

# 2000 Series



## *Installation/Operation Manual with Service Replacement Parts*

*International Models IDH2000, IMD2000*



### **International Door-type High Temperature Dishwasher**

Hot water sanitizing machine w/fresh water rinse and built-in stainless steel electric booster

220V/50/1  
220V/50/3  
380V/50/3



Machine Serial No.



*Issue Date: 9.30.14*

**Manual P/N 115487 rev. A**

*For machines beginning with S/N D09037592 and above*

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Winston-Salem, NC 27105  
336/661-1556 Fax: 336/661-1660  
Toll-free: 800/ 858-4477

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905/562-4195 Fax: 905/562-4618  
Toll-free: 800/ 263-5798

Printed in the USA



For future reference, record your dishwasher information in the box below.

|                         |                    |
|-------------------------|--------------------|
| Model Number_____       | Serial Number_____ |
| Voltage_____Hertz_____  | Phase_____         |
| Service Agent _____     | Tel:_____          |
| Parts Distributor _____ | Tel:_____          |

**ATTENTION:**

The model no., serial no., voltage, Hz and phase are needed to identify your machine and to answer questions.

**The machine data plate is located on the top-mounted control cabinet.**

Please have this information ready if you call for service assistance.

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## Revision History

The Revision History can contain part number changes, new instructions, or information that was not available at print time. We reserve the right to make changes to these instructions without notice and without incurring any liability by making the changes. Equipment owners may request a revised manual, at no charge, by calling 1 (800) 858-4477 in the USA or by calling 1 (800) 263-5798 in Canada.

| <b>Revision Date</b> | <b>Revised Pages</b> | <b>Serial Number Effectivity</b> | <b>Revision Description</b>                                 |
|----------------------|----------------------|----------------------------------|---|
| 6.12.09              | All                  | D09037592                        | Released First Edition                                      |
| 8.12.09              | All                  | D09037592                        | Changed Schematic for Overflow tempering Ckt.               |
| 9.11.09              | 24-25                | D09087829                        | Added 1/2" Piping to Fill Assy.                             |
| 9.16.09              | 31-32                | D09087829                        | Corrected P/N of Pump Suction Screen to 333021              |
| 10.23.09             | 20-21                | D09087829                        | Added 1/2" to Booster Piping                                |
| 2.12.10              | 26-27                | D09087829                        | Added Front and Side Panels                                 |
| 2.22.10              | 5                    | D09087829                        | Changed location of element jumper bars                     |
| 10.6.10              | 31                   | D09087829                        | Changed description of items 22, 23, 24                     |
| 3.8.11               | 24-25                | All                              | Added P/N 114861, Endcap Item 37 to parts list              |
| 8.22.11              | 30-31                | D10088521                        | Changed Item 2, P/N 114468 to P/N 114745                    |
| 6.1.12               | 36                   | D10088521                        | Revised Electrical Schematic Drain Tempering Circuit        |
| 6.1.12               | 24-25                | All                              | Use Kit 900962 to repair or replace the final rinse arm     |
| 9.13.12              | All                  | D12059921                        | Added 380V/50/3 information                                 |
| 8.5.14               | 24-25<br>38-40       | All<br>All                       | Changed Item 48 to P/N 335089<br>Added 220V/50/1 schematics |
| 9.30.15              | 27                   | All                              | Changed Item 19 description to 4 ft. capillary thermostat.  |

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## **Model Description**

### **2000 Series**

High temperature hot water sanitizing dishwasher with built-in 40-70°F/22-82°C rise booster heater.

208-240/50/1 and 3, 380V/50/3

Field convertible single or three phase

Self-draining pump

Automatic start

Fresh water rinse

55 racks per hour/60-second total cycle time

Rinse sentry

Automatic drain valve

### **Optional Equipment** *(consult factory)*

Drain water tempering kit

Side panels

## Receiving

**NOTE:**

The installation of your dishwasher must be performed by qualified service personnel. Problems due to improper installation are not covered by the Warranty.

1. Inspect the outside of the dishwasher carton for signs of damage.
2. Remove the carton and inspect the dishwasher for damage.
3. Check for any accessories that may have shipped with your dishwasher.
4. Turn to the front of this manual and complete the warranty card. Immediately mail the warranty card to validate your warranty.
5. Move the dishwasher near its permanent location.

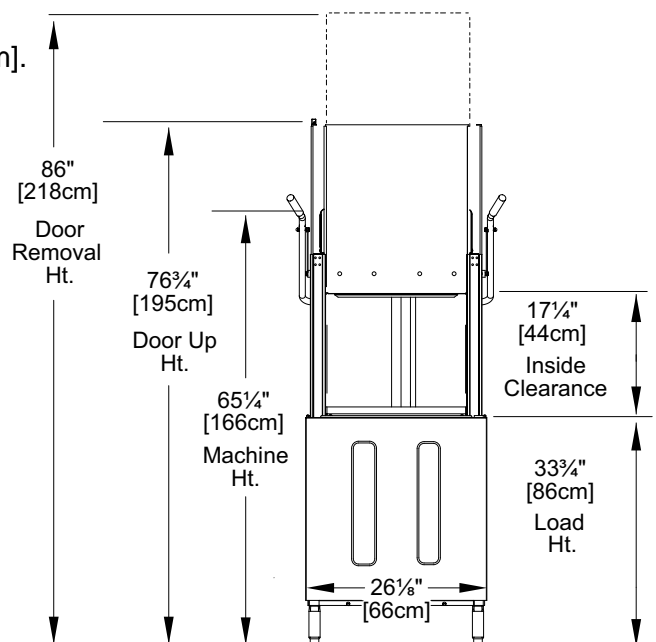
**CAUTION:**

Be careful when lifting and moving the dishwasher to prevent damage to the machine.

**NOTE:**

The installation of the dishwasher must comply with local health codes.

6. Compare the installation site utility connections with the dishwasher utility connections and make sure that they are the same.
7. Place the dishwasher in its permanent location.
8. The dishwasher has 4 adjustable feet for leveling.
9. Level the dishwasher front-to-back and side-to-side.
10. The dishwasher can be installed in a straight-through or a corner configuration.
11. The typical dishwasher load height is 33 $\frac{3}{4}$ " [86cm].
12. The machine height is 65 $\frac{1}{4}$ " [166cm].
13. The dishwasher doors require an open height of 76 $\frac{3}{4}$ " [195cm] and 86" [218cm] for door removal.



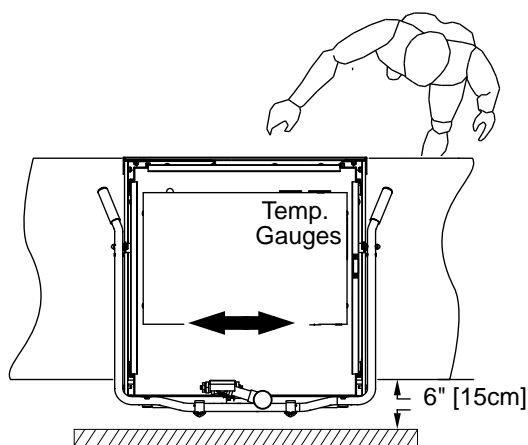
*Dishwasher Dimensions in inches and Centimeters*

## Converting Straight-through Operation to Corner Operation

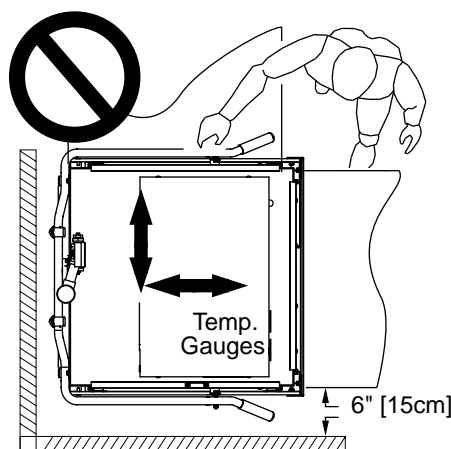
Dishwashers are shipped from the factory for Straight-through operation. Refer to the diagrams below and on the next page to convert a Straight-through operation machine to a Corner operation machine. Dish racks enter and exit the sides of a straight-through machine. Dish racks enter the side and exit the front of corner operation machine.

To convert the dishwasher:

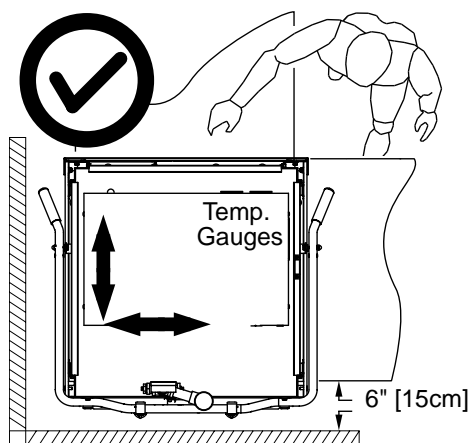
1. Convert the dishwasher before it is placed in its final position and before connecting utilities.
2. The temperature gauges must be clearly visible to the operator when facing the front of the machine. In addition, the door handles should move freely without interference from walls or other obstructions. Nominal wall clearance is 6" [152mm]; the minimum wall clearance is 4" [102mm].
3. Position the dishwasher as shown below and refer to the next page for instructions on changing the dish rack guides and door operation.



*Correct Orientation for  
Straight-Through Operation*



*Incorrect Orientation for  
Corner Operation*



*Correct Orientation for  
Corner Operation*



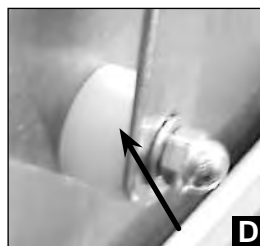
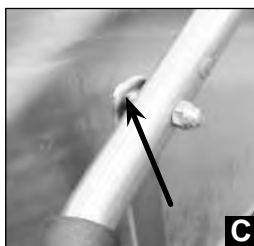
## Converting Straight-through Operation to Corner Operation

To convert track guides and door-lift for corner operation:

1. Remove the rack guide (A); save the fasteners. Move (A) and re-attach as shown in the illustration at right.
2. Slide a dish rack through the machine to check the guide to dish rack clearance. The dish rack should move smoothly without binding or tipping on the guides.
3. Disconnect the door-lift bracket (B) connecting the front door and the wall-side door and discard. To seal the holes, Re-install the bolts and lockwashers that held the bracket.
4. Disconnect the door linkage arm (C) from the wall-side door and discard. Re-install the white roller (D) and hardware.
5. Disconnect the door linkage arm (C) from the other door but do not discard.
6. Lift the door handle up and back until the springs relax.
7. Adjust the door spring hooks (E) located at the rear of dishwasher to reduce door spring tension until the front and side doors open and close without binding.

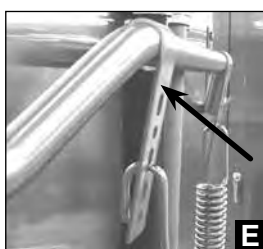


Remove the door-lift bracket connecting the front and wall-side doors.

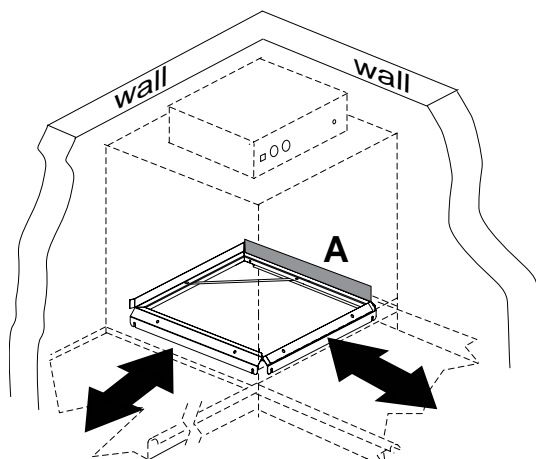
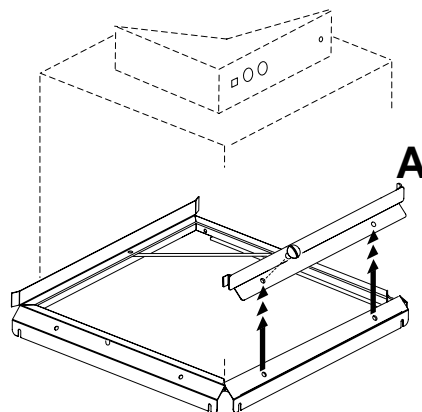
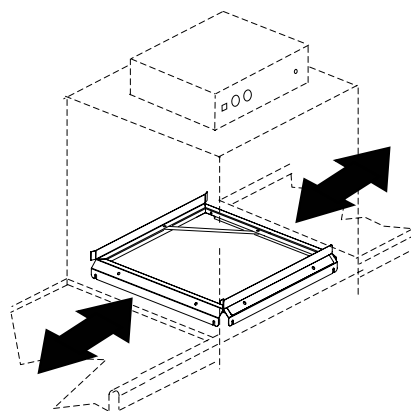


Remove the door-linkage arm from the wall-side door and discard.

Re-install the white roller with existing hardware.

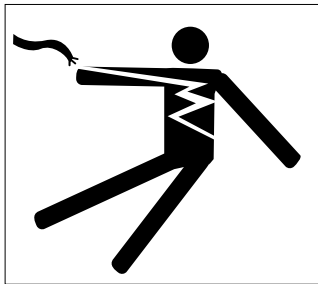


Re-adjust the door springs at the rear of the dishwasher then check that the doors open and close without binding.



## Electrical Connections 208-240V/50/3

### Three Phase Operation



#### **WARNING:**

Electrocution or serious injury may result when working on an energized circuit.

