5700	Release to production
B	03-26-03	MAW	N/A	Replaced photos with drawings, Added new logo.
C	01-21-04	MAW	N/A	Added 2nd Enodis logo to cover.
D	11-11-05	MAW	6964, 6988 7006, 7383	Changed thermostat from 05930-121-71-36 to 05930-011-49-43. Added 4-3/4" Din Rail 05700-002-90-18 to Control Box Assembly. Changed thermostat bracket from 05700-011-73-72 to 05700-011-81-64. Changed vacuum breaker from 04820-300-07-00 to 04820-003-06-13. Added service procedure pages. Changed to new layout. Updated schematic.

JP-24BPNSU

JP-24BPNSU - Hot water sanitizing, electrically-heated dishmachine.

Model:_____

Serial No.:_____

Installation Date:_____

Service Rep. Name:_____

Phone No.:_____

APPROVAL DATA FOR:

TITLE OF MANUAL: DESCRIPTION, OPERATION, INSTALLATION, AND MAINTENANCE INSTRUCTIONS FOR DISH-WASHING MACHINE, MODEL JP-24BPNSU

APPROVAL AUTHORITY: (LETTER OF APPROVAL FROM PROCURING ACTIVITY

CONTRACT NO.	NSN	NO. OF UNITS	CID/APL
DLA-400-90-M-1376	7320-01-144-2638	1	432100007

REMARKS:

DATE:

CERTIFICATION:

IT IS HEREBY CERTIFIED THAT THE TECHNICAL MANUAL PROVIDED UNDER CONTRACT NUMBER DLA-400-90-M-1376 FOR DISHWASHING MACHINE, MODEL JP-24BPNSU, HAS BEEN APPROVED BY THE APPROVAL DATA SHOWN ABOVE.

(TITLE OF COMPANY OFFICIAL)

COMPANY'S NAME

COMPANY'S ADDRESS

COMPANY'S FSCM

Change No.	Date	Title/Brief Description	Signature of Validating Officer

1. PURPOSE: This technical publication is issued for the purpose of identifying and authorizing the following commercial manual for Navy use.

MANUFACTURER: Jackson MSC Inc., Barbourville, Kentucky 40906
PURCHASE ORDER OR CONTRACT NO.: DLA-400-90-M-1376
EQUIPMENT: Dishmachine, Model JP-24BPNSU

ADDITIONAL IDENTIFICATION (if any): Not applicable

DATE: 1 January 1991

2. ADDITIONAL COPIES: Additional copies are available from:

DGSG-SDA
Richmond, Virginia 23297

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SECTION 1:
SPECIFICATION INFORMATION

SPECIFICATIONS

PERFORMANCE/CAPABILITIES

OPERATING CAPACITY (RACKS/HOUR)

RACKS PER HOUR	21
DISHES PER HOUR	525
GLASSES PER HOUR	525

OPERATING CYCLE (SECONDS)

WASH TIME	120
RINSE TIME	15
TOTAL CYCLE TIME	150

TANK CAPACITY (GALLONS)

WASH TANK	5.65
RINSE TANK	3

WASH PUMP CAPACITY

GALLONS PER MINUTE	60

TEMPERATURES

WASH---°F (MINIMUM)	150
RINSE---°F	180-195

ELECTRICAL REQUIREMENTS

WASH PUMP MOTOR HORSEPOWER	3/4

WATER REQUIREMENTS

VOLTS	HERTZ	PHASE	HEATER RATINGS	HEATER AMPS	MOTOR AMPS	TOTAL AMPS
460	60	3	480/8.2KW	9.4	1.6	11
460	60	3	480/10KW	12	1.6	13.6

INLET TEMPERATURE	140°F
GALLONS PER HOUR	52.3
WATER LINE SIZE I.P.S. (MINIMUM)	1/2”
DRAIN LINE SIZE I.P.S. (MINIMUM)	1 1/2”
FLOW PRESSURE P.S.I.	20 ±5
FLOW, GALLONS PER MINUTE	7.1

FRAME DIMENSIONS

WIDTH	24 1/4”
DEPTH	22 5/8”
HEIGHT, MINIMUM	33 1/4”
HEIGHT, MAXIMUM	34 1/4”
MAXIMUM INSIDE CLEARANCE HEIGHT	14 1/2”
CLEARANCE, WALL TO MACHINE	2 1/2”

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.

DIMENSIONS

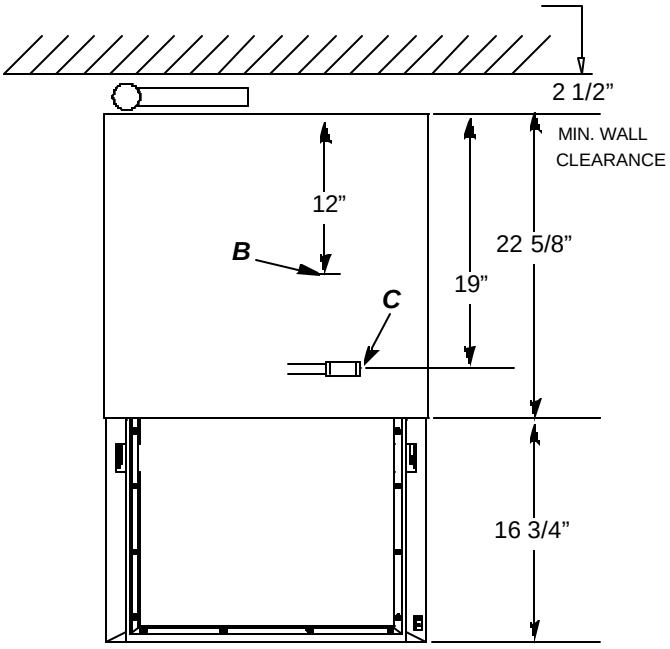
Legend:

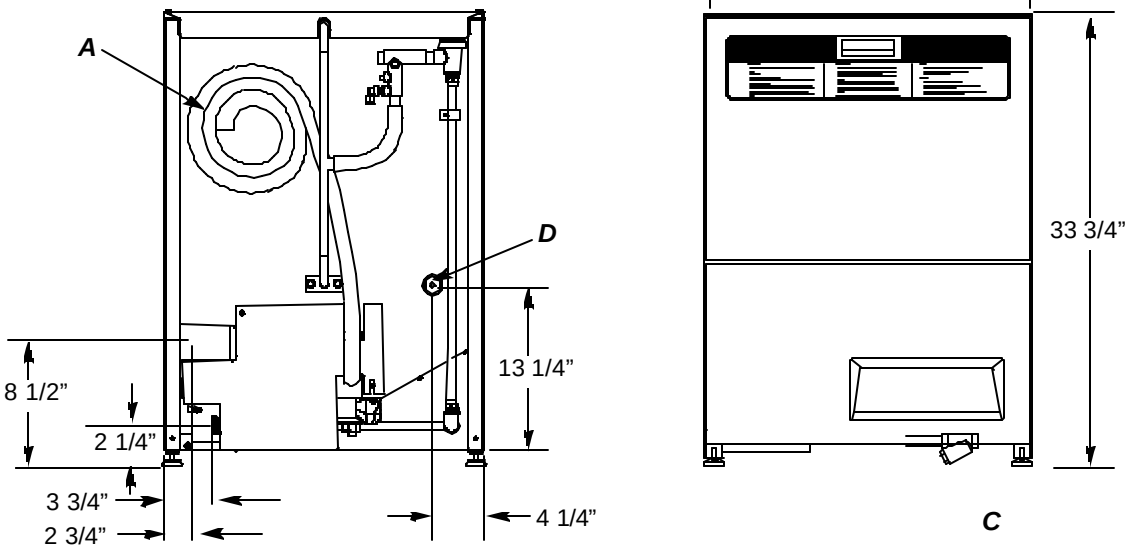
A **- Drain Connection flexible hose. 6'-0" free length, 1" ID x 1 3/8" OD**

B **- Electrical Connection.**

C **- Water Inlet 1/2" Female Pipe Thread, 2 1/2" AFF**

D **- Detergent Feeder Connection**





Note: All dimensions from floor can be increased 1" with adjustable feet supplied.

DIMENSIONS

Height (minimum):	**33-1/4"**	**Inside Clearance Height:**	**14-1/2"**
Height (maximum):	**34-1/4"**	**Inside Clearance Width:**	**20-1/4"**
Width:	**24-1/4"**	**Inside Clearance Depth:**	**21-1/4"**
Depth:	**22-5/8"**	**Door Open Depth:**	**39-1/2"**
Wall Clearance (minimum):	**2-1/2"**		

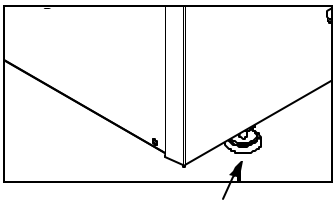
SECTION 2:
INSTALLATION/OPERATION INSTRUCTIONS

INSTALLATION INSTRUCTIONS

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

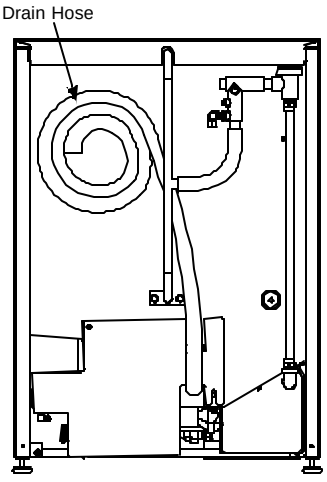
UNPACKING THE DISHMACHINE: Once the machine has been removed from the container, ensure that there are no missing parts from the machine. This may not be obvious at first. If it is discovered that an item is missing, contact Jackson immediately to have the missing item shipped to you.

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



Adjustable Bullet Foot

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

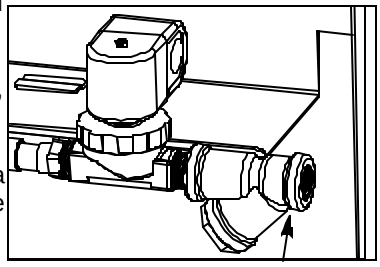


Back of Machine Showing Drain Hose

CONNECTING THE DRAIN LINE: The drain for the JP-24BPNSU is a pumped (pressure) drain capable of pumping waste water to a height of 24 inches from the floor to the kitchen's drain system. The dishmachine is supplied with a 10 foot long hose that extends from the rear side of the machine. 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 12 gallons per minute.

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

The water supply line is to be capable of 20 $\pm$5 PSI "flow" pressure at the recommended temperature indicated on the data plate.



Incoming Plumbing Y-Strainer

In areas where the water pressure fluctuates or is greater than the recommended pressure, it is recommended that a water pressure regulator be installed.

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

It is also recommended that a shock absorber (not supplied with the JP-24BPNSU model) be installed in the incoming water line. This prevents line hammer (hydraulic shock), induced by the solenoid valve as it operates, from causing damage to the equipment.

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

ELECTRICAL INSTALLATION INSTRUCTIONS

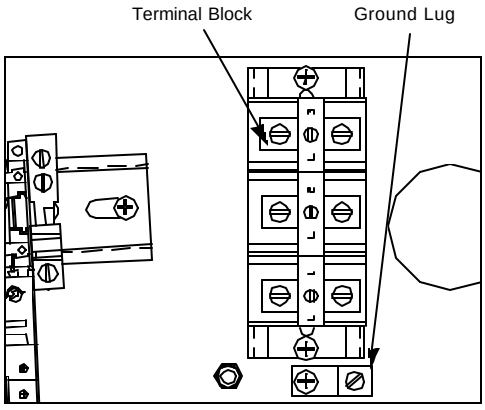
ELECTRICAL POWER CONNECTION: Electrical and grounding connections must comply with the applicable portions of the National Electrical Code ANSI/NFPA 70 (latest edition) and/or other electrical codes.

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

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

To install the incoming power lines, remove the kick panel. This will require taking a phillips head screwdriver and removing the four(4) screws on the front cover of the kick plate. Install 3/4" conduit into the pre-punched holes in the back of the control box. Route power wires and connect to power block and grounding lug. Install the service wires (L1, L2 and L3) to the appropriate terminals as they are marked on the terminal block. Install the grounding wire into the lug provided. Tighten the connections and perform the "pull test". The tightened wires should remain in place after giving the wires a moderate pull to see if they will come loose.

It is recommended that "DE-OX" or another similar anti-oxidation agent be used on all power connections.

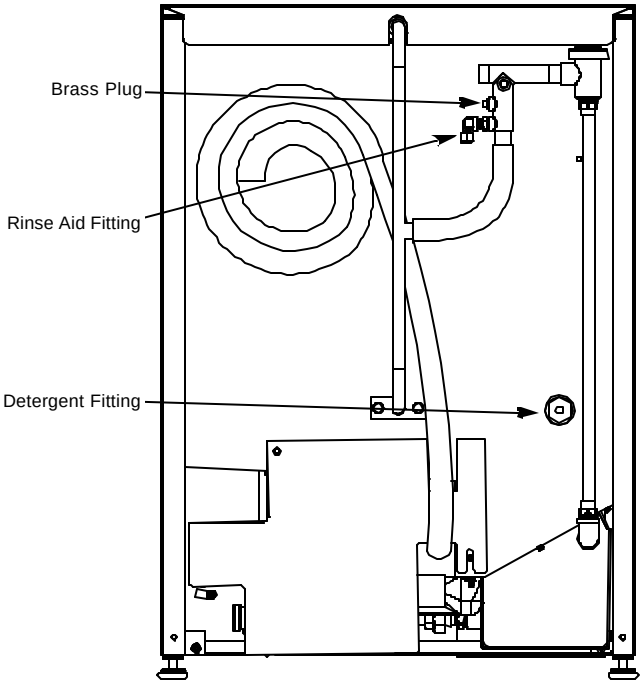


Control Box Electrical Connection

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

CHEMICAL CONNECTIONS: All chemical hookup locations are located on the back of the dishmachine. Please refer to the drawing at the right for the correct connection point.

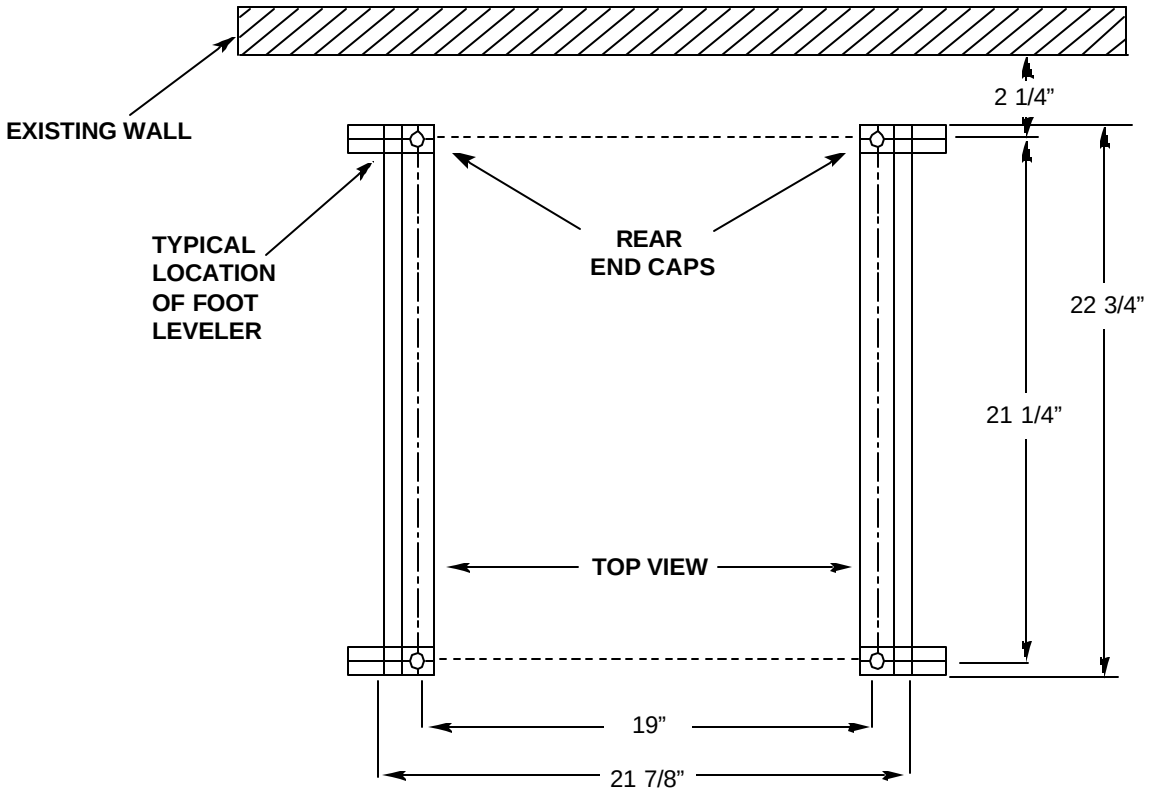
This equipment is not recommend for use with deionized water or other aggressive fluids. Use of deionized water or other aggressive fluids will result in corrosion and failure of materials and components. Use of deionized water or other aggressive fluids will void the manufacturer's warranty.

