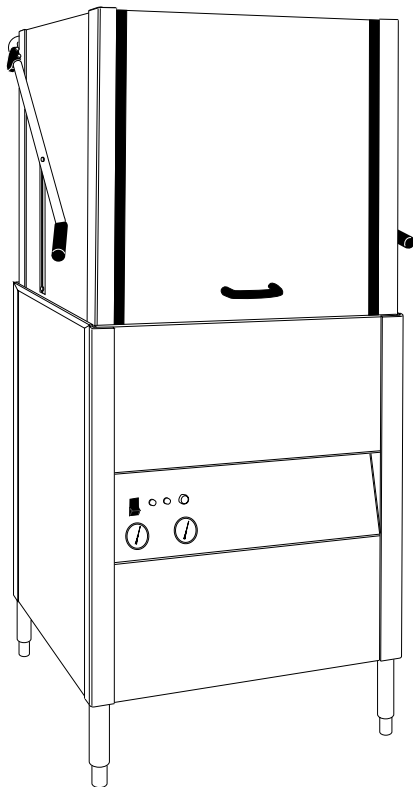

Champion[®]

The Dishwashing Machine Specialists

Technical Manual



Door-Type Extended Hood Dishwasher

Model

D-HBT, D-HBTC
High Temperature
Extended Hood
with Built-in Booster

D-H1T, D-H1TC
High Temperature
Extended Hood
without Built-in Booster

Machine Serial No.

July, 1998

Manual P/N **112724** Rev. A

P. O. Box 4149
Winston-Salem, North Carolina 27115-4149
336/661-1556 Fax: 336/661-1660

2674 N. Service Road
Jordan Station, Ontario, Canada LOR 1S0
905/562-4195 Fax: 905/562-4618

Champion Industries, Inc.

Complete the information below so it will be available for quick reference.

Model Number _____ Serial Number _____

Voltage and Phase _____

Champion Parts Distributor _____ Phone _____
(if applicable)

Champion Service Agency _____ Phone _____

Champion Service:

Champion, US

Phone: 1(336) 661-1556

1(800) 858-4477

Fax: 1(336) 661-1660

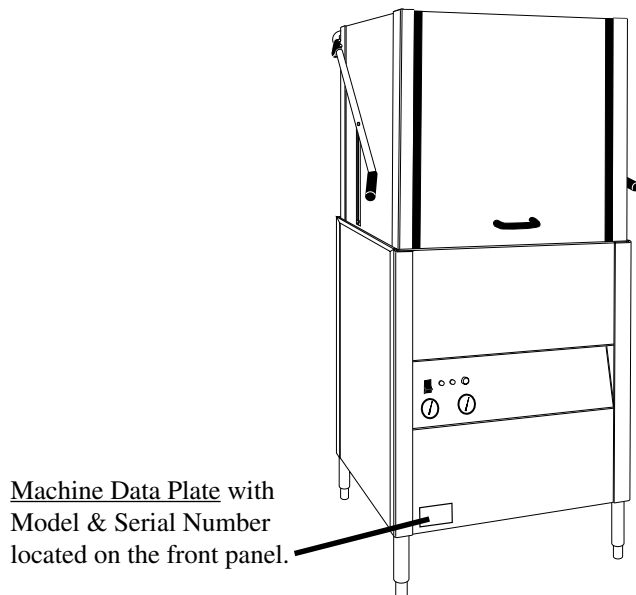
Champion, Canada

Phone: 1(905) 562-4195

1(800) 263-5798

Fax: 1(905) 562-4618

Note: When calling to order parts, be sure to have the model number, serial number, voltage and phase of your machine, along with your customer account number.



Machine Data Plate with Model & Serial Number located on the front panel.

Revision History

Revision Date	Revised Pages	Serial Number Effectivity	Comments
2/12/98	All	91299	Issue of New Manual and Service Parts List
4/23/98	52 – 53	91586	Redesigned overflow lift arm P/N 112469 order P/N's 112469-S and 322218 for machines built prior to S/N 91586
5/12/98	36 – 43	91612	Redesigned doors to include guide, P/N 112772
7/2/98	68 – 69	—	Corrected Control Cabinet fuse part numbers

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LIMITED WARRANTY

Champion Industries, Inc., P.O. Box 4149, Winston-Salem, North Carolina 27115, and P.O. Box 301, 2674 North Service Road, Jordan Station, Ontario, 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 Model Series CG] 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 Model Series CG, 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.

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 INDUSTRIES, INC. 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.

INTRODUCTION

Welcome to **Champion...**
and thank you for allowing us to take care of
your dishwashing needs.

This manual covers the door-type dishwasher,
Model D-HBT, D-H1T, D-HBTC, D-H1TC.
Your machine was completely assembled,
inspected, and thoroughly tested at our factory
before it was shipped to your installation site.

This manual contains:

- Installation Instructions
- Operation and Cleaning Instructions
- Troubleshooting Guide
- Basic Service Information
- Replacement Parts Lists
- Electrical Schematics

All information, illustrations and specifications
contained in this manual are based upon the
latest product information available at the time
of publication. **Champion** constantly improves
its products and reserves the right to make
changes at any time or to change specifications
or design without notice and without incurring
any obligation.

For your protection, factory authorized parts
should always be used for repairs.

Replacement parts may be ordered directly
from your **Champion** authorized service
agency. When ordering parts, please supply the
model number, serial number, voltage, and
phase of your machine, the part number, part
descriptions and quantity.

Model Numbers

D-HBT, D-HBTC, D-H1T, D-H1TC

The D-HBT model is a high temperature (180°F/82°C rinse) sanitizing model with booster.

The D-H1T, D-H1TC models are high temperature (180°F/82°C rinse) sanitizing models.

Standard Equipment includes:

D-HBT, D-HBTC, D-H1T, DH1TC

- Automatic tank fill and start
- Adjustable cycle selector
- Built-in electric booster heater (D-HBT only)
 - Field convertible to corner model
- Electric tank heat
- Low-water tank heat protection
- 2-hp drip-proof pump motor
- Door safety switch
- Door activated drain
- Common utility connections
- Two dish racks (peg and flat bottom)
- Detergent/chemical connection provisions
- Stainless steel front and side panels
- 1-1/2" O.D. gravity drain connection
- Water pressure reducing valve (mounted)
- Interchangeable upper and lower spray arms

Options

- Electric booster (70°F/39°C temperature rise) heater for 110°F/43°C supply water
- Steam injector or steam coil tank heat (steam booster 40°F/23°C-70°F/39°C rise)

Accessories

Additional dishracks:

Dish rack (peg) P/N [101285](#)

Silverware rack (flat bottom) P/N [101273](#)


3/4" Pressure reducing valve (PRV) P/N [112387](#)


Electrical Power Requirements: Electric Heat/Electric Booster

Model	Voltage	Booster Rise (D-HBT Only)	Machine Full Load Amps	Power Requirement (125% Service Factor)
D-H1T	208/60/1	—	27.3 Amps	35 Amps
D-H1T	220/60/1	—	26.7 Amps	35 Amps
D-H1T	230/60/1	—	27.4 Amps	35 Amps
D-H1T	240/60/1	—	27.9 Amps	35 Amps
D-H1T	208/60/3	—	14.5 Amps	20 Amps
D-H1T	220/60/3	—	14.9 Amps	20 Amps
D-H1T	230/60/3	—	14.9 Amps	20 Amps
D-H1T	240/60/3	—	15.2 Amps	20 Amps
D-H1T	380/60/3	—	8.7 Amps	15 Amps
D-H1T	415/60/3	—	8.8 Amps	15 Amps
D-H1T	480/60/3	—	6.9 Amps	15 Amps
D-H1T	575/60/3	—	5.7 Amps	15 Amps
<hr/>				
D-HBT	208/60/1	40°F/23°C	63.4 Amps	80 Amps
D-HBT	220/60/1	40°F/23°C	64.9 Amps	90 Amps
D-HBT	230/60/1	40°F/23°C	67.3 Amps	90 Amps
D-HBT	240/60/1	40°F/23°C	69.6 Amps	90 Amps
D-HBT	208/60/3	40°F/23°C	35.3 Amps	45 Amps
D-HBT	220/60/3	40°F/23°C	37 Amps	50 Amps
D-HBT	230/60/3	40°F/23°C	38 Amps	50 Amps
D-HBT	240/60/3	40°F/23°C	39.3 Amps	50 Amps
D-HBT	380/60/3	40°F/23°C	21.4 Amps	30 Amps
D-HBT	415/60/3	40°F/23°C	21.3 Amps	30 Amps
D-HBT	480/60/3	40°F/23°C	17.7 Amps	25 Amps
D-HBT	575/60/3	40°F/23°C	14.7 Amps	20 Amps
<hr/>				
D-HBT	208/60/1	—	—	—
D-HBT	220/60/1	—	—	—
D-HBT	230/60/1	—	—	—
D-HBT	240/60/1	—	—	—
D-HBT	208/60/3	70°F/39°C	52 Amps	70 Amps
D-HBT	220/60/3	70°F/39°C	54.6 Amps	70 Amps
D-HBT	230/60/3	70°F/39°C	56.4 Amps	70 Amps
D-HBT	240/60/3	70°F/39°C	58.5 Amps	80 Amps
D-HBT	380/60/3	70°F/39°C	31.6 Amps	40 Amps
D-HBT	415/60/3	70°F/39°C	33.8 Amps	45 Amps
D-HBT	480/60/3	70°F/39°C	28.6 Amps	40 Amps
D-HBT	575/60/3	70°F/39°C	23.8 Amps	30 Amps

INSTALLATION

Unpack the dishwasher

 **CAUTION:**
Care should be taken when lifting the machine to prevent damage.

 **NOTE:**
The installation of your machine must meet all applicable health and safety codes.

1. Immediately after unpacking the machine, inspect for any shipping damage. If damage is found, save the packing material and contact the carrier immediately.
2. Remove the dishwasher from the skid. Move the machine to its permanent location.
3. Level the machine (if required) by placing a level on the top of the machine and adjusting the feet. Level the machine front-to-back and side-to-side.
4. Remove the dishracks from the interior of the machine.
5. Refer to Fig. 1. Remove (2) screws that hold the front panel. Remove the front panel in preparation for service connections.

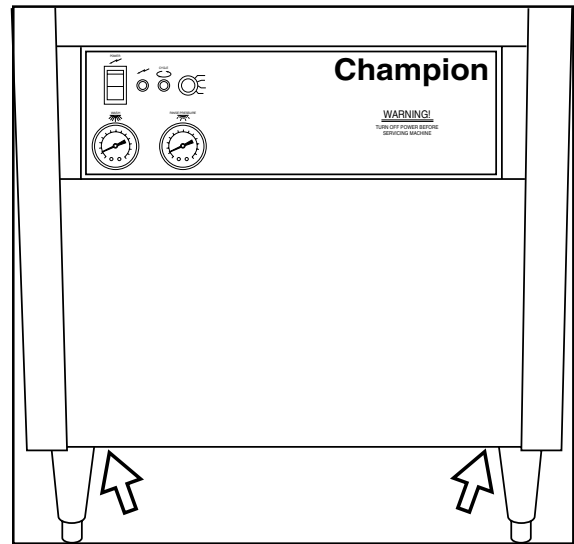



Figure 1
Remove Front Panel

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INSTALLATION (Cont.)

Electrical Connections

 **WARNING:** *Electrical and grounding connections must comply with all applicable Electrical Codes.*

 **WARNING:** *When working on the dishwasher, disconnect the electric service and place a tag at the disconnect switch to indicate work is being done on that circuit.*

1. A qualified electrician must compare the electrical power supply with the machine electrical specifications before connecting to the incoming service through a fused disconnect switch.

Refer to Fig. 2

2. A knock-out is provided at the lower right rear corner (as viewed from the front) for the electrical service connection. A fused disconnect switch or circuit breaker (supplied by others) is required to protect the power supply circuit.

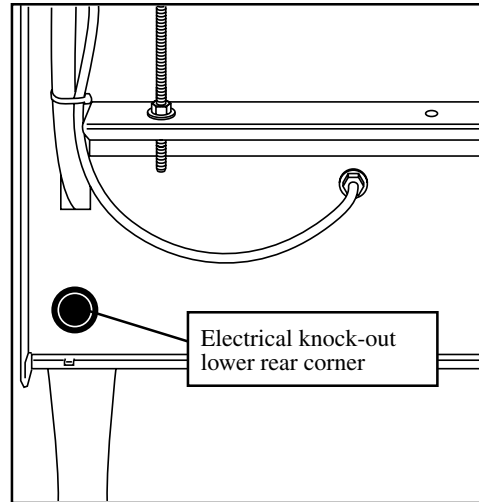


Figure 2
Electrical Connection Location

Electrical Connections (Cont.)

Refer to Fig. 3

3. Remove (2) lower screws from the front panel of the machine to expose the electrical controls. Remove (2) screws on the control panel support. Swing the hinged control panel forward.

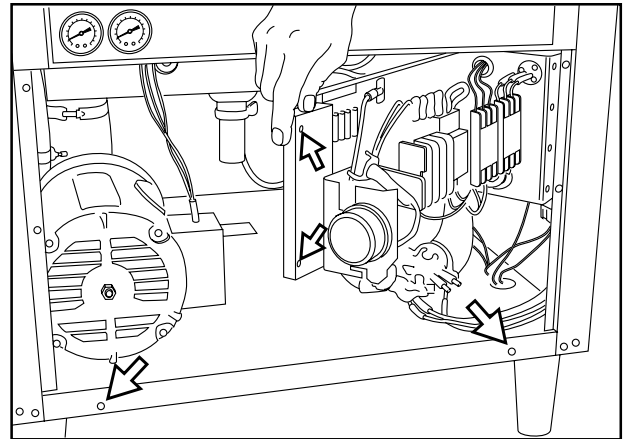


Figure 3
Hinged Control Panel

Refer to Fig. 4

4. Three phase or single phase incoming power wiring connections are made at the bottom of the machine's main terminal block. The main terminal block is located on the side of the front right post of the dishwasher.

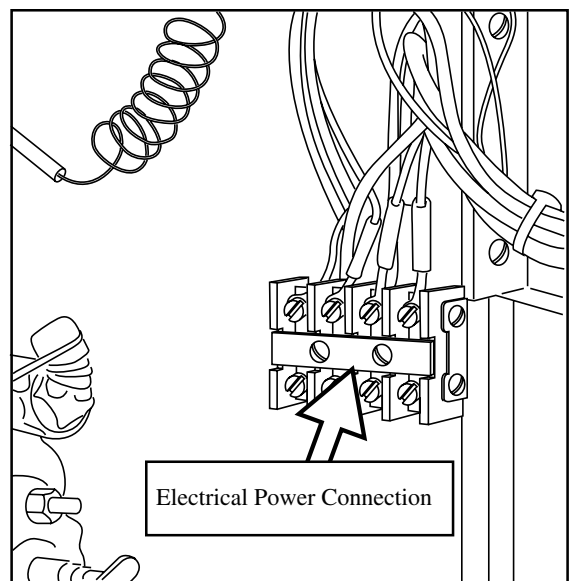


Figure 4
Main Terminal Block

INSTALLATION (Cont.)

Plumbing Connections

NOTE:

Plumbing connections must comply with all applicable sanitary and plumbing codes.

Water Connections

1. All D-HB/H1T series dishwashers require a single, hot water supply.

The hot water connection to all D-HB/H1T series dishwashers is 3/4" NPT.

The connection is made from underneath the dishwasher.

The following minimum water temperatures are recommended:

D-HBT with built-in 40° rise electric booster (Minimum 140°F/60°C)
 (Min./Max. flow pressure 20-22 PSI/138-151.8 kPa)

D-HBT with built-in 70° rise electric booster (Minimum 110°F/43°C)
 (Min./Max. flow pressure 20-22 PSI/138-151.8 kPa)

D-H1T without built-in booster (Minimum 180°F/70°C)
 (Min./Max. flow pressure 20-22 PSI/138-151.8 kPa)

Refer to Figs. 5 and 6

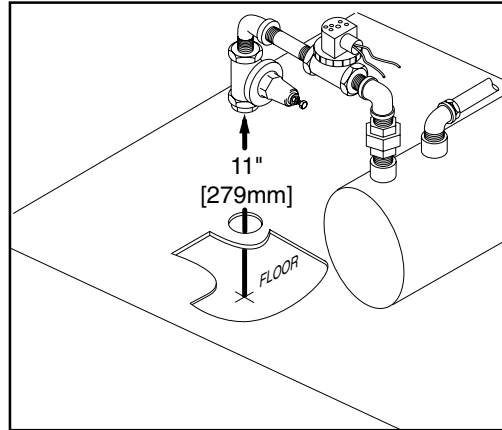


Figure 5
Hot Water Connection
3/4" NPT
(D-HBT Only)

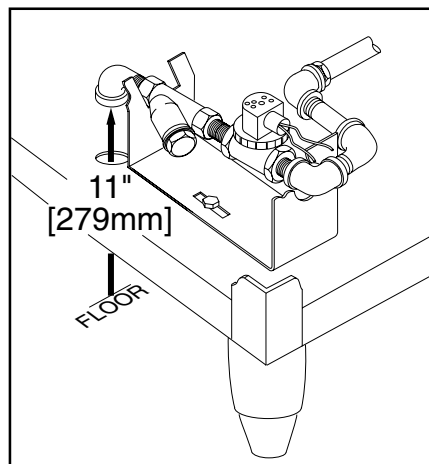


Figure 6
Hot Water Connection
3/4" NPT
(D-H1T Only)

Water Connections (Cont.)

- 2. A manual shut-off valve for steam and water (supplied by others) should be installed in the supply line to allow for servicing of the machine. The shut-off valve should be the same size or larger than the supply line.
- 3. Install a 3/4" pressure reducing valve (PRV) in the water supply line if flow pressure exceeds 20-22 PSI/138-151.8 kPa.

A PRV is standard equipment on Model D-HBT. A PRV is not standard equipment on Models D-H1T.

Drain Connections

Refer to Fig. 7

- 1. All models are GRAVITY DRAIN machines equipped with a 1-1/2" O.D. hose connection point.
- 2. The maximum drain flow rate is 15 gallons/min-56.8 liters/min.
- 3. Drain height for all models must not exceed 11" (280mm) above floor level.
- 4. The drain connection is made to the dishwasher from underneath the machine through an access hole in the machine base.

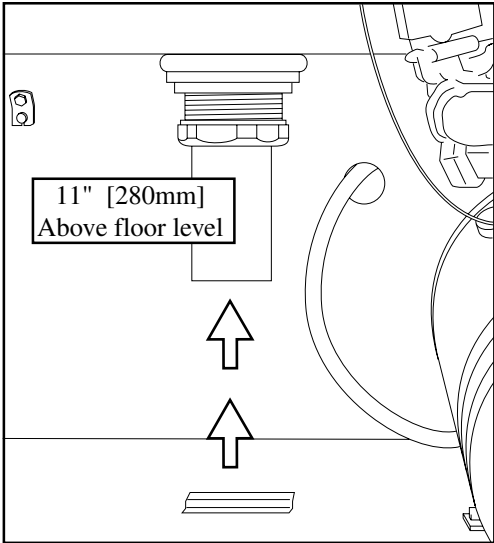


Figure 7
Drain Hose Connection
 1-1/2" O.D.
 (Max flow rate = 15 gal/min-56.8 liters/min)

Ventilation

NOTE:

Ventilation must comply with local sanitary and plumbing codes.



CAUTION:

Exhaust air should not be vented into a wall, ceiling, or concealed space of a building. Condensation can cause damage.

INSTALLATION (Cont.)

Chemical Connections

NOTE:
*Consult a qualified chemical supplier
 for your chemical needs.*

Refer to Fig. 8

1. A chemical signal terminal block is supplied for chemical dispensing equipment.
2. The terminal block is located below the control panel fuse block.

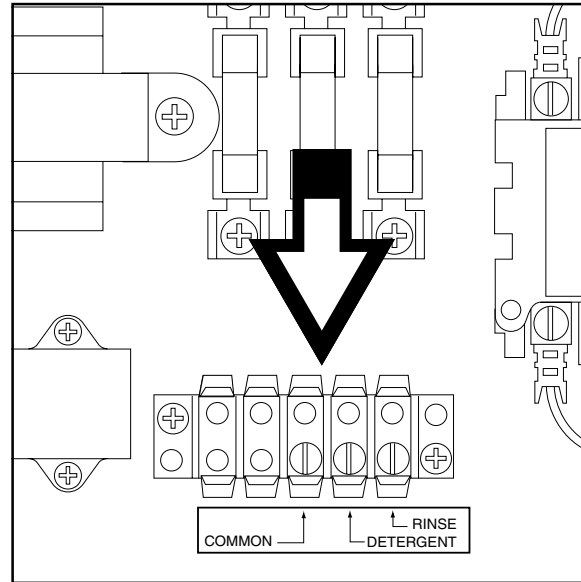


Figure 8
Chemical Dispenser
Signal
Terminal Block

Refer to Fig. 9

3. The detergent signal is limited to a maximum load of 1 Amp. Signal voltage is 115VAC.
4. The Rinse aid signal is limited to a maximum load of 1 Amp. Signal voltage is 115VAC.