Disconnect power at the main breaker or service disconnect switch before working on the circuit.

Lock-out and tag the breaker to indicate that work is being performed on the circuit.

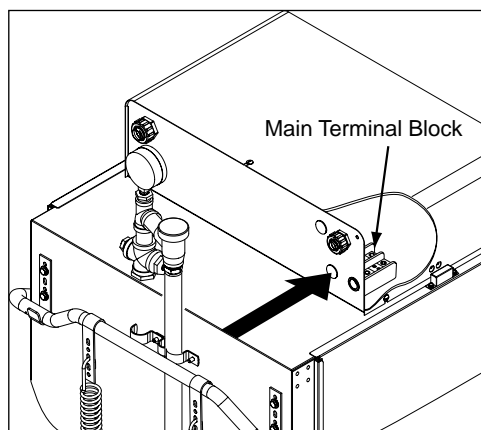
#### **ATTENTION**

A qualified electrician must connect the main incoming power to the dishwasher in accordance with all local codes and regulations or in the absence of local codes in accordance with the National Electrical Code.

Standard Dishwashers are shipped from the factory for 3-phase operation.

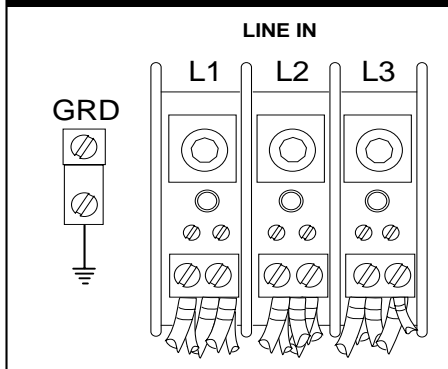
To connect the dishwasher for 3-phase operation:

1. Remove the top-mounted control cabinet cover and locate the main terminal block in the left-rear corner of the cabinet.
2. Refer to the **Machine Electrical Connection Data Plate** located near the main terminal block and make sure that the incoming power supply matches the machine's electrical requirements.
3. Connect the incoming 3-phase power as shown in the illustration to the right.
4. Re-install the control cabinet cover.



Main Terminal Block Location

#### **THREE PHASE POWER CONNECTION 208-240V/50/3**



#### **NOTE:**

Refer to the next page for 3-phase to 1-phase field conversion instructions.

## 208-240V/50/1 - Electrical Connections

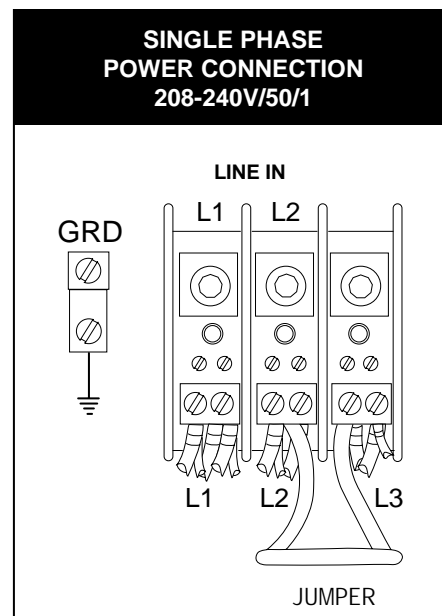
### Field Conversion from 3-phase to 1-phase Operation

A standard 3-phase operation dishwasher can be converted for 1-phase operation with the installation of a jumper wire on the main terminal and rewiring of the wash tank and booster tank heaters. A jumper wire, jumper bars and a new data plate are stowed on top of the wash tank heater junction box.

To convert the dishwasher from 3-phase to 1-phase operation:

#### **Install Main Terminal Block Jumper Wire**

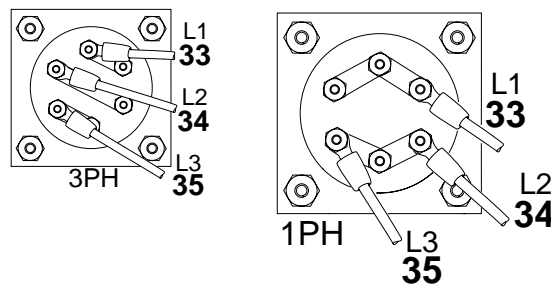
1. Disconnect all power to the machine.
2. Remove the top-mounted control cabinet cover and locate the main terminal block located in the left-rear corner of the cabinet.
3. Connect the jumper wire (shipped inside the control cabinet) between L2 and L3 on the output side of the main terminal block.
4. Connect the 1-phase incoming power supply to L1 and L2 on the input side of the main terminal block.



Connect the jumper wire between L2 and L3 on the output side of the main terminal block

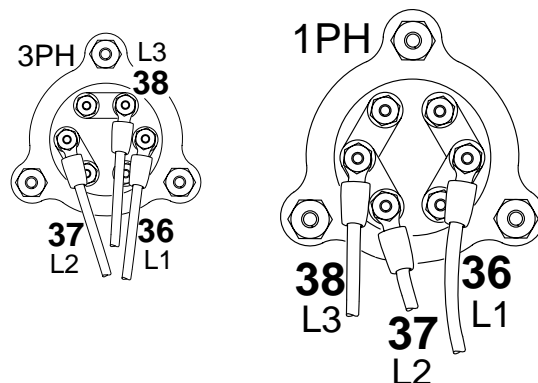
#### **Rewire Wash Tank Heater Element for 1PH**

1. Remove the lower front panel.
2. Remove the wash tank heater junction box cover.
3. Remove the paper insulator and jumper bars from the heater terminals.
4. Additional short jumper bars are stowed with the new data plate.
5. Reposition the jumper bars for 1PH as shown below.
6. Connect the #33 wire to one element terminal as shown.
7. Connect the #34 and #35 wires to the other terminals as shown.
8. Reinstall the paper insulator and the junction box cover.



#### **Rewire Booster Heater Element for 1PH**

1. Remove the booster heater element cover.
2. Remove the paper insulator and jumper bars from the heater terminals.
3. Install the jumper bars for 1PH as shown below.
4. Additional short jumper bars are stowed with the new data plate.
5. Connect the #36 wire to one element terminal as shown.
6. Connect the #37 and #38 wires to the other terminals as shown.
7. Reinstall the paper insulator and the booster heater element cover.



**NOTE:** The additional jumper bars needed for 1PH operation are stowed with the new data plate on top of the wash tank heater junction box.

#### **ATTENTION:**

**Affix the new data plate on top of the existing machine data plate to complete the conversion.**

## Electrical Connections - 380V/50/3

### Three Phase Operation



#### **WARNING:**

Electrocution or serious injury may result when working on an energized circuit.

Disconnect power at the main breaker or service disconnect switch before working on the circuit.

Lock-out and tag the breaker to indicate that work is being performed on the circuit.

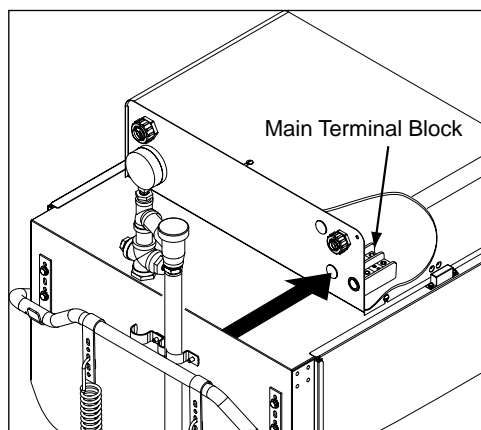
#### **ATTENTION**

A qualified electrician must connect the main incoming power to the dishwasher in accordance with all local codes and regulations or in the absence of local codes in accordance with the National Electrical Code.

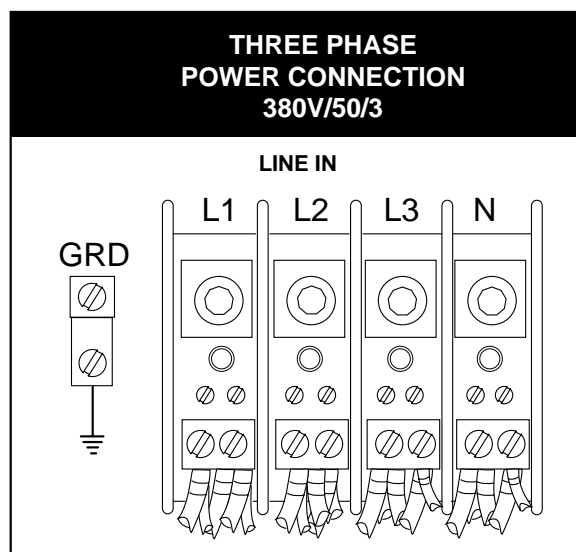
Standard Dishwashers are shipped from the factory for 3-phase operation.

To connect the dishwasher for 3-phase operation:

1. Remove the top-mounted control cabinet cover and locate the main terminal block in the left-rear corner of the cabinet.
2. Refer to the **Machine Electrical Connection Data Plate** located near the main terminal block and make sure that the incoming power supply matches the machine's electrical requirements.
3. Connect the incoming 3-phase power as shown in the illustration to the right. The incoming power must be a 4-wire supply which includes a current carrying neutral and ground.
4. Re-install the control cabinet cover.



Main Terminal Block Location

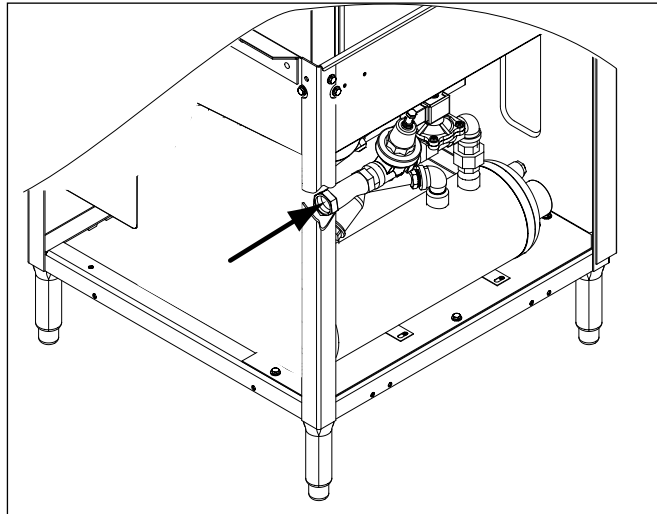


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## Hot Water Connection

The hot water connection is located at the lower left-rear side of the dishwasher. A 3/4" line strainer and pressure regulating valve (PRV) were installed at the factory.

1. The size of the incoming hot water line should be 3/4" or larger.
2. The PRV should be adjusted to supply a minimum flowing pressure of 20 PSI/138 kPa during the final rinse. The maximum flowing pressure must not exceed 25 PSI/172 kPa during the final rinse.
3. The temperature of the incoming hot water must maintain a minimum temperature of 140°F/60°C for a 40°F/22°C rise booster or a minimum temperature of 110°F/43°C for a 70°F/39°C rise booster.
4. A manually operated 3/4" or larger shut-off valve should be installed in the incoming line as close to the dishwasher as possible for servicing.

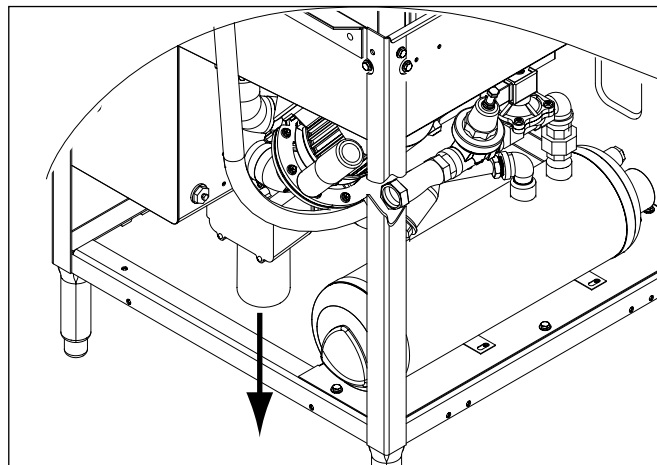


*The incoming hot water line is a 3/4" NPT connection.*

## Drain Connection

The drain water connection is a 2" slip-fit hose connection and is located at the center-rear of the machine base. It is a gravity drain.

1. The dishwasher drain is 2" O.D. hose connection.
2. A optional drain water tempering kit is available (consult the factory).
3. Drain water flow is controlled by an automatic electrically operated drain valve.
4. The floor sink and/or drain plumbing must be able to accommodate a maximum drain flow rate of 20 US gpm / 17 Imp gpm / 76 Lpm.

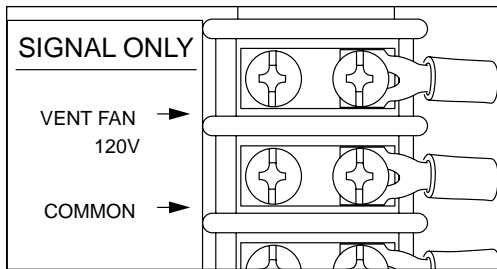


*The drain is a 2" slip-fit hose connection.*

### NOTE:

**Plumbing connections must comply with all national and/or local plumbing and sanitary codes.**

## Vent Fan Control



The Vent Fan Control Signal is limited to 120VAC 1 Amp maximum load.

