

SERVICE MANUAL

FOR JACKSON MODEL:

MODEL 24



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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SPECIFICATIONS

OPERATING CAPACITY 100%	
Racks per hour	17
Dishes per hour	425
Glasses per hour	425
OPERATING CYCLE	
Wash Time, seconds	60
Rinse Time, seconds	27
Total Cycle, seconds	180
WASH TANK CAPACITY (Gallons)	2.7
WASH/RINSE PUMP CAPACITY (GPM)	60
REQUIREMENTS 100%	
Inlet Temperature, °F	120° - 140°
Gallons per hour	46
Flow Pressure, PSI	20
Flow, GPM	4
Inlet size, IPS	1/2"
Drain size, OD (Gravity Feed)	1-1/2"
WASH/RINSE PUMP MOTOR (HP)	1/2
ELECTRICAL REQUIREMENTS, ONLY	115 volt, 1 ph. 60 HZ.
DIMENSIONS	
Height with Top	36"
Height without Top	34-1/2"
Width	24"
Clearance, wall to machine	2-1/2"
Depth	24"
Maximum height for dishes	14"
RACKS	
Standard Equipment	
for dishes	2.
for glasses and silverware	1
Size	19-3/4" x 19-3/4"
SANITIZING L/LF	
This is accomplished during the rinse cycle by a mixture of water and 5.25% Sodium Hypochlorite Sanitizing (Wall Mount Dispenser)	Available Chlorine 50 PPM for Sanitizing Adjustable by Cam on Timer
ELECTRICAL RATING	115 v., 1 phase, Approx Total Load Amps 8

Specifications subject to change without notice.

GENERAL INSTRUCTIONS

(INSTALLATION)

Note: Read the following instructions carefully. Proper installation of your Jackson Dishwasher will assure proper machine operation.

Uncrating 24L:

1. Remove straps around carton.
2. Open top flaps of dishwasher carton.
3. Remove any packing from top and sides of machine that can be done with ease from top.
4. Slide carton sleeve upward over top of dishwasher, set to one side.
5. Lift dishwasher and wooden base from carton base.
6. Move dishwasher to general installation area.
7. Remove bolts holding wooden base to machine and screw in adjustable feet supplied.
8. Reassemble wash and rinse assemblies in machine using sketch and instructions in this manual.
9. Set dishwasher in place, ready for installation.

Note: NSF base cradle installation must be field installed on all LF and BF models. Cradle is sealed to floor with waterproof caulking or equal and dishwasher feet are set inside and on cradle.

Installation Instructions:

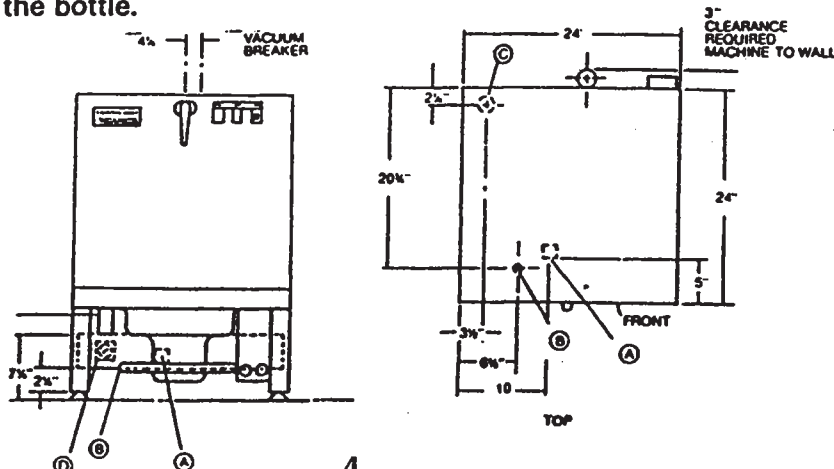
1. The unit must be installed a $\frac{1}{4}$ " higher in the front than in the back. It should not be level but higher in the front to allow more water in the back of the tank.
2. Refer to dimensional data sketch for connections.
3. The drain from the machine is a gravity drain system and should, therefore, have the proper drop from the machine to the kitchen's drain system. The drain connection is located to the left rear of the machine when facing the machine's door. The drain fitting is 1-1/2" OD tube size, 7" from floor.
4. The incoming water line should be attached to the machine's connection which is located to the front left side of the machine. The pipe size to the machine should be 1/2" and the water should be 120° - 140°F with a flow pressure of 20 PSI.
5. The electrical connections should be made to the terminal board located at the left center front. The terminals are marked L1, and L2. Install proper circuit breaker, wire and conduit size to conform with local and/or national codes (standards).
6. Located behind the control panel and lower kick plate on the left side of the unit is the sanitizer pump and intake tubing. Shipped with the machine is a 12" piece of gray PVC that is a tube stiffener for the white pump tubing. Unroll the white tubing from the unit and push it through the slotted end of the stiffener until it is even with the very tip of the angled end. Place your sanitizing agent bottle next to the machine and insert the tube stiffener into the bottle.

DIMENSIONAL DATA

Reference only
Subject to change

LEGEND

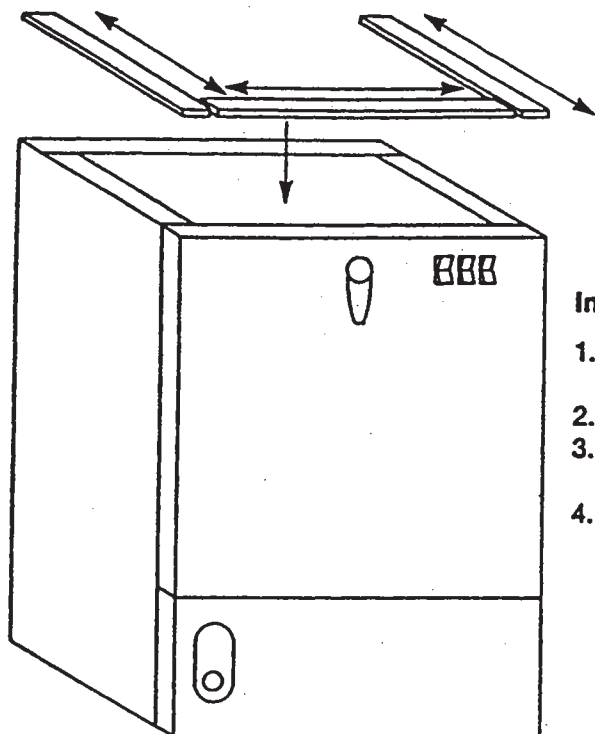
- A—ELECTRICAL HOOK UP
B— $\frac{1}{2}$ " F.S.P.S. WATER INLET
C— $\frac{1}{2}$ " DRAIN CONNECTION
D—SANITIZER PUMP



Installation of Model 24LM Top and Table gasket:

These instructions are to be used for applying the adhesive backed sponge rubber strip to the top of the machine prior to setting the table in place.

Included with the Model 24LM table is a 6' length of $\frac{1}{4}$ " thick x 1" wide sponge rubber adhesive backed stripping.

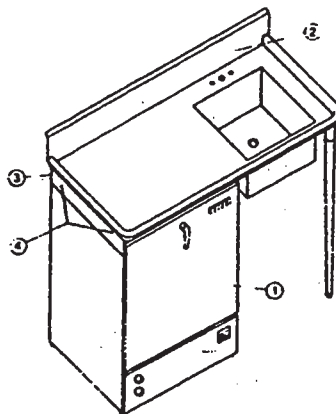
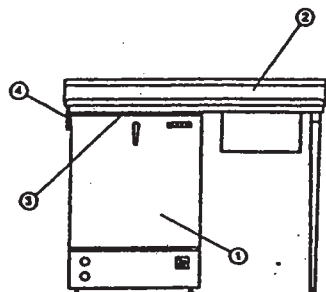


Instructions for applying gasket:

1. Place one end of the stripping along the complete side of leg support flange and cut it off.
2. Repeat the same procedure along the other side.
3. Place the remaining piece along the front edge and fit it in between the side pieces and cut it to length.
4. Remove the backing and set the strips in place.

Installation of Model 24LM Dishwasher Under Dishtable:

1. On the end of the table, locate bracket #4 opposite the sink end.
2. A rubber gasket #3 is supplied and should be secured to top frame of dishwasher.
3. Place dishtable #2 where it is to be installed and support the machine's end.
4. Slide dishwasher #1 underneath dishtable #2 so that the outside of machine is positioned against the guide bracket #4. Make sure dishtable and dishwasher are in desired permanent location.
5. Using the two holes in bracket #4 as a guide, drill two holes $\frac{9}{64}$ " diameter in the side panel of machine. Note: Drill through first thickness of metal only.
6. Using the self-tapping screws supplied, screw them through bracket #4 and into the side panel of machine until screws are tight.



INSTALLATION INSTRUCTIONS FOR WALL MOUNT DISPENSER UNIT ONLY

1. Supplied with the unit is a wall mounted dispenser unit consisting of three peristaltic pumps mounted inside of a stainless box with conduit and wires coming from the bottom. With the lower kick plate removed connect the conduit to the ledge of the unit and connect the plastic connector on the wires to the connector on the timer. This will provide the power to operate the dispensing pumps from the timer.
2. After the connecting the wires to the timer, mount the box to the selected surface, using the two holes provided in the rear and with the appropriate fasteners for the application. Consideration for the location of the chemicals and service of the pumps should be given when selecting a mounting place.
3. Turn the customer's circuit breaker on to the unit and check the electrical connections for the proper readings as indicated on the machine data plate.
4. Turn on the water to the unit and check for any water leaks. If they check out replace the lower kick plate. If there are no leaks push the top of the fill switch and hold for approximately 45 seconds.
5. Coming from each dispensing pump in the box is a different colored tube. Above each peristaltic pump in the box is a primer switch. After making sure that the feeder tubes to the pumps are in their proper containers, as marked on the pumps, press the switch and hold it until there is a discharge of the fluid into the machine. This is to be done to each pump before the initial operation of the machine. Water must be in the wash/rinse tub to prevent discoloration or deterioration of the stainless steel by chemicals.

Removal of Pan Strainer for Cleaning:

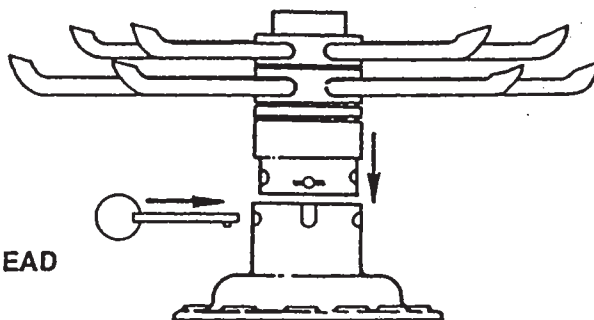
(Wash/Rinse Head Assembly must be removed prior to removing strainer.)

1. Drain machine by depressing drain switch for approximately 50 seconds.
2. Remove wing nut from upper pump housing; wash/rinse head may now be lifted out.
3. Pan strainer now accessible; lift out and clean thoroughly.
4. Clean around pump intake with bristle brush.
5. Replace strainer pan.
6. Reinstall wash/rinse head assembly.
7. Clean strainer pan daily or as needed to ensure proper machine operation.

Installation of Wash/Rinse Head Assembly:

(Items disassembled for shipment.)

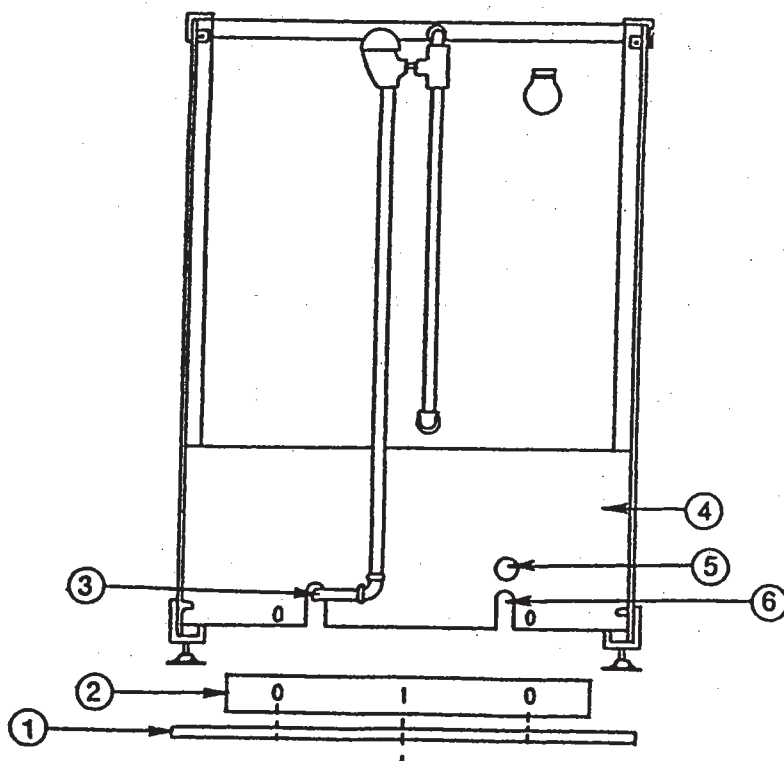
WASH RINSE HEAD
P/N 1889



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.

INSTALLATION OF TIE DOWN ASSEMBLY FOR CANADIAN STANDARDS

1. Locate the desired floor area in which the unit is going to be installed.
2. Place the base cradle in the exact location the machine will set with the end having the holes drilled in it to the rear.
3. Mark the holes and then drill two holes $\frac{3}{8}$ " in diameter, approximately $1\frac{1}{2}$ " into the floor, no deeper.
4. Clean any debris out of the holes and place the sleeve anchors with the bolts into the hole. Press them down and then tighten the nut down so that the anchor fastens firmly into the floor. Back off the nut and remove it so that approximately $\frac{1}{2}$ " to $\frac{3}{4}$ " of the bolt is now a stud sticking up from the level of the floor.
5. Lay the cradle in place over the studs and seal around the cradle with a silicone rubber sealant.
6. Attach the back panel to the machine by sliding it between the rinse water line and the unit, then fastening it at the bottom corners to the machine. When the back panel is in place attach the anchoring bracket loosely to the panel using the elongated slots.
7. Pick the machine up and set it into place on the base cradle. Make sure that the studs through the base cradle are inserted into the holes in the bottom of the anchoring bracket.
8. Remove the lower front kick panel and level the machine trying to have it a $\frac{1}{4}$ " higher in the front than in the back.
9. Once the unit is level fasten the nuts over the studs and tighten to the floor. Next fasten the bolts and nuts that attach the anchoring bolts to the back panel.
10. When the unit is tightened down and securely in place the remainder of the installation can continue.



