



Installation/Operation Manual with Service Replacement Parts



201HT

Undercounter Dishwashers M4 Series

201HT
High Temperature Wash
Refresh with built-in booster
and Pumped Final Rinse



201LT

201LT
Low Temperature Chemical
Sanitization Wash Refresh
with Pumped Final Rinse



Issue Date: 8.17.20

Manual P/N 115743 rev. E

For machines beginning with S/N W150350341 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

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.

PRODUCT REGISTRATION ONLINE

Connect to the internet and enter the URL below to register your machine.

IN CANADA:

<https://www.moyerdiebel.com/warranty-registration>



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)

Telephone #: () _____ --- _____
State or Province Zip or Postal Code

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.

Revision Date	Revised Pages	Serial Number Effectivity	Revision Description
7.9.15	—	W150350341	Released First 201HT Edition
		W150350281	Released First 201LT Edition
9.30.15	All	All	Adjusted format
5.18.18	94,95	ALL	Revised upper washarm hub
8.17.20	98-99	W200396317	Updated facia panel. New P/N 0313416
			Updated facia label. New P/N 0513515
	ii	All	Updated Limited Warranty
3.20.24	II	ALL	Updated warranty
	102-103	ALL	Removed gasket.

Terms & Conditions of Sale

1. **TERMS.** Moyer Diebel Limited is referred to herein as "Seller." The purchaser of the property subject hereto ("Property") is referred to as "Buyer." No terms or conditions other than those stated herein shall be applicable to the state of the Property unless incorporated as part of the order or quotation constituting a part of the Purchase Agreement described below. The Laws of the Province of Ontario will govern this Agreement and all transactions hereunder as to interpretation, enforcement, validity, construction, effect and in all other respects.
2. **PURCHASE AGREEMENT.** Any order for or offer to purchase the Property shall not be binding on the Seller unless it is accepted in writing by the Seller's acknowledgment reflecting such acceptance. When so accepted it shall be binding in accordance with the Terms and Conditions of Sale. No modifications shall be permitted unless agreed to in writing by the parties. Unless otherwise specifically agreed in writing, any delivery or shipping date shown, or mentioned by the Seller, is furnished only for the convenience of the Buyer, is estimated, and is not a date by which the Seller has agreed to ship or deliver the Property. Change orders for the Property will not be permitted without the Seller's consent. The Seller may impose a charge in connection with any change order that the Seller accepts. Each shipment or delivery is subject to Seller's approval of Buyer's creditworthiness including, without limitation, determination that Buyer is not in default on any obligation to Seller.
3. **PRICES.** Unless otherwise agreed: (i) all prices will be F.O.B. Destination, (ii) and all sales are subject to the terms and pricing of the applicable policy in effect on the date that the order for the Property is shipped. All invoices not paid within 30 days of the date of their issue shall be subject to a delinquency charge of 18% per annum, state equivalent sales per annum (.0041095% per day), or such lesser amount as may be the maximum rate permitted by law. Buyer agrees to pay all costs of collection including such reasonable attorneys' fees as may be allowed by law.
4. **DELIVERY.** If a delivery is F.O.B., shipment of the Property will be in accordance with Buyer's instructions. In the absence of shipping instructions on F.O.B. deliveries, Seller may ship by such method or carrier as Seller may deem reasonable. The risk of loss for Property shall pass to the Buyer upon delivery of the Property to the Buyer or a public carrier. The Seller shall not be liable for failure or delay in the delivery of the Property as a result in whole or in part, of fire, flood, tornado, hurricane or other acts of God; because of any casualty, accident, embargo, strike, lockout, work stoppage, war or government regulation; or for any other reason beyond the Seller's reasonable control including, but not limited to, late delivery, or non-delivery, of any part or component of the Property that is the subject thereof.
5. **DISCLAIMER OF WARRANTIES AND LIMITATIONS OF DAMAGES.** THE PROPERTY IS WARRANTED ONLY TO THE EXTENT REFLECTED IN THE SEPARATE MANUFACTURER'S LIMITED WARRANTY APPLICABLE THERETO, THE SELLER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, OR FITNESS OF PURPOSE. THE SELLER SHALL NOT BE LIABLE TO BUYER FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. In case of a breach by the Seller, the Buyer's exclusive remedy shall be, at the Seller's option, repair or replacement, or the return of the Property to the Seller and refund to the Buyer of the purchase price. In no event shall the Seller's liability exceed the contract price of the Property.
6. **ORDER CANCELLATION AND RETURN.** Buyer acknowledges that the Seller will have incurred costs in connection with the sale of the Property; that the Property is produced by the Seller as required pursuant to confirmed orders, that Buyer's failure to accept delivery of Property as to which Seller has given its acceptance will result in damage to the Seller which may be difficult to ascertain; and that liquidation damages as follows are reasonable and will be paid by Buyer if Property is not purchased:
 - a. As to standard machines, the Buyer will pay the Seller, as liquidated damages, 25% of the agreed price of the Property.
 - b. As to all other machines, the Buyer will pay the Seller, as liquidated damages, the following percentages of the agreed price of the Property:
 - i. 25% of the agreed price upon cancellation before production of the machine begins,
 - ii. 35% of the agreed price after production of the machine begins, and before the machine is substantially completed, and
 - iii. 50% of the agreed price after substantial completion of the machine.
 - iv. 100% of the agreed price for all custom made equipment.
7. **DISPUTE RESOLUTION.** Any unresolved dispute arising in connection herein shall be resolved by arbitration in Toronto, Ontario, under the rules of the Arbitration Act, (Ontario).
8. **GENERAL PROVISIONS.** The sale of the Property herein identified shall be governed by the law of Ontario. Failure or delay of the Seller in exercising any right, power or privilege shall not operate as a waiver of any such right, power or privilege. If any portion of these Terms and Conditions of Sale shall be held to be invalid or unenforceable, all other provisions shall nevertheless remain valid and enforceable in accordance with their terms.

NON STANDARD VOLTAGES: Contact Factory for availability and price. NOTE: Options prices apply only when ordered with machine.

Champion Moyer Diebel • 2674 North Service Rd., Jordan Station, Ontario, L0R 1S0 Tel: 905/562-4195 Fax: 905/562-5422 sales@moyerdiebellimited.com

Limited Warranty

Champion Industries, Bi-Line Systems (herein referred to as "The Companies"), 3765 Champion Blvd., Winston-Salem, North Carolina, 27105) warrants machines, and parts, as set out below:

WARRANTY OF MACHINES: "The Companies" warrant all new machines of its manufacture bearing the name Champion or Bi-Line and installed within the United States to be free from defects in material and workmanship for a period of one (1) year from the date of installation or fifteen (15) months from the date of shipment by "The Companies", whichever occurs first. Products shipped outside of United States are not covered by this Limited Warranty. The warranty registration card must be returned to "The Companies" within ten (10) days after installation or online to "The Companies" at www.championindustries.com/warranty-registration for the United States or by fax using the form provided at the front of this manual. If the warranty card, fax or email is not sent to "The Companies" within 15 days, then the warranty will expire after 15 months from the date of shipment. "The Companies" shall not assume any responsibility for additional installation costs 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, "The Companies", at their election, will either repair or replace the defective parts, the machine or accept return of the machine for full credit. In the event that "The Companies" elect to repair, the labor and work to be performed in connection with the warranty shall be done by "The Companies" authorized service agent during regular working hours and shall be covered at normal labor rates. Overtime charges are the responsibility of the equipment purchaser. Warranty travel is covered up to 50 miles from the authorized service technician's servicing office. If travel exceeds 50 miles, then the end user is responsible for any additional travel expense. Service calls initiated under warranty that are found to not contain any defects in materials or workmanship, shall not be covered by "The Companies". Defective parts become the property of "The Companies". Use of non-OEM replacement parts not authorized by "The Companies" shall relieve "The Companies" of all liability in connection with its warranty. In no event will "The Companies' warranty obligation exceed "The Companies" charge for the machine. Machines that come with a factory paid start-up shall be limited to one authorized service call. Installation problems or delays of any kind shall not be covered by "The Companies" and are the sole responsibility of the equipment purchaser.

The following are not covered by "The Companies" warranty:

- a. Element tubes, chemical squeeze tubes, O-rings, or curtains
- b. Vacuum breakers
- c. Adjustments to structural or mechanical components covered by recommended maintenance procedures
- d. Replacement of fuses, resetting overload breakers, or high limit thermostats
- e. Adjustment of thermostats, or temperature controlling devices
- f. Adjustment of clutches
- g. Adjustments of water pressure(s)
- h. Adjustments of chemical pumps
- i. Opening or closing of utility supply valves or switching of electrical supply current
- j. Cleaning of valves, strainers, screens, nozzles, or spray pipes

- k. Performance of regular maintenance and cleaning as outlined in the operator's guide
- l. Damages resulting from water conditions, accidents, alterations, improper use, abuse, tampering, improper installation, low voltage conditions, inadequate wiring, outdoor use, or failure to follow maintenance and operation procedures
- m. Wear on pulper cutter blocks, pulse vanes, and auger brush
- n. Damages due to improper storage
- o. Special installations or applications, including remote locations, are limited in coverage by this warranty. Any installation that requires additional work, and/or travel to gain access to a machine for service is the sole responsibility of the equipment purchaser

Defects not covered by the warranty but not limited to are:

1. Damage to the exterior or interior finish
2. Damage caused by improper connection to utility service other than that designated on the rating plate
3. Inadequate or excessive water pressure
4. Corrosion due to foreign materials, improper water supplies, improper chemicals, or chemicals dispensed in excess of recommended concentrations
5. Failure of electrical components due to connection of chemical dispensing equipment installed by others
6. Leaks and damage due to poor water quality
7. Leaks and damage caused by the installer, including machine table connections
8. Leaks or damage caused by chemical dispensing equipment connections installed by others
9. Failure to comply with all local building codes
10. Damage caused by labor dispute

WARRANTY OF PARTS: "The Companies" warrant all new machine parts produced or authorized by "The Companies" to be free from defect in material and workmanship for a period of 90 days from the date of invoice. If any defect in material and workmanship is found to exist within the warranty period, "The Companies" will refund the cost of the defective part.

DISCLAIMER OF WARRANTIES AND LIMITATIONS OF LIABILITY. "THE COMPANIES" WARRANTY IS ONLY TO THE EXTENT REFLECTED ABOVE. "THE COMPANIES" MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, OR FITNESS OF PURPOSE. "THE COMPANIES" 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 "THE COMPANIES" MACHINES AND PARTS. ALL OTHER REMEDIES ARE EXCLUDED, INCLUDING ANY LIABILITY FOR INCIDENTALS OR CONSEQUENTIAL DAMAGES.

Champion Industries or Bi-Line Systems does not authorize any other person, including persons who deal in Champion Industries or Bi-Line Systems machines, to change this warranty or create any other obligation in connection with Champion Industries or Bi-Line Systems machines.

NON STANDARD VOLTAGES: Contact Factory for availability and price. NOTE: Options prices apply only when ordered with machine.

Champion Industries/Bi-Line Systems 3765 Champion Blvd., Winston-Salem, 27105, North Carolina, USA

Tel: (336)661-1556, Fax: (336) 661-1979, email: sales@championindustries.com

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Receiving - 201HT

NOTE:

The installation of your dishwasher must be performed by qualified service personnel familiar with food service equipment and must comply with all local health codes. Problems due to improper installation are not covered by the Limited Warranty.

NOTE:

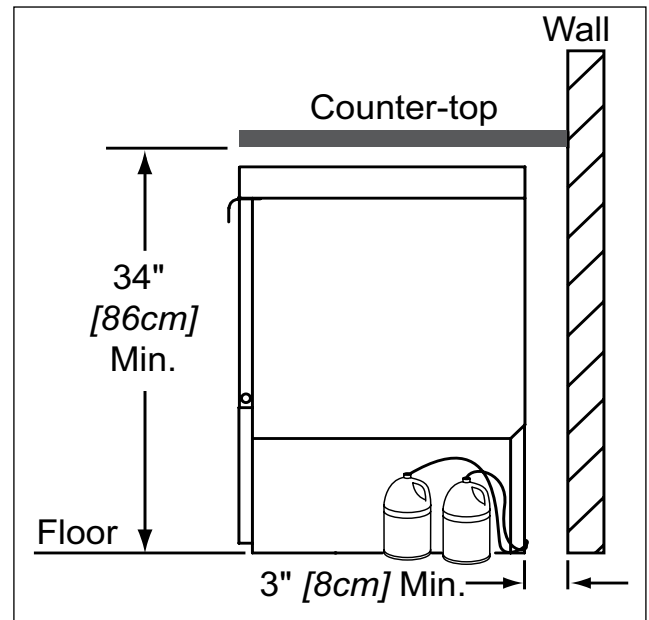
The installation of the dishwasher must comply with all local electrical, plumbing, health and safety codes or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, NFPA 70, Canadian Electrical Code (CEC), Part 1, CSA C22.1; and the Standard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

Placement - 201HT

CAUTION:

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

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. It is highly recommended that the underside of the counter-top be clad in metal.
7. Under counter installations should provide storage space for the dishwasher chemical supply containers. Do not elevate the containers above the finished floor.
8. Chemical supply containers should be placed as close to the machine as possible and the chemical tubing taped to the back of the machine should be repositioned before permanently placing the machine.
9. Place the dishwasher in its permanent location.
10. The dishwasher has 4 adjustable feet for leveling.
11. Level the dishwasher front-to-back and side-to-side.



Water Connections - 201HT

! VERY IMPORTANT !

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

Plumbing connections must allow the machine to be pulled out for service and cleaning.

Plumbing connections must comply with national, provincial local plumbing and sanitary codes. Only qualified service personnel familiar with food service equipment should install the machine.

The installing plumber must thoroughly flush the water supply line to remove all debris BEFORE connecting the water supply line to the machine.

! CAUTION !

Plumbing connections must be made BEFORE the electrical installation is performed.

Damage to the machine's water heaters will occur if the power is turned on to the machine without an adequate water supply.

! ATTENTION !

It is the installing plumber's responsibility to flush the incoming line to remove debris before connecting to the dishwasher. Failure to do so may void the machine warranty.

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 must 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 servicing.

The 201HT without booster has a built-in flow control. The flowing incoming hot water supply pressure must be between 25-95 psi. The hot water supply must provide a minimum of 180°F/82°C, measured at the dishwasher.

The 201HT with booster has a built-in flow control. The flowing incoming hot water supply pressure must be between 25-95 psi. The hot water supply must provide a minimum of 140°F/60°C, measured at the dishwasher for 40°F/22°C rise booster or 110°F/43°C for 70°F/39°C rise booster.

4. A water hardness of 3 grains/gal (US) [5.3 mg/L] or less is recommended. Excessively hard water may need a water softener or other means of water treatment to prevent lime build-up.

Drain Connections - 201HT

! VERY IMPORTANT !

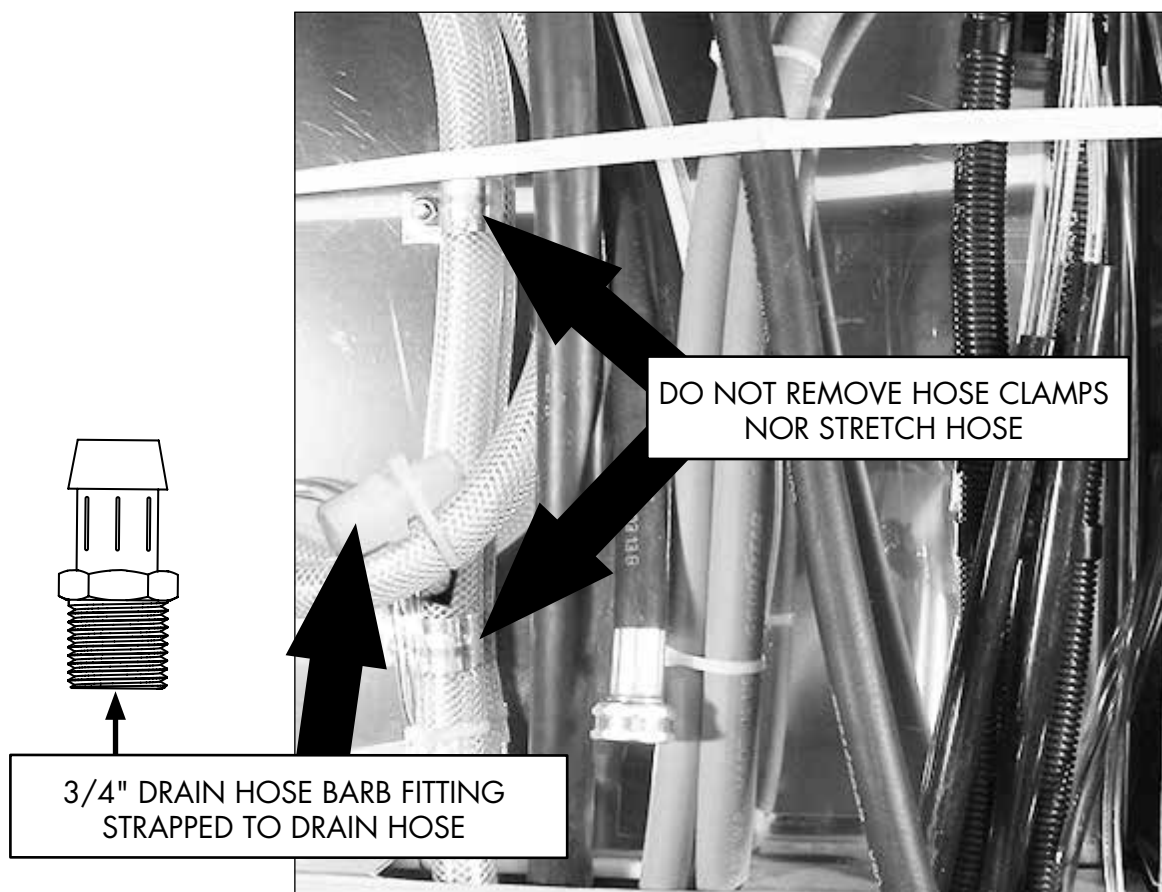
Do not connect the drain hose to a disposer. The dishwasher will not drain correctly.

Refer to the photo below.

1. All models are equipped with a 6 ft., 5/8" I.D. drain hose. The maximum drain height connection must not exceed 3 ft. [1 m] and must be vented to prevent the wash tank from siphoning.
2. The drain hose is located at the rear of the dishwasher, and is secured to the rear of the machine by two clamps to maintain an anti-siphoning loop in the drain hose.
3. A 3/4" hose barb fitting is strapped to the drain hose prior to shipment. The service part number for the hose barb is P/N 0512321.
4. Additional plumbing parts must be supplied by the plumbing installer.
5. The maximum drain flow is 15 US gpm/12.4 imp gpm/60 lpm.

! ATTENTION !

FAILURE TO FOLLOW THE DRAIN CONNECTION INSTRUCTIONS MAY VOID THE WARRANTY.



Drain Connection - 201HT *(continued)*

DO NOT REMOVE THE CLAMPS HOLDING THE DRAIN HOSE TO THE BACK OF THE DISHWASHER.

DO NOT CONNECT THE DRAIN HOSE TO A DISPOSER.

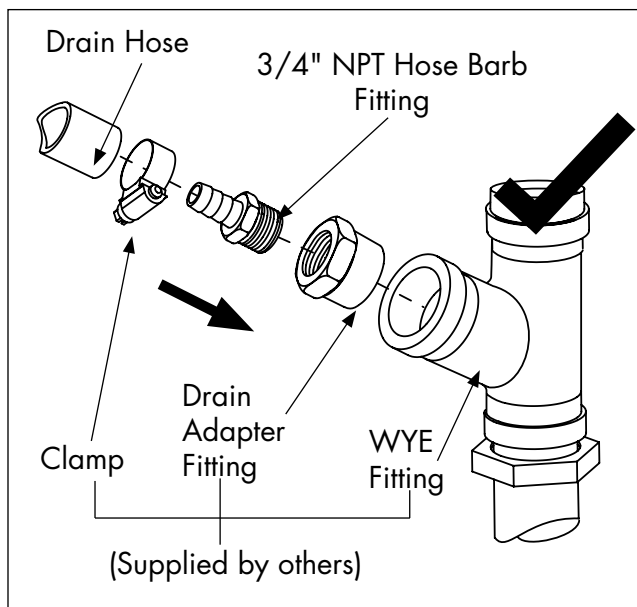
DO NOT REDUCE THE SIZE OF THE DRAIN HOSE CONNECTION NOR USE A DOMESTIC DRAIN FITTING.

DO NOT ADD ADDITIONAL LENGTH TO THE DRAIN HOSE.

DO NOT ALLOW THE DRAIN HOSE TO KINK.

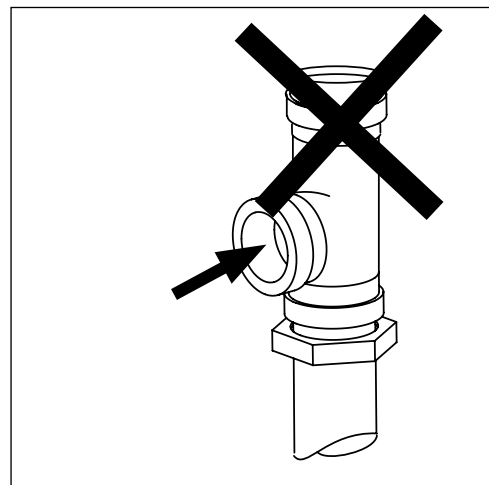
For a Direct Drain Connection:

1. Install the drain hose to an 1-1/2" or larger vented "WYE" drain fitting.
2. CONNECTION TO A "TEE" FITTING WILL PREVENT THE DISHWASHER FROM DRAINING COMPLETELY.



DO

connect the dishwasher flexible drain hose to a vented WYE drain fitting.



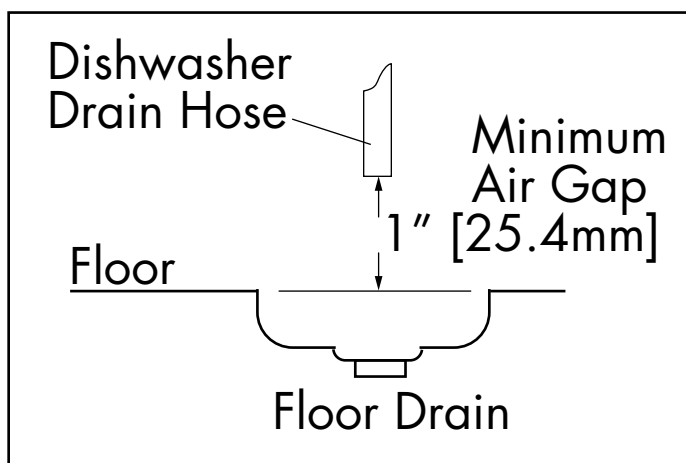
DO NOT

connect the dishwasher flexible drain hose to a TEE drain fitting.

Drain Connection - 201HT

For an Indirect Drain Connection:

1. A 1" [25.4mm] minimum air gap must be provided between the outlet of the dishwasher drain hose and the flood-level rim of the floor drain, floor sink or any other locally approved drain receptacle. (See illustration below.)



! VERY IMPORTANT !
IMPROPER INSTALLATION OF MACHINE DRAIN HOSE.

Machine drain problems are often the result of improper installation and may not be covered by the limited warranty.

Electrical Connections - 201HT with Built-in Booster1PH and 3PH Wiring Diagrams

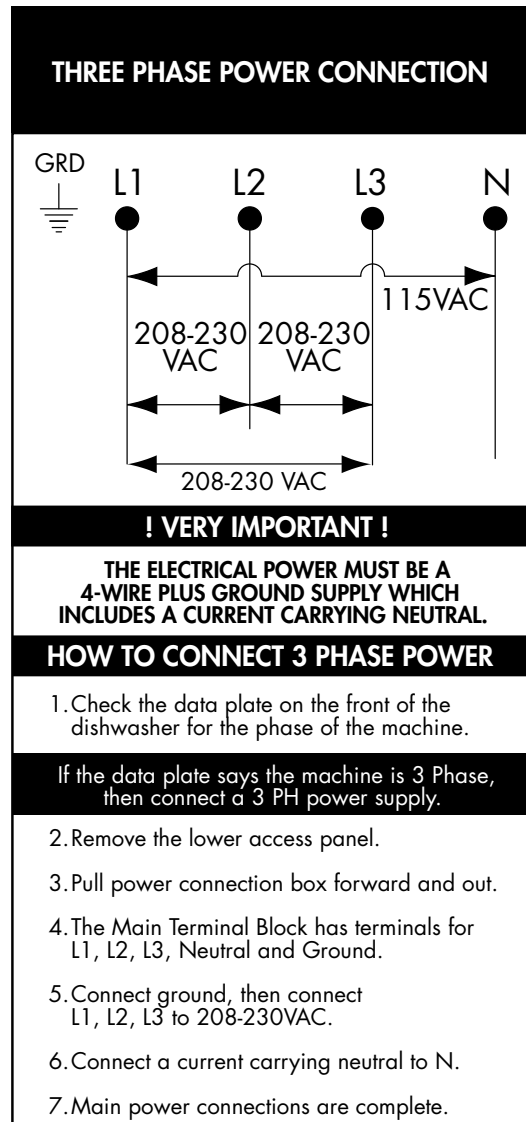


WARNING:

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 !

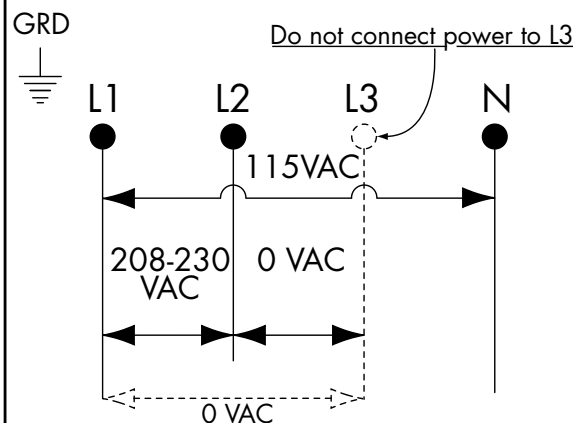
A qualified electrician must connect the main incoming power to the dishwasher in accordance with all local codes and regulations or in the absence of local codes in accordance with the National Electrical Code or the Canadian Electrical Code.

Electrical Connections - 201HT with Built-in Booster 1PH and 3PH Wiring Diagrams

! ATTENTION !

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.

SINGLE PHASE POWER CONNECTION



! 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.

Connecting Incoming Power to the Main Terminal Block for 1PH and 3PH Machines with Boosters- 201HT



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.

! VERY IMPORTANT !
PROVIDE A 3 FEET/1 METER SERVICE LOOP IN THE POWER SUPPLY CABLE TO SERVICE THE DISHWASHER.

! SINGLE PHASE POWER REQUIREMENT !

SINGLE PHASE 201HT

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

! THREE PHASE POWER REQUIREMENT !

