

Champion[®]

Installation Manual



44 PRO-VHR

PRO Series Ventless Heat Recovery Rack Conveyor Dishwashers

Models

44 PRO-VHR	66 PRO-VHR
70FF PRO HD-VHR	
80HD PRO-VHR	



www.championindustries.com

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Manual P/N 116114 rev. E

For machines beginning with S/N RP17011002 and above

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The Spirit of Excellence

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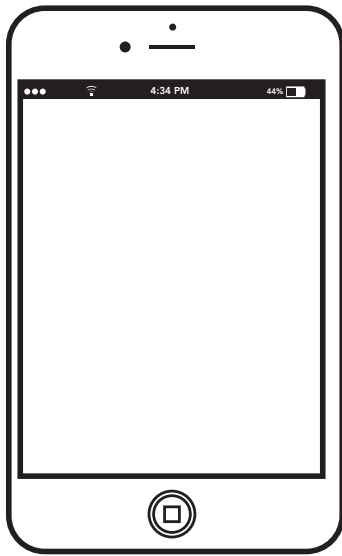
ATTENTION

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 right front corner
of the lower panel

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

Two ways to REGISTER YOUR PRODUCT and ACTIVATE YOUR WARRANTY.



- Visit our website at www.championindustries.com and register your product online.
- Use the fax form on the next page and fax to 1-800 661-1660.

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) State/Province Zip/Postal Code

Telephone #: () _____ --- _____

Contact: _____

Installation Company: _____

Address: _____

Telephone #: _____

Contact: _____

FAILURE TO REGISTER YOUR PRODUCT MAY VOID YOUR WARRANTY

IMPORTANT IMPORTANT

Specifications are subject to change based on continual product improvement. Equipment owners may request a revised manual, at no charge, by calling 1 (800) 858-4477 in the USA or 1(800) 263-5798 in Canada.

Revision Date	Revised Pages	Serial Number Effectivity	Description
6.19.17	All	RP17011002	Released First Edition
8.4.17	8-9	All	Added blue plumbing hoses
	14	All	Added mechanical DWT connection
	17,18	All	Revised chemical fuse blocks
4.9.18	7	All	Revised HP Fan/Thermistor illustration
10.23.19	1	RP18071601	Revised placement instructions to include drains
	7	All	Changed HP Fan/Thermistor connector
	15	RP18071601	Changed manual drain valves to electric
	21	RP18021381	Revised conveyor drive mechanism
7.1.19	2, 22	RP19062022	Changed dependo-drain P/N 114471 to Electric globe valve P/N 117014
8.21.19	15	RP19062022	Changed drain connection to 1-1/4"

Limited Warranty

LIMITED WARRANTY

Champion Industries (herein referred to as "The Company"), 3765 Champion Blvd., Winston-Salem, North Carolina 27105, and 2674 N. Service Road, Jordan Station, Ontario, Canada, L0R 1S0, warrants machines, and parts, as set out below.

Warranty of Machines: The Company warrants all new machines of its manufacture bearing the name "Champion and installed within the United States and Canada to be free from defects in material and workmanship for a period of one (1) year after the date of installation or fifteen (15) months after the date of shipment by The Company, whichever occurs first. [See below for special provisions relating to glasswashers.] Warranty registration must be submitted to The Company within ten (10) days after installation either online on the Champion Industries website (<http://www.championindustries.com>, in the USA or <http://www.championindustries.com/canada> in Canada or by the fax form provided at the front of this manual. The Company will not assume any responsibility for extra costs for installation in any area where there are jurisdictional problems with local trades or unions.

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

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

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

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

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

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

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Model Descriptions

44 PRO-VHR	44" single tank with ventless heat recovery
66 PRO-VHR	44" single tank, 22" prewash with ventless heat recovery
70 PRO-FF-VHR	44" single tank, front feed 26" prewash, with ventless heat recovery
80 PRO-HD-VHR	44" single tank, 36" heavy duty prewash with ventless heat recovery

Installation Codes

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.

**NOTE:**

Only qualified personnel familiar with the installation of food service equipment should attempt the installation of this machine. Damage or problems associated with improper installation will not be covered by the dishwasher limited warranty.

Safety Symbols

The following symbols are used throughout this manual to alert the reader to important information.

**WARNING:**

Warning statements indicate a condition or practice that can result in personal injury or possible death.

**CAUTION:**

Caution statements indicate a condition or practice that can result in damage to the machine or associated equipment.

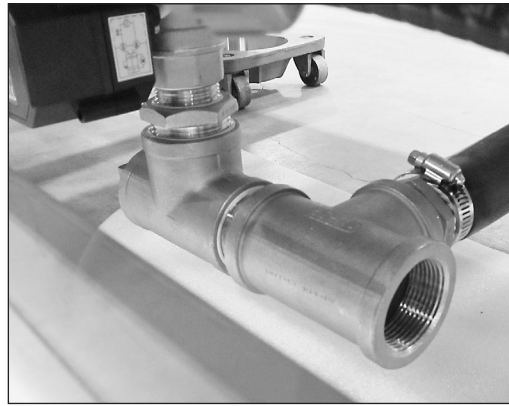
**NOTE:**

Note statements highlight important information necessary for the operation of the machine.

Receiving



1. Inspect the machine for damage and immediately report to a supervisor.
2. Check machine interior for accessories and parts.
3. Register your machine by fax or online as soon as possible.



ELECTRIC DRAIN VALVE



CAUTION:

Use caution when removing machine from pallet to prevent damage to drain valves.

Placement

1. Check the dishwasher interior for curtains, panels and supplies.
2. Lift the dishwasher off the shipping pallet and move the machine near its permanent location.
3. Adjust the height and level of the machine using the adjustable legs. Level the machine from side-to-side and front-to-back.
4. Do not remove tags attached to the utility connections.
5. Remove the protective film from the dishwasher exterior.