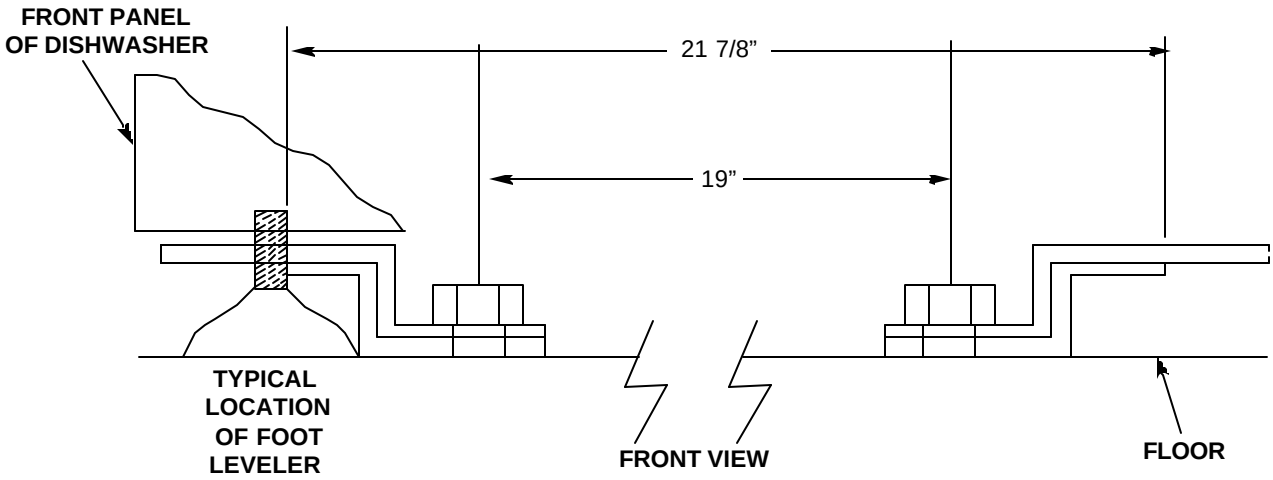


Back of Unit Showing Chemical Connection Points

INSTALLATION INSTRUCTIONS (CONTINUED)

DECK MOUNTING OF THE DISHMACHINE: The dishmachine must be secured in place using the deck mounting tracks and caps provided with machine. Install the (4) adjustable feet provided into screw holes where shipping bolts were removed earlier. Adjust the level of the dishmachine by screwing the adjustable feet in or out. The front of the machine should be adjusted 1/4" to 1/2" higher than the back. Install the deck mounting hardware as shown in the drawing below, at the location where the dishmachine will be permanently positioned. Install 3/8" stainless steel lug bolts to secure tracks and caps to the deck. Drill holes into deck as shown below and insure rear holes are located 2-1/4" from the wall. The racks and rear end caps may be tightened at this time. Slide dishmachine onto tracks and into position at rear end caps. Install front end caps into place and adjust if necessary to remove any movement of machine; if possible, tack weld tracks to deck.





DETERGENT CONTROL

Detergent usage and water hardness are two factors that contribute greatly to how efficient 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.

OPERATION INSTRUCTIONS

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

1. The strainer is in place and is clean.
2. That the wash and rinse arms are screwed securely into place and that their endcaps are tight. The wash and rinse arms should rotate freely.

POWER UP: To energize the unit, turn on the power at the service breaker. The voltage should have been previously verified as being correct. If not, the voltage will have to be verified.

FILLING THE WASH TUB: For the initial fill, close the door and depress the ON/FILL-OFF/DRAIN rocker switch in the ON position. The machine will run a partial cycle and fill to the factory preset level. Open the door and verify that the water level is correct. Hereafter, the water level is controlled by the timer that has been preset at the factory. Verify that there are no other leaks on the unit before proceeding any further. The wash tub must be completely filled before operating the wash pump to prevent damage to the component. Once the wash tub is filled, the unit is ready for operation.

NOTE: Make sure the orange wires at the heater contactor are connected properly. They have been purposely disconnected at the factory to avoid damage to the heater element when there is no water in the booster heater.

The machine runs 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.

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

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

WARM-UP CYCLES: For a typical daily start-up, it is recommended to run the machine through 3 cycles to ensure that all of the cold water is out of the system and to verify that the unit is operating correctly. To cycle the machine, ensure that the power is on and that the tub has filled to the correct level. Open the door and the cycle light will illuminate. When the light goes out, close the door, the unit will start, run through the cycle, and shut off automatically. Repeat this two more times. The unit should now be ready to proceed with the washing of ware.

WASHING A RACK OF WARE: To wash a rack, open the door completely and slide the rack into the unit. Close the door and the unit will start automatically. Once the cycle is completed, open the door and remove the rack of clean ware. Replace with a rack of soiled ware and close the door. The process will then repeat itself.

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

SHUTDOWN AND CLEANING: At the end of the workday, close the door. Start a cycle, then place the ON/FILL - OFF/DRAIN SWITCH to the “ OFF/DRAIN” position. The unit will automatically drain and turn off. Once the wash tub is drained, remove he pan strainer. Remove soil and debris from the strainer and set to the side. Unscrew the wash and rinse arms from their manifolds. Remove the endcaps and flush the arms with water. Use a brush to clean out the inside of the arms. If the nozzles appear to be clogged, use a toothpick to remove the obstruction. Wipe the inside of the unit out, removing all soil and scraps. Reassemble the wash and rinse arms and replace them in the unit. The arms only need to be hand tight, do not use tools to tighten them down. Reinstall the strainer and close the door.

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.

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 contact Jackson 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 Jackson.

Some problems, however, may having nothing to do with the machine itself and no amount of preventative maintanence 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 Jackson 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 your Ecolab representative 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

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: 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 PSI.
4. Detergent foaming. Reduce detergent quantity.

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 but not on automatic.

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

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

1. Water not turned on. Turn water on.
2. Defective solenoid valve. Replace solenoid valve.
3. Probes are dirty or coated. Clean probes.
4. Defective water level control. Replace.

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: Rinse doesn't operate on automatic during timed cycle (but does operate in auto/fill operation).

1. Timer defective. Replace timer.

Problem: Rinse water runs continuously with power applied to machine, but when circuit breaker to machine is turned off, water stops.

1. Defective water level control. Replace.
2. Probes are dirty or coated. Clean probes.

Problem: Wash temperature not at required reading on thermometer.

1. Defective thermometer. Replace.
2. Defective thermostat. Adjust thermostat. Replace thermostat.
3. Rinse heater defective. Replace heater element.
4. Water level protection control device. Replace.

Problem: Rinse water not at required temperature range.

1. Thermometer is defective. Replace.
2. Thermostat is defective. Adjust the thermostat. Replace if necessary.

Problem: Machine doesn't drain when "OFF/DRAIN" switch is pressed.

1. Drain solenoid clogged. Remove obstruction.
2. Defective "OFF/DRAIN" switch. Replace.
3. Defective motor or motor start relay. Replace.
4. Defective drain solenoid. Replace.
5. Defective timer. Replace.

Problem: No indication of pressure.

1. Water turned off. Turn water on.
2. 1/4" test cock ball valve is closed. Open the ball valve.

SECTION 5:
SERVICE PROCEDURES

RINSE SOLENOID VALVE REPAIR PARTS KIT

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

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

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

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

PREPARATION

1. Power must be secured to the unit at the service breaker. Tag or lock out the service breaker to prevent accidental or unauthorized energizing of the machine.
2. Ensure that incoming water to the machine is secured either by use of a shut-off valve or disconnecting the incoming water line.

TOOLS REQUIRED

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

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

TIME REQUIRED

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

IMPORTANT NOTES

1. Read these instructions thoroughly before attempting this maintenance evolution. Become familiar with the parts and what actions need to be taken. This will save time in the long run!
2. The procedures demonstrated in this manual are shown being performed on an AJ-44C rack conveyor dishmachine. The actual maintenance steps, however, apply to any Parker style solenoid valve found on a Jackson dishmachine.

STEPS

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

Removing the top screw

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

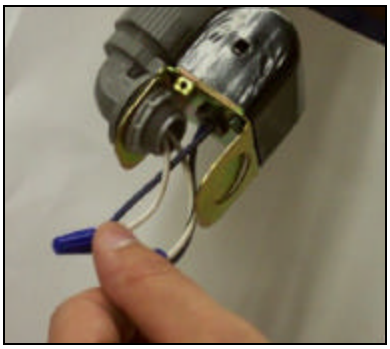
Removing the coil

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

RINSE SOLENOID VALVE REPAIR PARTS KIT (CONTINUED)

Prying open the coil wire cover

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



Straightening the wires

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

Removing the wire nuts

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

Loosening the conduit nut

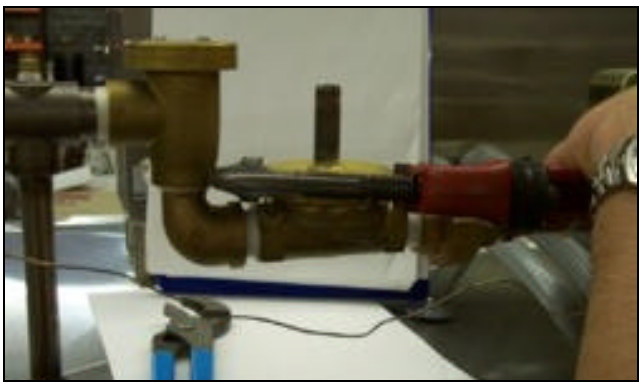
7. Using a pair of channel locks, gently loosen the conduit retaining ring for the conduit nut. Once it is loosened, use your fingers to unscrew and remove it.

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

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

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

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



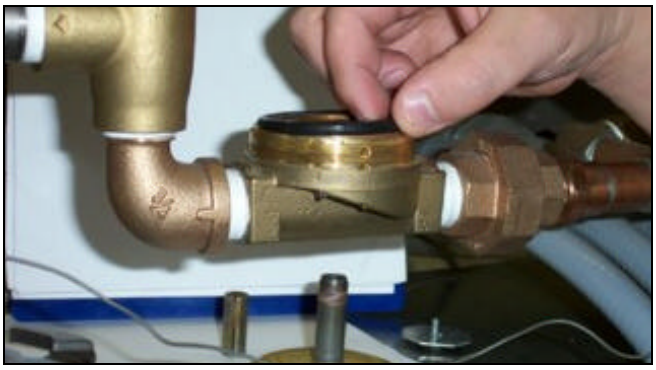
Loosening the valve bonnet

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

RINSE SOLENOID VALVE REPAIR PARTS KIT (CONTINUED)

Removing the valve bonnet

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

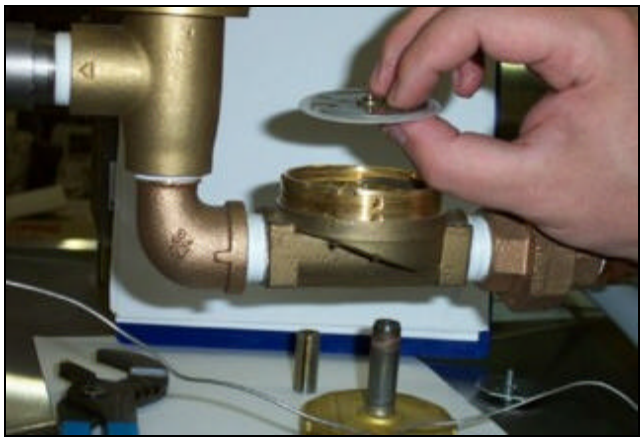


Removing the O-ring

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

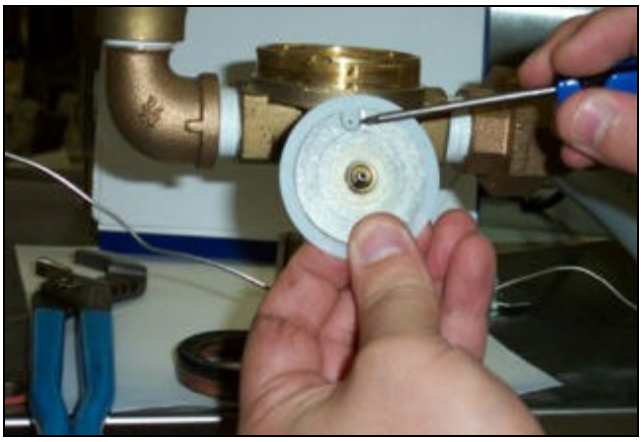
15. Examine the threads for the valve bonnet. Check them for scoring or signs of damage. Take a cloth and clean them out to remove any foreign particles that might get lodged in the threads and cause a leak. Severely damage threads should not be repaired; instead it is recommended that the entire valve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

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



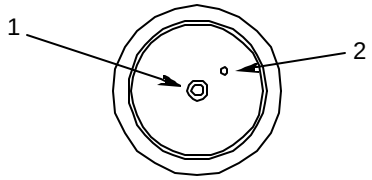
Removing the diaphragm

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



Pointing out the extension hole

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

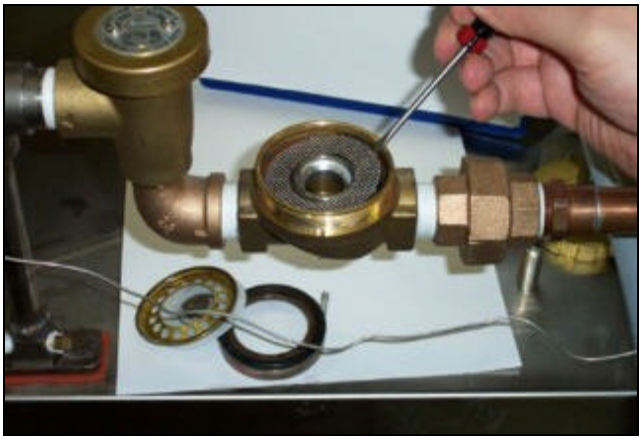


Diaphragm showing (1) pilot port and (2) extension hole

RINSE SOLENOID VALVE REPAIR PARTS KIT (CONTINUED)

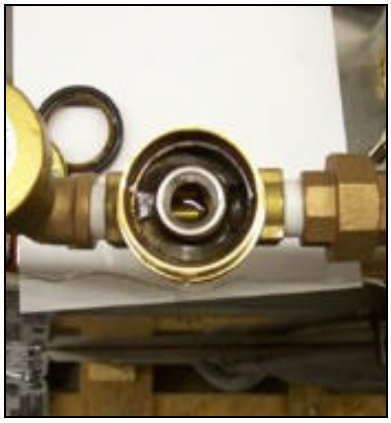
Removing the screen retainer

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



Removing the mesh strainer screen

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



View inside the solenoid valve body

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

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

AFTER MAINTENANCE ACTIONS

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

SPECIAL PARTS

Solenoid Valve Plunger Kit
Includes plunger and spring
Part number 06401-003-07-40

Solenoid Valve Diaphragm Kit
Includes diaphragm and o-ring
Part number 06401-003-07-41 (1/2" NPT)

Solenoid Valve 110 Volt Coil and Housing Kit
Part number 06401-003-07-43

Complete Solenoid Valve
Part number 04810-100-12-18 (1/2", 110 Volt)

VACUUM BREAKER REPAIR PARTS KIT

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

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

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

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

PREPARATION

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

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

TOOLS REQUIRED

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

1. Small flathead screwdriver
2. Needle nose pliers

TIME REQUIRED

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

IMPORTANT NOTES

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

STEPS

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

Vacuum breaker

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

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

Removing the cap

4. Set the cap to the side.

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

VACUUM BREAKER REPAIR PARTS KIT (CONTINUED)

Removing the plunger

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

Examining the seal ring on the plunger

Examining the plunger seating surface

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

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

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

Replacing the O-ring

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

AFTER MAINTENANCE ACTIONS

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

SPECIAL PARTS

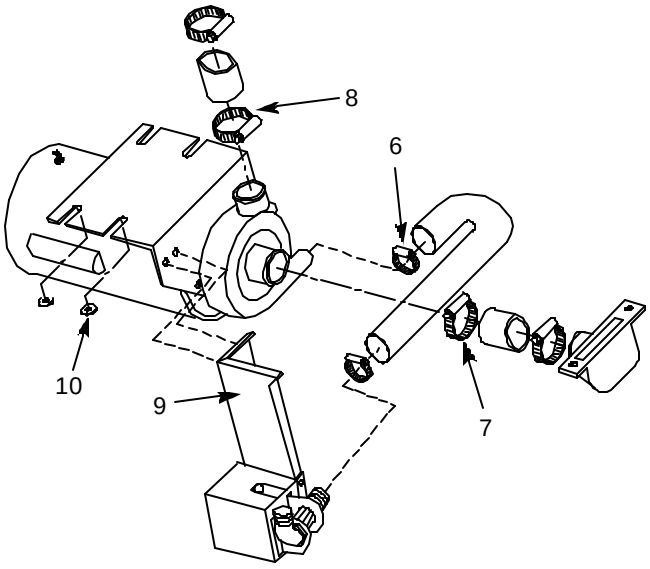
To order the kit with components and instructions:

Components of 1/2” Repair Kit
06401-003-06-23

REPLACING THE PUMP MOTOR

The following list of tools will be needed to complete this procedure. 5/6" nutdriver, phillips screwdriver, 7/16" socket and ratchet, and 7/16" wrench.

