JACKSON PRODUCTS

MODEL JV24 LOW TENNE

OPERATOR & SERVICE MANUAL

JACKSON PRODUCTS COMPANY

A DIVISION OF ALCO FOODSERVICE EQUIPMENT COMPANY

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S P E C I F I C A T I O N S JV24-LT

OPERATING CAPACITY 100%	Rack Per Hour Dishes Per Hour Glasses Per Hour	17 425 680
OPERATING CYCLE	Wash Time, seconds Rinse Time, seconds Drain Time, seconds Fill Time, seconds Total Cycle, minutes	60 27 37 40
CAPACITY (wash tank)	Gallons	2.7
WASH/RINSE PUMP CAPACITY	Gallons per minute	60
REQUIREMENTS 100%	Inlet Temperature, ^O F Gallon per Hour Flow Pressure Flow, GPM Inlet size Drain Size, OD Gravity feed	120°-140°F 46 20 PSI 4 ½" IPS 1½"
WASH PUMP MOTOR	Horse Power	· • • • • • • • • • • • • • • • • • • •
ELECTRICAL REQUIREMENTS, ONLY	11	5 volt, 1 ph. 60 HZ.
DIMENSIONS	Height with Top Height without Top Width Clearance, Wall to Machine Depth Maximum height for dishes	36" 34½" 24" 2½" 24" 16"
RACKS	Standard Equipment for Dishes for Glasses and Silverware Size	2 1 19-3/4x19-3/4

Specifications subject to change without notification.

GENERAL INSTRUCTIONS

READ THE FOLLOWING INSTRUCTIONS CAREFULLY. NOTE: PROPER OPERATION AND MAINTENANCE OF YOUR JACKSON DISHWASHER WILL ASSURE UNINTERRUPTED SERVICE 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.

5. NOTE: SILVERWARE IN THE UPRIGHT POSITION WASHES AND RINSES BETTER THAN LYING FLAT (SPECIAL RACKS ARE AVAILABLE).

MACHINE OPERATION

1. Check if pan strainer is clean and place empty rack in machine.

2. Place start rocker switch in center position.

3. Close door and lock latch.

4. Push top of fill switch and hold approximately 45 seconds.

5. Open door and slide rack of dishes into dishwasher.

6. Dispense proper amount of detergent in machine.

7. Start automatic wash and rinse cycle of dishwasher by pushing on top or bottom of start switch (with indicating light), light will come on.

8. When light goes out, open door, slide out rack of clean dishes, slide in rack of dirty dishes, close door and push start switch.

9. At end of mealtime, shut off by placing start rocker switch in center position. Drain machine by pressing top of drain switch. Clean pan strainer and machine.

PREVENTIVE MAINTENANCE (The following is to be performed periodically or as needed).

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 as directed, of Scale Solvent into the water. Scale Solvent is available from your detergent supplier (Scale Solvent or equal).

c. Turn on the start switch and allow to cycle out.

d. Open door and examine the interior. All lime should be removed and parts should be shiny. If not, repeat, it may be necessary to scrub deposit off if allowed to build up too long.

- e. After the interior is clean, with door closed, empty the wash water by depressing drain switch for approximately 45 seconds. Refill machine and allow to run through cycle. Drain and refill for normal operation.
- 2. Clean around overflow and pump intake area.

a. Clean drain hole. Remove deposits ONLY.

- b. Clean strainer pan.
- 3. Clean Y-strainer on incoming line. Remove plug and clean strainer.

4. 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).
- 5. Keep wash jets free of any debris which may obstruct wash pattern. Clean by removing wash head assembly and ream out wash tubes.

UNCRATING JV24-LT

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 the top.
- 4. Slide carton sleeve upward over top of dishwasher and 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 (inside carton in machine).
- 8. Set dishwasher in place ready for installation.