THREE PHASE 201HT

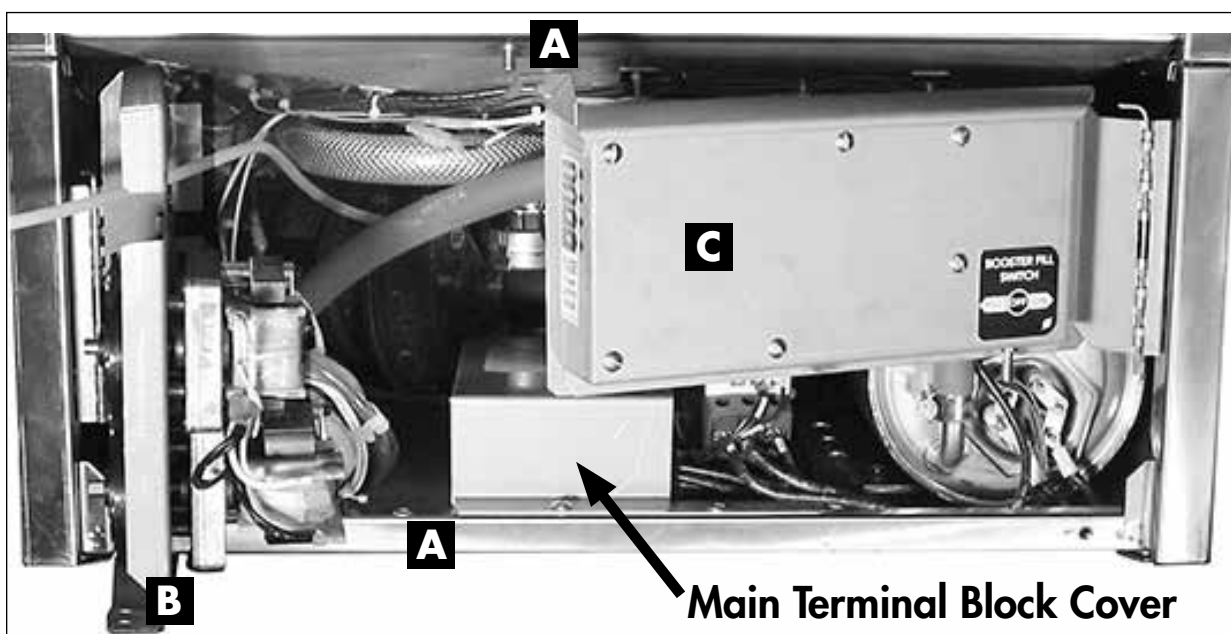
The electrical power must be a 4-wire plus ground supply which includes a current carrying neutral.

Connecting Incoming Power to the Main Terminal Block for 1PH and 3PH Machines with Boosters- 201HT

Refer to the photo below:

1. Remove the lower front dishwasher panel.
2. Remove the retaining fasteners (A) from the swing-out brackets and swing the chemical pump bracket (B) and the chemical circuit board bracket (C) out of the way as shown.

(continued on next page)

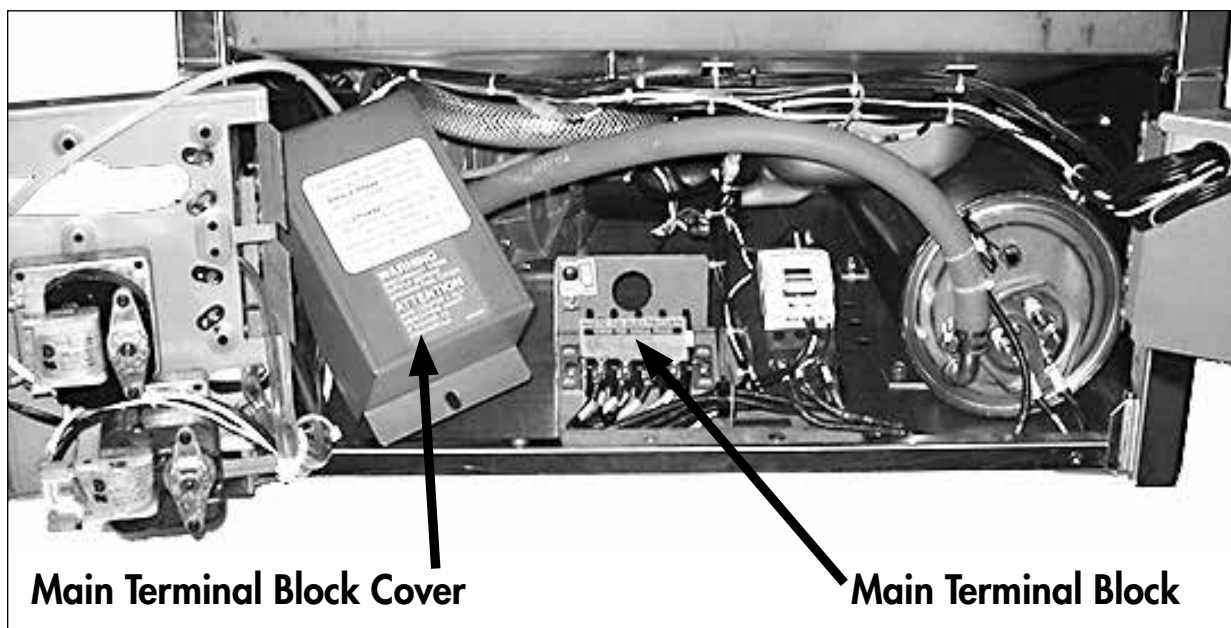


Connecting Incoming Power to the Main Terminal Block for 1PH and 3PH Machines with Boosters

(continued from previous page)

Refer to the photo below:

3. Provide a 3 foot/1 meter service loop in the power supply cable to service the machine
4. Route the power cable from the rear of the machine to the terminal block making sure the cable does not touch the booster tank.
5. Connect the power cable to the terminal block bracket using a suitable strain relief connector.
6. Connect the power wires according to the wiring diagrams on page 3 for either single phase or three phase operation.
7. Swing the chemical pump bracket and the chemical board back into position and secure with the existing fasteners.



Booster Heater Conversion from 1PH to 3 PH Operation

! VERY IMPORTANT !
THE BOOSTER HEATER IS WIRED FOR 1PH OPERATION WHEN SHIPPED.
FOLLOW THE INSTRUCTIONS BELOW TO WIRE THE BOOSTER FOR 3PH.



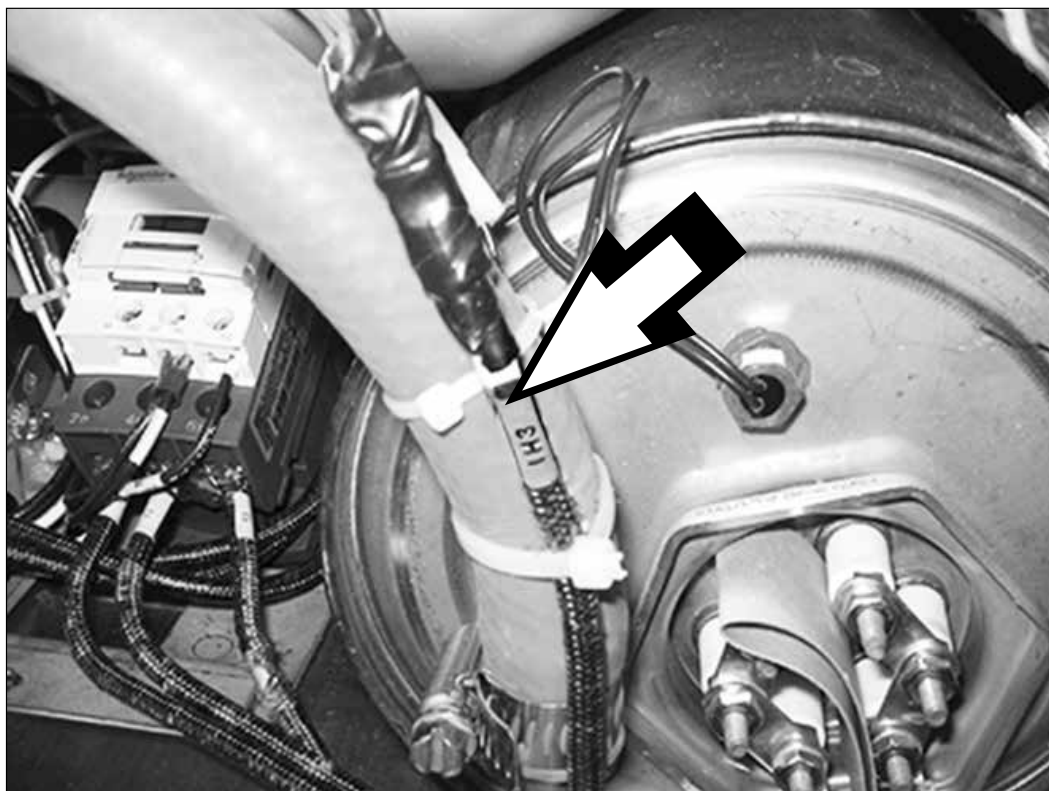
WARNING:

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.

1. To convert the booster heater from single phase to three phase operation, locate the booster wire labeled 1H3 that is cable-tied to the booster hose.
2. Remove the shrink insulation from the terminal and connect to the booster heater element as shown in the wiring diagram on page 7.

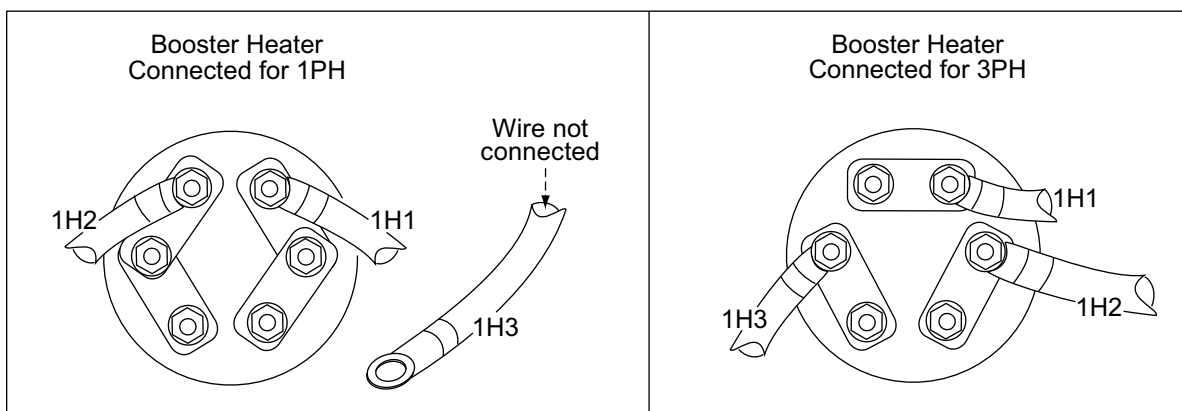


The three phase booster wire (1H3) is cable-tied to the hose adjacent to the booster tank.

Booster Heater Conversion from 1PH to 3 PH Operation (continued)

! VERY IMPORTANT !
THE BOOSTER HEATER IS WIRED FOR 1PH OPERATION WHEN SHIPPED.
FOLLOW THE INSTRUCTIONS BELOW TO WIRE THE BOOSTER FOR 3PH.

3. Disconnect the existing booster heater wires and change the booster heater element jumpers as shown in the illustration below
4. Connect wires 1H1, 1H2, and 1H3 as shown below.



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

Completing the 1PH to 3PH Electrical Conversion

! ATTENTION !
CHANGE THE DATA PLATE ON THE LOWER FRONT PANEL OF THE MACHINE
AFTER THE MACHINE IS WIRED FOR 3PH AND THE BOOSTER HEATER IS CONNECTED
FOR 3PH.

1. The data plate on the dishwasher lower front panel must be changed after the machine is converted from single phase operation to three phase operation.
2. Locate the replacement data plate stowed on the back of the lower front panel.
3. Remove the paper backing from the label and carefully place it over the existing data plate label making sure it covers the label completely.
4. Re-install the lower front panel to complete the conversion.



A three phase data plate is located on the back of the lower front panel.

Booster Fill Switch - 201HT
(Filling the booster tank for the first time)

! CAUTION !
AVOID PERMANENT DAMAGE TO THE BOOSTER HEATER

**DO NOT TURN THE DISHWASHER POWER SWITCH
ON WHEN FILLING THE BOOSTER FOR THE FIRST TIME.**

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

**THE BOOSTER FILL SWITCH IS LOCATED BEHIND THE LOWER FRONT PANEL ON THE
RIGHT SIDE OF THE MACHINE.**

To refill the booster for the first time:

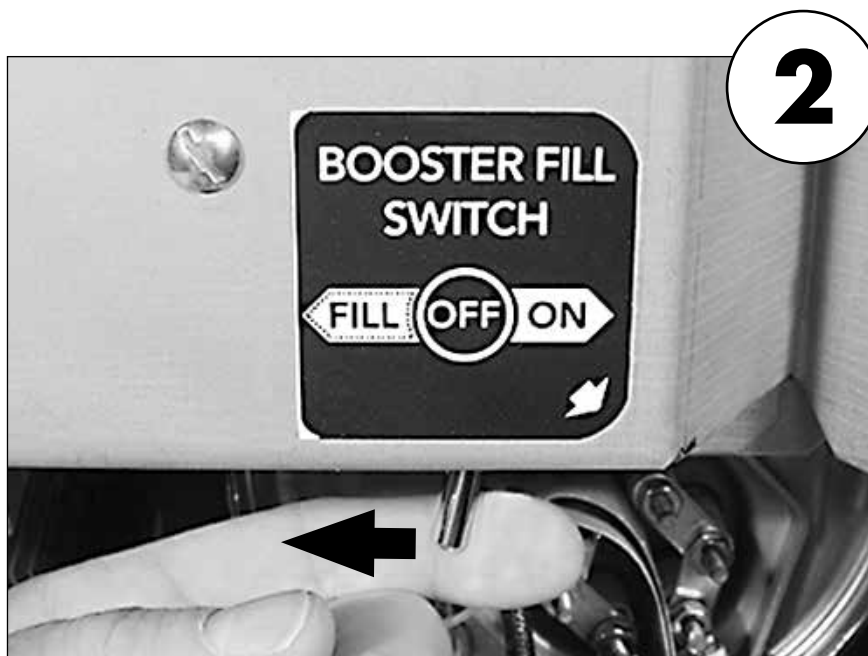
1. Turn the main breaker or disconnect switch to the dishwasher ON.
2. **DO NOT PUSH THE DISHWASHER ON-OFF/DRAIN POWER SWITCH TO THE ON POSITION.**
3. Locate the booster fill switch and note the switch is in the OFF position.

(continued on next page)

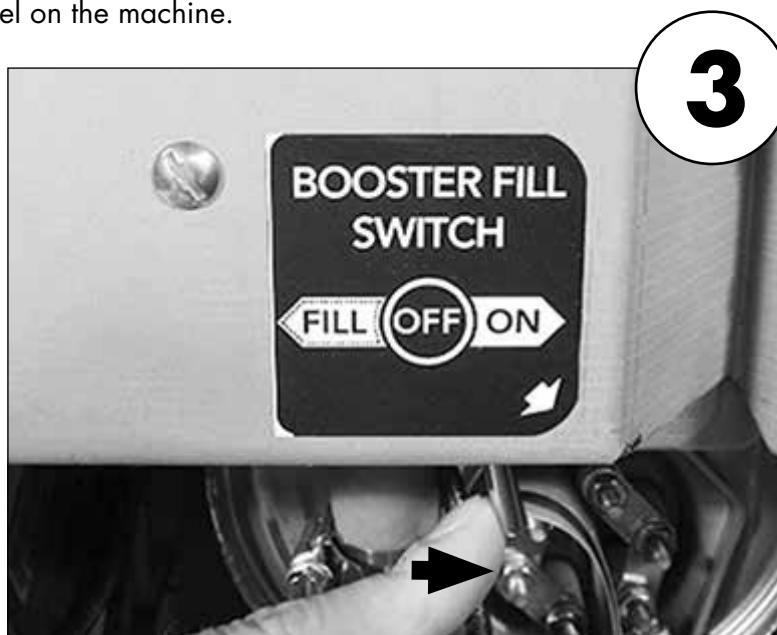


Booster Fill Switch - 201HT (Filling the booster tank for the first time)

4. *PUSH AND HOLD* the booster fill switch in the *FILL* position until water starts filling inside the wash compartment.
5. *Release the FILL switch.*



6. *PUSH* the booster fill switch to the *ON* position and release.
7. The booster fill operation is complete.
8. Replace the lower front panel on the machine.



Chemical Connections - 201HT

! VERY IMPORTANT !

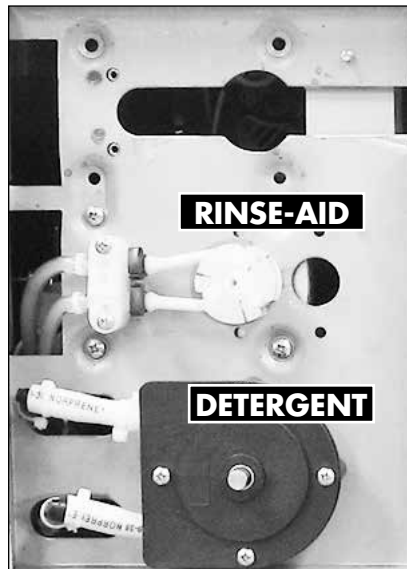
ALWAYS USE A COMMERCIAL-GRADE NON-CHLORINATED DETERGENT.
PLACE THE CHEMICAL SUPPLY CONTAINERS AS CLOSE TO THE MACHINE AS POSSIBLE.
DO NOT ELEVATE THE CHEMICAL CONTAINERS ABOVE THE FINISHED FLOOR.

! VERY IMPORTANT !

Contact a chemical supplier for detergent and rinse-aid chemicals. The chemical supplier must adjust the chemical dispensing pumps for water hardness and food soil types.

Chemical Dispensing Pumps

1. The detergent and rinse-aid pumps are located on the lower left-side of the machine behind the lower-front access panel.
2. Each pump is equipped with 6 feet [1.8 m] of pick-up tubes consisting of supply tubing, stiffener tubes, and strainers.
3. The pick-up tubes are stowed on the back of the machine for shipping.
4. A red label marked DETERGENT and a blue label marked RINSE-AID identify the chemical lines.



The 201HT pumps are located on the left-side behind the lower front panel of the dishwasher.

Detergent and Rinse-aid Pumps and Injection Points - 201HT

! VERY IMPORTANT !

ALWAYS USE A COMMERCIAL-GRADE NON-CHLORINATED DETERGENT.
PLACE THE CHEMICAL SUPPLY CONTAINERS AS CLOSE TO THE MACHINE AS POSSIBLE.
DO NOT ELEVATE THE CHEMICAL CONTAINERS ABOVE THE FINISHED FLOOR.

Injection Point Locations

1. For 201HT, the detergent and rinse-aid enter the wash tank compartment through a fitting on back right corner of the wash compartment.



(continued on next page)

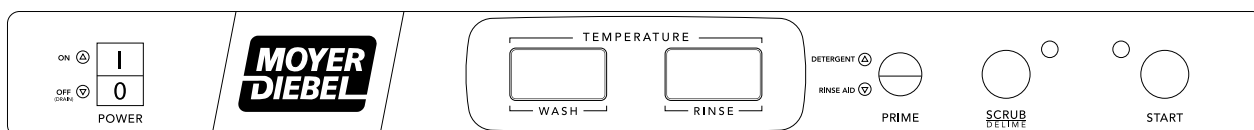
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Detergent and Rinse-aid Pumps and Injection Points - 201HT

Priming the Dispensing Pumps

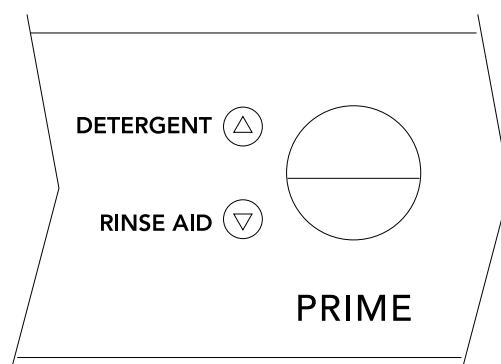
! VERY IMPORTANT !

The chemical dispensing pumps must be primed before operating the dishwasher and whenever the chemical container is changed.



201HT 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 through the fitting located on the back right corner of the tank. 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.



(continued on next page)

Detergent and Rinse-aid Pumps and Injection Points - 201HT

! ATTENTION !

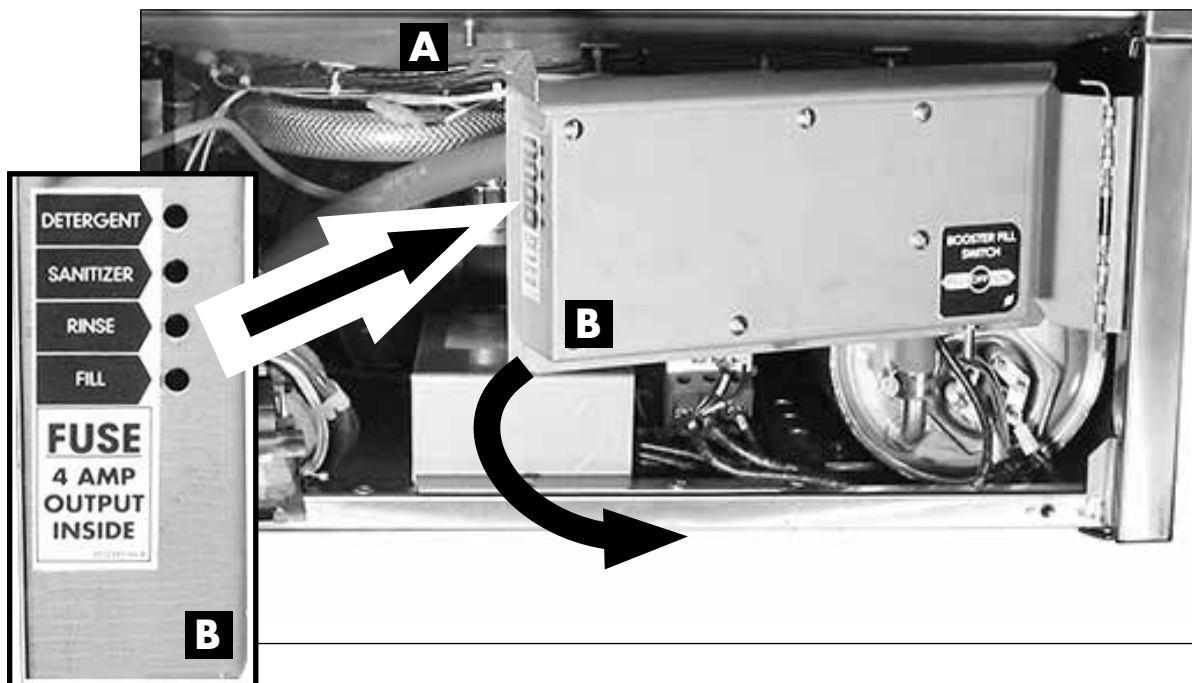
The amount of dispensed chemical is determined by the run time of the dispensing pump.

Refer to the photo below:

1. The chemical dispensing pump run and the tank fill adjustment screws are located on the end of the chemical circuit board swing-out bracket.
2. It is not necessary to swing the bracket out to make adjustments, but if desired, remove the mounting nut (A) and swing the bracket (B) out and to the right.
3. Refer to the next page for adjustment instructions.

! VERY IMPORTANT !

INSPECT & REPLACE THE CHEMICAL DISPENSING PUMP SQUEEZE TUBES EVERY SIX MONTHS.



! VERY IMPORTANT !

Contact a chemical supplier for detergent and rinse-aid chemicals. The chemical supplier must adjust the chemical dispensing pumps for water hardness and food soil types.

Detergent and Rinse-aid Pumps and Injection Points - 201HT

Refer to the photo below:

To adjust the amount of chemicals dispensed by the pumps:

1. 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.

Fill Adjustments

To adjust the tank fill:

1. The fill adjustment screw will provide a small change in the tank water level.
2. If a large adjustment is needed, check the incoming water pressure and make sure the fill hose is not kinked.
3. 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.



Operation - 201HT

Loading Dish Racks

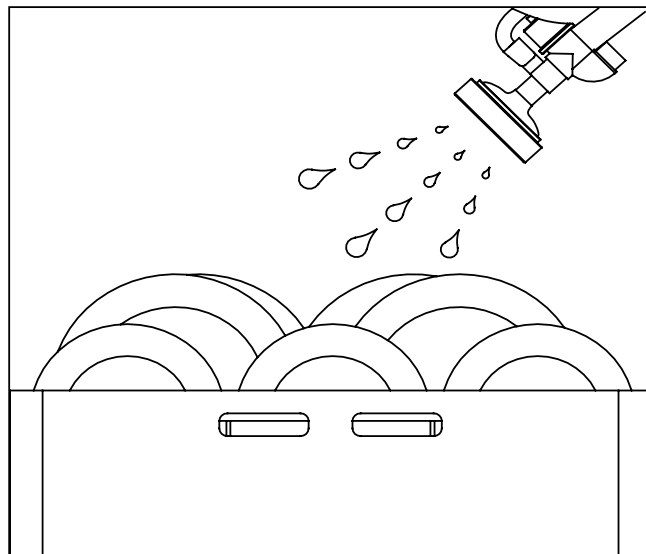
! VERY IMPORTANT !
DO NOT OVERLOAD THE DISH RACK.
LOAD ONE DISH RACK INTO THE MACHINE AT A TIME.

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.

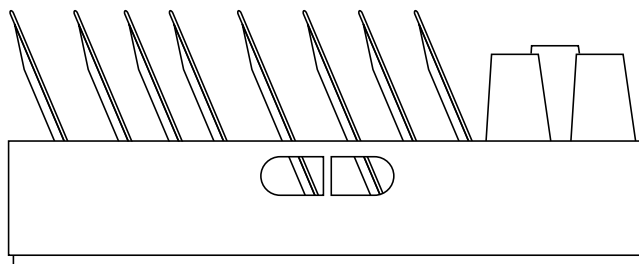
Do not overload the dish rack. Wash one dish rack at a time.

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.

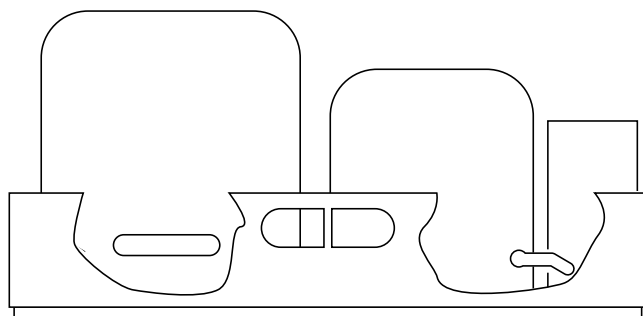
Prescrap and rinse wares before loading into the machine.



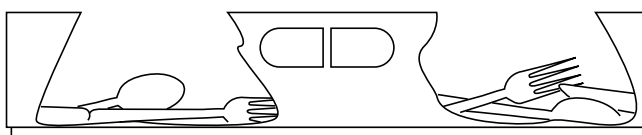
Load plates and glasses in a peg rack.



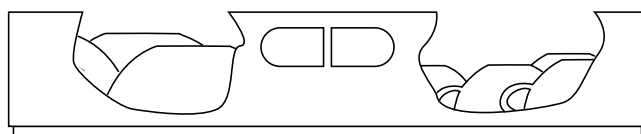
Loading Dish Racks (continued)



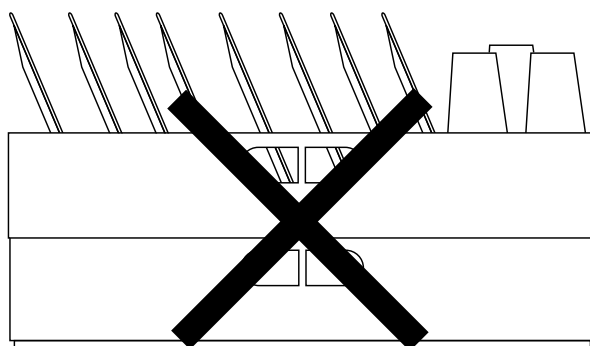
Load pots and pans in a flat-bottom rack.



