Enodis®
One Company, Countless Solutions

HIGHT TEMP, HOT WATER SANITIZING
UNDERCOUNTER DISHMACHINE

INSTRUCTION MANUAL

FOR JACKSON MODEL:

SERIES 24
MODELS 24A/AF, 24B/BF/BP

AFTER SERIAL NO. 23000

Jackson
An Enodis Company

January 21, 2004
P/N 7610-100-35-00 (Revision C)

www.jacksonmsc.com

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.

INDEX

SPECIFICATIONS

MODEL 24 (No Booster)

- Total automatic cycle is 2 minutes 25 seconds
- Up to 50% more wash time than other undercounter dishwashers
- Door activated cycle start switch
- Electric wash tank heater with low water protection maintains proper wash temperature
- Simplified controls for ease of operation
- Automatic fill
- Automatic drain
- Manual wash switch for deliming
- 100% fresh water rinse eliminates problems of rinse water contamination associated with re-circulating rinse machines
- (18-8) 304 series stainless steel construction. 18 gauge material is used for extra durability and years of reliable service
- No switches or wiring in door
- One dish rack and one combination cup, bowl and silver rack included
- 115 v/60 Hz/1 phase only
- Optional pumped drain

MODEL 24B

- Same Standard Features as above except the Model 24B includes a 6.2 KW built-in booster heater
- Built-in booster is sized to raise incoming water 40°-50°F
- 208-230 v/60 Hz/1 phase only
- Optional pumped drain

MODEL 24F and MODEL 24BF

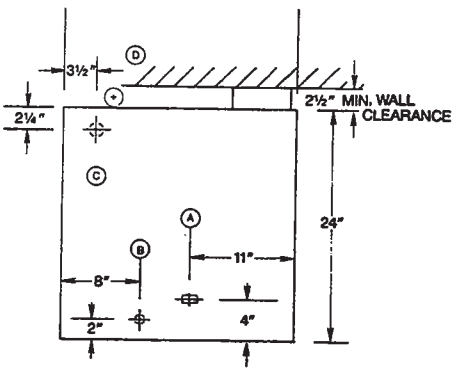
- Same Standard Features as above except "F" models include (18-8) 304 series 18 gauge stainless steel top and side panels for free standing installations
- Optional pumped drain

Dimensions

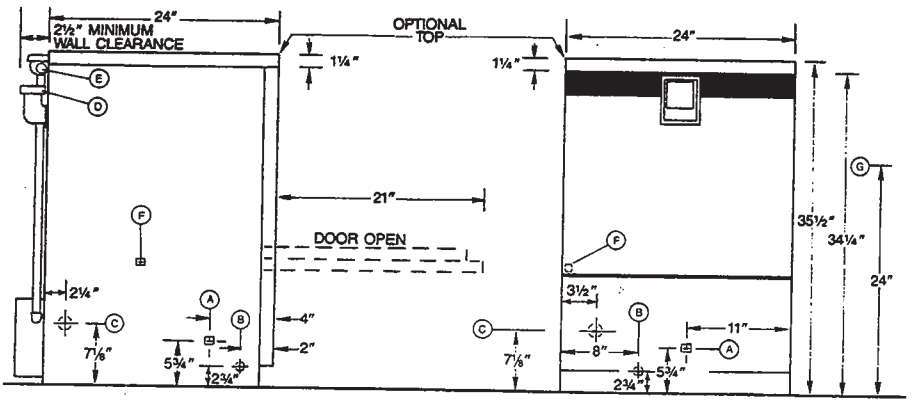
Height w/Top	36¼" ± ½"
Height w/o Top	34½" ± ½"
Width	24"
Depth	24"
Minimum Distance from Wall to Machine	2½"
Standard Table Height	34½"
Maximum Clearance for Dishes	14"

Legend

A. Electrical Connection.
B. Water Inlet - ½" Female Pipe Thread. 2½" High.
C. Drain Connection - 1½" O.D.
D. Vented on Back. Cover underside of countertop or table that will be affected by moisture with suitable protective material.
E. Rinse agent feeder connection.
F. Detergent feeder connection.
G. Maximum wall drain height with pumped drain option.



TOP VIEW



SIDE VIEW FRONT VIEW

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

Power/Connections

	Model 24(F)	Model 24B(F)
WASH PUMP MOTOR Horsepower	½	½
ELECTRIC HEAT WASH KW	1.0	1.0
ELECTRIC HEAT RINSE KW	N/A	6.2

Electrical Ratings

Model	Volts	Cycle*	Phase	Amps
24,24F	115	60	1 (2 wire)	15.5
24B,24BF	115/208-230	60	1 (3 wire)	34.9 @ 208v 37.8 @ 230v

*50 cycle available

Water Requirements

Inlet Temperature—°F	180	140
Gal. per Hour	52.3	52.3
Flow Pressure PSI	20	20
Flow GPM	7.1	7.1
Inlet—IPS	½"	½"
Drain—O.D. (Gravity Feed Drain)	1½"	1½"

Overall Product, in Place Performance/Capacities

	Model 24(F)	Model 24B(F)
OPERATING CAPACITY		
Racks per Hour	21	21
Dishes per Hour	525	525
Glasses per Hour	525	525
STANDARD RACK SIZE 19¾ x 19¾	1	1
OPERATING CYCLE		
Wash Time-Seconds	121	121
Rinse Time-Seconds	15	15
Total Cycle-Seconds	145	145
WASH TANK CAPACITY Gallons	5.65	5.65
RINSE TANK CAPACITY Gallons	N/A	3
WASH PUMP CAPACITY Gallons per Minute	60	60
THERMOMETERS		
Wash-°F	140-160	140-160
Rinse-°F	180-195	180-195
SHIPPING WEIGHT - Pounds BASIC MODELS (Approx.)	200	200
CARTON SIZE (W x D x H)	30" x 30" x 38"	

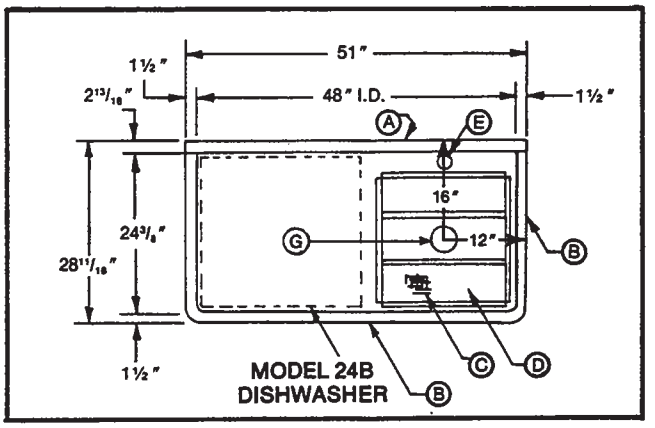
All specifications subject to change without notice.

MODEL 24 TABLE PACKAGE OPTIONS

GENERAL INFORMATION

- The system combines the 24 or 24B dishwasher with a standard Dishtable.
- 42″ wall mounted overshelf in 1-X package.
- The Dishtable and overshelf are constructed of 18-8 304 series 16 gauge stainless steel.
- Heavy duty pre-rinse spray.
- 20″ × 20″ × 6″ deep pre-rinse sink with molded scrap basket and rack slide.
- $6^{3}/_{16}$″ high backsplash.
- Left and right side panels for machine.

24-1 PACKAGE

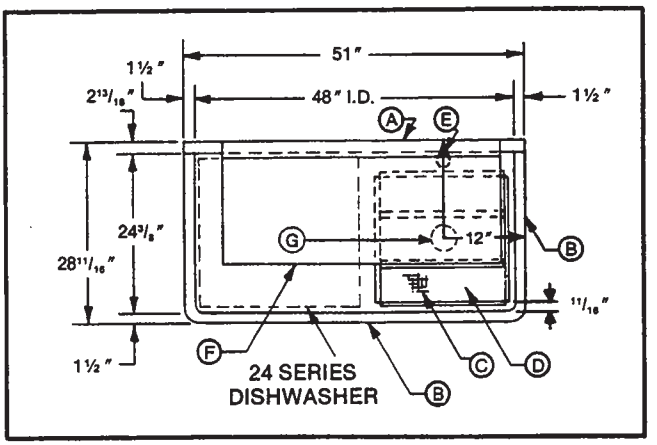


NOTES:

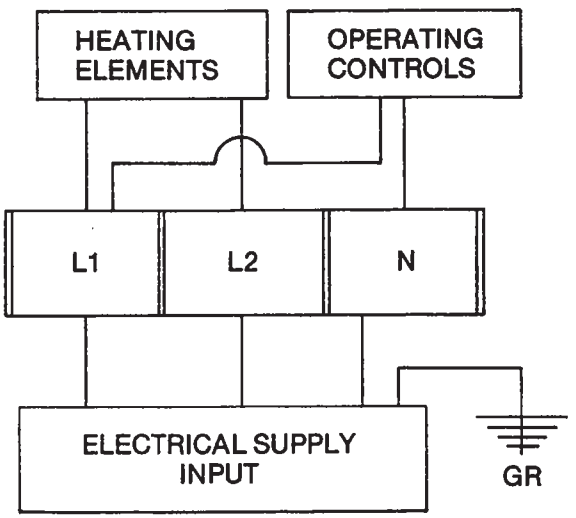
A. $6^{3}/_{16}$″ High Backsplash, 3¾″ Turnback at 45°.
B. 3″ High, 1½″ Dia. Rolled Edge.
C. Scrap Basket & "H" Bars.
D. 20″ × 20″ × 6″ Deep Pre-Rinse Sink. Drain Connection 25½ ± ½″ from Floor.
E. Heavy Duty Pre-Rinse $1^{7}/_{16}$″ Hole Size.
F. Slanted Wall Mounted Overshelf. 20″ × 42″ Long.
G. 3½″ Hole for Drain, Basket Assembly.

16 GA. s/s N.S.F. CONSTRUCTION

24-1X PACKAGE



ELECTRICAL CONNECTION DETAILS MODEL 24B ONLY



CONCEALED DAMAGE

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

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

If it is found that the shipment has concealed damage, PLEASE DO NOT RETURN IT TO US, but notify and file a claim with the carrier at once, as follows:

CONCEALED LOSS OR DAMAGE:

Concealed loss or damage means loss or damage which does not become apparent until the merchandise has been unpacked. The contents may be damaged in transit due to rough handling even though the carton may not show external damage. When the damage is discovered upon unpacking, notify the carrier within forty-eight (48) hours by phone and in writing, asking them to send their agent to fill out an inspection report. Save the cartons so he may see them and be sure to note in the report any black marks, creases, tears, crushed corners or any other marks indicating rough handling.

DO NOT RETURN DAMAGED MERCHANDISE TO US. FILE YOUR CLAIM AS ABOVE.

GENERAL INSTRUCTIONS
(INSTALLATION)

REFER TO SPECIFICATION SECTION FOR FURTHER DETAILS.

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

Uncrating 24:

1. Remove wooden blocks from carton.
2. Slide carton sleeve upward over top of dishwasher, set to one side.
3. Remove bolts holding wooden base to machine and screw in adjustable feet supplied. (Feet are inside of dishwasher.)
4. Set dishwasher in place, ready for installation

Note: NSF base cradle must be field installed on all 'F' and 'P' models. Cradle goes under machine and must be sealed in place using silicone sealant.

Installation Instructions:

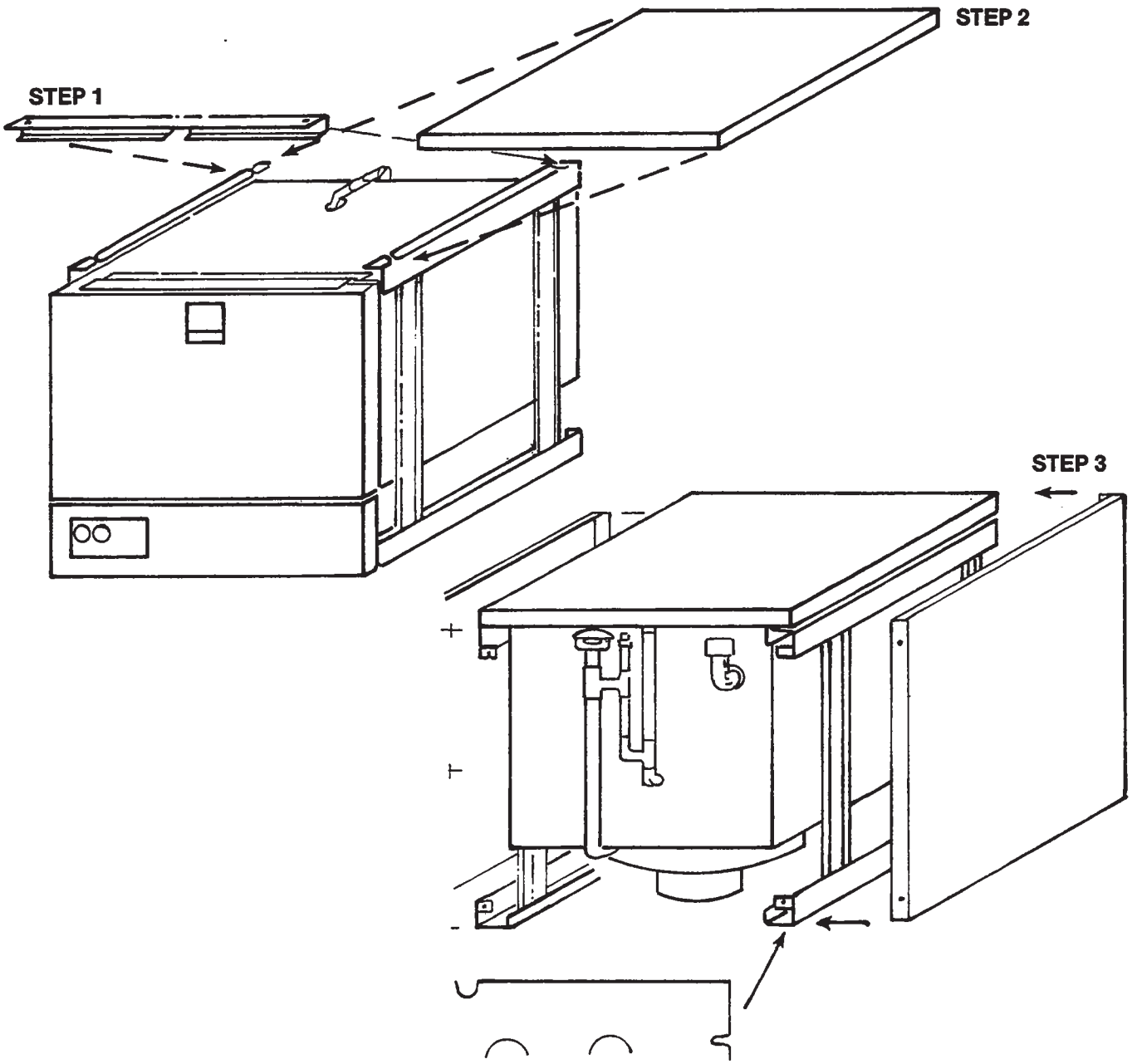
1. The dishwasher can be leveled to the proper height by adjusting the feet on the four corners. **The front of the unit must be ¼" to ½" higher than the back.**
2. Refer to the dimensional data sketch for connections.
3. The drain from the machine is a GRAVITY DRAIN SYSTEM and should have the proper drop from the machine to an open floor drain, vented to atmosphere. 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, 7" from floor.
4. IMPORTANT — PLEASE READ — Located on the back upper left corner of the unit is a steam equalizing vent. This vent in no way should be blocked or prevented from allowing steam to be vented to the outside of the unit or from under the cabinet in which the unit is installed. Never pipe the steam downward toward the floor. (SEE PAGE 5 IF IT IS BEING INSTALLED UNDER A COUNTER.)
5. The electrical connections should be made to the terminal board located at the center front. The terminals are marked L1, L2, and Neutral. Install proper circuit breaker and conduit size to conform with local and/or national codes (standards). USE COPPER WIRE ONLY (#8 AWG).

Installation of Top and Sides on 'F' and 'P' Models:

1. Insert rear barrier with angle facing out. Install prior to placing top on uit.
2. Place top on unit, making sure front lip is under flange, but does not interfere with latch or switch mechanism. Place studs in holes on back of unit. Use ¼-20 nuts.

NOTE: For 'P' models, omit steps 1 and 2.

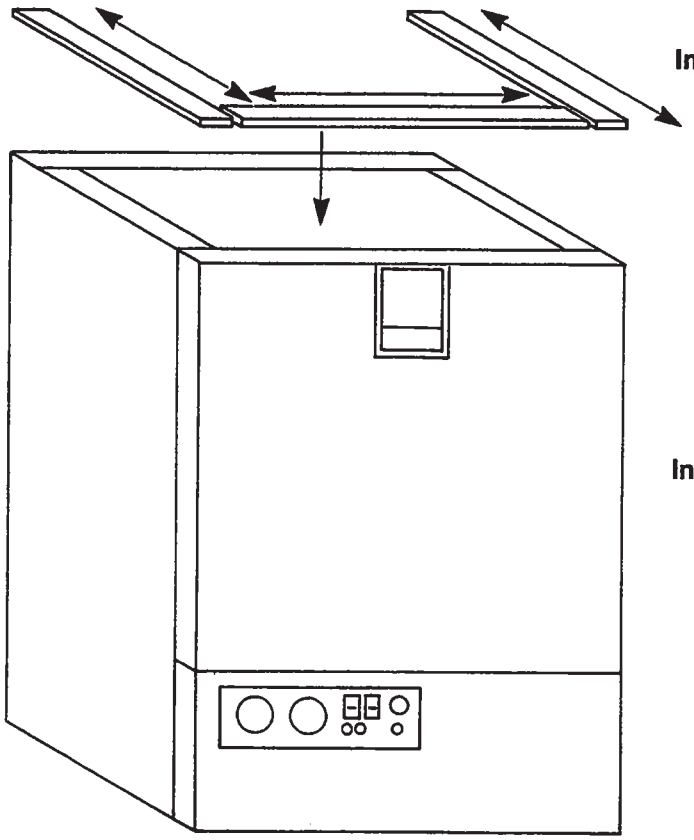
3. Remove kickplate. Open door and place side panel lip at door opening. Work panel under top by pushing with palm of hand. Put self-tapping screws in four places. Both side panels are installed in the same way. Note: If unit being installed is an 'F' model, do not put the bottom rear self-tapping screw in each panel until step 4.
4. 'F' models require a back panel. For installation, slide back panel behind lip of side panels and secure with the two remaining self-tapping screws.



Installation of Model 24 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 24 table is a 6 foot length of ¼" 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 the 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, fit it in between the side pieces and cut it to length.
4. Remove the backing and set the strips in place.

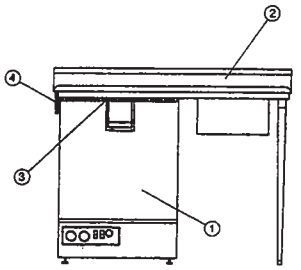
Instructions for installation under a porous counter top:

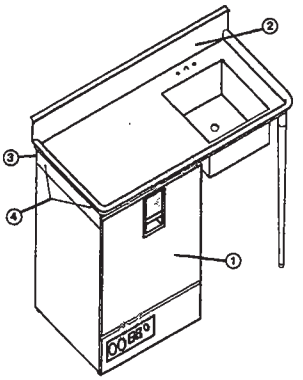
1. If possible, a hole should be cut through the counter top directly above the equalizing vent. A piece of 1¼" OD pipe is then inserted through the hole into the vent opening and piped to the outside.
2. If cutting a hole in the counter is not possible, then a piece of stainless steel 36" wide by 36" long bend in the middle at 90° should be centered directly over the vent to allow the steam to condense on it when it comes out of the vent.
3. It is very important that this vent be kept open and cool air allowed to circulate around the unit.

Installation of Model 24 Dishwasher Under Dishtable:

1. On the end of the table, locate bracket #4 opposite the sink end.
2. A square rubber gasket #3 is supplied and should be secured to top frame of dishwasher with caulk or suitable adhesive.
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 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.

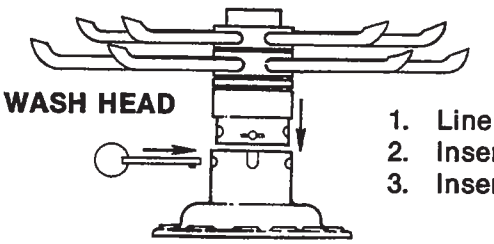




Removal of Pan Strainer for Cleaning: (Wash and rinse head assemblies must be removed prior to removing strainer.)

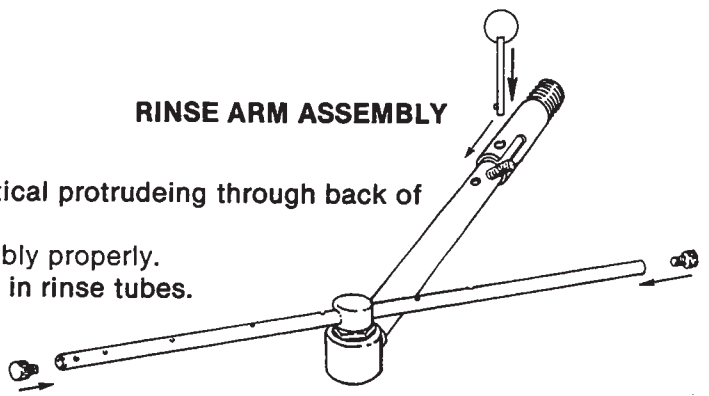
1. Turn machine off and drain by depressing drain switch and releasing.
2. Remove holding pin from rinse feed pipe, remove rinse head assembly by pulling forward.
3. Remove holding pin from upper pump housing, wash head may now be lifted out.
4. Pan strainer now accessible, lift out and clean thoroughly.
5. Clean around pump intake with bristle brush.
6. Replace stainer pan.
7. Re-install wash and rinse head assemblies.
8. Clean strainer pan daily or as needed to insure proper machine operation.

