

Champion®



Installation/Operation Manual with Service Replacement Parts



UH130B



UH230B

Undercounter Dishwashers

Models:

UH130
High Temperature
without built-in booster
Fill and Refresh Pumped
Final Rinse

UH130B
High Temperature
with built-in booster
Fill and Refresh Pumped
Final Rinse

UH230
High Temperature
without built-in booster
Fresh Water Final Rinse

UH230B
High Temperature
with built-in booster
Fresh Water Final Rinse

UL130
Low Temperature
Chemical Sanitization



Machine Serial No.



Issue Date: 5.15.13

Manual P/N 115281 rev. 0

For machines beginning with S/N W130838986 and above

3765 Champion Blvd.,
Winston-Salem, NC 27105
336/661-1556 Fax: 336/661-1660
Toll-free: 800.858.4477

2674 N. Service Road, Jordan Station
Ontario, Canada L0R 1S0
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: _____

National Service Department

In Canada:

Toll-free: 800/ 263-5798

Tel: 905/ 562-4195

Fax: 905/ 562-4618

email: service@moyerdiebellimited.com

In the USA:

Toll-free: 800/ 858-4477

Tel: 336/ 661-1556

Fax: 336/ 661-1660

email: service@championindustries.com

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 lower front panel.

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

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REGISTER YOUR PRODUCT ONLINE

Make sure you are connected to the internet then enter an address below:

In the U.S.A.

<http://www.championindustries.com/register>

In Canada

<http://www.championindustries.com/canada/register>

Champion®

The Dishwashing Machine Specialists

PRODUCT REGISTRATION BY FAX

COMPLETE THIS FORM AND FAX TO:

(336) 661-1660 in the USA

1-(800) 204-0109 in Canada

PRODUCT REGISTRATION CARD

Model

Serial #

Date of Installation: ____/____/____

Company Name: _____

Address: _____
(Street) Province Postal Code

Telephone #: () ____ --- ____

Contact: _____

Installation Company: _____

Address: _____

Telephone #: _____

Contact: _____

FAILURE TO REGISTER YOUR PRODUCT MAY VOID YOUR WARRANTY

IMPORTANT

IMPORTANT

Revision History

A revision might be a part number change, a new instruction, or other 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.

<i>Revision Date</i>	<i>Revised Pages</i>	<i>Serial Number Effectivity</i>	<i>Revision Description</i>
5.15.13	All	W130838986	Released First Edition

LIMITED WARRANTY

Champion Industries Inc. (herein referred to as Champion), 3765 Champion Blvd., Winston-Salem, North Carolina 27105, and P.O. Box 301, 2674 N. Service Road, Jordan Station, Canada, L0R 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.] Warranty registration must be submitted to Champion within ten (10) days after installation either online on the Champion Industries website (<http://www.championindustries.com/register>) in the USA or <http://www.championindustries.com/canada/register> in Canada or by fax on the form provided at the front of this manual. If warranty registration 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 CHAMPION DISHWASHING MACHINES 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.

Table of Contents

Models UH130, UH130B, UH230, UH230B, UL130

Revision History	i
Limited Warranty	ii
Model Descriptions	v
 Installation - Models UH130, UH130B, UH230, UH230B	 1
Receiving - All Models.....	1
Placement - All Models.....	1
(Single Phase) Electrical Connections	3
(Three Phase) Electrical Connections (Field Conversion from 1PH to 3PH Operation)	4
Booster Heater Element (Field Conversion from 1PH to 3PH Operation)	6
Water Connections.....	7
Drain Connection	7
 Initial Start-up - Models UH130, UH130B, UH230, UH230B	 9
Initial Start-up Check List.....	9
Booster Fill Switch - (Filling the booster for the first time) Models UH130B, UH230B Only	10
Pumps and Injection Points - Detergent and Rinse-aid Dispensing Pumps	12
Pump Priming - Detergent and Rinse-aid Dispensing Pumps.....	14
Pump Speed and Fill Adjustments - Detergent and Rinse-aid Dispensing Pumps	15
 Operation - Models UH130, UH130B, UH230, UH230B	 16
Loading Dish Racks - All Models.....	16
Normal Wash Mode - Models UH130 and UH130B	17
Rinse Sentry Mode - Models UH130 and UH130B	17
Normal Wash Mode - Models UH230 and UH230B	18
Rinse Sentry Mode - Models UH230 and UH230B	19
Extended Wash Mode - Models UH230 and UH230B Only	19
Drain Mode - All Models	20
 Cleaning - Models UH130, UH130B, UH230, UH230B	 21
Cleaning the Wash Tank	21
Cleaning the Wash Arms - All Models.....	22
Cleaning the Rinse Arms - Models UH230, UH230B Only).....	22
De-liming - Models UH230, UH230B.....	23
De-liming - Models UH130, UH130B.....	24
 Maintenance - Models UH130, UH130B, UH230, UH230B	 25
Daily, Weekly, Monthly	25
Troubleshooting.....	26

continued on next page

Table of Contents (continued)

Models UH130, UH130B, UH230, UH230B, UL130

Installation - UL130	27
Receiving	1
Placement.....	1
(Single Phase) Electrical Connections	28
Water Connections.....	29
Drain Connection	30
 Initial Start-up - UL130	 32
Initial Start-up Check List.....	31
Pumps and Injection Points - Detergent and Rinse-aid Dispensing Pumps	32
Pump Priming - Detergent and Rinse-aid Dispensing Pumps.....	34
Pump Speed and Fill Adjustments - Detergent and Rinse-aid Dispensing Pumps	35
 Operation - UL130.....	 36
Loading Dish Racks	36
Normal Wash Mode	37
Drain Mode.....	38
 Cleaning - UL130.....	 39
Cleaning the Wash Tank	39
Cleaning the Wash Arms	40
De-liming.....	41
 Troubleshooting and Maintenance -UL130	 42
Troubleshooting.....	26
Maintenance - Daily, Weekly, Monthly	42
 Service Replacement Parts	 43
 Electrical Schematics and Timing Charts	 91
 Basic Service	 95

Model Descriptions

UH130B

Fill and Refresh Pumped Final Rinse

High temperature hot water sanitizing dishwasher with built-in 40°F/22°C rise booster heater or 70°F/39°C rise booster heater.

Two built-in chemical dispensing pumps.

Field convertible from single phase to three phase operation.

208-240VAC/60/1 and 3 phase

UH230B

Fresh Water Final Rinse

High temperature hot water sanitizing dishwasher with built-in 40°F/22°C rise booster heater or 70°F/39°C rise booster heater.

Two built-in chemical dispensing pumps - Detergent, Rinse-aid

Field convertible from single phase to three phase operation.

208-240VAC/60/1 and 3 phase

UH130

Fill and Refresh Pumped Final Rinse

High temperature hot water sanitizing dishwasher without built-in booster heater.

Two built-in chemical dispensing pumps - Detergent, Rinse-aid.

208-240VAC/60/1

UH230

Fresh Water Final Rinse

High temperature hot water sanitizing dishwasher without built-in booster heater.

Two built-in chemical dispensing pumps - Detergent, Rinse-aid.

208-240VAC/60/1

UL130

Chemical Sanitizing Rinse

Low temperature chemical sanitizing dishwasher with three built-in chemical dispensing pumps - Detergent, Rinse-aid, sanitizer.

120VAC/60/1

Optional Equipment *(consult factory)*

70°F/39°C rise built-in booster heater (UH-230B, and UH130B Only)

70°F/39°C rise booster heater element- P/N 0513331, O-ring - P/N 0513525

1-RDT Right-hand sink - P/N 403562

1-RDT Left-hand sink - P/N 403561

17" Stand - P/N 0708757

6" Stand - P/N 0712393

Peg dish rack - P/N 101285

Flat-bottom dish rack - P/N 101273

Drain water tempering kit - 0712382

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Receiving - All Models

NOTE:

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

NOTE:

The installation of the dishwasher must comply with all local electrical, plumbing, health and safety codes or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, NFPA 70, Canadian Electrical Code (CEC), Part 1, CSA C22.1; and the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96.

Turn to the front of this manual and follow the instructions to register your product online or by fax.

Placement - All Models

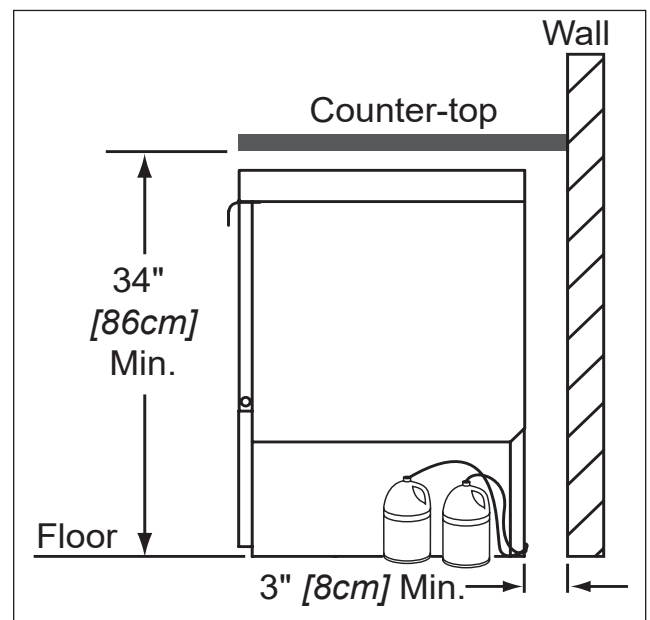
CAUTION:

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.

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 options or accessories that may have shipped with your dishwasher.
4. Compare the installation site utility connections with the dishwasher utility connections and make sure they are the same.
5. The dishwasher can be installed as a free-standing unit or under a counter-top.
The typical counter-top height in most locations is 34" [86cm].
6. Under counter installations should provide storage space for the dishwasher chemical supply containers. Do not elevate the containers above the finished floor.
7. Chemical supply containers should be placed as close to the machine as possible.
8. Place the dishwasher in its permanent location.
9. The dishwasher has 4 adjustable feet for leveling.
10. Level the dishwasher front-to-back and side-to-side.



(Single Phase) Electrical Connections - UH130, UH130B, UH230, UH230B



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 or service disconnect switch to indicate that work is being performed on the circuit.

! ATTENTION !

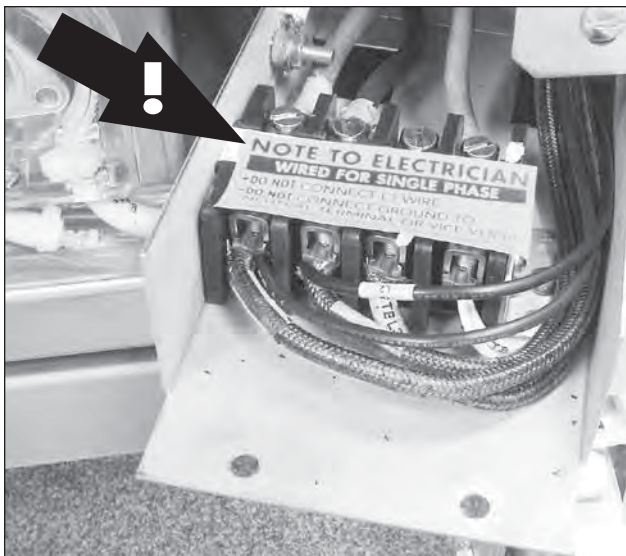
A qualified electrician must connect the main incoming power to the dishwasher in accordance with all local codes and regulations or in the absence of local codes in accordance with the National Electrical Code or the Canadian Electrical Code.

! VERY IMPORTANT !

ALL DISHWASHERS ARE SHIPPED FOR SINGLE PHASE OPERATION UNLESS SPECIFIED FOR THREE PHASE AT TIME OF ORDER.

A label is attached to the main terminal block alerting the electrician that the dishwasher is wired for single phase operation.

The dishwasher can be converted from single to three phase operation. Refer to the instructions on pages 4-5.



Main Terminal Block (MTB)
(shown extended from machine)

1. Power connections are made at the Main Terminal Block (MTB) located at the lower right-hand side of the dishwasher directly behind the lower front access panel.
2. Remove the MTB cover and 2 screws holding the MTB to the machine base
3. Pull the MTB up and forward to make the electrical connections.
4. Provide a 3 ft. service loop in the supply cable for machine servicing.
5. Re-install the MTB and the lower front access panel to complete the installation.
6. Refer to the connection diagrams on the next page for 1PH wiring.

(Single Phase) Electrical Connections - UH130, UH130B, UH230, UH230B (continued)

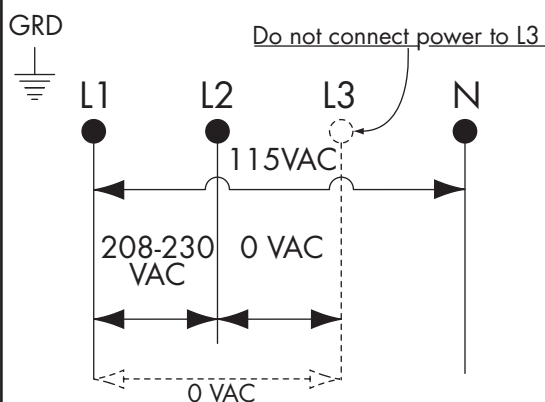
Refer to the connection diagrams below to connect main incoming power to the dishwasher.

! VERY IMPORTANT !

SINGLE PHASE UH130B and UH230B

The electrical power must be a 3-wire plus ground supply which includes a current carrying neutral.

SINGLE PHASE POWER CONNECTION
Models UH130B and UH230B



! VERY IMPORTANT !

THE ELECTRICAL POWER MUST BE A 3-WIRE PLUS GROUND SUPPLY WHICH INCLUDES A CURRENT CARRYING NEUTRAL.

HOW TO CONNECT 1 PHASE POWER

1. Check the data plate on the front of the dishwasher for the phase of the machine.

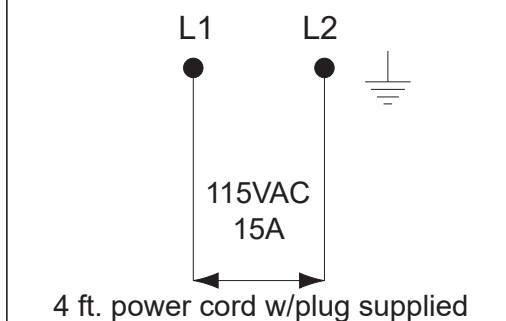
If the data plate says the machine is 1 Phase, then connect a 1 PH power supply.

2. Remove the lower access panel.
3. Pull power connection box forward and out.
4. The Main Terminal Block has connections for L1, L2, L3, Neutral and Ground.
5. Connect ground, then connect L1, L2 to 208-230VAC.
6. Connect a current carrying neutral to N.

DO NOT CONNECT POWER TO L3.

7. Main Power connections are complete.

SINGLE PHASE POWER CONNECTION
Model UL100



! ATTENTION !

Models UH130 and UH230 without a built-in booster are equipped with a 4 ft. power cord and plug. These models require a 115VAC, 15A receptacle.

(Three Phase) Electrical Connections - UH130, UH130B, UH230, UH230B

Field Conversion from Single to Three Phase Operation

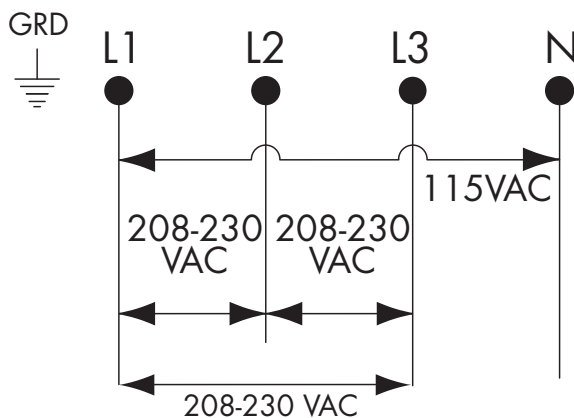
! VERY IMPORTANT !

ALL DISHWASHERS ARE SHIPPED FOR SINGLE PHASE OPERATION UNLESS SPECIFIED FOR THREE PHASE AT TIME OF ORDER.

A label is attached to the main terminal block alerting the electrician that the dishwasher is wired for single phase operation.

The dishwasher can be converted from single to three phase operation. Refer to the instructions below and on pages 5-6.

THREE PHASE POWER CONNECTION
Models UH130B and UH230B



! VERY IMPORTANT !

THE ELECTRICAL POWER MUST BE A 4-WIRE PLUS GROUND SUPPLY WHICH INCLUDES A CURRENT CARRYING NEUTRAL.

HOW TO CONNECT 3 PHASE POWER

1. Check the data plate on the front of the dishwasher for the phase of the machine.

If the data plate says the machine is 3 Phase, then connect a 3 PH power supply.

2. Remove the lower access panel.
3. Pull power connection box forward and out.
4. The Main Terminal Block has terminals for L1, L2, L3, Neutral and Ground.
5. Connect ground, then connect L1, L2, L3 to 208-230VAC.
6. Connect a current carrying neutral to N.
7. Main power connections are complete.

! VERY IMPORTANT !

THREE PHASE UH130B and UH230B

The electrical power must be a 4-wire plus ground supply which includes a current carrying neutral.

1. **Disconnect incoming power at the main breaker or service disconnect switch**
2. **Lock-out and tag the breaker or service disconnect switch to indicate that work is being performed on the circuit.**
3. Power connections are made at the Main Terminal Block (MTB) located at the lower right-hand side of the dishwasher directly behind the lower front access panel.
4. Remove the MTB cover and 2 screws holding the MTB to the machine base
5. Pull the MTB up and forward to make the electrical connections.
6. Provide a 3 ft. service loop in the supply cable for machine servicing.
7. Re-install the MTB and the lower front access panel to complete the installation.
8. Refer to the connection diagram at left for 3PH wiring.

(Three Phase) Electrical Connections - UH130, UH130B, UH230, UH230B (continued)
Field Conversion from Single to Three Phase Operation



WARNING:

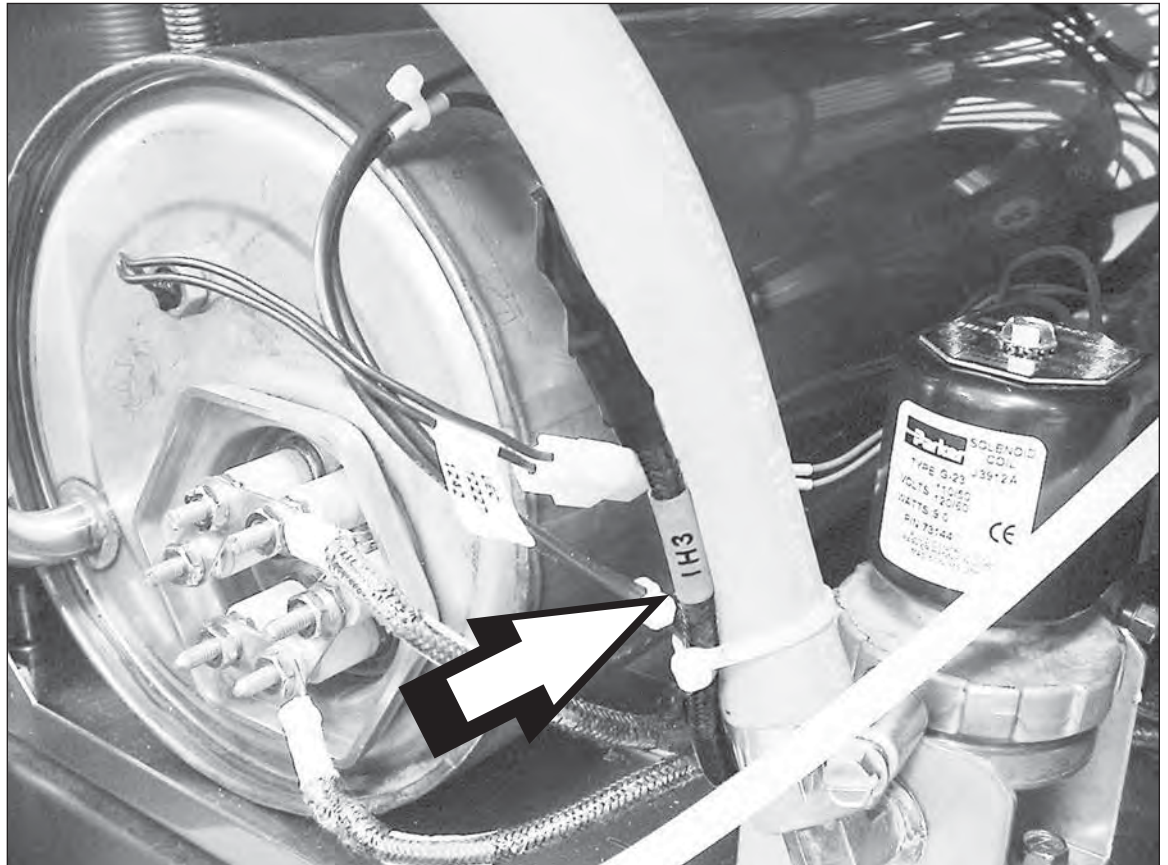
Electrocution or serious injury may result when working on an energized circuit.

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

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

Booster Heater Element
Field Conversion from Single to Three Phase Operation

To convert the booster heater from single phase to three phase operation, locate the booster wire labeled 1H3 cable-tied to the booster hose. Remove the shrink insulation from the terminal and connect to the booster heater element as shown on the wiring diagram on page 6.

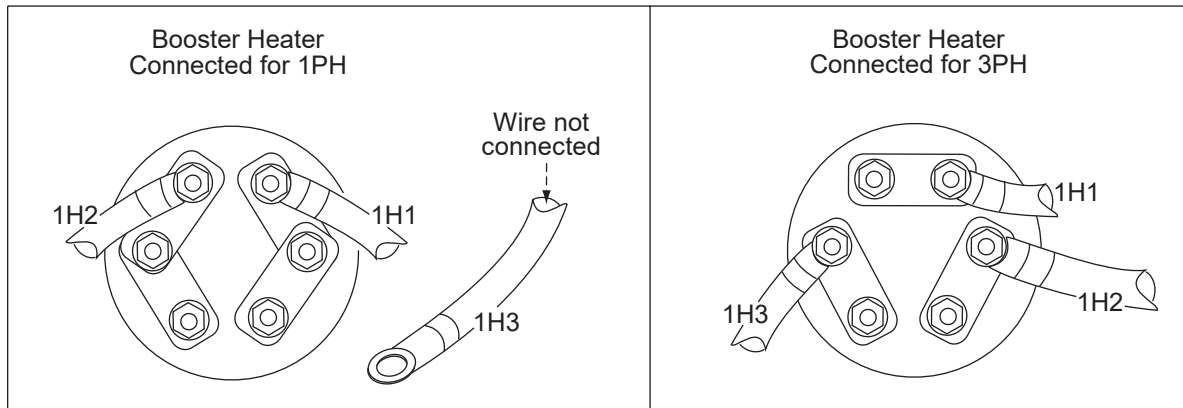


The three phase booster wire (1H3) is cable-tied to the hose adjacent to the booster tank.

Booster Heater Element - UH130, UH130B, UH230, UH230B

Field Conversion from Single to Three Phase Operation (continued)

1. Disconnect the main incoming power at the main service disconnect breaker or switch.
2. Remove the lower front access panel.
3. Locate the 1H3 booster heater wire stored on the right-side of the booster tank.
4. Disconnect the existing booster heater wires and change the booster heater element jumpers as shown in the illustration below
5. Connect wires 1H1, 1H2, and 1H3 as shown below.



Booster heater element connections shown for 1 phase and 3 phase operation.

6. A replacement 3PH data plate is stowed on the back of the lower front access panel. Replace the existing 1PH data plate on the front of the panel with the new 3PH data plate. Discard the 1PH data plate.



A replacement three phase data plate is stowed on the back of the machine lower front access panel.

Water Connections - UH130, UH130B, UH230, UH230B

NOTE

Plumbing connections must comply with national, provincial local plumbing and sanitary codes.

! IMPORTANT !

Make sure that the flexible water supply and drain hoses are not kinked.

Models UH130B, UH230B

1. All models have a 6 ft. flexible hot water fill hose with a 3/4" female garden hose connector.
2. A 1/2" or larger main incoming supply line should be installed to the dishwasher.
3. A 1/2" or larger shut-off valve should be installed in the water supply line as close to the dishwasher for servicing.
4. **FOR UH230B ONLY:** A pressure regulating valve, PRV, (supplied), must be installed after the shut-off service valve if the incoming flow pressure exceeds 20-22 psi minimum.
5. **FOR UH130B ONLY:** The UH130B has a built-in flow control. The incoming hot water supply pressure must be between 25-95 psi.
6. The hot water supply must provide a minimum of 140°F/60°C, measured at the dishwasher for the 40°F/ 22°C rise booster. For the 70°F/39°C rise booster the hot water supply must provide a minimum of 110°F/43°C measured at the dishwasher.
7. A water hardness of 3 grains/gal (US) [51.3 mg/L] or less is recommended.

Models UH130 and UH230

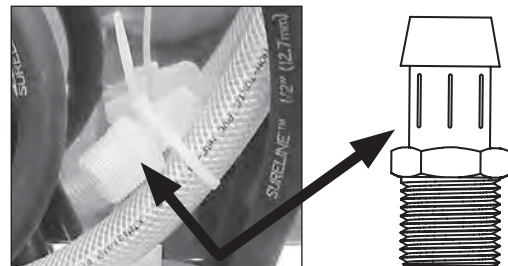
1. All models have a 6 ft. flexible hot water fill hose with a 3/4" female garden hose connector.
2. A 1/2" or larger main incoming supply line should be installed to the dishwasher.
3. A 1/2" or larger shut-off valve should be installed in the main water supply as close to the dishwasher as possible for service.
4. **FOR UH230B ONLY:** A pressure regulating valve, PRV, (supplied), must be installed after the shut-off service valve if the incoming flow pressure exceeds 20-22 psi minimum.
5. **FOR UH130B ONLY:** The UH130B has a built-in flow control. The incoming hot water supply pressure must be between 25-95 psi. For Models UH130, and UH230, the hot water supply must provide a minimum of 180°F/82°C, measured at the dishwasher.
6. A water hardness of 3 grains/gal (US) [51.3 mg/L] or less is recommended.

Drain Connections

All Models

1. All models have a 6 ft.. 5/8" I.D. drain hose. The maximum drain height connection must not exceed 3 ft.[0.9 m].
2. A 3/4" hose barb fitting is strapped to the drain hose to connect the drain hose to a wye drain fitting.

The service part number for the hose barb is P/N 0512321.



Drain Connections -

UH130, UH130B, UH230, UH230B (continued)

! ATTENTION !

Do not connect the drain hose to a disposer. The dishwasher will not drain correctly.

3. The drain hose is located at the rear of the dishwasher, and is secured to the rear of the machine by a clamp to maintain a goose-neck bend in the drain hose.
4. Install the drain hose to a "WYE" drain fitting. Connection to a "TEE" fitting will prevent the dishwasher from draining completely.

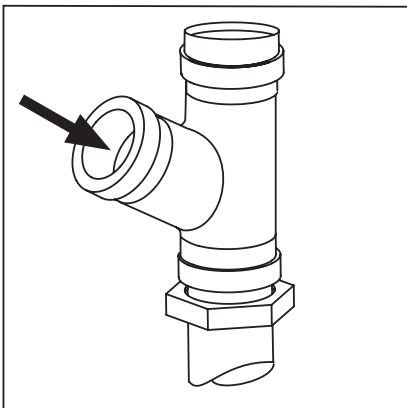
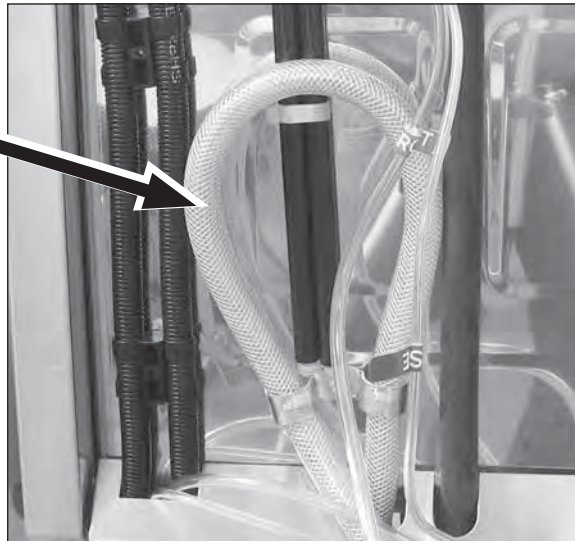
! VERY IMPORTANT !

Draining Problems Related Improper Installation.

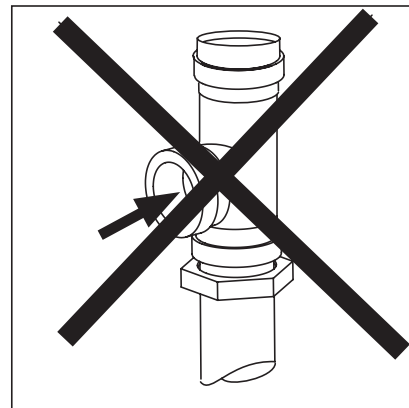
Problems with machine draining are often the result of improper installation. The drain hose is looped and clamped as shown in the photo below and must not be changed.

DO NOT REMOVE THE DRAIN
HOSE
RETAINING CLAMPS.
DO NOT STRETCH THE DRAIN
HOSE.

5. The maximum drain flow is 15 US gpm.
6. Make sure the drain hose does not kink. Kinks may prevent the dishwasher from draining completely.



The dishwasher flexible drain hose must be connected to a WYE fitting.



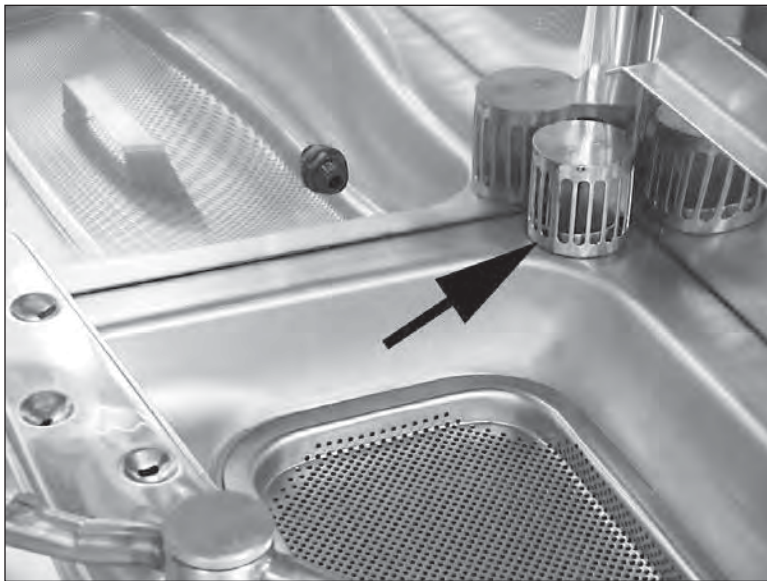
Do not connect the dishwasher flexible drain hose to a TEE fitting.

Initial Start-up Check List
UH130, UH130B, UH230, UH230B

1. Remove any protective film from dishwasher and check the interior for foreign material.
2. Make sure the dishwasher is permanently located.
3. Make sure all utility connections are complete.
4. Make sure the flexible drain hose and the hot water fill hose are not kinked.
5. Make sure the chemical supply containers are full and the chemical pick-up tubes are installed in the proper containers.
6. Make sure the scrap screen is in place.

***For Model UH230B only:
Make sure the overflow guard is in place.***

7. Make sure the spray arms are in place and spin freely.
8. Close the dishwasher door.
9. Turn the hot water supply on and check for leaks in the main water supply piping connected to the dishwasher.



*For Model UH230B only:
Make sure the overflow guard is in place.*



Make sure the scrap screen is in place.

