

TECHNICAL MANUAL

FOR JACKSON MODEL:

MODEL 24BPNSU



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 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.

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Insert latest changed pages; dispose of superseded pages in accordance with applicable regulations.

NOTE: On a changed page, the portion of the text affected by the latest change is indicated by a vertical line, or other change symbol, in the outer margin of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas.

Total number of pages in this manual is 44, consisting of the following:

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APPROVAL AND PROCUREMENT RECORD

APPROVAL DATA FOR:			·
TITLE OF MANUAL:	DESCRIPTION, OPEI	RATION, INSTALLATION, A DISHWASHING MACHIN	AND MAINTENANCE E, MODEL 24BPNSU
APPROVAL AUTHORITY:	(LETTER OF APPRO	VAL 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 CERTIF NUMBER DLA-400-90-M-1376 BY THE APPROVAL DATA S	FOR DISHWASHING M	NICAL MANUAL PROVIE IACHINE, MODEL 24BPNS	DED UNDER CONTRACT BU, HAS BEEN APPROVED
-	(TITLE OF COMPANY	OFFICIAL)	
	COMPANY'S NAME		
		S	
(COMPANY'S FSCM		

CHANGE RECORD

Change No.	Date	Title/Brief Description	Signature of Validating Officer
		2	
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IDENTIFYING TECHNICAL PUBLICATION SHEET

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

MANUFACTURER: JACKSON PRODUCTS CO., Lexington, Tennessee 38351 PURCHASE ORDER OR CONTRACT NO.: DLA-400-90-M-1376 EQUIPMENT: DISHWASHING MACHINE. Model 24BPNSU

REQUISITION NO.: Not Applicable FEDERAL STOCK NUMBER:

TITLE: Description, Operation, Installation, and Maintenance Instructions for DISHWASHING

MACHINE, Model 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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CHAPTER 1 — SPECIFICATIONS

TABLE 1-1. SPECIFICATIONS FOR MODEL 24BPNSU

OPERATING Racks pe Dishes p Glasses OPERATING Wash time	er hour er hour per hour		ABM 21 525 525
Racks per Dishes programmed Glasses of Control of Contr	er hour er hour per hour		21 525
Dishes p Glasses OPERATING Wash tim	er hour per hour		525
Glasses OPERATING Wash tim	per hour		
OPERATING Wash tim		1	
Wash tim	CYCLE		
Wash tim	0:000		
	e cocondo		100
	ie, seconds		120
	e, seconds		15
. Iolai Cycli	e, seconds		150
WASH TANK	CAPACITY, gallons		5.65
RINSE TANK	CAPACITY, gallons		3
WASH PUMP	CAPACITY, gallons per	minute	60
•		•	
THERMOMET	ERS		
Wash, F°			140-160
Rinse, F°			180-195
WATER REQU	IIREMENTS		
	erature, F°		140
Gallons pe		İ	52.3
Flow pres		l	
Inlet, IPS	sure, FSI		20 ½''
Drain			
			1½
WASH PUMP,	horsepower		1/2
EI ECTRIC HE	AT RINSE, KW		
Wash	Al Illion, Kil		1.0
Rinse			6.7
			0.7
DIMENSIONS		ļ	
Height, wit	thout top	į	341/2 inches
Height, wit			36 inches
Width	•		281/2 inches
	wall to machine		21/4 inches
Depth	Wall to Madrillo		24 inches
Maximum clearance for dishes			14 inches
			
STANDARD RA	4027		
Dish Class and air as			1934 inches
Glass and	Silver		19¾ inches
ELECTRICAL RATING	VOLTAGE	PHASE	TOTAL AMPS
10-ABM	440	3	12.7

2-1. Safety Precautions

The following are general safety precautions that are not related to any specific procedures and therefore do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

KEEP AWAY FROM LIVE CIRCUITS

Operating personnel must at all times observe all safety regulations. Do not replace components or make adjustments inside the equipment with the high voltage supply turned on. Under certain conditions, dangerous potentials may exist when the power control is in the off position, due to charge retained in capacitors. To avoid casualties, always remove power and discharge and ground a circuit before touching it.

DO NOT SERVICE OR ADJUST ALONE

Under no circumstances should any person reach into or enter the enclosure for the purpose of servicing or adjusting the equipment except in the presence of someone who is capable of rendering aid.

RESUSCITATION

Personnel working with or near high voltages should be familiar with modern methods of resuscitation. Such information may be obtained from the Bureau of Medicine and Surgery.

The following warnings and cautions appear in the text in this volume, and are repeated here for emphasis.

WARNING

Warning means there is a possibility of personal injury to yourself or others.

CAUTION

Caution means there is the possibility of damage to the machine.

2-2. Uncrating and Unpacking the Dishwashing Machine

Before any connections are made, visually check the entire machine for any possible shipping damage. If any damage is found, proceed to "CONCEALED DAMAGE OR MISSING PARTS."

STEPS: 1. Remove all protective packing material from machine.

- 2. Place machine in its operating location and remove skid.
 CAUTION: INSURE WEIGHT OF MACHINE IS EVENLY DISTRIBUTED WHEN REMOVING FROM SKID INTO POSITION.
- 3. Adjust all (4) adjustable bullet feet so contact is made to floor. See "LEVELING OF DISHWASHING MACHINE" section.

2-3. Concealed Damage or Missing Parts

IMPORTANT: FOR YOUR PROTECTION, PLEASE READ AND OBSERVE THE FOLLOWING:

This dishwashing machine has been thoroughly inspected and carefully packed before leaving our warehouse.

Concealed loss or damage means loss or damage which does not become apparent until the dishwashing machine has been unpacked. The contents may be damaged in transit due to rough handling even though the carton may not show external damage.

If it is found that the shipment has concealed damage, PLEASE DO NOT RETURN IT TO US, but notify carrier (within 48 hours), asking them to send their agent to fill out an inspection report. Save the cartons so he may see them and be sure to note in the report any black marks, creases, tears, crushed corners or any other marks indicating rough handling. Also notify the Dealer where dishwashing machine was purchased and/or Jackson Products Sales Department immediately.

If it is discovered that there are missing parts, such as Strainers, Spray Assembly, Rinse Assembly, Owner's Manual or racks, please notify the Dealer where dishwashing machine was purchased and/or Jackson Products Sales Department immediately.

The following parts are supplied with the dishwashing machine and are packed inside of machine:

- 1. Instruction manual
- 2. Strainer
- 3. Complete wash head assembly with retaining pin
- 4. Complete lower rinse arm assembly
- 5. Adjustable feet (4 each)
- 6. Deck mounting tracks (2 each)
- 7. Deck mounting track caps (4 each)
- 8. Tube brush
- 9. Racks (2 each)

2-4. Deck Mounting of Dishwashing Machine

The dishwashing machine must be secured in place using the deck mounting tracks and caps provided with machine.

REFER TO FIGURE 1

- 1. Install the (4) adjustable feet provided into screw holes where shipping bolts were removed earlier.
- 2. Adjust the level of the dishwashing machine 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.
- 3. Install the deck mounting hardware as shown in FIGURE 1 to the deck at location where dishwashing machine will be permanently positioned. Install 3/8" stainless steel lug bolts to secure tracks and caps to deck.
- 4. Drill holes into deck as shown in FIGURE 1 and insure rear holes are located 21/4" from wall.
- 5. The tracks and the rear end caps may be tightened at this time.
- 6. Slide dishwashing machine 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.

2-5. Gravity Drain System

The drain from the dishwashing machine is a gravity drain system and should have the proper drop from the machine to floor drain system.

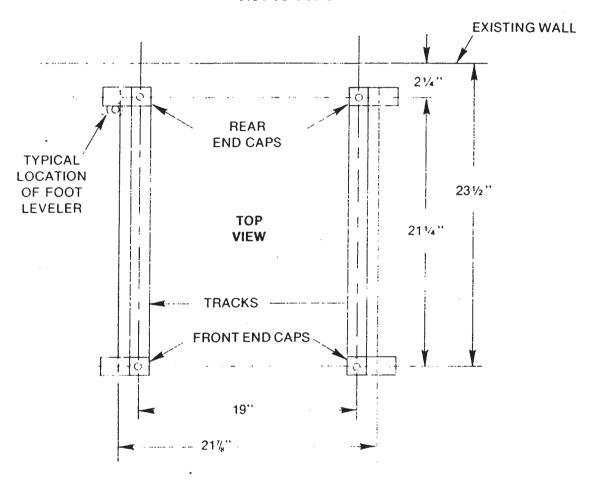
REFER TO FIGURE 2

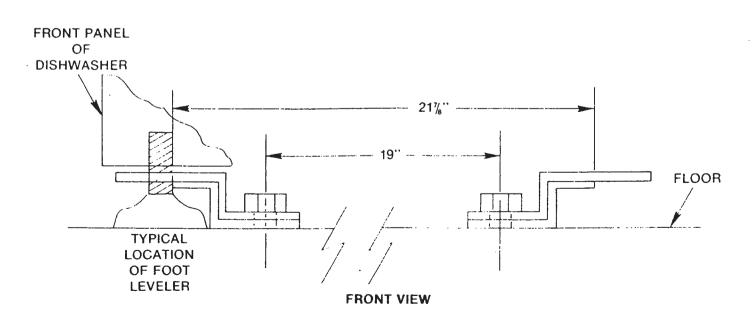
Install hose to drain tube located at left rear of machine as shown in FIGURE 2. Drain tube is 11/2"
in diameter and 7" from floor.

FIGURE 2-1

INSTALLATION OF DECK HARDWARE TO SECURE DISHWASHING MACHINE

Not To Scale





2-6. Steam Equalizing Vent

The steam equalizing vent is located on the back upper left corner of the dishwashing machine. The vent should not be blocked or prevented from venting steam off from inside of unit. Undercounter machines are not excluded from this requirement.

REFER TO FIGURE 2-2

1. Install 11/4" pipe to equalizing vent fitting and connect to appropriate venting system. NOTE: Do not pipe steam line downward toward floor; this will restrict venting of steam.

2-7. Electrical Power Connection

WARNING

All field wiring connections must conform to the Local and National electrical codes. Install proper circuit breaker, wire and conduit size. Make sure all electrical connections agree with voltage listed on equipment.

MACHINE DATA PLATE is located at top of inner door.

REFER TO FIGURE 2-2

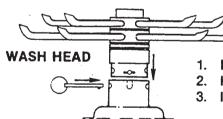
- 1. Remove control box side panel and lay aside.
- 2. Make electrical connection through conduit hole provided at rear of box and connect 440 VOLT, 60 HZ, 3 PHASE service to terminal block marked L1, L2 and L3.

FIGURE 2-2

2-8. Wash Head and Rinse Spray Arm Installation

FIGURE 2-3

INSTALLATION OF WASH HEAD AND RINSE ARM ASSEMBLIES (Items disassembled for shipment.)



- 1. Line holes up on wash head assembly to match slots in pump housing.
- 2. Insert wash head assembly down into upper pump housing as far as possible.
- 3. Insert retaining pin to secure wash head to pump housing.

Line up stud to match with slot in nipple.
 Insert rinse arm assembly into female receptical protrudeing through back of machine.

3. Insert lanyard pin to secure rinse arm assembly properly.

4. Make certain end plugs are secured properly in rinse tubes.



RINSE ARM ASSEMBLY

D - 11/4" EQUALIZING VENT

CHAPTER 3 — OPERATION

3-1. Operating Instructions

Note: Read the following instructions carefully. Proper operation of your Jackson Dishwashing Machine will assure clean and sanitized glasses and dishes, at optimum efficiency.

Dish Preparation:

- 1. Scrape dishes thoroughly.
- 2. Pre-wash dishes by soaking or with hose.
- 3. Place dishes and cups in dish rack, cups upside down.
- 4. Place glasses and silverware in combination glass-silverware rack, glasses upside down. Scatter silverware loosely on bottom.

Note: Silverware in the upright position washes and rinses better than lying flat. These silverware compartment racks are available through your dealer or Service Agency.

Operating Instructions:

- 1. Install pan strainer and the wash and rinse arms. Close the door and push until the handle latches.
- 2. Push the On/Fill-Off/Drain switch to the up 'ON/FILL' position. The machine power light will come on and so will the rinse heaters. The machine will begin to fill automatically and stop by itself.
- 3. After the machine has completed filling, open the door and put in a rack of soiled dishes. Close the door.
- 4. After the door has been closed, the cycle light will come on. There will be a 2-second delay before the wash cycle begins.
- 5. The machine will wash for 130 seconds and rinse for 15 seconds. After the cycle has finished, the cycle light will go out.
- 6. Open the door and remove the sanitized dishes. The machine is ready for another cycle.
- 7. To manually wash, push the manual wash switch to the up 'Manual' position. The machine will wash indefinitely. This function can also be used to delime. To resume normal operation, push the manual wash switch to the down 'Auto' position.
- 8. To drain the machine, close the door and latch. Push the On/Fill-Off/Drain switch to the 'OFF' position. All machine functions will be off. Push On/Fill-Off/Drain switch down to the momentary drain position. This will begin the drain cycle. After the machine is drained, it will turn itself off.
- 9. Open the door. Remove and clean the pan strainer and the wash arms.
- 10. Wash heater protection is provided by two means. Primary protection is given by the water level control which senses the water level with a probe. If this should fail due to excessive build up on the probe, the secondary thermal protection will cut out the wash heater before damage occurs.
- 11. When the secondary heater protection has been used, it will be indicated by the illuminated red reset light. The following steps are necessary in this situation:
 - A. Turn off power supply.
 - B. Open the door and remove the wash and rinse arms and the pan strainer.
 - C. Locate the probe. It is in the wash sump on the left hand side.
 - D. Using a deliming compound and a brush, clean the probe.
 - E. Reinstall the wash and rinse arms and the pan strainer.
 - F. Push the reset button, located above the reset light.
 - G. Push On/Fill-Off/Drain switch to the 'ON/FILL' position. The machine should begin to fill. If it does not and the reset light comes on again, call an authorized service agency.

3-2. Detergent Recommendations and Rinse Additives

We suggest that you contact your local Detergent Specialist for the correct detergent and rinse additives for your area. Dump the detergent on the pan strainer. This may have to be increased or decreased to obtain satisfactory results.

VERY IMPORTANT: Do not use a domestic type detergent in this machine at any time. This type of detergent may damage and/or obstruct pump operation and may cause corrosion to tank.

CHAPTER 4 — CARE AND CLEANING

4-1. General Cleaning

USER SERVICEABLE AREAS
(THE FOLLOWING IS TO BE PERFORMED DAILY OR AS NEEDED.)

Note: Read the following instructions carefully. Proper maintenance of your Jackson Dishwashing Machine must be conducted for warranty consideration.

1. Remove all lime and corrosion deposits.

- a. Fill the machine with wash water as would ordinarily be done for washing.
- b. Open door and place one cup or less of de-liming compound into the water. The compound is available from your detergent supplier.
- c. Turn on the manual wash switch and allow to wash for five minutes.
- d. Open door and examine the interior. All lime should be removed and parts should be shiny. If not, allow to wash for longer period.
- e. After the interior is clean, with door closed, empty the wash water by turning switch to the "off/drain" position. Refill machine and allow to run for two minutes, then again drain the wash reservoir.

