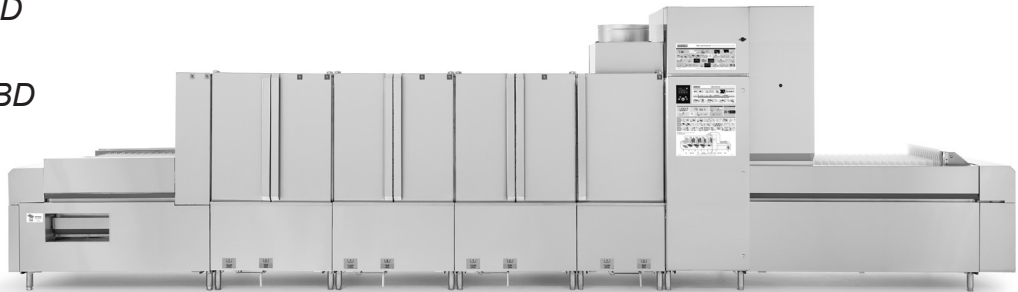


FT2000-SERIES DISHWASHERS
LAVE-VAISSELLE DE LA GAMME FT2000
LAVAVAJILLAS SERIE FT2000

MODEL
MODÈLE
MODELO

FT2000-BAS
FT2000-BAS-BD
FT2000-DWR
FT2000-DWR-BD
FT2000-ADV
FT2000-ADV-BD

FT2000S-BAS
FT2000S-BAS-BD
FT2000S-DWR
FT2000S-DWR-BD
FT2000S-ADV



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Installation and Care Of FT2000 SERIES DISHWASHERS

SAVE THESE INSTRUCTIONS

GENERAL

NOTES FOR THE INSTALLERS

Read the entire manual before installing the machine.

1. Do not use a forklift to move or unskid machine sections.
2. Do not throw out any loose parts. These may be required for installation or operation.
3. Electrical Connections:
 - Make sure line voltage matches the machine data plate located on the control box.
 - Make sure wiring connections to terminal block match the diagram inside the control box door.
 - Make sure the pilot circuit transformer is set to the correct voltage. Refer to Voltage Adjustment, page 29.
4. Level the center section in operation position. **Center section must be level end to end and front to back.** Refer to Leveling the Center Section, page 8.
5. Conveyor: Refer to the Conveyor Assembly section, page 31. **After installation, the conveyor must run continuously for 15 minutes and then be checked for alignment. Adjust if necessary and rerun for another 15 minutes. Then recheck alignment and retighten locknuts on take-up unit when finished.**
6. Make sure all curtains are in proper operating positions. Refer to Curtain section, pages 40-47.
7. Check all water and steam unions for tightness.
8. Ensure drain piping is free of any leaks.
9. Give the Operation Manual to the owner.

HOW TO REDUCE THE CLEARANCE HEIGHT OF THE CONTROL BOX DURING MOVE-IN

This procedure will reduce the overall height of the control box by 4-1/2" to allow it to travel through a low-height corridor or doorway.

⚠ WARNING The control box must be securely supported by at least two people while its mounting studs are being shifted to lower slots of the shipping braces.

The rear of the main control box is attached to the two shipping braces on the dual rinse/final rinse section by four 5/16-18 threaded studs, washers, lock washers, and nuts. The shipping braces have slots that allow the control box to be lowered by 4-1/2" (Fig. 1).

1. Remove the two shipping hinges from the side of the control box by removing the two 5/16-18 bolts from each bracket.
2. While two people are securely supporting the main control box, remove the four 5/16-18 nuts, lock washers, and washers from the inside of the shipping braces behind the control box.
3. Using at least two people, CAREFULLY withdraw the main control box's rear studs from the shipping braces. Lower the control box threaded studs to the lower slots on the braces. Refasten the control box with the same 5/16-18 nuts, lock washers, and washers removed in step 2.
4. Move the dishwasher past all low-height corridors or doorways.
5. Reverse steps 3, 2, and 1 to return the main control box to its original shipping condition for proper installation.