Booster Fill Switch - (Filling the booster tank for the first time)
Models UH130B and UH230B only

! VERY IMPORTANT !
Models UH130B and UH230B

**THE BUILT-IN BOOSTER TANK WAS DRAINED BEFORE SHIPMENT AND
MUST BE REFILLED BEFORE OPERATING THE DISHWASHER.**

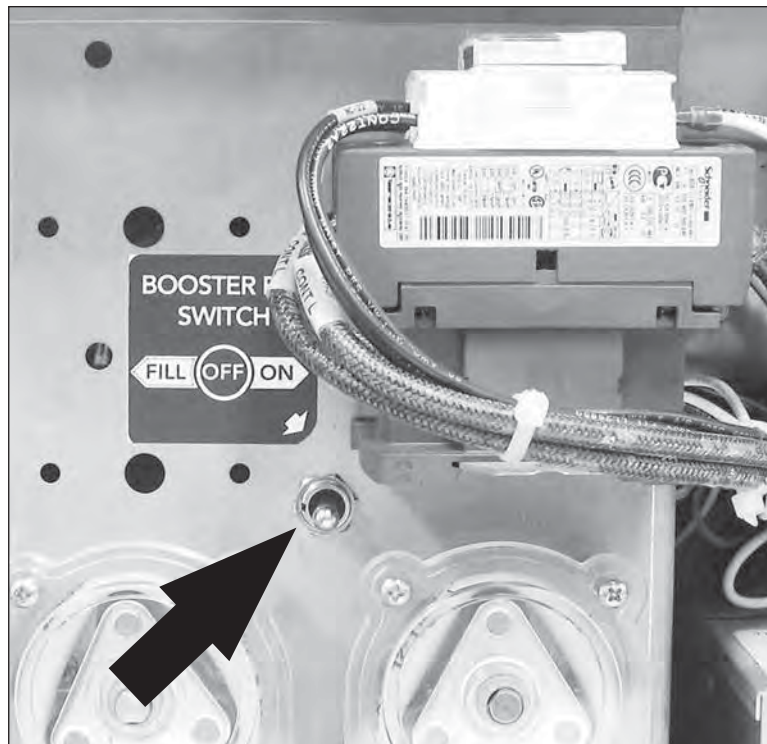
**A BOOSTER FILL SWITCH IS LOCATED BEHIND THE LOWER FRONT PANEL ON THE
MACHINE TO REFILL THE BOOSTER TANK.**

CAUTION:

Do not turn the dishwasher power switch on when refilling the booster tank to prevent permanently damaging the booster heater element.

To refill the booster tank:

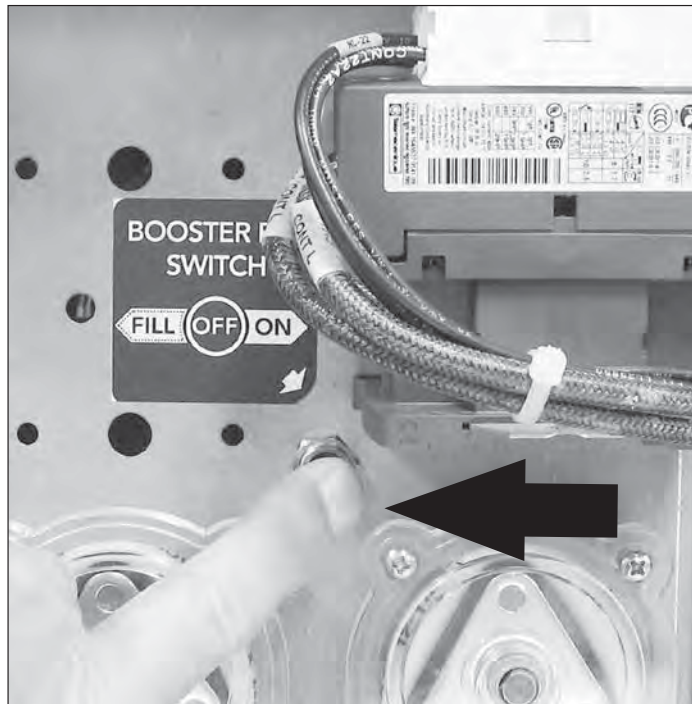
1. Remove the lower front panel.
2. Make sure the door is closed.
3. Locate the booster fill switch mounted on the bracket in the center of the machine. Note that the switch is in the OFF position.
4. **DO NOT push the dishwasher power switch on the control panel to the ON position.**
5. Turn the main power breaker or disconnect switch to the dishwasher ON.



The Booster Fill Switch is located on the front center bracket behind the lower front access panel.

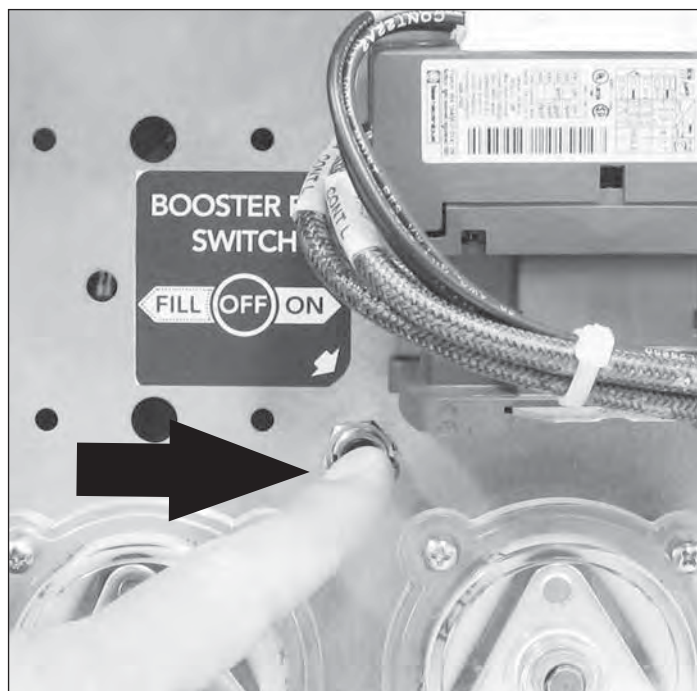
Continued on next page

Booster Fill Switch - (Filling the booster tank for the first time)
Models UH130B and UH230B only



Continued from previous page

6. Push and hold the switch in the FILL position until water is heard spraying inside the dishwasher.
7. Release the switch. It will automatically return to the OFF position.



8. Push the switch to the ON position.
9. Replace the lower front panel.
10. The dishwasher is ready to operate.
11. Push the dishwasher power switch on the control panel to the ON position.

*Pumps and Injection Points - Detergent and Rinse-aid Dispensing Pumps
Models UH130, UH130B and UH230, UH230B only*

! VERY IMPORTANT !
ALWAYS USE A COMMERCIAL-GRADE DETERGENT.

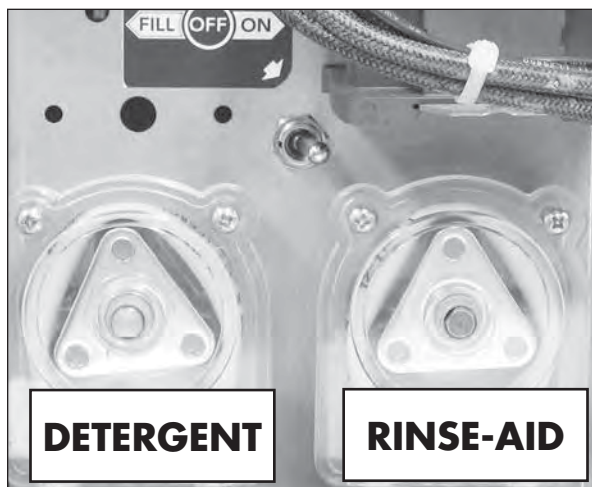
PLACE THE CHEMICAL SUPPLY CONTAINERS AS CLOSE TO THE MACHINE AS POSSIBLE.

DO NOT ELEVATE THE CHEMICAL CONTAINERS ABOVE THE FINISHED FLOOR.

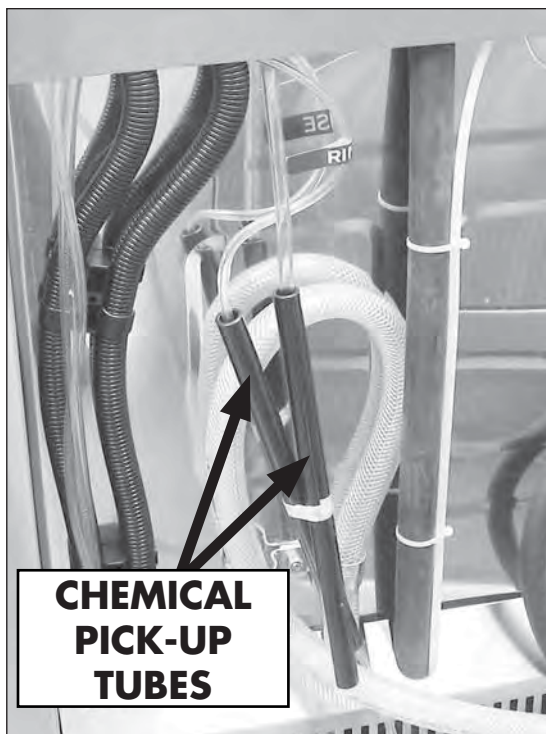
! ATTENTION !

Contact a chemical supplier for detergent and rinse-aid chemicals.
The supplier can adjust the chemical dispensing pumps too.

1. The detergent and rinse-aid pumps are located on a center bracket behind the lower-front access panel.
2. Each pump is equipped with 6 feet [1.8 m] of supply tubing, stiffener tubes, and strainers.
3. A red label marked DETERGENT and a blue label marked RINSE-AID identify the chemical lines.
4. For UH230B and UH230, the detergent enters the wash tank compartment through a fitting at the right rear of the wash compartment and the rinse-aid enters the final rinse piping through a fitting located on the upper-left rear side of the dishwasher near the vacuum breaker.
5. For UH130B and UH130, the detergent and rinse-aid enter the wash tank compartment through a fitting on the right-hand side for the wash compartment.

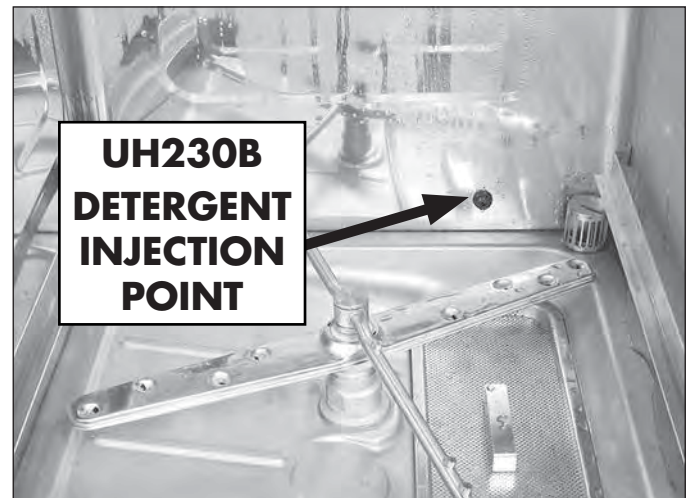


The chemical dispensing pumps are located on the center bracket behind the lower front panel of the dishwasher.

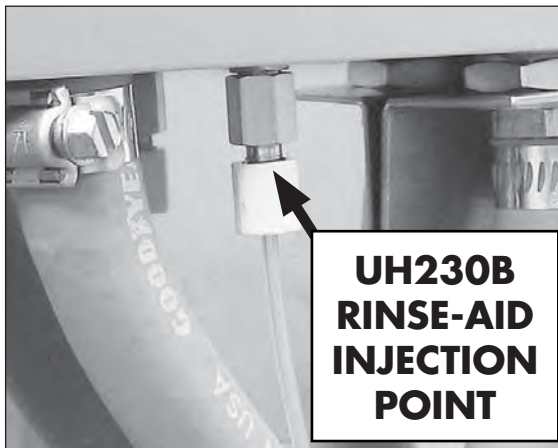


The chemical dispensing pick-up tubes are stowed at the rear of the dishwasher.

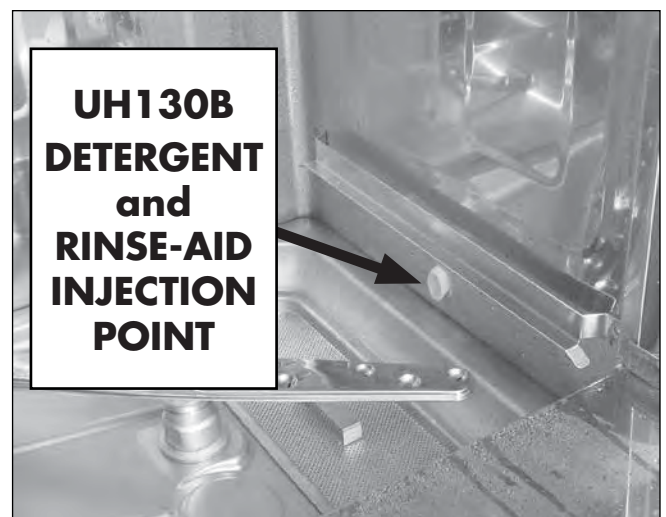
*Pumps and Injection Points - Detergent and Rinse-aid Dispensing Pumps
Models UH130, UH130B and UH230, UH230B only*



On the UH230B, detergent enters the wash tank through a fitting at the rear of the wash tank.



On the UH230B, the rinse-aid enters the wash tank through a fitting in the final rinse piping at the rear of the machine.



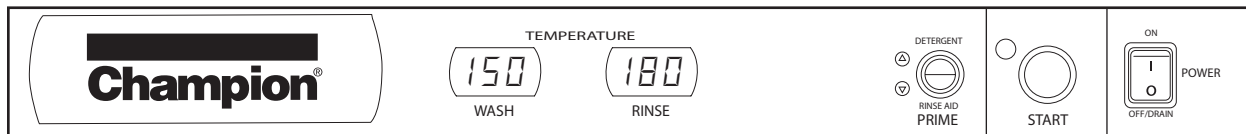
On the UH130B, chemicals enter the wash tank through a fitting on the right-hand side of the tank.

Pump Priming - Detergent and Rinse-aid Dispensing Pumps Models UH130, UH130B and UH230, UH230B

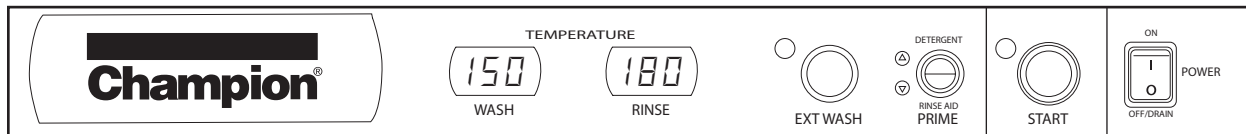
Priming the Dispensing Pumps

! VERY IMPORTANT !

The chemical dispensing pumps must be primed before operating the dishwasher.

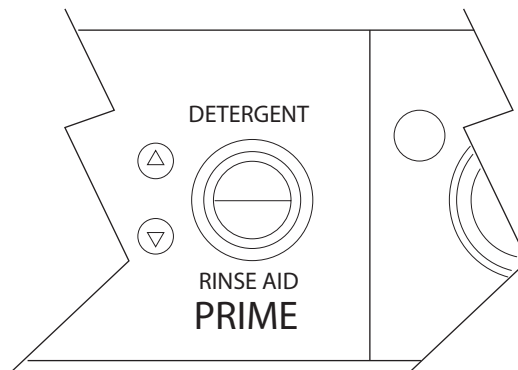


UH130B Control Panel



UH230B Control Panel

1. The chemical dispensing pump supply lines must be primed before they will pump the chemicals properly.
2. Make sure the chemical containers are full and the correct pick-up tubes are in their containers.
3. Turn the dishwasher power switch ON. The switch will illuminate and the dishwasher will fill with water.
4. Open the dishwasher door, then push and hold the prime push button UP to the DETERGENT position until detergent is observed entering the wash tank compartment. Release the push button.
5. Push and hold the prime push button DOWN to the Rinse-aid position until you see air bubbles moving through the rinse-aid tubing coming out of the chemical container. Release the push button.
6. Close the door to complete the priming operation.



Pump Speed and Fill Adjustments - Detergent and Rinse-aid Dispensing Pumps Models UH130, UH130B and UH230, UH230B only

Chemical Dispensing Pump Speed and Tank Fill Adjustments

! ATTENTION !

Contact a chemical supplier for detergent and rinse-aid chemicals.
The chemical supplier can adjust the chemical dispensing pumps too.



1. Adjustment screws are provided for the dispensing pumps and for the wash tank fill. They are located on the right-hand side of the dishwasher behind the lower front access panel.
2. Make sure the chemical containers are full and the pick-up tubes are in their proper containers.
3. Turn the dishwasher power switch ON. The switch will illuminate and the dishwasher will fill with water.
4. Run a normal dishwasher cycle and test detergent and rinse-aid concentrations according to the chemical supplier's instructions.

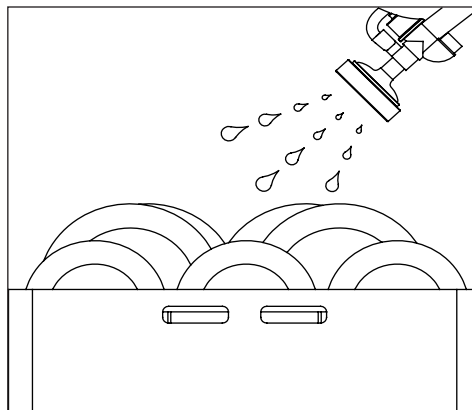
CAUTION:

Excessive pressure to the potentiometers when adjusting can result in bent or broken adjusting screws.

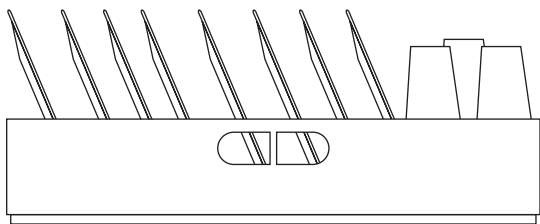
5. Each dispensing pump has a clearly marked adjustment screw. Turn the screw CW to increase the run time of the dispensing pump and CCW to reduce the run time of the dispensing pump.
6. The Fill adjustment screw will provide a small change in the tank water level. If a large adjustment is needed, check the incoming water pressure and make sure the fill hose is not kinked. If the above items are okay then the size of the incoming water supply should be checked. The incoming water supply line must be a minimum of 1/2" or larger.

Loading Dish Racks

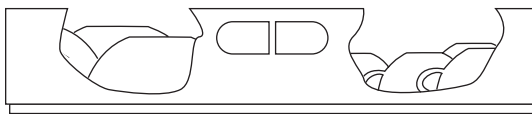
! VERY IMPORTANT !
Prescrap and rinse wares before loading
into the machine.



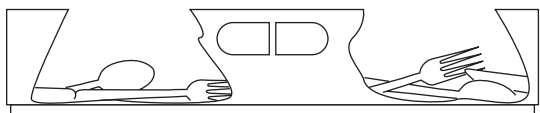
! VERY IMPORTANT !
DO NOT OVERLOAD THE DISH RACK.
LOAD ONE DISH RACK INTO THE MACHINE AT A TIME.



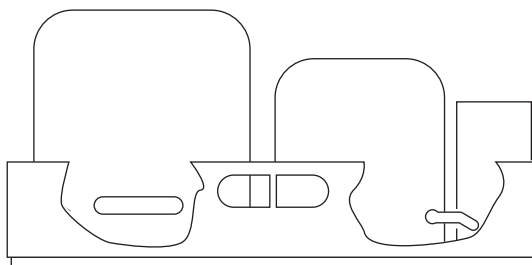
Load plates and glasses in a peg rack.



Load cups and bowls in a flat bottom rack.



Load utensils in a single layer in a flat bottom rack.

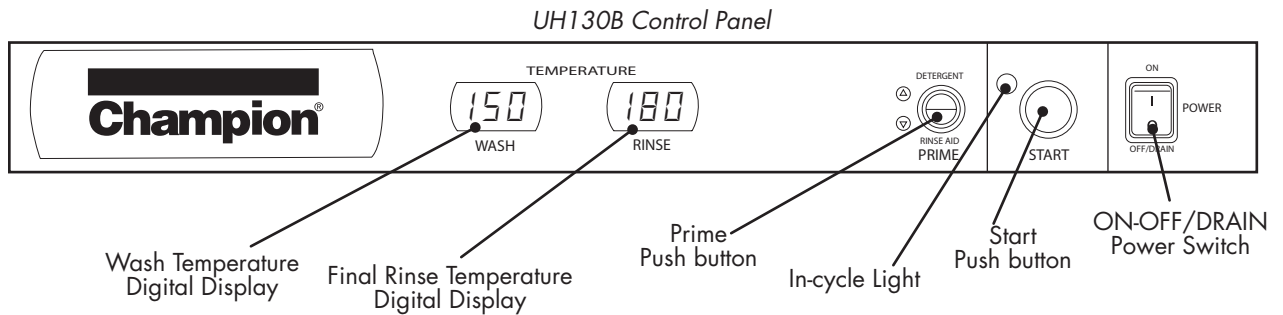


Load pots and pans in a flat bottom rack.

1. Prescrap and rinse the wares before loading to remove large food particles.
2. Load soiled wares into the dish rack. Place plates and glasses in a peg rack. Place cups and bowls in a flat bottom 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 rack. Wash one dish rack at a time.
3. Slide one dish rack into the wash compartment making sure that wares do not interfere with the rotating spray arms. Do not wash more than one dish rack at a time.

Operation - Models UH130, UH130B Only

Normal Wash Mode



1. Close the dishwasher front door.
2. Push the dishwasher Power Switch UP to turn the power ON.
3. The power switch will illuminate and the machine will fill with water.
4. Wait until the wash temperature gauge indicates a minimum of 150°F/66°C.

RUN THE FIRST CYCLE EMPTY TO HEAT THE WASH TANK INTERIOR.

5. Load the dish rack into the machine. Wash one dish rack at a time.
6. Close the door, then press the START BUTTON for 1 second. The green in-cycle light will illuminate and the wash cycle will begin. The total cycle is approximately 141 seconds.
7. Opening the door during a cycle will stop the dishwasher. The cycle will resume automatically when the dishwasher door is closed.
8. The final rinse cycle begins at the end of the wash cycle. The machine drains and then refills with fresh water hot water. Check the rinse temperature gauge during the final rinse. It must indicate a minimum of 180-195°F/82-91°C. The final rinse water is retained for the next wash cycle.
9. When the green cycle light goes out, open the door and remove the rack of clean wares.

! ATTENTION !

DOOR LEFT OPEN DURING WASH CYCLE

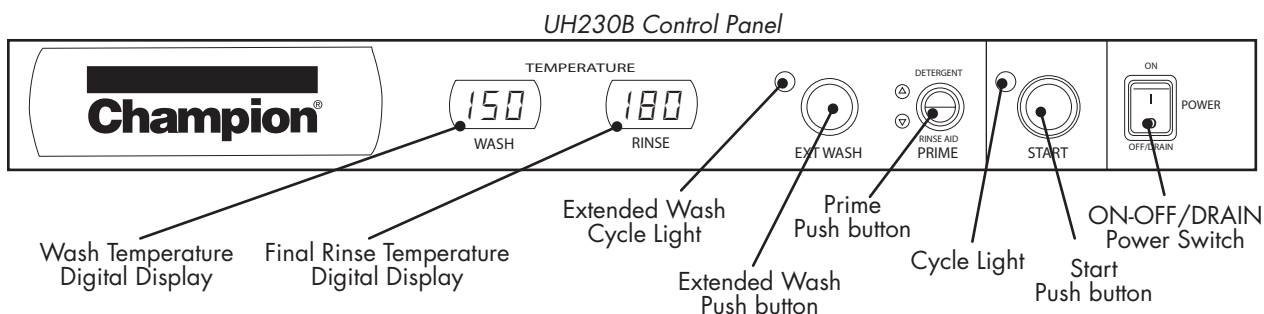
If the dishwasher door is left open for more than 5 seconds during the normal wash mode, then the dishwasher cycle will reset to the beginning of the normal wash cycle.

! ATTENTION !

RINSE SENTRY MODE WILL EXTEND WASH CYCLE TIME

In the event that the final rinse temperature has not reached 180-195°F/82-91°C after the wash cycle, the rinse sentry will extend the wash cycle time until the booster reaches 180-195°F/82-91°C. If the proper temperature is not reached within 5 minutes, the machine will leave the rinse sentry mode and complete the cycle.

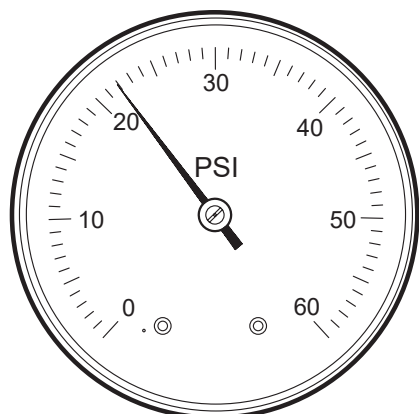
Normal Wash Mode



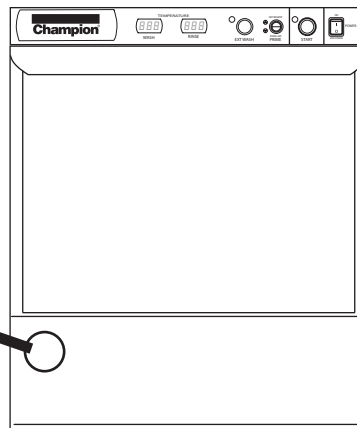
1. Close the door.
2. Push the dishwasher Power Switch UP to turn the power ON.
3. The power switch will illuminate and the machine will fill with water.
4. Check the pressure gauge as the machine fills and make sure the incoming water pressure is between 20-22 PSI.
5. Wait until the wash temperature gauge indicates a minimum of 150°F/66°C.

RUN THE FIRST CYCLE EMPTY TO HEAT THE WASH TANK INTERIOR.

6. Load the dish rack into the machine. Wash one dish rack at a time.
7. Close the door, then press the START BUTTON for 1 second. The green in-cycle light will illuminate and the wash cycle will begin. The total cycle is approximately 90 seconds.
8. Opening the door during a cycle will stop the dishwasher. The cycle will resume automatically when the dishwasher door is closed.
9. The final rinse cycle begins at the end of the wash cycle. The machine drains and retains a portion of the final rinse water for the next wash cycle.
10. Check the rinse temperature gauge during the final rinse. It must indicate a minimum of 180-195°F/82-91°C. The final rinse water is retained for the next wash cycle.
11. Check the pressure gauge during the final rinse to ensure the gauge reads 20-22 PSI.
12. When the green cycle light goes out, open the door and remove the rack of clean wares.



Check the pressure gauge during the final rinse to ensure the gauge reads 20-22 psi.



! ATTENTION !
DOOR LEFT OPEN DURING WASH CYCLE

If the dishwasher door is left open for more than 5 seconds during the normal wash mode, then the dishwasher cycle will reset to the beginning of the normal wash cycle.

! ATTENTION !
RINSE SENTRY MODE WILL EXTEND WASH CYCLE TIME

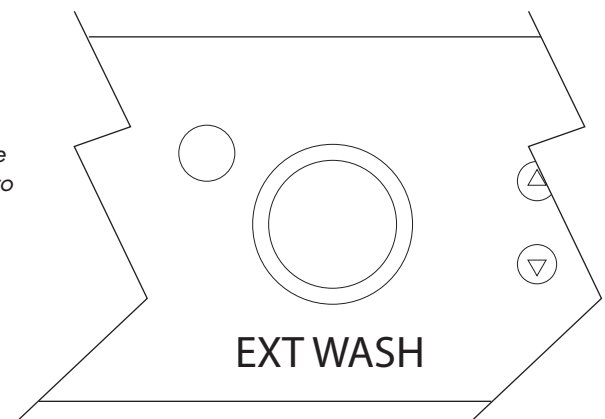
In the event that the final rinse temperature has not reached 180-195°F/82-91°C after the wash cycle, the rinse sentry will extend the wash cycle time until the booster reaches 180-195°F/82-91°C. If the proper temperature is not reached within 5 minutes, the machine will leave the rinse sentry mode and complete the cycle.

Extended Wash Mode
Model UH230, UH230B Only

The Extended Wash Mode is used to wash heavily soiled items such as pots, pans and other wares that require more washing time than the standard 90 second Normal Wash Mode. The dishwasher will remain in the Extended Wash Mode until the operator exits the mode.

1. Load a dish rack into the dishwasher, close the door and press the START button.
2. The green in-cycle light will illuminate and the dishwasher will begin a normal wash cycle.
3. Wait 10 seconds for the detergent to enter the wash compartment.

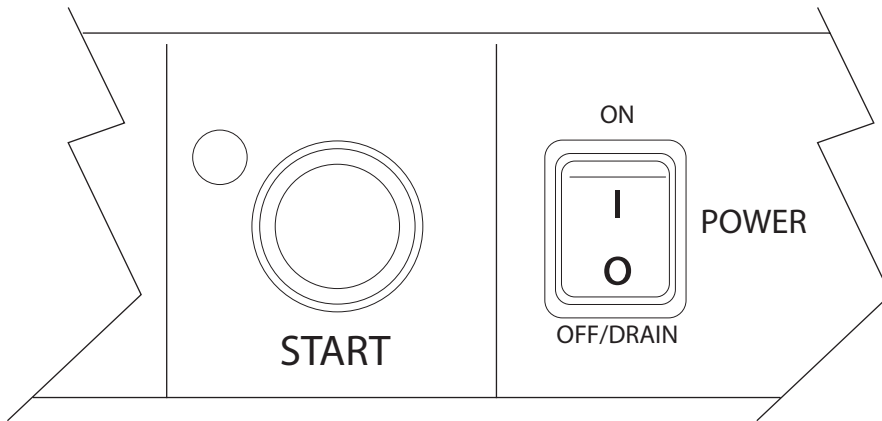
Press the EXT WASH button to place the machine into the extended wash mode to clean heavily soiled wares.



4. Press the EXT WASH button to place the dishwasher in the Extended Wash Mode.
5. The green extended wash light will illuminate indicating that the machine is in the Extended Wash Mode.
6. The dishwasher will continue to wash for a maximum of 15 minutes unless the operator presses the EXT WASH button again.
7. Press the EXT WASH button. The green extended wash light will go out indicating that the dishwasher has returned to the Normal Wash Mode.
8. The dishwasher will finish the wash cycle and perform a final rinse of the wares.

Drain Mode

The dishwasher will enter the drain mode whenever the Power Switch is pushed down to the OFF/DRAIN position.



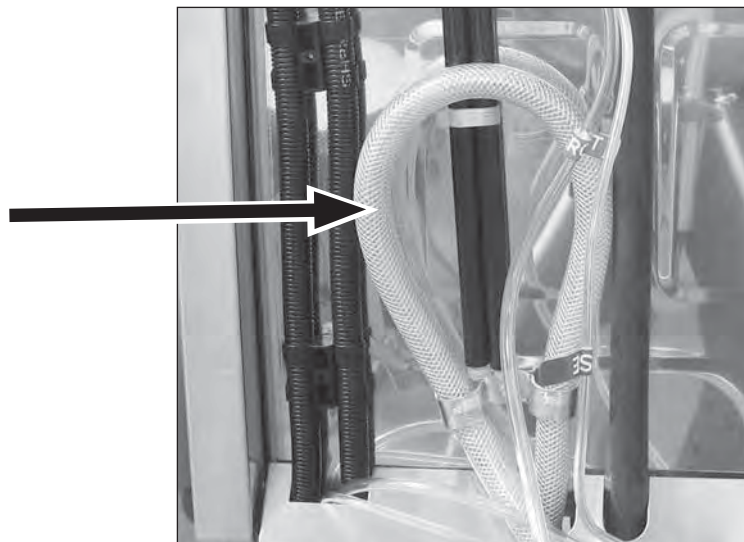
1. Push the illuminated power switch down to the OFF/DRAIN position. The power switch light will go out.
2. The cycle light will illuminate and the machine will drain.
3. The machine, will flush, perform 3 short cycles and then drain completely.
4. The cycle light will go out indicating that the drain cycle is complete.

! VERY IMPORTANT !

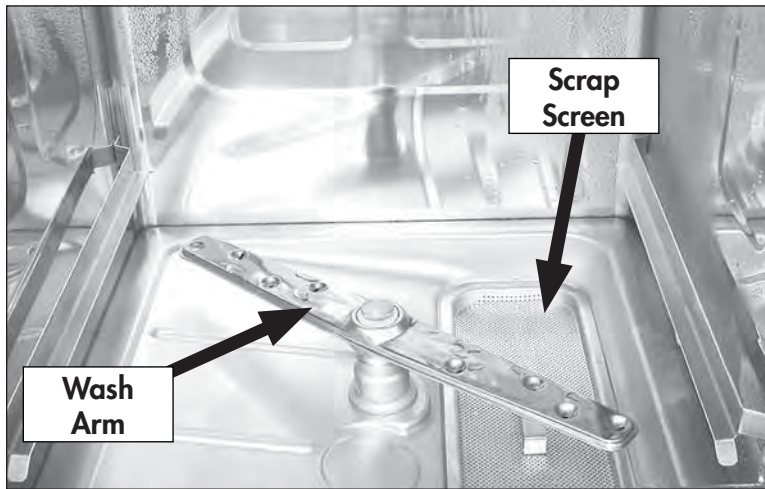
Draining Problems Related To Improper Installation.

