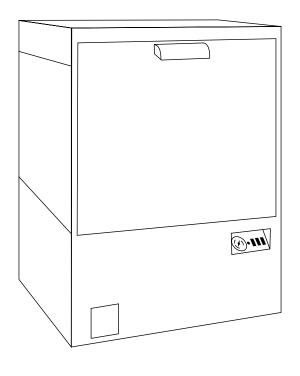
# Champion

The Dishwashing Machine Specialists

# **Technical Manual**



# Undercounter Dishwasher

Model UH-150B UH-150 UL-150

Machine Serial No.

**April**, 2003

Manual P/N 0510172 REV. F

| Model Number   | Serial Number                      |
|--|------------------------------------|
| Voltage and Phase  |                                    |
| Champion Parts Distributor(if applicable)  | Phone                              |
| Champion Service Agency  | Phone                              |
| Champion Industries Service: 1-800-858-4477 Champion Industries Se | ampion Service Fax: 1-336-661-1660 |

NOTE: When calling to order parts, be sure to have the model number, serial number, voltage,

Complete the information below so it will be available for quick reference.

and phase of your machine.

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# **Revision History**

| Revision<br>Date | Revised<br>Pages   | Serial Number<br>Effectivity | Comments  |
|------------------|--------------------|------------------------------|---|
| 08/01/00         | All                | W3245                        | Issue of manual and service replacement parts.                                      |
| 10/02/00         | 7                  | _                            | Added dispenser priming instructions.   |
| 11/08/00         | 39                 | W3245                        | Deleted P/N 112204, replaced with P/N 109069.                                       |
| 01/17/01         | 17                 | _                            | Changed Front panel P/N to 0308741.   |
| 08/21/01         | 21                 | _                            | Revised hose clamp and hose part numbers.   |
| 02/05/03         | 39                 | _                            | Replaced 108391 with 113622 thermometer.  |
| 04/23/03         | 3,8,14,38,40,42,47 | W7604                        | Inserted Final Rinse Sentry information.  |
| 04/23/03         | 19                 | _                            | Revised door hinge assemblies. Changed door catch assembly from 0710162 to 0710161. |
| 04/23/03         | 29,31              | _                            | Changed hose P/N 0509214 to P/N 107417  |

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# INTRODUCTION

Welcome to Champion.

Thank you for choosing **Champion** and for allowing us to take care of your dishwashing needs.

This manual covers several models. Model numbers are shown on the front cover.

Your machine has been completely assembled, inspected, and thoroughly tested at our factory to eliminate problems at installation before it was shipped to your installation site. This manual provides:

- Warranty information
- Installation and operation procedures
- Maintenance instructions
- Troubleshooting guide
- Replacement parts lists.

Complete and return your warranty registration card as soon as possible.

**Champion** constantly improves its products; therefore, specifications contained in this manual may have changed.

For your protection, factory authorized parts should always be used.

Replacement parts may be ordered directly from **Champion** or from your **Champion** authorized parts distributor or service agency. When ordering parts, supply the model number, serial number, voltage and phase of your machine, the part number, part description, and quantity.

### LIMITED WARRANTY

Champion Industries Inc. (herein referred to as Champion), P.O. Box 4149, Winston-Salem, North Carolina 27115, and P.O. Box 301, 2674 N. Service road, Jordan Station, Canada, LOR 1S0, warrants machines, and parts, as set out below.

Warranty of Machines: Champion warrants all new machines of its manufacture bearing the name "Champion" and installed within the United States and Canada to be free from defects in material and workmanship for a period of one (1) year after the date of installation or fifteen (15) months after the date of shipment by Champion, whichever occurs first. (See below for special provisions relating to glasswashers.) The warranty registration card must be returned to Champion within ten (10) days after installation. If warranty card is not returned to Champion within such period, the warranty will expire after one year from the date of shipment.

Champion will not assume any responsibility for extra costs for installation in any area where there are jurisdictional problems with local trades or unions.

If a defect in workmanship or material is found to exist within the warranty period, Champion, at its election, will either repair or replace the defective machine or accept return of the machine for full credit; provided, however, as to glasswashers, Champion's obligation with respect to labor associated with any repairs shall end (a) 120 days after shipment, or (b) 90 days after installation, whichever occurs first. In the event that Champion elects to repair, the labor and work to be performed in connection with the warranty shall be done during regular working hours by a Champion authorized service technician. Defective parts become the property of Champion. Use of replacement parts not authorized by Champion will relieve Champion of all further liability in connection with its warranty. In no event will Champion's warranty obligation exceed Champion's charge for the machine. The following are not covered by Champion's warranty:

- a. Lighting of gas pilots or burners.
- b. Cleaning of gas lines.
- c. Replacement of fuses or resetting of overload breakers.
- d. Adjustment of thermostats.
- e. Adjustment of clutches.
- f. Opening or closing of utility supply valves or switching of electrical supply current.
- g. Cleaning of valves, strainers, screens, nozzles, or spray pipes.
- h. Performance of regular maintenance and cleaning as outlined in operator's guide.
- i. Damages resulting from water conditions, accidents, alterations, improper use, abuse, tampering, improper installation, or failure to follow maintenance and operation procedures.
- j. Wear on Pulper cutter blocks, pulse vanes, and auger brush.

Examples of the defects not covered by warranty include, but are not limited to: (1) Damage to the exterior or interior finish as a result of the above, (2) Use with utility service other than that designated on the rating plate, (3) Improper connection to utility service, (4) Inadequate or excessive water pressure, (5) Corrosion from chemicals dispensed in excess of recommended concentrations, (6) Failure of electrical components due to connection of chemical dispensing equipment installed by others, (7) Leaks or damage resulting from such leaks caused by the installer, including those at machine table connections or by connection of chemical dispensing equipment installed by others, (8) Failure to comply with local building codes, (9) Damage caused by labor dispute.

**Warranty of Parts:** Champion warrants all new machine parts produced or authorized by Champion to be free from defects in material and workmanship for a period of 90 days from date of invoice. If any defect in material and workmanship is found to exist within the warranty period Champion will replace the defective part without charge.

DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITY. CHAMPION'S WARRANTY IS ONLY TO THE EXTENT REFLECTED ABOVE. CHAMPION MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED, TO ANY WARRANTY OF MERCHANTABILITY, OR FITNESS OF PURPOSE. CHAMPION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE REMEDIES SET OUT ABOVE ARE THE EXCLUSIVE REMEDIES FOR ANY DEFECTS FOUND TO EXIST IN CHAMPIOPN DISHWASHING MACINES AND CHAMPION PARTS, AND ALL OTHER REMEDIES ARE EXCLUDED, INCLUDING ANY LIABILITY FOR INCIDENTALS OR CONSEQUENTIAL DAMAGES.

Champion does not authorize any other person, including persons who deal in Champion dishwashing machines to change this warranty or create any other obligation in connection with Champion Dishwashing Machines.

# GENERAL

This manual covers the **Champion** undercounter dishwashing machine. This machine is fully automatic and is equipped with a 1/2 H.P. pump motor. All models are available for mounting directly to the floor or on optional stands (see accessories listed on page 4).

#### **Standard equipment includes:**

- -Automatic tank fill
- -Common utility connections
- -120 Volt control circuit
- -Convenient, easy to use controls
- -Door latch activated start switch
- -Detergent pump (UH-150, UH-150B)
- -Detergent, rinse-aid & sanitizer pumps (UL-150) -Final rinse sentry (UH-150, UH-150B)
- -Upper and lower wash/rinse arms
- -Two dish racks (peg and flat)
- -Exclusive vent design for venting of condensation
- -Stainless steel heavy-gauge construction,

including base

This series of dishwashers is available in the following models:

#### **Model Numbers**

UH-150B, UH-150, UL-150

- The UH-150B model is a high temperature (180°F/82°C rinse) sanitizing model with booster.
- The UH-150 model is a high temperature (180°F/82°C rinse) sanitizing model without booster.
- The UL-150 model is a low temperature (140°F/60°C rinse) sanitizing model for use with sodium hypochlorite solution (chlorine bleach) as a sanitizing agent. The rinse aid pump is standard.

#### **Options**

- Kit 504 Top and side panels (P/N 0708756)
- Kit 505 Top panel only (P/N 0708744)
- Kit 506 Left side panel only (P/N 0708745)
- Kit 507 Right side panel only (P/N 0708746)
- Kit 508 Rinse aid pump kit (P/N 0708754)
- Kit 510 Extended reach pumped drain kit (UH-150B, UH-150, UL-150) (P/N 0708766)
- Kit 511 70°F/39°C temperature rise booster (for 110°F/49°C supply water).

#### Accessories

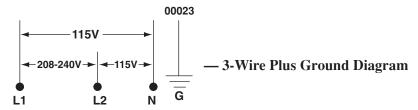
- 17RS 17" rack stand (raises working height and adds rack storage)
- 17T 17" cabinet (raises working height and adds storage)
- CST Combination sink/table (scraping and sorting station)
- 0501653 Dish Rack (Peg Rack)
- 0501654 Silverware Rack (Flat Bottom Rack)
- 0710364 5" Base/Stand

# **Electrical Power Requirements**

|         |          | Booster | Rated | Minimum Supply | Maximum Overcurrent |
|---------|----------|---------|-------|----------------|---------------------|
| Model   | Voltage  | Rise    | Amps  | Ckt. Ampacity  | Protective Device   |
| UL-150  | 115/60/1 | N/A     | 13    | 15             | 15                  |
| UH-150  | 115/60/1 | N/A     | 13    | 15             | 15                  |
| UH-150B | 208/60/1 | 40      | 36    | 50             | 50                  |
| UH-150B | 240/60/1 | 40      | 40    | 50             | 50                  |
| UH-150B | 208/60/1 | 70      | 48    | 60             | 60                  |
| UH-150B | 240/60/1 | 70      | 55    | 70             | 70                  |

#### NOTE:

208-240V/60Hz/1PH electrical supply service must be a 3-wire plus ground for connection as shown for model UH-150B.



# INSTALLATION

# Unpacking



#### **WARNING:**

Care should be taken when lifting the machine to prevent damage.

- 1. Immediately after unpacking your machine, inspect for any shipping damage. If damage is found, save the packing material and contact the carrier immediately.
- 2. Remove the dishwasher from the skid. Adjust the feet if required, then move the machine to its permanent location.
- Level the machine (if required) by placing a level on the top of the machine and adjusting the feet. Level the machine front-to-back and side-to-side.