2. Clean around overflow strainers and drain hole.

- a. Clean around overflow and strainer pan.
- b. Clean around pump intake (toothbrush makes excellent tool for cleaning).

3. Clean Y-strainer on incoming water line. (Water to machine must be turned off for this operation)

a. Remove plug and clean strainer.

4. Clean rinse tubes.

- a. Remove rinse assembly by disconnecting rinse feed pipe and removing end plugs on lower rinse.
- b. Clean all rinse tubes and feed pipes with special brush supplied.
- c. If spray holes in the rinse tubes are clogged, they may be cleaned with a pointed object.
- 5. Clean water level probe in sump with brush to remove any scale or build-up.

6. Clean wash head assembly.

- a. Remove pin holding wash head assembly to pump.
- b. Clean assembly at sink by flushing water through spray jets.
- c. If spray jets are still plugged, use sharp object to dislodge and flush again.
- d. Reinstall wash and rinse assemblies. (See page with instructions.)

7. Clean any deposits which may have built up on exterior moving parts.

- a. Clean around door gasket.
- b. Using a soft bristle brush, clean around switches on exterior of control panel. (Use no water.)
- c. Use soft bristle brush, dip in wash tank water and scrub inside door around gasket and hinges. Use clean cloth or paper towel to wipe off loose residue.

HARD WATER AREAS

Very Important: Areas known to have hard water (7-10.5 grains per gallon) or very hard water (10.5 + grains per gallon) must consider installing a water softner system to prevent scaling of heater elements and water probes which could cause damage not covered under normal warranty conditions.

CHAPTER 4 - CARE AND CLEANING

4-2. Wash Head and Rinse Arm Cleaning

USER SERVICEABLE PARTS (THE FOLLOWING IS TO BE PERFORMED DAILY OR AS NEEDED.)

Refer to Figures 4 and 5:

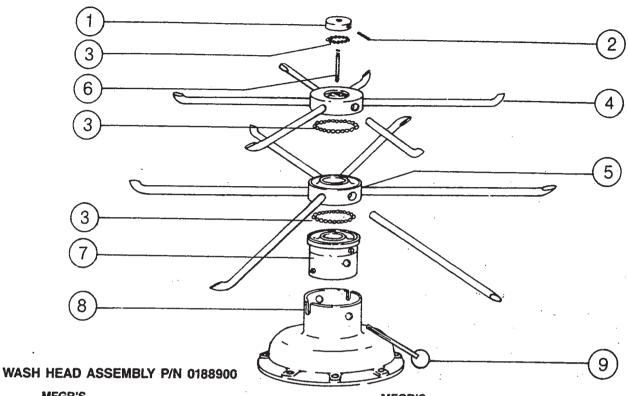
- 1. Drain unit by placing switch in the off/drain position.
- 2. Open the door and allow the unit a few minutes to cool off.
- 3. Remove the pin holding the rinse feed pipe. Pull the feed pipe out of the nipple and lay it to one side.
- 4. Remove wash head assembly by pulling out the holding pin and lifting assembly. Place the wash head on a table for disassembly.
- 5. Locate Allen head set screw in the wash head cap, insert Allen wrench and loosen screw by turning counterclockwise.
- 6. Turn wash head cap counterclockwise until cap is removed and put cap in safe place.
- 7. Remove ¼ " stainless ball bearings carefully and put it in a receptacle in a safe place.
- 8. Lift and remove small manifold with short tubes. Put it in a safe place.
- 9. Remove 1/4 " ball bearing in similar method to step #7.
- 10. Lift and remove large manifold with large length tubes similar to step #8.
- 11. Clean ball bearings by soaking in de-liming solution.
- 12. Ball bearing race ways may be cleaned by either brushing with de-liming solution (toothbrush makes excellent tool) or gently clean by rubbing with fine sandpaper or emery cloth.
- 13. Rinse ball bearings and manifolds thoroughly.
- 14. To reassemble, first fill lower race to capacity with 1/4 " ball bearings, then remove one. This will give proper movement needed during rotation of assembly.
- 15. Replace lower manifold and fill race fully with 1/4 " ball bearings. Repeat, removing one only.
- 16. Replace upper manifolds and repeat necessary parts of step #14.
- 17. Replace wash cap by screwing on center shaft clockwise, finger tight.
- 18. Back off wash cap about 1/4 turn and tighten Allen set screw.
- 19. Rotate manifolds in opposite directions; see if they rotate freely. A rule of thumb is to select the longest tube in the bottom manifold and make sure it moves up and down at least \(\frac{1}{2} \) " and no more than \(\frac{1}{2} \) ".
- 20. Replace wash head assembly and rinse arm.
- 21. Close the front door and refill dishwasher.
- 22. Run through several cycles and recheck wash arms for easy movement. Adjust if necessary.

Note: It is important that the wash head and rinse arm be kept clean and free from obstruction. Improper maintenance to these assemblies may create problems not covered under normal warranty conditions.

CHAPTER 4 — CARE AND CLEANING

FIGURE 4-1

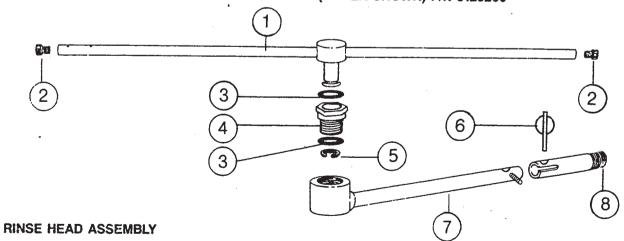
WASH HEAD ASSEMBLY P/N 0188900



ITEM	MFGR'S P/N	DESCRIPTION	F0014	17704	MFGR'S		
11 EM	F/N	DESCRIPTION	FSCM	ITEM	P/N	DESCRIPTION	FSCM
1.	0186500	WASH HEAD CAP WITH RACE		6.	0187500	WASH HEAD CENTER SHAFT	
2.	0187000	WASH HEAD CAP SET SCREW		7.		WASH HEAD FIXED RACE	
3.		WASH HEAD BEARING 1/4" S/S		8.			
4.	0189000	WASH HEAD SMALL MANIFOLD		9. 1	0188601	WASH HEAD ASSEMBLY	
		w/TUBES				RETAINING PIN w/RING	
5.	0189500	WASH HEAD LARGE MANIFOLD w/TUBES				7771110	
		WITUBES					

FIGURE 4-2

RINSE HEAD ASSEMBLY (LOWER SHOWN) P/N 0125200



15. 2. 3.	0126800	DESCRIPTION RINSE HEAD ARM - LOWER COMPLETE RINSE HEAD END PLUGS RINSE HEAD NYLATRON WASHER	FSCM	ITEM 4. 5. 6. 7.	0126500 0137301 0137200	DESCRIPTION RINSE HEAD HEX BRUSHING S/S RINSE HEAD SNAP RINGS S/S RINSE FEED PIPE LANYARD PIN RINSE FEED PIPE (LOWER)	FSCM
3.				7. 8.	0137200		

CHAPTER 5 — FUNCTIONAL INFORMATION

5-1. Solid State Timer

General Description: Refer to Figure 5-1

The timer is a solid state, 4 channel CMOS device with a 120V, 50 or 60 cycle, 1 amp rating. All components are environmentally encapsulated and quick connect terminals are marked for corresponding wires.

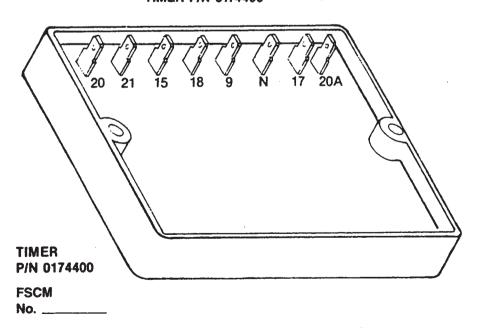
Principle of Operation:

Wash cycle function: (Machine must fill before cycle will start.) Upon closure of door switch, cycle light will come on and remain on for the 150-second cycle. At the same time, a 2-second rinse preheat interval will begin. After the preheat, the wash cycle will start and last 130 seconds. Between wash and rinse, there is a 4-second dwell followed by a 15-second rinse. Cycle by opening and closing door switch at the end of cycle or at any point in the cycle.

Drain cycle function: (Power switch must be in off position and door switch closed.) When power switch is pushed to the drain position and released, a holding circuit is established between R4 drain relay and the timer. The machine will drain for 60 seconds and then break the holding circuit. Cycle is reset by opening and closing door switch and pushing power switch to drain and releasing.

Very Important: At no time are there to be any aftermarket equipment electric connections made to any input or load circuits of this timer. Consult factory for further information.

FIGURE 5-1
TIMER P/N 0174400



CHAPTER 5 — FUNCTIONAL INFORMATION

5-2. Water Level Control

P/N 0204400 (110V, 60 cycle)

Function: Refer to Figure 5-2

The water level control device is utilized on this machine to automatically control the filling of the wash tank and the activation of the wash tank heater.

Warning: Disconnect power to machine before proceeding to checkout.

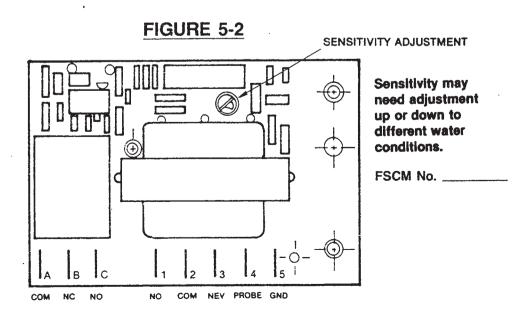
The control is a single probe resistance sensing device designed to maintain water level. When water level reaches the probe and covers it, a fixed time delay of 25 seconds is initiated. When the delay times out, the electromechanical relay energizes, opening the 'Auto/Fill' circuit and closing the wash heater circuit. If the water level drops below the probe, the relay will de-energize, opening the wash heater circuit and closing the 'Auto/Fill' circuit.

Symptoms of Level Control Failure:

- 1. 'Auto/Fill' will not shut off when water reaches the proper level. (Check sensitivity adjustment.)
- 2. Machine will partially fill.

Proceed with Checkouts:

- 1. Remove power source to machine by moving circuit breaker to 'OFF' position.
- 2. Remove screws holding lower kick plate to the front of machine and locate water level control. (See sketch below.)
- 3. Remove, mark and insulate (for easy replacement), wires going to pin numbers 4 and 5.
- 4. Re-apply power. Turn on 'ON/FILL' switch. With an insulated wire, connect jumper wire between pins 4 and 5. (12 volt system)
- 5. Wait for 25 seconds. The electromechanical relay will energize. If this occurs, control can be deemed operational; then other causes should be explored.
- 6. If relay doesn't operate, check GND and input voltages. Replace if needed.
- 7. Remove power source once again and replace wires that were removed in step three to original pins. (See trouble shooting section for other possible causes.)



CHAPTER 5 — FUNCTIONAL INFORMATION

5-3. Switches, Circuit Breaker and Indicator Lights

On/Fill Off/Drain Switch: P/N 0155600 FSCM No	This switch serves as the main control for the unit. When pressed into the 'on' position, it activates the heater controls, the automatic fill and readies the unit for the wash cycle. When turned off, all power is off. When pushed to drain position and released, the unit will drain and turn itself off.
Power Light: P/N 0083518 FSCM No	This light comes on when the unit is turned on and goes off when the unit is turned off.
Door Switch: P/N 0164000 FSCM No	Located on top of the unit, behind the latch bracket, this switch serves three functions. When the door is opened, it will reset the timer to the cycle starting position. When door is closed, it will start the automatic cycle. If door should be opened during a cycle, it would act as a safety switch by turning the unit off.
Cycle Light: P/N 0083507 FSCM No	This green light comes on only when the automatic cycle is in progress and goes off when the cycle is complete.
Manual Wash Switch: P/N 0159700 FSCM No	This switch is used to bypass the timer and operate the wash pump manually. The wash pump will run as long as this switch is 'on'. Its prime purpose is to extend the wash period for heavily soiled dishes, but it may be used for deliming.
Heater Reset Button: P/N 0169601 FSCM No	This is the reset button on a thermostatic overload. Its purpose is to provide a secondary protection for the wash tank heater element. If the heater element should come on while the wash tank is empty, this button would pop out, turning off the element and signaling a problem with the automatic fill.
Reset Light: P/N 0083518	This light comes on only when the heater reset trips off. Its purpose is to signal that there is a problem.

FSCM No.

CHAPTER 6 — SERVICE AND ADJUSTMENTS

6-1. Thermostat Adjustment

Refer to Figure 6-1.

The thermostat can be adjusted by turning screw #1 (see picture) on the thermostat control box cover. (Remember the present setting, in case the problems are elsewhere in the control circuit.) A CW rotation is used to obtain a lower temperature setting and a CCW rotation is used to obtain a higher temperature setting. A ½ turn of screw #1 changes the temperature approximately 15°F. If screw #1 is turned all the way to its stop in either direction, adjust screw #2 as follows.

WARNING

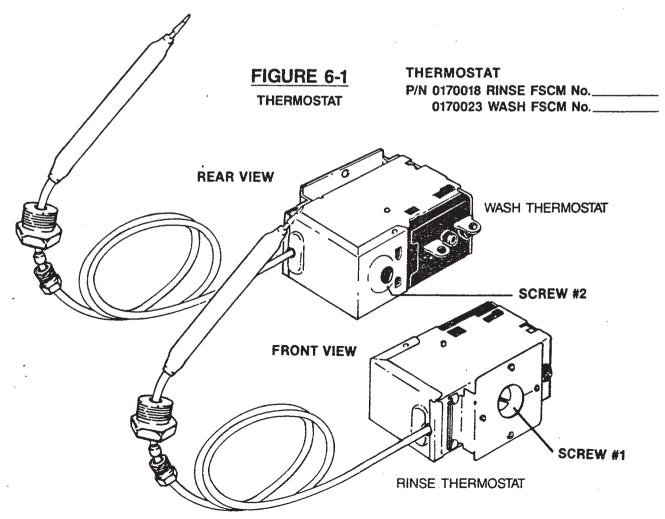
Do not touch the screw sealed with red paint. When adjusting screw #2, power should be disconnected during adjustment.

Set screw #1 so that it can be turned equal distances in either direction, then:

- if screw #1 stopped while turning in CW direction, turn screw #2 in CW direction, slowly and only ½ of a turn or less per complete cycle of the unit.
- if screw #1 stopped while turning in CCW direction, turn screw #2 in CCW direction, slowly and only % of a turn or less per complete cycle of the unit.

Three-fourths of a turn will bring the thermostat to approximately the same setting obtained where screw #1 stopped. Check the present temperature setting before attempting any further adjustments. Use screw #1 for any further adjustments.