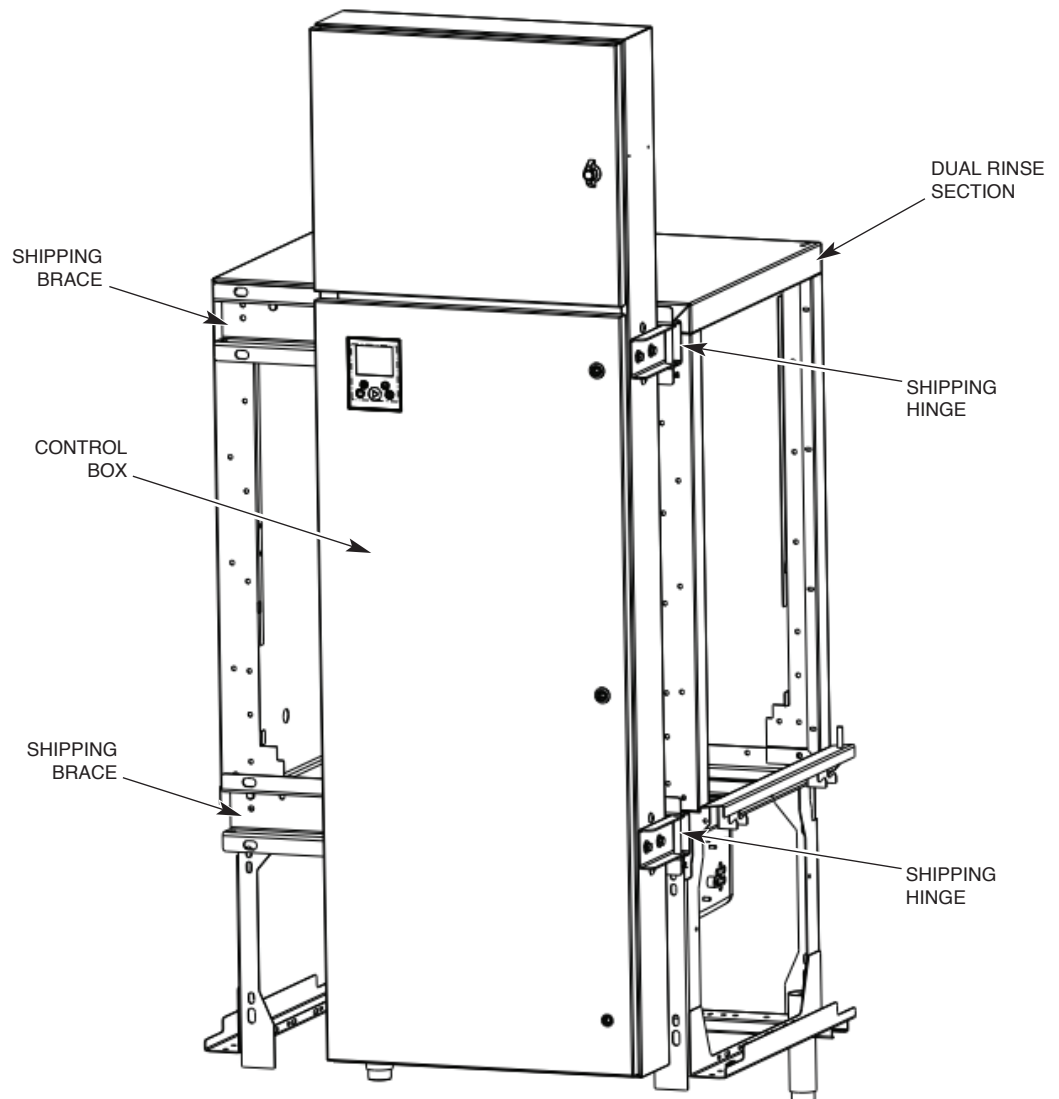


Fig. 1

HOW TO REMOVE VENT HOUSING FOR LOW CLEARANCE

1. Remove the front and rear panels by loosening the two nuts on top of each panel (Fig. 2, item A).
2. Remove the drain pan located in the base of the housing assembly (Fig. 2, item B).
3. Remove the three stop nuts located in the corners which secure the housing assembly to the top of the dual rinse chamber.
4. Lift the housing assembly straight up until the base clears the top of the studs and remove the assembly from the top of the machine.
5. Once the center section is moved into the dish room, reinstall the housing assembly, drain pan, and front and rear panels. **NOTE:** Apply permagum to washers when reinstalling.

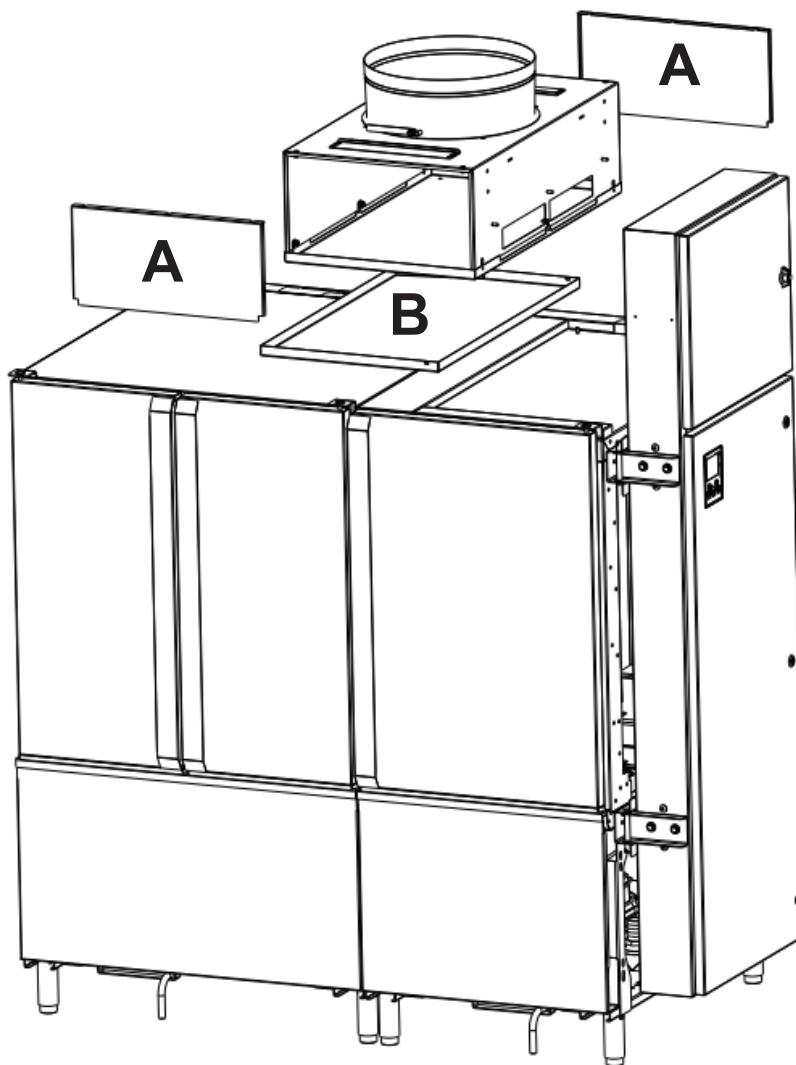


Fig. 2

UNPACKING

Immediately after unpacking the dishwasher, check for possible shipping damage. If the machine is found to be damaged, save the packaging material and contact the carrier within 5 business days of delivery.

Before installation, test the electrical service to make sure it agrees with the specifications on the machine data plate located on the control box. The electrical diagram is located inside the control box.

Strainer baskets, strainer pans and wash arms are taped and shipped in place. Remove tape for operation. If any parts are temporarily removed during installation, return to their proper places after installation is complete.

Before installing, check to make sure that necessary electrical, plumbing and exhaust accommodations are provided at the installation location. Take measurements of site's plumbing, electrical and exhaust connections; then take corresponding measurements of the machine to make sure all connections are correctly mated. If necessary to lower control box during move-in, slotted holes are provided on the control box shipping braces to allow adjustment for clearance height. Refer to page 4.

Removing Each Section From Its Skid

NOTICE Do not use a forklift directly on the machine frame or tank to move or lift machine sections. Doing so may result in damage to the machine.