1. BASE CRADLE
2. ANCHORING BRACKET
3. RINSE WATER LINE
4. BACK PANEL
5. ELECTRICAL CONNECTION CUT OUT
6. INCOMING WATER CONNECTION PUT OUT

GENERAL INSTRUCTIONS

(OPERATION)

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

Dish Preparation:

1. Scrape dishes thoroughly.
2. Pre-wash dishes by soaking or spraying 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 wash and rinse better than lying flat. These silverware compartment racks are available through your dealer or service agency.

Operator's Instructions (Standard L/LF Model):

1. Check that pan strainer is clean. Strainer must be clean for proper machine operation (wash/rinse head must be removed first, then strainer may be removed for cleaning).
2. Place start rocker switch in its center OFF position.
3. Close door and lock latch.
4. Place the sanitizing agent bottle (filled with 5.25% Sodium Hypochlorite) to the left front of machine. Place the tube coming out of the left side of machine into the sanitizing bottle. The tube must be in the bottle for proper machine operation. See instructions on separate page of this manual for complete details on sanitizing system.
5. Push top of fill switch and hold for approximately 45 seconds.
6. Open door and slide rack of soiled dishes into machine.
7. Dispense proper amount of detergent in machine.
8. Close and latch door. Start automatic cycle of machine by pushing on top or bottom of start switch; indicating light will come on.
9. When indicating light goes out, cycle is over; remove clean dishes. Slide in rack of soiled dishes, dispense proper amount of detergent, close door and push start switch for automatic cycle.
10. At end of mealtime, turn off machine by placing start switch in center position. Drain machine by depressing drain switch approximately 45-50 seconds. Clean pan strainer and machine.

Detergent Recommendations and Rinse Additives:

We suggest that you contact your local Detergent Specialist for the correct detergent and rinse additives for your area. To help you until one can be reached, we suggest that you use a non-foaming dishwasher detergent, approximately one tablespoon in wash tank when machine is filled, and one tablespoon each cycle or load thereafter. This may have to be increased or decreased to obtain satisfactory results.

When manually dispensing powdered detergent in wash tub always distribute over a sufficient area to prevent build up. Some detergent when dispensed in a small or concentrated area, may cause deterioration of the stainless tub or sump.

OPERATOR'S INSTRUCTIONS FOR WALL MOUNT DISPENSING UNITS

1. Check that the pan strainer is clean. Strainer must be clean for proper machine operation (wash/rinse head must be removed first, then strainer may be removed for cleaning).
2. Insert a rack of dishes and then close the door and turn handle.
3. Check the levels of the detergent, rinse additive and sanitizing agent containers. Fill them if necessary.
4. Push the top of the fill switch and hold it for approximately 45 seconds.
5. Start the automatic cycle of the machine by pushing the top of the start switch and holding for a count of three. This activates the time cycle and the cycle light will come on. During the cycle the timer will automatically dispense the detergent, rinse additive, and sanitizer as they are needed.
6. When the cycle light goes out, open the front door and slide out the rack of clean dishes. Replace them with a rack of soiled dishes and repeat steps #5 and #6.
7. At the end of a mealtime, drain the machine by depressing the drain switch for approximately 45-50 seconds. Clean the pan strainer and the machine.

GENERAL INSTRUCTIONS (PREVENTIVE MAINTENANCE)

THE FOLLOWING IS TO BE PERFORMED AS NEEDED.

Note: Read the following instructions carefully. Proper maintenance of your Jackson Dishwasher will assure optimum service with a minimum of down time.

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. Close door and push start switch.
 - d. Open door and examine the interior when cycle light goes out. All lime should be removed and parts should be shiny. If not, scrub stubborn deposits and repeat operation.
 - e. After the interior is clean, with door closed, empty the water by depressing drain switch for approximately 50 seconds. Refill machine and allow to run through cycle, then again drain the reservoir. Machine is now ready for normal operation.
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 and electricity to machine must be turned OFF for this operation.)
 - a. Remove plug and clean strainer.
4. Clean wash head assembly.
 - a. By removing the wing nut holding wash/rinse head assembly to pump, wash/rinse head assembly can be removed.
 - 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/rinse assembly. (See page with instructions.)
5. Clean any deposits which may have built up on exterior moving parts.
 - a. Clean around door gasket.
 - b. Using a soft bristle dry 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.

24L CYCLE SEQUENCE CHART

OPERATOR	OPERATION	TIME SECONDS
1. Push Power Switch	Energizes-to Handle Switch	N/A
2. Close Door	Closes Door Side Switch	N/A
3. Latch Door Handle	Energizes the Machine	N/A
4. Push Fill Switch	Manually Fills Machine	38-42
5. Push Start Switch	Energizes Timer Motor	N/A
6. _____	Dwell Time	4-7
7. _____	Wash Cycle	57-63
8. _____	Detergent Dispensed	7-9
9. _____	Dwell Time	4-7
10. _____	Drain Cycle	35-40
11. _____	Dwell Time	4-7
12. _____	Fill Cycle	38-43
13. _____	Sanitizer Dispensed	8-14
14. _____	Rinse Additive Dispensed	5-10
15. _____	Rinse Cycle	38-43
16. _____	End of Cycle	N/A

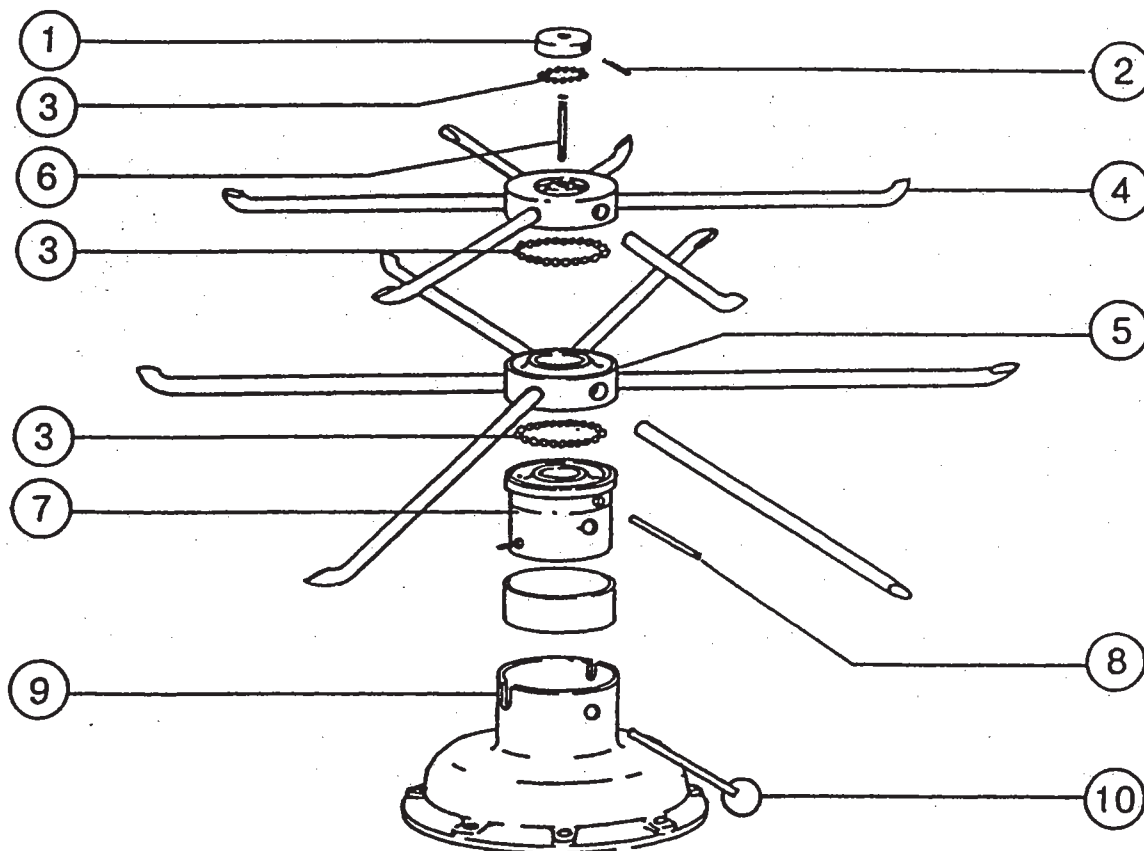
The rinse water used in the previous cycle will be used as the wash water in the next cycle.
Each cycle is one revolution.

REMOVAL of WASH/RINSE HEAD ASSEMBLY

(GENERAL INSTRUCTIONS)

- Before opening the door, hold the drain switch in and drain all of the water out of the unit.
- Open the door and allow the unit a few minutes to cool off.
- With your fingers, loosen the wing nut on the wash head assembly and lift it up and out. Take it to a safe place and begin to disassemble it according to the following instructions.
- Locate Allen head set screw in the wash head cap, insert Allen wrench and loosen screw by turning counterclockwise.
- Turn wash head cap counterclockwise until cap is removed and put cap in safe place.
- Remove ¼ " stainless ball bearings carefully and put it in a receptacle in a safe place.
- Lift and remove small manifold with short tubes. Put it in a safe place.
- Remove ¼ " ball bearing in similar method to step #6.
- Lift and remove large manifold with large length tubes similar to step #7.
- The lower fixed race may be left in place.
- Clean ball bearings by soaking in de-liming solution.
- 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.
- Rinse ball bearings and manifolds thoroughly.
- To reassemble, first fill lower race to capacity with ¼ " ball bearings, then remove one. This will give proper movement needed during rotation of assembly.
- Replace lower manifold and fill race fully with ¼ " ball bearings. Repeat, removing one only.
- Replace upper manifolds and repeat necessary parts of step #14.
- Replace wash cap by screwing on center shaft clockwise, finger tight.
- Back off wash cap about ¼ turn and tighten Allen set screw.
- 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 1/8" and no more than ¼ ".
- Close the front door and refill dishwasher.
- Run through several cycles and recheck wash arms for easy movement. Adjust if necessary.

WASH/RINSE HEAD ASSEMBLY P/N 1889



ITEM	P/N	DESCRIPTION	ITEM	P/N	DESCRIPTION
1.	1865	WASH HEAD CAP WITH RACE	6.	1875	WASH HEAD CENTER SHAFT
2.	1870	WASH HEAD CAP SET SCREW	7.	1936	WASH HEAD FIXED RACE
3.	1940	WASH HEAD BEARING 1/4" S/S	8.	1886	WASH HEAD SHAFT HOLDING PIN
4.	1890	WASH HEAD SMALL MANIFOLD w/TUBES	9.	1096	UPPER PUMP HOUSING
5.	1895	WASH HEAD LARGE MANIFOLD w/TUBES	10.	1898E	WASH HEAD ASSEMBLY RETAINING PIN w/RING

TIMER for MODEL 24L

General Description:

The timer is a self-contained (frame mounted) timer of the repeating cycle type. It is mounted on the lower control panel of the Jackson Dishwashing Machine to control the automatic functions of this machine. It consists of a clock motor which operates on 60 cycle, 110VAC. In addition to the clock motor, the timer also contains a driven cam arrangement which operates five micro switches.

Principle of Operation:

The timer controls various operations of the automatic washers as per wiring diagram for each machine; however, the timing cycle and the micro switches are the same for each model. The time for One Complete Revolution of the cam shaft is approximately 360 seconds, allowing two wash and two rinse operations for each complete revolution of the cam shaft. The micro switch nearest the timer motor is the hold circuit and uses both the NO and NC contacts. The micro switch second from the timer motor controls the wash/rinse and uses the NC contact. The micro switch third from the timer motor controls the rinse/fill and uses just the NC contact. The micro switch fourth from the timer motor controls the drain and uses just the NC contact. The last micro switch, fifth from the timer motor, controls the sanitizing pump and uses just the NC contact.

Service Instructions:

CAUTION: Always remove the power to the machine before working on the control panel or while servicing the components in the door panel. All electrical checks should be made by qualified personnel.

Timer operation can be observed after removing the machine's kickplate by loosening the two screws holding it.

If it is determined that the timer is defective, it is recommended that a new timer be installed. If a new timer is not available, limited field maintenance can be accomplished by changing the micro switch.

A frozen contact on a micro switch will be indicated by one function being executed all the time or the absence of a click when the switch arm is actuated.

To Replace Micro Switch:

1. Remove all wires from the timer, properly tag them to assure proper replacement.
2. Remove the screws which hold the timer to the control panel.
3. One screw holds the micro switches, cams and actuating arms in the frame. This screw is seen on the side opposite the motor. Remove this screw.
Note: Be sure to note which cam goes with which micro switch. Cam nearest timer motor has 1/2 raised and 1/2 depressed edge.
4. The unit can now be taken apart and the defective micro switch replaced.
5. Reassemble.

Note: The flanges on the cams are such that they only mesh in one direction.

The timers cam drive system is equipped with a clutch to enable one to view the operations of the cams and micro switches. Remove power to machine before touching timer. Rotate cams by turning with fingers; cams will turn in one direction only. Do not force them. As cams actuate switches, listen for the 'click' of the switch or test the switches with an ohmmeter.

TIMER for MODEL 24L

WALL MOUNT DISPENSING SYSTEMS

General Description:

The timer is a self-contained (frame mounted) timer of the repeating cycle type. It is mounted on the lower control panel of the Jackson Dishwashing Machine to control the automatic functions of this machine. It consists of a clock motor which operates on 60 cycle, 110VAC. In addition to the clock motor, the timer also contains a driven cam arrangement which operates seven micro switches.

Principle of Operation:

The timer controls various operations of the automatic washers as per wiring diagram for each machine; however, the timing cycle and the micro switches are the same for each model. The time for **One Complete Revolution** of the cam shaft is approximately 180 seconds, allowing one wash and one rinse operation for the complete revolution of the cam shaft. The Micro Switch nearest the timer motor is the hold circuit. The Micro Switch second from the timer motor controls the wash/rinse cycle. The Micro Switch third from the timer motor controls the detergent dispensing cam. The Micro Switch fourth from the timer motor controls the drain cycle cam. The Micro Switch fifth from the timer motor controls the water fill solenoid cam. The Micro Switch sixth from the timer motor controls the rinse additive dispensing cam. The Micro Switch seventh from the timer motor controls the sanitizer agent cam.