Installation of Wash Head and Rinse Arm Assemblies: (Items disassembled for shipment)



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

RINSE ARM ASSEMBLY



1. Line up stud to match with slot in nipple.
2. Insert rinse arm assembly into female receptical protrudeing through back of machine.
3. Insert lanyard pin to secure rinse arm assembly properly.
4. Make certain end plugs are secured properly in rinse tubes.

INSTALLATION CHECKLIST

Please check off the following items as they are completed. All items must be completed and checked off before proceeding to machine operation.

In the event that installation information is needed, please call one of Jackson Products authorized service agencies, dealership where purchased or Jackson Products Company Technical Assistance (813) 985-8144.

1. Is machine pitched up ¼-½ inch in front than rear?
2. For gravity drain systems — is machine's gravity drain connected to a open floor drain "vented to atmosphere"?
3. Is machine service voltage at L1 and L2 208-230 volts?
4. Is machine service voltage at L1 and neutral 104-120V?
5. Is machine properly grounded?
6. Is machine service breaker properly sized to total amp load as specified on data plate?
7. Is machine supplied with 140°F hot water at 20 PSI flow pressure with capacity of 52.3 gallons per hour?
8. Is water supply line to machine a minimum of ½ inch?
9. Is a pressure reducing valve installed on inlet water line for pressures greater than 20 PSI flow?
10. Is equalizing vent vented to atompshere?
11. Is pump intake strainer installed?
12. Is lower rinse spray arm installed?
13. Is wash spray head installed?

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 with hose.
3. Place dishes and cups in dish rack, cups upside down.
4. Place glasses and silverware in combination glass-silverware rack, glasses upside down. Scatter silverware loosely on bottom.
   Note: Silverware in the upright position washes and rinses better than lying flat. These silverware compartment racks are available through your dealer or Service Agency.

24B/BF Operating Instructions:

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

Detergent Recommendations and Rinse Additives:

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

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

GENERAL INSTRUCTIONS

(PREVENTIVE MAINTENANCE)

USER SERVICEABLE AREAS

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

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

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

2. **Clean around overflow strainers and drain hole.**
   a. Clean around overflow and strainer pan.
   b. Clean around pump intake (toothbrush makes excellent tool for cleaning).

3. **Clean Y-strainer on incoming water line. (Water to machine must be turned off for this operation)**
   a. Remove plug and clean strainer.

4. **Clean rinse tubes.**
   a. Remove rinse assembly by disconnecting rinse feed pipe and removing end plugs on lower rinse.
   b. Clean all rinse tubes and feed pipes with special brush supplied.
   c. If spray holes in the rinse tubes are clogged, they may be cleaned with a pointed object.

5. **Clean water level probe in sump with brush to remove any scale or build-up.**

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

7. **Clean any deposits which may have built up on exterior moving parts.**
   a. Clean around door gasket.
   b. Using a soft bristle brush, clean around switches on exterior of control panel. (Use no water.)
   c. Use soft bristle brush, dip in wash tank water and scrub inside door around gasket and hinges. Use clean cloth or paper towel to wipe off loose residue.

HARD WATER AREAS

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

REMOVAL of RINSE and/or WASH HEAD ASSEMBLIES

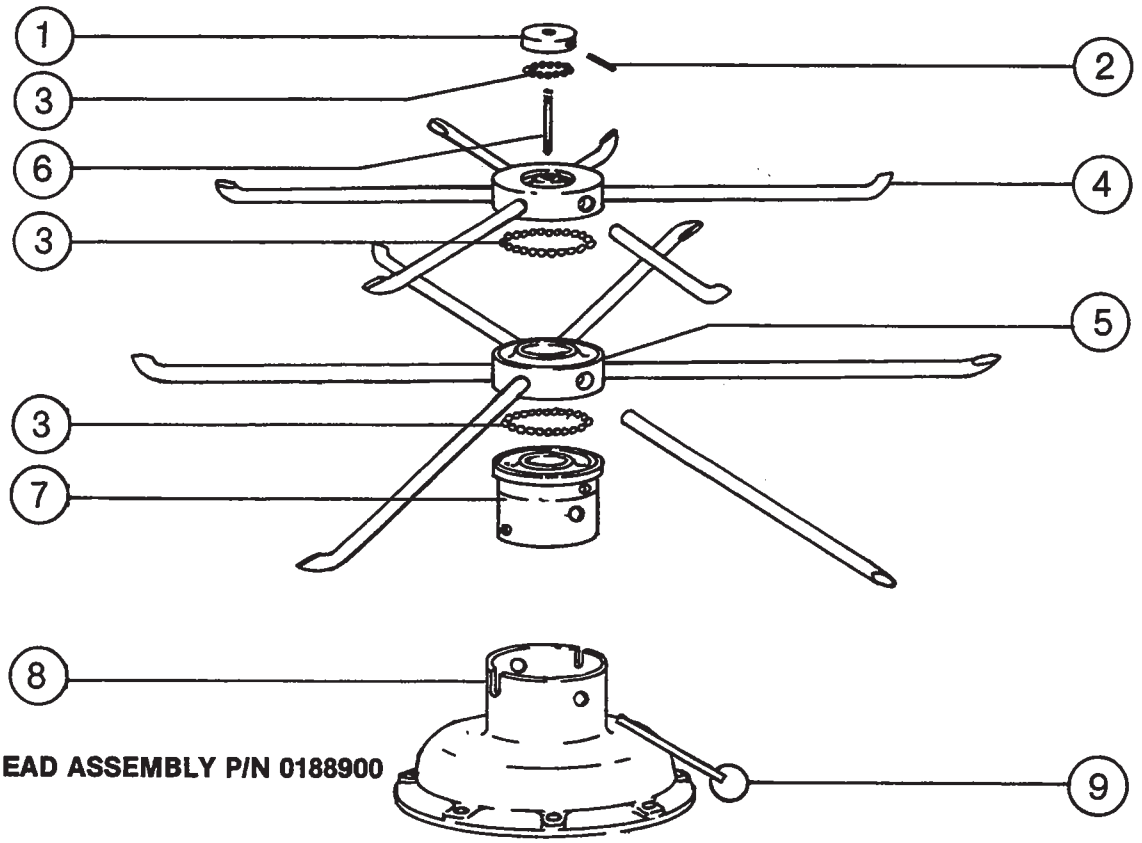
(GENERAL INSTRUCTIONS)

USER SERVICEABLE PARTS

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

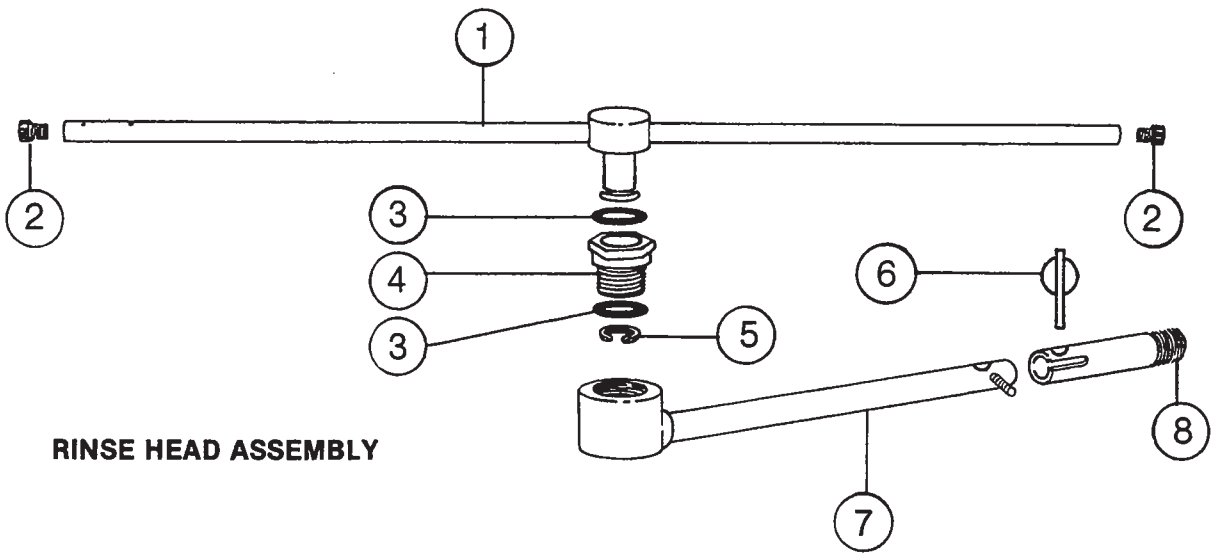
1. Drain unit by placing switch in the off/drain position.
2. Open the door and allow the unit a few minutes to cool off.
3. Remove the pin holding the rinse feed pipe. Pull the feed pipe out of the nipple and lay it to one side.
4. Remove wash head assembly by pulling out the holding pin and lifting assembly. Place the wash head on a table for disassembly.
5. Locate Allen head set screw in the wash head cap, insert Allen wrench and loosen screw by turning counterclockwise.
6. Turn wash head cap counterclockwise until cap is removed and put cap in safe place.
7. Remove ¼" stainless ball bearings carefully and put it in a receptacle in a safe place.
8. Lift and remove small manifold with short tubes. Put it in a safe place.
9. Remove ¼" ball bearing in similar method to step #7.
10. Lift and remove large manifold with large length tubes similar to step #8.
11. Clean ball bearings by soaking in de-liming solution.
12. Ball bearing race ways may be cleaned by either brushing with de-liming solution (toothbrush makes excellent tool) or gently clean by rubbing with fine sandpaper or emery cloth.
13. Rinse ball bearings and manifolds thoroughly.
14. To reassemble, first fill lower race to capacity with ¼" ball bearings, then remove one. This will give proper movement needed during rotation of assembly.
15. Replace lower manifold and fill race fully with ¼" ball bearings. Repeat, removing one only.
16. Replace upper manifolds and repeat necessary parts of step #14.
17. Replace wash cap by screwing on center shaft clockwise, finger tight.
18. Back off wash cap about ¼ turn and tighten Allen set screw.
19. Rotate manifolds in opposite directions; see if they rotate freely. A rule of thumb is to select the longest tube in the bottom manifold and make sure it moves up and down at least ⅛" and no more than ¼".
20. Replace wash head assembly and rinse arm.
21. Close the front door and refill dishwasher.
22. Run through several cycles and recheck wash arms for easy movement. Adjust if necessary.

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



WASH HEAD ASSEMBLY P/N 0188900

ITEM	P/N	DESCRIPTION
1.	0186500	WASH HEAD CAP WITH RACE
2.	0187000	WASH HEAD CAP SET SCREW
3.	0194000	WASH HEAD BEARING ¼" S/S
4.	0189000	WASH HEAD SMALL MANIFOLD w/TUBES
5.	0189500	WASH HEAD LARGE MANIFOLD w/TUBES
6.	0187500	WASH HEAD CENTER SHAFT
7.	0193601	WASH HEAD FIXED RACE
8.	0109600	UPPER PUMP HOUSING
9.	0188601	WASH HEAD ASSEMBLY RETAINING PIN w/RING



RINSE HEAD ASSEMBLY

ITEM	P/N	DESCRIPTION
1.	0125200	RINSE HEAD ARM
2.	0126800	RINSE HEAD END PLUGS
3.	0126000	RINSE HEAD NYLATRON WASHER
4.	0125500	RINSE HEAD HEX BRUSHING S/S
5.	0126500	RINSE HEAD SNAP RINGS S/S
6.	0137301	RINSE FEED PIPE LANYARD PIN
7.	0137200	RINSE FEED PIPE (LOWER)
8.	0137202	RINSE FEED PIPE NIPPLE

TIMER for MODEL 24 DISHWASHERS

General Description:

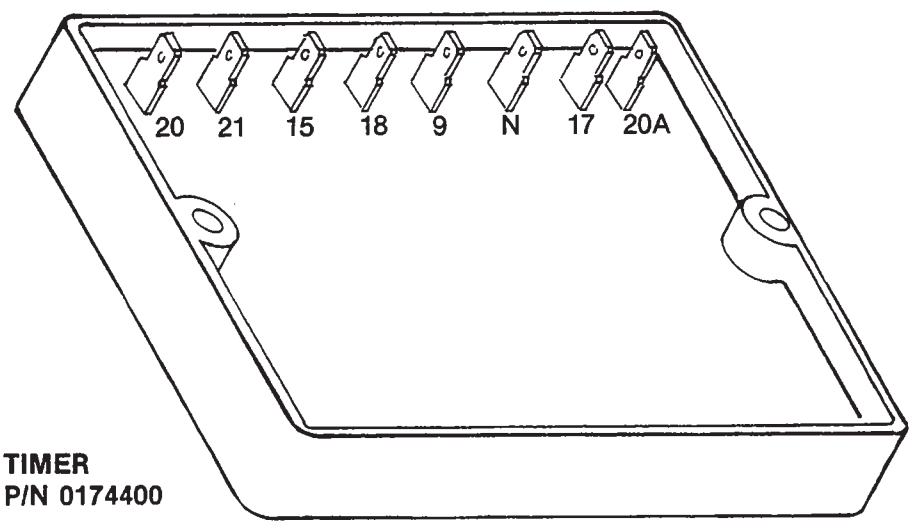
The timer is a solid state, 4 channel CMOS device with a 120V, 50 or 60 cycle, 1 amp rating. All components are environmentally encapsulated and quick connect terminals are marked for corresponding wires.

Principle of Operation:

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

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

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



TIMER
P/N 0174400

FUNCTION of SWITCHES, CIRCUIT BREAKER and INDICATING LIGHTS

On/Fill Off/Drain Switch: P/N 0155600	This switch serves as the main control for the unit. When pressed into the 'on' position, it activates the heater controls, the automatic fill and readies the unit for the wash cycle. When turned off, all power is off. When pushed to drain position and released, the unit will drain and turn itself off.
Power Light: P/N 0083518	This light comes on when the unit is turned on and goes off when the unit is turned off.
Door Switch: P/N 0164000	Located on top of the unit, behind the latch bracket, this switch serves three functions. When the door is opened, it will reset the timer to the cycle starting position. When door is closed, it will start the automatic cycle. If door should be opened during a cycle, it would act as a safety switch by turning the unit off.
Cycle Light: P/N 0083507	This green light comes on only when the automatic cycle is in progress and goes off when the cycle is complete.
Manual Wash Switch: P/N 0159700	This switch is used to bypass the timer and operate the wash pump manually. The wash pump will run as long as this switch is 'on'. Its prime purpose is to extend the wash period for heavily soiled dishes, but it may be used for deliming.
Heater Reset Button: P/N 0169601	This is the reset button on a thermostatic overload. Its purpose is to provide a secondary protection for the wash tank heater element. If the heater element should come on while the wash tank is empty, this button would pop out, turning off the element and signaling a problem with the automatic fill.
Reset Light: P/N 0083518	This light comes on only when the heater reset trips off. Its purpose is to signal that there is a problem.

THERMOSTAT ADJUSTMENT

The thermostat can be adjusted by turning screw #1 (see picture) on the thermostat control box cover. (Remember the present setting, in case the problems are elsewhere in the control circuit.) A CW rotation is used to obtain a lower temperature setting and a CCW rotation is used to obtain a higher temperature setting. A ⅛ turn of screw #1 changes the temperature approximately 15°F. If screw #1 is turned all the way to its stop in either direction, adjust screw #2 as follows.

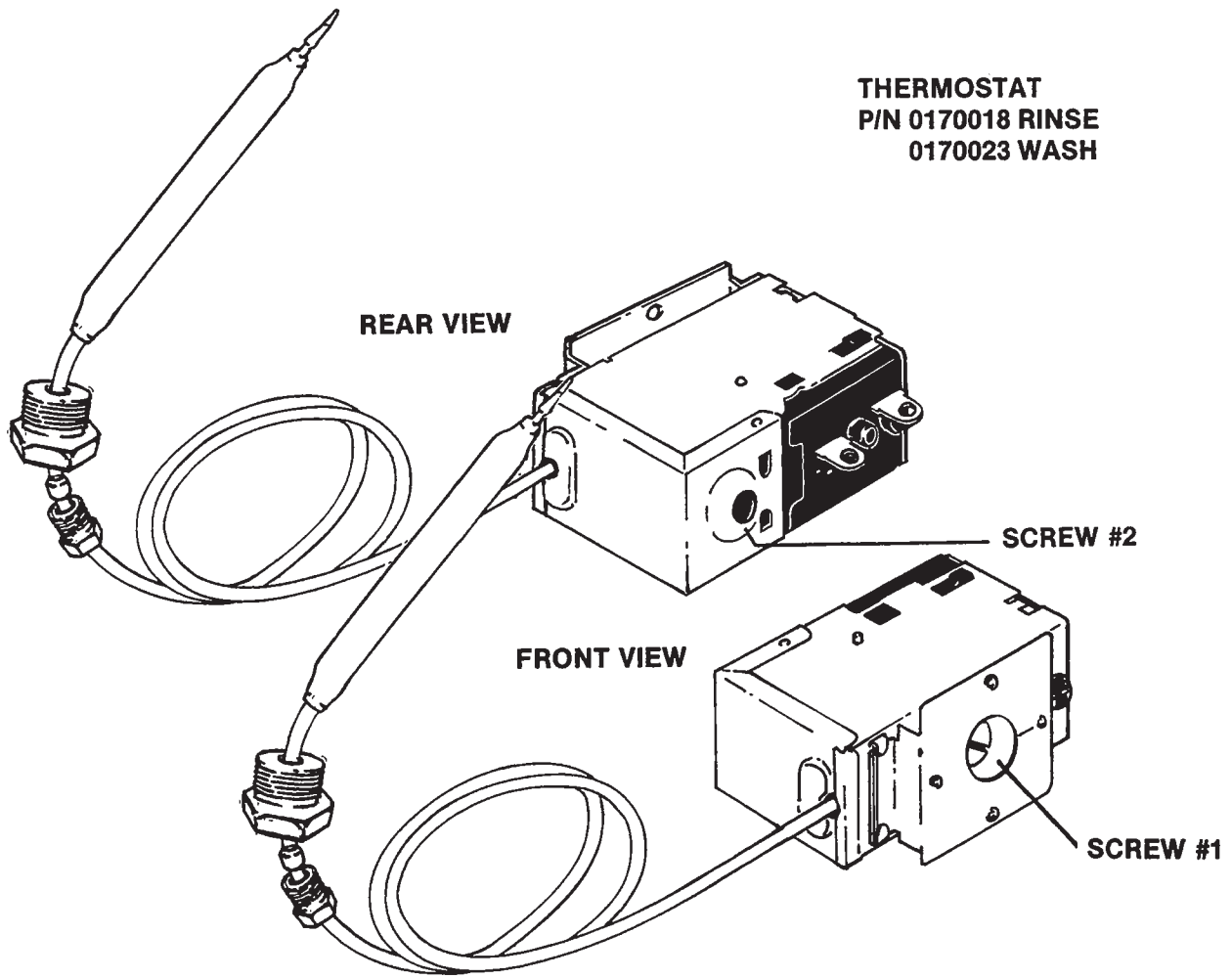
Note: Do not touch the screw sealed with red paint. When adjusting screw #2, power should be disconnected during adjustment.

Set screw #1 so that it can be turned equal distances in either direction, then:
— if screw #1 stopped while turning in CW direction, turn screw #2 in CW direction, slowly and only ⅛ of a turn or less per complete cycle of the unit.

— if screw #1 stopped while turning in CCW direction, turn screw #2 in CCW direction, slowly and only ⅛ of a turn or less per complete cycle of the unit.

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

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



RINSE TANK HEATER SYSTEM

Function:

The Rinse Tank Heater System is electrically connected in the circuit with the control system functioning on 110/130V and the power system functioning on 208/230V for both systems. The heat circuit is controlled by the 'on/fill' switch (mounted on front panel) and a thermostat (mounted near thermometer) which activates the coil on the heat relay. When higher temperature is required, power is applied to the heaters when the contacts of the heat relay are closed. Should the rinse tank thermometer read either too high or too low, follow checkout below.

Checkout of Heater System for Rinse Tank: (Refer to drawing, Figure #2)

Note: The following checkout should be done by a qualified service person or electrician.

1. Turn off power to machine by tripping circuit breaker to 'off' position.
2. Remove front kick plate below door.
3. Make sure rinse temperature is below 180°.
4. Reapply power and observe heat relay (2-pole) letter G, figure 2, as 'on/fill' switch is turned on and off several times.

AA If heat relay contacts do not close, with 'on/fill' switch on:
   1. Check power supply at Position 1 on terminal board X. Voltage should be 110VAC.
   2. Check Position 3; there should be 'zero' volts there. If not, readjust thermostat per thermostat instructions.
   3. If voltage is being applied to Position 1, then the relay should be replaced; coil on relay probably defective.

BB To determine if elements are working:
   1. There's an insulated movable bar on the heat relay across the top of the two contacts. With an insulated probe, depress the bar and observe rinse thermometer; the temperature should rise noticeably in a minute or two. If it moves **very** slowly, it would indicate that one element is defective. If it moves consistently higher at a good rate, the elements are okay.
      Note: A check with an amp probe, if available, can be made.
      The element should draw 22-25 amps. Replace element if found defective.