1. Using a forklift or pallet jack, raise one end of the skid and unthread the feet from the legs as far as possible without removing the foot from the leg. Repeat for other end until all feet have been extended out. Lower the skid back to the floor. This will now allow the machine to sit on its feet so the skid can easily be removed.
2. Remove the two end plate screws from the 2x4 runners, located just inside the front and rear legs, at each end of the skid.
3. Remove all lag bolts from the top of the skid cross members along either the front or rear of the machine.
4. From the opposite side of the machine that the lag bolts were removed in step 3, pull the entire skid assembly out from beneath the machine section.
5. Thread the feet into the legs as far as possible; then back out three full turns. Standard legs have 3" threaded studs for maximum adjustment. If special feet were ordered with extra-long leg shanks to accommodate a highly sloped floor, install them where the low points in the floor occur at leg locations on the machine before setting the unit on the floor.
6. Open all inspection doors and remove all wrapped parts and boxes from inside each machine section.

7. Remove and packaging, tape, wire and bracing from each section. Remove all rear and lower panles.
8. Verify that shipping tape has been removed from all floats in each tank and that the floats are free to operate properly.

NOTE: Do not throw out any loose parts. These may be required for installation or operation. Verify all ship loose items have been received per the packing list.

LOCATION

Allow adequate space for machine installation and operation. Place the machine sections close to their final position. Allow space to work on the ends of the center section.

Review, but do not remove tags or labels. Remove tags after installation is complete.

Positioning the Center Section

Use a chalk line on the floor to align the machine along its complete length.

With each section in its approximate final position, determine which section is at the high point in the floor. **Machine assembly begins after the center section has been leveled to a height that compensates for the floor height of the other sections.**

Leveling the Center Section

Leveling is an important installation function because it could affect door operation and cause leaks once the machine is operating.

- Level the center section along its length by opening the doors and placing a level between the doors along the tank support rail (Fig. 3). Do not check level on top of doors. Adjust the feet in or out as required to level.



Fig. 3

- Continue to level the center section front to back by removing the top panels and placing level across the top of the chambers on both ends of center section (Fig. 4).



Fig. 4

ASSEMBLY

Rotating Control Box 90 Degrees

The main control box is shipped with the upper and lower shipping hinges connected to the side of the control box. Remove the four 5/16-18 nuts, lock washers, and washers from the inside of the shipping braces behind the control box. Use the shipping hinges (Fig. 1) to rotate the control box 90 degrees. Do not remove the shipping hinges until after the control box is secured to the unload section.

Pull the control box out to allow mating of center and unload sections without interference with studs projecting from rear of control box.

Installing Foam Tape on Chamber Flanges & Control Box Mounting Surface

Cut strips of vinyl foam tape to fit the top, bottom, and vertical sides of the chamber flanges on the end of the load and unload sections to make a good seal. Apply strips of foam tape to the vertical edges of the chamber ends, across the top of the chamber ends, and one strip across the bottom flanges (Fig. 5). Place the foam tape approximately 1/16"-1/8" from the outside edge of the chamber. After the foam tape is applied, trim the excess tape along the chamber edges.

NOTE: The vertical piece of foam tape on the outer edge at the front of the machine must be folded over 1/2" on the sticky side with the rolled edge of the tape positioned towards the front of the machine.

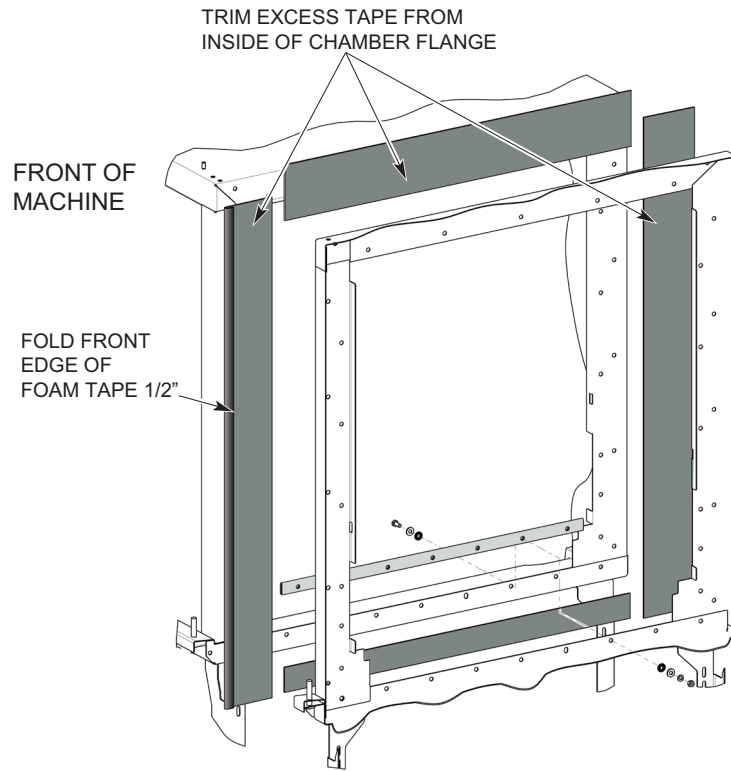


Fig. 5

Apply foam tape to unload chamber section where the rear perimeter of the control box will be mounted.

Attaching Control Box to Unload Section

1. Remove hardware from front and rear detachable legs. **DO NOT RE-INSTALL HARDWARE UNTIL AFTER SECTIONS ARE JOINED.**
2. Remove the detachable leg section on the front leg of the unload section where the control box will be mounted. This will allow the wires, which are preinstalled in the control box, to pass by the leg assembly freely (Fig. 6).