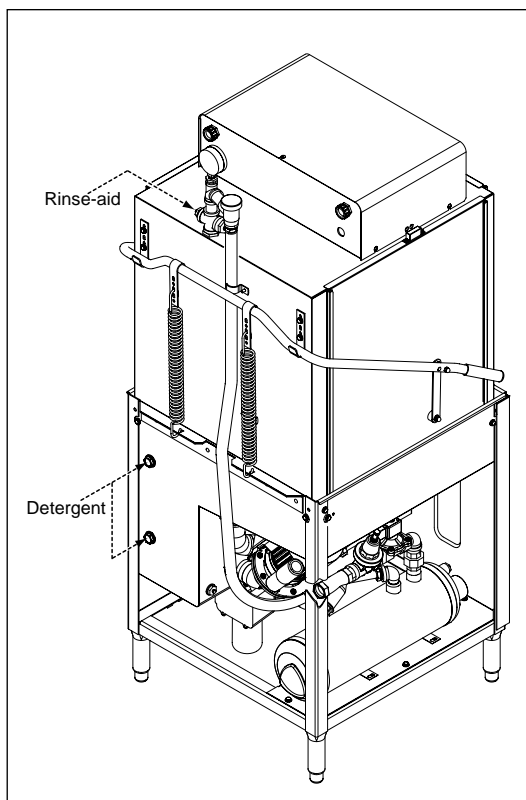
1. A vent fan control signal is provided on a terminal block located inside the top-mounted control cabinet. The terminal locations are clearly marked.
2. The 120VAC signal is designed only to operate an external vent fan contactor (supplied by others) and is limited to 1 AMP maximum load and is available when the dishwasher power switch is turned ON.

### CAUTION:

Do not connect a vent fan motor to the signal connection terminals.

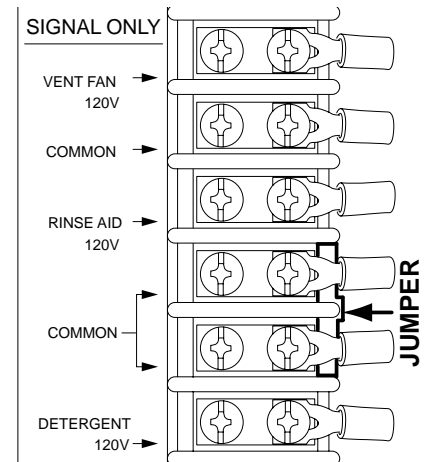
## Chemical Dispenser Provisions

Provisions for chemical suppliers to connect their chemical dispensing systems are provided on the dishwasher and include:



Detergent and Rinse-aid Injection Points

1. A 1/4" NPT plastic fitting as a rinse-aid injection point. The fitting is installed in the upper final rinse piping located at the top-rear of the dishwasher (see illustration at left).
2. Two 7/8" holes are provided on the right-side rear of the wash tank as detergent injection points.
3. Detergent and rinse-aid control signals are available inside the top-mounted control cabinet. The signals are 120VAC, Max. 1 Amp load. Connection points are located on a labeled terminal block (see below).
4. **DO NOT REMOVE THE JUMPER BETWEEN THE COMMON TERMINALS.**



**DO NOT REMOVE THE JUMPER BETWEEN THE COMMON TERMINALS**

### NOTE:

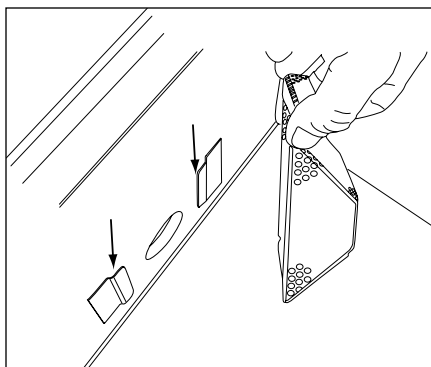
Consult a qualified chemical supplier for chemical supplies and chemical dispensing equipment.

## Installation Check List

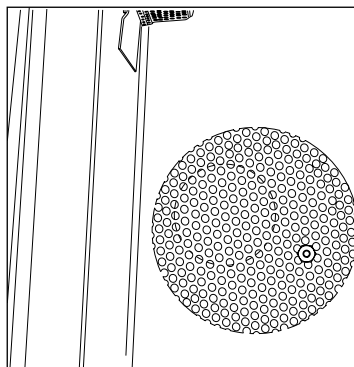
1. Remove any protective film from dishwasher. Check the interior for foreign material.
2. Make sure that the dishwasher is permanently located.
3. Make sure that all utility connections are complete.
4. Make sure that the chemical supply containers are full.
5. Make sure that the pump suction screen is in place.
6. Make sure the drain screen is clean and unobstructed by debris.
7. Make sure the scrap screen plate and scrap screens installed and firmly seated.  
The screen plate is mounted in the center of the wash tank and locks in a slot on the back screen support.
8. Make sure that the spray arms are in place and that they spin freely.
9. Fully close the dishwasher door.
10. Turn hot water supply on and check for leaks in the main water supply piping connected to the dishwasher.

### IMPORTANT

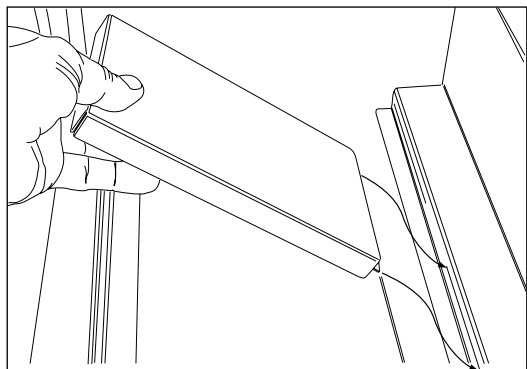
**During the initial fill, adjust the PRV to ensure that the flowing pressure of the incoming water is set between 20-25 PSI.**



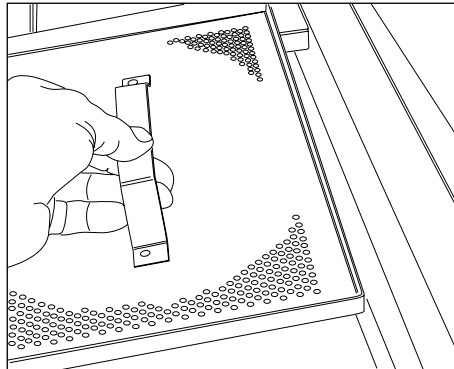
*Make sure the pump suction strainer is in place.*



*Make sure the drain screen is unobstructed.*



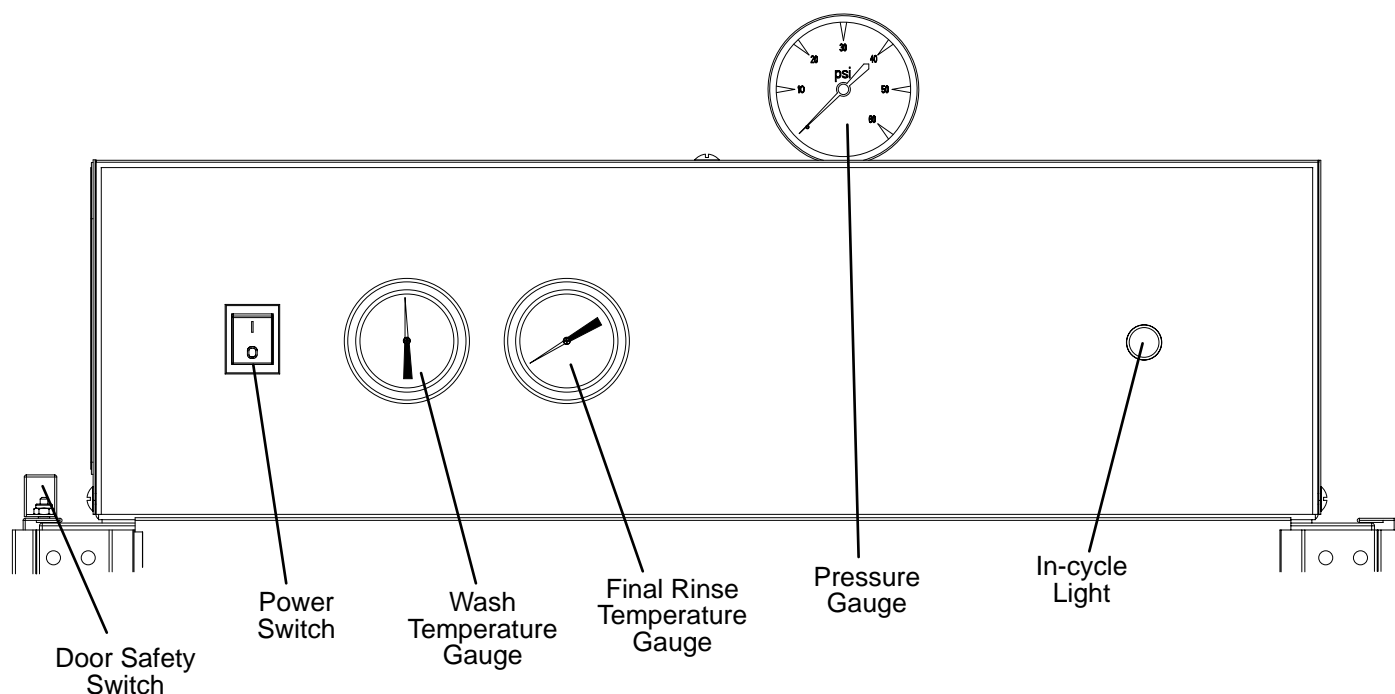
*Make sure the scrap screen plate is mounted in the center of the wash tank and separating the scrap screens.*



*Make sure the scrap screens are in place.*



## Normal Operation Mode

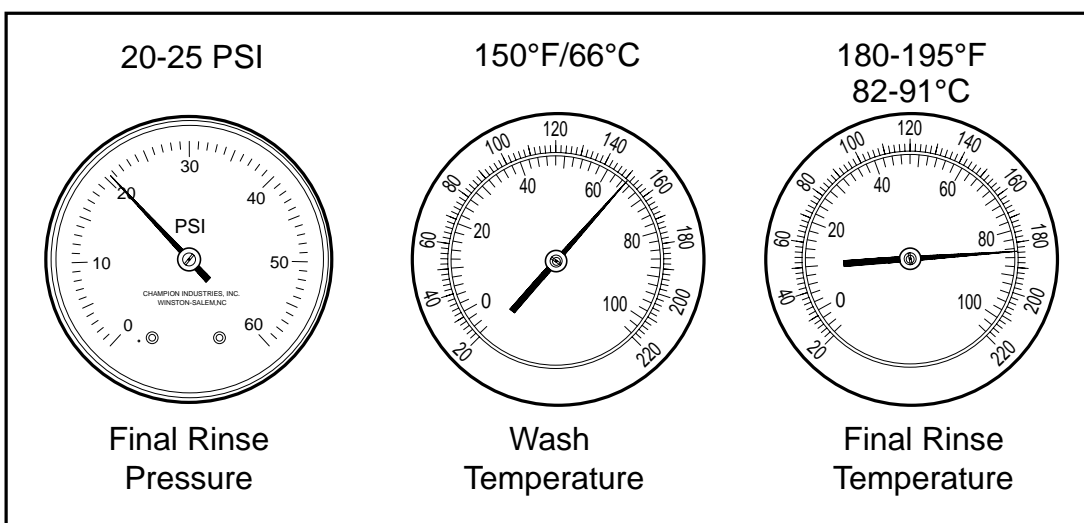


Follow the instructions below to operate the dishwasher in a Normal Wash Mode. A Rinse Sentry feature holds the dishwasher in a wash mode if the booster heater temperature is below 180°F/82°C.

1. Turn the main power on at the main circuit breaker.
2. Make sure the spray arms and the scrap screens are in place.
3. Turn the water supply on.
4. Close the dishwasher front door.
5. Push the dishwasher Power Switch to the ON position. The power switch will illuminate and the machine will fill with water.
6. Check the pressure gauge as the machine fills and make sure the incoming water pressure is between 20-25 psi.
7. Wait up to 10-minutes for the WASH temperature gauge to indicate a minimum of 150°F/66°C.
8. Load soiled wares into the dish rack. Place plates, glasses, cups and bowls in a peg rack. Place utensils in a single layer in a flat-bottom rack. Place pots and pans in a flat-bottom rack. Do not overload the dish racks.
9. Slide 1 dish rack into the wash compartment making sure that wares do not interfere with the rotating spray arms. Do not wash more than 1 dish rack at a time.
10. Close the front door fully, the wash cycle will begin automatically. The green in-cycle light will illuminate.
11. The wash cycle time runs for approximately 40-seconds. *(continued on next page)*

## Normal Operation Mode (continued)

12. Opening the door when the dishwasher is in-cycle will stop the dishwasher. The cycle will resume automatically when the dishwasher door is closed.
13. The final rinse cycle begins at the end of the wash cycle and runs for approximately 12-seconds.
14. Check the FINAL RINSE temperature gauge during the final rinse and make sure that it indicates a minimum of 180°F/82°C. The acceptable range of operation is 180-195°F/82-91°C.
15. Check the pressure gauge located at the top of the dishwasher to ensure that the final rinse pressure maintains a flowing pressure between 20-25 PSI.
16. At the end of the rinse cycle, the in-cycle light will go out. Open the door and remove the clean rack of wares. Repeat steps 8-15 for additional dish racks.
17. Refer to the Automatic Drain Cycle on the next page for the procedures to drain the dishwasher.



*The pressure gauge is located at the top of the dishwasher. The wash temperature gauge and the final rinse temperature gauges are located on the front of the control cabinet.*

## *Rinse Sentry Operation Mode*

The final rinse water temperature must be a minimum of 180°F/82°C during the final rinse cycle to ensure that all wares are sanitized. If for any reason, the hot water temperature in the booster tank cannot provide this temperature, the dishwasher will enter a Rinse Sentry Mode of operation and extend the cycle time.