Making large moves in adjusting may cause misalignment, thus increasing chances that further adjustment cannot be made and thermostat will have to be replaced.



CHAPTER 6 — SERVICE AND ADJUSTMENTS

6-2. Incoming Water Solenoid Service

SOLENOID VALVE COMPLETE	
P/N 1420 (110V, used on 60 cycle machine FSCM No	:) ½''
P/N 1425 (220V, used on 50 cycle machine FSCM No	e) ½'

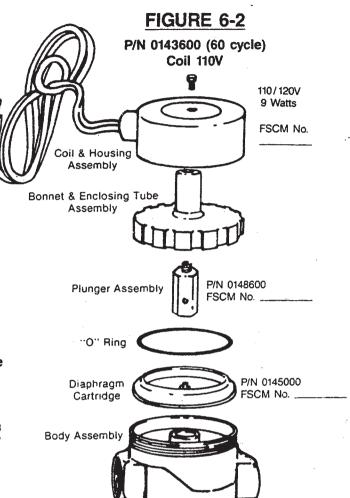
To take the valve apart: (refer to Figure 6-2)

Disassembly — These valves may be taken apart by unscrewing the bonnet and the enclosing tube assembly from the valve body assembly. See Fig. 6-2. After unscrewing, carefully lift off the bonnet and enclosing tube assembly. Don't drop the plunger. The "O" ring seal and diaphragm cartridge can now be lifted out.

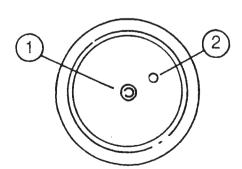
CAUTION

Be careful not to damage the machined faces while the valve is apart.

To Reassemble — Place the diaphragm cartridge in the body with the pilot port extension UP. Hold the plunger with the synthetic seat against the pilot port. Make sure the "O" ring is in place, then lower the bonnet and enclosing tube assembly over the plunger. Screw bonnet assembly snugly down on the body assembly.



DIAPHRAGM CARTRIDGE



Solenoid Coil Test

Coil Resistance — OHMS - 1600 No continuity, open circuit or erroneous OHMS — repiace coil

Possible Problems

Pilot Port extension #1 clogged Hole #2 clogged

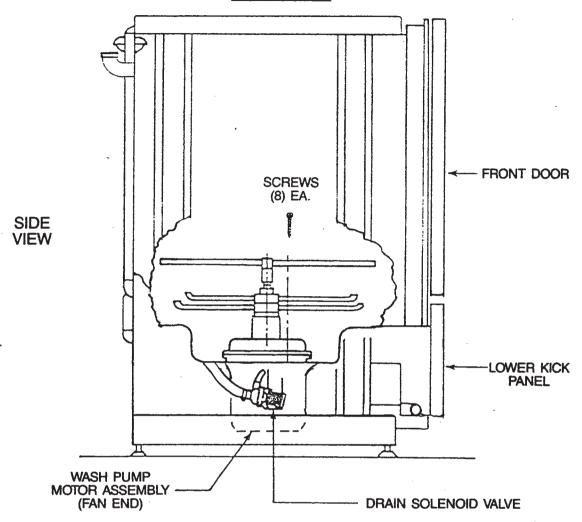
Remedy

Pass heated straight pin through hole #2 or clean hole #1

CHAPTER 6 — SERVICE AND ADJUSTMENTS

6-3. Wash Pump Motor Assembly

FIGURE 6-3



Wash Pump Motor Assembly Repair/Replacement

REFER TO FIGURE 6-3 ABOVE

CAUTION: DISCONNECT POWER TO MACHINE BEFORE SERVICING

- 1. Drain unit completely.
- 2. Remove wash and rinse spray heads.
- 3. Remove pump hose to drain solenoid.
- 4. Remove eight (8) screws mounting pump flange to sump.
- 5. Lift pump motor assembly up and out of sump while disconnecting electrical harness from fan end of pump motor.
- 6. Remove old gasket and mounting clips from pump mounting surface and scrape surface clean.
- 7. Once mounting surface is clean, install new mounting clips to mounting holes.
- 8. Apply liberal amount of silicone/pipe sealant to mounting surface and mounting clips.
- 9. Affix gasket to mounting surface and center holes.
- Plug new pump motor harness into machine harness and mount pump motor assembly to gasket and center holes.
- 11. Apply sealant into pump motor mounting holes and fasten with screws in a clockwise manner.
- 12. Reattach drain solenoid hose to pump port and tighten.

CAUTION: Pour some water into sump area to check for leaks before filling unit up completely.

CHAPTER 7 — TROUBLE SHOOTING GUIDE

	R		

Water overflow out bottom of front door when wash pump is operating.

Wash motor doesn't operate on manual wash.

CAUSE

Machine not ½ " higher in front than rear.

Overflow drain clogged. Excessive inlet pressure.

Water level in machine's wash reservoir too high.

Detergent foaming.

Equalizing vent blocked.

Wires broken or loose.

Defective manual wash switch.

Bad bearing, noticeable by noisy bearings or locked drive shaft.

Defective motor starting relay. (Typical - motor hums.)

SOLUTION

Increase height in front.
Slight tilt to rear
Remove obstruction, checking
inside of machine first.
Install pressure reducing valve.
Solenoid valve not closing at
end of fill or rinse cycle
causing excessive water
problem.

Reduce quantity of detergent. Allow free steam flow.

Check all wires in the motor and reconnect as necessary.

Replace.

Replace.

Replace.

Note: The motor starting relay is utilized to insert a starting field in the wash pump motor, once the motor has gained speed, the running winding will then take over and the starting winding will be removed when the relay kicks out.

Motor runs on manual wash but doesn't operate on automatic (rinse operates okay on both manual and automatic cycles.)

No water comes through the rinse arms when the 'on/fill' switch is depressed.

Little or no water coming through rinse assemblies.

Defective timer.

Defective circuit in manual wash switch.

Hand water valve to machine not turned on.

Defective coil on solenoid valve.

Probes are dirty or coated.

Defective water level control.

Limed up rinse heads or piping.

Water pressure low.

Replace timer.

Replace switch.

Turn on water valve.

Replace coil.

Clean probes.

Replace.

Begin by cleaning rinse heads using instructions for de-liming. If this isn't satisfactory, then clean the rinse feed pipes.

Increase pipe size to machine.

CHAPTER 7 — TROUBLE SHOOTING GUIDE

		·
PROBLEM	CAUSE	SOLUTION
Rinse doesn't operate on automatic during timed cycle (but does operate on auto/fill operation).	Timer defective.	Replace.
Rinse water runs continuously with circuit breaker controlling machine turned off.	Defective plunger in solenoid valve.	Replace plunger.
	Defective diaphragm in solenoid valve.	Check both holes in diaphragm cartridge to insure that they are open. The one on the outside perimeter should be the size of an ordinary straight pin. If it's not, heat a straight pin and put it through this hole to enlarge. If this fails to correct situation, replace diaphragm.
Note: In disassemblin	g solenoid valve, use instructions show	wn on separate page.
Rinse water runs con- tinuously with power applied to machine, but when circuit	Defective water level control.	Replace.

Note: Excessive water line pressure can cause water to continually run even though the power to the machine is turned off. Check specifications for required pressure.

Probes are dirty or coated.

Wash temperature not at	Defective thermometer.
required reading on	
thermometer.	

breaker to machine is turned

off, water stops.

Using a thermometer (fast reading type that's known to be correct), insert in wash rerservoir and check reading against wash thermometer on machine. If machine thermometer isn't correct within three or four degrees, replace.

Clean probes.

Rinse temperature not at required temperature, causing wash temperature to be lowered during rinse cycle.

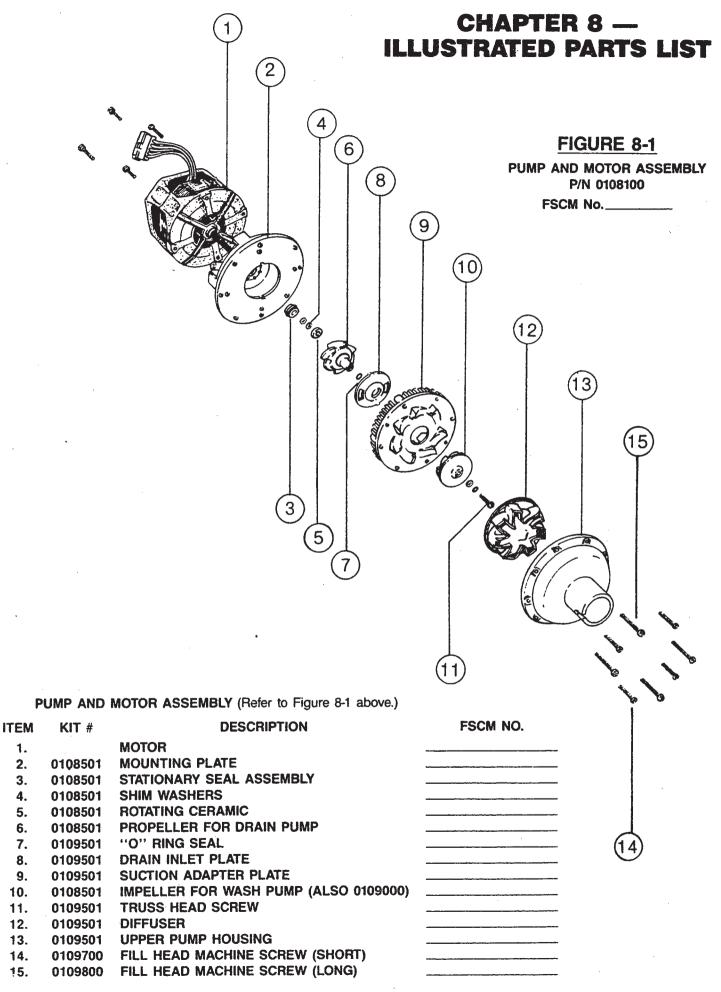
Check out rinse heat using heater checkout system page in manual.

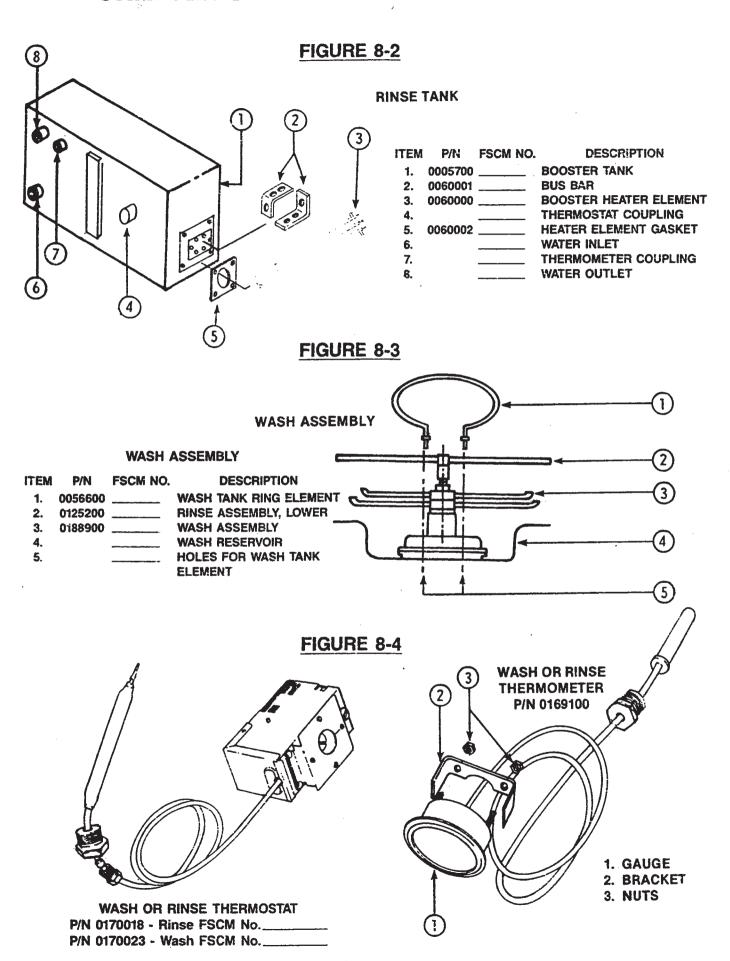
Note: Any switches, water level controls, heater elements, relays or contactor that have to be checked out, can be done using the heater checkout system page.

CHAPTER 7 — TROUBLE SHOOTING GUIDE

		
PROBLEM	CAUSE	SOLUTION
	Thermostat defective.	Adjust using instructions on thermostat page and heater system's checkout page. Replace if necessary.
	Water level protection control defective.	Replace. (Auto/fill would run continuously.)
	Heater element defective.	Replace.
	R-2 defective.	Replace.
Rinse water not at required temperature range.	Thermometer's defective.	Replace.
	Thermostat defective.	Adjust using instructions on thermostat page and heater system's checkout page. Replace if necessary.
	Defective heater relay on contactor.	If defective, replace. See note on heater system above.
After filling machine with water, leakage began at lower front panel without machine operating or at end of rinse cycle.	Overflow drain clogged.	Clean away obstruction.
Machine doesn't drain when	Drain solenoid clogged.	Remove obstruction.
'off <u>/drain'</u> switch is depressed.	Defective switch.	Replace.
	Defective motor or motor start relay.	Replace.
	Defective drain solenoid.	Replace.
	Defective timer.	Replace timer.
	Defective relay.	Replace.

Note: The drain pump of this machine is part of wash motor, so if wash motor operates properly drain system should work.