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



Load cups and bowls in a flat-bottom rack.

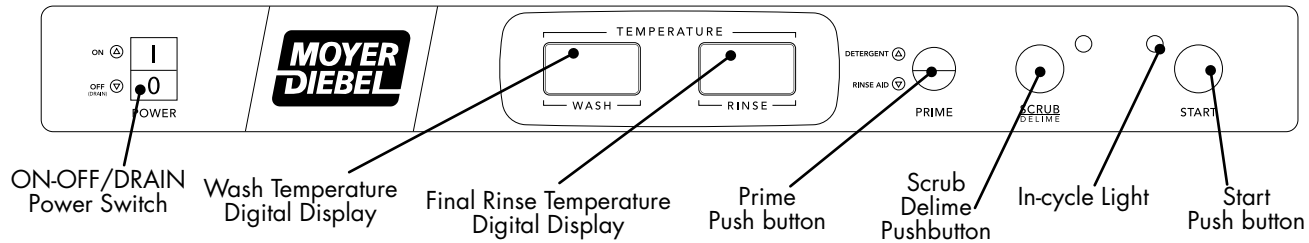


NEVER stack dish racks.
Wash one dish rack at a time.

Operation - 201HT

Normal Wash Mode

201HT Control Panel



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.

PLACE AN EMPTY DISHRACK IN THE MACHINE AND 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. If the door is open more than 5 seconds the cycle will restart from the beginning, if open less than 5 seconds the cycle will resume where it left off 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.

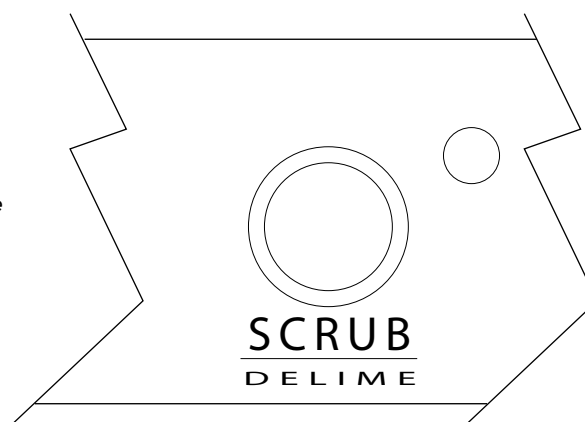
Scrub Mode - 201HT

The Scrub Mode is used to wash heavily soiled items such as pots, pans and other wares that require more washing time than the standard Normal Wash Mode.

The dishwasher will remain in the Scrub Mode until the operator exits the mode or 15 minutes has elapsed.

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 before pressing the SCRUB button.

Press the Scrub/Delime button to place the machine into the extended wash mode to clean heavily soiled wares.



4. Press the SCRUB button to place the dishwasher in the Scrub Mode.
5. The green extended wash light will illuminate indicating that the machine is in the Scrub Mode.
6. The dishwasher will continue to wash for a maximum of 15 minutes or until the operator presses the SCRUB button again whichever occurs first.
7. Press the SCRUB 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.

Rinse Sentry Mode - 201HT

! ATTENTION !
DOOR LEFT OPEN DURING WASH CYCLE

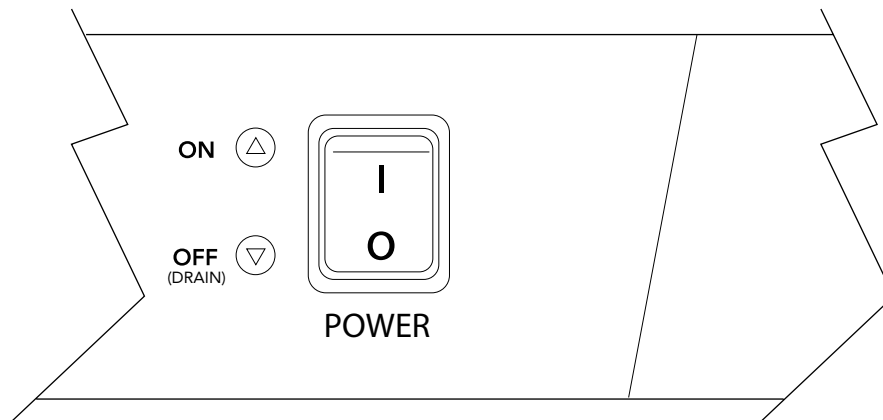
If the dishwasher door is left open for more than 5 seconds during the normal wash mode, then the dishwasher cycle will reset to the beginning of the normal wash cycle.

! 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.

Drain Mode

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



Place the Power Switch in the OFF/(DRAIN) position

(continued on next page)

Operation - 201HT

Drain Mode (continued)

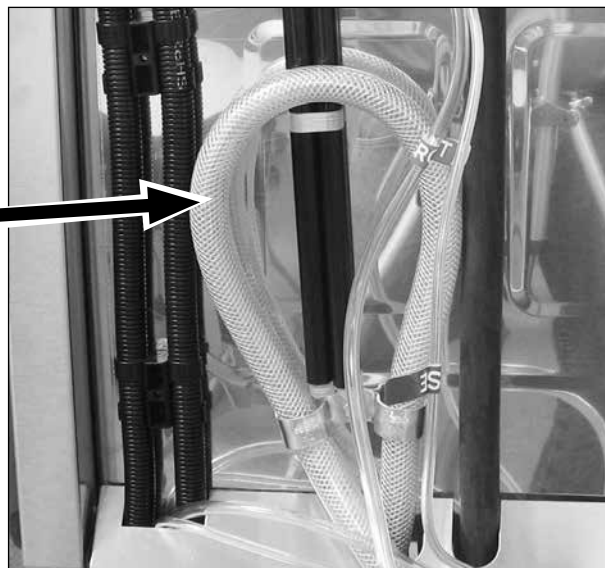
1. Push the illuminated power switch down to the OFF/(DRAIN) position. The power switch light will go out.
2. The cycle light will illuminate and the machine will drain.
3. The machine, will flush, perform 3 short drain cycles and then drain completely.
4. The cycle light will go out indicating that the drain cycle is complete. Do not open the door until the light goes out.

! VERY IMPORTANT !

Draining Problems Related To Improper Installation.

Problems with 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 inability to drain or may cause the machine to siphon the water out of the machine.



Cleaning - 201HT

! 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:

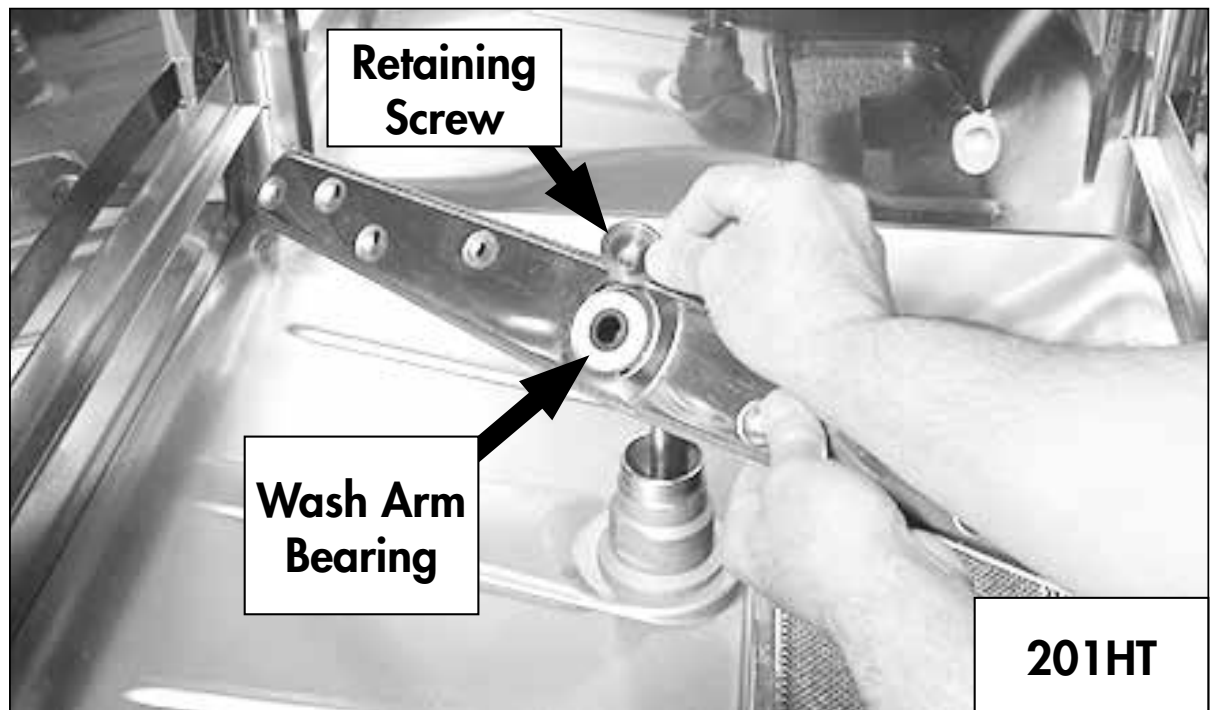
1. Remove the upper and lower spray arms and flush clean in a sink.
2. Remove the scrap screen taking care that debris does not fall off the screen and into the wash tank or sump. Flush the screen clean in a sink. Be sure to back-flush the screen.
3. DO NOT strike the scrap screen on solid surfaces.
4. Check the sump for foreign material.
5. Clean the pump intake 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 scouring pad. DO NOT USE METALLIC SCRUB PADS.
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.

! ATTENTION !
DO NOT USE METALLIC SCRUB PADS TO CLEAN THE MACHINE.
DO NOT SPRAY THE EXTERIOR OF THE MACHINE WITH WATER.

Cleaning - 201HT

Cleaning the wash arms:

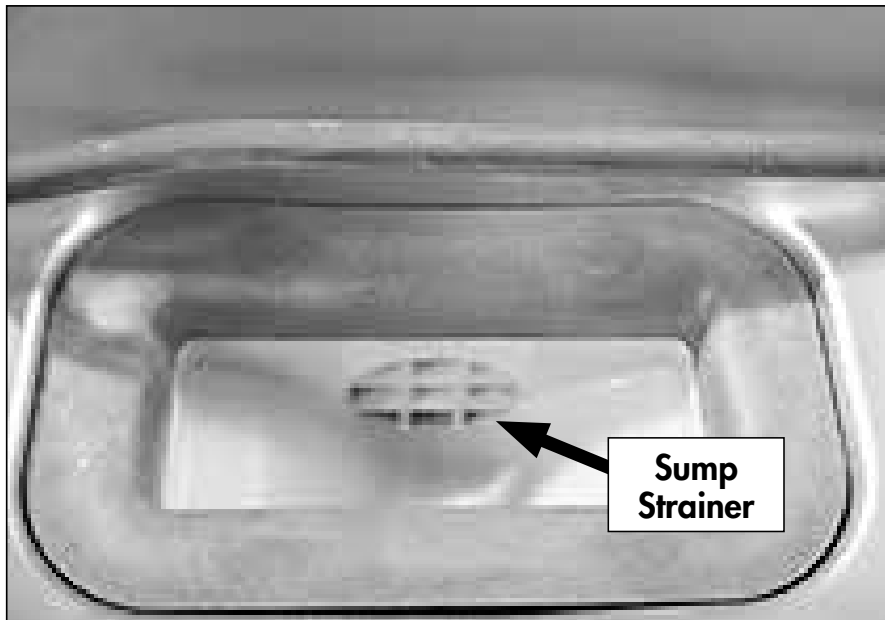
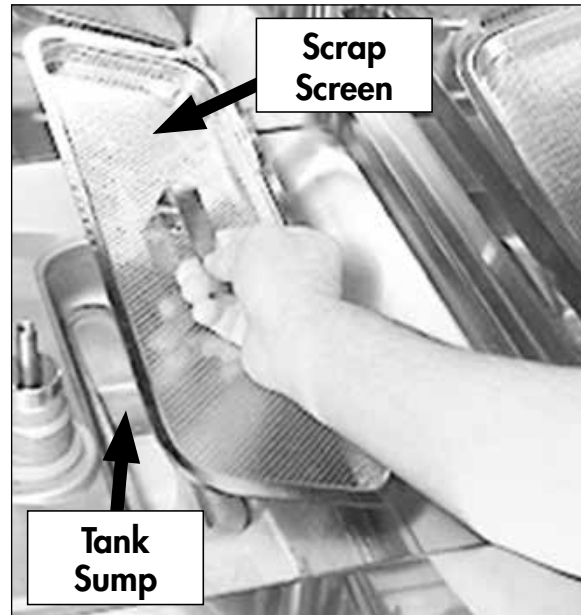
1. Unscrew the retaining screw from the upper and lower interchangeable spray arms.
2. Flush the spray arms clean in a sink. Be sure to flush the wash arm bearings.



Cleaning - 201HT

Scrap Screen and Sump Strainer

1. Lift the scrap screen straight up and out of the machine to prevent food particles from falling into the tank sump.
2. Flush the scrap screen in a remote sink making sure to back-flush both side of the screen.
3. Wipe the tank sump of water and debris.
4. Carefully inspect the pump intake strainer. This strainer is not removeable but must be thoroughly cleaned before reinstalling the scrap screen.



! ATTENTION !

**A CLOGGED OR
RESTRICTED SUMP
STRAINER WILL
PREVENT THE
PROPER WASHING,
RINSING AND
DRAINING OF THE
MACHINE.**

! ATTENTION !

**WIPE THE EXTERIOR OF THE MACHINE WITH A SOFT CLOTH AND MILD
DETERGENT. DO NOT SPRAY THE EXTERIOR WITH WATER OR BLEACH.**

LEAVE THE DOOR OPEN TO AID IN OVERNIGHT DRYING.

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Deliming - 201HT

DANGER:

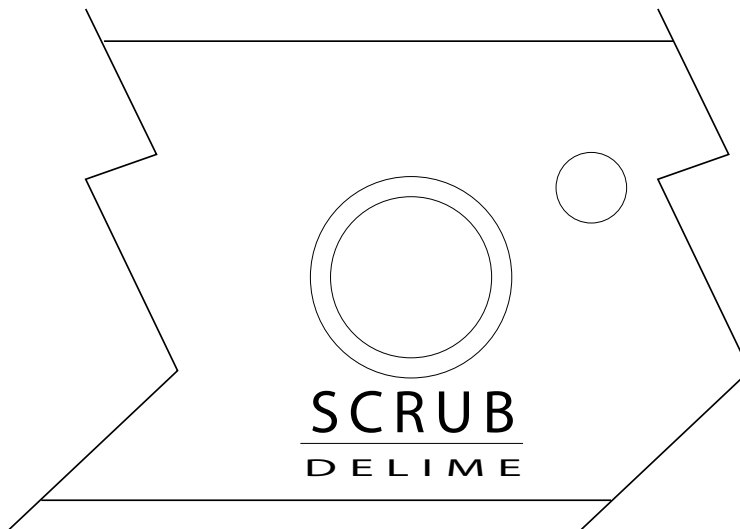
Death or serious injury may result when deliming solution is mixed with sodium hypochlorite sanitizing agent. Mixing may cause hazardous gases to form. Deliming solution and other acids must never be mixed with chlorine, iodine, bromine, or fluorine.

CAUTION:

Skin contact with deliming solutions can cause severe irritation and possible chemical burns. Always wear eye protection, rubber gloves and protective clothing when handling chemicals.

Delime Mode - 201HT

The SCRUB/DELIME switch is used to de-lime the machine.



*Model 201HT
Scurb/Delime Push button*

Deliming - 201HT

A deliming agent must be used in accordance with your chemical supplier's instructions.

Follow the steps below to delime the 201HT:

1. Open the dishwasher door and remove any dish racks.
2. Turn the power switch on the dishwasher to the ON position.
3. Remove the detergent and rinse-aid, and sanitizer chemical supply tubing from their chemical supply containers.
4. Place the tubing in a container of hot water.
5. Press and hold the prime switch UP in the DETERGENT position to flush the detergent from the supply tubing. Release the switch.
6. Press and hold the prime switch DOWN in the SANITIZER position to flush the sanitizer from the supply tubing. Release the switch.
7. Press and hold the rinse-aid prime switch UP in the RINSE AID position to flush the rinse-aid from the supply tubing. Release the switch.
8. Turn the dishwasher power switch to OFF/DRAIN to drain the wash tank. The green cycle light will go out in about 2 minutes.
9. **Always wear eye protection, rubber gloves and protective clothing when handling chemicals.**
10. Open the door and carefully add the deliming chemical to the wash tank in accordance with your chemical supplier's instructions. Be careful to avoid splashing.
11. Close the door and press the SCRUB/Delime push button three times.
12. The SCRUB green indicator light will illuminate and the machine will run for 23 minutes.
13. Check the deliming results and if scale is still present repeat steps 9-11.
14. Push the power switch ON to refill the machine and return the dishwasher to normal operation.
15. Run 4 empty cycles to flush any deliming chemicals from the machine.
16. Return chemical supply tubing to their containers and prime the chemical lines.
17. Return the dishwasher to normal operation.

Maintenance - 201HT

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.

***Model 201LT Low Temperature
Undercounter Dishwasher***

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Receiving - 201LT

NOTE:

The installation of your dishwasher must be performed by qualified service personnel familiar with food service equipment and must comply with all local health codes. Problems due to improper installation are not covered by the Limited Warranty.

NOTE:

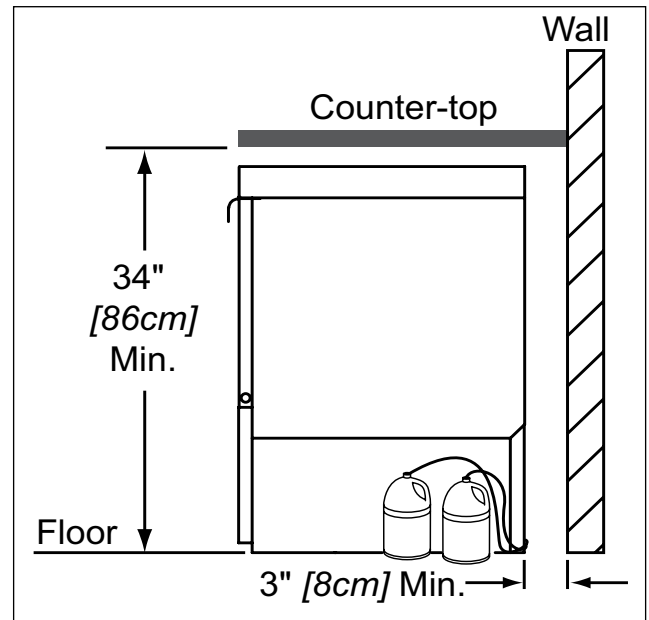
The installation of the dishwasher must comply with all local electrical, plumbing, health and safety codes or in the absence of local codes, installed in accordance with the applicable requirements in the National Electrical Code, NFPA 70, Canadian Electrical Code (CEC), Part 1, CSA C22.1; and the Standard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

Placement - 201LT

CAUTION:

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

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. It is highly recommended that the underside of the counter-top be clad in metal.
7. Under counter installations should provide storage space for the dishwasher chemical supply containers. Do not elevate the containers above the finished floor.
8. Chemical supply containers should be placed as close to the machine as possible and the chemical tubing taped to the back of the machine should be repositioned before permanently placing the machine.
9. Place the dishwasher in its permanent location.
10. The dishwasher has 4 adjustable feet for leveling.
11. Level the dishwasher front-to-back and side-to-side.



(Single Phase) Electrical Connections - 201LT



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.

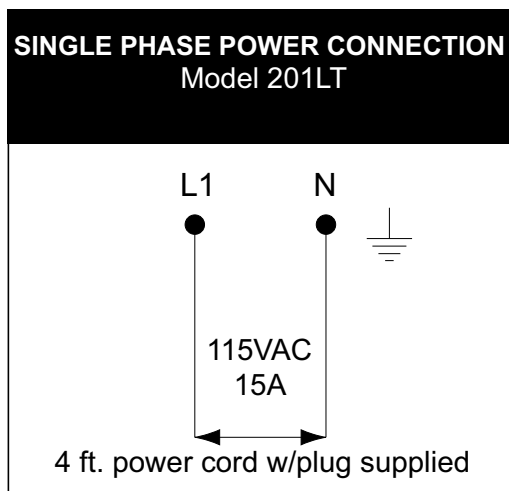
Lock-out and tag the breaker or service disconnect switch to indicate that work is being performed on the circuit.

! 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.

Refer to the connection diagram below for single a phase machine without a built-in booster.

1. A three prong 4 foot power cord and plug is prewired with the machine for connection to a 115VAC power source.



! ATTENTION !

Model 201LT is equipped with a 4 ft. power cord and plug. These models require a 115VAC, 15A receptacle.

Water Connection - 201LT

! VERY IMPORTANT !

**Make sure that the flexible water supply and drain hoses are not kinked.
Plumbing connections must allow the machine to be pulled out for service and cleaning.**

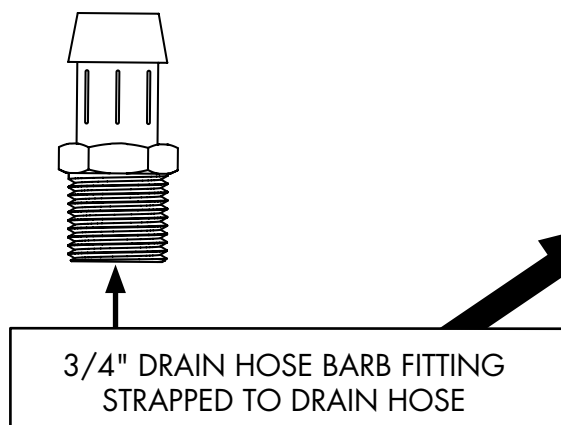
Plumbing connections must comply with national, provincial local plumbing and sanitary codes. Only qualified service personnel familiar with food service equipment should install the machine.

**The installing plumber must thoroughly flush the water supply line to remove all debris
BEFORE connecting the water supply line to the machine.**

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. We recommend that a 1/2" or larger shut-off valve be installed in the main water supply, as close to the dishwasher as possible for servicing.
4. The 201HT 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. Hard water can adversely affect wash results.

Drain Connection - 201LT

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.
3. The maximum drain flow is 15 US gpm/12.4 imp gpm/60 lpm.



Drain Connection - 201LT *(continued)*

NOTE

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

DO NOT REMOVE THE CLAMPS HOLDING THE DRAIN HOSE TO THE BACK OF THE DISHWASHER.

DO NOT CONNECT THE DRAIN HOSE TO A DISPOSER.

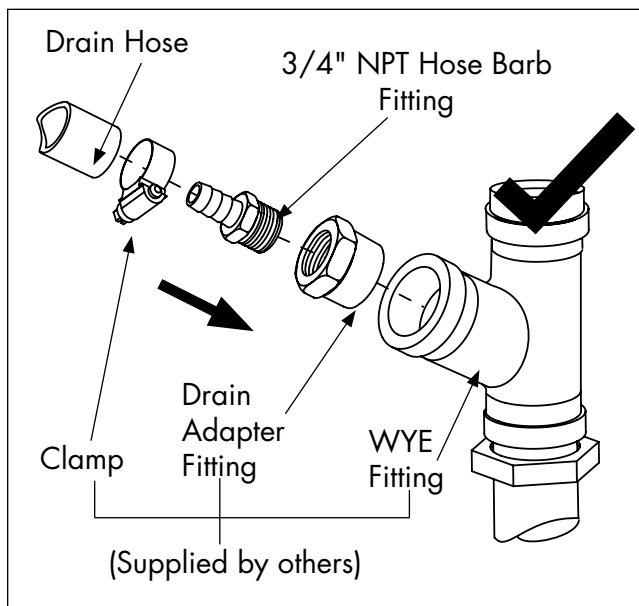
DO NOT REDUCE THE SIZE OF THE DRAIN HOSE CONNECTION NOR USE A DOMESTIC DRAIN FITTING.

DO NOT ADD ADDITIONAL LENGTH TO THE DRAIN HOSE.

DO NOT ALLOW THE DRAIN HOSE TO KINK.

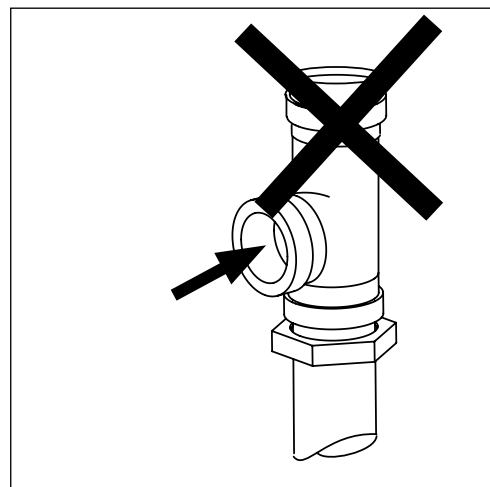
For a Direct Drain Connection:

1. Install the drain hose to an 1-1/2" or larger "WYE" vented drain fitting.
2. CONNECTION TO A "TEE" FITTING WILL PREVENT THE DISHWASHER FROM DRAINING COMPLETELY.



DO

connect the dishwasher flexible drain hose to a WYE drain fitting.

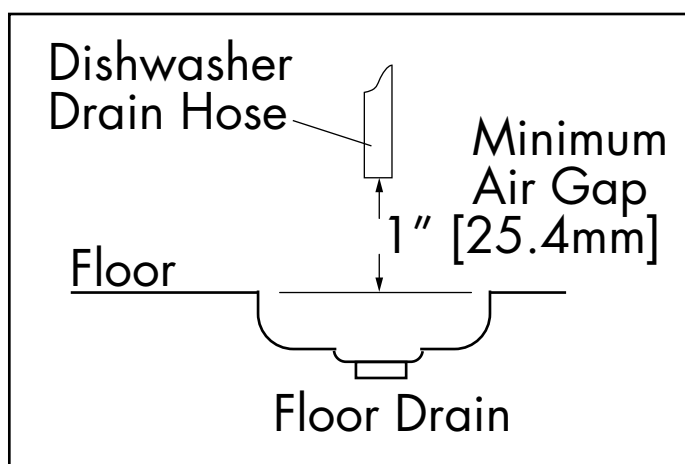


DO NOT

connect the dishwasher flexible drain hose to a TEE drain fitting.

For an Indirect Drain Connection:

1. A 1" [25.4mm] minimum air gap must be provided between the outlet of the dishwasher drain hose outlet and the flood-level rim of the floor drain, floor sink or any other locally approved drain receptacle. (See illustration below.)

**! VERY IMPORTANT !****IMPROPER INSTALLATION OF MACHINE DRAIN HOSE.**

Machine drain problems are often the result of improper installation and may not be covered by the limited warranty.

Pumps and Injection Points - Detergent, Rinse-aid and Sanitizer Dispensing Pumps - 201LT

! VERY IMPORTANT !

