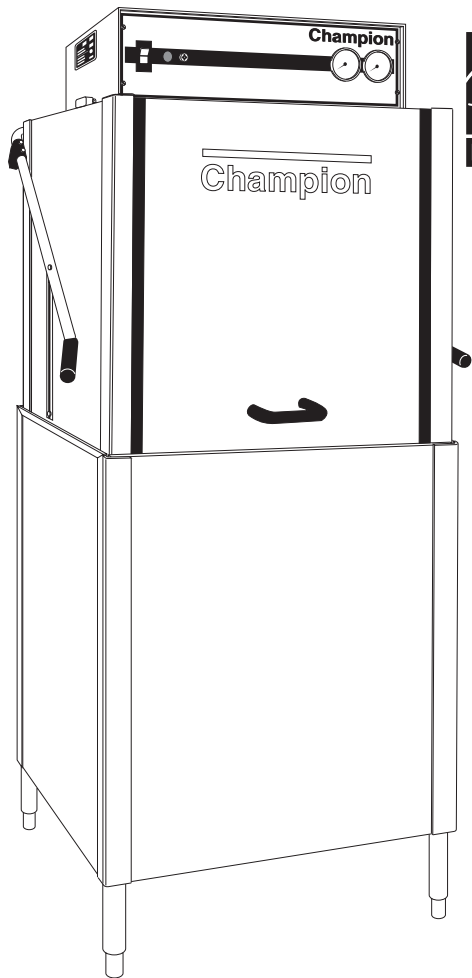


Champion®



Installation/Operation Manual with Service Replacement Parts

For machines beginning with S/N D3694 and above



Door-type Dishwasher

Models:

D-HBM5
High Temperature with
Built-in Booster Heater

D-H1M5
High Temperature

D-LFM5
Low Temperature



www.championindustries.com

Issued 11.4.10

Manual P/N 113491 rev. K

Champion Industries, INC.
3765 Champion Boulevard, Winston-Sale, NC 27105
P.O. Box 4149 Winston-Salem, NC 27115-4149
1-800 232-8591 Fax: 1-800-661-1556

2674 N. Service Road, Jordan Station
Ontario, Canada L0R 1S0
1-800 263-5798 Fax: 1-905 562-4618

Printed in U.S.A.



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

Model Number _____ Serial Number _____

Voltage _____ Hertz _____ Phase _____

Service Agent _____ Tel: _____

Parts Distributor _____ Tel: _____

National Service Department



In Canada:

Toll-free: 800/ 263-5798
Tel: 905/ 562-4195
Fax: 905/ 562-4618
email: service@moyerdiebellimited.com



In the USA:

Toll-free: 800/ 858-4477
Tel: 336/ 661-1556
Fax: 336/ 661-1660
email: service@championindustries.com

ATTENTION:

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

The machine data plate is located on the front panel of the machine

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

The USGBC and the CaGBC Member Logos are trademarks owned by the U.S. Green Building Council and The Canadian Green Building Council, respectively, and are used by permission. The logos signify only that Champion Industries and Moyer Diebel are a USGBC member and a CaGBC member respectively. USGBC and CaGBC do not review, certify nor endorse the products or services offered by its members.



1000004691-L0R1S0-BR01



MOYER DIEBEL LIMITED
PO BOX 301
JORDAN STATION ON L0R 1S0

CANADA	POSTES
POST	CANADA
Postage paid if mailed in Canada	Port payé si posté au Canada
Business Reply Mail	Correspondance- réponse d'affaires
3026604	01



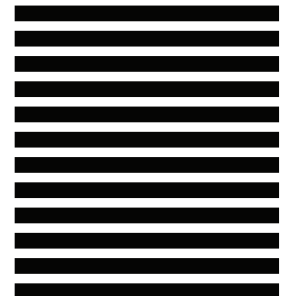
ATTENTION:

Complete the back of the POSTAGE PAID WARRANTY CARD below, then cut along the dashed lines and mail immediately to make sure that your machine warranty is validated.

USE CANADIAN WARRANTY CARD IN CANADA AND USA WARRANTY CARD IN THE UNITED STATES.



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 2101 WINSTON-SALEM, NC

POSTAGE WILL BE PAID BY ADDRESSEE

CHAMPION INDUSTRIES INC
PO BOX 4149
WINSTON-SALEM, NC 27119-0981



WARRANTY REGISTRATION CARD

Model

Serial #

Date of Installation: ____/____/____

Company Name: _____

Address: _____
(Street) State or Province Zip Code

Telephone #: () ____ --- ____

Contact: _____

Installation Company: _____

Address: _____

Telephone #: _____

Contact: _____

This Card Must Be Returned to Validate Machine Warranty:

IMPORTANT

IMPORTANT

WARRANTY REGISTRATION CARD

Model

Serial #

Date of Installation: ____/____/____

Company Name: _____

Address: _____
(Street) State or Province Zip Code

Telephone #: () ____ --- ____

Contact: _____

Installation Company: _____

Address: _____

Telephone #: _____

Contact: _____

This Card Must Be Returned to Validate Machine Warranty:

IMPORTANT

IMPORTANT

Revision History

A revision might be a part number change, new instructions, or information that was not available at the time of printing. We reserve the right to make changes to this manual without notice and without incurring any liability by making changes. Dishwasher owners may request a revised manual at no charge by calling (800) 858-4477 in the USA or (800) 263-5798 in Canada.

Revision Date	Pages	Serial No. Effectivity	Description
6.1.02	All	D3694	Release of First Edition
10.18.02	11	D3858	Revised cycle times
10.18.02	36,37	D3858	Revised rinse arm bearing P/N's Bearing 112164 replaced by 113514, 0707453 replaced by 414111.
10.18.02	37	D3858	Added new rinse arm P/N 414110 for DHB/DH1 and 414111 for DLF.
10.18.02	39	D3851	Added water deflector P/N 327283.
10.24.02	47	D3700	Added bushing P/N 100171.
10.24.02	55	D3858	Added new timer bd. P/N 113547.
12.18.02	55	D3858	Added timer bd. kit P/N 900911 to convert bds. to P/N 113597.
2.5.03	27	_____	Replaced P/N 108391 w/ 113622.
2.5.03	55	_____	Vendor change for overloads Square D in place of Siemens.
7.22.03	27	_____	Replaced P/N 112090 with 113644 & 112086 with 113662.
7.22.03	43	D3982	Replaced 110562 with 113604.
7.22.03	47, 51	-----	Replaced plastic V. Brk with Bronze.
2.3.04	44-45	D4237	Added PRV and line strainer
3.5.04	68	D4410	Update schematic to Rev. I
3.5.04	55	D4410	Changed door safety switch P/N 112659 to P/N 113721.
6.21.04	35	-----	Added rinse support bracket P/N 0309149.

Revision History (continued)

Revision History (continued)

<i>Revision Date</i>	<i>Pages</i>	<i>Serial No. Effectivity</i>	<i>Description</i>
2.2.10	All	D09117934	Release of Second Edition
4.30.10	2-3	D09117934	Revised pallet instructions
4.30.10	8	D09117934	Revised vent fan signal instructions
5.26.10	41	D09117934	Changed Item 10, P/N 113315 to P/N 114471
5.26.10	42-43	D09117934	Revised illustration to show Item 20, P/N 110561
11.4.10	56	All	Changed Pump impeller P/N to 113248

Model Numbers

Model Descriptions

D-HB - High Temperature sanitizing with built-in booster

D-H1 - High Temperature sanitizing without built-in booster

D-LF - Low Temperature Chemical sanitizing for use with a sodium hypochlorite (Chlorine) based sanitizer at a minimum concentration of 50 ppm in the final rinse.

Standard Equipment

Automatic Tank Fill and start

Built-in electric booster heater (DHB only) in 40 °F/22 °C rise for 140 °F/60 °C supply water

Balanced door lift system

Electric tank heat

Low-water tank heat protection

Door safety switch

Automatic electric drain

Common utility connection

Chemical connection provisions

Stainless steel front and side panels

Mounted water pressure regulating valve (DHB only)

Interchangeable upper and lower spray arms

Stainless steel rinse arms

Straight-through operation

Two dish racks (1 peg, 1 flat-bottom)

Options and Accessories

Built-in electric booster heater (DHB only) in 70 °F/39 °C rise for 110 °F/43 °C supply water

Externally mounted steam booster (steam booster 40 °F/22 °C - 70 °F/39 °C rise)

Steam injector or steam coil tank heat (steam booster 40 °F/22 °C - 70 °F/39 °C rise)

Single Source gas booster heater

Corner operation

Additional dish racks:

Peg rack P/N 101285

Flat-bottom P/N 101273

Sheet Pan P/N 113281

3/4" NPT Pressure Regulating Valve (PRV) P/N 107550

3/4" NPT Line Strainer P/N 110768

LIMITED WARRANTY

Champion Industries Inc. (herein referred to as Champion), P.O. Box 4149, Winston-Salem, North Carolina 27115, and P.O. Box 301, 2674 N. Service Road, Jordan Station, Canada, L0R 1S0, warrants machines, and parts, as set out below.

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

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

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

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

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

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

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

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

Table of Contents

Model D-HB, D-H1, D-LF Door-type Dishwashers

<i>Revision History</i>	<i>i</i>
<i>Model Descriptions.....</i>	<i>iii</i>
<i>Limited Warranty</i>	<i>iv</i>
 Installation	 1
 Operation	 13
 Cleaning	 18
 Maintenance	 20
 Troubleshooting	 22
 Service Replacement Parts	 23
 Electrical Schematics	 65

***This Page
Intentionally
Left Blank***

Receiving

!!ATTENTION!!

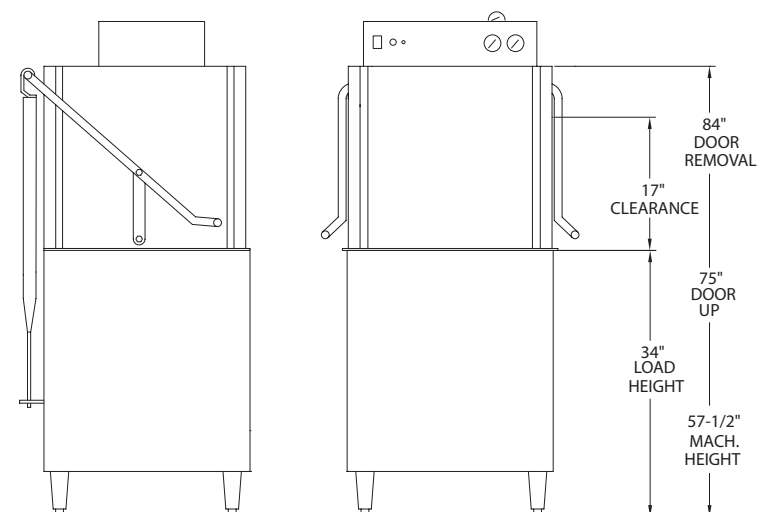
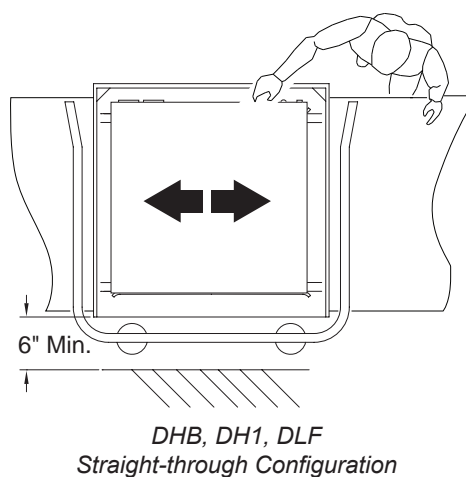
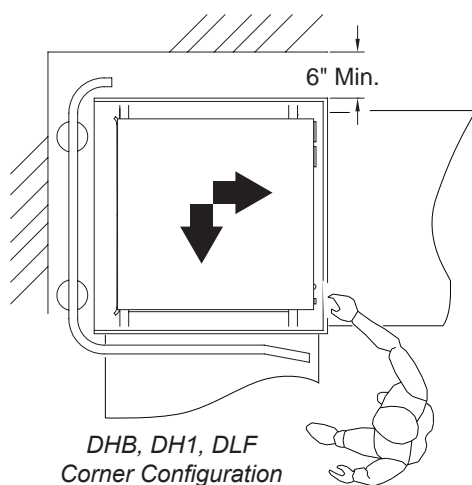
Use caution when moving or lifting the dishwasher to prevent damaging the dishwasher or the installation site. Check doorway and passageway clearance before moving the dishwasher. Remove dishwasher front panel and check under the machine base for obstructions before moving.

1. Inspect the dishwasher for shipping damage
2. Check the dishwasher interior for curtains, panels and other supplies.
3. Lift the dishwasher off the shipping pallet and move the machine near its permanent location.

NOTE:

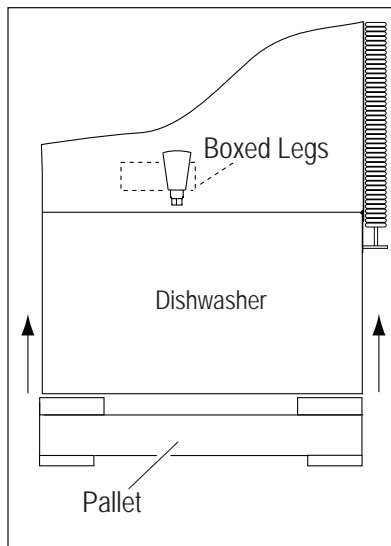
Refer to page 2 for instructions to remove the machine from the shipping pallet.

4. Leave a minimum of 6" between walls and the rear of the dishwasher.
5. Level the dishwasher side-to-side and front-to-back using a bubble level. The dishwasher legs are adjusted by screwing them in or out.
6. Do not remove tags attached to the utility connections.
7. Remove the protective film from the dishwasher exterior.
8. Remove any foreign material from the dishwasher interior.

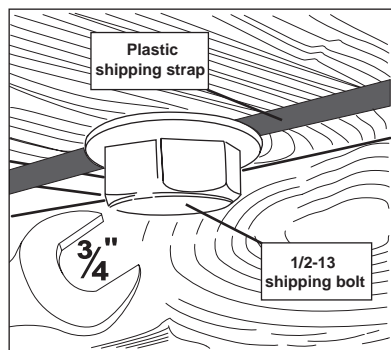


Removing the Dishwasher from its Shipping Pallet

The dishwasher is bolted to the shipping pallet on two corners using 1/2-13 shipping bolts. These shipping bolts must be removed and discarded. The machine legs are stowed inside the machine for installation when the dishwasher is removed from the shipping pallet. Follow the instructions below to remove the dishwasher from its pallet.



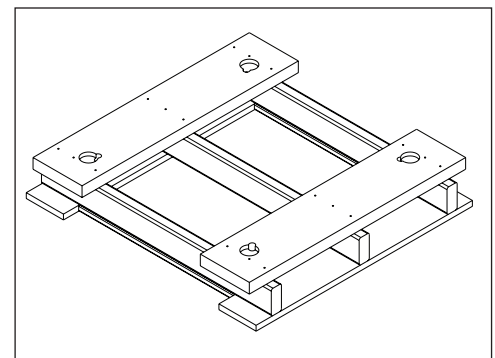
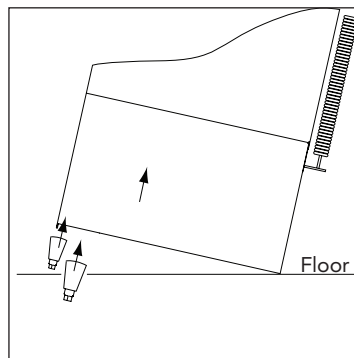
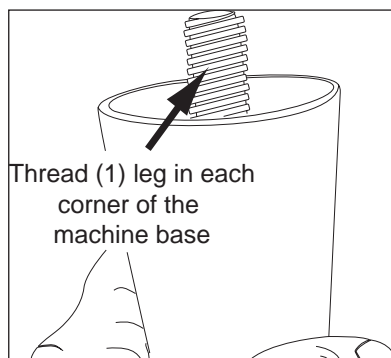
1. Remove the staples around the bottom perimeter of the box and lift the box off the machine.
2. Cut the plastic shipping straps off the corners of the dishwasher.
3. Open the dishwasher doors and locate the leg set stowed inside the machine.
4. Remove the two 1/2-13 shipping bolts holding the machine to the shipping pallet.
5. The bolts are located in a front corner and a back corner of the shipping pallet. The bolts are on the underside of the pallet frame.



6. Inspect the threads on the dishwasher legs making sure they are in good condition. Turn the adjustable feet up to their minimum settings.

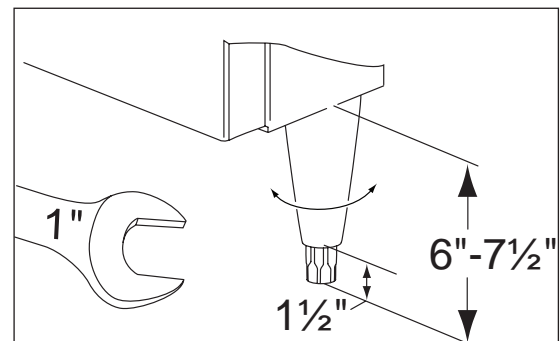
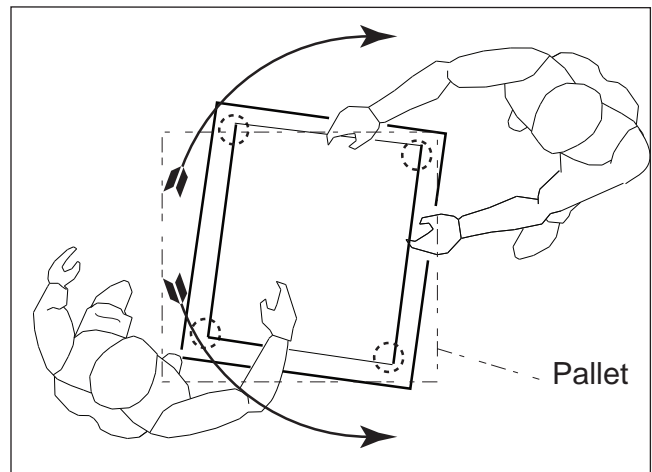
CAUTION:

Use care when tilting or moving the dishwasher to prevent injury to personnel or damage to the dishwasher.



Removing the Dishwasher from its Shipping Pallet

7. Carefully remove the dishwasher from the shipping pallet taking care to prevent damage to the lower panels.
8. Tilt the machine forward and install the rear legs on the machine. Be sure to maintain support on the machine at all times.
9. Tilt the machine in the opposite direction and install the front legs.
10. Make sure the legs are secure in the machine base and make sure the dishwasher does not wobble.
11. Adjust the bullet feet to level the dishwasher side-to-side and front-to-back.
12. Discard the shipping pallet and other shipping materials.



Door Conversion from Straight-through to Corner Configuration

Dishwasher door configurations are determined at the time the machine is ordered; however, the doors can be changed in the field with the addition of a door conversion kit P/N 900839 for Straight-through to Corner or P/N 900865 for Corner to Straight-through. Follow the instructions below to convert a straight-through machine to corner operation.

Prepare for Conversion

- 1 Refer to the parts list at right and make sure the kit is complete.

OPTIONAL TOOL:
(Qty. 2) 2" x 4" x 17-3/4" wood block to support front and right side doors.
- 2 Make sure dishwasher completes any unfinished cycles. Drain the dishwasher, open doors fully and allow hot surfaces to cool.
- 3 Turn machine power off and turn power off at the main disconnect switch.

WARNING!

Disconnect power at the main disconnect switch and place a tag at the disconnect switch to indicate work is being performed on the machine.

WARNING!

Machine surfaces are hot, especially during and after machine operation.

- 4 Refer to Fig. 1 at the right. Note the orientation of the machine for corner installation. Note the controls must be accessible from the front. Plan your relocation accordingly.
- 5 Raise the side doors completely. Block the side doors with the wood blocks as described in Step 1.
If you do not have a blocking tool, have a helper stand by to support the doors.

Conversion Kit Parts List Kit # 900839			
Item No.	Part No.	Description	Qty.
1	0309471	Track, front	1
2	0309469	Track, rack guide	1
3	0309468	Track, rack guide	1
4	0309470	Track, rack support	1
5	107966	Nut, grip 10-32 w/nylon insert	6
6	106727	Screw, 10-32 x 5/8" flat head	6
7	323224	Bracket, door lift	1
8	104889	Putty, sealing	1ft.
9	325408	Door, front	1

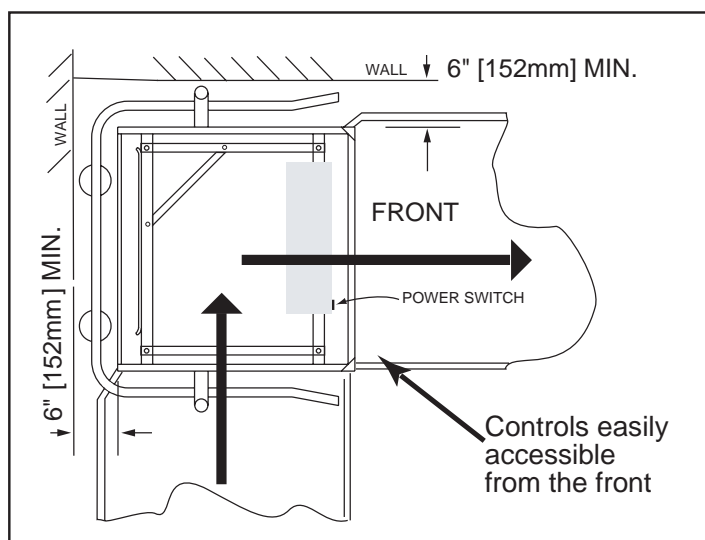


Figure 1

Replacing the tracks:

Refer to Fig. 2

- ⑤ Remove the existing front track, save mounting hardware.
- ⑥ Install Item 1, from kit using existing mounting hardware. Seal bolts with putty supplied in kit.
- ⑦ Install items 2-6 from kit.