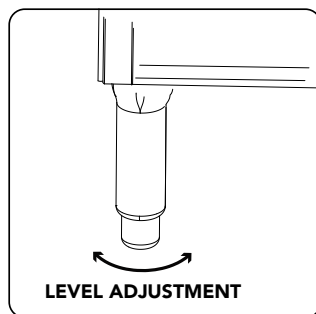


Fig. 1



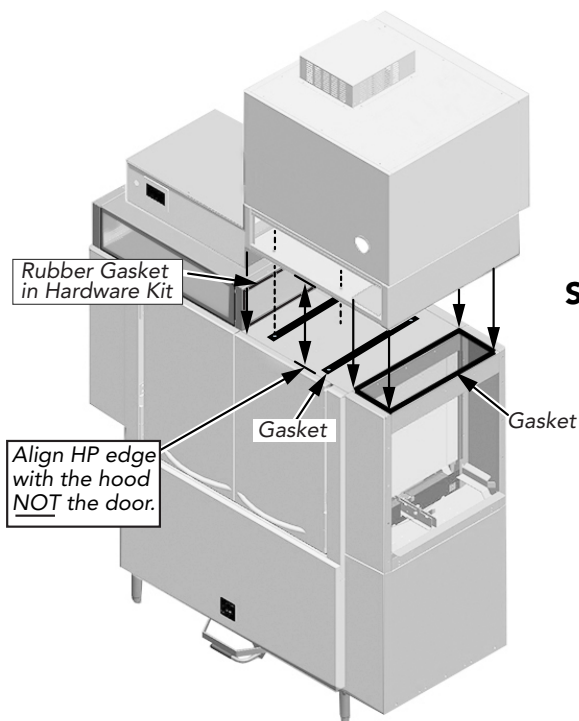
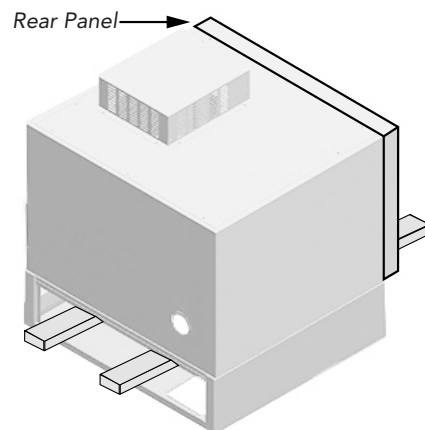
NOTE:

DO NOT REMOVE MACHINE INSTALLATION TAGS BEFORE UTILITIES ARE CONNECTED.

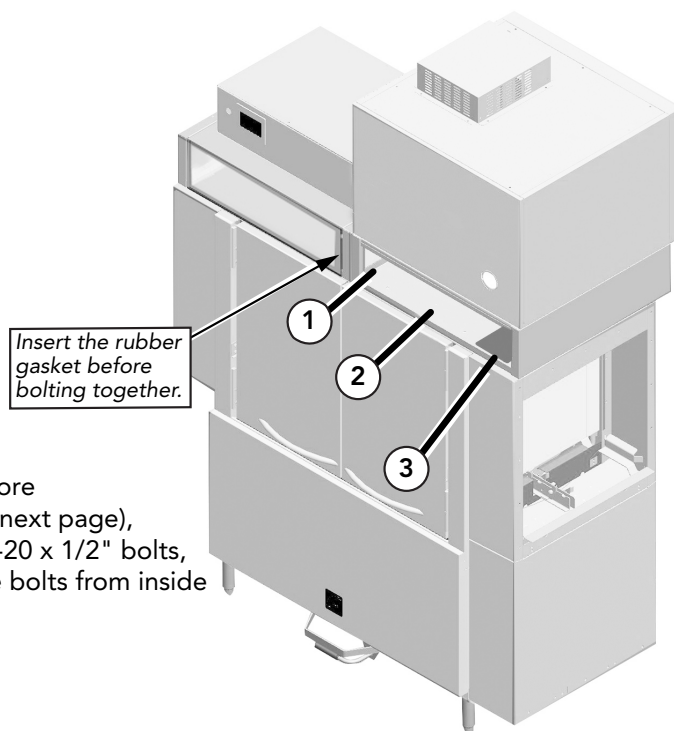
Heat Pump (HP) Mounting

The heat pump assembly is shipped on a separate pallet. Remove the rear panel before lifting the unit.

- Step 1:** The HP weighs 300 lbs.
 Remove the rear panel before lifting.
 Use four men to place the unit on the dishwasher.
 Use 2 x 4 boards positioned as shown at right.



- Step 2:** Align the HP front edge with the hood edge. Do not damage the foam gaskets when lowering the HP.



- Step 3:** Insert the rubber gasket before bolting the HP in place (see next page), then install the supplied 1/4-20 x 1/2" bolts, washers, and nuts. Insert the bolts from inside for Nos. 2 and 3.
- No. 1 = 14 bolts
 - No. 2 = 4 bolts
 - No. 3 = 5 bolts

CONTINUED ON NEXT PAGE

Heat Pump (HP) Mounting (continued)

Step 3: (continued from previous page)

! INSERT THE 14-HOLE RUBBER GASKET BETWEEN THE DISHWASHER AND HEAT PUMP CAVITIES. BOLT THEM TOGETHER WITH THE SUPPLIED FASTENERS.

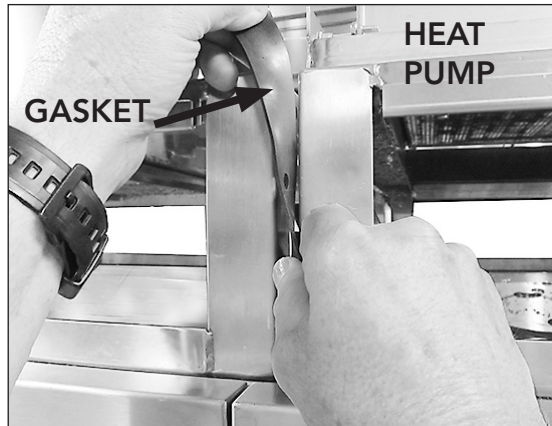


Fig. 2 - Heat pump gasket

HP Side Panel Installation

! THE FRONT AND REAR SIDE PANELS SLIDE INTO PLACE.