Problems with machine draining are often the result of improper installation. The drain hose is looped and clamped as shown in the photo below and must not be changed.

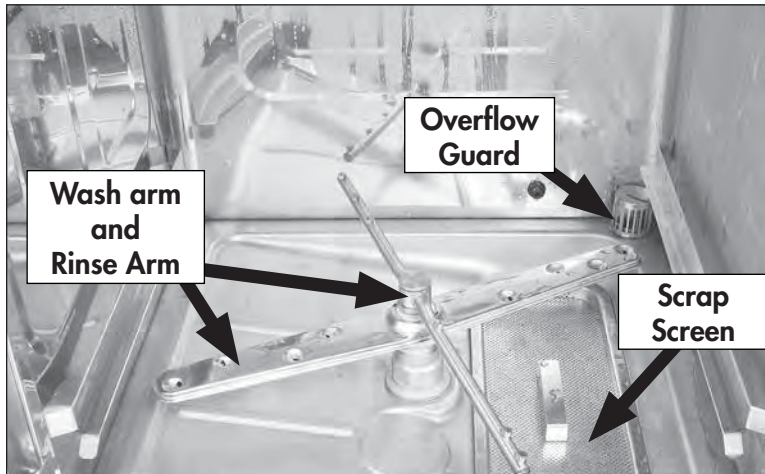
The drain hose is looped and clamped and must not be changed. Altering the drain hose routing may result in the machine's ability to drain properly.



Models UH130, UH130B and UH230, UH230B - Cleaning



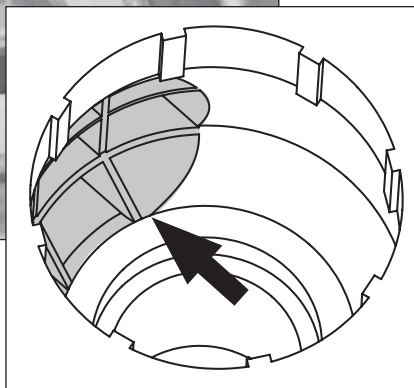
Model UH130B Wash Tank



Model UH230B Wash Tank



Sump Strainer
All Models



! VERY IMPORTANT !

DRAIN AND CLEAN THE DISHWASHER EVERY 2 HOURS OF CONTINUOUS OPERATION, AFTER EACH MEAL PERIOD, AND AT THE END OF THE DAY.

Cleaning the wash tank:

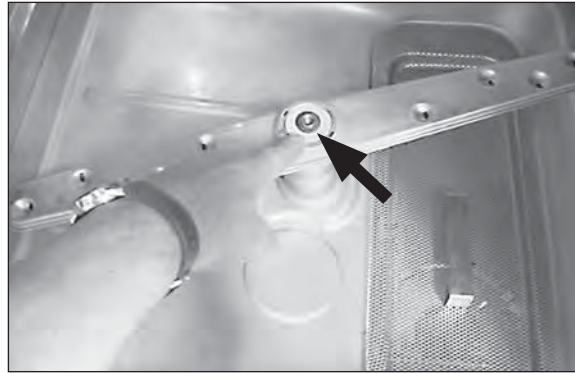
1. Remove the upper and lower spray arms and flush clean in a sink.
2. UH230B ONLY: Remove and clean the overflow guard.
3. Remove the scrap screen and flush clean in a sink. Be sure to back-flush the screen.
4. DO NOT strike the scrap screen on solid surfaces.
5. Check the sump for foreign material.
6. Clean the sump strainer in the bottom of the sump.
7. DO NOT scrub the interior with metal scrub pads.
8. Check the sump heating element for lime deposits and gently remove with a stainless steel scouring pad. DO NOT USE STEEL WOOL.
9. Wipe the exterior of the dishwasher with a soft clean cloth and a mild detergent.
10. Leave the door open to aid in overnight drying.

Continued on next page

Cleaning - Models UH130, UH130B and UH230, UH230B

Cleaning the wash arms:

1. There are two wash arms in the UH130, UH130B, the UH230 and UH230B. They are interchangeable.
2. The UH130, UH130B wash arms are combination wash/rinse arms. The UH230, UH230B are wash arms only.
3. The wash arms should be removed and thoroughly flushed clean in a sink.
4. Special attention should be paid to the cleaning and inspection of the wash arm bearings making sure they are clean and free of excessive wear.
5. If the bearings are damaged, contact an authorized service agent for replacement.



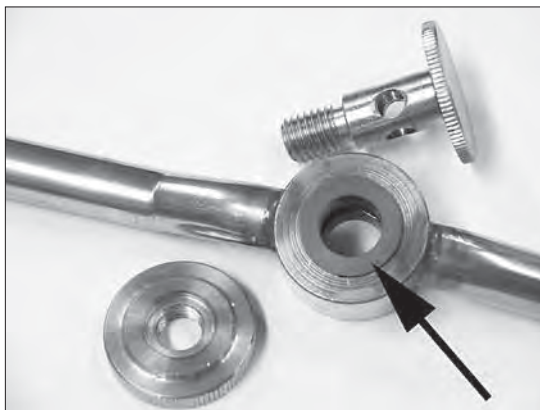
*Models UH130B and UH230B
Clean the upper and lower wash arm bearings.*

Cleaning the rinse arms (UH230, UH230B Only):

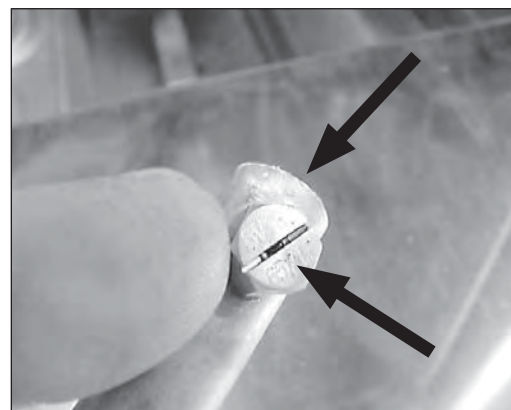
1. There are two rinse arms in the UH230, and UH230B. They are interchangeable.
2. Special attention should be paid to the cleaning and inspection of the rinse arm bearings making sure they are clean and free of excessive wear.
3. If the bearings are damaged, contact an authorized service agent for replacement.
4. The rinse arm spray nozzles should be inspected and if necessary, cleaned with a small paper clip or wire.
5. The rinse arm pipes can be flushed out by removing the pipe end plugs with a flat blade screw driver.



*Model UH230B Only
Disassemble the rinse arm assembly.*



*Model UH230B Only
Clean the upper and lower rinse arm bearings.*



*Model UH230B Only
Rinse arm nozzles and end plugs are located on the rinse arm pipes.*

Model UH230, UH230B De-liming

Minerals (scale) accumulate on the interior surfaces of the dishwasher. The removal of scale deposits is called de-liming. Inspect your machine interior for scale deposits. If de-liming is required, a de-liming agent should be used in accordance with your chemical supplier's instructions.

DANGER:

Death or serious injury may result when de-liming solution is mixed with sodium hypochlorite 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 eye protection, rubber gloves and protective clothing when handling chemicals.

! VERY IMPORTANT !

**CONTACT YOUR CHEMICAL SUPPLIER
FOR THE PROPER DELIMING CHEMICALS.**

**FOLLOW YOUR CHEMICAL SUPPLIER'S
INSTRUCTIONS MAKING SURE
TO WEAR ALL NECESSARY PROTECTION
INCLUDING EYE PROTECTION, RUBBER
GLOVES AND PROTECTIVE CLOTHING
WHEN HANDLING CHEMICALS.**

Model UH130, UH130B De-liming

Minerals (scale) accumulate on the interior surfaces of the dishwasher. The removal of scale deposits is called de-liming. Inspect your machine interior for scale deposits. If de-liming is required, a de-liming agent should be used in accordance with your chemical supplier's instructions.

DANGER:

Death or serious injury may result when de-liming solution is mixed with sodium hypochlorite 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 eye protection, rubber gloves and protective clothing when handling chemicals.

! VERY IMPORTANT !

CONTACT YOUR CHEMICAL SUPPLIER FOR THE PROPER DELIMING CHEMICALS.

FOLLOW YOUR CHEMICAL SUPPLIER'S INSTRUCTIONS MAKING SURE TO WEAR ALL NECESSARY PROTECTION INCLUDING EYE PROTECTION, RUBBER GLOVES AND PROTECTIVE CLOTHING WHEN HANDLING CHEMICALS.

Maintenance - Models UH130, UH130B and UH230, UH230B

Follow the maintenance schedules below to keep the dishwasher operating most efficiently.

Daily Maintenance

1. Make sure the water supply is on and that the drain is not clogged.
2. Check the temperature gauges and/or displays to ensure they are operating.
3. Make sure the dish racks are in good condition.
4. Check the chemical containers and refill as required.
5. Follow the cleaning procedures provided in the *Cleaning Section*.

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 flexible water fill and drain hoses are not kinked.
5. Make sure that 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.

Monthly Maintenance

1. Perform the Daily and Weekly Maintenance listed above.
2. Clean the chemical dispenser pick-up tubing for the chemical dispensing pumps.

To clean the pick-up tubing:

1. Remove the pick-up tubes from their containers.
2. Place each tube in a separate container of hot water.
3. Press and hold the PRIME buttons UP and DOWN until water flows into the wash tank compartment.
4. Return the pick-up tubes to their containers.
5. Run 3 empty dishwasher cycles to flush any chemicals from the dishwasher wash compartment.
6. Return the pick-up tubes to their containers and prime the chemical lines.

NOTE:

There are no lubrication points on the dishwasher.

Troubleshooting - Models UH130, UH130B and UH230, UH230B, UL130

Condition	Cause	Solution
Dishwasher will not run.	Door not closed. Main power OFF. Dishwasher OFF.	Close door completely. Check breaker on panel. Turn dishwasher power switch ON.
Low or no water.	Main water supply off. Fill hose kinked. Low incoming water pressure Solenoid valve defective. Solenoid strainer clogged. Circuit board fuse blown.	Open supply valve. Straighten fill hose. Set flowing water pressure to 20-22 PSI. Install repair kit or replace. Clean strainer. Contact service agent..
Chemicals won't feed into dishwasher.	Chemical supply low. Supply tubing damaged. Supply tubing kinked. Pick-up tube clogged Chemical circuit board fuse blown.	Refill chemical container. Replace tubing. Straighten tubing. Clean/replace tube. Contact service agent.
Low water pressure pumped from wash spray arms.	Clogged scrap screen. Clogged spray arms. Clogged pump intake screen.	Clean scrap screen. Clean spray arms. Inspect sump and clean pump intake screen.
Poor wash results.	Water temperature low. Thermistor defective. (See chemicals won't feed above.) (See low or no water above.) Detergent injector defective. Chemical circuit board fuse blown. Wares incorrectly loaded in dishrack. Booster high limit tripped. Wash tank high limit tripped.	Raise incoming water temperature to 140°F Replace thermistor. (See chemicals won't feed above.) (See low or no water above.) Replace squeeze tube. Replace injector motor. Clean tubing and pick-up. Contact service agent. Reposition wares or reduce amount of wares in dish racks. Reset or replace high limit. Reset or replace high limit.
Water has drained out of the wash tank while the dishwasher was idle.	Goose-neck loop in drain hose has been removed. Drain hose clamp is not holding the drain hose in proper position. Building plumbing does not provide correct air vent to prevent siphoning.	Re-route drain hose. DO NOT STRETCH HOSE Replace/adjust hose clamp making sure goose-neck is maintained. Contact service Agent and/or plumber.
Dishwasher stays in wash cycle.	Rinse Sentry extends wash mode for a maximum time of 5-minutes to allow final rinse water booster temperature to reach 180°F/82°C. Dishwasher is operating in Extended Wash Mode.(UH230B, Only)	Raise incoming water temperature. Adjust/replace final rinse booster thermistor. Push EXT WASH button to exit the Extended Wash mode.

***Model UL130 Low Temperature
Chemical Sanitizing Undercounter
Dishwasher***

(Single Phase) Electrical Connections - UL130



WARNING:

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

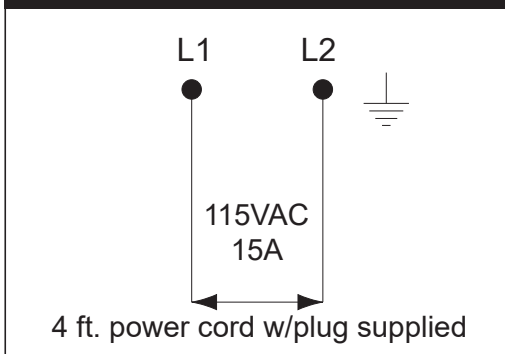
Disconnect power at the main breaker or service disconnect switch before working on the circuit.

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

! ATTENTION !

The Model UL130 is equipped with a 4 ft. power cord and plug and requires a 115VAC, 15A receptacle.

SINGLE PHASE POWER CONNECTION
Model UL100



Water Connections - UL130

NOTE

Plumbing connections must comply with national, provincial local plumbing and sanitary codes.

! IMPORTANT !

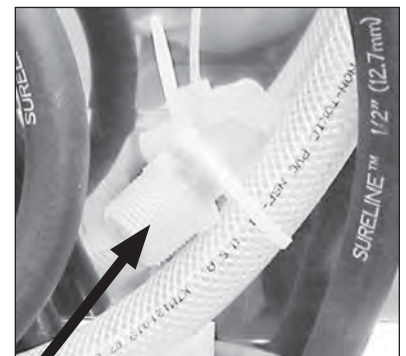
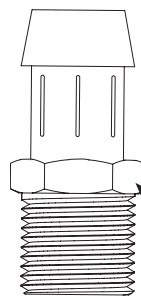
Make sure that the flexible water supply and drain hoses are not kinked.

1. All models have a 6 ft. flexible hot water fill hose with a 3/4" female garden hose connector.
2. A 1/2" or larger main incoming supply line should be installed to the dishwasher.
3. A 1/2" or larger shut-off valve should be installed in the main water supply as close to the dishwasher as possible for service.
4. The UL130 has a built-in flow control which requires that the incoming hot water supply pressure must be between 25-95 psi.
5. The hot water supply must provide a minimum of 120°F/49°C, measured at the dishwasher; however, 140°F/60°C is recommended.
6. A water hardness of 3 grains/gal (US) [51.3 mg/L] or less is recommended.

Drain Connections - UL130

1. All models have a 6 ft., 5/8" I.D. drain hose. The maximum drain height connection must not exceed 3 ft. [0.9 m].
2. A 3/4" hose barb fitting is strapped to the drain hose to connect the drain hose to a wye drain fitting.

The service part number for the hose barb is P/N 0512321.



Drain Connections - UL130 (continued)

! ATTENTION !

Do not connect the drain hose to a disposer. The dishwasher will not drain correctly.

3. The drain hose is located at the rear of the dishwasher, and is secured to the rear of the machine by a clamp to maintain a goose-neck bend in the drain hose.
4. Install the drain hose to a "WYE" drain fitting. Connection to a "TEE" fitting will prevent the dishwasher from draining completely.

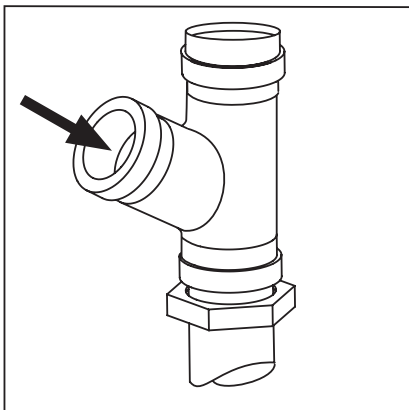
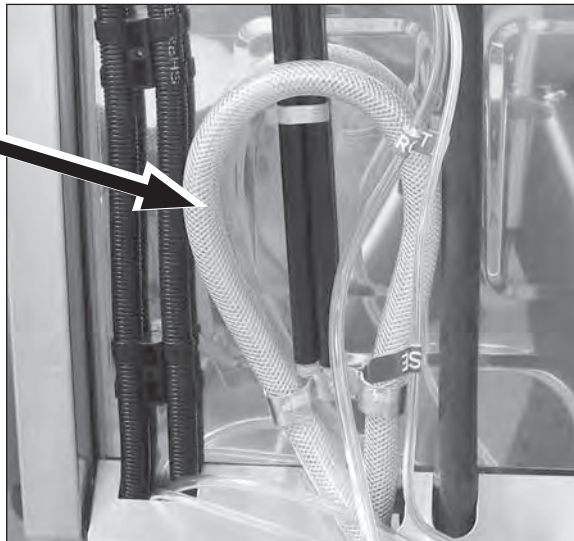
! VERY IMPORTANT !

Draining Problems Related Improper Installation.

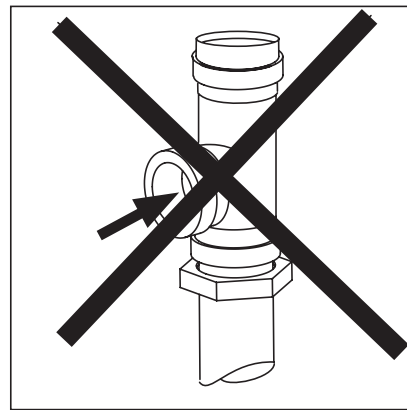
Problems with machine draining are often the result of improper installation. The drain hose is looped and clamped as shown in the photo below and must not be changed.

DO NOT REMOVE THE DRAIN
HOSE
RETAINING CLAMPS.
DO NOT STRETCH THE DRAIN
HOSE.

5. The maximum drain flow is 15 US gpm.
6. Make sure the drain hose does not kink. Kinks may prevent the dishwasher from draining completely.



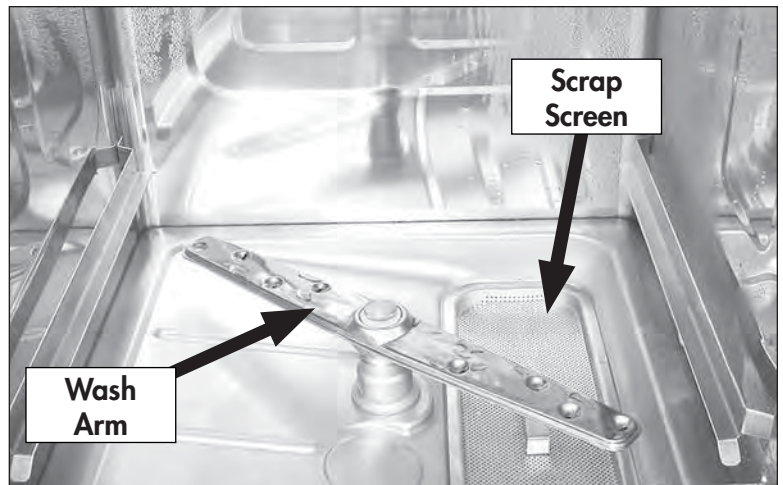
The dishwasher flexible drain hose must be connected to a WYE fitting.



Do not connect the dishwasher flexible drain hose to a TEE fitting.

Model UL130 - Initial Start-up
Initial Start-up Check List - UL130

1. Remove any protective film from dishwasher and check the interior for foreign material.
2. Make sure the dishwasher is permanently located.
3. Make sure all utility connections are complete.
4. Make sure the flexible drain hose and the hot water fill hose are not kinked.
5. Make sure the chemical supply containers are full and the chemical pick-up tubes are installed in the proper containers.
6. Make sure the scrap screen is in place.
7. Make sure the spray arms are in place and spin freely.
8. Close the dishwasher door.
9. Turn the hot water supply on and check for leaks in the main water supply piping connected to the dishwasher.



Model UL130 Wash Tank

Pumps and Injection Points - Detergent, Rinse-aid and Sanitizer Dispensing Pumps - UL130

! VERY IMPORTANT !

ALWAYS USE A COMMERCIAL-GRADE DETERGENT.

PLACE THE CHEMICAL SUPPLY CONTAINERS AS CLOSE TO THE MACHINE AS POSSIBLE.

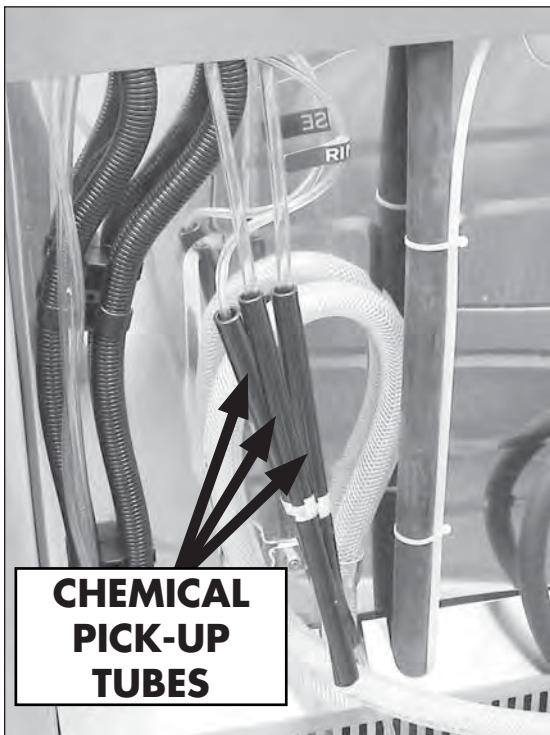
DO NOT ELEVATE THE CHEMICAL CONTAINERS ABOVE THE FINISHED FLOOR.

! ATTENTION !

Contact a chemical supplier for detergent and rinse-aid chemicals.

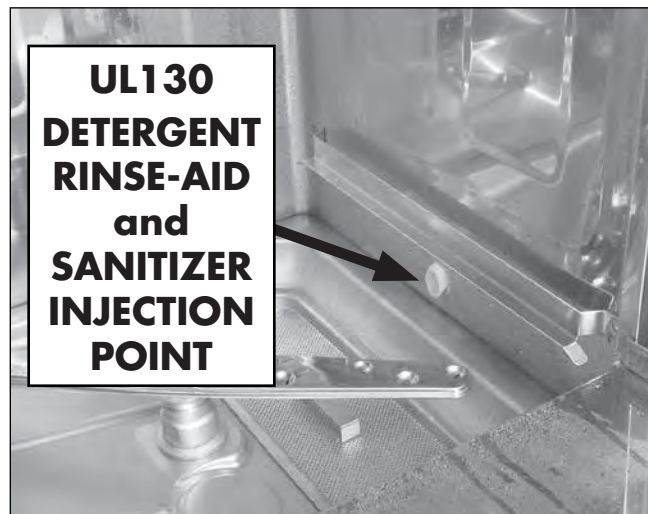
The supplier can adjust the chemical dispensing pumps too.

1. The chemical dispensing pumps are located on a center bracket behind the lower-front access panel.
2. Each pump is equipped with 6 feet [1.8 m] of supply tubing, stiffener tubes, and strainers.
3. A RED label marked DETERGENT, a BLUE label marked RINSE-AID and a WHITE label marked SANITIZER identify the chemical lines.
4. The chemicals enter the wash tank compartment through a fitting located on the right-hand side for the wash compartment.



**CHEMICAL
PICK-UP
TUBES**

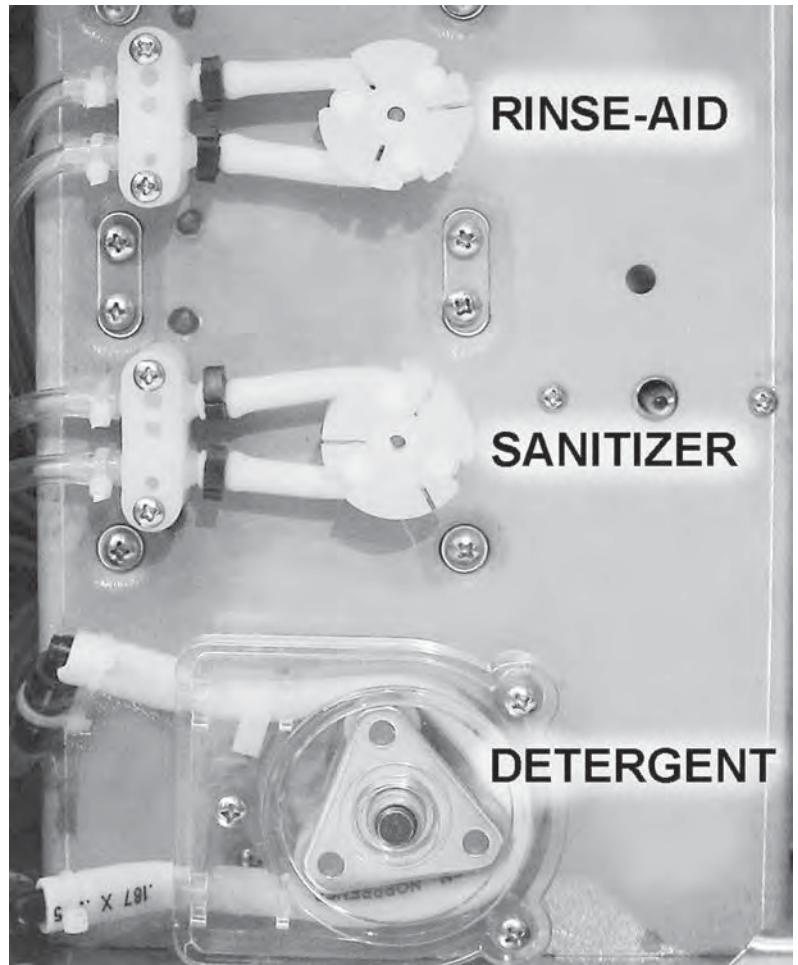
The chemical dispensing pick-up tubes are stowed at the rear of the dishwasher.



**UL130
DETERGENT
RINSE-AID
and
SANITIZER
INJECTION
POINT**

On the UL130, chemicals enter the wash tank through a fitting on the right-hand side of the tank.

Pumps and Injection Points - Detergent, Rinse-aid and Sanitizer Dispensing Pumps - UL130



The chemical dispensing pumps are located on the bracket behind the lower-front access panel.

! VERY IMPORTANT !

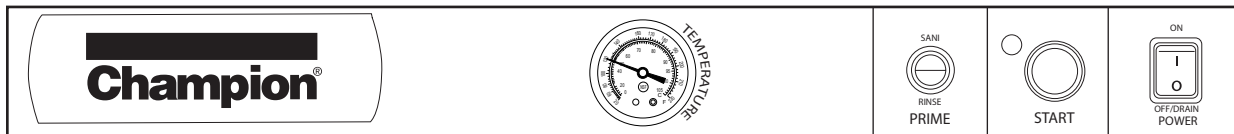
5.25% sodium hypochlorite (chlorine bleach) must be used as a sanitizing agent to provide a minimum concentration of 50 ppm in the final rinse. The 50 ppm concentration must be checked using chlorine test strips to make sure that the proper concentration is maintained.

Pump Priming - Detergent, Rinse-aid and Sanitizer Dispensing Pumps - UL130

Priming the Dispensing Pumps

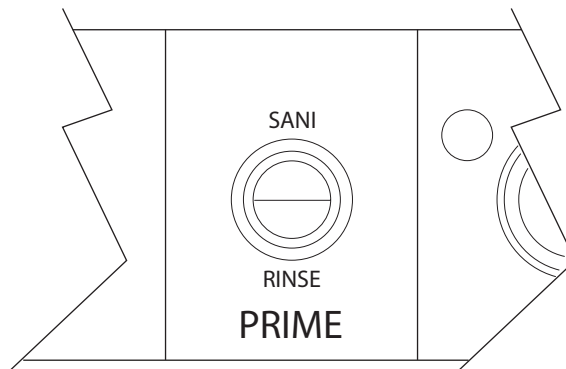
! VERY IMPORTANT !

The chemical dispensing pumps must be primed before operating the dishwasher.



UL130 Control Panel

1. Make sure the chemical containers are full and the correct pick-up tubes are in the containers.
2. Turn the dishwasher power switch ON. The switch will illuminate and the dishwasher will fill with water.
3. The Prime push button primes the Sanitizer pump and the Rinse-aid pump.
4. Open the dishwasher door. Push and hold the prime push button UP to the SANI position until sanitizer is observed entering the wash tank compartment.
5. Release the PRIME push button.
6. Push and hold the Prime push button DOWN to the RINSE position until rinse-aid is observed entering the wash tank compartment.
7. Release the Prime push button.
8. Close the door.



! ATTENTION !

The detergent pump does not have a prime push button. Run four empty cycles checking the detergent pick-up tubing to make sure that air bubbles are moving through the pick-up tubing indicating that the detergent is dispensing.

Pump Speed and Fill Adjustments - Detergent, Sanitizer and Rinse-aid Dispensing Pumps

Chemical Dispensing Pump Speed and Tank Fill Adjustments

! ATTENTION !

Contact a chemical supplier for detergent, rinse-aid and sanitizer chemicals.
The chemical supplier can adjust the chemical dispensing pumps too.



1. Adjustment screws are provided for the dispensing pumps and for the wash tank fill. They are located on the right-hand side of the dishwasher behind the lower front access panel.
2. Make sure the chemical containers are full and the pick-up tubes are in their proper containers.
3. Turn the dishwasher power switch ON. The switch will illuminate and the dishwasher will fill with water.
4. Run a normal dishwasher cycle and test detergent and rinse-aid concentrations according to the chemical supplier's instructions.

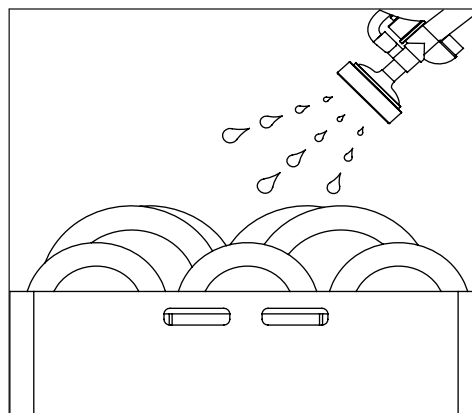
CAUTION:

Excessive pressure to the potentiometers when adjusting can result in bent or broken adjusting screws.

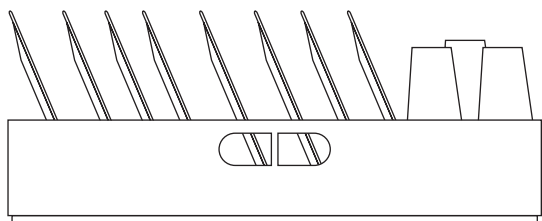
5. Each dispensing pump has a clearly marked adjustment screw. Turn the screw CW to increase the run time of the dispensing pump and CCW to reduce the run time of the dispensing pump.
6. The Fill adjustment screw will provide a small change in the tank water level. If a large adjustment is needed, check the incoming water pressure and make sure the fill hose is not kinked. If the above items are okay then the size of the incoming water supply should be checked. The incoming water supply line must be a minimum of 1/2" or larger.

Loading Dish Racks

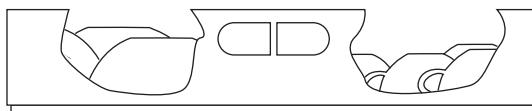
! VERY IMPORTANT !
Prescrap and rinse wares before loading into the machine.



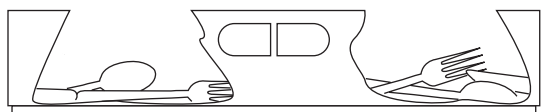
! VERY IMPORTANT !
DO NOT OVERLOAD THE DISH RACK.
LOAD ONE DISH RACK INTO THE MACHINE AT A TIME.



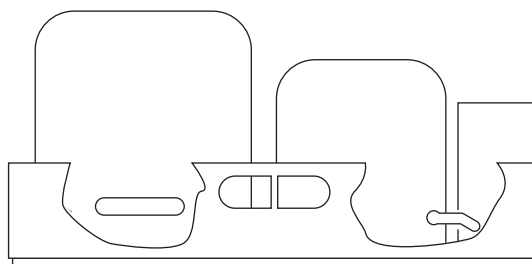
Load plates and glasses in a peg rack.



Load cups and bowls in a flat bottom rack.



Load utensils in a single layer in a flat bottom rack.

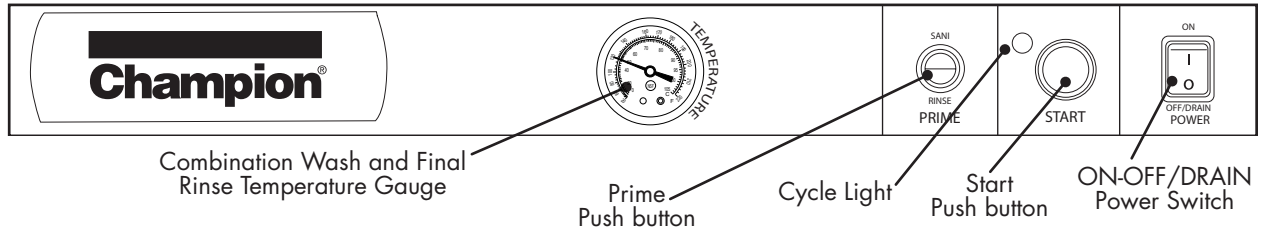


Load pots and pans in a flat bottom rack.