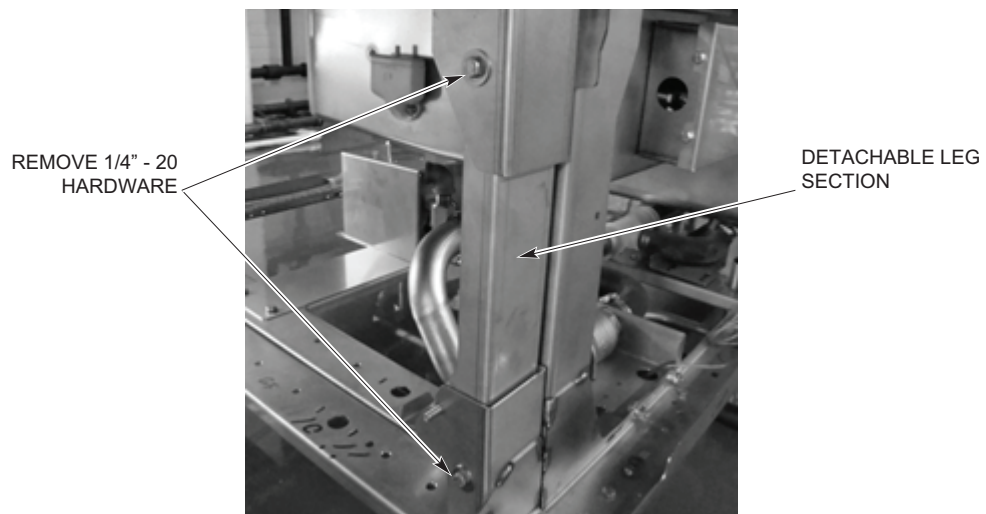


Fig. 6

3. With the control box rotated 90 degrees, move the unload section to within several inches of the center section behind the control box.
NOTE: Ensure wires do not get pinched between sections.
4. Maneuver the unload section so that the four 5/16-18 threaded studs on the back of the control box protrude thru the mounting holes on the unload section.
5. Reinstall the detachable leg section removed in step 1 (without hardware).
6. Secure the control box to the unload section using four 5/16-18 nuts, lock washers, and washers.
7. Once the control box is secured to the unload section remove the two shipping hinges from the side of the control box by removing the two 5/16 bolts and associated hardware from each hinge. The control box is now part of the unload section.
8. Install two 5/16 round head screws in open holes of control box where shipping hinges were removed.
9. Remove the hinges from the shipping braces by removing the cotter pins and hinge pins.
10. Remove the two shipping braces from the end of the dual rinse section by removing the three 5/16 bolts and associated hardware from each brace.
11. Using the supplied NSF-approved sealer, apply a bead of caulk where each side of the control box meets the tank support rails to allow any moisture condensation to drain back into the tank.

Positioning the Adjacent Load or Unload Sections

Move the adjoining (load or unload) section to within several inches of the prepared end of the center section. Adjust the feet of the section adjacent to the leveled center section so tank supports are the same height. Peel the protective paper from the vinyl foam tape and move the second section to its final position. Be very careful that mating components connect and fit together properly.

NOTE: Refer to Flow Back Pan Installation, page 17, and install the pan between the dual rinse and unload sections as the sections are bolted together.

Leveling the Load and Unload Sections

The tank support rails should be level across the entire length of the machine (Fig. 3). Sections to be mated should be level front to back (Fig. 4).

- All adjoining components of the two sections are exactly in line with each other.
- Top corners of adjoining sections are the same height.

Joining the Sections Together / Removing the Removable Feet

Removable feet are $\frac{1}{4}$ " shorter than the standard bullet feet. To properly align the chamber holes for bolting the sections together, use two floor jacks, or a single floor jack and a 2x4, to raise the end of the section with the removable feet. **NOTE:** Position the floor jacks under the cross member directly behind the removable feet (Fig. 7) or use one floor jack with a 2x4 offset from the center of the cross member. In some cases, using only the bullet feet to raise the machine sections will work to level the machine.

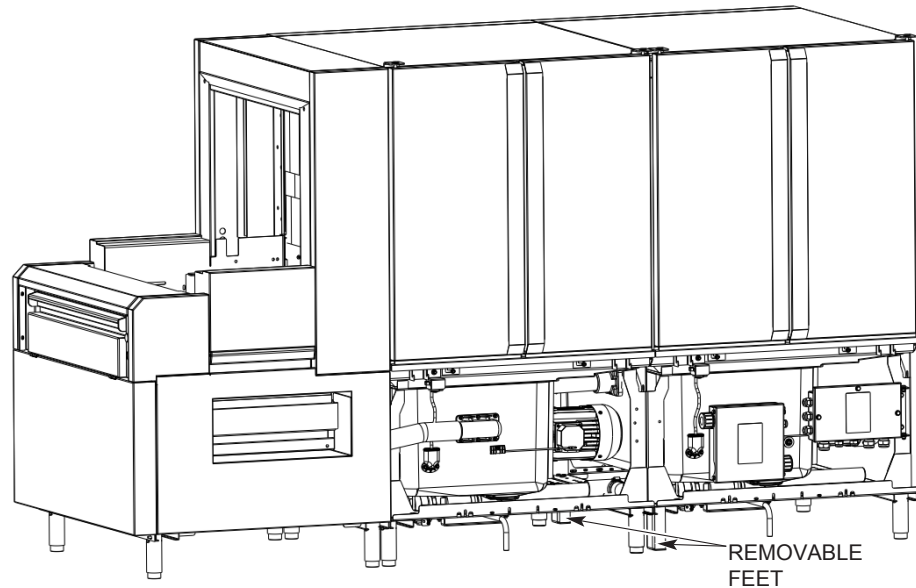


Fig. 7

NOTE: Join the machine sections together prior to raising the bullet feet for machines equipped with steam heat.

Use drift pins to align the holes in the horizontal and vertical chamber flanges of the mated sections. Use C-clamps to hold the sections in position while bolting the chamber front and back flanges together. Exercise care to avoid tearing the foam tape seal.

NOTICE Do not use a forklift directly on the machine frame or tank to move or lift machine sections. Doing so may result in damage to the machine.

After the sections are securely bolted together, remove the (3) bolts securing each removable foot to the cross member and slide the feet out from the end of the cross member (Fig. 8). The removable feet and hardware can then be discarded.

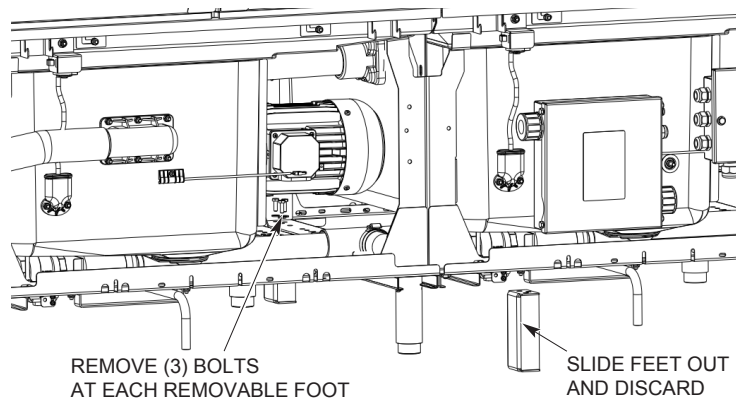


Fig. 8

Secure the vertical frame corner posts together at two locations using the appropriate hardware (Fig. 9).