1. Disconnect the electrical power to the dishwasher at the main circuit breaker box when servicing. Place a tag on the circuit box indicating the circuit is being repaired.
2. Disconnect power and conduit from dishmachine terminal block.
3. Turn off the water supply and disconnect the water supply line.
4. Disconnect the dishmachine drain hose from the kitchen's drain. Drain the machine of any water at this time.
5. Move the machine out and lay machine onto its back.
6. Use a 5/16" nutdriver to loosen the hose clamp and remove the pump hose to the drain valve.
7. Use a 5/16" nutdriver to loosen the hose clamp and remove the pump hose from the suction casting.
8. Use a 5/16" nutdriver to loosen the hose clamp and remove the pump hose from the discharge hub casting.
9. Use a 7/16" socket and ratchet, and a 7/16" wrench to remove the drain valve mounting bracket from the motor bracket.
10. Use a 7/16" socket and ratchet to remove the pump motor assembly by loosening the (4) locknuts securing the motor mounting bracket. NOTE: The motor mounting bracket is slotted to allow for easy removal and installation. Remove (2) of the locknuts on one side and slide the assembly toward that side and remove. Once the assembly is removed, disconnect the wire leads from the motor wiring box.
11. Install replacement motor in reverse order of above.

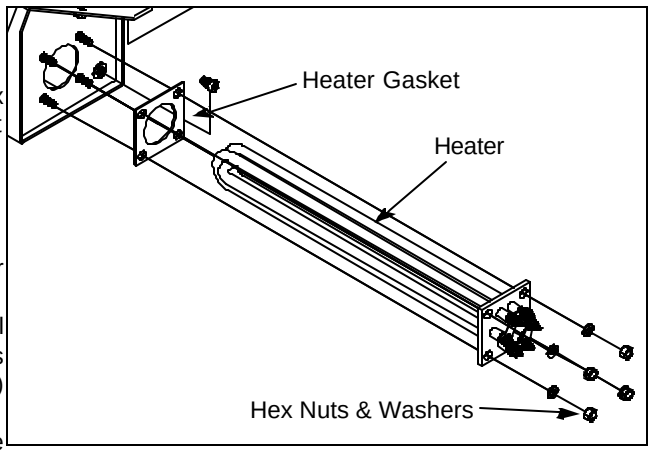


Replacing the Pump Motor

REPLACING THE BOOSTER TANK HEATER

The following list of tools will be needed to complete this procedure: phillips screwdriver and 1/2" socket and ratchet.

1. Disconnect the electrical power to the dishwasher at the main circuit breaker box when servicing. Place a tag on the circuit box indicating the circuit is being repaired.
2. Use the phillips screwdriver to remove the two screws from the bottom of the kick panel.
3. Disconnect power and conduit from dishmachine terminal block.
4. Turn off the water supply to the dishmachine.
5. **VERY IMPORTANT:** Disconnect wire lead (orange/white) from heater contactor coil. Note: Wire is tagged in electrical panel.
6. Drain water from booster tank.
7. Remove the wires from the heater.
8. Use a 1/2" socket and ratchet to remove the (4) 5/16-18 hex nuts and lock washers. Remove the heater and heater gasket from booster tank.
8. Install the replacement heater and gasket, the tighten firmly.
9. Connect wire leads to heater and tighten firmly.
10. Turn on water supply and power to dishmachine.
11. Place cycle switch in AUTO position and depress power switch to ON/FILL position.
12. **VERY IMPORTANT:** Run the dishmachine through several complete cycles and check water level in wash sump. If there is water in the wash sump, reconnect the wire lead (orange/white) previously removed from the heater contactor coil.
13. Run the dishwasher through several cycles and check to see that rinse and wash temperatures are correct.



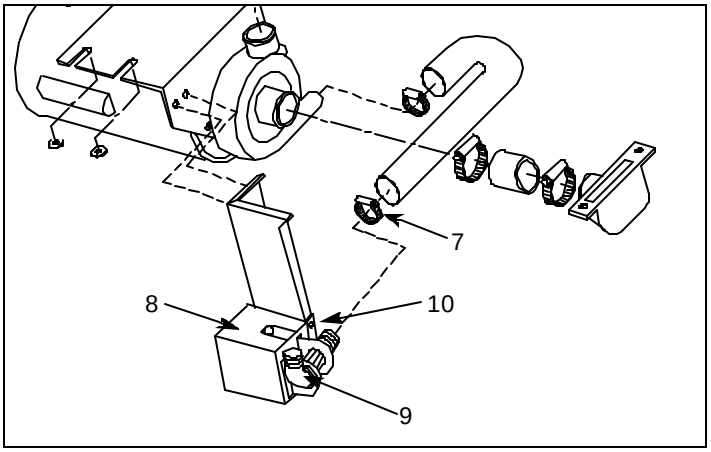
Replacing the Heater

REPLACING THE DRAIN VALVE

REPLACING THE DRAIN VALVE

The following list of tools will be needed to complete this procedure. 5/16" nutdriver, flat screwdriver, phillips screwdriver, and 7/16" socket and ratchet.

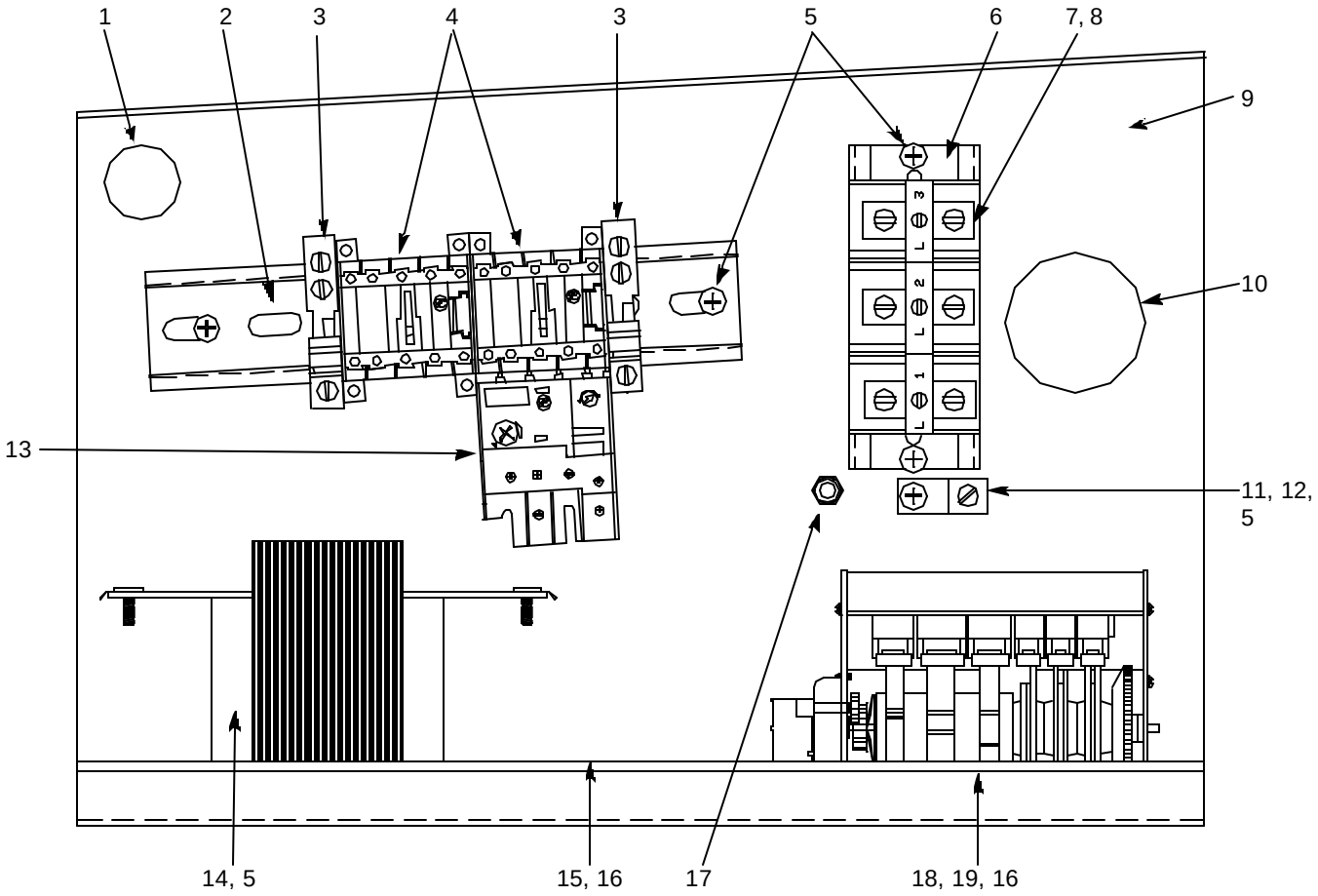
1. Disconnect the electrical power to the dishwasher at the main circuit breaker box when servicing. Place a tag on the circuit box indicating the circuit is being repaired.
2. Disconnect the power and conduit from dishmachine terminal block.
3. Turn off the water supply to the dishmachine.
4. Move the dishmachine away from the wall for servicing.
5. Use a 7/16" socket and ratchet to remove the lower enclosure panel at rear of machine.
6. Drain the dishmachine. Siphon out the water or remove inlet hose to drain valve and drain into pan. The dishmachine may be drained by opening the petcock on the pump housing or by removing the wash thermometer bulb from the lower wash tank.
7. Use a 5/16" nutdriver to loosen the hose clamp and remove the inlet hose to the drain valve from the pump motor.
8. Use a phillips screwdriver to remove the cover from the valve. Use a flat screwdriver to disconnect the lead wires and ground to the drain valve.
9. Use a 5/16" nutdriver to loosen the hose clamp and remove the discharge hose from the drain valve.
10. Use a phillips screwdriver to remove the screws attaching the drain valve to the mounting plate.
11. Reverse the procedures to install the new valve. **INSURE GROUND WIRE LEAD IS CONNECTED PROPERLY TO TERMINAL ON THE MOTOR.**



Replacing the Drain Valve

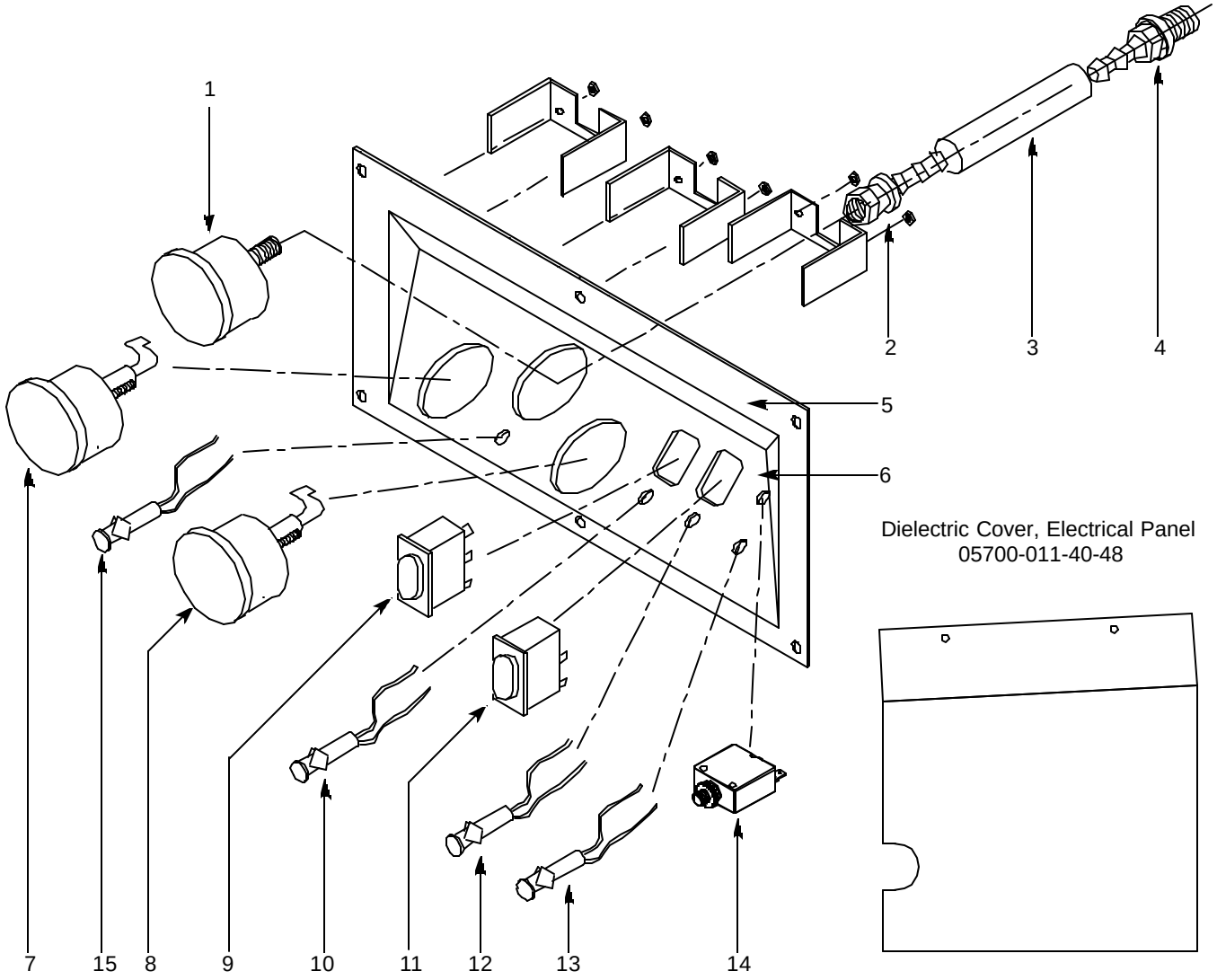
SECTION 6:
PARTS SECTION

ELECTRICAL PANEL ASSEMBLY



ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Bushing, Snap	05975210-03-00
2	1	Track, Terminal 6 7/8"	05700-021-62-91
3	2	End Clamp	05940-111-60-30
4	2	Contactor, Mini	05945111-60-07
5	9	Screw, 10-32 x 3/8” Phillips Truss Round Head	05305-173-12-00
6	1	Track, Terminal 3 3/4"	05700-011-62-89
7	1	Decal, L1, L2, L3	09905-101-12-66
8	3	Block, Snap-in Terminal	05940-500-02-19
9	1	Electrical Control Panel Weldment	05700-031-62-94
10	1	Grommet, 1 1/8" Heyco	05975210-08-00
11	1	Wire Lug	05940-200-76-00
12	1	Ground Decal	09905-011-41-82
13	1	Overload, Contactor	05945111-60-08
14	1	ACME Transformer, 480 to 120 Volt	05950-011-50-70
15	1	Terminal Board, 1/4 QC	05940-021-94-85
16	2	Screw, 6-32 x 3/8” Sems with External Tooth Lockwasher	05305-002-25-91
17	1	Locknut, 10-24 S/S Hex with Nylon Insert	05310-373-01-00
18	1	Timer, 6 Cam	05945121-44-69
19	1	Decal, Timer	09905-011-40-70
20	4	Locknut, 1/4”-20 S/S Hex with Nylon Insert (not shown)	05310-374-01-00