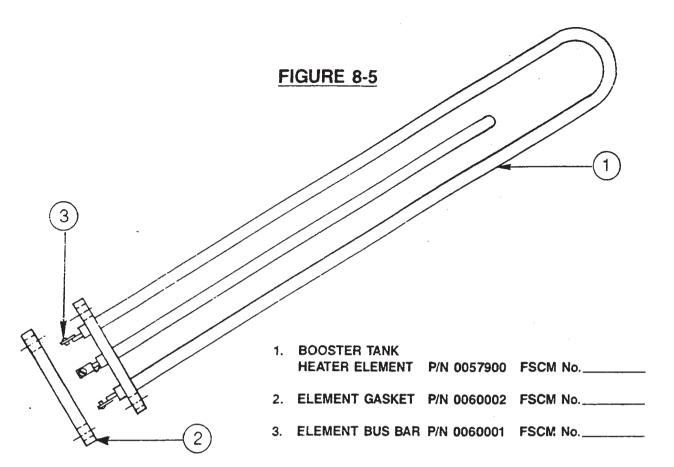


FIGURE 8-6

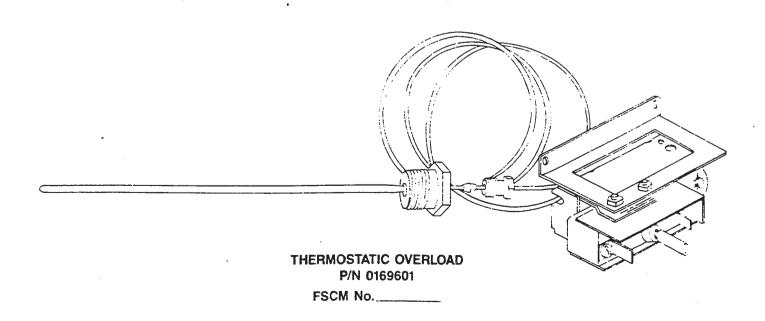
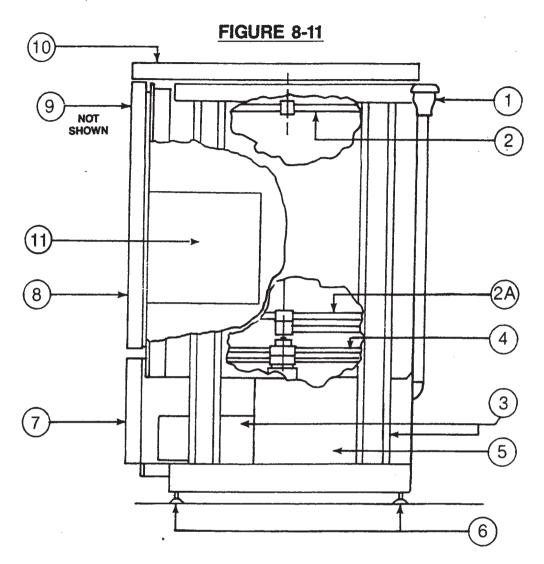


FIGURE 8-7 FIGURE 8-8 PAN STRAINER P/N 0153100 **VACUUM BREAKER P/N 0184101** P/N 0184101 **VACUUM BREAKER BONNET** PAN STRAINER P/N 0153100 DISK FSCM No. **GASKET** P/N 0184200 FSCM No. **POPPET** FIGURE 8-9 **DOOR SWITCH AND** P/N 0143600 (60 cycle) Coll 110V **BODY** LATCH ASSEMBLY **DOOR SWITCH and** LATCH ASSEMBLY FIGURE 8-10 **INCOMING PLUMBING** (3)ITEM P/N FSCM NO. DESCRIPTION 0153600 "Y" STRAINER 1. 2. **REMOVABLE FILTER** VALVE FOR HEALTH 3. 0185000 **INSPECTOR** 2 0142000 SOLENOID VALVE 1/2", (110V. used on 60-cycle machine)

5

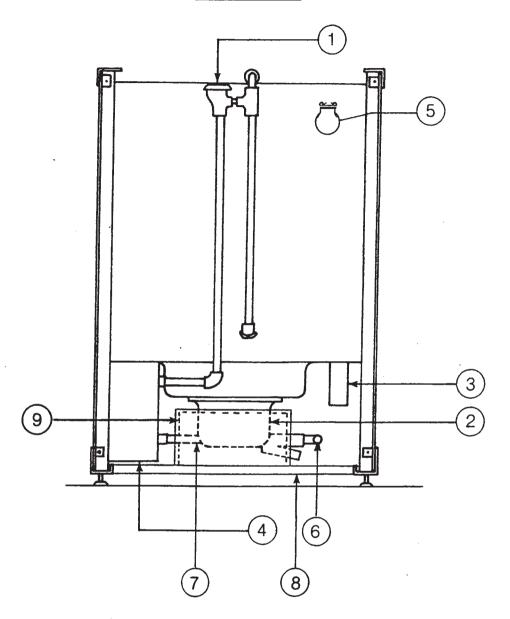
PIPE UNION



RIGHT SIDE VIEW

ITEM	P/N	FSCM NO.	DESCRIPTION
1.	0184101		VACUUM BREAKER ASSEMBLY
2.	0125100		RINSE ASSEMBLY, UPPER
2A.	0125200		RINSE ASSEMBLY, LOWER
3.	0004000		SIDE FRAME & BRACE, RIGHT HAND
4.	0188900		WASH ASSEMBLY
5.	0005700		BOOSTER TANK
6.	0083400		ADJUSTING FEET
7.	0054902		KICK PANEL
8.	0052600		FRONT DOOR
9.	0052700		DOOR HANDLE ASSEMBLY
10.	0054700		OPTIONAL TOP
11.			440V CONTROL BOX

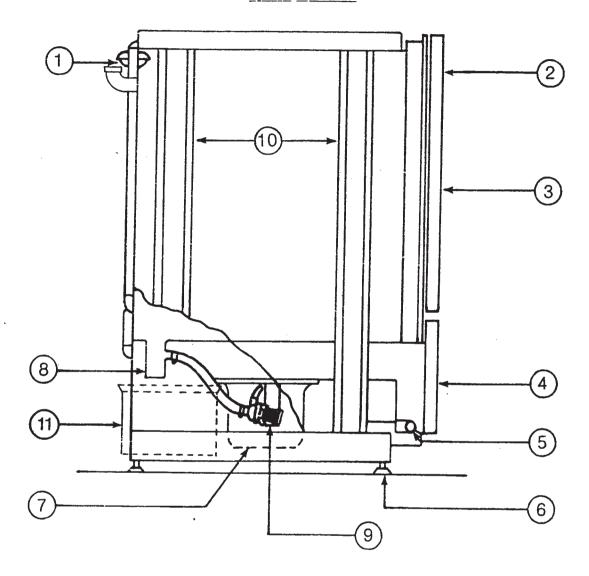
FIGURE 8-12



BACK VIEW

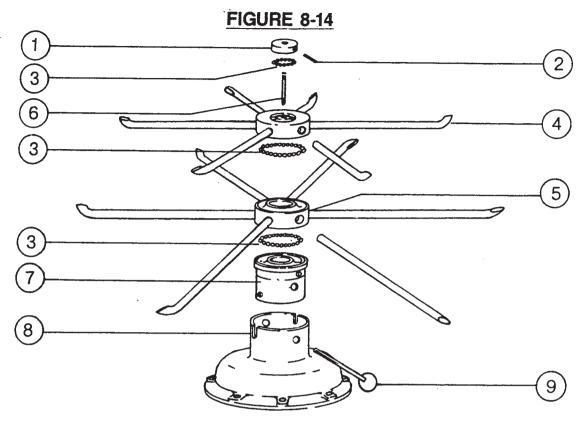
ITEM	P/N	FSCM NO.	DESCRIPTION
1.	00184101		VACUUM BREAKER ASSEMBLY
2.	00108100		PUMP & MOTOR ASSEMBLY
3.			DRAIN - GRAVITY FEED
4.	0005700		BOOSTER TANK
5.			EQUALIZING VENT
6.			INCOMING WATER CONNECTION
7.			TRANSFORMER BOD W/LID
8.			TRANSFORMER PLATFORM
9.	0180900		TRANSFORMER, 1 KVA,
			440/110V

FIGURE 8-13



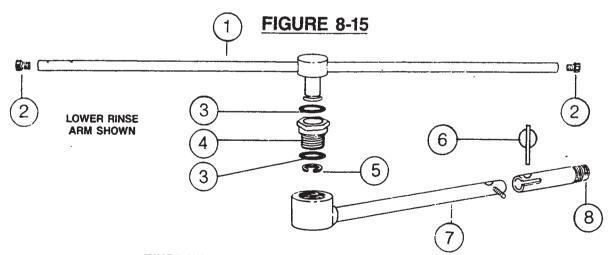
LEFT SIDE VIEW

ITEM	P/N	FSCM NO.	DESCRIPTION
1.	0184101		VACUUM BREAKER ASSEMBLY
· 2.	0052700		DOOR HANDLE ASSEMBLY
3.	0052600		FRONT DOOR, OUTER
4.	0054902		KICK PANEL
5.			INCOMING WATER CONNECTION
6.	0083400		ADJUSTING FEET
7.	0108100		PUMP & MOTOR ASSEMBLY (110V, 60 cycle)
8.			DRAIN — GRAVITY FEED
9.	0142400		DRAIN SOLENOID VALVE (110V, used on 60 cycle machine)
10.	0004001		SIDE FRAME AND BRACE, LEFT HAND
11.	0180900		TRANSFORMER, 1 KVA, 440/110V



WASH HEAD ASSEMBLY P/N 0188900

ITEM	P/N	FSCM NO.	DESCRIPTION	ITEM	P/N	FSCM NO.	DESCRIPTION
1.	0186500		WASH HEAD CAP WITH RACE	6.	0187500		WASH HEAD CENTER SHAFT
2.	0187000		WASH HEAD CAP SET SCREW	7.	0193601		WASH HEAD FIXED RACE
3.	0194000		WASH HEAD BEARING 1/4" S/S	8.	0109600		UPPER PUMP HOUSING
4.	0189000		WASH HEAD SMALL	9.	0188601		WASH HEAD ASSEMBLY RE-
			MANIFOLD w/TUBES				TAINING PIN w/RING
5.	0189500		WASH HEAD LARGE				
			MANIFOLD w/TUBES				

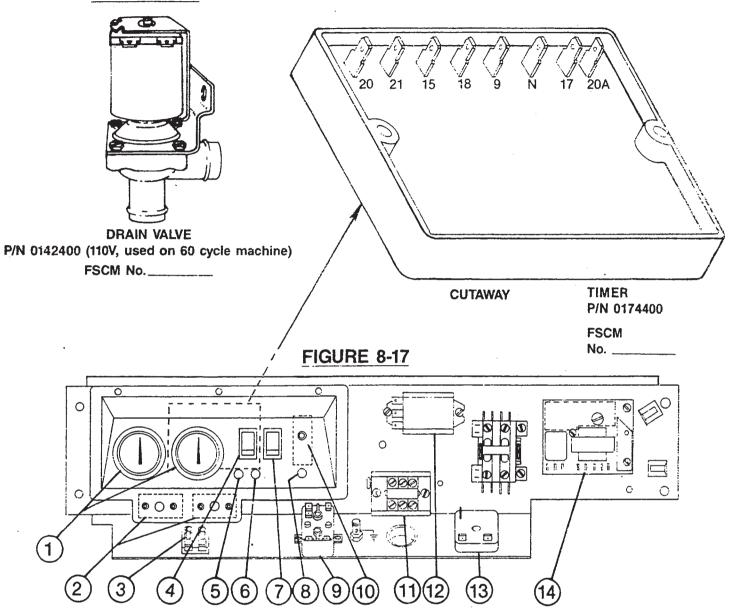


RINSE HEAD ASSEMBLY P/N 0125200 -- LOWER

ITEM	P/N	FSCM NO.	DESCRIPTION	ITEM	P/N	FSCM NO.	DESCRIPTION
1.	0125100		RINSE HEAD ARM ASSY.	5.	0126500		RINSE HEAD SNAP RINGS S/S
			- UPPER	6.	0137301		RINSE FEED PIPE LANYARD
2.	0126800		RINSE HEAD END PLUGS				PIN
3.	0126000		RINSE HEAD NYLATRON	7.	0137200		RINSE FEED PIPE (LOWER)
			WASHER	8.	0137202		RINSE FEED PIPE NIPPLE
4	0125500		RINSE HEAD HEY RRUSHING S/S				

CHAPTER 8 — ILLUSTRATED PARTS LIST

FIGURE 8-16



PANEL

ITEM	P/N 0169100	FSCM NO.	DESCRIPTION THERMOMETERS. WASH AND RINSE			
2.	0170018	· 	THERMOSTAT, RINSE		FRONT VIEW OF SIDE BOX (440V)	
2.	0170023		THERMOSTAT, WASH			
3.	•		DETERGENT FUSE BLOCK	(4E)		
4.	0155600		POWER SWITCH	(15)	H4 L1	
5.	0083518		POWER LIGHT			
6.	0083507		CYCLE LIGHT			
7.	0159700		MANUALIAUTO SWITCH			
8.	0063518		HEATER RESET LIGHT		6 + (HC) - 7	
9.	0122701		MOTOR RELAY (R-3)		#	
10.	0169601		THERMOSTATIC OVERLOAD		·	
11.	G165600		TERMINAL BOARD, INCOMING ELECTRICAL CONNECTION			\
12.	0124400		DRAIN RELAY (R-4)		H5 L2 H1 H2 H3	()
13.	C120701		MOTOR STARTING RELAY		WASH HEATEN	7
14.	0204400		WATER LEVEL CONTROL	(40)	CONTACTOR	
15.	0120500		RELAY, 110V 2-POLE WASH HEAT	(18)		
16.	0123600		RELAY, 110V 3-POLE RINSE HEAT			
17.	0165600		TERMINAL BOARD, 3-POLE		9 9 9	
	0167900		TERMINAL BOARD BLOCKS W/SCREW TERMINALS		· [古] (十一9) 十	
	0168000		TERMINAL BOARD END BARRIER	LIGHT -	T T T T SWITCH	
	0158100		TERMINAL BOARD CLIPS	MODULE		
4.00	0168200		TERMINAL BOARD TRACK, 3"	TRANSFORME	R in the da TITI	
18.	0154900		SWITCH CONTACT BLOCKS		——————————————————————————————————————	
	0155700		SWITCH, MANUAL WASH (ROCKER-TYPE)	(47)	TERM RINSE HEATER	
	0157800		SWITCH, HEAT (ILLUMINATED ROCKER-TYPE)		L1 L2 L3 BOARS CONTACTOR	
	0158800		SWITCH, START (ILLUMINATED ROCKER-TYPE) SWITCH, ILLUMINATED POWER ON, 440V		- L	
	0159500		SWITCH, ILLUMINATED FOWER ON, 4404			
					<u> </u>	

CHAPTER 9 — MANUFACTURER/VENDOR CROSS-REFERENCE LIST FOR MODEL 24BPNSU

	Mfgr's #	Description of Part	Vendor Name and Address	Vendor Part No.
1	0005700	Booster Tank (stripped)		
1	0051700	Door Latch and Switch Bracket	•	
1	0052300	Door Gasket	Sperry Rubber & Plastics Co., RR #2, Box 42, Brookville, IN 47012	BD4420
1	0052400	Door Gasket, Clamp Assembly	•	
1:	0052600	Door, Front, Outer only (stripped)	•	
1	0052700	Door Handle	Southco, Inc., P.O. Box 7780-1316, Philadelphia, PA 19182	64-10-301-50
1	0053400	Drain Hose-Pump to Solenoid Valve, short	·	
4	0053500	Drain Hose Clamps		
1	0053600	Drain Hose-Solenoid Valve to Drain, long	•	
2	0054400	Door Spring	Southern Spring & Stamping, 401 Substation Rd., Venice, FL 33595	AD-3741-B
1	0054500	Enclosure Panel, righthand side	*	
1	0054600	Enclosure Panel, lefthand side	*	İ
1	0054700	Enclosure Panel, top	•	
1	0054902	Enclosure Panel, Lower Kickplate	*	
1	0056600	Heater Element, Ring-Style, 1000W, 440V	Tru Hoot Corn. 700 Crond Ch. Madina	C1014
	0057000		Tru-Heat Corp., 700 Grand St., Medina, OH 44256	C1014
1	0057900	Heater Element, Flange Type, 6.7KW, 440V	Watlow, PO. Box 691088, Orlando, FL 32819-1088	7-29-20-1
2	0060001	Heater Element, Flange Type, Bus Bars	•	
1	0060002	Heater Element, Flange Type,		į.
		Gasket	Watlow, P.O. Box 691088, Orlando, FL 32819-1088	AD-8565
· 1	0083507	Light, Indicator, Green	Wes-Garde Components Group, Inc., 3815 Industry Blvd., Lakeland, FL 33803	8041-X2/Potted
2	0083518	Light, Indicator, Red	Wes-Garde Components Group, Inc., 3815 Industry Blvd., Lakeland, FL 33803	8011-N4/Potted
1	0084300	Probe, Lundy, small	•	
1	0108100	Pump Assembly, complete with motor, 115V, 60 cycle		14988-001
1	0108400	Pump Gasket		AD-3737E
1	0108500	Pump Propeller Mounting Plate and	20th St., Tampa, FL 33605	
		Seal Assembly, kit	Gorman Rupp Industries, 180 Hines Ave., Bellville, OH 44813	02501-220
1	0109000	Pump Impeller, kit	Gorman Rupp Industries, 180 Hines Ave., Bellville, OH 44813	02500-359
1	0109501	Pump, Upper Housing, kit		02501-206
4	0109700	Pump Fill Head Machine Screws,	· · · · ·	
		short	Spencer Products, 5144 Cypress St., Tampa, FL 33607	AD-7152
4	0109800	Pump Fill Head Machine Screws, long	Spencer Products, 5144 Cypress St.,	AD-7152
1	0117500	Rack, square, 1934" x 1934" (cup,	Tampa, FL 33607	
		bowl, glass)	Raburn Division of Ecolab, 1201 Mark St., Elk Grove, IL 60007	6000M