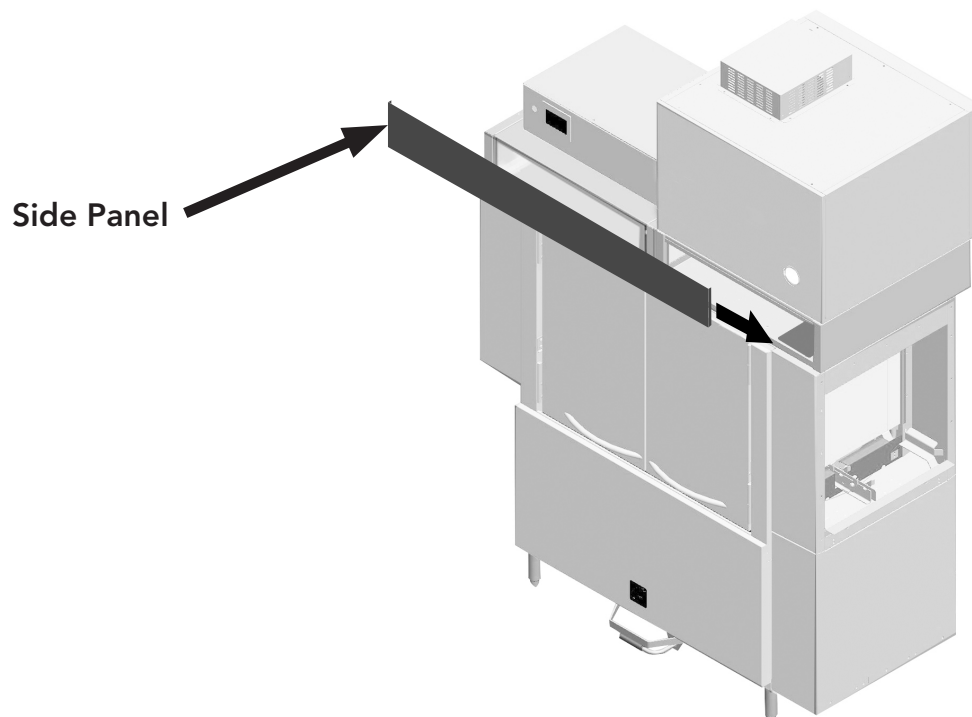


Fig. 3 - Side panels

HP Side Panel Installation (continued)

! SLIP THE PANEL SLOT OVER THE BOTTOM EDGE OF THE OPENING, THEN SLIDE THE PANEL INTO PLACE.



Fig. 4 - Slip the panel slot over the edge first.

! FIT THE PANEL TOP ON THE HANGER, PRESS DOWN TO LOCK IN PLACE.

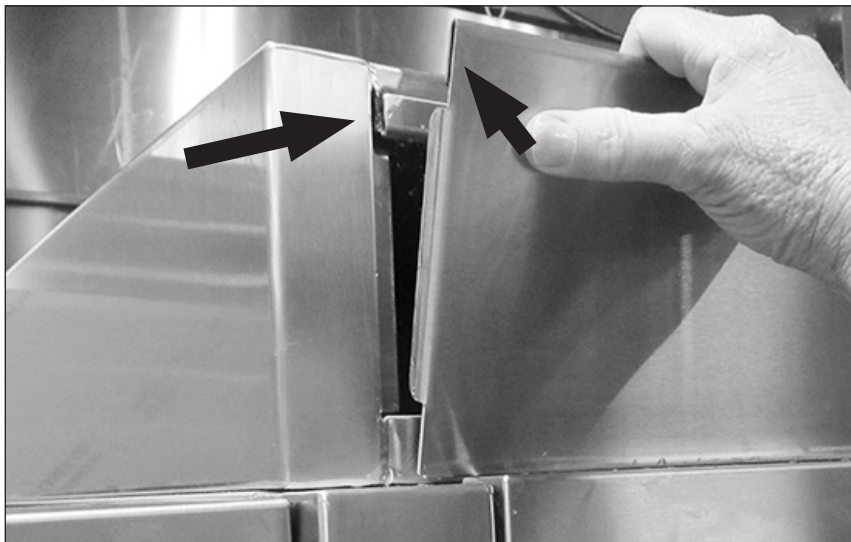


Fig. 5 - Fit the top of the panel on to the hanger.

HP Electrical Connections

! REMOVE THE HEAT PUMP RIGHT-SIDE PANEL TO ACCESS THE COMPRESSOR.

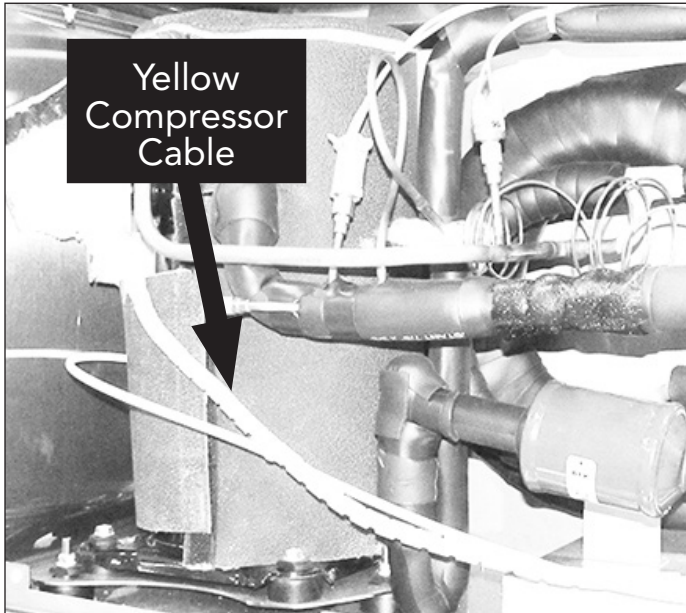


Fig. 6 - Route cable from cabinet to the compressor.

! ROUTE THE YELLOW CABLE FROM THE CONTROL CABINET TO THE COMPRESSOR. THE CONNECTION IS LOCATED TOWARD THE FRONT OF THE COMPRESSOR BEHIND THE BLACK INSULATION.



Fig. 7 - Connection is behind the insulation.

HP Electrical Connections



ROUTE THE FAN MOTOR AND THERMISTOR CABLE FROM THE DISHWASHER CONTROL CABINET TO THE TERMINAL BLOCK LOCATED AT THE TOP RIGHT REAR OF THE HEAT PUMP.