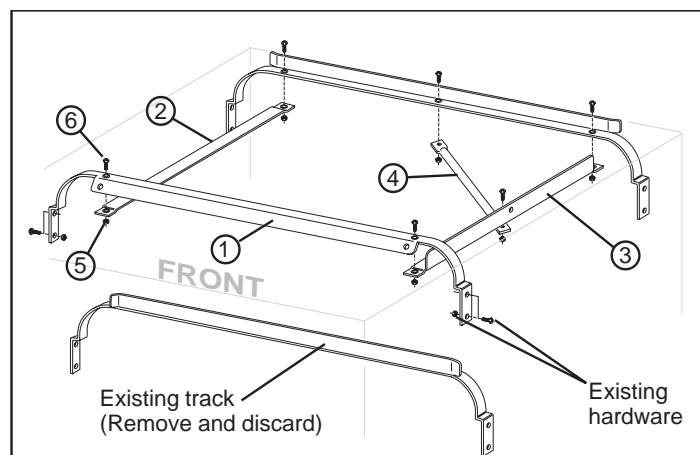


Figure 2- Change the Tracks

Adding Door and Door Lift Bracket

Refer to Fig. 3

- ⑧ Remove and discard the front door and the door catch assembly. The door catch assembly is mounted to right front inside of the hood (A).
- ⑨ Install the front door, Item 9 from the kit.
- ⑩ Install item 7 from the kit as shown in Fig. 3 to reconnect the left and front door
- ⑭ Remove the hardware that connects the door handle to the right side of the door. Reinstall the bolts to plug holes.
- ⑮ Carefully remove the wood blocks supporting the right side door & close the door.
- ⑯ Adjust the spring tension by tightening the nuts on the spring bolts (see bracket B). so the doors move freely. Open the front & side door and make sure that the door opening measures 17" in height. Return the doors to a closed position, if the doors do not stay completely closed, spring has too much tension, readjust the nuts on the spring bolts until the doors remain closed.

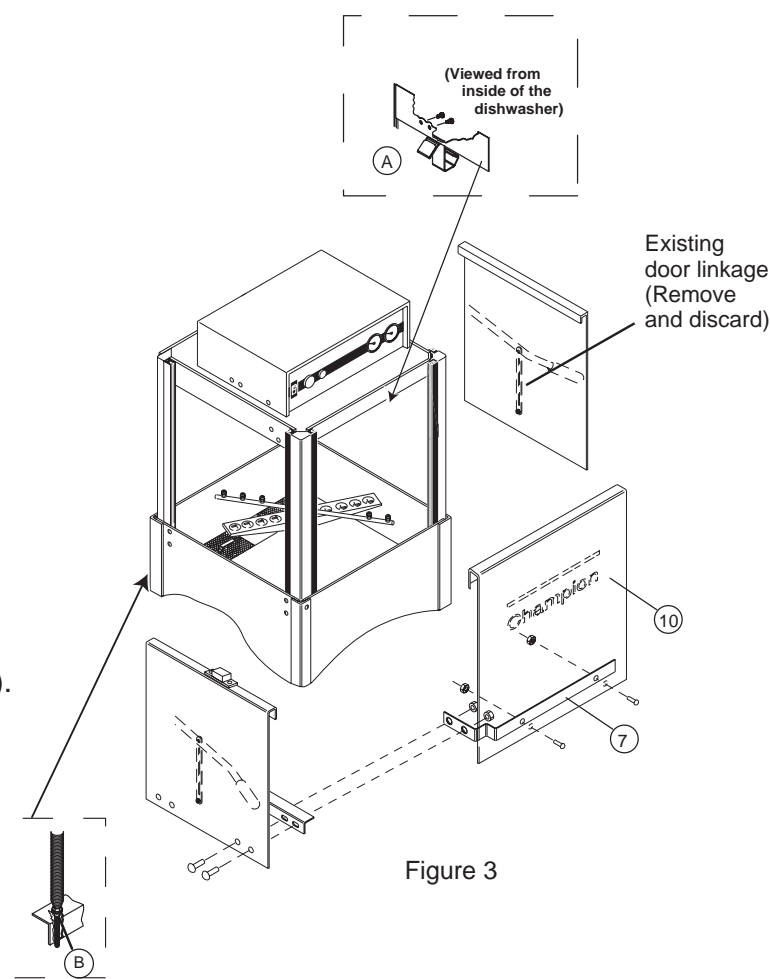
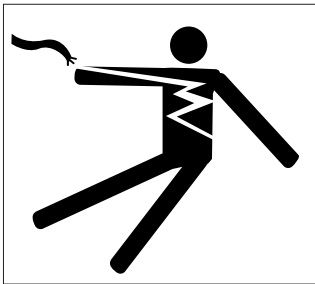


Figure 3

Conversion is complete

Electrical Connections



WARNING:

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

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

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

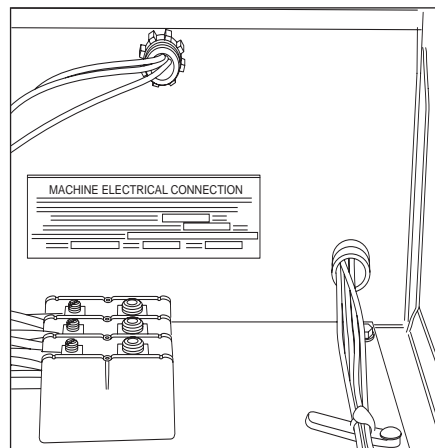
ATTENTION

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

!!ATTENTION!!

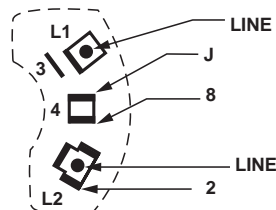
Electrical and grounding connections must comply with all local codes or in the absence of local codes then the National Electrical Code.

A qualified electrician **MUST** compare the electrical power supply with the machine electrical specifications stamped on the MACHINE ELECTRICAL CONNECTION PLATE located on the base of dishwasher near the main terminal block.

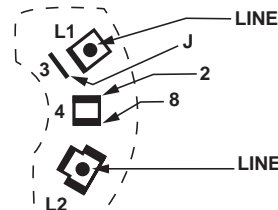


1. Models are available in single and three phase voltages.
2. A knock-out is provided on the left-hand rear corner (machine viewed from front) of the machine for the electrical service connection.
3. Motor rotation was set at the factory. For three phase motors, reverse L1 and L2 at the main terminal block to change rotation. Single phase rotation is changed at the motor.

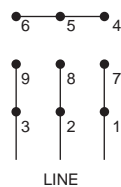
Single Phase - Low Voltage



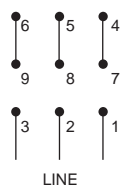
Single Phase - High Voltage



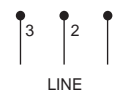
208-240V
Three Phase - Low Voltage



480V
Three Phase - High Voltage



575V Only
Three Phase

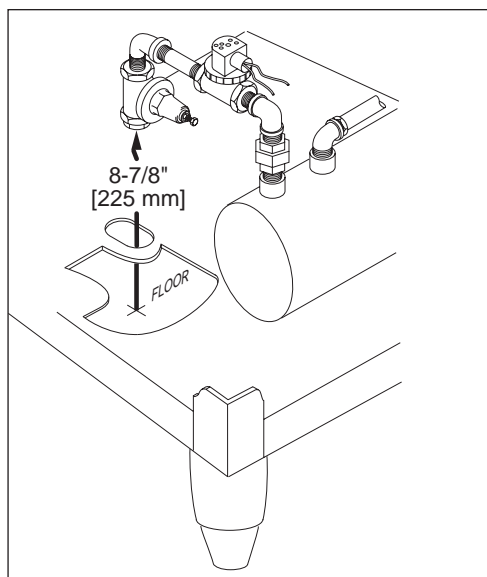


Water Connections

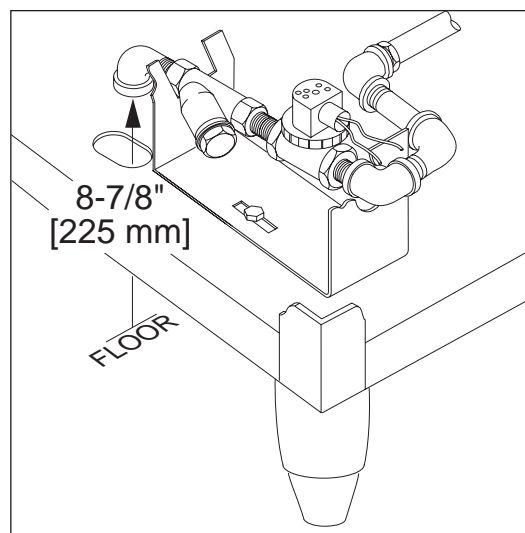
NOTE:

Plumbing connections must comply with local sanitary and plumbing codes.

1. Connect a 3/4" NPT hot water supply line to the dishwasher. The connection point is located behind the lower front panel of the machine. The line enters the machine from underneath the base.



*Model DHB
3/4" NPT Hot Water Connection with
Pressure Regulating Valve*



*Model DH1 and DLF
3/4" NPT Hot Water Connection*

2. The minimum incoming water supply temperatures are listed below:

Minimum 140°F/60°C for DHB with built-in 40°F/23°C rise booster.

Minimum 110°F/43°C for DHB with built-in 70°F/39°C rise booster.

Min./Max flow pressure is 20-22 PSI.

Minimum 180°F/82°C for DH1 without built-in booster.

Min./Max flow pressure is 20-22 PSI.

Minimum 140°F/60°C for DLF low temperature dishwasher.

Min./Max flow pressure is 20-22 PSI.

3. A manual shut-off valve (supplied by others) should be installed in the supply line as close to the machine as possible to allow for servicing. The valve should be the same size or larger than the supply line.
4. A 3/4" pressure regulating valve should be installed in the supply line if the incoming flowing water pressure exceeds 22 PSI.

Drain Connections

1. All models are GRAVITY DRAIN machines equipped with a 2" O.D. hose connection.
2. The maximum flow rate is 15 U.S. gpm/56.8 Lpm.
3. Drain height for all models must not exceed 8-7/8" [225mm] above the finished floor.
4. The drain connection is made to the dishwasher from underneath the machine. An access hole is provided in the machine base.

Ventilation Connections

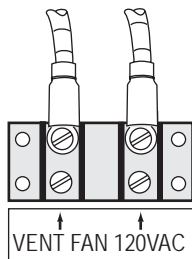
NOTE:

DO NOT VENT THE DISHWASHER INTO WALLS, CEILINGS OR ENCLOSED PLACES.

All venting must comply with local codes.

Vent Fan Signal Connection

A two point terminal block is provided inside the top-mounted control cabinet to provide a 120VAC, 1 AMP Max Load signal.



NOTE:

The Vent Fan Signal Connection supplies 120VAC to a control relay (supplied by others) when the dishwasher is ON and 0 VAC when the dishwasher is OFF. Power to operate the vent fan (supplied by others) must be supplied separately.

***This Page
Intentionally
Left Blank***

Steam Coil Tank Heat and Steam Booster Heater

The illustration below details a steam heated machine consisting of a tank heat steam coil and a mounted steam booster for the final rinse. Contact the factory for steam injector tank heat details.

NOTE:

Only qualified personnel should make dishwasher steam connections.

Connections must meet local plumbing and sanitary codes. Improper installation is not covered by the dishwasher warranty.

Steam Requirements:

2A: 3/4" NPT hot water supply (140°F/60°C) at 68 GPH at 20 PSI flowing pressure.

3A: 1/2" NPT cold water tempering (85°F/30°C) max 25 PSI if equipped.

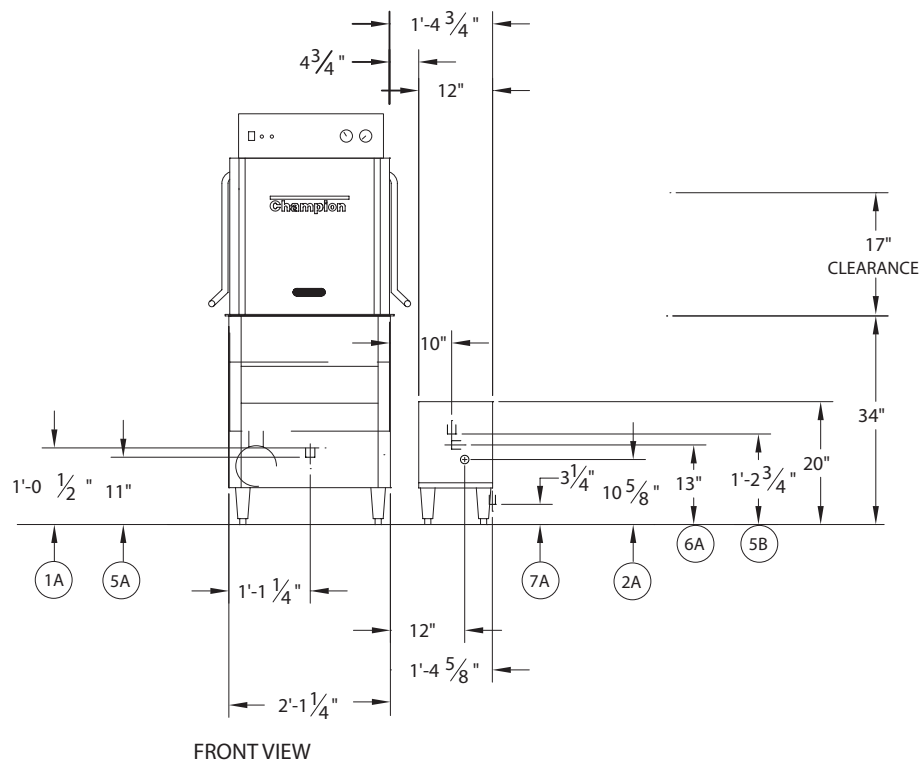
4A: 3/4" NPT final rinse hot water (180-195°F/82-91°C) at 324 GPH at 20 PSI flowing pressure.

5A: 2" O.D. drain hose connection.

5B: 3/4" NPT booster relief to open drain.

6A: 1" NPT Booster 50 Lb/Hr / Tank Heat 25 Lb/Hr consumption.
7-10 PSI, 11-14 PSI, 15-30 PSI flowing pressure.

7A: 3/4" NPT condensate return to boiler (no back-pressure).



Single Source Gas Booster Heater

The illustration below details a single source gas heated machine consisting of a tank heat hot water coil and a gas-powered booster heater for the final rinse. The gas-powered booster provides hot water for the hot water coil and the final rinse. The booster will run on natural gas or propane which is specified at the time of order.

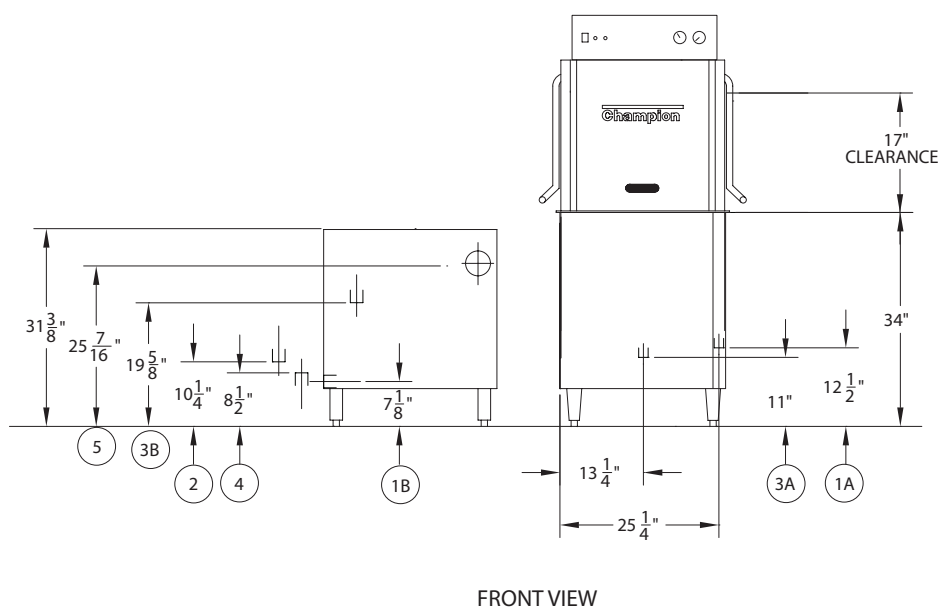
NOTE:

Only qualified personnel should make dishwasher gas connections.

Connections must meet local gas and sanitary codes. Improper installation is not covered by the dishwasher warranty.

Single Source Requirements:

- 1A: Gas booster electrical requirements are 15A @ 120V/60/1
- 2A: 3/4" NPT hot water supply 140 °F/60 °C for 40 °F/22 °C rise and 110 °F/43 °C for 70 °F/39 °C rise at 20-22 PSI flowing pressure.
- 3A: 2" O.D. machine drain hose connection,
- 3B: 3/4" NPT relief valve to open drain,
- 3C: 1/2"NPT vent to open drain.
- 4A: Natural gas, 40 °F/22 °C rise requires 58,000 BTU/HR., 70 °F/39 °C rise requires 105,000 BTU/HR. Hatco Model PMG-60 requires 1/2" NPT, Hatco Model PMG-100 requires 3/4" NPT
- 5A: Gas flue connection is 4" diameter at the rear of the booster. Refer to the Hatco Gas Booster Installation and Operating Instructions.

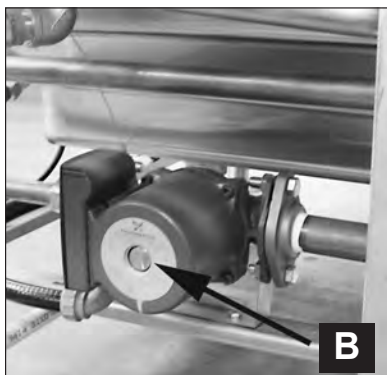


Purging Air from the Dishwasher/Booster Heater System

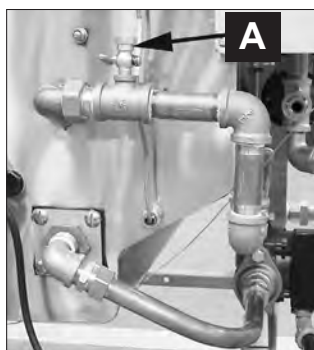
CAUTION:

PERMANENT DAMAGE to the hot water recirculating pump can occur if the air is not purged from the dishwasher/booster heater system prior to placing the dishwasher into service.

Follow the instructions carefully to prevent damage to the dishwasher hot water recirculating pump.



The dishwasher recirculating pump is located on the base of the machine.



The air purge petcock is located behind the dishwasher lower front panel.

Follow the procedure below to purge the air from the system. Plumbing and electrical service connections must be completed before purging the system.

To purge the air:

1. Make sure the dishwasher main power switch is OFF.
2. Make sure the main water supply valve located at the booster heater is OFF.
3. Open petcock (A) on the inlet side of the dishwasher hot water heater coil.
4. Remove the silver plug located in the center of the recirculating pump.
5. Turn the main water supply valve ON. Water will begin to fill the booster heater and the dishwasher heater coil.
6. Water and air will begin to flow out of the purge petcock and the recirculating pump and eventually only water will be observed.
7. Turn the booster heater power switch ON.
8. Turn the dishwasher power switch ON. The dishwasher wash tank will begin to fill with water.
9. Continue to observe the petcock and the recirculating pump and make sure that there is a steady stream of water is flowing from (A) and (B).
10. Replace the silver plug (B) in the center of the recirculating pump then close the petcock (A).
11. Turn the dishwasher power switch OFF.
12. Purging is complete.

-
- | | | | | | |
|---|------------------|---|---|---|-------------|
| CAUTION
120V SUPPLY
DISPENSERS
ONLY | RINSE/SANI | → | ⊘ | ○ | Terminal 15 |
| | COMMON
RETURN | → | ⊘ | ○ | Terminal 2 |
| | | → | ⊘ | ○ | Terminal 2 |
| | DETERGENT | → | ⊘ | ○ | Terminal 10 |
- Diagram showing the back of the dispenser with electrical connections. The connections are labeled 5, 6, 12, 17, 18, 19, 15, 2, 2, and 10. A caution box indicates 120V SUPPLY DISPENSERS ONLY.

13

Door Safety Switch

Dishwasher access doors are equipped with a door safety switch that automatically stops the dishwasher pump if a door is raised while the dishwasher is running. In addition, the dishwasher will not start if a door is left open.

1. If the dishwasher is running and a door is raised, then lighted in-cycle light goes out and the pump stops.
2. Check the interior of the dishwasher for a dish rack still in the machine. This dish rack must be washed again to ensure it is washed and sanitized completely.
3. To restart the dishwasher, make sure all doors are closed.

Pump Intake Screen and Float Switch

Refer to the photo below and note the location of the pump intake screen and dual float switch.

1. Make sure the pump intake screen is installed by sliding it on the bracket located above the wash pump intake.
2. Make sure the float ball on the float switch moves freely on the float stem.
3. Check the interior of the tank for any foreign objects and make sure the drain screen is clean.



Make sure tank is clean, the pump intake screen is installed and the float switch moves freely.

Scrap Screens and Screen Support

4. Make sure the scrap screen support is positioned across the wash tank and installed in the brackets at the front and rear of the tank.