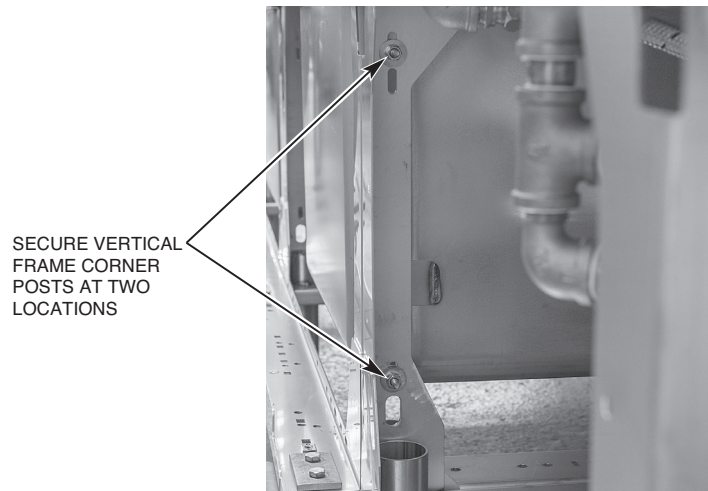


Fig. 9

Installing the Curtain Hangers and Unload Air Baffle

On prewash/wash section joint, install the two curtain hangers on the prewash side of the joint in the upper front and rear corners using the appropriate chamber flange hardware (Fig. 10).

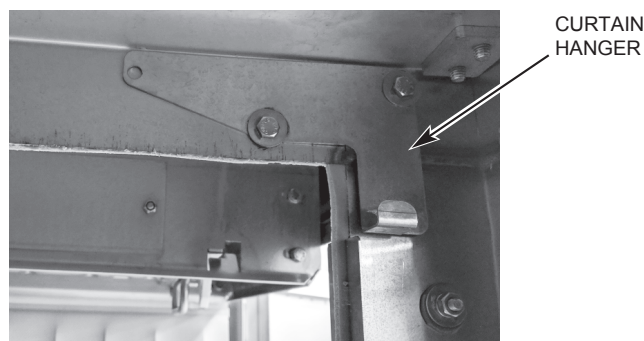


Fig. 10

On dual rinse/unload section joint, install the unload air baffle and two curtain hangers. The curtain hangers mount on to the air baffle studs where they protrude through the upper front and rear corner chamber holes on the final rinse side of the top of the chamber where sections are being joined using appropriate fasteners (Fig. 11). The unload air baffle also has three mounting holes which need to slip over the three studs protruding down from the top of the unload chamber. Secure with 1/4-20 nuts, lock washers, and washers (Fig. 12).



Fig. 11

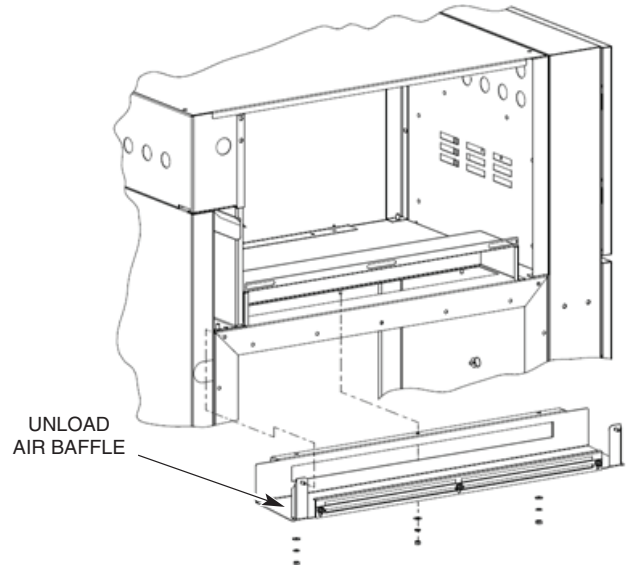


Fig. 12

CHAMBER FLANGE AND BOLT ASSEMBLY AT EACH SECTION JOINT

Description	Qty.	Bolt Size	Assembly Order	Instructions
Short Bolt-Use except where long bolts or medium bolts are required	22	1/4-20 x 5/8"	[Bolt, Washer] [Washer, Lockwasher, Nut]	Use permagum on insides of washers on both sides of chamber flanges.
Medium Bolt-Use for curtain hangers and at top and bottom corners of chambers	9	1/4-20 x 3/4"	[Bolt, Washer] [Washer, Lockwasher, Nut]	Use permagum on insides of washers at curtain hangers and chamber flanges.
Long Bolt-Use on saddle joints, track/chamber interface, and vertical frame corner posts	15	1/4-20 x 1"	[Bolt, Washer] [Washer, Lockwasher, Nut]	Use permagum on insides of washers on both sides of saddle joints and at tracks & chamber flanges.

Installing the Saddle Joint - Bottom of Chamber Flanges

1. Seal the tank end flanges where sections join together using a saddle joint.
2. Position the saddle joint over the tank end flanges and make sure that all bolt holes are aligned. Use drift pins (or punches) to align holes if required.
3. If machine is equipped with the standard conveyor assembly, install baffles along with the saddles using same mounting hardware. Ensure baffles are adjusted to the lowest position to ensure that the baffle does not interfere with the flight links (Fig. 13).