1. Prescrap and rinse the wares before loading to remove large food particles.
2. Load soiled wares into the dish rack. Place plates and glasses in a peg rack. Place cups and bowls in a flat bottom 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 rack. Wash one dish rack at a time.
3. Slide one dish rack into the wash compartment making sure that wares do not interfere with the rotating spray arms. Do not wash more than one dish rack at a time.

Operation
Model UL130
Low temperature Chemical Sanitization

Normal Wash Mode



1. Close the dishwasher front door.
2. Push the dishwasher Power Switch UP to turn the power ON.
3. The power switch will illuminate and the machine will fill with water.
4. Wait until the wash temperature gauge indicates a minimum of 140°F/60°C.

RUN THE FIRST CYCLE EMPTY TO HEAT THE WASH TANK INTERIOR.

5. Load the dish rack into the machine. Wash one dish rack at a time.
6. Close the door, then press the START BUTTON for 1 second. The green in-cycle light will illuminate and the wash cycle will begin. The total cycle is approximately 141 seconds.
7. Opening the door during a cycle will stop the dishwasher. The cycle will resume automatically when the dishwasher door is closed.
8. The final rinse cycle begins at the end of the wash cycle. The machine drains and then refills with fresh water hot water. Check the rinse temperature gauge during the final rinse. It must indicate a minimum of 120°F/49°C. The final rinse water is retained for the next wash cycle.

! VERY IMPORTANT !

5.25% sodium hypochlorite (chlorine bleach) must be used as a sanitizing agent to provide a minimum concentration of 50 ppm in the final rinse. The 50 ppm concentration must be checked using chlorine test strips to make sure that the proper concentration is maintained.

9. When the green cycle light goes out, open the door and remove the rack of clean wares.

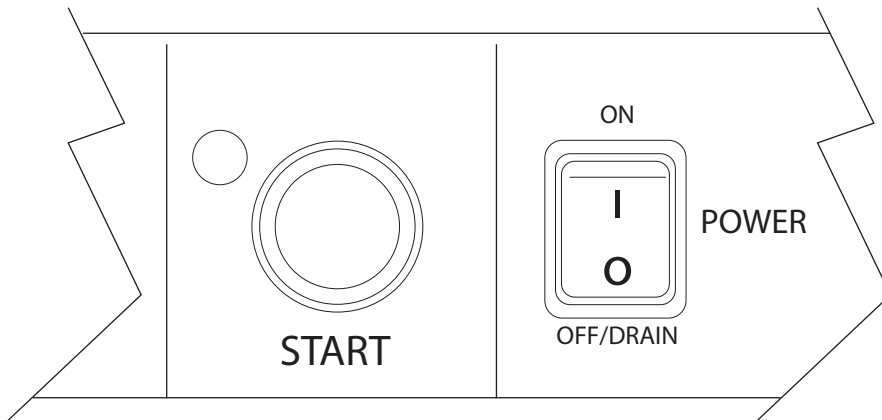
! ATTENTION !

DOOR LEFT OPEN DURING WASH CYCLE

If the dishwasher door is left open for more than 5 seconds during the normal wash mode, then the dishwasher cycle will reset to the beginning of the normal wash cycle.

Drain Mode

The dishwasher will enter the drain mode whenever the Power Switch is pushed down to the OFF/DRAIN position.



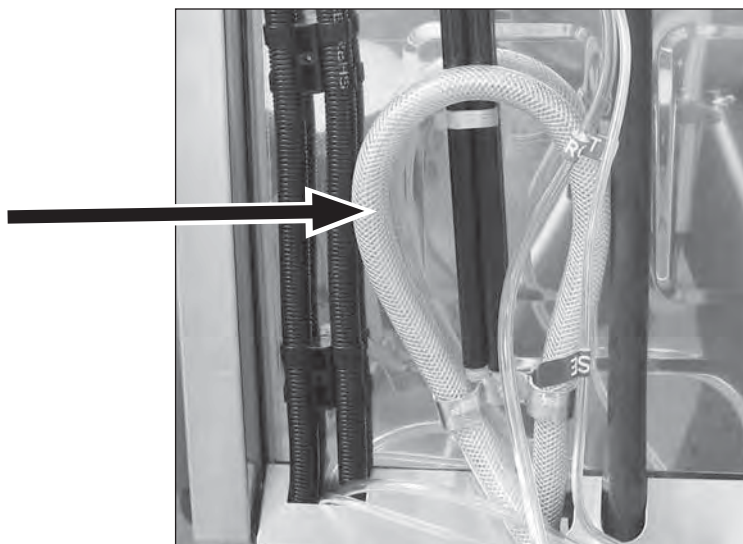
1. Push the illuminated power switch down to the OFF/DRAIN position. The power switch light will go out.
2. The cycle light will illuminate and the machine will drain.
3. The machine, will flush, perform 3 short cycles and then drain completely.
4. The cycle light will go out indicating that the drain cycle is complete.

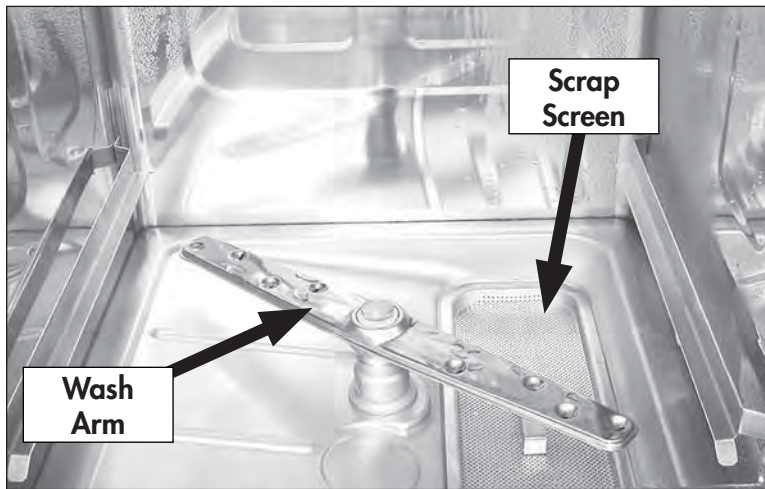
! VERY IMPORTANT !

Draining Problems Related To Improper Installation.

Problems with machine draining are often the result of improper installation. The drain hose is looped and clamped as shown in the photo below and must not be changed.

The drain hose is looped and clamped and must not be changed. Altering the drain hose routing may result in the machine's ability to drain properly.





Model UL130 Wash Tank

! VERY IMPORTANT !

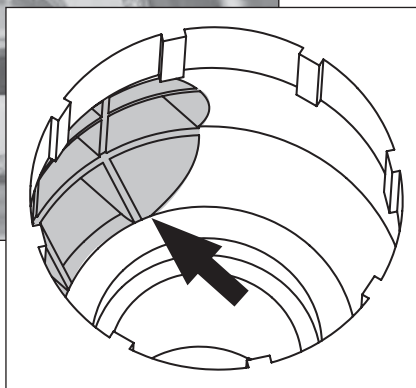
DRAIN AND CLEAN THE DISHWASHER EVERY 2 HOURS OF CONTINUOUS OPERATION, AFTER EACH MEAL PERIOD, AND AT THE END OF THE DAY.

Cleaning the wash tank:

1. Remove the upper and lower spray arms and flush clean in a sink.
2. Remove the scrap screen and flush clean in a sink. Be sure to back-flush the screen.
3. DO NOT strike the scrap screen on solid surfaces.
4. Check the sump for foreign material.
5. Clean the sump strainer in the bottom of the sump.
6. DO NOT scrub the interior with metal scrub pads.
7. Check the sump heating element for lime deposits and gently remove with a stainless steel scouring pad. DO NOT USE STEEL WOOL.
8. Wipe the exterior of the dishwasher with a soft clean cloth and a mild detergent.
9. Leave the door open to aid in overnight drying.



Sump Strainer
UL130

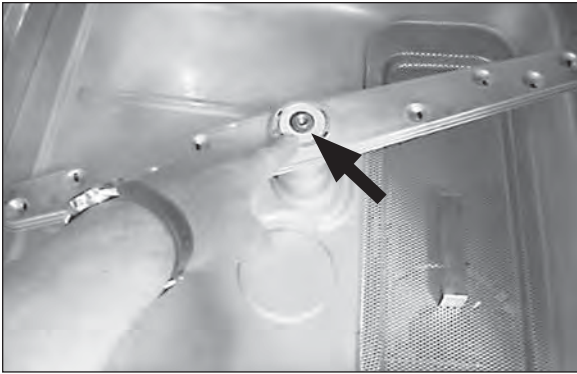


Continued on next page

Cleaning - Model UL130 (continued)

Cleaning the wash arms:

1. There are two combination wash/rinse arms in the wash tank. They are interchangeable.
2. The wash arms should be removed and thoroughly flushed clean in a sink.
3. Special attention should be paid to the cleaning and inspection of the wash arm bearings making sure they are clean and free of excessive wear.
4. If the bearings are damaged, contact an authorized service agent for replacement.



*Model UL130
Clean the upper and lower wash arm bearings.*

DANGER:

Death or serious injury may result when de-liming solution is mixed with sodium hypochlorite 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 eye protection, rubber gloves and protective clothing when handling chemicals.

! VERY IMPORTANT !

**CONTACT YOUR CHEMICAL SUPPLIER
FOR THE PROPER DELIMING CHEMICALS.**

**FOLLOW YOU CHEMICAL SUPPLIER'S
INSTRUCTIONS MAKING SURE
TO WEAR ALL NECESSARY PROTECTION
INCLUDING EYE PROTECTION, RUBBER
GLOVES AND PROTECTIVE CLOTHING
WHEN HANDLING CHEMICALS.**

! ATTENTION !

Refer to page 26 for Troubleshooting Instructions.

Follow the maintenance schedules below to keep the dishwasher operating most efficiently.

Daily Maintenance

1. Make sure the water supply is on and that the drain is not clogged.
2. Check the temperature gauges and/or displays to ensure they are operating.
3. Make sure the dish racks are in good condition.
4. Check the chemical containers and refill as required.
5. Follow the cleaning procedures provided in the *UL130 Cleaning Section*.

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 flexible water fill and drain hoses are not kinked.
5. Make sure that 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.

Monthly Maintenance

1. Perform the Daily and Weekly Maintenance listed above.
2. Clean the chemical dispenser pick-up tubing for the chemical dispensing pumps.

To clean the pick-up tubing:

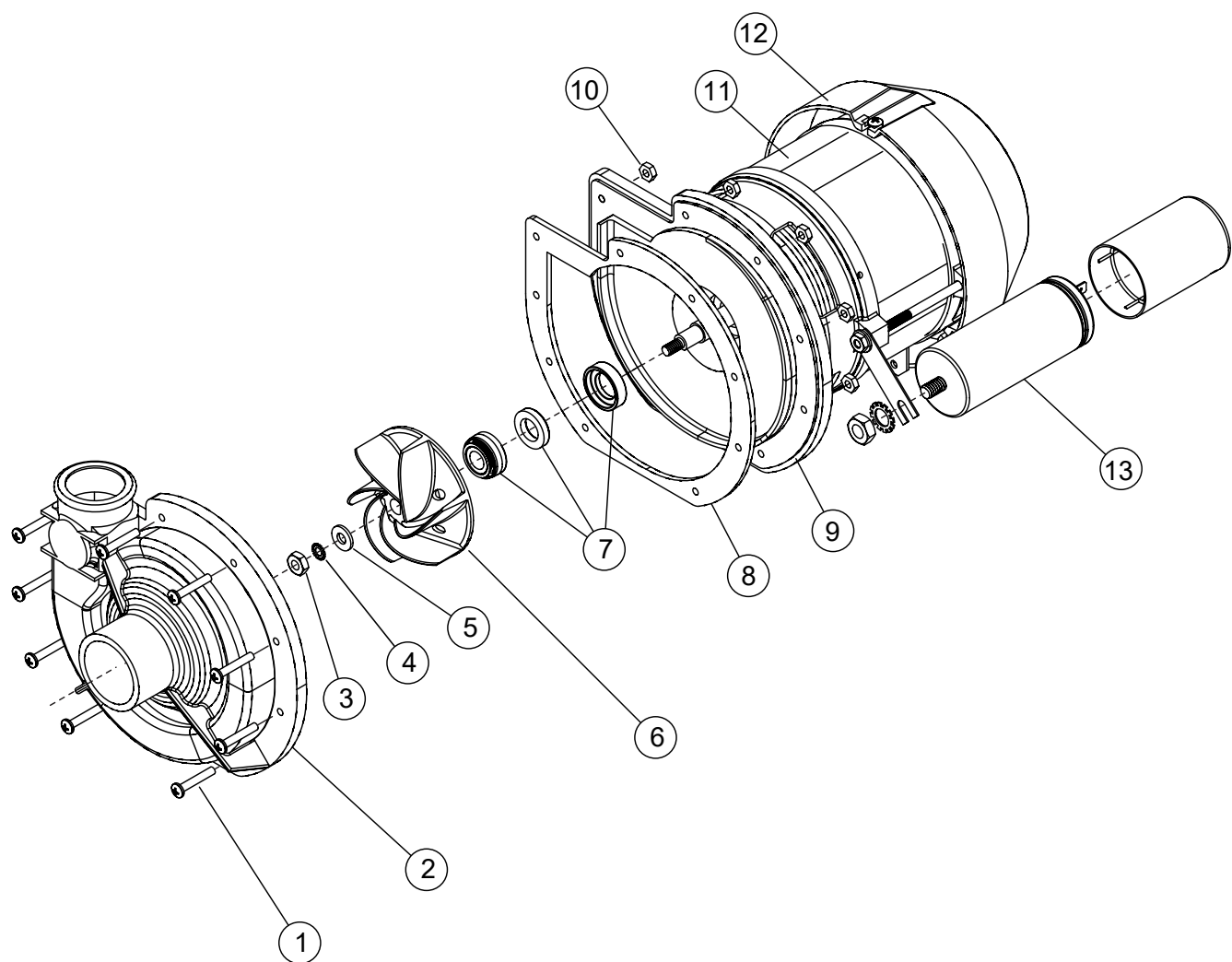
1. Remove the pick-up tubes from their containers.
2. Place each tube in a separate container of hot water.
3. Press and hold the PRIME buttons UP and DOWN until water flows into the wash tank compartment.
4. Return the pick-up tubes to their containers.
5. Run 3 empty dishwasher cycles to flush any chemicals from the dishwasher wash compartment.
6. Return the pick-up tubes to their containers and prime the chemical lines.

NOTE:

There are no lubrication points on the dishwasher.

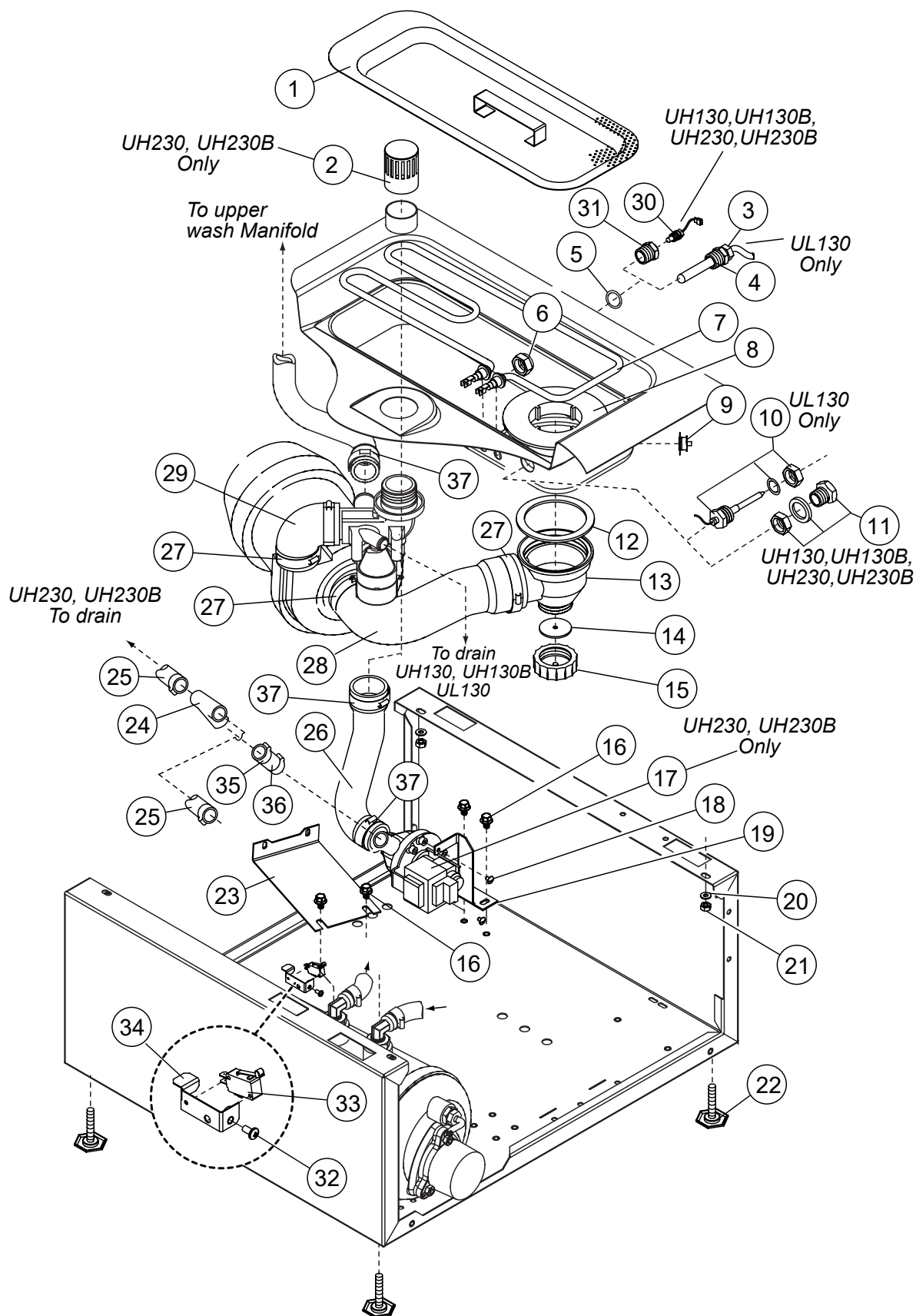
Service Replacement Parts

<i>Illustrations</i>	<i>Page</i>
Wash Pump and Motor Assembly - <i>All Models</i>	44
Wash Tank, Lower Piping and Drain Assembly - <i>All Models</i>	46
Main Terminal Block and Timer Board Assembly - <i>All Models</i>	50
Center Bracket Assembly - <i>All Models</i>	52
Booster Assembly - <i>UH130B, UH230B</i>	54
Fill Piping Assembly - <i>UH230, UH230B</i>	56
Upper Final Rinse Piping - <i>UH230, UH230B</i>	58
Wash and Rinse Spray Arm Assemblies - <i>UH230, UH230B</i>	60
Fill Piping Assembly - <i>UH130, UH130B, UL130</i>	62
Fill Solenoid Valve Assembly - <i>UH130, UH130B, UL130</i>	64
Fill Chute Assembly - <i>UH130, UH130B, UL130</i>	66
Wash/Rinse Spray Arm Assemblies - <i>UH130, UH130B, UL130</i>	68
Detergent Pump Assembly - <i>UH130, UH130B, UH230, UH230B, UL130</i>	70
Rinse-Aid Pump Assembly <i>UH-230, UH230B</i>	72
Rinse-Aid Pump Assembly - <i>UH130, UH130B, UL130</i>	74
Sanitizer Pump Assembly - <i>UL130</i>	76
Control Panel - <i>UH230, UH230B</i>	78
Control Panel - <i>UH130, UH130B</i>	80
Control Panel - <i>UL130</i>	82
Panel Assembly - <i>All Models</i>	84
Door Assembly - <i>All Models</i>	86
Dish Racks, Line Strainer, and Pressure Regulating Valve (PRV)	88



Item No.	Part No.	Description	Qty.
1	0512340	SCREW, M4, PHIL, PAN HD.	9
2	0512341	VOLUTE, PUMP	1
3	114144	NUT, M6	1
4	0501501	WASHER, LOCK, 1/4"	1
5	0501478	WASHER, PLAIN, 17/64"	1
6	0512345	IMPELLER	1
7	114139	SEAL	1
8	110285	GASKET	9
9	114137	BACKPLATE, PUMP	1
10	107337	NUT, M4	9
11	0512101	PUMP/MOTOR ASSEMBLY COMPLETE 115VAC/60/1	1
12	0513131	COVER, REAR MOTOR FAN	1
13	0512347	CAPACITOR 40 μ F	1

Wash Tank, Lower Piping and Drain Assembly - All Models



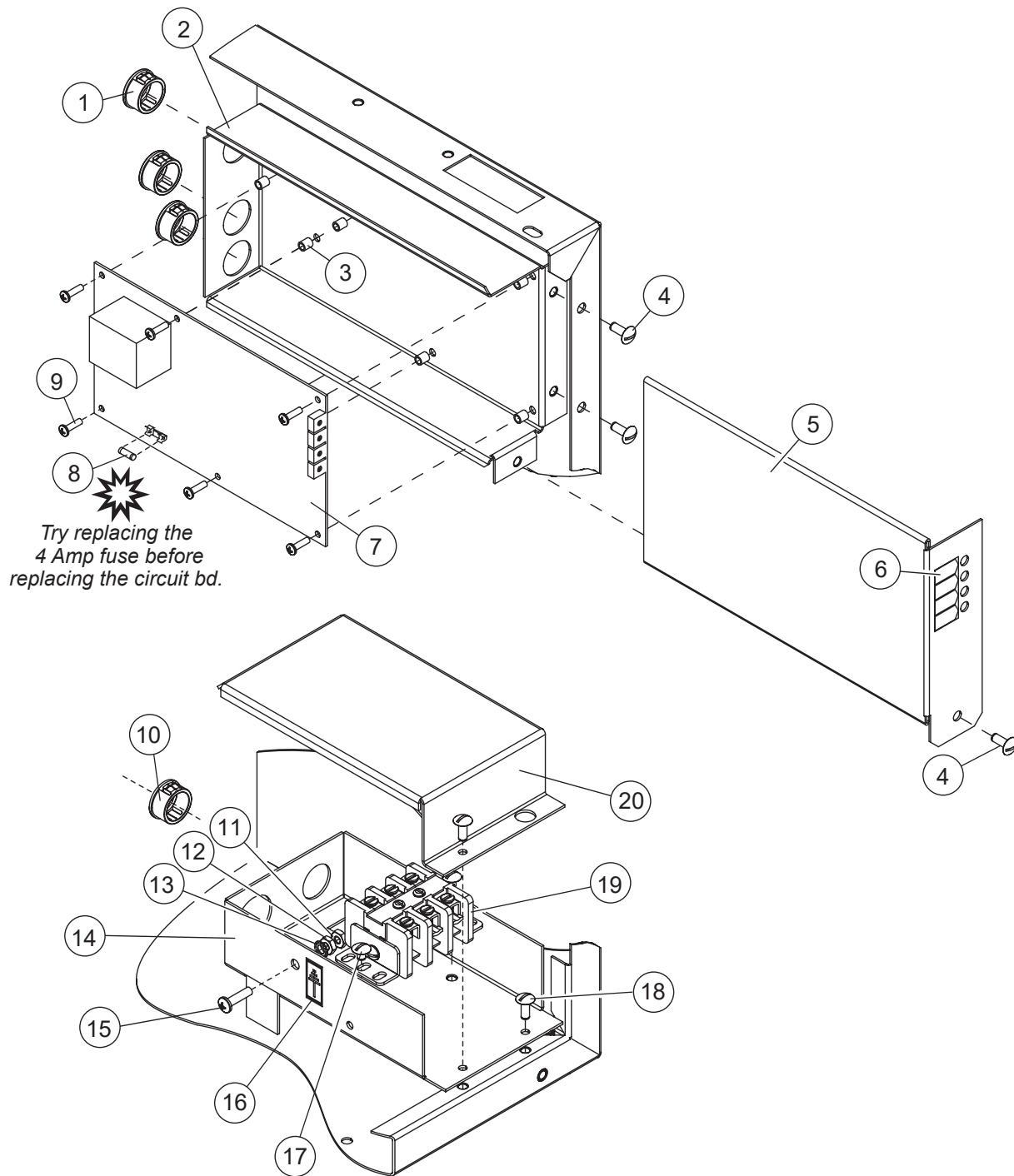
Item No.	Part No.	Description	Qty.
1	0512136	SCREEN, SCRAP ASSY.	1
2	0712236	TUBE, OVERFLOW GUARD (UH230, UH230B ONLY)	1
3	0512107	THERMOMETER, WASH TANK (UL130 Only)	1
4	0508872	ADAPTOR, THERMOMETER (UL130 Only)	1
5	0512099	O-RING	1
6	201029-1	NUT, LOCK 1/2 INCH NI PLATED	2
7	0512169	HEATER, 120VAC 750W (120v LOW TEMP) (UL130)	1
—	0512426	HEATER, 240VAC 2000W (UH130, UH130B, UH230, UH230B)	1
8	D540088	FLANGE, PUMP SUCTION	1
9	110562	THERMOSTAT, BI-METAL SNAP, 240°F	1
10	<u>UL130 THERMOSTAT ASSEMBLY:</u>		
-	0507323	THERMOSTAT. WASH TANK	1
-	0512099	O-RING	1
-	0508873	ADAPTOR, THERMOSTAT	1
11	<u>UH130, UH130B, UH230, UH230B TANK PLUG ASSEMBLY:</u>		
-	108417	NUT, PLUG 1/2" PLASTIC	1
-	108418	PLUG, 1/2" PLASTIC	1
-	109034	WASHER, FIBER	1
12	D80208	GASKET, PUMP SUCTION	1
13	D500603	ELBOW, PUMP SUCTION	1
14	D80305	GASKET, ELBOW	1
15	108447	CAP, 1-1/4" PLASTIC	1
16	0512185	BOLT, HEX FLANGE 1/4-20 X 3/8" SST	2

All Models - Wash Tank, Lower Piping and Drain Assembly

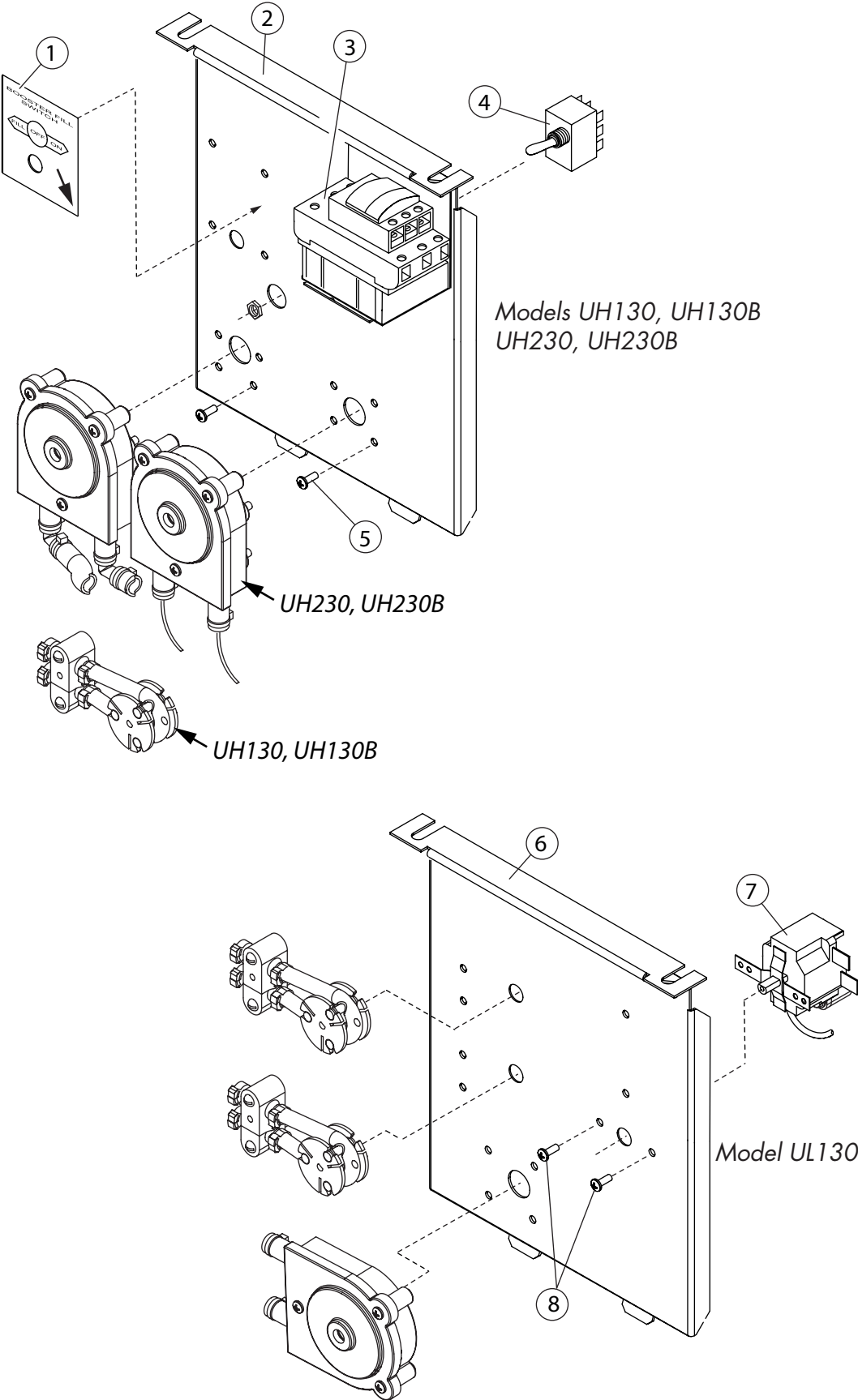
Item No.	Part No.	Description	Qty.
17	0512227	PUMP, DRAIN 115V 60 HZ (UH230, UH230B ONLY)	1
18	0512352	SCREW, PHILLIPS PAN HEAD #10 x 3/4" SS	2
19	0312145	BRACKET, DRAIN PUMP (UH230, UH230B Only)	1
20	0501501	WASHER, SPLIT LOCK 1/4" SST	4
21	100003	NUT, 1/4-20 HEX, SST	4
22	0503718	FOOT, ADJUSTING	1
23	0312144	BRACKET, WASH PUMP	1
24	0512134	TEE, 3/4", POLY.	1
25	0509302	HOSE, 5/8" ID X 1" OD X 6" LG.	A/R
26	0512132	HOSE, OVERFLOW MOLDED FWR (UH230, UH230B ONLY)	1
27	0502571	CLAMP, HOSE GEAR HOSE 1-1/2" SS	4
28	0512118	HOSE, PUMP SUCTION	1
29	0512119	HOSE, PUMP DISCHARGE	1
30	112612	THERMISTOR, 10k Ω , 2 WIRE ASSY, WASH TANK (UH130, UH130B, UH230, UH230B)	1
31	0512299	ADAPTOR, THERMISTOR	1
32	0501411	SCREW, 10-32 X 1/4" RH SLOT SST	1
33	0501379	SWITCH, 15A	1
34	0312096	BRACKET, DOOR SWITCH	1
35	0508808	CLAMP, SS GEAR	2
36	0512120	HOSE, 4" Lg. (NOTE: CUT TO FIT)	1
37	0512322	CLAMP, HOSE 1-13/16" x 2-3/4"	3