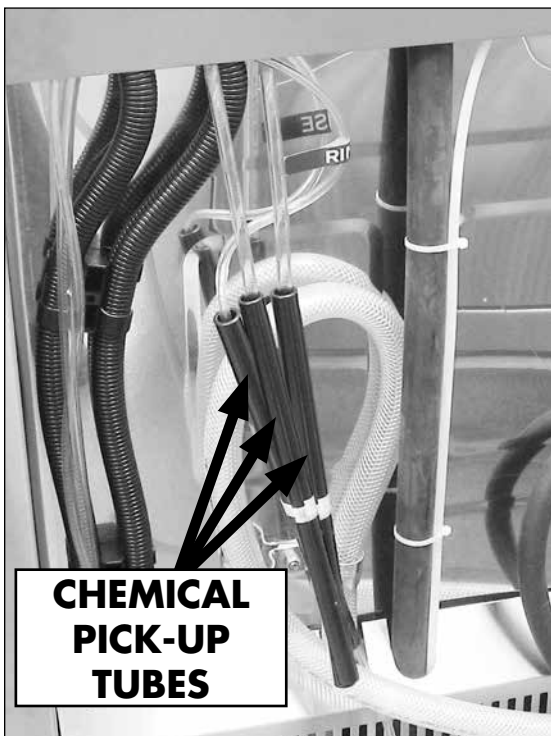
ALWAYS USE A COMMERCIAL-GRADE NON-CHLORINATED DETERGENT.
PLACE THE CHEMICAL SUPPLY CONTAINERS AS CLOSE TO THE MACHINE AS POSSIBLE.

DO NOT ELEVATE THE CHEMICAL CONTAINERS ABOVE THE FINISHED FLOOR.

! VERY IMPORTANT !

Contact a chemical supplier for detergent and rinse-aid chemicals. The chemical supplier must adjust the chemical dispensing pumps for water hardness and food soil types.

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 rear right-hand side of the wash compartment.



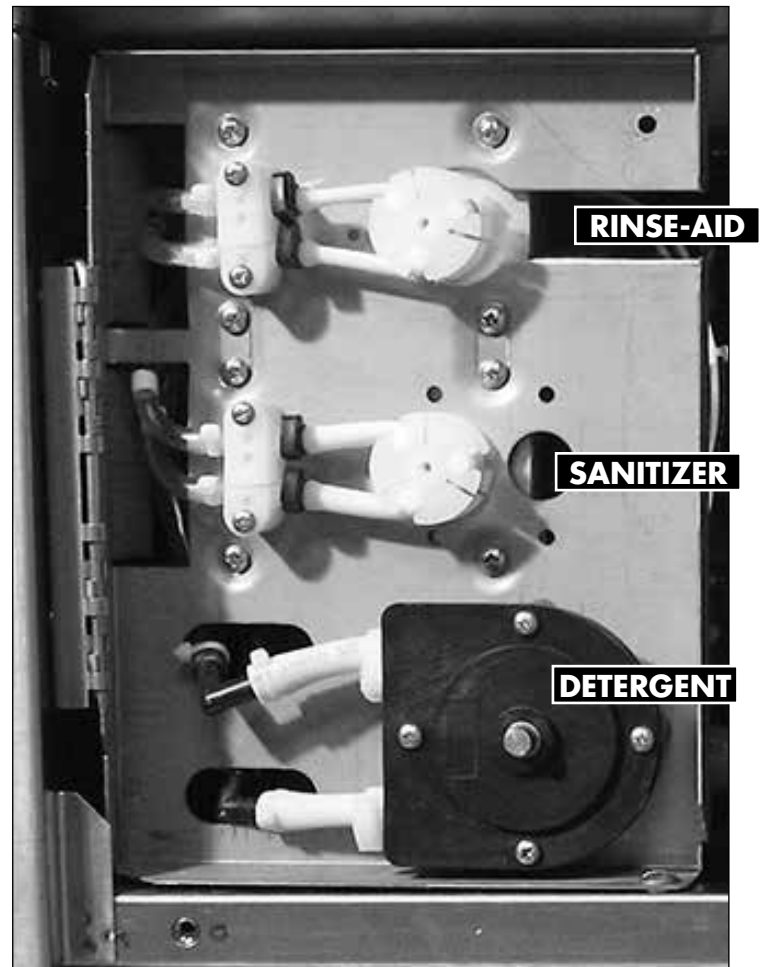
The chemical dispensing pick-up tubes are stowed at the rear of the dishwasher.



On the 201LT, chemicals enter the wash tank through a fitting on the rear wall of the tank.

Pumps and Injection Points - Detergent, Rinse-aid and Sanitizer Dispensing Pumps - 201LT

**! VERY IMPORTANT !
CHEMICAL SQUEEZE TUBES
SHOULD BE INSPECTED AND
REPLACED EVERY 6 MONTHS**



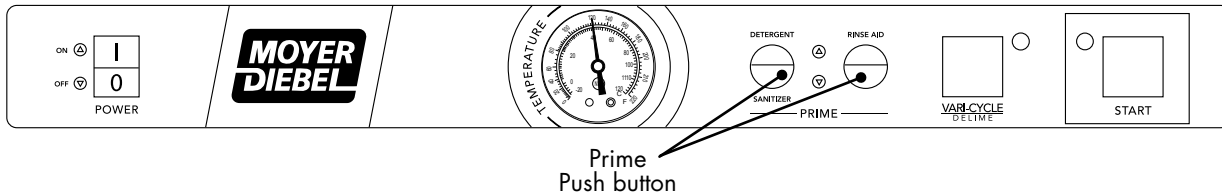
The chemical dispensing pumps are located on the bracket behind the lower-front access panel.

! VERY IMPORTANT !

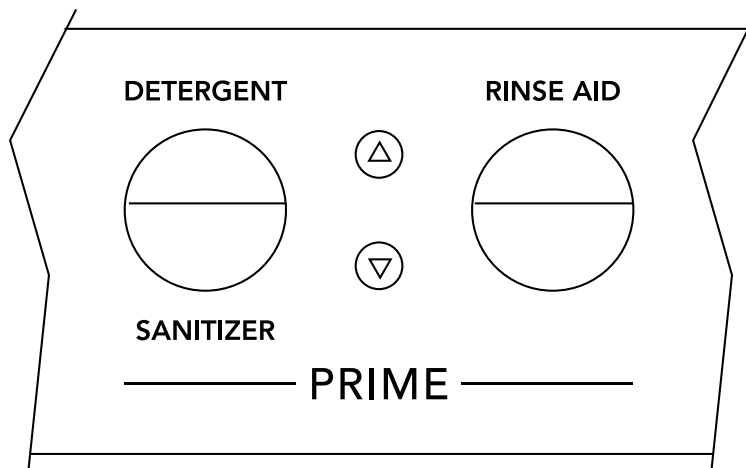
5.25% sodium hypochlorite (chlorine bleach) must be used as a sanitizing agent to provide a minimum concentration of 50 ppm in the final rinse for the USA and 100 ppm in Ontario, Canada. The 50 ppm or 100 ppm concentration must be checked using chlorine test strips to make sure that the proper concentration is maintained.

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

201LT Control Panel



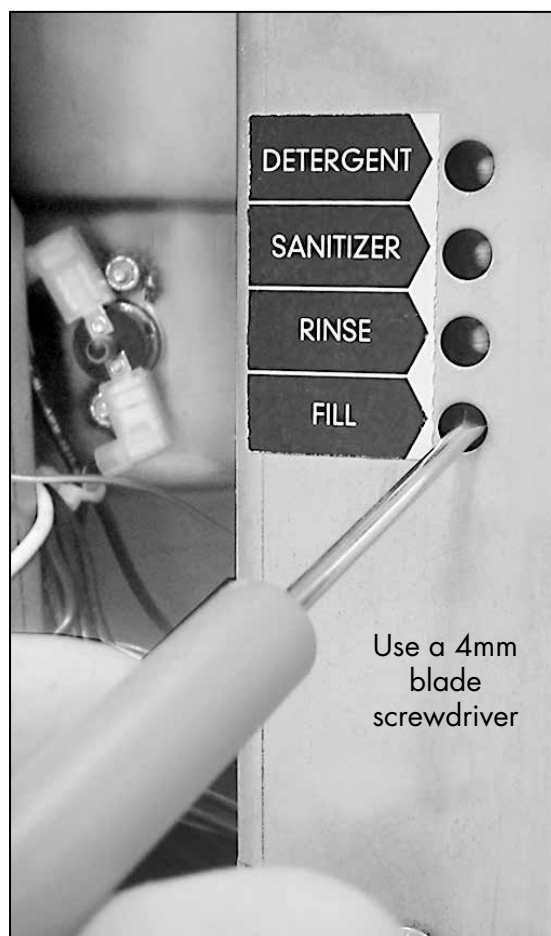
1. Make sure the chemical containers are full and the correct pick-up tubes are in their containers.
2. Turn the dishwasher power switch ON. The switch will illuminate and the dishwasher will fill with water.
3. Refer to the illustration below and note the two momentary push buttons provided to prime the detergent, sanitizer and rinse aid pumps.
4. Open the dishwasher door and observe the inlet chute on the rear right-hand side of the wash tank.
5. 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.
6. Push and hold the same push button DOWN until sanitizer is observed entering the wash tank compartment. Release the push button.
7. Push and hold the other push button UP to the RINSE AID position until air bubbles are observed moving in the pick-up tube, then hold the button for another 2 minutes. Release the push button.
8. Priming is complete.



Pump and Tank Fill Adjustments

! ATTENTION !

The amount of dispensed chemical is determined by the run time of the dispensing pump.



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 chemical concentrations according to the chemical supplier's instructions.

CAUTION:

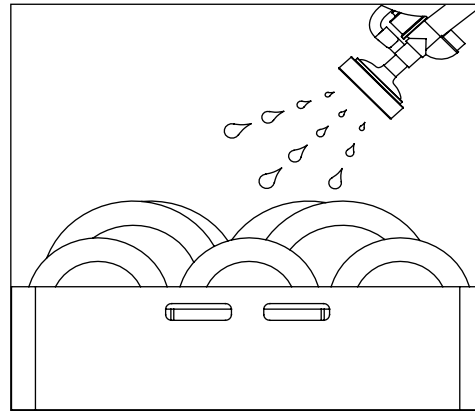
Excessive pressure to the potentiometers when adjusting can result in bent or broken adjusting screws.

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.

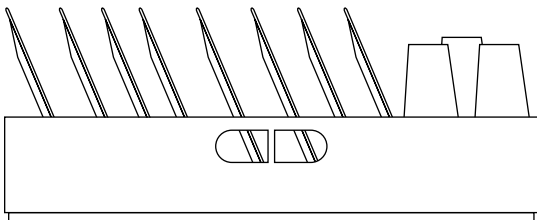
Operation - 201LT

Loading Dish Racks

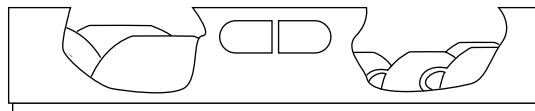
! VERY IMPORTANT !
Prescrape and rinse wares before loading into the machine.



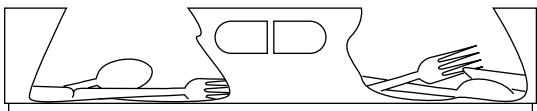
! VERY IMPORTANT !
DO NOT OVERLOAD THE DISH RACK.
LOAD ONE DISH RACK INTO THE MACHINE AT A TIME.



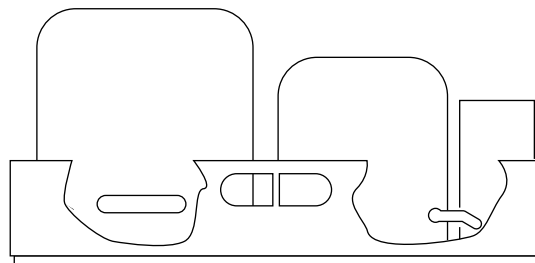
Load plates and glasses in a peg rack.



Load cups and bowls in a flat bottom rack.



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

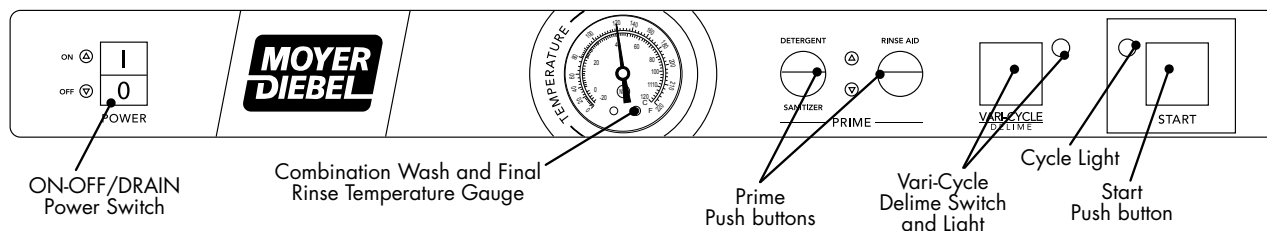


Load pots and pans in a flat bottom rack.

1. Prescrape 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 - 201LT

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 120°F/49°C.

RUN THE FIRST CYCLE WITH AN EMPTY DISH RACK 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. If the door is open more than 5 seconds the cycle will restart from the beginning, if open less than 5 seconds the cycle will resume where it left off 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.
9. When the green cycle light goes out, open the door and remove the rack of clean wares.

! VERY IMPORTANT !

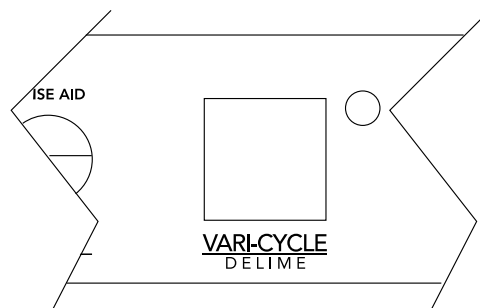
5.25% sodium hypochlorite (chlorine bleach) must be used as a sanitizing agent to provide a minimum concentration of 50 ppm in the final rinse for the USA and 100 ppm in Ontario, Canada. The 50 ppm or 100 ppm concentration must be checked using chlorine test strips to make sure that the concentration is maintained.

Vari-Cycle Mode - 201LT

The Vari-Cycle Wash Mode is used to wash heavily soiled items such as pots, pans and other wares that require more washing time than the standard Normal Wash Mode. The dishwasher will remain in the Vari-cycle Mode until the operator exits the mode or 15 minutes has elapsed.

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 before pressing the Vari-cycle/Delime button.

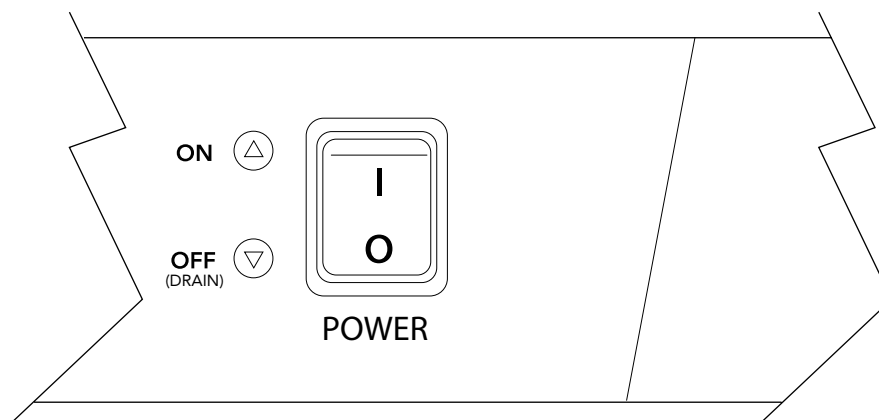
Press the Vari-Cycle button to increase the wash time for clean heavily soiled wares.



4. Press the Vari-cycle/Delime button to place the dishwasher increase the wash time.
5. The green vari-cycle light will illuminate indicating that the machine is in the vari-cycle mode.
6. The dishwasher will continue to wash for a maximum of 15 minutes or until the operator presses the vari-cycle button again whichever occurs first.
7. Press the vari-cycle button. The green vari-cycle 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.



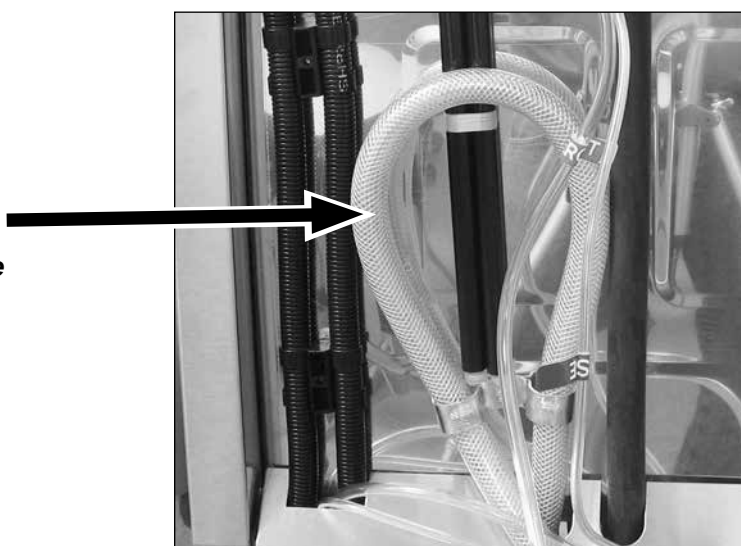
1. Push the illuminated power switch down to the OFF/DRAIN position. The power switch light will go out.
2. The cycle light will illuminate and the machine will drain.
3. The machine, will flush, perform 3 short drain cycles and then drain completely.
4. The cycle light will go out indicating that the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

! VERY IMPORTANT !

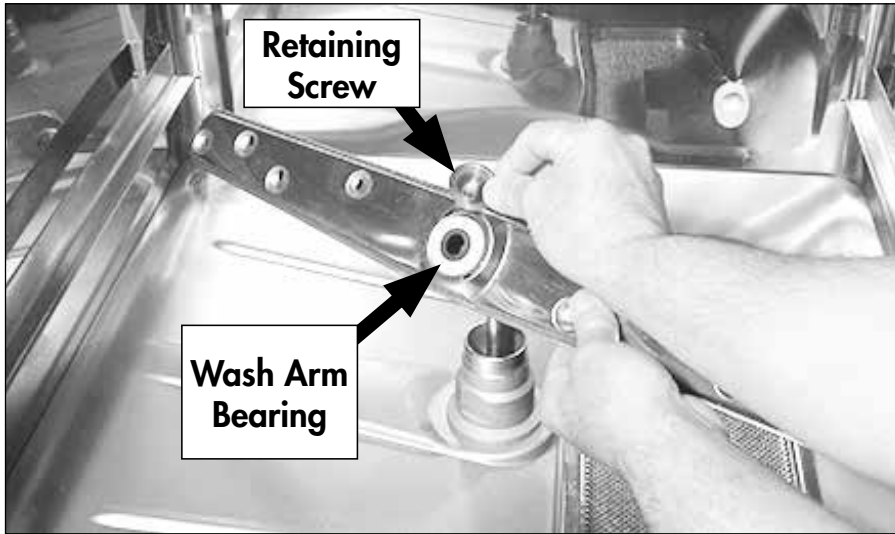
Draining Problems Related To Improper Installation.

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 inability to drain or may cause the machine to siphon the water out of the machine.



Cleaning - 201LT



! 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 taking care that debris does not fall off the screen and into the wash tank or sump. Flush the screen 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 wash pump strainer in the bottom of the sump.
6. DO NOT scrub the interior with metallic scrub pads.
7. Check the sump heating element for lime deposits and gently remove with a scouring pad. DO NOT USE METALLIC PADS.
8. Wipe the exterior of the dishwasher with a soft clean cloth and a mild detergent. DO NOT USE BLEACH.
9. Leave the door open to aid in overnight drying.

Cleaning the wash arms:

1. There are two combination wash/rinse arms in the wash tank. They are interchangeable.
2. The wash arms are 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.

Cleaning - 201LT (continued)

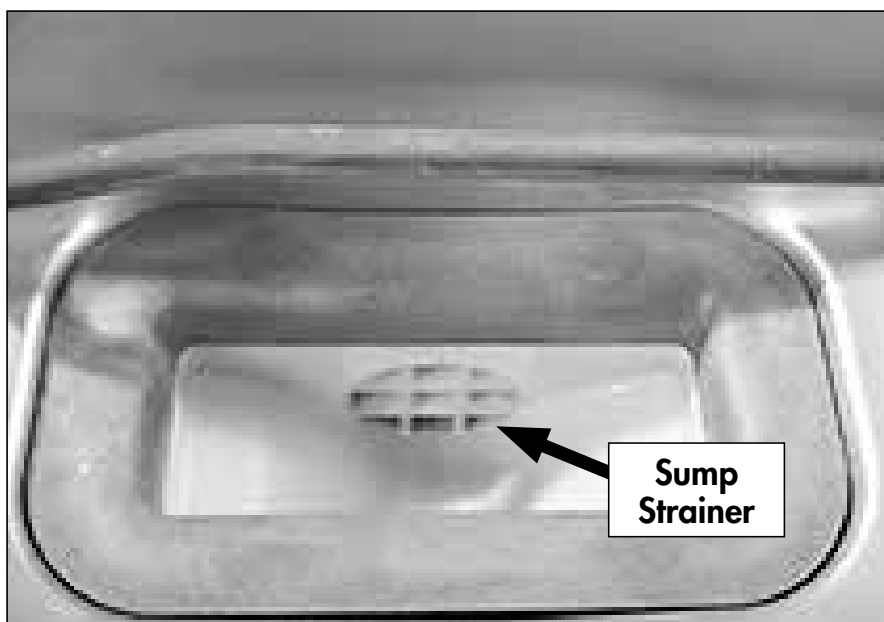
1. Lift the scrap screen straight up and out of the machine to prevent food particles from falling into the tank sump.
2. Flush the scrap screen in a remote sink making sure to back-flush both side of the screen.
3. Wipe the tank sump of water and debris.
4. Carefully inspect the sump strainer. This strainer is not removable but must be thoroughly cleaned before reinstalling the scrap screen.

Scrap Screen and Sump Strainer



! ATTENTION !

A CLOGGED SUMP STRAINER WILL PREVENT THE PROPER WASHING, RINSING AND DRAINING OF THE MACHINE.



! ATTENTION !

WIPE THE EXTERIOR OF THE MACHINE WITH A SOFT CLOTH AND MILD DETERGENT. DO NOT SPRAY THE EXTERIOR WITH WATER.

LEAVE THE DOOR OPEN TO AID IN OVERNIGHT DRYING.

Deliming - 201LT

DANGER:

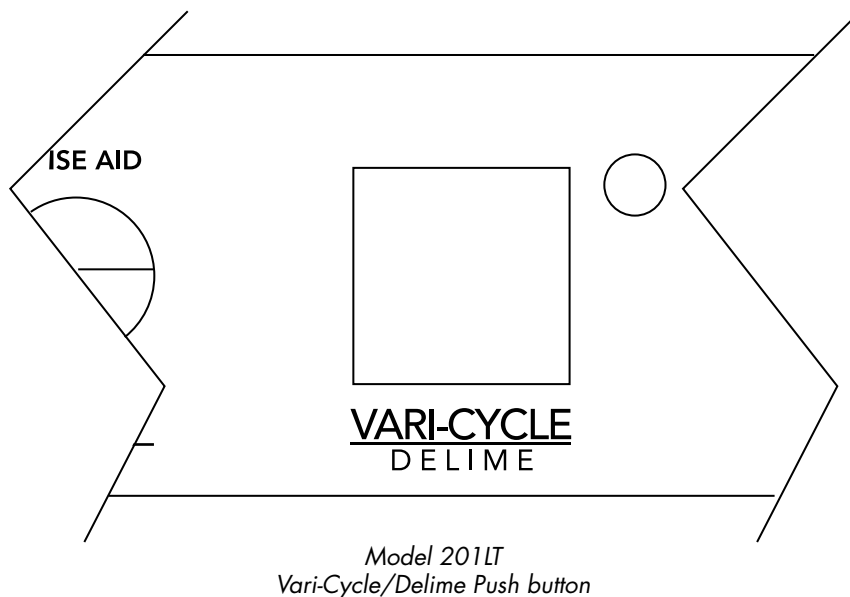
Death or serious injury may result when deliming solution is mixed with sodium hypochlorite sanitizing agent. Mixing may cause hazardous gases to form. Deliming solution and other acids must never be mixed with chlorine, iodine, bromine, or fluorine.

CAUTION:

Skin contact with deliming solutions can cause severe irritation and possible chemical burns. Always wear eye protection, rubber gloves and protective clothing when handling chemicals.

Delime Mode - 201LT

The Vari-cycle/Delime switch is used to the de-lime the machine.



Deliming - 201LT

Follow the steps below to delime the 201LT:

1. Open the dishwasher door and remove any dish racks.
2. Turn the power switch on the dishwasher to the ON position.
3. Remove the detergent and rinse-aid, and sanitizer chemical supply tubing from their chemical supply containers.
4. Place the tubing in a container of hot water.
5. Press and hold the prime switch UP in the DETERGENT position to flush the detergent from the supply tubing. Release the switch.
6. Press and hold the prime switch DOWN in the SANITIZER position to flush the sanitizer from the supply tubing. Release the switch.
7. Press and hold the rinse-aid prime switch UP in the RINSE AID position to flush the rinse-aid from the supply tubing. Release the switch.
8. Turn the dishwasher power switch to OFF/DRAIN to drain the wash tank. The green cycle light will go out in about 2 minutes.
9. **Always wear eye protection, rubber gloves and protective clothing when handling chemicals.** Open the door and carefully add the deliming chemical to the wash tank in accordance with your chemical supplier's instructions. Be careful to avoid splashing.
10. Close the door and press the Vari-cycle/Delime push button three times.
11. The Vari-cycle/Delime green indicator light will illuminate and the machine will run for 23 minutes.
12. Check the deliming results and if scale is still present repeat steps 9-11.
13. Push the power switch ON to refill the machine and return the dishwasher to normal operation.
14. Return chemical supply tubing to their containers and prime the chemical lines.

Maintenance - 201LT

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 201LT 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.

***Models 201HT, 201LT
Troubleshooting Charts***

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Troubleshooting

201HT, 201LT

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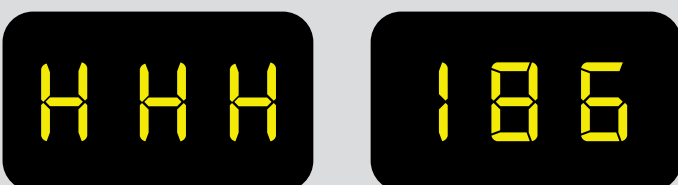

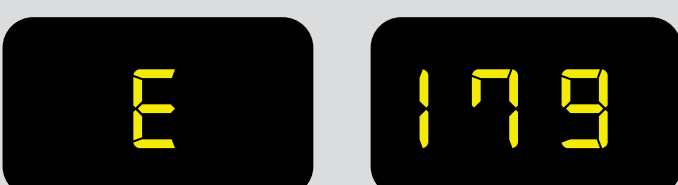
Troubleshooting - 201HT, 201LT

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.	Excessively hard water. 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.	Contact chemical supplier. 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.	Anti-siphon 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.	201HT-Incoming water supply cold 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. 201LT- Vari-Cyle button was pressed and vari-cycle light is on.	Raise incoming water temperature. Adjust/replace final rinse booster thermistor. Press Vari-cycle button to exit and return to the normal wash mode.