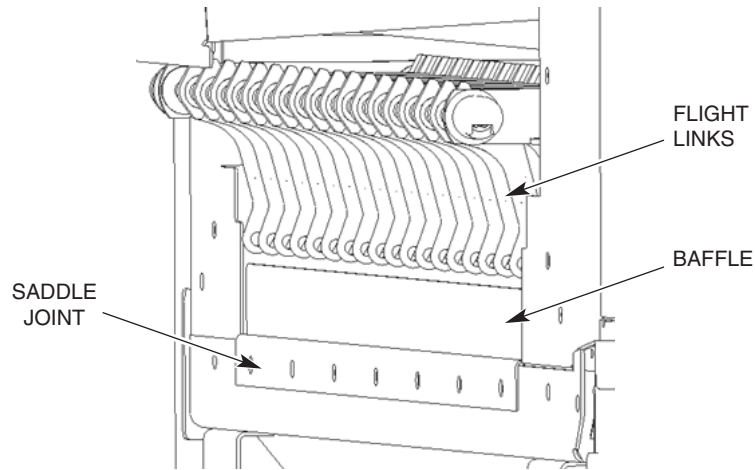


Fig. 13

4. Use Permagum on insides of washers on both sides to make an adequate seal (Fig. 14). You may have to use a C-clamp on the saddle to get the hardware started. Bolt the saddle joint to the bottom tank flanges with seven long bolts, washers, lock washers, and nuts provided.

NOTE: Do not apply foam tape or permagum inside saddle or on surfaces that the saddle covers.

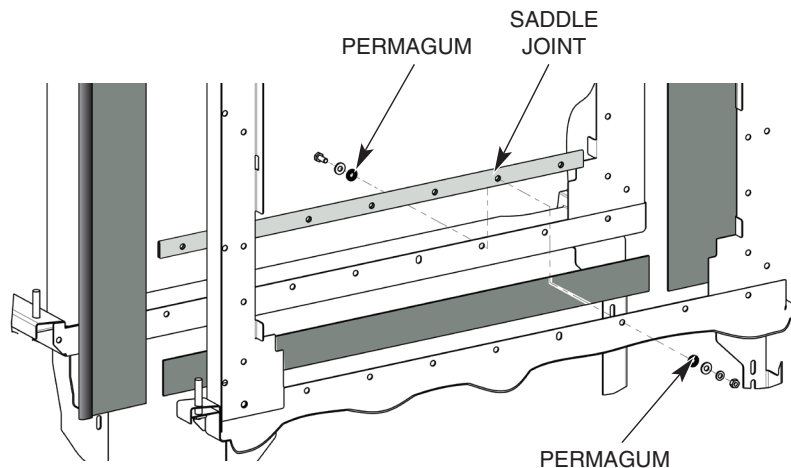


Fig. 14

Installing the Flowback Pipe (Wash to Prewash Tanks)

Install the flowback pipe between the wash tank and the prewash tank (Fig. 15). Make sure the flowback pipe is adequately lubricated with O-ring lube (not supplied). Make sure O-rings are in their proper places on the coupling; two inside and one on the flange end.

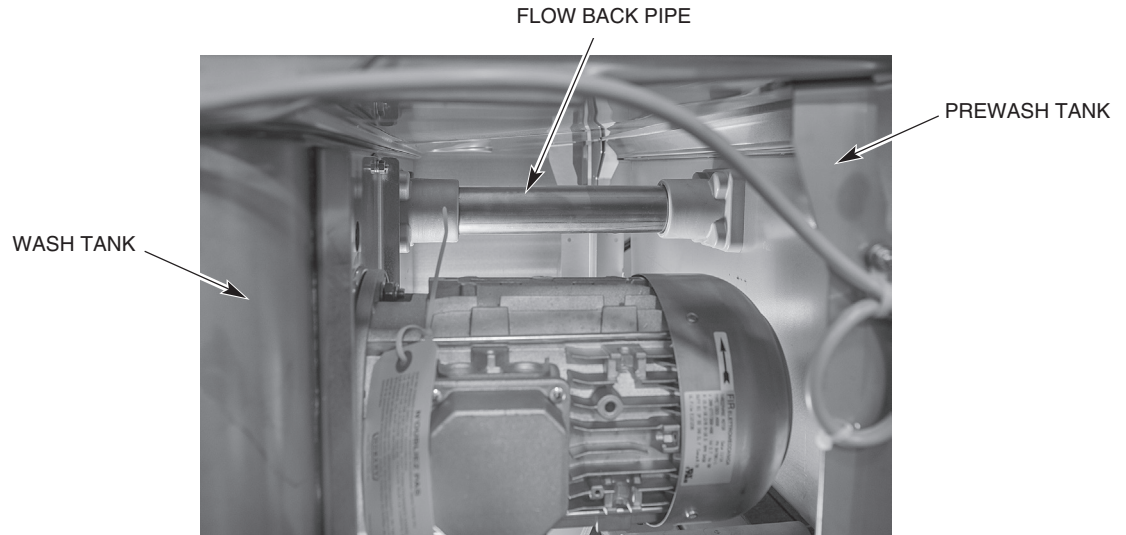


Fig. 15

Installing the Drain Pipe

Install the drain pipe between the adjoining tank sections as follows:

1. Lubricate the molded drain T-connectors at each end of the drain pipe using O-ring lube (not supplied). Do not use animal-, vegetable-, or petroleum-based lubricants.
2. With a twisting motion, slide the pipe into one of the molded drain T-connectors.
3. Lift the other end, align it with the molded drain T-connectors and with a twisting motion, slide the pipe until the drain pipe hits the stop in the tee (approximately 1-1/4" from the face of the tee).
4. Slide hose clamps to ends of drain pipe and tighten to maintain position.

Flow Back Pan Installation

Before installing the conveyor assembly, install the two flow back pans; one between the prewash and wash tank, and one between the dual rinse tank and the unload section.

Install the pan and saddle between the prewash and wash tank to the deflector located in the wash section ensuring that the pan slopes towards the prewash tank (Fig. 16). Secure the pan and saddle to the deflector using four $\frac{1}{4}$ -20 x $\frac{3}{4}$ " bolts and elastic stop nuts. The pins on the bottom of the pan should rest on the top edge of the lower track (Fig. 17).

NOTE: To install the pan and saddle to the deflector, unbolt the deflector from the track to allow clearance for saddle installation.