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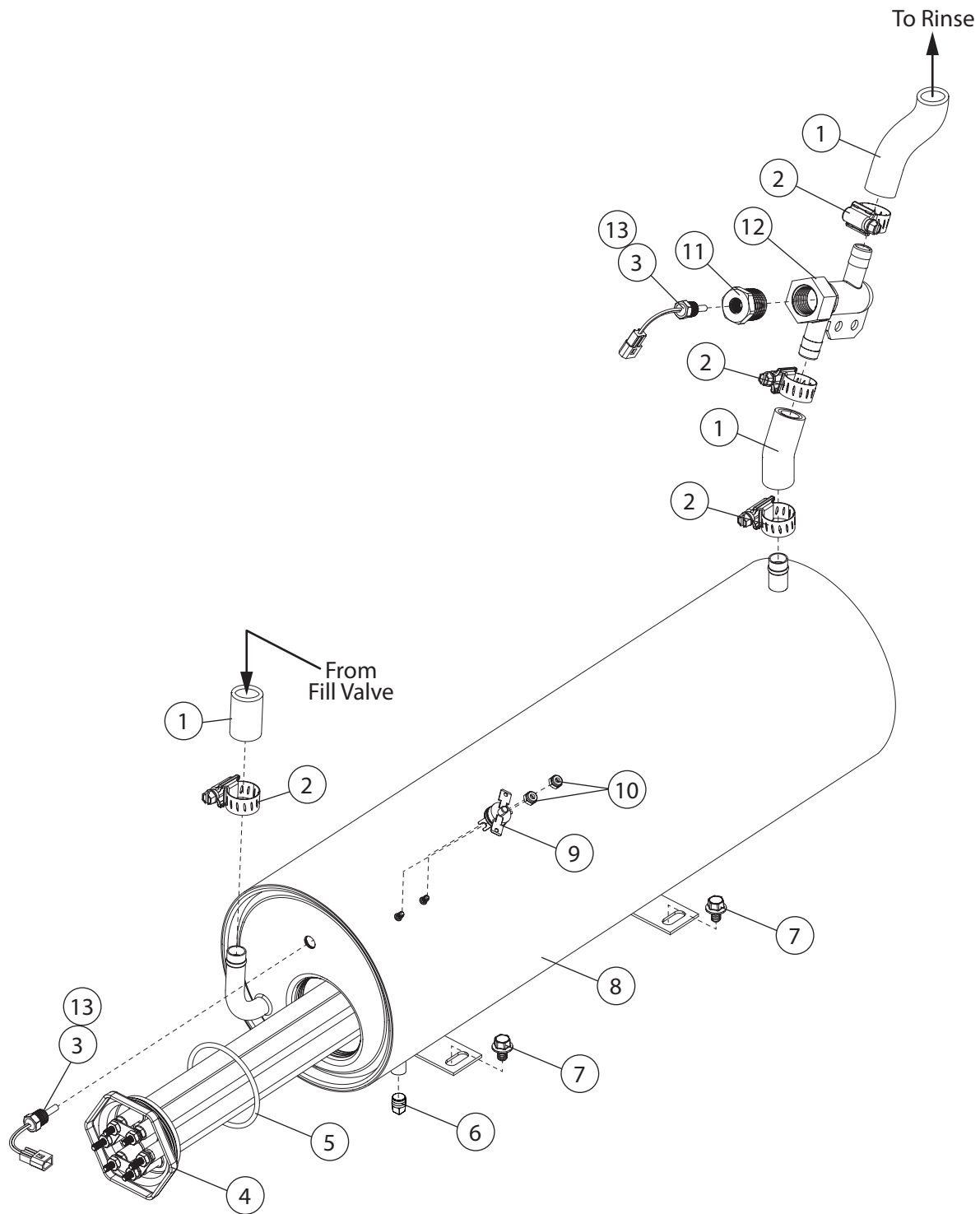
Main Terminal Block and Timer Board Assembly - All Models



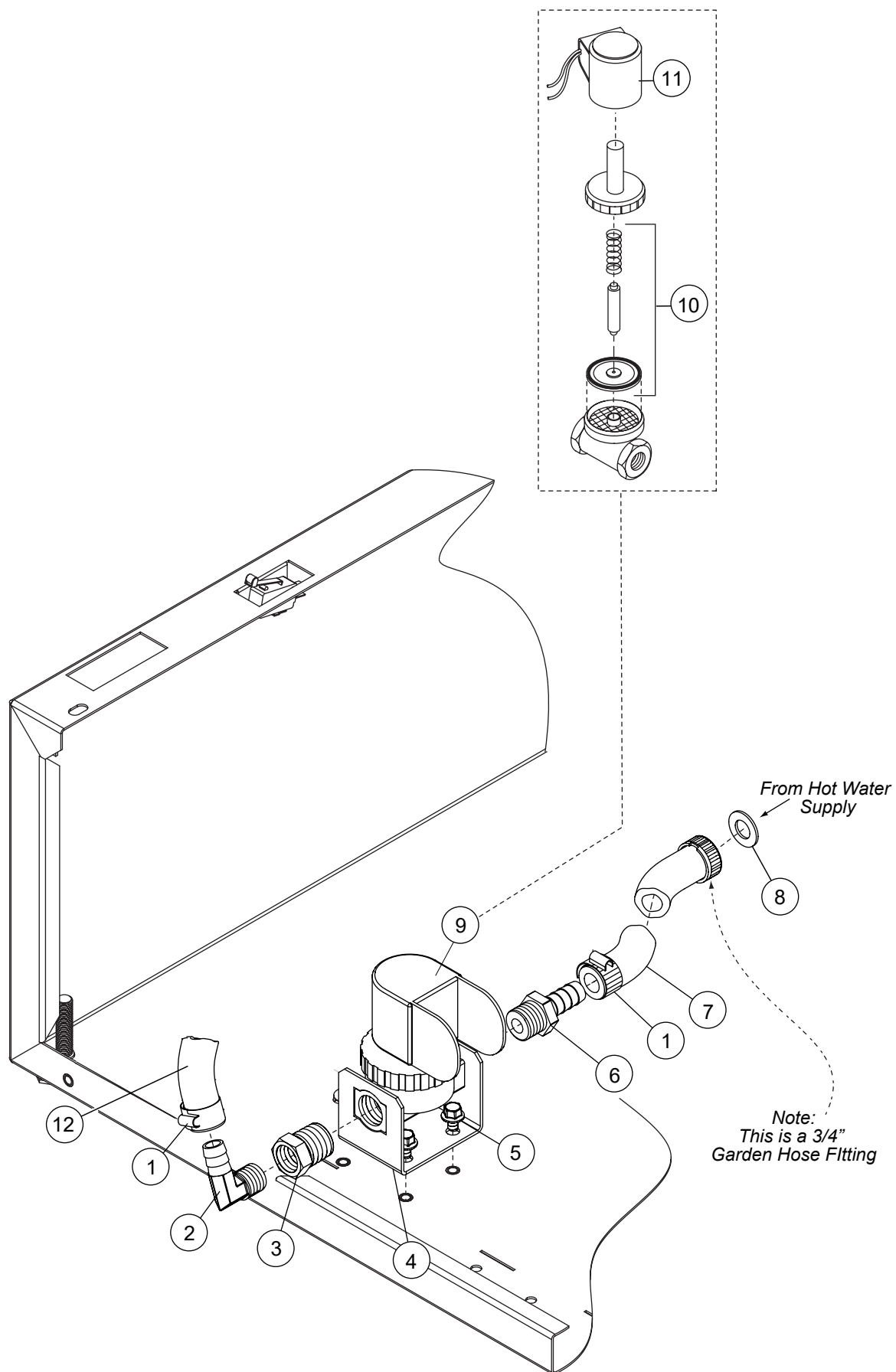
Item No.	Part No.	Description	Qty.
1	0503574	BUSHING, STRAIN RELIEF, SMALL	3
2	0312188	BASE, TIMER ENCLOSURE	1
3	0508710	SPACER, 5/16"	6
4	0501411	SCREW, 10-32 X 1/4" RH SLOT SS	3
5	0312189	COVER, TIMER ENCLOSURE	1
6	0512243	LABEL, ADJUSTMENT	1
7	0712105	TIMER CKT. BD. , SOLID STATE	1
8	0512373	FUSE, 4A 250VAC,	1
9	106695	SCREW, 6-32 X 1/2" ROUND HD PHI	6
10	0503647	BUSHING, STRAIN RELIEF, MEDIUM	2
11	0501533	NUT, BRASS 10-32	2
12	0501472	WASHER, FLAT 1/8" X 1/2" BRASS	1
13	0501493	WASHER LOCK #10 EXT. TOOTH, BRASS	1
14	0312338	BASE, ENCLOSURE, ELEC. CONN	1
15	0501403	SCREW, BRASS RH 10-32 X 3/4" SLOT	1
16	0503592	LABEL, GROUND	1
17	100007	SCREW TRUSS SLOT SS 10-32X3/8	2
18	100213	SCREW, 10-32 X 1/4", TRUSS HD.	2
19	0509527	BLOCK, TERMINAL, 4-POLE (UH130 UH130B, UH230, UH230B Only)	1
20	0312339	COVER, ENCLOSURE, ELEC. CONN	1
—	0501292	CORD AND PLUG, POWER 115VAC (UL130 Only) NOT SHOWN	1



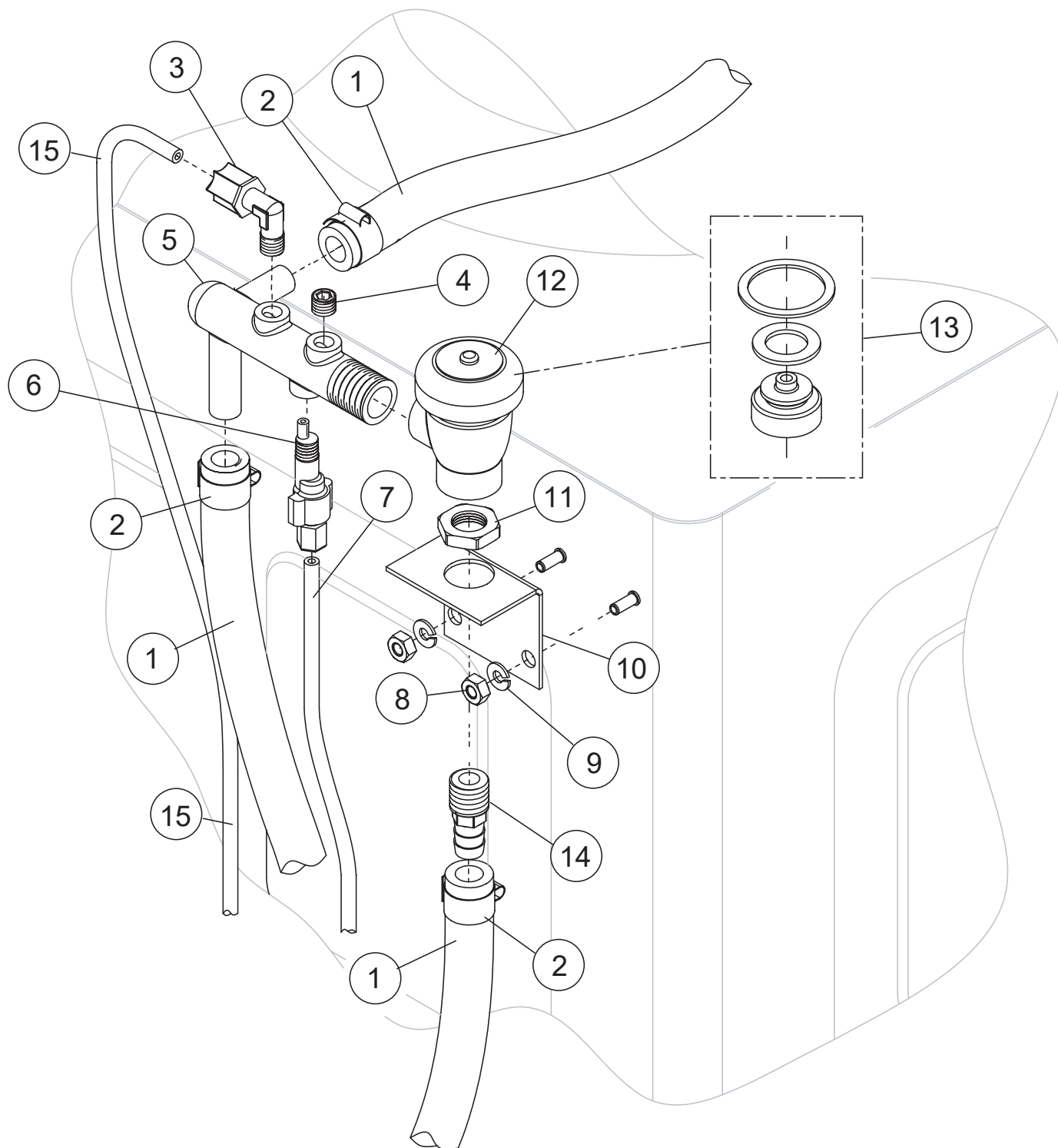
Item No.	Part No.	Description	Qty.
1	0512444	LABEL, BOOSTER FILL, FILL-OFF-ON	1
2	0312173-1	BRACKET, CHEMICAL PUMP	1
3	0512432	CONTACTOR, 3-POLE 120V (UH130, UH130B, UH230, UH230B)	1
4	0501373	SWITCH, 3-POSITION TOGGLE	1
5	0504822	SCREW, 8-32 X 1/2" PAN HD PH SST	8
6	0312173-3	BRACKET, CHEMICAL PUMP, THERMOSTAT (UL130 Only)	1
7	0507323	THERMOSTAT, WASH TANK (UL130 Only)	1
8	0501450	SCREW, NIBS RH 6-32 X 3/16 PHIL.SS	4



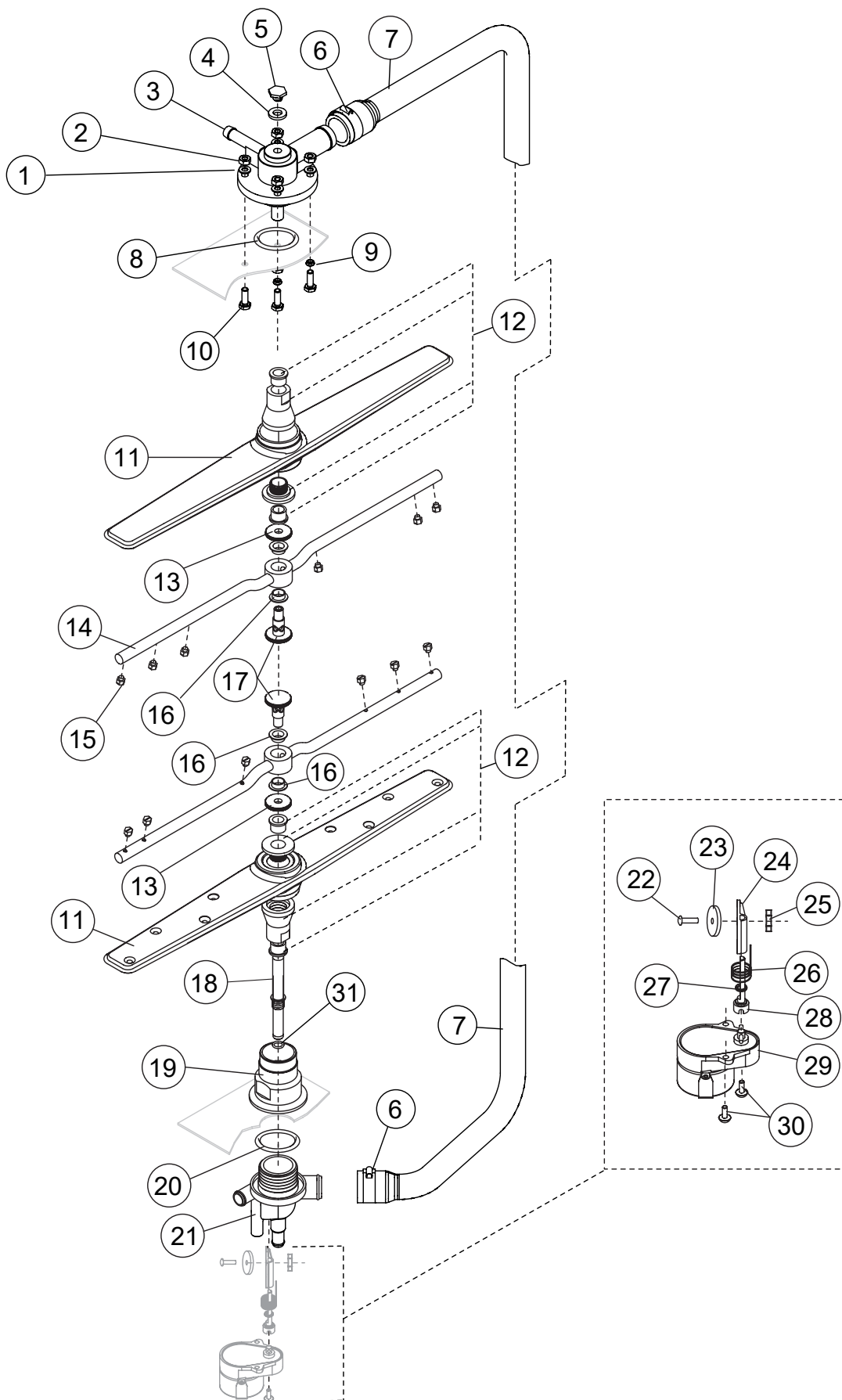
Item No.	Part No.	Description	Qty.
1	107417	HOSE, RUBBER 1/2" ID X .84" OD	A/R
2	0503679	CLAMP, SS GEAR-MIN. 5/16"	4
3	112612	THERMISTOR 10 k Ω , 2-WIRE	2
4	0513330	BOOSTER, ELEMENT 5 KW, 40°F RISE	1
—	0513331	BOOSTER, ELEMENT 9 KW, 70°F RISE	1
5	0513525	O-RING, BOOSTER ELEMENT	1
6	0508817	PLUG, 1/8"	1
7	0512185	BOLT, HEX FLANGE, 1/4-20 X 3/8" SST	2
8	0713333	TANK, BOOSTER SST	1
9	110562	THERMOSTAT, HIGH LIMIT 240°F	1
10	108954	NUT, GRIP 6-32 WITH NYLON INSERT SST	2
11	0512298	BUSHING, REDUCING 1/2" NPT X 1/8" NPT	1
12	0512857	TEE. RINSE THERMOMETER	1
13	0513538	HARNESS, BOOSTER THERMISTOR	2
—	0513537	HARNESS, WIRING (UH130B NOT SHOWN)	1
—	0513536	HARNESS, WIRING (UH230B NOT SHOWN)	1



Item No.	Part No.	Description	Qty.
1	0503679	CLAMP, SS GEAR-MIN. 5/16"	2
2	0502653	ELBOW, 90° 3/8" MPT X 1/2" HOSE	1
3	0502650	BUSHING, 1/2" NPT X 3/8" NPT	2
4	0312146	BRACKET, 1/2" SOLENOID VALVE (UH230, UH230B)	1
5	0512185	BOLT, HEX FLANGE 1/4-20 X 3/8" SS	2
6	0502618	BARB, HOSE 1/2" X 3/8" MPT	1
7	0509526	HOSE, 1/2" X 7' (3/4" garden hose fitting)	1
8	0505320	WASHER, 1" OD GARDEN HOSE	1
9	109886	VALVE, SOLENOID, 1/2" NPT 120VAC	1
10	109902	KIT, REPAIR, 1/2" SOLENOID VALVE	1
11	108516	KIT, REPAIR, COIL, 120VAC	1
12	107417	HOSE, RUBBER 1/2" ID X .84" OD	A/R



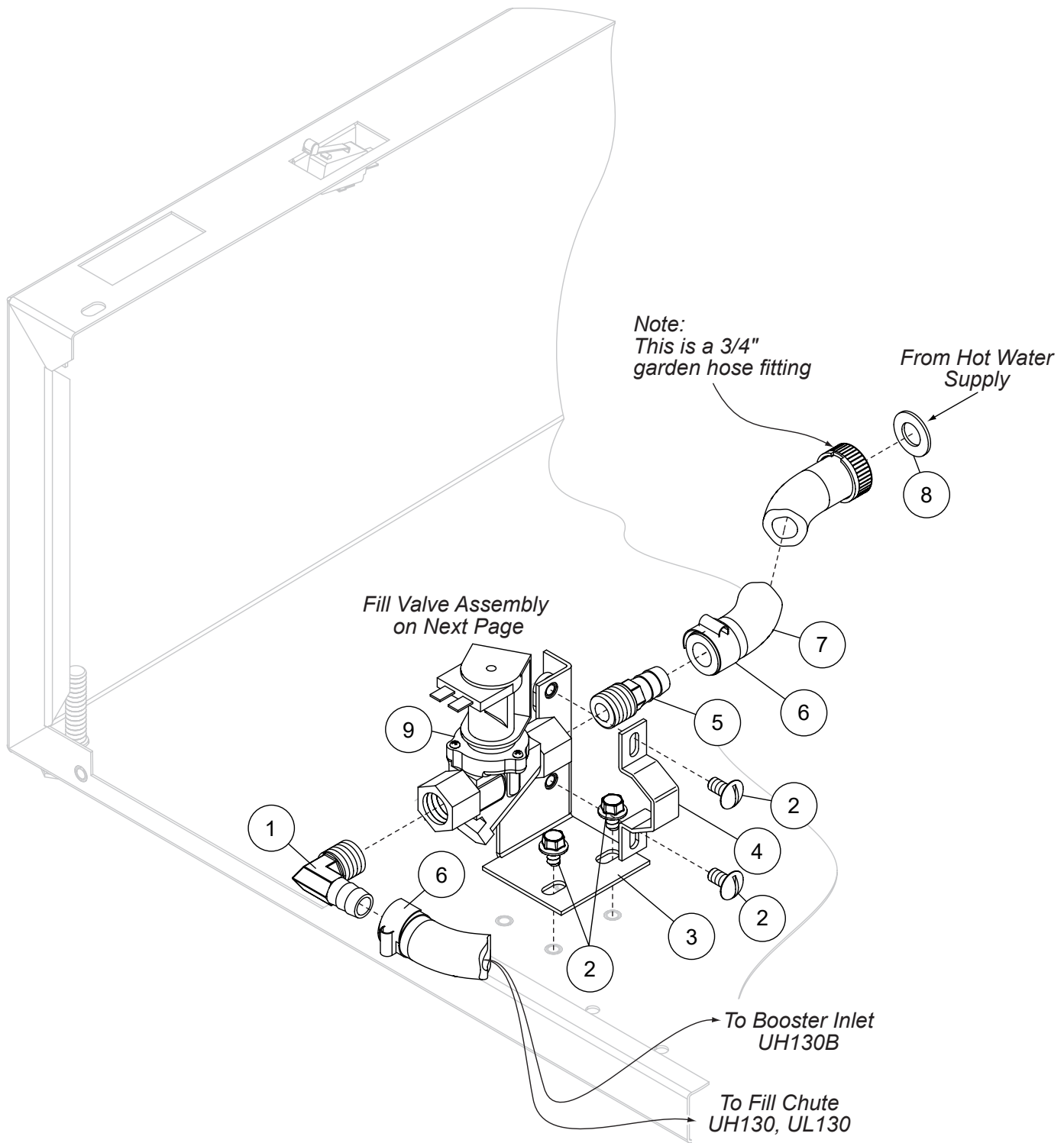
Item No.	Part No.	Description	Qty.
1	107417	HOSE, RUBBER 1/2ID X .84OD	AR
2	0503679	CLAMP, SS GEAR-MIN. 5/16-MAX.7/8	6
3	112728	FITT COMP 1/4OD X 1/8MPT ELL J	1
4	0508817	PLUG, 1/8 HEX COUNTERSUNK	1
5	0513110	MANIFOLD, RINSE (UH230, UH230B)	1
6	112763	INJECTOR FITTING	1
7	112883-1	TUBING, 1/8" OD X 1/16" ID	AR
8	100003	NUT, HEX SS 1/4-20	2
9	0501501	WASHER, SPLIT LOCK 1/4i 304SS	2
10	0312190	BRACKET, VACUUM BREAKER	1
11	201029	NUT, LOCK 1/2" NICKEL PLATED	1
12	100500	VACUUM BREAKER, 1/2" NPT, BRONZE	1
13	900836	REPAIR KIT, VACUUM BREAKER 1/2"	1
14	0502651	COUPLER 1/2 MPT X 1/2" HOSE	1
15	107928	TUBING, 1/4" NATURAL	AR



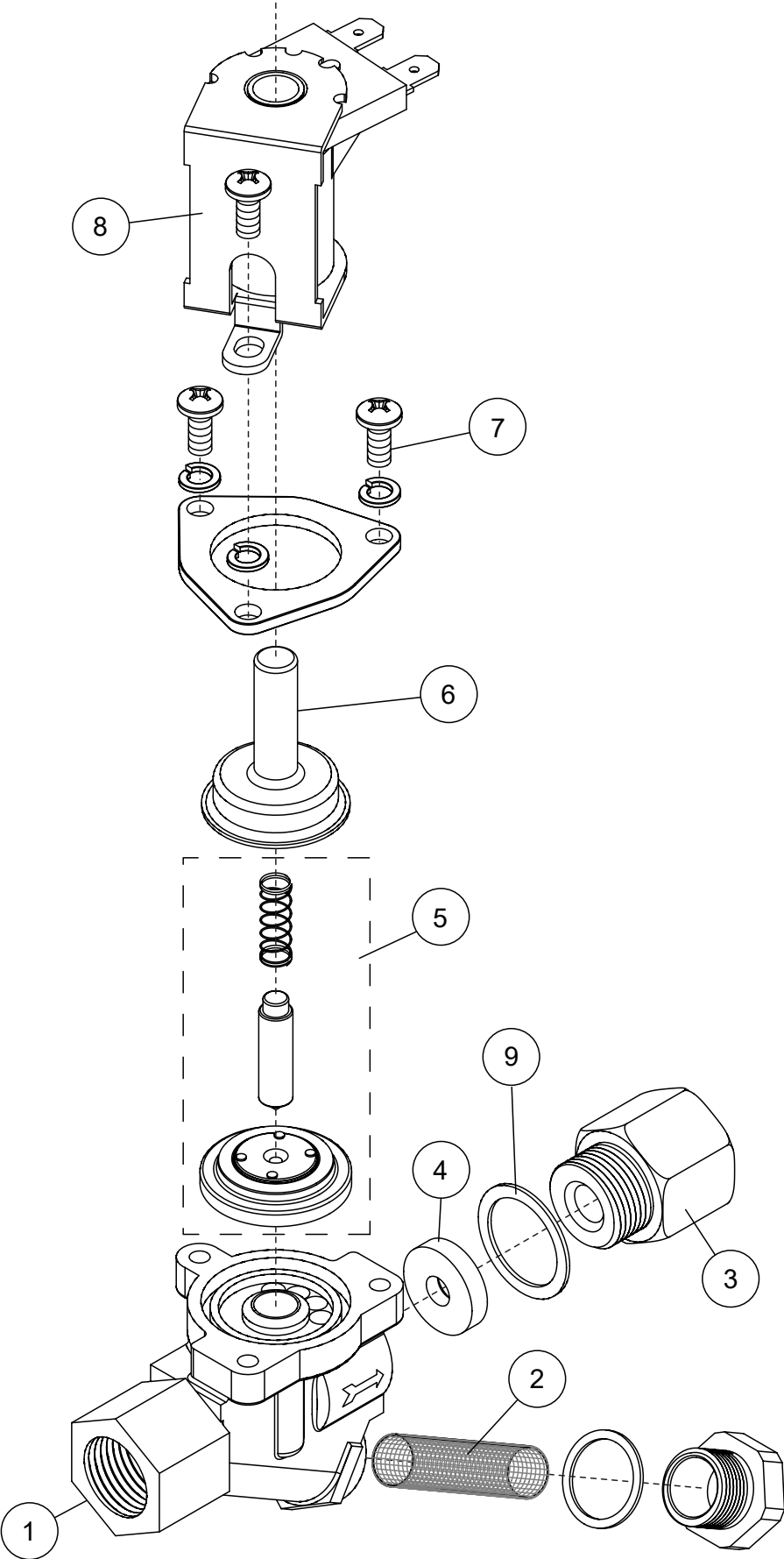
Item No.	Part No.	Description	Qty.
1	0501478	WASHER, 17/64 id X 9/16" OD SST	4
2	107967	NUT, HEX 1/40-20 NYLON INSERT SST	4
3	H35509	HUB, UPPER SPRAY ARMS	1
4	107873	WASHER, PACKING	1
5	110215	PLUG, UPPER MANIFOLD	1
6	0502571	CLAMP, HOSE GEAR 1-1/2" SST	2
7	0512120	HOSE, UPPER WASH ARM	1
8	0512133	O-RING, 2-1/8" OD X 1-3/4" ID X 3/16"	1
9	0501481	WASHER, NYLITE	4
10	100738	BOLT, 1/4-20 X 1" SST	4
11	H420548	WASH ARM ASSEMBLY <i>(Includes Item 12)</i>	2
12*	0712749	BEARING ASSEMBLY	2
13	H34998	NUT, SPACER	2
14	H36211	RINSE ARM ASSEMBLY <i>(Includes Items 13, 16, and 17)</i>	2
15	H37149	NOZZLE, RINSE ARM	12
16	H190663	BEARING, RINSE ARM	4
17	H36275	SPINDLE, RINSE ARM	2
18	0512124	SHAFT, LOWER	1
19	0512066	HUB, LOWER WASH ARM	1
20	0512133	O-RING, 2-1/8" OD X 1-3/4" ID X 3/16"	1
21	0512102	MANIFOLD, LOWER FWR	1
22	100007	SCREW, TRUSS SLOT 10-32 X3/8" SST	1
23	0512127	GASKET, DRAIN	1
24	0512104	FLAP, DRAIN	1
25	100194	NUT, GRIP 10-32 SST	1
26	0512126	SPRING, TORSION	1
27	0512130	O-RING, DRAIN SHAFT	1
28	0512128	SHAFT, DRAIN	1
29	0712123	MOTOR, DRAIN 115VAC	1
30	104883	SCREW, 6-32 X 3/8" RD. HD. SLOTTED, SST	2
31	0512239	O-RING	1
—	0712368	DRAIN MANIFOLD ASSEMBLY <i>(Includes Items 20-29)</i>	1

* Note:

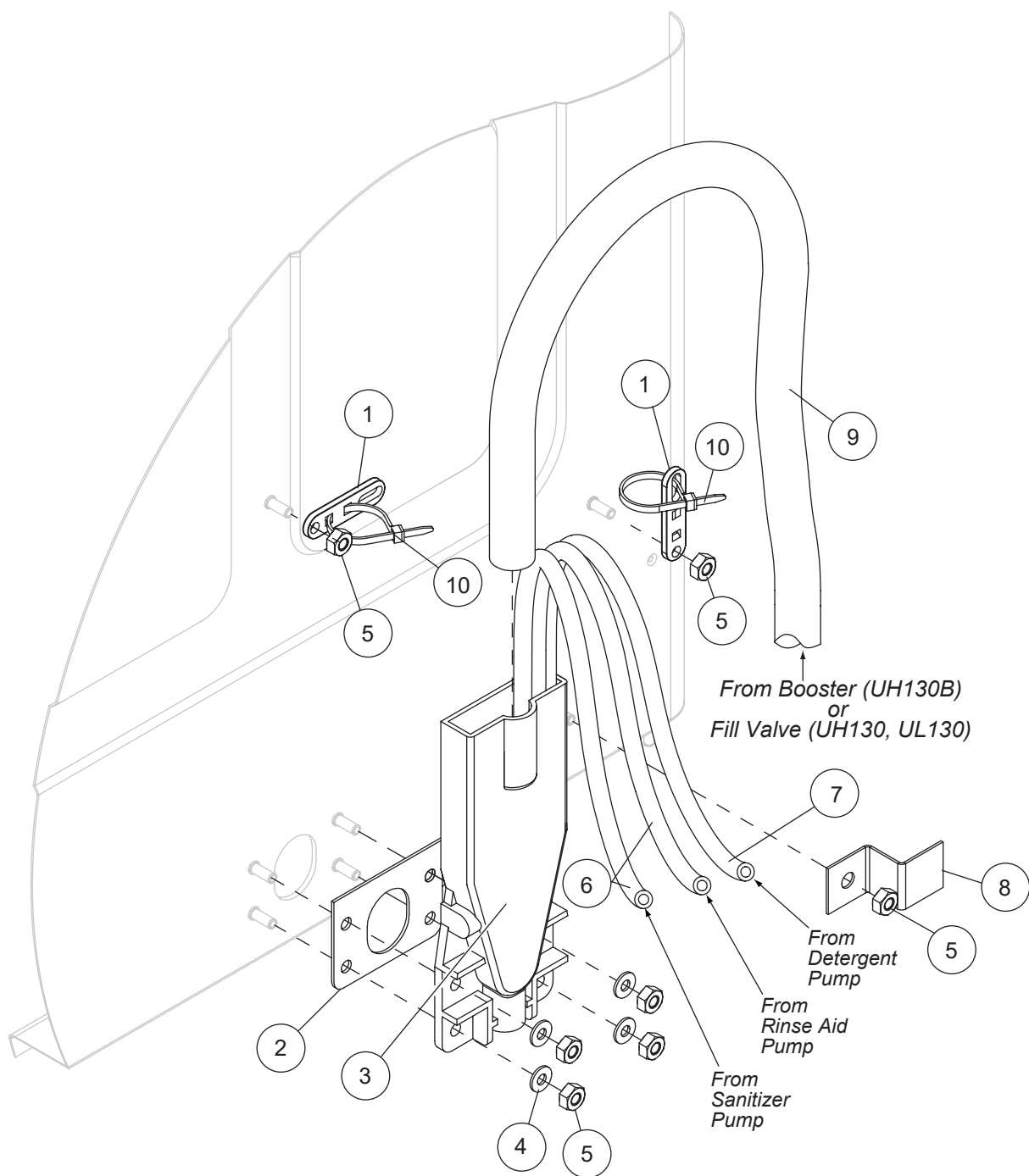
The bearing assembly, P/N 0712749 includes 2 bearings, 1 locknut, and 1 wash arm hub. The bearings, locknut and hub are not available as separate service replacement parts.