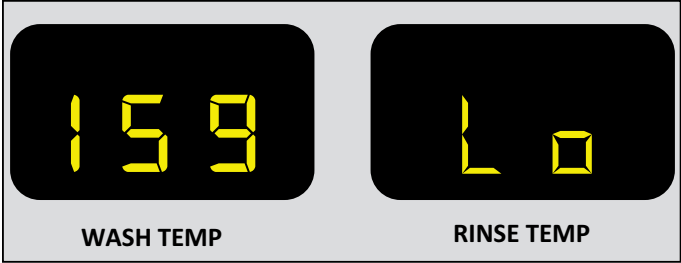
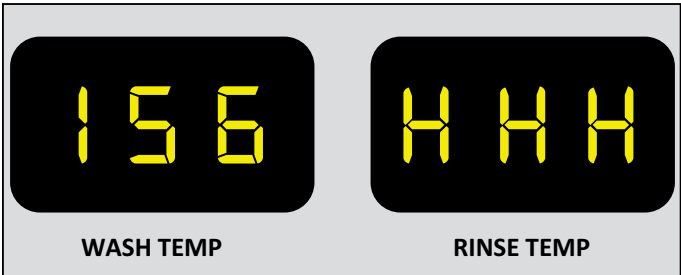
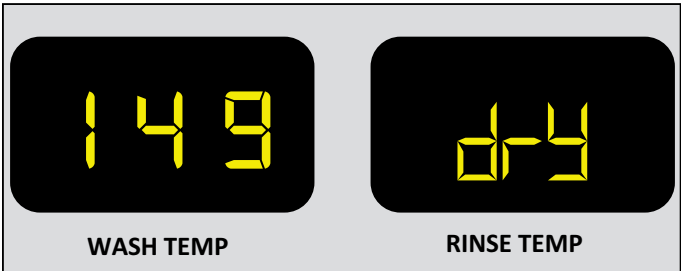
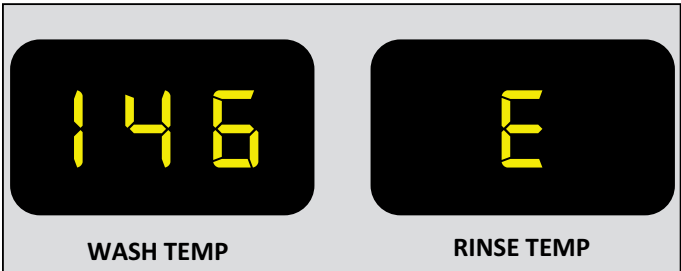
Digital Temperature Display Codes

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

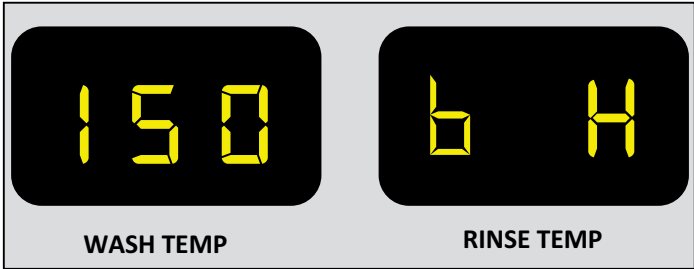
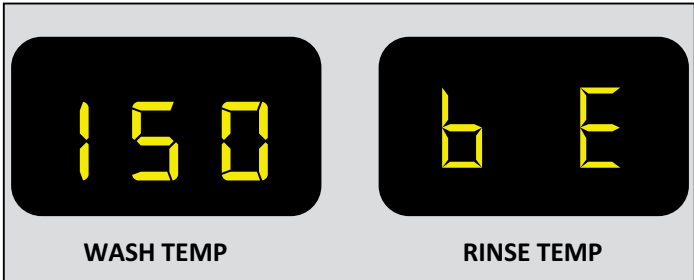
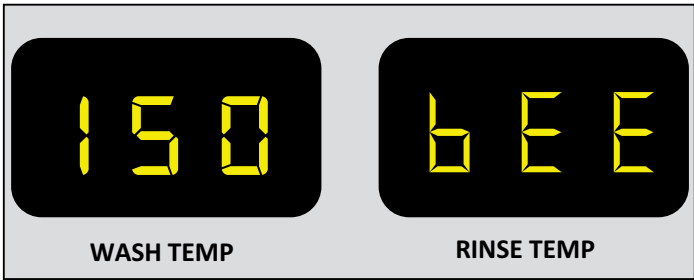
WASH DISPLAY CODE	CAUSE
 <p>WASH TEMP RINSE TEMP</p>	<p>Wash temperature is below 100°F</p>
 <p>WASH TEMP RINSE TEMP</p>	<p>Wash temperature is above 180°F</p>
 <p>WASH TEMP RINSE TEMP</p>	<p>Wash tank is empty and tank heater is on.</p> <p>CAUTION: The tank may be <u>extremely</u> hot.</p>
 <p>WASH TEMP RINSE TEMP</p>	<p>Defective wash thermistor or open, broken, wire between thermistor and board or loose connection.</p>

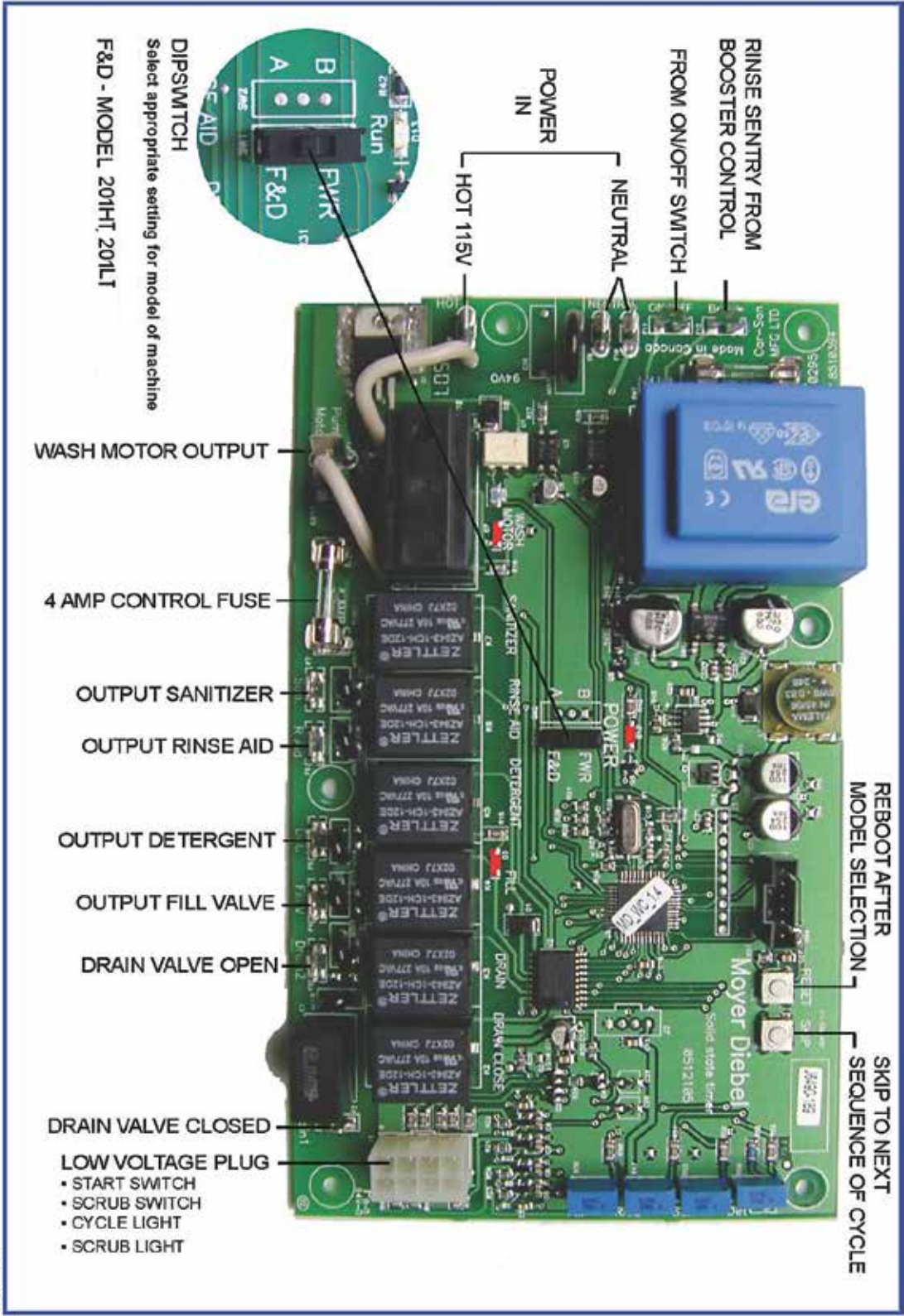
Rinse Display Codes

RINSE DISPLAY CODE	CAUSE
 <p>WASH TEMP 159 RINSE TEMP L0</p>	Rinse temperature is below 100°F
 <p>WASH TEMP 156 RINSE TEMP HHH</p>	Rinse temperature is above 200°F
 <p>WASH TEMP 149 RINSE TEMP 0-4</p>	Booster tank is empty & booster heater is on. CAUTION: Temperature in the booster may be <u>extremely</u> hot
 <p>WASH TEMP 146 RINSE TEMP E</p>	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
 <p>WASH TEMP: 150 RINSE TEMP: b H</p>	<p>Booster overtemp lockout because booster temperature is greater than 210°F.</p> <p>NOTE: Booster is locked out for 10 minutes before being re-energized.</p>
 <p>WASH TEMP: 150 RINSE TEMP: b E</p>	<p>Booster thermistor is defective or disconnected, broken wires.</p> <p>NOTE: After the thermistor is reconnected, there is a 5 second delay before the display is re-energized.</p>
 <p>WASH TEMP: 150 RINSE TEMP: b E E</p>	<p>Both booster and final rinse display thermistors are defective, unplugged, or open or broken wires between the display and thermistor.</p> <p>NOTE: After a thermistor is reconnected, there is a 5 second delay before the display is re-energized.</p>



Diagnostic Testing for the Solid State Timer Board, P/N 0712105

Beginning with S/N W150350341 and above

1

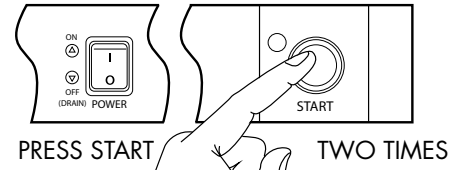
Before testing, Press the dishwasher power switch to OFF/DRAIN and allow the machine to complete the drain cycle.

Check the incoming voltages.

2

With the Power switch in the OFF/DRAIN position, press the START button 2 times.

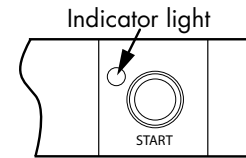
If the drain valve opens and closes 5 times then the DRAIN VALVE is okay.



3

Open the door.

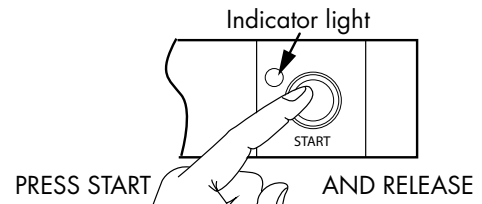
If the green cycle indicator light blinks continuously for 10 seconds, then the DOOR SWITCH and the CYCLE LIGHT are okay.



4

Press and release the START button.

If the green cycle indicator light flashes then the START BUTTON is okay.

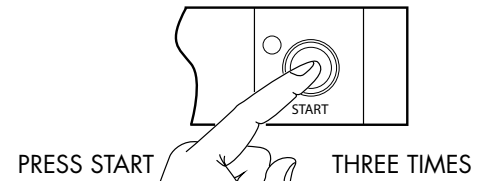


5

With the Power switch in the OFF/DRAIN position, press the START button 3 times.

The timer board and the following components are okay if the components run consecutively for a few seconds in the following order:

1. Fill Valve
2. Detergent Pump
3. Rinse-aid Pump
4. Drain Valve opens and then closes
5. Wash Pump
6. Drain Pump or Sanitizer Pump

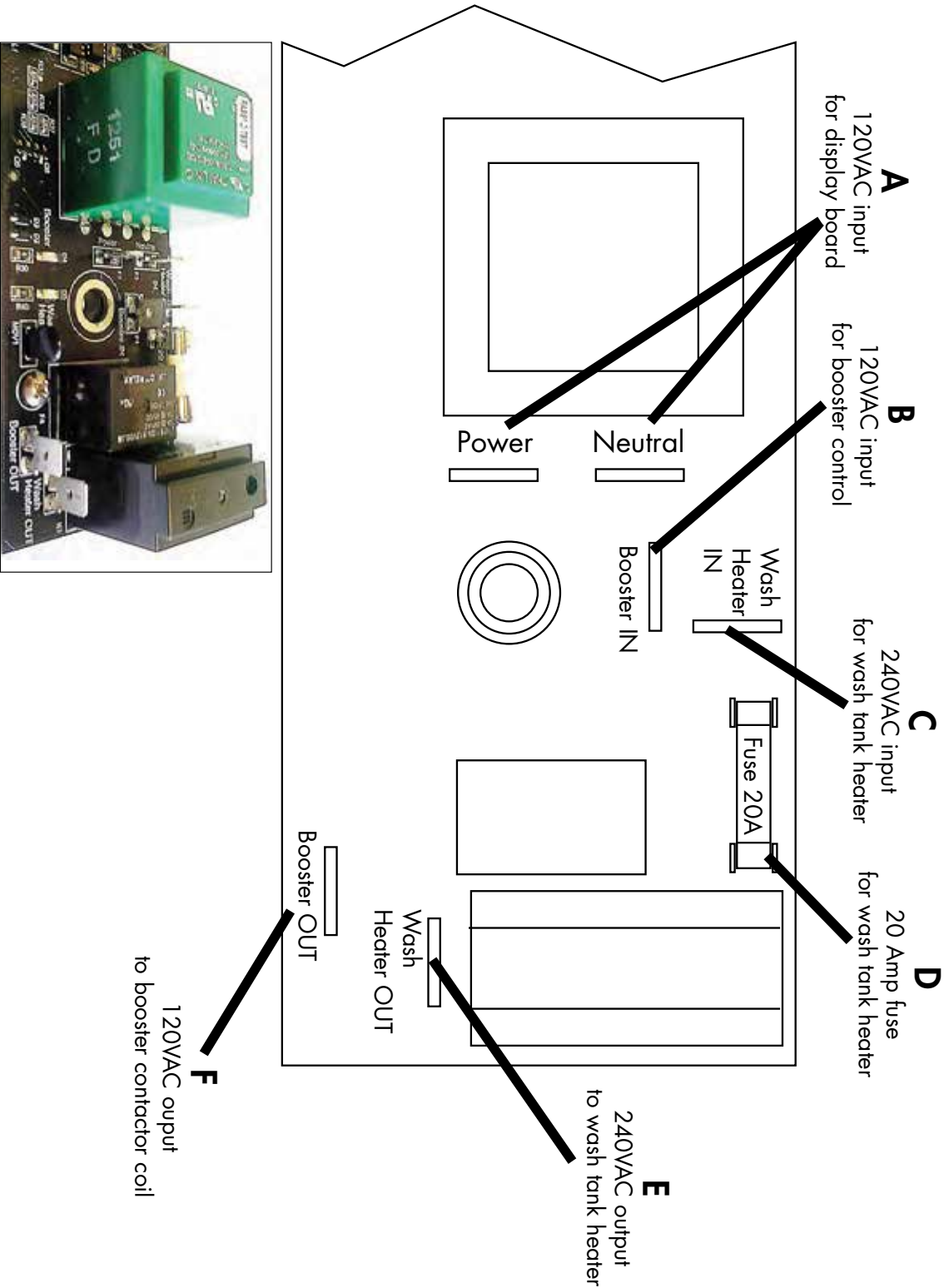


6

Troubleshooting - See below if one or more of the components in Step 5 did not run.

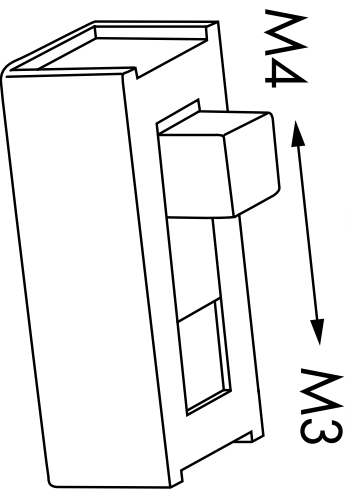
CONDITION	POSSIBLE CAUSE/SOLUTION
A single component in Step 5 does not run.	Check the component that did not run.
Wash pump only component that runs (Except UH330B)	Check timer bd 4A fuse. (All except UH330B)
Wash pump only component that runs (UH330B Only)	Check timer bd 6A fuse. (UH330B Only)
Wash pump only component that won't run. 4A/6A fuse okay.	Check pump/motor - see troubleshooting guide.
None of the components in Step 5 run.	Check neutral wire - see troubleshooting guide.

Undercounter Temperature Display Board — P/N 0512106-1
Power Terminals.



Undercounter Temperature Display Board – P/N 0512106-1

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.

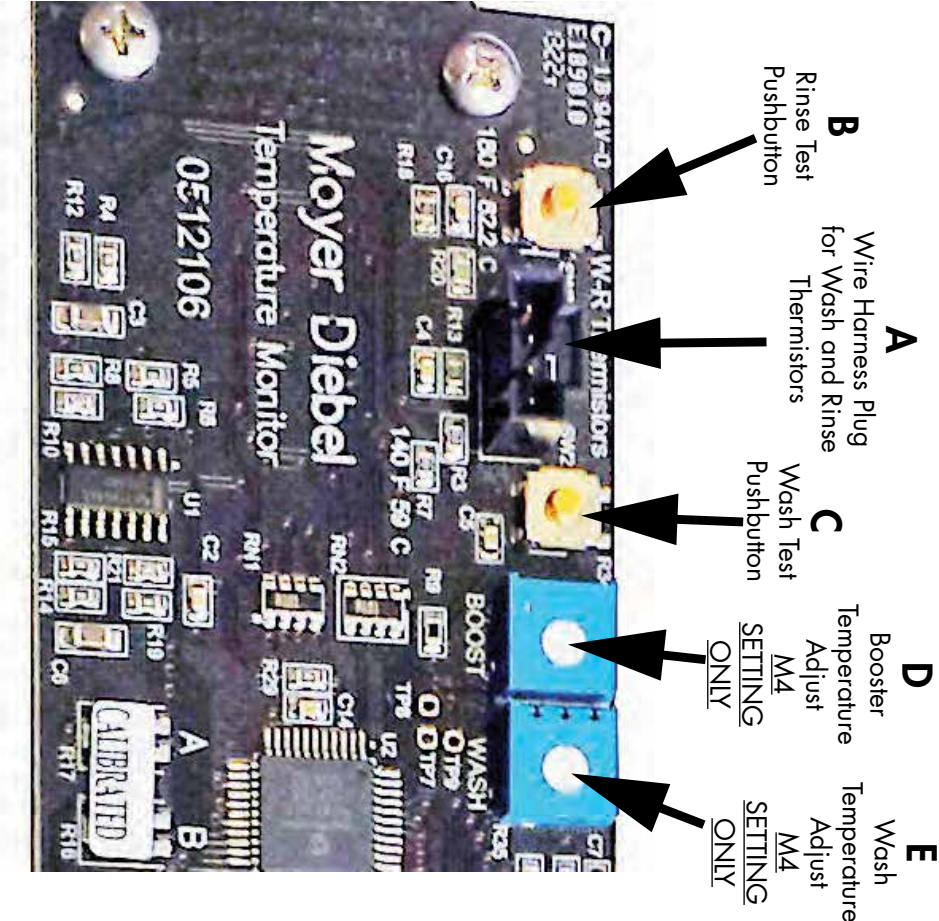
M4 Setting

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.

Undercounter Temperature Display Board
P/N 0512106-1



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.

Booster Heater/Wash Tank Heater Interlock Circuit Operation

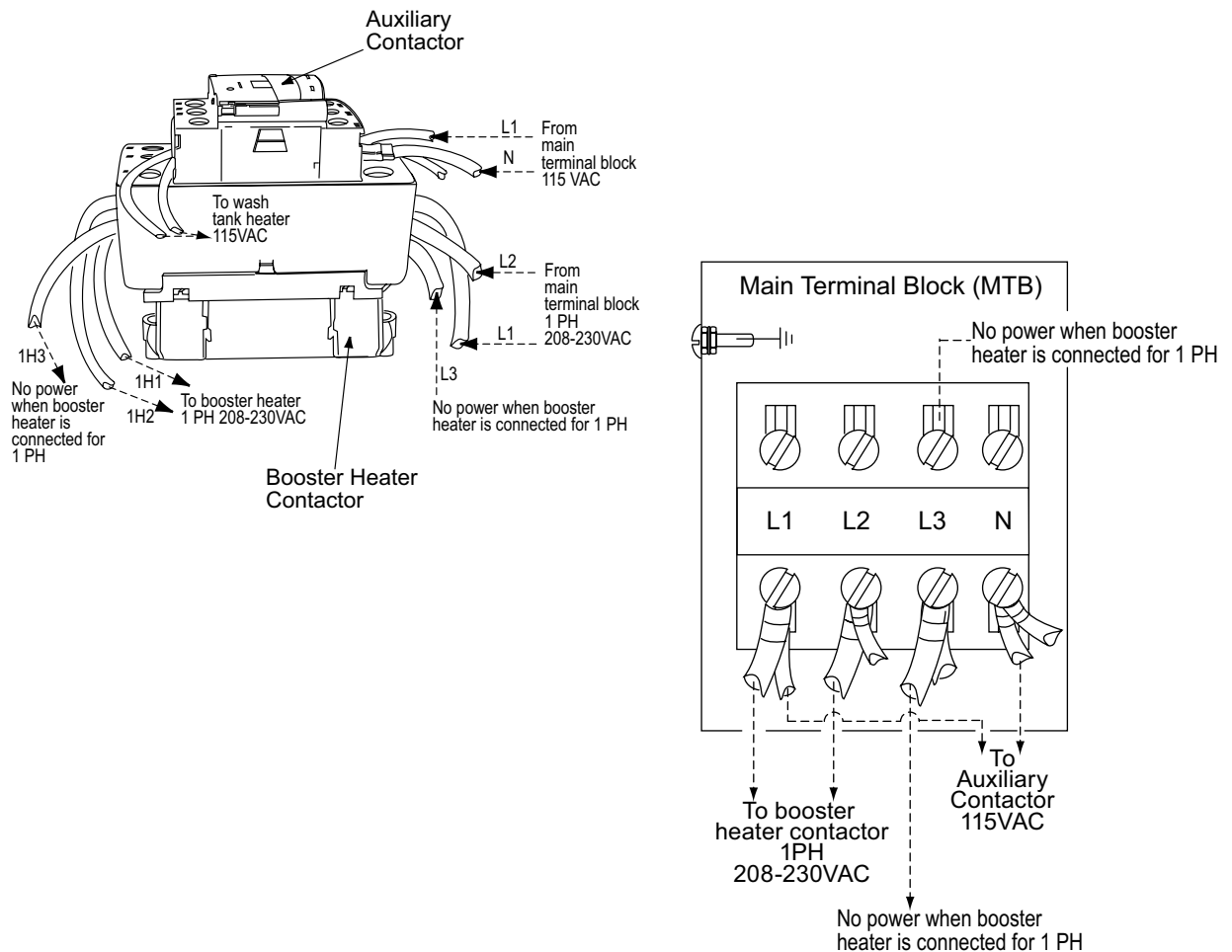
For Model 201HT, the booster heater/wash tank heater interlock circuit removes power from the wash tank heater whenever the booster heater contactor energizes.

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

The booster heater contactor is located on the center of the base 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.