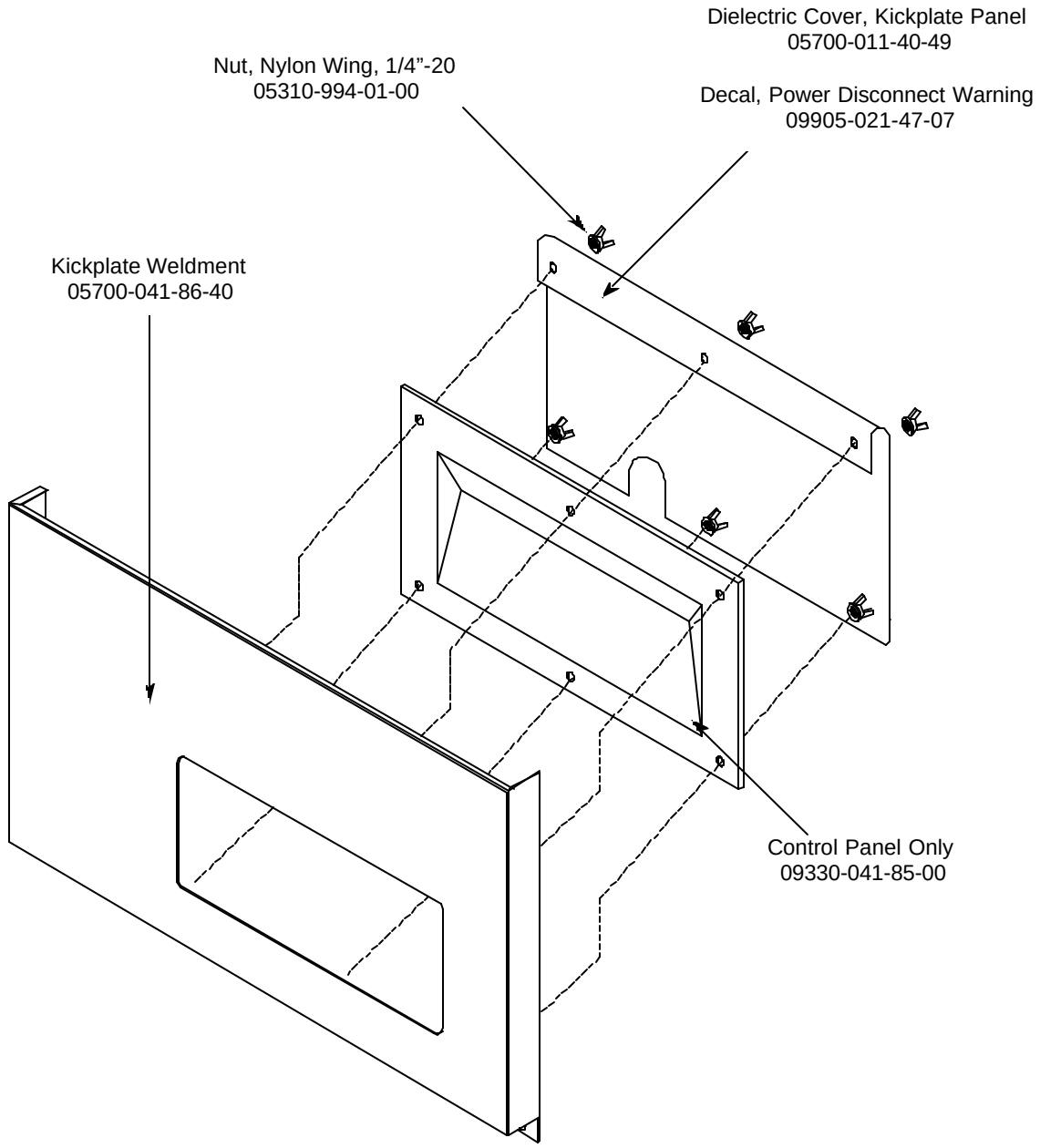
GAUGE PANEL ASSEMBLY



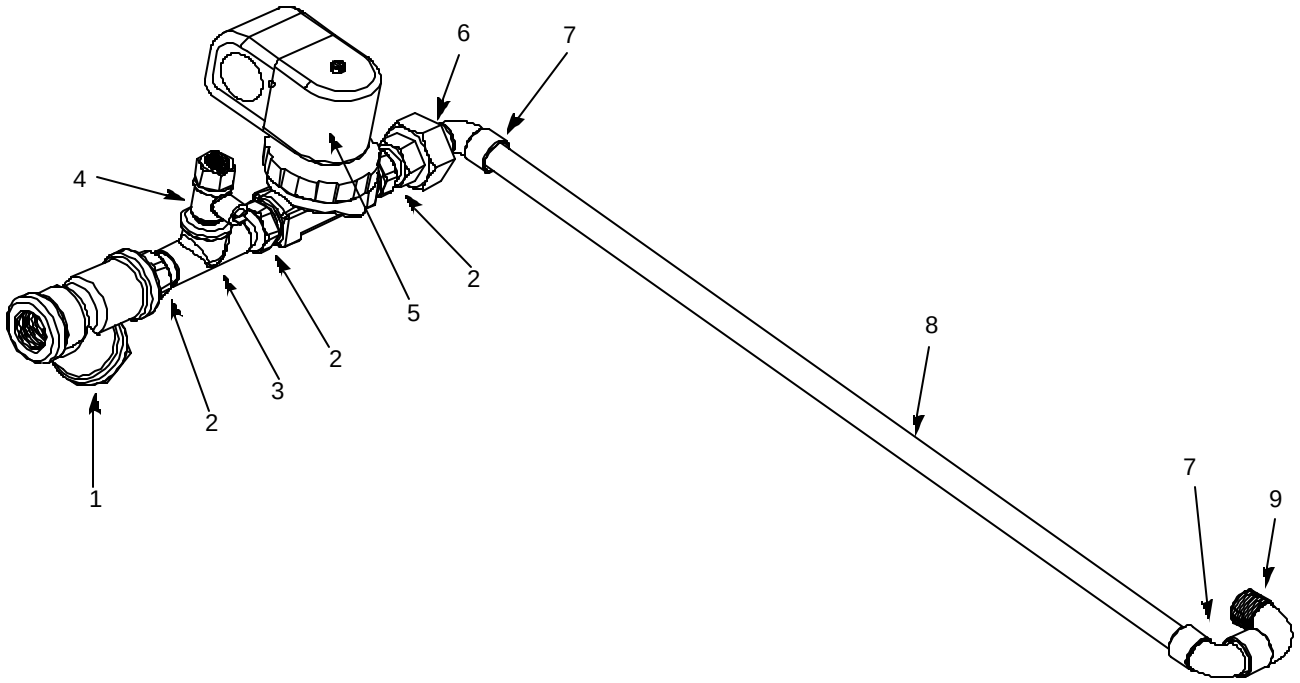
Dielectric Cover, Electrical Panel
05700-011-40-48

ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Gauge, 0-100 PSI with Green Zone	06680-011-86-42
2	1	Fitting, 1/4” BARB, 1/4” FNPT Swivel	04730-011-95-42
3	1	Hose, 5/16” x 12"	05700-011-86-45
4	1	Fitting, 1/4” BARB 1/4” MNPT Swivel	04730-011-95-41
5	1	Control Panel	09330-041-85-00
6	1	Decal, Control Panel	09905-031-40-55
7	1	Thermometer, 96” Wash	06685-111-68-49
8	1	Thermometer, 48” Rinse	06685-111-68-48
9	1	Switch, ON/FILL & OFF/DRAIN	05930-301-49-55
10	1	Light, Red	05945111-44-45
11	1	Switch, Delime	05930-011-49-00
12	1	Light, Amber	05945111-44-44
13	1	Light, Green	05945111-44-43
14	1	Breaker, 2A Circuit	05925-111-64-18
15	1	Light, Red	05945111-44-45

KICK PLATE ASSEMBLY

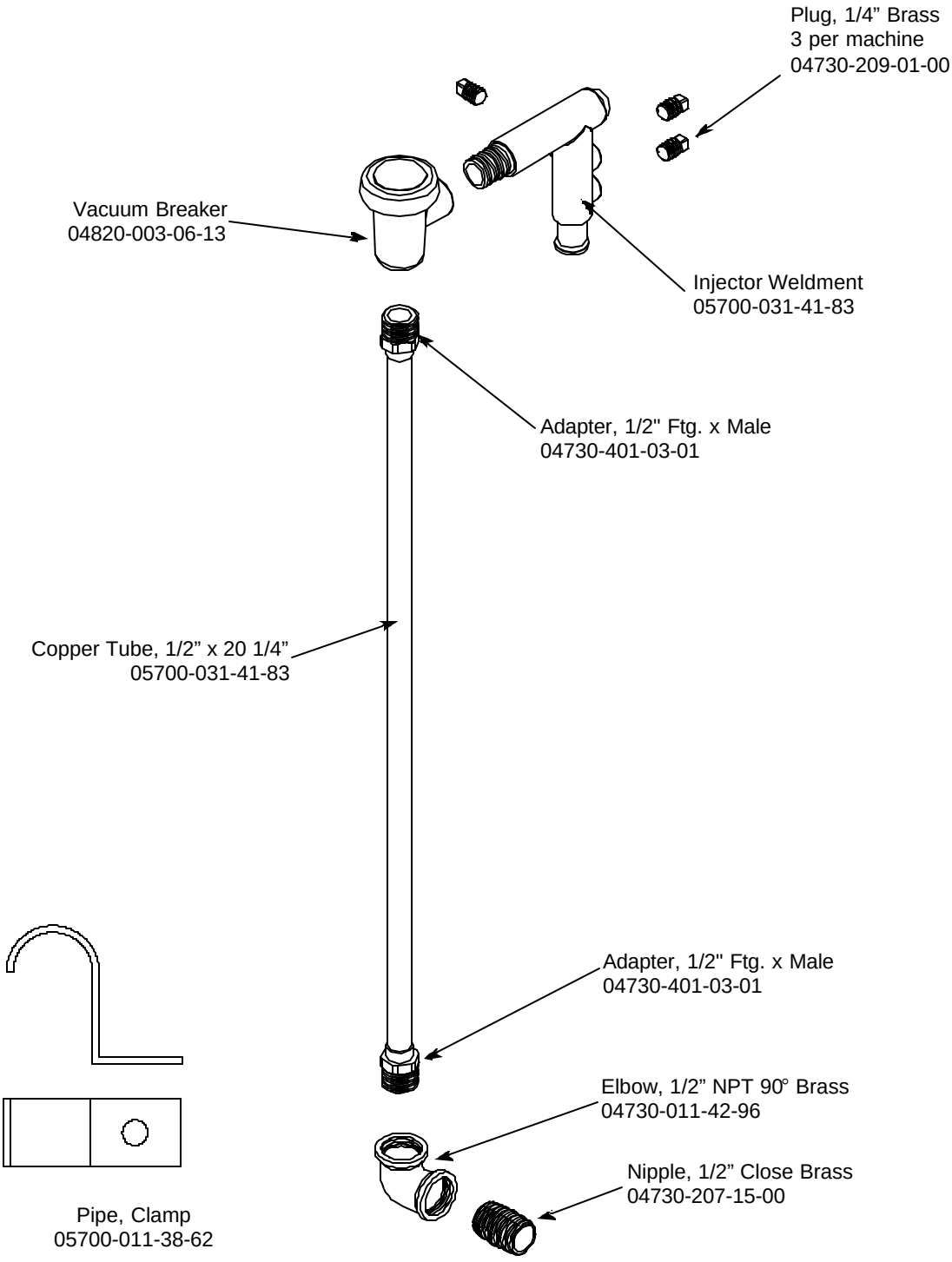


INCOMING PLUMBING ASSEMBLY

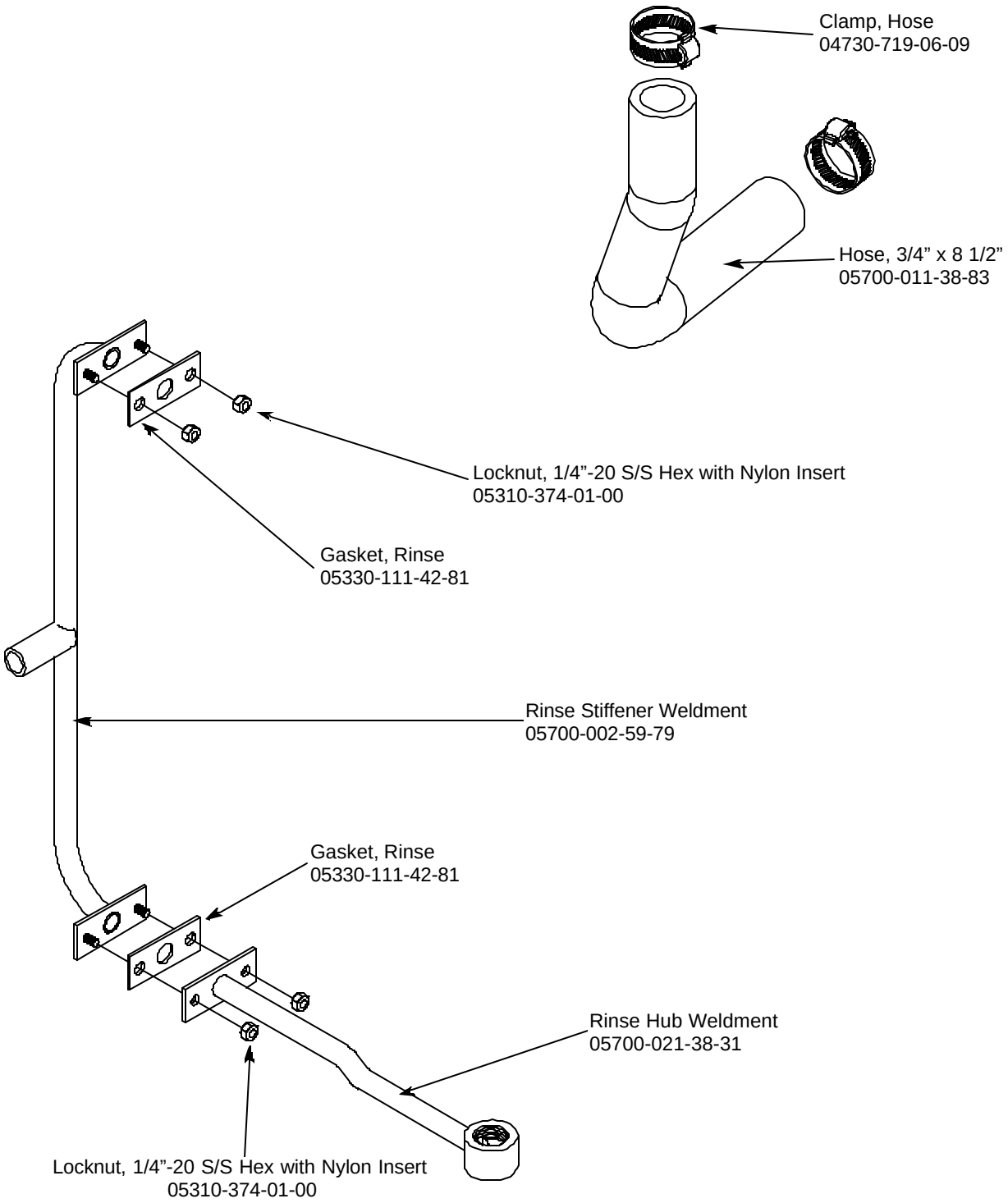


ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Y-Strainer, 1/2"	04730-217-01-10
2	3	Adapter, 1/2" Ftg x Male	04730-011-59-53
3	1	Tee, 1/2” x 1/2” x 1/4”	04730-411-25-01
4	1	Ball Valve, Test Cock 1/4"	04810-011-72-67
5	1	Valve, Solenoid 1/2" 110 volt	04810-100-12-18
6	1	Union, 1/2" C to C	04730-412-05-01
7	2	Elbow, 1/2" C to Ftg	04730-406-31-01
8	1	Copper Tube, 1/2" x 18 1/2"	05700-011-44-34
9	1	Elbow, 1/2", 90 Deg. C to MSPS	04730-406-32-01

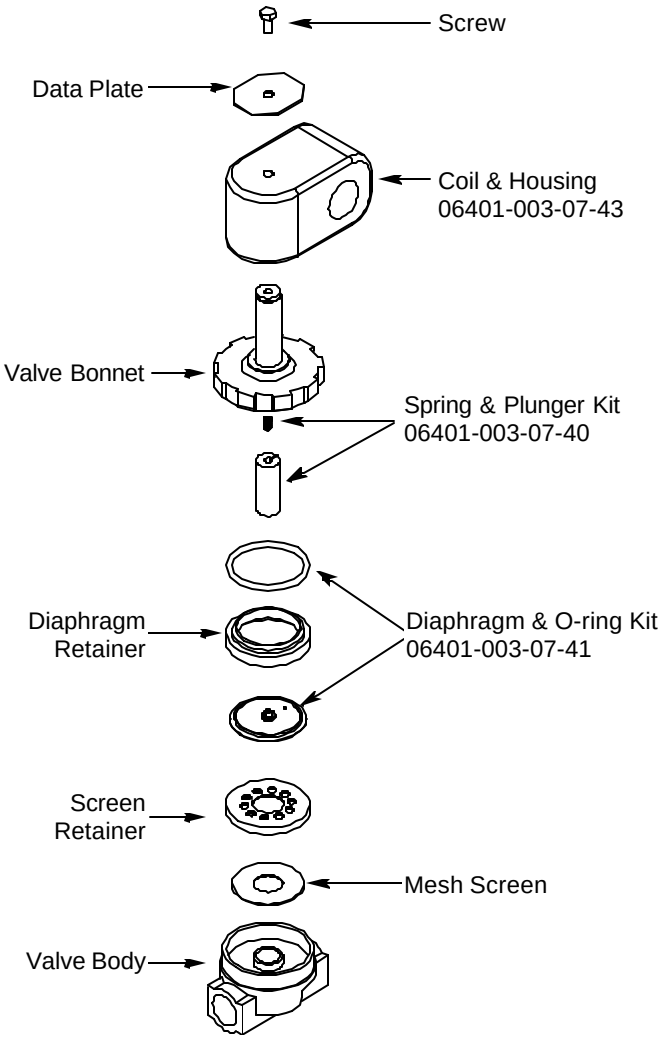
PLUMBING ASSEMBLY (CONTINUED)



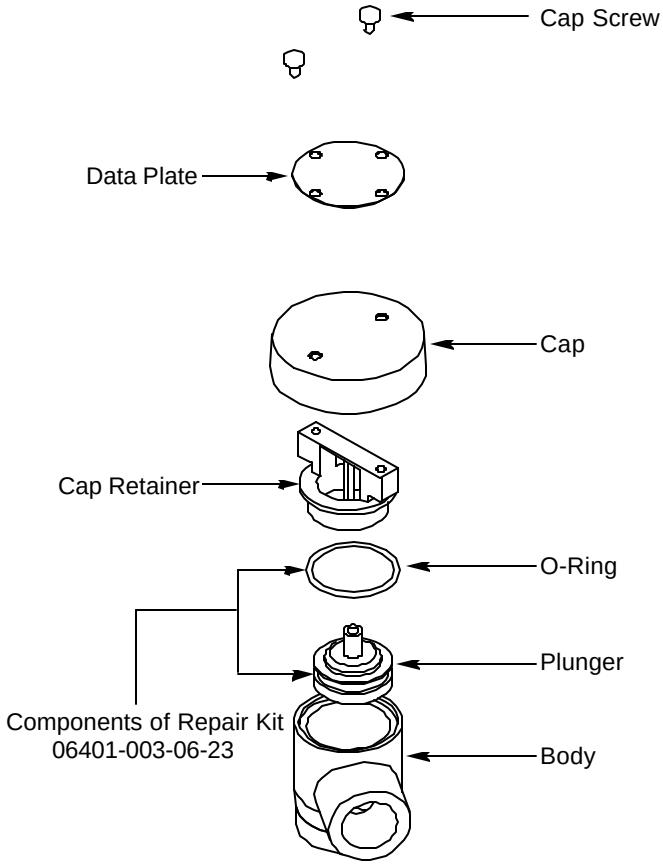
PLUMBING ASSEMBLY (CONTINUED)