The Rinse Sentry changes the Normal Operation Mode as described below:

1. The Rinse Sentry constantly monitors the water temperature inside final rinse booster.
2. If the temperature inside the booster heater falls below 180°F/82°C then the Rinse Sentry will extend the wash cycle time until the booster heater water temperature reaches the proper temperature.
3. The in-cycle light will remain illuminated during the Rinse Sentry Mode.
4. The RINSE water temperature gauge must be monitored to ensure that a minimum of 180°F/82°C is maintained during the rinse cycle.
5. The temperature range for the final rinse water is 180-195°F/82-91°C.
6. An extraordinarily long wash cycle may indicate a low incoming water temperature or a problem with the booster heater operation.

**DO NOT REMOVE WARES UNTIL THE FINAL RINSE CYCLE HAS  
SANITIZED THE WARES AND THE GREEN CYCLE LIGHT GOES OUT.**

## *Automatic Drain Cycle*

The dishwasher can be drained automatically when the dishwasher has completed a normal wash cycle or whenever the dishwasher is idle.

To drain the dishwasher:

1. Turn the dishwasher Power Switch OFF. The automatic drain valve will open and the machine will drain.
2. The drain valve will remain open for 10-minutes to allow time to flush the interior with fresh water during a cleaning operation.
3. When 10-minutes has elapsed the drain, the drain valve will close.  
The automatic drain cycle is complete.

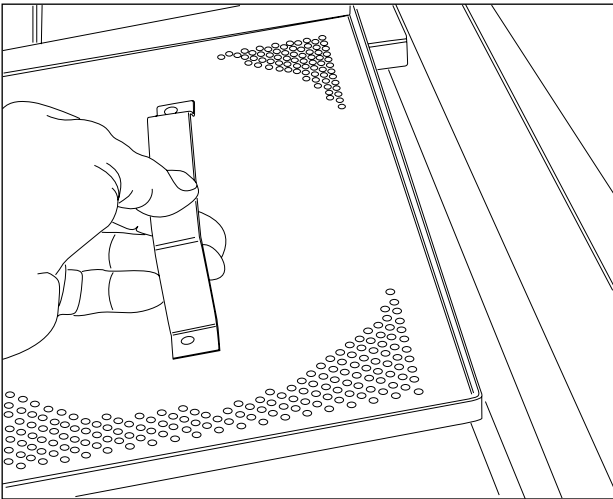
### **NOTE:**

The automatic drain cycle can be repeated after 10-minutes by turning the power Switch ON and immediately OFF. The dishwasher will drain for another 10-minutes and then turn off.

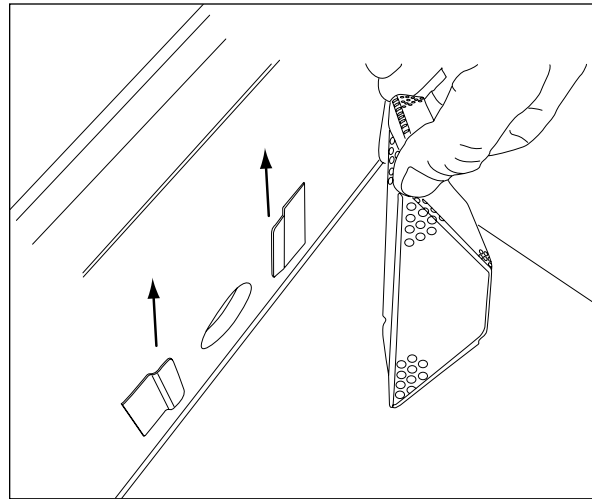
## *Cleaning*

After Each Meal Period or every 8 Hours of Operation.

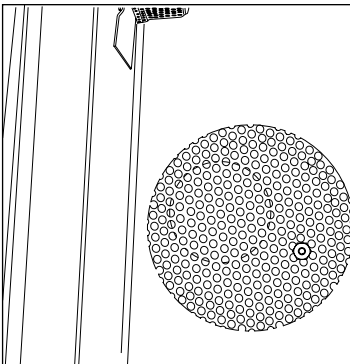
1. Press the lighted power switch to the OFF position. The power switch light will go out and the automatic drain cycle will operate for 10-minutes.
2. Flush the interior of the machine with fresh water.
3. Remove the scrap screens and remove debris in a waste container.
4. Flush the scrap screens making sure to back-flush.
5. Do not strike the scrap screens against solid objects.
6. Flush the wash tank, the pump suction strainer and drain screen.
7. Check the wash tank for foreign material and clean as required.
8. Replace pump suction strainer and scrap screens.
9. Make sure that spray arms turn freely.
10. Check the chemical containers and refill as required.
11. Close the door and turn the power switch ON. The machine will refill with fresh hot water.
12. Resume normal operation.



*Clean scrap screens.*



*Clean pump suction strainer*

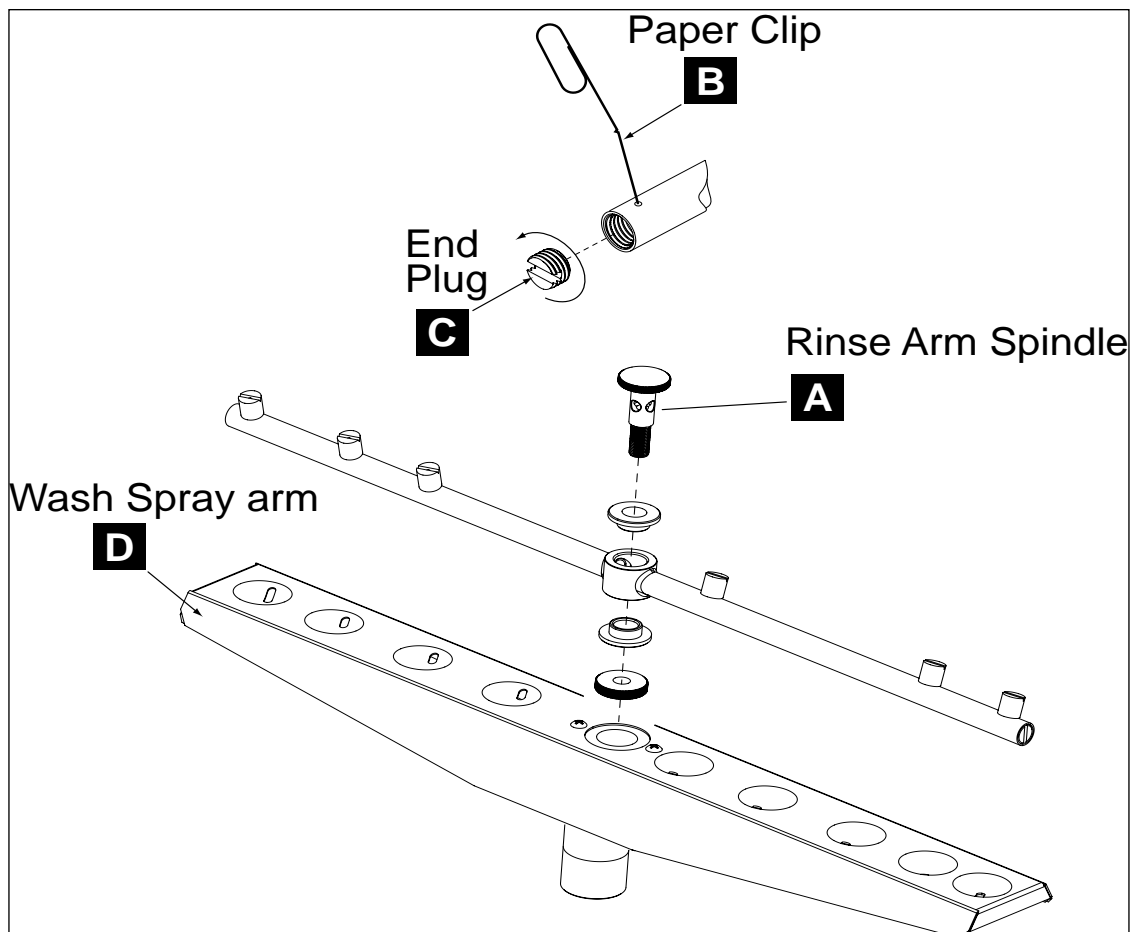


*Clean drain screen.*

## Cleaning

### At the End of the Day

1. Perform Steps 1-10 on the previous page.
2. Remove the upper and lower rinse and wash spray arms. The spray arms are interchangeable.
3. Unscrew the upper and lower rinse arm spindles (A). Remove the rinse arm assemblies
4. Clean the final rinse arm nozzles using a small paper clip (B).
5. Remove the rinse arm end plugs (C) *if necessary*, and flush the rinse arm with clean water.
6. Re-install the rinse arm end plugs if they were removed.
7. Remove the wash spray arms and flush with clean water.
8. DO NOT USE STEEL WOOL TO CLEAN THE INTERIOR OF THE MACHINE.
9. Contact the chemical supplier for de-liming if required (see next page).
10. Wipe the interior and exterior of the machine with a soft cloth and a mild detergent.  
DO NOT HOSE THE EXTERIOR OF THE MACHINE WITH WATER.
11. Reassemble the dishwasher and leave the door open to allow overnight drying.



## *De-liming*

Minerals accumulate on the interior surfaces of the dishwasher. The deposits have a white haze and, in cases of heavy accumulation, may appear as a granular solid. The generic name for mineral deposits is lime. The removal of lime deposits is called de-liming. Your dishwasher should be de-limed regularly; how often will depend on the mineral content of your water.

Inspect your machine interior for lime deposits. If de-liming is required, a de-liming agent should be used for best results in accordance with the chemical supplier's instructions.

### **Danger:**

Death or serious injury may result when de-liming solution is mixed with sodium hypochlorite (*chlorine bleach*) sanitizing agent. Mixing may cause hazardous gases to form.

De-liming solution and other acids must never be mixed with chlorine, iodine, bromine, or fluorine.

### **CAUTION:**

Skin contact with de-liming solutions can cause severe irritation and possible chemical burns. Always wear protective clothing and goggles when handling chemicals.

### **Attention:**

Contact your chemical supplier for specific safety procedures and instructions for the use of the de-liming solution supplied for the dishwasher.

De-liming solution or other chemicals are not supplied by the dishwasher manufacturer.

## *Maintenance*

### Daily Maintenance

1. Check all of the wash arm and rinse arm spray jets and clean as necessary.
2. Make sure the water supply is on and that the drain is not clogged.
3. Check the temperature gauges and/or displays to ensure that they are operating.
4. Make sure dish racks are in good condition.
5. Check the chemical containers and refill as required.
6. Follow the cleaning procedures given above.

### Weekly Maintenance

1. Perform Steps 1-5 in the Daily Maintenance.
2. Inspect water lines for leaks.
3. Check for water leaks underneath the dishwasher.
4. Make sure the floor drain and/or piping handles the drain water discharge.
5. Make sure the dishwasher is level.
6. Clean accumulated lime deposits from the wash tank heating element.
7. Inspect the scrap screen and replace it if damaged.
8. Check the spray arms and replace or repair if damaged.

**NOTE:**

Consult your chemical supplier for chemical dispensing system maintenance.

Follow the troubleshooting guide below in the event that your dishwasher does not operate as expected. Perform the basic checks below before calling an authorized service agent:

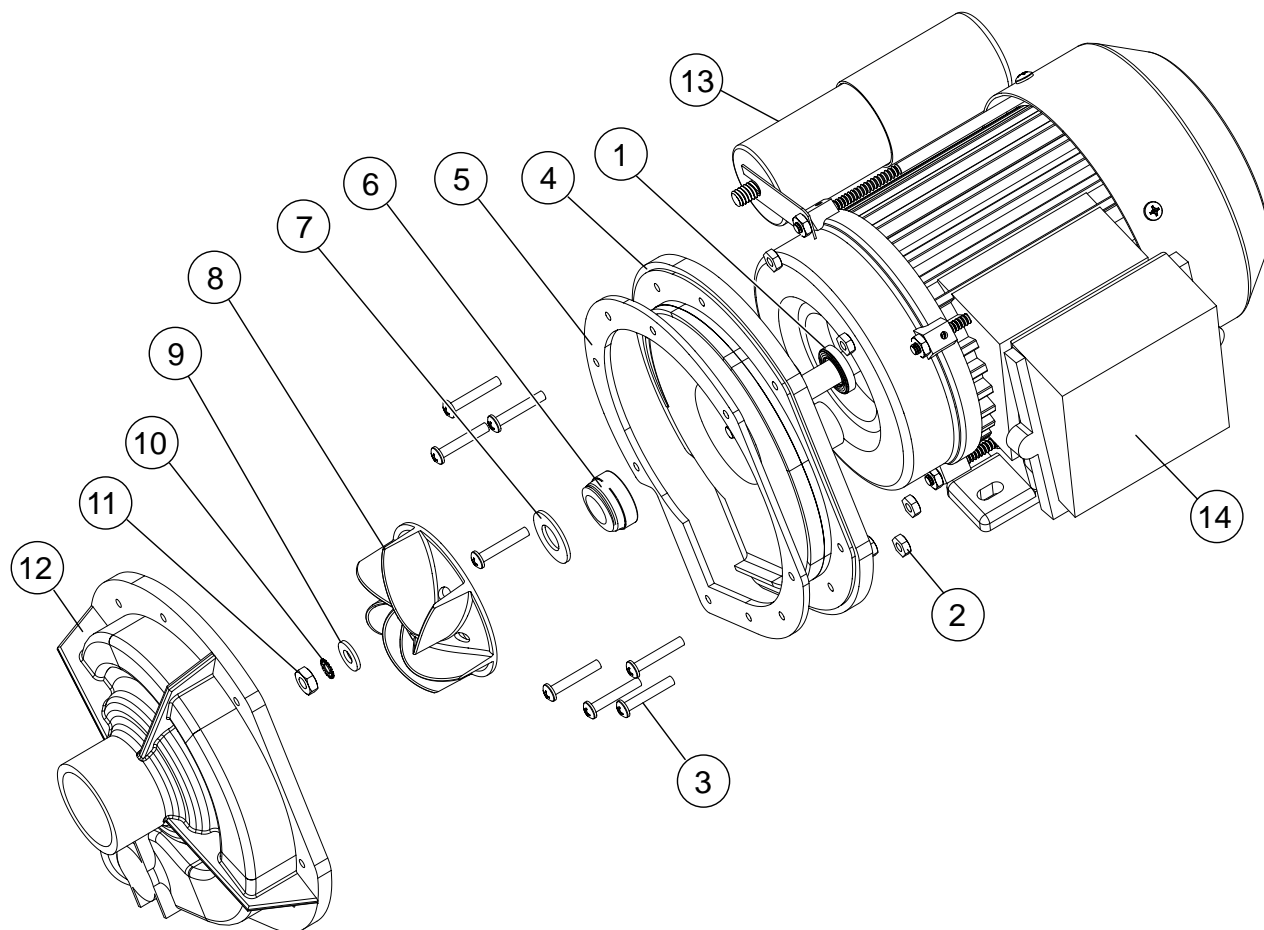
1. Make sure that the main water supply is turned on.
2. Make sure that the main power is turned on.
3. Make sure the machine is clean.