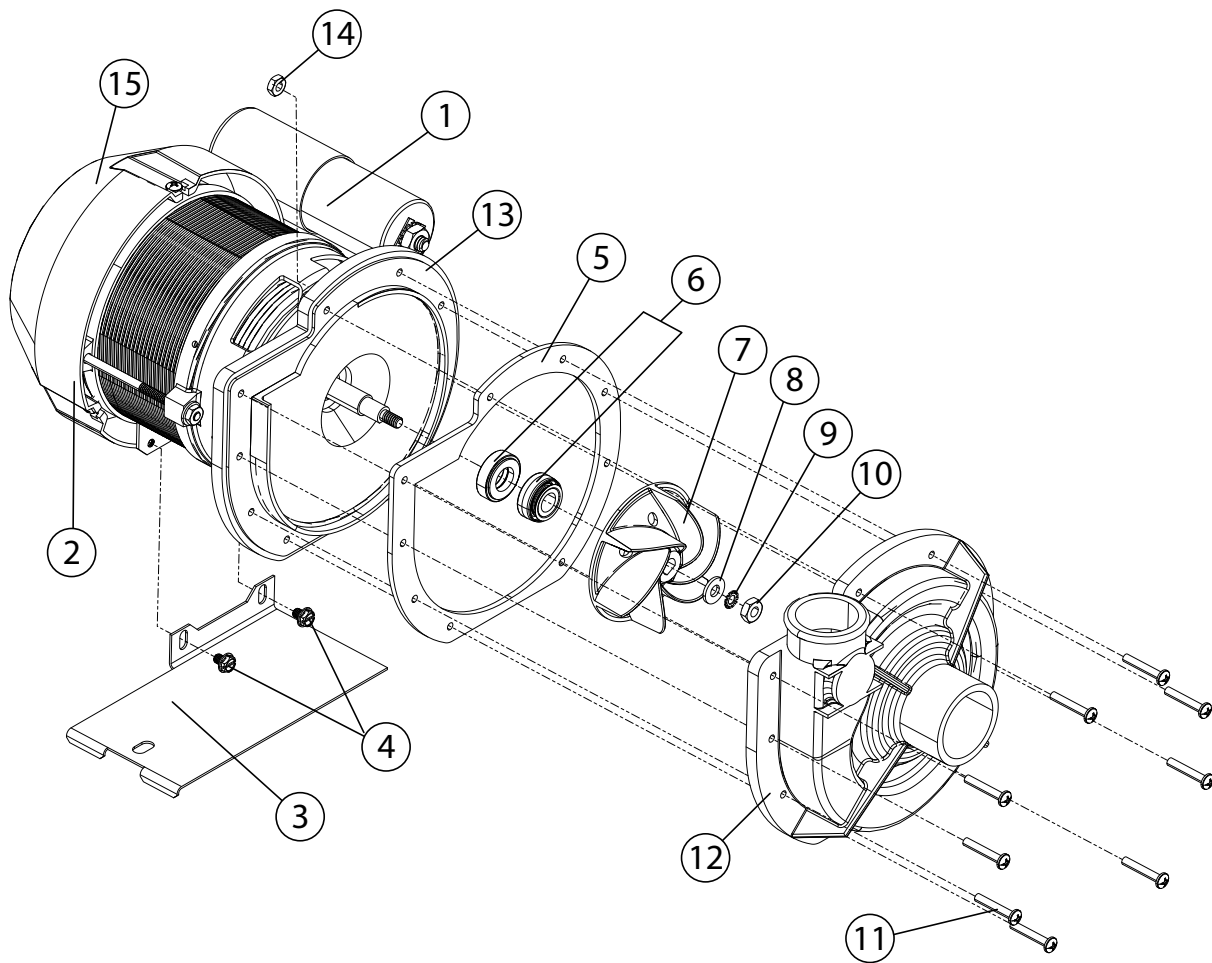
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***Models 201HT, 201LT
Service Replacement Parts***

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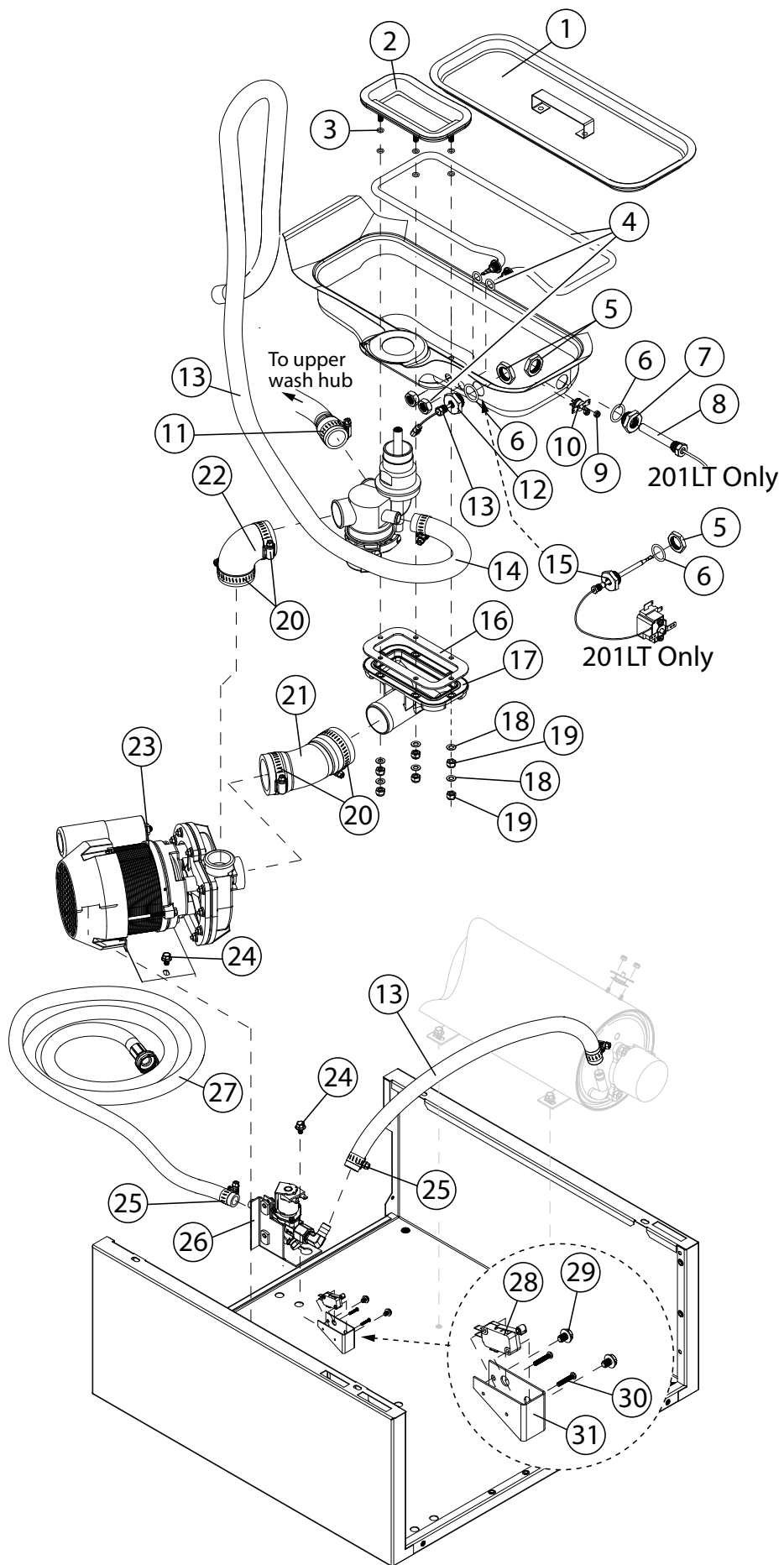
Service Replacement Parts

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Panels - 201HT, 201LT.....	102
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Item No.	Part No.	Description	Qty.
1	0512347	CAPACITOR 40 μ F	1
2	0512101	PUMP/MOTOR ASSEMBLY COMPLETE 115VAC/60/1	1
3	0313394	BRACKET, WASH PUMP	1
4	0512185	BOLT, HEX FLANGE 1/4-20 X 3/8" SST	2
5	110285	GASKET	1
6	114139	SEAL	1
7	0512345	IMPELLER	1
8	0501478	WASHER, PLAIN, 17/64"	1
9	106482	WASHER, LOCK, 1/4"	1
10	114144	NUT, M6	1
11	0512340	SCREW, M4, PHIL, PAN HD.	9
12	0512341	VOLUTE, PUMP	1
13	114137	BACKPLATE, PUMP	1
14	107337	NUT, M4	9
15	0513131	COVER, REAR MOTOR FAN	1

NOTE: The pump motor is not sold separately.

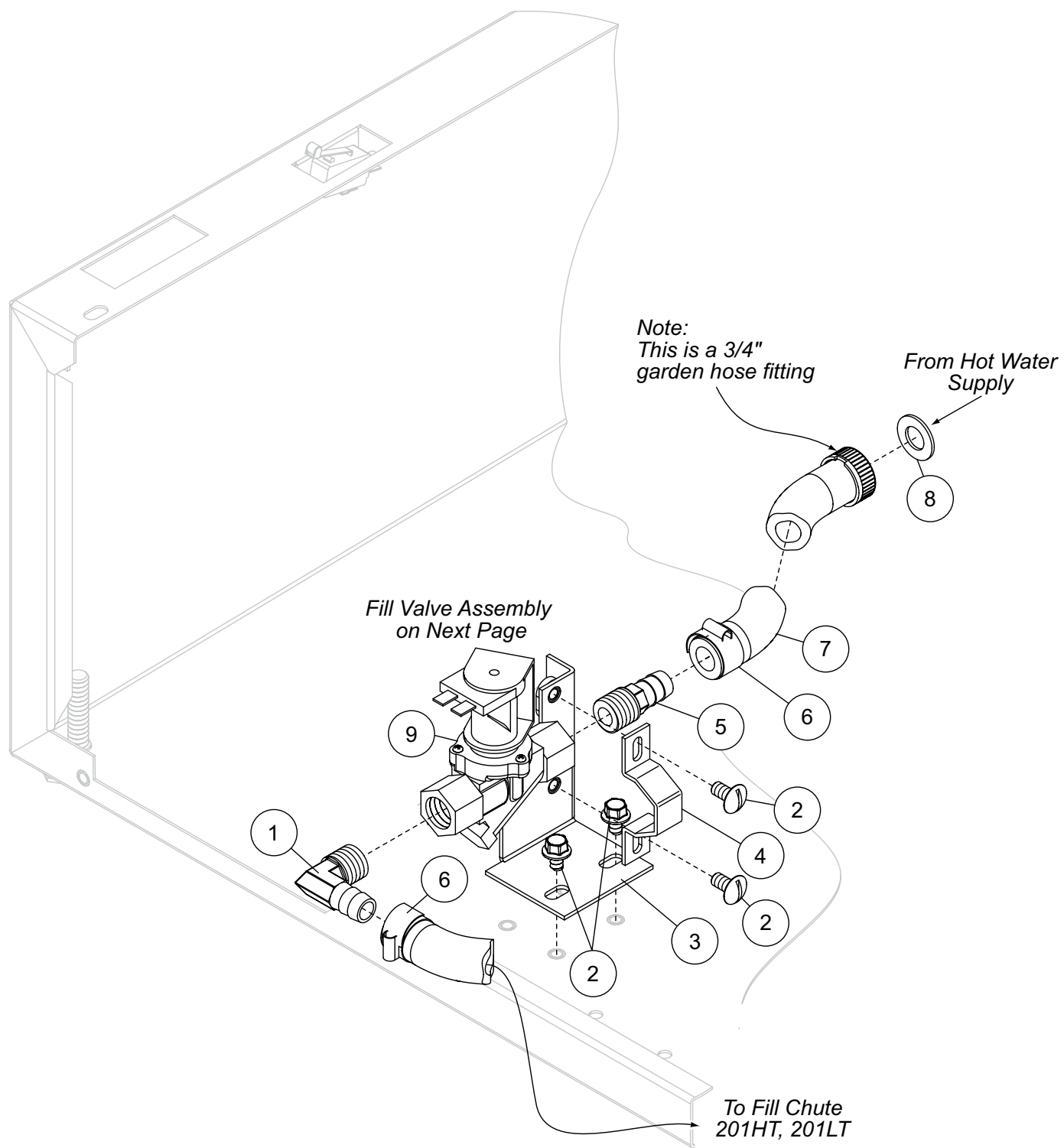


Item No.	Part No.	Description	Qty.
1	0512136	SCREEN, SCRAP ASSY.	1
2	0513324	FLANGE, PUMP SUCTION	1
3	0513677	O-RING	A/R
4	0512169	HEATER, 120VAC 750W (201LT)	1
—	0512426	HEATER, 240V 2kW (201HT)	1
5	201029-1	NUT, LOCK 1/2 INCH NI PLATED	A/R
6	0512099	O-RING	1
7	0508872	ADAPTOR, THERMOMETER (201LT Only)	1
8	0512107	THERMOMETER, WASH TANK (201LT Only)	1
9	108954	NUT, GRIP 6-32 WITH NYLON INSERT SST	2
10	113604	THERMOSTAT, HI-LIMIT BI-METAL SNAP, 212°F	1
11	0508808	CLAMP, SS GEAR	2
12	0512299	ADAPTOR, THERMISTOR	1
13	0513310	THERMISTOR, 10 KΩ, 2 WIRE ASSY (201HT Only)	1
14	0509302	HOSE, 5/8" ID X 1" OD X 6" LG.	A/R
15	0507323	THERMOSTAT, WASH (201LT Only)	1
16	0513329	GASKET, PUMP SUCTION	1
17	0513325	ELBOW, PUMP SUCTION	1
18	0501476	WASHER	6
19	107967	NUT, 1/4-20 W/NYLON INSERT SST	6
20	0502571	CLAMP, HOSE 1-1/16" - 2"	2
21	0513328	HOSE, PUMP SUCTION	1
22	0512119	HOSE, PUMP DISCHARGE	1
23	0512101	PUMP/MOTOR COMPLETE 115/60/1	1
24	0512185	BOLT, HEX FLANGE 1/4-20 X 3/8" SST	1
25	0512985	CLAMP, HOSE	1
26	0504952	VALVE, FILL 5.0 GPM	1

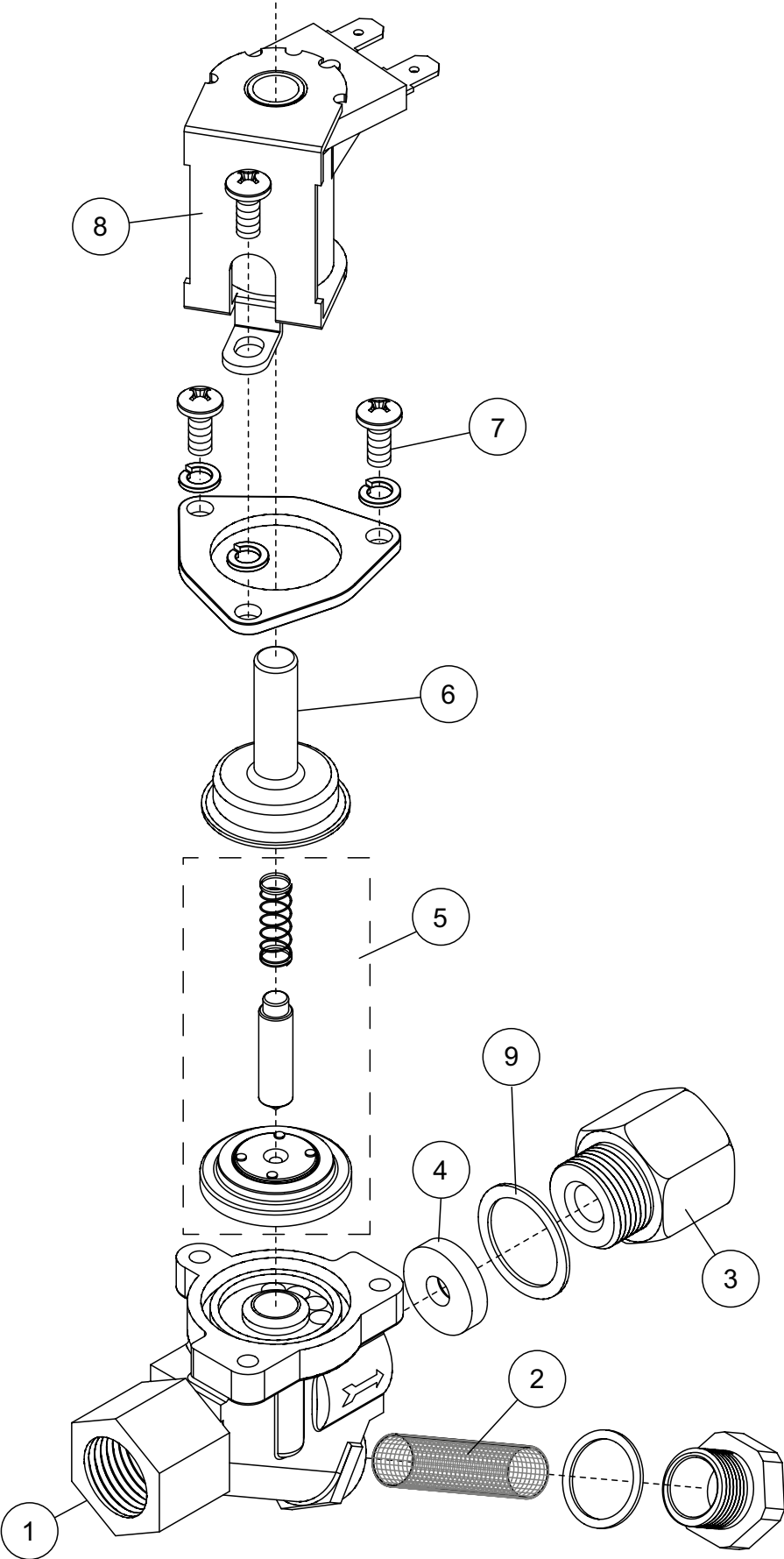
Base Assembly - 201HT, 201LT

Item No.	Part No.	Description	Qty.
27	0509526	HOSE, 1/2" X 7 FT. FEM. GARD. ADAPT.	1
28	0501379	SWITCH, 15A	1
29	0512792	SCREW, 10-32 X 1/4" RD. HD. PHILL. SST	2
30	0508752	SCREW, 4-40 X 5/8" RH. HD. PHILL. SST	2
31	0313432	BRACKET, DOOR SWITCH	1

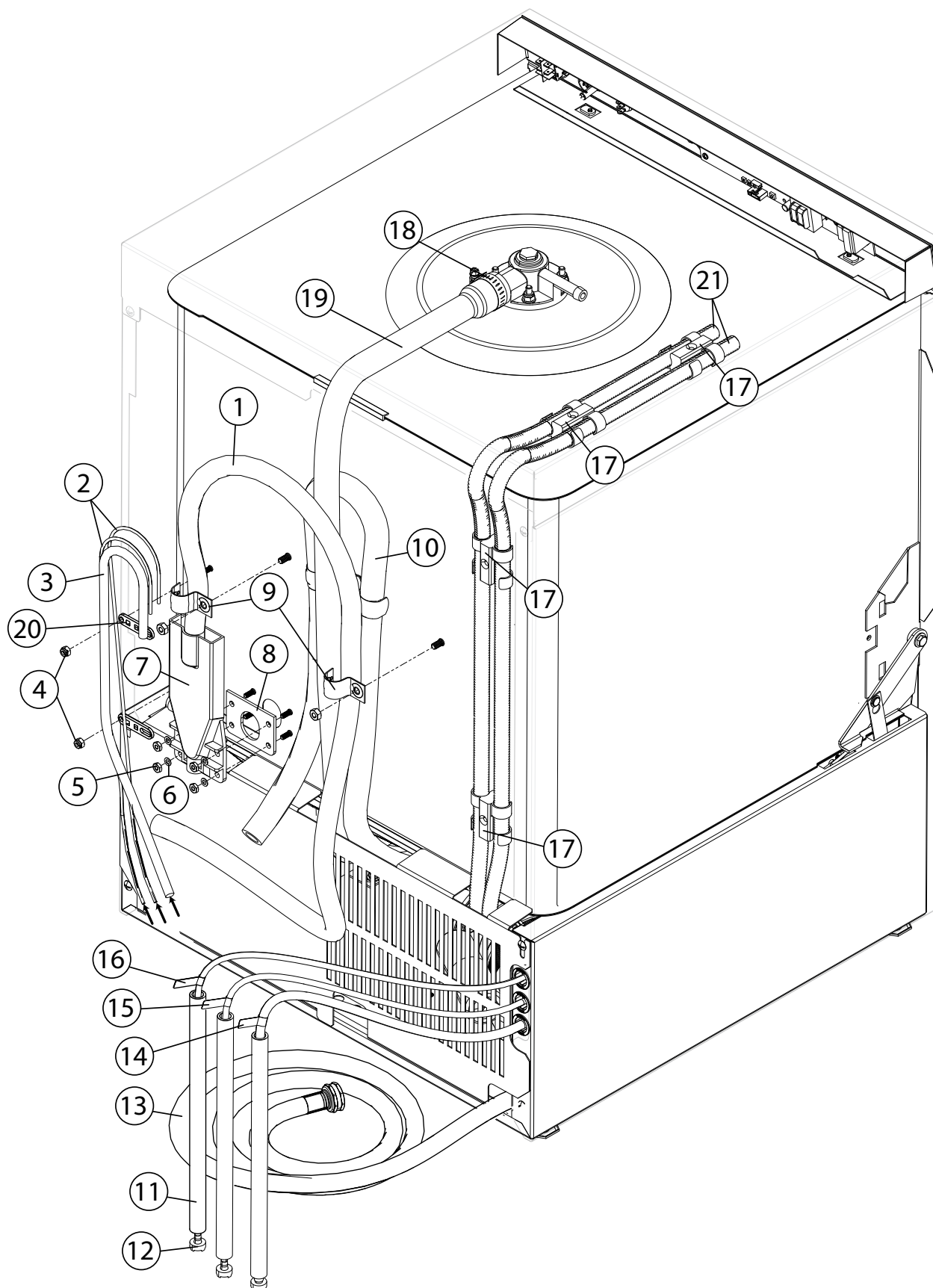
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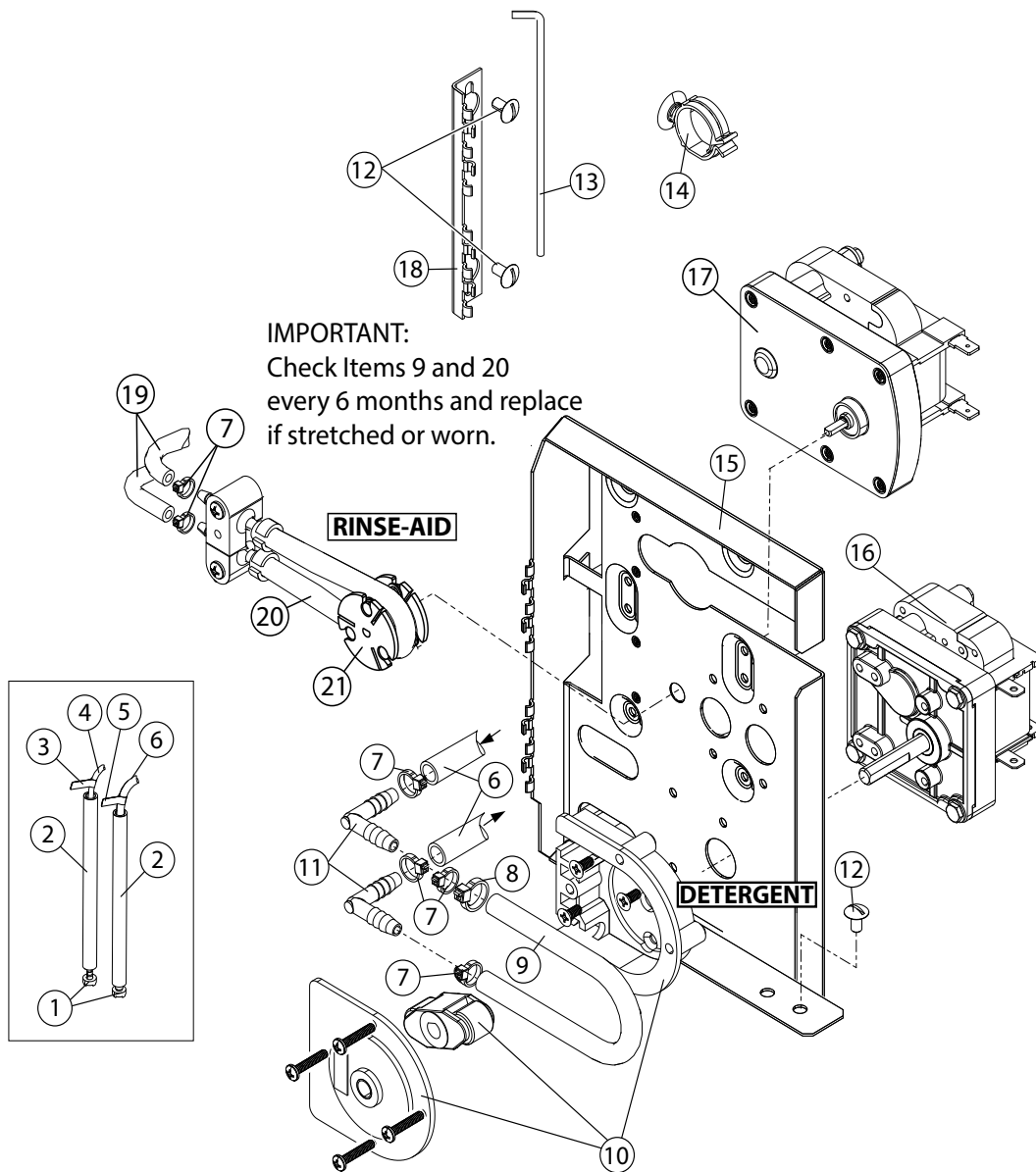
Item No.	Part No.	Description	Qty.
1	0502653	ELBOW, 90° 3/8" MPT X 1/2" HOSE	1
2	0512185	BOLT, HEX FLANGE 1/4-20 X 3/8" SST	4
3	0300065	SUPPORT, VALVE	1
4	0300203	CLAMP, VALVE	1
5	0502618	HOSE BARB, 1/2" X 3/8" MPT	1
6	0512985	CLAMP, HOSE	1
7	0509526	HOSE, 1/2" X 7 FT. FEM. GARD. ADAPT.	1
8	0505320	WASHER, 1" OD GARDEN HOSE	1
9	0504952	VALVE, FILL, 3/8" NPT	1



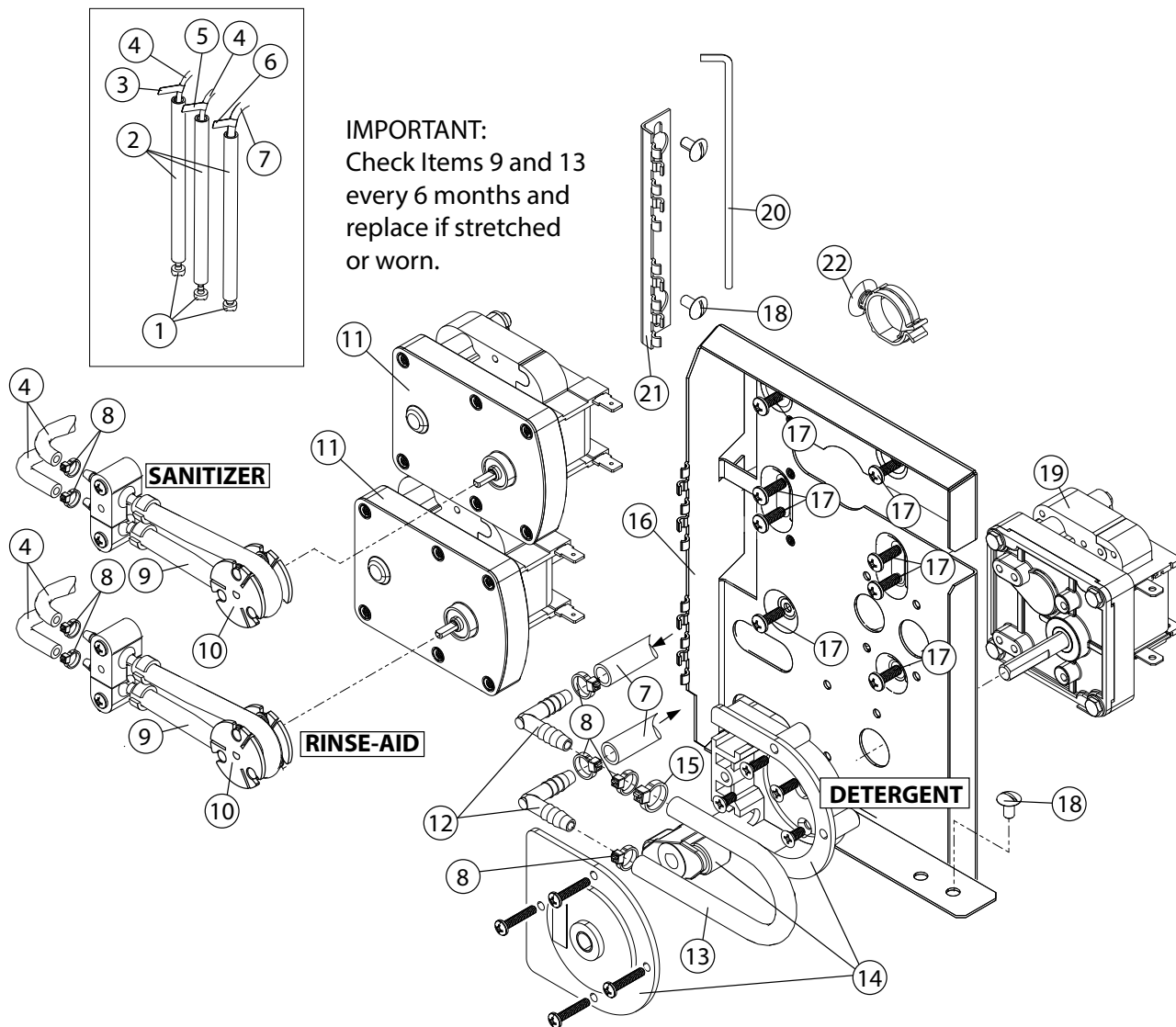
Item No.	Part No.	Description	Qty.
1	0504952	VALVE, FILL 5.0 GPM	1
2	0502803	SCREEN, VALVE STRAINER	1
3	0502804	GASKET, CAP	1
4	0504958	WASHER, FLOW 5.0 GPM	1
5	0502811	KIT, REBUILD	1
6	0505229	GUIDE	1
7	0501406	SCREW, SLOT SS RH 8-32 X 1/2"	3
8	0505235	COIL, 115V 60HZ 10W	1
9	0502807	GASKET, OUTLET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