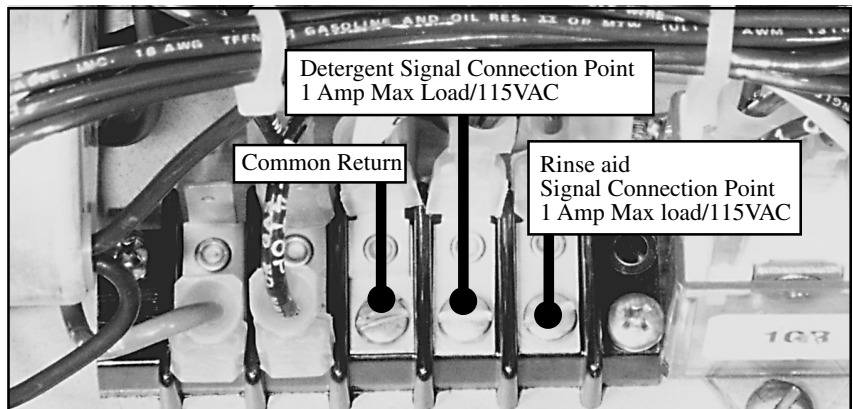
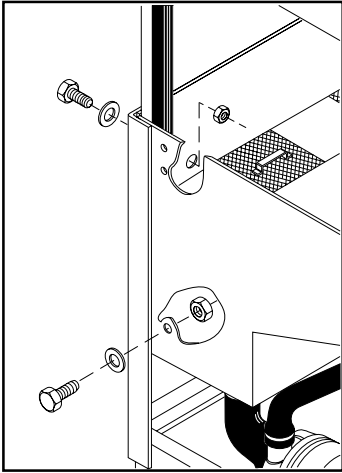


Figure 9
Chemical Signal
Connection Points

Chemical Connections (Cont.)

Refer to Fig. 10

- 5. A 1/2" detergent probe injection point is provided at the rear and left side of the dishwasher.
- 6. Detergent may be added manually if your dishwasher is not equipped with dispensing equipment. Consult your chemical supplier for recommended amounts.

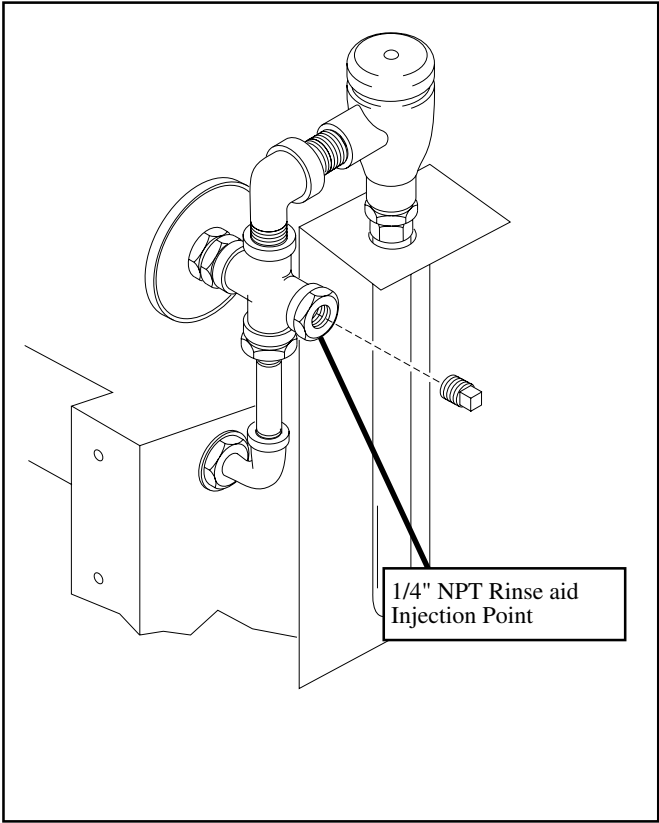


**Figure 10
Detergent Probe
Injection Points, 1/2"**

Refer to Fig. 11

- 7. **D-HBT, D-H1T**
A 1/4" NPT rinse aid injection point is provided in the final rinse manifold. Use a liquid rinse aid. The manifold is located on the top right side of the dishwasher.

Models D-HBT and D-H1T do not require sanitizer.



**Figure 11
Rinse Aid Injection Point
(Top of Dishwasher)**

INITIAL START-UP

Complete the Installation

After plumbing and electrical connections are made, follow the steps below to complete the installation of your dishwasher.

1. Remove the white protective covering from the exterior of the machine.
2. Remove any foreign material from inside the machine.
3. Make sure dishwasher power switch is off.
4. Turn main water supply on.
5. Turn main power on at the main power service disconnect switch.

1

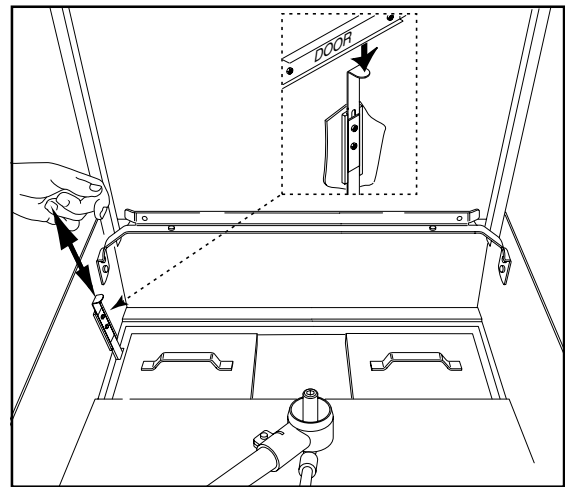
Install the Scrap Screens and Drain-Overflow Assembly

Install scrap screens.

Make sure the door activated drain assembly is in place. The drain is opened by manually pulling up on the drain-overflow lever.

The drain closes when the doors are closed.

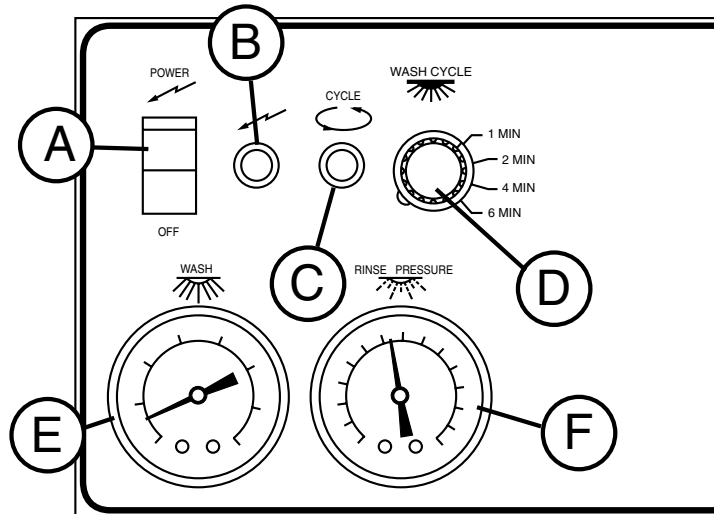
MAKE SURE DOORS ARE FULLY CLOSED.



2

The controls are located on the front of the dishwasher.

- A- On/Off power switch
- B- Power indicator Light
- C- In cycle light
- D- Wash cycle selector switch
- E- Wash water temperature gauge
- F- Final rinse pressure gauge



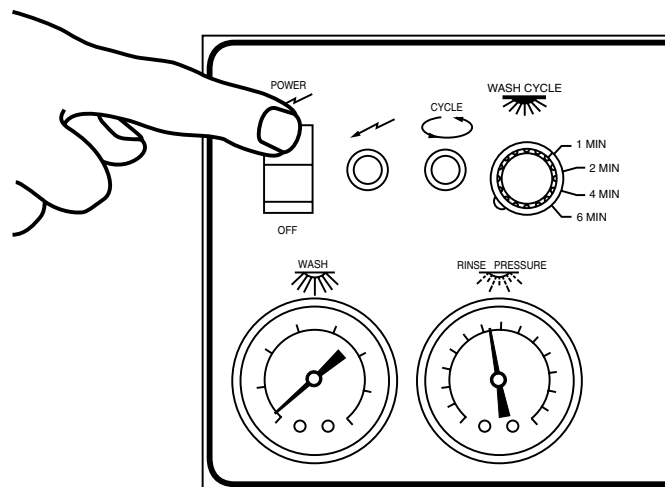
INITIAL START-UP (Cont.)

3

THE POWER SWITCH IS ON DURING INITIAL FILL.

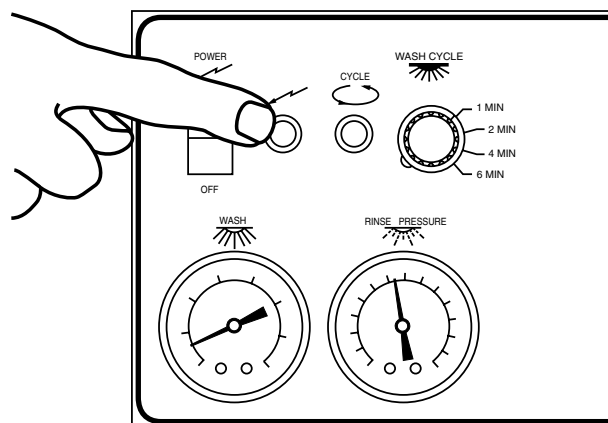
Make sure the doors are fully closed.
Push the On/Off power switch to the UP position.

THE DISHWASHER FILLS AUTOMATICALLY.



4

Note that the power indicator light is illuminated.



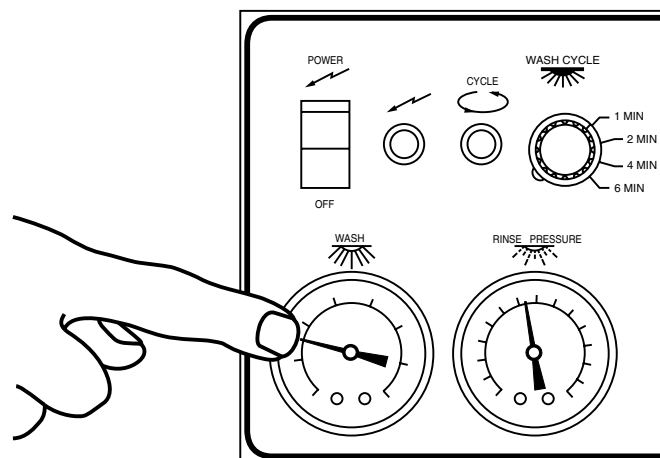
5

Check Wash Water Temperature

The wash tank heater and the (booster tank heater, D-HBT only) will begin to heat the water in the dishwasher.

Wait approximately 10 minutes for the wash tank water to reach operating temperature. The temperature should be a minimum of 150°F/66°C for (D-HBT, D-H1T).

Prescrap the dishes. Load ware into the dishrack. Open the doors, insert the rack into the dishwasher.



INITIAL START-UP (Cont.)

6

Fully close the dishwasher doors.
The dishwasher will begin the automatic cycle.

Opening the doors anytime during the cycle will stop the dishwasher.

Closing the doors will resume the automatic cycle where it left off.

The cycle times are listed below:

1 Minute Wash Cycle Setting

Wash = 45 seconds
Dwell = 1 seconds
Final rinse = 14 seconds

4 Minute Wash Cycle Setting

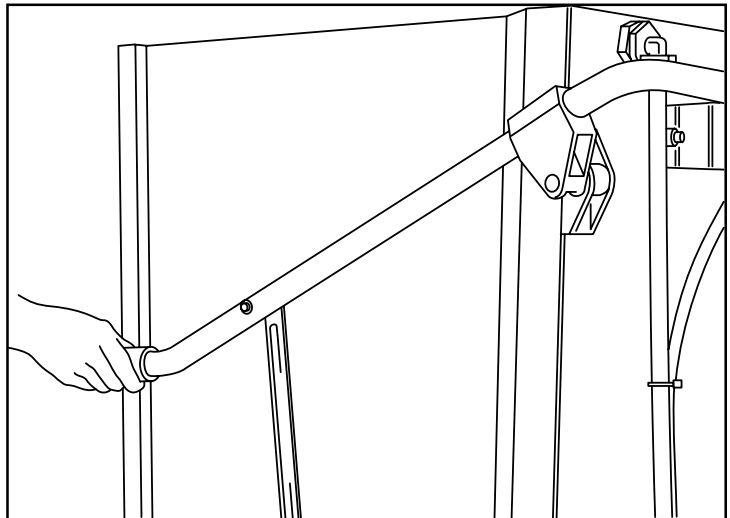
Wash = 225 seconds (3 min 45 sec)
Dwell = 1 seconds
Final rinse = 14 seconds

2 Minute Wash Cycle Setting

Wash = 105 seconds (1 min 45 sec)
Dwell = 1 seconds
Final rinse = 14 seconds

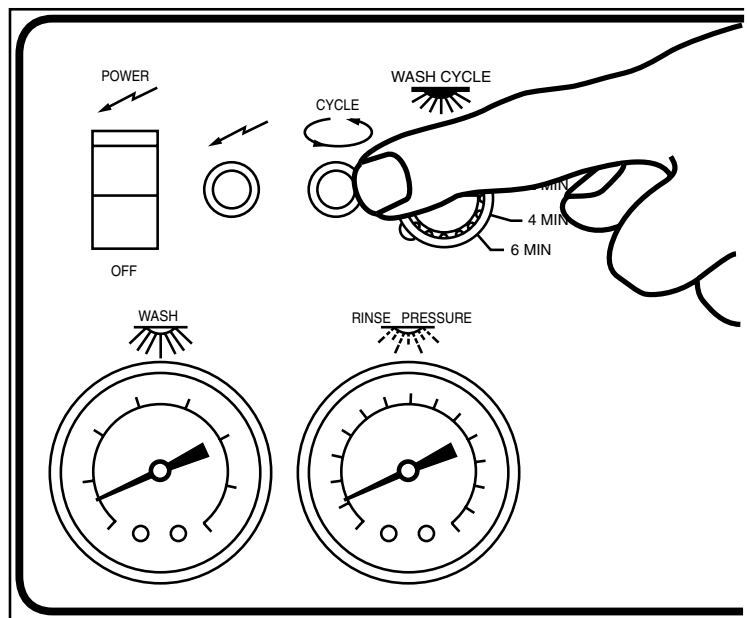
6 Minute Wash Cycle Setting

Wash = 345 seconds (5 min 45 sec)
Dwell = 1 seconds
Final rinse = 14 seconds



7

Note that the in-cycle light is lit during the automatic dishwasher cycle.



INITIAL START-UP (Cont.)

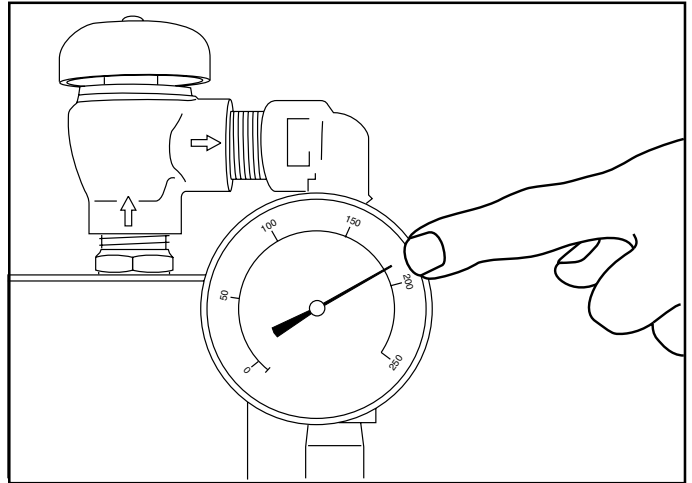
8

Check Final Rinse Water Temperature

Check the final rinse water temperature during the final rinse cycle.

The final rinse water temperature gauge is located in the final rinse piping at the top of the dishwasher.

The final rinse water temperature should be a minimum of 180°F/82°C for (D-HBT, D-H1T). The optimum final rinse temperature for (D-HBT, D-H1T) is 180-195°F/82-91°C.

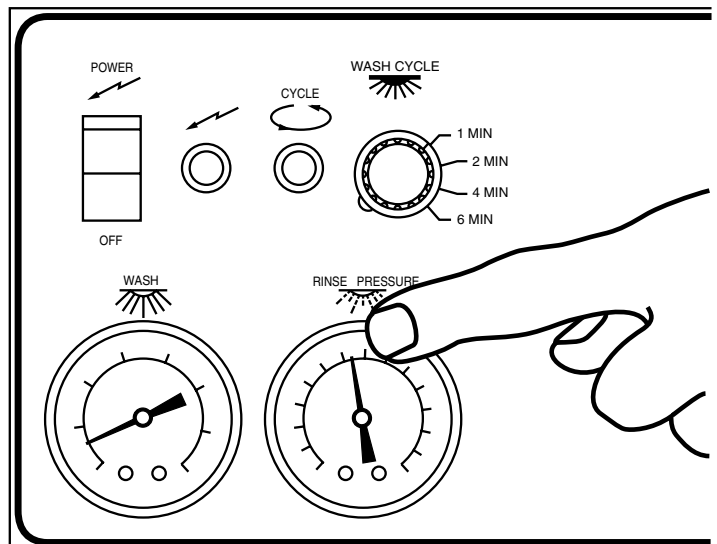


9

Check Final Rinse Water Pressure

The final rinse water pressure gauge should indicate a flowing pressure of 20-22 PSI/138-151.8 kPa during the final rinse cycle for all models.

A pressure reducing valve (PRV) is required if flow pressure exceeds 20-22 PSI/138-151.8 kPa.



INITIAL START-UP (Cont.)

10

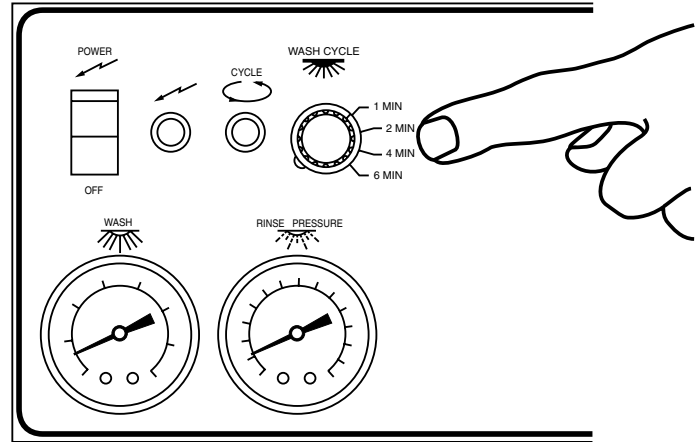
The Wash Cycle Selector Switch

The wash cycle selector switch provides the option of choosing four different dishwasher cycle times.

To select a cycle time —

Make sure power is on and the dishwasher has completed its last cycle.

Turn the selector knob to the desired time as indicated on the control panel.



Close the doors.

The dishwasher will begin the cycle automatically.

If the timed fill is activated due to a loss of water, the cycle will stop. When the dishwasher is full the automatic cycle will resume where it left off.

*The maximum total wash cycle time is 6 minutes.
For example: You can not select 4 minutes then turn the switch to 6 minutes during the automatic 2 minute cycle to extend the total cycle to 10 minutes.*

The dishwasher cycle times are listed below:

1 Minute Wash Cycle Setting

Wash = 45 seconds
Dwell = 1 seconds
Final rinse = 14 seconds

2 Minute Wash Cycle Setting

Wash = 105 seconds (1 min 45 sec)
Dwell = 1 seconds
Final rinse = 14 seconds

4 Minute Wash Cycle Setting

Wash = 225 seconds (3 min 45 sec)
Dwell = 1 seconds
Final rinse = 14 seconds

6 Minute Wash Cycle Setting

Wash = 345 seconds (5 min 45 sec)
Dwell = 1 seconds
Final rinse = 14 seconds

INITIAL START-UP (Cont.)

11

Complete the initial start-up

Check all the plumbing for leaks. Also, check the drain plumbing for leaks and be sure that the drain will handle the drain water flow (15 gal/min-56.8 liters/min) from the dishwasher.

After the drain and the plumbing connections are checked, turn off the dishwasher power switch.

12

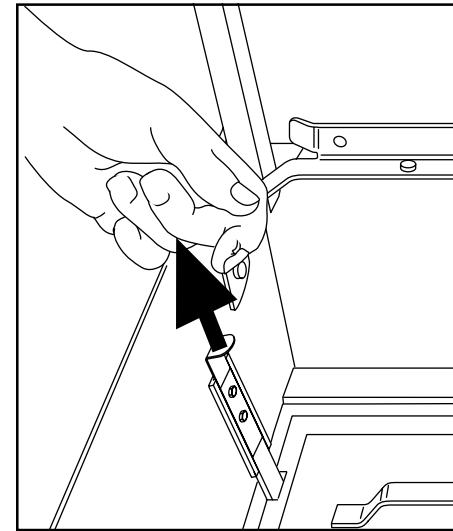
Drain the dishwasher

Make sure the dishwasher power switch is turned off.