CC If the heat relay closes:
   1. Check power supply at Position 4 on terminal board X, right hand view. It should be 220V approx. If not, check circuit breaker at customer's panel; replace if defective.
   2. Check power at Position 5; voltage should be 220V. If not, check connections and wires for breaks; replace as necessary.
   3. With 'on/fill' switch on and relay closed, check power at Position 6; voltage should be 220V. If not, replace heat relay.
   4. If No. 3 above checks out okay, check at Position 7; voltage should be 220V. If not, check wiring from heat relay to elements for loose connections or broken wires; repair as necessary.

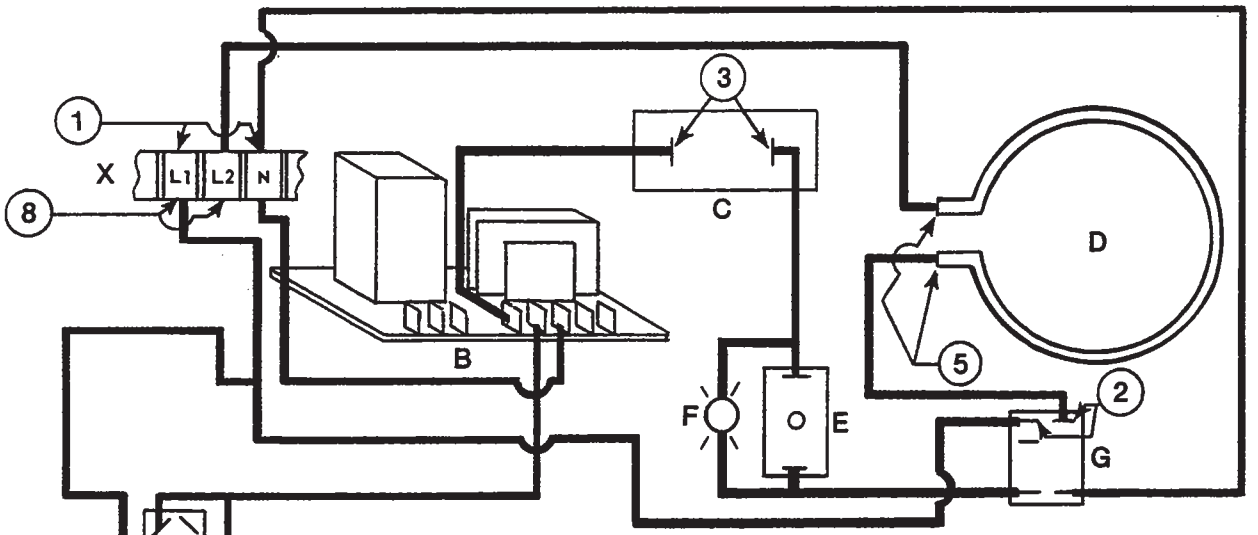


FIGURE #1 WASH TANK HEATER SYSTEM

SAME TERMINAL BOARD AS X ABOVE

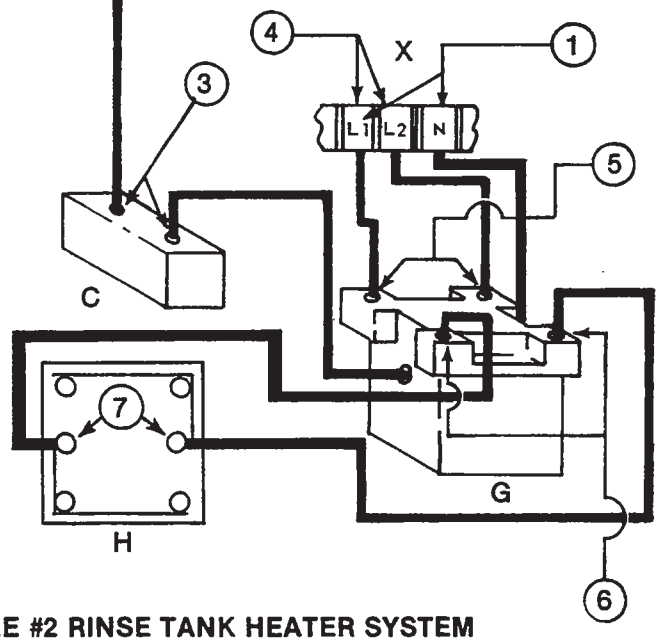


FIGURE #2 RINSE TANK HEATER SYSTEM

A - ON/FILL SWITCH
B - WATER LEVEL CONTROL
C - THERMOSTAT
D - (WASH) RING HEATER
E - THERMOSTATIC OVERLOAD
F - RESET LIGHT
G - RELAY
H - RINSE HEATER
X - TERMINAL BOARD

WASH TANK HEATER SYSTEM

Function:

The Wash Tank Heater system is electrically connected in the circuit, with the control system functioning on 110V and the power system functioning on 208/230V. (On models without built-in booster, power circuit is 110V.) The heat circuit is controlled by the water level control (mounted right side of control panel), thermostat (mounted near thermometers), and thermostatic overload (located beside manual wash switch), and wash heat relay (R-2). When higher temperature is required, power is applied to the heater when the contacts of the heat relay are closed. Should the wash tank thermometer read either too high or too low, follow checkout below.

Checkout of Heater System for Wash Tank: (Refer to drawing, Figure 1.)

Note: The following checkout should be done by qualified service personnel or electrician.

1. Turn off power to machine by turning circuit breaker to 'off' position.
2. Remove front kickplate below door.
3. Turn circuit breaker back on.
4. With door closed and latched, turn the 'on/fill' switch to the 'on/fill' position. Machine should start to fill automatically. Observe the water level control, letter B. When machine has filled for approximately 25 seconds, contact points in clear plastic relay should move, and an automatic cycle should start. Note: This will happen everytime 'on/fill' switch is turned off and back on.

AA If water level control relay doesn't close, refer to page on Water Level Control function and checkout.

BB If water level control is functioning properly:
   1. Check voltage at Position 1 on terminal board X. Voltage should be 110.
   2. Check Position 3, Figure 1; there should be no voltage. If there is voltage, then adjust thermostat (refer to page on Thermostat Adjustment).
   3. Check reset light. If light is on, push reset button.
   4. Check voltage at Position 2. There should be no voltage. If there is voltage, relay should be replaced; coil is probably defective.
   5. Check Position 5, Figure 1. Voltage should be 220. If not, check Position 8. There should be 220V.
   6. Temperature should rise **slowly**. A check with an amp probe would indicate if the element is working. Replace element if defective.

WATER LEVEL CONTROL

AS USED ON 24

P/N 0204400 (110V, 60 cycle)

Function:

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

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

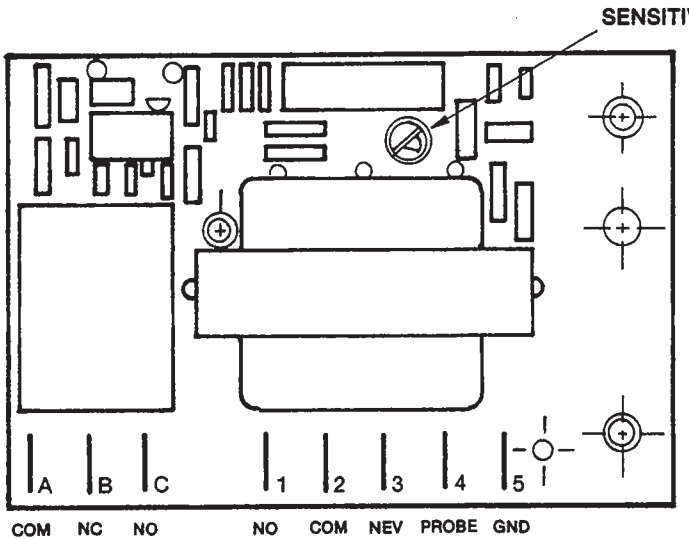
The control is a single probe resistance sensing device designed to maintain water level. When water level reaches the probe and covers it, a fixed time delay of 25 seconds is initiated. When the delay times out, the electromechanical relay energizes, opening the 'Auto/Fill' circuit and closing the wash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

Symptoms of Level Control Failure:

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

Proceed with Checkouts:

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



Sensitivity may need adjustment up or down to different water conditions.

SERVICE INSTRUCTIONS
(INCOMING WATER SOLENOID VALVE)

SOLENOID VALVE
P/N 0142100
(110V, used on 60 cycle machine)

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 extention 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.

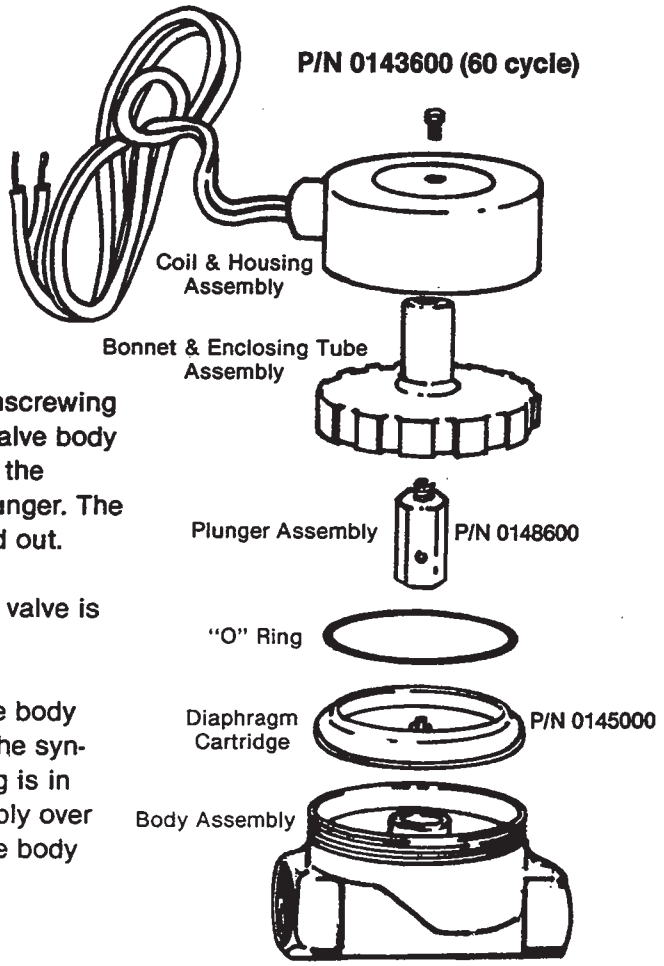
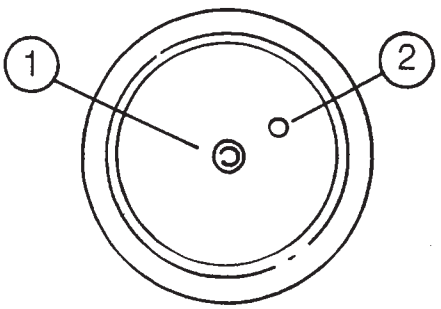


FIG.3

DIAPHRAGM CARTRIDGE



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

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

BEWARE of COUNTERFEITING!

No, not money, but counterfeiting of parts that could cost you hundreds of dollars.

The only difference between this form of counterfeiting and monetary counterfeiting is that is may be legal. In our economy it's called competitive business. However, as an end user, are you aware of your liability if such a part fails and causes injury to one of your customers or employees? Your customer may bring suit against you, and your employee may file a workmen's compensation claim. In such a case, do you have sufficient recourse against the company from which you bought the part? Do you realize that many of these companies may not carry adequate liability insurance to protect themselves from such a claim?

Factory Authorized parts are purchased directly from the manufacturer that produces the equipment. Typically, the manufacturer assumes responsibility for the replacement parts, when installed correctly. These parts have passed numerous rigid tests and are either UL (electrical), AGA (gas), or NSF (all) approved.

Most manufacturers will void the warranty of equipment if counterfeit parts are installed. In some cases installation of counterfeit parts will relieve the manufacturer from liability for the equipment. No one can argue that counterfeit parts are competitively priced — although sometimes at the expense of quality. The companies that manufacture counterfeit parts often do not have the same overhead as the manufacturer that produces the original equipment — expenses incurred for continuous rigid testing, inspection, insurance, warranty service and the like.

The next time you purchase a replacement part for "the best price", ask if it is a FACTORY AUTHORIZED part. Then you can consider if the risk is worth the "savings".

If you are uncertain whether you have purchased a counterfeit part, please bring it to us for inspection. We are pleased to help you reduce your liability — and costs — whenever we can.

GENUINE PARTS PROTECT YOU ALWAYS.

TROUBLE SHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
Water overflow out bottom of front door when wash pump is operating.	Machine not level.	Level machine. Slight tilt to rear
	Overflow drain clogged.	Remove obstruction, checking inside of machine first.
	Water level in machine's wash reservoir too high.	Solenoid valve not closing at end of fill or rinse cycle causing excessive water problem.
	Detergent foaming.	Reduce quantity of detergent.
	Equalizing vent blocked.	Allow free steam flow.
Wash motor doesn't operate on manual wash.	Wires broken or loose.	Check all wires in the motor and reconnect as necessary.
	Defective manual wash switch.	Replace.
	Bad bearing, noticeable by noisy bearings or locked drive shaft.	Replace.
	Defective motor starting relay. (Typical - motor hums.)	Replace.

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

Motor runs on manual wash but doesn't operate on automatic (rinse operates okay on both manual and automatic cycles.)	Defective timer.	Replace timer.
	Defective circuit in manual wash switch.	Replace switch.
No water comes through the rinse arms when the 'on/fill' switch is depressed.	Hand water valve to machine not turned on.	Turn on water valve.
	Defective coil on solenoid valve.	Replace coil.
	Probes are dirty or coated.	Clean probes.
	Defective water level control.	Replace.
Little or no water coming through rinse assemblies.	Limed up rinse heads or piping.	Begin by cleaning rinse heads using instructions for de-liming. If this isn't satisfactory, then clean the rinse feed pipes.
	Water pressure low.	Increase pipe size to machine.

TROUBLE SHOOTING GUIDE

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

Note: In disassembling solenoid valve, use instructions shown on separate page.

Rinse water runs continuously with power applied to machine, but when circuit breaker to machine is turned off, water stops.	Defective water level control.	Replace.
	Probes are dirty or coated.	Clean probes.

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.

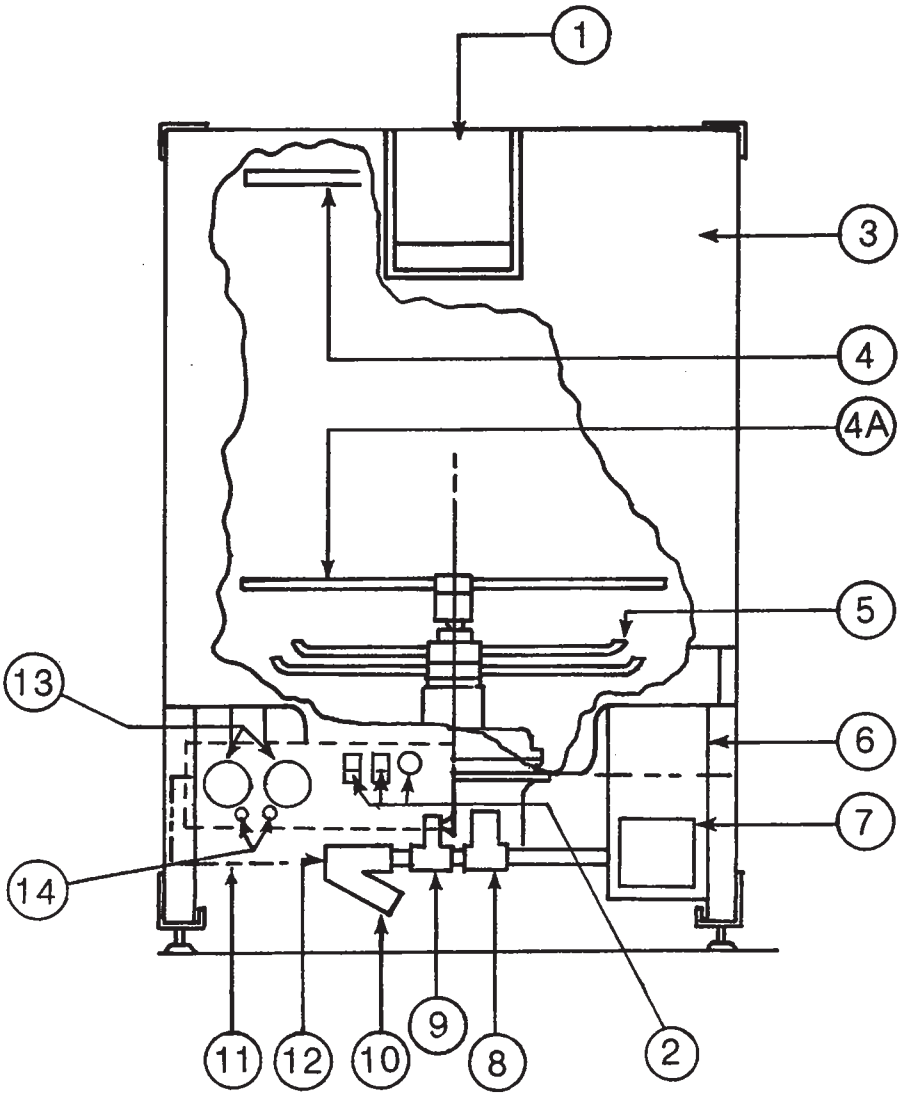
Wash temperature not at required reading on thermometer.	Defective thermometer.	Using a thermometer (fast reading type that's known to be correct), insert in wash rerservoir and check reading against wash thermometer on machine. If machine thermometer isn't correct within three or four degrees, replace.
	Rinse temperature not at required temperature, causing wash temperature to be lowered during rinse cycle.	Check out rinse heat using heater checkout system page in manual.

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

TROUBLE SHOOTING GUIDE

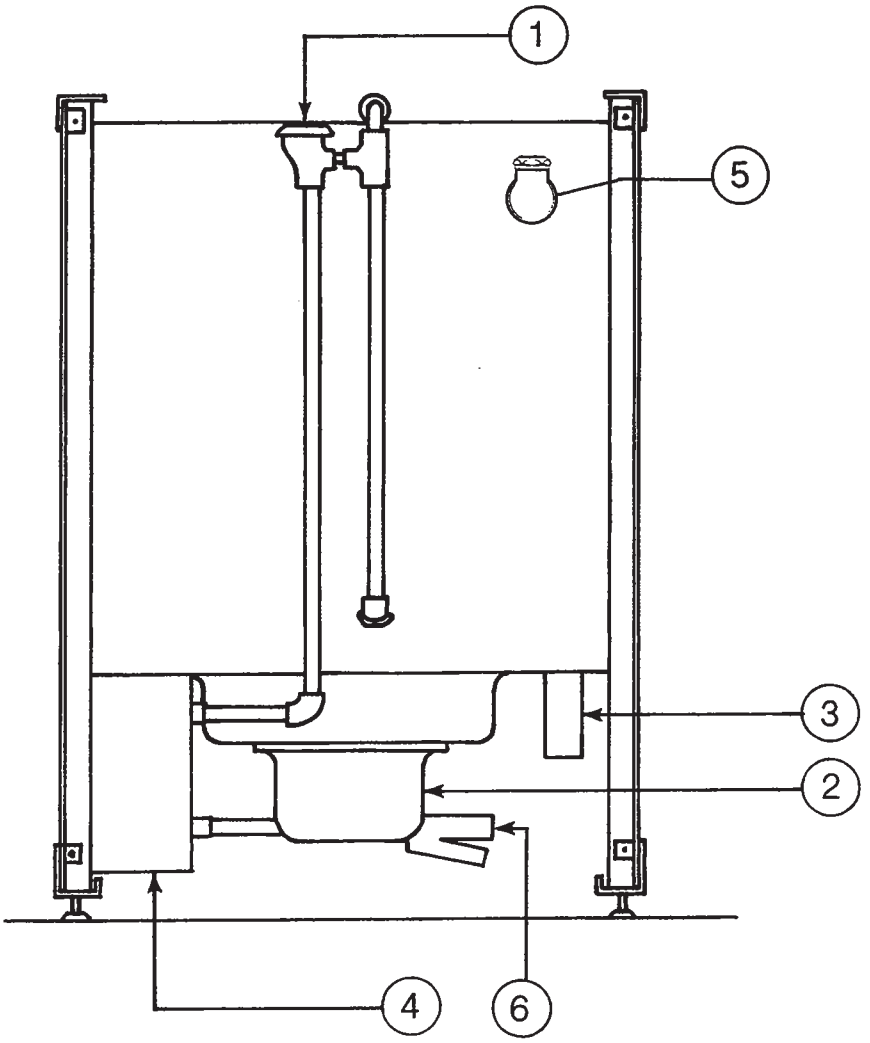
PROBLEM	CAUSE	SOLUTION
	Thermostat defective.	Adjust using instructions on thermostat page and heater system's checkout page. Replace if necessary.
	Water level protection control defective.	Replace. (Auto/fill would run continuously.)
	Heater element defective.	Replace.
	R-2 defective.	Replace.
Rinse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