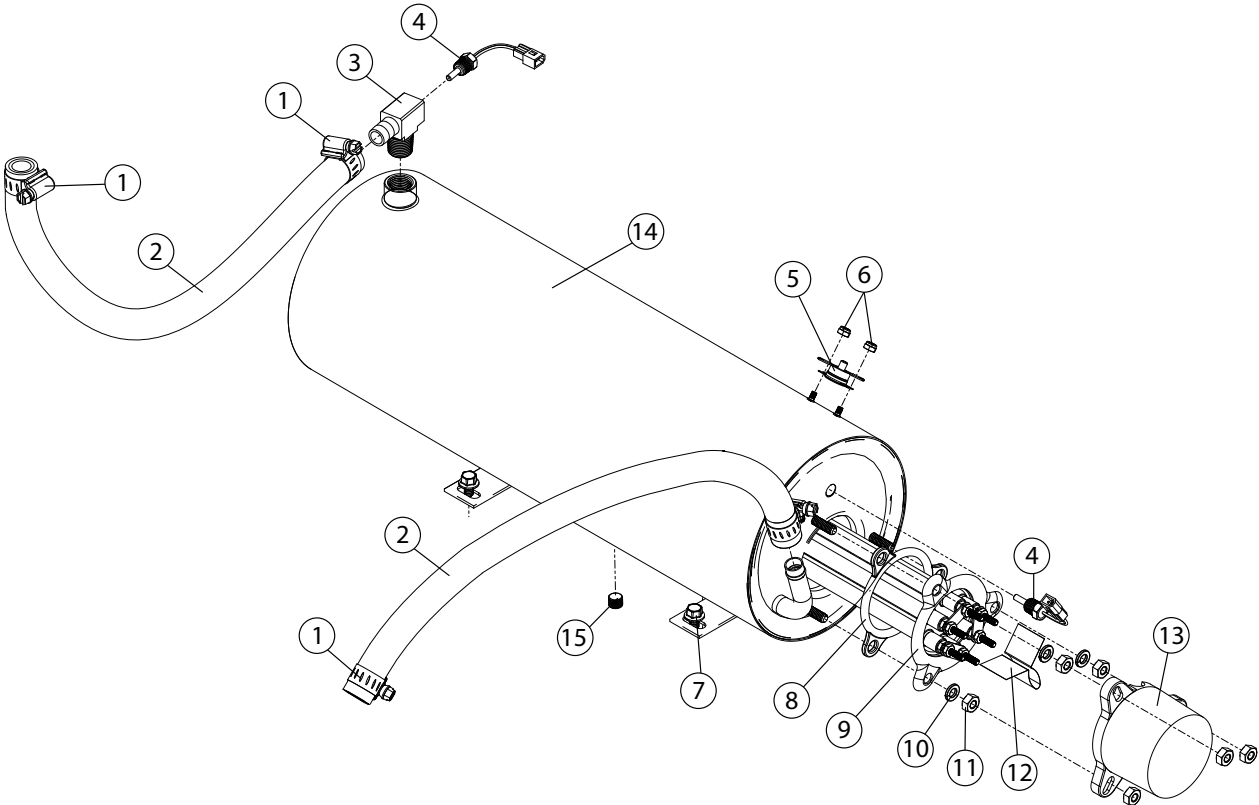
Item No.	Part No.	Description	Qty.
1	107417	HOSE, RUBBER 1/2" ID X .84" OD	A/R
2	0502666	HOSE, 1/8" ID X 1/4" OD PVC	A/R
3	0502667	HOSE, 1/4" ID X 3/8" OD PVC	A/R
4	100194	NUT, GRIP 10-32 W/NYLON INSERT	2
5	0503722	NUT, HEX 10-32 SST	4
6	0507709	WASHER, FLAT #10 SST	4
7	0508867	CHUTE, INLET	1
8	0509048	GASKET, INLET CHUTE	1
9	0308822	CLAMP, EMT 1/2"	1
10	0509302	HOSE, 5/8" ID X 1" OD PVC BRAIDED	A/R
11	0306363	TUBE, STIFFENER	A/R
12	0501869	STRAINER	A/R
13	0509526	HOSE, FILL 1/2" X 7 FT. FEM. GARD. ADAPT.	1
14	0503695	LABEL, DETERGENT HOSE	1
15	0505483	LABEL, RINSE-AID HOSE	1
16	0503694	LABEL, SANITIZER HOSE (201LT ONLY)	1
17	0512369	CLAMP, CONDUIT	4
18	0502571	CLAMP, HOSE GEAR	A/R
19	0512120	HOSE, WASH	1
20	106090	TIE PLATE	2
—	0501518	TIE, NYLON 5-1/2"	2
21	0512757	CONDUIT, 1/2"	A/R
—	0512758	CONDUIT, 3/8"	A/R



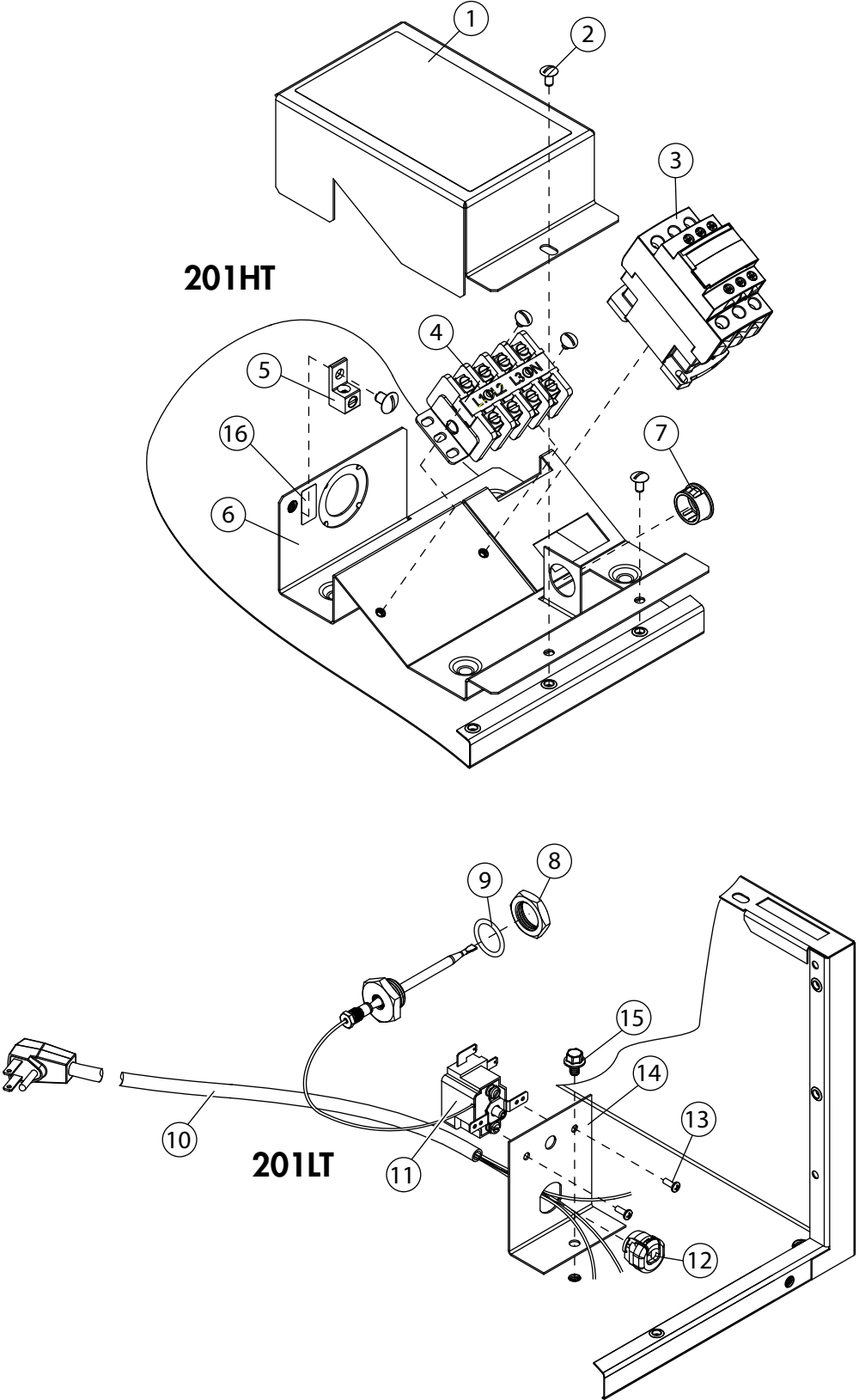
Item No.	Part No.	Description	Qty.
1	0501869	STRAINER	2
2	0306363	TUBE, 3/8" ID X 12" LG. STIFFENER	1
3	0505483	LABEL, RINSE-AID HOSE	1
4	112883-1	TUBING, 1/8" OD X 1/16" ID	A/R
5	0503695	LABEL, DETERGENT HOSE	A/R
6	0502667	HOSE, 1/4" ID X 3/8" OD PVC	A/R
7	0501519	TIE, NYLON 4"	7
8	0512369	CLAMP, HOSE	2
9	114202	TUBE, PUMP 3/16" ID X 3/8" OD X 9" LG.	1
10	114203	PUMP HD KIT, PERISTALIC	2
11	0502644	ELBOW, 1/4" HOSE BARB	2
12	100007	SCREW, 10-32 X 3/8" TRUSS SST	3
13	0313644	PIN, HINGE	1
14	0513645	HOLDER, CABLE	4
15	0313393	BRACKET, CHEMICAL PUMP	1
16	0510870-1	GEARMOTOR, 115/60/1	2
17	0503756	MOTOR, INJECTOR PUMP	1
18	0313431	BRACKET, HINGED PANELS	1
19	0502666	HOSE, 1/8" ID X 1/4" OD PVC	A/R
20	0706635	TUBE, ELEMENT 45 CC	1
21	0707142	ROTOR	1



Item No.	Part No.	Description	Qty.
1	0501869	STRAINER	2
2	0306363	TUBE, 3/8" ID X 12" LG. STIFFENER	1
3	0505483	LABEL, RINSE-AID HOSE	1
4	0502666	HOSE, 1/8" ID X 1/4" OD PVC	A/R
5	0503694	LABEL, SANITIZER HOSE	A/R
6	0503695	LABEL, DETERGENT HOSE	A/R
7	0502667	HOSE, 1/4" ID X 3/8" OD PVC	A/R
8	0501519	TIE, NYLON 4"	8
9	0706635	TUBE, ELEMENT ASSEMBLY 45CC	1
10	0707142	ROTOR	1
11	0503756	MOTOR, INJECTOR PUMP	1
12	0502644	ELBOW, 1/4" HOSE BARB	2
13	114202	TUBE, 3/16" ID X 3/8" OD X 9" LG.	1
14	114203	PUMP HD KIT, PERISTALIC	1
15	0512369	CLAMP, HOSE	1
16	0313393	BRACKET, CHEMICAL PUMP	1
17	0504822	SCREW, 8-32 X 1/2" PAN HD. SST	4
18	100007	SCREW, 10-32 X 3/8" TRUSS SST	3
19	0510870-1	GEARMOTOR, 115/60/1	1
20	0313644	PIN, HINGE	1
21	0313431	BRACKET, HINGED PANELS	1
22	0513645	HOLDER, CABLE	4

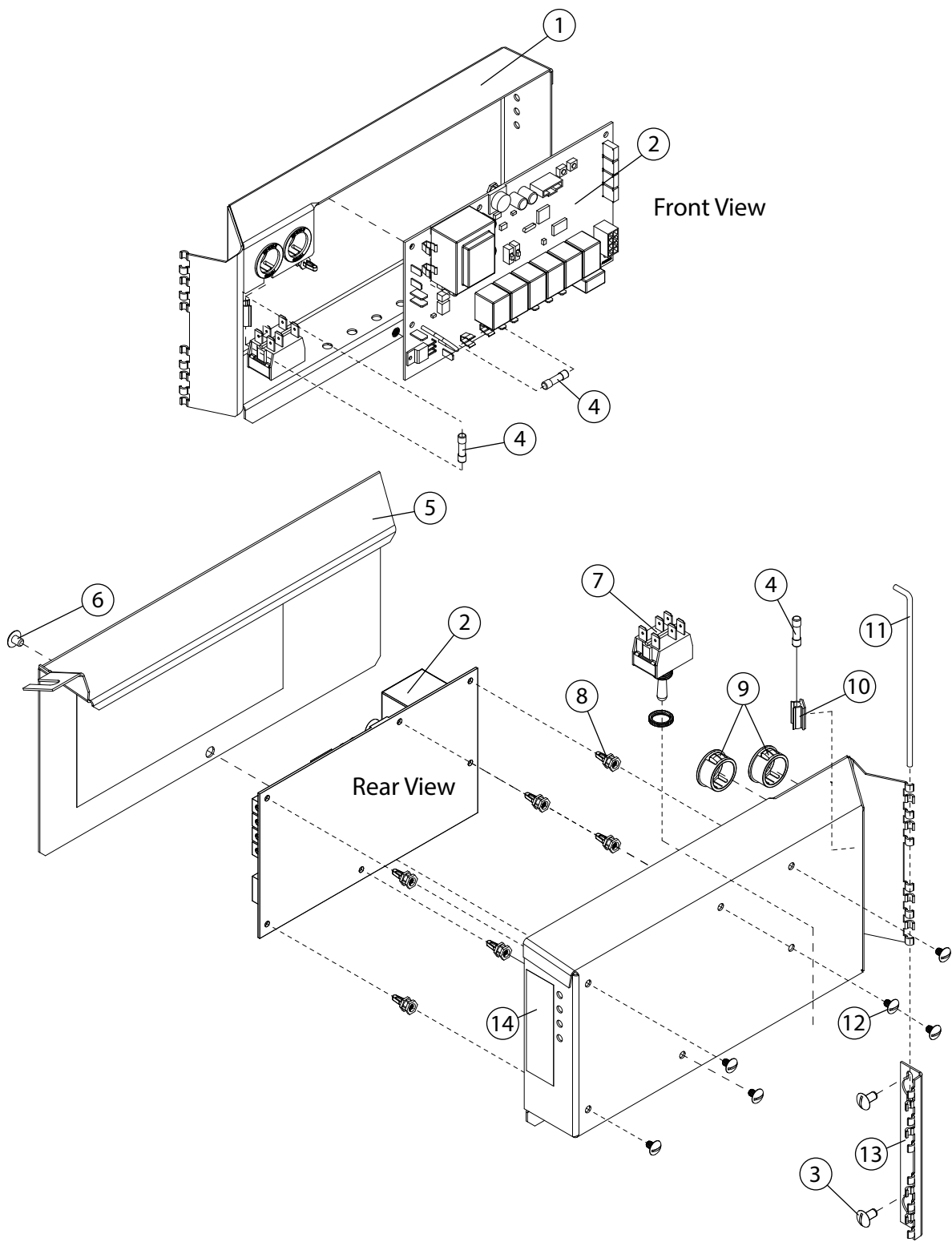


Item No.	Part No.	Description	Qty.
1	0512985	CLAMP, SS GEAR-MIN. 1/2"	4
2	107417	HOSE, RUBBER 1/2" ID X .84" OD	A/R
3	0513314	TEE, RINSE	1
4	0513310	THERMISTOR 10 kΩ, 2-WIRE	2
5	110562	THERMOSTAT, HIGH LIMIT 240°F	1
6	108954	NUT, GRIP 6-32 W/NYLON INSERT SST	2
7	0512185	BOLT, HEX FLANGE, 1/4-20 X 3/8" SST	2
8	109985	SEAL, BOOSTER ELEMENT	1
9	111235-1	BOOSTER, ELEMENT 5 KW, 40°F RISE	1
—	111233	BOOSTER, ELEMENT 9 KW, 70°F RISE	1
10	106482	WASHER, LOCK 1/4" SPLIT SST	3
11	100003	NUT, PLAIN 1/4-20 SST	6
12	111885	INSULATOR	1
13	H161123	COVER, ELEMENT	1
14	0713333	TANK, BOOSTER SST	1
15	0508817	PLUG, 1/8"	1
—	0513538	HARNESS, BOOSTER THERMISTOR	2
—	0513537	HARNESS, WIRING (UH130B NOT SHOWN)	1

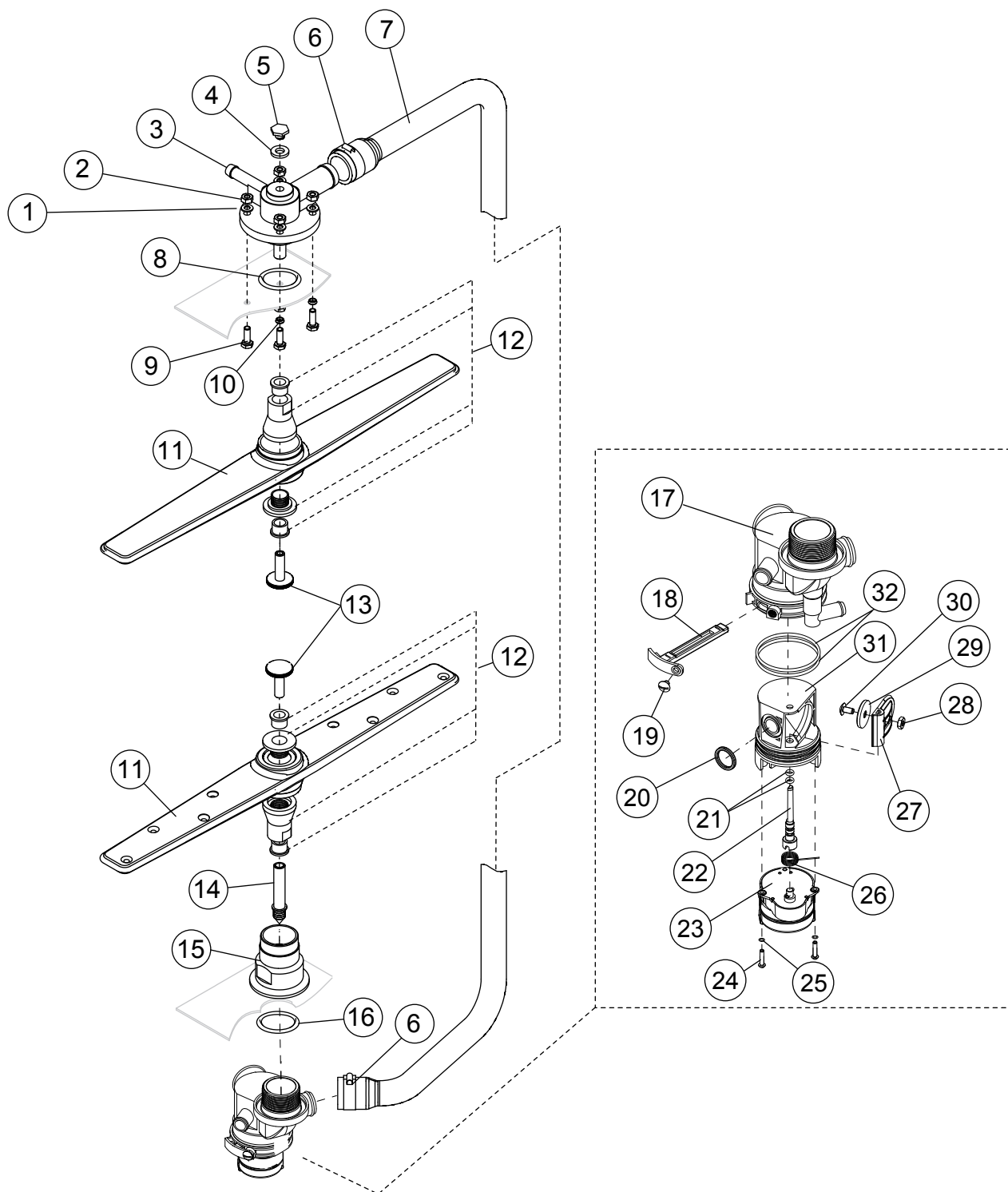


201HT, 201LT - Power Input Block and Cord Assemblies

Item No.	Part No.	Description	Qty.
1	0313396	COVER, BOX WIRING	1
2	0501411	SCREW, 10-32 X 1/4", TRUSS HD.	2
3	0512432	CONTACTOR, 3-POLE 120VAC COIL	1
4	0509527	BLOCK, TERMINAL, 4-POLE <i>(201HT Only)</i>	1
5	103310	LUG, GROUND	1
6	0313395	BOX, WIRING	1
7	107964	BUSHING, STRAIN RELIEF, SMALL	A/R
8	201029-1	NUT, LOCK 1/2 INCH NI PLATED	A/R
9	0512099	O-RING	1
10	0513312	CORD AND PLUG, 115VAC <i>(201LT Only)</i>	1
11	0507323	THERMOSTAT, WASH <i>(201HT Only)</i>	1
12	0503647	RELIEF, STRAIN	1
13	0501450	SCREW, 6-32 X 3/16" NIBS, RH PHIL. SST	2
14	0313410	BRACKET, POWER CORD	1
15	0512185	BOLT, HEX FLANGE, 1/4-20 X 3/8" SST	1
16	0503592	LABEL, GROUND	1



Item No.	Part No.	Description	Qty.
1	0313397	BOX, CONTROL BOARD	1
2	0712105	TIMER CKT. BD.	1
3	0501464	SCREW, 10-24 X 3/8; TRUSS HD. SST	2
4	0512373	FUSE, 4A 250V	1
5	0313398	COVER, BOX	1
6	0501411	SCREW, 10-32 X 1/4" SST	1
7	0501373	SWITCH, BOOSTER FILL (201HT only)	1
8	0512973	STANDOFF	6
9	107964	BUSHING, STRAIN RELIEF	2
10	0512781	HOLDER, FUSE	1
11	0313644	PIN, HINGE	1
12	0501408	SCREW, 8-32 X 1/4" TRUSS HD. PHIL. SST	6
13	0313431	BRACKET, HINGED PANELS	1
14	0512243	LABEL, CHEMICAL ADJUST	1

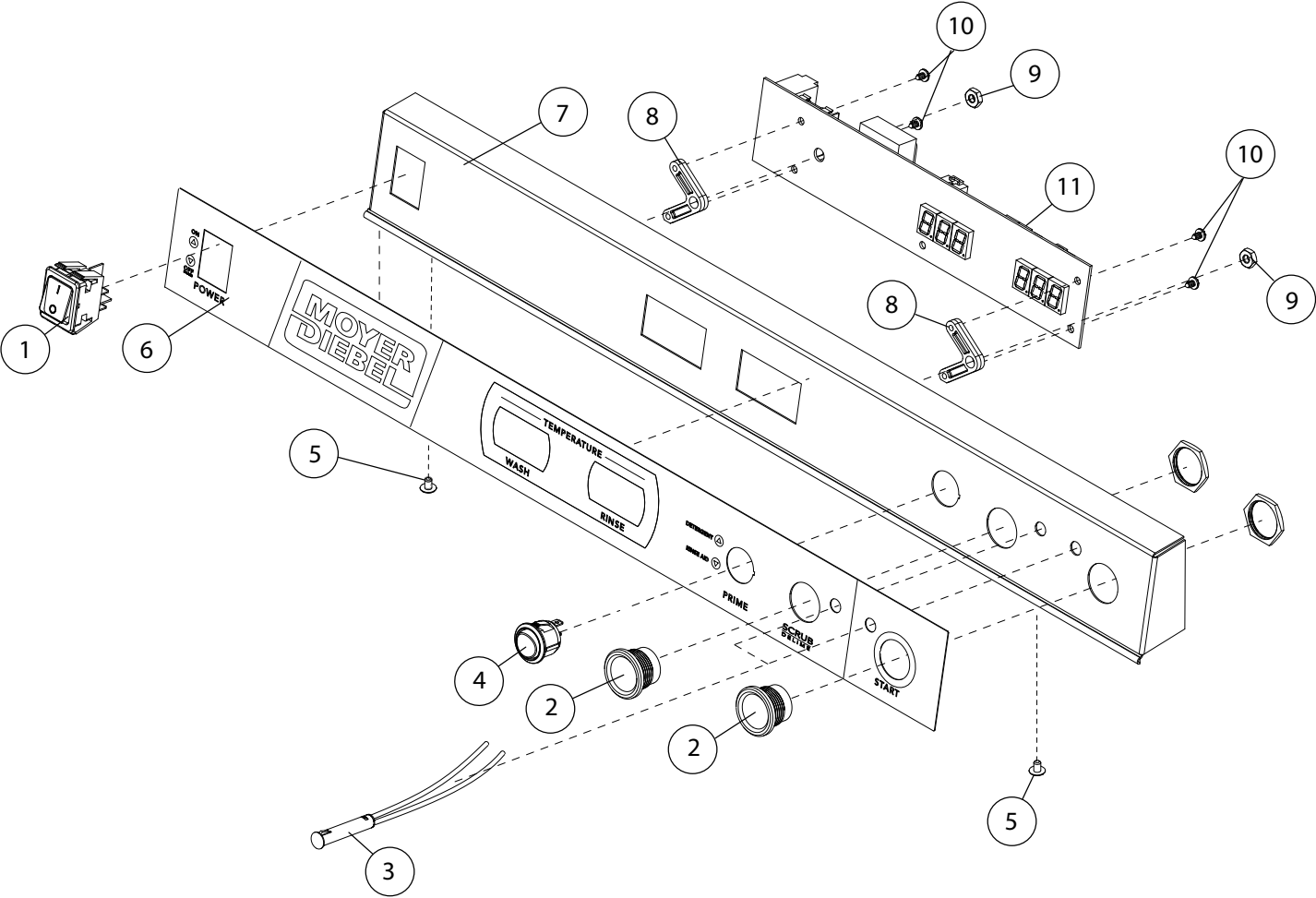


201HT, 201LT - Wash/Rinse Spray Arm and Drain Valve

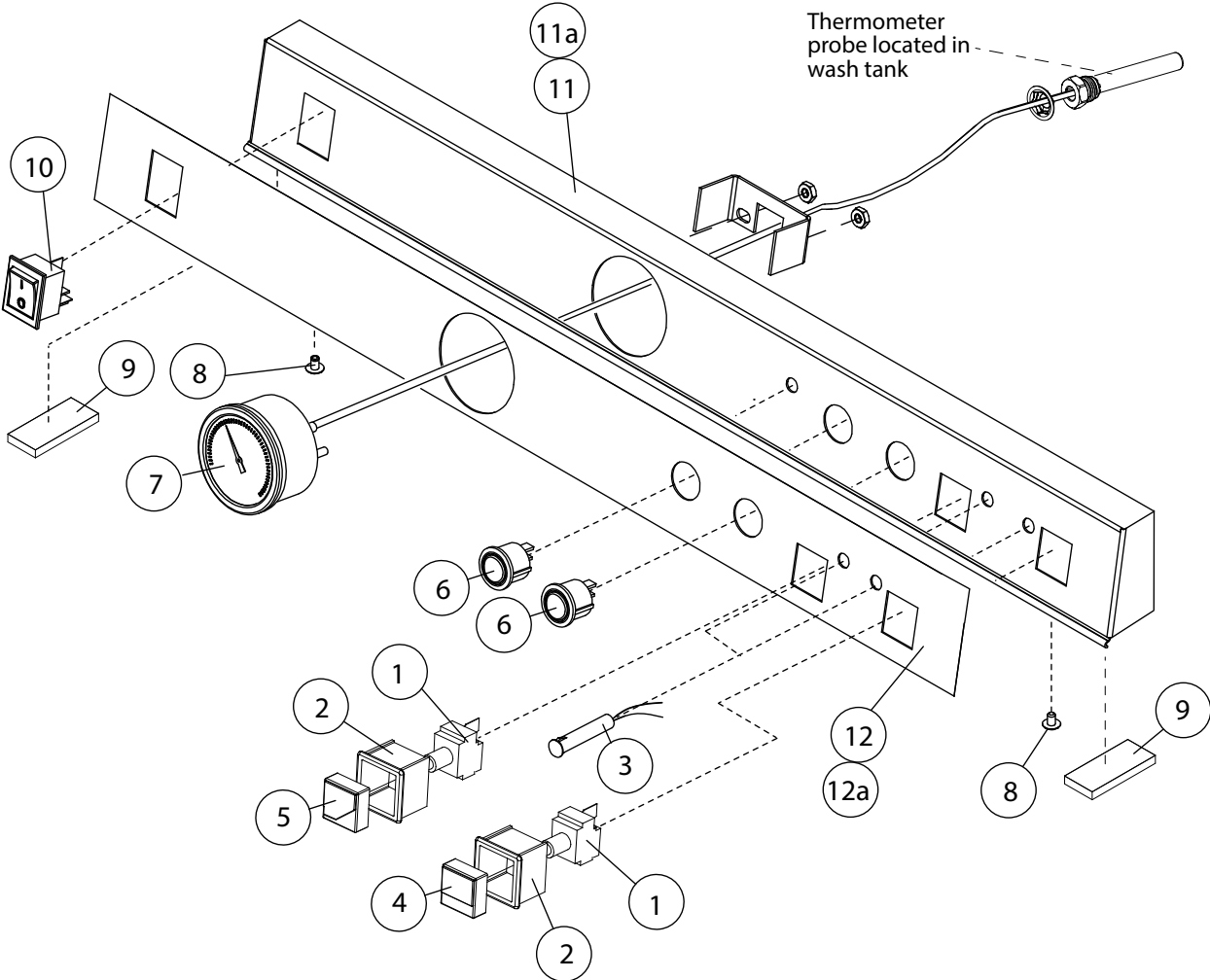
Item No.	Part No.	Description	Qty.
1	0501478	WASHER, 17/64" ID X 9/16" OD SST	4
2	107967	NUT, HEX SST 1/4-20 NYLON INSERT	4
3	0514251	HUB, UPPER WASH ARM	1
4	107873	WASHER, PACKING	1
5	110215	SCREW, RETAINING	1
6	0502571	CLAMP, HOSE GEAR HOSE 1-1/2" SST	2
7	0512120	HOSE, UPPER WASH ARM	1
8	0512133	O-RING, 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	0513440	HOUSING, MANIFOLD	1
18	0513443	PIN, RETENTION	1
19	0509439	SCREW, RETENTION PIN 10-32 X 5/16" SST	1
20	0513446	O-RING, QUAD	1
21	0513445	O-RING, PIVOT SHAFT	2
22	0513447	SHAFT, FLAPPER	1
23	0712123	MOTOR, DRAIN VALVE	1
—	0509257	PIN, MOTOR (COMES WITH MOTOR)	1
24	104883	SCREW, MOTOR 6-32 X 3/8" SST	2
25	0501497	WASHER, SPLIT LOCK #8	2
26	0512126	SPRING, TORSION	1
27	0513442	FLAPPER	1
28	100194	NUT, FLAPPER SEAL	1
29	0512127	GASKET, FLAPPER	1
30	0501412	SCREW, FLAPPER SEAL 10-32 X 3/8"	1
31	0513441	BODY, CARTRIDGE DRAIN VALVE	1
32	0513444	O-RING, CARTRIDGE BODY	2
—	0713667	CARTRIDGE ASSEMBLY, COMPLETE INCLUDES ITEMS 18-32	1