#### **CAUTION:**

After locating your machine, it must meet local health codes. An example may be to seal your machine to the floor using a good grade of silicone sealant.

## **Electrical Connections**



#### **WARNING:**

Electrical and grounding connections must comply with the National Electrical Code and/or Local Electrical Codes.



#### **WARNING:**

When working on the dishwasher, disconnect the electric service and tag it to indicate work is being done on that circuit.

1. The electrician should compare the electrical specifications on the machine electrical junction box (located behind the front panel) to the electrical power supply before connecting the machine to the incoming service at a fused disconnect switch.



The 208-240V/60Hz/1PH electrical supply service for model UH-150B must be a *3-wire plus ground service.* 

- On the 208V-240V models, a knock-out is provided at the rear of the junction box (located behind the front panel) for electrical service connections. A fused disconnect switch or circuit breaker (supplied by user) is required to protect each power supply circuit.
- On 115V models, your machine is already equipped with a 4-foot power cord and plug suitable for 115V-15A service.

# **Plumbing Connections**



#### **CAUTION:**

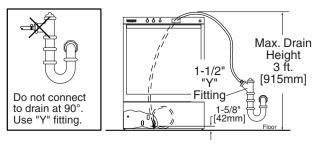
Plumbing connections must comply with local sanitary and plumbing codes.

#### **Water Connections**

- 1. Connect the hot water supply (140°F/60°C Min) to the 1/2" I.D. fill hose. The fill solenoid valve is equipped with a flow control that will accept water pressures from 172 kPa/25 psi to 665 kPa/95 psi.
- 2. Install a manual shut-off valve in the water supply line to accommodate servicing the machine. The shut-off valve should be the same size or larger than the supply line.
- 3. The fill solenoid valve is equipped with a built-in strainer to protect from particles in the water supply.

#### **Drain Connections**

1. All Models are supplied with a flexible 5/8" I.D. drain hose, which must be connected to a 1-1/2" drain using a wye (Y) fitting.



# **Chemical Dispensing Pumps**

- 1. Use a qualified detergent/chemical supplier for your detergent, rinse aid, and chemical sanitizer needs.
- 2. The cycle timer located in the main control cabinet is equipped with adjustable cams for the chemical dispensing pump(s). The cams control the length of time that the pumps operate. A qualified person may adjust the cam settings if necessary. Refer to the timer chart diagram(s) at the end of the manual for timer cam locations and factory time settings.

# **Detergents**

1. Your machine is supplied with a detergent dispensing pump that is internally wired and ready for use. Using a liquid detergent, insert the labeled *Detergent* pickup tube into the detergent container. The pickup tube has a strainer on the end to prevent crystallized chemical from clogging the supply lines.

## Rinse Aid

1. An optional rinse aid pump may be supplied for UH-150B and UH-150 models. Using a liquid rinse aid, insert the labeled *Rinse Aid* pickup tube into the rinse aid container.

#### Sanitizer

- 1. Model UL-150 is supplied with an internally wired chemical sanitizer dispensing pump. Using a sodium hypochlorite solution, insert the labeled *Chemical Sanitizer* pickup tube into the chemical sanitizer container.
- 2. Contact your chemical supplier for adjustment of the chemical sanitizer.

# **Priming Chemical Dispensing Pumps**

1. Insert pick-up tubes in their respective chemical containers. Each pick-up tube is labeled to identify the proper container.



#### NOTE:

Make sure booster has been primed on Model UH-150B before priming chemical pumps.

- For all models, push the DET/RINSE to prime the detergent and rinse-aid. Hold the switch, and observe fill chute on interior right side of machine until chemical enters the wash chamber.
- 3. For model UL-150 only, hold the SANITIZER switch in the up position to prime the sanitizer. Observe fill chute on interior right side of machine until you see chemical enter the wash tank.

# **Completing Installation**

- 1. Remove any foreign material from inside the machine.
- 2. Center the scrap screen over the sump opening.
- 3. Prime the booster using the following procedure (if applicable).



#### **CAUTION:**

To prime the booster, the following procedure must be followed AFTER the electrical and plumbing connections have been made.

- a. Close the front door.
- b. Remove the front panel.
- c. Locate the Installation and Service toggle switch on the extreme left side of the control box.
- d. Press the toggle switch down to the Booster Fill position and hold it approximately 1 minute (or until water can be heard entering the machine).
- e. Release the toggle switch to stop the water flow.
- f. You have completed the booster priming process.



Push the Installation and Service toggle switch to the UP position. Electrical power is now supplied to the machine.



#### **WARNING:**

Failure to prime the booster may cause damage to the booster elements and other electrical components and will void the warranty.

- 4. After plumbing and electrical connections are completed, check the machine for water leaks by depressing the **ON/FILL** switch on the front panel, then close and latch the door. This allows the tank to fill and to complete the rinse cycle. Check for leaks.
- 5. Open the door and check the water level. The water level should barely cover the scrap screen.
- 6. Depress the **OFF/DRAIN** switch and close and latch the door to drain the tank. This allows the machine to complete the 100-second wash and drain cycle. Check the drain plumbing for leaks.
- 7. Replace the front panel. Installation is now complete.

# **OPERATION**

# **Operation Summary**

The following is a summary of your Undercounter Dishwashing Machine operating cycle:

- 1. The cycle begins when you depress the front edge of the door latch toward the door.
- 2. The green cycle lamp lights and the pump starts.
- 3. The pump runs during the wash cycle for approximately 80 seconds. The wash cycle duration is extended if booster is not up to temperature.
- 4. The pump stops, and the drain is opened.
- 5. After a 2-3 second pause, the pump drain cycle begins and continues for approximately 30 seconds.
- 6. After a 2-3 second pause, the fill valve opens, and the pump starts for the rinse cycle.
- 7. Within approximately 25 seconds, the rinse cycle is complete. The pump stops, the green cycle lamp turns off, and the cycle is complete.
- 8. Open the door and remove the rack of clean ware. The door must remain open for 5 seconds to allow the timer to reset before starting another cycle.

# **Operation Procedures**

The operation of your dishwasher will be more efficient when these procedures are followed:

- 1. Check that the spray arms and scrap screen are in place.
- 2. Close the door and depress the front edge of the door latch toward the door. Push the **ON/FILL** switch to the **ON** position. The tank will begin filling with water. This procedure is followed only when the tank is empty.
- 3. When the tank is full, check the wash tank temperature gauge. Minimum wash temperatures are:
  - UH-150B, UH-150 **150°F/66°C**.
  - UL-150 140°F/60°C.
- 4. Scrap and preflush all items to be washed, and load the items into the rack. **DO NOT OVERLOAD** the rack. Wash only one layer of silverware in a rack.
- 5. Open the door and insert the rack into the machine.
- 6. Shut the door, and depress the door latch. This will start the wash cycle. The green cycle lamp located on the front control panel will light. This lamp will remain on until the entire wash and rinse cycle is completed.

#### NOTE:

The machine may be stopped at any time by opening the door. When restarted, the cycle does not start over. It will continue from the point at which it was interrupted.

- 7. Check the rinse temperature during the final rinse (120 seconds into cycle). The rinse temperature must be 180°F/82°C minimum for models UH-150B, UH-150, and 140°F/60°C for model UL-150.
- 8. The pump will automatically stop and the green cycle light will turn off indicating the cycle is completed.
- 9. Open the door and remove the rack.
- 10. Repeat steps 4-9 for additional cycles. Machine operation is automatic.
- 11. CLEAN the scrap screen after every meal period. During heavy usage, the scrap screen should be cleaned more frequently.



#### **CAUTION:**

Poor machine performance and/or damage to the machine can occur if the scrap screen becomes clogged with soil or waste particles.

12. After completing usage for the day, water in the tank should be drained by depressing the OFF/DRAIN switch and closing and latching the door. This initiates a 100-second wash and drain cycle that drains the tank.



#### **CAUTION:**

DO NOT LEAVE WATER IN THE TANK OVERNIGHT. Water left in the tank overnight will allow harmful chemicals to deteriorate the tank.

# **Extended Wash Cycle**

On models UH-150B, UH-150, but not on model UL-150, an extended wash cycle is available for pots, pans and heavily soiled items.

#### To use the Extended Wash Cycle:

- 1. Insert the loaded rack into the machine. Close the door and depress the latch. Wait 10 seconds for the detergent to be dispensed automatically.
- 2. Flip the **Extended Wash/Delime Switch** to the **UP** position. The green cycle light will go out, indicating that the machine is in a **continuous** wash mode.
- 3. When your desired wash time has passed, flip the **Extended Wash/Delime Switch** to the **DOWN** position. The green cycle light will come on, indicating a return to the normal wash mode. The machine will now complete the remaining portion of the automatic cycle.

# **MAINTENANCE**

The efficiency and life of your machine is increased by regularly scheduled preventive maintenance. A well maintained machine gives better results and service. An investment of a few minutes of daily maintenance will be worthwhile.

The best maintenance you can provide is to keep your machine clean. Components that are not regularly cleaned and flushed will clog and become inoperative.

Intervals shown in the following schedules represent an average length of time between necessary maintenance. Maintenance intervals should be shortened whenever your machine is faced with abnormal working conditions, hard water, or multiple shift operations.

# **Cleaning Schedule**

- Daily Every 8 Hours
  - 1. Depress the **OFF/DRAIN** switch to **OFF** and close and latch the door to drain the tank.
  - 2. Open the door and remove both the upper and lower spray arms by unscrewing the knurled fastener holding each spray arm.
  - 3. Remove the scrap screen carefully to keep soil or waste particles from falling into the sump.
  - 4. Clean inside the tank with clean water. Backflush the scrap screen until it is clean. Do not strike the screen against solid objects.
  - 5. Clean the wash arms to remove any debris from spray openings. Do not strike the spray arms against solid objects.
  - 6. Reinstall the scrap screen and spray arms.
  - 7. Leave the door open overnight to allow drying.
  - 8. Report any unusual conditions to your supervisor.

#### Meal Periods

1. Clean the scrap screen after every meal period and more frequently during heavy usage. Do not allow the scrap screen to become clogged with soil or waste particles.

# **Deliming**

Your dishwasher should be delimed regularly as required. This will depend on the mineral content of your water.

Inspect your machine interior for lime deposits. If deliming is required, a deliming agent should be used for best results.

If you have the chemical sanitizing model (UL-150), carefully follow the following procedure before deliming:



#### DANGER:

Deliming solution or other acids must not come in contact with household bleach (sodium hypochlorite) or any chemicals containing chlorine, iodine, bromine, or fluorine. Mixing will cause hazardous gases to form. Skin contact with deliming solutions can cause severe irritation and possible chemical burns. Consult your chemical supplier for specific safety precautions.