Service Instructions:

CAUTION: Always remove the power to the machine before working on the control panel or while servicing the components in the door panel. All electrical checks should be made by qualified personnel.

Timer operation can be observed after removing the machine's kickplate by loosening the two screws holding it.

If it is determined that the timer is defective, it is recommended that a new timer be installed. If a new timer is not available, limited field maintenance can be accomplished by changing the micro switch.

A frozen contact on a micro switch will be indicated by one function being executed all the time or the absence of a click when the switch arm is activated.

To Replace Micro Switch:

1. Remove all wires from the timer, properly tag them to assure proper replacement.
2. Remove the screws which hold the timer to the control panel.
3. One screw holds the micro switches, cams and actuating arms in the frame. This screw is seen on the side opposite the motor. Remove this screw.
4. The unit can now be taken apart and the defective micro switch replaced.
5. Reassemble.

Note: The flanges on the cams are such that they only mesh in one direction.

The timers cam drive system is equipped with a clutch to enable one to view the operations of the cams and micro switches. Remove power to machine before touching timer. Rotate cams by turning with fingers; cams will turn in one direction only. Do not force them. As cams actuate switches, listen for the 'click' of the switch or test the switches with an ohmmeter.

TIMER MOTOR and ADJUSTMENT to CAMS

(FOR WALL MOUNT DISPENSING SYSTEMS)

CAUTION: Always remove the power to the machine before working on the control panel or while servicing the components in the door panel. All electrical checks should be made by qualified personnel.

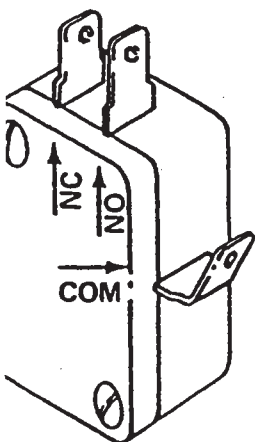
A defective motor is indicated by the fact that the cams do not rotate or the machine does not perform the automatic operations, or performs a specific part of the cycle continuously, but works okay on manual. Remember, the timer motor is controlled by the start switch and the hold micro switch; check this complete circuit before changing motor.

To Replace Motor:

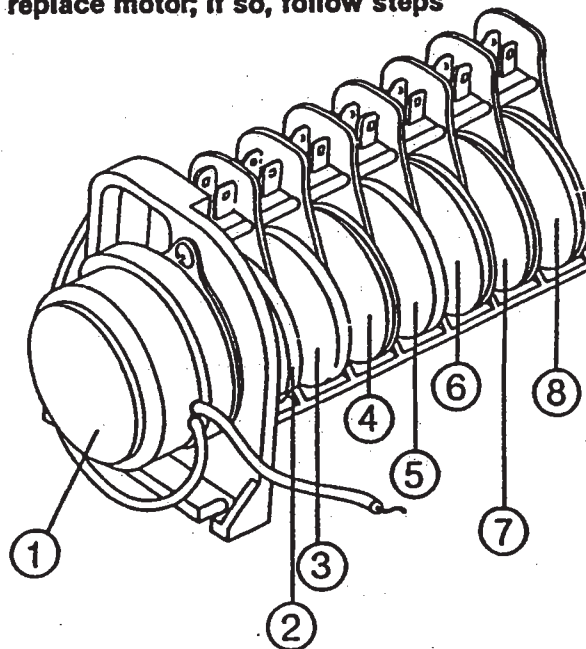
1. Remove motor leads from shorting bar and neutral.
2. Remove the two screws which hold the motor.
3. Replace with a new motor.

Note: It may be necessary to remove complete timer to replace motor; if so, follow steps 1 and 2 on previous page.

TYPICAL TIMER SWITCH
P/N 1775



TIMER
P/N 1713



1. TIMER MOTOR
2. TIMER MOTOR CAM (F)
3. WASH MOTOR CAM (F)
4. DETERGENT CAM (A)
5. DRAIN CAM (F)
6. WATER FILL CAM (A)
7. RINSE ADDITIVE CAM (A)
8. SANITIZING AGENT CAM (A)

F—FIXED CAM

A—ADJUSTABLE CAM

When making adjustments to the timer cams, be sure that the first cam next to the timer motor is in its stop position in the notch. Place one hand over the timer motor with your thumb lodged next to or on the first cam so that it will not move when the other cams are being adjusted. To make the adjustment, place your other thumb on the right side of the cam. If a longer operating time is desired, increase the gap between the left and right side of the cam. If a shorter operating time is desired, decrease the gap between the left and right side of the cam.

DEFECTIVE MOTOR

CAUTION: Always remove the power to the machine before working on the control panel or while servicing the components in the door panel. All electrical checks should be made by qualified personnel.

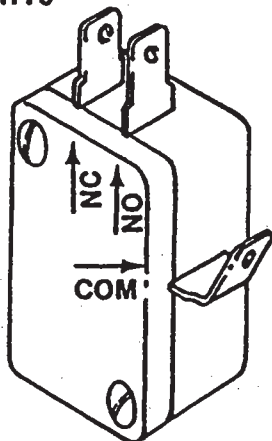
A defective motor is indicated by the fact that the cams do not rotate or the machine does not perform the automatic operations, or performs a specific part of the cycle continuously, but works okay on manual. Remember, the timer motor is controlled by the start switch and the hold micro switch; check this complete circuit before changing motor.

To Replace Motor:

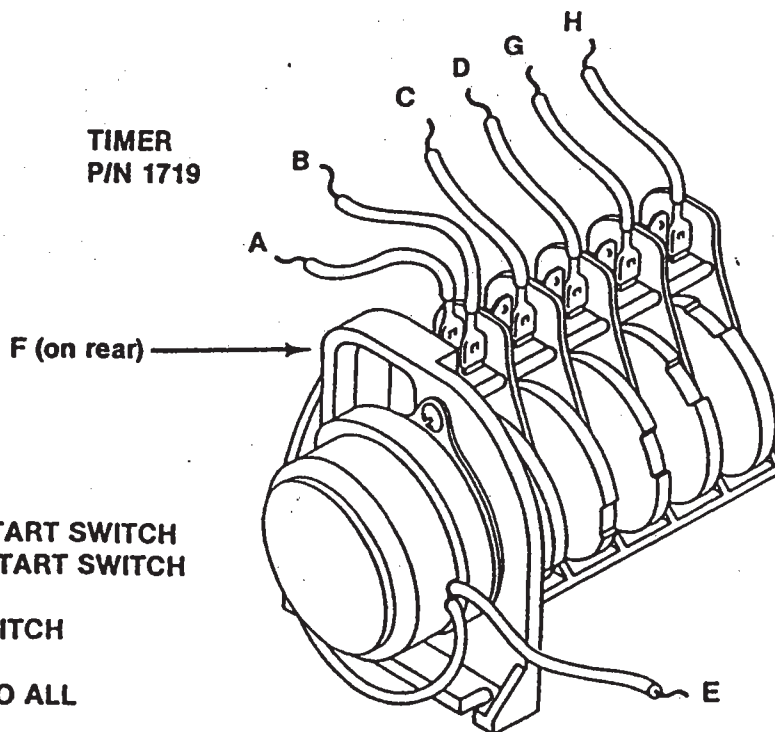
1. Remove motor leads from shorting bar and neutral.
2. Remove the two screws which hold the motor.
3. Replace with a new motor.

Note: It may be necessary to remove complete timer to replace motor; if so, follow steps 1 and 2 on previous page.

TYPICAL TIMER SWITCH P/N 1775



TIMER P/N 1719



- A—TO UPPER RIGHT TERMINAL START SWITCH
- B—TO LOWER RIGHT TERMINAL START SWITCH
- C—TO DRAIN RELAY TERMINAL
- D—LOWER TERMINAL ON FILL SWITCH
- E—TO NEUTRAL TERMINAL
- F—SHORTING BAR CONNECTED TO ALL FIVE TIMER SWITCHES, THIS TERMINAL ON REAR
- G—TO COIL ON DRAIN RELAY
- H—TO UPPER LEFT TERMINAL FILL SWITCH

REPLACEMENT of SWITCHES in FRONT DOOR

There are three switches installed in the door's upper right hand corner. These are the start, drain, and fill.

Before working on the machine, it is important that the power be turned OFF at the customer's circuit breaker to prevent the possibility of electrical shock; trip the breaker to the OFF position.

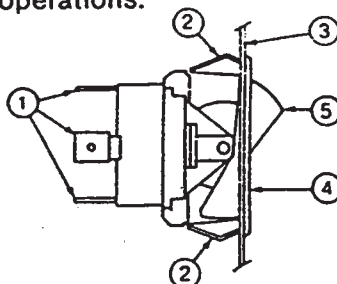
Remove inside door from machine by removing the eight screws on the flanged section of the inside door panel. The three switches are all snapped into place in individual rectangular holes. By using a screw driver, it is possible to pry up the chromed flange on each side away from switch and remove the switch from flange. Little pressure should be used to prevent damage of switch and flange.

After the switch has been checked to see if it is defective, replacement can be made by placing the new switch close to the defective switch and moving one wire at a time, transferring them to the same terminals on the new switch until all wires have been reconnected. If this is not practical, pull the wires loose, one at a time, tag them and reconnect them according to the electrical diagram.

Put all switches back into place making sure switch protrudes through front door properly.

Note: Two click positions on bracket. Replace inner door panel. Seal top of inner door to outer door with a waterproof sealant. Power can now be applied to the dishwasher and run through cycles, checking all operations.

1. CONNECTION TERMINALS
2. BRACKET SPRING SIDES
3. PANEL PLATE
4. BRACKET FRONT
5. ROCKER BUTTON



ROCKER SWITCH

INTERLOCK SYSTEM

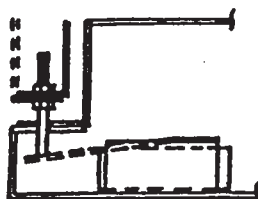
The Interlock System is designed to prevent the machine from operating when the front door is opened or not latched properly.

The Interlock System consists of two safety switches, one mounted so that the door latch has to be closed to complete the circuit. The other switch is located so that a pin on the machine depresses a safety switch mounted on the door, to complete the circuit. Either of these switches, if not depressed, will prevent the machine from operating. Basically, the door must be closed and the door latch locked in order for the machine to function.

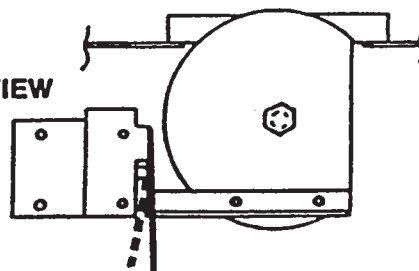
DOOR SAFETY SWITCH (SIDE) P/N 1641

DOOR LATCH SAFETY SWITCH P/N 1641

TOP VIEW



FRONT VIEW



CHECKOUT

(INTERLOCK SYSTEM)

Note: All electrical checks should be made by qualified service personnel.

If it is determined that the proper power is being applied to the machine's incoming terminal blocks, then further check of the interlock system should be made.

Note: This checkout would only be performed if none of the systems of the machine operate. This would mean that none of the switches, when depressed, will perform the function noted for that switch.

Example: Drain, fill, start switches.

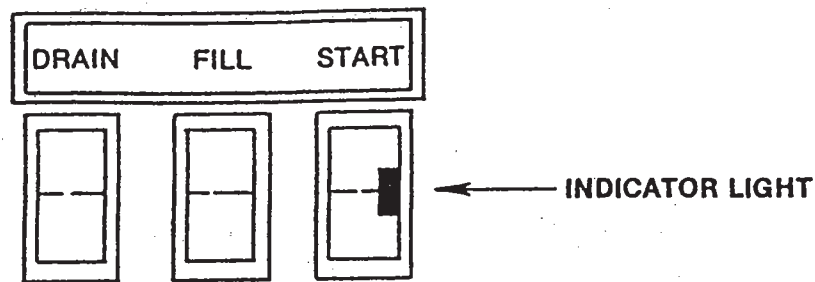
Proceed with checkout.

1. Remove power to the machine by turning circuit breaker that protects the machine to OFF position.

Note: It may be necessary to disconnect the door springs to prevent door from closing when inner door is removed.

2. Open the front door and remove screws holding inner panel of door.
3. Disconnect one wire from the switch closest to the door latch and using an ohmmeter, depress the lever of the switch and check that there is continuity across that switch. If there is no continuity, replace switch.
4. Check second safety switch located in top right hand corner of door, viewed with inner door off. Remove wire from one side of the switch and check for continuity with ohmmeter when switch is depressed. If there is no continuity, replace switch.
5. Replace inner door panel.
6. Apply power and check operation.

OPERATOR CONTROLS



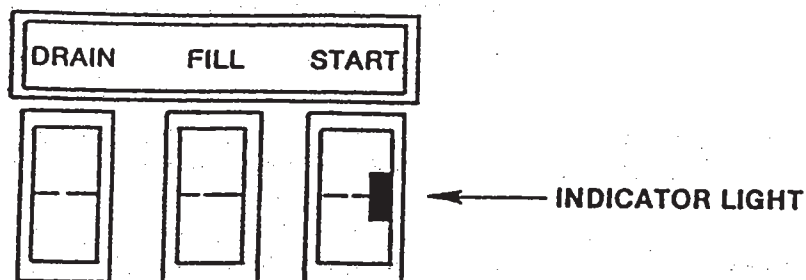
The operator of this machine has only three control switches which he can operate. These switches are located in the top righthand corner of the machine's front door.

1. The **Start Switch** initiates automatic operation of the machine.
2. The **Drain Switch** allows the User to manually drain the wash tank at the end of the day or when cleaning is required.
3. The **Fill Switch** allows the User to manually fill the machine before running it the first time of each day.
 - a. Also used as the **Primer Switch** for the sanitizing agent pump.

SEQUENCE of MACHINE OPERATIONS

1. Start switch depressed.
2. Timer motor activated.
3. Wash/rinse cam switch activates motor starting relay for wash.
4. Wash ends — drain cam switch activates drain relay and motor starting relay for drain.
5. Drain ends — fill solenoid and sanitizing agent pump activated (dropping sanitizing agent in rinse water) by fill cam switch.
6. Wash/rinse cam switch activates motor starting relay for rinse; fill ends.
7. Timer motor deactivated and cycle ends.

OPERATOR CONTROLS FOR WALL MOUNT DISPENSING SYSTEMS



The operator of this machine has six control switches which he can operate. Three of these switches are located in the top righthand corner of the machine's front door and the remainder, in the dispenser box.