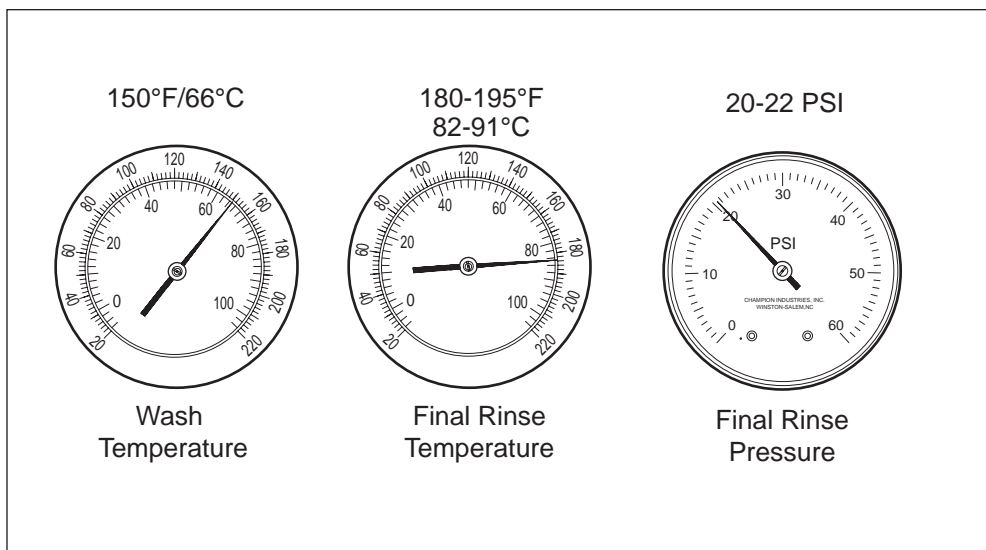


5. Install the scrap screens.



Check list

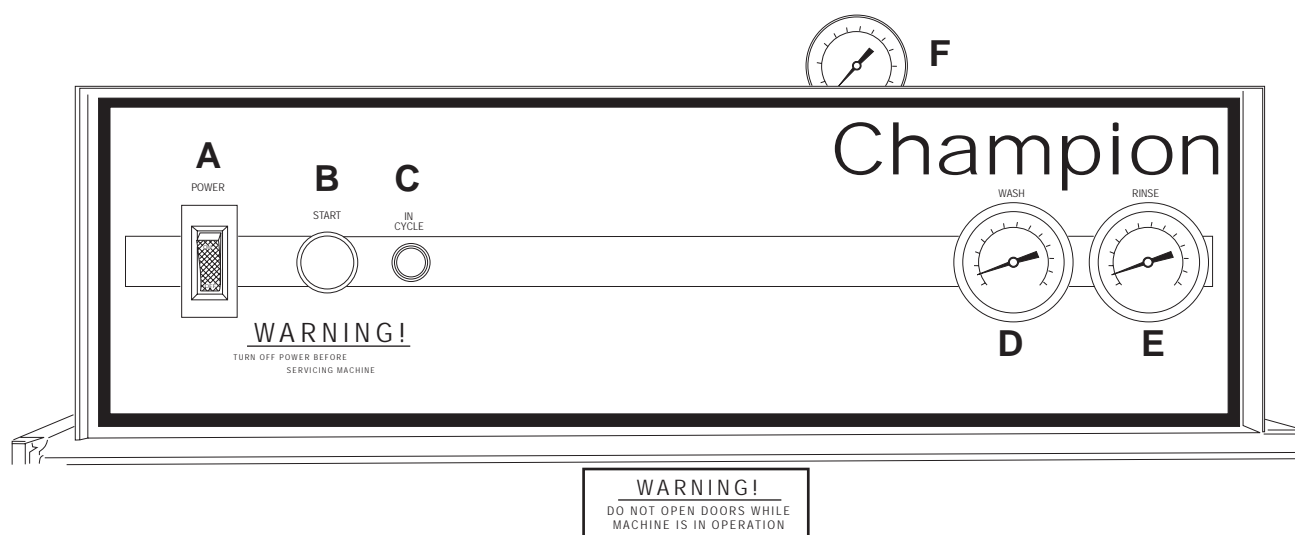
1. Remove white protective film from the dishwasher exterior.
2. Install lower panels to the dishwasher.
3. Remove any foreign material from inside of the machine.
4. Check dishwasher drain/overflows are closed and in securely seated.
5. Install scrap screens, spray arms.
6. Turn main utilities to the dishwasher ON. (Power, water).
7. Make sure doors are closed.
8. Turn dishwasher power switch ON.
9. Check that the wash tank water temperature reaches a minimum of 150 °F/60 °C.
10. Close the door and push the Green start push button to start a wash cycle.
11. During the final rinse check that the final rinse water temperature reaches a minimum of 180 °F/82 °C during the final rinse.
12. Make sure that the final rinse pressure gauge indicates 20-22 PSI during the final rinse.
13. Check for leaks.
14. Push the Power Switch OFF. The dishwasher should drain for 10 minutes.
15. Check that floor drain handles the water volume leaving the dishwasher.



Control Panel

Refer to the illustration below and the explanation of the control panel controls located on the top-mounted control cabinet.

- A: ON/OFF power switch
- B: Start Push button
- C: In-cycle Light
- D: Wash Water Temperature Gauge
- E: Final Rinse Water Temperature Gauge
- F: Final rinse Water Pressure Gauge

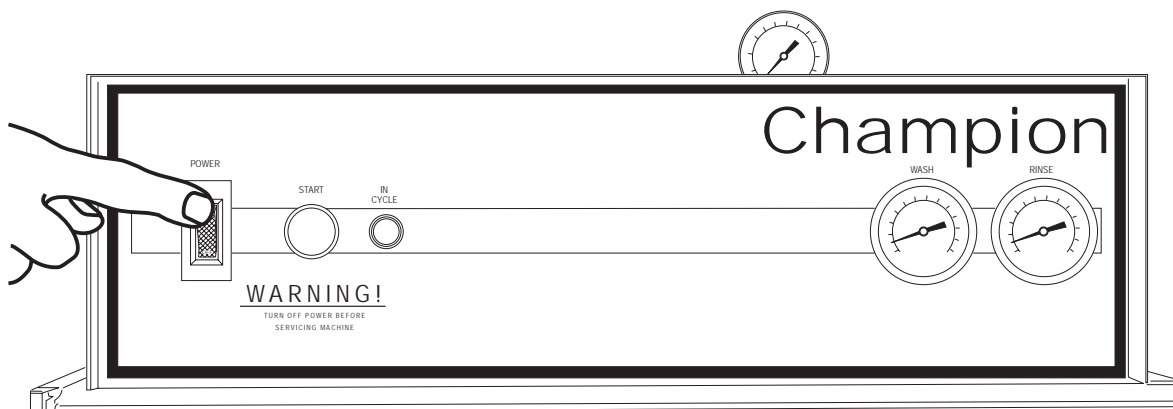


Operation

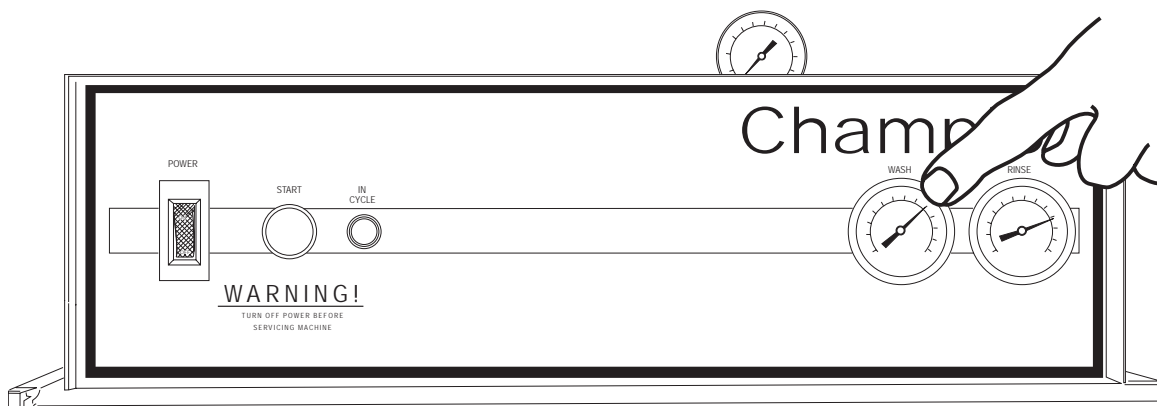
Operation

The following steps describe the operation of the dishwasher.

1. Make sure the main power and water supplies are turned on and the dishwasher doors are closed.
2. Push the power switch to the ON position.
The power switch will illuminate and the machine will fill with water.



3. Wait approximately 10 minutes for the wash tank temperature gauge to reach a minimum of 150 °F/60 °C for DHB and DH1 or 140 °F/49 °C for DLF. For DHB only, the booster heater is heating the final rinse water at the same time.

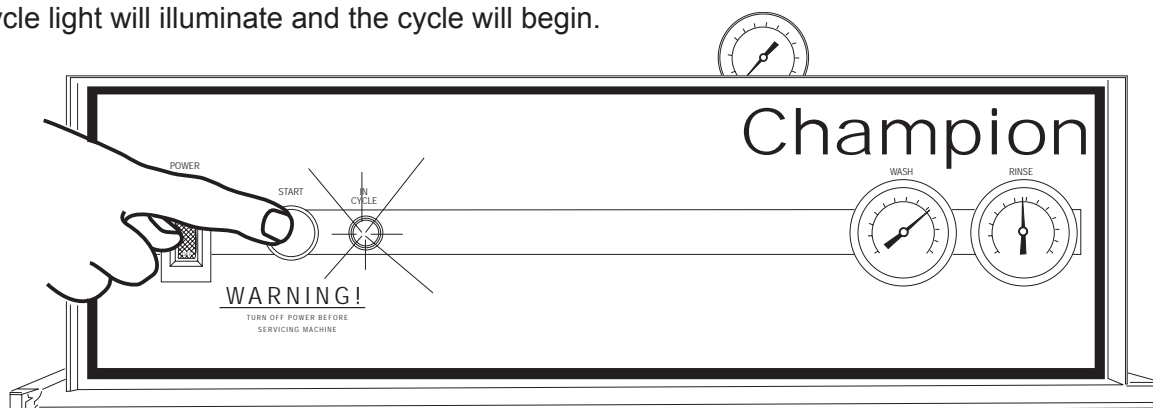


4. Prescrap the dishes and load them into the dish racks for washing.

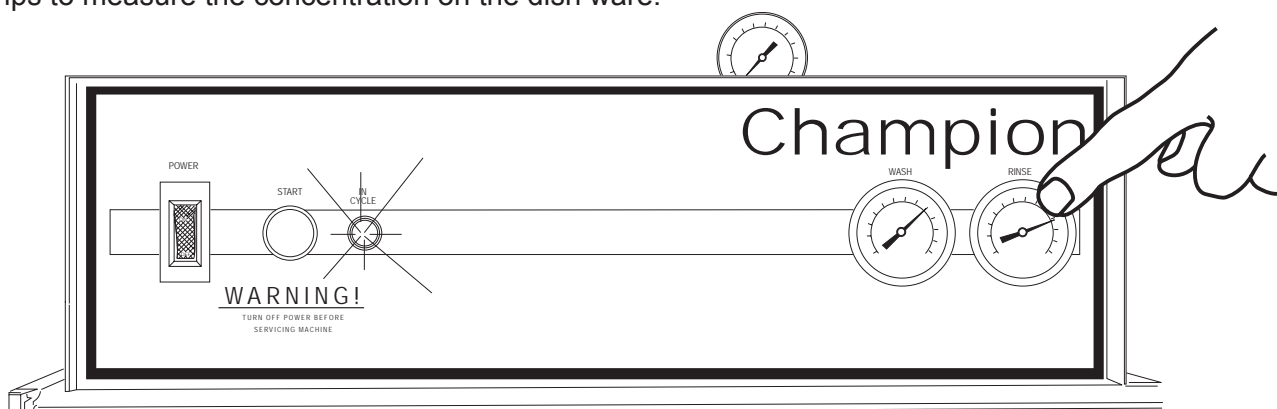
Load plates glasses and bowls in a peg rack. Spread silverware and utensils evenly in a single layer in a flat bottom rack.

5. DO NOT OVERLOAD DISH RACKS.

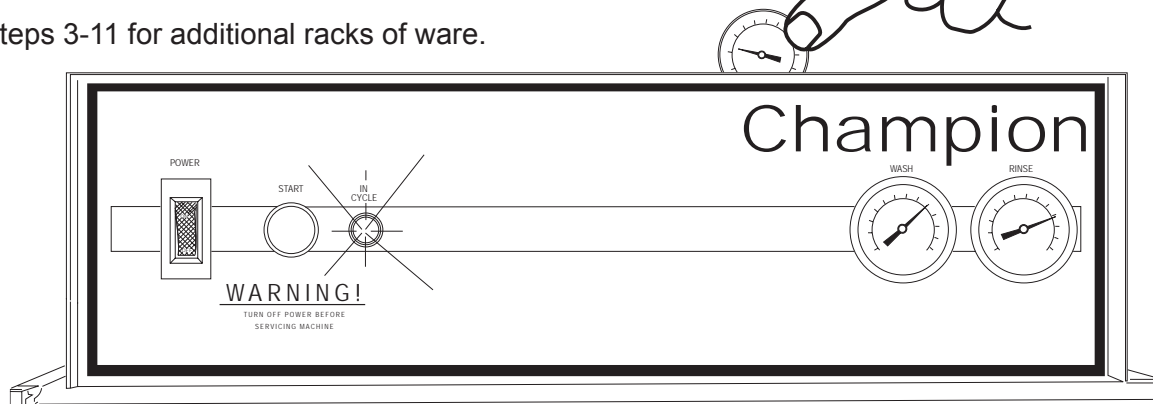
6. Open the dishwasher doors and insert a rack of soiled wares into the machine. Close the doors and press the Green Start push button.
7. The in-cycle light will illuminate and the cycle will begin.



8. The dishwasher washes for 40 seconds, final rinses for 8 seconds, and dwells for 12 seconds for a complete cycle time of 60 seconds.
9. Check the final rinse water temperature during the 8 second final rinse. The temperature must maintain a minimum of between 180-195°F/82-91°C for DHB, DH1 and 140°F/60°C for DLF.
10. The DLF requires that a minimum concentration of 50 ppm of a 5.25% chlorine sanitizer be maintained in the final rinse water during the final rinse. The concentration must be measured using chlorine test strips to measure the concentration on the dish ware.



11. Check the final rinse pressure on the pressure gauge during the final rinse cycle to ensure that 20-22 PSI is maintained.
12. Repeat steps 3-11 for additional racks of ware.

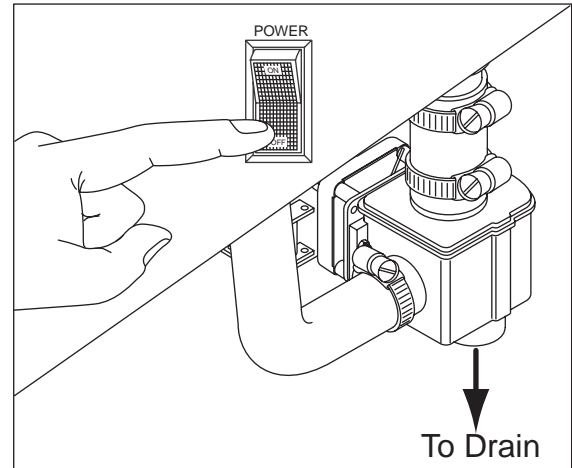


Operation Summary

ACTION	RESULT
1. Push ON/OFF switch UP to the ON position.	The power switch illuminates, machine fills automatically and wash water begins to heat. DHB booster begins to heat.
2. Wait 10 minutes for water to reach proper temperature.	Wash water temperature gauge should indicate minimum of 150°F/60°C.
3. Prescrap and load wares into the dish racks.	Wares should be placed edgewise in a peg rack. Cups and bowls should be placed upside down in flat bottom rack. Silverware or utensils should be placed in a single layer in a flat bottomed rack.
4. Open the doors, insert a dish rack of soiled ware and close the doors. Push the Green Start push button. Opening the doors anytime during the automatic cycle stops the dishwasher. Closing the doors will resume the cycle where it left off.	The in-cycle light will illuminate and complete the time cycle of 60 seconds The final rinse temperature must maintain a minimum of 180-195°F/82-91°C during the final rinse and a flowing pressure of 20-22 PSI.
5. Check the final rinse temperature gauge and final rinse pressure gauge during the final rinse portion of the timed cycle.	The in-cycle light goes out.
6. The automatic cycle ends.	
7. Open the doors, remove the cleaned wares, insert another rack of soiled wares and close the dishwasher doors.	
8. Push the power switch DOWN to the OFF position.	The dishwasher automatic electric drain valve opens for 10 minutes to drain the dishwasher.
9. Clean the dishwasher after each meal period or after 2 hours of continuous operation, whichever occurs first.	Periodic cleaning reduces detergent consumption and improves the overall performance of the dishwasher.
10. Spray the interior of the dishwasher with fresh water. Clean the scrap screens and pump intake strainer. Clean the spray arms.	
11. Wipe the exterior of the machine with a soft cloth and mild detergent.	
12. DO NOT HOSE THE EXTERIOR OF THE MACHINE WITH WATER.	

Cleaning

Cleaning your dishwasher is the best maintenance you can perform. The cleaning intervals below are the minimum requirements for most dishwashers. You may need to clean your dishwasher more often when washing heavily soiled wares or during long hours of continuous operation.



The automatic drain valve will open for 10 minutes to drain the dishwasher when the Power Switch is turned off.

Daily or every 2 hours of operation

1. Turn power switch to OFF. The automatic electric drain valve will open for 10 minutes.
2. Flush the interior of the dishwasher with fresh water.
3. Clean Scrap screens and pump intake screen
4. Remove wash and rinse spray arm assemblies. Flush with fresh water.

Every 8 hours of operation or at the End-of-the-day.

1. Turn power switch to OFF. The automatic electric drain valve will open for 10 minutes.
2. Flush the interior of the dishwasher with fresh water.
3. Clean Scrap screens and pump intake screen
4. Remove wash and rinse spray arm assemblies. Flush with fresh water.
5. Check rinse nozzles and clean with a paperclip if needed.
6. Clean the exterior of the machine with a soft cloth and mild detergent
DO NOT HOSE THE EXTERIOR WITH WATER.
7. Flip power switch on and immediately off to drain machine again.
8. Reassemble the machine and leave doors open to aid overnight drying.
9. Do not leave water in wash tank overnight.

De-liming

Lime (scale) deposits are the result of minerals contained in the water feeding the dishwasher and appear as a white haze on the surface of the dishwasher. Severe scaling can appear as a granular deposit. These deposits are a result of the mineral content in the geographic area of the machine's location.

WARNING:

Death or injury can result from toxic fume when de-liming agents come in contact with Chlorine Bleach, or other chemicals that contain iodine, bromine, or fluorine.

USE EXTREME CAUTION WHEN HANDLING ANY DE-LIMING AGENT

CAUTION:

De-liming agents can cause chemical burns.

Wear rubber gloves, eye protection and any other protective clothing as instructed by a qualified chemical supplier and follow the instructions provided by the chemical supplier.

Maintenance

Weekly

1. Inspect all water lines for leaks and tighten at joints if required.
2. Clean any detergent residue from the exterior of the machine.
3. Check that the drain/overflow pipes seat tightly in their drains.
4. Clean any accumulated scale from the heating element.
5. Inspect the spray arms for any damage or missing parts.
6. Inspect the final rinse arms for missing parts.
7. Check that float switch moves freely.

Monthly

1. Inspect interior of machine for lime deposits and clean.
2. Check that the drains flow freely.
3. Clean any accumulated scale from the heating element.
4. Inspect the rinse spray arms and ensure all plugs are installed.
5. Inspect the final rinse arms for missing parts
6. Inspect the pawl bar and drive assembly for damage or missing parts.
7. Check that float switch moves freely.
8. Check the door guides and door operation.
9. Check the operation of temperature and pressure gauges
10. Perform complete operation check.

Yearly

1. Contact authorized service agent to perform complete maintenance review of machine.
2. Correct any abnormal situations as recommended.

Troubleshooting

Before calling for service check the following conditions.

1. Dishwasher main power and water supply is on.
2. Machine has been assembled correctly.
3. Drain is closed.
4. Screens and pump intake screen are clear.
5. Doors are closed and secure.

Condition	Cause	Solution
Dishwasher will not run.	Door not closed. Main power OFF Dishwasher Power OFF.	Close door completely. Check breaker on panel. Turn dishwasher ON.
Machine washes constantly.	Timer or door switch defective	Contact Service Agent
Low or no water.	Main water supply off. PRV setting incorrect Solenoid strainer clogged. Solenoid valve defective. Drain valve defective Stuck or defective float.	Open supply valve. Adjust the PRV setting Clean strainer. Contact Service Agent. Contact Service Agent. Clean or replace.
Water fills constantly	Defective ckt. bd. Defective fill valve Defective drain valve Defective float switch	Contact Service Agent
Wash motor won't run	Tripped motor overload Defective motor	Reset motor overload Replace motor
Wash tank water temp is low when in use.	Incoming water temp at machine too low Defective thermometer Defective thermostat Defective heater Defective solenoid valve Heater element limed up	Increase water temperature Contact Service Agent Contact Service Agent Contact Service Agent Contact Service Agent Clean element

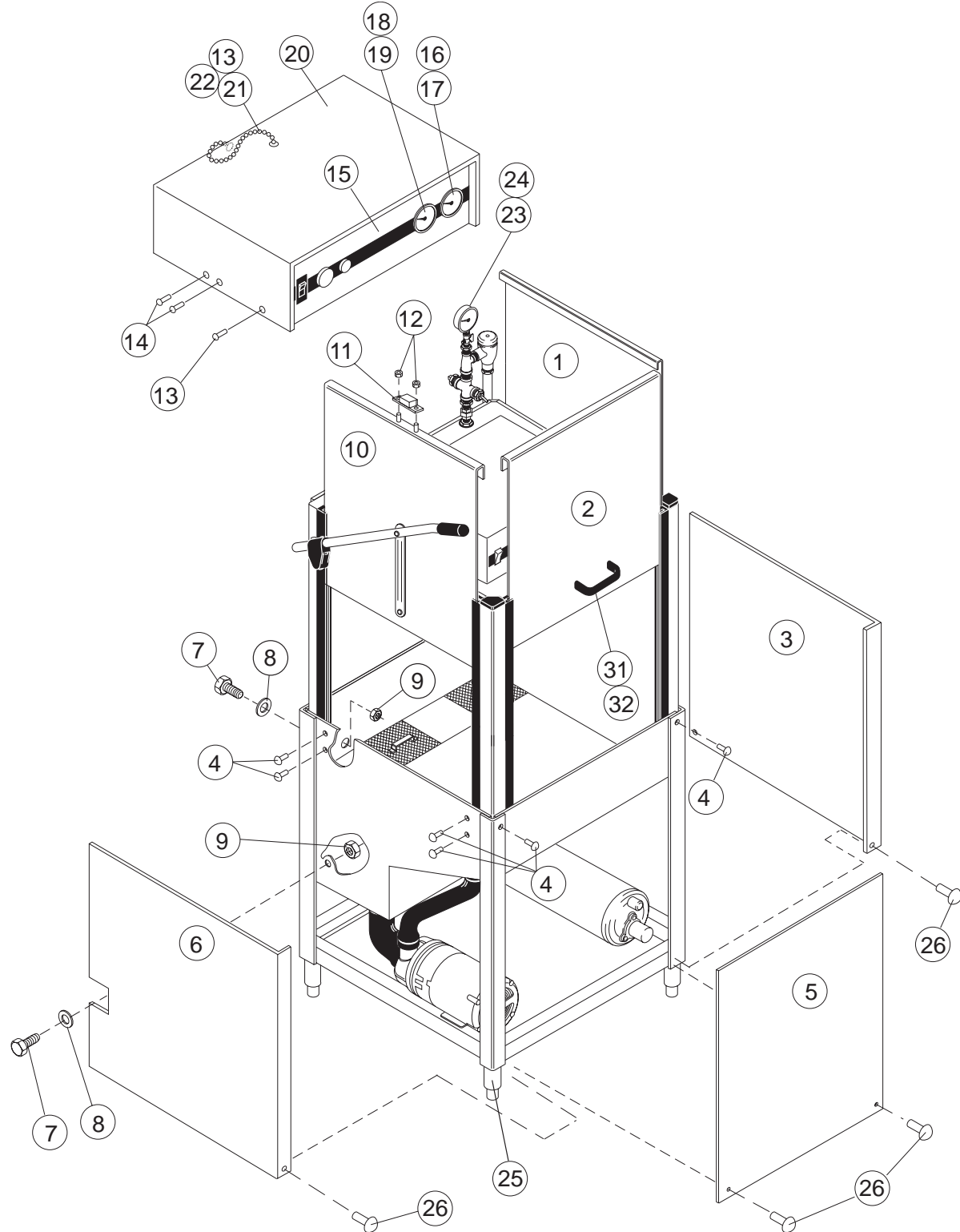
Troubleshooting (continued)

Condition	Cause	Solution
Insufficient pumped spray pressure	Clogged pump intake screen. Clogged spray arm. Scrap screen full. Pump motor rotation wrong Defective pump seal.	Clean. Clean. Clean. Reverse L1 and L2. Replace pump seal.
Insufficient or no final rinse spray pressure	Main water supply off. PRV setting incorrect Solenoid strainer clogged. Solenoid valve defective. Clogged rinse nozzles.	Open supply valve. Adjust the PRV setting Clean strainer. Contact Service Agent. Clean with paperclip.
Insufficient final rinse or no final rinse.	Defective PRV. PRV setting wrong. Clogged rinse nozzle or rinse arm. Incoming water line too small. Clogged line strainer.	Replace. Set to 20-22 PSI flowing. Clean nozzle with paperclip and flush arm. Increase line size. Clean strainer.
Low final rinse temperature.	Low incoming water temperature. Defective thermostat Defective thermometer.	Booster thermostat setting low. Replace thermostat. Replace thermometer.
Poor wash results.	Detergent not added to tank Wares incorrectly loaded in dishrack. Clogged screens . Clogged spray arms. Thermostat defective. End plugs missing. Water temperature low. Heater elements limed up	Check detergent supply. Reposition wares or reduce amount of wares. Clean screens.. Clean spray arms. Contact Service Agent. Check spray arms. Check incoming water temperature. De-lime dishwasher.