1/2” SOLENOID VALVE & 1/2” NPT VACUUM BREAKER REPAIR PARTS KITS

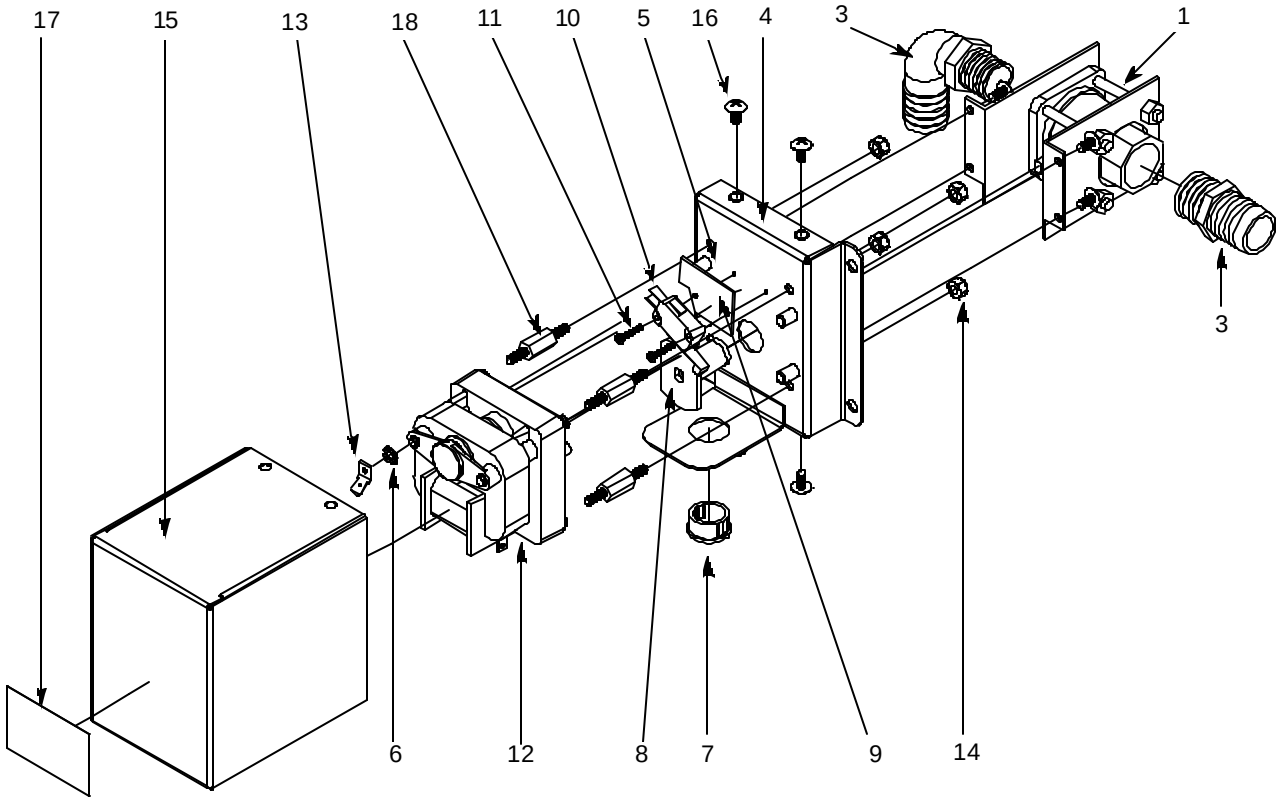


Complete 110 Volt Solenoid Valve Assembly
04810-100-12-18



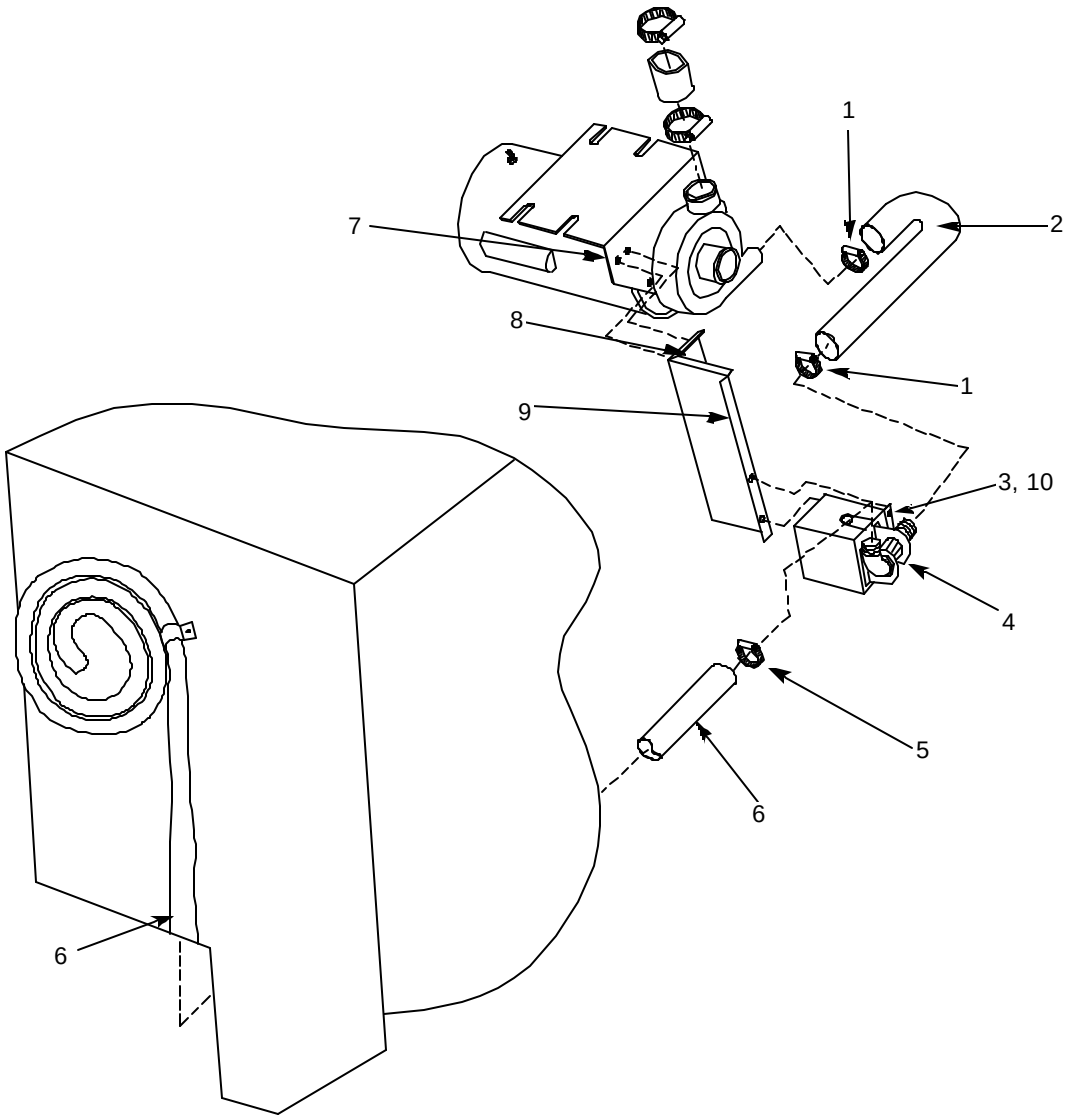
Complete Vacuum Breaker Assembly
04820-003-06-13

DRAIN VALVE ASSEMBLY



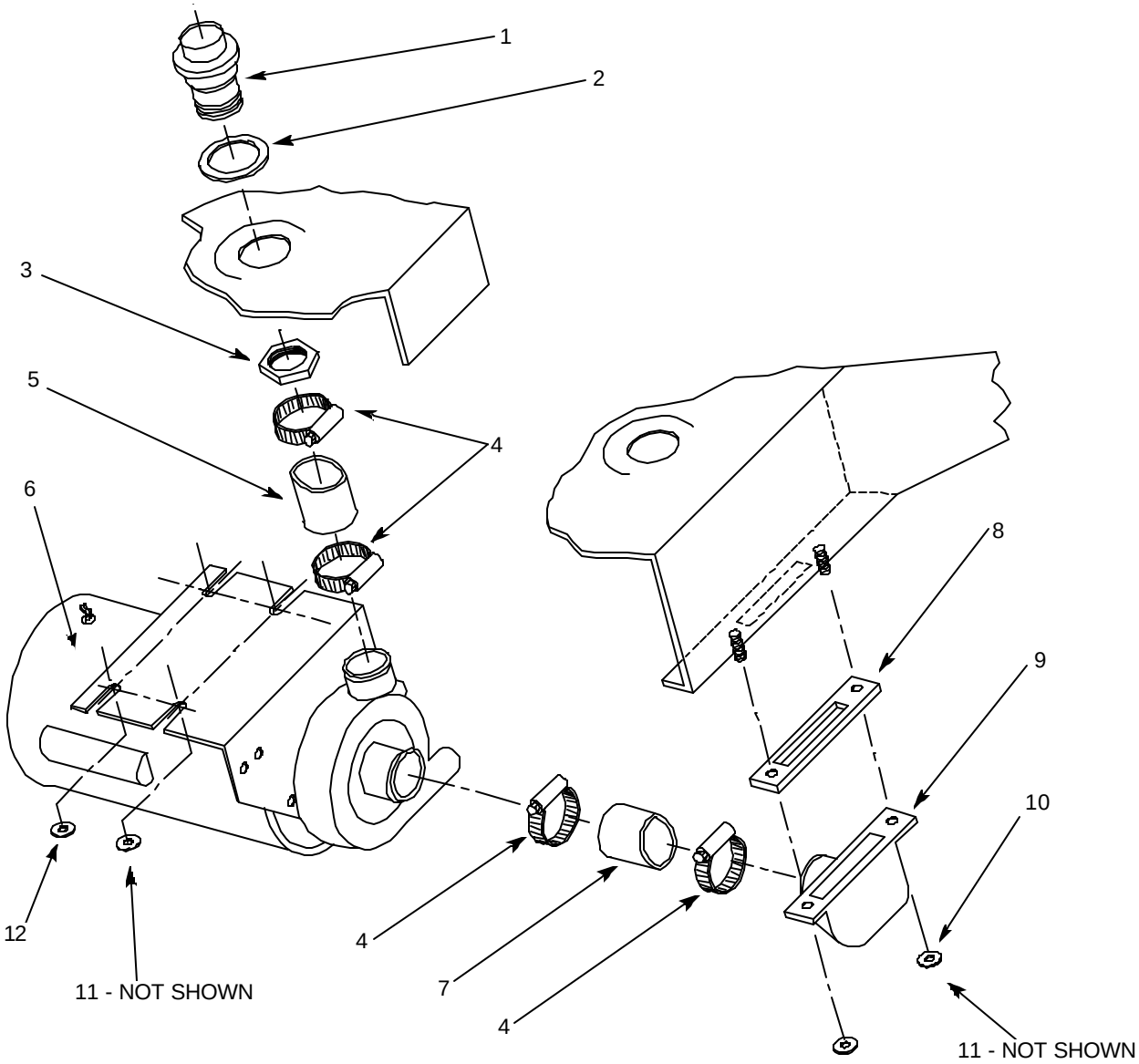
ITEM	QTY	DESCRIPTION	Mfg. No.
	1	Diverter Valve Assembly, 220 Volt	06401-022-23-21
1	1	Valve, With Brackets	05700-002-23-28
2	1	Hosebarb, 1” x 3/4” NPT Polypropylene	04730-011-65-86
3	1	Hosebarb, 90° 1” x 3/4” NPT	04730-011-65-87
4	1	Plate, Motor Mounting Weldment	05700-031-96-02
5	4	Tricnut, 10-32 AK Fastener, S/S	05340-111-58-10
6	1	Lockwasher, #10 External Tooth	05311-273-02-00
7	1	Grommet, Heyco	05975210-03-00
8	1	Cam Weldment	05700-011-65-78
9	1	Plate, Dielectric	05700-011-65-80
10	1	Switch, Micro	05930-011-65-81
11	2	Screw, 4-40 x 5/8"	05305-011-49-70
12	1	Motor, Chemical Feeder Pump 14 RPM 220 Volt	04320-011-79-34
13	1	Terminal, Ground Spade	05940-011-75-70
14	4	Locknut, 10-32 S/S Hex with Nylon Insert	05310-373-02-00
15	1	FW-Valve, Cover	05700-031-65-70
16	4	Screw, 10-32 x 3/8” Truss Head	05305-173-12-00
17	1	Decal, Warning-Disconnect Power	09905-100-75-93
18	4	Screw, Mounting	05305-011-93-30

DRAIN PLUMBING ASSEMBLY



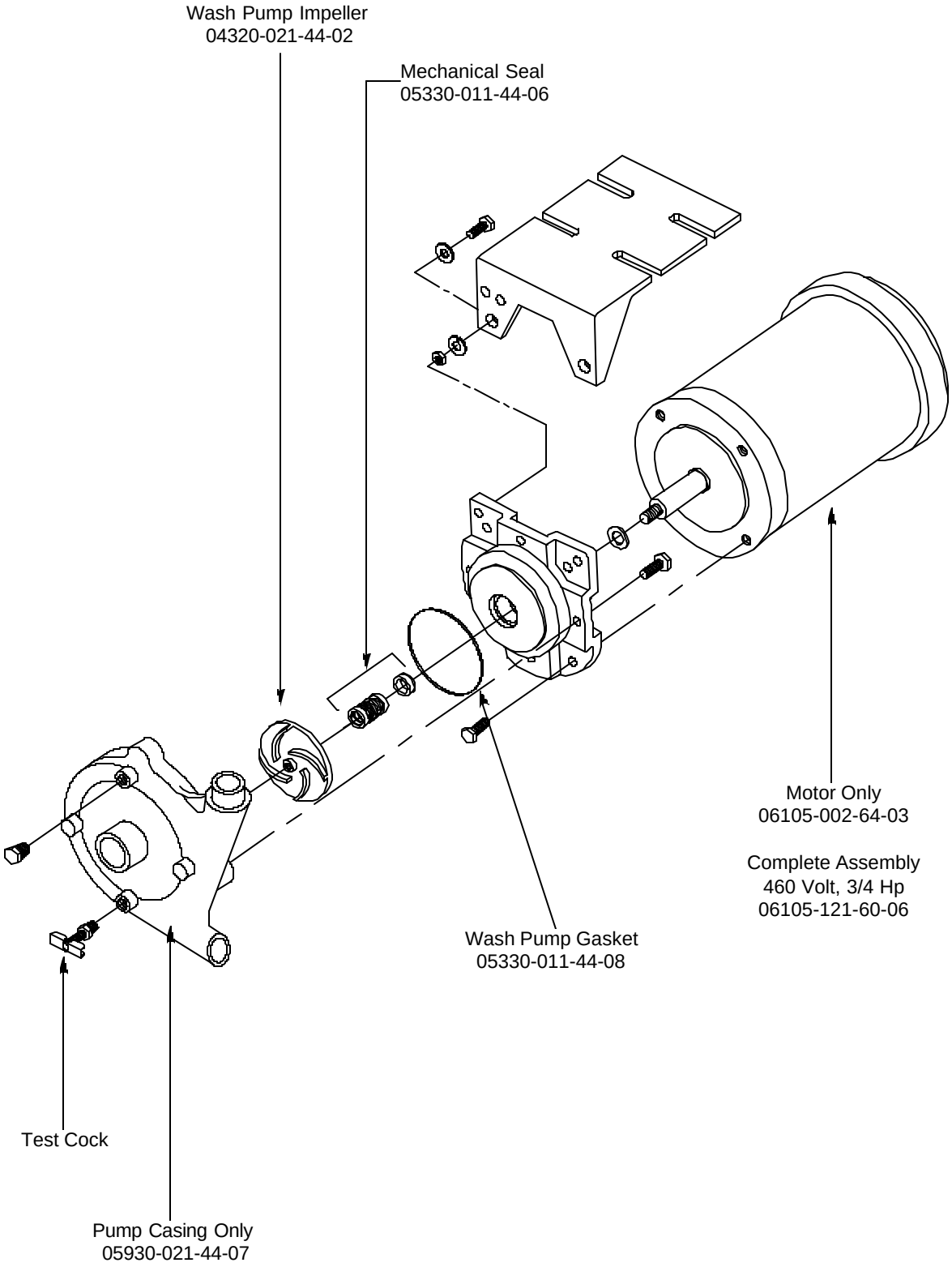
ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Clamp, 3/16” to 1 1/2”	04730-719-06-09
2	1	Hose, Formed Drain	04720-121-40-36
3	2	Bolt, 10-32 x 1/2 Slotted Truss Head	05305-173-04-00
4	1	Diverter Valve Assembly	06401-022-23-21
5	1	Clamp, 11/16” to 1 1/4”	04730-002-18-40
6	1	Hose, 1” I.D. x 10 Feet Long	05700-011-39-72
7	2	Locknut, 1/4”-20 S/S Hex with Nylon Insert	05310-374-01-00
8	2	Bolt, 1/4”-20 x 1/2” Long	05305-274-02-00
9	1	Bracket, Valve Mounting with Tricnuts	05700-021-66-37
10	2	Washer, #10 External Tooth Star	05311-273-02-00