1. The Start Switch initiates automatic operation of the machine.
2. The Drain Switch allows the User to manually drain the wash tank at the end of the day or when cleaning is required.
3. The Fill Switch allows the User to manually fill the machine before running it the first time of each day.
4. The primer switches in the dispenser boxes are used to activate the peristaltic pumps for purposes of refilling the lines after a change in chemical containers.
5. The indicator light is either located in the start switch or just to the right of the switches.

SEQUENCE of MACHINE OPERATIONS

1. Start switch depressed.
2. Timer motor activated.
3. Wash/rinse cam switch activates motor starting relay for wash.
4. The detergent dispenser pump is activated by the timer dispensing detergent into the wash water.
5. Wash ends — drain cam switch activates drain relay and motor starting relay for drain.
6. Drain ends — fill solenoid and sanitizing agent pump activated (dropping sanitizing agent in rinse water) by the fill cam and sanitizing pump switch of timer.
7. Wash/rinse cam switch activates motor starting relay for rinse; fill ends.
8. The rinse additive pump is activated by the timer dispensing rinse additive into the rinse water.
9. Timer motor deactivated and cycle ends.

PERISTALTIC PUMP SANITIZING DISPENSING SYSTEM

(FOR WALL MOUNT DISPENSING SYSTEMS)

The three peristaltic pumps are mounted in the dispenser box which is attached to the wall or unit. The pump receive their electrical signals from two sources.

The first source is the rinse/fill switch which is used to prime the pump when it is first put into operation and then every time the unit is filled with fresh water to start a new meal period.

The second source is the timer which activates the pump during the fill cycle of the unit and allows it to drop 15 milliliters of sanitizing solution into the rinse water.

Checkout of Sanitizing Agent Injector:

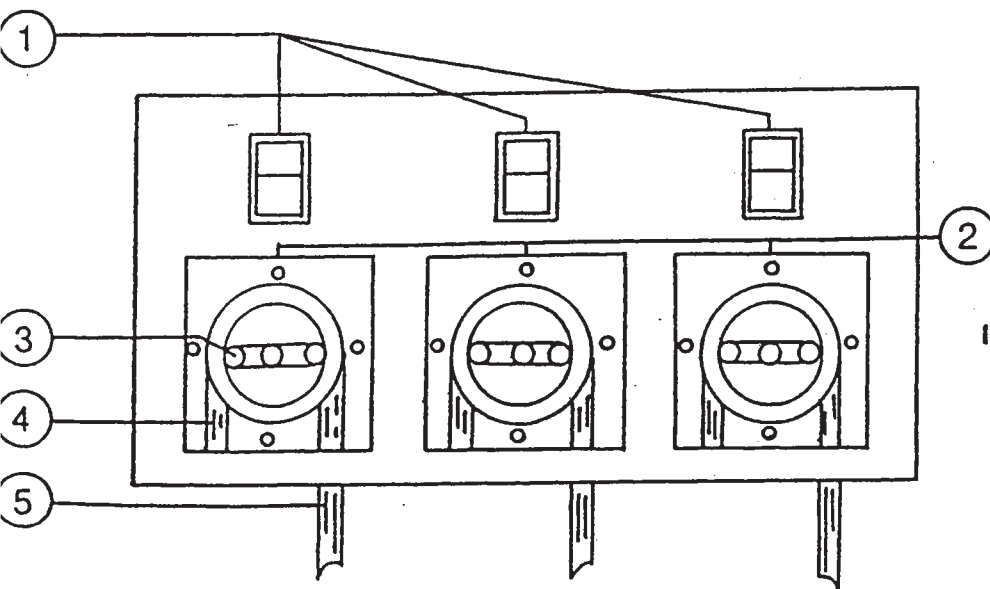
The pump can be deemed operational if the following items are observed:

1. If the cam roller assembly rotates during each cycle.
2. If the solution is observed passing through the tube.

Note: Both of these operations must be observed to determine if the sanitizing agent is being dispensed.

If it is determined that the unit is not operating correctly, the following procedures will aid in correcting the problem:

1. Make certain that the tube is in the bottle of solution.
2. Make certain that there are no cracks in the tubing and particularly in the pump hose.
3. Check all wire connections on the pump, the timer cam, and the rinse/fill switch.
4. Check to see that there is no debris in the tubes.
5. Make sure that the tubing is inserted into the pump hose so that air is not drawn into the system.



ITEM	P/N	DESCRIPTION
1.	1543	PRIMER SWITCHES
2.	465	PERISTALTIC PUMPS
3.	465D	CAM ROLLERS
4.	465F	INTAKE HOSE
5.	4652	OUTLET TUBE

PERISTALTIC PUMP SANITIZING DISPENSING SYSTEM

(OPERATION)

The three peristaltic pumps are mounted in the dispenser box which is attached to the wall or unit. The pump receive their electrical signals from two sources.

The first source is the rinse/fill switch which is used to prime the pump when it is first put into operation and then every time the unit is filled with fresh water to start a new meal period.

The second source is the timer which activates the pump during the fill cycle of the unit and allows it to drop 15 milliliters of sanitizing solution into the rinse water.

Checkout of Sanitizing Agent Injector:

The pump can be deemed operational if the following items are observed:

1. If the cam roller assembly rotates during each cycle.
2. If the solution is observed passing through the tube.

Note: Both of these operations must be observed to determine if the sanitizing agent is being dispensed.

If it is determined that the unit is not operating correctly, the following procedures will aid in correcting the problem:

1. Make certain that the tube is in the bottle of solution.
2. Make certain that there are no cracks in the tubing and particularly in the pump hose.
3. Check all wire connections on the pump, the timer cam, and the rinse/fill switch.
4. Check to see that there is no debris in the tubes.
5. Make sure that the tubing is inserted into the pump hose so that air is not drawn into the system.

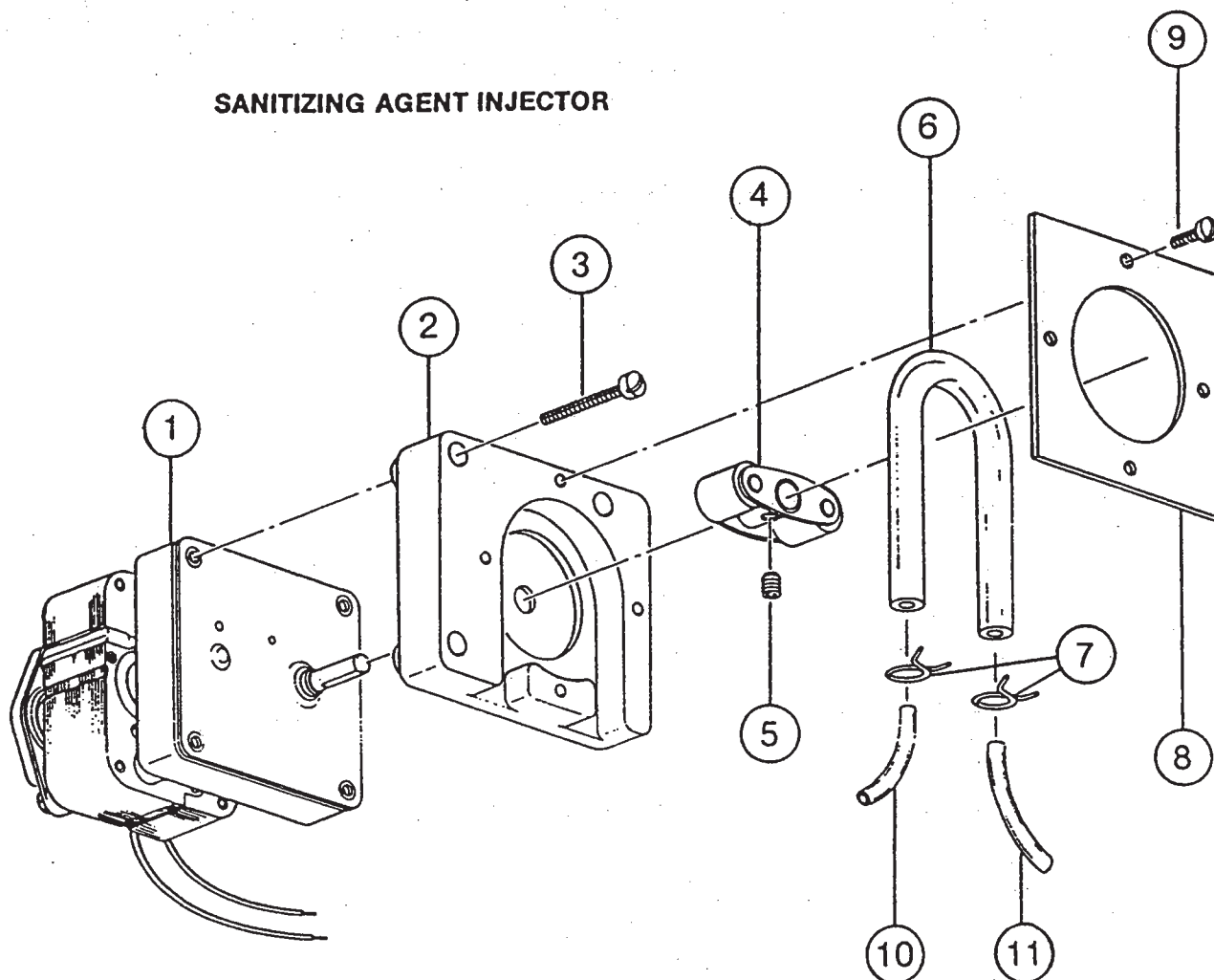
Instructions: Filling the Storage Bottle and Dispenser Operation.

1. Check the level of the liquid in the opaque storage bottle setting in front of or on the side of the machine. You should be able to see liquid about 1" up from the bottom.
2. To refill, place a funnel in the top of the bottle and slowly transfer 5.25% of Sodium Hypochlorite (FDA approved) into the storage bottle.

CAUTION: Do not spill liquid on clothes or skin and avoid getting in eyes, as it is an irritant. Rinse immediately. Harmful if swallowed; call a physician immediately.

3. Replace the storage bottle in front or on the side with the hose in the mouth of the bottle.

SANITIZING AGENT INJECTOR



P/N 465 COMPLETE PUMP ASSEMBLY

ITEM	P/N	DESCRIPTION	ITEM	P/N	DESCRIPTION
1.	465A	PUMP MOTOR	8.	465H	FACE PLATE
2.	465B	PUMP HOUSING	9.	465I	PLATE MOUNTING SCREWS (4) $\frac{1}{2}$
3.	465C	HOUSING MOUNTING BOLTS (3) $\frac{1}{2}$ FILLSTER HEAD	10.	465J	INTAKE OR SUCTION TUBING
4.	465D	CAM ROLLER ASSEMBLY	11.	465J	OUTPUT OR INJECTION TUBING
5.	465E	CAM ROLLER SET SCREW			
6.	465F	PUMP HOSE			
7.	465G	HOSE CLAMPS (2)			

SERVICE INSTRUCTIONS

(INCOMING WATER SOLENOID VALVE)

SOLENOID VALVE
P/N 1420

To Take The Valve Apart:

Disassembly — These valves may be taken apart by unscrewing the bonnet and the enclosing tube assembly from the valve body assembly. See Fig. 3. After unscrewing, carefully lift off the bonnet and enclosing tube assembly. Don't drop the plunger. The "O" ring seal and diaphragm cartridge can now be lifted out.

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

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

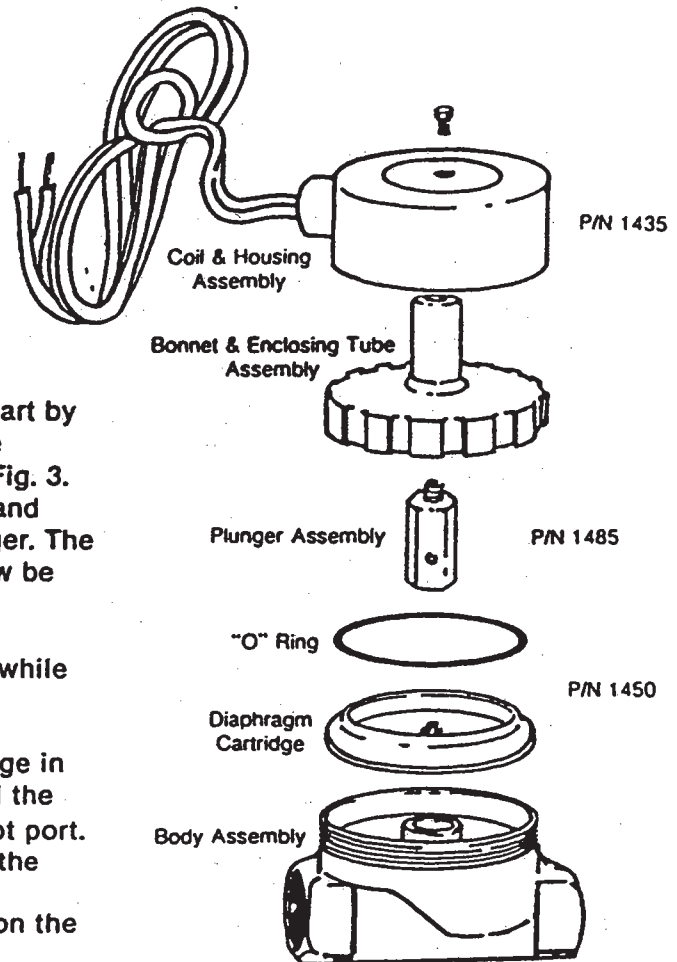
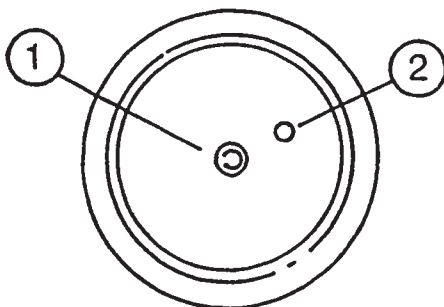


FIG. 3

DIAPHRAGM CARTRIDGE



Possible Problems:
Pilot Port extension #1 clogged.
Hole #2 clogged.

Remedy:
Pass heated straight pin through hole #2
or clean hole #1.