Open the doors.

Drain the dishwasher by pulling the door activated drain lever up

The door activated drain lever is located on the inside left rear corner of the dishwasher.



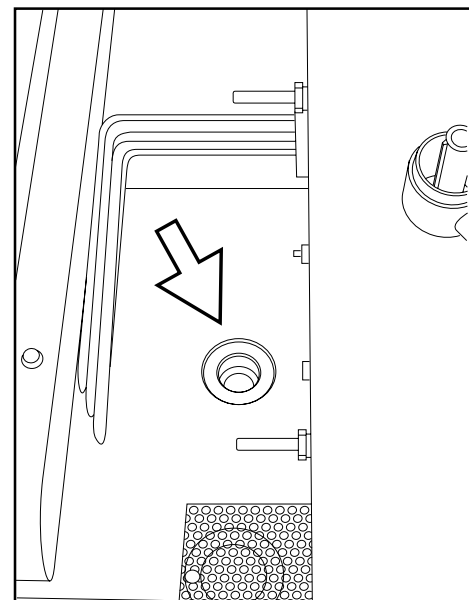
Remove the scrap screens and check the drain located in the bottom of the dishwasher wash tank.

Make sure that the building drain handles the water flow exiting the dishwasher.

Clean the interior of the wash tank of any foreign material.

Leave the doors open to air dry the interior of the dishwasher.

The initial start-up is complete.



OPERATION SUMMARY

Action	Result
1. Push the On/Off power switch “UP” to the ON position. Dishwasher fills automatically.	1. The power indicator light illuminates. The wash tank heater (D-HBT/H1T) and the (booster tank heater, D-HBT) begin to heat.
2. Wait approximately 10 minutes for the wash tank heater to heat the water. Then, check the reading on the wash water temperature gauge.	2. The wash water temperature gauge should indicate a minimum of 150°F/66°C for D-HBT, D-H1T.
3. Prescrap and load the ware into the dishrack.	3. Ware should be placed edgewise in the peg rack. Cups and bowls should be placed upside down in the flat rack. Silverware should be spread evenly in a single layer in the flat rack.
4. Open the doors. Insert a dishrack of soiled ware. Fully close the doors. Opening the doors anytime during the automatic cycle stops the dishwasher. Closing the doors will resume the cycle where it left off.	4. In cycle light illuminates as the dishwasher begins a selected automatic cycle. The total cycle times are listed below: 1 minute = 45 second wash 2 minute = 1 minute 45 second wash 4 minute = 3 minute 45 second wash 6 minute = 5 minute 45 second wash
5. Check the final rinse temperature gauge reading during the 14 second final rinse cycle.	5. The final rinse temperature gauge should indicate a minimum of 180°F/82°C for D-HBT/ D-H1T. The optimum final rinse temperature range is between 180-195°F/82-90°C.
6. Check the incoming water pressure during the 14 second final rinse cycle.	6. The water pressure gauge should indicate a flowing pressure of 20-22 PSI/138-151.8 kPa. A pressure reducing valve (PRV) is required if flow pressure exceeds 20-22 PSI/138-151.8 kPa.
7. The selected automatic cycle ends.	7. The in cycle light goes out.
8. Open the doors. Remove the clean rack. Insert another rack of soiled ware. Fully close the doors.	8. The selected automatic cycle begins again.
9. Turn power OFF at the dishwasher. Lift the drain lever up. Clean the scrap screens. Clean the dishwasher after each meal period or every two hours of operation.	9. Dishwasher wash tank drains completely. Periodic cleaning reduces detergent consumption and improves washing results.

CLEANING

Cleaning your machine is the best maintenance that you can provide. Components that are not regularly flushed and cleaned do not perform well.

The following schedules are the minimum requirements necessary for the proper performance of your machine. Intervals should be shortened whenever your machine is faced with abnormal working conditions, hard water, or multiple shift operations.

CLEANING SCHEDULE

Every 2 Hours or After Each Meal Period

1. Drain the dishwasher.
2. Flush interior with fresh water.
3. Clean scrap screens and pump intake screen.
4. Clean spray arm nozzles.

Every 8 Hours or at the End of the Day

1. Drain the machine.
2. Flush interior with fresh water.
3. Clean scrap screens and pump intake screen.
4. Clean spray arms.
5. Thoroughly clean the exterior of machine.

**DO NOT HOSE DOWN
WITH WATER.**

6. Reassemble the machine.
7. Leave doors open to aid in drying.



CAUTION:

Do not leave water in wash tank overnight.

DELIMING

Your dishwasher should be delimed regularly depending on the mineral content of your water. Inspect the machine interior for mineral deposits and use a deliming solution for the best cleaning results.



NOTE:

Consult your chemical supplier for an appropriate deliming solution.



WARNING:

Deliming solutions or other acids must not come in contact with household bleach (sodium hypochlorite) or any chemicals containing chlorine, iodine, bromine, or fluorine. Mixing will cause hazardous gases to form. Skin contact with deliming solutions can cause severe irritation and possible chemical burns. Consult your chemical supplier for specific safety precautions.

DELIMING PROCESS

Model D-HBT and D-H1T

1. Remove all dishes from machine.
2. Remove any chemical pick-up tubes from their containers.
3. Place each tube in a container of fresh water and prime the chemical lines for several minutes to thoroughly flush chemical from the lines. Leave pick-up tubes out of their containers.
4. Drain the machine and refill with fresh water.
5. Spray interior walls with deliming solution and let sit for 5 or 10 minutes depending on amount of build-up. Add deliming solution to wash tank.
Do not let chemicals sit for longer than 15 minutes.
6. Close the doors to run an automatic cycle.
7. Repeat Steps 4-6 if necessary.
8. Lift the drain lever assembly and drain the machine.
9. Refill the machine and run a complete cycle two additional times. Drain and refill the machine after each cycle to thoroughly flush any deliming solution from the interior of the machine.
10. Flip the power switch to OFF.
11. Drain machine.
12. Deliming is complete.

TROUBLESHOOTING

Perform the seven checks listed below in the event that your dishwasher does not operate as expected.

1. All switches are ON
2. Drain-overflow assembly is in place and seated
3. Wash and rinse nozzles are clean
4. Wash and rinse pipe assemblies are installed correctly
5. Scrap screens are properly positioned
6. Thermostat(s) are properly adjusted
7. Detergent and rinse additive dispensers are adequately filled

If a problem still exists, use the following table for troubleshooting

CONDITION	CAUSE	SOLUTION
Machine will not start	Doors not closed	Make sure doors are fully closed
	Door safety switch faulty	Contact your service agency
	Main switch off	Check disconnect at main panel
	Blown Fuse	Replace fuse
Machine washes constantly	Timer or door switch defective	Contact your service agency
Low or no water	Main water supply is turned off	Turn on house water supply
	Drain-overflow assembly is not in place and seated	Place and seat drain-overflow
	Machine doors not fully closed	Close doors securely
	Faulty fill valve	Contact your service agency
	Machine not filled initially	Push Power switch UP to fill
Continuous water filling	Clogged strainer in fill valve	Clean or replace
	Stuck or defective Fill Timer	Contact your service agency
	Fill valve will not close	Clean or replace
	Drain-overflow not in place	Install drain-overflow assembly
	Stuck or Defective float switch	Inspect or replace float switch
Wash motor not running	Overload protector tripped	Reset overload in Control Box
	Defective motor	Contact your service agency
Wash tank water temperature is low when in use	Incoming water temperature at machine too low	Raise temperature to: 110-140°F/43-60°C for D-HBT 180°F/82°C for D-H1T
	Defective thermometer.....	Check or replace
	Defective thermostat	Check for proper setting or replace
	Defective heater element	Check or replace
	Defective solenoid valve	Check or replace
	Heater elements	Clean and delime
	have soil/lime buildup	

TROUBLESHOOTING (Cont.)

CONDITION	CAUSE	SOLUTION
Insufficient pumped spray pressure	Clogged pump intake screen	Clean
	Clogged spray pipe	Clean
	Scrap screen full	Must be kept clean and in place
	Low water level in tank	Check drain-overflow assembly
	Pump motor rotation incorrect	Reverse connection between L1 and L2 in Control Cabinet
	Defective pump seal	Contact Service Agent
Insufficient final rinse or no final rinse	Faulty pressure reducing valve	Clean or replace
	Improper setting on pressure reducing valve	Set flow pressure at 20-22 PSI/ 138-151.8 kPa
	Clogged rinse nozzle and/or pipe	Clean
	Improper water line size	Have installer change to proper size
	Clogged strainer in fill valve	Clean or replace
Low final rinse temperature	Low incoming water temperature	Check the booster (D-HBT, D-H1T) be sure the thermostat is set to maintain 180°F/82°C temperature.
	Solenoid valve defective.....	Check valve to be sure it is clean and operating
	Defective thermometer	Check for proper setting or replace
Poor washing results	Detergent dispenser	Contact detergent supplier
	not operating properly	
	Insufficient detergents	Contact detergent supplier
	Wash water temperature	See condition "Wash Tank Water Temperature" above
	too low	
	Wash arm clogged	Clean
	Improperly scraped dishes	Check scraping procedures
	Ware being improperly placed in rack	Use proper racks. Do not overload racks
Improperly cleaned equipment	Unclog wash sprays and rinse nozzles to maintain proper pressure and flow conditions. Overflows must be open. Keep wash water as clean as possible.	
	Heater elements	Clean and delime
	have soil/lime buildup	

BASIC SERVICE

This Basic Service section does not cover all possible repair procedures. If you require additional service support, you may call your local service company or:

Champion National Service

USA: 1-800-858-4477

Canada: 1-800-263-5798

Please have the Model and Serial Number of the machine ready when you call.

ELECTRICAL SERVICE

NOTE:

DO NOT USE CHASSIS GROUND WHEN PERFORMING VOLTAGE CHECKS.

Doing so will result in false and inaccurate readings.

PERFORM VOLTAGE CHECKS BY READING FROM THE HOT SIDE OF THE LINE AND NEUTRAL (any #2 or white wire).



WARNING:

USE EXTREME CAUTION when performing tests on energized circuits.



WARNING:

When repairing a circuit, disconnect the power at the main service disconnect switch and place a tag at the disconnect switch to indicate that work is being performed on the circuit.

Troubleshooting

Schematics

Champion places an electrical schematic in the control cabinet of every machine before it is shipped. Schematics are included at the back of this manual as well. Be aware that these schematics include options that may not apply to your machine. Options are enclosed in dashed lines with the words (IF USED) next to them on the schematic. Disregard any options that appear on the schematics which are not a part of your machine.

Tools

All electrical repairs can be made with:

- Standard set of hand tools
- Volt/Ohm Meter (VOM)
- Clip-on AC current tester

Circuit Tests

Use a clip-on AC current tester to check the motors and electric heaters.

Use a VOM to test line voltages and the 115VAC control circuit.

ELECTRICAL SERVICE (Cont.)

Fuses —

Refer to Fig. 12.

There are two fuse blocks. A 3 pole block (A) is located in the main control cabinet. The (A) fuses protect the wash tank heater circuit. Booster heater circuits (D-HBT only) are not fused. A 2 pole fuse block is located on the machine base to protect the control circuit.

To Replace a fuse:

Turn the dishwasher main power switch off. Disconnect power to the machine at the main service disconnect switch. Replace the fuse. If the fuse blows again, **DO NOT INCREASE THE FUSE SIZE. DETERMINE THE CAUSE OF THE OVERLOAD.**

Motor Overloads —

The wash pump motor has an overload to protect it from line voltage electrical overloads. The overload disconnects 120VAC power to the motor contactor coil.

Refer to Fig. 13.

Note the Switch Lever on the Overload.

If the switch lever is off with the “0” showing then the overload has tripped.

To Reset the Motor Overload:

Flip the overload switch to the On position. A “1” should be visible on the switch lever.

To Replace a Motor Overload:

Disconnect the wires to the overload. Release the mounting catch on the front side of the overload. Push forward and lift out. Snap the new overload into place and reconnect the wires.

To adjust the overload setting:

The screwdriver in Fig. 13 is positioned to adjust the motor overload AMP setting. Read the full load amps (FLA) motor amps on the motor nameplate. Turn the setting to match the name plate.

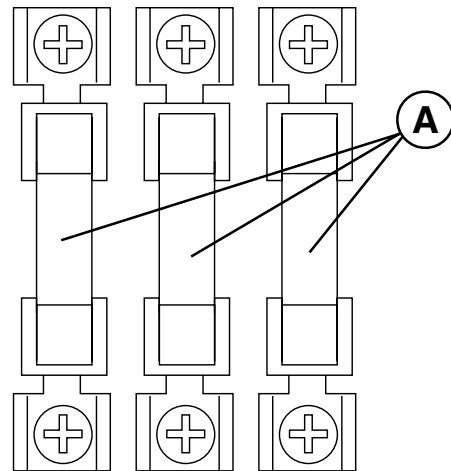


Figure 12
Wash tank heater fuses
Control Cabinet

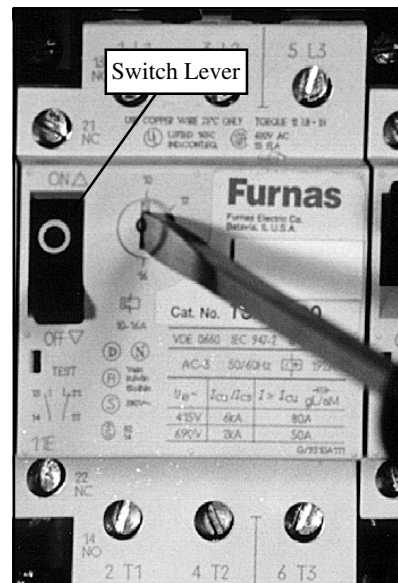


Figure 13
Motor Overload

ELECTRICAL SERVICE (Cont.)

Electromechanical Timers

D-HBT, D-H1T, models have two non-adjustable timers. They are the 45 second main cycle timer and the fill timer. The timers are mounted on the swing-out control cabinet. Remove the lower front panel to access the timers.

There are three adjustable timers located on the lower right rear corner of the wash tank. These timers control the 2, 4, and 6 minute wash cycle operations. Remove the lower front and left side panel to access the timers.

Main Cycle Timer —

Refer to Fig. 14.

The main cycle timer controls the non-adjustable 45-second wash time. It also resets and connects to the adjustable 2, 4, and 6 minute timers through the wash cycle selector switch. The main cycle timer also controls the 1 second dwell and the 14 second final rinse portion of the total wash cycle time.

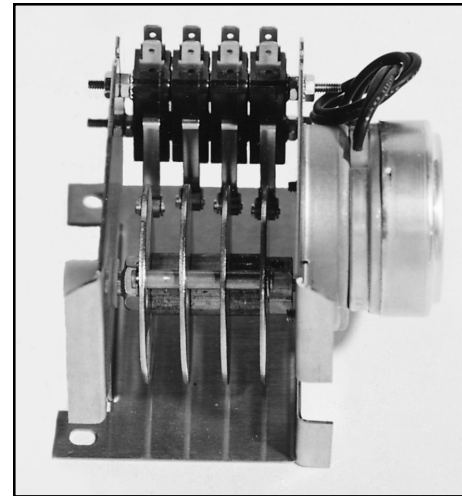


Figure 14
Main Cycle Timer
(45 second)

Fill Timer —

Refer to Fig. 15.

The fill timer controls the dishwasher's fill operation. The timer consists of a timer motor, one micro-switch, and one non-adjustable plastic cam. The fill timer operates during initial fill. The fill timer also operates if main power is turned off and then turned back on even if the dishwasher is full of water.

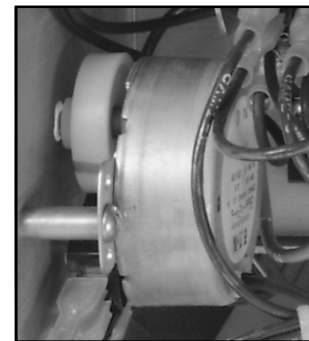


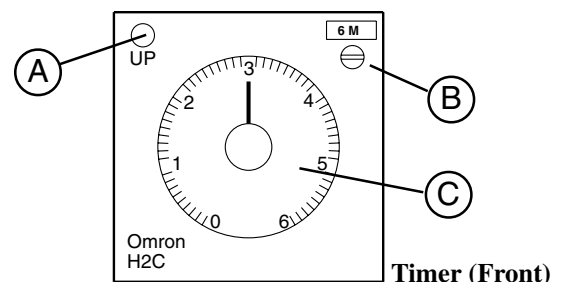
Figure 15
Fill Timer

Adjustable Wash Cycle Timers —

Refer to Fig. 16 and detail views to the right.

The adjustable cycle timers are preset for 2, 4, and 6 minutes at the factory. All the adjustable timers are powered at the same time and run concurrently. Each timer has an indicator lite (A) on the front. The lite is "ON" when the timer is counting down.

Replacement timers are not preset. The installer must set the time range (B) to "6M" for six minutes. The timer dial (C) should be turned to match the original timer setting. The Hertz selector (D) must be set to match the supplied HZ, 50Hz or 60Hz. The adjustable timers are interchangeable.



Timer (Front)

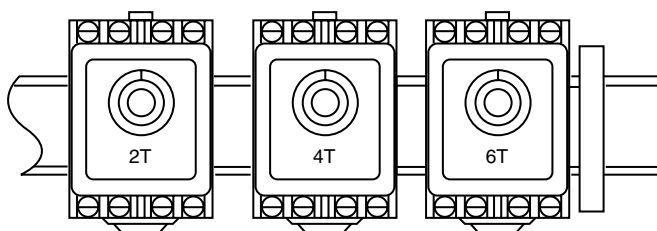
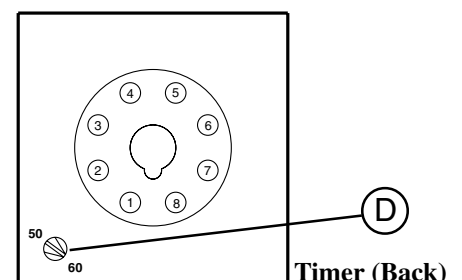


Figure 16
Cycle Timers (2, 4, and 6 minute)



Timer (Back)

ELECTRICAL SERVICE (Cont.)

Heater Element Wiring – Booster Tank and Wash Tank Heater Elements

Refer to the illustrations and follow the steps below to properly install terminal jumpers and to make line power connections to a replacement element.

Step 1. Hold the element assembly with the calrod coils facing toward you.

Step 2. Match your element coil to Configuration A, B, C, or D.

Step 3. Rotate your element coils to match the correct configuration.

Step 4. Turn the element over and match your element to the correct terminal configuration.

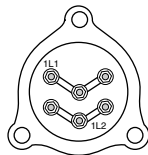
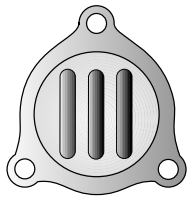
Step 5. Install terminal jumpers according to the illustration for your voltage requirement.

Step 6. Install the element and make your line connections 1L1, 1L2, or 1L3 per the illustration.

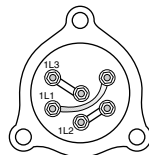
Configuration A

Booster tank element

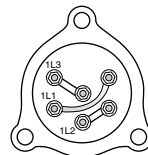
View of calrod coils



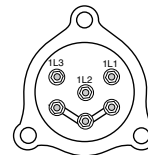
208V/1 Phase



208-240V/3 Phase
Delta Connection



480V/3 Phase
575V/3 Phase
Delta Connection



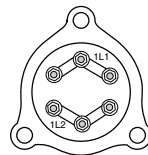
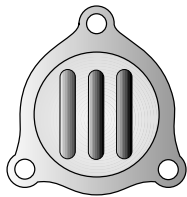
208-240V/3 Phase
Wye Connection for
380-415V/3 Phase

Terminal Connections View of element

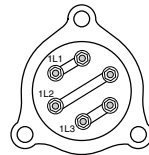
Configuration B

Booster tank element

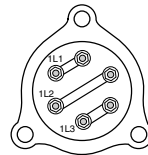
View of calrod coils



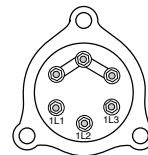
208V/1 Phase



208-240V/3 Phase
Delta Connection



480V/3 Phase
575V/3 Phase
Delta Connection



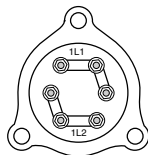
208-240V/3 Phase
Wye Connection for
380-415V/3 Phase

Terminal Connections View of element

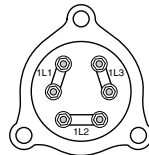
Configuration C

Booster tank element

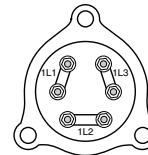
View of calrod coils



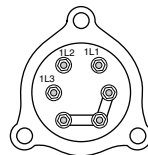
208V/1 Phase



208-240V/3 Phase
Delta Connection



480V/3 Phase
575V/3 Phase
Delta Connection



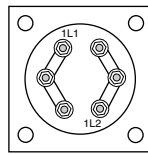
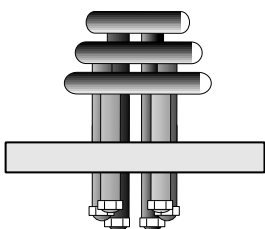
208-240V/3 Phase
Wye Connection for
380-415V/3 Phase

Terminal Connections View of element

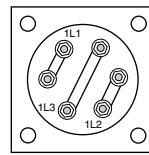
Configuration D

Wash tank element

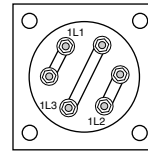
View of calrod coils



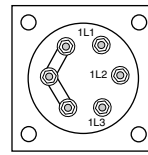
208V/1 Phase



208-240V/3 Phase
Delta Connection



480V/3 Phase
575V/3 Phase
Delta Connection



208-240V/3 Phase
Wye Connection for
380-415V/3 Phase

Terminal Connections View of element

Figure 17
Heater Element Wiring

ELECTRICAL SERVICE (Cont.)