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



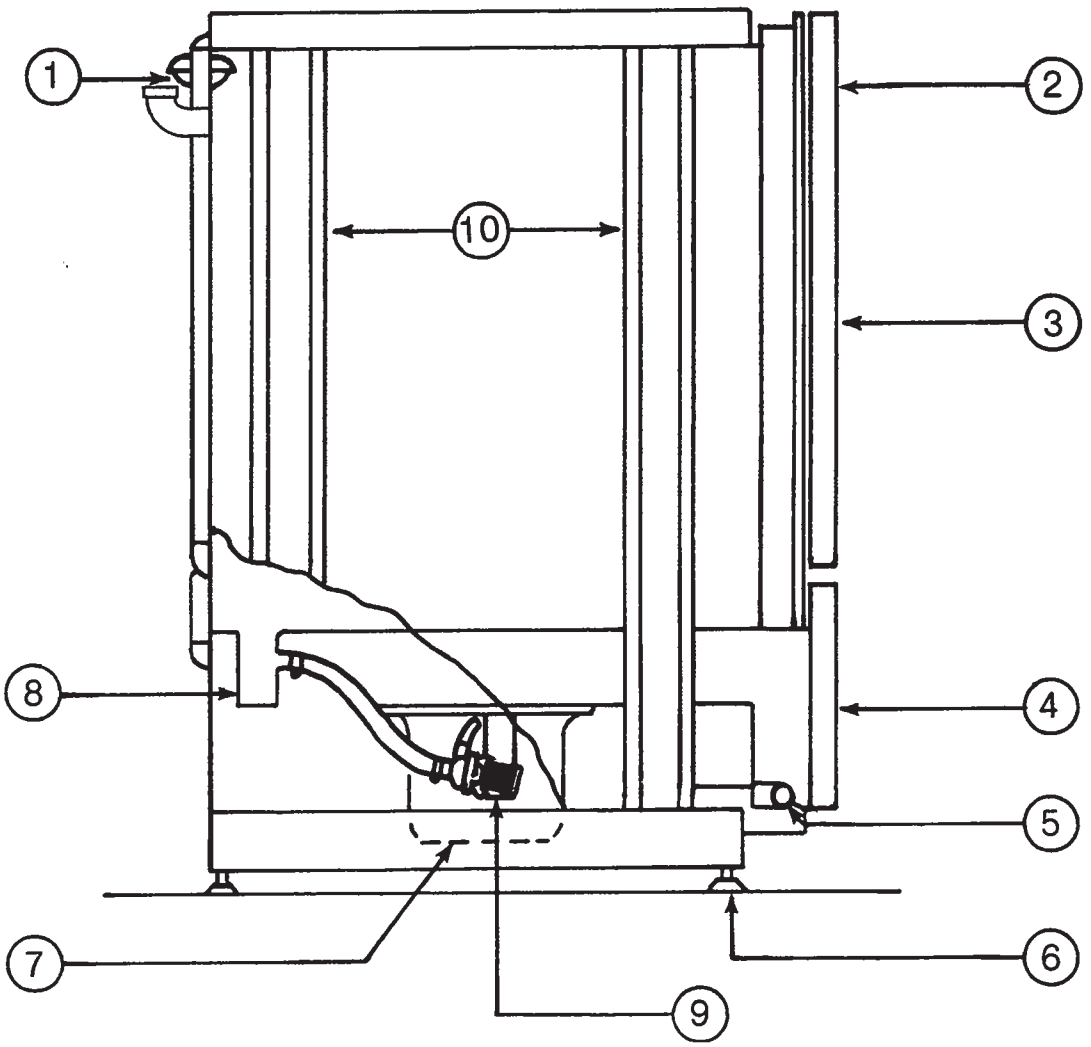
FRONT VIEW

ITEM	P/N	DESCRIPTION
1.	0052700	DOOR HANDLE ASSEMBLY
2.		SWITCHES
3.	0052600	FRONT DOOR
4.	0125100	RINSE ASSEMBLY, UPPER
4A.	0125200	RINSE ASSEMBLY, LOWER
5.	0188900	WASH ASSEMBLY
6.	0005700	BOOSTER TANK
7.	0060000	HEATER ELEMENTS
8.	0142100	SOLENOID, (110V, used on 60 cycle machines)
9.	0185000	VALVE FOR HEALTH INSPECTOR GAUGE
10.	0153600	"Y" STRAINER
11.		ELECTRIC PANEL
12.		INCOMING WATER CONNECTION
13.	0169100	THERMOMETERS
14.	0170018	THERMOSTAT, RINSE
	(or)	
	0170023	THERMOSTAT, WASH



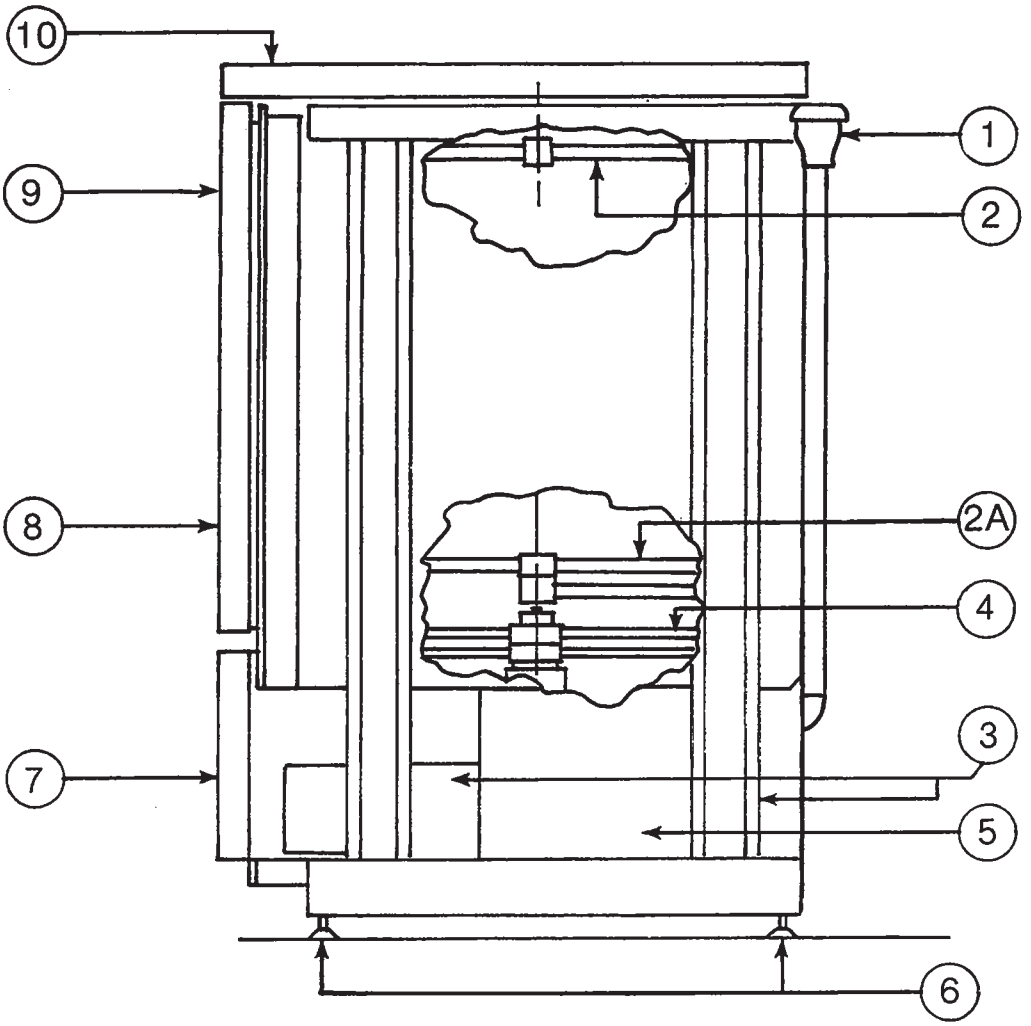
BACK VIEW

ITEM	P/N	DESCRIPTION
1.	0184101	VACUUM BREAKER ASSEMBLY
2.	0108100	PUMP & MOTOR ASSSEMBLY, (110V, 60 cycle)
3.		DRAIN — GRAVITY FEED
4.	0005700	BOOSTER TANK
5.		EQUALIZING VENT
6.		INCOMING WATER CONNECTION



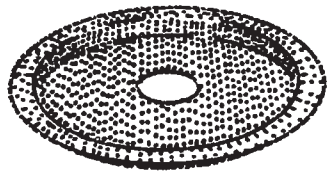
LEFT SIDE VIEW

ITEM	P/N	DESCRIPTION
1.	0184101	VACUUM BREAKER ASSEMBLY
2.	0052700	DOOR HANDLE ASSEMBLY
3.	0052600	FRONT DOOR, OUTER
4.	0054902	KICK PANEL
5.		INCOMING WATER CONNECTION
6.	0083400	ADJUSTING FEET
7.	0108100	PUMP & MOTOR ASSEMBLY, (110V, 60 cycle)
8.		DRAIN — GRAVITY FEED
9.	0142400	DRAIN SOLENOID VALVE, (110V, used on 60 cycle machine)
10.	0004001	SIDE FRAME & BRACE, LEFT HAND



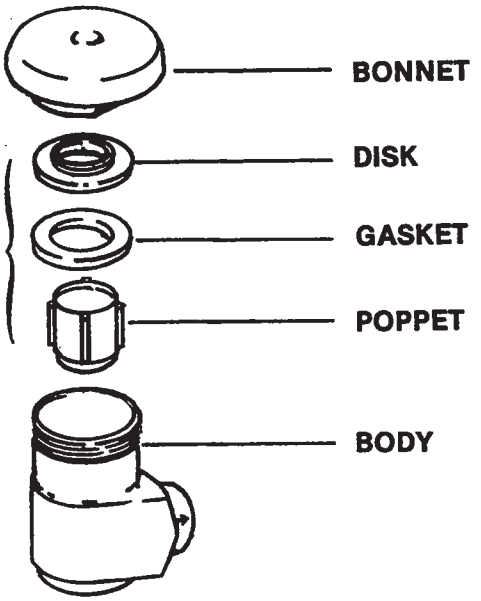
RIGHT SIDE VIEW

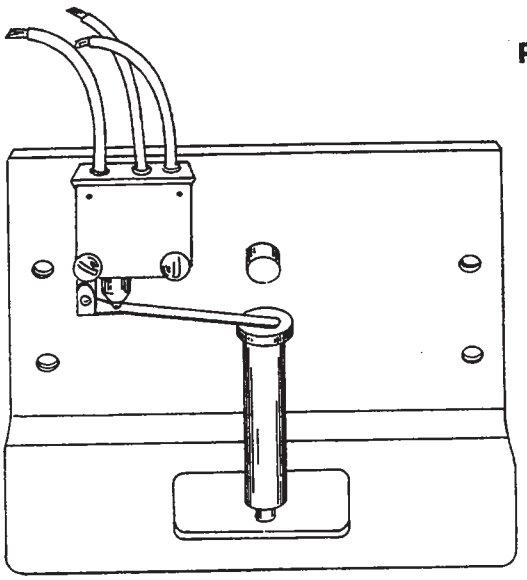
ITEM	P/N	DESCRIPTION
1.	0184101	VACUUM BREAKER ASSEMBLY
2.	0125100	RINSE ASSEMBLY, UPPER
2A.	0125200	RINSE ASSEMBLY, LOWER
3.	0004000	SIDE FRAME & BRACE, RIGHT HAND
4.	0188900	WASH ASSEMBLY
5.	0005700	BOOSTER TANK
6.	0083400	ADJUSTING FEET
7.	0054902	KICK PANEL
8.	0052600	FRONT DOOR
9.	0052700	DOOR HANDLE ASSEMBLY
10.	0054700	OPTIONAL TOP



PAN STRAINER P/N 0153100

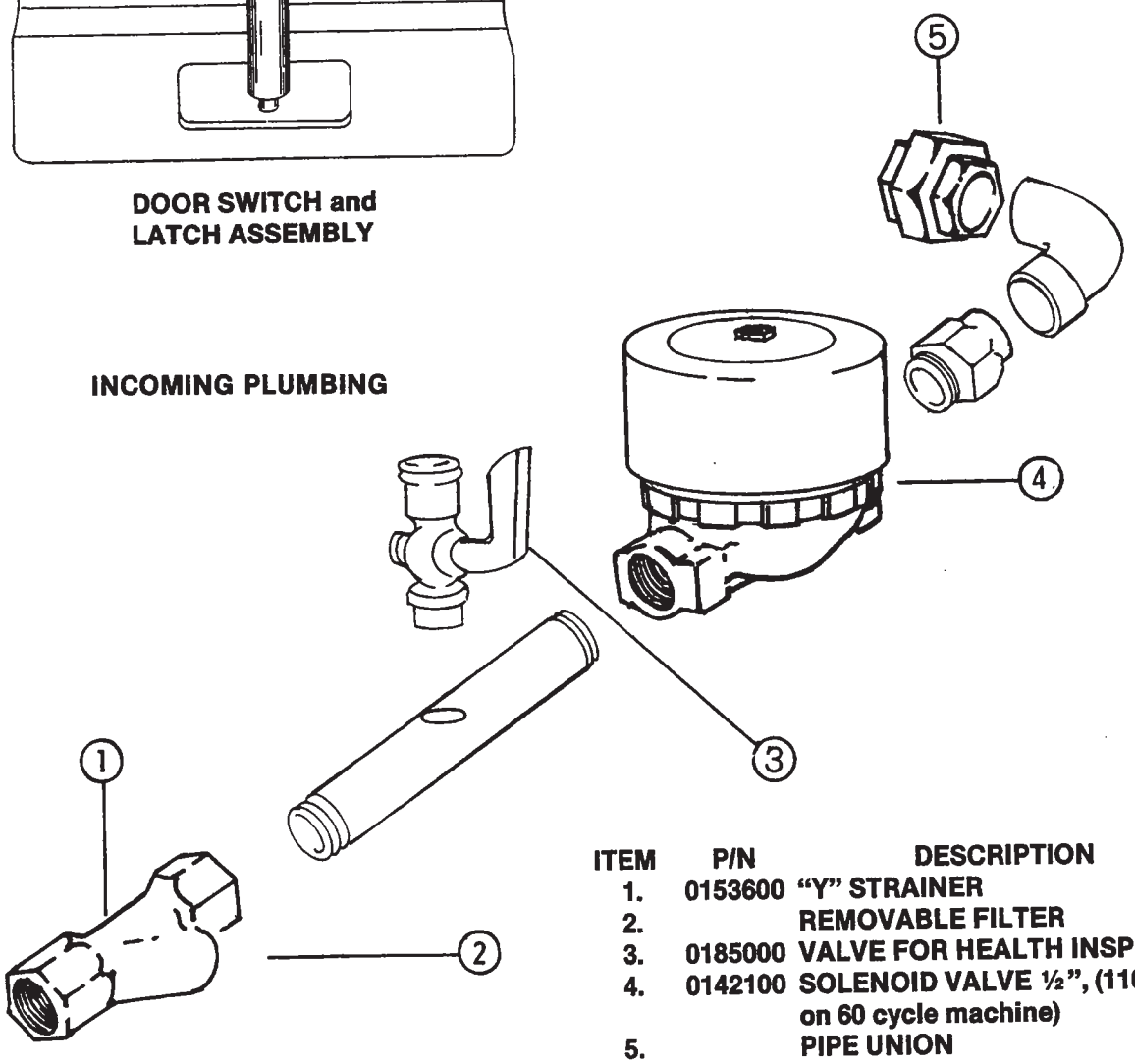
VACUUM BREAKER P/N 0184101



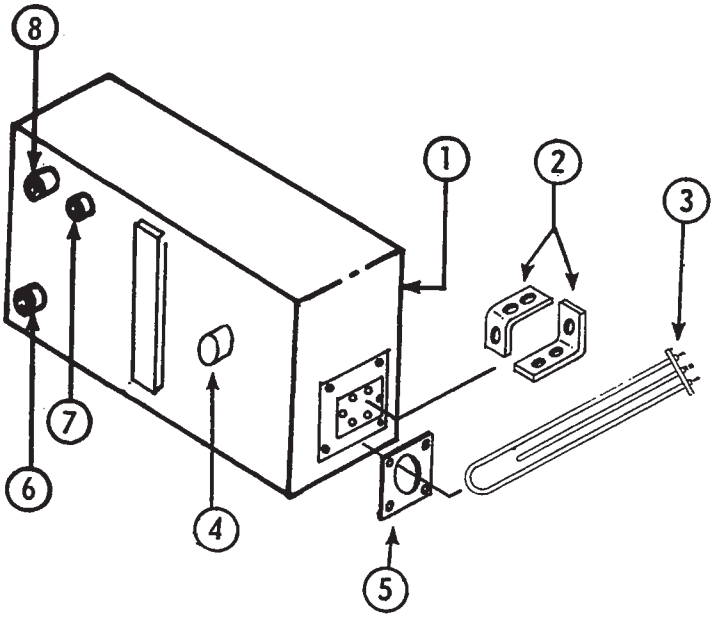


DOOR SWITCH and
LATCH ASSEMBLY

INCOMING PLUMBING



ITEM	P/N	DESCRIPTION
1.	0153600	"Y" STRAINER
2.		REMOVABLE FILTER
3.	0185000	VALVE FOR HEALTH INSPECTOR
4.	0142100	SOLENOID VALVE ½", (110V, used on 60 cycle machine)
5.		PIPE UNION

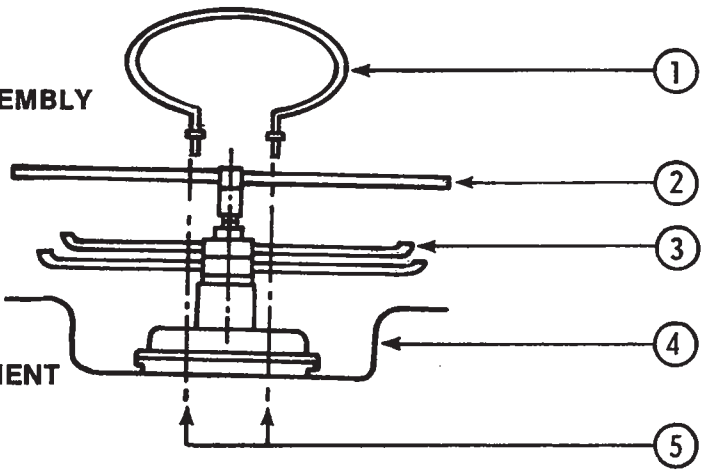


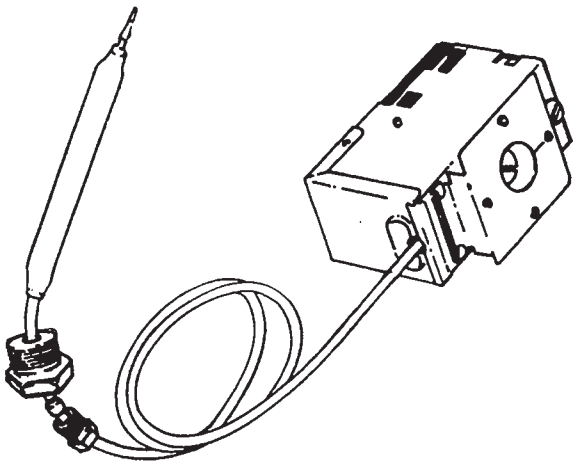
RINSE TANK

ITEM	P/N	DESCRIPTION
1.	0005700	BOOSTER TANK
2.	0060001	BUS BAR
3.	0060000	BOOSTER HEATER ELEMENT
4.		THERMOSTAT COUPLING
5.	0060002	HEATER ELEMENT GASKET
6.		WATER INLET
7.		THERMOMETER COUPLING
8.		WATER OUTLET

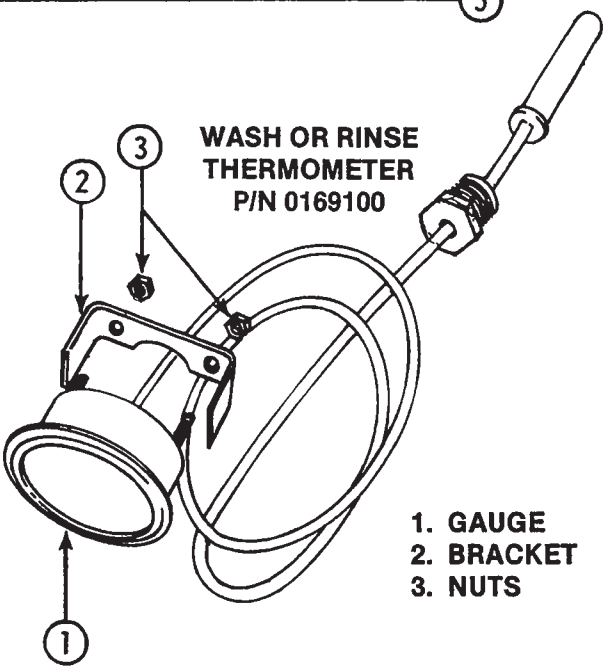
WASH ASSEMBLY

ITEM	P/N	DESCRIPTION
1.	0056900	WASH TANK RING ELEMENT
2.	0125200	RINSE ASSEMBLY, LOWER
3.	0188900	WASH ASSEMBLY
4.		WASH RESERVOIR
5.		HOLES FOR WASH TANK ELEMENT