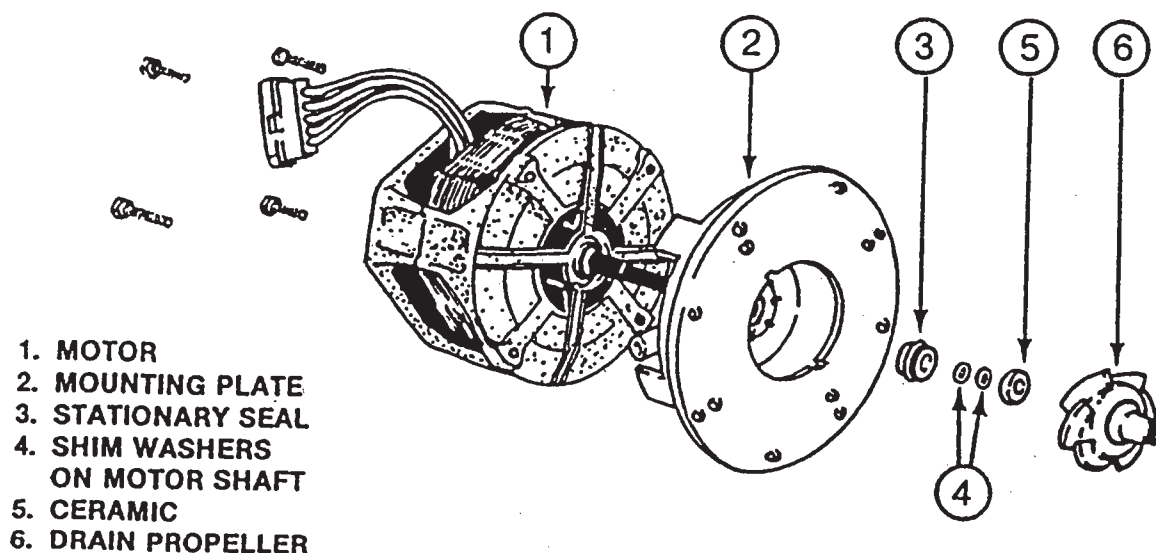
SEAL and CERAMIC for PUMP SYSTEM

(GENERAL INFORMATION)

The wash and drain pump are part of the total motor pump system. One seal and ceramic are utilized to prevent the pump from leaking.

Replacement of Seal and/or Ceramic:

1. Drain machine either by depressing drain switch or by bailing out.
2. Turn incoming power to machine OFF.
3. Open door — remove racks, wash/rinse head assembly and strainer pan.
4. Remove kickplate (located under front door).
5. Unplug motor at connector.
6. Loosen eight screws holding pump in sump tank.
7. Disconnect drain hose from motor (must be done from underneath machine).
8. Pull motor and pump gently upward and move from side to side as required to remove unit. (Old machines motor removed downward.)
9. Set pump and motor on bench and proceed.
10. Loosen eight screws holding upper pump housing, and remove housing.
11. Remove diffuser plate.
12. Loosen impeller screw and remove impeller.
13. Remove suction adapter plate.
14. Remove drain inlet plate.
15. Remove propeller.
16. Remove mounting plate from motor (loosen 4 phillips head screws on bottom of plate).
17. Knock out old seal carefully and clean hole, re-insert new seal.
Note: Be sure not to ruffle edges of seal when inserting. Seal should contact all resting surfaces at one time.
18. Ceramic is imbedded in propeller and normally does not wear or need replacement, but check for cracks.
19. Reinstall motor and pump by reversing above process.



TROUBLE SHOOTING GUIDE

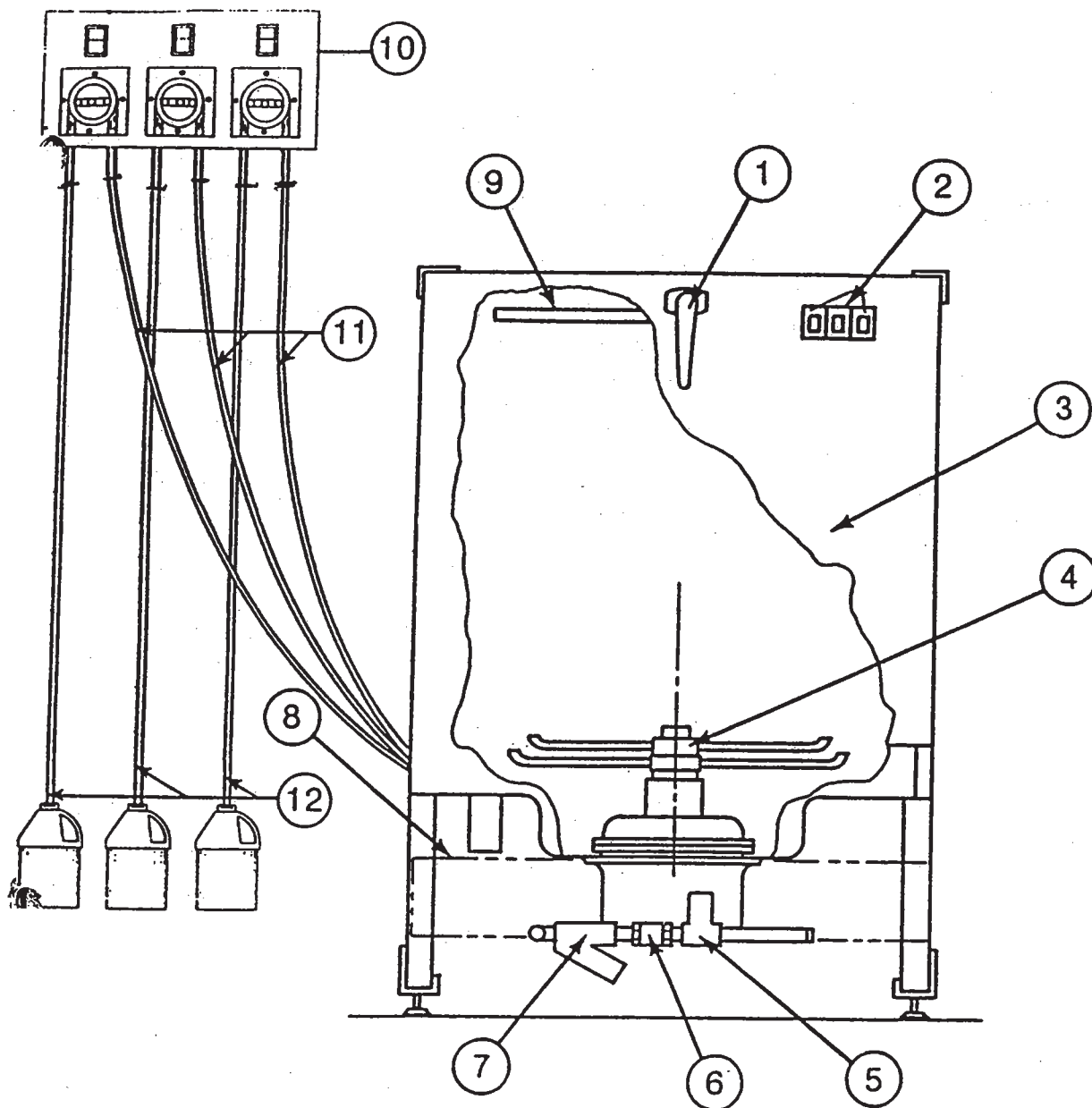
PROBLEM	CAUSE	SOLUTION
Water overflow out bottom of front door when wash pump is operating.	<ol style="list-style-type: none"> 1. Machine not level. 2. Overflow drain clogged. 3. Water level in machine's wash reservoir too high. 4. Detergent foaming. 	<ol style="list-style-type: none"> 1. Level machine, slight tilt to rear. 2. Remove obstruction, checking inside of machine first. 3. Solenoid valve not closing at end of fill or rinse cycle causing excessive water level problem. 4. Reduce quantity of detergent.
Wash/rinse motor runs but kicks out or stops after several seconds.	<ol style="list-style-type: none"> 1. Wires broken or loose. 2. Pump bound up. 3. Bad bearing, noticeable by noisy bearings or locked drive shaft. 4. Defective motor starting relay. (Typical - motor hums.) 	<ol style="list-style-type: none"> 1. Check all wires in the motor and reconnect as necessary. 2. Disassemble and free pump. 3. Replace. 4. Replace.
<p>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. This relay is the amperage sensing type.</p>		
Motor doesn't operate on automatic (rinse operates okay on automatic cycles).	<ol style="list-style-type: none"> 1. Defective wash/rinse micro switch of timer. 2. Broken or loose wires. 	<ol style="list-style-type: none"> 1. Replace switch. 2. Repair or reconnect.
No water comes through the fill pipe when the fill switch is depressed.	<ol style="list-style-type: none"> 1. Hand water valve to machine not turned on. 2. Defective coil on solenoid valve. 3. Broken or loose wires. 4. Defective manual fill switch. 	<ol style="list-style-type: none"> 1. Turn on water valve. 2. Replace coil. 3. Repair or reconnect. 4. Replace.
Little or no water coming through fill pipe and wash-rinse pump surges.	<ol style="list-style-type: none"> 1. Defective flow regulator. 2. Water leaving machine through drain valve. 3. Water pressure low. 	<ol style="list-style-type: none"> 1. Replace. 2. Clean or replace drain valve. 3. Correct pressure problem or increase pipe size to machine. Water should flow at the rate of 4 gallons per minute (2.7 gallons in 40 seconds).
Fill doesn't operate on automatic during timed cycle (but does operate on manual fill operation).	<ol style="list-style-type: none"> 1. Fill micro switch defective (this is the center micro switch). 2. Fill switch defective on NC contacts. 3. Broken or loose wire. 	<ol style="list-style-type: none"> 1. Replace. 2. Replace. 3. Repair or reconnect.

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
Fill water runs continuously with circuit breaker controlling machine turned off.	<ol style="list-style-type: none"> 1. Defective plunger in solenoid valve. 2. Defective diaphragm in solenoid valve. 	<ol style="list-style-type: none"> 1. Replace plunger. 2. Check 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 disassembling or checking solenoid valve, use instructions shown on separate page.		
Fill water runs continuously with power applied to machine, but when circuit breaker to machine is turned off, water stops.	<ol style="list-style-type: none"> 1. Defective fill switch. 2. Defective timer that has stopped in a position keeping the rinse on. 3. Defective fill micro switch on timer assembly. 	<ol style="list-style-type: none"> 1. Replace. 2. Replace timer motor or timer as necessary. 3. 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.		
Wash temperature not at required reading on thermometer.	<ol style="list-style-type: none"> 1. Defective thermometer. 2. Incoming fill water temperature not as required, causing wash or rinse temperature to be lowered during cycle. 3. Unit sets too long between operations. 	<ol style="list-style-type: none"> 1. Using a thermometer (fast reading type that's known to be correct), insert in wash reservoir and check reading against wash thermometer on machine. If machine thermometer isn't correct within 3 or 4 degrees, replace. 2. Check out hot water tank supplying machine, correct supply temperature. 3. Drain and refill before cycling.
Rinse water not at required temperature range.	<ol style="list-style-type: none"> 1. Thermometer's defective. 2. Incoming fill water to machine not up to temperature 120°-140° F. 	<ol style="list-style-type: none"> 1. Replace. 2. Check hot water tank supplying machine, correct supply temperature.
After filling machine with water, leakage began at lower front panel without machine operating or at end of rinse cycle.	<ol style="list-style-type: none"> 1. Overflow drain clogged. 2. Fill switch activated too long. 	<ol style="list-style-type: none"> 1. Clean away obstruction. (Water should be below overflow by at least 1".) 2. Activate fill switch no more than 40 seconds.

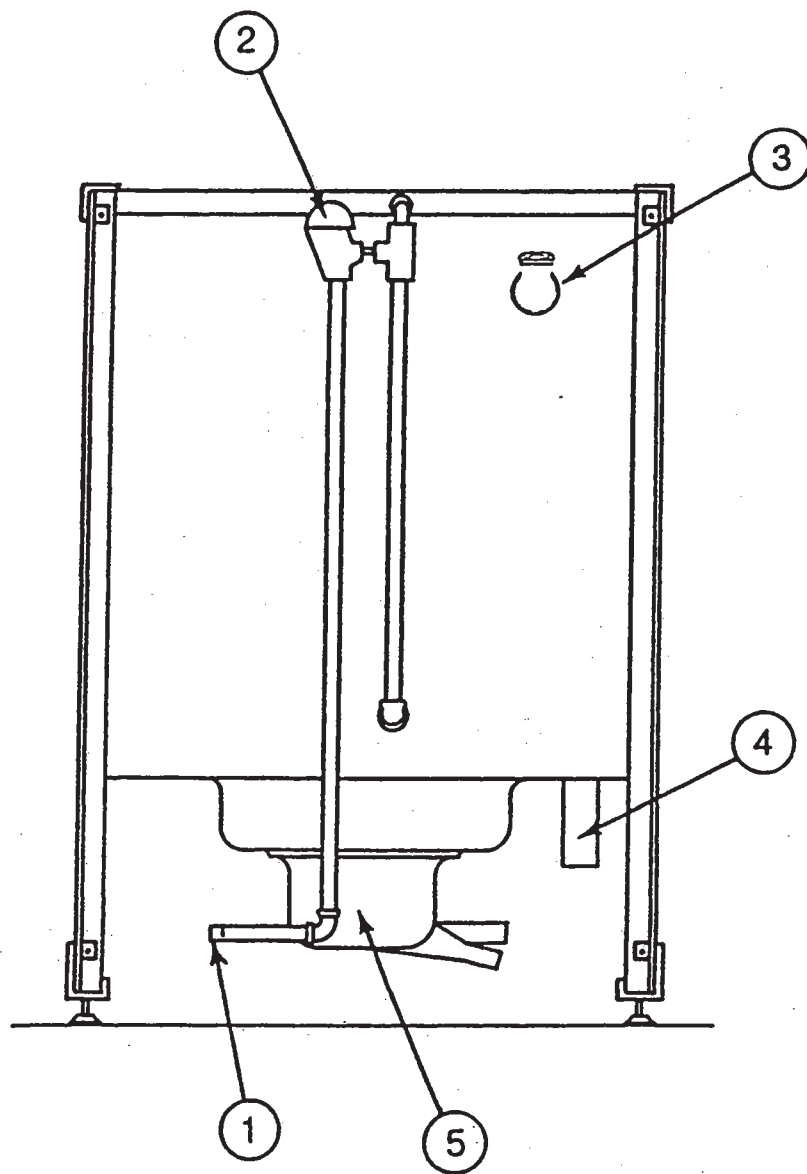
TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
Machine doesn't drain when drain switch is depressed.	<ol style="list-style-type: none"> 1. Drain solenoid clogged. 2. Defective drain switch. 3. Defective motor or motor start relay. 4. Defective drain solenoid. 5. Defective motor reversing relay. 6. Broken or loose wire. 	<ol style="list-style-type: none"> 1. Remove obstruction. 2. Replace. 3. Replace. 4. Replace. 5. Replace. 6. Repair or reconnect.
Note: The drain pump of this machine is part of wash motor, so if wash motor operates properly drain system should work; but check windings.		
Level of sanitizing agent does not change.	<ol style="list-style-type: none"> 1. Faulty sanitizing agent pump. 2. Suction hose (intake tube) out of supply bottle. 3. Pinch tube cracked and drawing air. 	<ol style="list-style-type: none"> 1. Check, using instruction page on sanitizing agent pump. 2. Return to bottle. 3. Replace pinch tube.
Cam roller assembly on peristaltic pump does not rotate.	<ol style="list-style-type: none"> 1. Faulty motor. 2. Faulty timer micro switch. 3. Tube is bunched up in housing. 	<ol style="list-style-type: none"> 1. Replace motor. 2. Replace micro switch. 3. Straighten out hose and place clamp on intake side of hose closer to the housing.