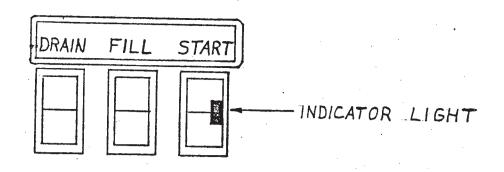
INSTALLATION INSTRUCTIONS (See special 'Installation' on bottom)

1. Level dishwasher machine using adjustable feet.

- 2. Refer to installation sketch for dimensions of connections to be made.
- 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 1½" OD tube size.
- 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 $\frac{1}{2}$ " and the water temperature should be 120° to 140° .
- 5. The electrical connections should be made to the terminal board located at the left front. The terminals are marked L1 and Neutral. INSTALL PROPER CIRCUIT BREAKER, WIRE AND CONDUIT SIZE TO CONFORM WITH LOCAL AND/OR NATIONAL CODES (STANDARDS).

DETERGENT RECOMMENDATIONS AND RINSE ADDITIVES

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



OPERATOR CONTROLS

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

- 1. The START SWITCH initiates automatic operation of the machine.
- 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 the day.

SEQUENCE of MACHINE OPERATIONS

- 1. Start switch depressed.
- 2. Timer motor activated.
- 3. Wash/Rinse cam switch activates motor starting relay for wash.
- 4. Cam switch for sanitizing agent pump activates and fills receiver then turns off.
- 5. Wash ends--drain cam switch activates drain relay and motor starting relay for drain.
- 6. Drain ends--fill solenoid and pinch valve activated by fill cam switch.
- 7. Wash/rinse cam switch activates motor starting relay for rinse; fill ends.
- 8. Rinse ends, cycle ends as timer motor deactivates.

TIMER for JACKSON DISHWASHERS

General Description

The timer is a self-contained (frame-mounted) timer of the repeating cycle type. It is mounted on the control panel of Jackson Automatic Dishwashing Machines, to control the automatic functions of these machines. It consists of a clock motor which operates on 60 cycles A.C., 110V A.C. In addition to the clock motor, the timer also contains a driven cam arrangement which operates five micro switches.

Principal of Operation

The timer controls various operations of the automatic washers as per wiring diagram for each machine. The time for one complete revolution of the cam shaft is approximately 360 seconds allowing two complete cycles of operation 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 second micro switch controls the wash and uses the 'NC' contact. The third micro switch farther away from the timer motor controls the fill and uses just the 'NC' contact. The fourth micro switch controls the drain function and uses the 'NC' contact. The last micro switch controls the bleach pump and uses the 'NC' contact.

Service Instructions

CAUTION: Always remove the power to the machine before working on the control panel or while servicing the components on the switch panel.

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

If it is determined that the timer is defective, it is recommended that a new timer be installed. However, limited field maintenance can be accomplished as follows:

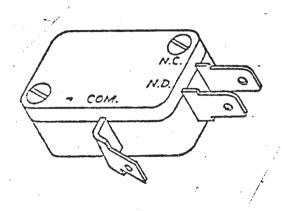
A frozen contact on a micro switch will be indicated by the absence of a click when the switch arm is actuated. The micro switch is replaced by...

- 1. Removing all wires from the timer, properly tag them to assure proper replacement.
- 2. Removing the two 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. AS THEY ARE ALL CUT DIFFERENTLY.
- 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.

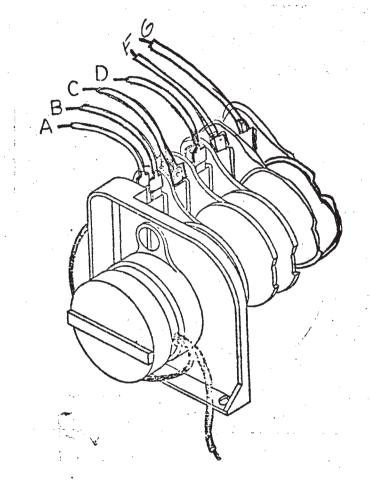
DEFECTIVE MOTOR

A defective motor is indicated by the fact that the machine does not perform the automatic operations or performs a specific part of the cycle continously, but works okay on manual. The motor is replaced by:

- 1. Use steps #1 and #2 above
- 2. Remove the two screws which hold the motor
- 3. Replace with a new motor



- A. To upper right terminal start switch
- B. To lower right terminal start switch
- C. To terminal on drain relay (see elect'l dwg.)
- D. To bottom terminal of rinse switch
- E. To L2 terminal
- F. To coil on drain relay (see elect'l dwg.)
- G. To bleach pump lead



MANUAL OPERATION of TIMER (for Testing)

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 switches with an ohmmeter.

BLEACH INJECTOR (Mounted on Back of Machine)

- 1. PUMP delivers sanitizing agent from its container into the Receiver.
- 2. RECEIVER HOLDING TUBE contains measured amount of sanitizing agent to be dropped in rinse water.
- 3. INTAKE TUBE to PUMP.
- 4. PINCH VALVE, solenoid-type valve opens to drop measured amount of sanitizing agent in rinse water.
- 5. DROP TUBE carries sanitizing agent from Receiver to Wash/Rinse Tank.
- 6. OVERFLOW TUBE returns sanitizing agent to its container for future use. NOTE: TOP OF CONTAINER SHOULD ALWAYS BE POSITIONED BELOW OVERFLOW OUTLET.
- 7. RECEIVER HOLDING TUBE for sanitizing agent.

THEORY OF OPERATION (BLEACH INJECTOR)
(Refer to Drawing on Sketch)

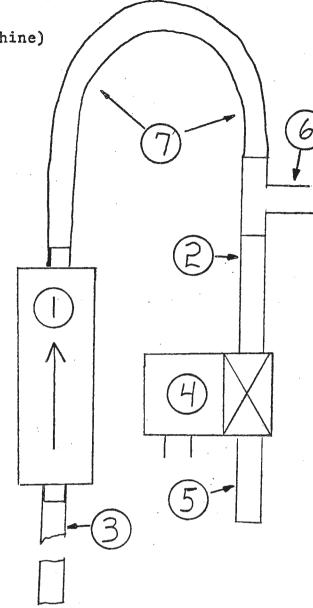
NOTE: ALL ELECTRICAL SIGNALS ARE GENERATED FROM THE TIMER ON CONTROL PANEL OF MACHINE. PINCH VALVE IS NORMALLY CLOSED.

Before the rinse/fill cycle of machine, the bleach pump is activated.
Bleach is delivered from its holding container up through the pump and into the Receiver. The Receiver Holding
Tube is filled to a specified level and excess fluid is drained out through the overflow tube. After a specific amount of time, the pump is turned off allowing the fluid to level off in the Receiver.

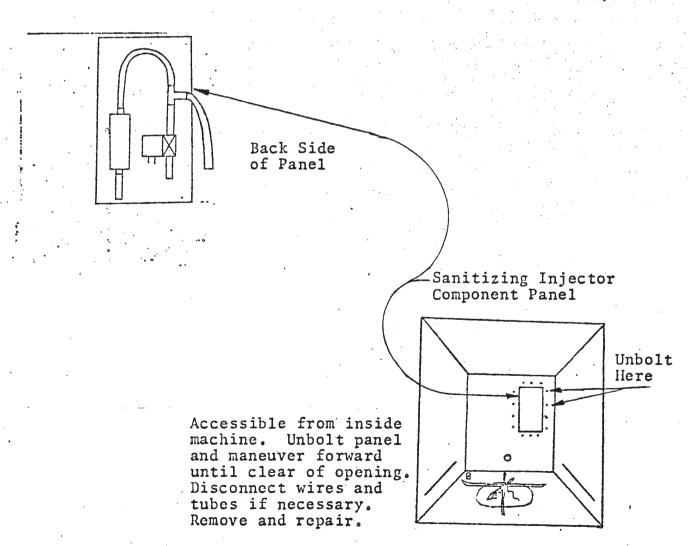
After the machine is completely drained, the fill solenoid valve is opened and water flows into the machine. At the same time, the Pinch Valve is opened allowing the pre-measured amount of sanitizing agent to be dispensed into the rinse water.