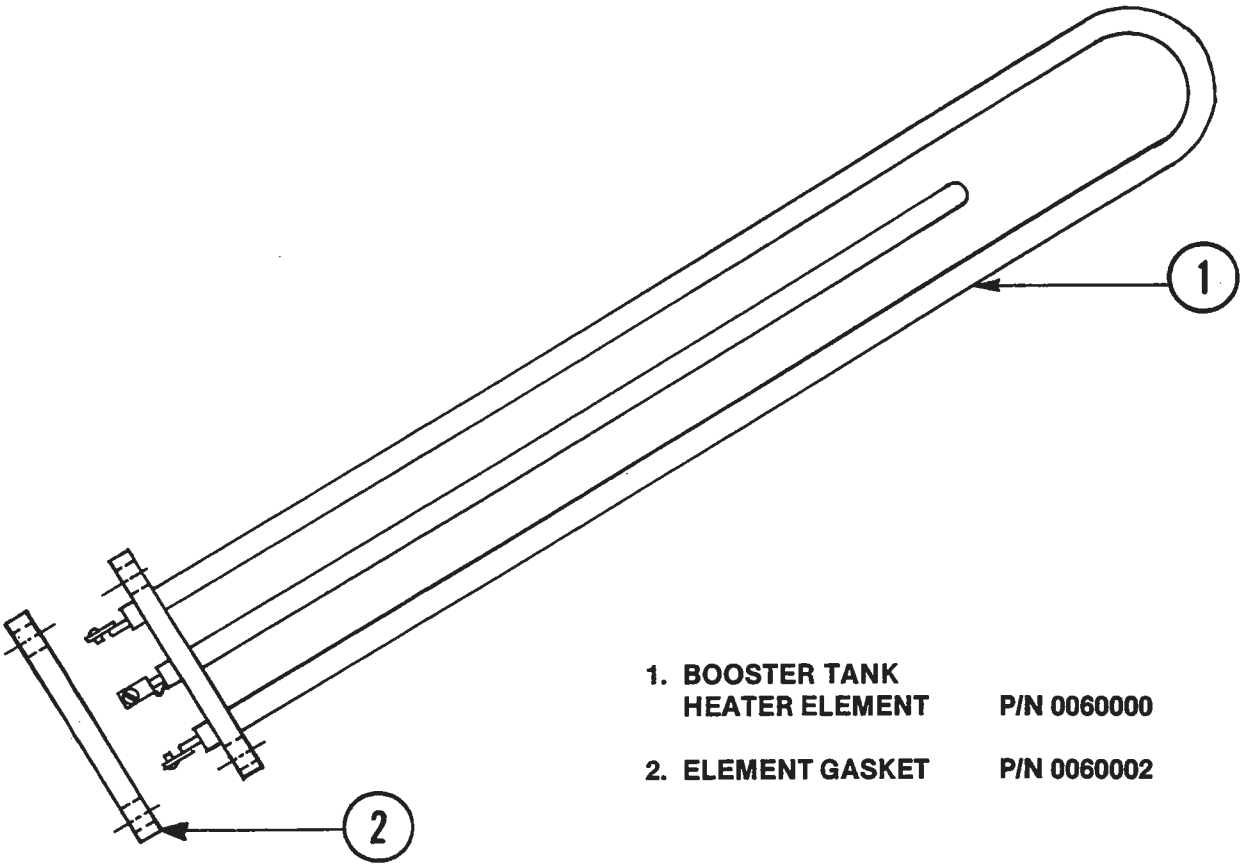


WASH OR RINSE THERMOSTAT
P/N 0170018 - Rinse
P/N 0170023 - Wash

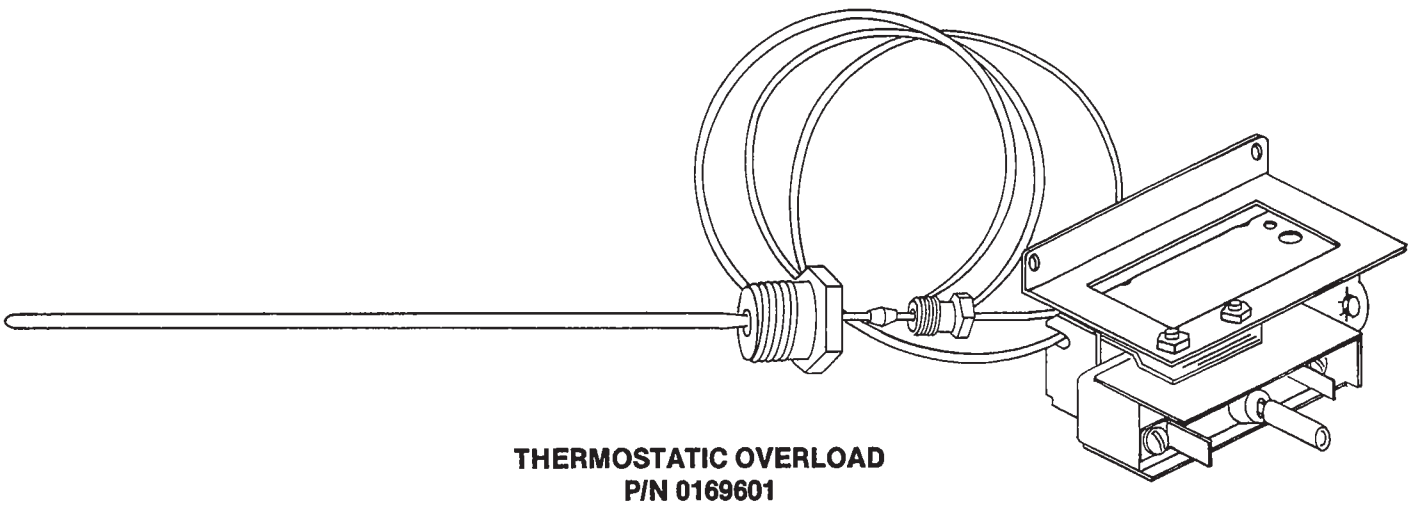


WASH OR RINSE
THERMOMETER
P/N 0169100

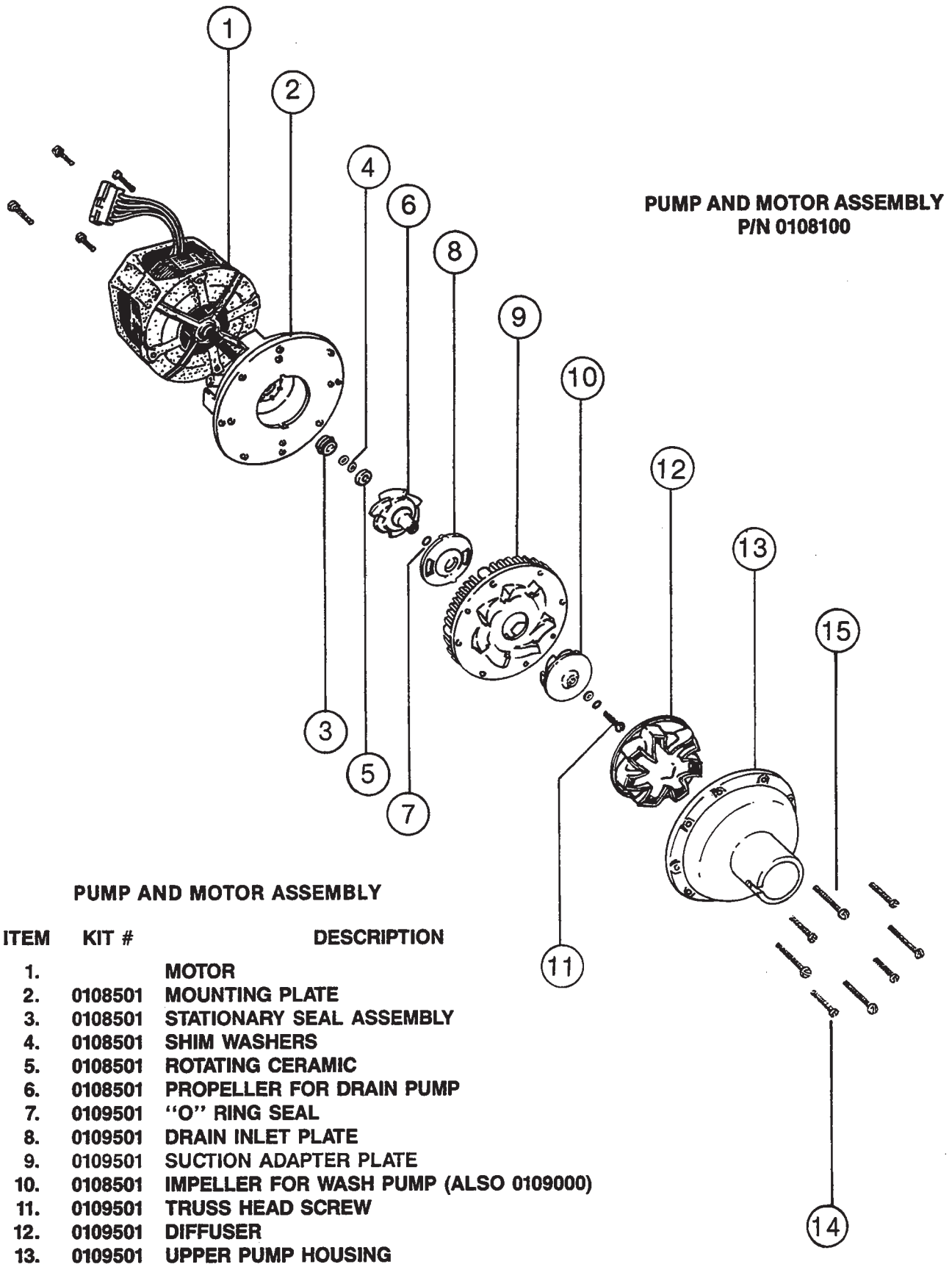
1. GAUGE
2. BRACKET
3. NUTS



1. **BOOSTER TANK HEATER ELEMENT** **P/N 0060000**
2. **ELEMENT GASKET** **P/N 0060002**



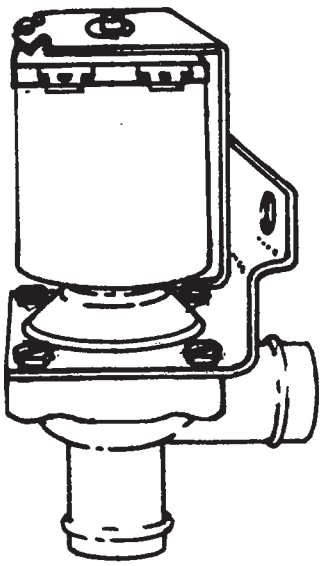
THERMOSTATIC OVERLOAD
P/N 0169601



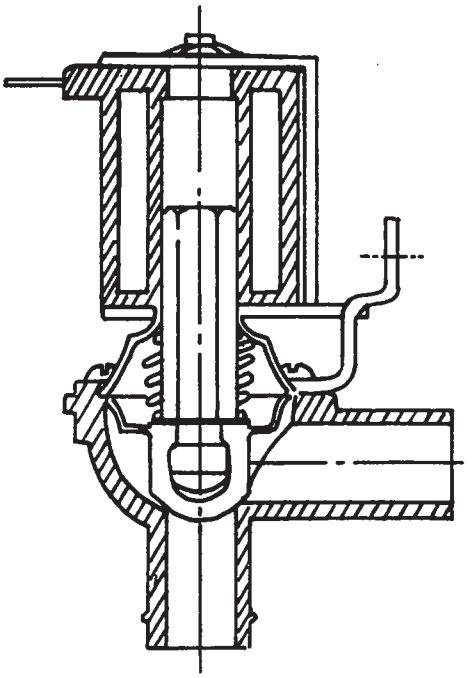
PUMP AND MOTOR ASSEMBLY
P/N 0108100

PUMP AND MOTOR ASSEMBLY

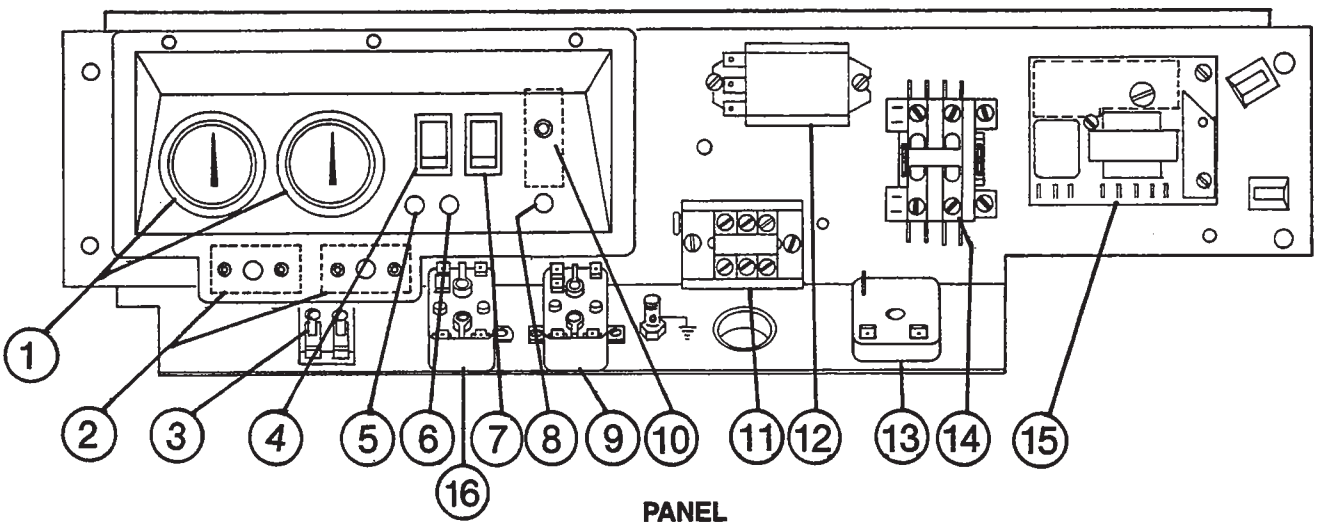
ITEM	KIT #	DESCRIPTION
1.		MOTOR
2.	0108501	MOUNTING PLATE
3.	0108501	STATIONARY SEAL ASSEMBLY
4.	0108501	SHIM WASHERS
5.	0108501	ROTATING CERAMIC
6.	0108501	PROPELLER FOR DRAIN PUMP
7.	0109501	"O" RING SEAL
8.	0109501	DRAIN INLET PLATE
9.	0109501	SUCTION ADAPTER PLATE
10.	0108501	IMPELLER FOR WASH PUMP (ALSO 0109000)
11.	0109501	TRUSS HEAD SCREW
12.	0109501	DIFFUSER
13.	0109501	UPPER PUMP HOUSING
14.	0109700	FILL HEAD MACHINE SCREW (SHORT)
15.	0109800	FILL HEAD MACHINE SCREW (LONG)



DRAIN VALVE
P/N 0142400 (110 V, used on 60 cycle machine)

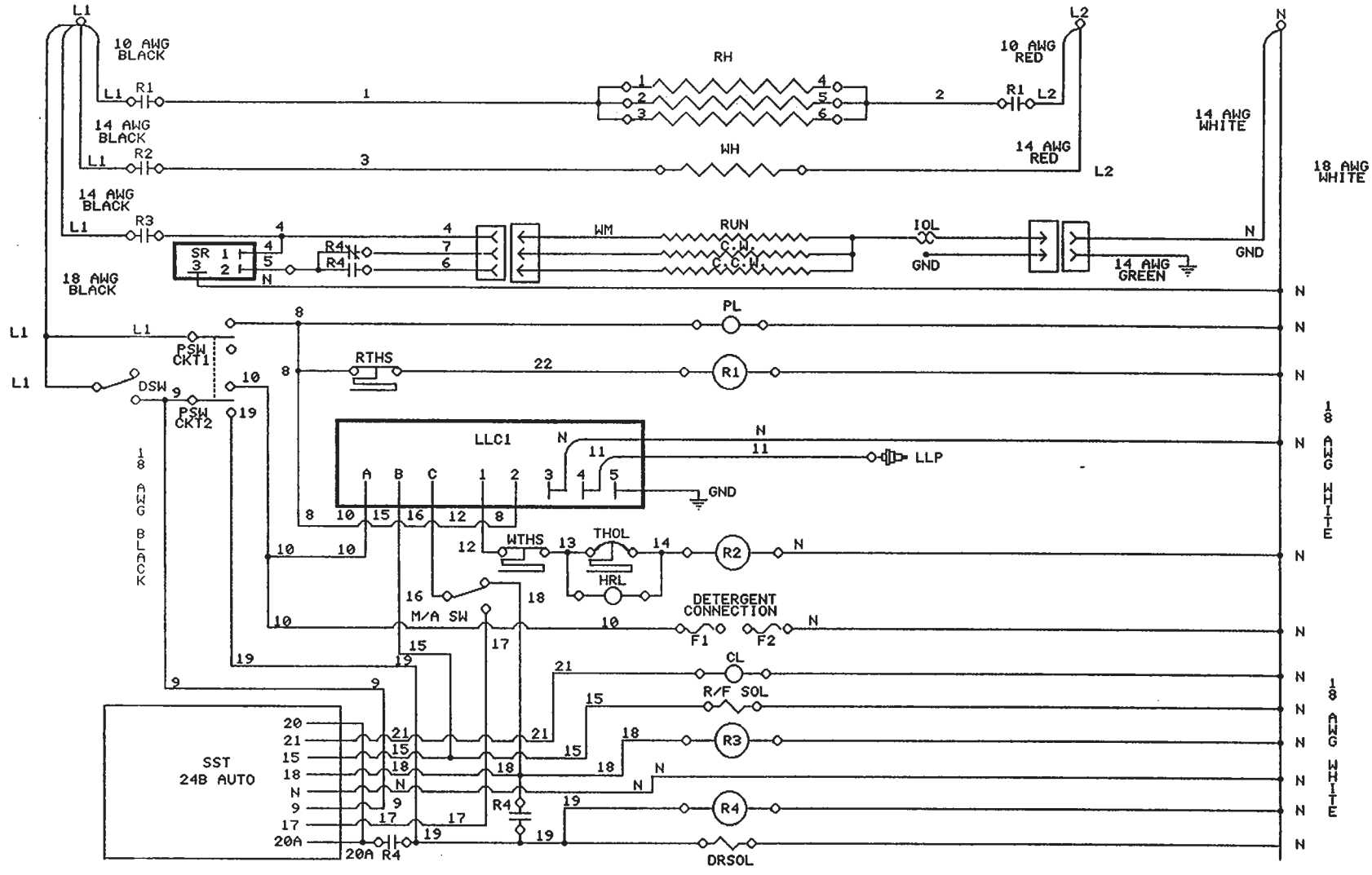


CUTAWAY VIEW



PANEL

ITEM	P/N	DESCRIPTION
1.	0169100	THERMOMETERS, WASH AND RINSE
2.	0170018	THERMOSTAT, RINSE
2.	0170023	THERMOSTAT, WASH
3.		DETERGENT FUSE BLOCK
4.	0155600	POWER SWITCH
5.	0083518	POWER LIGHT
6.	0083507	CYCLE LIGHT
7.	0159700	MANUAL/AUTO SWITCH
8.	0083518	HEATER RESET LIGHT
9.	0122701	MOTOR RELAY (R-3)
10.	0169601	THERMOSTATIC OVERLOAD
11.	0165600	TERMINAL BOARD, INCOMING ELECTRICAL CONNECTION
12.	0124400	DRAIN RELAY (R-4)
13.	0120701	MOTOR STARTING RELAY
14.	0120500	RINSE HEATER RELAY
15.	0204400	WATER LEVEL CONTROL
16.	0121300	WASH HEATER RELAY



R1 RINSE HEATER RELAY
R2 WASH HEATER RELAY
R3 WASH MOTOR RELAY
R4 DRAIN RELAY
RH RINSE HEATER
WH WASH HEATER
SR START RELAY

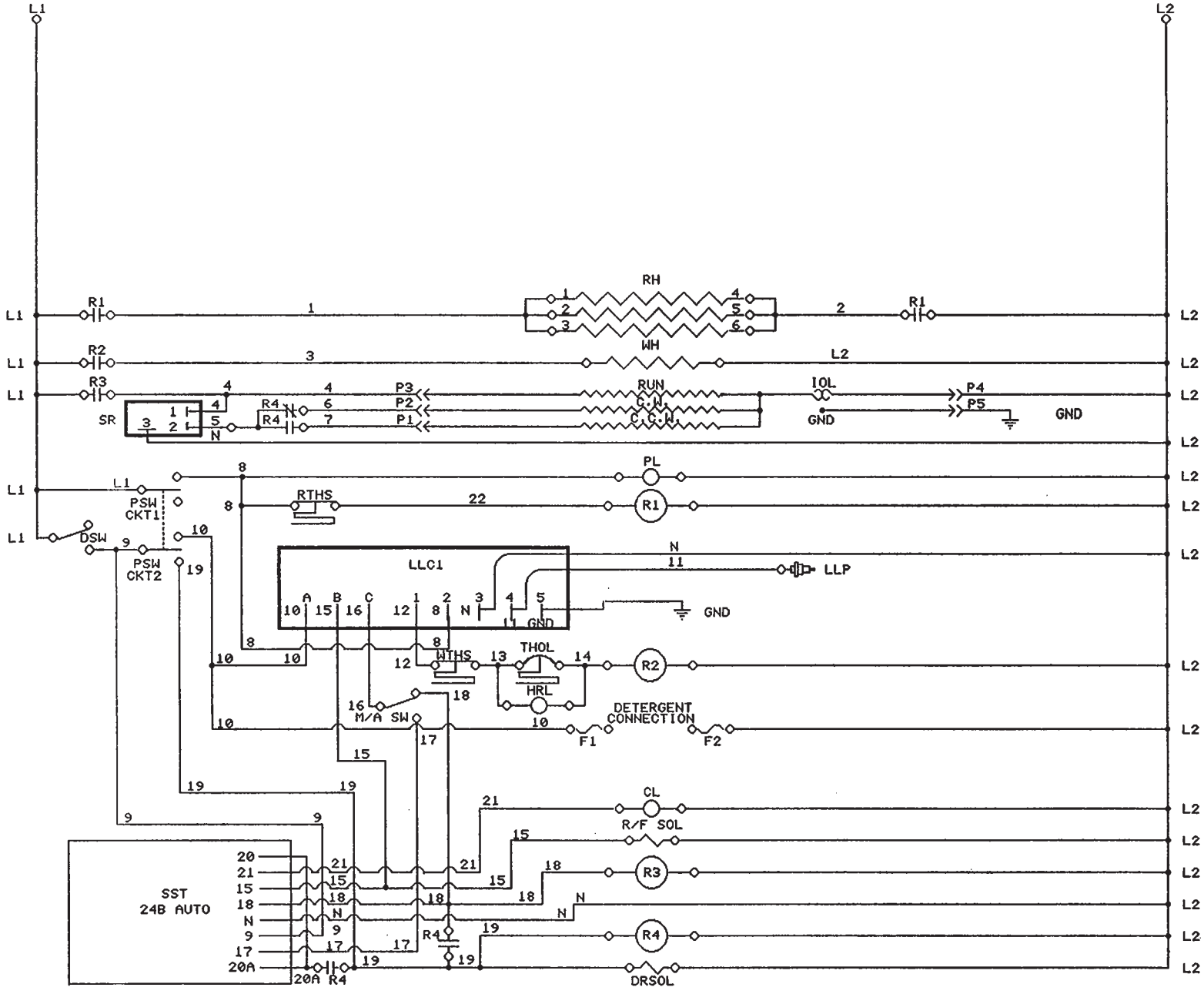
WM WASH MOTOR
RUN MAIN RUN WINDING
C.W. WASH START WINDING
C.C.W. DRAIN START WINDING
IOL INTERNAL OVER LOAD
DSW DOOR SWITCH
PSW POWER SWITCH