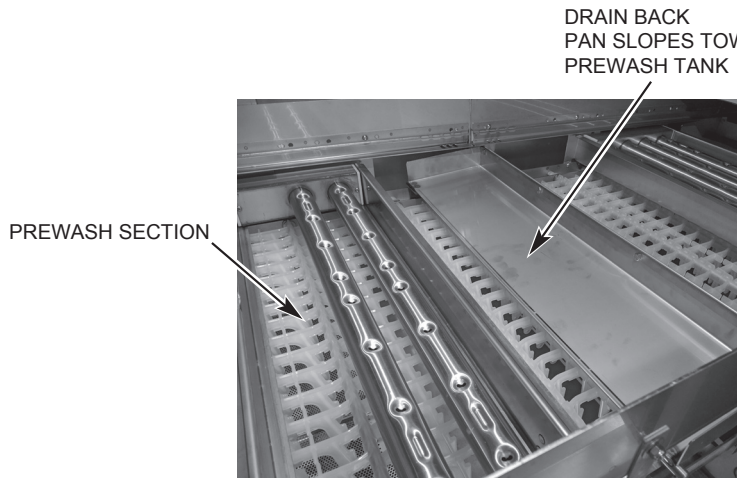


Fig. 16

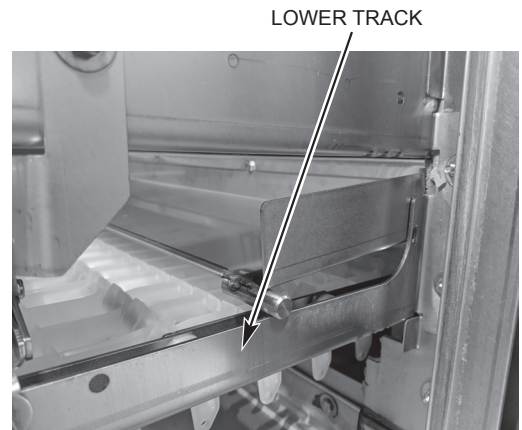


Fig. 17

When joining the dual rinse and unload sections together, install the pan between the dual rinse and unload section ensuring that the pan slopes towards the dual rinse tank (Fig. 18). Secure the pan to the lower front and rear tracks using two $\frac{1}{4}$ -20 x $\frac{5}{8}$ " bolts and elastic stop nuts. The pins on the bottom of the pan should rest on the top edge of the lower track (Fig. 19).

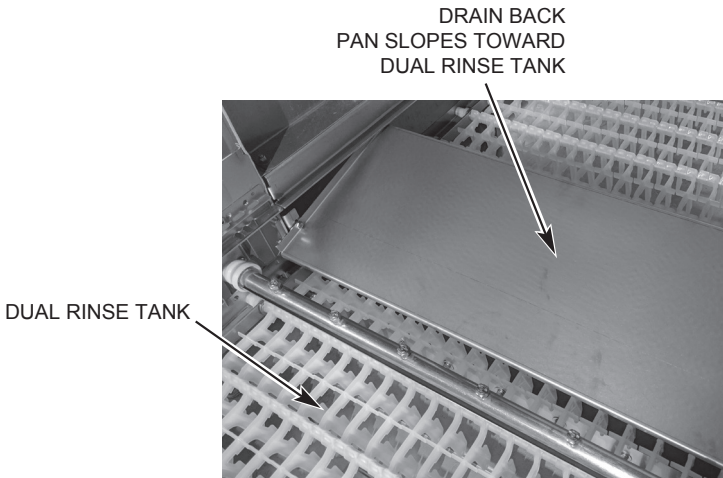


Fig. 18

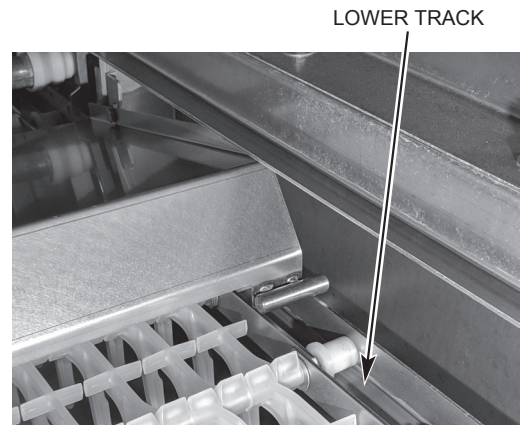


Fig. 19

Blower Dryer Assembly

NOTICE When installing the blower dryer fan assembly, do not stand, sit or lean on top of the air deflector or the air deflector supports as blower dryer performance could be compromised.

1. Remove the blower dryer cover panels; front, rear, and top (Fig. 20).

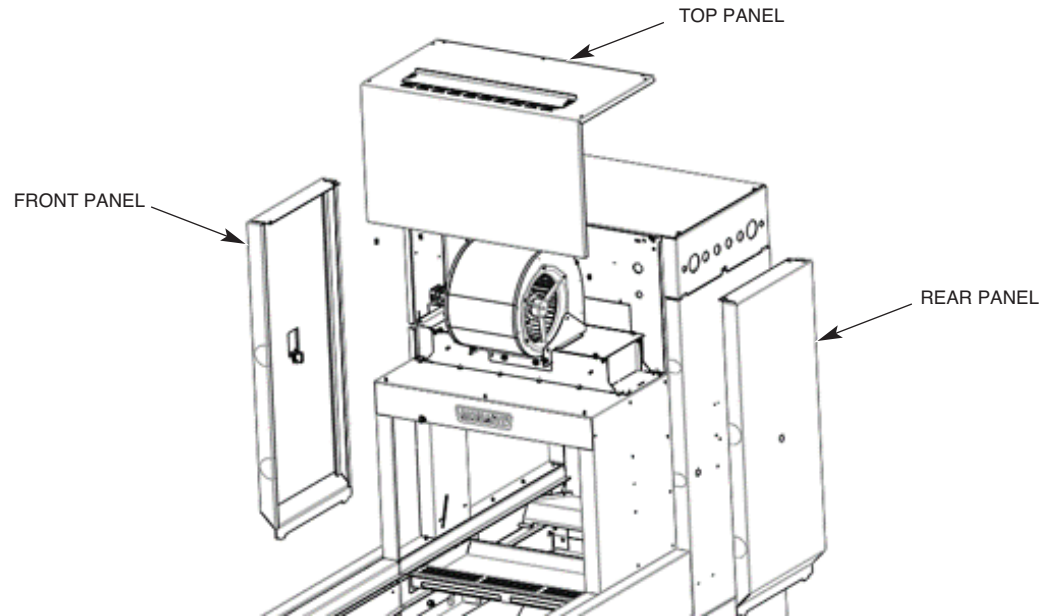


Fig. 20

2. Install the blower assembly on top of the heater housing by lowering the blower assembly on an angle so that the front tabs hook underneath the notches on the top plate of the heater housing (Fig. 21 and 22).