MAINTENANCE of BLEACH INJECTOR

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



- 1. Make certain all tubes in the system are not clogged with debris.
- 2. Check all wire connections to the pump and pinch valve, make sure they are on tight.
- 3. Check intake tube connection to pump, make sure pump is not drawing air; tube connection must be air-tight.
- 4. Check the pump to see if it is pumping, if it is, but no fluid is drawn to it, replace the pump. If it doesn't operate, check the appropriate micro switch and wire connections on the timer.
- 5. Make sure the pinch valve is opening at the start of the fill operation.
- 6. If it is determined that the pump is leaking, it must be replaced with a new one.



Front View of Machine

There are three switches installed in the door's upper-righthand corner. These are the Drain, Start and initial Fill switches.

Before working on machine, it is important that the power to the machine be turned off at the Circuit Breaker-trip Breaker to its 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's 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. Power can be reapplied to the unit and dishwasher run through cycles, checking all operations after replacement.

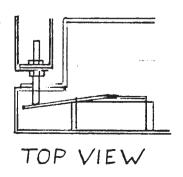
INTERLOCK SYSTEM

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

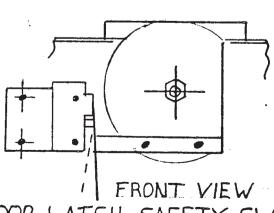
The Interlock System consist of two safety switches. One mounted so that the door latch has to be closed to complete the circuit. The other switch is located so that a pin on the machine depresses a safety switch mounted in the door, to complete the circuit. Either of these switches, if not depressed,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

START-DPDT-(CENTER OFF)
FILL - SPDT (MOMENTARY)

DRAIN-SPDT-(MOMENTARY)



DOOR SAFETY SWITCH SYSTEM



DOOR LATCH SAFETY SWITE

CHECKOUT

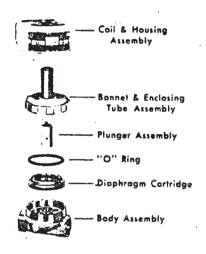
If it's determined that the proper power is being applied to the machine's incoming terminal blocks, then further check of the safety switch system should be made. NOTE: THIS CHECKOUT WOULD ONLY BE PERFORMED IF NONE OF THE SYSTEMS OF THE MACHINE OPERATES. THIS WOULD MEAN THAT NONE OF THE SWITCHES, WHEN DEPRESSED, WILL PERFORM THE FUNCTION NOTED FOR THAT SWITCH. Example, drain, fill or start switches. Proceed with checkout.

- 1. Remove power to the machine by turning circuit breaker that protects the machine to 'off' position.
- 2. Open the front door and remove screws holding inside panel of front 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 lefthand corner of door. 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.

SERVICE INSTRUCTIONS

SOLENOID VALVE

TO TAKE THE VALVE APART



- - - - Types J-2, J-200, J-207, J-4, J-400, J-407, J-6, J-600 and J-607

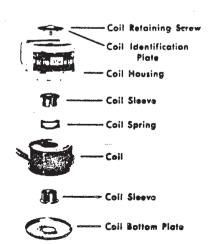
Disassembly — These valves may be taken apart by unscrewing the bonnet and enclosing tube assembly from the valve body assembly. See Fig. 3. After unscrewing, carefully lift off the bonnet and enclosing tube assembly. Don't drop the plunger. The "O" ring seal and diaphragm cartridge can now be lifted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

TO REMOVE OR CHANGE THE COIL



COIL ASSEMBLY

To remove the solenoid coil, first take out the retaining screw at the top of the coil housing. The entire coil assembly can then be lifted off the enclosing tube.