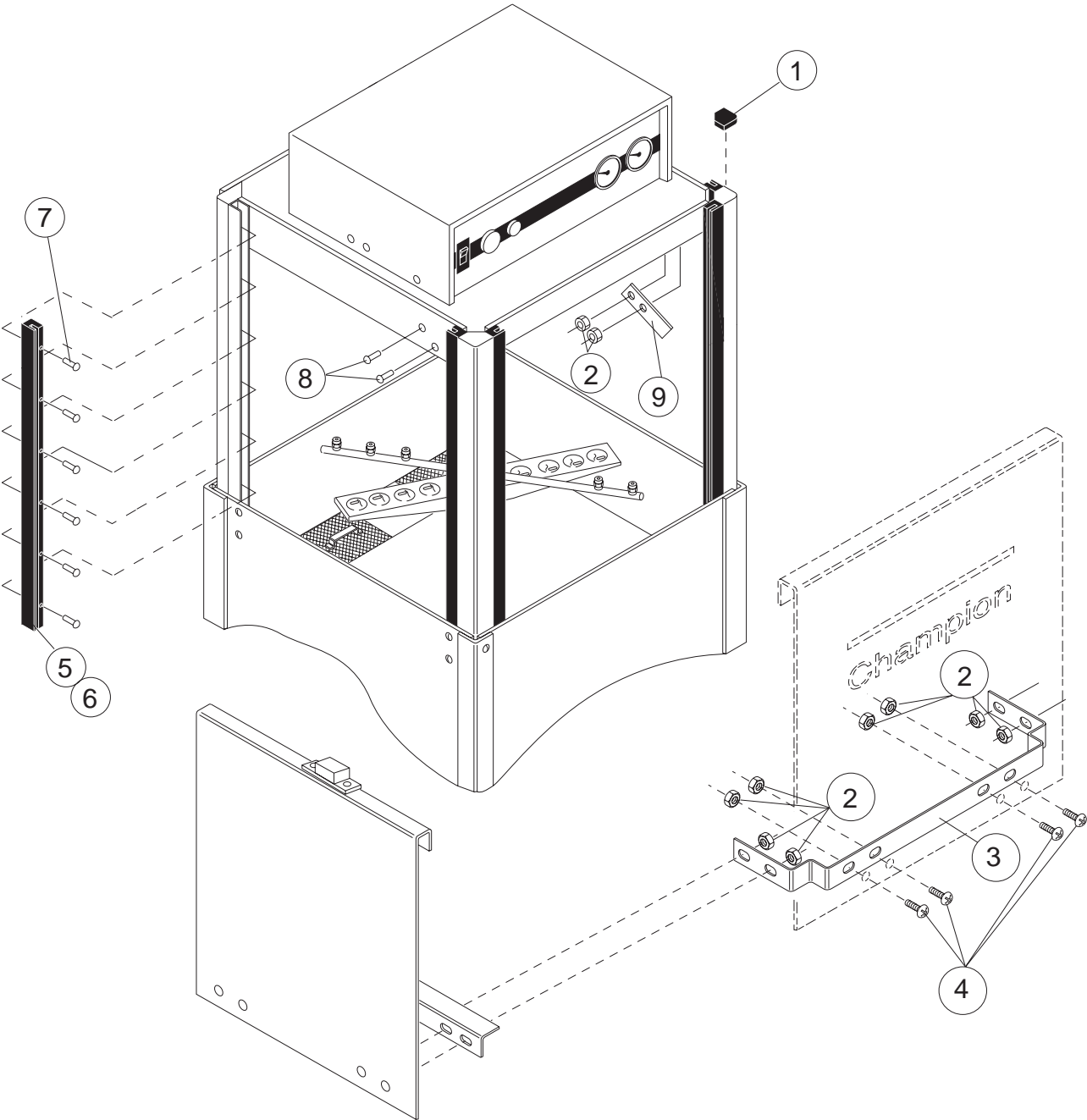
***This Page
Intentionally
Left Blank***

Service Replacement Parts

Illustration	Page
Panels, Doors and Gauges	28
Doors, Guides, Stops and Lift Bracket	30
Door Handle and Spring Assembly.....	32
Track Assembly	34
Wash/Rinse Spray Piping.....	36
Wash and Rinse Spray Arms.....	38
Drain Assembly and Scrap Screens.....	40
Wash Tank Heat, Thermostats and Float Switch.....	42
Electric Booster Assembly	44
K2 Steam Booster Assembly	46
Hot Water Coil Tank Heat Assembly.....	48
Single Source Gas Booster Piping	50
DHB Lower Fill Piping Assembly	52
DHB, DH1 Upper Fill Piping Assembly	54
DLF Upper Fill Piping Assembly.....	56
DH1, DLF Lower Fill Piping Assembly.....	58
Pump Assembly.....	60
Control Cabinet Assembly	62
Dish racks, PRV	64

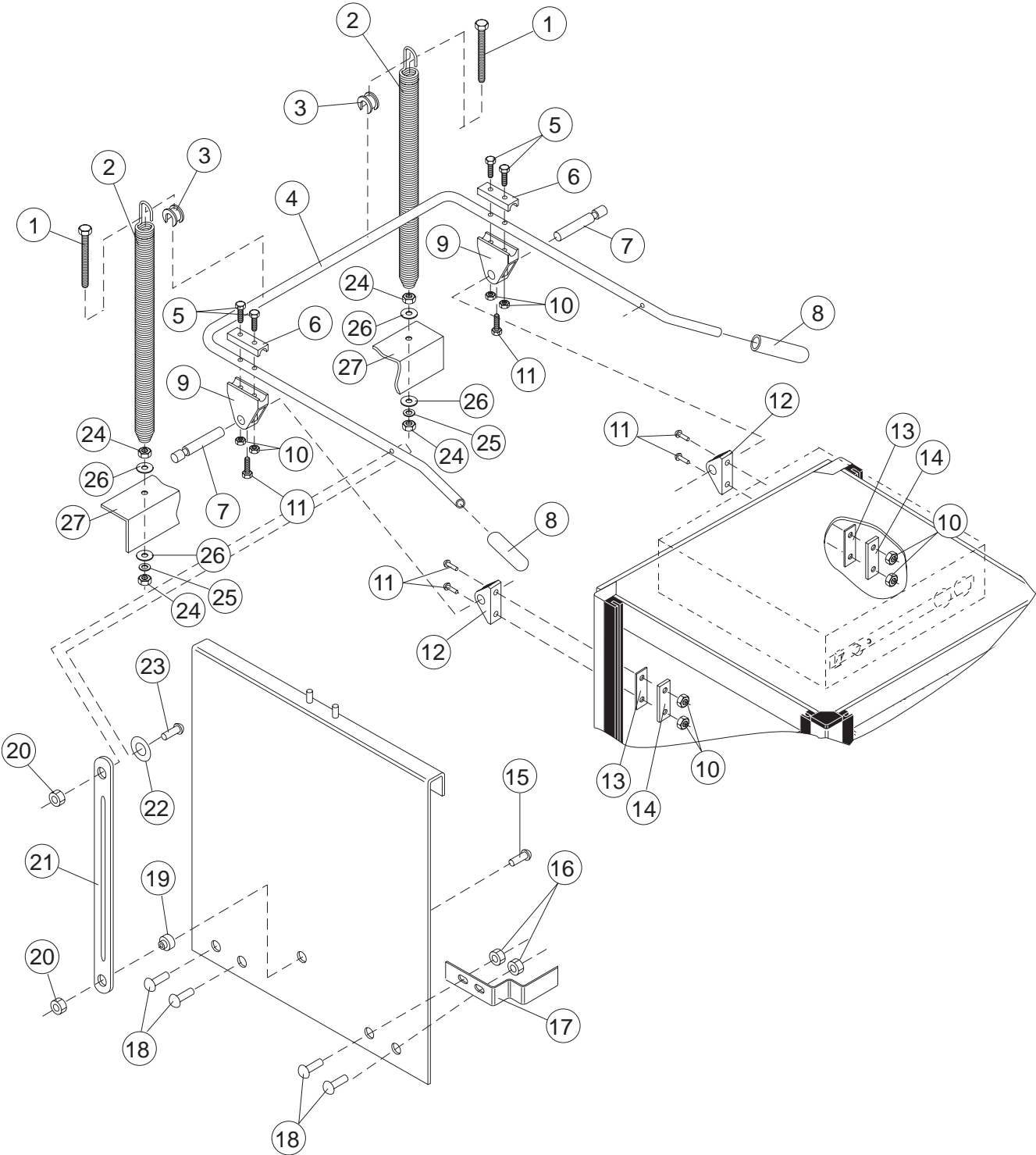


Item No.	Part No.	Description	Qty
1	325405	SIDE DOOR, RIGHT	1
2	325407	SIDE DOOR, RIGHT (CORNER MACHINE)	1
3	327127	DOOR, FRONT	1
4	100779	SCREW, 1/4-20 X 5/8" TRUSS HD., SST	6
5	321932	PANEL, FRONT	1
6	321941	PANEL, LH WITH CUT-OUT	1
7	108418	PLUG, PLASTIC	4
8	109034	WASHER, 3/16" X 1-3/16"	4
9	108417	NUT, PLASTIC	4
10	325406	DOOR, LEFT SIDE	1
11	324801	MAGNET	1
12	108954	GRIP NUT, 6/32 W NYLON INSERT, SST	2
13	100007	SCREW, 10-32 X 3/8" TRUSS HD., SST	2
14	0508752	SCREW, 4-40 X 5/8" RD. HD., SST	2
15	0508668	DECAL, CONTROL CABINET	1
16	113622	THERMOMETER, 4-FT.CAPILLARY (FINAL RINSE)	1
17	113644	OVERLAY, FINAL RINSE 180-195°F	1
---	112092	OVERLAY, FINAL RINSE 120°F (DLF ONLY)	1
18	107440	THERMOMETER, 8-FT CAPILLARY	1
19	113662	OVERLAY, WASH 150-160°F	1
---	112093	OVERLAY, WASH 120°F (DLF ONLY)	1
20	305404	COVER, CONTROL CABINET	1
21	107367	CHAIN, BEAD #10	2FT
22	107368	CHAIN, END COUPLING	1
23	100135	GAUGE, PRESSURE (0-60 PSI)	1
24	109765	OVERLAY, PRESSURE GAUGE	1
25	112587	FOOT, CAST GREY	4
26	0504822	SCREW, 8-32 X 1/2" PAN HD., SST	4
27	325392	BAFFLE, SPLASH (FRONT & SIDE DOORS) (NS)	A/R
28	325400-1	BAFFLE, SPLASH (TOP OF HOOD) (NS)	A/R
29	325400-2	BAFFLE, SPLASH (SIDE/TOP OF HOOD) (NS)	A/R
30	325444	BAFFLE, SPLASH (FRONT, SIDE, TOP) (NS)	A/R
31	108966	HANDLE, DOOR	1
32	100073	SCREW, 1/4-20 X 1/2" TRUSS HD., SST	2

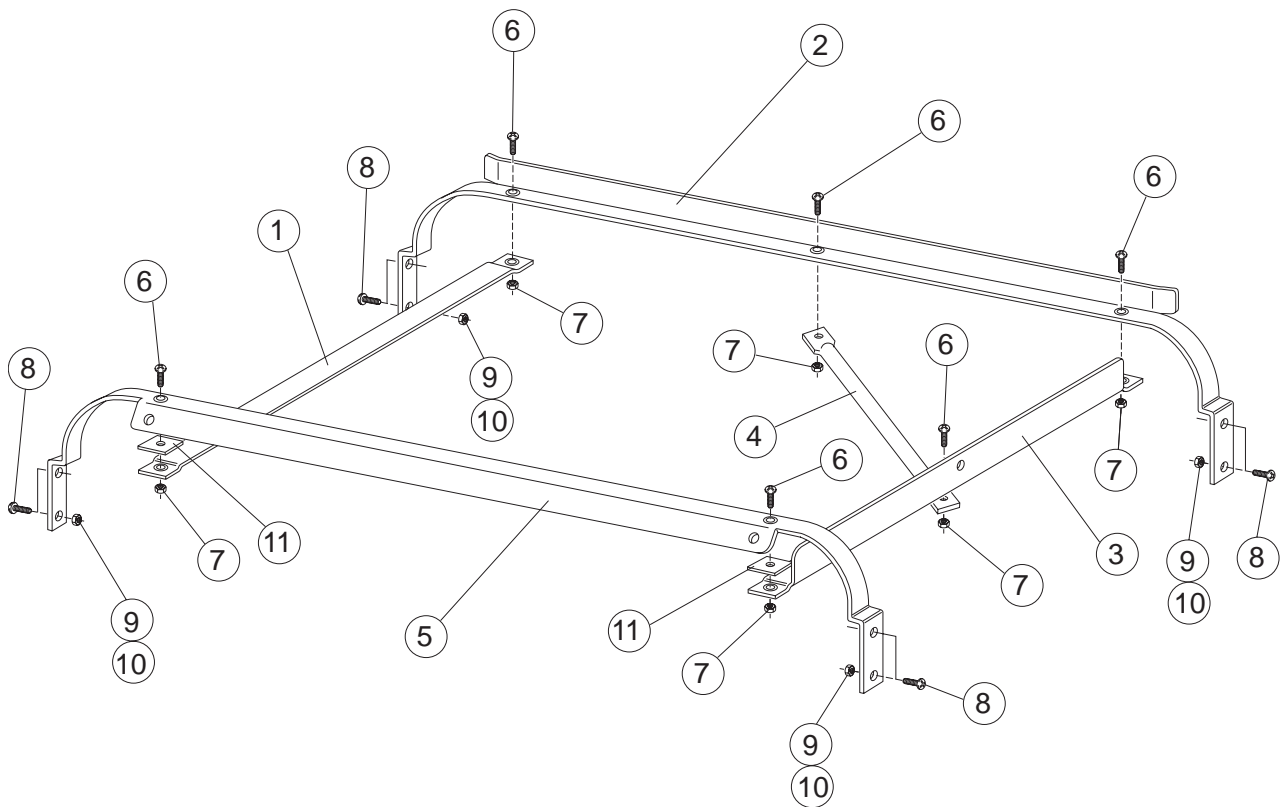
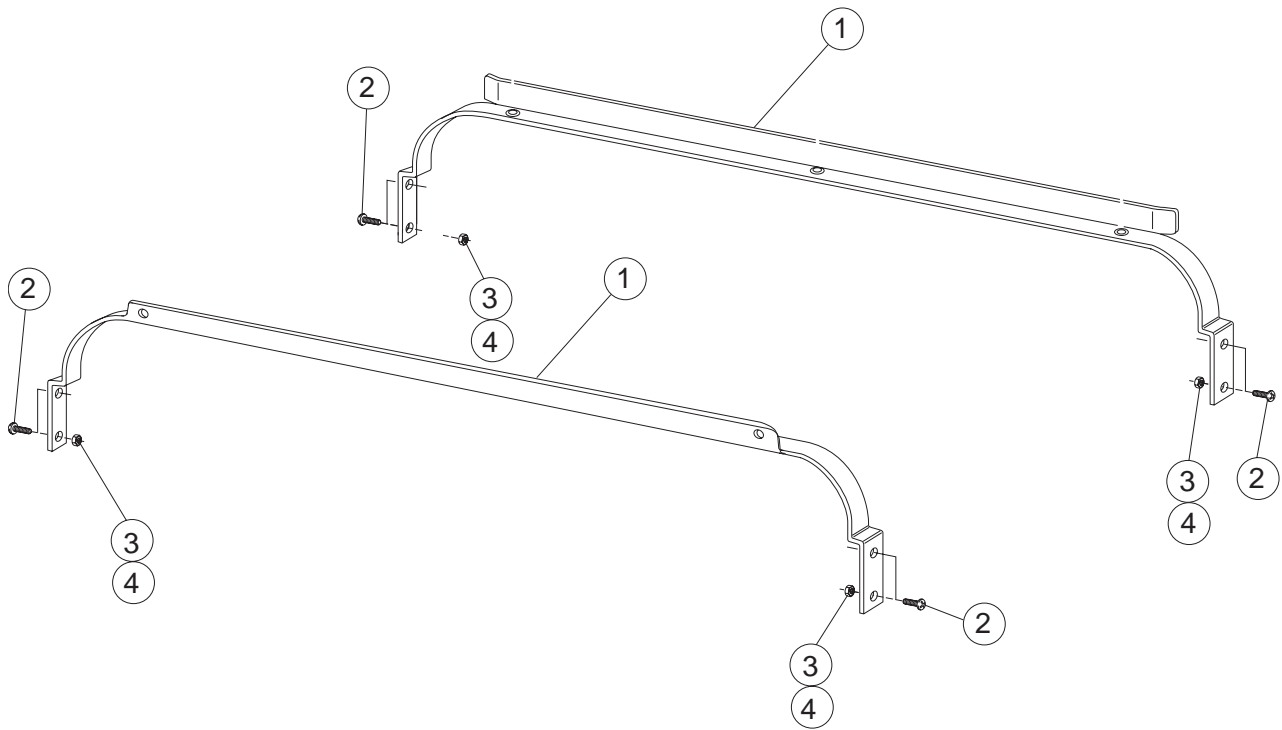


Item No.	Part No.	Description	Qty
1	108053	PLUG, CORNERPOST	2
2	107966	GRIP NUT, 10-32 W/NYLON INSERT	10
3	327104	BRACKET, DOOR LIFT	1
4	100007	SCREW, 10-32 X 3/8" TRUSS HD., SST	4
5	327103	BRACKET, LIFT DOOR	1
6	100097	SCREW, 10-32 X 1/2" TRUSS HD., SST	2
7	108347	GUIDE, DOOR	6
8	108410	GASKET, DOOR GUIDE 26"	12FT
9	107970	SCREW, 8-32 X 1" FILISTER	36
10	317345	BRACKET, DOOR CATCH	1
11	325921	CATCH, DOOR	1
12	100073	SCREW, 1/4-20 X 1/2" TRUSS HD., SST	2
13	100141	GRIP NUT, 1/4-20 W/NYLON INSERT SST	2
14	108966	HANDLE, DOOR	1

Door Handle and Spring Assembly



Item No.	Part No.	Description	Qty
1	112723	BOLT, 5/16-18 X 13" HEX HD., SST	2
2	108066	SPRING, EXTENSION	2
3	107397	BLOCK, SPRING HOOK	2
4	0509166	HANDLE, DOOR (STRAIGHT-THROUGH)	1
---	112859	HANDLE, DOOR (CORNER MACHINE)	1
5	107437	BOLT, M6 X 45 MM HEX HD., SST	4
6	107396	BLOCK, UPPER PIVOT	2
7	107393	PIN, PIVOT	2
8	107962	HANDLE, GRIP	2
9	107395	BLOCK, LOWER PIVOT	2
10	107420	NUT, PLAIN M6	8
11	107436	SCREW, M6 X 16 MM FILISTER	6
12	107399	SUPPORT, PIVOT BLOCK	2
13	304811	GASKET, BACKING	2
14	108368	PLATE, BACKING	2
15	100740	BOLT, 5/16-18 X 1" HEX HD., SST	2
16	107966	GRIP NUT, 10-32 W/NYLON INSERT SST	8
17	322077	GUARD, SPLASH (PRIOR TO D3857 NO LONGER USED)	2
18	100097	SCREW, 10-32 X 1/2" TRUSS HD., SST	8
19	0509264	BUSHING, SIDE DOOR	2
20	100142-T	NUT, TOPLOCK 5/16-18 SST	2
21	0309167	LIFT BAR, DOOR	2
22	102376	WASHER, FLAT	2
23	104002	BOLT, 5/16-18 X 1-1/2"	2
24	100154	NUT, PLAIN 5/16-18 SST	4
25	106013	WASHER, LOCK 5/16" SPLIT	2
26	102376	WASHER, FLAT 5/16" SST	4
27	321927	SPRING, ANCHOR BRACKET	2