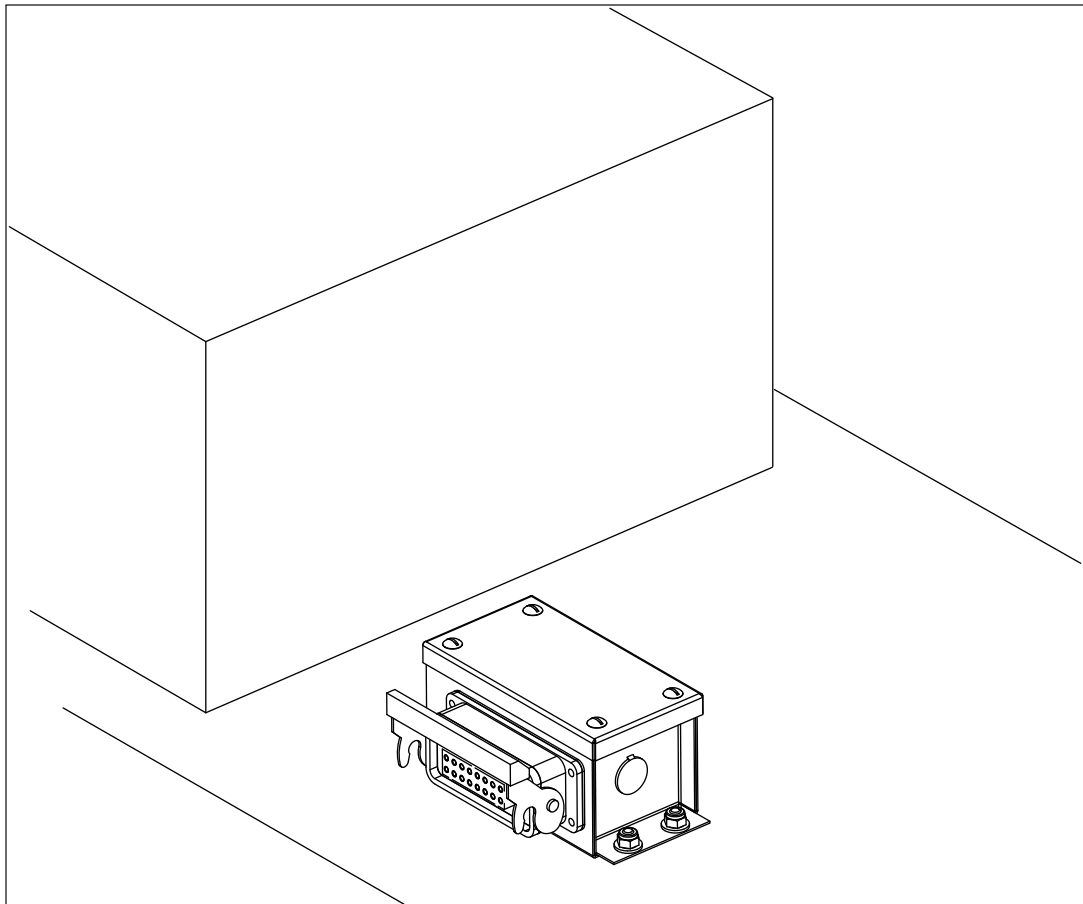


Fig. 8 - HP Fan/Thermistor Connector

HP Plumbing Connections

! CONNECT BLUE 1/2" HOSES TO THE HEAT PUMP WATER LINES.
THE LINES ARE MARKED FOR EASY ASSEMBLY.

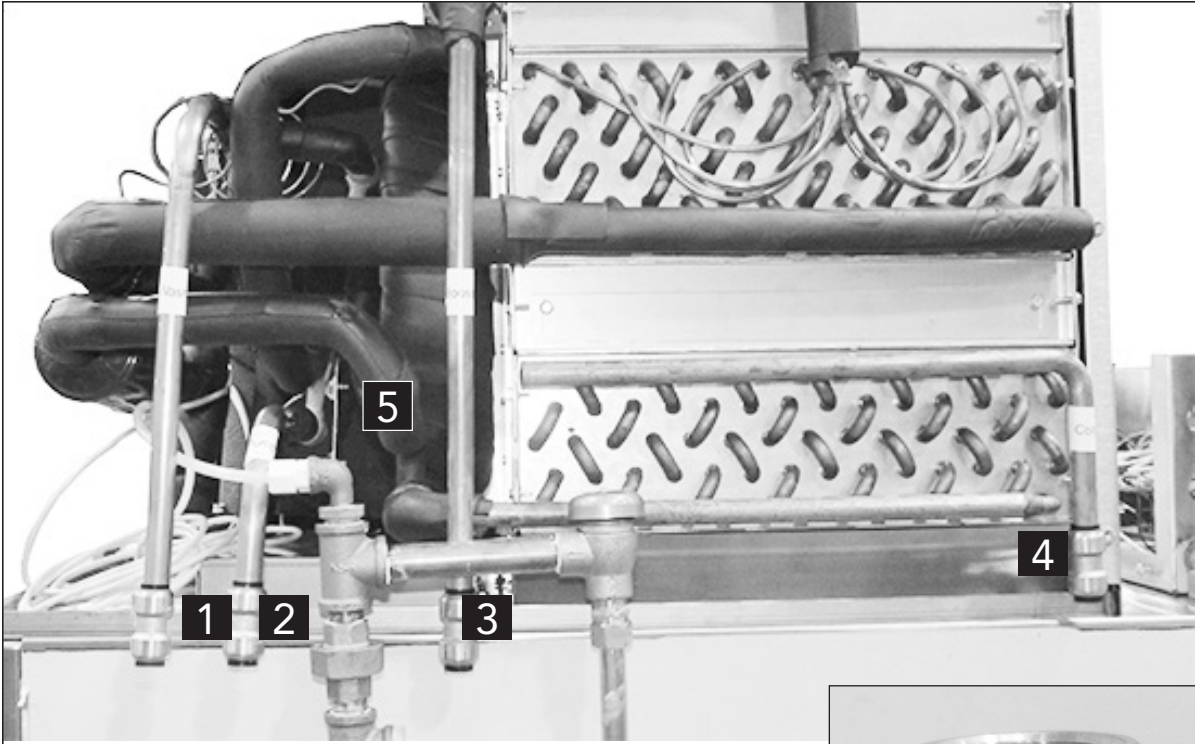


Fig. 9 - Connect Water Lines 1, 2, 3, and 4.



HP Plumbing Connections

! CONNECT BLUE 1/2" ID HOSES TO THE DISHWASHER.

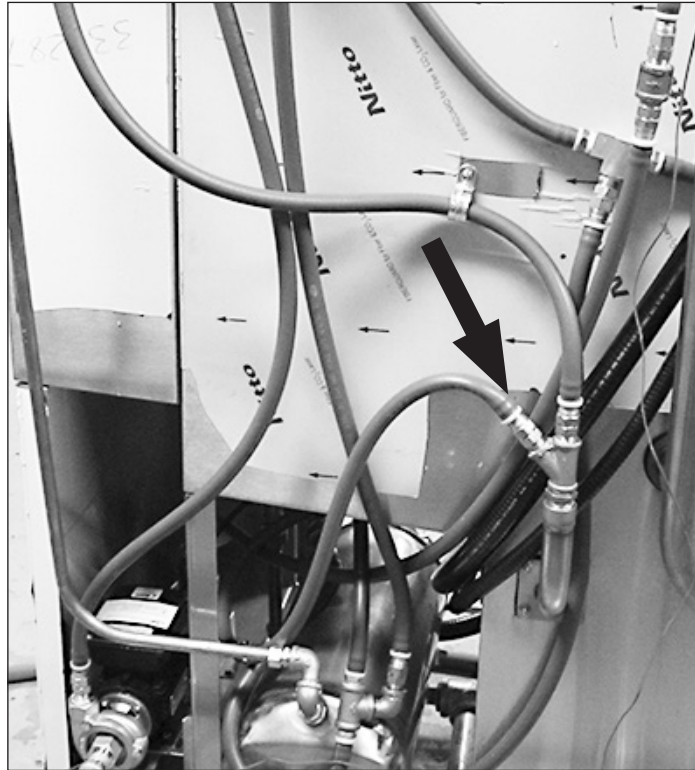


Fig. 9b - 1/2" ID Blue Hoses

! CONNECT THE PRESSURE GAUGE TUBING TO THE FINAL RINSE MANIFOLD.