To reassemble, make sure that the parts are placed on the enclosing tube in the following order: (See Fig. 2)

- The coil bottom plate with the edge up
- 5 The upper coil sleeve with the flange at top (the sleeve goes through the coil spring)
- 2 The lower coil sleeve with the flange at bottom
- The coil housing. Make sure coil lead wires do not catch over or under the coil.
- The coil itself (or its replacement) with lead exits at the bottom
- 7 The electrical data plate (be sure to change if the coil
- The coil spring, with the flat edges up
- sure to change if the coil specification is changed)

Press parts down firmly and insert the coil retaining screw. Rotate housing to proper position and tighten screw securely.

PROBLEM

Fill doesn't operate on automatic during timed cycle (but does operate on manual fill operation).

Fill water runs continously with circuit breaker controlling machine turned off.

CAUSE

Micro switch defective (this is the third micro switch from the timer motor on the timer assembly).

Defective plunger in solenoid valve.

Defective diaphragm solenoid valve.

SOLUTION

Replace.

Replace plunger.

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 is not, heat a straight pin and tap it through this hole to enlarge. If this fails to correct situation replace diaphragm.

NOTE: IN DISASSEMBLING SOLENOID VALVE, USE INSTRUCTIONS SHOWN ON SEPARAGE PAGE.

Fill water runs continously with power applied to machine, but when circuit breaker to machine is turned off, water stops.

Defective fill switch. Replace.

Defective timer that has stopped in a position keeping the rinse on. Replace timer motor or timer as necessary.

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 (20 PSI).

Wash or rinse temperature not at required reading on thermometer.

Defective thermometer.

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

Check your hot water heater.

Temperature may have to be set higher.

PROBLEM	CAUSE	SOLUTION
Bleach injector not operating correctly.		Refer to section labeled 'Bleach Injector' in this manual for instructions.
No automatic functions occur when start switch is depressed.	Machine not connected to power source.	Connect machine to 110V-AC source.
	Timer motor not operating.	Check motor wire con- nection, replace Timer motor.
	Safety switches in front door not actu-ated.	Remove inside door and check switches.
Machine overfilling.	Fill solenoid defective.	Replace.
	Hays measure flow de- vice defective, pos- sibly due to excessive hot water.	Replace
Machine underfilling.	'Y' strainer clogged.	Remove strainer and clean.
Dishes not clean.	Wash jets clogged.	Remove wash heads and clean.
Machine doesn't drain when drain switch is	Drain system clogged.	Remove obstructions.
depressed.	Defective drain switch.	Replace.
NOTE: THE DRAIN PUMP O WASH MOTOR OPERA (See below)	F THIS MACHINE IS PART O TES PROPERLY, DRAIN SYST	F WASH MOTOR, SO, IF EM SHOULD WORK.
Machine won't drain automatically.	Drain relay defective.	Replace.
ad some crearry s	Loose connection on micro switch or drain solenoid.	Tighten connections.
	Micro switch defective.	Replace.
	Motor starting relay defective.	Replace.
	Drain solenoid valve defective.	Check wire connection on valve and timer switch. Replace valve
Wash motor doesn't operate.	Wires broken or loose on micro switch.	Check all wires in the motor circuit and reconnect as necessary.

PROBLEM

CAUSE

SOLUTION

Defective motor starting relay.

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. THIS RELAY IS THE AMPERAGE SENSING TYPE.

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

Machine not level.

Level machine.

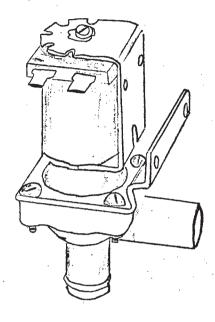
Overflow drain clogged. Remove obstruction,

checking inside of machine first.