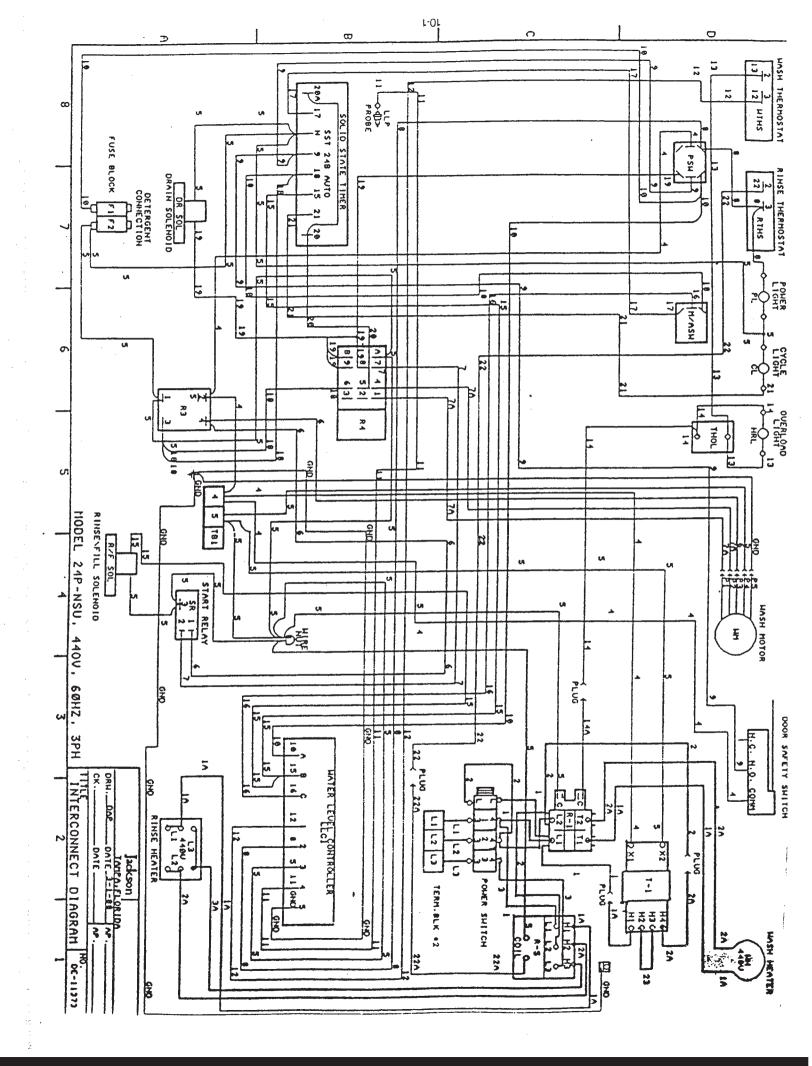
^{*}Manufacturer is vendor/supplier of part.

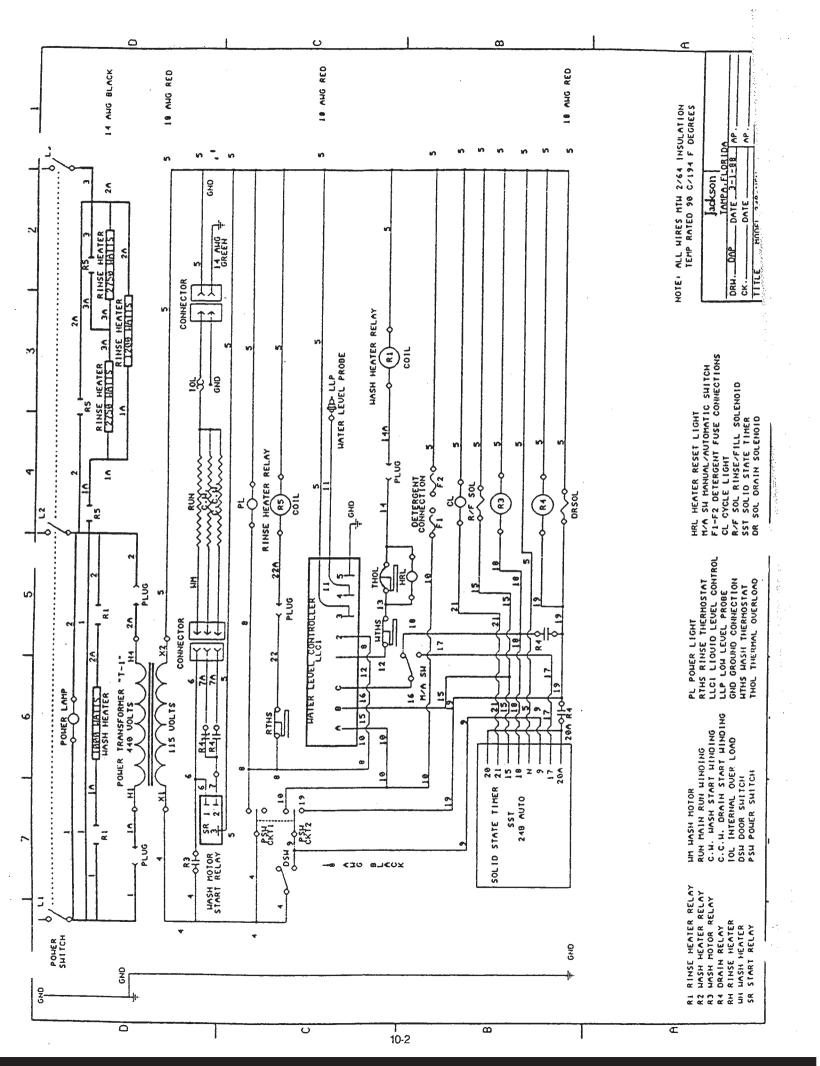
CHAPTER 9 — MANUFACTURER/VENDOR CROSS-REFERENCE LIST FOR MODEL 24BPNSU

	Mfgr's #	Description of Part	Vendor Name and Address	Vendor Part No.
2	0117800	Rack, square, 1934" x 1934" (dish-		
	:	moided)	Raburn Division of Ecolab. 1201 Mark St., Elk Grove, IL 60007	5020
1	0123600	Relay, 110V. 3-pole, Rinse Heat Circuit,		
		Allen Bradley	Honeyweil, P.C. Box 101100, Atlanta, GA 30348	702A0D92
1	0120701	Relay, 110V, Motor Starting	MRC Technology, Inc.	30-0.50-115V-UL
2	0122701	Relay, Motor	White-Rogers Division, 9797 Reavis Rd., St. Louis, MO 63123	184-20203-302
,	0124400	Relay, Drain, 3PDT	Electronic Precepts of Florida, 7401 114th Ave. N., #502A, Largo, FL	RM705-615
		• • • • • • • • • • • • • • • • • • •	34643	
7	01/251/00	Rinse Head Assembly, upper		
1	0125200	Rinse Head Assembly, lower		
2	0126800	Rinse Head End Plug, knurled	•	1
2	0125500	Rinse Head, Hex Bushing	* ·	
2	0126000	Rinse Head. Nylatron Washer		
2	0126500	Rinse Head, Snap Ring. s/s	Dixie Bearings Inc. 626 13th St	5103-56H
	0131000		Tampa, FL 33612	
1		Rinse Head Brush, Tube Cleaning	Lake St., Chicago, IL 60607	4-25-97
1	0137301	Rinse Feed Pipe Lanyard Pin		
1,	0142000	Solenoid Valve 1/2", JE, 110V	Jakes-Evans Controls, Division Parker Hannifin Corp., PO. Box 130, Madison, MS 39110	70563A73099
1	0142400	Drain Valve, Doie 1/2", 110V (Valve		
	:		Eaton Corp., PO. Box 1018, Beloit, Wi 53511	K29312
1	0143600	Solenoid Valve Coil, 110V, JE		
	0145000	Solenoid Valve Diaphragm Cartridge		
	:	and "O" Ring, JE	Jakes-Evans Controls, Division Parker	76610
	:	i	Hannifin Corp., PO. Box 130,	
			Madison, MS 39110	
1	0147500	Solenoid Valve "O" Ring, JE		P45-17
'	0147300	Solehold valve of hing, 32		: 40-17
			Hannifin Corp., PO. Box 130,	
		6	Madison, MS 39110	
1	0148600	Solenoid Valve, Plunger Assembly,		
		J L	Jakes-Evans Controls, Division Parker Hannifin Corp., PO. Box 130, Madison, MS 39110	7018135
1	0149500	Solenoid Valve, Strainer Screen, JE	Jakes-Evans Controls, Division Parker	J-4
:	5:49500	Oderioid valve, Strainer Goreen, ot	Hannifin Corp., PO. Box 130, Madison, MS 39110	0-4
	03.524.00	Strainer, Pan-Type	*	
: :	0153100		Wee Garde Components Grown inc	TIGM5B-6S-
	915560 0	Switch, On/Fill, Off, Drain	3815 Industry Blvd., Lakeland, FL 33803	BL-W91
1	0164000	Switch, Door, SPDT	· · ·	E72-40H
4	0159700	Switch, Manual Wash	Wes-Garde Components Group, Inc., 3815 Industry Bivd., Lakeland, FL	AD-9732
:	0165600	Terminal Board, 3-pole		SPSWTC
	0100100	Thormometer 26" Con Dines	Lakeland, FL 33801	enua.
1 :	0169100	Thermometer, 36" Cap., Rinse	West Babylon, NY 11704	20UB~
1	0169601	Thermostatic Overload, Heater	Hamilton Standard Control, 501 Archdale Dr., Charlotte, NC 28217	103R-700?
i	İ		;	

CHAPTER 9 — MANUFACTURER/VENDOR CROSS-REFERENCE LIST FOR MODEL 24BPNSU

Box B, C125241 Box B, C125236 Camp Ave., TG5-24X1489B c/o Marsh & 38-103-01 c/o Marsh & 38-00301 c/o Marsh & 38-00301
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NAVSEA (USER) TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER) (NAVSEA S0005-AA-GYD-030/TMMP & NAVSEAINST 4160.3)

INSTRUCTIONS: Insert classification at top and bottom of page. Read the following before completing this form. Continue on 8 1/2" x 11" paper if additional space is needed.

- 1. USE THIS REPORT TO INDICATE DEFICIENCIES, USER REMARKS, AND RECOMMENDATIONS RELATING TO PUBLICATION.
- 2. BLOCKS MARKED WITH "" ARE TO BE FILLED IN BY THE CONTRACTOR BEFORE PRINTING.
- 3. FOR UNCLASSIFIED TMDER'S FILL IN YOUR RETURN ADDRESS IN SPACE PROVIDED ON THE BACK, FOLD AND TAPE WHERE

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NAVSEA 9086/10 (REV. 6-85) S/N 0116-LF-090-8651 (REPLACES 4-84 EDITION & NAVSEA 4160/1-DESTROY STOCK).

CLASSIFICATION:

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CEPARTMENT OF THE NAVY

OFFICIAL BUSINESS
FENALTY FOR PRIVATE USE \$300



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PORT HUENEME, CA. 93043-5007

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CLASSIFICATION:

NAVSEA (USER) TECHNICAL MANUAL DEFICIENCY/EVALUATION REPORT (TMDER) (NAVSEA S0005-AA-GYD-030/TMMP & NAVSEAINST 4160.3)

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NAVSEA 9086/10 (REV. 6-85) S/N 0116-LF-090-8651 (REPLACES 4-84 EDITION & NAVSEA 4160/1-DESTROY STOCK).

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ORDERING REPLACEMENT WIRE

ORDERING REPLACEMENT WIRE FOR YOUR DISHMACHINE

Jackson dishmachines have several color and gauges of wire used in them and it may become necessary to replace these wires. Wire may be ordered from Jackson MSC Inc., but please note that it is only available in feet. Ensure that you order the correct color and guage.