Fig. 10 - Pressure gauge

HP Plumbing Connections (continued)

! CONNECT THE CAVITY DRAIN LINE.

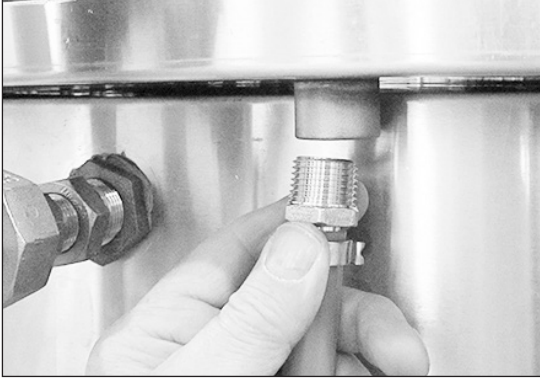


Fig. 11 - Cavity drain line.

Final Rinse Discharge Valve Setting



WARNING:

The Final Rinse Discharge Valve, located above the booster, is set to operate at 20 PSI by the factory and must not be adjusted without factory permission.

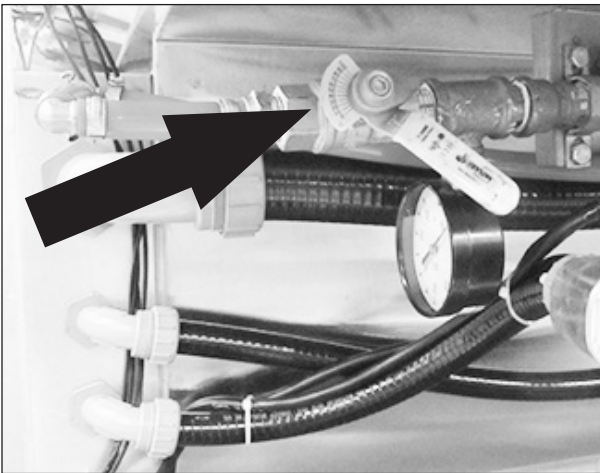


Fig. 12 - Located above the booster.



Fig. 13 - Set for 20 PSI.

Dish Table Connections



NOTE:

Tables should be installed after the machine is placed in its final location, properly leveled, and the height adjusted. The standard load height for the dishwasher is 34" [864 mm].

1. The load end table must slope away from the dishwasher to prevent water from entering the machine. The unload table should slope toward the machine to prevent water from pooling on the exit table.
2. The dish rack must not hit the end of the table as it enters or exits the machine. Adjust the table until the track height of the machine is approximately 1/4" above the table edge.
3. Set the tables inside the machine making sure the table flange fits against the wash tank wall. Attach the tables to the machine applying a silicone sealant to the mating surfaces (see Fig. 14).

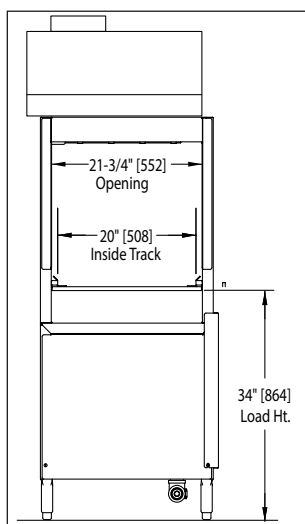


Fig. 14 - Load height.

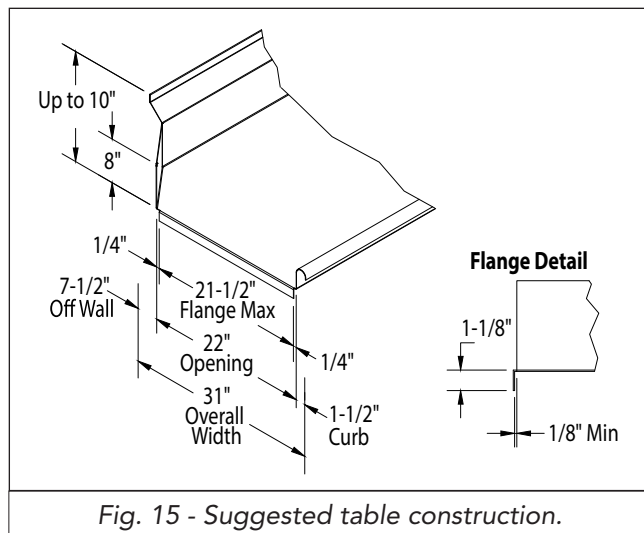


Fig. 15 - Suggested table construction.

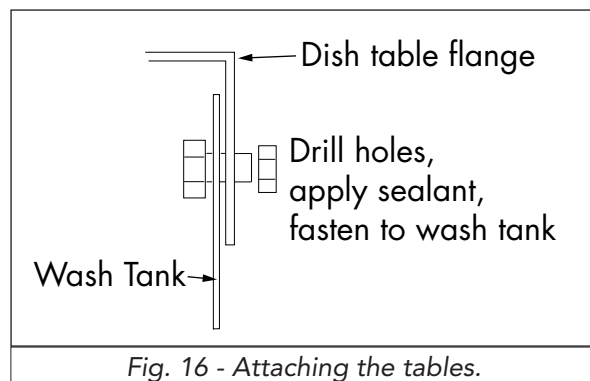


Fig. 16 - Attaching the tables.

Hot Water Connection



HOT WATER

Connect the plumbing in accordance with the following specifications.

! MINIMUM 1/2" NPT HOT WATER SUPPLY LINE.



CAUTION: To prevent damage to the dishwasher supply valves, the installing plumber must thoroughly flush debris from the water supply line before connecting it to the dishwasher. Damage caused by improper installation is not covered by the limited warranty.