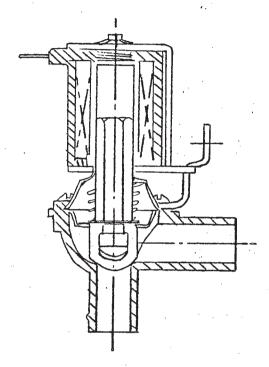
Water level in machine Solenoid valve not wash reservoir too high.

closing at end of fill or rinse cycle causing excessive: water problem.

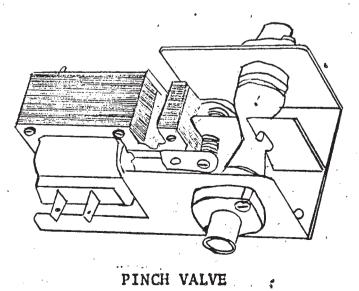
Detergent used either foaming type or quanity too great.



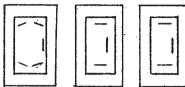
DRAIN VALVE



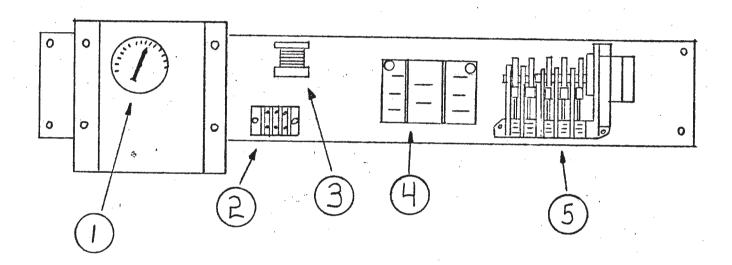
CUTAWAY VIEW







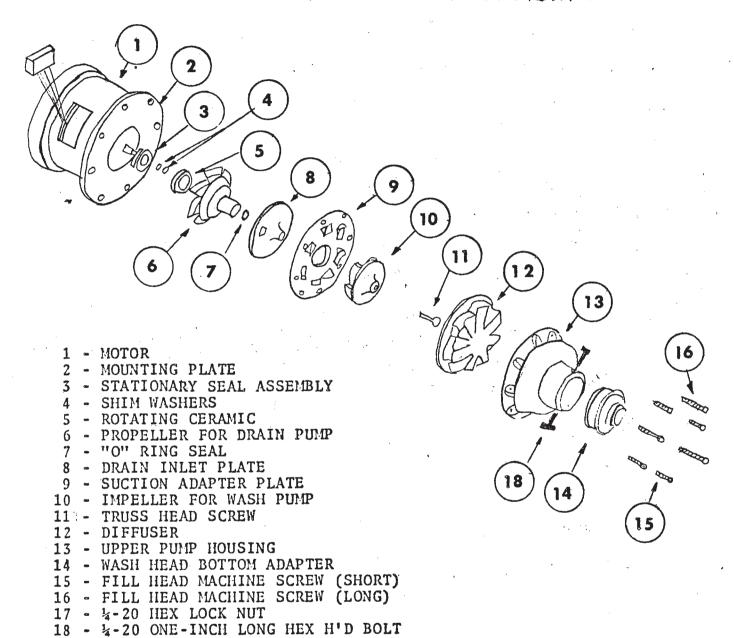
REAR VIEW OF SWITCHES

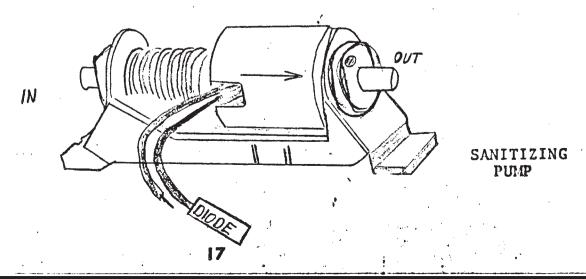


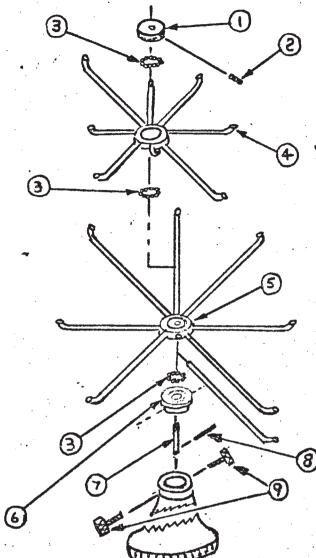
PANEL

- I THERMOMETER
- 2-TERMINAL BOARD
- 3-STARTING RELAY
- 4. -DRAIN RELAY
 - 5.-TIMER