Motor Connections —

1. Models D-HBT and D-H1T are available in either single phase or 3 phase voltages.
2. Motor rotation was set at the factory. For three phase machines, reversing the motor direction is done in the control cabinet by reversing the wires L1 and L2 on the disconnect side of the main electrical connection block. For single phase machines, motor rotation is changed at the motor connection plate on the rear of the single phase motor (if necessary).

Refer to Fig. 18 for the proper wiring of the pump motor for single and three phase voltages.

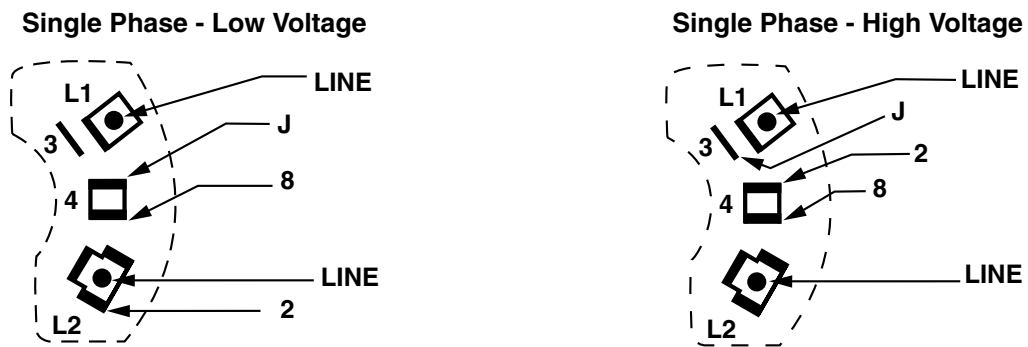
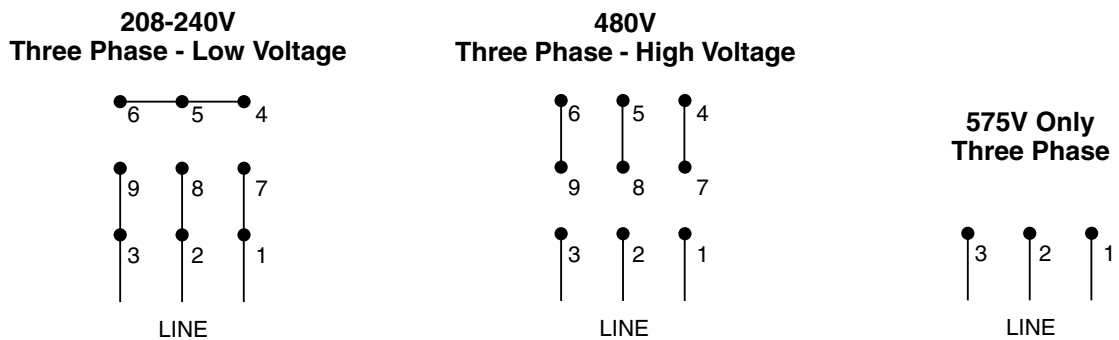


Figure 18
Pump Motor Wiring Diagrams



MECHANICAL SERVICE

Pump Seal Replacement

1. Disconnect the power to the machine at the main breaker panel or fuse box.
2. Drain the machine.
3. Remove the front and side panels.
4. Remove drain plug on the pump volute and drain the pump.
5. Remove the pump hoses.
6. Disconnect the wires to the motor at the motor junction box.
7. Unbolt motor from machine base and remove the pump/motor assembly.
8. Remove bolts on volute and carefully remove from the pump flange.
9. Remove the impeller retaining bolt and nut from center of impeller.
10. Lock the motor shaft with a wrench or pliers. The back of motor shaft is square.
11. Turn the impeller counter-clockwise to remove from shaft (right hand threads).
12. Remove the old seal and discard.
13. Check seal seat in the pump flange and clean thoroughly.
14. Press rubber seal/ceramic portion of seal assembly into the pump flange. Use a water soluble lubricant. Be careful to keep the ceramic clean.
15. Install the rotating part of the seal on the shaft with the graphite surface toward the ceramic. Use a water soluble lubricant on the rubber seal part only (not the graphite).
16. Reinstall impeller, and new flange gasket. Reinstall bolts. Reinstall drain plug.
17. Reinstall the pump/motor assembly and reconnect the pump hoses.
18. Fill the dishwasher with water.
19. Check motor rotation by bump starting motor.
Correct motor shaft rotation is clockwise when viewing motor from the rear.
20. Test run and check for leaks.

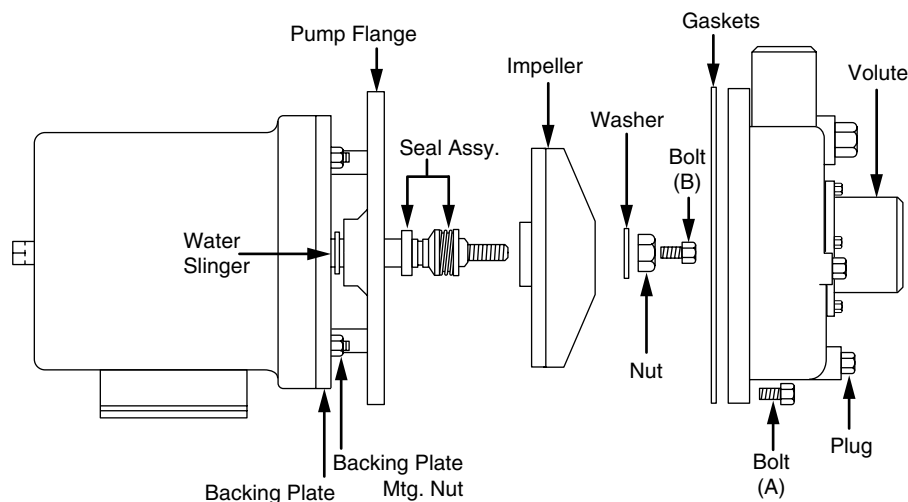


Figure 19
Pump Seal Replacement

REPLACEMENT PARTS

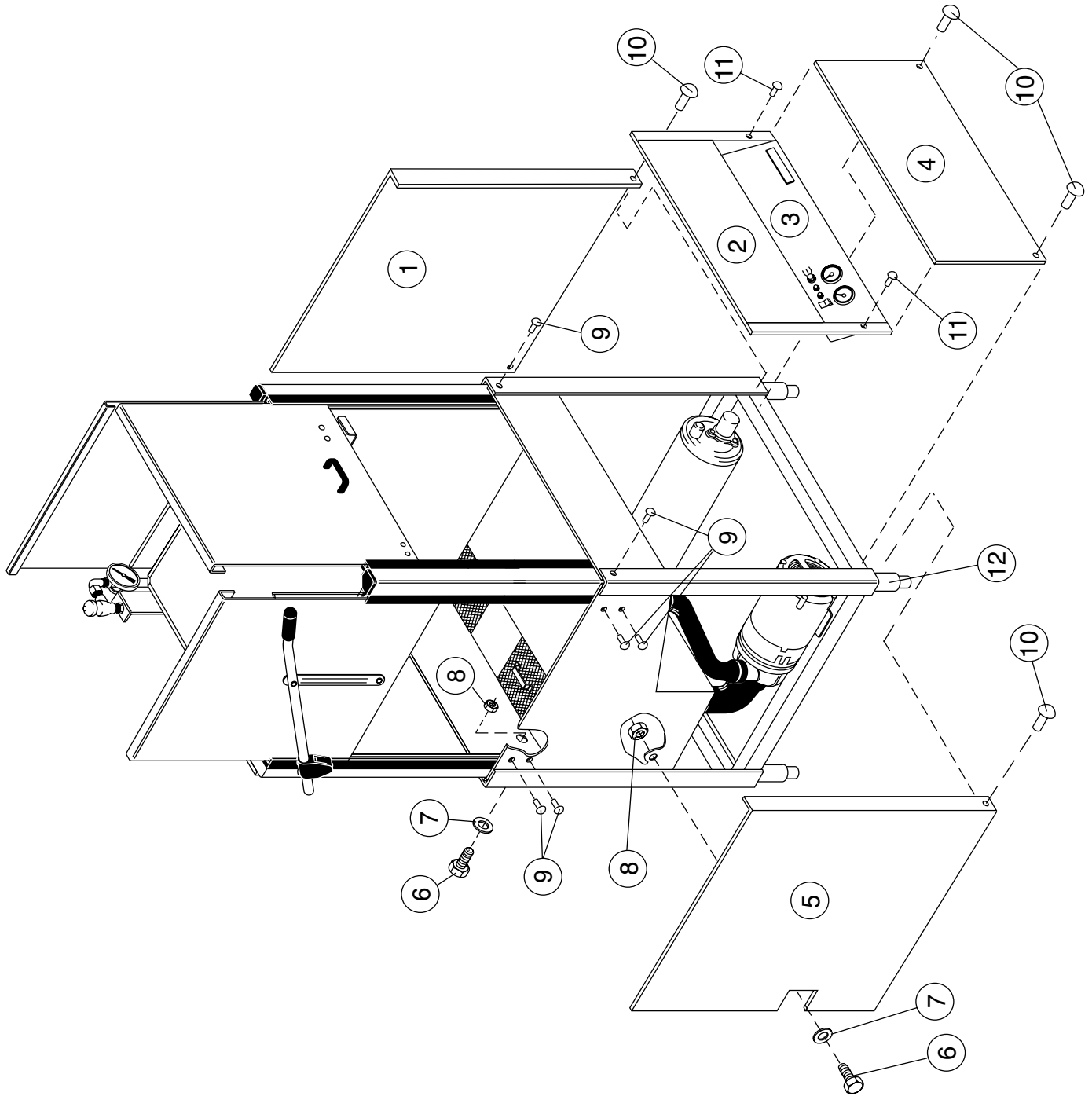


Figure 20 - D-HBT/D-H1T
Panels

**D-HBT
PANELS**

Fig. 20 Item No.	Part No.	Part Description	Qty.
1	321929	RH PANEL NO CUT OUT	1
2	321933	PANEL, INSTRUMENT	1
3	112388	DECAL, CONTROL PANEL	1
4	322074	PANEL, FRONT LOWER	1
5	321941	LH PANEL W/CUTOUT	1
6	108418	PLUG PLASTIC	2
7	109034	WASHER 13/16 X 1-13/16 FIBER	2
8	108417	NUT, PLASTIC	2
9	100779	SCREW, 1/4-20 X 5/8 TRUSS HEAD	6
10	0504822	SCREW, 8-32 X 1/2 PAN HEAD	4
11	100763	SCREW, 10-32 X 1-1/4 ROUND HEAD	2
12	112587	FOOT, CAST GREY	4

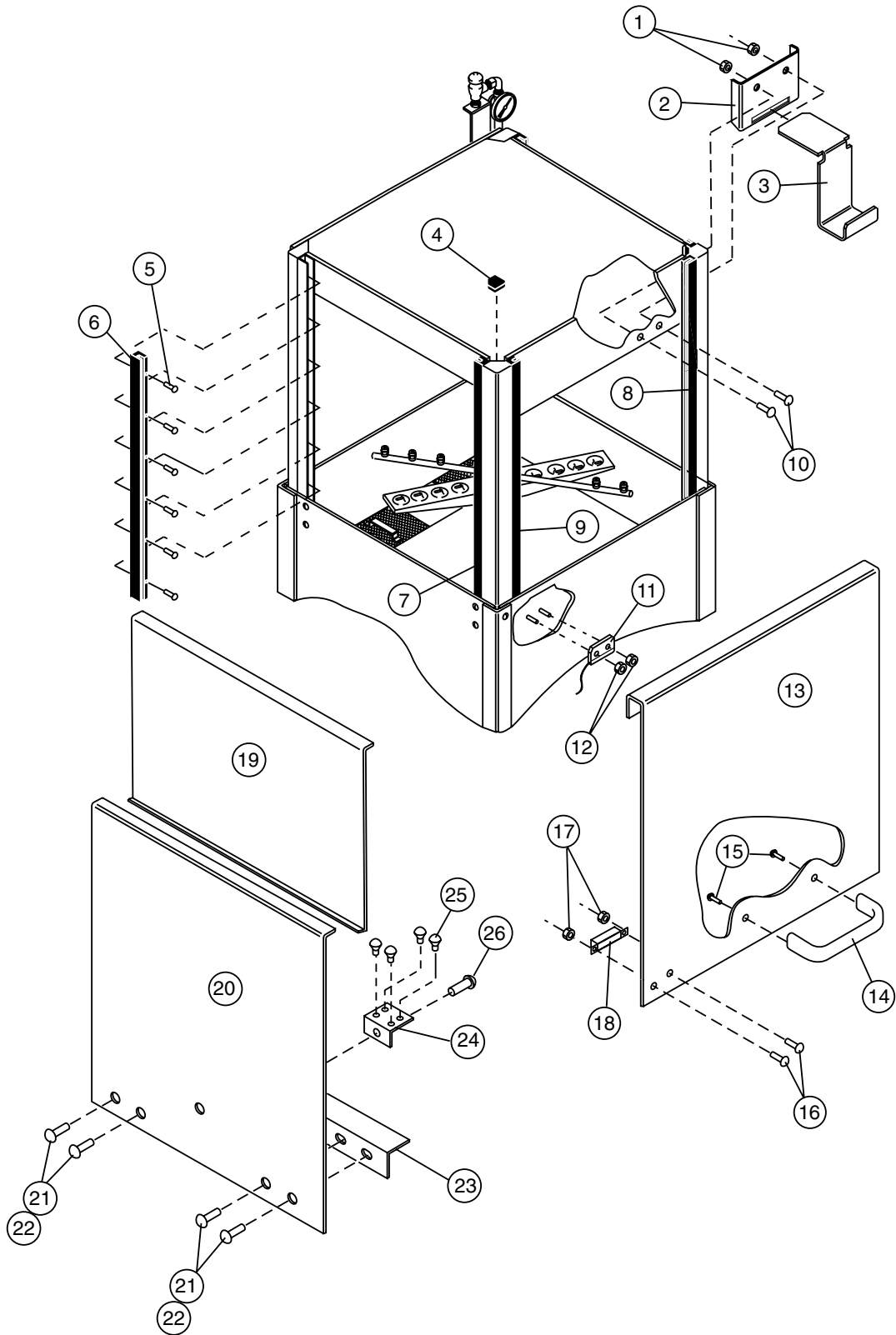


Figure 21 - DHB-T/DH1-T
Doors, Guides, & Stops
(Prior to S/N 91612)

DHB-T/DH1-T
DOORS, GUIDES, & STOPS
(Prior to S/N 91612)

Fig. 21 Item No.	Part No.	Part Description	Qty.
1	100141	NUT, GRIP 1/4-20 SST	2
2	317345	BRACKET, DOOR CATCH	1
3	317344	HOOK, DOOR CATCH	1
4	108053	PLUG, CORNER POST	2
5	107970	SCREW, 8/32 X 1 FILLISTER HEAD	48
6	112704	DOOR GUIDE, SIDE DOOR LEFT	2
7	112705	DOOR GUIDE, SIDE DOOR RIGHT	2
8	112703	DOOR GUIDE, FRONT DOOR RIGHT	1
9	112702	DOOR GUIDE, FRONT DOOR LEFT	1
10	100073	SCREW, 1/4-20 X 1/2 TRUSS HEAD	1
11	111090	SWITCH, MAGNETIC	1
12	108954	NUT, GRIP 6-32	2
13	322790	DOOR, FRONT	1
14	108966	HANDLE, DOOR	1
15	100073	SCREW, 1/4-20 X 1/2 TRUSS HEAD	2
16	106382	SCREW, 6-32 X 3/8 TRUSS HEAD	2
17	108954	NUT, GRIP 6-32	2
18	111026	MAGNET	1
19	—	SIDE DOOR, UPPER (Replaced by Kit 900793, see below)	2
20	322788	SIDE DOOR, LOWER	2
21	100097	SCREW, 10-32 X 1/2 TRUSS HEAD	8
22	107966	NUT, GRIP 10-32	2
23	322077	SPLASH GUARD	2
24	323066	DOOR STOP	2
25	107893	SHOCK ABSORBER	8
26	100740	BOLT, 5/16-18 X 1 HEX HEAD	2
—	900793	KIT, SIDE DOOR	1
		(Refer to Figure 23, page 40)	
		(Kit includes:	
		Qty. 1, Item 19, Qty. 2, Item 25, Qty. 1, Items 27-28, Qty. 4, Item 29)	

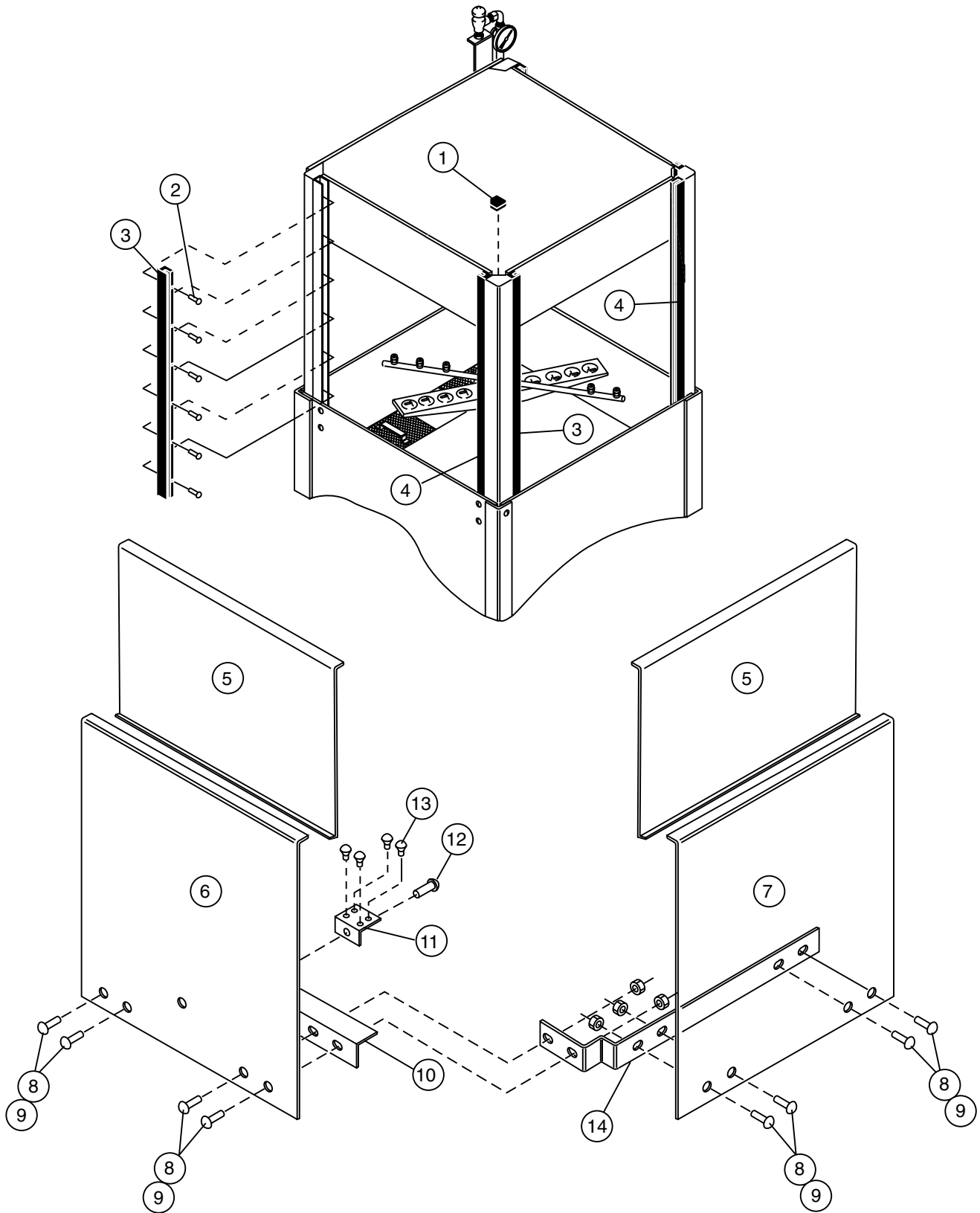


Figure 22 - DHB-TC/DH1-TC
Doors, Guides, & Stops (Corner Model Only)
(Prior to S/N 91612)