- Remove the sanitizer tube from the container. Place the tube into a container of hot water. 1.
- 2. Depress and hold the SANITIZER prime switch (located on the front panel) until clear water enters the tank through the fill air gap.
- Close the door and depress the door latch. Complete two operating cycles to purge the machine of all sanitizer.

# **Deliming Process**

Complete the following procedure to delime your machine:

- 1. Add the delime chemical to wash the tank (per chemical supplier specifications).
- 2. Close and latch the door.
- 3. On models UH-150B and UH-150, depress the EXTENDED WASH/DELIME switch on the front panel as soon as the cycle starts. On model UTL, proceed to step 5 of this procedure.



# NOTE:

The **EXTENDED** wash/delime switch will operate only during the wash cycle. When this switch is in the ON position, the machine stays in the wash cycle until the switch is **OFF**. After switching to **OFF**, the machine will finish the cycle.

- After 2-1/2 to 3 minutes (or as long as required), turn off the EXTENDED WASH/ 4. **DELIME** switch. The machine will finish a complete cycle.
- 5. Complete two cycles with the machine empty to purge the machine of all delime chemicals.
- 6. Deliming is complete.

#### **Maintenance Schedule**

#### · As Required

- 1. Check the temperature gauge reading.
- 2. Check the chemical supplies and refill as necessary.

#### Weekly

- 1. Inspect all water lines for leaks and tighten them at joints if required.
- 2. Clean all detergent residue from the exterior of the machine.
- 3. Check the drain for leaks.
- 4. Clean accumulated scale from the heating element.
- 5. Remove and closely inspect each spray arm for blockage.
- 6. Check for damage to the scrap screen. Ineffective screening can cause wash system failures.
- 7. Clean the detergent, sanitizer, and rinse aid supply tubes. Complete the following procedure:
  - a. Remove the detergent, sanitizer, and rinse aid pick-up tube(s) from the container(s). Place the tube(s) into a container of hot water.
  - b. Depress and hold the **DET** prime switch (located on the front panel) until clear water enters the tank through the fill air gap (located on the right side of the tank).
  - c. If your machine is equipped with a sanitizer and/or rinse aid pump, follow the same procedure by pressing the **SANITIZER** and/or the **RINSE AID** prime switch until clear water enters the tank through the fill air gap.
  - d. When completed, remove the pickup tubes from the hot water and reinsert them into the correct chemical containers. Repeat the priming procedures to ensure that chemicals have filled the tubes for the next operating period.
  - e. Run a complete cycle to flush chemicals from the tank.

# **TROUBLESHOOTING**

Before determining any specific cause of a breakdown or abnormal operation of your dishwasher, check that:

- 1. Turn all switches ON, except for the extended wash switch.
- 2. Wash arms are clean.
- 3. Scrap screen is properly positioned and clean.
- 4. Thermostat(s) are at their correct setting.
- 5. Sanitizer, detergent, and rinse additive dispensers are adequately filled.
- 6. All plumbing valves are open.

If a problem still exists, use the following table for troubleshooting.

| CONDITION                            | CAUSE  | SOLUTION  |
|--------------------------------------|--|---|
| Machine will not start               | Door not closed and latched  | Make sure door is fully latched<br>Check disconnect or plug into outlet<br>Make sure the extended wash switch is in<br>the OFF position.  |
| Low or no water                      | Main water supply is turned off  | Turn on house water supply  |
| Chemical not feeding                 | No chemical in container  Feed tubes to/from chemical pump clogged Screen on feed tube clogged Tubing kinked or split  | Replace or fill container Clear obstruction and flush with hot water Clean and replace Straighten or replace tubing   |
| Water temperature is low when in use | Incoming water temperature<br>at machine too low<br>Hi limit tripped   | Raise temperature to 140°F/60°C for all machines Reset hi limit   |
| Insufficient pumped spray pressure   | Clogged spray arm<br>Scrap screen full   | Clean<br>Must be kept clean and in place  |
| Low final rinse temperature          | Low incoming watertemperature  Hi limit tripped  | Check the booster - be sure the thermostat is set to maintain 180°F/66°C temperature (UL-150 is 140°F/60°C) (Check all valves to be sure they are clean and operating) Reset hi limit   |
| Poor washing results                 | Water level low in wash tankshould be at or 1/2" (13mm) above screen Detergent dispenser not   | Check fill valve and water pressure  Contact service agent  |
|                                      | operating properly Insufficient detergents  Detergent setting too low Wash water temperature too low Wash arm clogged Improperly scraped dishes Ware being improperly placed in rack Improperly cleaned equipment Electric element has soil/lime buildup | Check and fill Contact detergent supplier Contact detergent supplier See above booster temperatures Clean wash arm Check scraping procedures Use proper racks - do not overload racks Unclog wash arms to maintain proper pressure and flow conditions Clean and delime |

# TROUBLESHOOTING (con't)

| CONDITION   | CAUSE                                 | SOLUTION  |
|---|---------------------------------------|---|
| No water in wash well   | Opening door priorto cycle completion | Close door. Wait for green cycle light to go out before opening door. |
| No water in wash tank<br>after activating the<br>ON/FILL switch | Door not latched                      | Latch door.<br>Wait for wash tank to fill.                            |
| Cycle time increases with each cycle                            | Incoming watertemperature is too low  | Raise temperature to 60°C/140°F for all machines.                     |

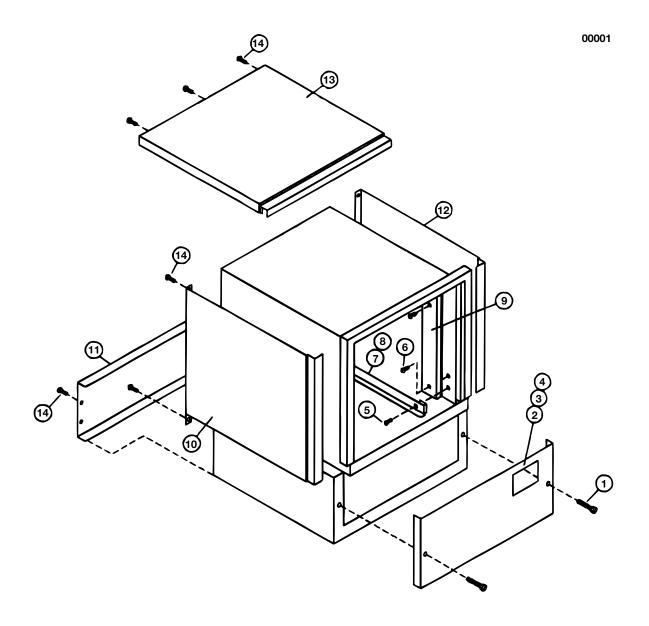


Figure 1 — Track and Panel Assembly

# TRACK/PANEL ASSEMBLY

| Fig. 1   | Part    | Description                                 | Qty |
|----------|---------|---|-----|
| Item No. | No.     |   |     |
| 1        | 0508751 | Screw, 10-32 x 1-1/2" Lg. Truss Head        | 2   |
| 2        | 0308741 | Front Panel (UH-150B, UH-150, UL-150)       | 1   |
| 3        | 0308741 | Front Panel (UL-150)                        | 1   |
| 4        | _       | No Longer Available                         |     |
| 5        | 0501413 | Screw, 10-32 x 3/8" Lg. Round Head          | 2   |
| 6        | 0501415 | Screw, 10-32 x 5/8" Lg. Round Head          | 4   |
| 7        | 0308632 | Track, RH                                   | 1   |
| 8        | 0308631 | Track, LH                                   | 1   |
| 9        | 0708647 | Cover, Vent                                 | 2   |
| 10       | 0308736 | Panel, LH Side (UL-150, UH-150B, UH-150)    | 1   |
| 11       | 0308734 | Panel, Rear (UL-150, UH-150B, UH-150)       | 1   |
| 12       | 0308737 | Panel, RH Side (UL-150, UH-150B, UH-150)    | 1   |
| 13       | 0308735 | Panel, Top (UL-150, UH-150B, UH-150)        | 1   |
| 14       | 100007  | Screw, 10-32 x 3/8" Lg. Truss Head (UL-150) | 10  |

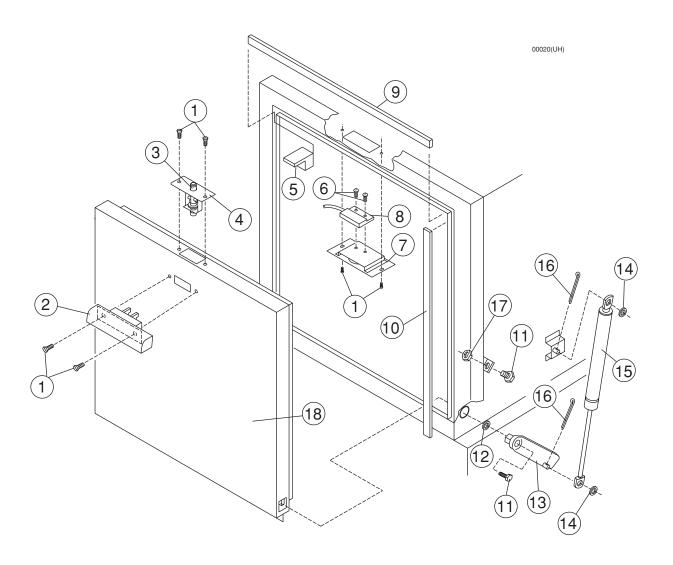


Figure 2 — Door & Switch Assembly

# DOOR & SWITCH ASSEMBLY

| Fig. 2<br>Item No. | Part<br>No. | Description                            | Qty |
|--------------------|-------------|--|-----|
| 1                  | 100007      | Screw, 10-32 x 3/8" Truss Head         | 6   |
| 2                  | 0710167     | Door Latch Assy.                       | 1   |
| 3                  | 0510165     | Plunger, c/w Magnet                    | 1   |
| 4                  | 0710161     | Assembly, Door Catch (Includes item 3) | 1   |
| 5                  | 0508545     | Gasket, Steam                          | 2   |
| 6                  | 104883      | Screw, Round Head (6-32 x 3/8")        | 2   |
| 7                  | 0709431     | Plate, Door Switch                     | 1   |
| 8                  | 111090      | Switch, Door Magnetic Reed             | 1   |
| 9                  | 0508544     | Gasket, Upper Door                     | 1   |
| 10                 | 0508543     | Gasket, Side Door                      | 2   |
| 11                 | 112779      | Screw 1/4-20 x 1 3/4" FL Socket Head   | 4   |
| 12                 | 0310183     | Washer, Hinge (2 per side)             | 4   |
| 13                 | 0710098     | RH Hinge Assy.                         | 1   |
| 13                 | 0710097     | RH Hinge Assy.                         | 1   |
| 14                 | 106026      | Washer                                 | 4   |
| 15                 | 112543      | Shock, Door                            | 2   |
| 16                 | 106551      | Pin, Cotter                            | 4   |
| 17                 | 0501539     | Nut, Plain 1/4-20                      | 2   |
| 18                 | 0710158     | Door                                   | 1   |
| -                  | 0508555     | Wiring, Harness, Door Switch           | 1   |