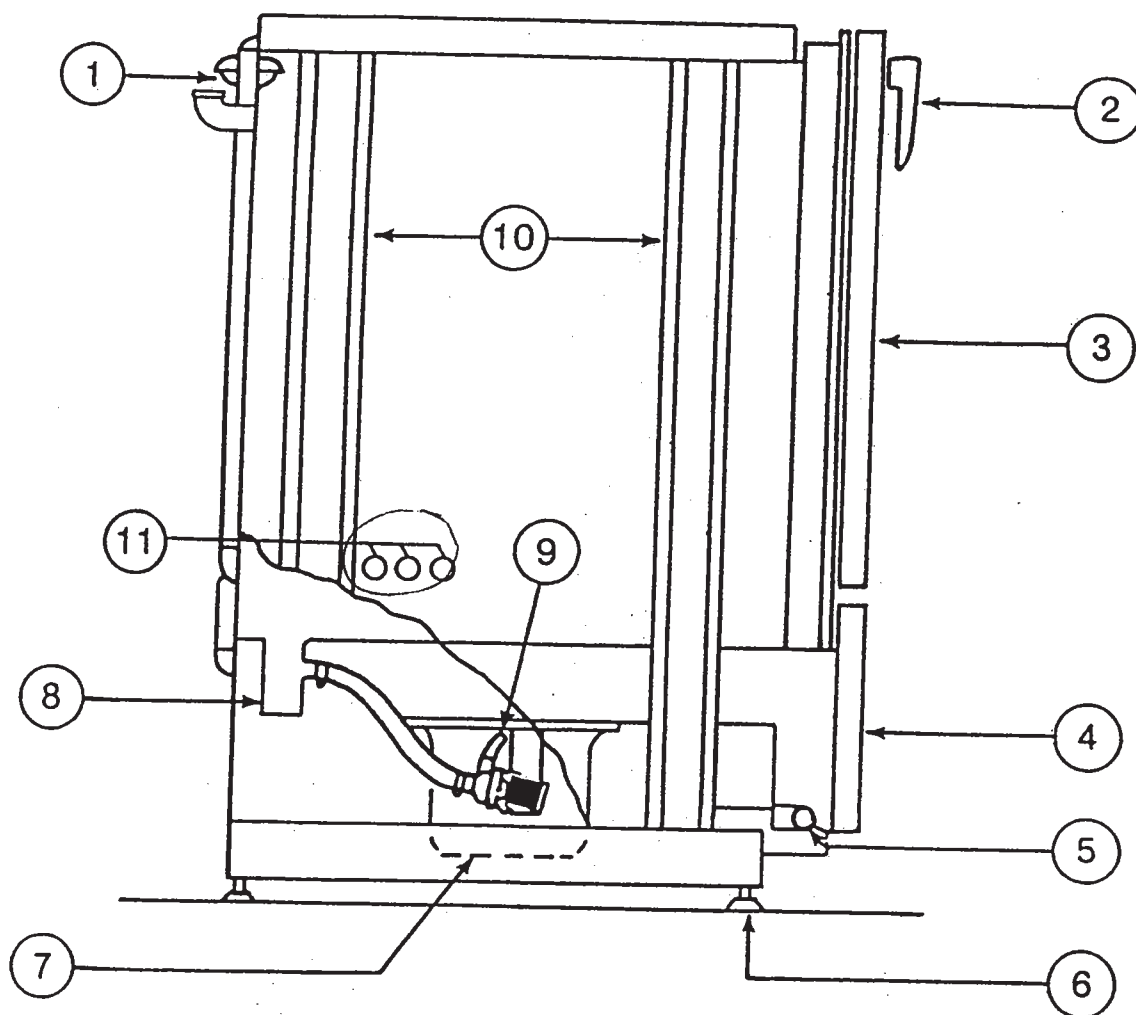
FRONT VIEW OF MACHINE

ITEM	P/N	DESCRIPTION	
1.	512	DOOR HANDLE ASSEMBLY	
2.		SWITCHES — DRAIN, FILL, START	
3.	492	FRONT DOOR	
4.	1889	WASH/RINSE ASSEMBLY	
5.	1420	SOLENOID (FILL)	
6.	553	FLOW CONTROL	
7.	1536	"Y" STRAINER	
8.	303	ELECTRICAL CONTROL PANEL MOUNTING PLATE	
9.	1251	UPPER RINSE HEAD ASSEMBLY	
10.		REMOTE MOUNTING OF DISPENSING UNIT	} WALL MOUNT UNITS ONLY
11.		DISPENSER FEED TUBES	
12.		DISPENSER INTAKE TUBES	



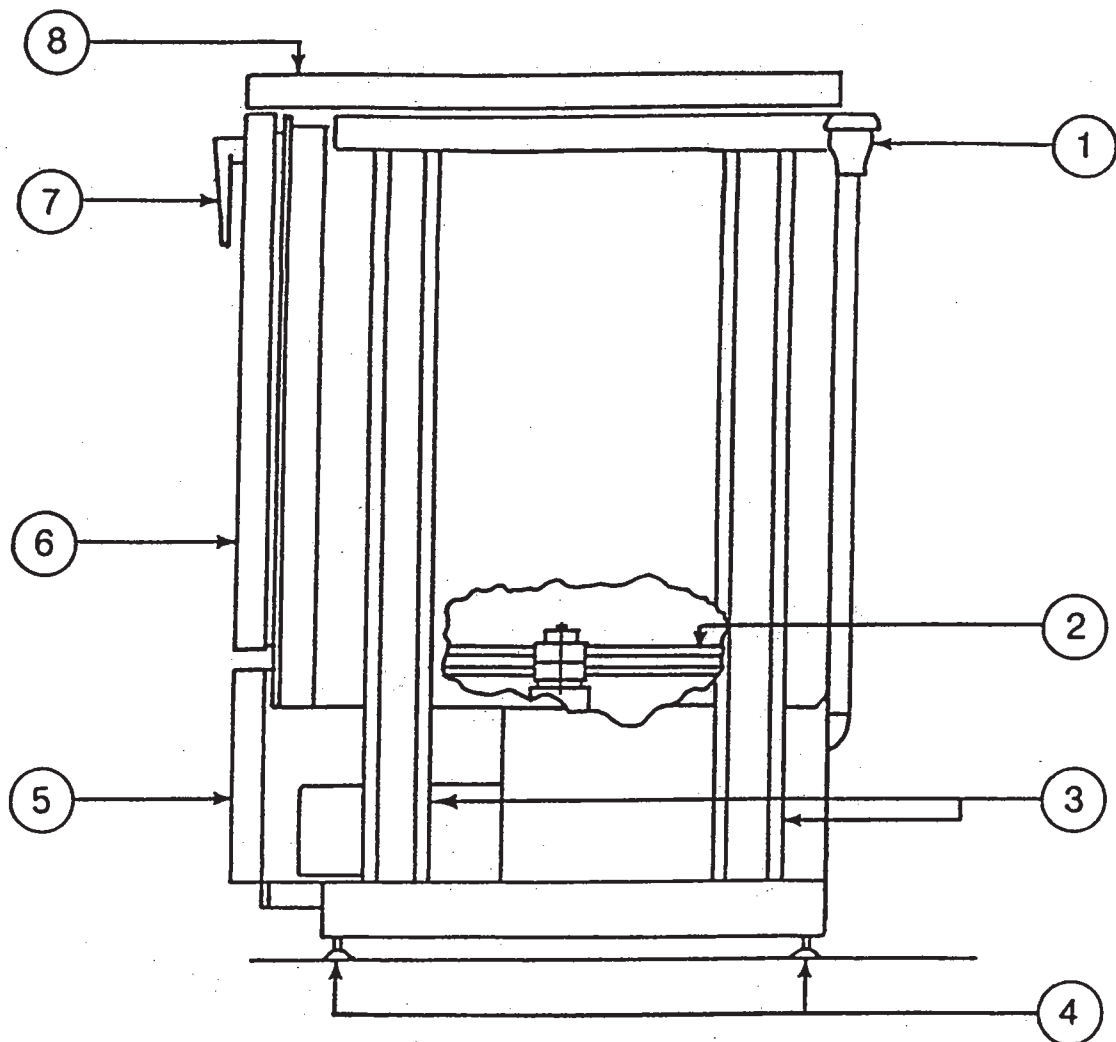
BACK VIEW OF MACHINE

ITEM	P/N	DESCRIPTION
1.		INCOMING WATER CONNECTION
2.	1841	VACUUM BREAKER ASSEMBLY
3.		EQUALIZING VENT
4.		DRAIN — GRAVITY FEED
5.	1081	PUMP & MOTOR ASSEMBLY



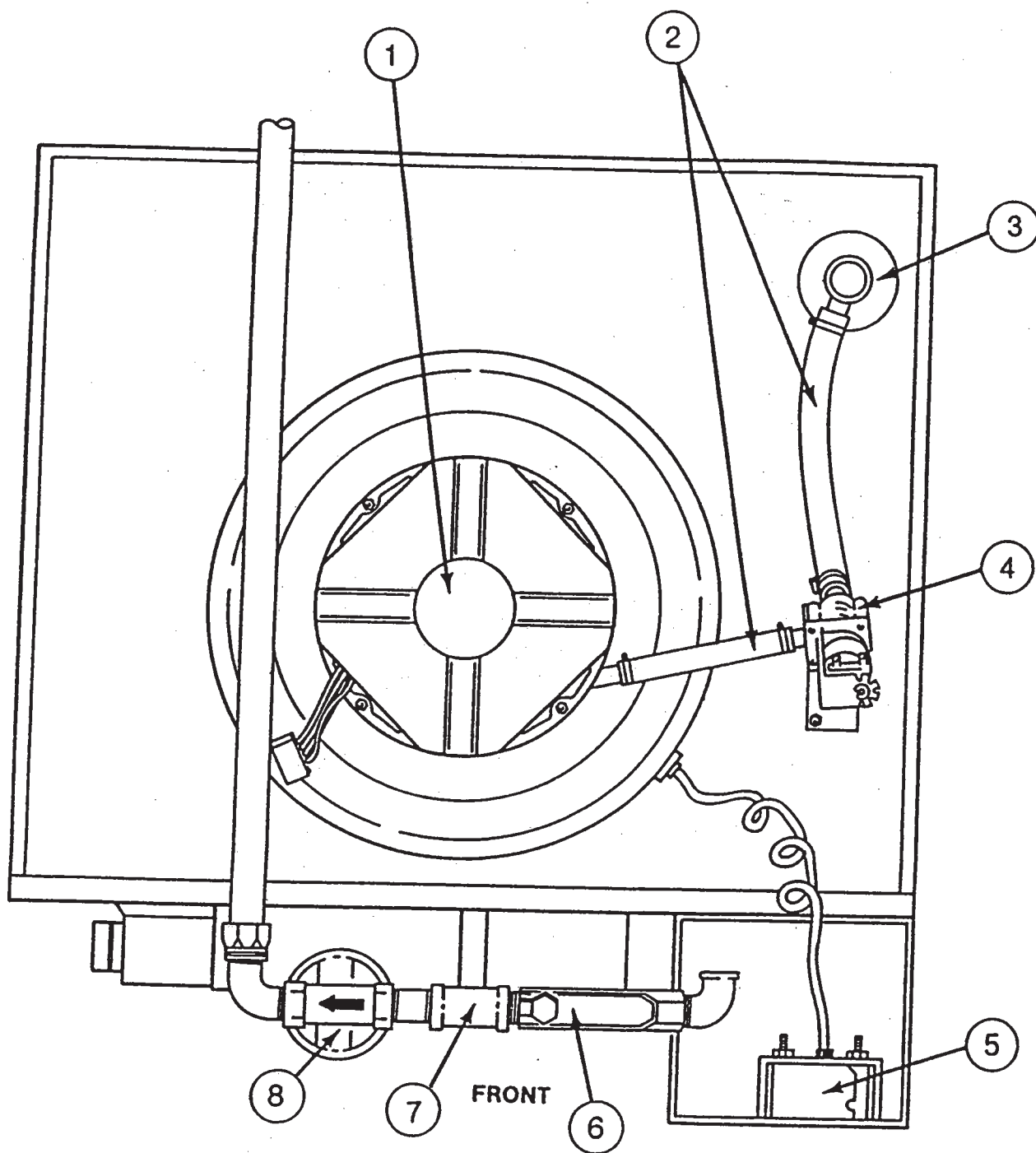
LEFT SIDE VIEW OF MACHINE

ITEM	P/N	DESCRIPTION
1.	1841	VACUUM BREAKER ASSEMBLY
2.	512	DOOR HANDLE ASSEMBLY
3.	492	FRONT DOOR, OUTER
4.	549A	KICK PANEL
5.		INCOMING WATER - 120° - 140°F
6.	834	ADJUSTING FEET (4 PLACES)
7.	1081	MOTOR
8.		DRAIN — GRAVITY FEED
9.	1424	DRAIN SOLENOID VALVE
10.		SIDE FRAME & BRACE
11.		FITTINGS FOR DISPENSER INTAKE



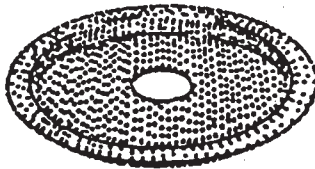
RIGHT SIDE VIEW OF MACHINE

ITEM	P/N	DESCRIPTION
1.	1841	VACUUM BREAKER ASSEMBLY
2.	1889	WASH/RINSE ASSEMBLY
3.		SIDE FRAME & BRACE
4.	834	ADJUSTING FEET
5.	549A	KICK PANEL
6.	492	FRONT DOOR
7.	512	DOOR HANDLE ASSEMBLY
8.	547	OPTIONAL TOP