DHB-TC/DH1-TC
DOORS, GUIDES, & STOPS (Corner Model Only)
(Prior to S/N 91612)

Fig. 22 Item No.	Part No.	Part Description	Qty.
1	108053	PLUG, CORNERPOST	2
2	107970	SCREW, 8-32 X 1 FILISTER HEAD	32
3	112704	GUIDE, DOOR LEFT	2
4	112705	GUIDE, DOOR RIGHT	2
5	—	DOOR, UPPER (Replaced by Kit 900793, see below)	2
6	322788	DOOR, LOWER SIDE	1
7	323221-S	DOOR LOWER FRONT	1
8	100097	SCREW 10-32 X 1/2 TRUSS HEAD	8
9	107966	NUT, GRIP 10-32	8
10	322077	GUARD, SPLASH	1
11	323006	STOP, DOOR	1
12	100740	BOLT, 5/16-18 X 1 HEX HEAD	1
13	107893	SHOCK ABSORBER	4
14	323224	BRACKET, CORNER MACHINE DOOR LIFT	1
—	900793	KIT, SIDE DOOR	1
		Refer to Figure 24, page 42)	
		(Kit Includes:	
		Qty. 1, Item 5, Qty. 2, Item 13, Qty. 1 Items 15-16, Qty. 4, Item 17)	

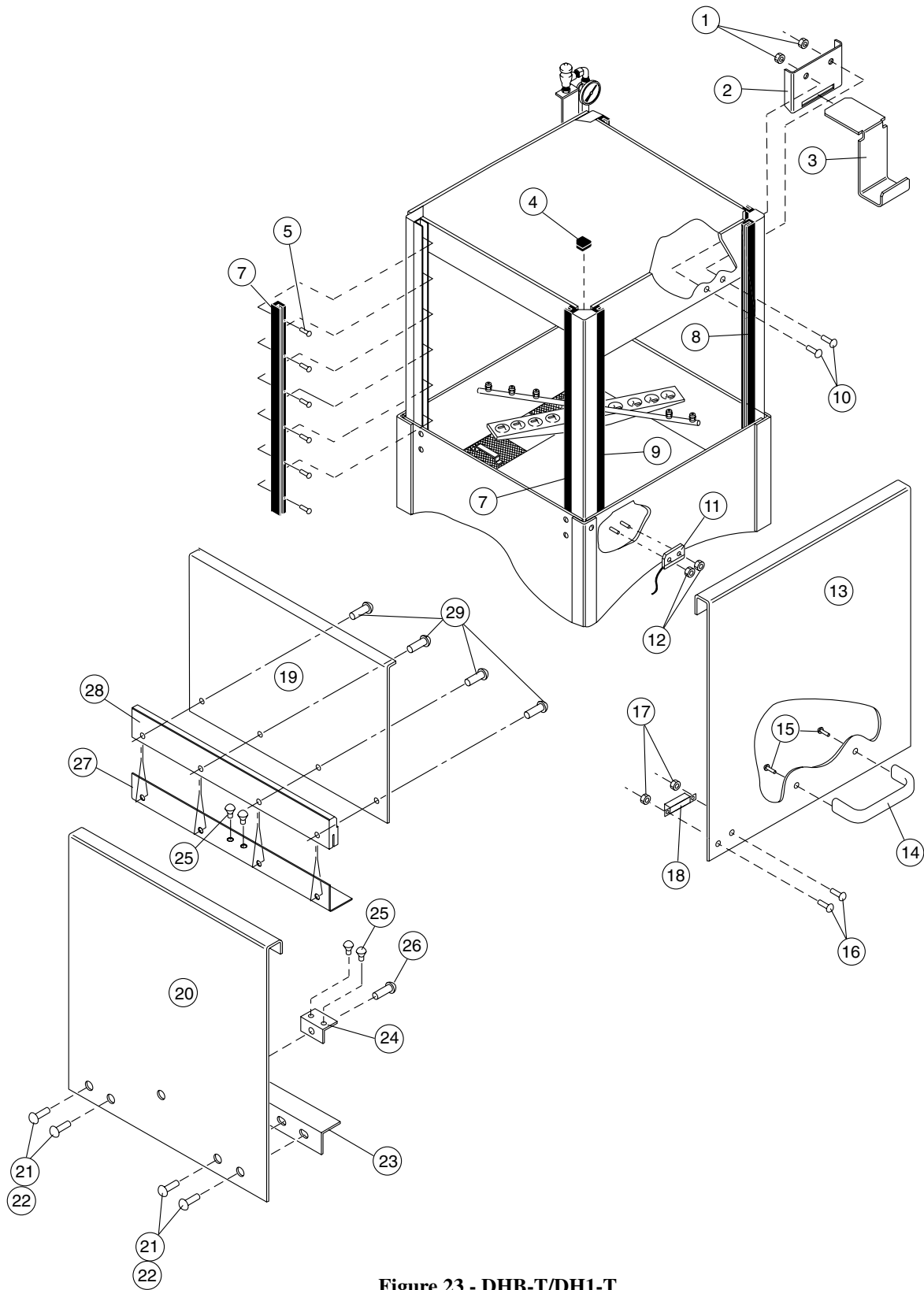


Figure 23 - DHB-T/DH1-T
Doors, Guides, & Stops
(For machines beginning with S/N 91612 and above)

DHB-T/DH1-T
DOORS, GUIDES, & STOPS
(For machines beginning with S/N 91612 and above)

Fig. 23 Item No.	Part No.	Part Description	Qty.
1	100141	NUT, GRIP 1/4-20 SST	2
2	317345	BRACKET, DOOR CATCH	1
3	317344	HOOK, DOOR CATCH	1
4	108053	PLUG, CORNER POST	2
5	107970	SCREW, 8/32 X 1 FILLISTER HEAD	48
6	112704	DOOR GUIDE, SIDE DOOR LEFT	2
7	112705	DOOR GUIDE, SIDE DOOR RIGHT	2
8	112703	DOOR GUIDE, FRONT DOOR RIGHT	1
9	112702	DOOR GUIDE, FRONT DOOR LEFT	1
10	100073	SCREW, 1/4-20 X 1/2 TRUSS HEAD	1
11	111090	SWITCH, MAGNETIC	1
12	108954	NUT, GRIP 6-32	2
13	322790	DOOR, FRONT	1
14	108966	HANDLE, DOOR	1
15	100073	SCREW, 1/4-20 X 1/2 TRUSS HEAD	2
16	106382	SCREW, 6-32 X 3/8 TRUSS HEAD	2
17	108954	NUT, GRIP 6-32	2
18	111026	MAGNET	1
19	322789	SIDE DOOR, UPPER	2
20	322788	SIDE DOOR, LOWER	2
21	100097	SCREW, 10-32 X 1/2 TRUSS HEAD	8
22	107966	NUT, GRIP 10-32	2
23	322077	SPLASH GUARD	2
24	323066	DOOR STOP	2
25	107893	SHOCK ABSORBER	8
26	100740	BOLT, 5/16-18 X 1 HEX HEAD	2
27	323305	ANGLE, DOOR STOP	2
28	112772	STOP, DELRIN SPLASH BAFFLE	2
29	100097	SCREW, 10-32 X 1/2 TRUSS HEAD	8

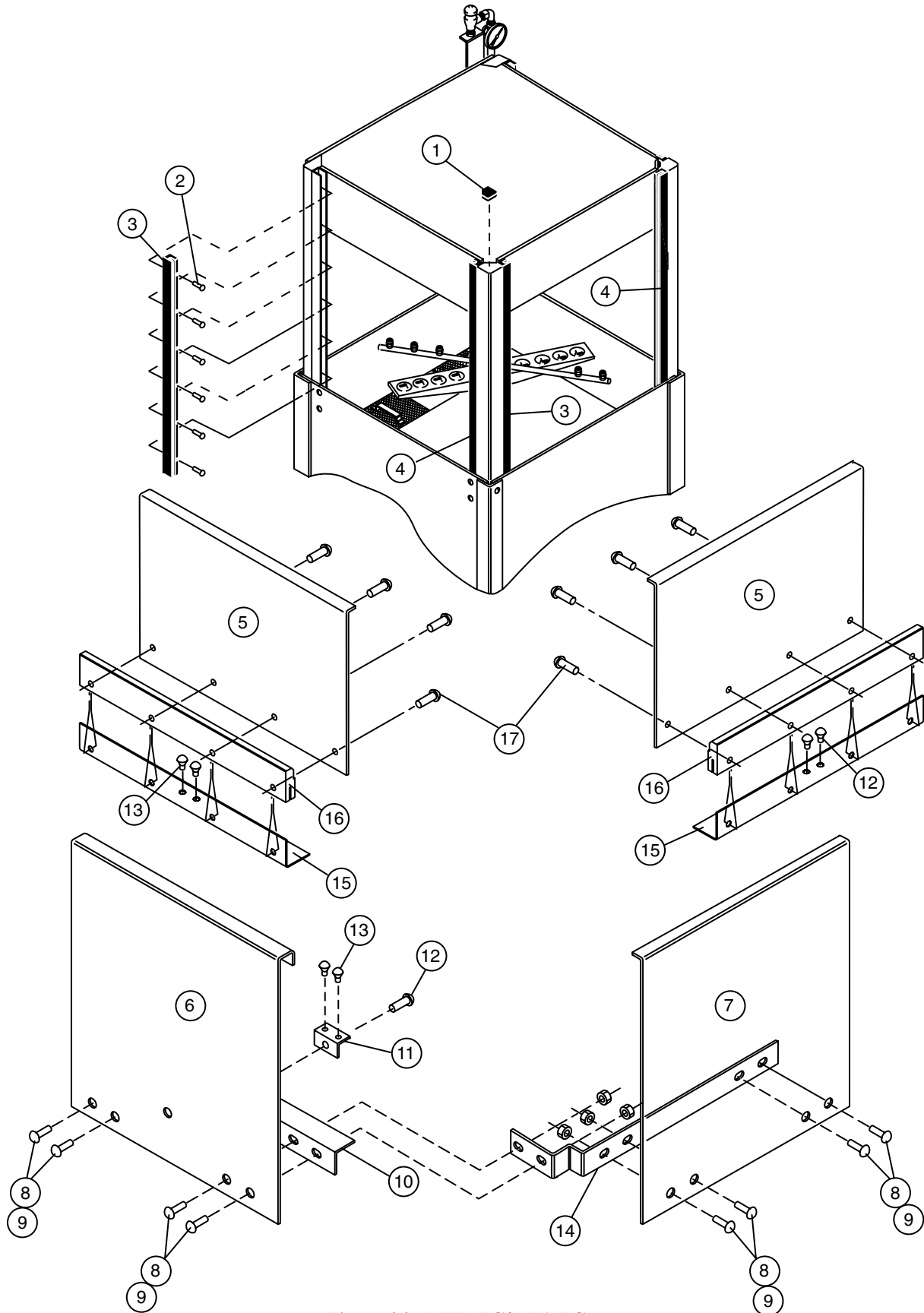


Figure 24 - DHB-TC/DH1-TC
Doors, Guides, & Stops (Corner Model Only)
(For machines beginning with S/N 91612 and above)

DHB-TC/DH1-TC
DOORS, GUIDES, & STOPS (Corner Model Only)
(For machines beginning with S/N 91612 and above)

Fig. 24 Item No.	Part No.	Part Description	Qty.
1	108053	PLUG, CORNERPOST	2
2	107970	SCREW, 8-32 X 1 FILISTER HEAD	32
3	112704	GUIDE, DOOR LEFT	2
4	112705	GUIDE, DOOR RIGHT	2
5	322789	DOOR, UPPER (Replaced by Kit 900793 , see below)	2
6	322788	DOOR, LOWER SIDE	1
7	323221-S	DOOR, LOWER FRONT	1
8	100097	SCREW 10-32 X 1/2 TRUSS HEAD	8
9	107966	NUT, GRIP 10-32	8
10	322077	GUARD, SPLASH	1
11	323006	STOP, DOOR	1
12	100740	BOLT, 5/16-18 X 1 HEX HEAD	1
13	107893	SHOCK ABSORBER	6
14	323224	BRACKET, CORNER MACHINE DOOR LIFT	1
15	323305	ANGLE, DOOR STOP	2
16	112772	STOP, DELRIN SPLASH BAFFLE	2
17	100097	SCREW, 10-32 X 1/2 TRUSS HEAD	8

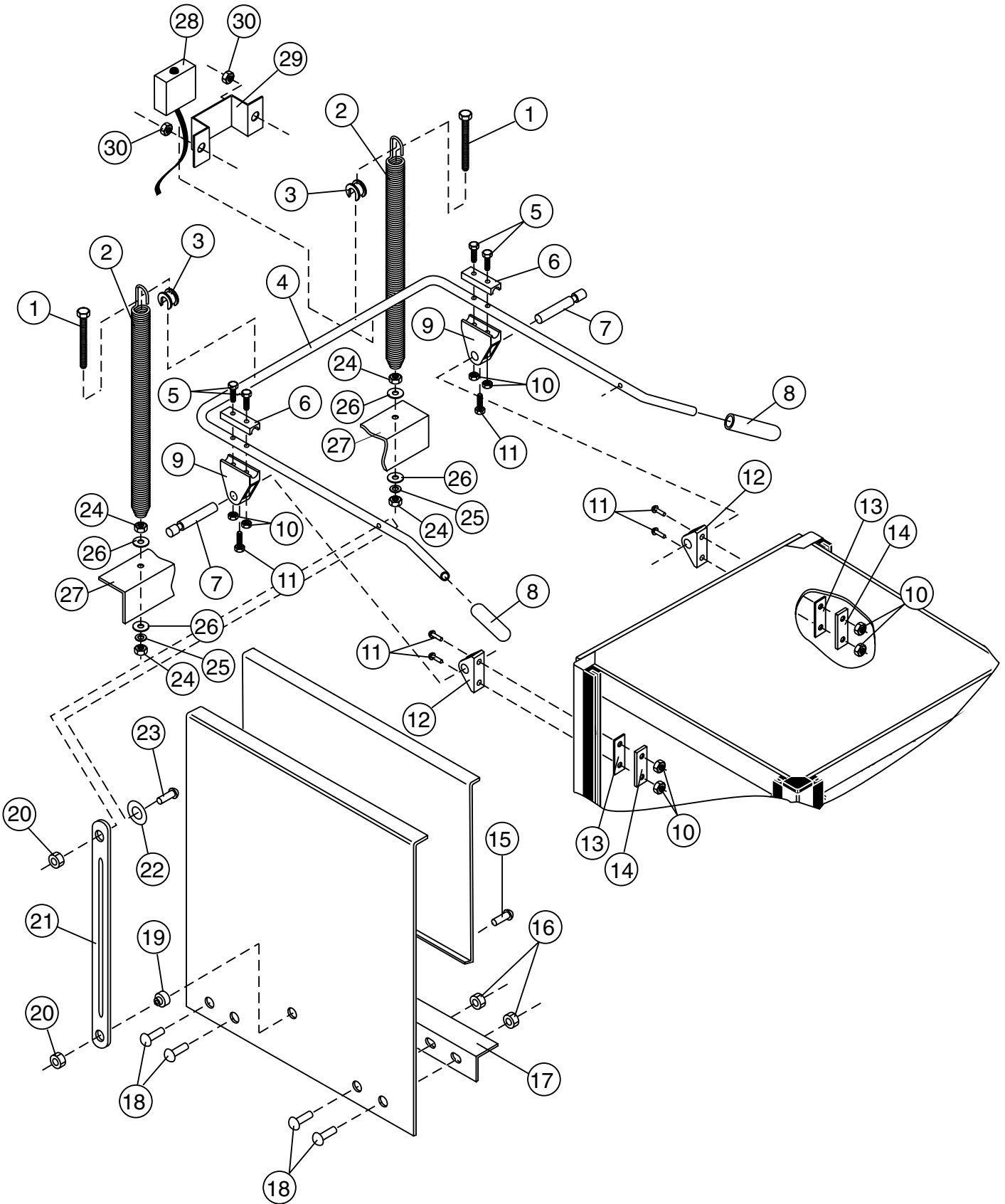


Figure 25 - D-HBT/D-H1T
Door Handle, Spring Assembly, and Safety Switch

**D-HBT/D-H1T
DOOR HANDLE , SPRING ASSEMBLY, AND SAFETY SWITCH**

Fig. 25 Item No.	Part No.	Part Description	Qty.
1	0509168	BOLT 5/16-18 X 11 HEX HEAD	2
2	108066	SPRING, EXTENSION	2
3	107397	BLOCK, SPRING HOOK	2
4	0509166	DOOR HANDLE	1
5	107437	BOLT M6 X 45MM HEX HEAD	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 16MM FILISTER	6
12	107399	SUPPORT, PIVOT BLOCK	2
13	108368	GASKET, BACKING	2
14	304811	PLATE, BACKING	2
15	100740	BOLT 5/16-18 X 1 HEX HEAD	2
16	107966	NUT, GRIP 10-32 W/NYLON INSERT	8
17	322077	GUARD, SPLASH	2
18	100097	SCREW 10-32 X 1/2 TRUSS HEAD	8
19	0509264	BUSHING, SIDE DOOR	2
20	0509274	NUT, ACORN 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	4
25	106013	WASHER, LOCK 5/16 SPLIT	2
26	102376	WASHER 5/16 X 3/4 X 1/16	4
27	321927	SPRING ANCHOR BRACKET	1
28	0509199	SWITCH, DOOR SAFETY	1
29	0309451	BRACKET, SWITCH	1
30	107967	NUT, GRIP (1/4-20 W/NYLON INSERT)	2

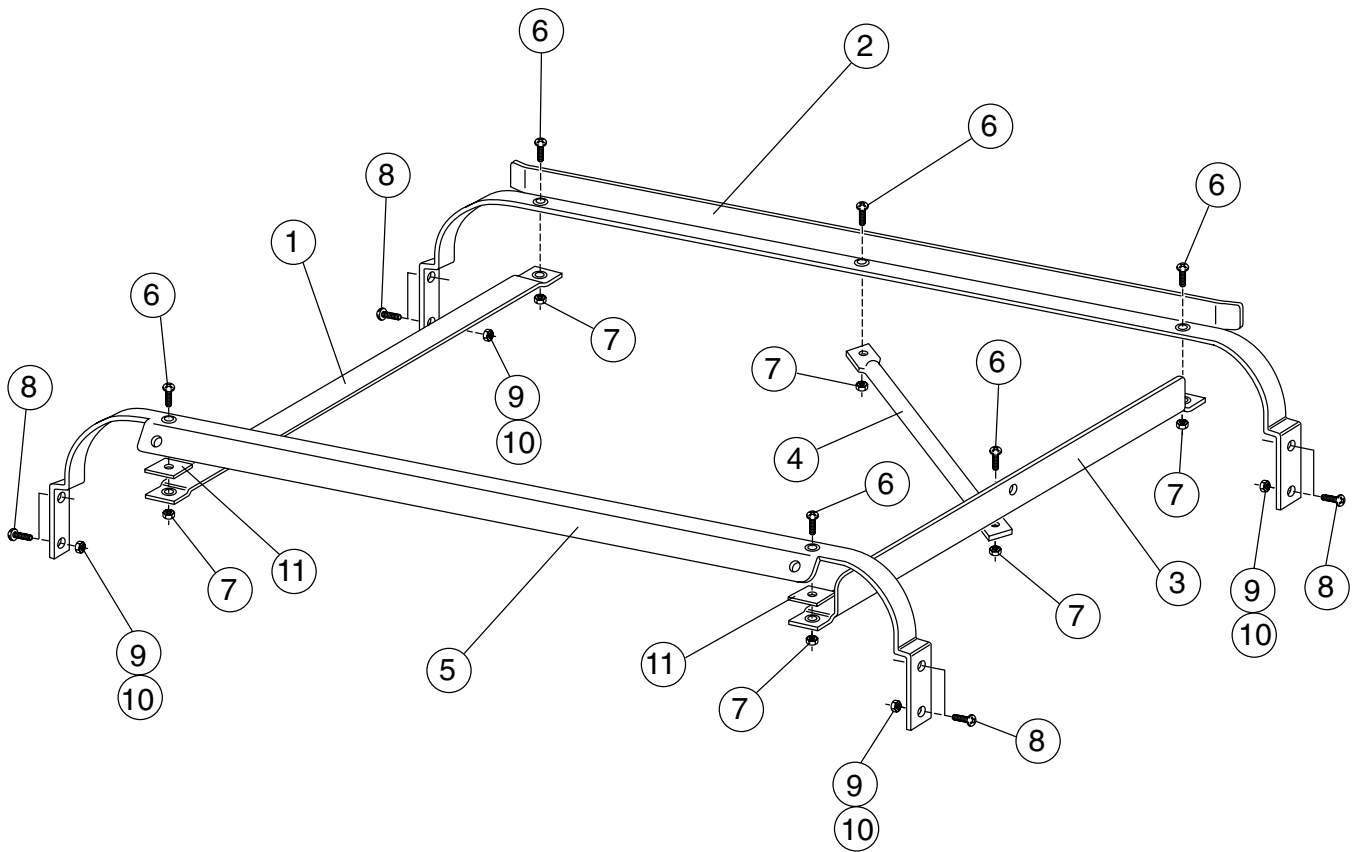


Figure 26 - D-HBT/D-H1T
Track Assembly
(Corner configuration shown)