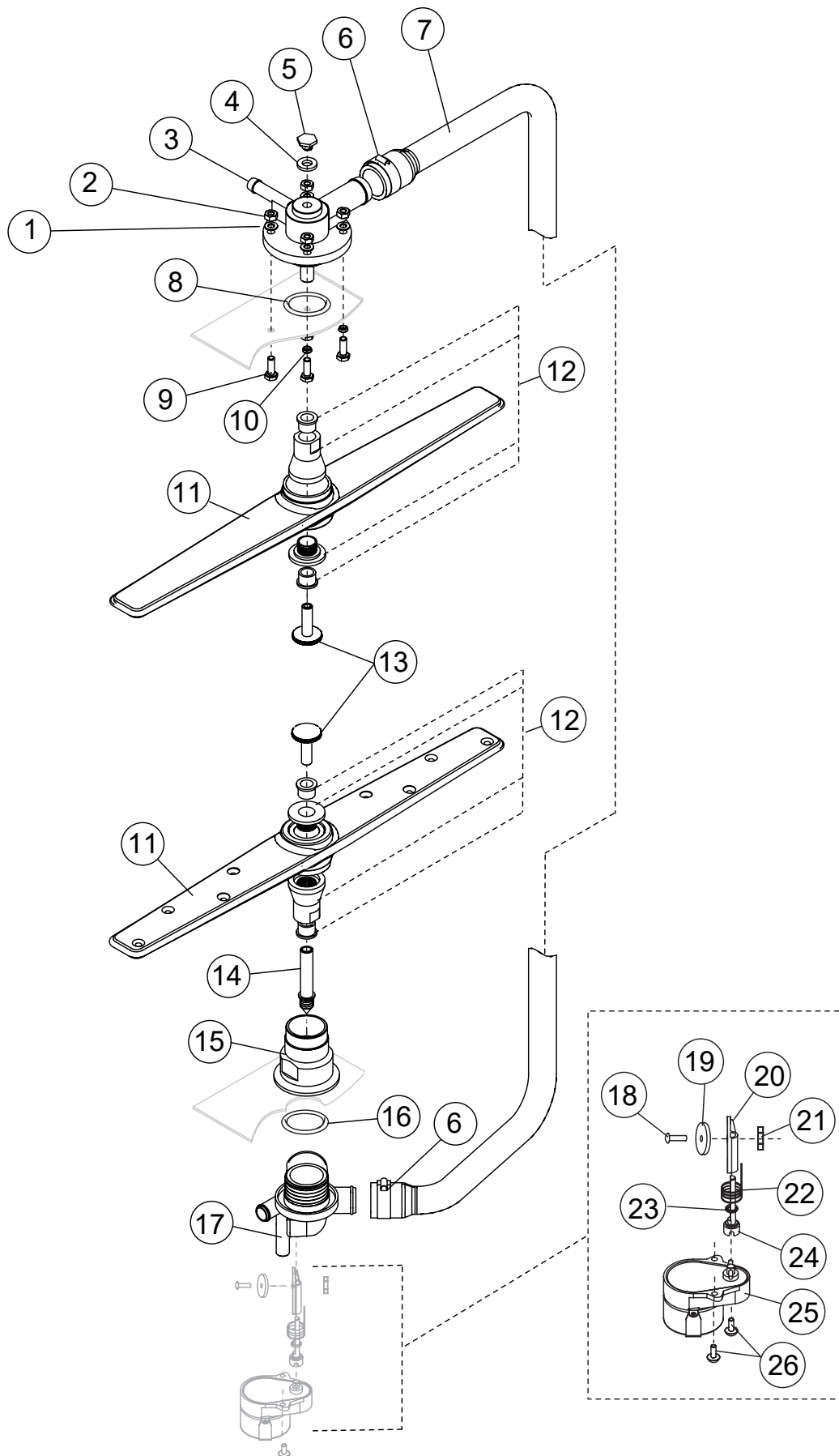
Item No.	Part No.	Description	Qty.
1	0502653	ELBOW, 90 DEGR 3/8" MPT X 1/2" HOSE	1
2	0512185	BOLT, HEX FLANGE 1/4-20 X 3/8" SS	4
3	0300065	SUPPORT, VALVE	1
4	0300203	CLAMP, VALVE	1
5	0502618	HOSE BARB, 1/2" X 3/8" MPT	1
6	0503679	CLAMP, SS GEAR-MIN. 5/16"- MAX. 7/8"	1
7	0509526	HOSE, 1/2" X 7 FT. FEM. GARD. ADAPT.	1
8	0505320	WASHER, 1" O.D. GARDEN HOSE	1
9	0504952	VALVE, FILL, 3/8" NPT	1



Item No.	Part No.	Description	Qty.
1	0504952	VALVE, FILL 5.0 GPM	1
2	0502803	SCREEN, SOL-VALVE STRAINER	1
3	0502804	GASKET, CAP	1
4	0504958	WASHER, FLOW 5.0 GPM	1
5	0502811	KIT, REBUILD	1
6	0505229	GUIDE	1
7	0501406	SCREW, SLOT SS RH 8-32 X 1/2"	3
8	0505235	COIL, 115V 60HZ 10W	1
9	0502807	GASKET, OUTLET (COPPER)	1



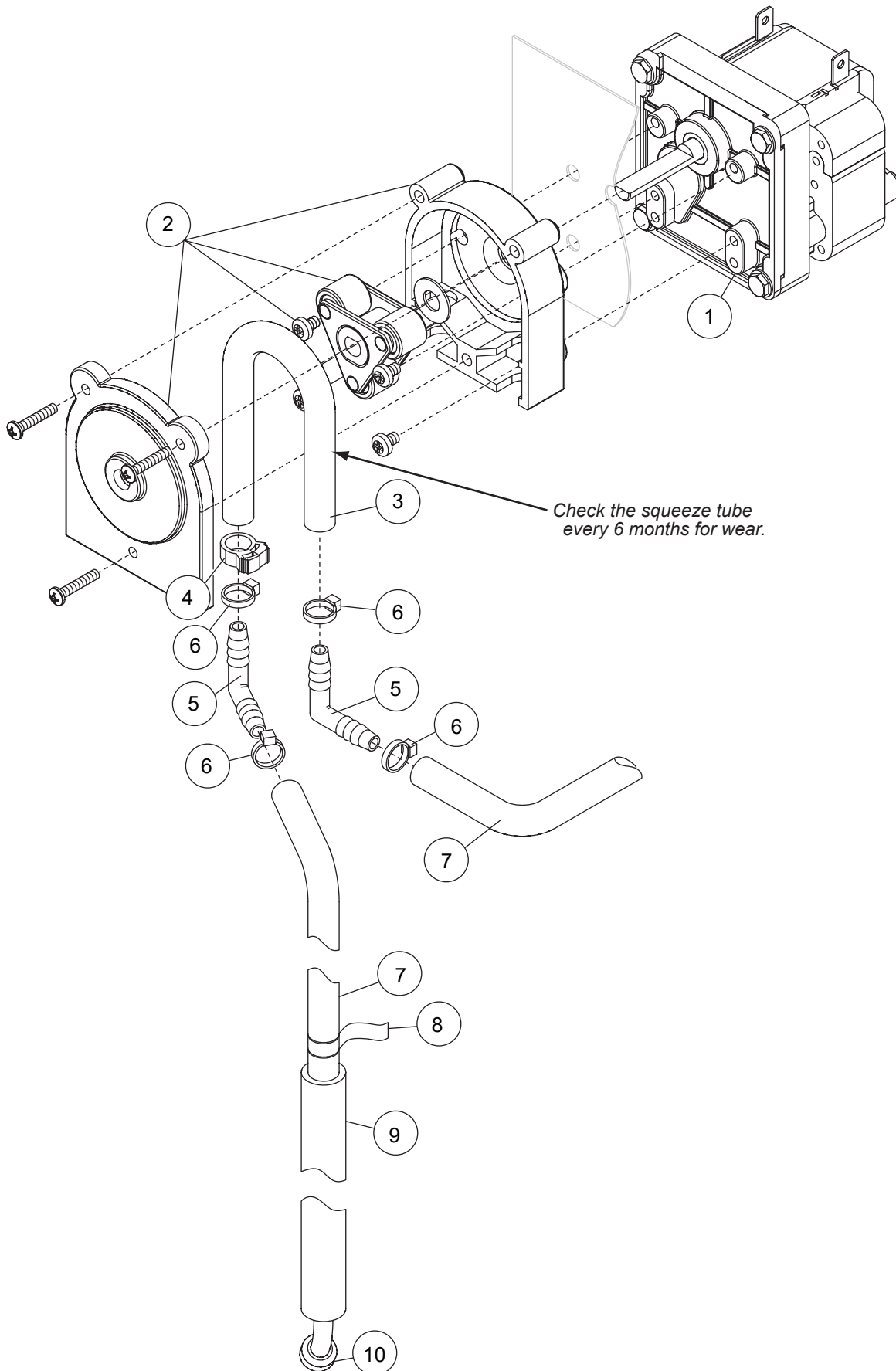
Item No.	Part No.	Description	Qty.
1	106090	TIE PLATE	2
2	0509048	GASKET, INLET CHUTE	1
3	0508867	CHUTE, INLET	1
4	0507709	WASHER, FLAT #10 SS	4
5	0503722	NUT, HEX 10-32 SS	6
6	0502666	HOSE, 1/8" ID X 1/4" OD PVC	AR
7	0502667	HOSE, 1/4" ID X 3/8" OD PVC	AR
8	0308822	CLIP, HOSE	1
9	107417	HOSE, RUBBER 1/2" ID X .84" OD	AR
10	0501518	TIE, NYLON 5-1/2"	2



Item No.	Part No.	Description	Qty.
1	0501478	WASHER, 17/64" IDX 9/16" OD SST	4
2	107967	NUT, HEX SST 1/4-20 NYLON INSERT	4
3	H35509-1	HUB, UPPER WASH ARM	1
4	107873	WASHER, PACKING	1
5	110215	SCREW, RETAINING	1
6	0502571	CLAMP, HOSE GEAR HOSE 1-1/2" SST	2
7	0512120	HOSE, UPPER WASH ARM	1
8	0512133	O-RING, 2-1/8" OD X 1-3/4" ID X 3/16	1
9	100738	BOLT, 1/4-20 X 1" HEX. HD. SST	4
10	0501481	WASHER, NYLTITE	4
11	H420548	WASH ARM ASSEMBLY <i>(Includes Item 12)</i>	2
12*	0712749	BEARING ASSEMBLY	2
13	0512129	NUT, WASH ARM	2
14	0512125	SHAFT, LOWER	1
15	0512066	HUB, LOWER WASH ARM	1
16	0512133	O-RING, 2-1/8" OD X 1-3/4" ID X 3/16	1
17	0512103	MANIFOLD, LOWER	1
18	100007	SCREW, TRUSS SLOT 10-32 X3/8" SST	1
19	0512127	GASKET, DRAIN	1
20	0512104	FLAP, DRAIN	1
21	100194	NUT, GRIP 10-32 SST	1
22	0512126	SPRING, TORSION	1
23	0512130	O-RING, DRAIN SHAFT	1
24	0512128	SHAFT, DRAIN	1
25	0712123	MOTOR, DRAIN 115VAC	1
26	104883	SCREW, 6-32 X 3/8 RD. HD. SLOTTED, SST	2
—	0712367	DRAIN MANIFOLD ASSEMBLY <i>(Includes Items 16-25)</i>	1

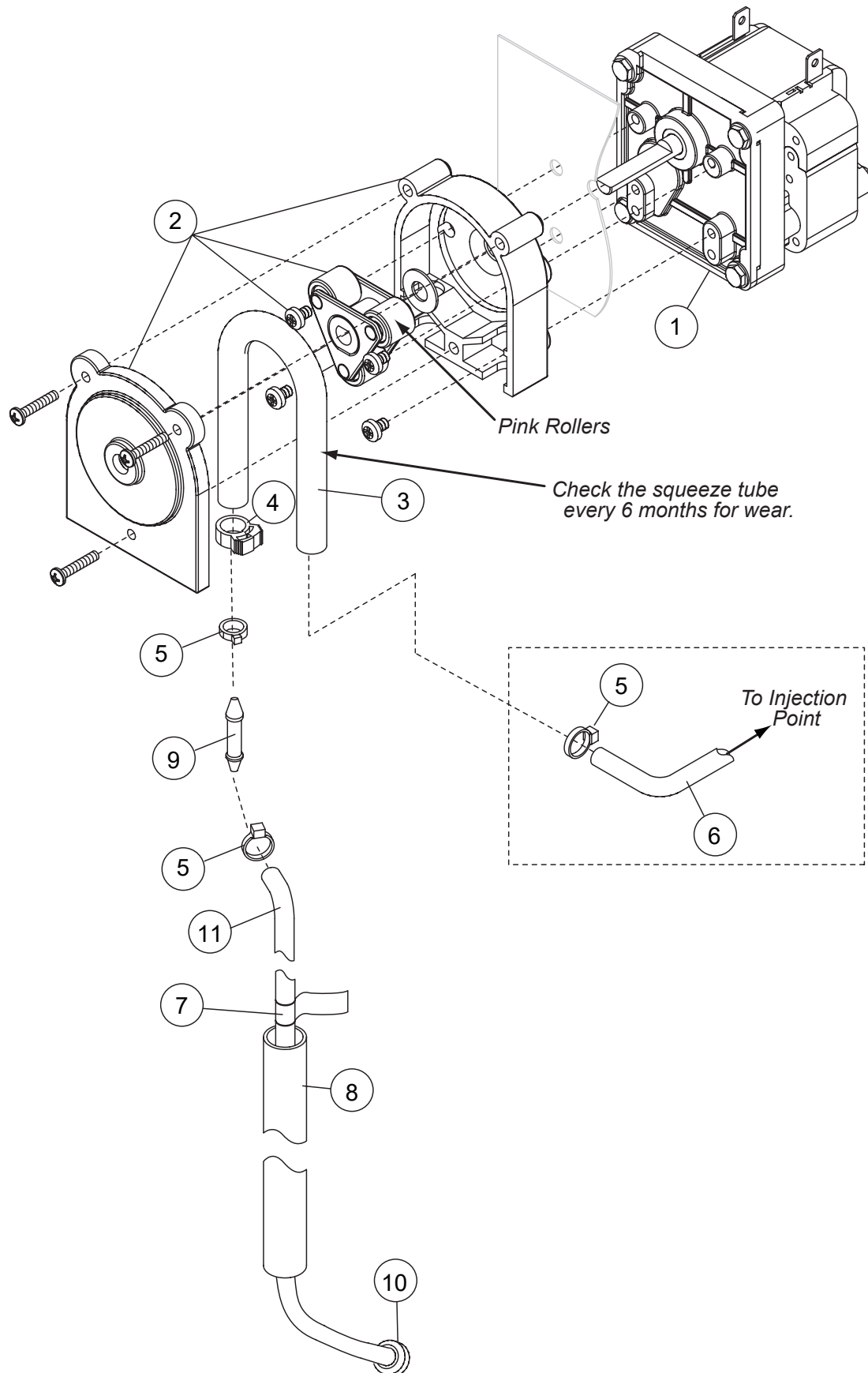
* Note:

The bearing assembly, P/N 0712749 includes 2 bearings, 1 locknut, and 1 wash arm hub.
The bearings, locknut and hub are not available as separate service replacement parts.

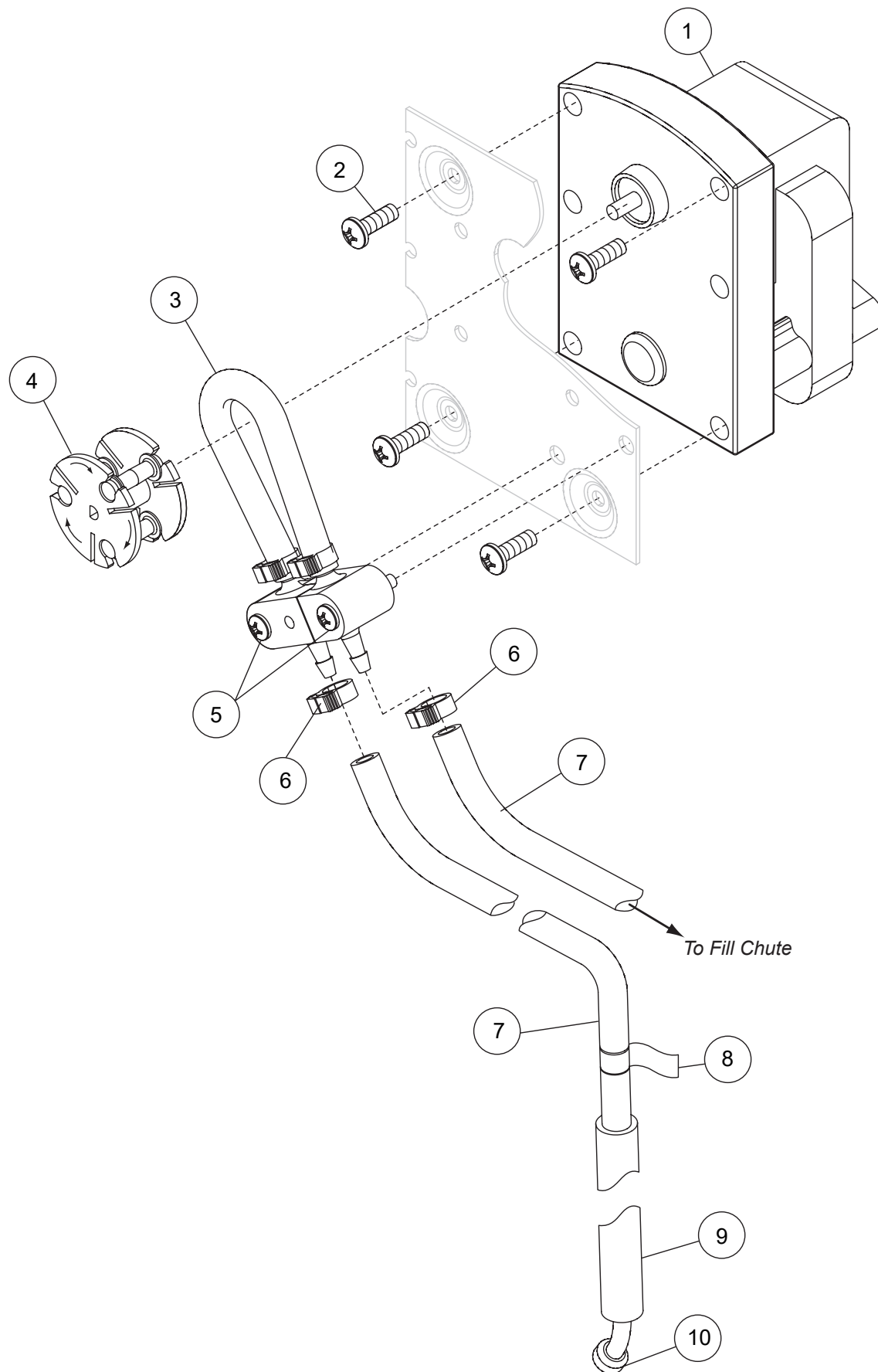


UH130, UH130B, UH230, UH230B, UL130 - Detergent Pump Assembly

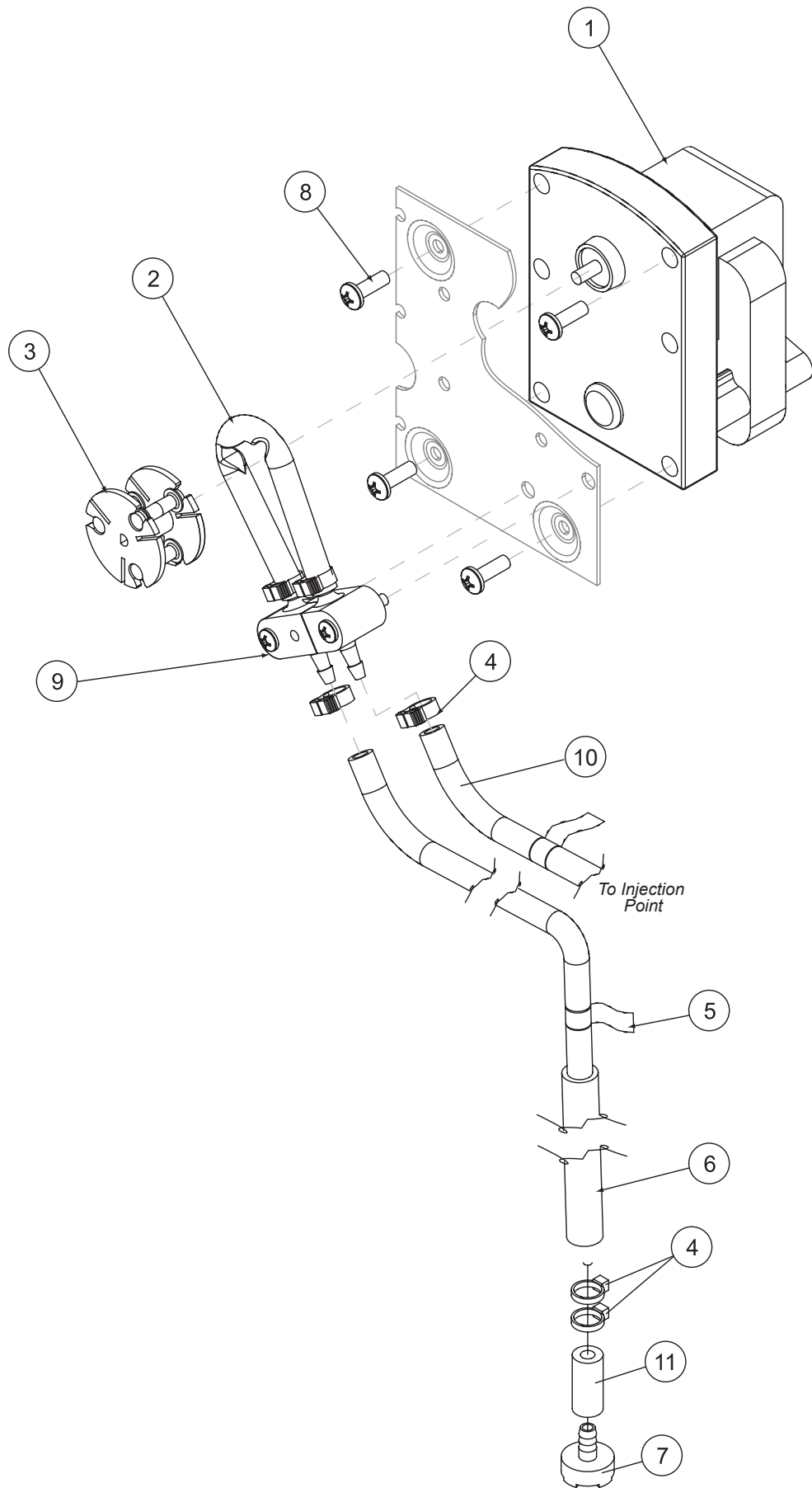
Item No.	Part No.	Description	Qty.
1	0510870-1	GEARMOTOR, 115/60/1	1
2	114203	PUMP HD KIT, PERISTALIC	1
3	114202	TUBE ASY,SANTOPRENE, 3/16" X 3/8" X 9" LG.	1
4	0512369	CLAMP, HOSE	1
5	0502644	ELBOW, 1/4 HOSE BARB	2
6	0501519	TIE, NYLON 4"	4
7	0502667	HOSE, 1/4" ID X 3/8" OD PVC	A/R
8	0503695	LABEL, DETERGENT	1
9	0306363	TUBE, 3/8" ID X 12" LG. STIFFENER	1
10	0501869	STRAINER	1



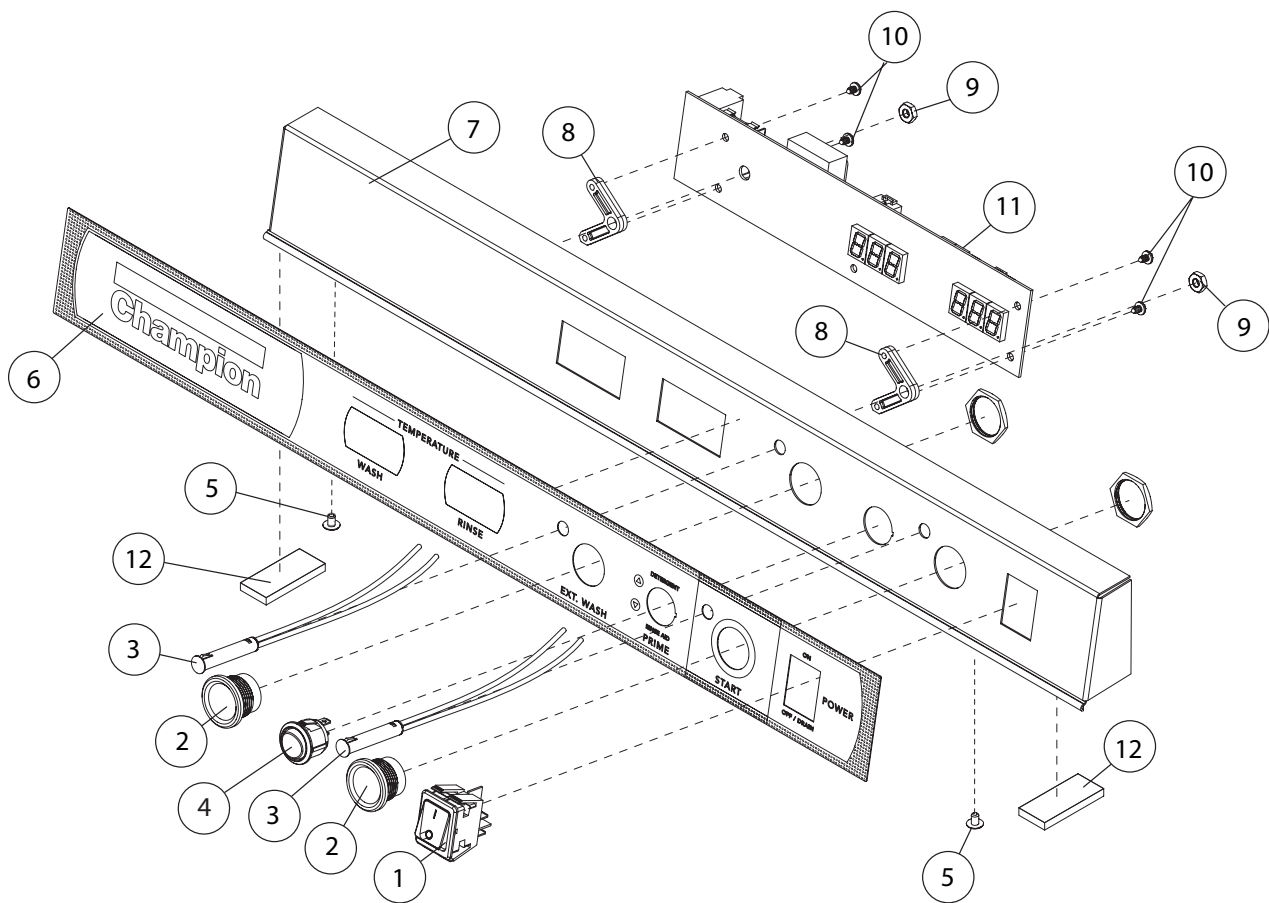
Item No.	Part No.	Description	Qty.
1	0510872-1	GEARMOTOR, RINSE-AID 115/60/1	1
2	114203	PUMP HEAD, PERISTALTIC	1
3	112759	TUBE, PUMP 1/8" ID X 9" LG.	1
4	0512369	CLAMP, HOSE	1
5	0501519	TIE, CABLE 4"	4
6	112883-1	TUBING, 1/8" OD X 1/16" ID	A/R
7	0505483	LABEL, RINSE AID	1
8	0306363	TUBE, 3/8" ID X 12" LG. STIFFENER	1
9	0512794	CONNECTOR, 5/32" X 1/8"	1
10	0501869	STRAINER	1
11	0502666	TUBING, 1/4" OD X 1/8" ID	A/R



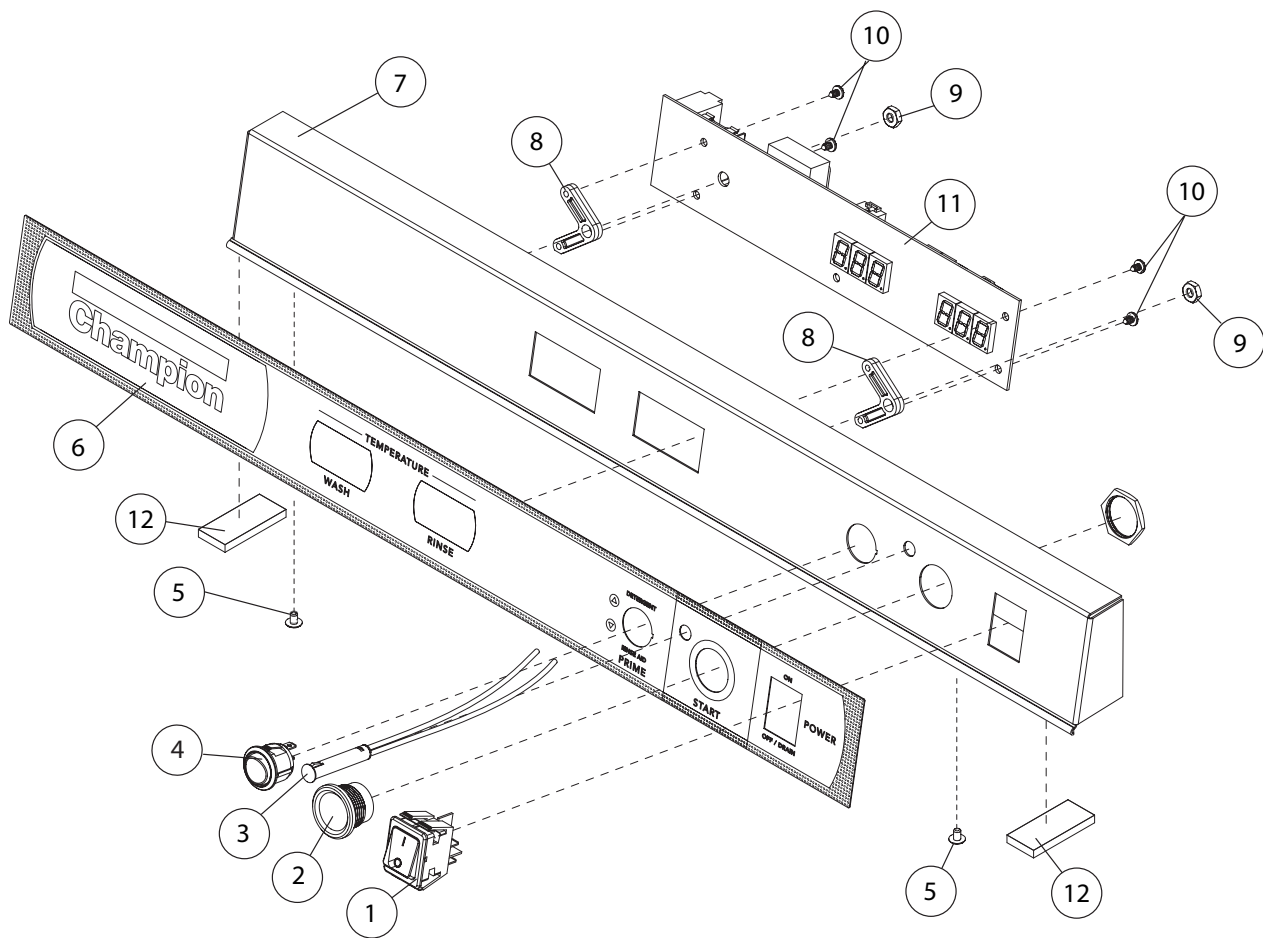
Item No.	Part No.	Description	Qty.
1	0503756	MOTOR, INJECTOR PUMP	1
2	0504822	SCREW, 8-32 X 1/2" PAN HD PH S.S	2
3	0706635	TUBE, ELEMENT ASSEMBLY 45CC	1
4	0707142	ROTOR, ASSEMBLY	1
5	0506589	SCREW, PAN 6-32 X 7/8" SS PHILLIP	2
6	0501519	TIE, NYLON 4"	4
7	0502666	HOSE, 1/8" ID X 1/4" OD PVC	A/R
8	0505483	LABEL, RINSE AID	1
9	0306363	TUBE, 3/8" ID X 12" LG. STIFFENER	1
10	0501869	STRAINER	1