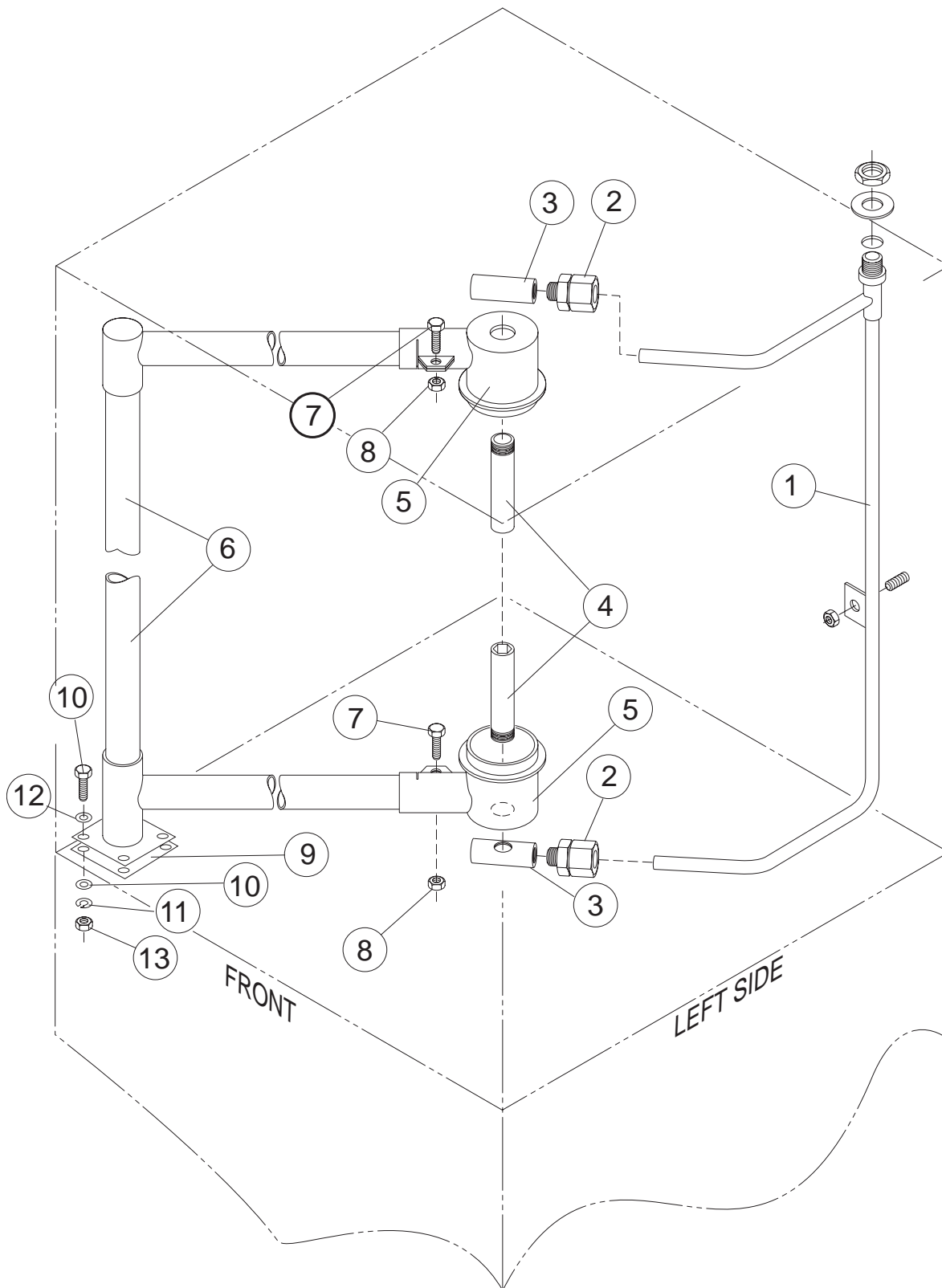


STRAIGHT-THROUGH TRACK CONFIGURATION

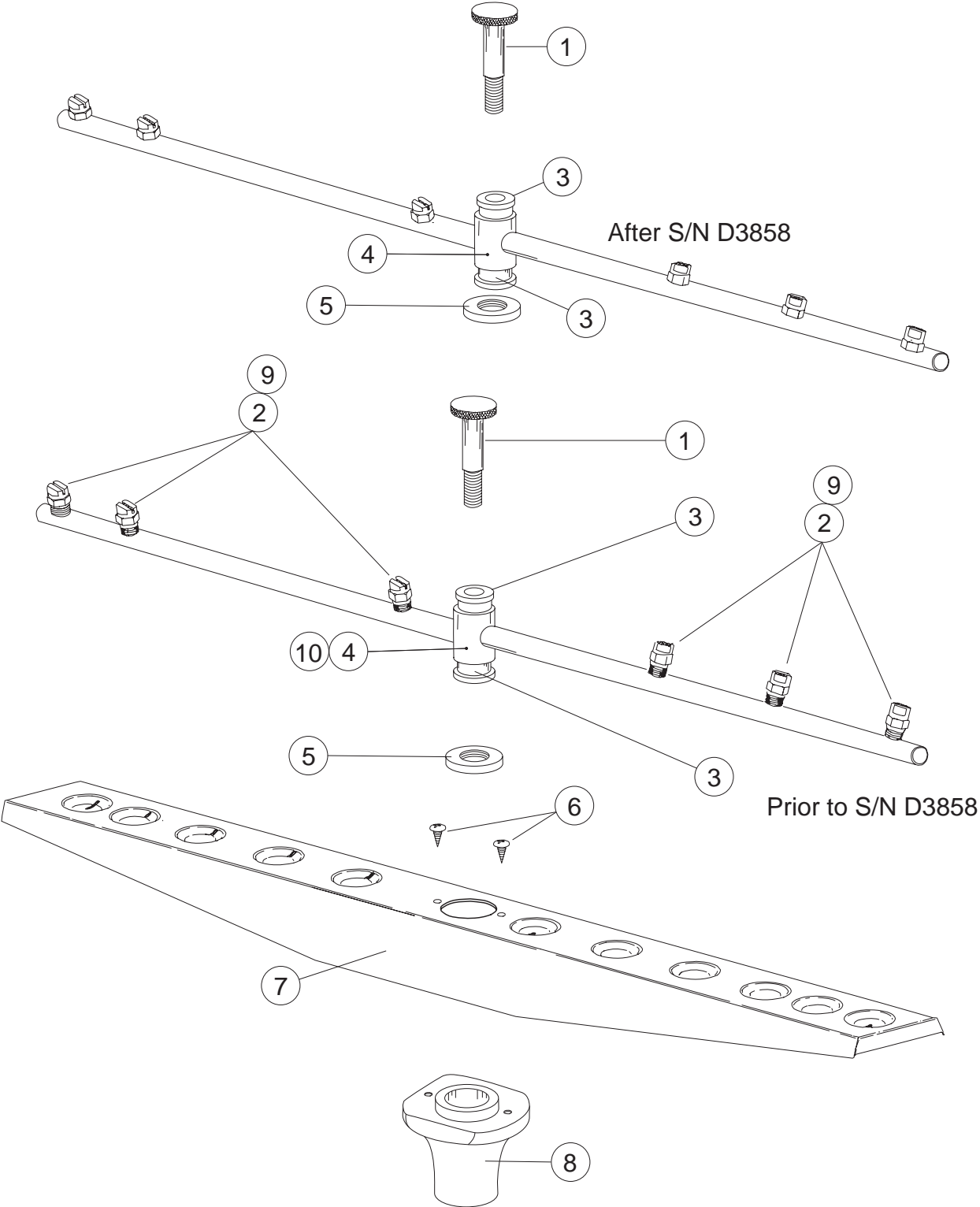
Item No.	Part No.	Description	Qty
1	0309472	TRACK, REAR	1
2	100073	BOLT, 1/4-20 X 1/2" TRUSS HD., SST	8
3	106482	WASHER, LOCK 1/4" SPLIT SST	8
4	100003	NUT, PLAIN 1/4" HEX HD., SST	8

CORNER TRACK CONFIGURATION

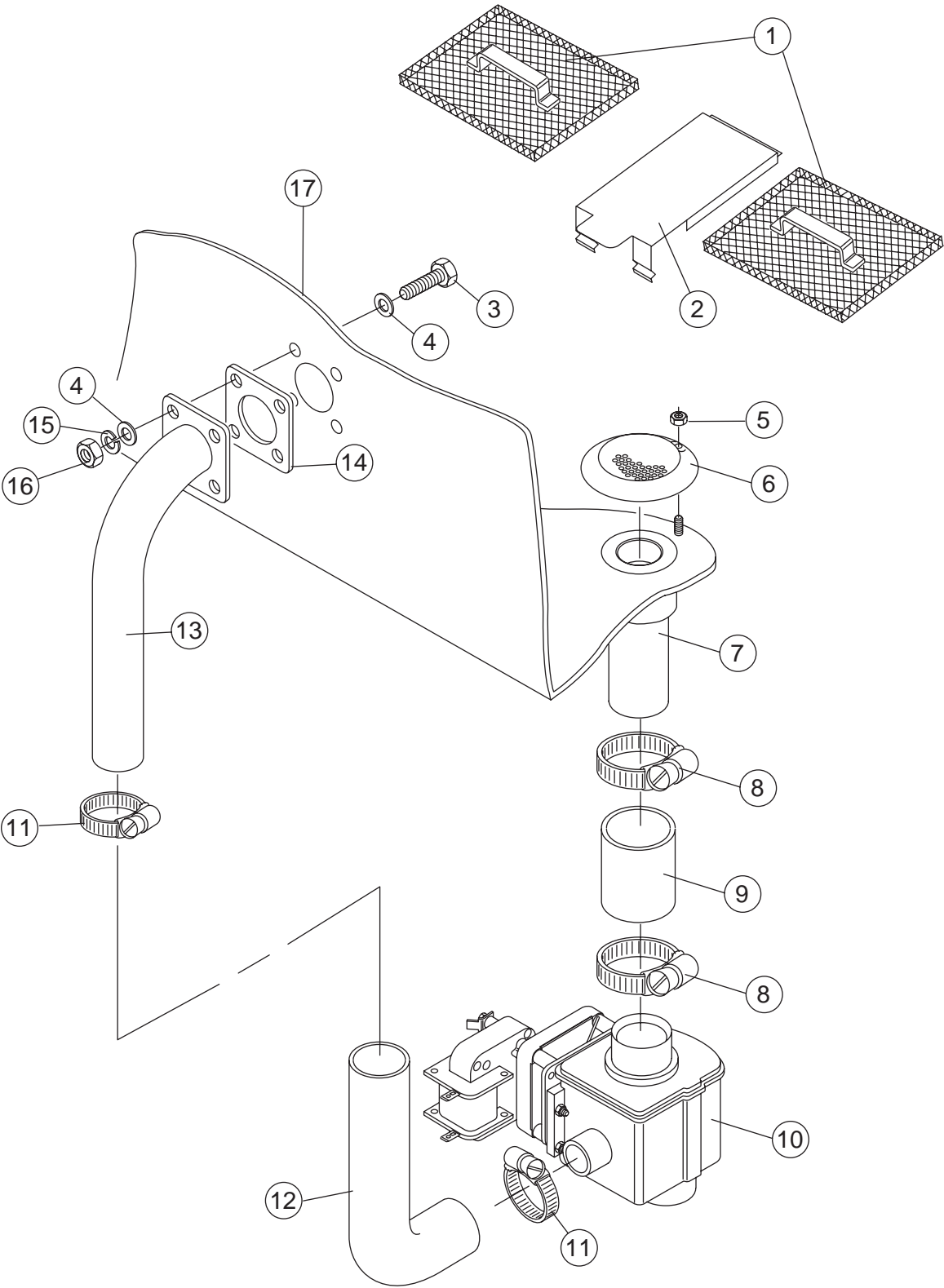
Item No.	Part No.	Description	Qty
1	0309469	GUIDE, RIGHT HAND	1
2	0309472	TRACK, REAR	1
3	0309468	GUIDE, LEFT HAND	1
4	0309470	SUPPORT, RACK	1
5	0309471	TRACK, FRONT	1
6	106727	SCREW, 10-32 X 5/8" FLAT HD., SST	8
7	107966	GRIP NUT, 10-32 W/NYLON INSERT, SST	8
8	100073	BOLT, 1/4-20 X 1/2" TRUSS HD., SST	8
9	106482	WASHER, LOCK 1/4" SPLIT, SST	8
10	100003	NUT, PLAIN 1/4-20 HEX HD., SST	8
11	0309473	SPACER	2



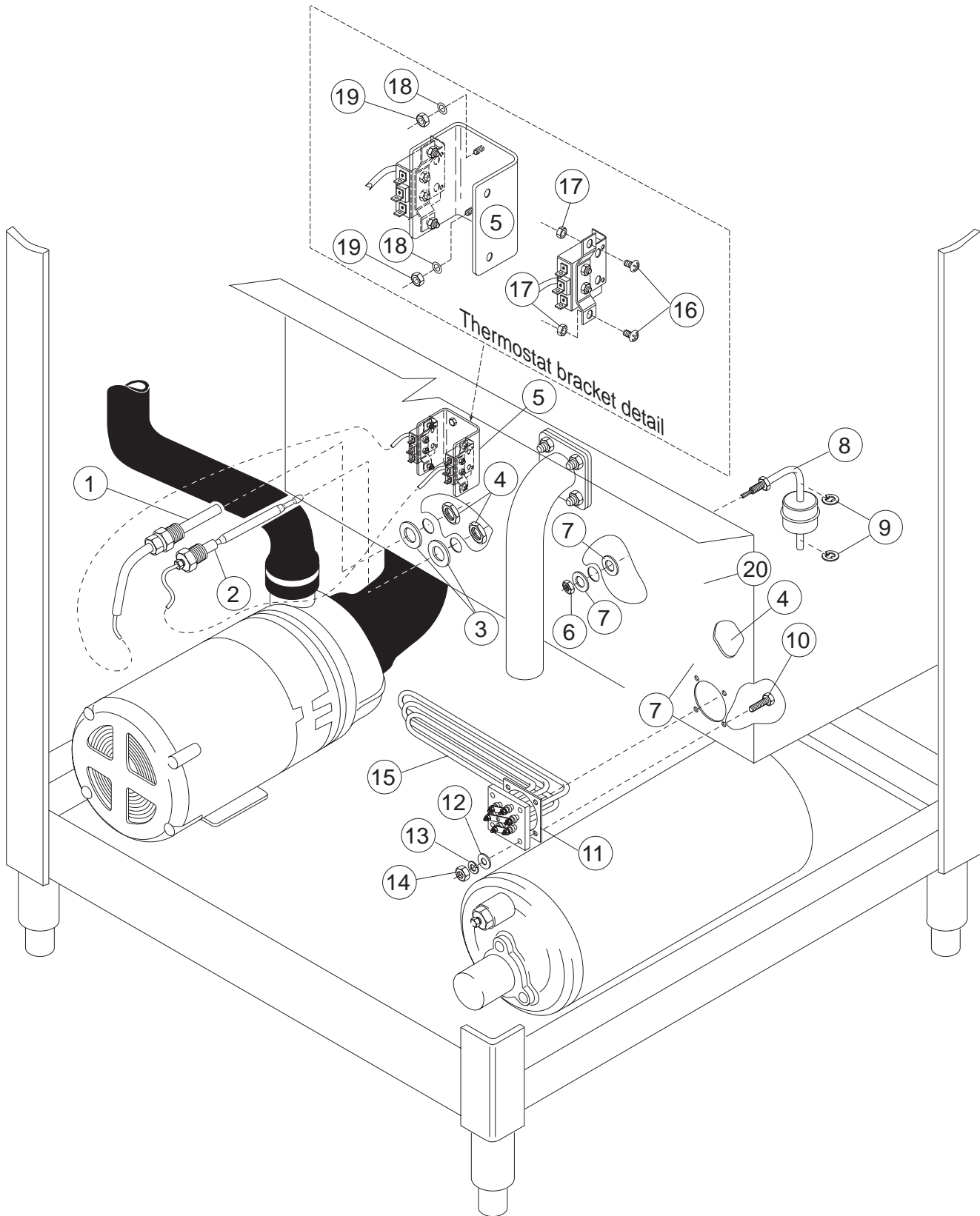
Item No.	Part No.	Description	Qty
1	324526	MANIFOLD, RINSE WELDMENT	1
2	113027	CONNECTOR, RINSE ARM	2
3	113028	CONNECTOR, TOP RINSE	2
4	0507445	SPINDLE, WASH ARM	2
5	109864	SUPPORT, WASH ARM	2
6	109781	STANDPIPE, WASH	1
7	100736	BOLT, 1/4-20 X 3/4" HES HD., SST	2
8	107967	GRIP NUT, 1/4-20	3
9	109854	GASKET, WASH STANDPIPE	1
10	100740	BOLT, 5/16-18 X 1" HEX HD., SST	4
11	106013	WASHER, LOCK 5/16" SPLIT SST	4
12	102376	WASHER, FLAT 5/16" SST	8
13	100154	NUT, PLAIN 5/16-18 SST	4
---	0309149	BRACKET, RINSE PIPE SUPPORT (NOT SHOWN)	1



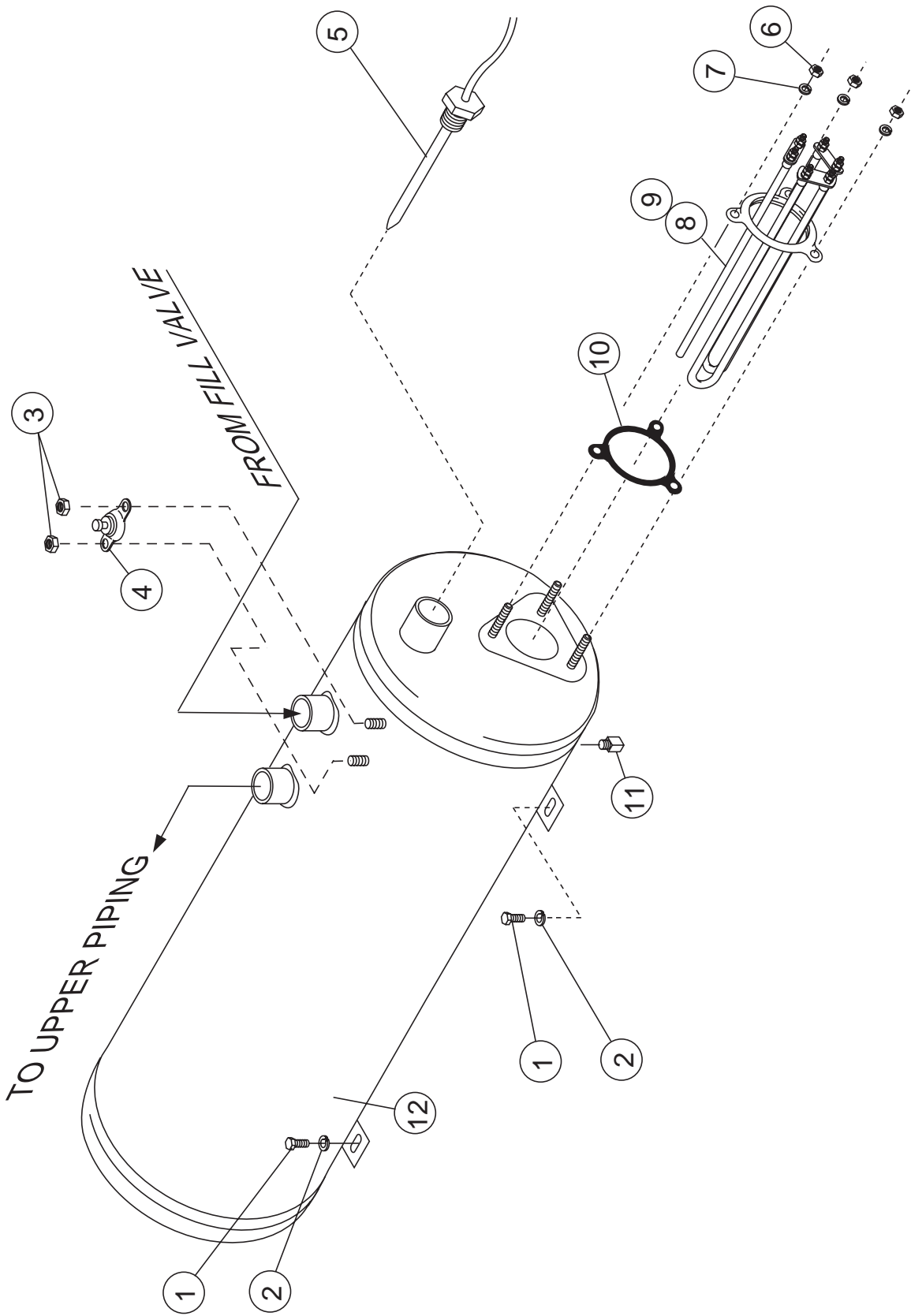
Item No.	Part No.	Description	Qty
1	0507443	SPINDLE, RINSE ARM	2
2	0508376	NOZZLE, RINSE ARM (DHB, DH1 Only) Prior to D3858	12
3	113514	BEARING, RINSE ARM	4
4	414111	RINSE ARM ASSY COMPLETE (DHB, DH1 Only) (Prior to D3858)	2
---	414110	RINSE ARM ASSY COMPLETE (DHB, DH1 Only) (Beginning with D3858)	2
5	0507444	NUT, RINSE ARM	2
6	109835	SCREW, #8 X 1/2" PAN HEAD SST	4
7	0707452-S	WASH ARM ASSEMBLY COMPLETE (INCLUDES 6 & 8)	2
8	0507446	BEARING, WASH ARM	2
9	0507451	NOZZLE, RINSE ARM SST (Model DLF Only) (Prior to D3858)	12
10	414111	RINSE ARM ASSY COMPLETE (DLF Prior to D3858)	2
NOTE: Original Complete Rinse arm assemblies are no longer available for for DLF machines built prior to S/N D3858. Order P/N 414111 to update DLF rinse arm to current design.			