**D-HBT/D-H1T
TRACK ASSEMBLY**

Fig. 26 Item No.	Part No.	Part 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)	6
7	107966	NUT, GRIP (10-32 W/NYLON INSERT)	6
8	100779	BOLT (1/4 -20 X 5/8 TRUSS HD).....	8
9	106482	WASHER, LOCK	8
10	100003	NUT (1/4-20 HEX HD)	8
11	0309473	SPACER	2

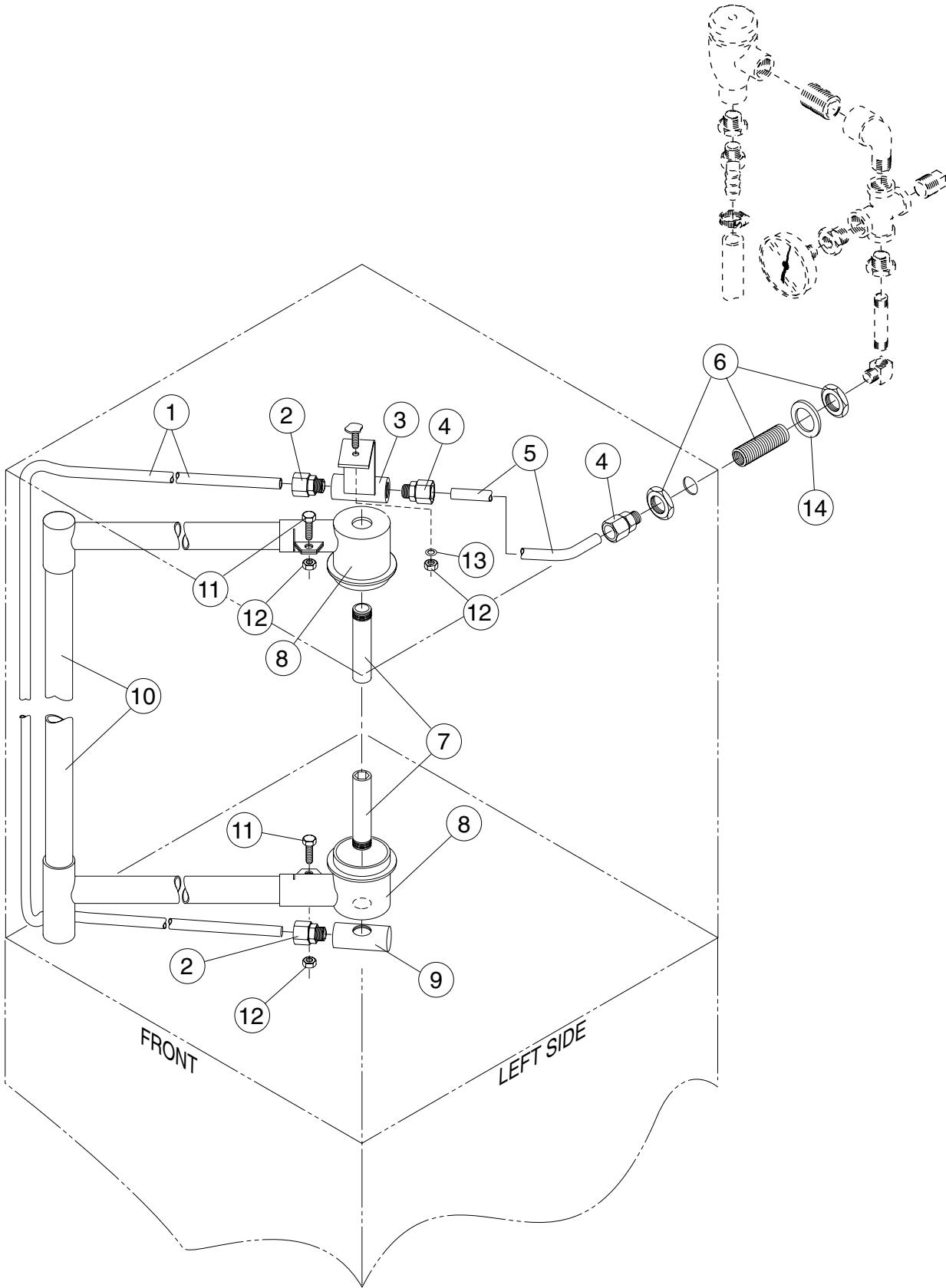


Figure 27 - D-HBT/D-H1T
Wash/Rinse Spray Piping

**D-HBT/D-H1T
WASH/RINSE SPRAY PIPING**

Fig. 27 Item No.	Part No.	Part Description	Qty.
1	112688	RINSE TUBE	1
2	0509181	FITTING, STRAIGHT COMPRESSION	2
3	0509150	CONNECTOR, TOP RINSE	1
4	0509180	FITTING, STRAIGHT COMPRESSION	2
5	0309445	RINSE TUBE, TOP	1
6	0509179	FITTING, BULKHEAD 1/2"NPT	1
7	0507445	SPINDLE, WASH ARM	2
8	109864	SUPPORT, WASH ARM	2
9	0509178	CONNECTOR, BOTTOM RINSE	1
10	112684	STANDPIPE, WASH	1
11	100736	BOLT 1/4-20 X 3/4 HEX HEAD	2
12	107967	NUT, GRIP 1/4-20	1
13	106482	WASHER, SPLIT LOCK SST	2
14	0309350	WASHER	1

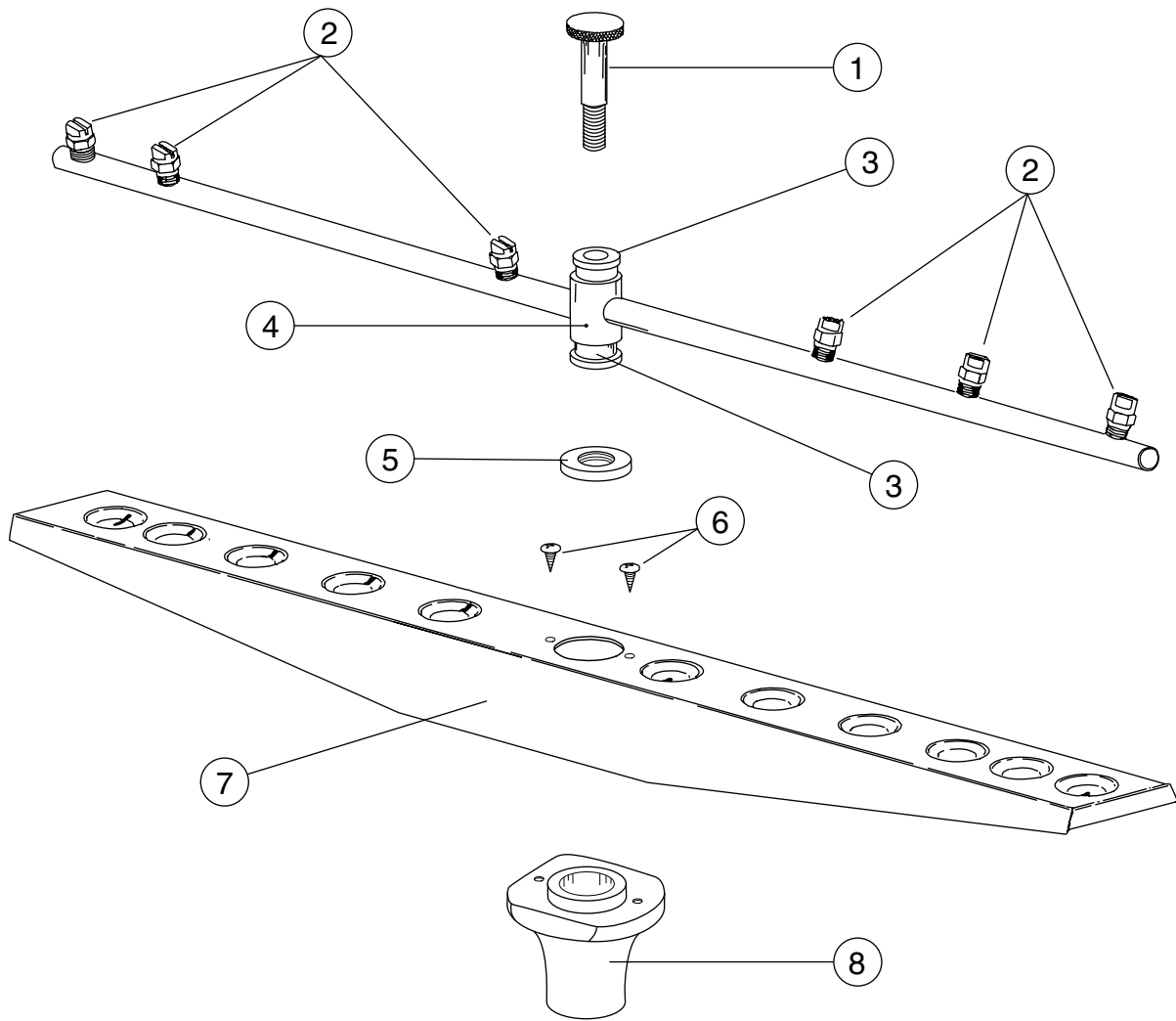


Figure 28 - D-HBT/D-H1T
Wash/Rinse Spray Arms

**D-HBT/D-H1T
WASH/RINSE SPRAY ARMS**

Fig. 28 Item No.	Part No.	Part Description	Qty.
1	0507443	SPINDLE, RINSE ARM	2
2	0508376	NOZZLE, RINSE ARM (D-HBT/ D-H1T ONLY).....	12
3	112164	BEARING, RINSE ARM.....	4
4	0707453	RINSE ARM ASSY. (INCLUDES 2 & 3)	2
5	0507444	NUT, RINSE ARM	2
6	109835	SCREW (#8 X 1/2 PAN HD)	4
7	0707452-S	WASH ARM ASSY. (INCLUDES 6 & 8).....	2
8	0507446	BEARING,WASH ARM	2
—	0707450	RINSE ARM (DOES NOT INCLUDE ITEMS 2, 3 OR 9)	
—	0707456	WASH ARM (DOES NOT INCLUDE ITEM 8)	

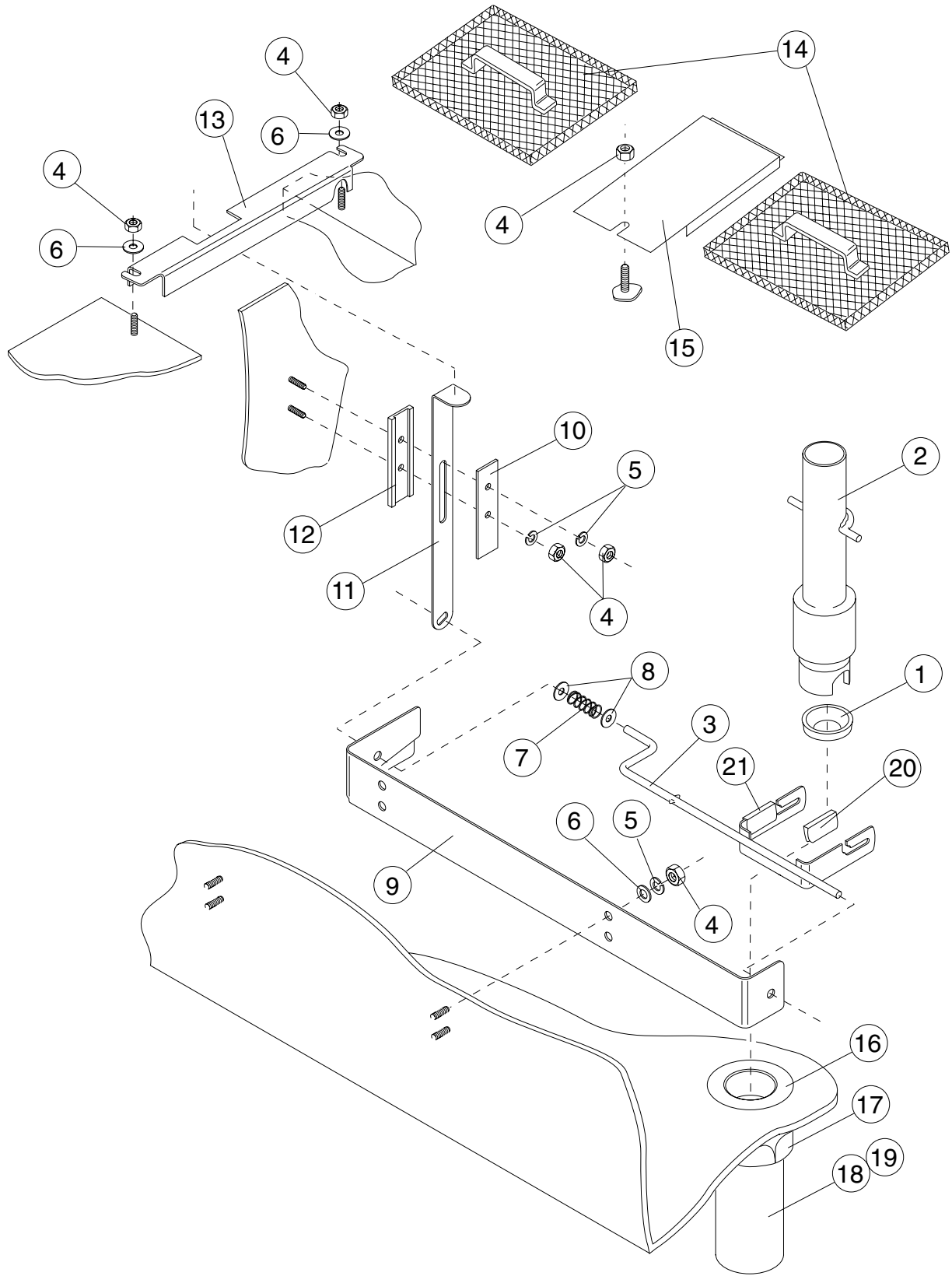


Figure 29 - D-HBT/D-H1T
Drain Assembly and Scrap Screens

**D-HBT/D-H1T
DRAIN ASSEMBLY AND SCRAP SCREENS**

Fig. 29 Item No.	Part No.	Part Description	Qty.
1	110427	SEAL OVERFLOW TUBE	1
2	112468	OVERFLOW	1
3	112469-S	OVERFLOW LIFT ARM	1
		(Must order with item 11 for machines built prior to S/N 91586) (For machines beginning with S/N 91586 and above, order separately)	
4	100003	NUT PLAIN 1/4 -20 SST	9
5	106482	WASHER LOCK 1/4 SPLIT	3
6	106026	WASHER 1/4 X 5/8 X 1/16 SST	3
7	111391	LIFT ARM SPRING	1
8	102376	WASHER 5/16 X 3/4 X 1/16	2
9	322217	ACTUATOR MOUNTING BRACKET	1
10	112463	ACTUATOR KEEPER PLATE	1
11	322218	ACTUATOR	1
12	112462	OVERFLOW ACTUATOR GUIDE	1
13	322216	LH FILLER PLATE	1
14	305164	SCREEN, SCRAP (10-3/8")	2
15	322215	CENTER SCREEN FILLER PLATE	1
16	107342	DRAIN BASKET	1
17	112044	SLIP NUT	1
18	112045	WASHER, TAILPIECE	1
19	107473	TAILPIECE	1
20	322547-1	RETAINER, CLIP LH	1
21	322547-1	RETAINER, CLIP LH	1

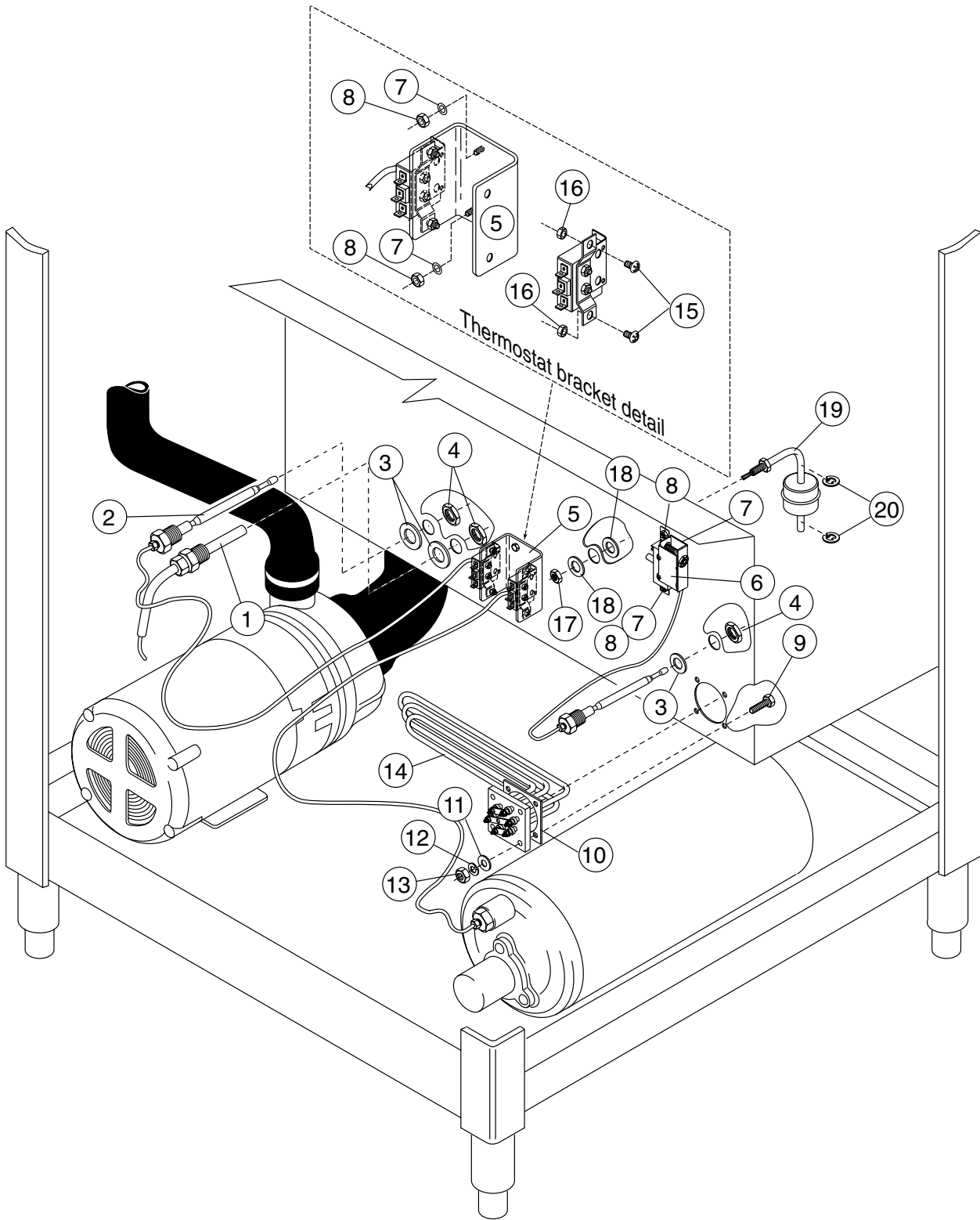


Figure 30 - D-HBT/D-H1T
Wash Tank Heat and Thermostats

**D-HBT/D-H1T
WASH TANK HEAT AND THERMOSTATS**

Fig. 30 Item No.	Part No.	Part Description	Qty.
1	108391	THERMOMETER 4 FT.	1
2	109069	THERMOSTAT W/CAP 110-220°F	1
3	201041	WASHER	3
4	201029	NUT, LOCK 1/2"	3
5	322076	DUAL THERMOSTAT BRACKET	1
6	110561	THERMOSTAT, FIXED HIGH LIMIT	1
7	106482	WASHER, LOCK 1/4 SPLIT SST	4
8	100003	NUT, PLAIN 1/4-20 SST	4
9	100740	BOLT 5/16-18 X 1 HEX HEAD	4
10	108345	GASKET 3 X 3 X 1/8 2"	1
11	102376	WASHER 5/16 X 3/4 X 1/16	8
12	106013	WASHER, LOCK 5/16 SPLIT	4
13	100154	NUT, PLAIN 5/16-18 SST	4
14	0509637	HEATER 3KW 115V/1PH	1
	0509185	HEATER 3KW 208-240/380-415V 1/3PH	1
	0509373	HEATER 3KW 460V/3PH	1
	0507707	HEATER 3KW 575V/3PH	1
15	100007	SCREW 10-32 X 3/8 TRUSS HEAD	4
16	107966	NUT, GRIP 10-32 W/NYLON INSERT	4
17	107089	NUT, JAM, 1/2-13	1
18	104882	WASHER	2
19	111092	FLOATSWITCH	1
20	111151	C-CLIP FLOATSWITCH	2