WASH MOTOR TO WASH TUB ASSEMBLY

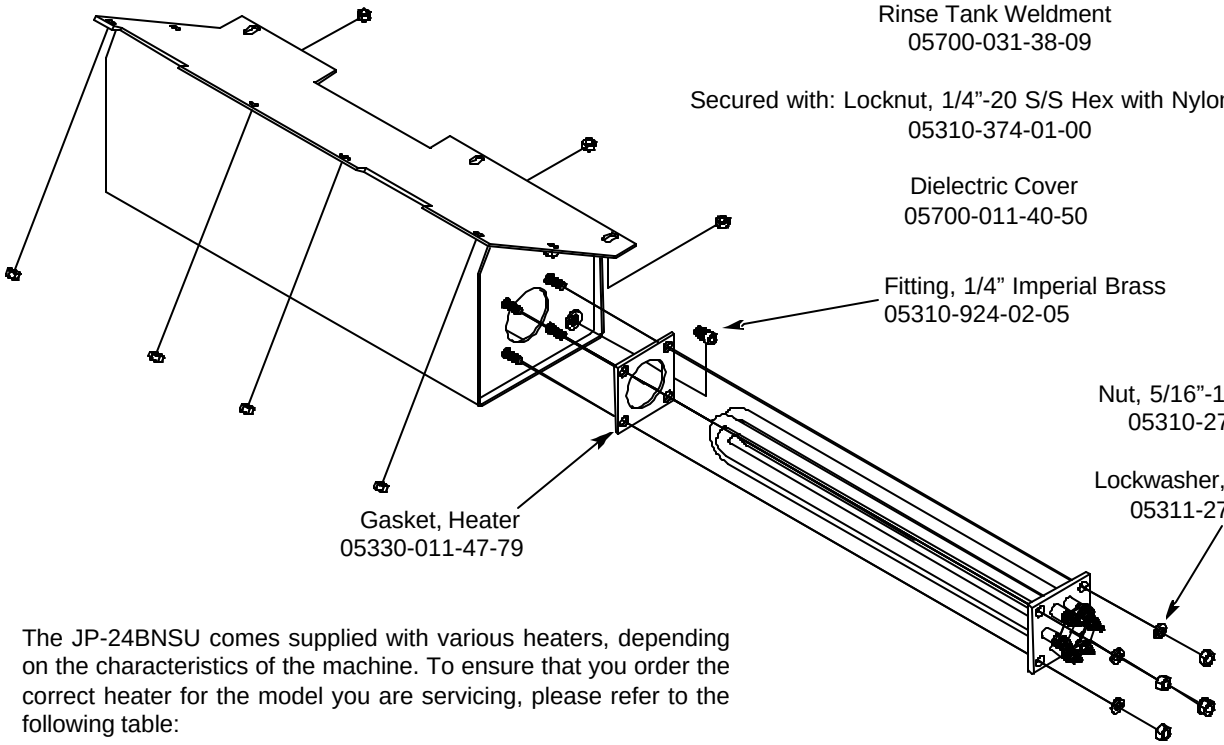


ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Hub, Discharge Machined	05700-021-37-90
2	1	Gasket, 2” O.D. x 1 1/2” I.D. x 1/16”	05330-200-23-00
3	1	Nut, Jam 1 1/2”-12 NPT	05700-000-86-23
4	4	Hose Clamp, 1 1/16" - 2”	04730-719-18-00
5	1	Hose,1 1/4” x 2 1/4” Reinforced	05700-011-44-48
6	1	Motor, Wash	06105-121-60-06
7	1	Hose, Bottom Manifold Pump	05700-001-22-92
8	1	Gasket, Suction Adapter	05330-021-40-87
9	1	Casting, Suction Adapter	09515-031-39-86
10	4	Washer, S/S 1/4”-20 I.D.	05311-174-01-00
11	6	Locknut, 1/4”-20 S/S	05310-374-01-00
12	4	Washer, 1/4” I.D. x 3/4” O.D. S/S	05311-011-76-30

WASH MOTOR ASSEMBLY



RINSE TANK & COMPONENTS



Rinse Tank Weldment
05700-031-38-09

Secured with: Locknut, 1/4”-20 S/S Hex with Nylon Insert
05310-374-01-00

Dielectric Cover
05700-011-40-50

Fitting, 1/4” Imperial Brass
05310-924-02-05

Nut, 5/16”-18 S/S Hex
05310-275-01-00

Lockwasher, 5/16” Split
05311-275-01-00

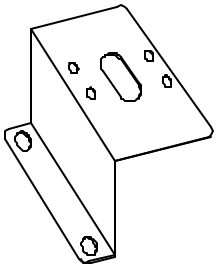
Gasket, Heater
05330-011-47-79

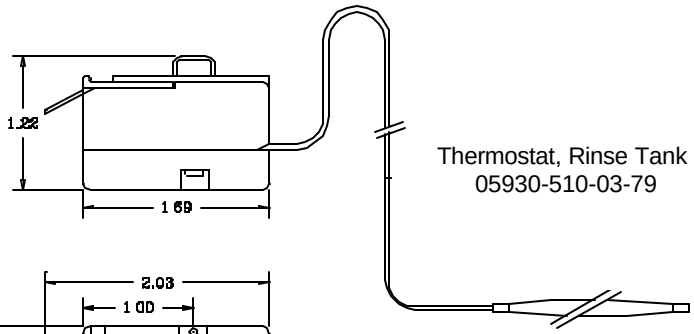
The JP-24BNSU comes supplied with various heaters, depending on the characteristics of the machine. To ensure that you order the correct heater for the model you are servicing, please refer to the following table:

Volts	Hz	Phase	40°F Rise Rinse Heater (8.2 KW)	70°F Rise Rinse Heater (10 KW)
460	60	3	04540-111-51-46	04540-002-29-82

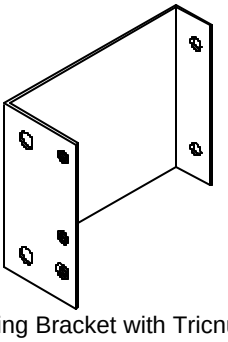
Thermostat Mounting Bracket
05700-011-81-64

The thermostat attaches with 2:
Screw, 6-32 x 3/8” Sems w/External Tooth Washer
05305-002-25-91



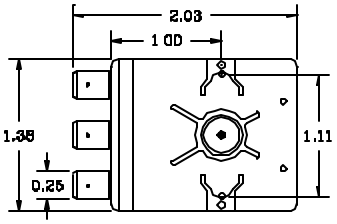


Thermostat, Rinse Tank
05930-510-03-79



Thermostat Mounting Bracket with Tricnuts
05700-011-65-00

Secured with:
Locknut, 10-24 S/S Hex with Nylon Insert
05310-373-01-00



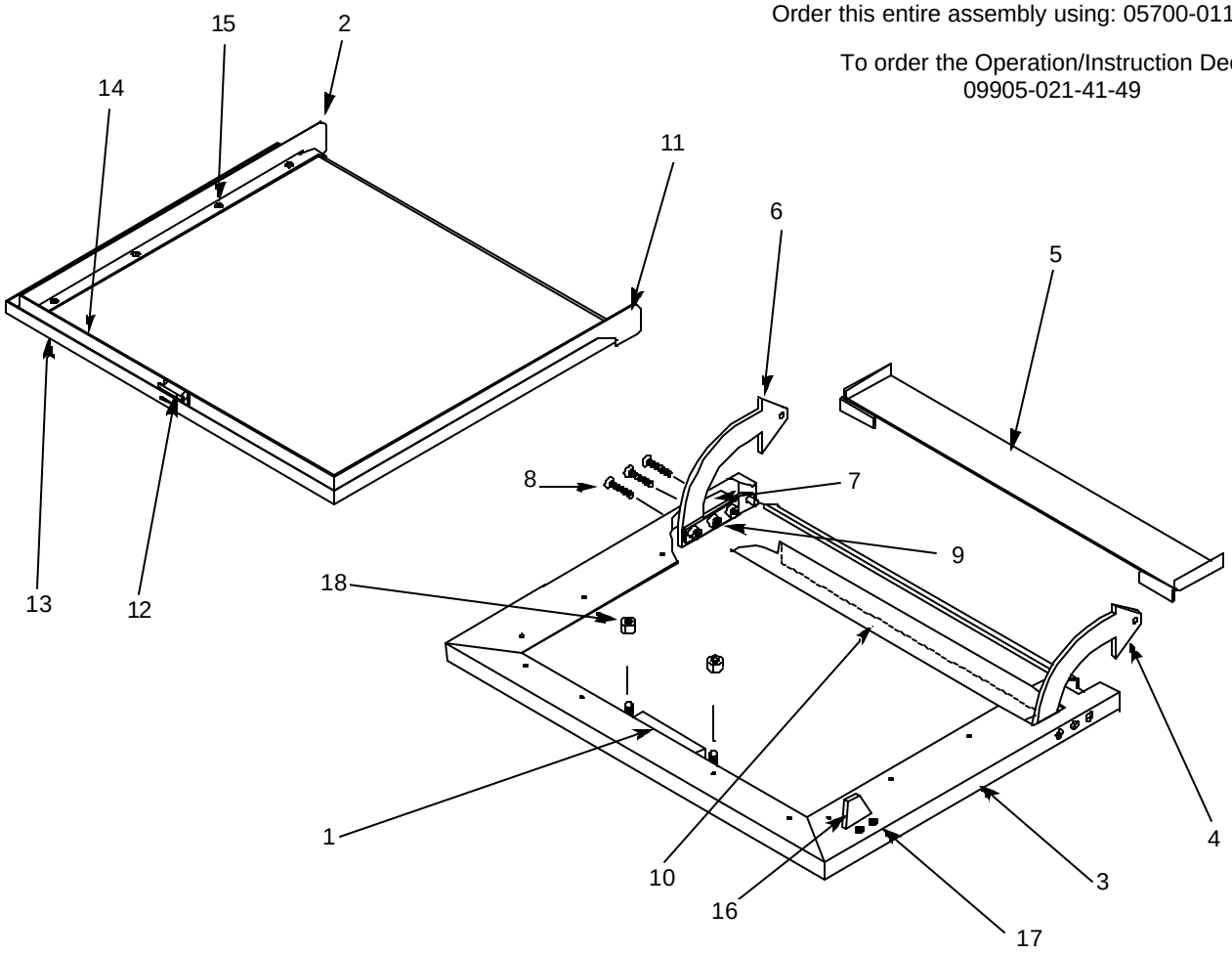
Thermostat, High Limit
05930-011-49-43

Decal, High Limit
09905-011-84-32

DOOR ASSEMBLY

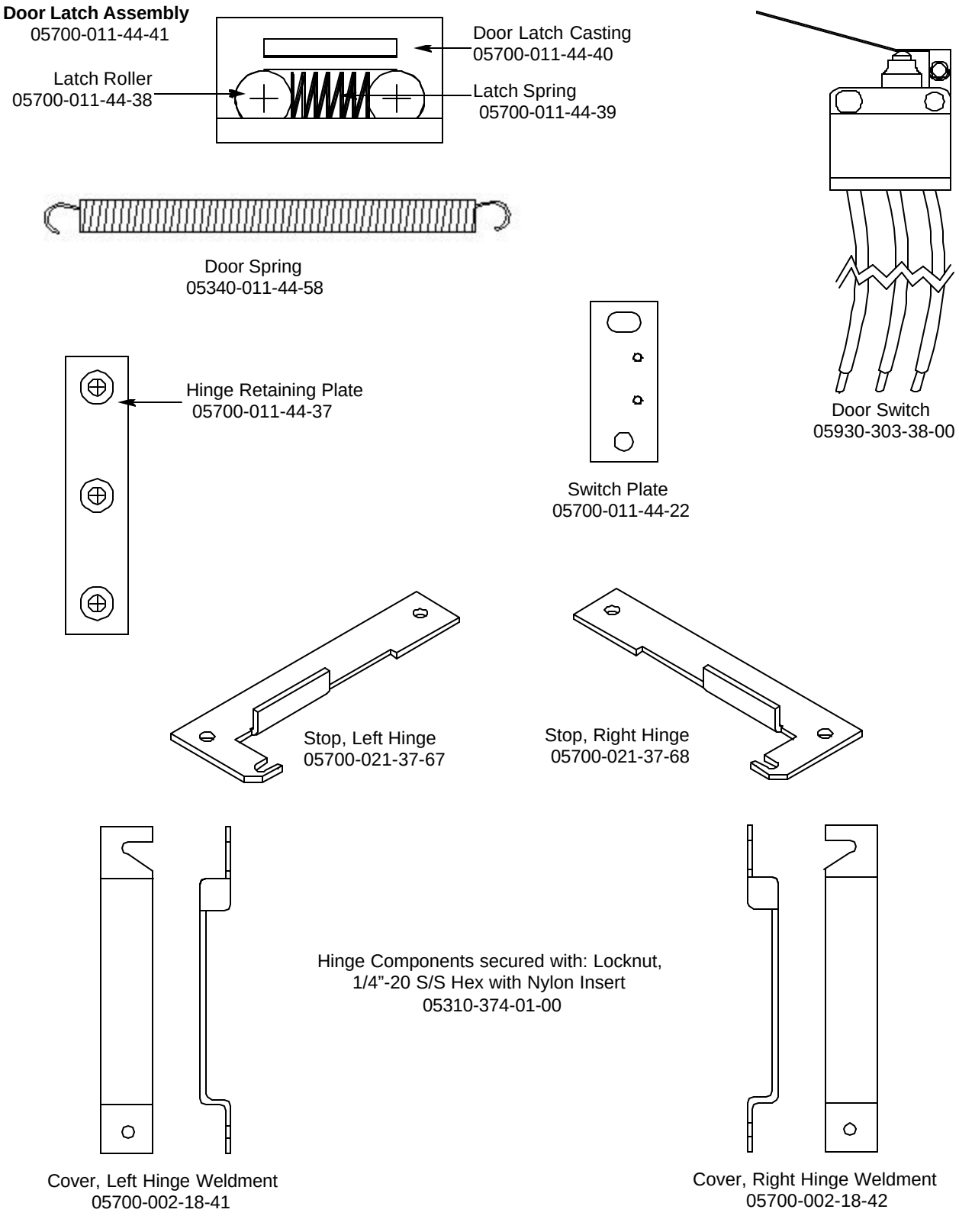
Order this entire assembly using: 05700-011-39-15

To order the Operation/Instruction Decal
09905-021-41-49

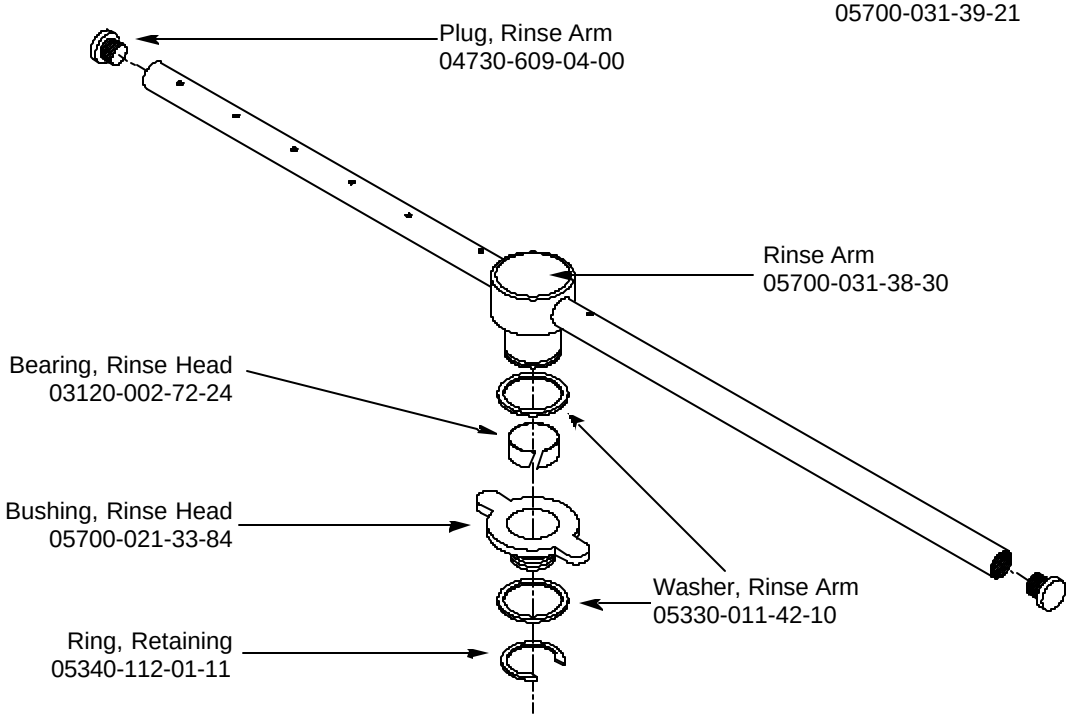


ITEM	QTY	DESCRIPTION	Mfg. No.
1	1	Door Handle, S/S	05340-011-60-25
2	1	Seal Channel, Inner Door, Left	05700-031-32-89
3	1	Outer Door Weldment	05700-021-35-72
4	1	Right Hinge Assembly Weldment	05700-021-38-75
5	1	Spray Baffle	05700-031-37-56
6	1	Left Hinge Assembly Weldment	05700-021-38-76
7	2	Spacer, Hinge UHMW	05700-011-44-23
8	6	Fastener, Screw, 1/4"-20 x 1-1/2" Long	05305-011-44-50
9	2	Hinge Retaining Plate Assembly	05700-011-44-37
10	1	Baffle, Door	05700-001-44-75
11	1	Seal Channel, Inner Door, Right	05700-031-32-91
12	1	Latch Assembly	05700-011-44-41
13	1	Inner Door	05700-031-32-85
14	1	Seal Channel, Inner Door, Top	05700-031-32-90
15	12	Fastener, Screw, 10-32 Counter Sink, 1/2" Long	05305-011-44-51
16	1	Striker, Door Switch	05700-011-44-24
17	2	Fastener, Screw 10-32 x 1/2" Long	05305-011-44-52
18	2	Locknut, 10-32, S/S Hex with Nylon Insert	05310-373-02-00