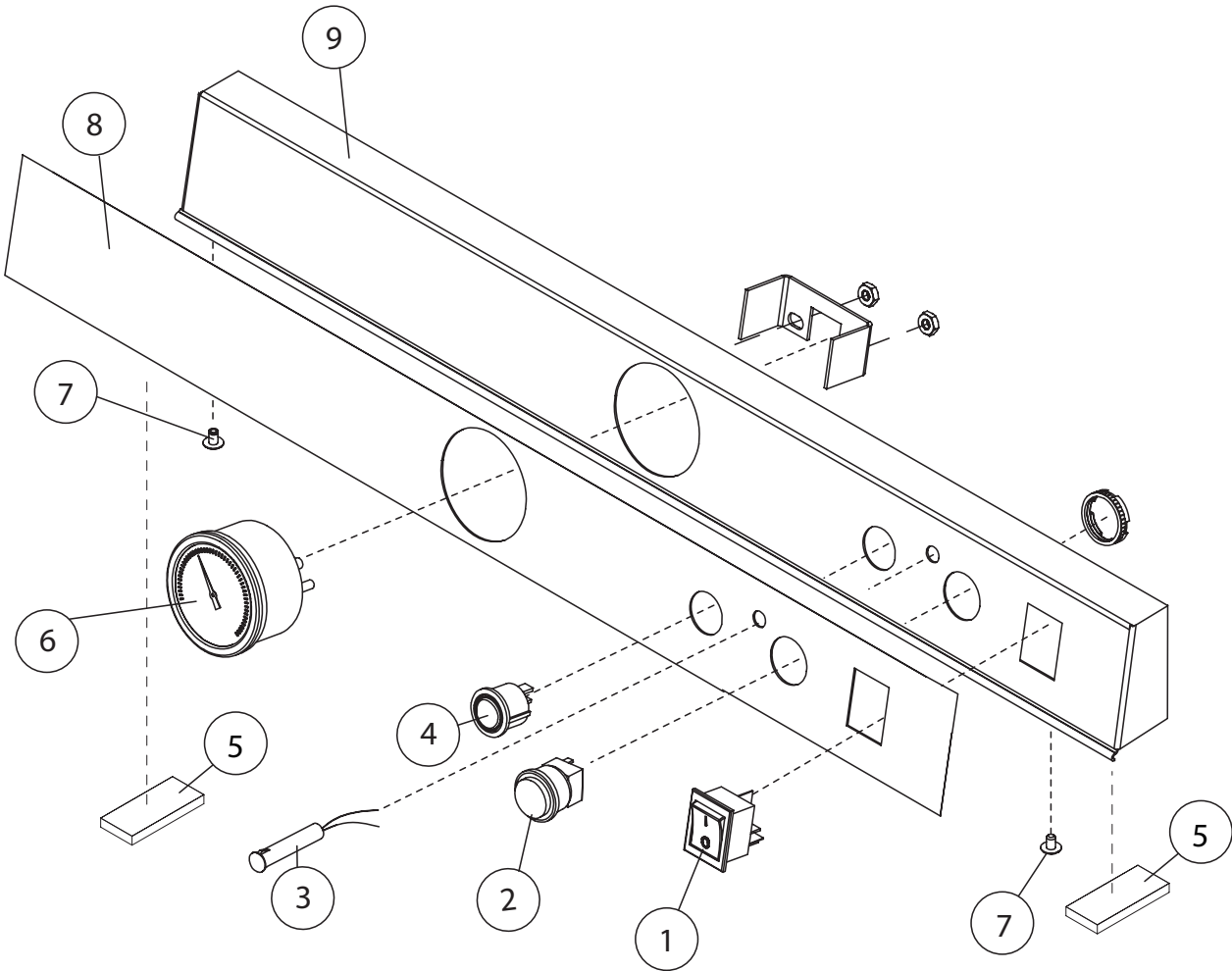
Item No.	Part No.	Description	Qty.
1	0503756	MOTOR, INJECTOR PUMP	1
2	0706635	TUBE, ELEMENT ASSEMBLY 45CC	1
3	0707142	ROTOR, ASSEMBLY	1
4	0501519	TIE, NYLON 4"	4
5	0503694	LABEL, SANITIZER	1
6	0306363	TUBE, 3/8" ID X 12" LG. STIFFENER	1
7	0501869	STRAINER	1
8	0504822	SCREW, 8-32 X 1/2" PAN HD PH S.S	2
9	0506589	SCREW, PAN 6-32 X 7/8" SS PHILLIP	2
10	0502666	HOSE, 1/8" ID X 1/4" OD PVC	A/R
11	112759	TUBE, PUMP 1/8" ID X 1/2" LG.	1



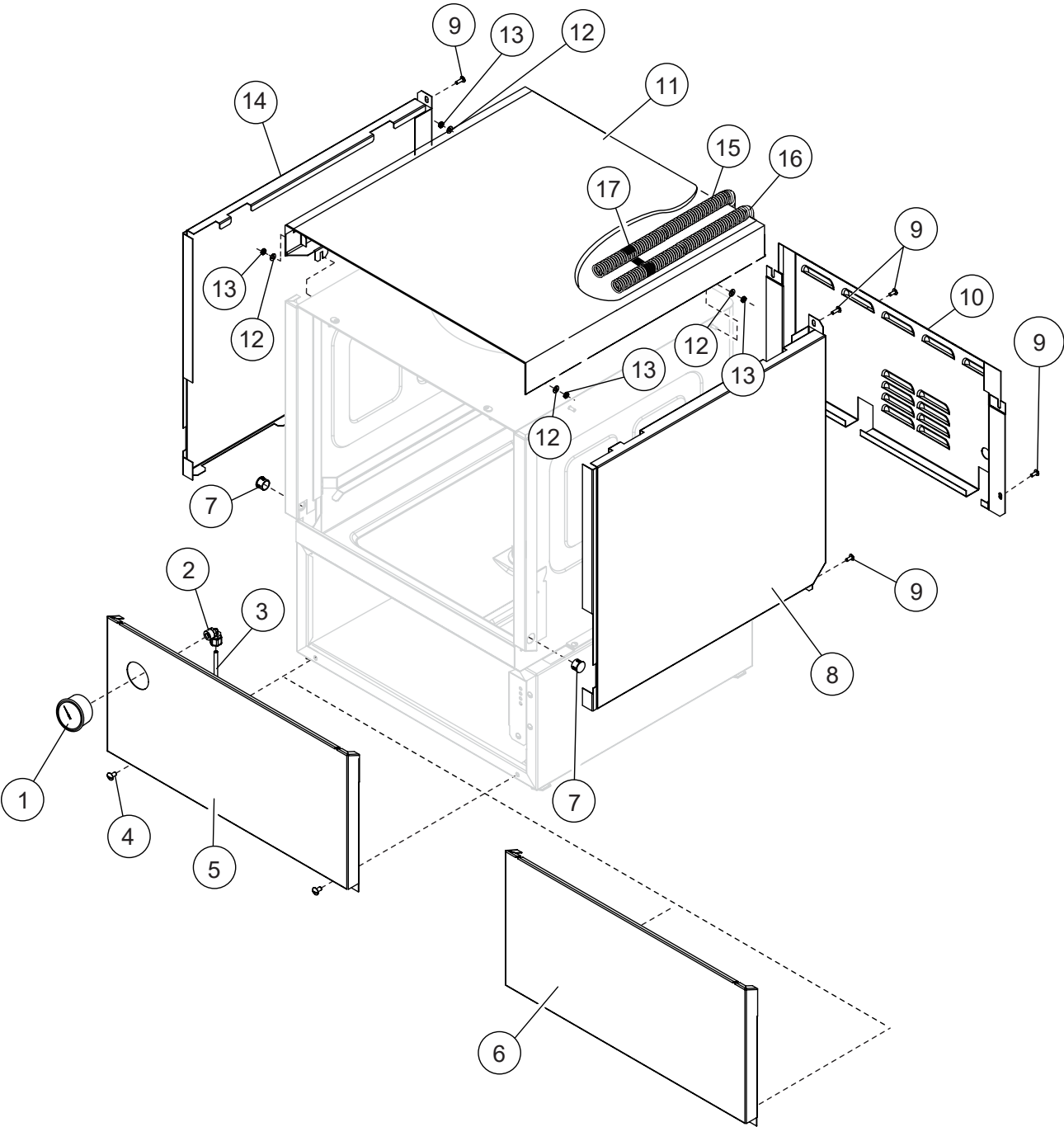
Item No.	Part No.	Description	Qty.
1	0512221	SWITCH, ROCKER DPST 250V NEON	1
2	0512213	SWITCH, PIEZIO	2
3	0512232	LIGHT, INDICATOR, GREEN	2
4	0512226	SWITCH, ROCKER RND SPDT MOMENTARY	1
5	0501408	SCREW, TRUSS SLOT SS 8-32 X 1/4"	2
6	0512448	LABEL, FACIA	1
7	0312438	PANEL, FACIA	1
8	0512357	STANDOFF, LED DISPLAY BOARD	2
9	0503580	NUT, 10-32	2
10	0501563	SCREW, #8 X 3/8"	4
11	0512106-1	TEMPERATURE INDICATOR BD., DIGITAL	1
12	0512320	GASKET, STEAM	2
—	0512362	HARNESS, DIGITAL DISPLAY WIRING <i>(Not Shown)</i>	1
—	0513536	HARNESS, COMPLETE MACHINE <i>(Not Shown)</i>	1



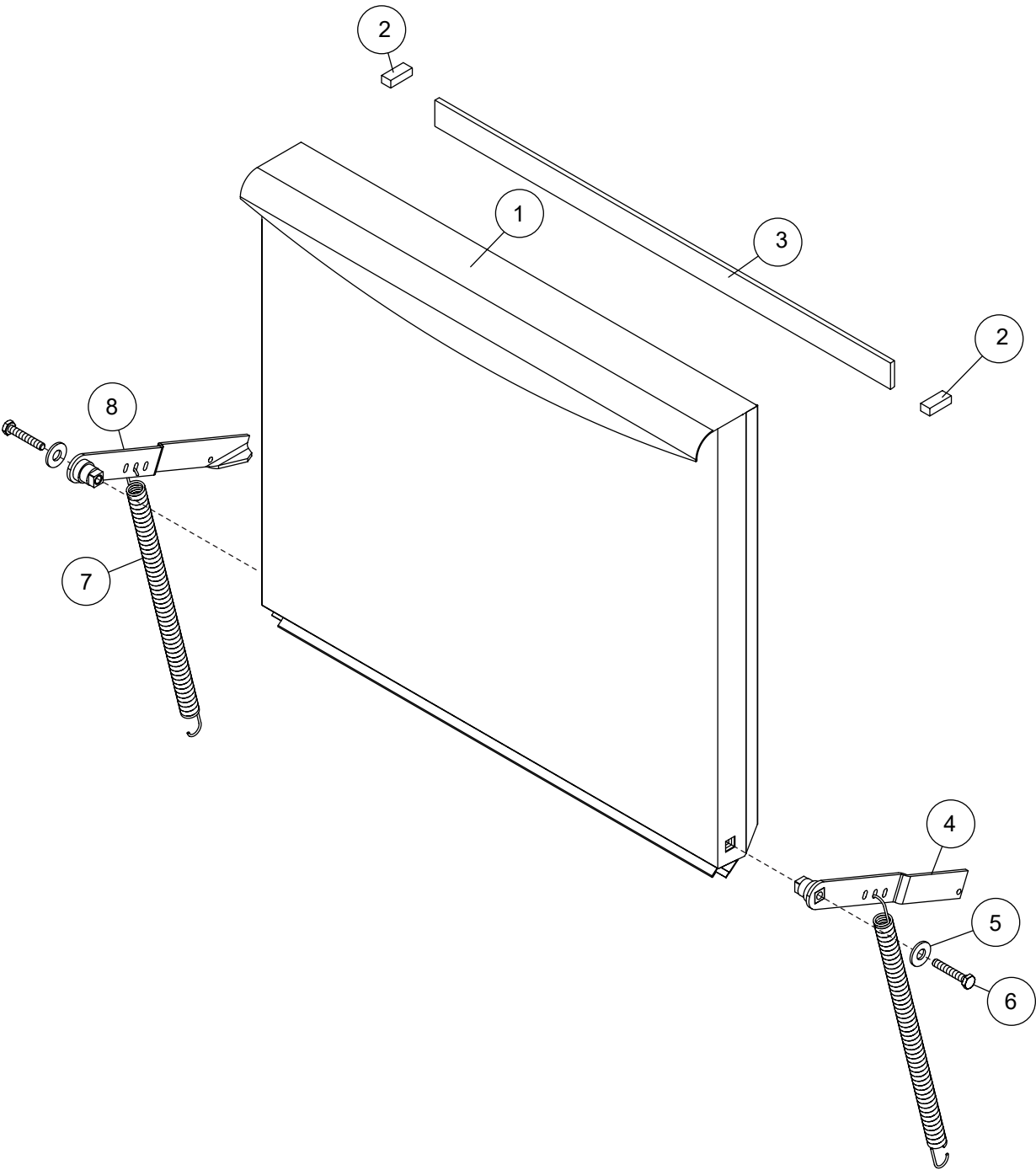
Item No.	Part No.	Description	Qty.
1	0512221	SWITCH, ROCKER DPST 250V NEON	1
2	0512213	SWITCH, PIEZIO	2
3	0512232	LIGHT, INDICATOR, GREEN	2
4	0512226	SWITCH, ROCKER RND SPDT MOMENTARY	1
5	0501408	SCREW, TRUSS SLOT SS 8-32 X 1/4"	2
6	0513540	LABEL, FACIA	1
7	0312438	PANEL, FACIA	1
8	0512357	STANDOFF, LED DISPLAY BOARD	2
9	0503580	NUT, 10-32	2
10	0501563	SCREW, #8 X 3/8"	4
11	0512106-1	TEMPERATURE INDICATOR BD., DIGITAL	1
12	0512320	GASKET, STEAM	2
—	0512362	HARNESS, DIGITAL DISPLAY WIRING <i>(Not Shown)</i>	1
—	0513537	HARNESS, COMPLETE MACHINE <i>(Not Shown)</i>	1



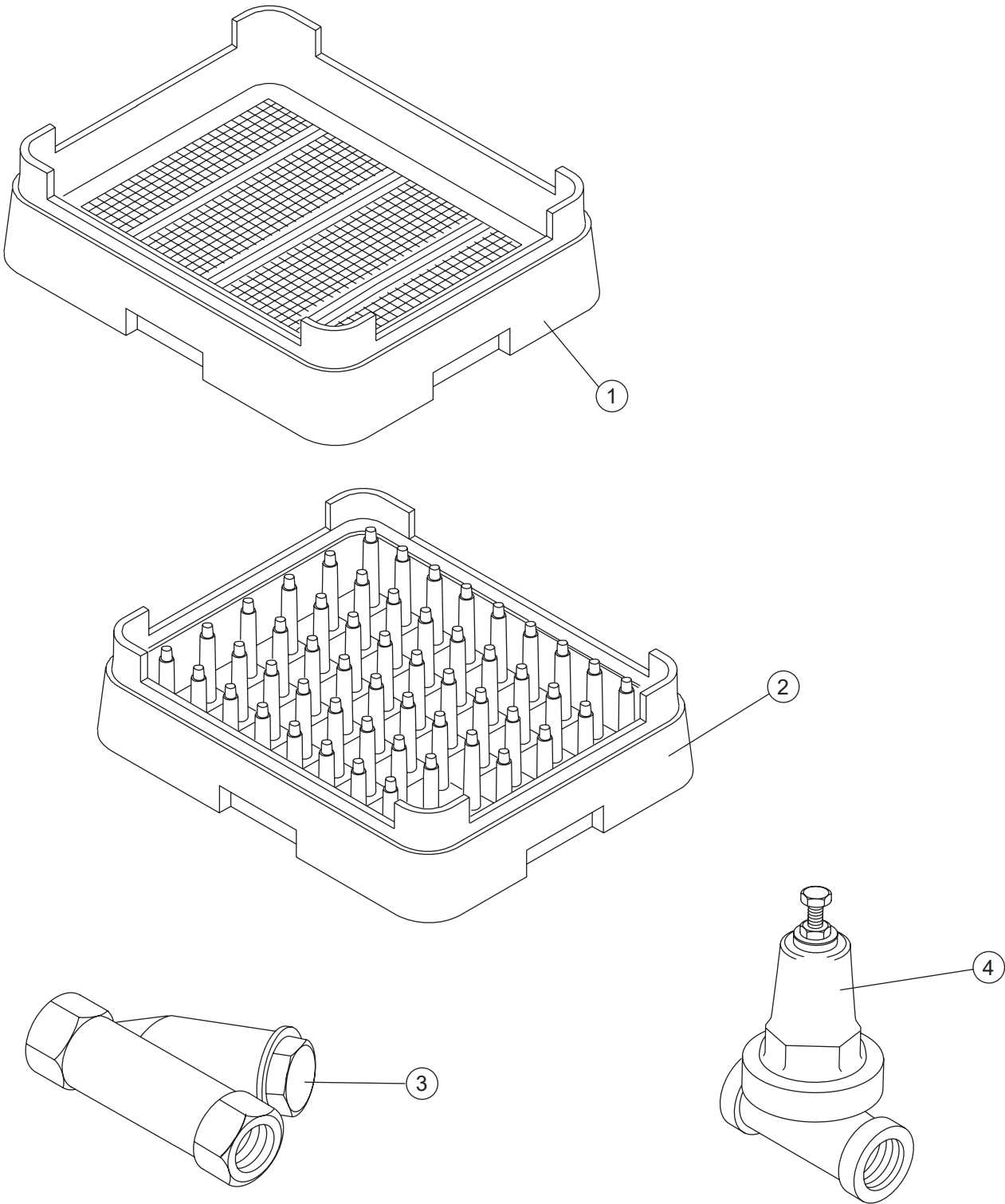
Item No.	Part No.	Description	Qty.
1	0512220	SWITCH, ROCKER DPST 250V NEON	1
2	0512214	SWITCH, PUSH-BUTTON, GREEN	1
3	0512232	LIGHT, INDICATOR, GREEN	2
4	0512226	SWITCH, ROCKER RND SPDT MOMENTARY	1
5	0512320	GASKET, STEAM	2
6	0512107	THERMOMETER, 2" DIAL, 7" CAPILLARY	1
7	0501408	SCREW, TRUSS SLOT SS 8-32 X 1/4"	2
8	0512453	LABEL, FACIA	1
9	0312440	PANEL, FACIA	1



Item No.	Part No.	Description	Qty.
1	109812	GAUGE, PRESSURE 0-60PSI	1
2	111100	FITT COMP 1/4" OD X 1/8" MPT ELL J	1
3	107928	TUBING, 1/4" NATURAL	AR
4	100779	SCREW 1/4-20 X 5/8" TRUSS SS PHIL	6
5	0312192	PANEL, FRONT WITH GAUGE HOLE	1
6	0312330	PANEL, FRONT WITHOUT GAUGE HOLE	1
7	108826	PLUG, HOLE 3/4"	2
8	0312174	PANEL, RH SIDE	1
9	100007	SCREW TRUSS SLOT SS 10-32 X 3/8"	6
10	0312191	PANEL, BACK	1
11	0312437	HOOD, SQUARE	1
12	0501478	WASHER, 17/64" ID X 9/16" OD SS	4
13	100003	NUT, HEX SS 1/4-20	4
14	0312175	PANEL, LH SIDE	1
15	0512757	CONDUIT, 1/2"	AR
16	0512758	CONDUIT, 3/8"	AR
17	0512369	CLAMP, CONDUIT	3



Item No.	Part No.	Description	Qty.
1	0713136	DOOR ASSEMBLY	1
2	0512320	GASKET, STEAM	2
3	0512319	GASKET, DOOR (TOP)	1
4	0712162-1	HINGE, RH ASSY	1
5	0501476	WASHER, 9/32" X 5/8" OD SS	1
6	0501422	BOLT, HEX SS 1/4-20 X 1-1/2"	1
7	0512122	SPRING, DOOR	2
8	0712162	HINGE, LH ASSY	1

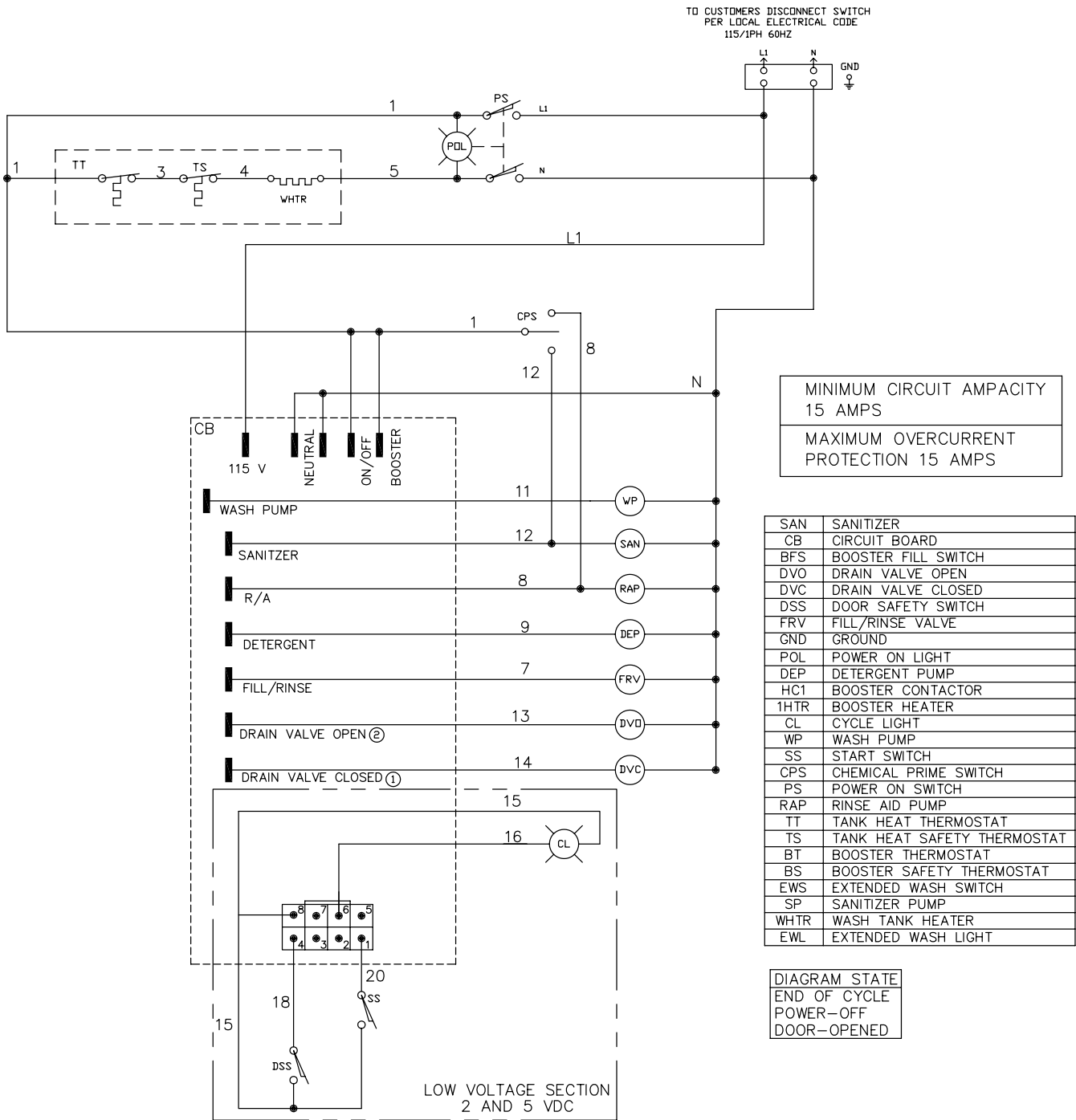


Item No.	Part No.	Description	Qty.
1	101273	DISH RACK, FLAT-BOTTOM	AR
2	101285	DISH RACK, PEG	AR
3	104421	STRAINER, LINE 1/2" BRONZE (UH230, UH230B)	1
4	108265	VALVE, PRESSURE REGULATING (PRV) (UH230, UH230B)	1

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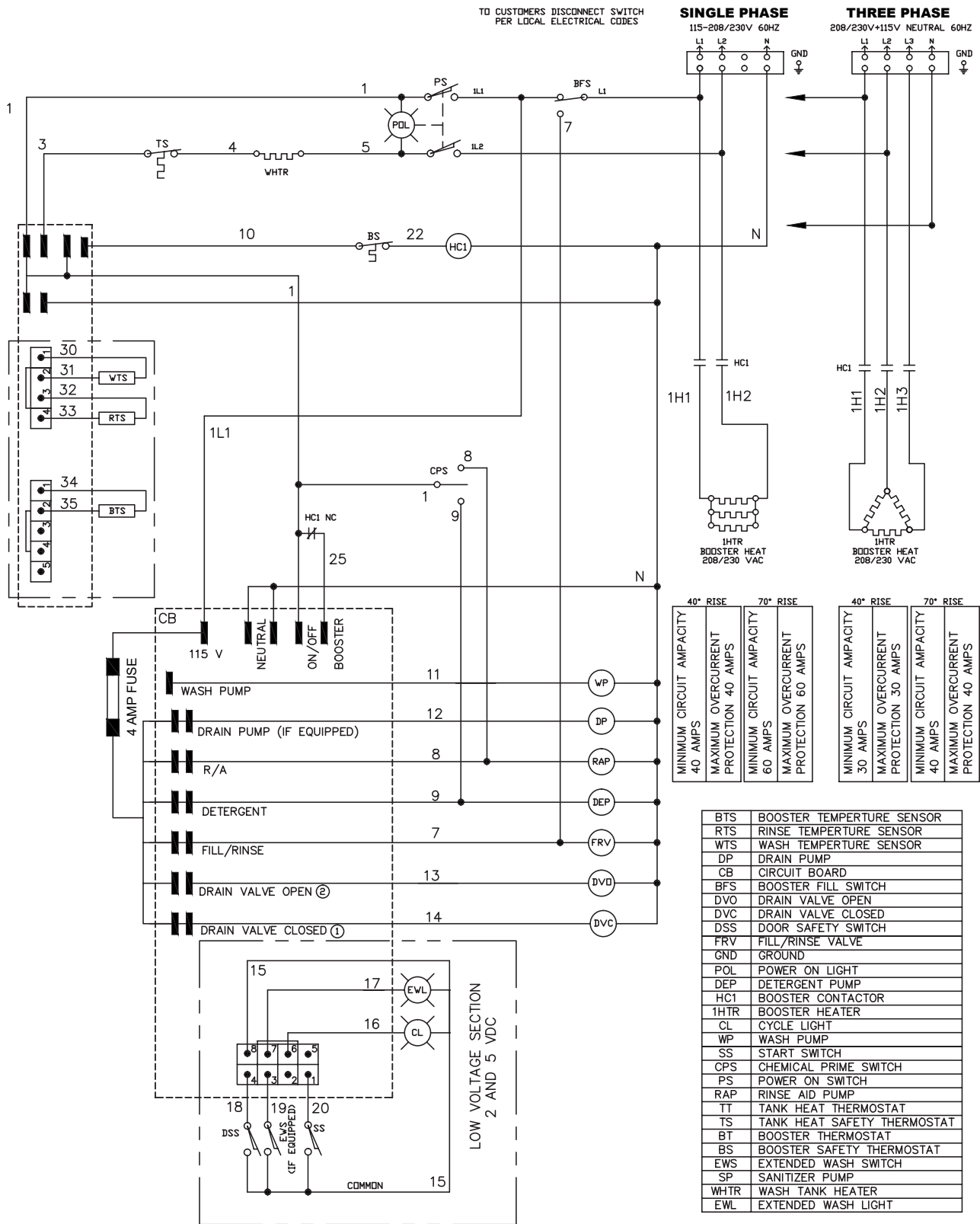
Electrical Schematics and Timing Charts

<i>Illustrations</i>	<i>Page</i>
Low Temperature Model - UL130	92
High Temperature Models - UH130, UH130B, UH230B, UH230B	93
Timing Charts	94



UL130 - Low Temperature Undercounter

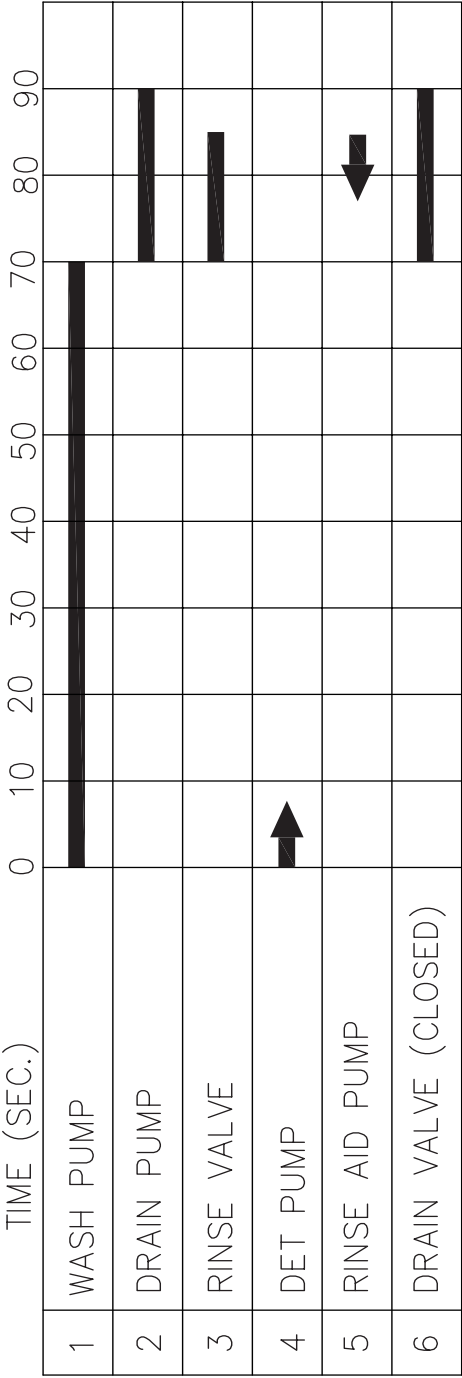
DATE	NUMBER/REV
20-JUN-06	0512089 REV 2



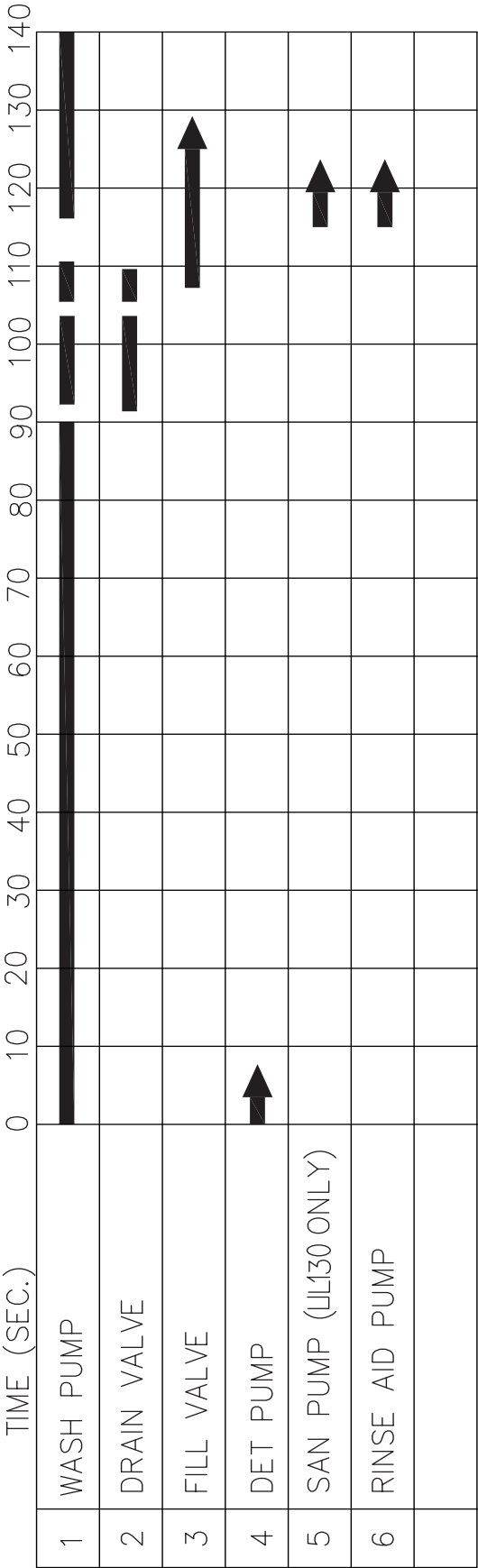
UH130, UH130B, UH230, UH230B - Digital Display
High Temperature Undercounter