PL POWER LIGHT
RTHS RINSE THERMOSTAT
LLC1 LIQUID LEVEL CONTROL
LLP LOW LEVEL PROBE
GND GROUND CONNECTION
WTHS WASH THERMOSTAT
THOL THERMAL OVERLOAD

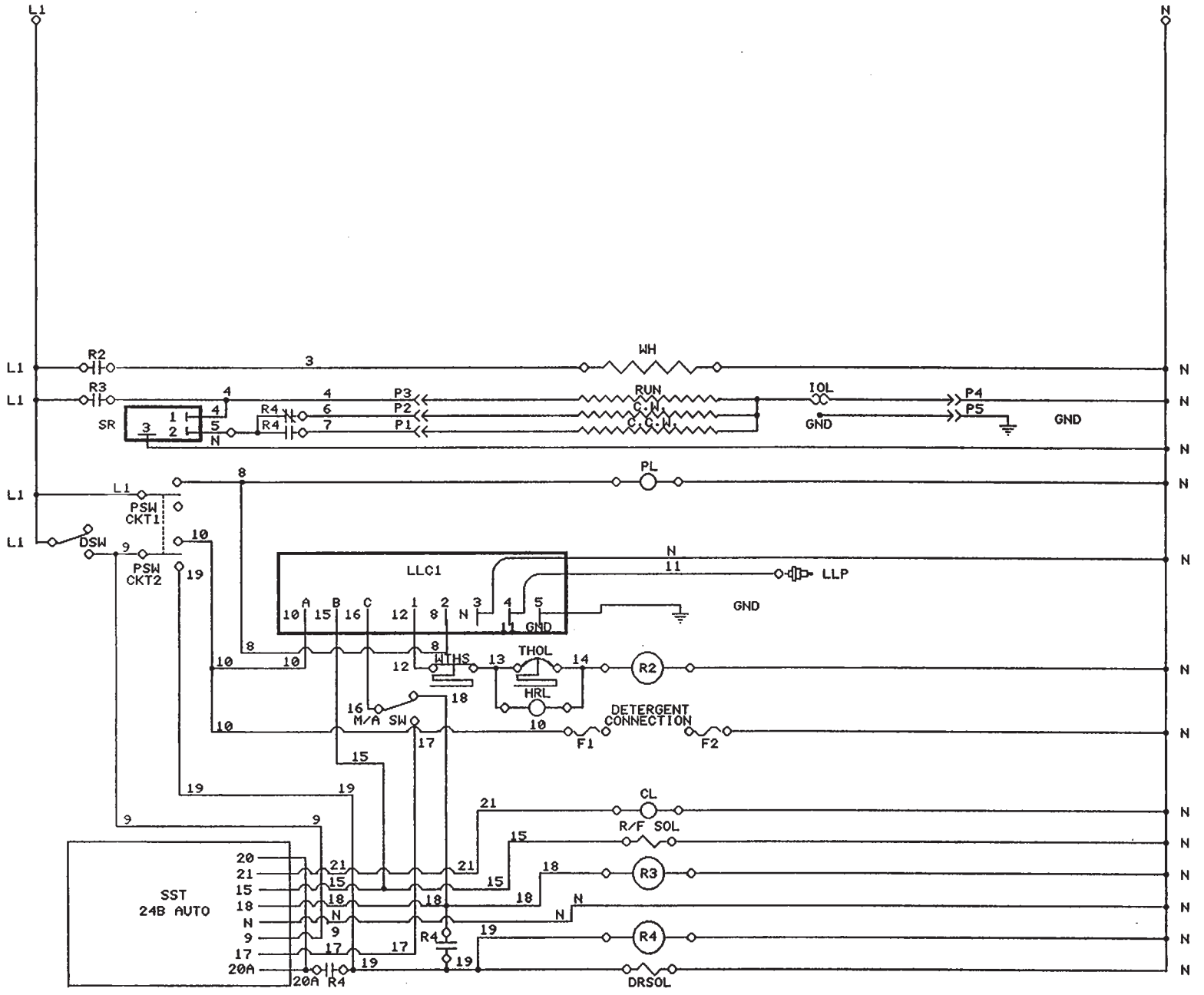
HRL HEATER RESET LIGHT
M/A SW MANUAL/AUTOMATIC SWITCH
F1-F2 DETERGENT FUSE CONNECTIONS
CL CYCLE LIGHT
R/F SOL RINSE/FILL SOLENOID
SST SOLID STATE TIMER
DR SOL DRAIN SOLENOID

NOTE: ALL WIRES MTW 2/64 INSULATION TEMP RATED 90 C/194 F DEGREES

Jackson TAMPA, FLORIDA			
DRW. D.A.B	DATE 3/23/87	AP.	
CK.	DATE	AP.	
TITLE 24B LADDER SCHEMATIC 208/230-115V 60CY 1PH		NO. BE 9893C	



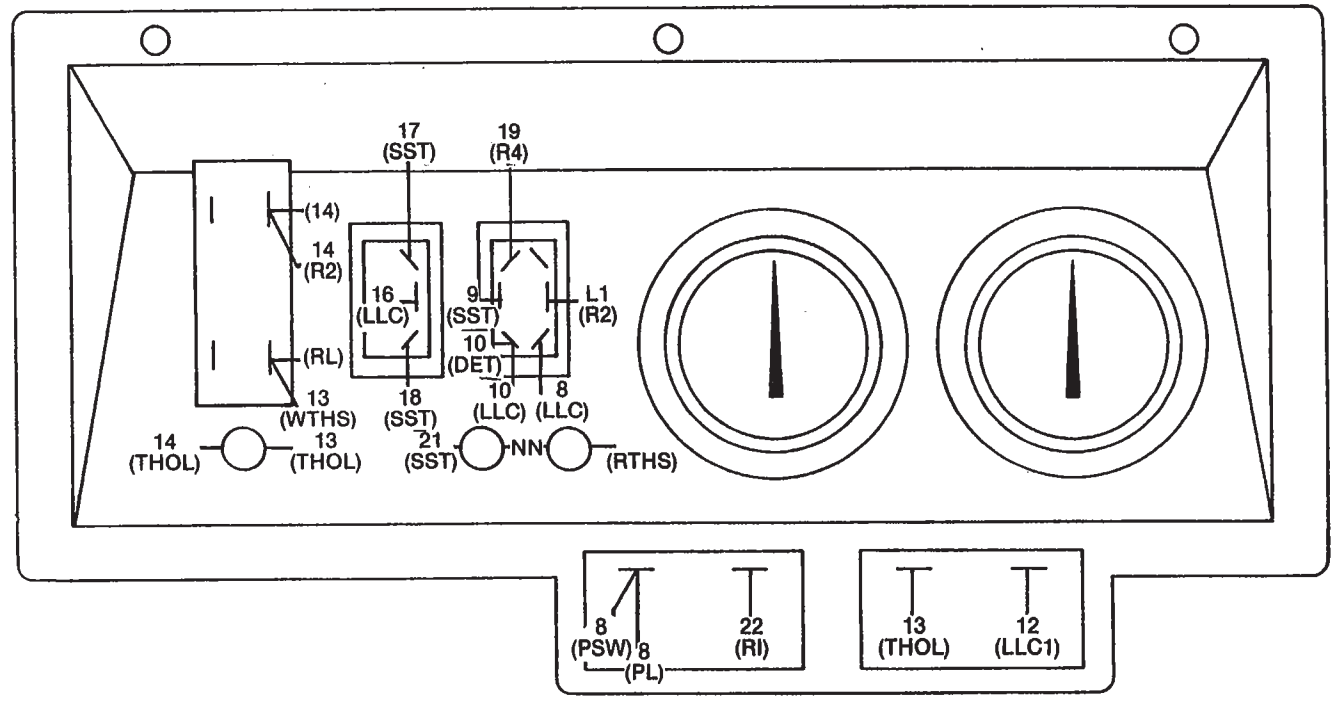
Jackson TAMPA, FLORIDA			
DRW. D.A.B	DATE 10-22-86	AP.	
CK. D.A.B	DATE 10-22-86	AP.	
TITLE 24B LADDER SCHEMATIC 208/230V 50CY 1PH		NO.	



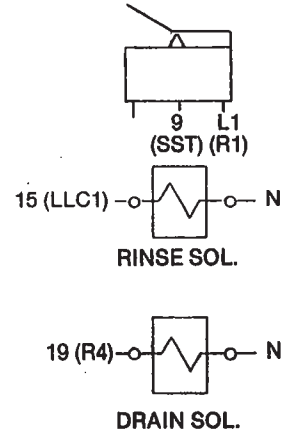
Jackson TAMPA, FLORIDA			
DRW. D.A.B	DATE 10-22-86	AP.	
CK. D.A.B	DATE 10-22-86	AP.	
TITLE 24A LADDER SCHEMATIC 115V 60CY 1PH		NO. BE 10214	

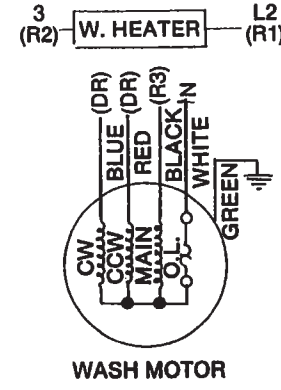
LEGEND

RH	RINSE HEATER
WH	WASH HEATER
SR	START RELAY
RUN	RUN MOTOR WINDING
CW	WASH START WINDING
CCW	DRAIN START WINDING
O.L.	MOTOR OVERLOAD
R1	RINSE HEAT CONTACTOR
R2	WASH HEAT RELAY
R3	WASH MOTOR RELAY
R4	DRAIN CYCLE RELAY
LLC1	LIQUID LEVEL CONTROL
LLP	LOW LEVEL PROBE
PSW	POWER SWITCH
DSW	DOOR SAFETY SWITCH
M/ASW	MANUAL/AUTO SWITCH
WTHS	WASH THERMOSTAT
WHOL	WASH HEAT OVERLOAD
HRL	HEATER RESET LIGHT
F1	DETERGENT FUSE 1
F2	DETERGENT FUSE 2
SST	SOLID STATE TIMER
R/FSOL	RINSE/FILL SOLENOID
CL	CYCLE LIGHT
DRSOL	DRAIN SOLENOID
RTHS	RINSE THERMOSTAT
PL	POWER LIGHT