| Condition                             | Cause   | Solution  |
|---------------------------------------|---|---|
| Dishwasher will not run.              | Door not closed.<br>Main power OFF.<br>Dishwasher OFF.  | Close door completely.<br>Check breaker on panel.<br>Turn dishwasher ON.  |
| Low or no water.                      | Main water supply off.<br>PRV setting incorrect<br>Line strainer clogged.<br>Solenoid valve defective.  | Open supply valve.<br>Adjust the PRV setting<br>Contact Service Agent.<br>Contact Service Agent.  |
| Chemicals won't feed into dishwasher. | Chemical supply low.<br>Pick-up tube clogged<br>Supply tubing damaged.<br>Supply tubing kinked.   | Refill chemical container.<br>Clean/replace tube.<br>Replace tubing.<br>Straighten tubing.  |
| Poor wash results.                    | Wares incorrectly loaded.<br>in dishrack.<br><br>Clogged screens.<br>Clogged spray arms.<br><br>Chemical injectors not<br>feeding.<br><br>Thermostat defective.<br><br>Detergent motor defective.<br><br>Water temperature low. | Reposition wares or<br>reduce amount of wares.<br><br>Clean screens.<br>Clean spray arms.<br><br>Contact Chemical Supplier.<br><br>Contact Service Agent.<br><br>Contact Service Agent<br><br>Contact Service Agent |
| Dishwasher stays in wash cycle.       | Rinse Sentry extends wash mode to allow final rinse water booster temperature to reach 180°F/82°C.  | Contact Service Agent.  |
| Dishwasher will not drain.            | Drain screen clogged.<br><br>Drain valve defective.   | Clean drain screen.<br><br>Contact Service Agent.   |



# Service Replacement Parts

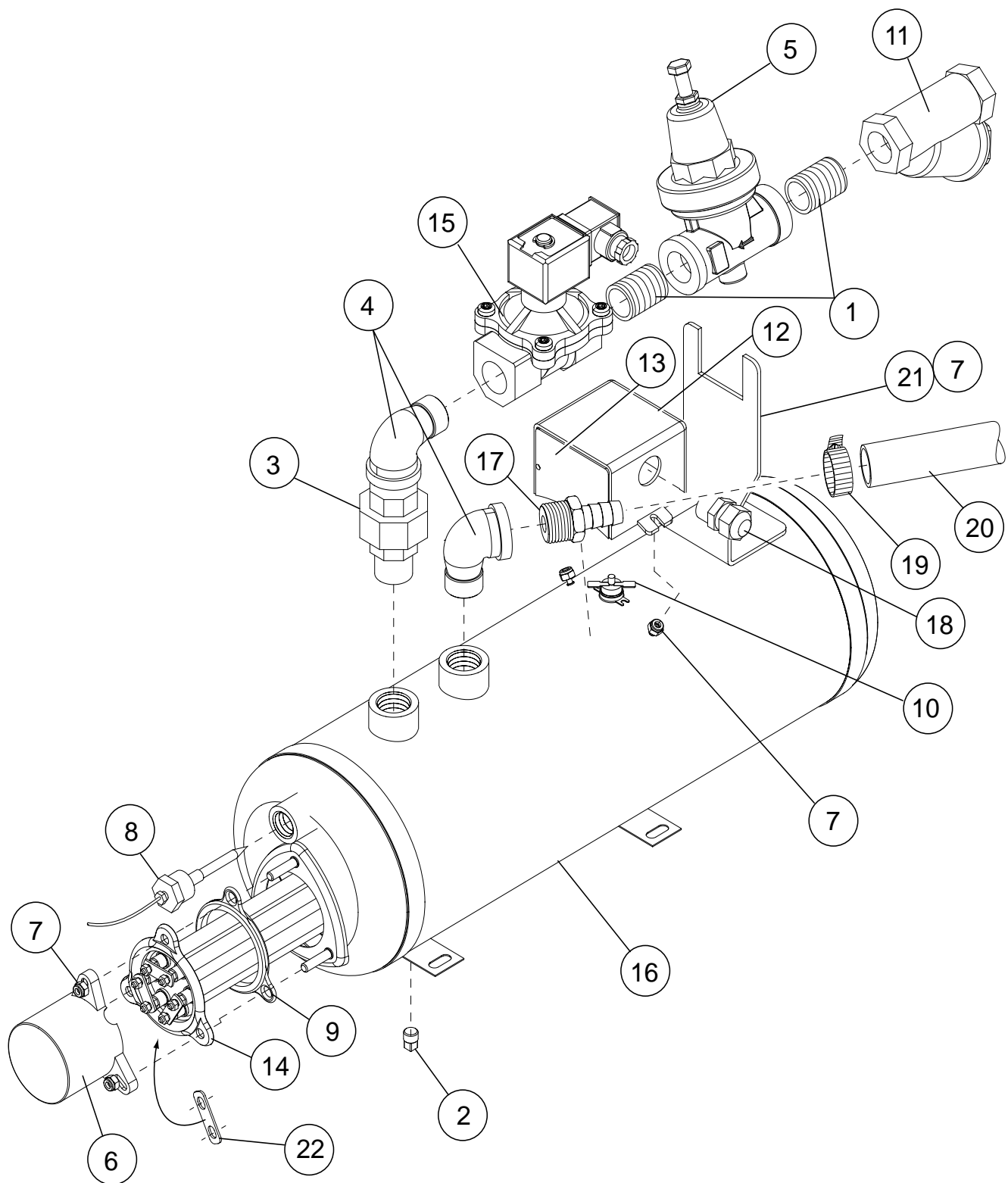
| <i><b>Illustrations</b></i>   | <i><b>Page</b></i> |
|---|--------------------|
| Wash Pump/Motor Assembly .....                                      | 20                 |
| Booster Assembly .....  | 22                 |
| Control Panel Assembly .....  | 24                 |
| Wash and Rinse Spray Arm Assemblies .....                           | 26                 |
| Hood and Door Assembly .....  | 28                 |
| Track Assembly .....  | 30                 |
| Wash Tank Heat, Drain, Screens, Hoses .....                         | 32                 |
| Dish racks, Line Strainer and Pressure Regulating Vavle (PRV) ..... | 34                 |
| Timer Chart .....   | 37                 |
| Electrical Schematics .....   | 38                 |



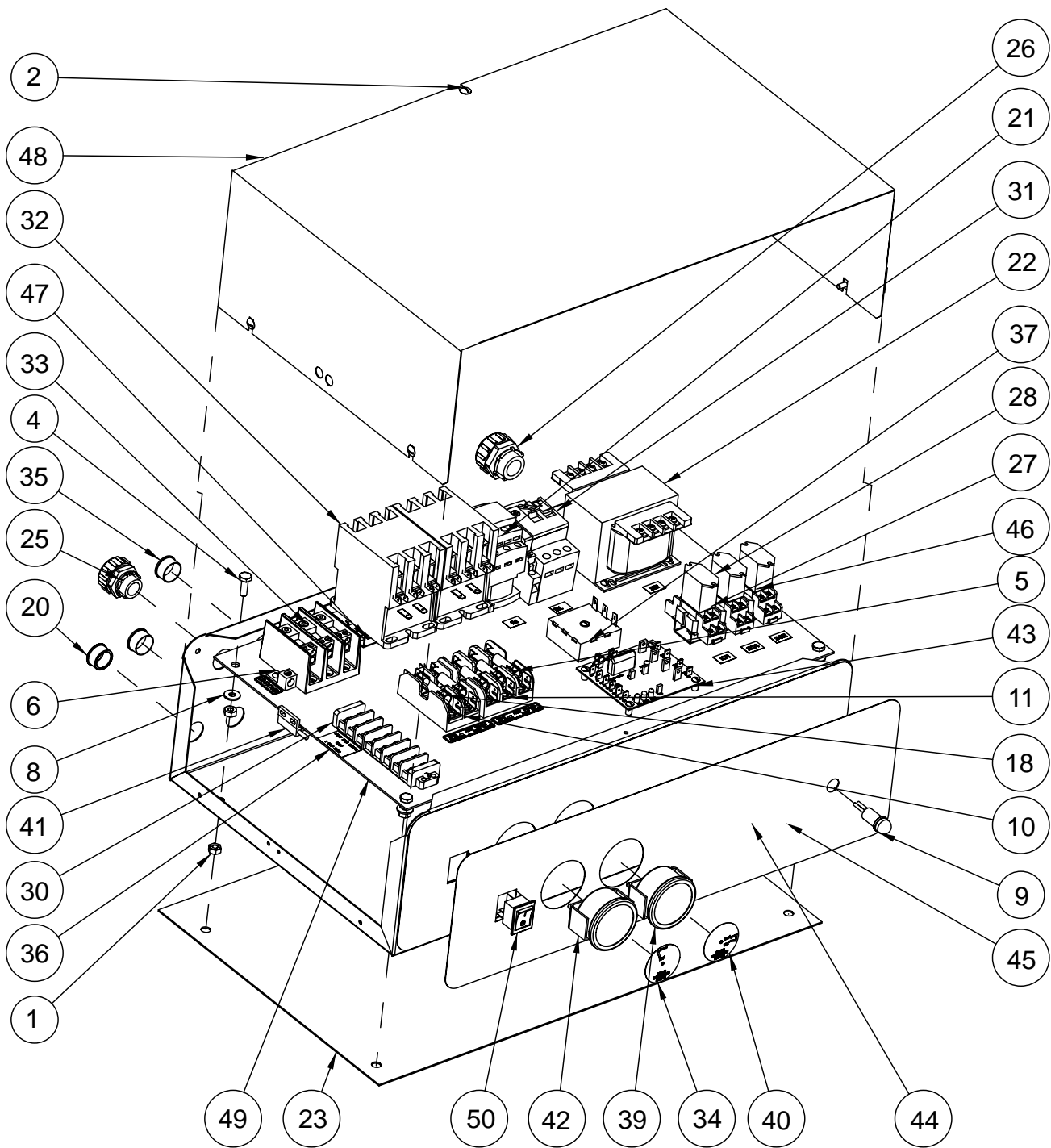
| Item No. | Part No. | Description                                 | Qty. |
|----------|----------|---|------|
| 1        | 114134   | SLINGER, WATER                              | 1    |
| 2        | 114135   | NUT   | 9    |
| 3        | 114136   | SCREW                                       | 9    |
| 4        | 114137   | BACKPLATE, PUMP                             | 1    |
| 5        | 114138   | GASKET, PUMP                                | 1    |
| 6        | 114139   | SEAL, PUMP                                  | 1    |
| 7        | 114140   | WASHER                                      | 1    |
| 8        | 114141   | IMPELLER                                    | 1    |
| 9        | 114142   | WASHER                                      | 1    |
| 10       | 114143   | WASHER, LOCK                                | 1    |
| 11       | 114144   | NUT, IMPELLER                               | 1    |
| 12       | 114145   | HOUSING, PUMP                               | 1    |
| 13       | 114322   | CAPACITOR 15 $\mu$ F                        | 1    |
| 14       | 114722   | PUMP/MOTOR ASSEMBLY COMPLETE<br>220VAC/50/1 | 1    |