BOOSTER RISE °F	BOOSTER kW	MINIMUM INCOMING WATER TEMPERATURE	MINIMUM INCOMING SUPPLY PRESSURE	MINIMUM/MAXIMUM OPERATING FLOWING PRESSURE
70°F RISE	21kW	110°F/ 43°C	45 PSI/310 kPa	20/22 PSI 138-152 kPa

! WATER HARDNESS OF 3 GRAINS/US GAL - 0.83 IMP GAL -5.3mg/L or LESS.

! INSTALL A 1/2" OR LARGER SHUT-OFF VALVE IN THE WATER SUPPLY LINE AS CLOSE TO THE DISHWASHER AS POSSIBLE FOR SERVICING.

! WATER SUPPLY CONNECTION IS LOCATED NEAR CORNER AT THE TOP OF MACHINE HOOD.

! INSTALL A PRESSURE REGULATING VALVE IN THE INCOMING WATER SUPPLY LINE TO MAINTAIN THE PROPER FLOWING PRESSURE.



Fig. 17 - Hot water connection.

Cold Water Connection



**COLD
WATER**

Connect the plumbing in accordance with the specifications below.



MINIMUM 1/2" NPT COLD WATER SUPPLY LINE.



CAUTION: To prevent damage to the dishwasher supply valves, the installing plumber must thoroughly flush debris from the water supply line before connecting it to the dishwasher. Damage caused by improper installation is not covered by the limited warranty.

MINIMUM INCOMING
WATER TEMPERATURE

MINIMUM INCOMING
SUPPLY PRESSURE

MINIMUM/MAXIMUM
OPERATING FLOWING PRESSURE

50-70°F/ 10-21°C

45 PSI/310 kPa

20/22 PSI 138/152 kPa



WATER HARDNESS OF 3 GRAINS/US GAL - 0.83 IMP GAL -5.3mg/L or LESS.



INSTALL A 1/2" OR LARGER SHUT-OFF VALVE IN THE WATER SUPPLY LINE AS CLOSE TO THE DISHWASHER AS POSSIBLE FOR SERVICING.



WATER SUPPLY CONNECTION IS LOCATED NEAR THE BOOSTER TANK ON THE MACHINE BASE.



ADJUST THE PRESSURE REGULATING VALVE TO MAINTAIN THE PROPER FLOWING PRESSURE.

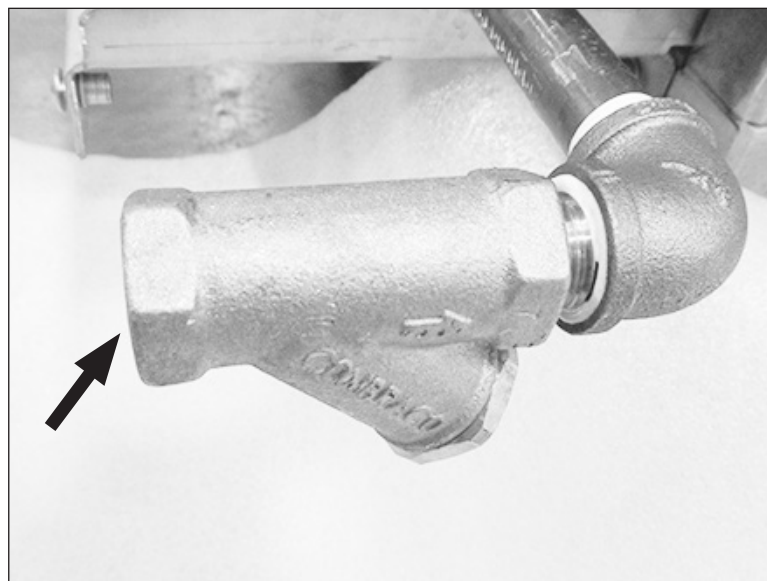


Fig. 18 - Cold water connection.

Cold Water Connection

Drain Water Tempering, (DWT), Valve



**COLD
WATER**

! MINIMUM 1/2" NPT COLD WATER SUPPLY LINE.

MINIMUM INCOMING
WATER TEMPERATURE

MAXIMUM INCOMING
SUPPLY PRESSURE

36°F/ 2°C

60 PSI/414 kPa



CAUTION: To prevent damage to the dishwasher supply valves, the installing plumber must thoroughly flush debris from the water supply line before connecting it to the dishwasher. Damage caused by improper installation is not covered by the limited warranty.

! WATER HARDNESS OF 3 GRAINS/US GAL - 0.83 IMP GAL -5.3mg/L or LESS.

! INSTALL A 1/2" OR LARGER SHUT-OFF VALVE IN THE WATER SUPPLY LINE AS CLOSE TO THE DISHWASHER AS POSSIBLE FOR SERVICING.

! WATER SUPPLY CONNECTION IS LOCATED NEAR A MACHINE CORNER AT THE BASE OF THE DISHWASHER.

**! METHOD A:
CONNECT A 1/2" NPT DRAIN LINE TO THE MECHANICAL DWT DEVICE (Fig. 19a).
METHOD B:
CONNECT A 1/2" NPT DRAIN LINE TO THE BACKFLOW PREVENTER/SOLENOID VALVE RELIEF MAINTAINING AN AIRGAP DRAIN CONNECTION (Fig. 19b).**



Fig. 19a - Mechanical DWT Valve

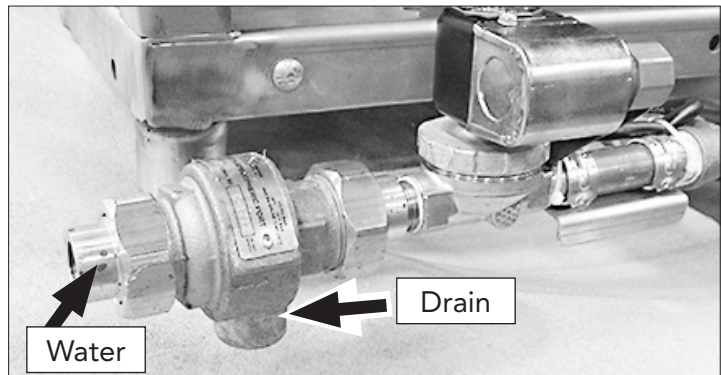


Fig. 19b - Backflow Preventer/Solenoid Valve

Drain Connection



DRAIN

Connect the drain in accordance with the specifications below.