* Note:

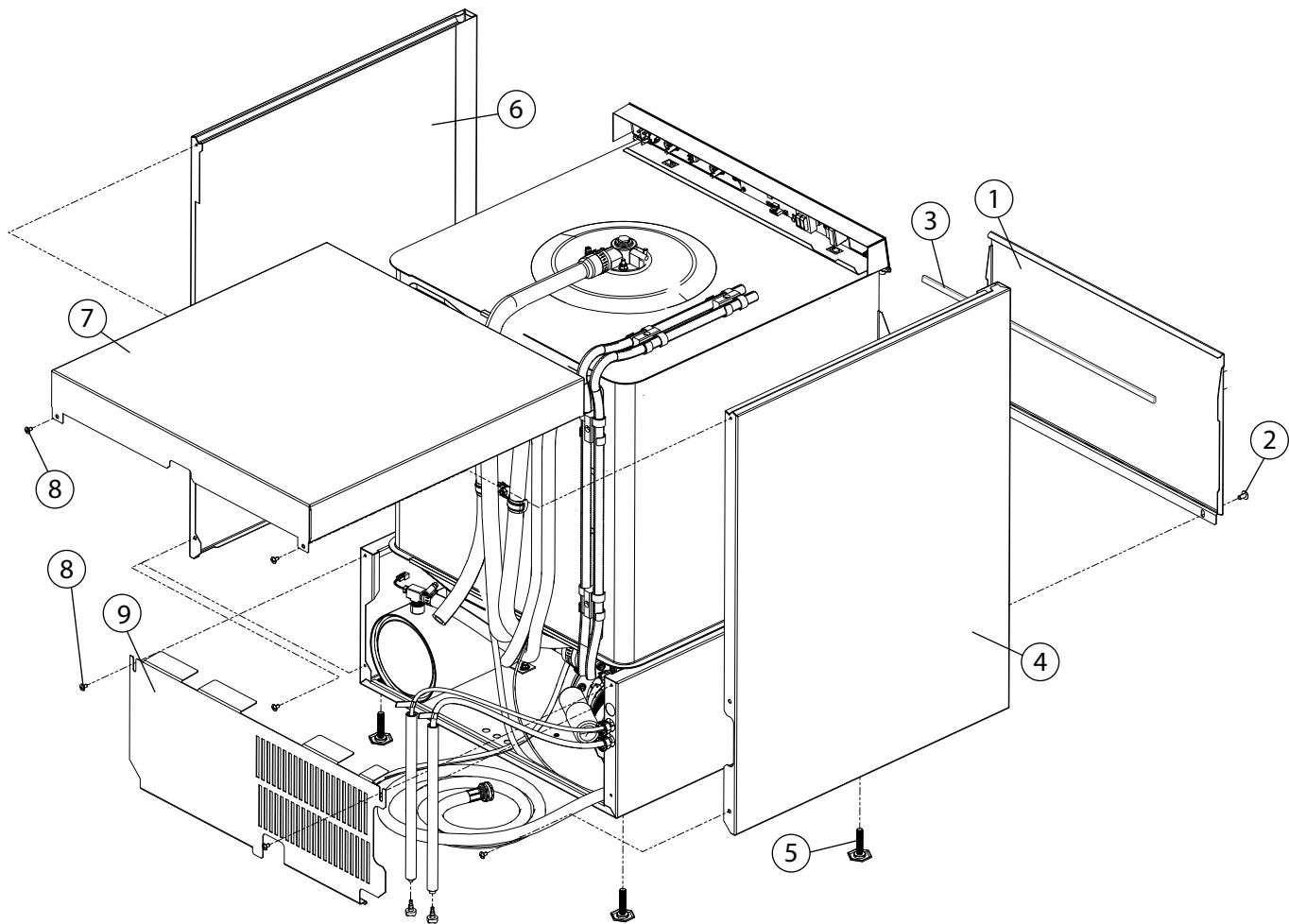
The bearing assembly, P/N 0712749 includes 2 bearings, 1 locknut, and 1 wash arm hub.
The bearings, locknut and hub are not available as separate service replacement parts.



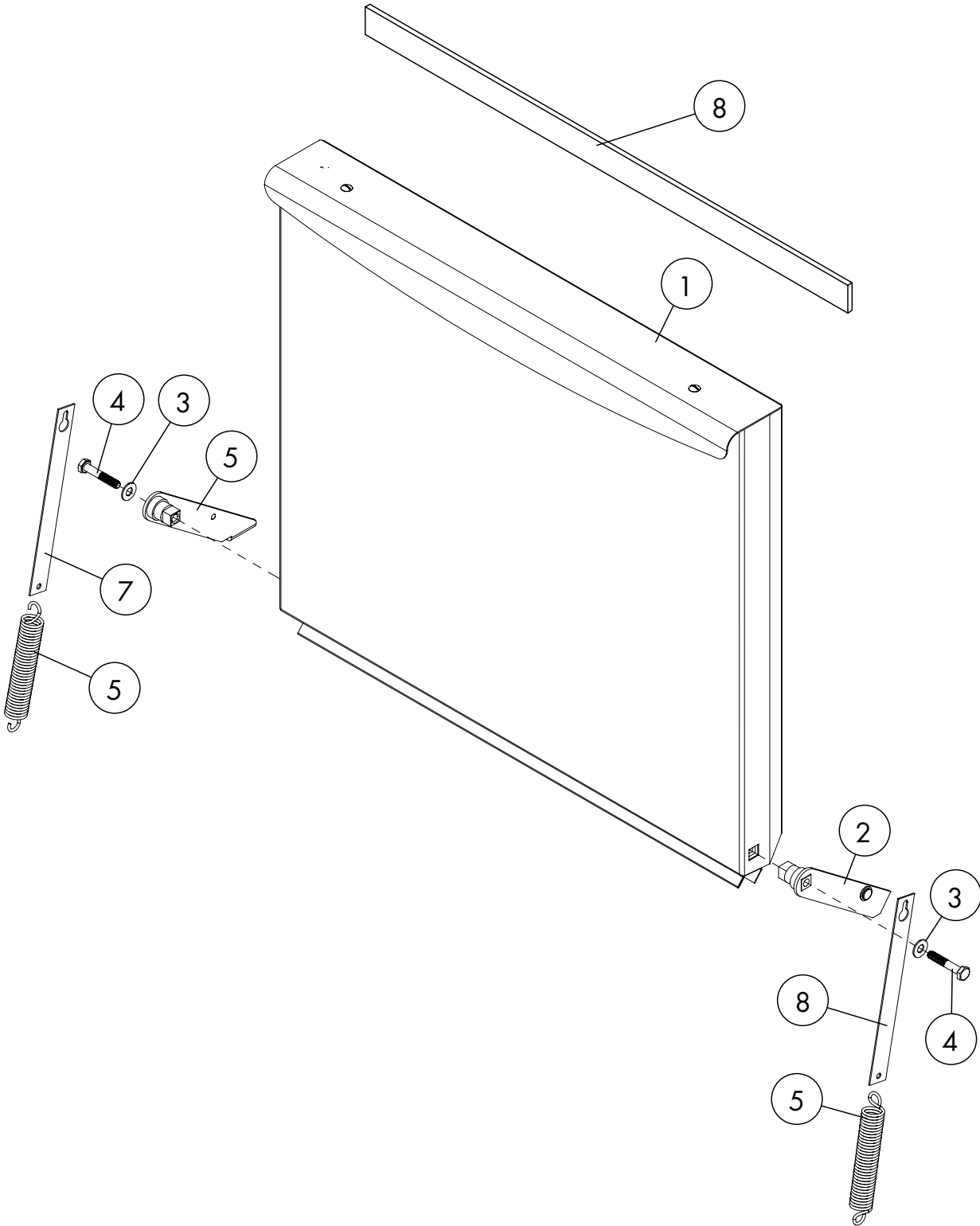
Item No.	Part No.	Description	Qty.
1	0512221	SWITCH, ROCKER DPST 250V NEON	1
2	0512213	SWITCH, PIEZIO	2
3	0512232	LIGHT, INDICATOR, GREEN	2
4	0512226	SWITCH, ROCKER RND SPDT MOMENTARY	1
5	0501408	SCREW, TRUSS PHIL. SST 8-32 X 1/4"	2
6	0513504	LABEL, FACIA	1
7	0313415	PANEL, FACIA	1
8	0512357	STANDOFF, 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
—	0512362	HARNESS, DIGITAL DISPLAY WIRING <i>(Not Shown)</i>	1
—	0513537	HARNESS, COMPLETE MACHINE <i>(Not Shown)</i>	1



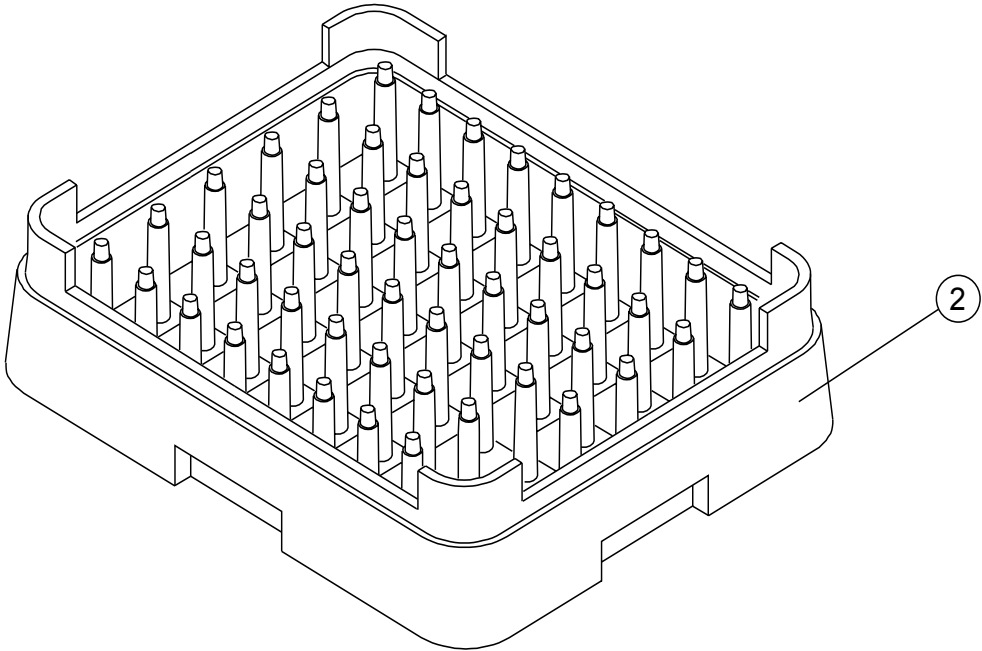
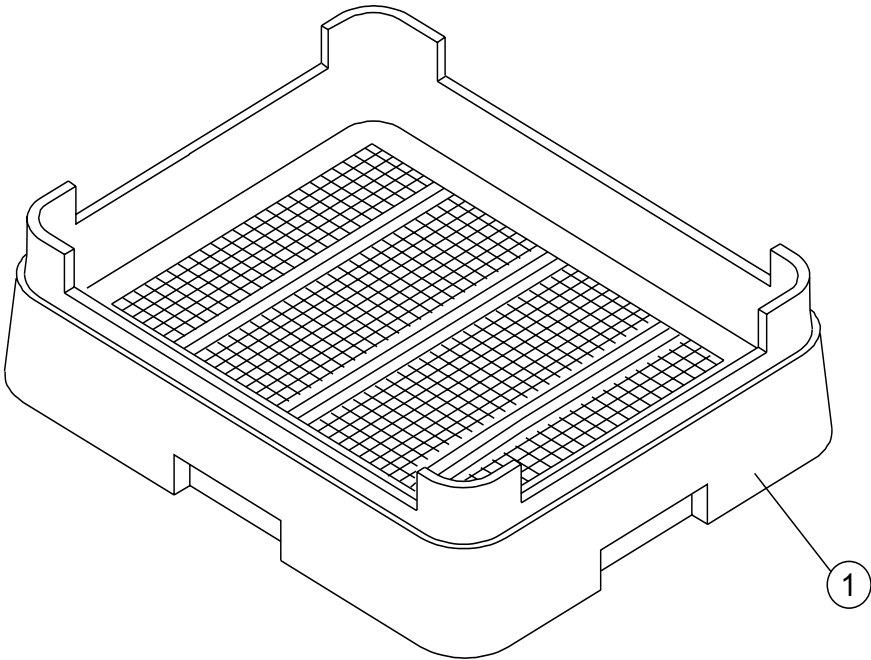
Item No.	Part No.	Description	Qty.
1	0512216	CONTACT, SWITCH MOMENTARY (N.O.)	2
2	0512217	HOUSING, PUSH BUTTON SWITCH	2
3	0512232	LIGHT, INDICATOR, GREEN	2
4	0512218	PUSH BUTTON, GREEN	1
5	0512219	PUSH BUTTON, GRAY	1
6	0512226	SWITCH, ROCKER RND SPDT MOMENTARY	2
7	0512107	THERMOMETER, 2" DIAL, 7" CAPILLARY	1
8	0501408	SCREW, TRUSS PHIL. SST 8-32 X 1/4"	2
9	0512320	GASKET, STEAM	1
10	0512220	SWITCH, ROCKER DPST 125V NEON	1
11	0313419	PANEL, FACIA (Prior to S/N W20036317)	1
11a	0313416	PANEL, FACIA (Beginning with S/N W20036317)	1
12	0513503	LABEL, FACIA PANEL, (Prior to S/N W20036317)	1
12a	0513515	LABEL, FACIA PANEL, (Beginning with S/N W20036317)	1



Item No.	Part No.	Description	Qty.
1	0313405	PANEL, FRONT	1
2	100779	SCREW 1/4-20 X 5/8" TRUSS SS PHIL	2
3	0513735	GASKET	1
4	0313403	PANEL, LH SIDE	1
5	0503718	FOOT, ADJUSTING	4
6	0313402	PANEL, RH SIDE	1
7	0313401	PANEL, TOP	1
8	100007	SCREW, TRUSS SLOT SST 10-32 X 3/8"	A/R
9	0313404	PANEL, REAR	1



Item No.	Part No.	Description	Qty.
1	0713136	DOOR ASSEMBLY	1
2	0713428	HINGE, RH ASSY	1
3	0501476	WASHER, 9/32" X 5/8" OD SS	1
4	0501422	BOLT, HEX SS 1/4-20 X 1-1/2"	1
5	0513332	SPRING, DOOR	2
6	0713429	HINGE, LH ASSY	1
7	0313430	ARM, DOOR SPRING	2
8	0513794	GASKET, TOP DOOR	1

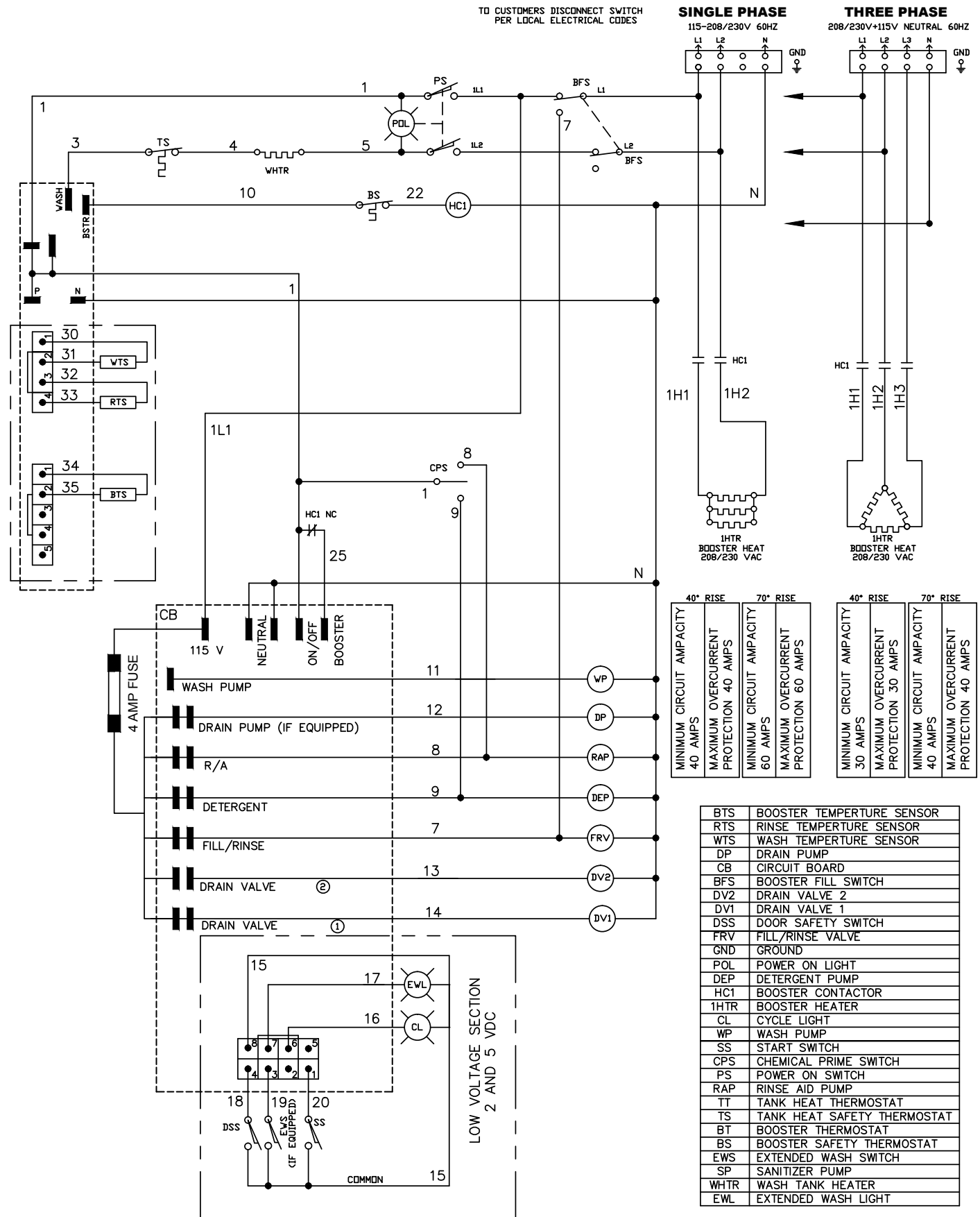


Item No.	Part No.	Description	Qty.
1	101273	DISH RACK, FLAT-BOTTOM	AR
2	101285	DISH RACK, PEG	AR

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Electrical Schematics and Timing Charts

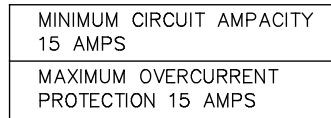
Illustrations	Page
Electrical Schematic - <i>High Temperature Model 201HT</i>	108
Electrical Schematic - <i>Low Temperature Model 201LT</i>	109
Timing Charts - <i>Models 201HT, 201LT</i>	110



201HT
HIGH TEMP DIGITAL UNDERCOUNTER M4

DIAGRAM STATE
END OF CYCLE
POWER-OFF
DOOR-OPEN

DATE	NUMBER/REV
28-JAN-14	0513371

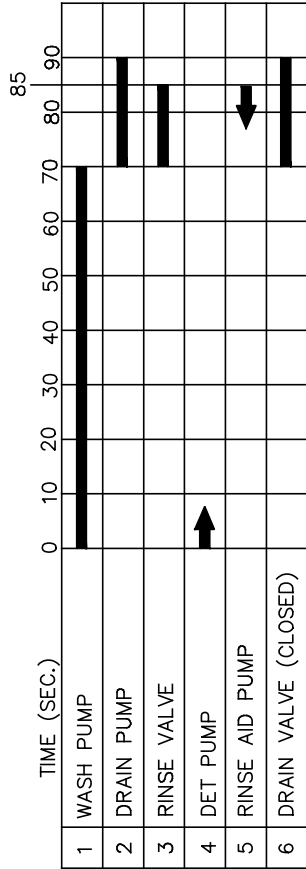


CT	CYCLE COUNTER
R1	DOOR SAFETY/HEATER RELAY
SAN	SANITIZER
CB	CIRCUIT BOARD
BFS	BOOSTER FILL SWITCH
DV1	DRAIN VALVE 1
DV2	DRAIN VALVE 2
DSS	DOOR SAFETY SWITCH
FRV	FILL/RINSE VALVE
GND	GROUND
POL	POWER ON LIGHT
DEP	DETERGENT PUMP
HC1	BOOSTER CONTACTOR
1HTR	BOOSTER HEATER
CL	CYCLE LIGHT
WP	WASH PUMP
SS	START SWITCH
CPS	CHEMICAL PRIME SWITCH
PS	POWER ON SWITCH
RAP	RINSE AID PUMP
TT	TANK HEAT THERMOSTAT
TS	TANK HEAT SAFETY THERMOSTAT
BT	BOOSTER THERMOSTAT
BS	BOOSTER SAFETY THERMOSTAT
EWS	EXTENDED/DELINE WASH SWITCH
SP	SANITIZER PUMP
WHTR	WASH TANK HEATER
EWL	EXTENDED WASH LIGHT

DIAGRAM STATE
END OF CYCLE
POWER-OFF
DOOR-OPENED

DATE	NUMBER/REV
20-MAR-14	0513372

201HT

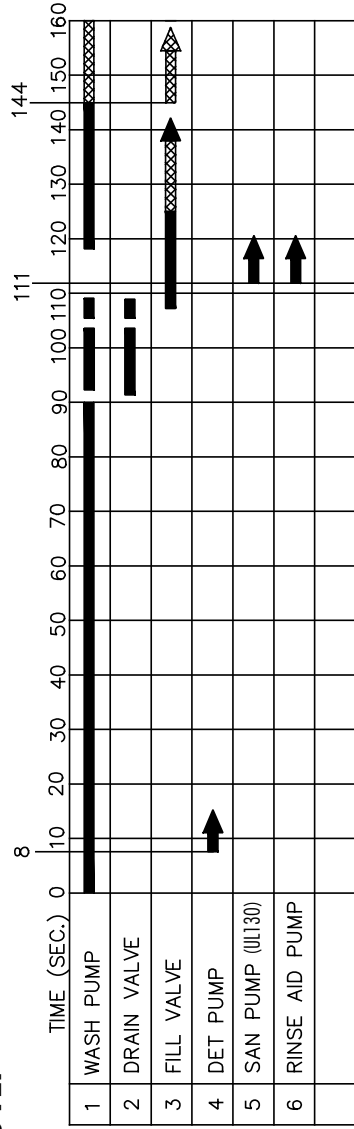


TIMING CHART FOR FRESH WATER RINSE
EXTENDED WASH ADDS 15 MINUTES EXTRA WASHING TIME AT 70 SECS
SWITCH MAY BE PUSHED ANY TIME FROM 0.5 TO 70 SEC

		MINIMUM	MAXIMUM
1	FILL VALVE	20 SEC.	55 SEC
2	DET. PUMP	0 SEC.	12 SEC.
3	SAN. PUMP	0 SEC.	20 SEC.
4	RINSE AID PUMP	0 SEC.	10 SEC.

ARROW INDICATES THAT FUNCTION END TIME
IS VARIABLE WITH THE ADJUSTMENT POTENTIOMETER

201LT



TIMING CHART FOR FILL AND DUMP
EXTENDED WASH ADDS 15 MINUTES EXTRA WASHING TIME AT 90 SECS
SWITCH MAY BE PUSHED ANY TIME FROM 0.5 TO 90 SEC

WASH PUMP	
TIME	ON OFF
P1	0 90
P2	92.5 103
P3	105.5 109
P4	118 144
P4	144 VARIES WITH F2

DRAIN VALVE	
TIME	ON OFF
D1	92 103
D2	105 108.5

FILL VALVE	
TIME	ON OFF
F1	106 123
F2	123 VARIABLE