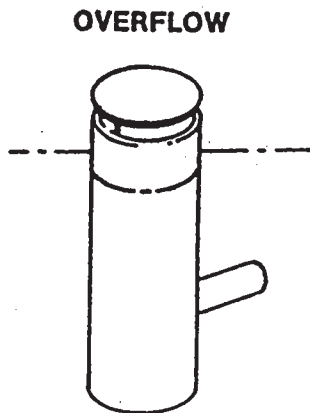


BOTTOM VIEW OF MACHINE

ITEM	P/N	DESCRIPTION
1.	1081	PUMP MOTOR (WASH — RINSE)
2.	536	DRAIN HOSES
3.		OVERFLOW DRAIN — GRAVITY FEED
4.	1424	DRAIN VALVE
5.	1691	THERMOMETER
6.	1536	"Y" STRAINER
7.	553	FLOW CONTROL
8.	1420	SOLENOID — FRESH WATER



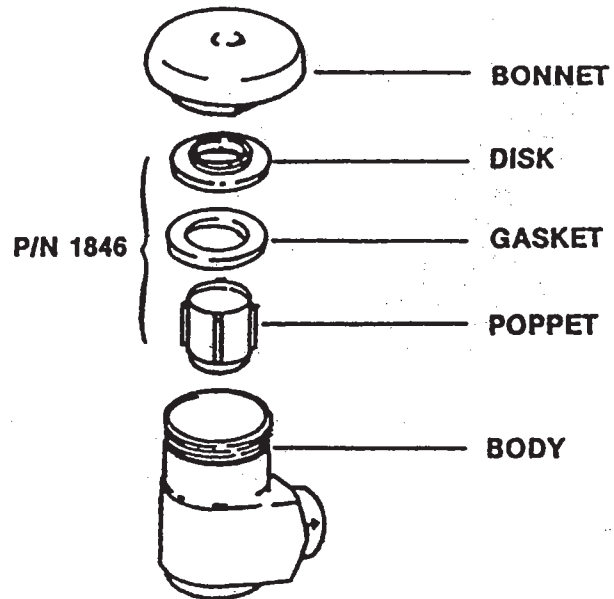
PAN STRAINER P/N 1531



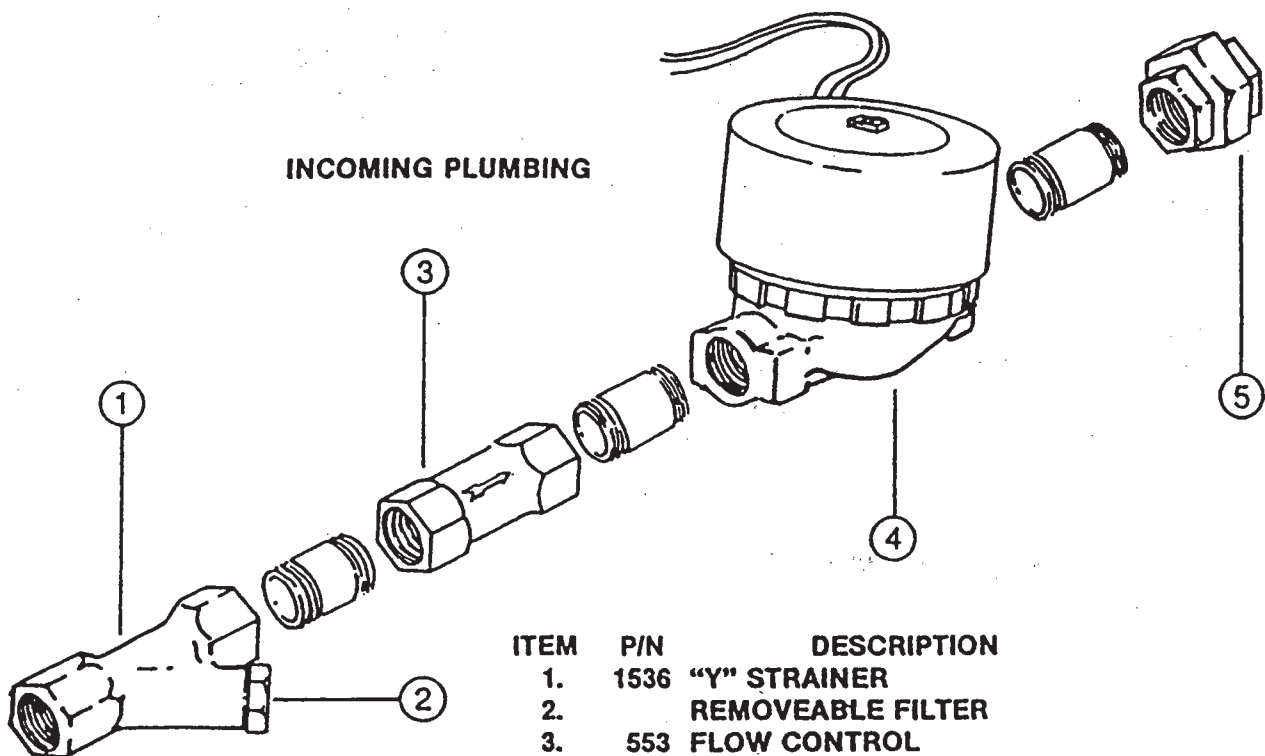
OVERFLOW

VACUUM BREAKER

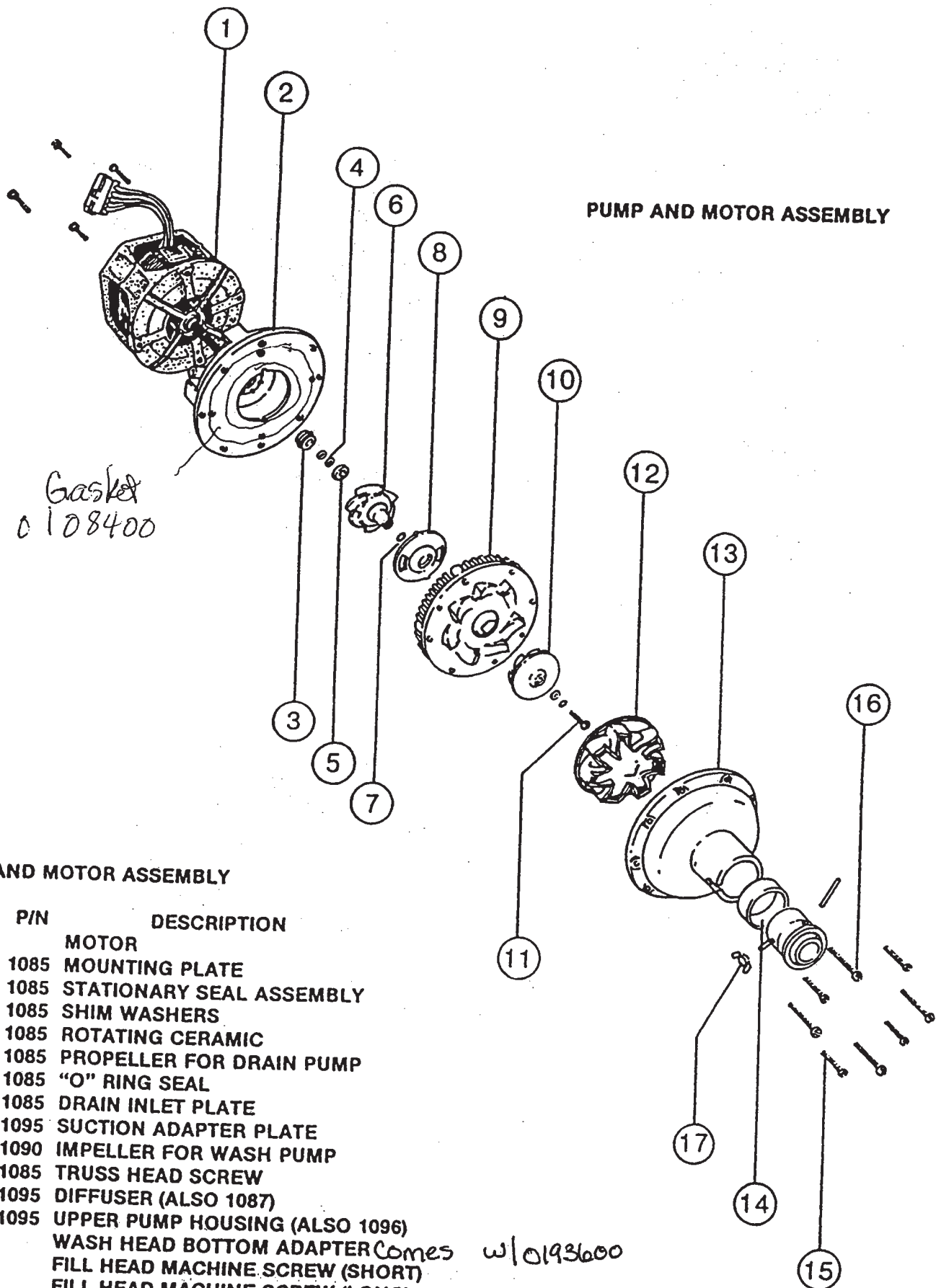
P/N 1841

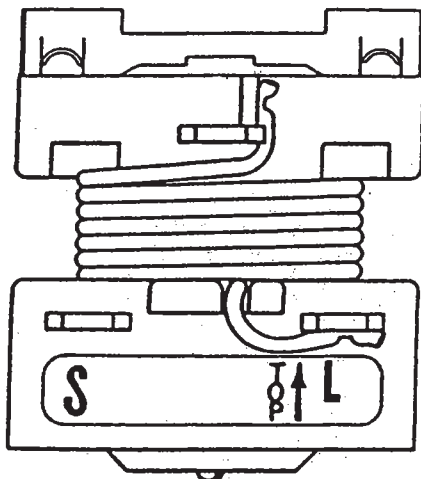


INCOMING PLUMBING

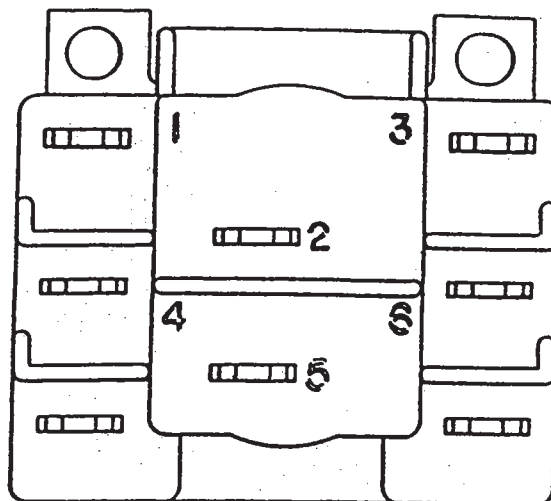


ITEM	P/N	DESCRIPTION
1.	1536	"Y" STRAINER
2.		REMOVEABLE FILTER
3.	553	FLOW CONTROL
4.	1420	SOLENOID VALVE 1/2"
5.		PIPE UNION

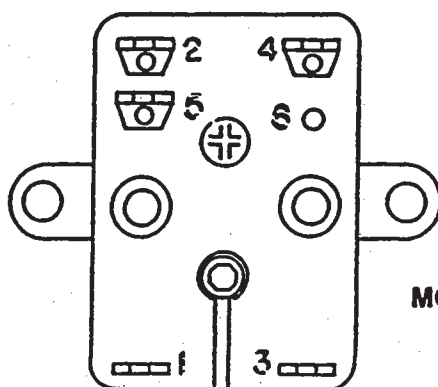




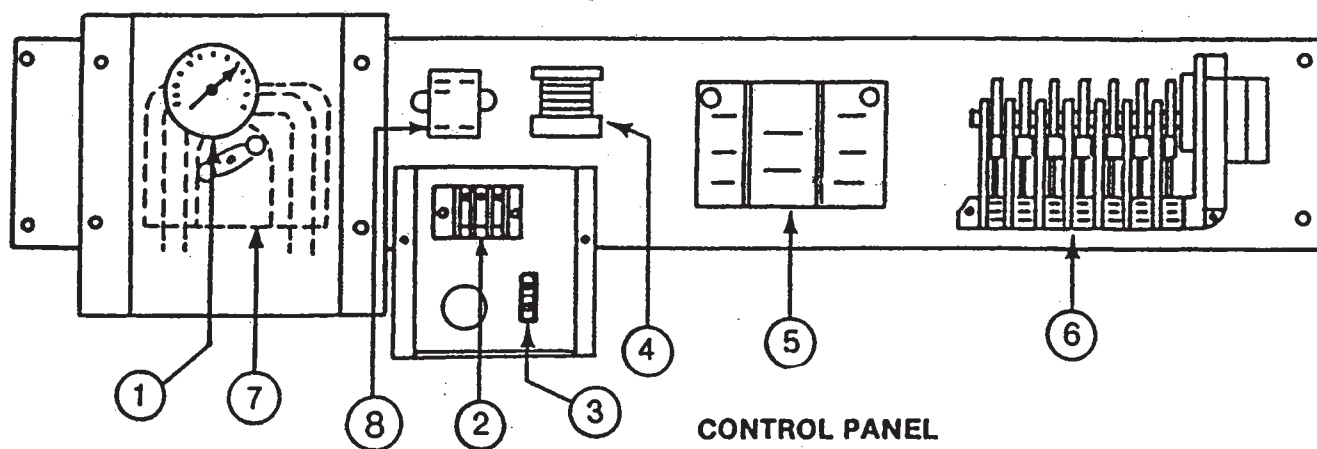
MOTOR STARTING RELAY
P/N 1207



DRAIN RELAY
(MOTOR REVERSING)
P/N 1246

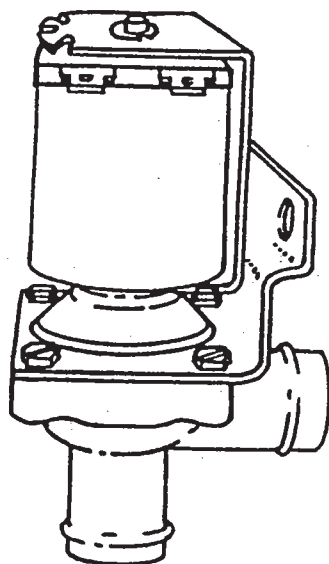


MOTOR RELAY
P/N 1213

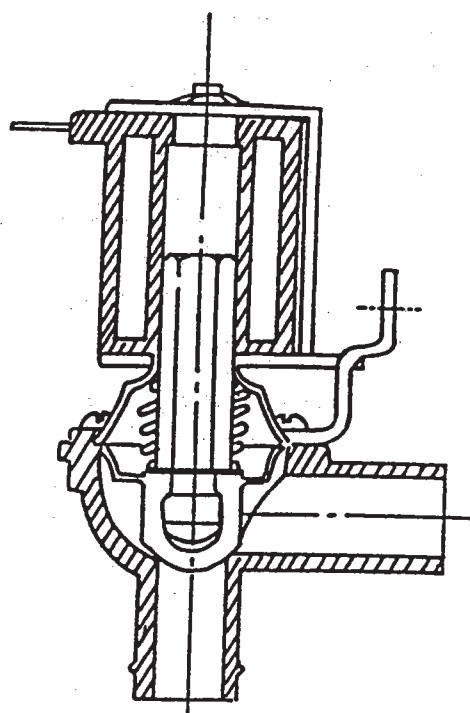


CONTROL PANEL

ITEM	P/N	DESCRIPTION
1.	1691	THERMOMETER
2.	1665	TERMINAL BOARD
3.		GROUNDING LUG
4.	1207	MOTOR STARTING RELAY
5.	1246	DRAIN RELAY (MOTOR REVERSING)
6.	1713	TIMER
7.	460	SANITIZING PUMP (L/LF MODELS ONLY) (LOCATED BEHIND BRACKET)
8.	1213	MOTOR RELAY