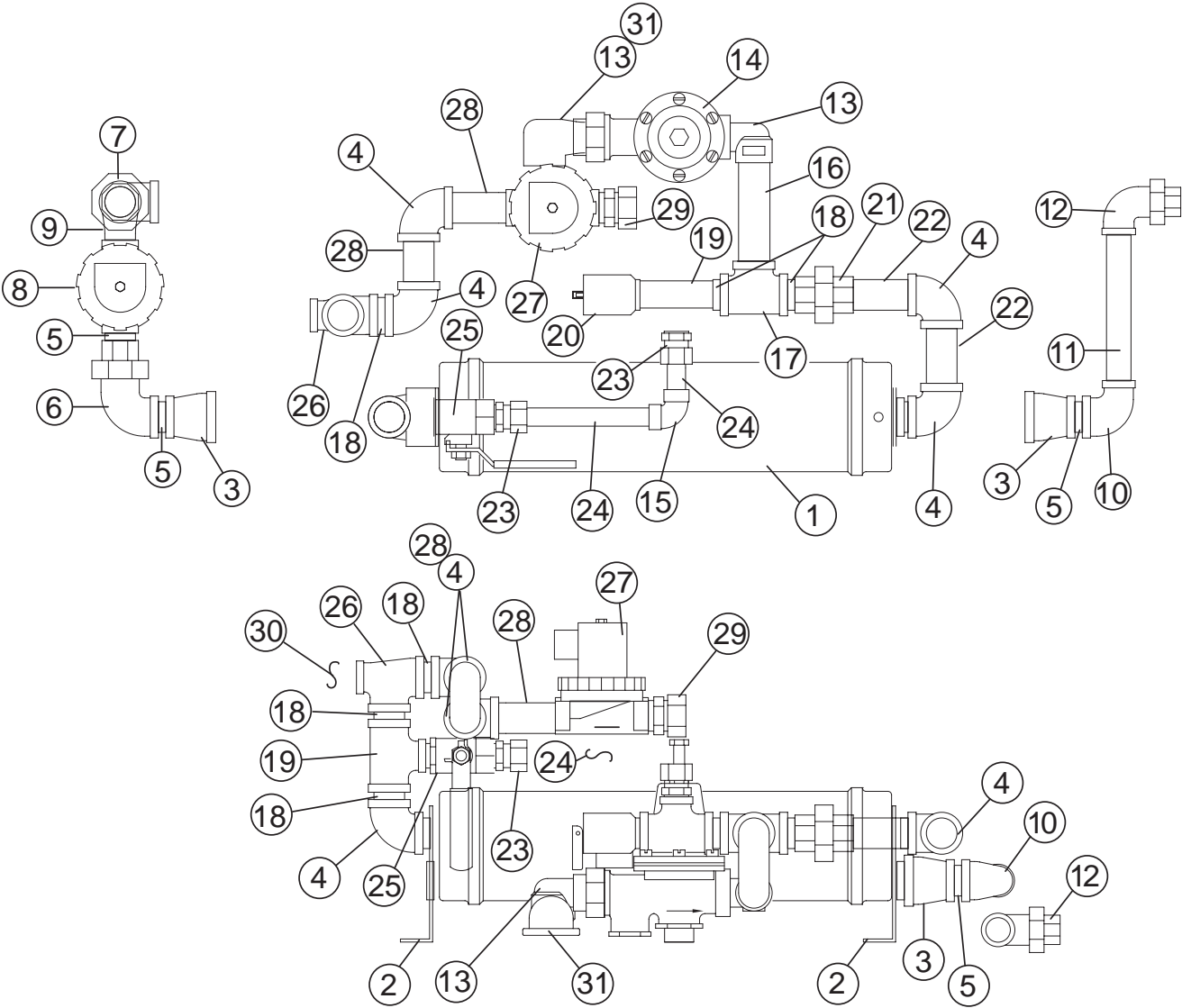
Item No.	Part No.	Description	Qty
1	305164	SCREEN 10"	2
2	324582	PLATE, FILLER	1
3	100736	BOLT, 1/4-20 X 3/4" HEX HD., SST	4
4	106026	WASHER, FLAT 1/4" SST	8
5	107967	GRIP NUT, 1/4-20 HEX HD., SST	1
6	304816	STRAINER	1
7	205988	CONNECTOR, ELECTRIC DRAIN VALVE	1
8	104165	CLAMP, HOSE	2
9	205990	HOSE, RUBBER	1
10	114471	DRAIN VALVE, ELECTRIC (BEGIN S/N D2964)	1
---	900830	KIT, DRAIN VALVE (FROM D2099 TO D2963)	---
11	107340	CLAMP, HOSE	2
12	113048	OVERFLOW, HOSE	1
13	324573	OVERFLOW, FLANGE WELDMENT	1
14	113047	GASKET, DRAIN FLANGE	1
15	106482	WASHER, LOCK 1/4" SPLIT SST	4
16	100003	NUT, PLAIN 1/4-20 SST	4
17	327283	DEFLECTOR, WATER (AFTER S/N D3851)	1
---	327098	SUPPORT, DRAIN VALVE (NOT SHOWN)	1



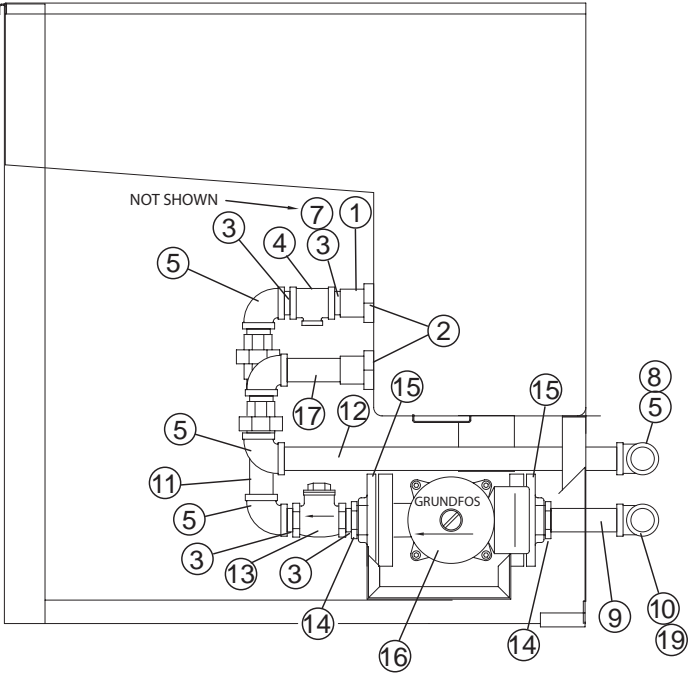
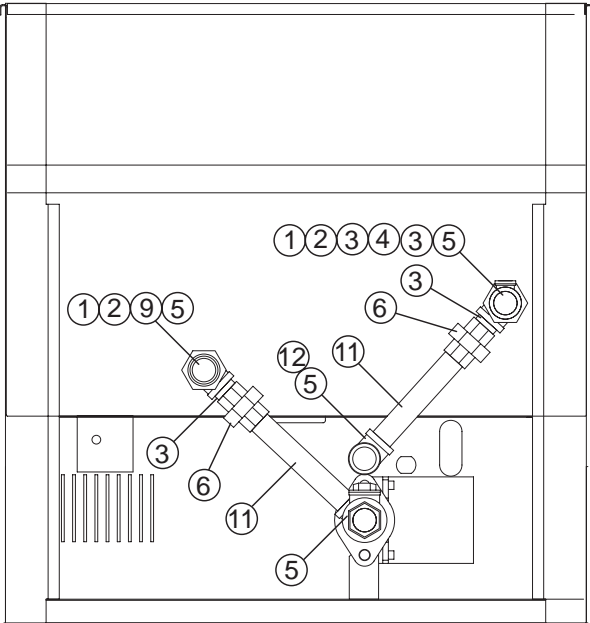
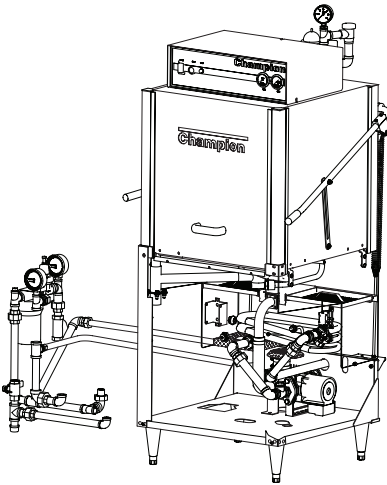
Item No.	Part No.	Description	Qty
1	113622	THERMOMETER, 4FT. CAPILLARY	1
2	109069	THERMOSTAT W/CAPILLARY	1
3	201041	WASHER	3
4	201029	NUT, LOCK 1/2"	3
5	322076	BRACKET, DUAL THERMOSTAT	1
6	107089	NUT, JAM 1/2-13	2
7	104882	WASHER	2
8	111092	SWITCH, FLOAT	1
9	111151	C-CLIP, FLOAT SWITCH	2
10	100740	BOLT, 5/16-18 X 1" HEX HD., SST	4
11	108345	GASKET	1
12	102376	WASHER, FLAT 5/16 SST	8
13	106013	WASHER, LOCK 5/16" SPLIT, SST	4
14	100154	NUT, PLAIN 5/16-18 SST	4
15	0509637	HEATER, 3KW 115V/1PH	1
PRIOR TO S/N D09117987			
---	113479	HEATER, 4.7KW 208-240/380-415V/1-3PH	1
---	113480	HEATER, 4.7KW 460V/3PH	1
---	113481	HEATER, 4.7KW 575V/3PH	1
BEGIN WITH S/N D09117987 AND ABOVE			
---	114178	HEATER, 5.2KW 208-240/380-415V/1-3PH	1
---	114179	HEATER, 5.2KW 460V/3PH	1
---	114180	HEATER, 5.2KW 575V/3PH	1
16	100007	SCREW, 10-32 X 3/8" TRUSS HD., SST	4
17	107966	GRIP NUT, 10-32 W/NYLON INSERT, SST	4
18	106482	WASHER, LOCK 1/4" SPLIT, SST	4
19	100003	NUT, PLAIN 1/4-20 HEX HD., SST	4
20	110561	THERMOSTAT, FIXED HIGH LIMIT	1



Item No.	Part No.	Description	Qty
1	100740	BOLT, 5/16-18 X 1" HEX HD., SST	2
2	102376	WASHER, FLAT 5/16" SST	2
3	108954	GRIP NUT, 6-32 W/NYLON INSERT, SST	2
4	110562	THERMOSTAT, HIGH LIMIT SNAP	1
---	110563	COMPOUND, HEAT SINK	A/R
5	109069	THERMOSTAT, CONTROL W/CAPILLARY	1
6	100003	NUT, PLAIN 1/4-20 SST	3
7	106482	WASHER, LOCK 1/4" SPLIT, SST	5
8	111334	HEATER, 9KW 208-240/380-415V 40°RISE (1-3 PH)	1
---	108579	HEATER, 9KW 480V/3PH 40°RISE	1
---	111122	HEATER, 9KW 575V/3PH 40°RISE	1
9	111266	HEATER, 18KW 208-240/380-415V 70°RISE (1-3PH)	1
---	111267	HEATER, 18KW 480V/3PH 70°RISE	1
---	111600	HEATER, 18KW 575V/3PH 70°RISE	1
10	109985	SEAL, ELECTRIC HEATER	1
11	100210	PLUG, 1/8" SST	1
12	0509042	TANK, BOOSTER	1

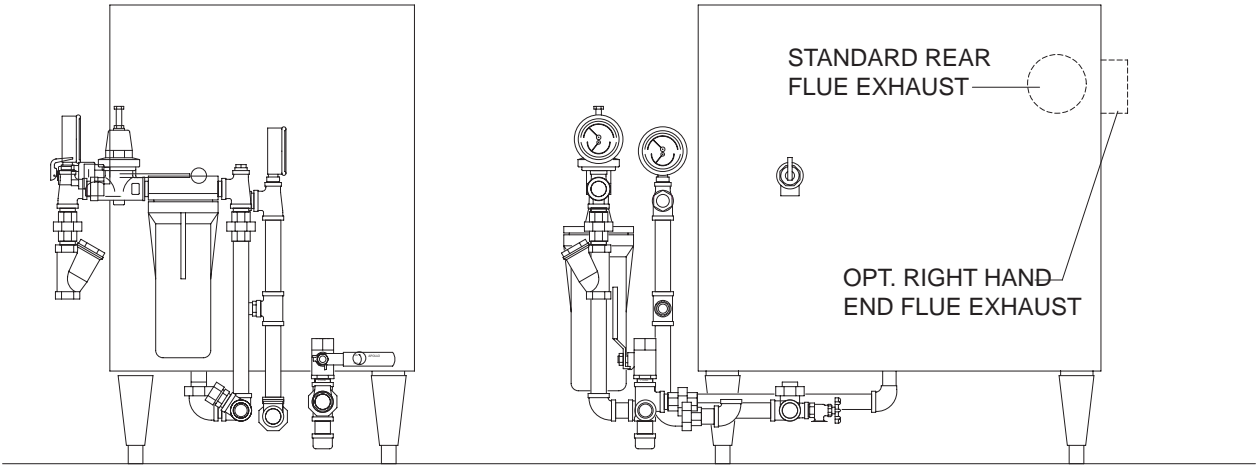


Item No.	Part No.	Description	Qty
1	110189	BOOSTER, K2 SPIREX	1
2	315596	BRACKET, BOOSTER SUPPORT	2
3	105725	COUPLING REDUCING, 1" X 3/4" NPT BI	2
4	102442	ELBOW, 3/4" NPT X 90° BRASS	5
5	105803	NIPPLE, CLOSE 3/4" NPT BI	3
6	106485	UNION ELL, 3/4" NPT X 90° FEMALE BI	1
7	107502	UNION ELL, 3/4" NPT X 90° MALE BI	1
8	109887	VALVE, SOLENOID 3/4" NPT STEAM	1
---	108516	KIT, SOLENOID COIL REPAIR 3/4" NPT	A/R
---	109903	KIT, REPAIR DIAPHRAGM 3/4" NPT VALVE	A/R
9	105731	STREET ELL, 3/4" NPT BI	1
10	105738	ELBOW, REDUCING 3/4" X 1/2" NPT BI	1
11	105794	NIPPLE, 1/2" NPT X 6" LG. BI	1
12	111386	UNION ELL, 1/2" NPT X 90° FEMALE BI	1
13	112430	STREET ELL, 3/4" NPT X X 90° FORGED BRASS	1
14	112387	PRESSURE REGULATOR/LINE STRAINER 3/4" NPT	1
15	103427	ELBOW, 1/2" X 90° COPPER	1
16	102662	NIPPLE, 3/4" NPT X 6-1/2" LG. BRASS	1
17	102521	TEE, 3/4" NPT BRASS	1
18	100184	NIPPLE, CLOSE 3/4" NPT	6
19	102526	TEE, 3/4" X 3/4" X 1/2" NPT BRASS	2
20	104649	RELIEF VALVE 3/4" NPT 125 PSI	1
21	100571	UNION, 3/4" NPT BRASS	1
22	102470	NIPPLE, 3/4" NPT X 3" BRASS	2
23	107736	UNION, 1/2" X 1/2" NPT MALE COPPER	2
24	107380	FORM TO FIT, TUBING 1/2" TYPE L COPPER	2
25	104749	BALL VALVE, 1/2" NPT M X F	1
26	102525	TEE, 3/4" X 1/2" X 3/4" NPT BRASS	1
27	111437	VALVE, 3/4" NPT HOT WATER	1
---	111472	KIT, SOLENOID COIL REPAIR 3/4" VALVE	A/R
---	109903	KIT, REPAIR DIAPHRAGM 3/4" NPT VALVE	A/R
28	102651	NIPPLE, 3/4"NPT X 2" LG. BRASS	2
29	109879	COMPRESSION FITTING, 3/4" X 7/8" OD	1
30	109069	THERMOSTAT, WITH CAPILLARY (NOT SHOWN)	1
31	102444	ELBOW, STREET, 3/4" X 90° BRASS CAST	1

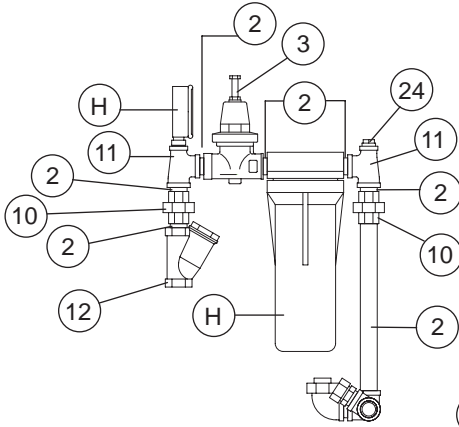


Item No.	Part No.	Description	Qty
1	322280	COIL WELDMENT, STEAM/HOT WATER	1
2	100585	LOCKNUT, 1" NPT BRASS	2
3	100184	NIPPLE, CLOSE 3/4" NPT BRASS	6
4	107418	TEE, 3/4" X 3/4" X 1/4" BRASS	1
5	102442	ELBOW, 3/4" NPT BRASS	5
6	100571	UNION, 3/4" NPT BRASS	2
7	112437	NEEDLE VALVE, 1/4" NPT M X F BRASS	1
8	109879	COMPRESSION FITTING, 7/8" OD X 3/4" NPT BRASS	1
9	102490	NIPPLE, 3/4" NPT X 3-1/2" LG. BRASS	2
10	109925	COMPRESSION FITTING, 5/8" OD X 1/2" MPT	1
11	102660	NIPPLE, 3/4" NPT X 6" LG. BRASS	2
12	102690	NIPPLE, 3/4" NPT X 16-1/2" LG. BRASS	1
13	100853	CHECK VALVE, 3/4" NPT BRASS	1
14	102396	REDUCING BUSHING, 1" X 3/4" NPT BRASS	2
15	111860	FLANGE KIT, FLANGES, GASKETS, BOLTS	1
16	111854	CIRCULATION PUMP	1
17	102653	NIPPLE, 3/4" NPT X 4" LG. BRASS	1
18	323041	PUMP SUPPORT BRACKET	1
19	102446	ELBOW REDUCING, 3/4" X 1/2" X 90° BRASS	1

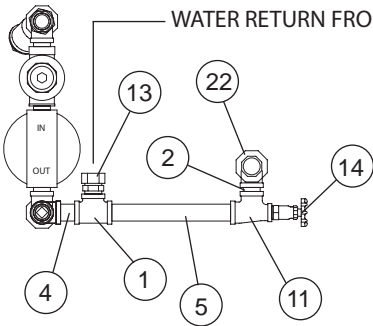
Single Source Gas Booster Piping



110° HOT WATER IN TO BOOSTER
AND RETURN FROM TANK HEAT COIL

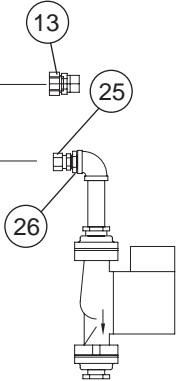
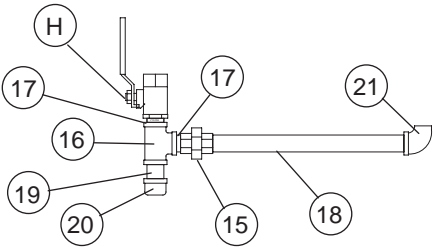