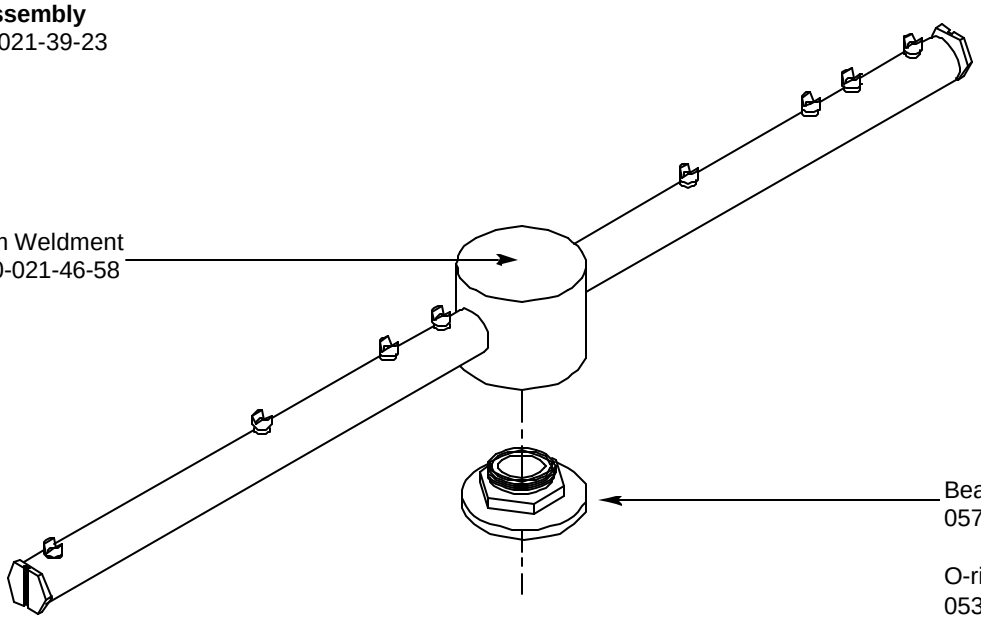
MISCELLANEOUS DOOR SUB-ASSEMBLIES



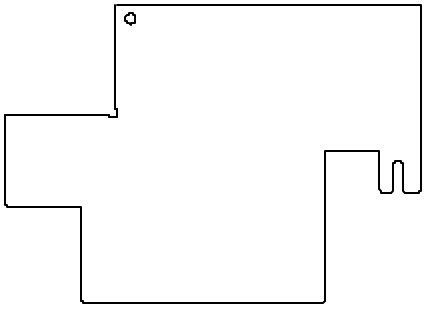
Rinse Arm Assembly
05700-031-39-21



Wash Arm Assembly
05700-021-39-23

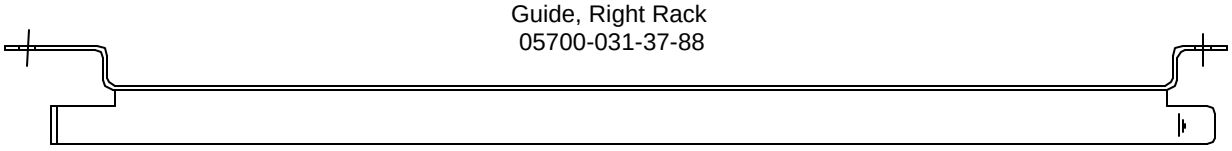


MISCELLANEOUS PARTS

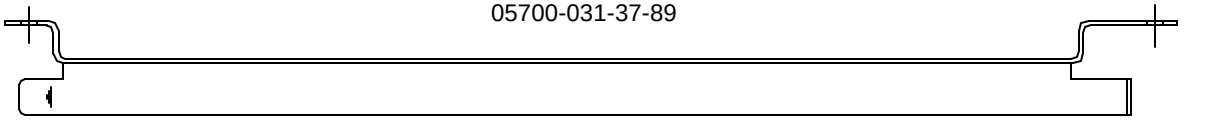


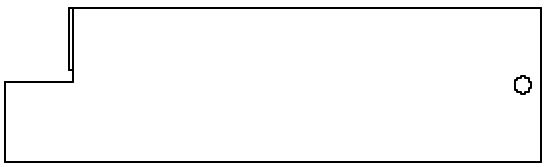
Back Panel
05700-031-44-33

Guide, Right Rack
05700-031-37-88



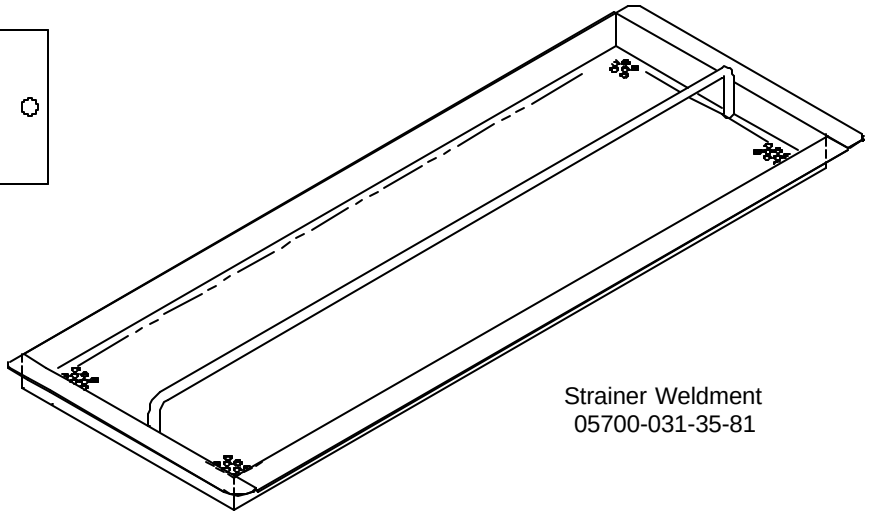
Guide, Left Rack
05700-031-37-89





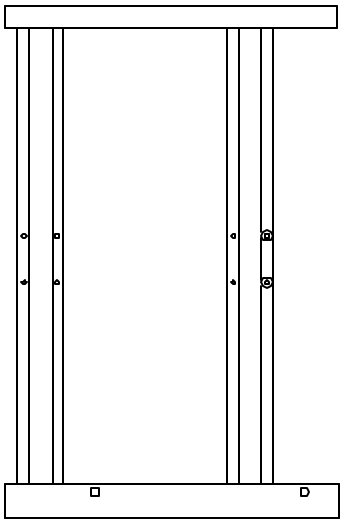
Strainer Spacer
05700-021-35-83

Attaches with:
Nut, Nylon Wing, 1/4”-20
05310-994-01-00

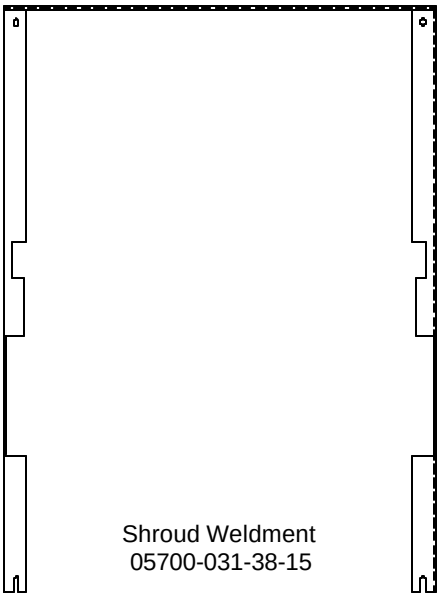


Strainer Weldment
05700-031-35-81

FRAME, SHROUD, & PANEL COMPONENTS

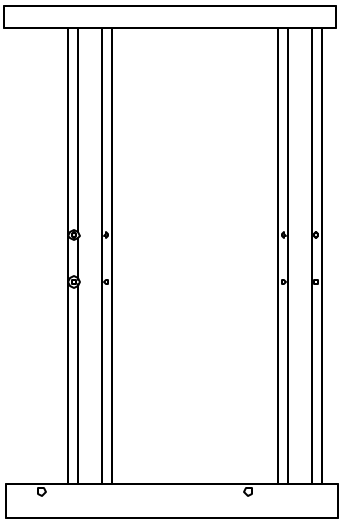


Left Frame Weldment
05700-011-73-85



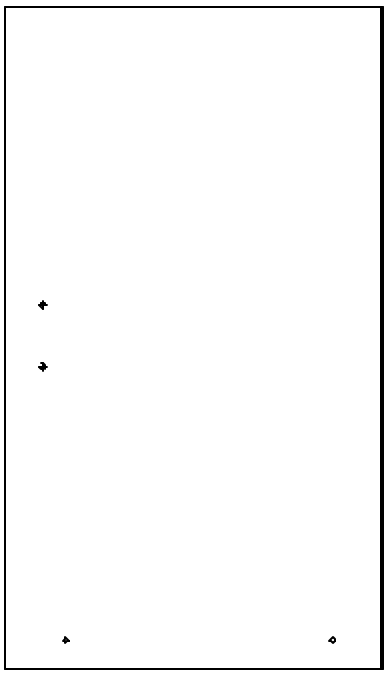
Shroud Weldment
05700-031-38-15

Secured with 10-32 x 1/2" Long Screws
05305-173-04-00

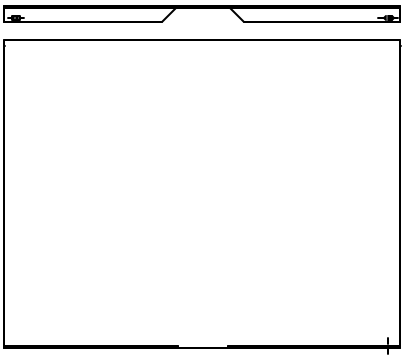


Right Frame Weldment
05700-011-73-86

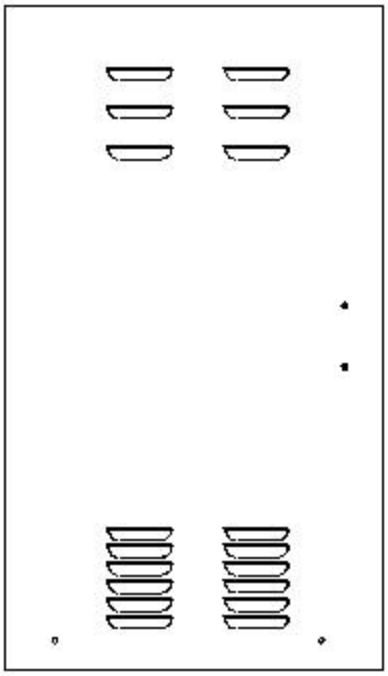
The swivel feet used on the unit may be ordered using 05340-108-02-00



Left Dress Panel
05700-041-38-37



Top Panel
05700-041-38-38



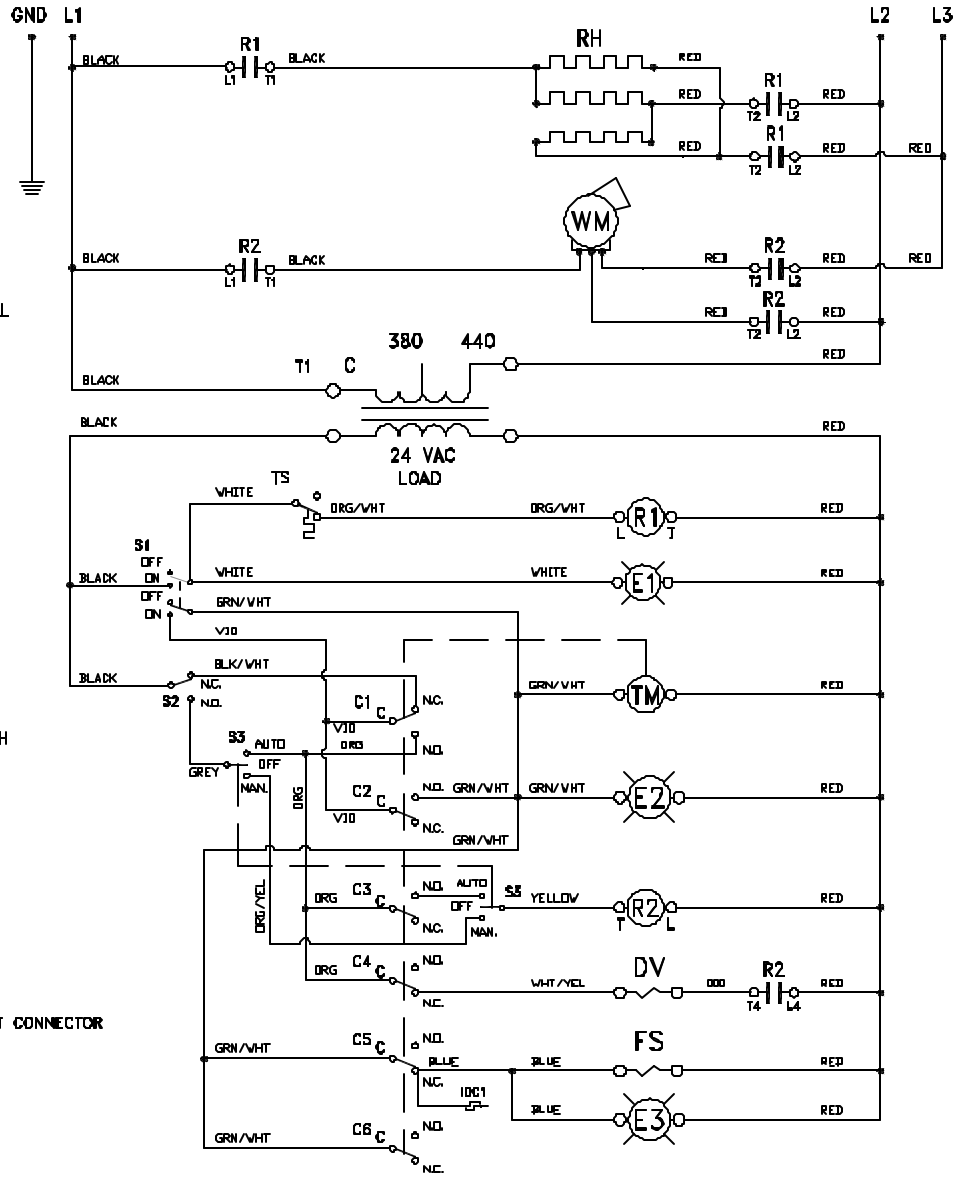
Right Dress Panel
05700-041-38-08

The Panels are secured with 10-32 x 1/2" Truss Head Screws, 05305-011-39-36

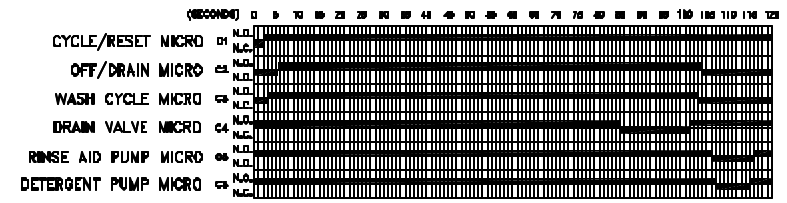
SECTION 7:
ELECTRICAL DIAGRAMS

LEGEND

- WM — WASH PUMP MOTOR
- TM — TIMER MOTOR
- R1 — RINSE HEATER CONTACTS
- R2 — WASH RELAY CONTACTS
- (R1) — WASH RELAY COIL
- (R2) — WASH RELAY COIL
- S1 — OFF-DRAIN SWITCH/ON-FILL
- S2 — DOOR SWITCH
- S3 — FRONT DOOR SWITCH
- (E1) — POWER ON LIGHT
- (E2) — CYCLE LIGHT
- (E3) — RINSE/FILL LIGHT
- (DV) — DRAIN VALVE
- FS — FILL SOLENOID
- C1 — CYCLE/RESET MICROSWITCH
- C2 — WASH MICROSWITCH
- C3 — DRAIN MICROSWITCH
- C4 — FILL MICROSWITCH
- C5 — SANITIZER MICROSWITCH
- C6 — DETERGENT MICROSWITCH
- IDC — INSULATION DISPLACEMENT CONNECTOR
- H1 — RINSE TANK HEATER
- T1 — TRANFORMER (380 / 440)
- TS — RINSE HEATER THERMOSTAT



TIMING CHART



9905-031-51-11

NAVSEA/SPAWAR TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER)

INSTRUCTION: Continue on 8 1/2" x 11" paper if additional space is needed.