BLACK WIRE:			
		RED WIRE:	
6 Gauge	6145-002-15-91		
8 Gauge	6145-104-43-00	6 Gauge	6145-002-15-92
10 Gauge	6145-104-16-00	8 Gauge	6145-104-45-00
12 Gauge	6145-112-01-00	10 Gauge	6145-104-08-00
14 Gauge	6145-104-09-00	14 Gauge	6145-104-05-00
18 Gauge	6145-104-01-97	18 Gauge	6145-104-37-00
18 Gauge with Orange Stripes	6145-011-35-66	18 Gauge with Black Stripes	6145-011-59-56
18 Gauge with White Stripes	6145-011-35-65	18 Gauge with Blue Stripes	6145-011-81-74
18 Gauge with Yellow Stripes	6145-011-35-64	18 Gauge with White Stripes	6145-011-81-73
l ,		18 Gauge with Yellow Stripes	6145-011-81-75
BLUE WIRE:		20 Gauge	6145-104-02-97
6 Gauge	6145-002-15-93	WHITE WIRE:	
8 Gauge	6145-104-44-00		
10 Gauge	6145-104-42-00	10 Gauge	6145-104-19-00
14 Gauge	6145-104-04-00	14 Gauge	6145-104-10-00
18 Gauge	6145-104-35-00	18 Gauge	6145-104-39-00
18 Gauge with Black Stripes	6145-011-46-35	18 Gauge with Black Stripes	6145-011-35-70
18 Gauge with Red Stripes	6145-011-46-37	18 Gauge with Blue Stripes	6145-011-46-40
18 Gauge with White Stripes	6145-011-46-36	18 Gauge with Green Stripes	6145-011-35-69
18 Gauge with Yellow Stripes	6145-011-46-38	18 Gauge with Grey Stripes	6145-002-20-18
20 Gauge	6145-104-06-97	18 Gauge with Red Stripes	6145-011-35-67
20 Gauge with Black Stripes	6145-104-17-97	18 Gauge with Yellow Stripes	6145-011-35-68
20 Gauge with White Stripes	6145-104-13-97	20 Gauge	6145-104-04-97
20 Gaage with write outpeo	011010101	20 Gauge with Orange & Yellow Stripes	6145-104-16-97
GREEN WIRE:		20 Gauge with Yellow Stripes	6145-104-15-97
8 Gauge	6145-002-15-94	YELLOW WIRE:	
14 Gauge	6145-104-03-00	TELEOW WINE.	
	6145-104-32-00	18 Gauge	6145-104-33-00
18 Gauge		18 Gauge with Black Stripes	6145-011-81-68
18 Gauge with Yellow Stripes	6145-001-44-96 6145-104-05-97	18 Gauge with Blue Stripes	6145-011-81-70
20 Gauge	6145-104-05-97	18 Gauge with Red Stripes	6145-011-81-69
20 Gauge with Black Stripes		20 Gauge	6145-104-07-97
20 Gauge with Yellow Stripes	6145-104-11-97	20 Gauge	0145-104-07-97
GREY WIRE:			
18 Gauge	6145-104-36-00		
18 Gauge with Black Stripes	6145-011-81-71		
18 Gauge with Blue Stripes	6145-011-81-72		
18 Gauge with Red Stripes	6145-011-46-41		
18 Gauge with White Stripes	6145-011-35-60		
18 Gauge with Yellow Stripes	6145-011-46-42		
20 Gauge	6145-104-03-97		

ORDERING REPLACEMENT WIRE (CONTINUED)/CONDUIT & FITTINGS

MISCELLANEOUS WIRE:

Brown (18 Gauge) Brown (20 Gauge) Orange (18 Gauge) Orange with Black Stripes (18 Gauge) Orange with Blue Stripes (18 Gauge) Orange with White Stripes (18 Gauge) Orange with Yellow Stripes (18 Gauge) Orange (20 Gauge) Pink (18 Gauge) Purple (18 Gauge) Violet (20 Gauge)	6145-104-20-00 6145-104-08-97 6145-101-35-62 6145-011-35-63 6145-011-35-63 6145-011-35-61 6145-104-10-97 6145-104-31-00 6145-104-09-97
Plug, GFI	6145-001-97-90
Cable, 16 Gauge, 3 Wire Romex	6145-001-98-29
Cord, Hubble Plug MC	6145-011-47-23
Cord, S-J	6145-011-49-02
Cord, Power	6145-011-70-28
Cord, 115V Power	6145-309-02-00
Cord, 125V Power, 96 " Long	6145-309-04-00

CONDUIT AND RELATED FITTINGS

Jackson dishmachines come with a wide variety of conduit and fittings for use in routing the wires of the machine. The list below provides for most of stock of such items. When ordering, remember that Jackson does not offer pre-cut sections of conduit for your machine, instead it is sold by the foot. Please take into account the slack that will be necessary once installing the new conduit to ensure that it fits correctly. It is recommended that you order at least 6" more conduit than you require to ensure that you have enough for trimming.

CONDUIT:		Fitting, 1", 90 Degree	5975-011-68-43
		Fitting, Cole-Flex, 1/2" Straight	5975-205-03-00
Conduit, 1/2", Liquidtite	5975-101-25-00	Fitting, Cole-Flex, 3/4" Straight	5975-205-41-00
Conduit, 1/2", Non-Metallic	5975-111-46-57	Fitting, Cole-Flex, 3/4", 90 Degree	5975-204-42-00
Conduit, 1/2", PVC	5975-105-04-00	Fitting, Liquidtite, .231 ID/.394 OD	5975-011-49-03
Conduit, 1/2", Sealtite	5975-105-01-00	Fitting, Liquidtite, .25 ID/.546 OD	5975-011-65-51
Conduit, 1/2", Xtraflex	5975-105-06-44	Fitting, Liquidtite, .27 ID/.48 OD	5975-011-59-50
Conduit, 3/8", Liquidtite	5975-105-02-00	Fitting, Liquidtite, 1/2", 90 Degree	5975-111-01-00
Conduit, 3/4", Cole-Flex	5975-105-05-00	Fitting, Liquidtite, 3/8", Straight	5975-205-03-82
Conduit, 3/4", Liquidtite	5975-105-03-00	Fitting, Liquidtite, 3/8", 90 Degree	5975-205-02-82
Conduit, 3/4", Non-Metallic	5975-011-47-71	Fitting, Liquidtite, 3/4", Straight	5975-205-15-02
Conduit, 3/4" Xtraflex	5975-105-07-44	Fitting, Liquidtite, 3/4", 45 Degree	5975-205-01-82
Conduit, 1", Carlon	5975-011-68-42	Fitting, Liquidtite, 3/4", 90 Degree	5975-205-07-82
		Fitting, Xtraflex, 1/2", Straight	5975-205-47-44
CONDUIT FITTINGS:		Fitting, Xtraflex, 3/4", Straight	5975-205-46-44
		Nut, 1-1/4"	5975-011-42-54
Elbow, Cole-Flex, 1/2", 90 Degree	5975-205-40-00		
Elbow, Xtraflex, 1/2", 90 Degree	5975-205-44-44		
Elbow, Xtraflex, 3/4", 90 Degree	5975-205-45-44		
Fitting, 1/2" Straight	5975-011-45-13		
Fitting, 1/2", Straight, Zinc Plated	5975-111-89-89		
Fitting, 1/2", 45 Degree	5975-011-45-23		
Fitting, 1/2", 45 Degree, Zinc Plated	5975-111-89-86		
Fitting, 1/2", 90 Degree	5975-011-45-14		
Fitting, 1/2", 90 Degree, Zinc Plated	5975-111-89-88		
Fitting, 3/4", Straight	5975-011-47-72		
Fitting, 3/4", 45 Degree	5975-011-47-74		
Fitting, 3/4", 90 Degree	5975-011-47-73		
Fitting, 1", Straight	5975-011-70-75		

ORDERING REPLACEMENT FASTENERS

Dishmachines come with a variety of fasteners used to hold them together. On the following pages will be comprehensive list of all of the fasteners you may order. Jackson reserves the right to require minimum quantities to be ordered.

SCREWS:

SCREV	<u>vs:</u>	
Screw.	1/4"-20 x 1/4", Set	5305-002-10-14
	1/4"-20 x 1/2", Phillips Truss Head	5305-174-03-00
	1/4"-20 x 1/2", Set Screw	5305-011-71-51
	1/4"-20 x 1/2", Slotted Truss Head	5305-002-22-81
Screw.	1/4"-20 x 1/2". Thumb	5305-011-38-62
Screw.	1/4"-20 x 1/2", Thumb 1/4"-20 x 1/2", with Rubber Washer	5305-974-01-00
Screw.	1/4"-20 x 5/8", 80 Deg CSink	5305-002-20-30
	1/4"-20 x 5/8", Hex Head	5305-274-24-00
	1/4"-20 x 5/8", Phillips Truss Head	5305-174-04-00
	1/4"-20 x 1-1/8", Hex Head	5305-274-21-00
Screw,	1/4"-20 x 1-1/4", Flat Head	5305-174-19-00
Screw,	1/4"-20 x 1-3/8", Hex Head	5305-274-19-00
	1/4"-20 x 1-1/2", Flat Head	5305-174-11-00
Screw,	1/4"-20 x 1-1/2", Hex Head	5305-274-23-00
Screw,	1/4"-20 x 1-1/2", Phillips Head	5305-011-44-50
Screw,	1/4"-20 x 1-1/2", Slotted Truss Hd	5305-002-22-82
Screw,	1/4"-20 x 1-3/4", Hex Head	5305-274-10-00
Screw,	1/4"-20 x 3-3/4", Hex Head	5305-011-93-68
	5/16"-18 x 1/2", Hex Head	5306-011-88-67
	5/16"-18 x 1-1/4", Flat Head	5305-011-83-49
	3/8"-16 x 1", Socket Head	5305-356-04-00
	3/8"-16 x 1-1/4", Hex Head Plated	5305-256-04-00
	3/8"-16 x 2", Cap	5305-011-74-98
	4-40 x 1/4", Phillips Pan Head	5305-011-36-92
Screw,	4-40 x 3/8", Phillips Truss Head	5305-011-59-70
	4-40 x 1/2" Phillips Pan Head	5305-011-38-19
	4-40 x 5/8" Phillips Truss Head	5305-011-49-70
	4-40 x 3/4", Phillips Pan Head	5305-011-59-64
	4-40 x 1", Slotted Pan Head	5305-179-01-00
Screw,	6-32 x 1/4", Flat Head	5305-171-01-00
Screw,	6-32 x 1/4", Round Head	5305-151-02-00
	6-32 x 1/2", Phillips Head	5305-171-15-00
	6-32 x 1/2", Phillips Truss Head	5305-011-39-34
	6-32 x 3/8", Phillips Head	5305-171-02-00 5305-171-07-00
Sorow,	6-32 x 3/8", Phillips Round Head 6-32 x 5/8", Phillips Round Head	5305-171-07-00
	6-32 x 3/4", Round Head	5305-011-03-00
	6-32 x 3/4", Phillips Pan Head	5305-171-00-00
	6-32 x 7/8", Phillips Round Head	5305-171-10-00
	8-32 x 1/4", Phillips Pan Head	5305-172-09-00
Screw.	8-32 x 1/4", Slotted Round Head	5305-172-01-00
Screw.	8-32 x 3/8", Phillips Flat Head	5305-776-03-00
	8-32 x 3/8", Phillips Flat Head	5305-011-37-07
	8-32 x 3/8", Round Head	5305-172-02-00
		5305-002-02-87
Screw.	8-32 x 1/2", Hex Head 8-32 x 1/2", Phillips Flat Head	5305-011-37-06
Screw.	8-32 x 3/4", Phillips Round Head	5305-172-06-00
	10-24 x 3/8", Flat Head Undercut	5305-773-02-00
	10-24 x 3/8", Phillips Truss Head	5305-173-03-00
	10-24 x 1/2", Phillips Truss Head	5305-173-18-00
Screw,	10-24 x 1/2", Set	5305-473-02-00
Screw,	10-24 x 5/8", Hex Head	5305-011-40-89
Screw,	10-24 x 3/4", Hex Head	5305-273-05-00
Screw,	10-24 x 2-1/4", Hex Head	5305-011-38-10
Screw,	10-32 x 1/4", Round Head	5305-173-01-00
Screw,	10-32 x 3/8", Phillips Pan Head	5305-173-26-00
	10-32 x 3/8", Phillips Truss Head	5305-173-12-00
Carau	10.32 v 3/9" Dound Hood, Slotted	5305-173-02-00

Screw, 10-32 x 3/8", Round Head, Slotted 5305-173-02-00

Screw, 10-32 x 1/2", Phillips Flat He	ad 5305-011-44-51
Screw, 10-32 x 1/2", Phillips Pan Hea	ad 5305-011-44-52
Screw, 10-32 x 1/2", Phillips Truss H	ead 5305-011-39-36
Screw, 10-32 x 1/2", Self Tapping	5305-011-62-69
Screw, 10-32 x 1/2", Slotted Truss	5305-173-04-00
Screw, 10-32 x 5/8", Fillister Head	5305-973-02-00
Screw, 10-32 x 3/4", Shoulder, .25 Sl	houlder 5305-011-86-65
Screw, 10-32 x 3/4", Phillips Truss H	ead 5305-011-62-17
Screw, 10-32 x 3/4", Phillips Truss H	ead 5305-011-49-33
Screw, 10-32 x 7/8", Fillister Head	5305-973-04-00
Screw, 10-32 x 7/8", Hex Head	5305-279-01-00
Screw, 10-32 x 1", Phillips Pan Head	5305-002-19-42
Screw, 10-32 x 1-1/8" Fillister Head	5305-973-03-00
Screw, 10-32 x 1-1/4", Phillips Truss	Head 5305-011-66-03
Screw, 10-32 x 1-1/4", Socket Head	5305-356-16-00
Screw, 10-32 x 1-1/2", Fillister Head	5305-973-01-00
Screw, 10-32 x 1-3/4", Phillips Pan H	lead 5305-011-62-67
Screw, 10-32 x 1-3/4", Self Tapping	5305-011-59-92

BOLTS:

Bolt, 1/4"-20 x 3/8", Hex Head	5305-274-20-00
Bolt, 1/4"-20 x 1/2", Hex Head	5305-274-02-00
Bolt, 1/4"-20 x 3/4", Hex Head	5305-274-04-00
Bolt, 1/4"-20 x 7/8", Hex Head	5305-274-05-00
Bolt, 1/4"-20 x 1", Hex Head	5305-254-06-00
Bolt, 1/4"-20 x 1-1/4", Hex Head	5305-274-22-00
Bolt, 1/4"-20 x 2", Hex Head	5306-011-84-72
Bolt, 1/4"-20 x 2-1/4", Hex Head	5305-011-30-50
Bolt, 1/4"-20 x 2-1/2", Hex Head	5306-011-83-52
Bolt, 1/4"-20 x 2-3/4", Hex Head	5306-011-46-62
Bolt, 1/4"-20 x 3-1/4", Hex Head	5306-002-05-55
Bolt, 5/16"-18 x 5/8", Hex Head	5305-275-09-00
Bolt, 5/16"-18 x 3/4", Hex Head	5305-275-04-00
Bolt, 5/16"-18 x 1" , Hex Head	5305-275-06-00
Bolt, 5/16"-18 x 1-1/4", Hex Head	5305-275-10-00
Bolt, 3/8"-16 x 3/4", Hex Head	5306-011-71-60
Bolt, 3/8"-16 x 7/8", Hex Head	5306-011-36-95
Bolt, 3/8"-16 x 1", Hex Head	5305-276-03-00
Bolt, 3/8"-16 x 1", Hex Head, Plated	5305-256-03-00
Bolt, 3/8"-16 x 1-1/4", Hex Head	5305-276-10-00
Bolt, 3/8"-16 x 1-3/4", Hex Head	5306-011-36-94
Bolt, 3/8"-16 x 2-1/4", Hex Head	5306-011-95-12
Bolt, 3/8"-16 x 2-3/4", U-Bolt	5306-011-51-34
Bolt, 3/8"-16 x 4", Hex Head	5306-956-02-00
Bolt, 1/2"-13 x 1-3/4"	5305-011-71-94
Bolt, 10-24 x 3/8", Hex Head	5306-011-63-29
Bolt, 10-32 x 3/8"	5306-011-62-45

ORDERING REPLACEMENT FASTENERS (CONTINUED)

LOCKWASHERS:

Lockwasher, 1/4", Split	5311-274-01-00
Lockwasher, 3/8", Split	5311-276-01-00
Lockwasher, 3/8", Split	5311-256-01-00
Lockwasher, 5/8"	5311-278-02-00
Lockwasher, 5/16", Split	5311-275-01-00
Lockwasher, 5/16", Split, Cad Plated	5311-255-01-00
Lockwasher, #4, External Tooth	5311-011-59-70
Lockwasher, #6 External Tooth	5311-271-02-00
Lockwasher, #8	5311-272-02-00
Lockwasher, #8, External Tooth	5311-272-01-00
Lockwasher, #8, Internal Tooth	5311-272-03-00
Lockwasher, #10, External Tooth	5311-273-02-00
Lockwasher, #10, Internal Tooth	5311-273-03-00
Lockwasher, #10, Split	5311-273-01-00

FLAT WASHERS:

Washer, Flat, Brass, 3/32" ID	5311-129-08-00
Washer, Flat, Brass, 1/4" ID	5311-129-09-00
Washer, 1/4" ID x 3/4" OD	5311-011-76-30
Washer, Flat, 5/16" ID	5311-175-01-00
Washer, Flat, Brass, 5/16", Cadplated	5311-156-01-00
Washer, Flat, S/S, 3/8" ID	5311-176-01-00
Washer, 3/8" ID x 9/16" OD	5311-011-71-49
Washer, 1/2" ID x 1" OD x 1/8" Thick	5311-011-71-48
Washer, 1/2" ID x 1-5/16" OD, Cadplated	5311-157-01-00
Washer, Nylon, .51" ID x .76" OD	5311-011-62-65
Washer, Flat, S/S, 11/16 " ID x 1/2" OD	5311-178-01-00
Washer, 7/8" ID x 1-1/2" OD	5311-011-35-37
Washer, Flat, 1/4" ID	5311-174-01-00
Washer, Flat, #10	5311-173-02-00

LOCKNUTS:

Locknut, 1/4"-20 with Nylon, High Profile Locknut, 1/4"-20 with Nylon, Low Profile Locknut, 5/16"-24 with Nylon, High Profile Locknut, 5/16"-24 with Nylon, Low Profile Locknut, 3/8"-16, with Nylon, High Profile Locknut, 3/8"-16, with Nylon, Low Profile Locknut, 4-40, with Nylon Locknut, 6-32, with Nylon	5310-374-01-00 5310-374-02-00 5310-375-01-00 5310-374-03-00 5310-011-72-55 5310-376-02-00 5310-279-06-00 5310-373-03-00
The state of the s	

HEX NUTS:

Nut Hay 1/4" 00	E210 274 01 00
Nut, Hex, 1/4"-20	5310-274-01-00
Nut, Hex, 1/4"-20, Cad Plated	5310-254-01-00
Nut, Hex, 5/16"-18	5310-275-01-00
Nut, Hex, 5/16"-18, Cad Plated	5310-255-01-00
Nut, Hex, 3/8"-16	5310-276-02-00
Nut, Hex, 3/8"-16, Cad Plated	5310-256-02-00
Nut, Hex, 1/2"-13	5310-011-72-58
Nut, Hex, 6-32	5310-271-01-00
Nut, Hex, 8-32	5310-272-01-00
Nut, Hex, 10-24	5310-273-02-00
Nut, Hex, 10-32	5310-273-01-00

MISCELLANEOUS NUTS:

Nut, 1/4"-20, Acorn	5310-174-01-00
Nut, 1/4"-20, Hex, Serrated	5310-011-66-49
Nut, 1/4"-20, Wing, Nylon	5310-994-01-00
Nut, 5/16"-18, Keps	5310-955-01-00
Nut, 5/8"-18, Brass	5310-228-01-11
Nut, 6-32, Keps	5310-002-24-29
Nut, 10-24, Hex Cap	5310-173-01-00
Nut, 10-24, Wing, Nylon	5310-993-01-00

ORDERING REPLACEMENT HOSE & TUBING

Tubing and hose are ordered by the foot. Jackson MSC Inc. reserves the right to require minimum ordering quantities for the items below.

HOSE:

Hose, 3/16" ID x 5/16" OD Hose, 1/4" ID x .062" Wall, Excelon Hose, 1/4" ID x 1/2" OD, 300-350 PSI Hose, 3/8" ID x 5/8" OD, 300 PSI	4720-601-40-00 4720-111-59-46 4720-011-95-43 4720-002-31-63
Hose, 3/8" ID x 5/8" OD, 300 PS1	4720-002-31-03
Hose, 3/8" ID x 3/4" OD, PVC	4720-111-35-41
Hose, 1/2" ID x 3/4" OD	4720-011-94-01
Hose, 1/2" ID, Reinforced	4720-011-63-06
Hose, 5/8" ID x 7/8" OD, PVC	4720-601-14-00
Hose, 3/4" ID x 1" OD	4720-011-94-10
Hose, 3/4" ID, Nylon Reinforced	4720-011-63-02
Hose, 1" ID x 1-1/4" OD, EPDM	4720-111-39-73
Hose, 1-1/4" ID x 1-1/2" OD, Reinforced	4720-601-42-00
Hose, 1-1/4" ID, Reinforced	4720-011-44-47
Hose, 1-1/2" ID, Clear Wire Reinforced	4720-111-34-60
Hose, 2" ID, Nylon Reinforced	4720-011-63-25
Hose, 2" ID, Reinforced Flex Drain	4720-011-63-04
Hose 2" ID x 3" OD, EPDM	4720-011-88-02

TUBING:

Tubing, 1/8" OD, Paraflex	4720-111-58-09
Tubing, 3/16" ID x .54" OD, CPVC	4720-111-35-31
Tubing, 1/4" OD	4720-111-51-65
Tubing, 1/4" OD, Blue	4720-601-11-00
Tubing, 1/4" OD, Red	4720-601-12-00
Tubing, 1/4" OD, White	4720-601-13-00
Tubing, 1/4" OD, Paraflex	4720-111-51-70
Tubing, 1/4" ID x 3/8" OD, Tygon	4720-001-97-65
Tubing, 1/2" ID x 13/16" OD, Polypropolene	4720-601-24-00
Tubing, 5/16" x 7/16" OD, Clear	4720-111-35-34
Tubing, 5/16" ID x 1/2" OD, Flexible	4720-011-35-21
Tubing, 3/8" ID x 1/16" Wall, Clear	4720-601-22-00
Tubing, 3/8" OD, White Polypropolene	4720-011-50-49
Tubing, 5/8" ID with .125" Wall	4720-002-12-20
Tubing, 3/4" ID x 1/8" Wall, Polypropolene	4720-601-25-00
Tubing, 3/4" ID x 1-1/8" OD, Nylon	4720-001-84-01
Tubing, 1" Polybrade	4720-011-69-16
Tubing, 1" ID x 1-3/8" OD, Polypropolene	4720-601-23-00
Tubing, 1-1/2" Polybrade	4720-011-69-17

ALABAMA

Jones-McLeod Appliance

1616 7th Avenue North Birmingham, AL 35203 (205) 251-0159 (800) 821-1150 (205) 322-1440 fax

Jones-McLeod Appliance

854 Lakeside Drive Mobile, AL 36693 (334) 666-7278 (800) 237-9859 (334) 661-0223 fax

ALASKA

Restaurant Appliance Service

7219 Roosevelt Way NE Seattle, WA 98115 (206) 524-8200 (800) 433-9390 (206) 525-2890 fax

ARIZONA

GCS Service, Inc. #78

5052 South 40th Street Phoenix, AZ 85040 (602) 474-4510 (800) 510-3497 (602) 470- 4511 fax

Authorized Commercial Food Equipment Service

4832 South 35th St. Phoenix, AZ 85040 (602) 234-2443 (800) 824-8875 (602) 232-5862 fax

ARKANSAS

Bromely Parts & Service

10th & Ringo P.O. Box 1688 Little Rock, AR 72202 (501) 374-0281 (800) 482-9269 (501) 374-8352 fax

Commercial Parts & Service

3717 Cherry Road Memphis, TN 38118 (901) 366-4587 (800) 262-9155 (901) 366-4588 fax

CALIFORNIA

P & D Appliance

4220-C Roseville Road North Highlands, CA 95660 (916) 974-2772 (800) 824-7219 (916) 974-2774

CALIFORNIA (cont)

P & D Appliance

100 South Linden Avenue S. San Francisco, CA 94080 (650) 635-1900 (800) 424-1414 (650) 635-1919 fax

Barkers Food

Machinery Equipment 5367 Second Street Irwindale, CA 91706

(626) 960-9390 (800) 258-6999 (626) 337-4541 fax

GCS Service, Inc. #24

1100 East Pico Blvd Los Angeles, CA 90021 (213) 683-2090 (800) 327-1433 (213) 683-2099 fax

GCS Service, Inc. #24

650 S. Grand Avenue Suite 111 Santa Ana, CA 92705 (714) 542-1798 (800) 540-0719 (714) 542-4787 fax

GCS Service, Inc. #52

360 Littlefield S. San Francisco, CA 94080 (650) 635-0720 (800) 969-4427 (650) 871-4019 fax

GCS Service, Inc. #84

9030 Kenamar Drive Suite 313 San Diego, CA 92121 (858) 549-8411 (800) 422-7278 (858) 549-2323 fax

COLORADO

GCS Service, Inc. #60

4251 S. Natches Ct. Unit C Sheridan, Co 80110 (303) 371-9054 (800) 972-5314

Metro Appliance Service

1640 South Broadway Denver, CO 80210 (303) 778-1126 (800) 525-3532 (303) 778-0268 fax

CONNECTICUT

GCS Service, Inc. #06 302 Murphy Road Hartford, CT 06114 (860) 549-5575 (800) 423-1562 (860) 527-6355 fax

DELAWARE

Food Service Equipment

2101 Parkway South Broomall, PA 19008 (610) 356-6900 (610) 356-2038 fax

GCS Service, Inc. #44

817 N. Third Street P.O. Box 3564 Philadelphia, PA 19123 (215) 925-6217 (800) 441-9115 (215) 925-6208 fax

Elmer Schultz Service

36 Belmont Ave. Wilmington, DE 19804 (302) 655-8900 (800) 225-0599 (302) 656-3673 fax

EMR Service Division

106 Willamsport Circle Salisbury, MD 21804 (410) 543-8197 (410) 543-4038 fax

FLORIDA

GCS Service, Inc. #15

3373 N. W. 168th Street Miami, FL 33056 (305) 621-6666 (800) 766-8966 (305) 621-6656 fax

Commercial Appliance Service

8416 Laurel Fair Circle Building 6, Suite 114 Tampa, FL 33610 (813) 663-0313 (800) 282-4718 (813) 663-0212 fax

GCS Service, Inc. #14

3902 Corporex Park Drive Suite 350 Tampa, FL 33619 (813) 626-6044 (800) 282-3008 (813) 621-1174

FLORIDA (cont)

GCS Service, Inc. # 13 4305 Vineland Road

Suite G-12

Orlando, FL 32811

(407) 841-2551

(800) 338-7322

(407) 423-8425 fax

Jones-McLeod Appliance

854 Lakeside Drive Mobile, AL 36693

(334) 666-7278

(800) 237-9859

(334) 661-0223 fax

GEORGIA

GCS Service, Inc. #16

3127Presidential Dr. Atlanta, GA 30340

(770) 452-7322

(300) 334-3599

(770) 452-7473 fax

Southeastern

Restaurant Service

2200 Norcross Pkwy,

Suite 210

Norcross, GA 30071

(770) 446-6177

(800) 235-6516

(770) 446-3157 fax

Whaley Foodservice Repairs

109-A Owens Industrial Drive

Savannah, GA 31405

(912) 447-0827

(888) 765-0036

(912) 447-0826 fax

HAWAII

Food Equipment Parts &

Service Co.

300 Puuhale Road

Honolulu, HI 96819

(808) 847-4871

(808) 842-1560 fax

IDAHO

Ron's Service

703 E. 44th Street, Suite 10

Garden City, ID 83714

(208) 375-4073

(208) 375-4402 fax

Restaurant Appliance Service

7219 Roosevelt Way Ne

Seattle, WA 98115

(206) 524-8200

(800) 433-9390

(206) 525-2890 fax

ILLINOIS

GCS Service Inc. #12

696 Larch Avenue

Elmhurst, IL 60126

(630) 941-7800

(800) 942-9689

(630) 941-6048 fax

Cone's Repair Service

2408 40th Avenue

Moline, IL 61265

(309) 797-5323

(800) 716-7070

(309) 797-3631 fax

Eichenauer Services, Inc.

130 S. Oakland Street

Decatur, IL 62522

(217) 429-4229

(800) 252-5892

(217) 429-0226 fax

GCS Service, Inc. #80

9722 Reavis Park Drive

St. Louis, MO 63123

(314) 638-7444

(800) 284-4427

(314) 638-0135 fax

INDIANA

Commercial Parts and Service

5310 E. 25th Street

Indianapolis, IN 46218

(317) 545-9655

(800) 727-8710

(317) 549-6286 fax

IOWA

Goodwin-Tucker Group

3509 Delaware Avenue

Des Moines, IA 50313

(515) 262-9308

(800) 372-6066

(515) 262-2936 fax

Cone's Repair Service

1056 27th Ave. SW Cedar Rapids, IA 52404

(319) 365-3325

(800) 747-3326

(319) 365-0885 fax

KANSAS

GCS Service Inc. #82

6107 Connecticut

Kansas City, MO 64120

(816) 920-5999

(800) 229-6477

(816) 920-7387 fax

KENTUCKY

Certified Service Center

Ramco Business Park

4283 Produce Road

Louisville, Ky 40218

(502) 964-7007

(800) 637-6350

(502) 964-7202 fax

Commercial Parts & Service

4204 South Brook Street

Louisville, KY 40214

(502) 367-1788

(800) 752-6160

(502) 367-0400 fax

Certified Service Center

1051 Goodwin Drive

Lexington, KY 40505

(606) 254-8854

(800) 432-9269

(606) 231-7781 fax

Commercial Parts & Service

1002 Nandino Blvd.

Lexington, KY 40511

(606) 255-0746 (800) 432-9260

(606) 255-0748 fax

LOUISIANA

Bana Parts, Inc.

1501 Kueble Street

Harahan, LA 70123

(504) 734-0076

(800) 325-7543 (504) 734-8456 fax

Bana Parts, Inc.