TO RINSE THERMOSTAT (CALLED OUT IN CONTROL BOX) THERMOMETER (CALLED OUT IN CONTROL BOX) TO PUMP DRAIN TO DRAIN

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Figure 3 — Tank Heat and Drain

# TANK HEAT/DRAIN ASSEMBLY

| Fig. 3   | Part    | Description                                    | Qty   |
|----------|---------|--|-------|
| Item No. | No.     |  |       |
| 1        | 0508628 | Scrap Screen                                   | 1     |
| 2        | 0508536 | Heater Element 220V-60Hz-1PH (UH-150B, UL-150) | 1     |
| 3        | 0508537 | Heater Element 110V-60Hz-1PH (UH-150, UL-150)  | 1     |
| 4        | 0508578 | Adapter, Pump Tube                             | 1     |
| 5        | 0501539 | Nut, Plain 1/4-20                              | 2     |
| 6        | 0501501 | Washer, Lock, 1/4" Split                       | 2     |
| 7        | 0308611 | Support, Drain Valve                           | 1     |
| 8        | 0306618 | Valve, Drain                                   | 1     |
| 9        | 0501418 | Screw, 1/4-20 x 1/2" Lg. Round Head            | 2     |
| 10       | 0508873 | Adapter, Thermostat                            | 1     |
| 11       | 0501836 | O-Ring, Thermostat                             | 2     |
| 12       | 0508872 | Adapter, Thermometer                           | 1     |
| 13       | 108954  | Nut, Grip 6-32 w/Nylon Insert                  | 2     |
| 14       | 110562  | Thermostat, High-Limit                         | 1     |
| 15       | 201029  | Locknut, 1/2 NPT Nickel-Plated                 | 2     |
| 16       | 0308655 | Tube, Pump Outlet                              | 1     |
| 17       | 0508579 | Nut, Jam 1"-8                                  | 1     |
| 18       | 104414  | O-Ring   | 1     |
| 19       | 0510082 | Clamp, Hose                                    | 2     |
| 20       | 0507265 | Hose, 5/8"ID x 7/8"OD PVC Braided              | A/R   |
| 21       | 0509302 | Hose, 5/8"ID x 1"OD PVC Braided                | 6 Ft. |

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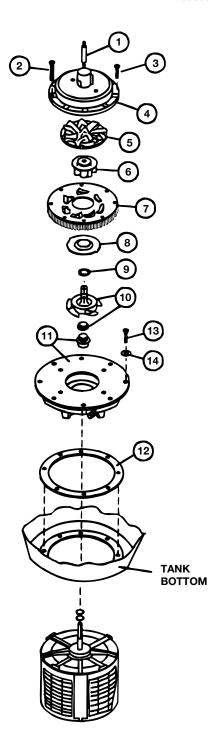


Figure 4 — Pump Assembly

# **PUMP ASSEMBLY**

| Fig. 4   | Part    | Description  | Qty |
|----------|---------|--|-----|
| Item No. | No.     |  |     |
| 1        | 0508542 | Spindle, Lower Wash Arm                                | 1   |
| 2        | 0501431 | Screw, 8-32 x 1-1/8" Round Head                        | 4   |
| 3        | 0501425 | Screw, 8-32 x 5/8" Round Head                          | 4   |
| 4        | 0508793 | Housing, Diffuser                                      | 1   |
| 5        | 0502741 | Diffuser   | 1   |
| 6        | 0502704 | Impeller   | 1   |
| 7        | 0502746 | Adapter Plate, Suction                                 | 1   |
| 8        | 0502745 | Plate, Drain Inlet                                     | 1   |
| 9        | 0502703 | O-ring   | 1   |
| 10       | 0502744 | Propeller/Rotating Seal Assembly                       | 1   |
| 11       | 0502743 | Mounting Plate/Seal Assembly (Includes Item 10)        | 1   |
| 12       | 0501881 | Gasket, Pump   | 1   |
| 13       | 0508665 | Screw, 10-32 x 5/8" Hex Washer Head                    | 8   |
| 14       | 0508570 | Washer, Sealing Teflon                                 | 8   |
| -        | 0710071 | Pump/Motor Assembly (Includes items 1-11)*             | 1   |
| -        | 107966  | Nut, Grip 10-32, SST (Not Shown) (For mounting Item 1) | 1   |

<sup>\*</sup> Motor not available as a separate repair part

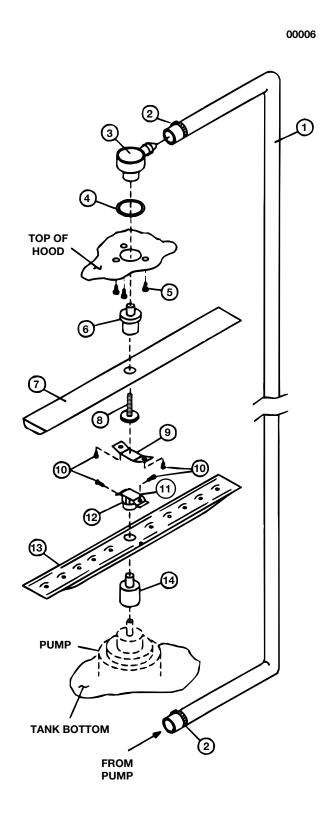


Figure 5 — Wash System Assembly

# WASH SYSTEM ASSEMBLY

| Fig. 5   | Part    | Description                                    | Qty |
|----------|---------|--|-----|
| Item No. | No.     |  |     |
| 1        | 0508549 | Hose, Upper Wash                               | 1   |
| 2        | 0502563 | Clamp, Hose 1"                                 | 2   |
| 3        | 0708650 | Spindle, Upper Wash Arm                        | 1   |
| 4        | 0503588 | O-ring, 1-1/8" x 1-3/8"                        | 1   |
| 5        | 0501412 | Screw, 10-32 x 3/8" Lg. Truss Head             | 3   |
| 6        | 0508541 | Bushing, Upper Wash Arm                        | 1   |
| 7        | 0705047 | Wash Arm, Upper                                | 1   |
| 8        | 0505042 | Pivot, Upper Wash Arm                          | 1   |
| 9        | 0308783 | Retainer, Upper Pivot S/A                      | 1   |
| 10       | 0501563 | Screw, #8 x 3/8" (Sheet Metal) Truss Head      | 4   |
| 11       | 0308158 | Nut Clip, Spray Arm                            | 1   |
| 12       | 0501684 | Nut, Spray Arm Lock                            | 1   |
| 13       | 0705049 | Wash Arm, Lower                                | 1   |
| 14       | 0508540 | Bushing, Lower Wash Arm                        | 1   |
| _        | 0708874 | Lower Wash Arm Assembly (includes items 10-14) |     |

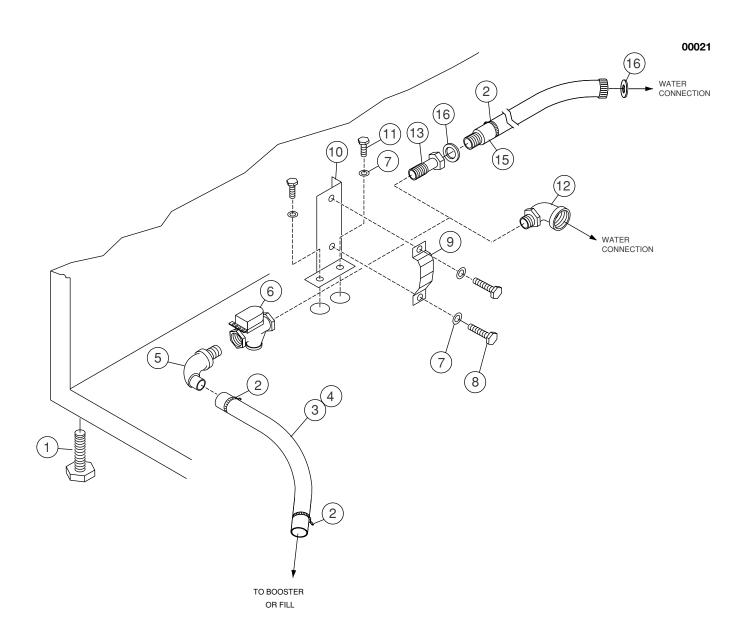


Figure 6 — Water Inlet Piping

# WATER INLET PIPING ASSEMBLY

| Fig. 6   | Part    | Description  | Qty |
|----------|---------|--|-----|
| Item No. | No.     |  |     |
| 1        | 0503718 | Foot, Adjustable   | 4   |
| 2        | 0503679 | Clamp, Hose  | 2   |
| 3        | 0502665 | Hose 1/2" I.D. Clear-Braided (all except UH-150)         | A/R |
| 4        | 0509214 | Hose 1/2" I.D. White (UH-150)                            | A/R |
| 5        | 0502653 | Elbow, 3/8 MPT x 1/2" Hose x 90° Brass                   | 1   |
| 6        | 0504952 | Valve, Solenoid 3/8 NPT                                  | 1   |
| -        | 0502811 | Repair Kit, 3/8" NPT Solenoid Valve                      | A/R |
| -        | 0505235 | Coil, 115V, 3/8" NPT Solenoid Valve                      | A/R |
| -        | 0504958 | Flow Washer, 3/8" NPT Solenoid Valve                     | A/R |
| 7        | 0501501 | Washer, Lock 1/4" Split                                  | 4   |
| 8        | 0501419 | Bolt, 1/4-20 x 1/2" Lg. Hex Head                         | 2   |
| 9        | 0300203 | Clamp, Valve Support                                     | 1   |
| 10       | 0300065 | Support, Fill Valve                                      | 1   |
| 11       | 0501424 | Bolt, 1/4-20 x 3/8" Lg. Hex Head                         | 2   |
| 12       | 0503713 | Elbow, Street 3/8 MPT x 1/2 FPT Brass                    |     |
|          |         | (UH-150B, UH-150, UL-150)                                | 1   |
| 13       | 0502618 | Coupler, 3/8 MPT x 1/2" Hose barb                        | 1   |
| 14       | 0503679 | Clamp, Hose (all except UH-150B, UH-150, UL-150)         | 1   |
| 15       | 0509526 | Hose, Coupled 7 ft. (all except UH-150B, UH-150, UL-150) | 1   |
| 16       | 0505320 | Washer, Hose (all except UH-150B, UH-150, UL-150)        | 1   |