1. USE THIS REPORT TO INDICATE DEFICIENCIES, PROBLEMS, AND RECOMMENDATIONS RELATING TO PUBLICATION.
2. FOR CLASSIFIED TMDERS. SEE OPNAVINST 5510H FOR MAILING CLASSIFIED TMDERS.
3. Submit TMDERS at web site http://nsdsa.nswses.navy.mil or mail

1. PUB NO.	2. VOL/PART	3. REV. NO./DATE OR TM CH. NO./DATE	4. SYSTEM/EQUIPMENT IDENTIFICATION

5. TITLE	6. REPORT CONTROL NUMBER (UIC-YEAR-XXXX)

7. RECOMMENDED CHANGES TO PUBLICATION

PAGE NO. A.	PARA-GRAPH B.	C. RECOMMENDED CHANGES AND REASONS

8. ORIGINATOR'S NAME AND WORK CENTER (Please Print)	9. DATE	10. DSN/COMM NO.	11. TRANSMITTED TO; (NSDSA WILL FILL IN)

12. SHIP HULL NO. AND/OR STATION ADDRESS (Do Not Abbreviate)

13. ORIGINATORS EMAIL ADDRESS

NAVSEA 4160/1 (REV 2-99) SN 0116-LF-019-5300 (Destroy Old Stock)

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DEPARTMENT OF THE NAVY

PLACE
POSTAGE
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COMMANDER
NSDSA CODE 5E30
NAVSURFWARCENDIV
4363 MISSILE WAY
PORT HUENEME CA 93043-4307

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Ref: NAVSEAINST 4160.3A

(Insert Classification of TMDER Here) CLASSIFICATION: NAVSEA S0005-AA-GYD-030/TMMP

NAVSEA/SPAWAR TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER)

INSTRUCTION: Continue on 8 1/2" x 11" paper if additional space is needed.

1. USE THIS REPORT TO INDICATE DEFICIENCIES, PROBLEMS, AND RECOMMENDATIONS RELATING TO PUBLICATION.
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NAVSEA 4160/1 (REV 2-99) SN 0116-LF-019-5300 (Destroy Old Stock)

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NSDSA CODE 5E30
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4363 MISSILE WAY
PORT HUENEME CA 93043-4307

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SECTION 8: JACKSON MAINTENANCE & REPAIR CENTERS

ALABAMA:

JONES-McLEOD APPLIANCE SVC
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 SVC
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
800-510-3497

ARKANSAS:

BROMLEY PARTS & SVC
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COMMERCIAL PARTS & SVC.
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800-258-6999
FAX: (626) 337-4541
service@barkers.com

GCS SERVICE INC.
LOS ANGELES, CA
800-327-1433

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

INDUSTRIAL ELECTRIC SVC
5662 ENGINEER DRIVE
HUNTINGON BEACH, CA 92649
(714) 379-7100
800-457-3783
FAX: (714) 379-7109

GCS SERVICE INC.
1196 CHERRY LANE
SAN BRUNO, CA 92121
(858) 549-8411
800-422-7278

BARKERS FOOD MACHINERY SERVICES
9373 ACTIVITY ROAD #G
SAN DIEGO, CA 92126
(858) 695-1091
800-995-7955
FAX: (858) 695-0092

GCS SERVICE INC.
9030 KENAMAR DR. SUITE 313
SAN DIEGO, CA 92121
(858) 549-8411
800-422-7278
FAX: (858) 549-2323

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

GCS SERVICE INC.
650 S. GRAND AVE #111
SANTA ANA, CA 92705
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800-327-1433

COLORADO:

HAWKINS COMMERCIAL APPLIANCE SERVICE
56 BUCHANAN
COLORADO SPRINGS, CO 80110
(719) 477-1242
FAX: (719) 477-1513

HAWKINS COMMERCIAL APPLIANCE SERVICE
3000 S. WYANDOT ST.
ENGLEWOOD, CO 80110
(303) 781-5548
(800) 624-2117
FAX: (303) 761-8861

METRO APPLIANCE SERVICE
1640 S BROADWAY
DENVER, CO 80210
(303) 778-1126
800-525-3532
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GCS SERVICE INC.
DENVER, CO
800-510-3497

CONNECTICUT:

GCS SERVICE INC.
302 MURPHY ROAD
HARTFORD, CT 06114
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DELAWARE:

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204 QUARRY STREET
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ELMER SCHULTZ SERVICE
36 BELMONT AVE.
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PHILADELPHIA, PA
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EMR SERVICE DIVISION
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FAX: (410) 548-4038

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ELMWOOD CIRCLE 1
SAHRON HILL, PA 19079
(215)925-6217
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FAX: (215) 925-6208

FLORIDA:

COMMERCIAL APPLIANCE SVC
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BLDG 6, SUITE 114
TAMPA, FL 33610
(813) 663-0313
800-282-4718
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commercialappliance@worldnet.att.net

COMMERCIAL APPLIANCE SVC
5791 YOUGQUIST RD. #1
FT. MEYERS, FL 33912
(941) 466-5883
800-671-1837
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COMMERCIAL APPLIANCE SVC
6270 EDGEWATER DR. #3400
ORLANDO, FL 32810
(407) 532-2107
FAX: (407) 532-2640

COMMERCIAL APPLIANCE SVC
6653 POWERS AVE. SUITE 241
JACKSONVILLE, FL 32217
(904) 626-6684
800-282-4718
FAX: (904) 636-6685

GCS SERVICE INC
3373 N. W. 168TH STREET
MIAMI, FL 33056
(305) 621-6666
800-766-8966
FAX: (305) 621-6656

GCS SERVICE INC
3902 CORPOREX PARK DR.
SUITE 350
TAMPA, FL 33619
(813) 626-6044
800-282-3008
FAX: (813) 621-1174

JONES-McLEOD APPLIANCE SVC
854 LAKESIDE DRIVE
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GEORGIA:

GCS SERVICE INC
3127 PRESIDENTIAL DRIVE
ATLANTA, GA 30340
(770) 452-7322
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FAX: (770) 452-7473

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

WHALEY FOODSERVICE REPAIRS
2909 LANDFORD RD. B-200
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(678) 243-7973
FAX: (678) 243-7974

WHALEY FOODSERVICE REPAIRS
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SAVANNAH, GA 31405
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FOOD EQMT. PARTS & SERVICE CO.
300 PUUHALE RD.
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106 E. MCCLURE
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GENERAL PARTS INC.
248 JAMES ST.
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CONES REPAIR SVC.
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696 LARCH AVENUE
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FAX: (866) 365-1551

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GENERAL PARTS INC.
1101 E. 13TH STREET
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1051 GOODWIN DRIVE
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FAX: (502) 367-0400

GCS SERVICE CENTER
533 CODELL DR. UNIT A
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BANA PARTS INC.
1501 KUEBLE STREET
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FAX: (504) 734-8456

MAINE:

MRE, INC.
170 JOHN ROBERTS RD UNIT #3
PROTLAND, ME 04106
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GCS SERVICE INC.
2660 PITTMAN DRIVE
SILVER SPRING, MD 20910
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FAX: (301) 495-4410

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ACE SERVICE CO.
95 HAMPTON AVE.
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SOMERVILLE, MA 02143
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800-338-6737
FAX: (617) 868-5331

GCS SERVICE INC.
180 SECOND STREET
CHELSEA, MA 02150
(617) 889-9393
800-225-1155
FAX: (617) 889-1222

GCS SERVICE INC.
302 MURPHY ROAD
HARTFORD, CT 06114
(860) 549-5575
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GCS SERVICE INC.
31829 WEST EIGHT MILE ROAD
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800-772-2936
FAX: (248) 426-7555

JACKSON SERVICE COMPANY
3980 BENSTEIN RD.
COMMERCE TOWNSHIP, MI 48382
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FAX: (248) 363-5448

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GENERAL PARTS INC.
11311 HAMPSHIRE AVE. S.
BLOOMING, MN 55438-2456
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800-279-9980
FAX: (800) 279-9980

GCS SERVICE INC.
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GCS SERVICE INC.
5755 GALLANT DRIVE.
JACKSON, MS 39206
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800-274-5954
FAX: (601) 956-1200

GCS SERVICE INC.
108 DISTRIBUTION DR. SUITE A
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FAX: (314) 638-0135

KAMMERLIN PARTS & SVC.
1539 SOUTH KINGSHIGHWAY
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NEVADA:

HI TECH COMMERCIAL SVC
400 E. MEAD BLVD.
LAS VEGAS, NV 89030
(702) 649-4616
(877) 924-4832
FAX: (702) 649-4607

GCS SERVICE INC.
LAS VEGAS, NV
800-822-2303

NEW HAMPSHIRE:

GCS SERVICE INC.
180 SECOND STREET
CHELSEA, MA 02150
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FAX: (617) 889-1222

ACE SERVICE CO.
500 HARVEY RD.
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90 CLINTON RD
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FAX: (973) 575-5890

JACKSON FASPRAY SVC.
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AMERICAN KITCHEN MACHINERY & REPAIR
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ELMER SCHULTZ SERVICES
201 WASHINGTON AVE.
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STOVE PARTS SUPPLY CO.
2120 SOLANA STREET
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bud@stoveparts.com

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APPLIANCE INSTALLATION AND SERVICE CORP.
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B.E.S.T. INC.
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DUFFY'S EQUIPMENT SVC.
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NORTHERN PARTS & SVC.
21 NORTHERN AVENUE
PLATTSBURGH, NY 12903
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800-634-5005
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ALL ISLAND REPAIR
40-9 BURT DRIVE
DEER PARK, NY 11729
(631) 242-5588
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A. I. S. COMMERCIAL PARTS & SVC
1900 COLLEGE AVENUE
ELMIRA HEIGHTS, NY 14901
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A. I. S. COMMERCIAL PARTS & SVC
13 WESTR MAIN STREET
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(716) 665-6556
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FAX: (716) 665-4227

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GCS SERVICE INC.
BROOKLYN, NY 11211
800-969-4271

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WHALEY FOODSERVICE
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WHALEY FOODSERVICE
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109 HINTON AVE. #4
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AUTHORIZED COMMERCIAL EQUIPMENT SERVICE
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1150 WEST MOUND STREET
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HAGAR RESTAURANT EQMT.
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GCS SERVICE INC.
210 VISTA PARK DRIVE
PITTSBURGH, PA 15205
(412) 787-1970
800-738-1221
FAX: (412) 787-5005

AIS COMMERCIAL PARTS & SERVICE
740 VISTA PARK DRIVE
PITTSBURGH, PA 15205
(412) 809-0244
800-726-6020
FAX: (412) 809-0246

K & D PARTS & SERVICE
1818 CEDAR AVE
SCRANTON, PA 17404
(570) 342-5135
FAX: (717) 238-4367

K & D PARTS & SERVICE
2670 EUCLID AVE
WILLIAMSPORT, PA 17702
(570) 323-8010
FAX: (717) 238-4367

K & D PARTS & SERVICE
2100 WEST MARKET ST.
YORK, PA 17404
(717) 793-8525
FAX: (717) 238-4367

RHODE ISLAND:

GCS SERVICE INC.
180 SECOND STREET
CHELSEA, MA 02150
(617)889-9393
800-225-1155
FAX: (617) 889-1222

MASSACHUSETTS RESTAURANT SUPPLY
170 AMARAL STREET
E. PROVIDENCE, RI 02915
(401) 434-1600
800-621-6737
FAX: (401) 434-1660

SOUTH CAROLINA:

AUTHORIZED COMMERCIAL EQUIPMENT SERVICE
1811 TAYLOR ST.
COLUMBIA, SC 29202
(803) 254-8414
FAX: (803) 254-5146

AUTHORIZED COMMERCIAL EQUIPMENT SERVICE
2249 AUGUSTA RD.
GREENVILLE, SC 29605
(864) 235-9616
FAX: (864) 235-9623

WHALEY FOODSERVICE REPAIRS
I 26 & US1
P.O. BOX 4023
WEST COLUMBIA, SC 29170
(803) 791-4420
800-877-2662
FAX: (803) 794-4630
info@whaleyfoodservice.com

WHALEY FOODSERVICE REPAIRS
748 CONGAREE ROAD
GREENVILLE, SC 29607
(864) 234-7011
800-494-2539
FAX: (864) 234-6662
info@whaleyfoodservice.com

WHALEY FOODSERVICE REPAIRS
1406-C COMMERCE PL.
MYRTLE BEACH, SC 29577
(843) 626-1866
FAX: (843) 626-2632
info@whaleyfoodservice.com

WHALEY FOODSERVICE REPAIRS
4740-A FRANCHISE STREET
N. CHARLESTON, SC 29418
(843) 760-2110
FAX: (843) 760-2255
info@whaleyfoodservice.com

SOUTH DAKOTA:

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

TENNESSEE:

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

TENNESSEE (cont.):

GCS SERVICE INC.
748 FESSLERS LANE
NASHVILLE, TN 37210
(615) 244-8050
800-831-7174
FAX: (615) 244-8885

TEXAS:

GCS SERVICE INC.
AUSTIN, TX
800-822-2303

ARMSTRONG REPAIR CENTER
1700 S LAMAR BLVD #327
AUSTIN, TX 78704
(512) 416-1101
800-392-5322
FAX: (512) 416-6912

COMMERCIAL KITCHEN REPAIR
6205-B BURNET RD
AUSTIN, TX 78207
(512) 454-8544
888-454-8544
FAX: (512) 454-8553

ARMSTRONG REPAIR CENTER
5110 GLENMONT DRIVE
HOUSTON, TX 77081
(713) 666-7100
800-392-5325
FAX: (713) 661-0520
gm@armstrongrepair.com

COMMERCIAL KITCHEN REPAIR CO.
1377 N BRASOS
P.O BOX 831128
SAN ANTONIO, TX 78207
(210) 735-2811
800-292-2120
FAX: (210) 735-7421
brock@commercialkitchen.com

GCS SERVICE INC.
440 WRANGLER DRIVE #100
COPPELL, TX 75019
(972) 906-0307
800-442-5026
FAX: (972) 906-9886

GCS SERVICE INC.
HOUSTON, TX
800-822-2303

GCS/STOVE PARTS
2120 SOLANA STREET
FORT WORTH, TX 76117
(817) 831-0381
800-433-1804
FAX: (817) 834-7754
bud@stoveparts.com

UTAH:

LA MONICA'S RESTAURANT EQMT. SVC.
6182 SOUTH STRATLER AVENUE
MURRAY, UT 84107
(801) 263-3221
800-527-2561
FAX: (801) 263-3229
lamonica81@aol.com

GCS SERVICE INC.
1366 S. 400 WEST
SALT LAKE CITY, UT 84115
(801) 487-3653
800-955-9201
FAX: (801) 487-2253

VERMONT:

NORTHERN PARTS & SVC.
4874 S. CATHERINE STREET
PLATTSBURGH, NY 12901
(518) 563-3200
800-634-5005
FAX: (800) 782-5424
info@northernparts.com

GCS SERVICE INC.
180 SECOND STREET
CHELSEA, MA 02150
(617) 889-9393
800-225-1155
FAX: (617) 889-1222

VIRGINIA:

DAUBERS, INC.
5255 HENNEMAN DRIVE
NORFOLK, VA 23513
(757) 855-4097
800-880-7775
FAX: (757) 855-1795

DAUBERS, INC.
2407 OWNEBY LANE
RICHMOND, VA 23220
(804) 359-9065
800-273-9593
FAX: (804) 359-4331

DAUBERS, INC.
7645 DYNATECH COURT
SPINGFIELD, VA 22153
(703) 866-3600
800-554-7788
FAX: (703) 866-4071
daubers@aol.com

GCS SERVICE INC.
2660 PITTMAN DRIVE
SILVER SPRING, MD 20910
(301) 585-7550(DC)
(410) 792-0388(BALT)
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FAX: (301)495-4410

VIRGINIA TO WYOMING/CANADA

VIRGINIA (cont.):

GCS SERVICE INC.
RICHMOND, VA
800-822-2303

WASHINGTON:

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

WEST VIRGINIA:

STATEWIDE SERVICE, INC.
603 MAIN AVE.
NITRO, WV 25143
(304) 755-1811
(800) 441-9739
FAX: (304) 755-4001
sws3182@aol.com

WISCONSIN:

APPLIANCE SERVICE CENTER, INC.
2439 ATWOOD AVE
MADISON, WI 53704
(608) 246-3160
800-236-7440
FAX: (608) 246-2721
ascmad@execpc.com

APPLIANCE SERVICE CENTER, INC.
6843 W. BELLOIT RD.
WEST ALLIS, WI 53219
(414) 543-6460
800-236-6460
FAX: (414) 543-6480
ascmil@execpc.com

APPLIANCE SERVICE CENTER
786 MORRIS AVE
GREEN BAY, WI 54304
(920) 496-9993
800-236-0871
FAX: (920) 496-9927
ascfox@execpc.com

METROPOLITAN SERVICE
3210 LONDON RD.
EAU CLAIRE, WI 54701
(715) 832-0555
800-848-3945
FAX: (715) 832-7813

GENERAL PARTS SERVICE
W223 N735 SARATOGA DR
WAUKESHA, WI 53186
(262) 650-6666
800-279-9976
FAX: (262) 6660

WYOMING:

HAWKINS COMMERCIAL APPLIANCE SERVICE
300 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

CANADA

Garland Commercial Ranges, Ltd.
1177 KAMATO ROAD
MISSISSAUGA, ONTARIO L4W 1X4
(905) 624-0260
800-427-6668
FAX: (905) 624-0623

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