WATER RETURN FROM COIL

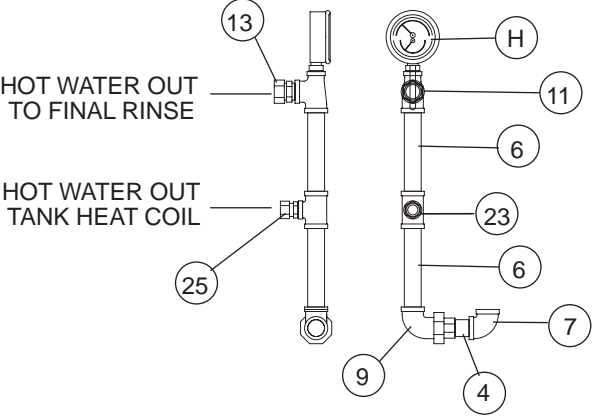


HOT WATER RETURN FROM
COIL TO BOOSTER

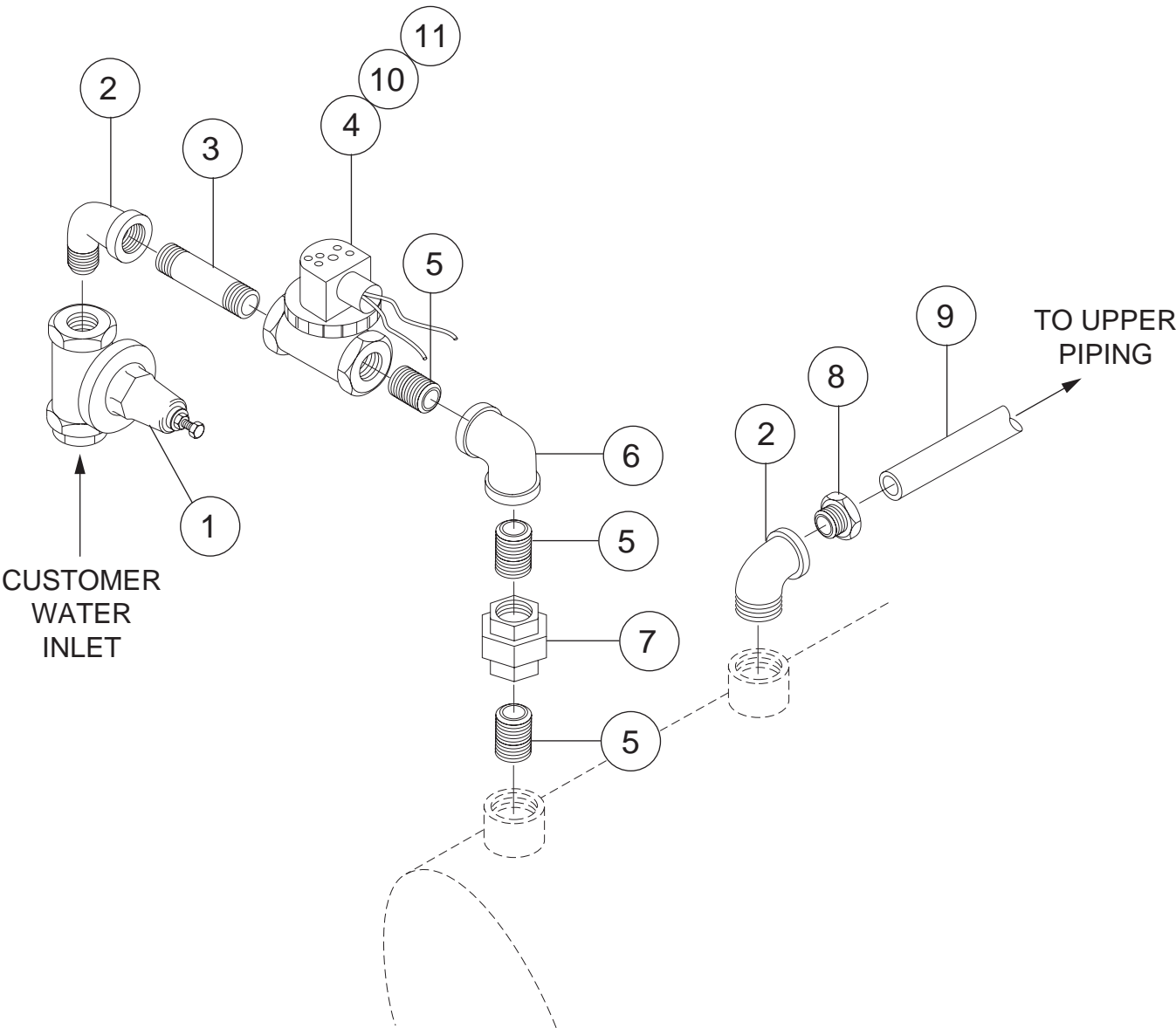
HOT WATER IN FROM
BOOSTER TO COIL



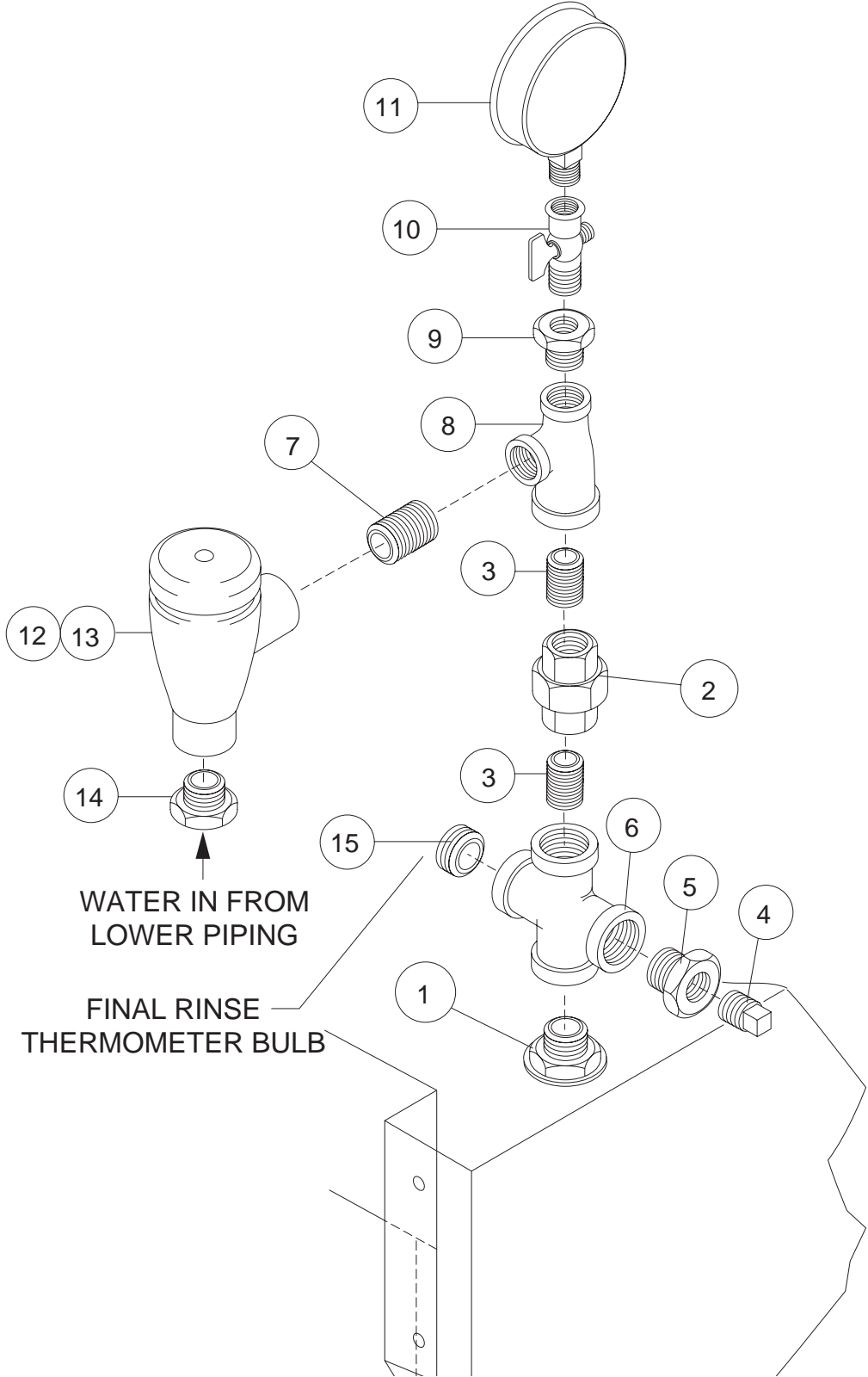
HOT WATER OUT TO MACHINE
FINAL RINSE AND COIL



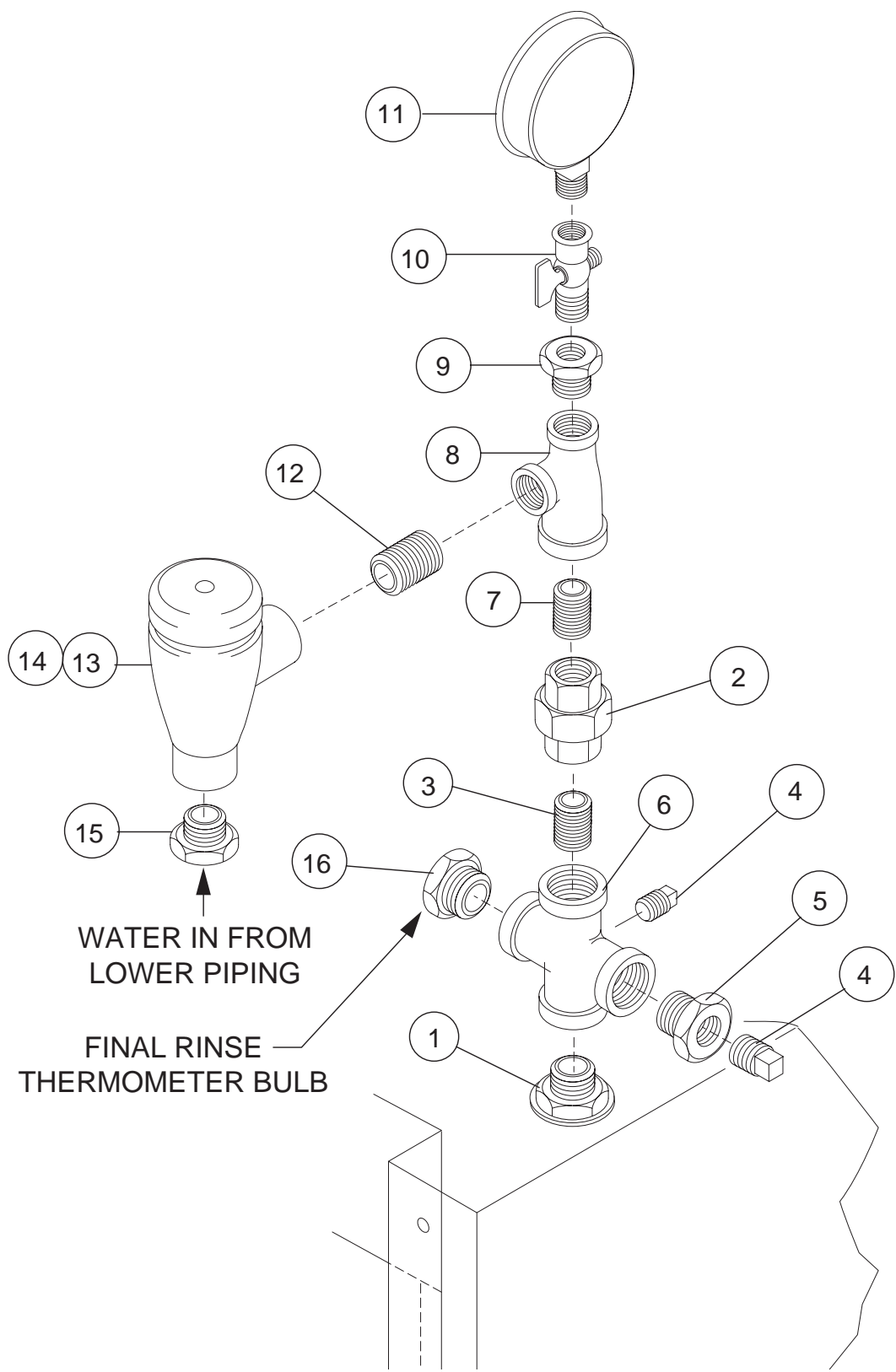
Item No.	Part No.	Description	Qty
1	102521	TEE, 3/4" NPT BRASS	1
2	100184	NIPPLE, CLOSE 3/4" NPT BRASS	7
3	107550	PRESSURE REGULATING VALVE 3/4" NPT BRONZE	1
4	102651	NIPPLE, 3/4" NPT X 2" LG. BRASS	2
5	102669	NIPPLE, 3/4" NPT X 8-1/2" LG. BRASS	1
6	102660	NIPPLE, 3/4" NPT X 6" LG. BRASS	2
7	102442	ELBOW, 3/4" NPT X 90° BRASS	2
8	102678	NIPPLE, 3/4" NPT X 11-1/2" LG. BRASS	1
9	106911	UNION ELL, 3/4" NPTF X 90° BRASS	1
10	100571	UNION, 3/4" NPT BRASS	2
11	102525	TEE, 3/4" X 1/2" X 3/4" NPT BRASS	4
12	110768	LINE STRAINER, 3/4" NPT BRONZE	1
13	109879	COMPRESSION FITTING, 7/8" OD X 3/4" NPT BRASS	2
14	112228	VALVE, ANGLE, DRAIN BRASS	1
15	105779	UNION, 3/4" NPT BI	1
16	105752	TEE, 3/4" NPT BI	1
17	105803	NIPPLE, 3/4" NPT CLOSE BI	2
18	113003	NIPPLE, 3/4" NPT X 13" LG. BI	1
19	105806	NIPPLE, 3/4" NPT X 2" LG. BI	1
20	100113	CAP, 3/4" NPT SST	1
21	105731	STREET ELL, 3/4" NPT 90° BI	1
22	100118	UNION ELL MALE, 3/4" NPT X 90° BRASS	1
23	102526	TEE, 3/4" X 3/4" X 1/2" NPT BRASS	1
24	102504	PLUG, 1/2" NPT BRASS	1
25	109925	COMPRESSION FITTING, 5/8" OD X 1/2" NPT BRASS	2
26	102392	BUSHING, 3/4" X 1/2" NPT BRASS	1
H	-----	SUPPLIED BY HATCO WITH BOOSTER	



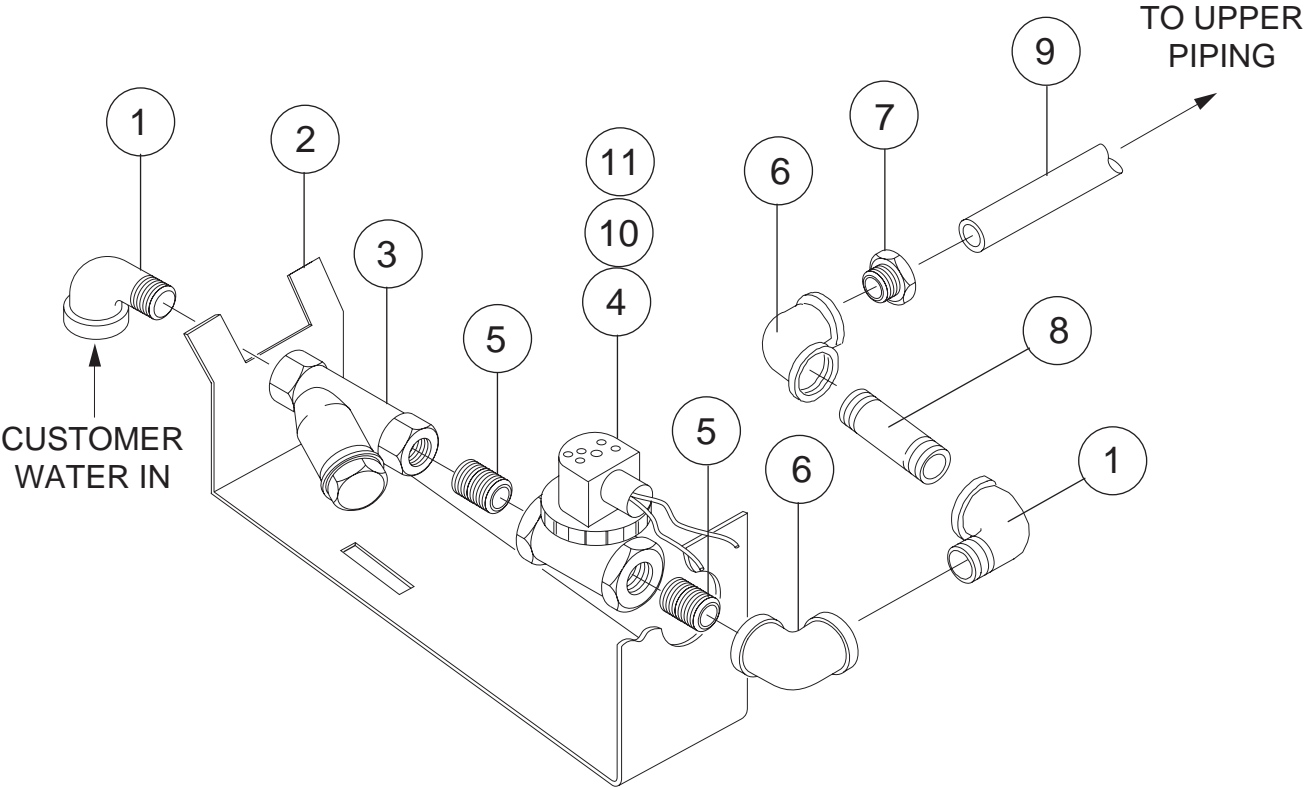
Item No.	Part No.	Description	Qty
1	107550	VALVE, PRESSURE REGULATING 3/4"	1
2	102444	STREET ELL, 3/4" X NPT BRASS	2
3	102651	NIPPLE, 3/4" X 2" BRASS	1
4	111437	VALVE, 3/4" NPT HOT WATER 120VAC	1
5	100184	NIPPLE, CLOSE 3/4" NPT BRASS	4
6	102442	ELBOW, 3/4" NPT X 90° BRASS	1
7	100571	UNION, 3/4" NPT BRASS	1
8	109879	COMPRESSION FITTING, 3/4" X 7/8" OD BRASS	1
9	205761	TUBE, COPPER 3/4" FORMED	1
10	108516	COIL, SOLENOID VALVE 120VAC	A/R
11	109903	KIT, REPAIR 3/4" SOLENOID VALVE	A/R
12	110768	STRAINER, LINE 3/4" BRASS (NOT SHOWN)	1



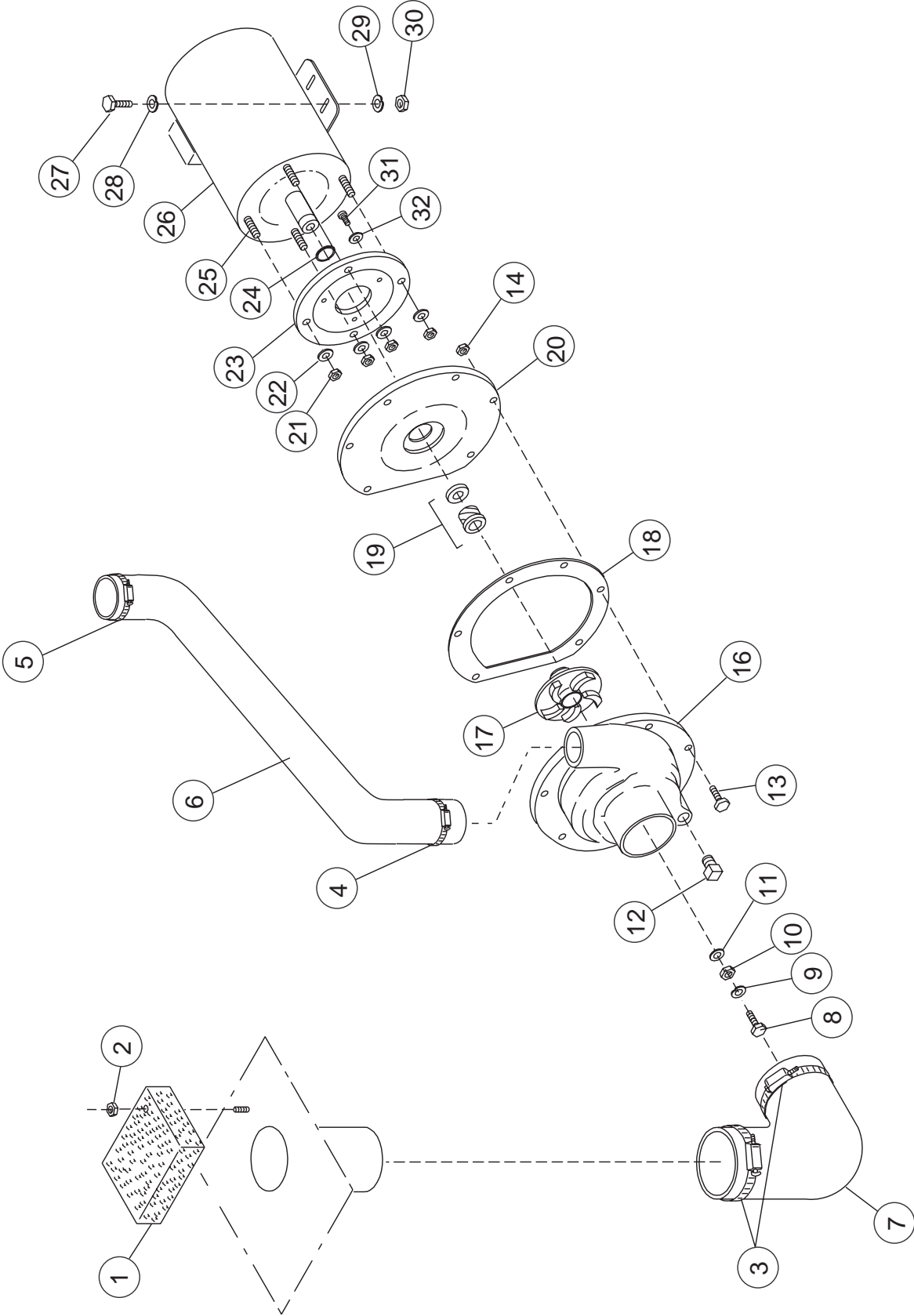
Item No.	Part No.	Description	Qty
1	100156	LOCKNUT, 3/4" NPT BRASS	1
2	100571	UNION 3/4" NPT BRASS	1
3	100184	NIPPLE, CLOSE 3/4" NPT BRASS	2
4	107463	PLUG, 1/4" NPT PLASTIC	1
5	108181	BUSHING, RED. 3/4" X 1/4" NPT PLASTIC	1
6	100599	CROSS, 3/4" NPT BRASS	1
7	102444	ELBOW, STREET 3/4" NPT 90° BRASS	1
8	102525	TEE, 3/4" x 1/2" x 3/4" NPT BRASS	1
9	102388	BUSHING, RED. 1/2" X 1/4" NPT BRASS	1
10	112437	VALVE, NEEDLE 1/4" NPT	1
11	100135	GAUGE, PRESSURE (0-60 PSI)	1
12	104429	VACUUM BREAKER, 3/4" NPT (AFTER D3291)	1
13	900837	KIT, REPAIR VAC. BREAKER	A/R
14	109879	COMPRESSION FITTING 3/4" NPT X 7/8" OD	1
15	102392	BUSHING, RED. 3/4" NPT X 1/2" BRASS (PRIOR TO S/N D3699)	1
---	100171	BUSH, RED., FACE 3/4" NPT X 1/2" BRASS (BEGIN WITH S/N D3700)	1



Item No.	Part No.	Description	Qty
1	100548	LOCKNUT, 3/4" NPT SST	1
2	102554	UNION, 3/4" NPT SST	1
3	100051	NIPPLE, CLOSE 3/4" NPT SST	1
4	107463	PLUG, PLASTIC 1/4"	2
5	108181	BUSHING RED. 3/4" X 1/2" NPT PLASTIC	1
6	205993	CROSS, 3/4" NPT SST	1
7	100184	NIPPLE, CLOSE 3/4" NPT BRASS	1
8	102525	TEE, 3/4" X 1/2" X 3/4" NPT BRASS	1
9	102388	BUSHING RED. 1/2" X 1/4" NPT BRASS	1
10	112437	VALVE, NEEDLE 1/4" NPT	1
11	100135	GAUGE, PRESSURE (0-60 PSI)	1
12	102489	NIPPLE, 3/4 X 2-1/2" LG. BRASS	1
13	104429	BREAKER, VACUUM 3/4" BRASS	1
14	900837	KIT, REPAIR VACUUM BREAKER	1
15	109879	COMPRESSION FITTING 3/4" NPT X 7/8" OD	1
16	102393	BUSHING, REDUCING 3/4" X 1/2" NPT SST	1

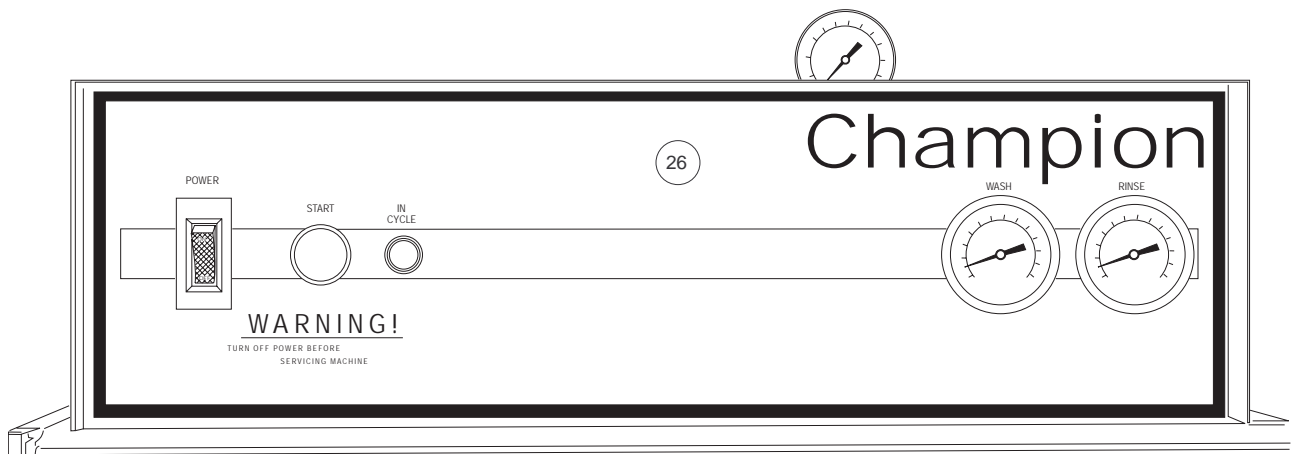
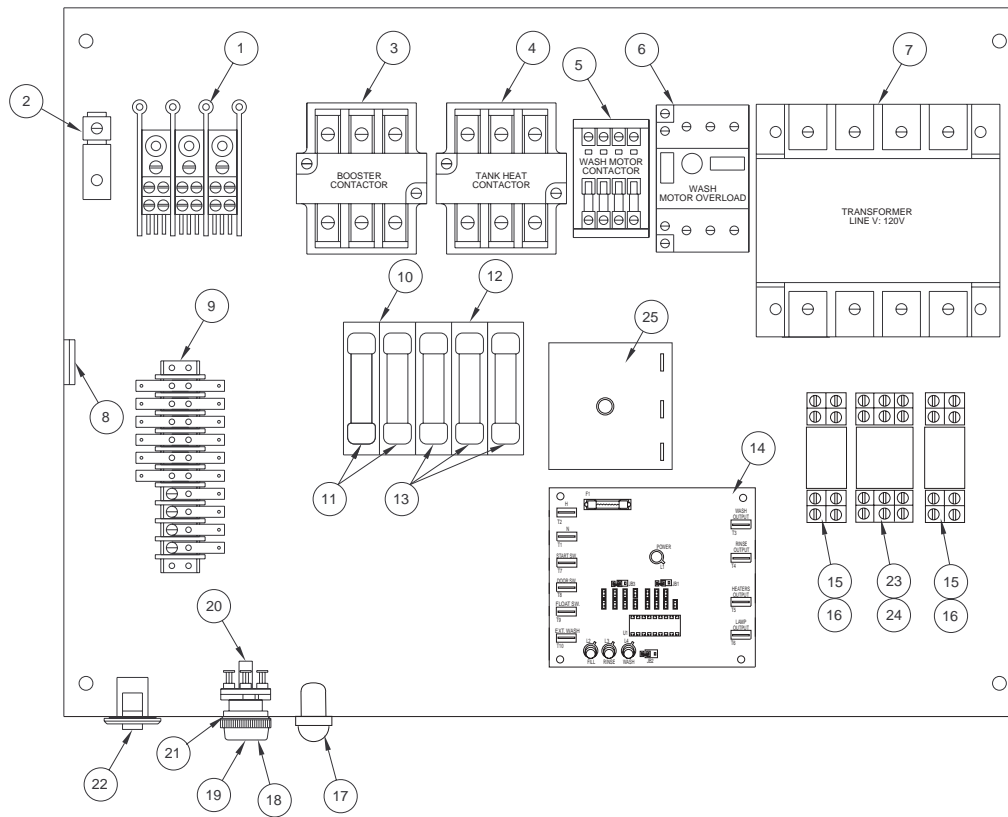