4028 Greenwood Road

Shreveport, LA 71109 (318) 631-6550

(800) 832-6550

(318) 636-5675 fax

MAINE

GCS Service, Inc. #09

180 Second Street

Chelsea, MA 02150 (617) 889-9393

(800) 225-1155

(617) 889-1222 fax

Massachusetts Restaurant Supply

34 South Street

Somerville, MA 02143

(617) 868-1930 (800) 338-6737

(617) 868-5331 fax

MARYLAND

GCS Service, Inc. #07 2660 Pittman Drive

Silver Spring, MD 20910

(301) 585-7550 (DC)

(410) 792-0388 (Balt)

(800) 638-7278

(301) 495-4410 fax

EMR Service Division

700 East 25th Street Baltimore, MD 21218

(410) 467-8080

(800) 879-4994

(410) 467-4191 fax

EMR Service Division

106 Willamsport Circle Salisbury, MD 21804

(410) 543-8197

(888) 687-8080

(410) 548-4038 fax

EMR Service Division

2626 Pittman Drive

Silver Spring, MD 20910

(301) 588-8080

(800) 348-2365

(301) 588-6985 fax

MASSACHUSETTS

GCS Service, Inc. #09

180 Second Street Chelsea, MA 02150

(617) 889-9393

(800) 225-1155

(617) 889-1222 fax

Massachusetts Restaurant Supply

34 South Street

Somerville, MA 02143

(617) 868-1930

(800) 338-6737

(617) 868-5331 fax

Ace Service Co.

95 Hampton Avenue Needham, MA 02494

(781) 449-4220

(800) 225-4510 MA & NH

(781) 444-4789 fax

GCS Service, Inc. #06

302 Murphy Road Hartford, CT 06114

(860) 549-5575

(800) 723-1562

(860) 527-6355 fax

MICHIGAN

GCS Service, Inc. #20

31829 West Eight Mile Road

Livonia, MI 48152 (248) 426-9500

(800) 772-2936

(248) 426-7555 fax

GCS Service, Inc. #21

3516 Roger B Chaffe SE Grand Rapids, MI 49548

(248) 426-9500

(800) 772-2936

(248) 426-7555 fax

Jackson Service

3980 Benstein Road

Commerce Township, MI 48382

(248) 363-4159

(800) 332-4053

(248) 363-5448 fax

MINNESOTA

GCS/Metro Service. Inc.

2857 Louisiana Avenue N. Minneapolis, MN 55427

(612) 546-4221

(800) 345-4221

(612) 546-4286 fax

MISSISSIPPI

Commercial Parts & Service

5755 Gallant Drive Jackson, MS 39206

(601) 956-7800

(800) 274-5954

(601) 956-1200 fax

Commercial Parts & Service

3717 Cherry Road Memphis, TN 38118

(901) 366-4587

(800) 262-9155

(901) 366-4588 fax

MISSOURI

GCS Service, Inc. #82

6107 Connecticut

Kansas City, MO 64120

(816) 920-5999

(800) 229-6477

(816)920-7387 fax

GCS Service, Inc. #80

9722 Reavis Park Drive St. Louis, MO 63123

(314) 638-7444

(800) 284-4427

(314) 638-0135 fax

MISSOURI (cont)

Kammerlin Parts & Service

2728 Locust Street

St. Louis, MO 63103

(314) 535-2222

(314) 535-6205 fax

MONTANA

Restaurant Appliance Service

7219 Roosevelt Way NE Seattle, WA 98115

(206) 524-8200

(800) 433-9390

(206) 525-2890 fax

NEBRASKA

Goodwin-Tucker Group

815 N. 19th Street Omaha, NE 68102

(402) 345-7400

(800) 228-0342

(402) 346-6145 fax

NEVADA

GCS Service, Inc. #77

3585 East Patrick Lane

Suite 1000

Las Vegas, NV 89102

(702) 450-3495

(800) 500-9060

(702) 450-3491 fax

Burney's Commercial Service

4480 Aldevaran Avenue Las Vegas, NV 89103

(702) 736-0006

(702) 798-7531 fax

NEW HAMPSHIRE

GCS Service, Inc. #09

180 Second Street

Chelsea, MA 02150

(617) 889-9393

(800) 225-1155 (617) 889-1222 fax

Massachusetts Restaurant Supply

34 South Street

Somerville, MA 02143

(617) 868-1930

(800) 338-6737

(617) 868-5331 fax

Ace Service Co.

95 Hampton Avenue Needham, MA 02494

(781) 449-4220

(800) 225-4510 MA & NH

(781) 444-4789 fax

NEW JERSEY

Jackson Faspray Service

155 Sargeant Avenue Clifton, NJ 07013 (973) 471-8000 (800) 356-6740 (973) 471-1289 fax

GCS Service, Inc. #44

817 N. Third Street Philadelphia, PA 19123 (215) 925-6217 (800) 441-9115 (215) 925-6208 fax

GCS Service, Inc. #02

1 Madison ST., Bldg. F E. Rutherford, NJ 07073 (973) 614-0003 (800) 399-8294 (973) 614-0320 fax

Food Service Equipment

2101 Parkway South Broomall, PA 19123 (610) 356-6900 (610) 356-2038 fax

NEW MEXICO

Stove Parts Supply Co.

2120 Solana Street Ft. Worth, TX 76117 (817) 831-0381 (800) 433-1804 (817) 834-7754 fax

NEW YORK

GCS Service, Inc. #01

932 Grand Street Brooklyn, NY 11211 (718) 486-5220 (800) 969-4271 (718) 486-6772 fax

Duffy's Equipment Service

3138 Oneida Street Sauquiot, NY 13456 (315) 737-9401 (800) 443-8339 (315) 737-7132 fax

B.E.S.T., Inc.

Buffalo, NY 14225 (716) 893-6464 (800) 338-5011 (716) 893-6466 fax

3003 Genesee Street

NEW YORK (cont)

Appliance Installation & Service Corp.

1336 Main Street Buffalo, NY 14209 (716) 884-7425 (800) 722-1252 (716) 884-0410 fax

Northern Parts & Service

21 Northern Avenue Plattsburgh, NY 12903 (518) 563-3200 (800) 634-5005 (800) 782-5424 fax

Jackson Faspray Service

155 Sargeant Avenue Clifton, NJ 07013 (973) 471-8000 (800) 356-6740 (973) 471-1289 fax

NORTH CAROLINA

Whaley Foodservice Repairs

8334-K Arrowridge Blvd. Charlotte, NC 28273 (704) 529-6242 (704) 529-1558 fax

Whaley Foodservice Repairs

203-D Creek Ridge Road Greensboro, NC 27406 (336) 333-2333 (336) 333-2533 fax

Whaley Foodservice Repairs

335-105 Sherwee Drive Raleigh, NC 27603 (919) 779-2266 (919) 779-2224 fax

Whaley Foodservice Repairs

6418-101 Amsterdam Way Wilmington, NC 28405 (910) 791-0000 (910) 791-6662 fax

NORTH DAKOTA

GCS/Metro Service Inc.

2857 Louisiana Avenue N. Minneapolis,MN 55427 (612) 546-4221 (800) 345-4221 (612) 546-4286 fax

OHIO

Certified Service Center

890 Redna Terrace Cincinnati, OH 45215 (513) 772- 6600 (800) 543-2060 (513) 612-6600 fax OHIO (cont)

Commercial Parts & Service of Columbus

1150 West Mound Street Columbus, OH 43223 (614) 221-0057 (800) 837-8327 (614) 221-3622 fax

GCS Service, Inc.

2830 Johnstown Rd. Columbus, OH 43219 (614) 476-3225 (800) 282-5406 (614) 476-1196 fax

Electrical Appliance Repair Service

5805 Valley Belt Road Cleveland, OH 44131 (216) 459-8700 (800) 621-8259 (216) 459-8707 fax

OKLAHOMA

Krueger Inc.

100 NE 24th Street Oklahoma City, OK 73105 (405) 528-8883 (800) 522-8069 (405) 528-5405 fax

Hagar Restaurant Equipment

1229 W. Main Street Oklahoma City, OK 73106 (405) 235-2184 (800) 445-1791 (405) 236-5592 fax

OREGON

Ron's Service 16364 SW 72nd Ave.

Portland, OR 97224 (503) 624-0890 (800) 851-4118 (503) 684-6107 fax

PENNSYLVANIA

GCS Service, Inc. #44 817 N. Third Street P.O. Box 3564 Philadelphia, PA 19123

(215) 925-6217 (800) 441-9115 (215) 925-6208 fax

Elmer Schultz Service

540 North 3rd Street Philadelphia, PA 19123 (215) 627-5400 (215) 627-5408 fax

PENNSYLVANIA (cont)

Food Service Equipment

2101 Parkway South Broomall, PA 19008 (610) 356-6900 (610) 356-2038

A.I.S. Commercial Parts &

Service

1816 West 26th Street Erie, PA 16508 (814) 456-3732 (800) 332-3732 (814) 452-4843 fax

GCS Service, Inc. #44

4400 Lewis Road, Suite E Harrisburg, PA 17111 (717) 564-3282 (800) 367-3225 (717) 564-9286 fax

K & D Parts & Service

1833-41 N. Cameron Street Harrisburg, PA 17103 (717) 236-9039 (800) 932-0503 (717) 238-4367 fax

AFS-Authorized Factory Service. Co.

940 First Avenue Coraopolis, PA 15108 (412) 262-2330

(800) 222-8767 (412) 262-2245 fax

GCS Service, Inc. #48

210 Vista park Drive Pittsburgh, PA 15205 (412) 787-1970 (800) 738-1221 (412) 787-5005 fax

RHODE ISLAND

GCS Service, Inc. #90

1002 Waterman Ave. E. Providence, RI 02914 (401) 434-6803 (800) 462-6012 (401) 438-9400 fax

SOUTH CAROLINA

Whaley Foodservice Repairs

I-26 & US1 P.O. Box 4023 West Columbia, SC 29170 (803) 791-4420 (800) 877-2662 (803) 794-4630 fax

SOUTH CAROLINA (cont)

Whaley Foodservice Repairs

748 Congaree Road Greenville, SC 29607 (864) 234-7011 (800) 494-2539 (864) 234-6662 fax

Whaley Foodservice Repairs

1406-C Commerce PI. Myrtle Beach, SC 29577 (843) 626-1866 (843) 626-2632 fax

Whaley Foodservice Repairs

4740-A Franchise St. N. Charleston, SC 29418 (843) 760-2110 (843) 760-2255 fax

SOUTH DAKOTA

Metro Commercial

Service, Inc.

2857 Louisiana Avenue N. Minneapolis, MN 55427 (612) 546-4221 (800) 345-4221 (612) 546-4286 fax

TENNESSEE

Commercial Parts & Service

3717 Cherry Road Memphis, TN 38118 (901) 366-4587 (800) 262-9155 (901) 366-4588 fax

Commercial Parts & Service

748 Fesslers Lane Nashville, TN 37210 (615) 244-8050 (800) 831-7174 (615) 244-8885 fax

Commercial Appliance Service

919 8th Ave. South Nashville, TN 37203 (615) 254-0906 (800) 476-0906 (615) 254-0919 fax

TEXAS

GCS Service, Inc. #90

10850 Sanden Drive Dallas, TX 75238-5325 (972) 484-2954 (800) 422-5026 (972) 484-2531 fax

TEXAS (cont)

Stove Parts Supply Co.

2120 Solana Street Ft. Worth, TX 76117 (817) 831-0381 (800) 433-1804 (817) 834-7754 fax

GCS Service, Inc. #88

8150 Westpark Houston, TX 77081 (713) 785-9187 (800) 868-6957 (713) 785-3979 fax

Armstrong Repair Center

5110 Glenmont Dr. Houston, TX 77081 (713) 666-7100 (800) 392-5325 (713) 661-0520 fax

Commercial Kitchen Repair

1377 N. Brasos P.O. Box831128 San Antonio, TX 78207 (210) 735-2811 (800) 292-2120 (210) 735-7421 fax

UTAH

Lamonica's Restaurant Equipment Service

6182 S. Stratler Avenue Murray, UT 84107 (801) 263-3221 (800) 527-2561 (801) 263-3229 fax

VERMONT

Authorized Appliance Servicenter of Vermont

74 River Street Rutland, VT 05701 (802) 775-5588 (800) 874-1080 (802) 775-9593 fax

Northern Parts & Service

4874 S. Catherine Street Plattsburg, NY 12901 (518) 563-3200 (800) 634-5005 (800) 782-5424 fax

GCS Service, Inc. #09 180 Second Street

Chelsea, MA 02150 (617) 889-9393 (800) 225-1155 (617) 889-1222 fax

VIRGINIA

GCS Service, Inc. #18

5760 Northampton Blvd.

Suite 106

Virginia Beach, VA 23455

(757) 464-3500

(800) 476-4278

(757) 464-4106 fax

GCS Service, Inc. #07

2660 Pittman Drive

Silver Spring, MD 20910

(301) 585-7550 (DC)

(410) 792-0388 (Balt)

(800) 638-7278

(301) 495-4410 fax

GCS Service, inc. #18

2421 Grenoble Road

Richmond, VA 23294

(804) 672-1700

(800) 899-5949

(804) 672-2888 fax

Daubers, Inc.

7645 Dynatech Court

Springfield, VA 22153

(703) 866-3600

(800) 554-7788

(703) 866-4071 fax

WASHINGTON

Restaurant Appliance Service

7219 Roosevelt Way NE

Seattle, WA 98115

(206) 524-8200

(800) 433-9390

(206) 525-2890

WEST VIRGINIA

AFS-Authorized Factory

Service, Inc.

Rt.-1 Box 288

S. Charleston, WV 25312

(304) 344-8225

(800) 654-4606

(304) 344-8248 fax

WISCONSIN

Appliance Service Center, Inc.

2439 Atwood Avenue

Madison, WI 53704

(608) 246-3160

(800) 236-7440

(608) 246-2721 fax

Appliance Service Center, Inc.

6843 W. Belloit Road

West Allis, WI 53219

(414) 543-6460

(800) 236-6460

(414) 543-6480 fax

WISCONSIN (cont)

Appliance Service Center, Inc.

786 Morris Ave.

Green Bay, WI 54304

(920) 496-9993

(800) 236-0871

(920) 496-9927 fax

WYOMING

Metro Appliance Service

1640 South Broadway

Denver, CO 80210

(303) 778-1126

(800)525-3532

(303) 778-0268 fax

Kontac Industries

6504 South Broadway Edmonton, AB T6B0E7 (780) 469-4869 (800) 661-2500 (780) 465-6937 fax

Key Food Equipment Services

#105-3728 North Fraser Way Burnaby, BC V5J5G1 (604) 433-4484 (800) 665-2655 (604) 433-4684 fax

Choquette - CKS

2710 Lancaster Road Unit 119 Ottawa, OT K1B4T7 (613) 739-8458 (800) 267-2515 (613) 739-3851 fax

Kontac Industries

6271-15 Dorman Road Missisauga, OT L4V1H1 (905) 677-1580 (800) 661-2500 (905) 677-2863 fax

Choquette - CKS

8487 19th Avenue Montreal, QU H1Z4J2 (514) 722-2000 (800) 361-7681(Quebec) (514) 722-5050 fax

Service D'Equipment de Cuisine Entretien

893 King O Sherbroke, QU J1H1R9 (819) 821-2153 (819) 821-4015 fax

A.A. Dot (Service d'Entretien)

15 St. Alphonse Ste. Therese, QU J731G3 (450) 435-7736 (450) 435-5249 fax

Choquette - CKS

900 Pierre Bertrand Suite 220 Vanier, QU G1M3k2 (418) 681-3944 (800) 463-5506 (418) 681-3385 fax