PUMP AND MOTOR ASSEMBLY







WASH HEAD ASSEMBLY

1-WASH HEAD CAP W/RACE

2 " CAP SET SCREW

3 " " BEARING-14"S/S.

4 " SMALL MAN FOLD

W/TUBES

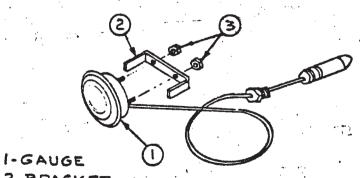
5 WASH HEAD LARGE MANIFOLD W/TUBES

6 WASH HEAD FIXED RACE

7 " CENTER SHAFT

8 " SHAFT HOLDING PIN

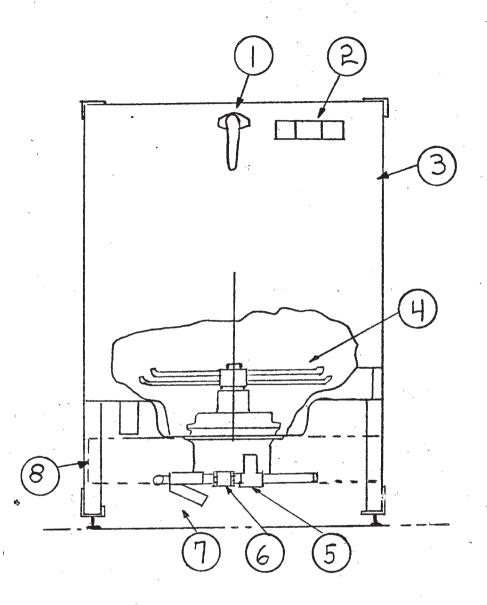
9 " ASSY HOLDING SCREW



1-GAUGE 2-BRACKET 3-NUTS

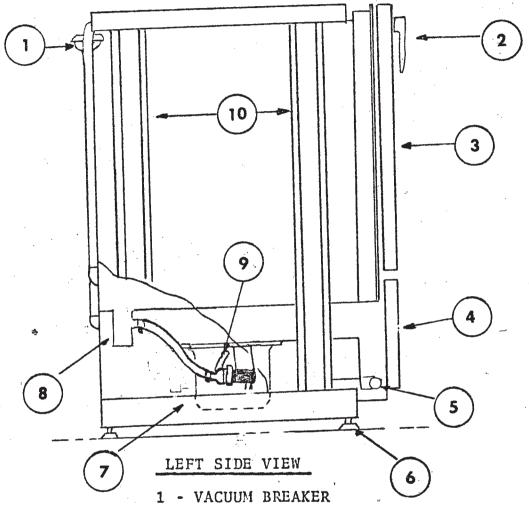
WASH OR RINSE THERMOMETER



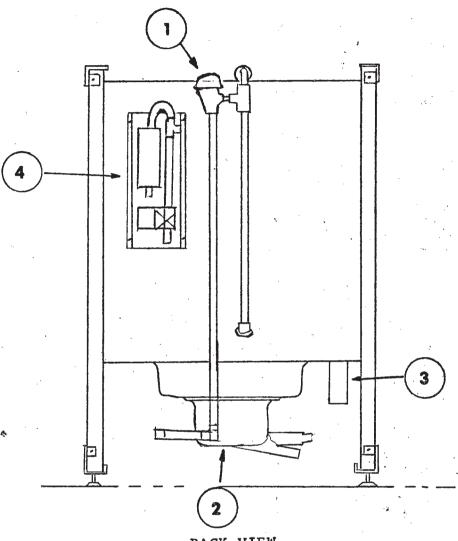


FRONT

- 1- DOOR LATCH
- 2-SWITCHES, DRAIN, FILL, START
- 3- FRONT DOOR
- 4- WASH ASSEMBLY
- 5 SOLENOID
- 6-FLOW REGULATOR
- 7-"Y" STRAINER
- 8-ELECTRICIAL CONTROL PANEL