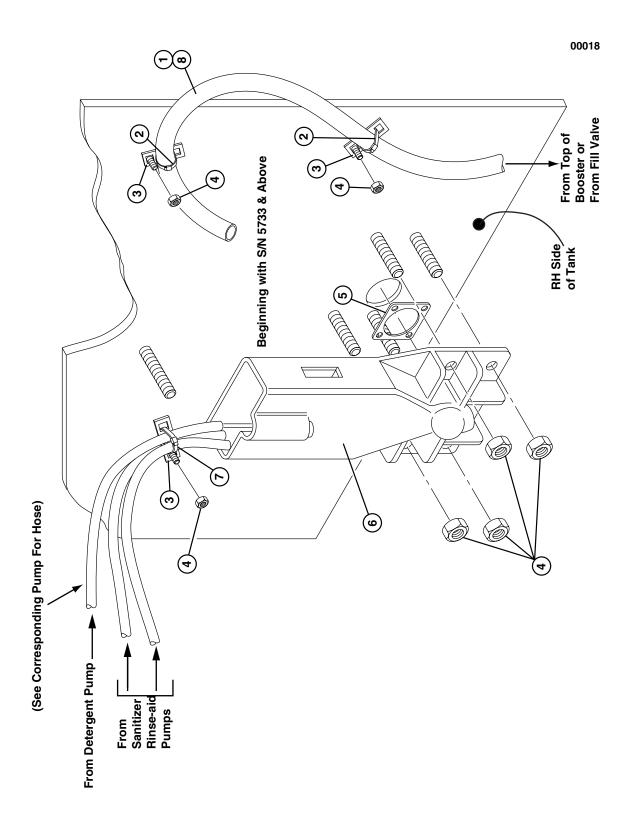


Figure 7 — Fill System

# FILL SYSTEM All Models

| Fig. 7 Item No. | Part<br>No. | Description                                    | Qty   |
|-----------------|-------------|--|-------|
| 1               | 0502665     | Hose, 1/2" I.D. Clear Braided (UL-150)         | A/R   |
| 2               | 0501518     | Tie Wrap, Hose                                 | 2     |
| 3               | 106090      | Bracket, Tie Wrap                              | 2     |
| 4               | 107966      | Nut, Grip, 10-32 w/Nylon Insert                | 8     |
| 5               | 0509048     | Gasket, Inlet Chute                            | 1     |
| 6               | 0508867     | Inlet Chute                                    | 1     |
| 7               | 0501519     | Tie Wrap, Chemical Hose                        | 3     |
| 8               | 107417      | Hose, Fill 1/2" I.D. (White) (UH-150B, UH-150) | 3 ft. |

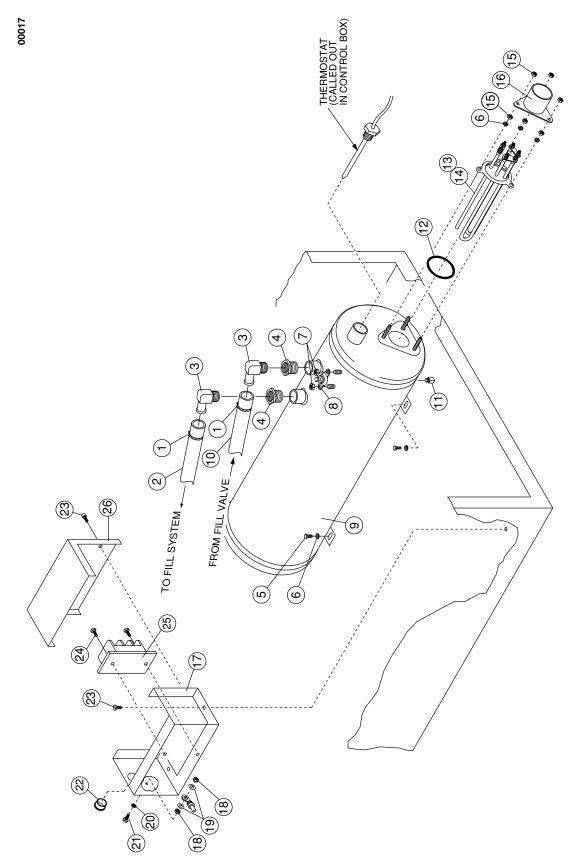


Figure 8 — Booster Assembly

# BOOSTER ASSEMBLY (Model UH-150B Only)

| Fig. 8   | Part    | Description                                       |
|----------|---------|---|
| Item No. | No.     |   |
| 1        | 0503679 | Clamp, Hose                                       |
| 2        | 107417  | Hose, 1/2" I.D. (42")                             |
| 3        | 0502653 | Elbow, 3/8 MPT x 1/2" Hose x 90° Brass            |
| 4        | 0508840 | Bushing, Reducing 3/4 NPT x 3/8 NPT Brass         |
| 5        | 0501419 | Bolt, 1/4-20 x 1/2" Lg. Hex Head                  |
| 6        | 0501501 | Washer, Lock 1/4" Split                           |
| 7        | 108954  | Nut, Grip 6-32 w/Nylon Insert                     |
| 8        | 110562  | Thermostat, High Limit                            |
| 9        | 0509042 | Tank, Booster                                     |
| 10       | 107417  | Hose 1/2" I.D. (28")                              |
| 11       | 0508709 | Pipe Plug, 1/8 NPT Brass                          |
| 12       | 109985  | O-Ring  |
| 13       | 111233  | Heater Element, 9KW (70°F Rise) 208/230V-60Hz-1Ph |
| 14       | 111235  | Heater Element, 6KW (40°F Rise) 208/230V-60Hz-lPh |
| 15       | 100003  | Nut, Plain 1/4-20 SST                             |
| 16       | 107908  | Cover, Heater Element                             |
| 17       | 0308638 | Body, Junction box                                |
| 18       | 0501533 | Nut, Plain 10-32 Brass                            |
| 19       | 0501472 | Washer, Flat #10 Brass                            |
| 20       | 0501493 | Washer, Lock #10 Ext. Tooth Brass                 |
| 21       | 0501403 | Screw, 10-32 x 3/4" Lg. Round Head Brass          |
| 22       | 107964  | Bushing, Snap                                     |
| 23       | 100007  | Screw, 10-32 x 3/8" Lg. Truss Head                |
| 24       | 0504538 | Screw, 10-32 x 3/8" Lg. Truss Head Steel          |
| 25       | 0504951 | Terminal Block                                    |
| 26       | 0308627 | Cover, Junction Box                               |
| -        | 110997  | Wire, Jumper, Heater Element (Not Shown)          |
| -        | 0307356 | Insulation, Heater Terminal (Not Shown)           |
| -        | 0508397 | Label, Cover Warning (Not Shown)                  |

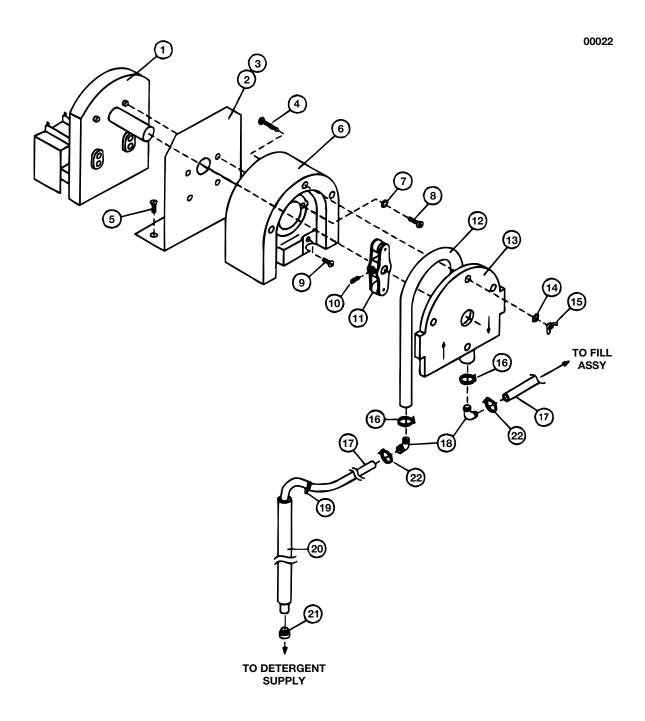


Figure 9 — Detergent Pump Assembly

### DETERGENT PUMP ASSEMBLY All Models

| Fig. 9<br>Item No. | Part<br>No. | Description   |     |  |
|--------------------|-------------|---|-----|--|
| 1                  | 0503757     | Motor, Pump   | 1   |  |
| 2                  | 0308637     | Bracket, Detergent Pump (UH-150B, UH-150)           | 1   |  |
| 3                  | 0308610     | Bracket, Detergent/Sanitizer Pumps (UL-150)         | 1   |  |
| 4                  | N/A         | Screw, M4 x 35mm Hex Head                           | 4   |  |
| 5                  | 100007      | Screw, 10-32 x 3/8" Lg. Truss Head                  | 2   |  |
| 6                  | N/A         | Housing, Pump                                       | 1   |  |
| 7                  | 0501497     | Washer, Lock #8 Split                               | 2   |  |
| 8                  | 0504822     | Screw,8-32 x 1/2" Lg. Pan Head                      | 2   |  |
| 9                  | 0501425     | Screw, 8-32 x 5/8" Round Head                       | 2   |  |
| 10                 | N/A         | Screw, Set M6 x 8mm                                 | 1   |  |
| 11                 | N/A         | Rotor Assembly                                      | 1   |  |
| 12                 | 108194      | Hose, Pump  | 1   |  |
| 13                 | N/A         | Cover, Pump Housing                                 | 1   |  |
| 14                 | N/A         | Washer, Flat M4                                     | 4   |  |
| 15                 | N/A         | Nut, Wing M4  | 4   |  |
| 16                 | 0501519     | Tie Wrap, Hose                                      | 2   |  |
| 17                 | 0502667     | Hose, Detergent, 1/4" I.D. PVC (Clear)              | A/R |  |
| 18                 | 0502644     | Elbow, 1/4" O.D. x 90° Barbed                       | 2   |  |
| 19                 | 0503695     | Label, Detergent                                    | 1   |  |
| 20                 | 0306363     | Tube, Pick-Up                                       | 1   |  |
| 21                 | 0501869     | Strainer, Pick-Up Tube                              | 1   |  |
| 22                 | 0501519     | Tie Wrap, Hose                                      | 2   |  |
| -                  | 109829      | Pump Head Assy. (includes items 4, 6, 10-15)        |     |  |
| -                  | 0708559     | Pump/Motor Assy. (includes items 1, 2, 4, 6-16, 18) |     |  |