**NOTE:**

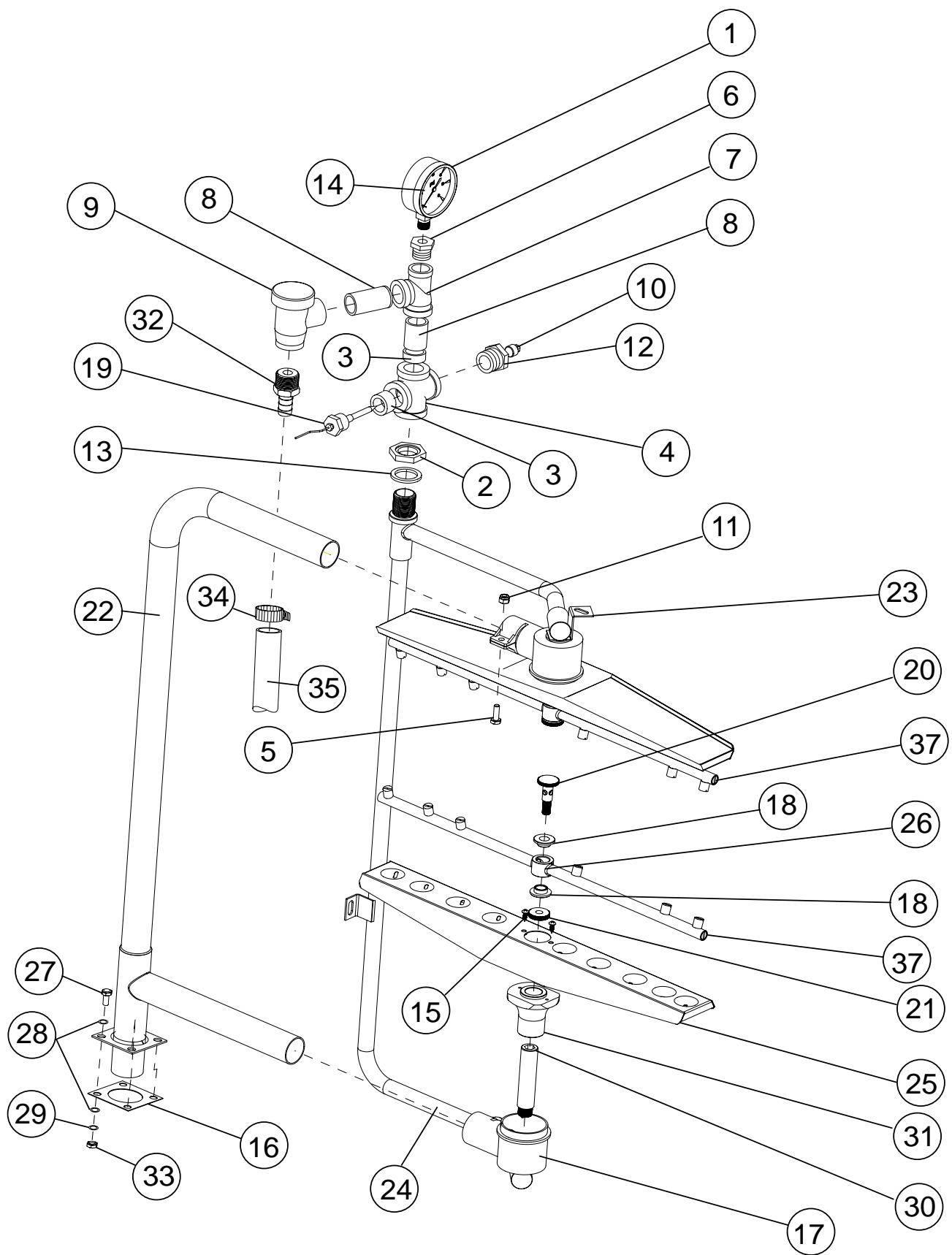
THE MOTOR CANNOT BE ORDERED AS A SEPARATE REPLACEMENT PART.



| Item No. | Part No. | Description   | Qty. |
|----------|----------|---|------|
| 1        | 100184   | NIPPLE, 3/4" NPT X CLOSE BRASS                            | 2    |
| 2        | 100210   | PLUG, 1/8" SST  | 1    |
| 3        | 100571   | UNION, 3/4" NPT BRASS                                     | 1    |
| 4        | 102444   | ELBOW, STREET 3/4" NPT X 90° BRASS                        | 2    |
| 5        | 107550   | VALVE, PRESSURE REG. 3/4" NPT BRASS                       | 1    |
| 6        | 107908   | COVER, HEATER   | 1    |
| 7        | 107966   | NUT, HEX GRIP 10-32 SST W/NYLON                           | 7    |
| 8        | 109069   | THERMOSTAT, W/CAPILLARY                                   | 1    |
| 9        | 109985   | O-RING, BOOSTER HEATER                                    | 1    |
| 10       | 110562   | THERMOSTAT, HI-LIMIT FIXED SNAP 240°F                     | 1    |
| 11       | 110768   | STRAINER, LINE 3/4" BRONZE FEMALE                         | 1    |
| 12       | 110929   | BOX, ELECTRIC BOOSTER, THERMOSTAT                         | 1    |
| 13       | 110930   | COVER, BOOSTER THERMO BOX                                 | 1    |
| 14       | 111233   | HEATER, BOOSTER 7.5kW/10kW,<br>220V/50/1 & 3, 380V/50/3   | 1    |
| 15       | 111437   | VALVE, SOLENOID 120VAC 3/4" NPT                           | 1    |
| ---      | 108516   | COIL, SOLENOID 120VAC                                     | A/R  |
| ---      | 109903   | KIT, REPAIR SOLENOID VALVE 3/4"                           | A/R  |
| 16       | 0509042  | TANK, BOOSTER WELDMENT                                    | 1    |
| 17       | 0512027  | BARB, HOSE 3/4" NPTx3/4" BR <i>(Before S/N D09087829)</i> | 1    |
| ---      | 108528   | BARB, HOSE 1/2" NPT BR <i>(After S/N D09087829)</i>       | 1    |
| 18       | B500355  | CONNECTOR, STRAIN RELIEF CORD                             | 1    |
| 19       | 113269   | CLAMP, HOSE   | 1    |
| 20       | 206727   | HOSE, 3/4" <i>(Before S/N D09087829)</i>                  | 1    |
| ---      | 206987   | HOSE, 1/2" <i>(After S/N D09087829)</i>                   |      |
| 21       | 333154   | BRACKET, PIPING SUPPORT                                   | 1    |
| 22       | 111488   | JUMPER, STRIP <i>(spares used for conversion)</i>         | 3    |



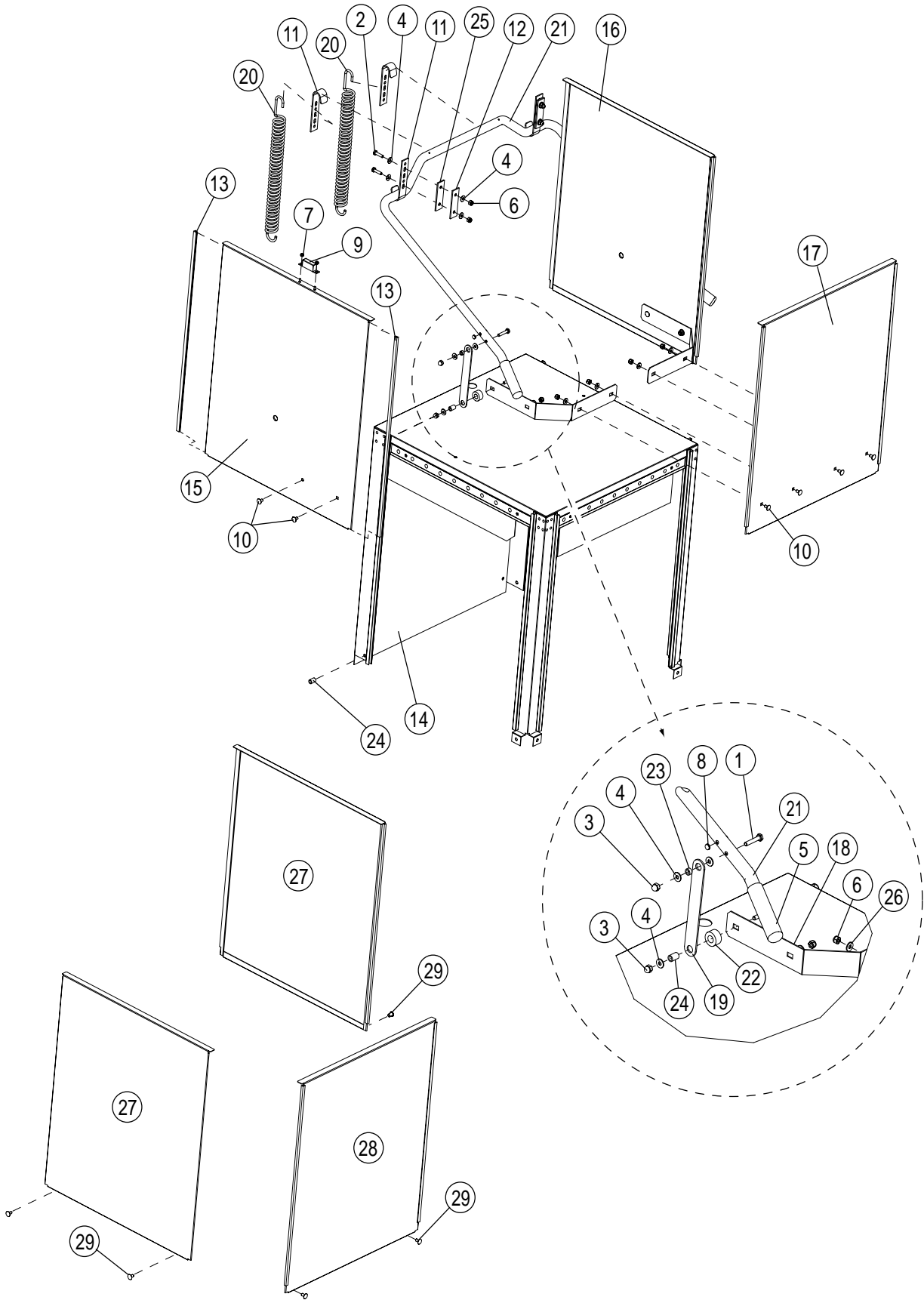
| Item No. | Part No. | Description                                | Qty. |
|----------|----------|--|------|
| 1        | 100003   | NUT, HEX PLAIN 1/4-20 SST                  | 8    |
| 2        | 100007   | SCREW, TRUSS HD. 10-32 X 3/8" SST          | 5    |
| 3        | 100100   | SCREW, ROUND HD. 8-32 X 1/4" SST           | 19   |
| 4        | 100736   | BOLT, HEX HD., 1/4-20 X 3/4" SST           | 4    |
| 5        | 100929   | FUSE, ATMR-30, 600V ONE-TIME               | 3    |
| 6        | 103310   | LUG, GROUND                                | 1    |
| 7        | 104873   | LABEL, GROUND                              | 1    |
| 8        | 106026   | WASHER, FLAT 1/4" SST                      | 4    |
| 9        | 106364   | LIGHT, INDICATOR                           | 1    |
| 10       | 106402   | FUSE BLOCK, 2-POLE                         | 1    |
| 11       | 106925   | FUSE BLOCK, 3-POLE                         | 1    |
| 12       | 106975   | LABEL, 1CR                                 | 1    |
| 13       | 106976   | LABEL, 2CR                                 | 1    |
| 14       | 106977   | LABEL, 3CR                                 | 1    |
| 15       | 106980   | LABEL, 1M                                  | 1    |
| 16       | 107098   | LABEL, XFMR                                | 1    |
| 17       | 107099   | LABEL, 1MOL                                | 1    |
| 18       | 107289   | FUSE, 2.5 A                                |      |
| 19       | 107564   | SCREW, TRUSS HD. 6-32 X 1" SST             | 1    |
| 20       | 107964   | PLUG, SNAP                                 | 1    |
| 21       | 108122   | CONTACTOR, 3-POLE                          | 1    |
| 22       | 108397   | TRANSFORMER, 150VA                         | 1    |
| 23       | 109849   | INSULATION, CONTROL CABINET                | 1    |
| 24       | 110574   | LABEL, MAX AMP                             |      |
| 25       | 110836   | FITTING, STRAIGHT, 1/2" SEALTITE           | 1    |
| 26       | 110838   | FITTING, STRAIGHT, 3/4" SEALTITE           | 1    |
| 27       | 111036   | SOCKET, RELAY 2-POLE                       | 3    |
| 28       | 111068   | RELAY, 2-POLE, 10 AMP                      | 3    |
| 29       | 111319   | SCREW, TRUSS HD. 6-32 X 1/2" SST           | 4    |
| 30       | 111331   | TERMINAL STRIP, 8-POLE                     | 1    |
| 31       | 111628   | MOTOR STARTER                              | 1    |
| 32       | 111702   | CONTACTOR, 3-POLE                          | 2    |
| 33       | 112376   | TERMINAL BLOCK, INPUT (4th Pole Adder)     | 1    |
| 34       | 112086   | OVERLAY, 150°F, WASH                       | 1    |
| 35       | 112519   | PLUG, SNAP                                 | 2    |
| 36       | 112614   | LABEL, VENT FAN SIGNAL                     | 1    |
| 37       | 113314   | TIMER, INFITEC, 600SEC                     | 1    |
| 38       | 113506   | LABEL, MAX AMP                             | 2    |
| 39       | 113622   | GAUGE, RINSE, TEMPERATURE, 4FT. CAPILLARY  | 1    |
| 40       | 113644   | OVERLAY, 180°F, RINSE                      | 1    |
| 41       | 113721   | SWITCH, REED ALEPH                         | 1    |
| 42       | 114236   | GAUGE, WASH, TEMPERATURE 8FT. CAPILLARY    | 1    |
| 43       | 114470   | CONTROL BD., ELECTRONIC                    | 1    |
| 44       | 114583   | DECAL CHAMPION DH2000, CONTROL CABINET     | 1    |
| 45       | 114584   | DECAL MOYER DIEBEL MD2000, CONTROL CABINET | 1    |
| 46       | 206015   | RAIL, DIN 35MM X 15MM                      | A/R  |
| 47       | 206016   | RAIL, DIN 35MM X 15MM                      | A/R  |
| 48       | 335089   | COVER, CONTROL CABINET                     | 1    |
| 49       | 331693   | PANEL, INNER                               | 1    |
| 50       | 0512220  | SWITCH, ROCKER ON/OFF                      | 1    |