- 
GRAVITY DRAIN- 1-1/4" NPT DRAIN CONNECTION LOCATED UNDERNEATH MACHINE. MAX FLOW IS 17 US GAL/MIN.
- 
USE A DIRECT OR INDIRECT CONNECTION TO THE BUILDING DRAIN IN ACCORDANCE WITH LOCAL CODE.
- 
FOR PREWASH MACHINES, CONNECTION IS AT THE LOAD END.
- 
FOR SINGLE TANK MACHINES, THE CONNECTION IS AT THE RIGHT-HAND SIDE OF THE MACHINE UNDER THE BOOSTER.
- 
THE DRAIN VALVE(S) ARE ELECTRIC. THEY OPEN AND CLOSE AUTOMATICALLY WHEN DISHWASHER POWER IS OFF OR ON.



Fig. 6A - Electric Drain Valve

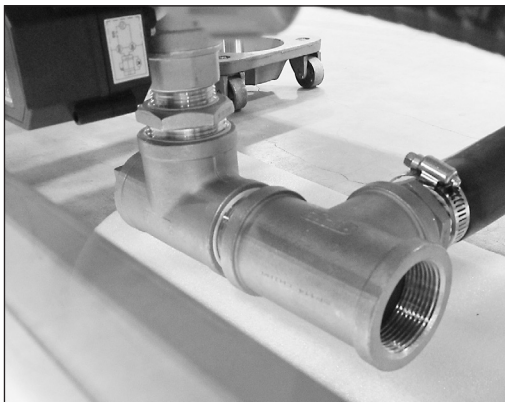
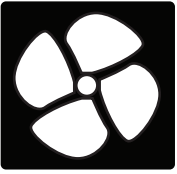


Fig. 6B - Drain connections.

Ventilation



The VHR machine does not require venting. It will conform to local codes and regulations.

! TYPE II VENTILATION HOOD IS NOT REQUIRED.

! THE DISHWASHER VENT FAN RETURNS COOL AIR TO THE DISHROOM DURING OPERATION.

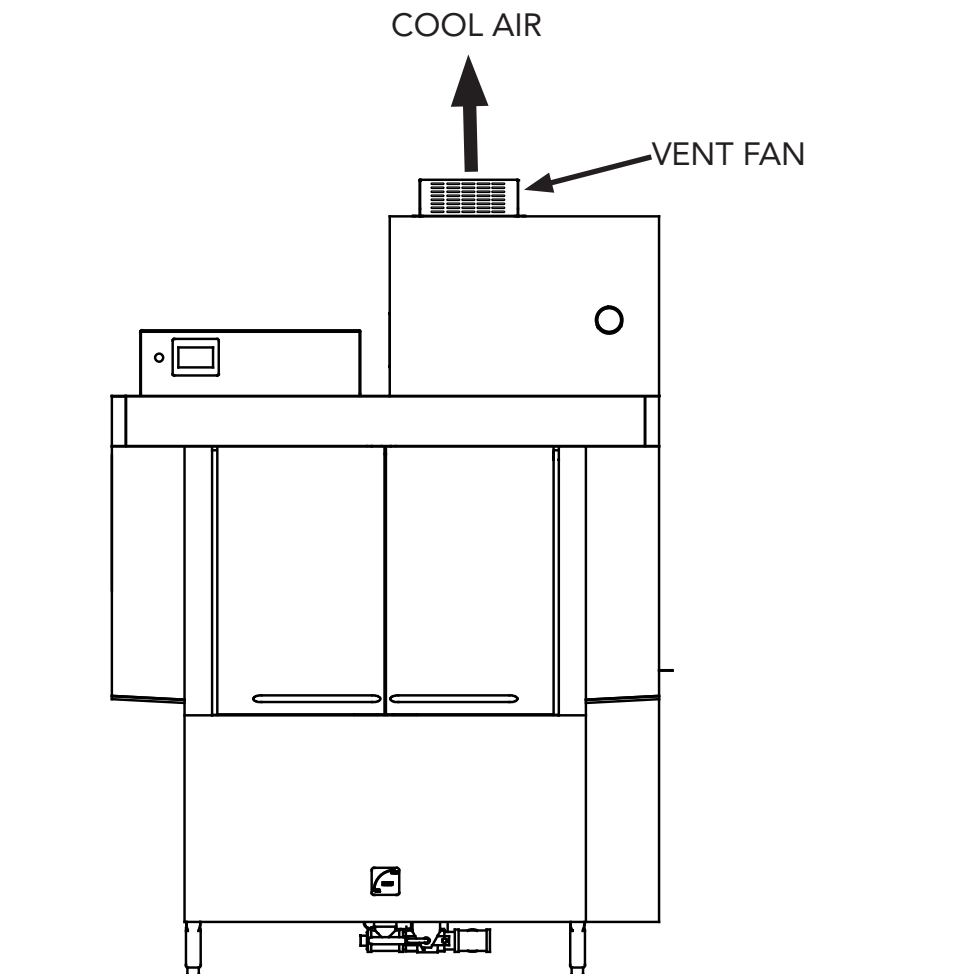


Fig. 21 - Ventilation

Detergent Dispenser Connection



A commercial grade NON-CHLORINATED detergent must be used in this dishwasher.

! WASH TANK CAPACITY IS 17 US GAL./14.2 IMP. GAL/64.4 L.

! 7/8" DIAMETER HOLES ARE PROVIDED IN THE WASH TANK FOR A PROBE AND INJECTOR.

! FUSED 120VAC 0.5 AMP MAX LOAD DETERGENT SIGNAL CONNECTION IS PROVIDED INSIDE THE CONTROL CABINET.

! THE DETERGENT SIGNAL IS ENABLED WHEN THE WASH PUMP IS RUNNING.

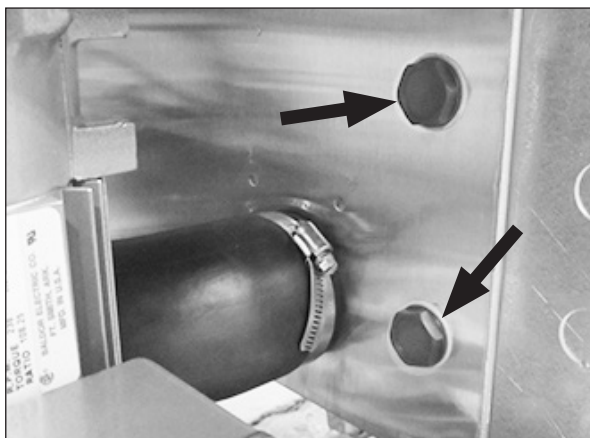


Fig. 22 - Detergent connections.



Fig. 23 - Detergent signal (0.5 A fuse).