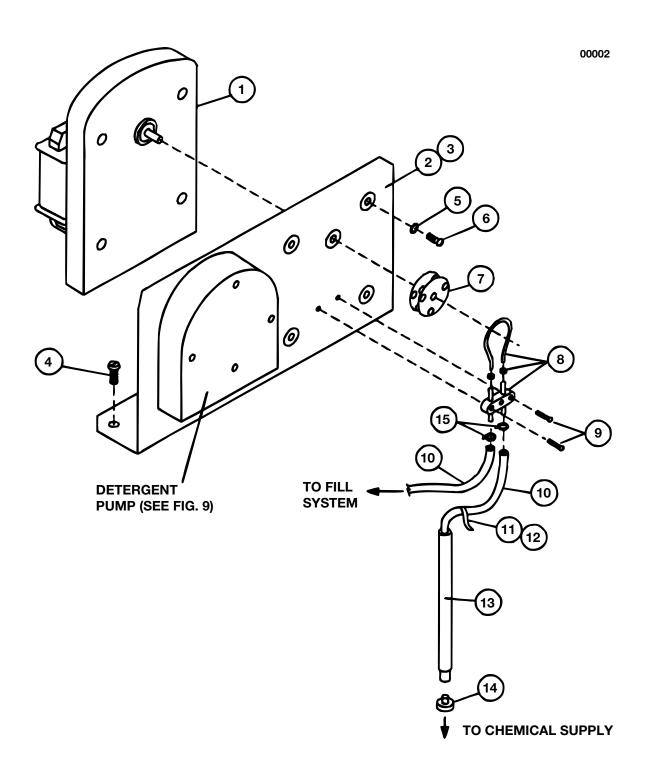


Figure 10 — Sanitizer/Rinse Aid Pump Assembly

#### SANITIZER/RINSE AID PUMP UL-150

| Fig. 10  | Part    | Description   | Qty |
|----------|---------|---|-----|
| Item No. | No.     |   |     |
| 1        | 0503756 | Motor, Pump   | 1   |
| 2        | 0308610 | Bracket, Detergent/Sanitizer Pump (UL-150)              | 1   |
| 3        | 0308697 | Bracket, Rinse-Aid Pump                                 | 1   |
| 4        | 100007  | Screw, 10-32 x 3/8" Lg. Truss Head                      | 2   |
| 5        | 0501497 | Washer, Lock #8 Split                                   | 4   |
| 6        | 0504822 | Screw, 8-32 x 1/2" Lg. Pan Head                         | 4   |
| 7        | 0707142 | Rotor Assy  | 1   |
| 8        | 0706635 | Element Tube Assy (45 <sup>cc</sup> /min)               | 1   |
| 9        | 0506589 | Screw, 6-32 x 7/8" Lg. Pan Head                         | 2   |
| 10       | 0502666 | Hose, 1/8" I.D. PVC (Clear)                             | A/R |
| (11)     | 0503694 | Label, Sanitizer (UL-150)                               | 1   |
| 12       | 0505483 | Label, Rinse-Aid (Optional)                             | 1   |
| 13       | 0306363 | Tube, Pick-Up   | 1   |
| 14       | 0501869 | Strainer, Pick-up Tube                                  | 1   |
| 15       | 0501519 | Tie Wrap, Hose  | 2   |
| -        | 0708561 | Detergent/Sanitizer Pump Assy. (UL-150)                 | 1   |
| <u>-</u> | 0708754 | Rinse-Aid Pump Assy.<br>(Includes Items 1, 3-10, 12-15) |     |

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Figure 11 — Drain Pump Assembly

# OPTIONAL EXTENDED REACH DRAIN PUMP ASSEMBLY

| Fig. 11  | Part    | <b>Description</b>                        |     |  |
|----------|---------|---|-----|--|
| Item No. | No.     |   |     |  |
| 1        | 0308119 | Bracket, Pump Hold Down                   | 1   |  |
| 2        | 0501419 | Bolt, 1/4-20 x 1/2" Lg. Hex Head          | 2   |  |
| 3        | 0501501 | Washer, Lock 1/4" Split                   | 2   |  |
| 4        | N/A     | Motor, Pump                               | 1   |  |
| 5        | N/A     | Backing Plate, Pump                       | 1   |  |
| 6        | 0508370 | Gasket, Pump Volute                       | 1   |  |
| 7        | 0508369 | Impeller, Pump                            | 1   |  |
| 8        | 0508368 | Volute, Pump                              | 1   |  |
| 9        | N/A     | Screw, 10-24 x 1-5/8" Lg. Pan Head        | 3   |  |
| 10       | 0508141 | Adapter, 3/4 MPT x 1/2" Hose Barb PVC     | 1   |  |
| 11       | 0507265 | Hose, 5/8" I.D. x 7/8 O.D., Braided       | A/R |  |
| 12       | 0503679 | Clamp, Hose                               | 2   |  |
| 13       | 0508139 | Coupling, 1/2" NPT PVC                    | 1   |  |
| 14       | 0508140 | Elbow, 1/2 MPT x 1/2" Hose Barb x 90° PVC | 1   |  |
| (-)      | C35065  | Drain Pump Assy. (Includes Items 4-9)     |     |  |

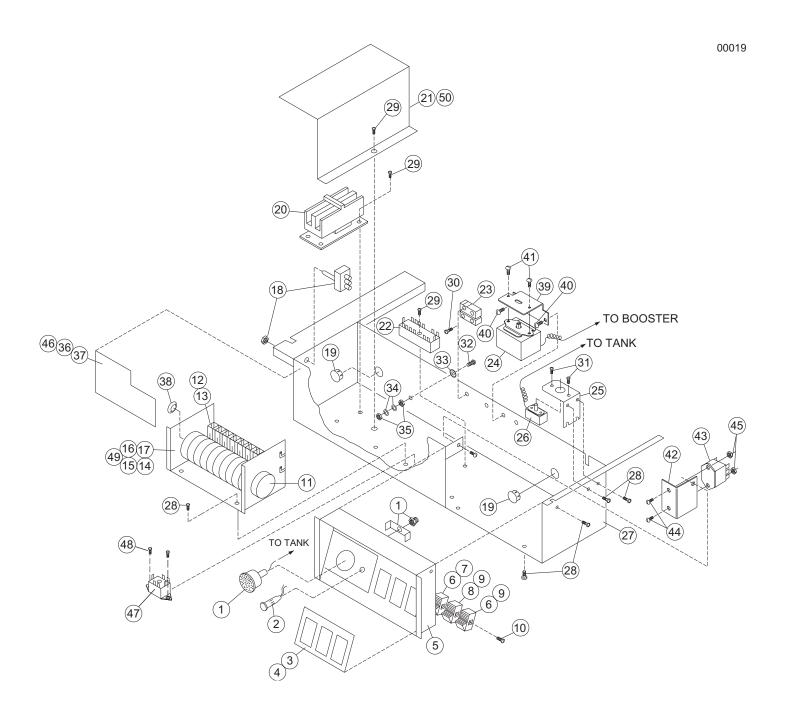


Figure 12 — Control Cabinet

## CONTROL CABINET ASSEMBLY UH-150B, UH-150, UL-150

| Fig. 12<br>Item No. | Part<br>No. | Description   |    |  |  |  |
|---------------------|-------------|---|----|--|--|--|
| 1                   | 113622      | Thermometer, 4ft Gas Filled (Replaces 108391)                               |    |  |  |  |
| 2                   | 0508551     | Lamp, Green   | 1  |  |  |  |
| 3                   | 0508552     | Decal, Control Panel (All except UH-150B, UH-150)                           |    |  |  |  |
| 4                   | 0508553     | Decal, Control Panel (UL-150)   | 1  |  |  |  |
| 5                   | 0708635     | Control Panel   | 1  |  |  |  |
| 6                   | 0501361     | Switch, Rocker (UH-150B, UH-150)  | 2  |  |  |  |
| (7)                 | 0501361     | Switch, Rocker (UL-150)   | 1  |  |  |  |
| 8                   | 0501369     | Switch, Rocker, Spring-Return (UH-150B, UH-150)                             | 1  |  |  |  |
| 9                   | 0501369     | Switch, Rocker, Spring Return (UL-150)                                      | 2  |  |  |  |
| 10                  | 0504911     | Screw #6 x 1/4" Lg. (Sheet Metal) Pan Head                                  | 6  |  |  |  |
| 11                  | 0504956     | Motor, Timer  | 1  |  |  |  |
| 12                  | 0501379     | Switch, Timer UH-150B, UH-150)  | 8  |  |  |  |
| (13)                | 0501379     | Switch, Timer (UL-150)  | 9  |  |  |  |
| 14)                 | 0708538     | Timer Assy (includes items 11, 12, 38) (UH-150B, UH-150 prior to S/N W7604) | 1  |  |  |  |
| (15)                | 0708590     | Timer Assy (includes items 11, 13, 38) (UL-150 prior to S/N W7604)          | 1  |  |  |  |
| (16)                | 0708590     | Timer Assy (includes items 11, 13, 38)                                      | 1  |  |  |  |
| 17                  |             | No Longer Available   |    |  |  |  |
| (18)                | 0501373     |   | 1  |  |  |  |
| 19                  | 107964      |   | 2  |  |  |  |
| (20)                | 0508554     | Contactor, 2 Pole, 50 AMP (240V) (UH-150B)                                  | 1  |  |  |  |
| (21)                | 0308641     | Cover, Contactor (UH-150B)  | 1  |  |  |  |
| 22                  | 0503749     | Terminal Block  | 1  |  |  |  |
| 23                  | 0501358     | Relay, Start  | 1  |  |  |  |
| **24                | 109069      | Thermostat w/capillary  | 1  |  |  |  |
| 25                  | 0300096     | Bracket, Tank Heat, Thermostat  | 1  |  |  |  |
| 26                  | 0501380     | Thermostat, Tank Heat, w/Capillary Wash Tank                                | 1  |  |  |  |
| 27                  | 0708525     | Control Box   | 1  |  |  |  |
| 28                  | 0501412     | Screw, 10-32 x 3/8" Lg. Truss Head  | 11 |  |  |  |
| 29                  | 0503648     | Screw, 8-32 x 1/4" Lg. Pan Head   | 4  |  |  |  |
| 30                  | 0501463     | Screw, 8-32 x 1" Lg. Round Head   | 1  |  |  |  |
| 31                  | 0501450     | Screw, 6-32 x 1/4" Lg. Round Head   | 2  |  |  |  |
| 32                  | 0501403     | Screw, 10-32 x 3/4" Lg. Round Head Brass                                    | 1  |  |  |  |
| 33                  | 0501493     | Washer, Lock #10 Ext. Tooth   | 1  |  |  |  |
| 34                  | 0501472     | Washer, Flat #10 Brass  | 2  |  |  |  |
| 35                  | 0501533     | Nut, Plain 10-32 Brass  | 2  |  |  |  |
| <u>36</u>           | 0508572     | Label, Cam (UH-150B, UH-150)  | 1  |  |  |  |
| (37)                | 0508589     | Label, Cam (UL-150)   | 1  |  |  |  |