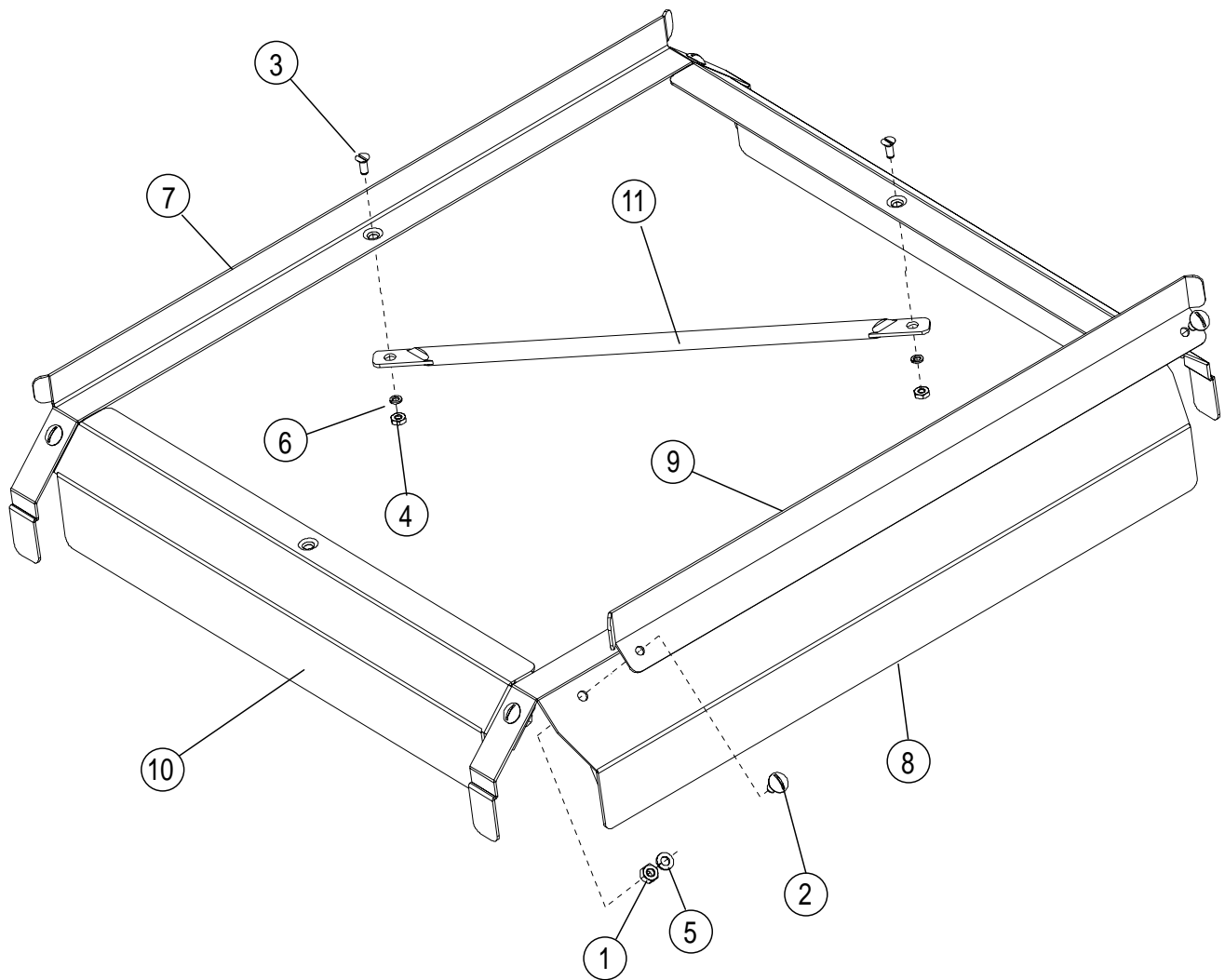


| Item No. | Part No. | Description  | Qty. |
|----------|----------|--|------|
| 1        | 100135   | GAUGE, PRESSURE 0-60 PSI   | 1    |
| 2        | 100156   | LOCKNUT, 3/4" NPT BRASS  | 1    |
| 3        | 100171   | BUSHING, RED. FACE 3/4" X 1/2" BRASS                                 | 3    |
| 4        | 100599   | CROSS, 3/4" NPT BRASS  | 1    |
| 5        | 100736   | BOLT, HEX HD. 1/4-20 X 3/4" SST                                      | 2    |
| 6        | 102388   | BUSHING, RED 1/2" NPT X 1/4" NPT BRASS                               | 1    |
| 7        | 102525   | TEE, RED. 3/4" X 1/2" X 3/4" NPT BRASS <i>(Before S/N D09087829)</i> | 1    |
| ---      | 102514   | TEE, 1/2" X 1/2" X 1/2" NPT BRASS <i>(After S/N D09087829)</i>       |      |
| 8        | 102651   | NIPPLE, 3/4" NPT X 2" LG. BRASS <i>(Before S/N D09087829)</i>        | 2    |
| ---      | 100206   | NIPPLE, 1/2" NPT, 2-1/2" LG. BRASS <i>(After S/N D09087829)</i>      |      |
| 9        | 104429   | BREAKER, VACUUM 3/4" NPT BRASS <i>(Before S/N D09087829)</i>         | 1    |
| ---      | 100500   | BREAKER, VACUUM 1/2" NPT BRASS <i>(After S/N D09087829)</i>          |      |
| ---      | 900837   | KIT REPAIR, 3/4" VACUUM BREAKER                                      | A/R  |
| 10       | 107463   | PLUG, 1/4" NPT   | 1    |
| 11       | 107967   | HEX GRIP NUT, 1/4-20 SST W/NYLON                                     | 2    |
| 12       | 108181   | BUSHING, RED. 3/4" X 1/4" PVC  | 1    |
| 13       | 108620   | GASKET, RINSE MANIFOLD 3/4" PIPING                                   | 1    |
| 14       | 109765   | OVERLAY, PRESSURE GAUGE  | 1    |
| 15       | 109835   | SCREW, #8 X 1/2" PHILS. SST  | 4    |
| 16       | 109854   | GASKET, WASH STANDPIPE   | 1    |
| 17       | 109864   | SUPPORT, WASHARM HUB   | 1    |
| 18*      | 113514   | BEARING, RINSE ARM   | 4    |
| 19       | 113622   | THERMOMETER, 4 FT. CAPILLARY   | 1    |
| 20*      | 114555   | SPINDLE, RINSE ARM   | 2    |
| 21       | 114556   | NUT, RINSE ARM   | 2    |
| 22       | 332489   | STANDPIPE, WASH WELDMENT   | 1    |
| 23       | 332552   | SUPPORT, BRACKET   | 1    |
| 24       | 332553   | MANIFOLD, WELDMENT RINSE STANDPIPE                                   | 1    |
| 25       | 332761   | WELDMENT, WASHARM  | 1    |
| 26*      | 332762   | WELDMENT, RINSE ARM  | 1    |
| 27       | 100740   | BOLT, HEX HD. 5/16-18 X 1" SST                                       | 4    |
| 28       | 102376   | WASHER, FLAT 5/16" SST   | 8    |
| 29       | 106013   | WASHER, LOCK SPLIT 5/16" SST   | 4    |
| 30       | 0507443  | SPINDLE, WASH ARM  | 2    |
| 31       | 0507446  | BEARING, WASH ARM SUPPORT  | 2    |
| 32       | 0512027  | BARB, HOSE, ST 3/4" NPT X 3/4" H BRASS <i>(Before S/N D09087829)</i> | 1    |
| ---      | 107419   | BARB, HOSE, ST 1/2" NPT X 1/2" H BRASS <i>(After S/N D09087829)</i>  | 1    |
| 33       | 100154   | NUT, HEX HD. PLAIN 5/16-18 SST                                       | 4    |
| 34       | 113269   | CLAMP, HOSE  | 1    |
| 35       | 206727   | HOSE, 3/4"   | 1    |
| ---      | 206987   | HOSE, 1/2"   | 1    |
| 36       | 100171   | BUSHING, FACE 3/4" X 1/2" NPT BRASS <i>(After S/N D09087829)</i>     | 2    |
| 37       | 114861   | ENDCAP, HEADLESS 7/16-20 SST   | 4    |
| ----     | 900926   | WASH ARM ASSY. COMPLETE (includes items 15, 25 and 31)               | 2    |
| ----     | 900962   | RINSE ARM ASSY. COMPLETE (includes items 18,20,21,26,37)             | 2    |

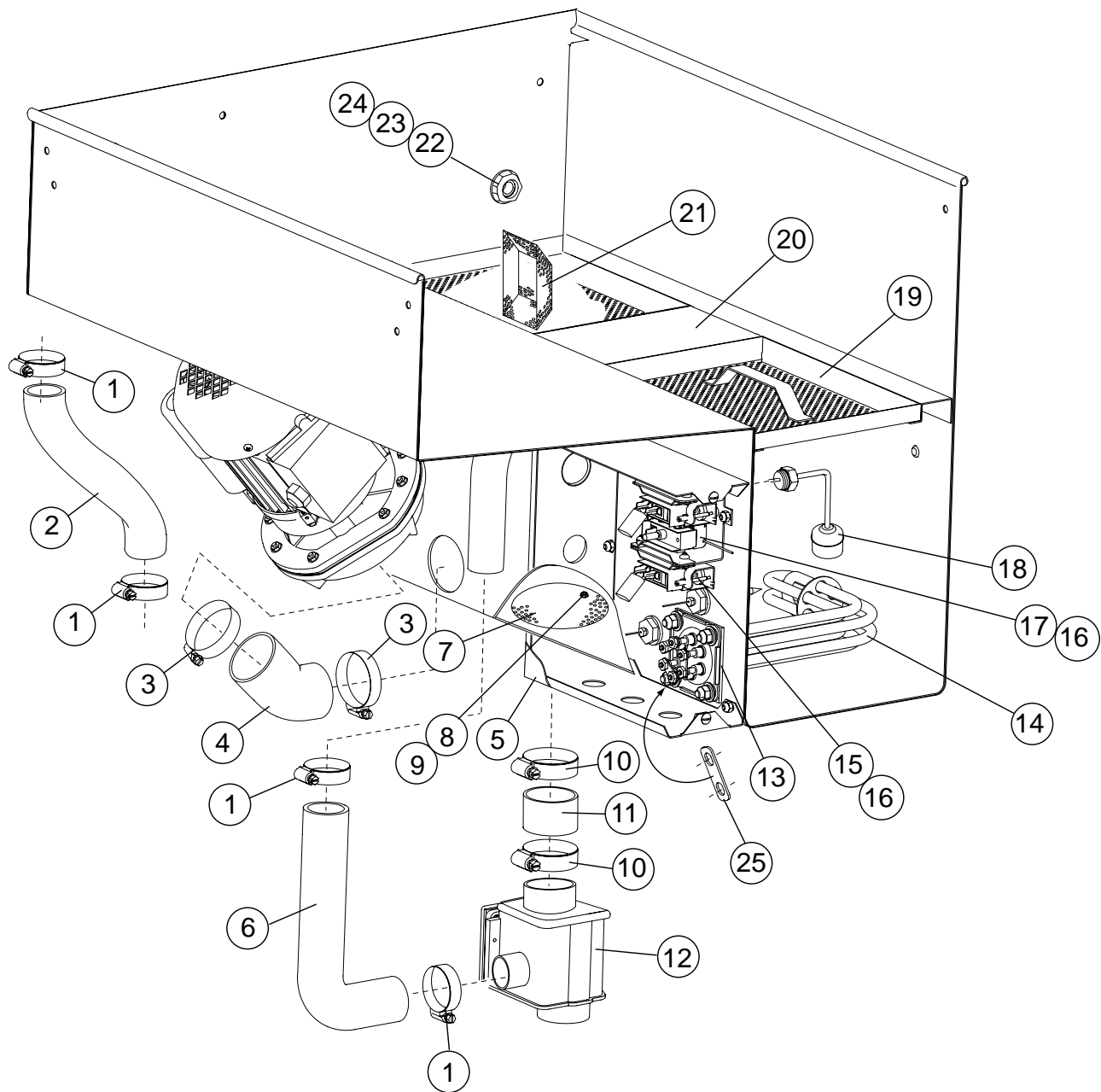
\*Note: For machines built prior to S/N D12049848 you must order P/N 900962 to repair the existing rinse arm assembly.