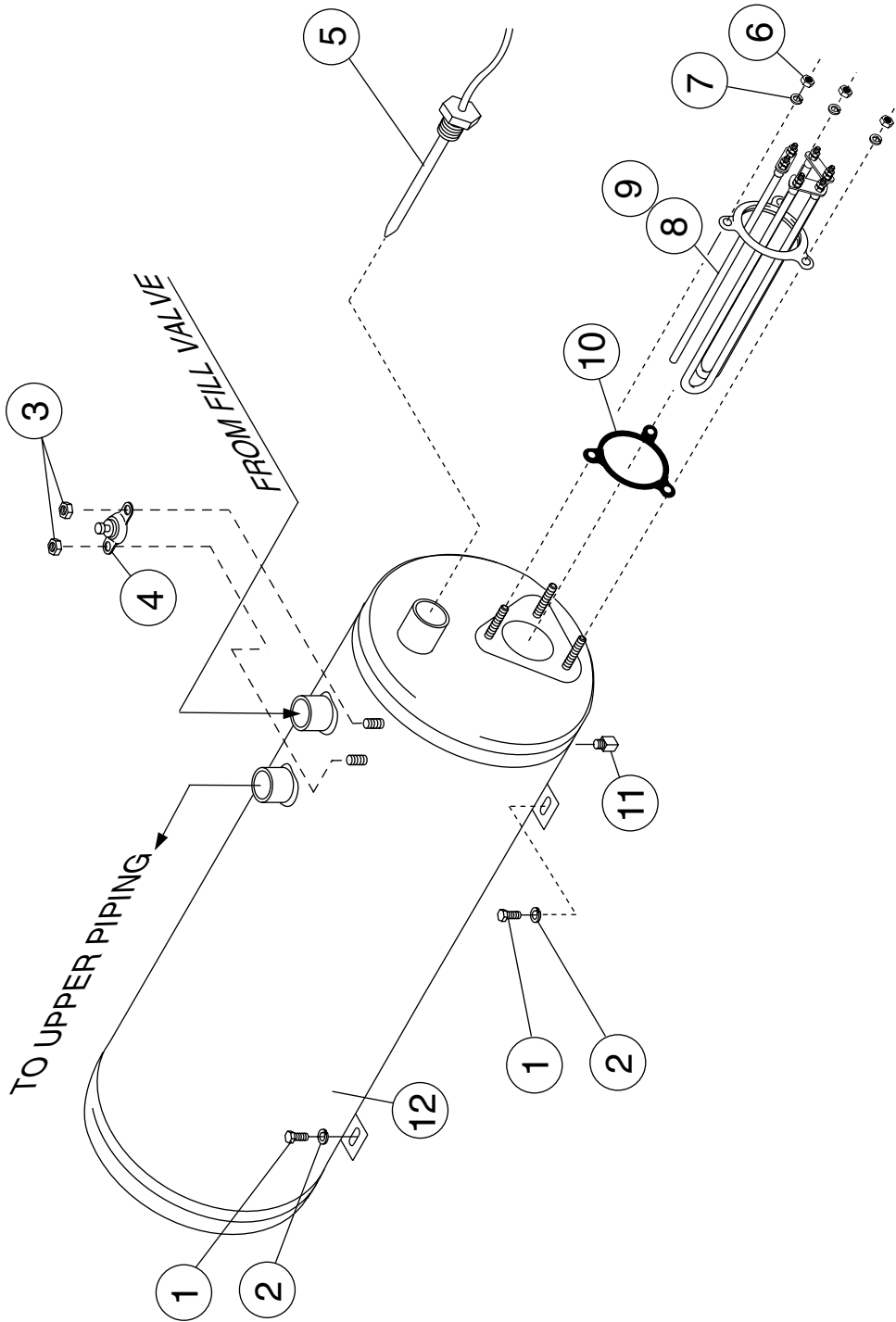


Figure 31 - D-HBT Only
Electric Booster and Thermostats

D-HBT ONLY
ELECTRIC BOOSTER AND THERMOSTATS

Fig. 31 Item No.	Part No.	Part Description	Qty.
1	100740	BOLT 5/16-18 X 1 HEX HEAD	2
2	102376	WASHER, FLAT 5/16 X 3/4 X 1/16	2
3	108954	NUT, GRIP 6-32 W/INSERT	2
4	110562	THERMOSTAT, HIGH LIMIT	1
	110563	COMPOUND, HEAT SINK	A/R
5	109069	THERMOSTAT, BOOSTER	1
6	100003	NUT, PLAIN 1/4-20 SST	3
7	106482	WASHER, LOCK 1/4 SPLIT	3
8	111233	HEATER 9KW 208-240/380-415V, 40°RISE (1 & 3 PHASE)	1
	108579	HEATER 9KW 480V, 40°RISE (3 PHASE ONLY)	1
	111122	HEATER 9KW 575V, 40°RISE (3 PHASE ONLY)	1
9	111266	HEATER 18KW 208-240/380-415V, 70°RISE (1 & 3 PHASE)	1
	111267	HEATER 18KW 480V, 70°RISE (3 PHASE ONLY)	1
	111600	HEATER 18KW 575V, 70°RISE (3 PHASE ONLY)	1
10	109985	SEAL, ELECTRIC HEATER	1
11	100210	PLUG 1/8 SST	1
12	0509042	TANK, BOOSTER	1

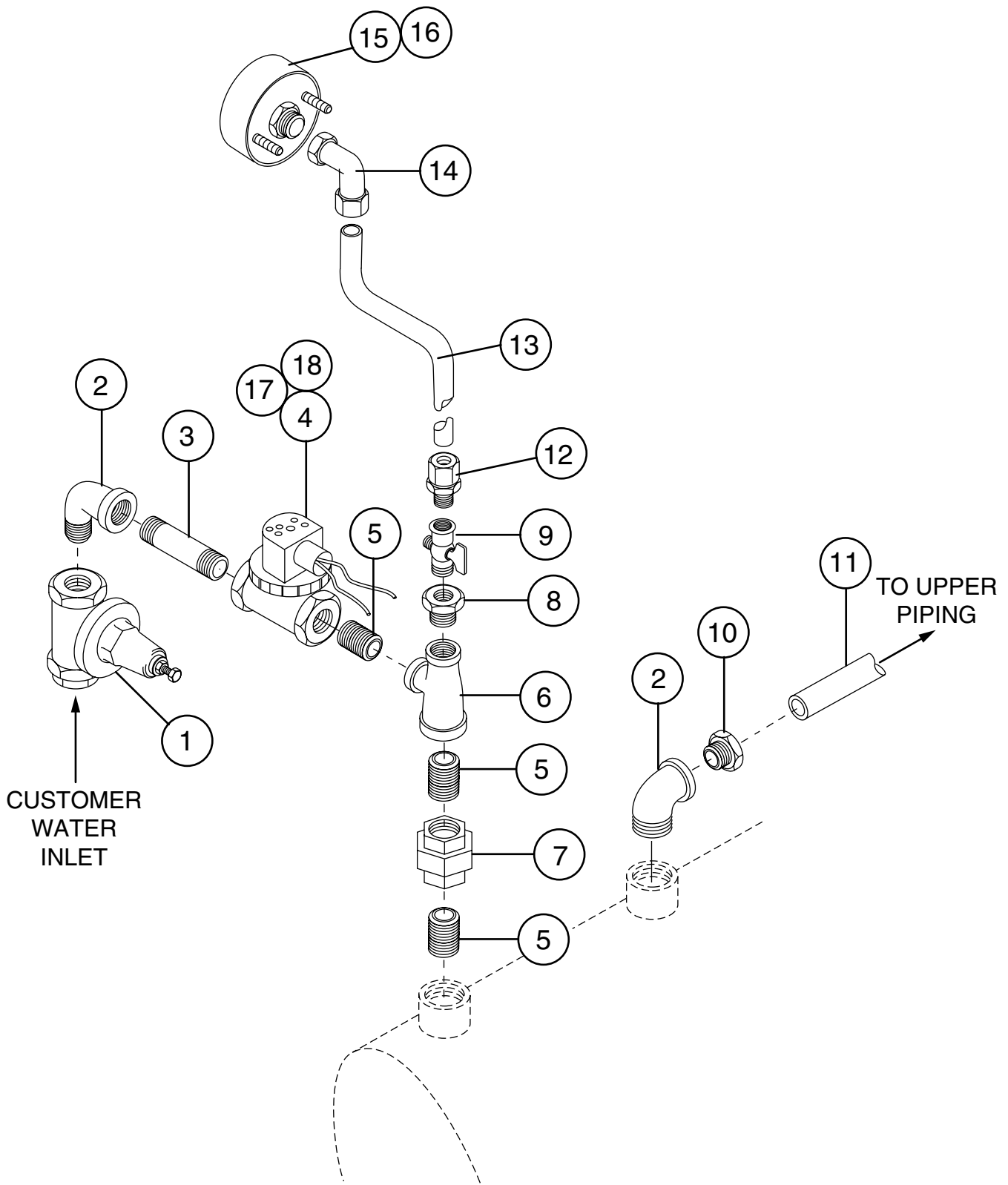


Figure 32 - D-HBT Only
Lower Fill Piping Assembly

**D-HBT ONLY
LOWER FILL PIPING ASSEMBLY**

Fig. 32 Item No.	Part No.	Part Description	Qty.
1	112387	LINE STRAINER/PRV COMBO	1
2	102444	STREET ELL 3/4" NPT BRASS	2
3	102651	NIPPLE 3/4" X 2" BRASS	1
4	111437	VALVE 3/4" NPT HOT WATER	1
5	100184	NIPPLE 3/4" NPT	3
6	102525	TEE 3/4" X 1/2" X 3/4" BRASS	1
7	100571	UNION 3/4" NPT BRASS	1
8	102388	BUSHING REDUCER 1/2" X 1/4" BRASS	1
9	112437	VALVE, NEEDLE 1/4"	1
10	109879	FITTING, COMPRESS, 3/4 NPT X 7/8 OD	1
11	205824	FINAL RINSE TUBE	1
12	107065	CONNECTOR, MALE 1/4" O.D. X 1/4 NPT	1
13	107928	TUBING, HIGH DENSITY	3FT.
14	111100	ELBOW, FEMALE 1/4" O.D. X 1/8 NPT	1
15	109812	GAUGE, PRESSURE 0-100 PSI	1
16	109816	OVERLAY, GAUGE 20-30 PSI	1
17	108516	COIL, SOLENOID VALVE (120V)	1
18	109903	KIT, REPAIR, 3/4" SOLENOID VALVE	1

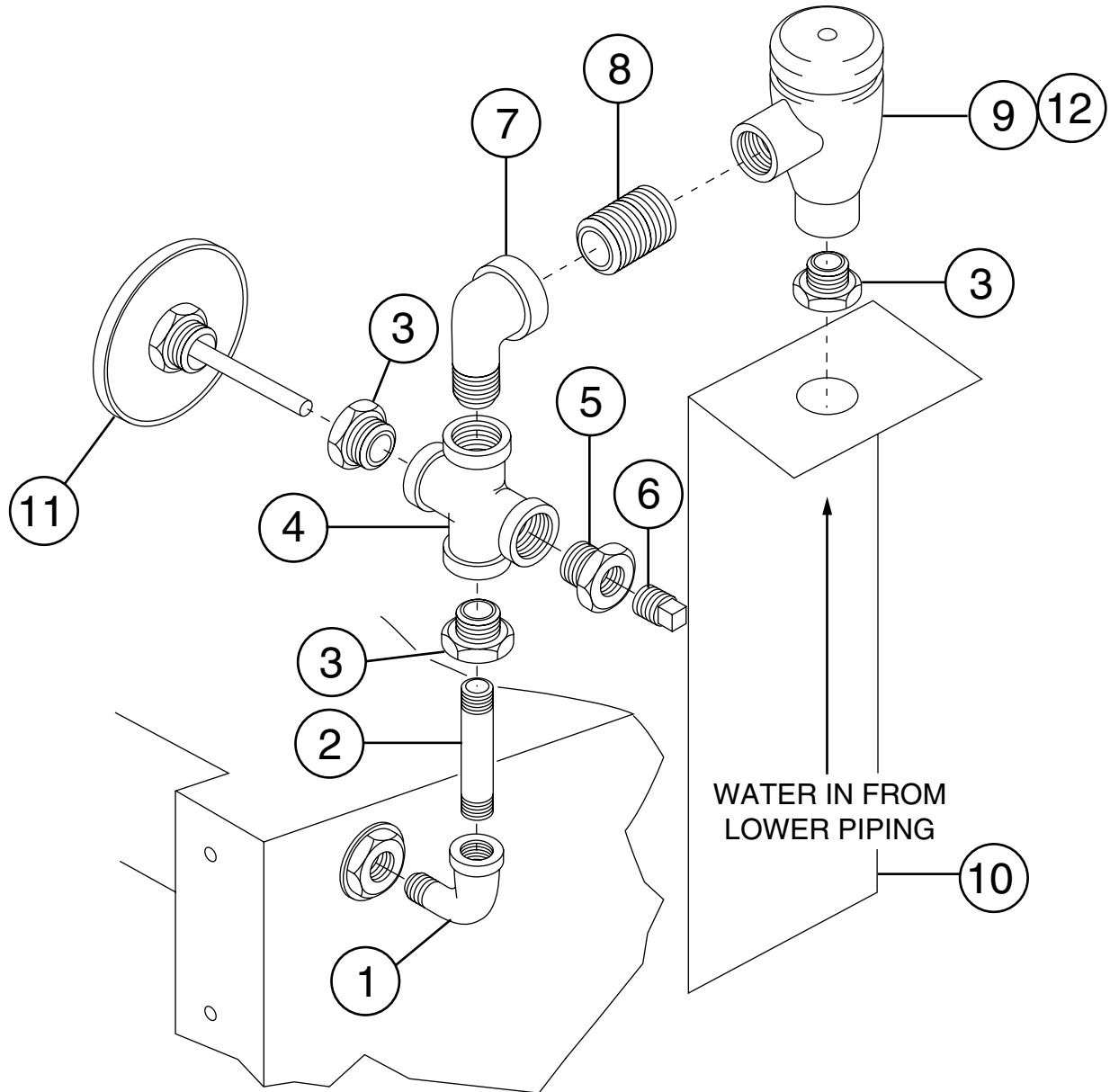


Figure 33 - D-HBT/D-H1T
Upper Fill Piping Assembly

**D-HBT/D-H1T
UPPER FILL PIPING ASSEMBLY**

Fig. 33 Item No.	Part No.	Part Description	Qty.
1	102438	ELBOW STREET, 1/2" NPT X 90° BRASS	1
2	102567	NIPPLE, 1/2" NPT X 3/4" BRASS	1
3	102392	FITTING, COMPRESS, 3/4 NPT X 7/8 OD	2
4	100599	CROSS 3/4" NPT BRASS	1
5	108181	BUSHING, REDUCER 3/4" X 1/4" NPT PLASTIC	1
6	107463	PLUG, 1/4" NPT PLASTIC	1
7	112430	ELBOW, STREET 3/4" X 90° BRASS	1
8	100184	NIPPLE, 3/4" NPT CLOSE BRASS	1
9	104429	VACUUM BREAKER, 3/4" NPT BRASS	1
10	0309426	BRACKET, PLUMBING SUPPORT	1
11	104682	THERMOMETER, FINAL RINSE, 2" STEM	1
12	104429	KIT, REPAIR, 3/4" VACUUM BREAKER	1

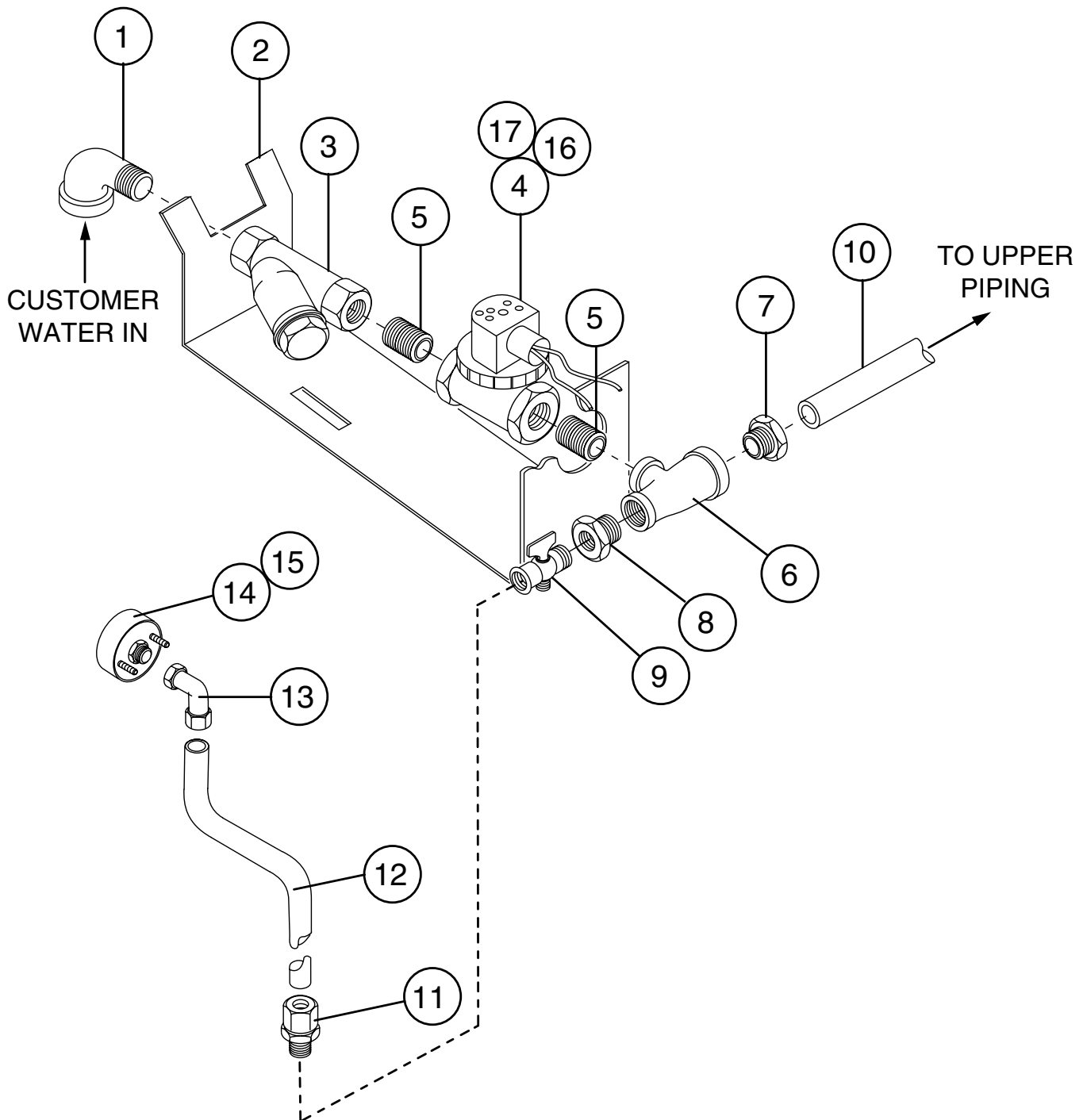


Figure 34 - D-H1T Only
Lower Fill Piping Assembly

**D-HBT ONLY
LOWER FILL PIPING ASSEMBLY**

Fig. 34 Item No.	Part No.	Part Description	Qty.
1	102444	ELBOW, STREET X 90° BRASS	1
2	0309340	BRACKET, PLUMBING SUPPORT	1
3	110768	LINE STRAINER, 3/4" BRASS	1
4	111437	VALVE 3/4" NPT HOT WATER	1
5	100184	NIPPLE 3/4" NPT	2
6	102525	TEE 3/4" X 1/2" X 3/4" BRASS	1
7	100171	BUSHING, REDUCER 3/4" X 1/2" BRASS	1
8	102388	FITTING, COMPRESS 3/4 NPT X 7/8 OD	1
9	112437	VALVE, NEEDLE 1/4"	1
10	205824	FINAL RINSE TUBE	1
11	107065	CONNECTOR, MALE 1/4" O.D. X 1/4 NPT	1
12	107928	TUBING, HIGH DENSITY	3FT.
13	111100	ELBOW, FEMALE 1/4" O.D. X 1/8 NPT	1
14	109812	GAUGE, PRESSURE 0-100 PSI	1
15	109816	OVERLAY, GAUGE 20-30 PSI	1
16	108516	COIL, SOLENOID VALVE (120V)	1
17	109903	KIT, REPAIR, 3/4" SOLENOID VALVE	1