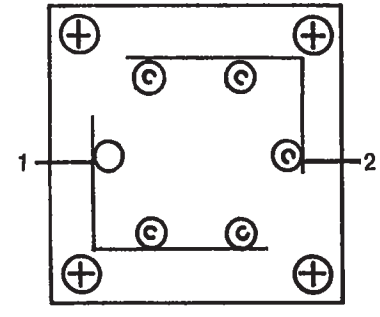


REAR VIEW OF PANEL



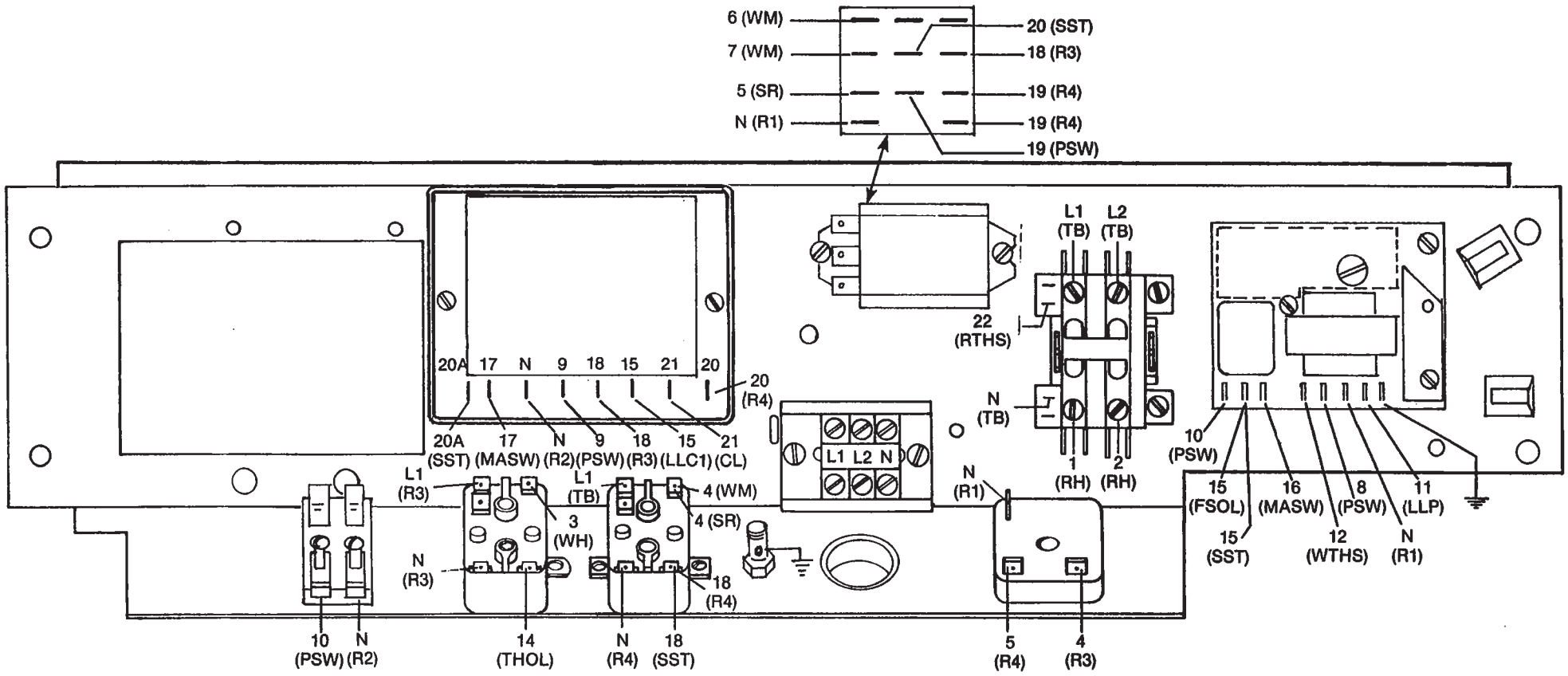


WASH MOTOR



WITH BOOSTER

WIRING DIAGRAM
MODEL 24B
SOLID STATE TIMER
115-208/230 VOLT
60 CY 1 PH

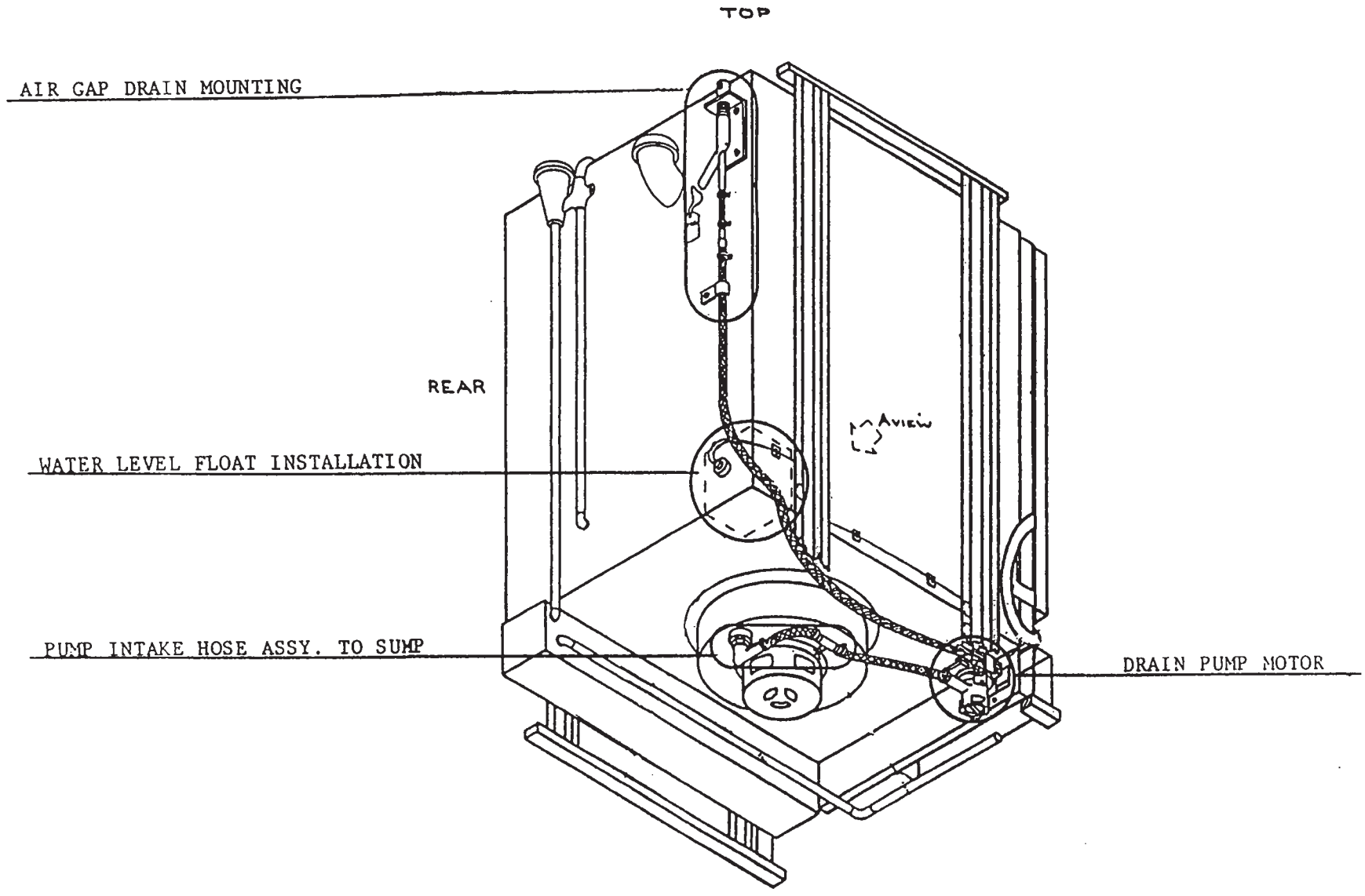


WIRING DIAGRAM
MODEL 24B
SOLID STATE TIMER
115-208/230 VOLT
60 CY 1 PH

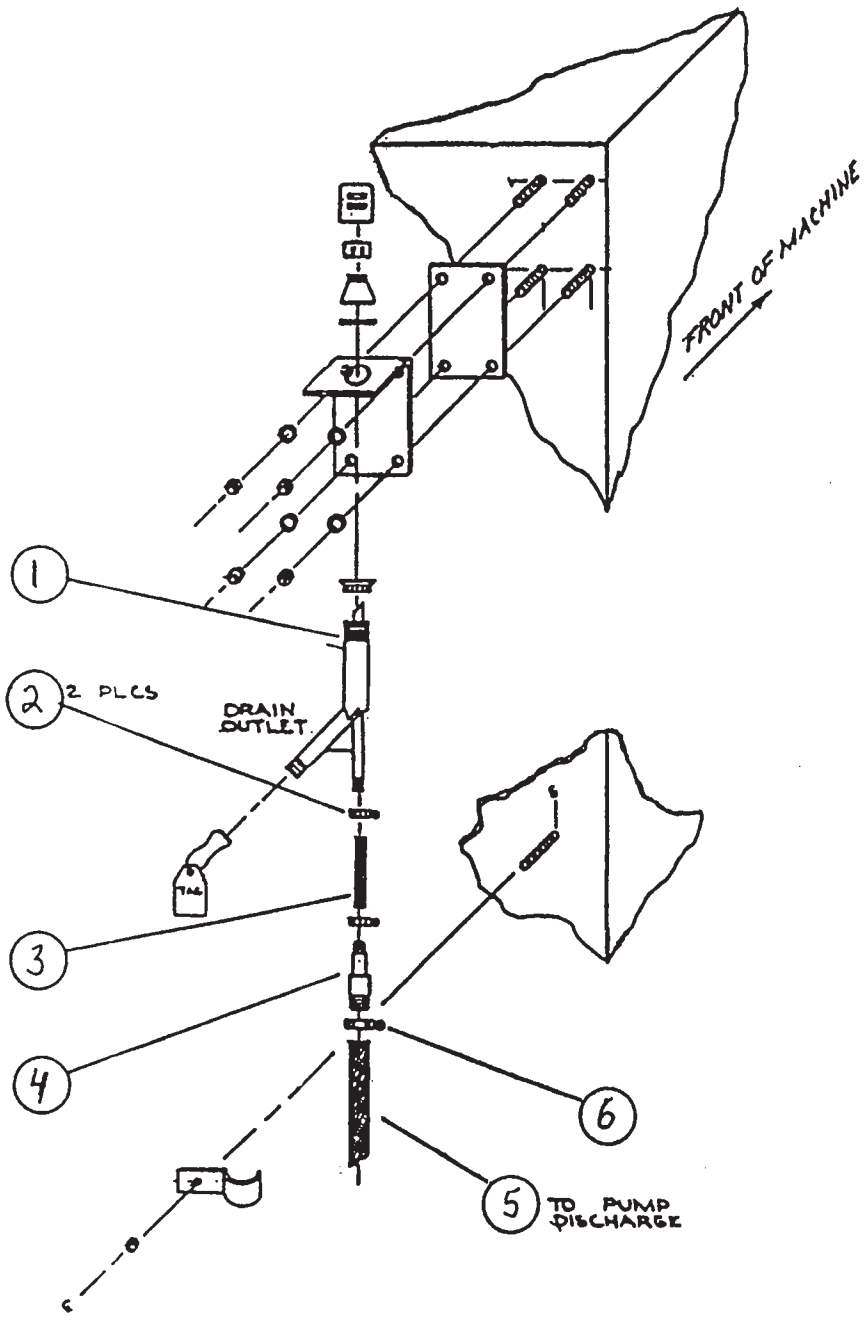
OPTIONAL PUMP DRAIN APPENDIX

INDEX

FOUR MAIN AREAS OF THE PUMP DRAIN SYSTEM ON A 24BP



DRAWING A-4

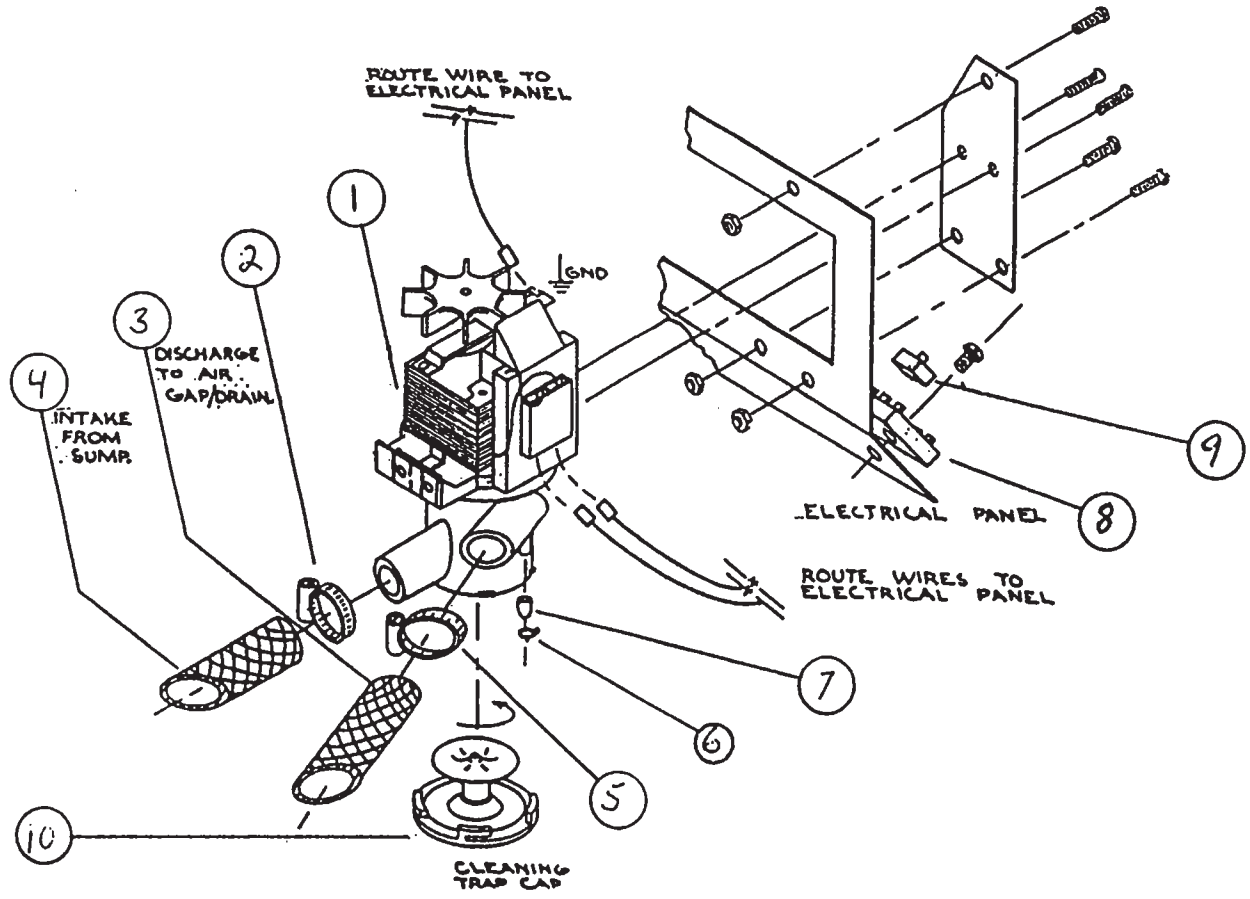


AIR GAP DRAIN MOUNTING

1.) 0052110 ------ AIR GAP
2.) 0052124 ------ DRAIN HOSE CLAMP
3.) 0052101 ------ DRAIN HOSE
4.) 0052120 ------ DRAIN BARB REDUCER
5.) 0052102 ------ DRAIN HOSE
6.) 0052122 ------ DRAIN HOSE CLAMP

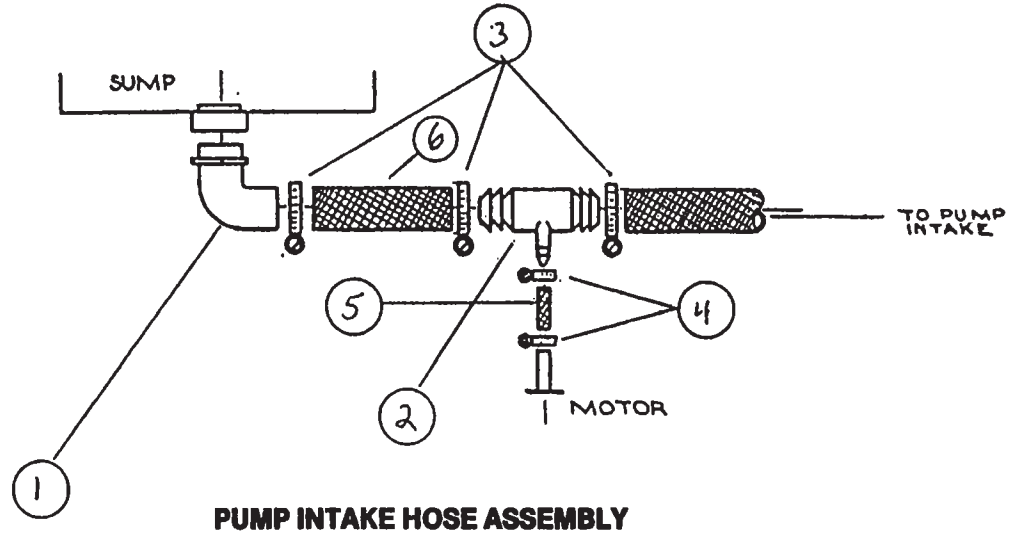
DRAWING A-5

DRAIN PUMP MOTOR



1.) 0052100 ---------- DRAIN PUMP MOTOR
2.) 0052122 ---------- DRAIN HOSE CLAMP
3.) 0052102 ---------- DRAIN HOSE
4.) 0052108 ---------- DRAIN HOSE
5.) 0052123 ---------- DRAIN HOSE CLAMP
6.) 0052112 ---------- DRAIN PUMP MOTOR VENT CLAMP
7.) 0052111 ---------- DRAIN PUMP MOTOR VENT CAP
8.) 0052113 ---------- DRAIN RELAY TIME DELAY
9.) 0052114 ---------- RELAY ADJUSTMENT POD
10.) 0052119 ---------- DRAIN PUMP MOTOR CAP

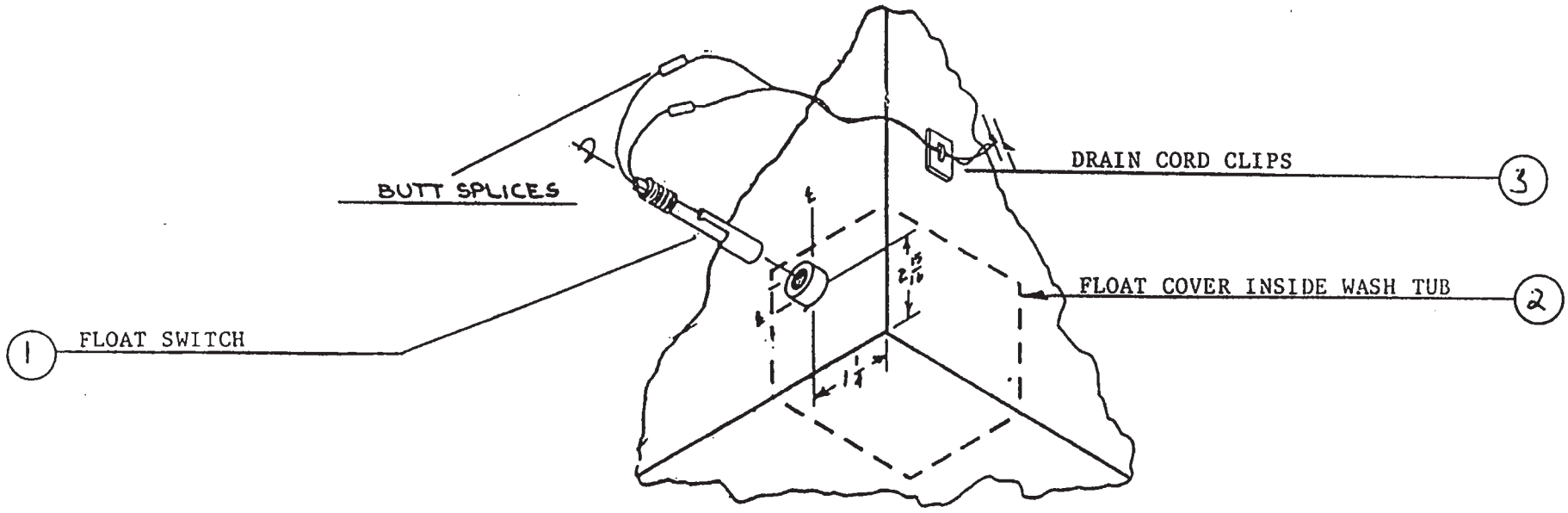
DRAWING A-6



PUMP INTAKE HOSE ASSEMBLY TO SUMP

1.) 0052106 ---------- DRAIN ELBOW FROM SUMP TO PUMP INTAKE
2.) 0052120 ---------- DRAIN BARB REDUCER
3.) 0052123 ---------- DRAIN HOSE CLAMP
4.) 0052124 ------ DRAIN HOSE CLAMP
5.) 0052107 ------ DRAIN HOSE
6.) 0052108 ------ DRAIN HOSE

DRAWING A-7



WATER LEVEL FLOAT INSTALLATION

1.) 0052103 DRAIN FLOAT SWITCH

2.) 0052105 DRAIN FLOAT COVER

3.) 0052104 DRAIN CORD CLIPS

DRAWING A-8

FUNCTIONAL BREAKDOWN of the FOUR MAIN PARTS of the 24BP and 24AP PUMP DRAIN SYSTEM

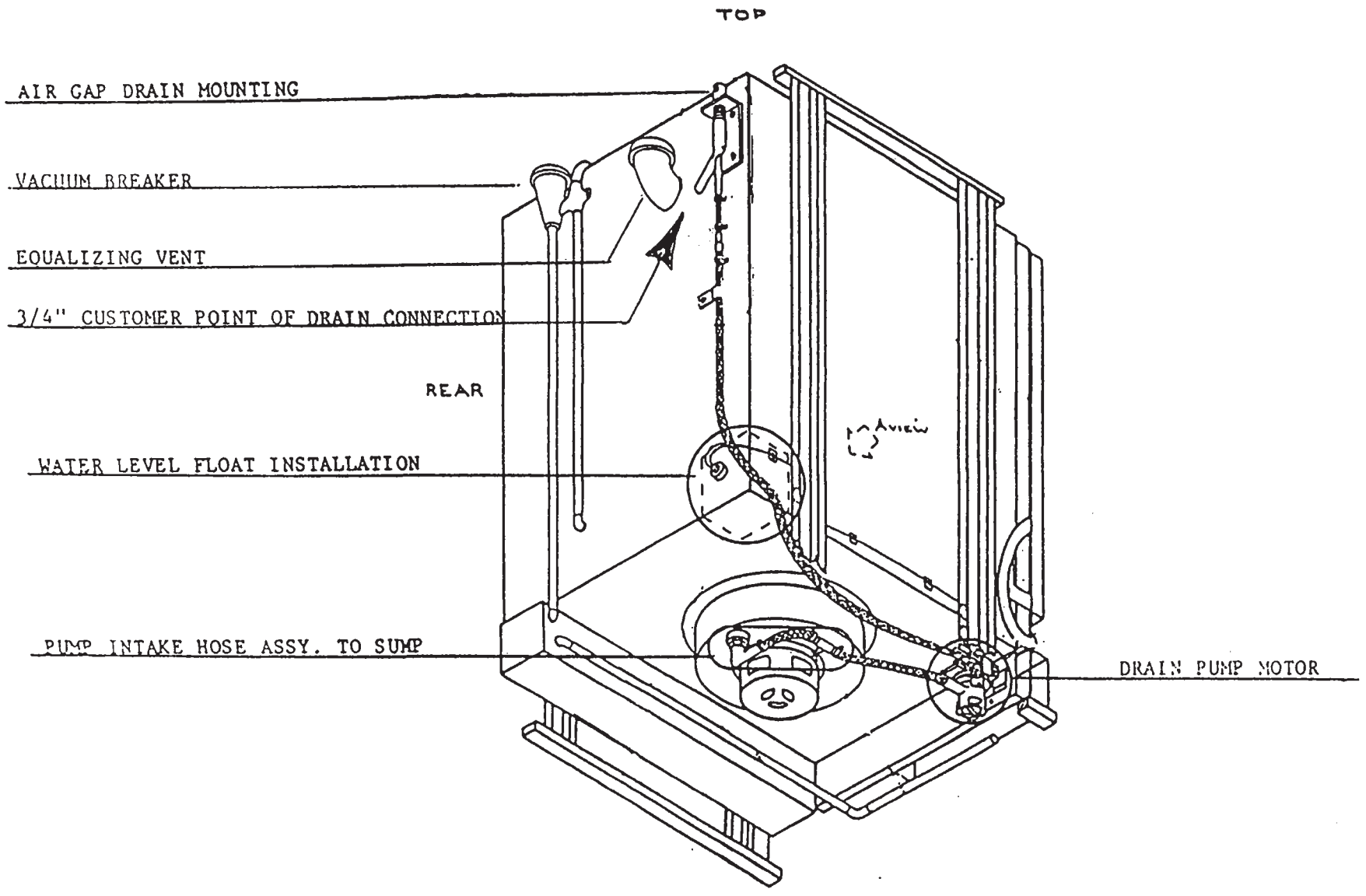
Note: Refer to Drawing A-4.

A.) With machine properly leveled, by adjusting the feet on all corners, the front of the unit should be ¼ " to ½ " higher than the back of the unit.

B.) With machine filled and power switch on, proceed as follows:
1.) Insert rack.
2.) Close door.
3.) Cycle wil begin with two seconds of rinse water. Then, the wash cycle will begin.
4.) About half way through the cycle, there is another two seconds of rinse water.
5.) Note: At this time, water level in the machine may be higher than normal.

C.) At this level, the float switch will come into operation.
1.) The float switch rises, thus energizing the drain-time delay relay. This will in turn activate the drain pump motor. The amount of time that the drain pump will run is determined by the setting on the adjustment pod, located on the drain time-delay relay. The longer the pump runs, the more water will be removed from the machine.

D.) Run machine through three or four cycles. Between each cycle, check water level to determine if it is too high or too low. Accurate water level is obtained by setting the adjustment pod between each cycle until the water is at its correct level.


TOP
AIR GAP DRAIN MOUNTING
VACUUM BREAKER
EQUALIZING VENT
3/4" CUSTOMER POINT OF DRAIN CONNECTION
REAR
WATER LEVEL FLOAT INSTALLATION
PUMP INTAKE HOSE ASSY. TO SUMP
DRAIN PUMP MOTOR

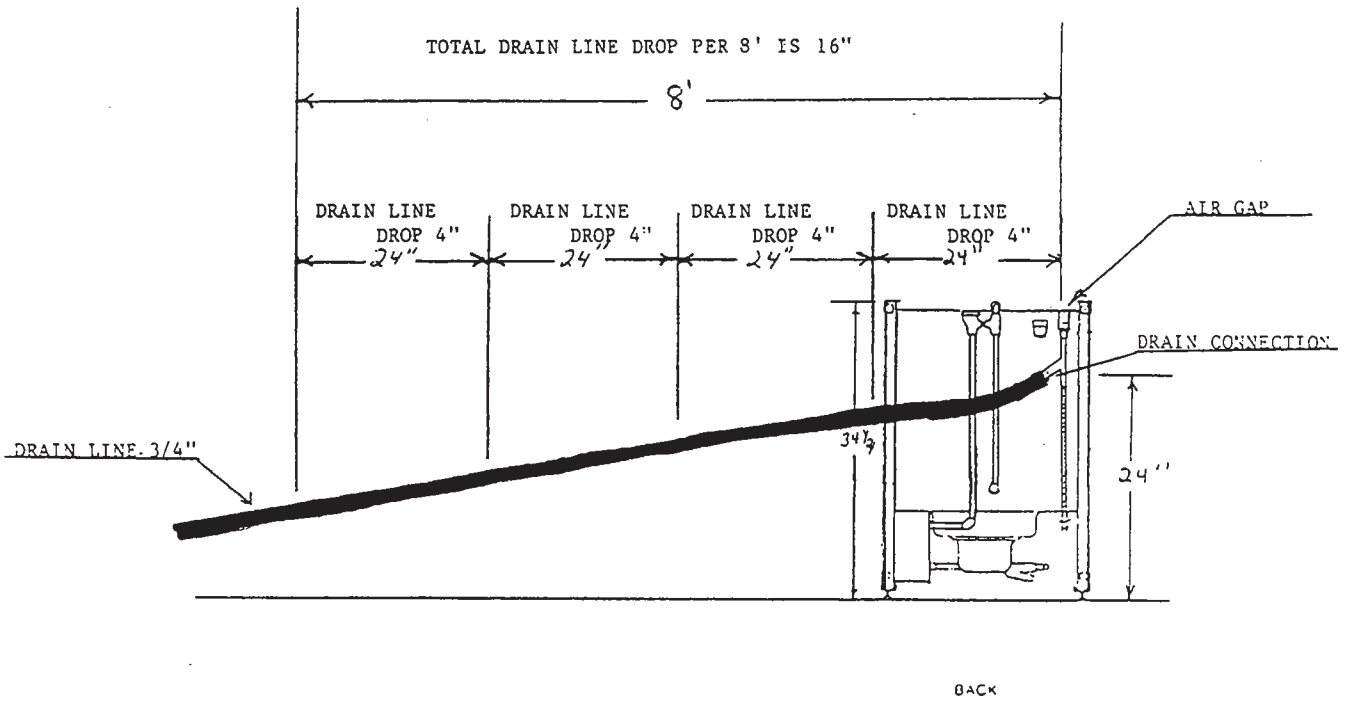
DRAWING A-9

GENERAL INSTALLATION INSTRUCTIONS of MACHINE DRAIN LINE

STEP 1: LOCATION OF DRAIN LINE CONNECTION
Note: Refer to Drawing A-1.
The drain line connection on this machine is located at rear of machine in the upper-right-hand corner. Connection size is ¾". Use ¾" reinforced hose.

STEP 2: DRAIN LINE INSTALLATION
Note: Refer to Drawing A-2.
Drain should slope downward on an incline to customer's drain connection. For every 24 inches of drain line, the drop should be 3" to 4".