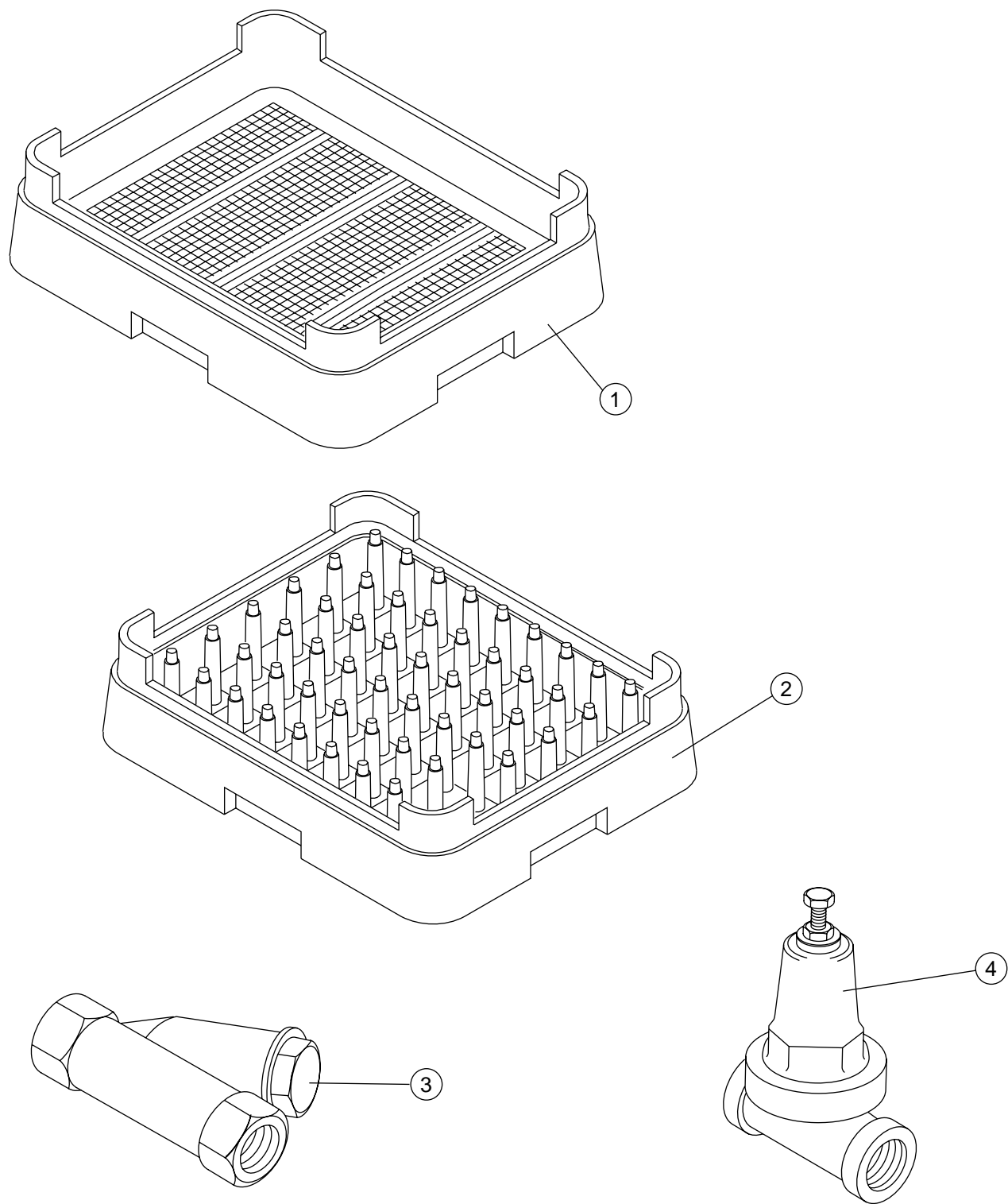
| Item No. | Part No.  | Description                         | Qty. |
|----------|-----------|-------------------------------------|------|
| 1        | 100002    | BOLT, HEX HD., 1/4-20 X 1-3/8" SST  | 2    |
| 2        | 100738    | BOLT, HEX HD., 1/4-20 X 1" SST      | 4    |
| 3        | 106014    | NUT, HEX ACORN PLAIN, 1/4-20 SST    | 4    |
| 4        | 106026    | WASHER, FLAT 1/4" SST               | 21   |
| 5        | 107962    | HANDLE, GRIP                        | 2    |
| 6        | 107967    | HEX, GRIP NUT, 1/4-20 SST W/NYLON   | 12   |
| 7        | 108954    | HEX, GRIP NUT, 6-32 SST W/NYLON     | 2    |
| 8        | 113745    | PLUG, HOLE FDA, SILICON             | 4    |
| 9        | 113937    | MAGNET, ALEPH                       | 1    |
| 10       | 114154    | SCREW, TRUSS HD., 1/4-20 X 1/2" SST | 6    |
| 11       | 0310781-1 | PIVOT, DOOR HANDLE                  | 4    |
| 12       | 0310792-1 | PLATE, DOOR PIVOT                   | 2    |
| 13       | 0310843-2 | WEAR STRIP, DOOR 24" LG.            | 6    |
| 14       | 332538    | HOOD, WELDMENT                      | 1    |
| 15       | 332546    | DOOR, LH                            | 1    |
| 16       | 332547    | DOOR, RH                            | 1    |
| 17       | 332557    | DOOR, FRONT                         | 1    |
| 18       | 332867    | BRACKET, CONNECTION DOOR            | 2    |
| 19       | 332881    | LIFT BAR, DOOR                      | 2    |
| 20       | 0510459   | SPRING, DOOR                        | 2    |
| 21       | 0510779-1 | HANDLE, DOOR                        | 1    |
| 22       | 0510787-1 | SPACER, LIFT BAR, DOOR              | 1    |
| 23       | 0510788-1 | TUBE, SPACER                        | 2    |
| 24       | 0510788-2 | TUBE, SPACER                        | 4    |
| 25       | 0510791-1 | GASKET, DOOR PIVOT                  | 2    |
| 26       | 104618    | WASHER, FLAT 3/8" SST               | 6    |
| 27       | 332559    | PANEL, SIDE                         | 2    |
| 28       | 332540    | PANEL, FRONT                        | 1    |
| 29       | 104923    | SCREW, 1/4-20 X 3/8" RD., HD., SST  | 6    |



| <b>Item No.</b> | <b>Part No.</b> | <b>Description</b>                  | <b>Qty.</b> |
|-----------------|-----------------|-------------------------------------|-------------|
| 1               | 100003          | HEX PLAIN NUT, 1/4-20 SST           | 6           |
| 2               | 100073          | SCREW, TRUSS HD., 1/4-20 X 1/2" SST | 6           |
| 3               | 100754          | SCREW, FLAT HD., 10-32 X 1/2" SST   | 2           |
| 4               | 104985          | HEX PLAIN NUT, 10-32 SST            | 2           |
| 5               | 106482          | WASHER, LOCK 1/4" SPLIT SST         | 6           |
| 6               | 106486          | WASHER, LOCK #10 SPLIT, SST         | 2           |
| 7               | 332021          | TRACK, REAR                         | 1           |
| 8               | 332022          | TRACK, FRONT                        | 1           |
| 9               | 332023          | TRACK, RAIL ADJUST                  | 1           |
| 10              | 332024          | BAFFLE, SPLASH                      | 2           |
| 11              | 332025          | TUBE, CROSS TRACK                   | 1           |



| Item No. | Part No. | Description                                   | Qty. |
|----------|----------|---|------|
| 1        | 107340   | CLAMP, HOSE                                   | 4    |
| 2        | 114745   | HOSE, DISCHARGE                               | 1    |
| 3        | 104203   | CLAMP, HOSE                                   | 2    |
| 4        | 114467   | HOSE, SUCTION                                 | 1    |
| 5        | 332543   | COVER, JUNCTION BOX                           | 1    |
| 6        | 114472   | HOSE, OVERFLOW                                | 1    |
| 7        | 304816   | STRAINER, DRAIN                               | 1    |
| 8        | 107967   | HEX, GRIP NUT 1/4-20 SST W/NYLON              | 1    |
| 9        | 106026   | WASHER, FLAT 1/4-20 SST                       | 1    |
| 10       | 104165   | CLAMP, HOSE                                   | 2    |
| 11       | 205990   | HOSE, DRAIN                                   | 1    |
| 12       | 114471   | VALVE, DRAIN, ELECTRIC W/COVER                | 1    |
| 13       | 108345   | GASKET, ELEMENT                               | 1    |
| 14       | 114178   | ELEMENT, HEATER 5.2 kW, 220/380V/50/1 and 3   | 1    |
| ----     | 100740   | BOLT, HEX 5/16-18 X 1" SST                    | 4    |
| ----     | 102376   | WASHER, FLAT 5/16" SST                        | 4    |
| ----     | 106013   | WASHER, LOCK SPLIT, 5/16" SST                 | 4    |
| 15       | 109069   | THERMOSTAT, CONTROL                           | 1    |
| 16       | 113271   | SUPPRESSOR, ARC                               | 2    |
| 17       | 110561   | THERMOSTAT, FIXED HI-LIMIT                    | 1    |
| 18       | 111092   | SWITCH, FLOAT                                 | 1    |
| ----     | 107089   | HEX, PLAIN JAM NUT, 1/2-13 SST                | 1    |
| ----     | 104882   | WASHER, FLAT                                  | 2    |
| 19       | 305164   | SCREEN, SCRAP                                 | 2    |
| 20       | 332544   | SUPPORT, FILLER SCREEN                        | 1    |
| 21       | 333021   | STRAINER, PUMP SUCTION                        | 1    |
| 22       | 108418   | PLUG, 1/2" NPT PLASTIC                        | 1    |
| 23       | 108417   | NUT, 1/2" NPT PLASTIC                         | 1    |
| 24       | 109034   | GASKET, 1/2" PLUG                             | 1    |
| 25       | 111488   | JUMPER, STRIP ( <i>spare for conversion</i> ) | 3    |

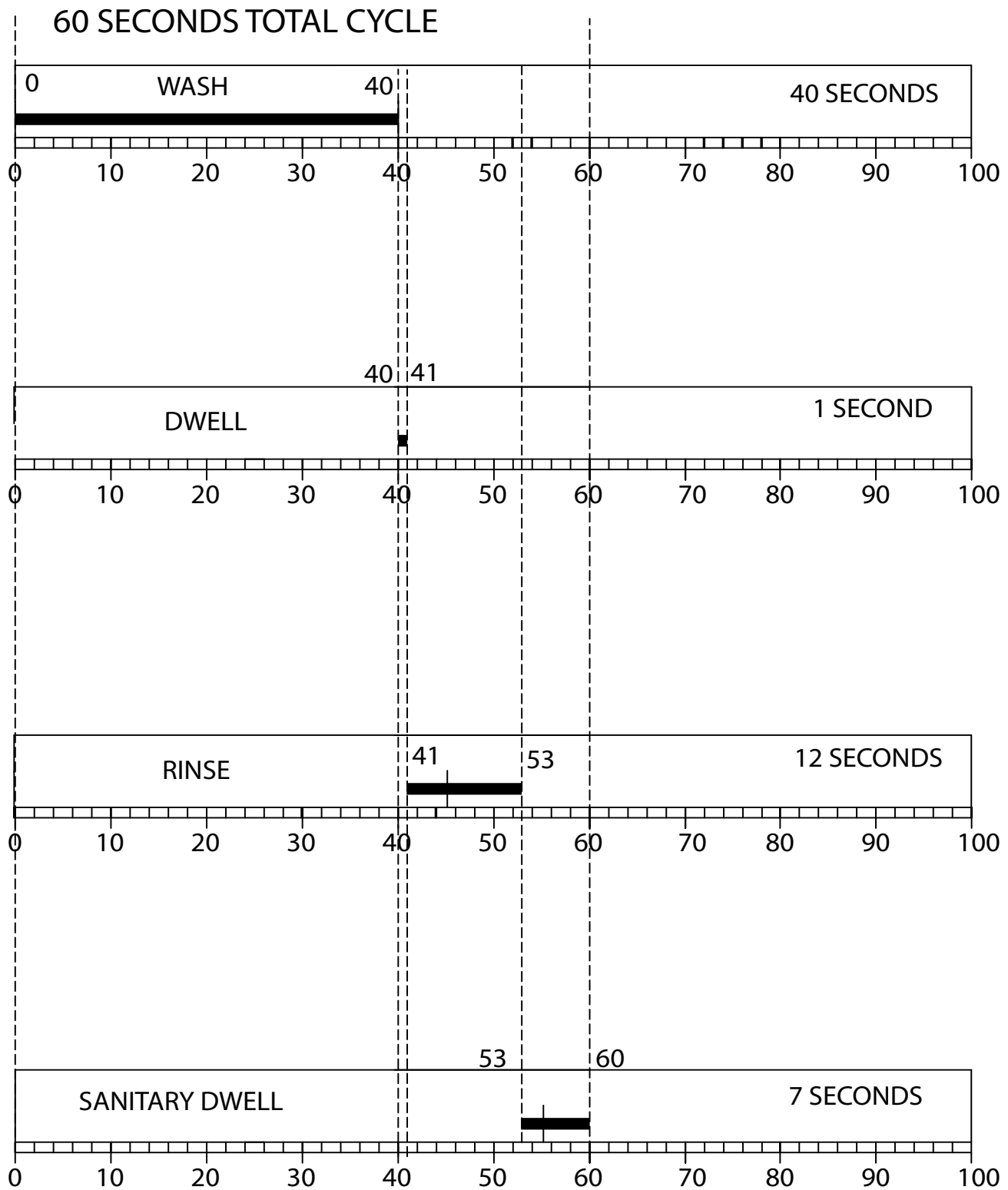




| <b>Item No.</b> | <b>Part No.</b> | <b>Description</b>                      | <b>Qty.</b> |
|-----------------|-----------------|---|-------------|
| 1               | 101273          | DISH RACK, FLAT-BOTTOM                  | AR          |
| 2               | 101285          | DISH RACK, PEG                          | AR          |
| 3               | 110768          | STRAINER, LINE 3/4" BRONZE              | 1           |
| 4               | 107550          | VALVE, PRES. REGULATING 3/4" (Optional) | 1           |

# Timer Chart, Electrical Schematic

| <i>Illustrations</i>        | <i>Page</i> |
|-----------------------------|-------------|
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| Electrical Schematics ..... | 38          |



CYCLE STRUCTURE

60 seconds cycle consisting of:

|            |                |
|------------|----------------|
| 40 seconds | Wash           |
| 1 second   | Dwell          |
| 12 seconds | Rinse          |
| 7 seconds  | Sanitary Dwell |

TIME CYCLE - DH/MD2000

DWG. 114470-0/B

3/10/09 L.B.