DRAIN VALVE SOLENOID



**CUTAWAY VIEW
(DRAIN SOLENOID)**

**START
P/N 1589**



**WALL MOUNT
DISPENSING UNIT
ONLY**

**START
P/N 1588**



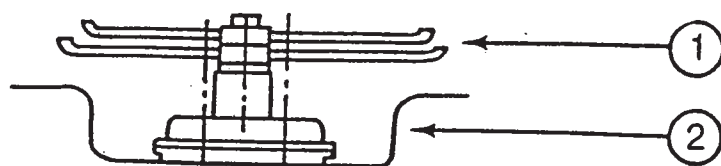
**FILL
P/N 1543**



**DRAIN
P/N 1543**

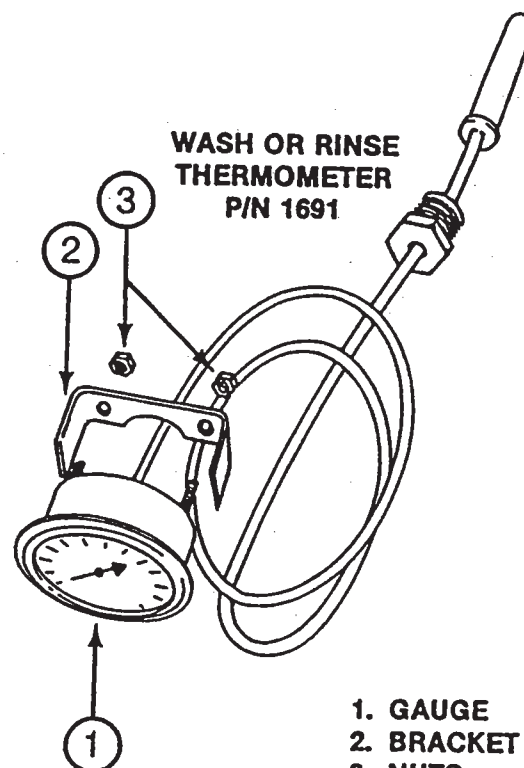


REAR VIEW OF SWITCHES



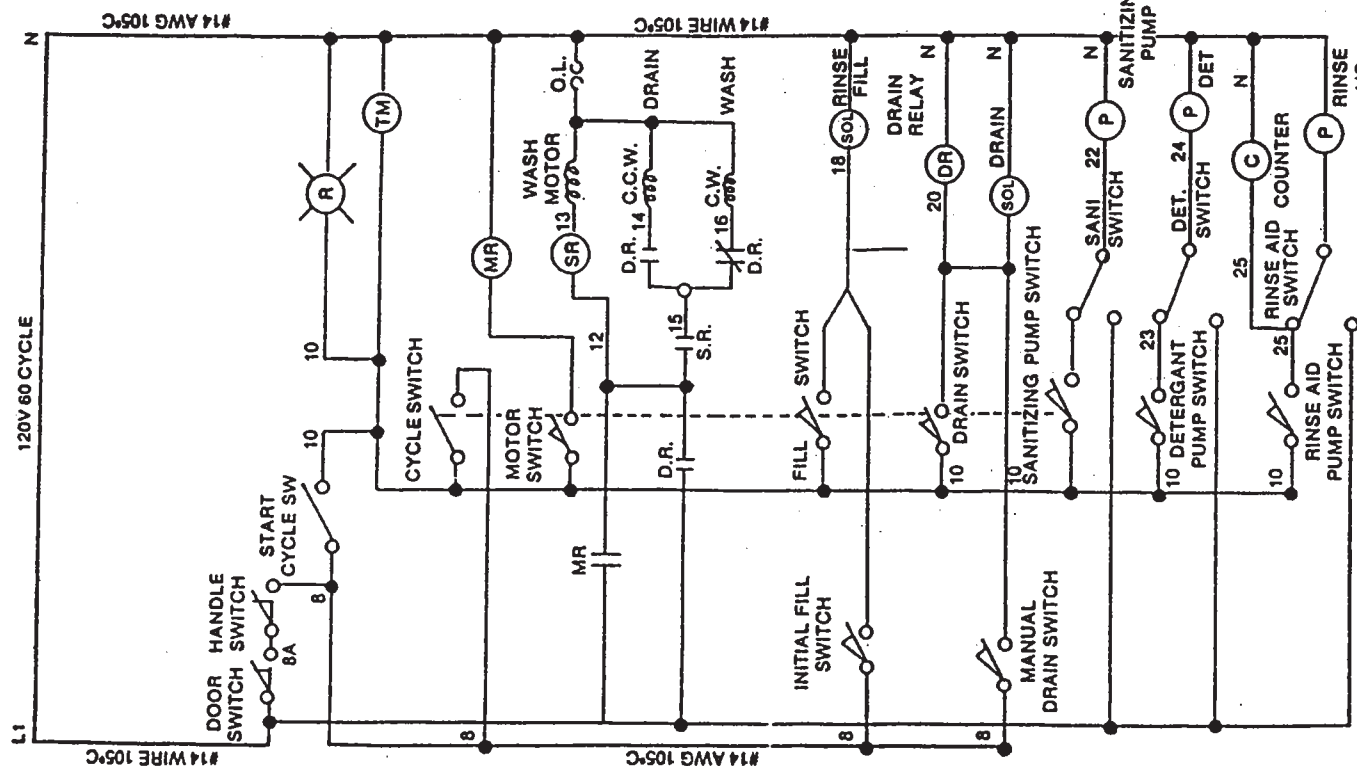
WASH/RINSE HEAD ASSEMBLY LOCATED

ITEM	P/N	DESCRIPTION
1.	1889	WASH ASSEMBLY
2.		WASH RESERVOIR

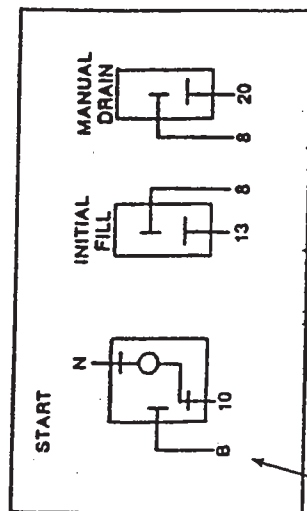


**WASH OR RINSE
THERMOMETER
P/N 1691**

- 1. GAUGE
- 2. BRACKET
- 3. NUTS

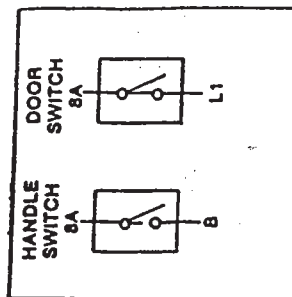


NOTE:
ALL NEUTRAL WIRES "WHITE"
ALL GROUND WIRES "GREEN"
ALL OTHER WIRES "RED"

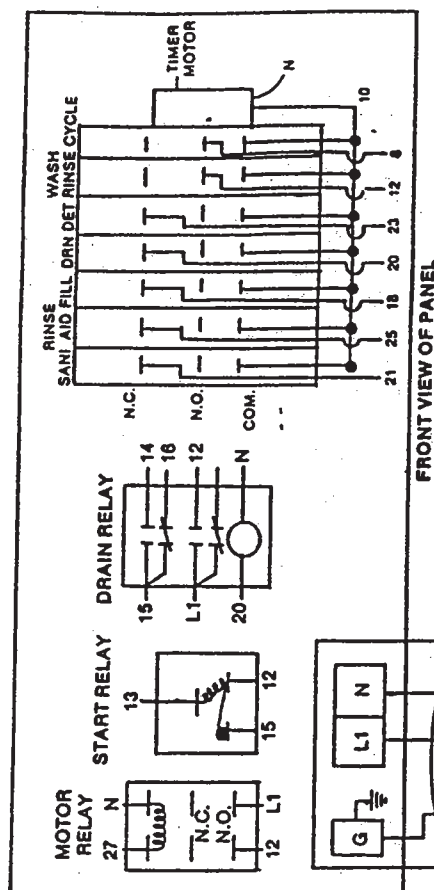


REAR VIEW OF SWITCHES

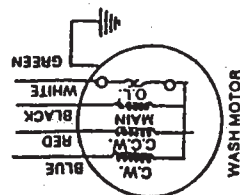
NOTE: ON SOME MACHINES THE START SWITCH & INDICATOR HEAT MAY BE SEPARATE COMPONENTS



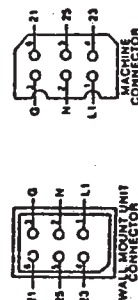
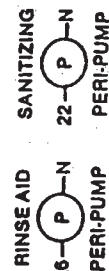
REAR VIEW OF INTERLOCK SWITCHES



FRONT VIEW OF PANEL



WASH MOTOR



COMPLETE PARTS LIST for 24L

303	Control Panel, wired (lower front) for 24L.....	1
447	Door Handle Cam Nut	2
465	Dispenser Peristaltic Pump, Complete	1
465A	Dispenser Peristaltic Pump Motor	1
465B	Dispenser Peristaltic Pump Housing	1
465C	Dispenser Peristaltic Pump Housing Mounting Bolts	3
465D	Dispenser Peristaltic Pump Cam Roller Assembly	1
465E	Dispenser Peristaltic Pump Cam Roller Set Screw	1
465F	Dispenser Peristaltic Pump Hose	1
465G	Dispenser Peristaltic Pump Hose Clamps	2
465H	Dispenser Peristaltic Pump Face Plate	1
465I	Dispenser Peristaltic Pump Face Plate Mounting Screws	4
465J	Dispenser Peristaltic Pump Tubing	1
492	Front Door ONLY	1
512	Door Handle Assembly	1
513	Door Handle Cam	1
523	Door Gasket.	1
524	Door Gasket, Clamp Assembly	1
534	Drain Hose — Pump to Solenoid Valve, short	1
535	Drain Hose Clamps	4
536	Drain Hose — Solenoid Valve to Drain, long	1
544	Door Spring	2
545	Enclosure Panel, righthand side	1
546	Enclosure Panel, lefthand side	1
547	Enclosure Panel, top	1
548	Enclosure Panel, back	1
549A	Kick Panel	1
553	Flow Control, 4 gpm	1
834	Adjusting Feet	4
1081	Pump Assembly, complete with motor, 115V	1
1084	Pump Gasket	1
1085	Pump Propeller Mounting Plate and Seal Assembly, kit	1
1087	Pump Diffuser ONLY	1
1090	Pump Impeller, kit	1
1095	Pump, Upper Housing, kit	1
1096	Pump, Upper Housing, with slots ONLY	1
1175	Rack, square 19 3/4 " x 19 3/4 " (cup, bowl, glass)	1
1178	Rack, square, 19 3/4 " x 19 3/4 " (dish-molded).....	2
1207	Relay, 110V, Motor Starting	1
1213	Relay Motor.....	1
1246	Relay, Drain, 110V (motor reversing)	1
1420	Solenoid Valve, 1/2 ", JE, 110V	1
1424	Drain Valve, Dole 1/2 " 110V, (Valve only)	1
1435	Solenoid Valve Coil, 110V, JE	1
1450	Solenoid Valve Diaphragm Cartridge & "O" Ring, JE 1/2 "	1
1475	Solenoid Valve "O" Ring, JE 1/2 "	1
1485	Solenoid Valve, Plunger Assembly, JE	1
1495	Solenoid Valve, Strainer 1/2 " Screen, JE	1
1531	Strainer, Pan-Type	1
1536	"Y" Strainer	1
1543	Switch, Fill, Primer(rocker-type).....	4
1543	Switch, Drain (rocker-type)	1
1588	Switch, Start (illuminated rocker-type).....	1
1589	Switch, Start, Momentary w/light — Wall Mount Units	1
1641	Switch Interlock (side or latch)	2
1643	Switch Bracket, for side interlock	1

COMPLETE PARTS LIST for 24L

1647	Switch Bracket, for latch interlock	1
1656	Terminal Board, 3-pole	1
1691	Thermometer, Standard	1
1713	Timer, 110V, 7 Cams Adjustable, Wall Mount Units	1
1719	Timer, 115V for 24L (5 cam) <i>6173500</i>	1
1775	Timer Micro Switches, Plastic Module-Type	5
1841	Vacuum Breaker, Sloan, 1/2 "	1
1846	Vacuum Breaker, Sloan, Float and Seal Repair Kit	1
1865	Wash Head Cap w/Race	1
1870	Wash Head Cap Set Screw	1
1875	Wash Head Center Shaft	1
1886	Wash Head Shaft Holding Pin	1
1889	Wash/Rinse Head Assembly, Complete	1
1890	Small Manifold w/Tubes, Wash Head	1
1895	Large Manifold w/Tubes, Wash Head	1
1897	Wash Head Assembly Holding Wing Nut	2
1898E	Wash Head Assembly Retaining Pin w/Ring	1
1936	Wash Head Fixed Race, with pins and wing nuts (after S/N 11291)	1
1940	Wash Head Bearings, 1/4 ", S/S	57