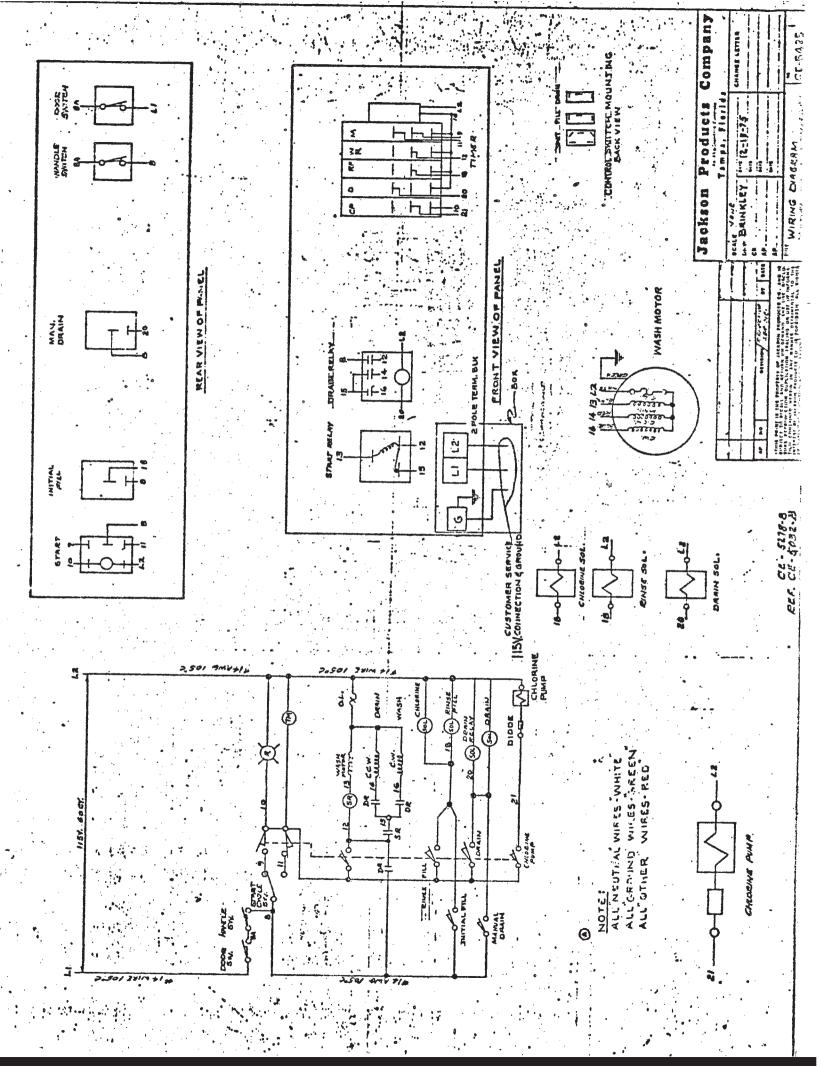


- DOOR LATCH
- FRONT DOOR KICK PANEL
- INCOMING WATER 120° 140° ADJUSTING FEET
- MOTOR
- DRAIN
- 9 DRAIN SOLENOID VALVE
- 10 SIDE FRAME & BRACE



BACK VIEW

- 1 VACUUM BREAKER
 2 MOTOR/PUMP ASSEMBLY
 3 DRAIN
 4 INJECTOR SYSTEM



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