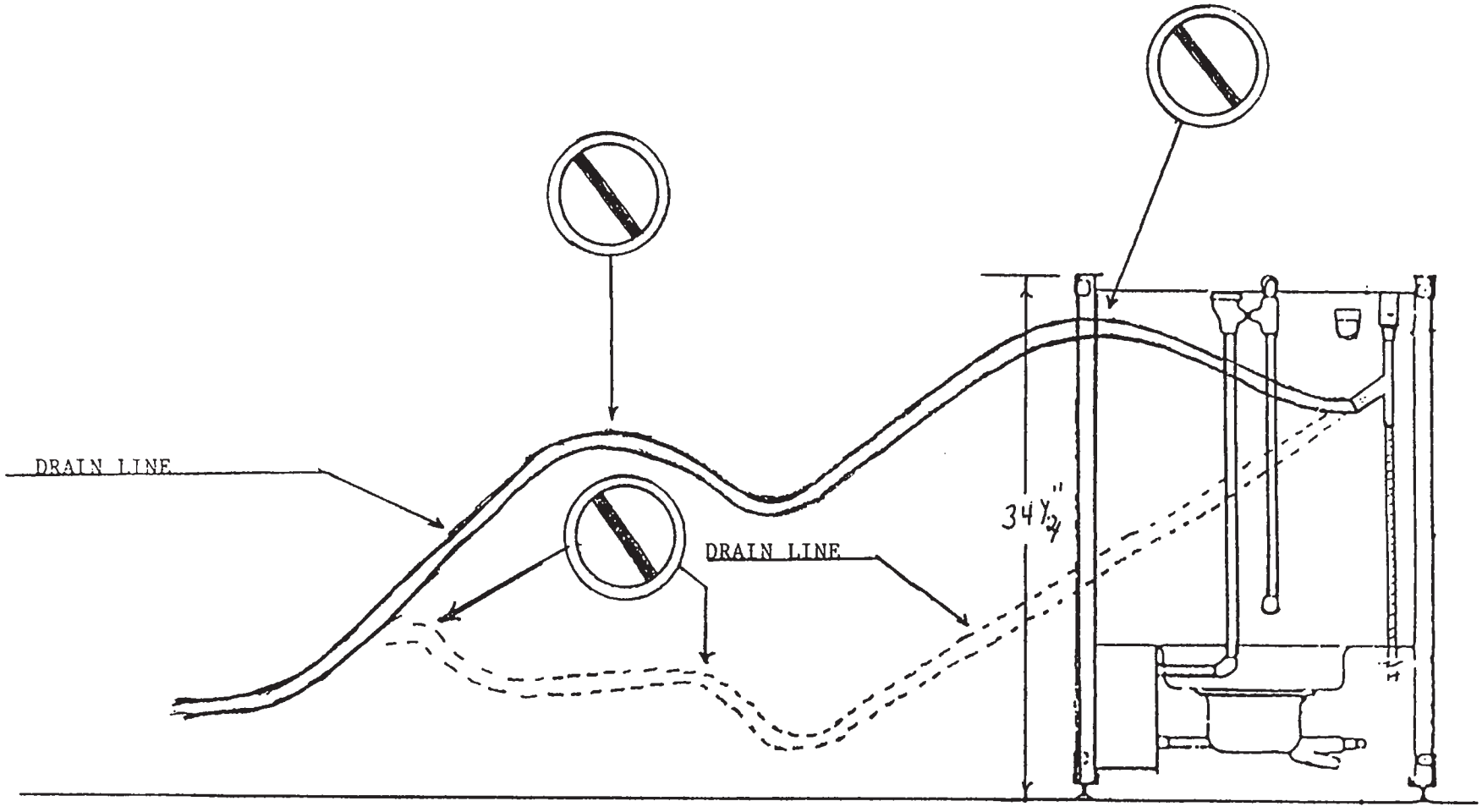
Please reference Drawing A-3 to note the **IMPROPER** drain line installation. Once the drain line is sloping downward, **DO NOT** slope the drain line upward again. Doing this would prevent the pump from draining properly.



DRAIN LINE INSTALLATION FOR MODEL 24BP OR 24AP

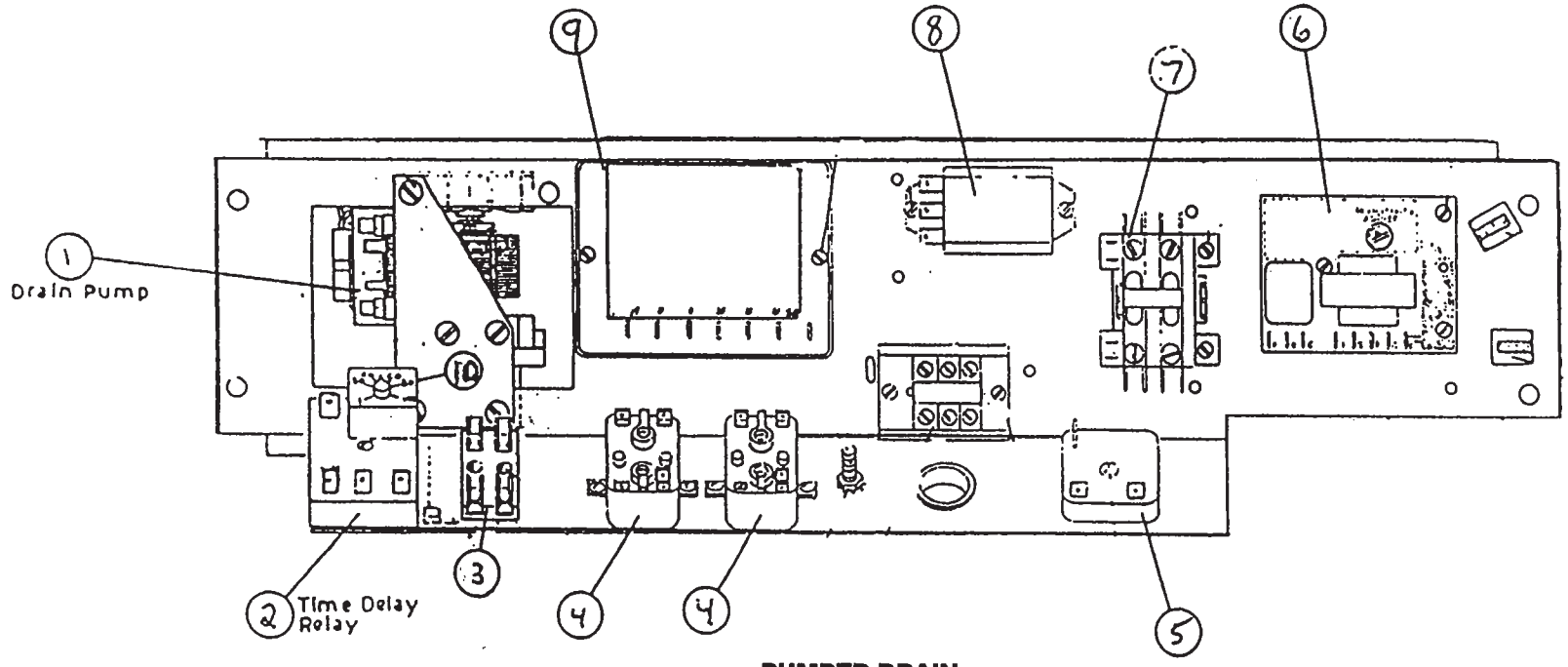
DRAWING A-10

TWO SAMPLES OF IMPROPER DRAIN LINE INSTALLATION



BACK

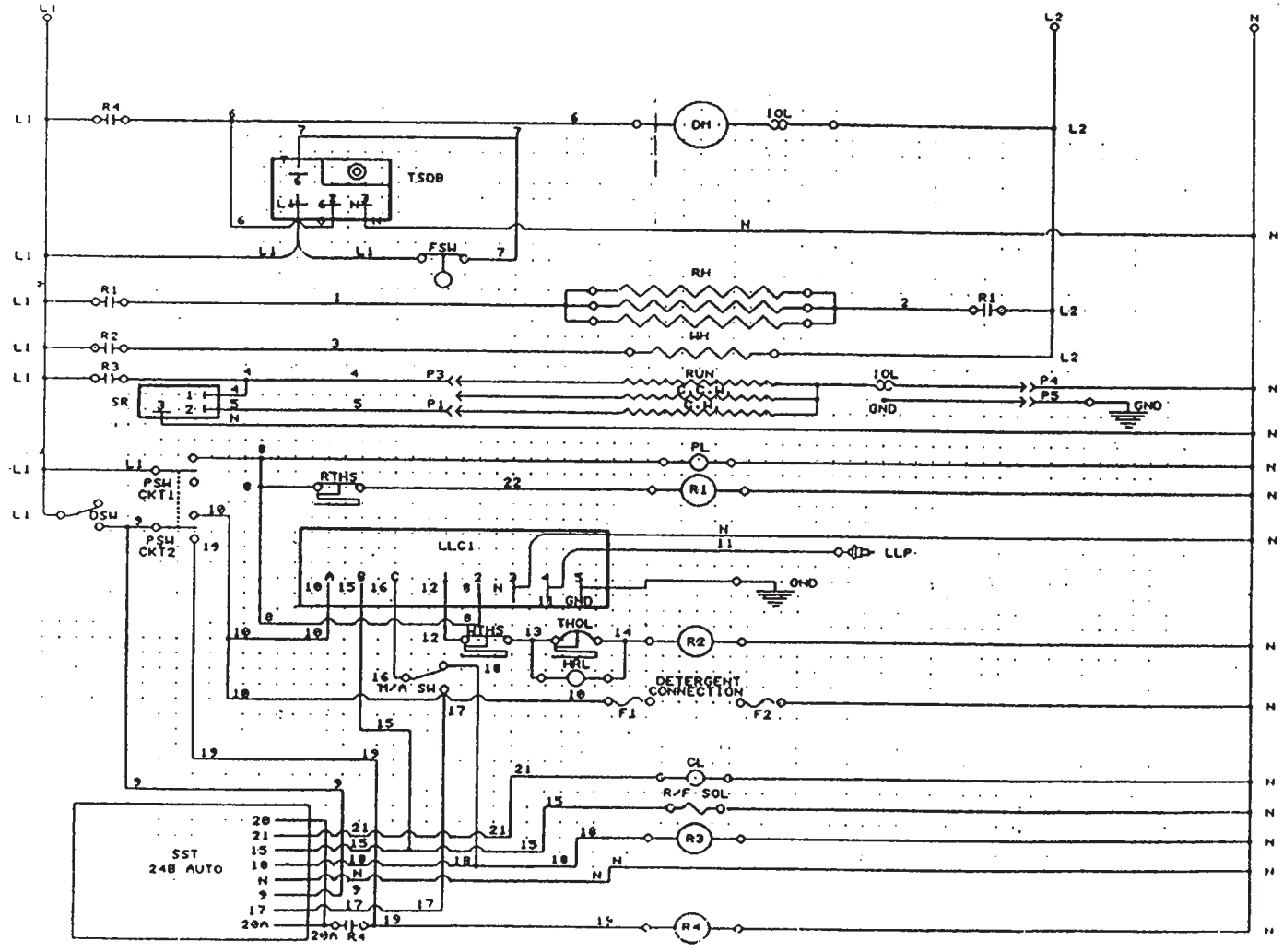
DRAWING A-11



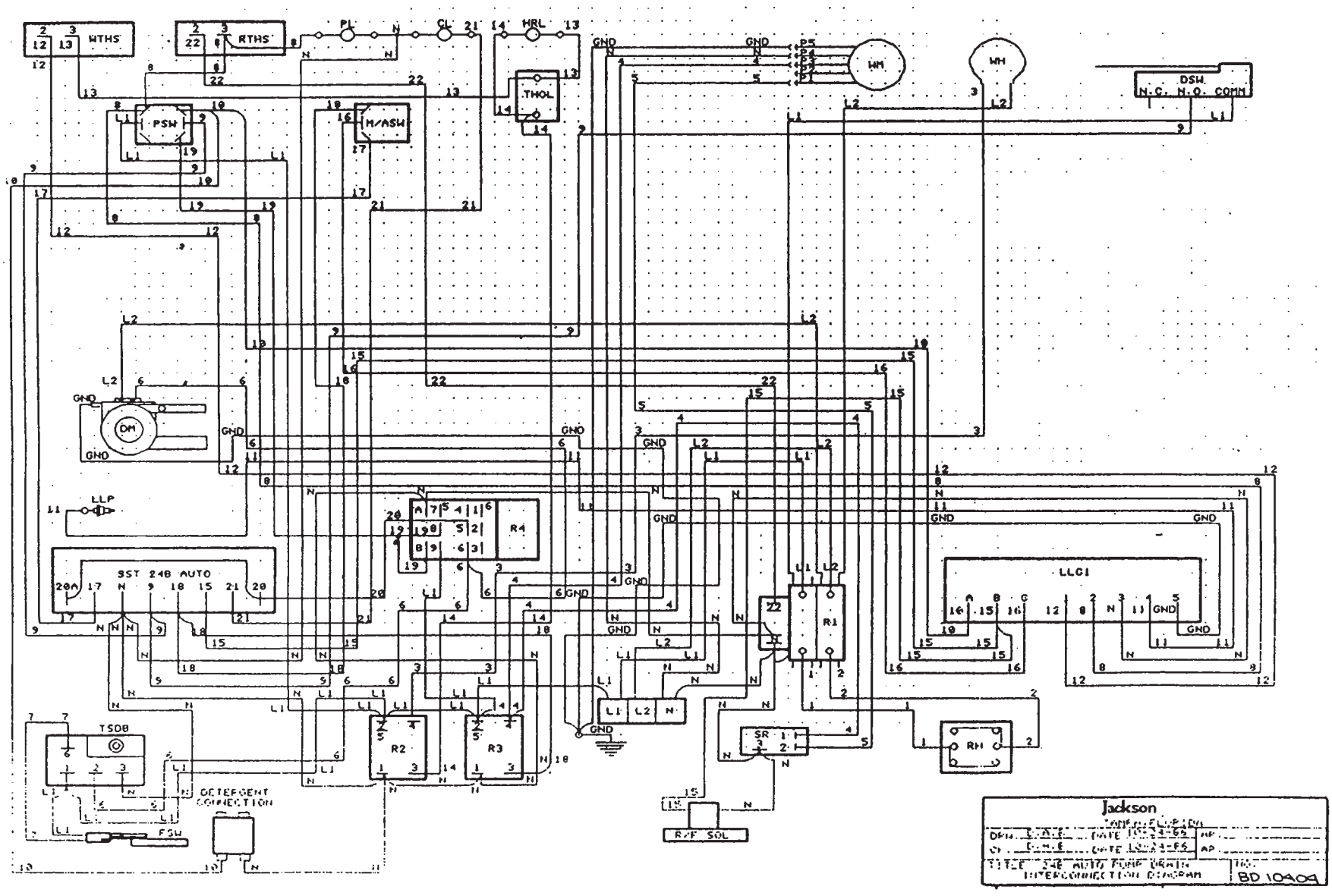
PUMPED DRAIN
COMPONENT LAYOUT (Solid State Timer)

1.) 0052100 DRAIN, PUMP MOTOR
2.) 0052113 DRAIN, TIME DELAY RELAY
3.) 0046523 DISPENSER CONNECTION FUSE PLATE
4.) 0121300 RELAY 110v, FOR PUMP MOTOR & WASH TANK HEATER.
5.) 0120701 MOTOR START RELAY
6.) 0204400 WATER LEVEL CONTROL
7.) 0120500 RELAY RINSE HEATER
8.) 0124400 RELAY DRAIN CYCLE
9.) 0174400 TIMER SOLID STATE
10.) 0052114 DRAIN, RELAY ADJUSTING POD

DRAWING A-12



Jackson TAMPA, FLORIDA		
DRW. D.A.B	DATE 12-22-86	AP.
CK. D.A.B	DATE 12-22-86	AF.
TITLE 24B AUTO /PUMP DRAIN 208/230-115V 60CY 1PH		No. BD-10905


WTHS
RTHS
PL
CL
HRL
THOL
PSW
M/ASW
HM
WH
DSW
N.C. N.O. COMM
DM
LLP
R4
SST 248 AUTO
LLC1
R1
R2
R3
TSDB
DETERGENT CONNECTION
FSW
SR
RH
R/F SOL
GND
Jackson
BD 10404

PARTS LIST for the PUMP DRAIN SYSTEM

This Parts List includes parts (only) for the **Pump Drain System** of the Model 24BP.

PART NUMBER	DESCRIPTION
0052100	DRAIN PUMP ASSEMBLY
0052101	DRAIN HOSE, ½" ID (AIR VENT)
0052102	DRAIN HOSE, ¾" × 27"
0052103	DRAIN FLOAT SWITCH
0052104	DRAIN CORD CLIPS
0052105	DRAIN FLOAT COVER
0052106	DRAIN ELBOW FROM SUMP TO PUMP INTAKE
0052107	DRAIN HOSE, ½" ID FROM PUMP TO TEE
0052108	DRAIN HOSE, 1" ID
0052110	DRAIN AIR GAP
0052111	DRAIN PUMP MOTOR VENT CAP
0052112	DRAIN PUMP MOTOR VENT CAP HOSE CLAMP
0052113	DRAIN TIME DELAY RELAY
0052114	DRAIN RELAY ADJUSTMENT POD
0052119	DRAIN PUMP MOTOR CAP
0052120	DRAIN BARB REDUCER, ¾" to ½"
0052121	DRAIN TEE BARB, 1" × 1" × ½"
0052122	DRAIN HOSE CLAMP (MEDIUM SIZE)
0052123	DRAIN HOSE CLAMP (LARGE SIZE)
0052124	DRAIN HOSE CLAMP (SMALL SIZE)

COMPLETE PARTS LIST for SERIES 24

0005700	Booster Tank (stripped)	1
0051700	Door Latch and Switch Bracket	1
0052300	Door Gasket	1
0052400	Door Gasket, Clamp Assembly	1
0052600	Door, Front, Outer only (stripped)	1
0052700	Door Handle	1
0053400	Drain Hose-Pump to Solenoid Valve, short	1
0053500	Drain Hose Clamps	4
0053600	Drain Hose-Solenoid Valve to Drain, long	1
0054400	Door Spring	2
0054500	Enclosure Panel, righthand side	1
0054600	Enclosure Panel, lefthand side	1
0054700	Enclosure Panel, top	1
0054902	Enclosure Panel, Lower Kickplate	1
0056900	Heater Element, ring-style, 1000W, 220V, P/N 0056700, 115V, 1000W	1
0060000	Heater Element, Flange Type, 208/230V, 6200W	1
0060001	Heater Element, Flange Type, Bus Bars	2
0060002	Heater Element, Flange Type, Gasket	1
0083507	Light, Indicator, Green	1
0083518	Light, Indicator, Red	2
0084300	Probe, Lundy, small	1
0108100	Pump Assembly, complete with motor, 115V, 60 cycle	1
0108400	Pump Gasket	1
0108500	Pump Propeller Mounting Plate and Seal Assembly, kit	1
0108700	Pump Diffuser (only)	1
0109000	Pump Impeller, kit	1
0109500	Pump, Upper Housing, kit	1
0109600	Pump, Upper Housing, (only)	1
0109700	Pump Fill Head Machine Screws, short	4
0109800	Pump Fill Head Machine Screws, long	4
0117500	Rack, square, 19¾″ × 19¾″ (cup, bowl, glass)	1
0117800	Rack, square, 19¾″ × 19¾″ (dish-molded)	2
0120500	Relay, 110V, 2-pole, HW Heat Circuit	1
0120701	Relay, 110V, Motor Starting	1
0121300	Relay, Motor, replaced by 0122701; use 0121300 for Heat Relay	1
0124400	Relay, Drain, 3PDT	1
0125100	Rinse Head Assembly, upper	1
0125200	Rinse Head Assembly, lower	1
0125300	Rinse Head End Plug, knurled	2
0125500	Rinse Head, Hex Bushing	2
0126000	Rinse Head, Nylatron Washer	2
0126500	Rinse Head, Snap Ring, s/s	2
0131000	Rinse Head Brush, Tube Cleaning	1
0137301	Rinse Feed Pipe Lanyard Pin, P/N - 6137200 Lower Feed Pipe	1
0142100	Solenoid Valve ½″, JE, 110V	1
0142400	Drain Valve, Dole ½″, 110V, (Valve only)	1
0143600	Solenoid Valve Coil, 110V, JE	1
0145000	Solenoid Valve Diaphragm Cartridge and "O" Ring, JE	1
0147500	Solenoid Valve "O" Ring, JE	1
0148600	Solenoid Valve, Plunger Assembly, JE	1
0149500	Solenoid Valve, Strainer Screen, JE	1
0153100	Strainer, Pan-Type	1
0155600	Switch, On/Fill, Off, Drain	1
0164000	Switch, Door, SPDT	1
0159700	Switch, Manual Wash	1

COMPLETE PARTS LIST for SERIES 24

0165600	Terminal Board, 3-pole	1
0169100	Thermometer, 36" Cap., Rinse	1
0169601	Thermostatic Overload, Heater	1
0170018	Thermostat, Rinse, 180°, fixed	1
0170023	Thermostat, Wash, 150°, fixed	1
0174400	Timer, Solid State	1
0177500	Timer Micro Switches, Plastic Module-Type	3
0184101	Vacuum Breaker, ½" Conbraco	1
0184200	Vacuum Breaker Repair Kit, ½" Conbraco	1
0186500	Wash Head Cap w/Race	1
0187000	Wash Head Cap Set Screw	1
0187500	Wash Head Center Shaft	1
0188600	Wash Head Holding Pin	1
0188601	Wash Head, Disconnect Pin	1
0188900	Wash Head Assembly, complete	1
0189000	Wash Head, Small Manifold w/Tubes	1
0189500	Wash Head, Large Manifold w/Tubes	1
0193601	Wash Head Fixed Race	2
0194000	Wash Head Bearings, ¼" s/s	57
0204400	Water Level Control, 110V, w/25 Second Time Delay	1
0054904	Gauge Panel, Black Plastic	1

MODEL 24B PARTS LIST
220V, 50HZ, 1 PH

0056900	Heater Element, Wash, (Ring Style)
0060000	Heater Element, Rinse, (Booster Tank)
0060002	Heater Gasket
0108200	Pump Assembly, Complete (w/Motor, 220V, 50 HZ, 1 PH)
0121100	Relay, DPDT, Drain 220V, Coil
0121400	Relay, Motor Start, 220V, 50 HZ, 1 PH
0121800	Contactor, Heater, 220V Coil
0123300	Relay, SPDT, 220V Coil
0142200	Solenoid, Valve Drain, 220V
0142500	Solenoid, Valve Coil, 220V, Incoming Water
0174500	Timer, Solid State, 8 Pin, 220V, 50 HZ, 1 PH
0204600	Water Level Control, SSAC, 220V, 50 HZ 6680-200-0821