DIAGRAM STATE
END OF CYCLE
POWER-OFF
DOOR-OPEN

DATE	NUMBER/REV
28-FEB-12	0513370



Timing Chart for UH230, UH230B



Timing Chart for UH130, UH130B, UL130

Basic Service

<i>Illustrations</i>	<i>Page</i>
Booster/Wash Tank Heater Interlock Circuit Operation - UH130B, UH230B.....	96
Digital Temperature Display Board - UH130, UH130B, UH230, UH230B.....	97
Digital Temperature Display Codes - UH130, UH130B, UH230, UH230B	101
Timer Board Connection Diagram - All Models	104
Timer Board Troubleshooting Guide - All Models.....	105
Timer Board Diagnostic Testing - All Models.....	106

Booster Heater/Wash Tank Heater Interlock Circuit Operation

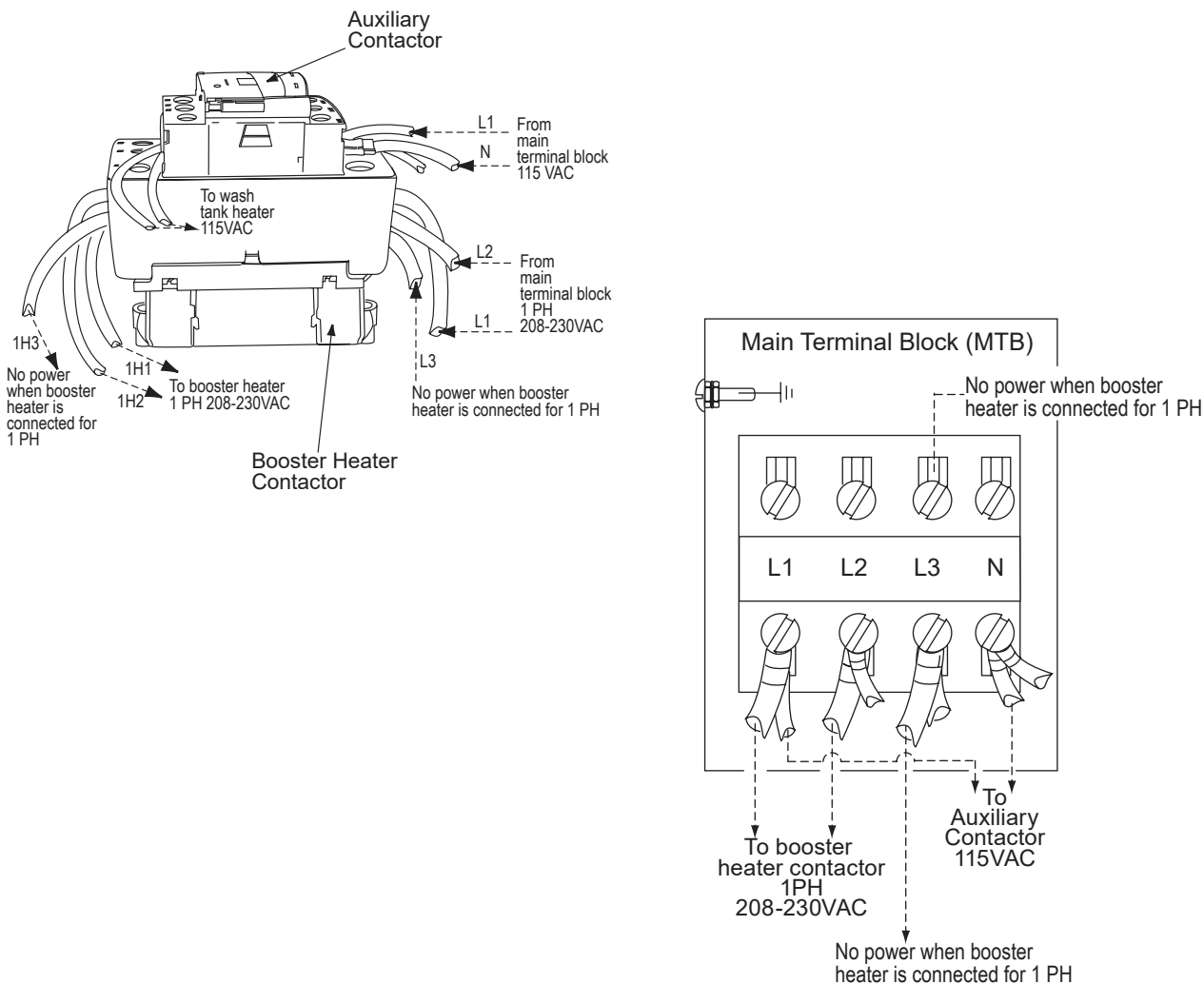
For Models UH130B, UH230B The booster heater/wash tank heater interlock circuit removes power from the wash tank heater whenever the booster heater contactor energizes.

The illustration below shows how the booster heater contactor is wired.

The booster heater contactor is located behind the lower front access panel.

Interlock Circuit Operation

1. The dishwasher fills with water when the main power switch on the dishwasher is turned on. The booster heater thermistor calls for heat which energizes the booster heater contactor.
2. The auxiliary contact on the top of the contactor opens and removes power from the wash tank heater.
3. When the booster heater thermistor is satisfied, the booster heater contactor de-energizes and the auxiliary contacts close applying power to the wash tank heater.
4. This operation is repeated whenever the booster thermistor calls for heat.



Undercounter Temperature Display Board Updates — P/N 0512106

Old Version of Temperature Display Board



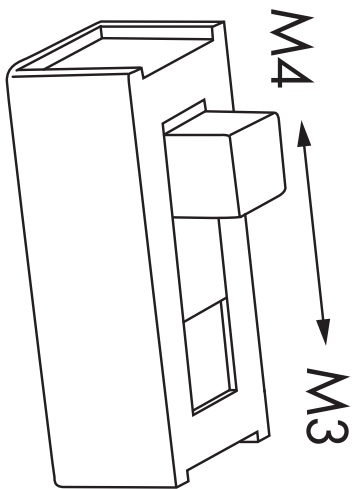
Mounting holes are in the same locations for installation

New Version of Temperature Display Board



1. The new version for the undercounter display board is larger than the display board used on previous models.
2. The new version board mounting holes are in the same location as the old board and will mount in the machine as before.

Undercounter Temperature Display Board – P/N 0512106
M3 - M4 Model Selector Slide Switch



! ATTENTION – VERY IMPORTANT !

Before installing a new version display board, you must select the model type using the M3 - M4 Switch located at the bottom center of the circuit board.

M3 Setting

Slide the selector switch to the M3 position for machines equipped with thermostats.

M4 Setting

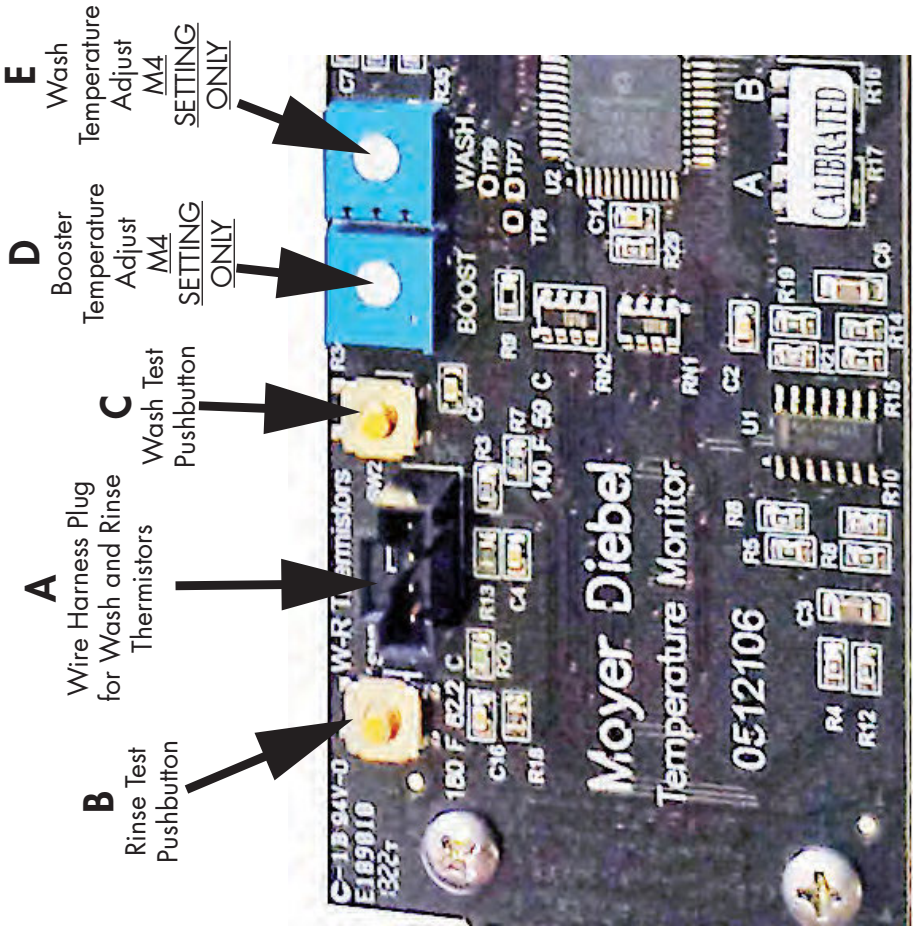
Slide the selector switch to the M4 position for machines equipped with thermistors only.

NOTE:

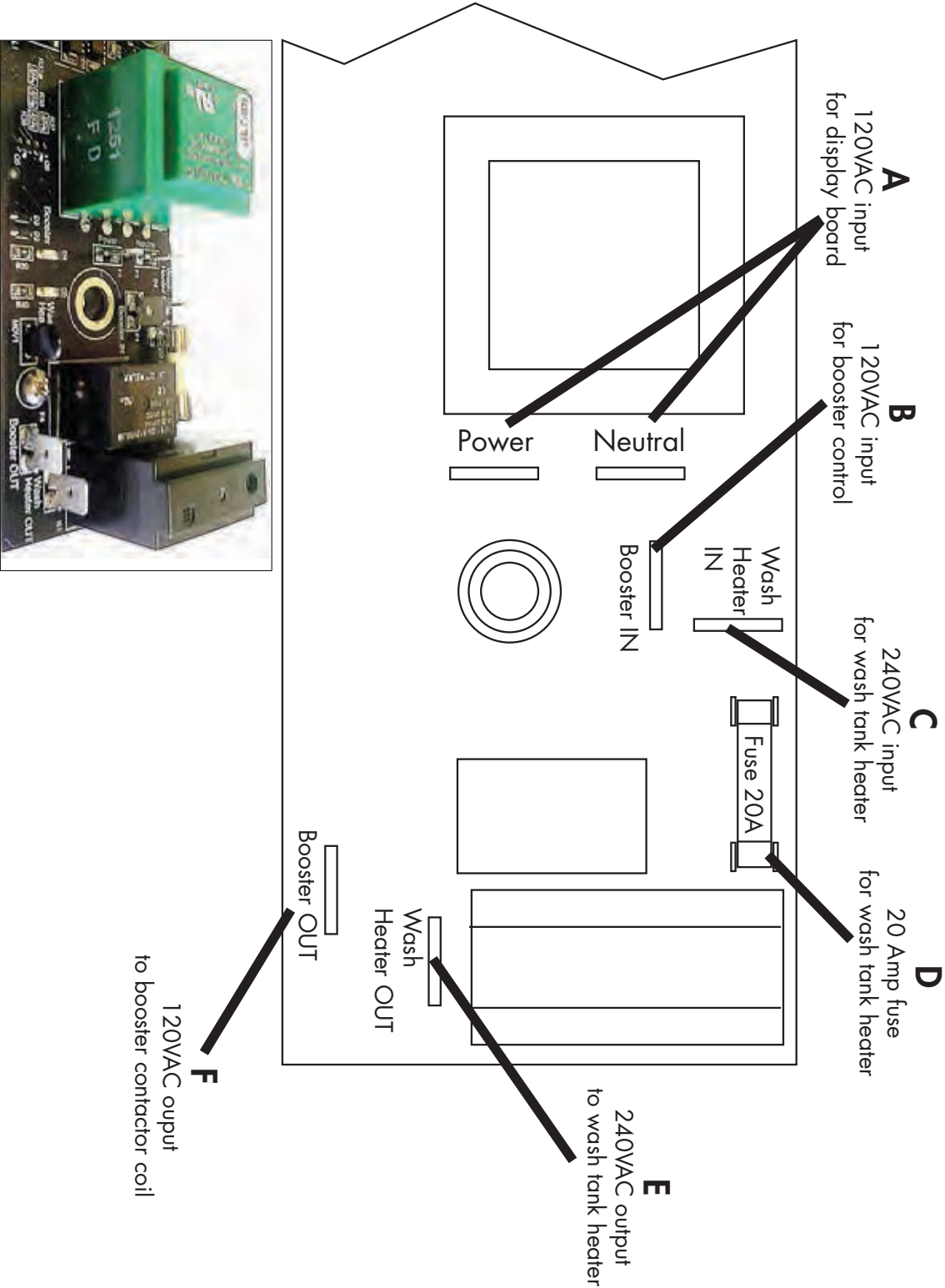
The machine will not operate properly if the selector switch is set to the wrong position.

Diagnostics	
A -	When testing the circuit board operation, disconnect the harness from this plug. The wash and rinse displays will display E.
B -	Push and hold the rinse test pushbutton. A numerical value of 179-180 should appear in the rinse temperature display window indicating the circuit board is operating normally.
C -	Push and hold the wash test pushbutton for 10 seconds. A numerical value of 140 should appear in the wash temperature display window indicating the circuit board is operating normally.
Temperature Adjustments	
When performing diagnostics the values are displayed in °F even if the display is set for °C.	
A F/C Slide switch is provided on the board to change the display from the factory default setting of °F to the optional °C.	
D -	Turn clockwise to increase the booster temperature. Full range is 3/4 turns 180-200°F. DO NOT FORCE PAST THE STOPS.
E -	Turn clockwise to increase the wash temperature. Full range is 3/4 turns 120-160°F. DO NOT FORCE PAST THE STOPS.

Undercounter Temperature Display Board
P/N 0512106



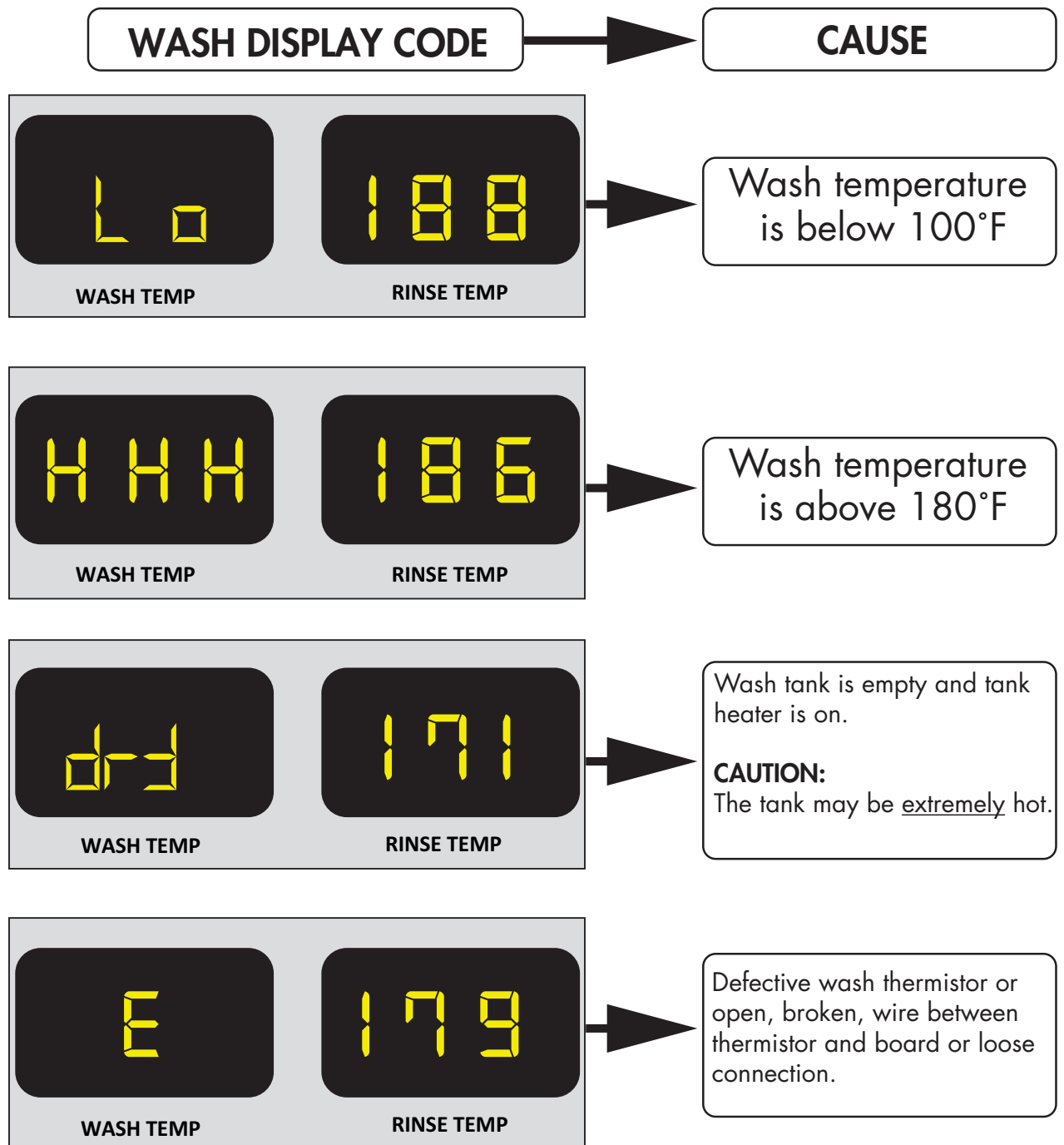
Undercounter Temperature Display Board — P/N 0512106
Power Terminals.



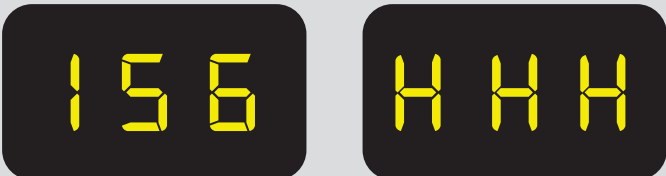
Digital Temperature Display Codes

Display codes that appear in the display windows indicate the operating condition of the machine. Refer to the illustrations below for the meaning of the codes.

Wash Display Codes

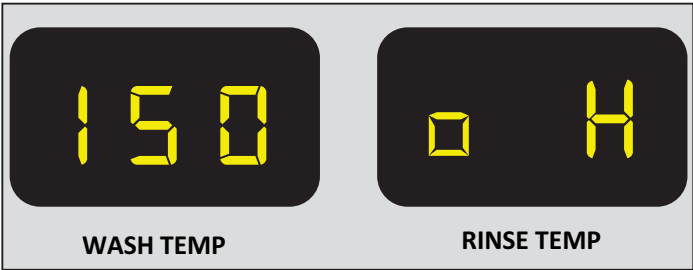
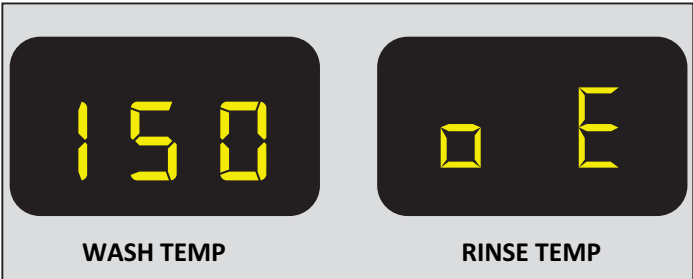
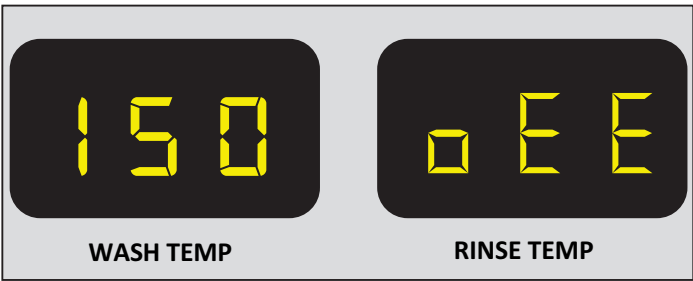


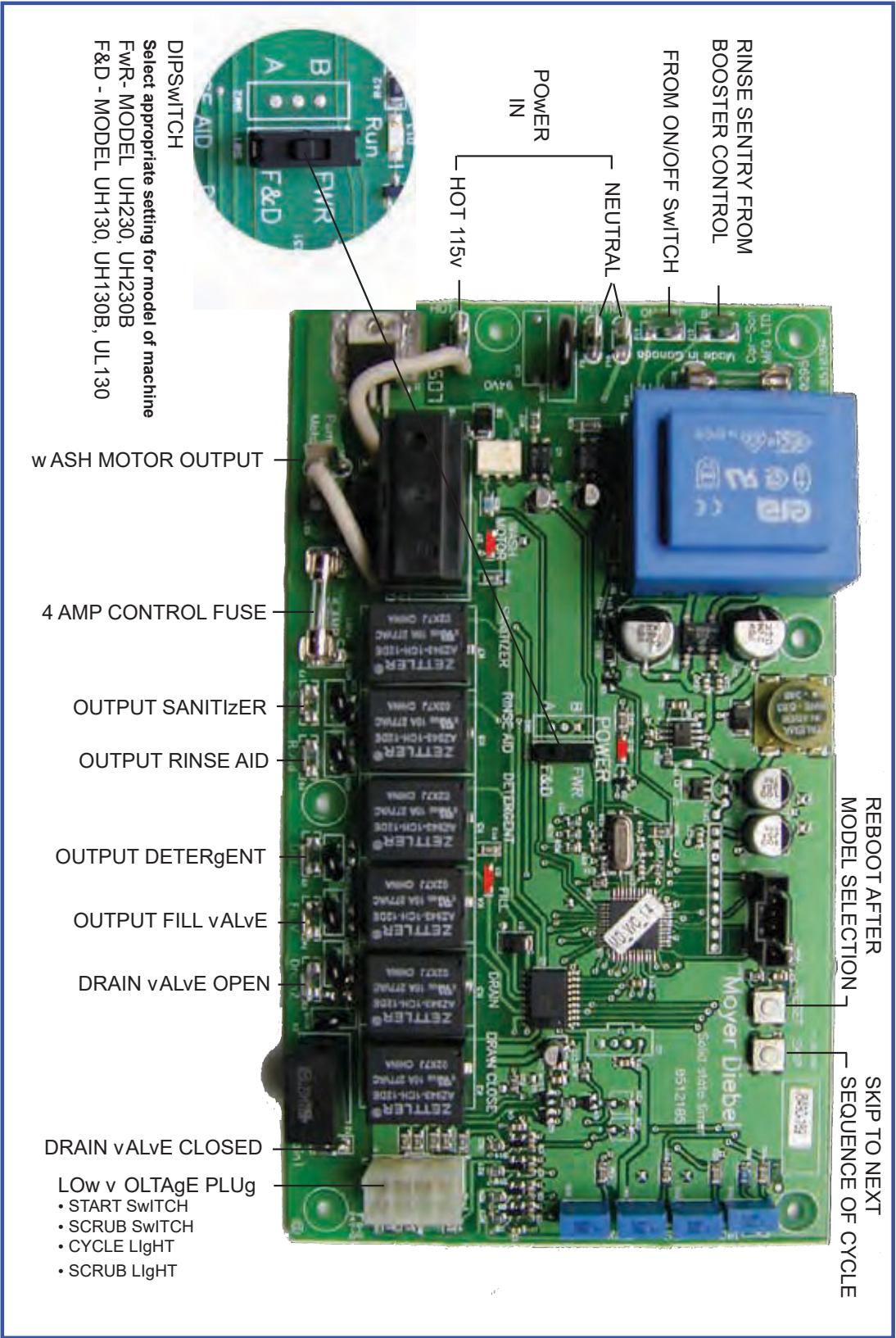
Rinse Display Codes

RINSE DISPLAY CODE	CAUSE
 WASH TEMP RINSE TEMP	Rinse temperature is below 100°F
 WASH TEMP RINSE TEMP	Rinse temperature is above 200°F
 WASH TEMP RINSE TEMP	Booster tank is empty & booster heater is on. CAUTION: Temperature in the booster may be <u>extremely</u> hot
 WASH TEMP RINSE TEMP	Defective rinse thermistor or open, broken, wire between thermistor and board or loose connection.

Booster Display Codes

Error Codes for Booster and Final Rinse Thermistors Only.

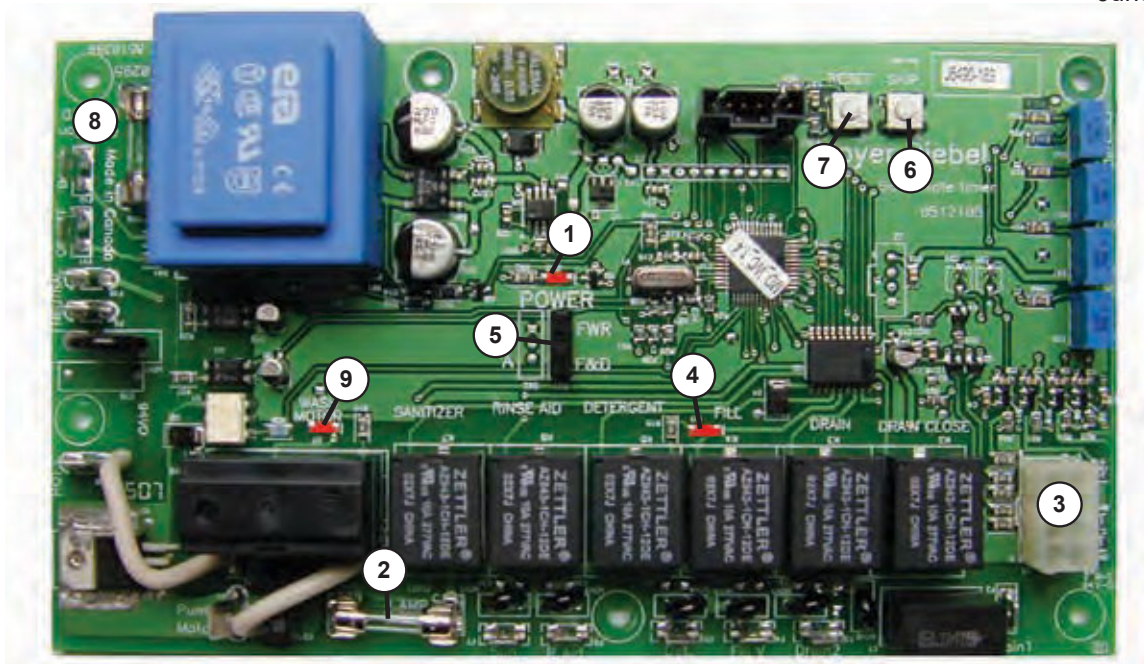
DISPLAY CODES	CAUSE
 WASH TEMP RINSE TEMP	Booster overtemp lockout because booster temperature is greater than 210°F. NOTE: Booster is locked out for 10 minutes before being re-energized.
 WASH TEMP RINSE TEMP	Booster thermistor is defective or disconnected, broken wires. NOTE: After the thermistor is reconnected, there is a 5 second delay before the display is re-energized.
 WASH TEMP RINSE TEMP	Both booster and final rinse display thermistors are defective, unplugged, or open or broken wires between the display and thermistor. NOTE: After a thermistor is reconnected, there is a 5 second delay before the display is re-energized.

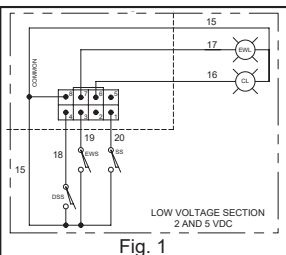


Troubleshooting Guide

Troubleshooting Timer Board P/N 0712105

June 2010



Test/Condition	Indication/Cause	Recommendation/Solution
1. Run LED is lit Machine is powered up and Run LED is not lit Machine is powered up and Run LED is not lit after unplugging the low voltage plug	Board has power Possible bad start switch, scrub switch or wiring short (does not apply to S.S. Pizio switch on models (UH130, UH130B, UH230, UH230B))	Unplug low voltage plug. If Run LED lights up: The start switch or scrub switch failed in the closed position, or there is a wiring short Check voltage
2. Wash pump runs but nothing else works	4 amp board output fuse is blown	Replace the 4 amp fuse. Check for wiring problem
3. Check continuity of the start switch	 Fig. 1	Use plug pin #8, wire #15 as common to plug pin # 1, wire #20 (see Fig.1)
Check continuity of the scrub switch		Use plug pin #8, wire #15 as common to plug pin # 3, wire #19 (see Fig.1)
Check continuity of the cycle light		Use a meter with diode setting - to cycle light, plug pin # 6, wire #16 and common pin # 8, wire # 15
Check continuity of the scrub light		Use a meter with diode setting - to scrub light, plug pin # 7, wire #17 and common pin # 8, wire # 15
Check continuity of door safety switch		Use a meter with diode setting - to door safety switch, plug pin # 4, wire #18 and common pin # 8, wire # 15
4. Fill LED is lit	Indicates output voltage to fill valve	
5. Select the appropriate setting on the dipswitch for the model of machine the solid state timer will be installed in	<i>Note: This solid state timer board is used for several different models</i>	Set dipswitch to FWR for models UH230, UH230B Set dipswitch to F&D for models UH130, UH130B, UL130
6. Use the skip switch to force the timer to the next segment of the cycle		Eg: Pressing the skip switch immediately after starting the cycle will make the machine skip the wash cycle, and go straight into the drain cycle
7. Use the reset button to reset the solid state timer board	The reset button will reboot the solid state timer board (much like rebooting your computer)	
8. 0.063 amp internal board supply fuse is blown		Replace the solid state timer board
9. Wash motor LED is lit	Indicates output voltage to the wash motor during wash/rinse cycle only. LED is not lit during soft start	
Wash motor LED is not lit, but wash motor runs continuously		Replace the board

Diagnostic Testing for p/n 0712105 Solid State Timer Board

- effective serial # W081217467 and up

1 Before testing, turn the power switch OFF and allow the machine to complete the drain cycle.

Check incoming voltages

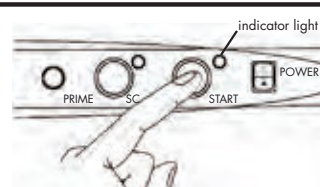
2 Open the door

If the green cycle indicator light blinks, the DOOR SWITCH and CYCLE LIGHT work
Note: This function times out after 10 seconds

Close the door

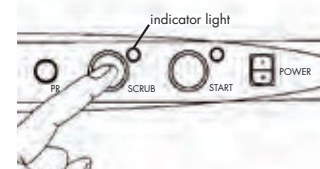
3 Press and release the START SWITCH

If the green cycle indicator light flashes the start switch works



4 Press and release the SCRUB/EXT WASH switch if equipped

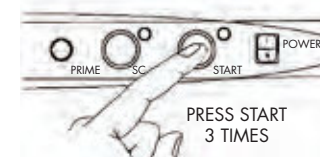
If the green indicator light for the scrub switch flashes, the scrub/ext wash switch works



5 To test the timer board and the following components, press and release the start switch 3 times with the door closed

If the components listed below are operating properly, they should run consecutively for a few seconds each

- fill valve
- detergent pump
- rinse-aid pump
- drain valve opens
- drain valve closes
- wash pump
- drain pump or sanitizer pump (if applicable)



If one or more components do not run, see below

CONDITION

POSSIBLE CAUSE/SOLUTION

One of the components in step 5 does not run

Check the component that did not run

The wash pump is the only component that runs

Check the 4 amp fuse on the timer board

The wash pump is the only component that will not run and the 4 amp fuse is good

Check pump motor/See troubleshooting guide

None of the components run in step 5

Check neutral wire/See troubleshooting guide

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