# CONTROL CABINET ASSEMBLY (cont'd) UH-150B, UH-150, UL-150

| Fig. 12 Part<br>Item No. No. |           | Description   |   |  |
|------------------------------|-----------|---|---|--|
|                              |           | Description Times Class                                   | 1 |  |
| (38)                         | 0503701   | Bearing, Timer Shaft                                      | 1 |  |
| -                            | 0501292   | Power Cord (UH-150, UL-150) (Not Shown)                   | 1 |  |
| 39                           | 112185    | Bracket, Ranco thermostat                                 | 1 |  |
| 40                           |           | Sheetmetal screw (#8 x 3/16")                             | 2 |  |
| 41                           |           | Screw (6/32 x 1/4")                                       | 2 |  |
| 42                           | 0309433   | Bracket, Relay  | 1 |  |
| 43                           | 0509428   | Relay (15A, 120VAC)                                       | 1 |  |
| 44                           | 0501408   | Screw (8-32 x 1/4")                                       | 2 |  |
| 45                           | 0501538   | Nut, (8-3/2 Hex)  | 2 |  |
| <del>(46)</del>              | 0508572-1 | Label, Cam Adjust (After S/N W7604)                       | 1 |  |
| 47                           | 111069    | Relay 2PDT 10 Amp 240VAC (After S/N W7604)                | 1 |  |
| 48                           | 100007    | Screw 10-32 x 3/8 Truss Head (After S/N W7604)            | 2 |  |
| 49                           | 0710583   | Timer Assy. (Includes items 11, 12, 38) (After S/N W7604) | 1 |  |
| (50)                         | 0308641-1 | Electric Box Divider RS (After S/N W7604)                 | 1 |  |
| <u>-</u>                     | 0508556   | Wire Harness (For Timer Assy. 0708538 and 0708590)        |   |  |
| <u>–</u>                     | 0510619   | Wire Harness (For Timer Assy. 0710583)                    |   |  |

\*\*Note: Ranco Thermostats are no longer available. Use P/N 109069 instead.