Item No.	Part No.	Description	Qty
1	102444	STREET ELL, 3/4" NPT BRASS	2
2	0309340	BRACKET, PLUMBING SUPPORT	1
3	110768	STRAINER, LINE 3/4" BRASS	1
4	111437	VALVE, 3/4" NPT HOT WATER, 12OVAC	1
5	100184	NIPPLE, CLOSE 3/4"NPT BRASS	2
6	109879	COMPRESSION FITTING, 3/4" NPT X 7/8" OD BRASS	1
7	102442	ELBOW, 3/4" NPT BRASS	1
8	102470	NIPPLE, 3/4" NPT X 3" LG. BRASS	1
9	205761	TUBE, 3/4" COPPER FORMED	1
10	109903	KIT, REPAIR VALVE, 3/4" NPT HOT WATER	A/R
11	111472	COIL. SOLENOID 12OVAC, 3/4" NPT HOT WATER	A/R

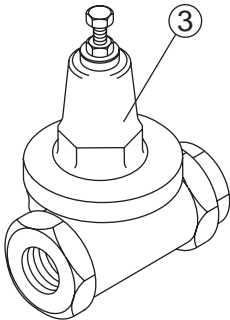
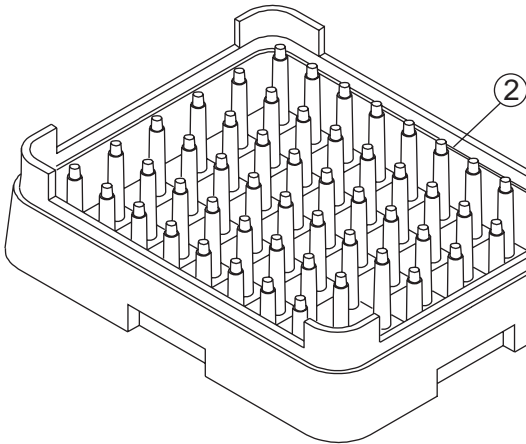
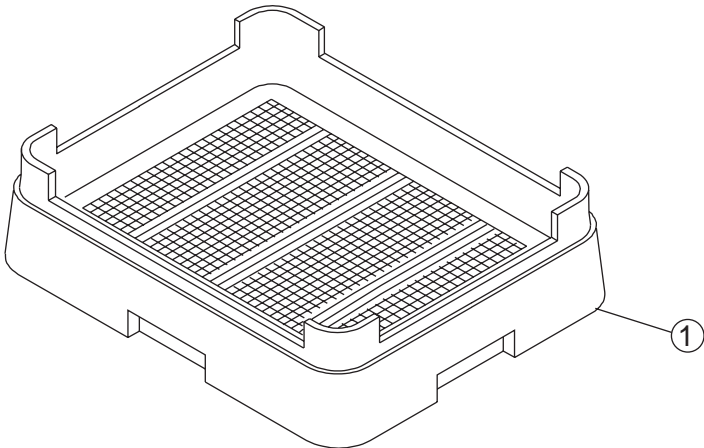


Item No.	Part No.	Description	Qty
1	324580	STRAINER	1
2	107966	GRIP NUT, 10-32 W/NYLON INSERT	1
3	104203	CLAMP, HOSE	2
4	104165	CLAMP, HOSE	1
5	107340	CLAMP, HOSE	1
6	112383	HOSE, PUMP DISCHARGE	1
7	0508515	HOSE, SUCTION	1
8	100734	BOLT, 1/4-20 X 1/2" HEX HD., SST	1
9	106482	WASHER, LOCK 1/4" SPLIT SST	1
10	110247	NUT, HEX JAM 7/16-20	1
11	110248	WASHER, FLAT	1
12	107463	PLUG, 1/4"	1
13	107137	BOLT, 10-32 X 7/8" HEX HD., SST	11
14	100194	GRIP NUT, 10-32	11
15	0501505	WASHER, LOCK INTERNAL SST #8 (NOT SHOWN)	11
16	109651	VOLUTE	1
17	113248	IMPELLER	1
18	109653	GASKET, O-RING	1
19	111111	SEAL, PUMP	1
20	109649	FLANGE ASSY, 1HP	1
21	107690	NUT, JAM 3/8-16	4
22	106407	WASHER, LOCK 3/8" SPLIT	4
23	109648	PLATE, BACKING	1
24	109654	PUMP, SLINGER WASHER	1
25	110734	STUD, 3/8-16 X 1-3/8"	4
26	111145	MOTOR, 1.4HP 208-240/460V/60/3	1
---	111144	MOTOR, 1.4HP 115/208-240/60/1	1
---	112163	MOTOR, 1.4HP 115/208-240/50/1	1
---	0507708	MOTOR, 1.4HP 575/60/3	1
27	100739	BOLT, 5/16-18 X 3/4" HEX HD., SST	4
28	102376	WASHER, FLAT 5/6" SST	4
29	106013	WASHER, LOCK 5/16-18 SST	4
30	100142	GRIP NUT, 5/16-18	4
31	100754	SCREW, FLAT 10-32 X 1/2" SST	4
32	110270	WASHER, COUNTERSUNK SST	4
---	900173	KIT, PUMP ASSY LESS MOTOR	A/R
---	451643	PUMP/MOTOR ASSY COMPLETE 1.4HP (208-240/460/60/3)	A/R
---	451642	PUMP/MOTOR ASSY COMPLETE 1.4HP (115/208-240/60/1)	A/R
---	0707549	PUMP/MOTOR ASSY COMPLETE /1.4HP 575V/60/3PH	A/R

Control Cabinet Assembly



Item No.	Part No.	Description	Qty
1	111833	TERMINAL BLOCK, 1 & 3 PH	1
2	103310	WIRE LUG, GROUND	1
3	111702	CONTACTOR, BOOSTER (MV 3PH) 40/70°F RISE	1
4	111702	CONTACTOR, TANK HEAT (MV 1 & 3 PH)	1
5	109582	CONTACTOR, WASH MOTOR 1PH	1
---	108122	CONTACTOR, WASH MOTOR 3 PH	1
6	111632	STARTER, MOTOR WASH 115V/1PH	1
---	111630	STARTER, MOTOR WASH 208-240V/1PH	1
---	110806	STARTER, MOTOR WASH 208-240V/3PH	1
---	110805	STARTER, MOTOR WASH 380-415V/3PH	1
---	110804	STARTER, MOTOR WASH 480V/3PH	1
---	112692	STARTER, MOTOR WASH 575V/3PH	1
7	109064	TRANSFORMER, CONTROL 208-240V/1 & 3PH	1
---	109064	TRANSFORMER, CONTROL 480V/3PH	1
---	111464	TRANSFORMER, CONTROL 380-415V/3PH	1
---	111521	TRANSFORMER, CONTROL 575V/3PH	1
8	113721	SWITCH, REED	1
9	0508895	BLOCK, TERMINAL	1
10	106402	BLOCK, FUSE 2P, 1 & 3 PH	1
11	107289	FUSE 2.5A 115V/1PH, 208-240V/1 & 3 PH	2
---	0508707	FUSE 1.OA 380-415V/3PH, 480V 3PH	2
---	0508708	FUSE 2.5A 575V/3PH	2
12	106925	BLOCK, FUSE 3P 1 & 3 PH	1
13	100929	FUSE, 30A 115V/1PH, 208-240V/1PH	3
---	100922	FUSE, 20A 208-240V/3PH	3
---	100913	FUSE, 10A 380-415V/3H, 575V/3PH	3
14	113597	BOARD, TIMER (AFTER S/N D3858)	1
---	900911	KIT, TIMER BOARD CONVERSION (PRIOR TO D3858)	1
15	111068	RELAY, 120V	2
16	111036	SOCKET, RELAY	2
17	106364	LIGHT, INDICATOR (GREEN)	1
18	900725	KIT, PUSH BUTTON (INCLUDES ITEMS 19-21)	1
19	111614	SWITCH, PUSH BUTTON (GREEN)	1
20	111617	BLOCK, CONTACT N.O.	1
21	113140	BOOT, SILICON PUSHBUTTON	1
22	111980	BREAKER, CIRCUIT 5A, ON/OFF SWITCH	1
23	112382	RELAY, 3PDT 10A 120V	1
24	112415	SOCKET, RELAY	1
25	113314	TIMER, INFITEC 600S	1
26	0508668	DECAL, CONTROL CABINET	1



Item No.	Part No.	Description	Qty
1	101273	RACK FLAT BOTTOM	1
2	101285	RACK, PEG	1
3	107550	VALVE, PRESSURE REGULATING (PRV)	1

***This Page
Intentionally
Left Blank***

NOTE 1: IF SUPPLY IS 115V, T1 IS NOT USED.
WIRES #1 AND 2 ARE CONNECTED TO THE FUSE
BLOCK IN PLACE OF #39 AND 40.

NOTE 2: USED ON MACHINES WITH INDEPENDENT
FRONT DOOR OPTION.

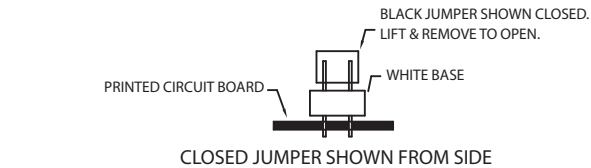
NOTE 3:
A: ON 115V MACHINES THE WASH TANK HEATER IS 3 kW.
B: THE KW RATING OF THE BOOSTER ELEMENT IS
DEPENDENT UPON THE VOLTAGE AND DEGREE RISE OF THE
SYSTEM. SINGLE PHASE MACHINES W/ ELEC. BOOSTER ARE 40°F
RISE ONLY. 40°F RISE UNITS USE 7.5/10 OR 9 KW ELEMENTS.
70°F RISE UNITS USE 13.5/18 OR 17.7 KW ELEMENTS.

! IMPORTANT !
IMPROPER JUMPER SETTINGS WILL CAUSE ERRATIC MACHINE OPERATION.

VERIFY THE MODEL AND SERIAL NUMBER OF THE DISHWASHER,
THE CIRCUIT BOARD PART NUMBER, AND THEN SET THE POSITION
OF THE JUMPERS (JB1, JB2, JB3) AS SHOWN IN THE TABLE BELOW.

MODEL	MACHINE SERIAL NUMBER	CKT. BD. PART NUMBER	JUMPER SETTINGS		
			JB1	JB2	JB3
DH1, DH8	UP TO D3857	112676 REV C	OPEN	CLOSED	OPEN
DH1, DH8	D35858-D0816800	113597 REV G	CLOSED	CLOSED	OPEN
DLF	ALL	113597 REV G	OPEN	CLOSED	OPEN
DH1/B (E*)	D08016801 - UP	113597 REV H	OPEN	OPEN	OPEN

E* - Energy Star Qualified Product, starting with serial# D08016801



PER LOCAL ELECTRICAL CODE

ON SINGLE PHASE
MACHINES OMIT L3.

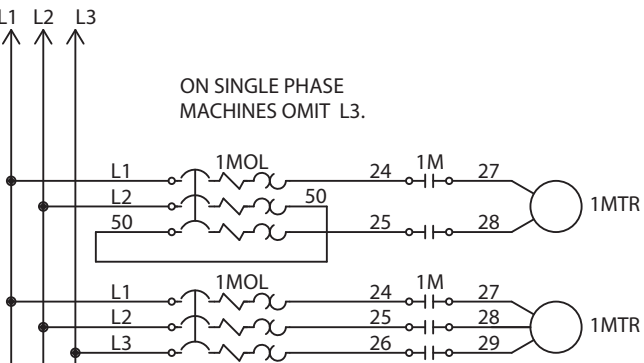
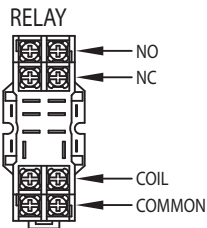
T1 NOT USED WITH
115V LINE SUPPLY
SEE NOTE 1

1CR	DOOR SWITCH RELAY
2CR	RINSE AID SIGNAL RELAY
3CR	POWER ON RELAY
1M	WASH MOTOR CONTACTOR
1MOL	WASH MOTOR OVERLOAD
1MTR	WASH MOTOR
AS	ARC SUPPRESSOR
BC1	BOOSTER TANK CONTACTOR OR STEAM VALVE
BCHL	BOOSTER TANK HIGH LIMIT (ELECTRIC HEAT ONLY)
DS1	DOOR SAFETY SWITCH, FRONT DOOR
DS2	DOOR SAFETY SWITCH, SIDE DOORS
DV	DRAIN VALVE
F1	TIMER BOARD FUSE
FSW	FLOAT SWITCH
FUH	TANK HEAT FUSES
FUT	TRANSFORMER FUSES
HC1	TANK HEAT CONTACTOR OR STEAM VALVE
HCHL	TANK HEAT HIGH LIMIT
IT	INTERVAL TIMER
JB1	RINSE TIME SELECT JUMPER
JB2	CYCLE SELECT JUMPER
JB3	CYCLE SELECT JUMPER
LT1	CYCLE LIGHT
MPS	MAIN POWER SWITCH
PCB	POWER SWITCH CIRCUIT BREAKER
RWV	RINSE WATER VALVE
T1	LINE:120V TRANSFORMER
TSBC	BOOSTER TANK THERMOSTAT
TSHC	WASH TANK THERMOSTAT

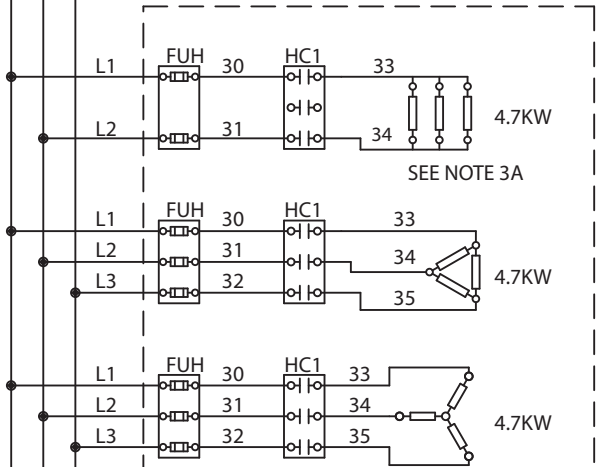
IF CHANGE AND/OR REVISE MAKE SURE TO UPDATE
PART# 113142, SCHEMATIC PEEL-OFF LABEL

TO TEST INPUTS T7, T8, AND T9 A METER
CAPABLE OF READING DC VOLTAGES MUST
BE USED.
1.) SET METER TO READ DC VOLTAGE
2.) PLACE BLACK LEAD TO T2
3.) PLACE RED LEAD TO TERMINAL BEING TESTED
e.g. , PLACE RED LEAD TO T8 TO TEST DOOR SW.
4.) AN OPEN SWITCH WILL READ 4.7-5.3VDC
A CLOSED SWITCH WILL READ 0-1VDC

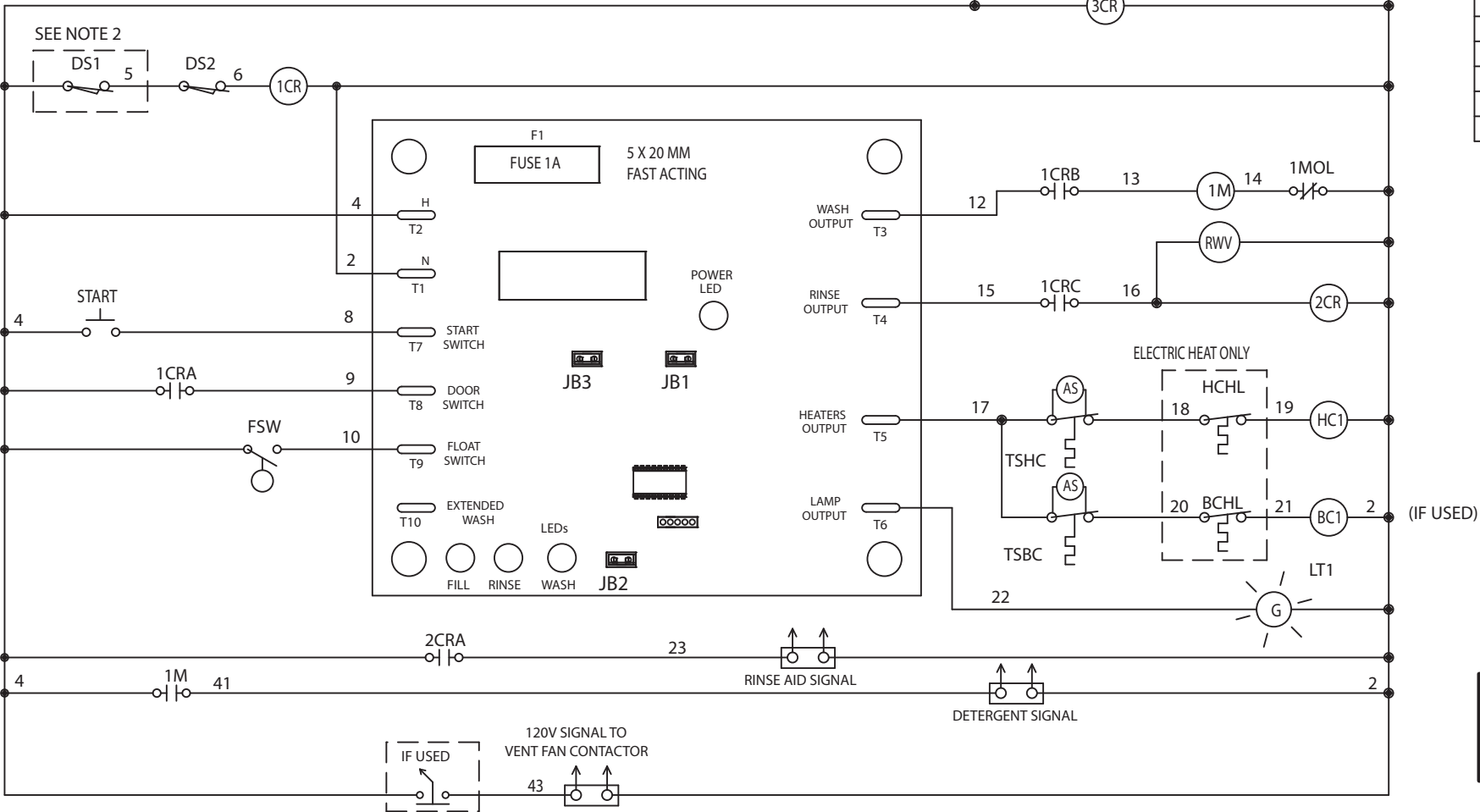
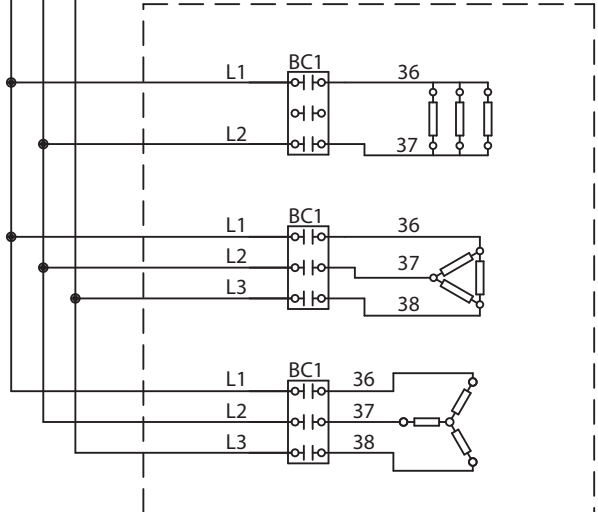
DIAGRAM STATE
POWER OFF
DOORS CLOSED
TANKS EMPTY
END OF CYCLE



ELECTRIC TANK HEAT IF USED



ELECTRIC BOOSTER HEAT IF USED (SEE NOTE 3B)



CUSTOMER TO SUPPLY RATED VOLTAGE/PHASE/Hz, AS SPECIFIED PER ORDER, TO DISCONNECT SWITCH. ALL POWER SUPPLIED TO EACH CONNECTION POINT MUST COMPLY WITH ALL LOCAL ELECTRIC CODES.			
DR.BY	J. NEWTON	SCALE	NONE
DATE	20MAY99	SHEET	1 OF 1

REV.	DESCRIPTION	DATE	BY
G	ADD JUMPER / SN INFORMATION. REVISE NOTE 3.	1NOV02	MJM
H	ADDED ARC SUPPRESSORS	13MAR03	JAM
I	CORRECTED BOARD# 'S. WAS 113457 & 112676	2/4/04	WB

REV.	DESCRIPTION	DATE	BY
J	REMOVED ARC SUPPRESSOR FROM DOOR SWITCH	14DEC04	JAM
K	CHANGED JUMPERS' CONFIGURATION (CS-676H)	10/1/07	JAM
L	CHANGED VENT FAN SWITCH OPTION	6JUN08	JAM

Champion
The Dishwashing Machine Specialists

CHAMPION DOOR MACHINE
DH1/B-E - STEAM/ELECTRIC - 1 & 3 PHASE

B	701650	REV. L
---	--------	--------

**