Rinse-Aid Dispenser Connection



! RINSE = 0.48 US GAL/RACK, 0.40 IMP. GAL/RACK, 1.82 L/RACK

! 1/8" NPT PIPE PLUG PROVIDED IN FINAL RINSE PIPING.

! FUSED 120VAC 0.5 AMP MAX LOAD RINSE AID SIGNAL CONNECTION IS PROVIDED INSIDE THE CONTROL CABINET.

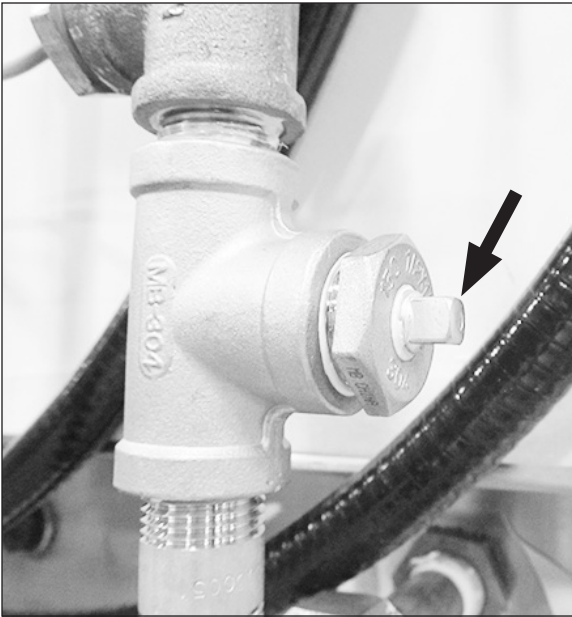


Fig. 24 - Rinse-aid connection.



Fig. 25 - Rinse-Aid signal (0.5 A fuse).

Electrical Connections



Only qualified personnel familiar with the installation of food service equipment should attempt the installation of this machine. Damage or problems associated with improper installation will not be covered by the dishwasher limited warranty.



WARNING:

There may be more than one power source connected to the machine. Make sure all power sources are disconnected, locked and tagged out before working on the machine.

Electrocution may occur when working on energized circuits. Disconnect power at the main breaker or service disconnect switch, then lock out and tag it to indicate that work is being performed on the circuit.

! COMPARE THE ELECTRICAL SUPPLY WITH THE MACHINE ELECTRICAL CONNECTION DATA PLATES BEFORE CONNECTING THE POWER TO THE MACHINE.

! THE MACHINE DATA PLATE IS LOCATED ON THE SIDE OF THE HEAT PUMP ASSEMBLY. THE CONNECTION DATA PLATES ARE LOCATED INSIDE THE CONTROL CABINET.

Machine Electrical Connection Data Plate	Booster Electrical Connection Data Plate
208V 60Hz 3PH 77 A	208V 60Hz 3PH 58 A
Minimum supply conductor ampacity: 100 A	Minimum supply conductor ampacity: 75 A
Maximum supply overcurrent protection device. (Time delay fuse or inverse time circuit breaker)	Maximum supply overcurrent protection device. (Time delay fuse or inverse time circuit breaker)
100 A	75 A

Fig. 26 - The connection data plates are located inside the control cabinet.

Electrical Connections (continued)

! THE MACHINE IS A SPLIT ELECTRICAL CONNECTION. THE INPUT TERMINAL BLOCKS ARE LOCATED IN THE CONTROL CABINET.

! CONNECT THE DISHWASHER POWER TO TERMINAL BLOCK 1L1, 1L2, and 1L3.

! CONNECT THE BOOSTER POWER TO TERMINAL BLOCK 2L1, 2L2, and 2L3.



Fig. 27 - Input power is a split connection.

Check Motor Rotation



ALL MOTORS ARE PHASED THE SAME AT THE FACTORY. REVERSE L1 AND L2 AT THE INPUT TERMINAL BLOCKS TO CHANGE THE ROTATION DIRECTION.

1. Fig. 28 shows the rotation arrow label on the rear pump housing.



Fig. 28

2. Fig. 29 shows the drive motor rotation label on the drive plate.

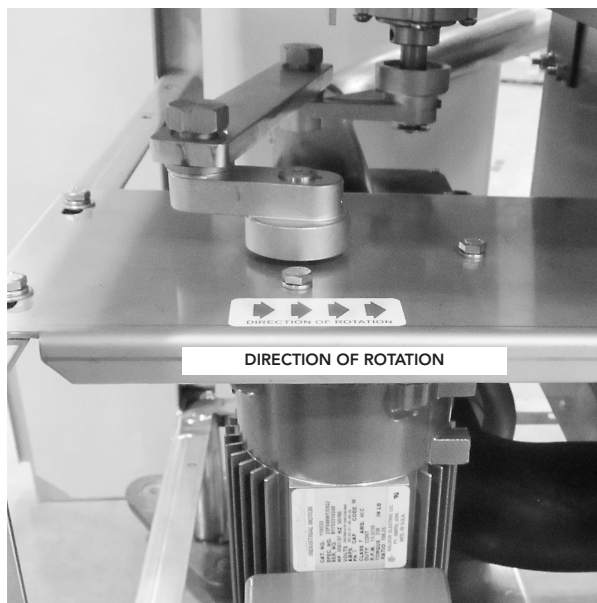


Fig. 29

HOW TO MANUALLY OPERATE NEW PRO DRAIN VALVE

Electric Drain Valve, P/N 117014 Beginning with S/N: RP19062022, Effective 7/1/19

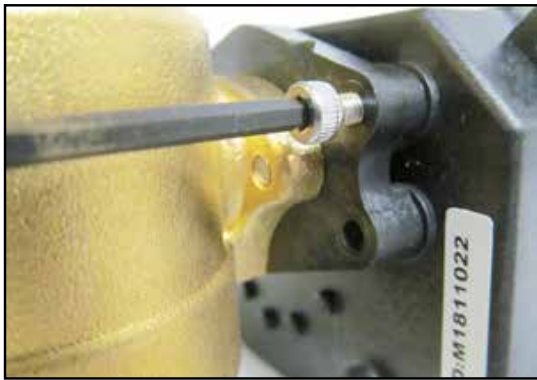


- The new electric drain valve does not have a manual lever as the Dependo-Drain.
- To manually operate the new valve, four 2.5mm socket allen screws must be removed, the valve coil removed, and the valve globe rotated with pliers.

- The valve coil has an indicator line showing valve position. Ensure valve is reassembled in the same position.



1



Remove four 2.5mm coil retaining allen screws.

2



Remove the coil from the valve body.

3



Using pliers, turn the valve body key to the vertical position to open valve.

Reassemble in reverse order.