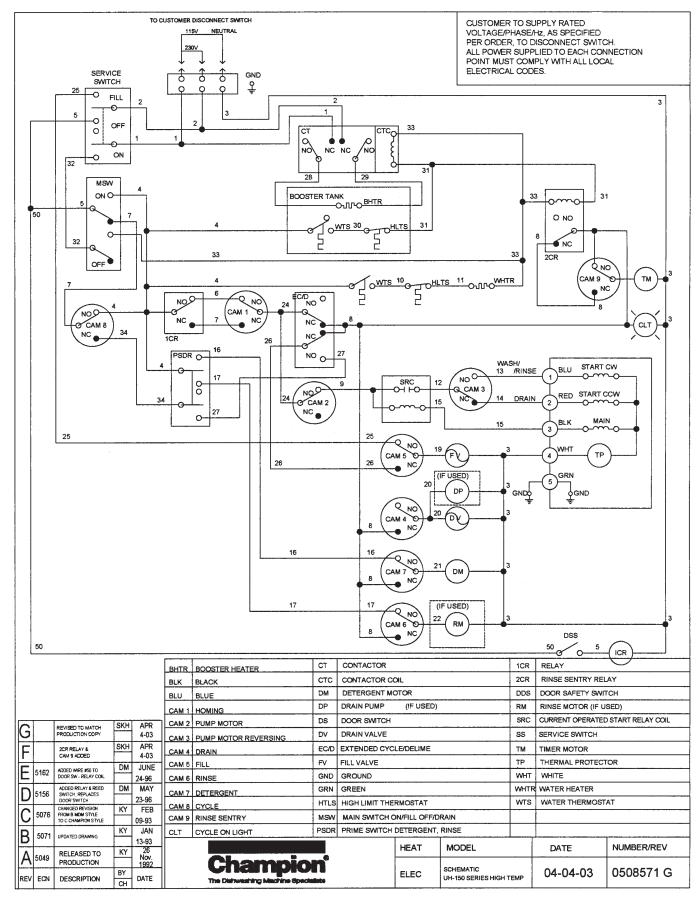


Figure 13 - Electrical Diagram, UH-150B S/N After W7604

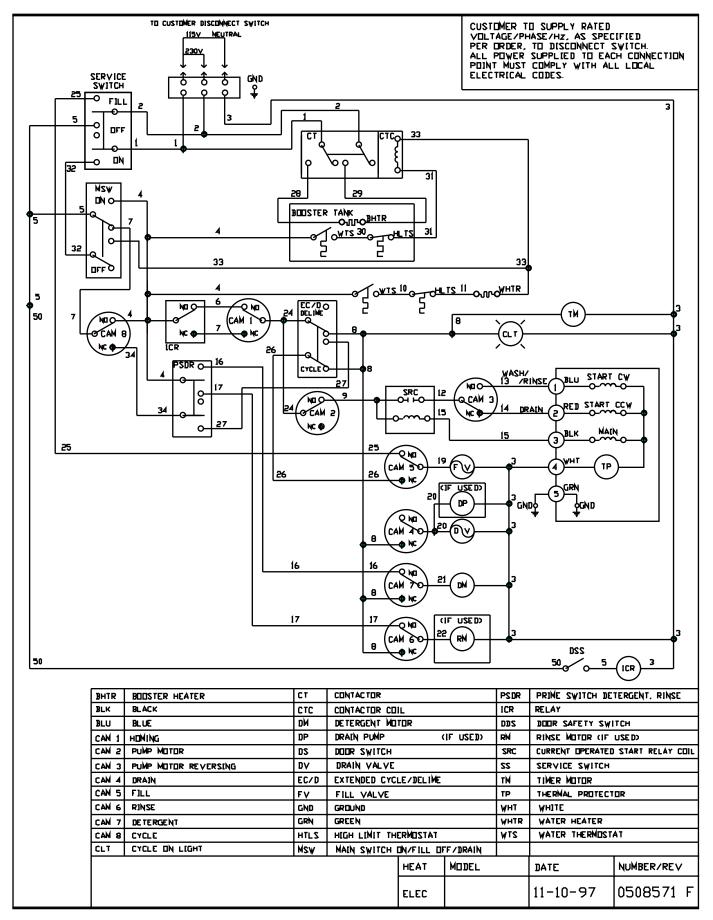


Figure 14 - Electrical Diagram, UH-150B S/N Prior to W7604

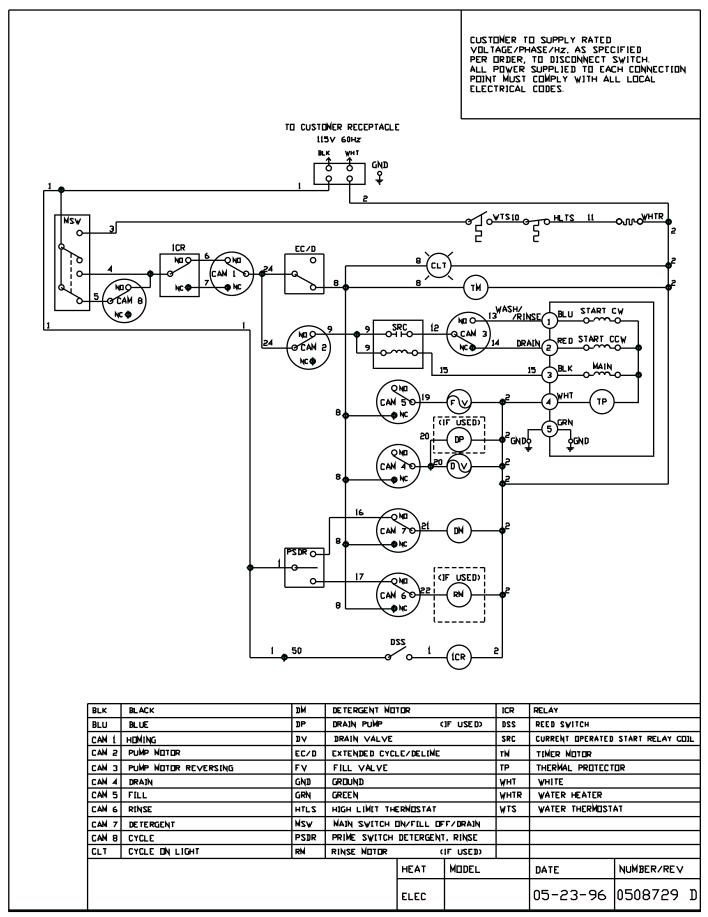


Figure 15 - Electrical Diagram, UH-150

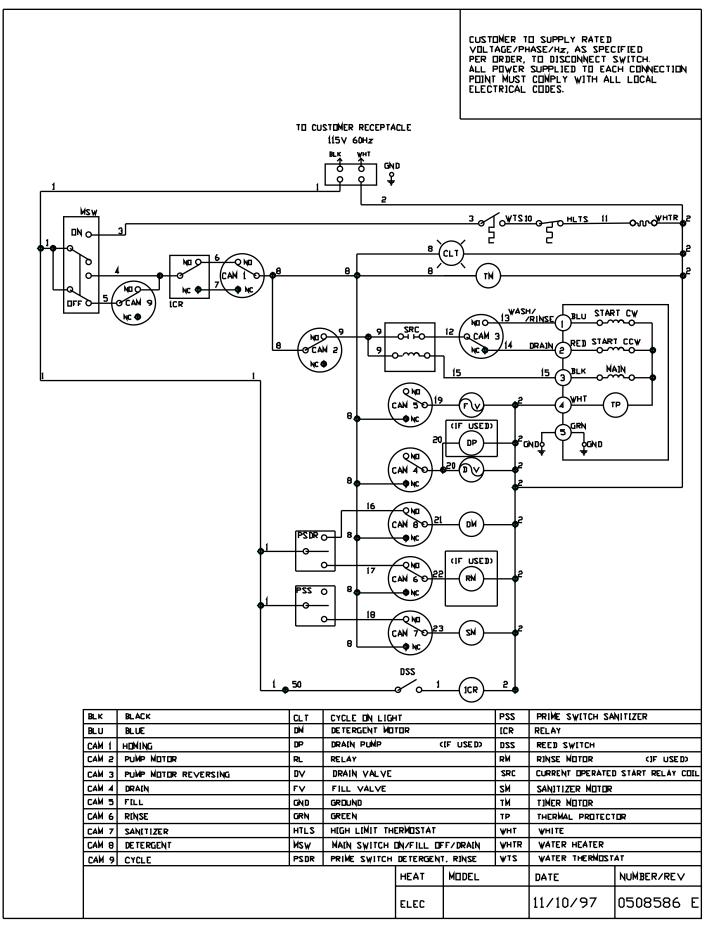
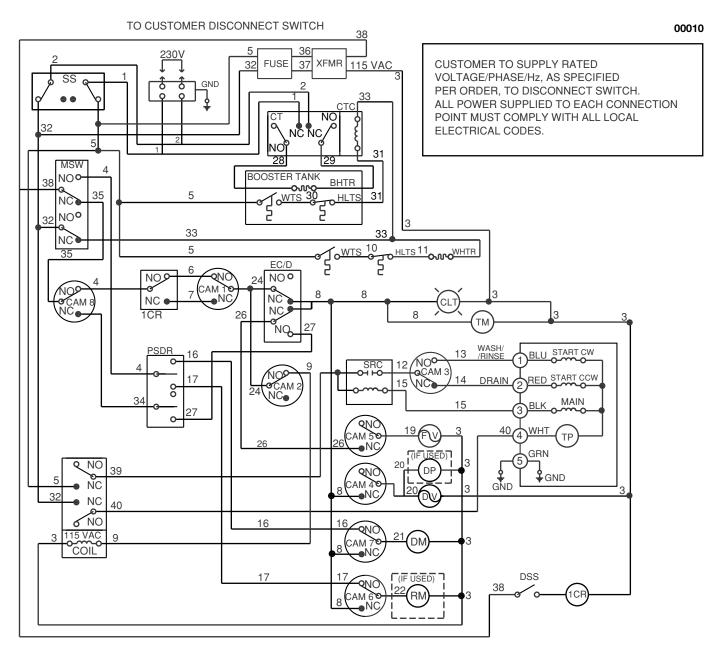


Figure 16 - Electrical Diagram, UL-150



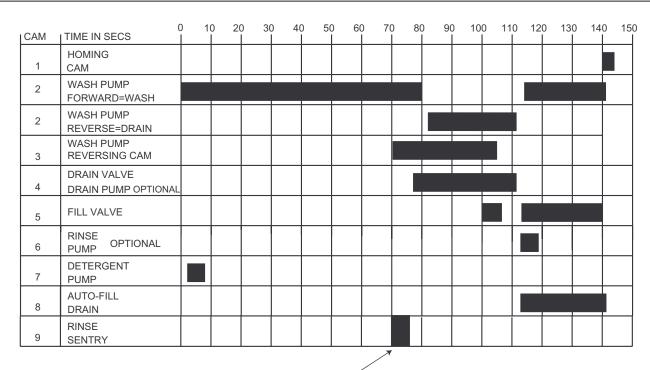
| BHTR  | BOOSTER HEATER       | CT   | CONTACTOR                     | PSDR | PRIME SWITCH DETERGENT, RINSE     |
|-------|----------------------|------|-------------------------------|------|-----------------------------------|
| BLK   | BLACK                | CTC  | CONTACTOR COIL                | 1CR  | RELAY                             |
| BLU   | BLUE                 | DM   | DETERGENT MOTOR               | RM   | RINSE MOTOR (IF USED)             |
| CAM 1 | HOMING               | DP   | DRAIN PUMP (IF USED)          | SRC  | CURRENT OPERATED START RELAY COIL |
| CAM 2 | PUMP MOTOR           | DSS  | DOOR SAFETY SWITCH            | SS   | SERVICE SWITCH                    |
| CAM 3 | PUMP MOTOR REVERSING | DV   | DRAIN VALVE                   | TM   | TIMER MOTOR                       |
| CAM 4 | DRAIN                | EC/D | EXTENDED CYCLE/DELIME         | TP   | THERMAL PROTECTOR                 |
| CAM 5 | FILL                 | FV   | FILL VALVE                    | WHT  | WHITE                             |
| CAM 6 | RINSE                | GND  | GROUND                        | WHTR | WATER HEATER                      |
| CAM 7 | DETERGENT            | GRN  | GREEN                         | WTS  | WATER THERMOSTAT                  |
| CAM 8 | CYCLE                | HLTS | HIGH LIMIT THERMOSTAT         |      |                                   |
| CLT   | CYCLE ON LIGHT       | MSW  | MAIN SWITCH ON/FILL OFF/DRAIN |      |                                   |

0508975/A

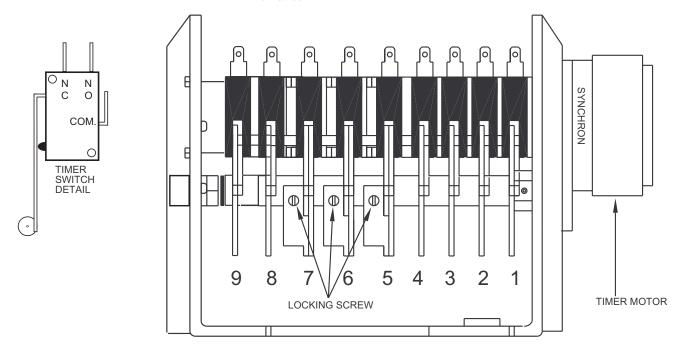
Figure 17 - Electrical Diagram, UH-150B (50 Hz)

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### **TIMING CHART 501HT**



If booster thermostat is calling for heat, cam 9 will pause wash cycle until it reaches 82°C/180°F.

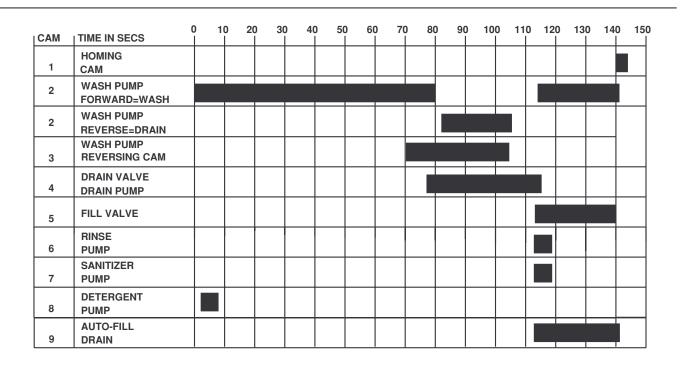


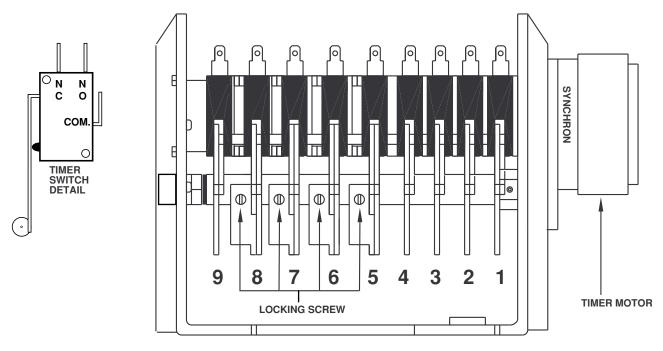
### **TIMER ASSEMBLY 501HT**

Figure 18 - Timer Chart and Diagram, UH-150B, UH-150 Beginning with S/N W7604

00016

## **TIMING CHART 5( UL-150**



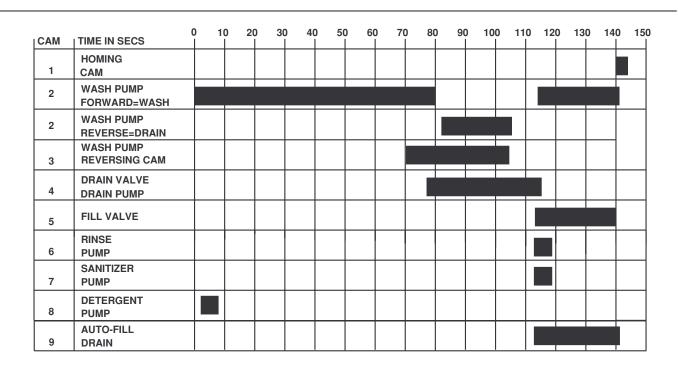


TIMER ASSEMBLY UH-150B, UH-150

Figure 19 - Timer Chart and Diagram, UH-150B, UH-150 Prior to S/N W7604

00016

### **TIMING CHART! UL-150**



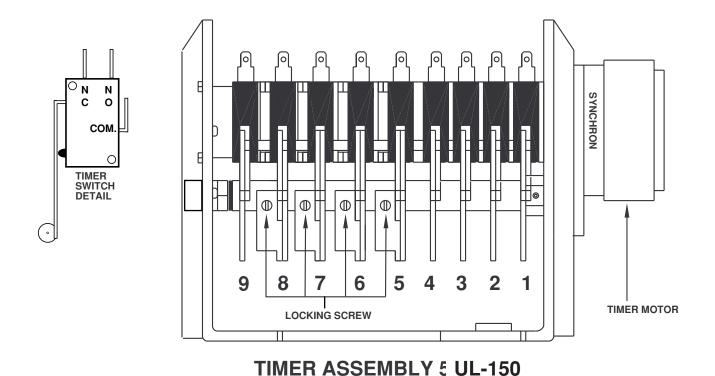


Figure 20 - Timer Chart and Diagram, UL-150