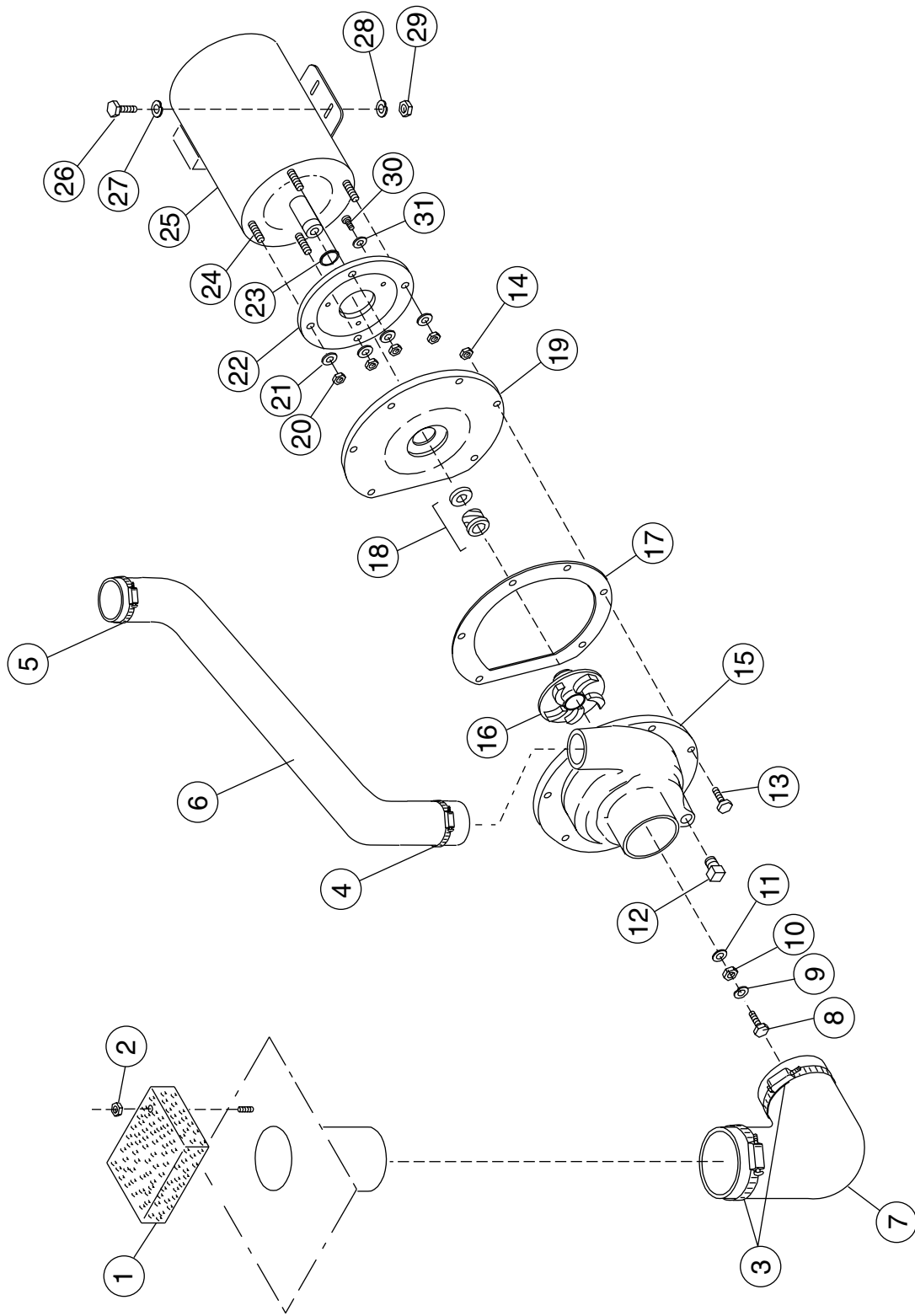


Figure 35 - D-HBT/D-H1T
Pump Assembly

**D-HBT/D-H1T
PUMP ASSEMBLY**

Fig. 35 Item No.	Part No.	Part Description	Qty.
1	308005	STRAINER	1
2	107966	NUT, GRIP 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	109562	HOSE, SUCTION	1
8	100734	BOLT 1/4-20 X 1/2" HEX HEAD	1
9	106482	WASHER, LOCK 1/4" SPLIT	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 HEAD	11
14	107966	NUT	11
15	109651	VOLUTE	1
16	112689	IMPELLER	1
17	109653	GASKET, O-RING	1
18	111111	PUMP SEAL	1
19	109649	BACK PUMP HOUSING	1
20	107690	NUT, JAM 3/8-16	4
21	106407	WASHER, LOCK 3/8" SPLIT	4
22	204460	BACKING PLATE, MACHINED	1
23	109654	PUMP SLINGER WASHER	1
24	110734	STUD 3/8-16 X 1 3/8	4
25	110422	MOTOR 2 HP (208-240V/ 460V/60/3)	1
	110421	MOTOR 2 HP (208-240V/60/1)	1
	111740	MOTOR 2 HP (575V/60V3PH)	1
26	100739	BOLT 5/16-18 X 3/4 HEX HEAD	4
27	102376	WASHER, FLAT 5/16	4
28	106013	WASHER, LOCK 5/16-18 SST	4
29	100142	NUT, GRIP 5/16-18	4
30	100754	SCREW, FLAT 10-32 X 1/2"	4
31	110270	WASHER, COUNTERSUNK SST	4
—	109645	KIT, PUMP (INCLUDES 15,17,19)	1
—	452281	PUMP/MOTOR ASSEMBLY COMPLETE 2 HP (208-240V/460V/60/3PH)	1
	452282	PUMP/MOTOR ASSEMBLY COMPLETE 2 HP (208-240V/1PH)	1
—	452283	PUMP/MOTOR ASSEMBLY COMPLETE 2 HP (575V/60/3PH)	1

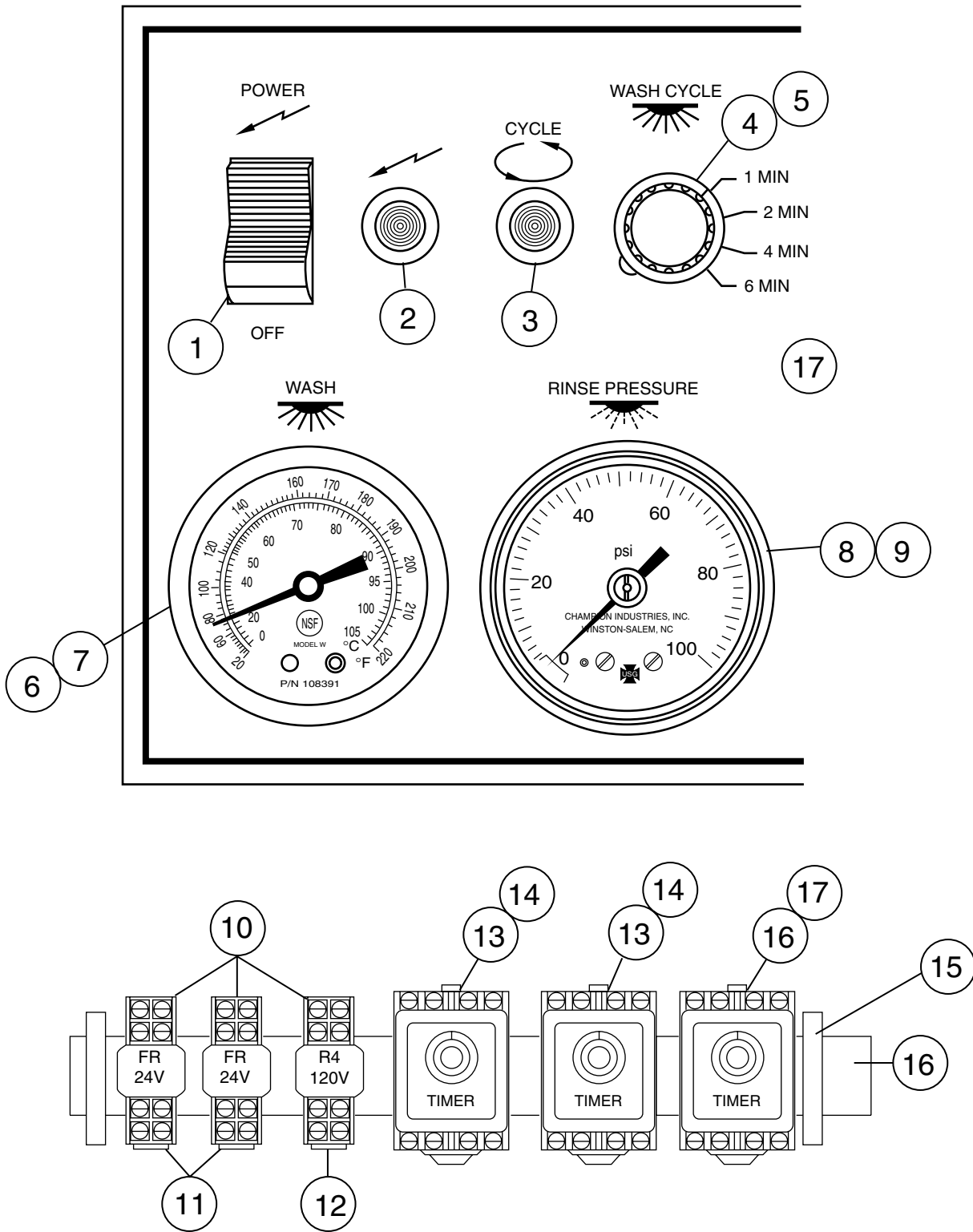
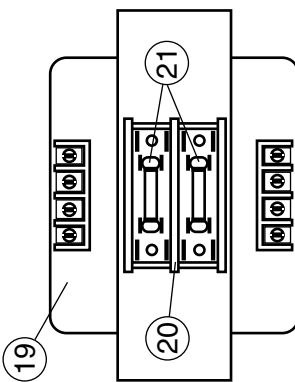
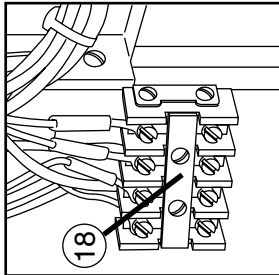
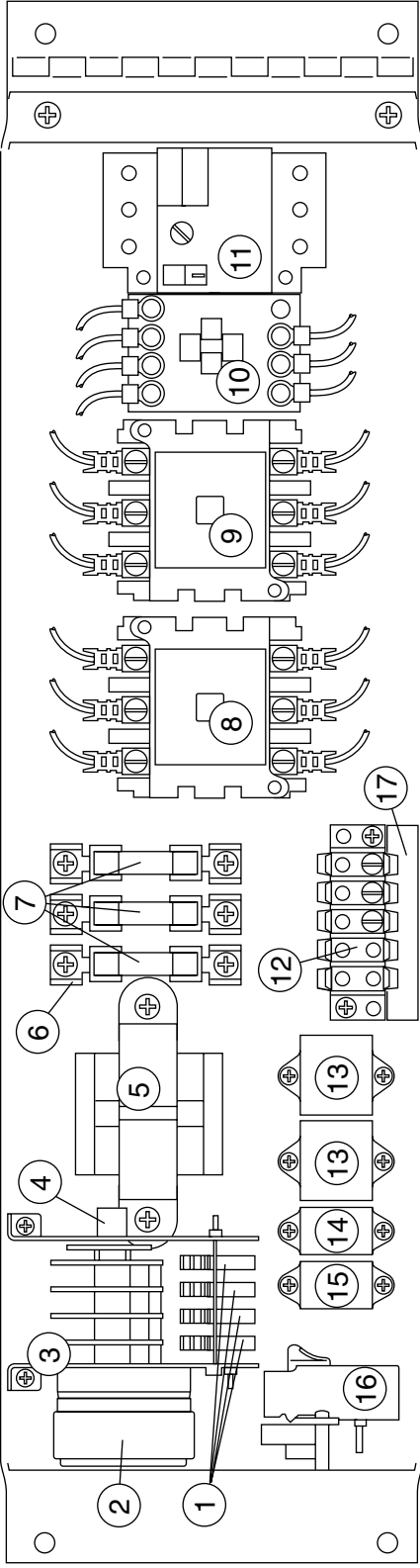


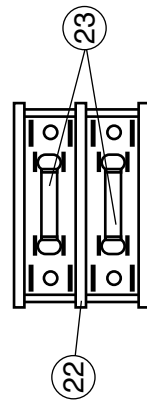
Figure 36 - D-HBT/D-H1T
Control Panel and Gauges

**D-HBT/D-H1T
CONTROL PANEL AND GAUGES**

Fig. 36 Item No.	Part No.	Part Description	Qty.
1	0501361	SWITCH, ON-OFF	1
2	112390	LITE, RED (POWER)	1
3	112391	LITE, AMBER (IN-CYCLE)	1
4	112721	SWITCH, EXTENDED WASH	1
5	112722	KNOB, WASH CYCLE SWITCH	1
6	108391	THERMOMETER, 4 FT	1
7	112086	OVERLAY, WASH 150°F	1
8	109812	GAUGE, PRESSURE 0-100 PSI	1
9	109816	OVERLAY, 20-30 PSI	1
10	111036	RELAY SOCKET	3
11	111067	RELAY, 24 VOLT	2
12	111068	RELAY, 120 VOLT	1
13	112352	TIMER SOCKET	3
14	112351	TIMER, 0-6 MINUTE	3
15	110900	STOP, END TERMINAL	2
16	110849	DIN RAIL	1
17	112388	DECAL, CONTROL PANEL	1



Main Power Transformer
mounted on machine base
(208V-575V/1 or 3 phase)

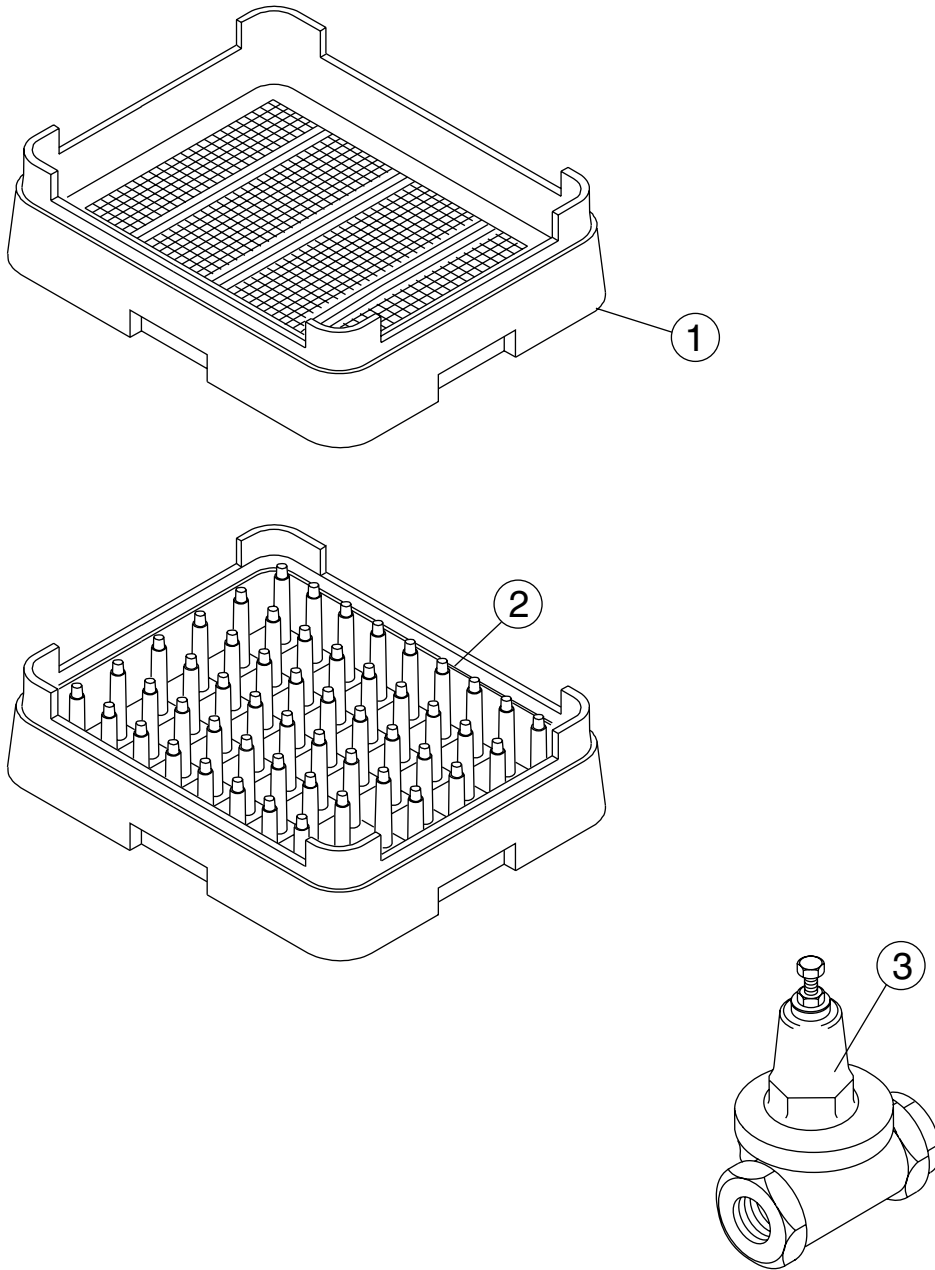


Main Power Fuse Block
mounted on machine base
(115V/1 phase only)

Figure 37 - D-HBT/D-H1T
Control Cabinet

**DHB-T/DH1-T
CONTROL CABINET**

Fig. 37 Item No.	Part No.	Part Description	Qty.
1	0501379	Switch, timer	4
2	0508773	Motor, timer.....	1
3	0709633	Assembly, timer (includes Items 1, 2, 4)	1
4	0503701	Bearing, timer	1
5	111277	Transformer (120V : 24V).....	1
6	106925	Block, fuse (30A, 3 pole)	1
7	0508675	Fuse, 10A ((DHB-T) 208-240V/3	3
7	100906	Fuse, 5A (DHB-T) 480V/3	3
7	100913	Fuse, 10A (DHB-T) 380-415V/3	3
7	100906	Fuse, 5A (DHB-T) 575/3	3
7	0508675	Fuse, 10A (DH1-T) 208-240V/3	3
7	100913	Fuse, 10A (DH1-T) 380-415V/3	3
7	100906	Fuse, 5A (DH1-T) 480V/3	3
7	0508676	Fuse, 30A (DH1-T) 115V/1	2
7	107384	Fuse, 20A (DH1-T) 208-240V/1	2
8	111904	Contactor, booster heater (40A, 3 pole) (DHB-T Only)	1
9	111904	Contactor, wash tank heater (40A, 3 pole) (All Models)	1
10	111642	Contactor, 2 HP Wash motor (12A 3 pole) (All Models)	1
11	112691	Overload, motor 2 HP Wash (All Models) 208-240V/3	1
11	111626	Overload, motor 2 HP Wash (All Models) 480V/3	1
11	111627	Overload, motor 2 HP Wash (All Models) 380-415V/3	1
11	112692	Overload, motor 2 HP Wash (All Models) 575V/3	1
11	111632	Overload, motor 2 HP Wash (DH1-T) 115V/1	1
11	111630	Overload, motor 2 HP Wash (DH1-T) 208-240V/1	1
12	107366	Board, terminal	1
13	112382	Relay (3PDT, 10A, 120VAC coil)	2
14	111068	Relay (2PDT, 10A 120VAC coil)	1
15	111067	Relay (2PDT, 10A 24VAC coil)	1
16	0508469	Fill timer assembly	1
17	0509564	Label, chemical connections	1
18	0509527	Block, terminal (4 pole) (Main Power)	1
19	109064	Transformer (208-240V/1 and 3PH/480V/3PH)	1
19	111464	Transformer (380-415V/3PH)	1
19	111521	Transformer (575V/3PH)	1
20	112424	Kit, fuse block (2 pole) (208-240V/1-3PH, 380-415V/3PH, 480V/3PH, 575V/3PH)	1
21	112482	Fuse, 3.5A, 600V (ATDR) 208-240V 1 and 3 PH	2
21	112483	Fuse, 1.8A, 600V (ATDR) 380-415V/3PH	2
21	112484	Fuse, 1.5A 600V (ATDR) 480V/3PH.....	2
21	112485	Fuse, 1.25A 600V (ATDR) 575V/3PH	2
22	106402	Block, fuse (2 pole) (115V Only)	1
23	107289	Fuse, 2.5A, 250V(ATDR) 115V Only	2
—	103309	Wire lug, ground (Not shown)	1



**Figure 38 -
Dishracks and PRV**

DISHRACKS AND PRV

Fig. 38 Item No.	Part No.	Part Description	Qty.
1	101273	RACK, (FLAT BOTTOM)	1
2	101285	RACK, (PEG)	1
3	112387	LINE STRAINER/PRV COMBO	1

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