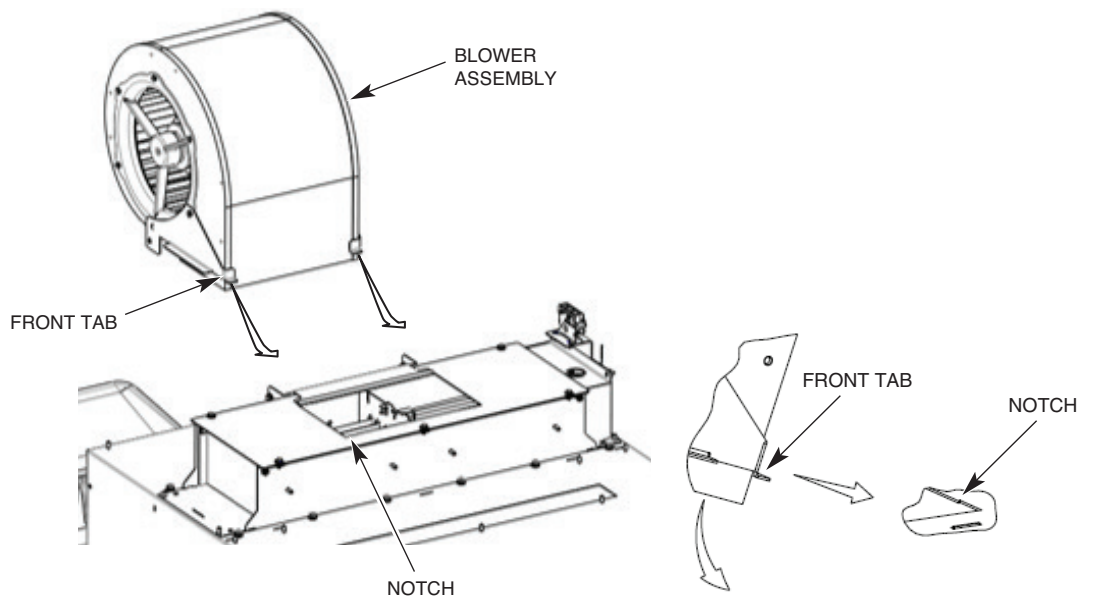


Fig. 21

Fig. 22

3. Lower the back side of the blower assembly down so that the holes in the blower mounting brackets line up with the holes in the support brackets on the heater housing (Fig. 23).
4. Install ¼-20 hex head cap screws with washers and stop nuts as shown in Fig. 23 and tighten.

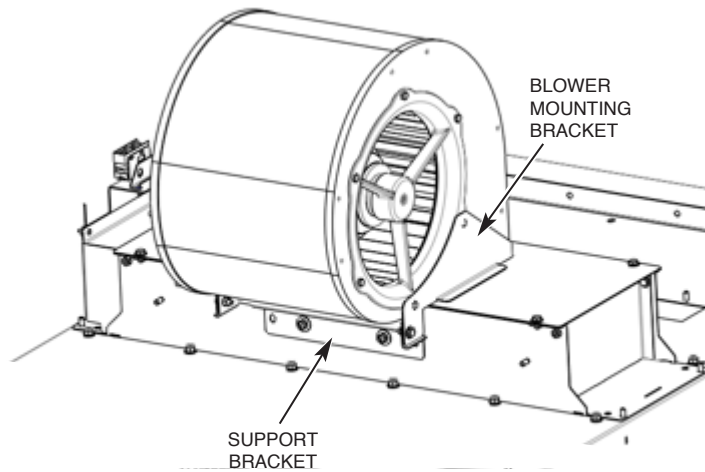


Fig. 23

5. Route blower cable through strain relief located on the vertical enclosure panel and through strain relief located at rear of control box.

NOTE: Ensure that the cable is not routed on the side of the blower where the air intake chamber openings are located.

6. Connect blower motor wires to TB9 terminal block in the control box. Strip wires back 10mm and push wire into appropriate TB9 terminal until it clicks. Gently pull on the wire to ensure it is properly seated. Ensure motor is wired per machine voltage (see data plate for machine voltage) (Fig. 24).

NOTE: The white wires are not used. Cut the white wires back at the sheath.

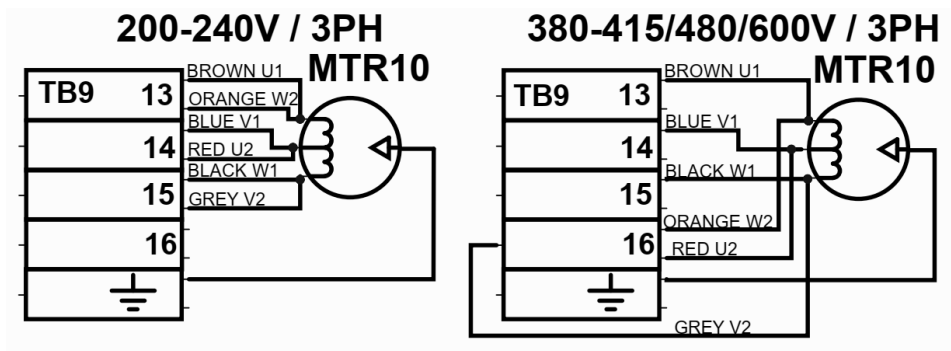


Fig. 24

NOTE: If the blower dryer is equipped with electric heaters, connect electric heater wires labeled DRYER HTR7.1, .2, .3, .4, .5 and .6 to the heating elements in the blower dryer (Fig. 25). Also connect the electric heater high limit over temp wires labeled TAS8 COM and TAS8 NO and the over temp warning light wires labeled PL1 to the designated terminals located on the TAS8 high limit switch mounted to the electric heater element cover plate (Fig. 25) and PL1 over temp warning light mounted on the front blower dryer cover panel (Fig 26).

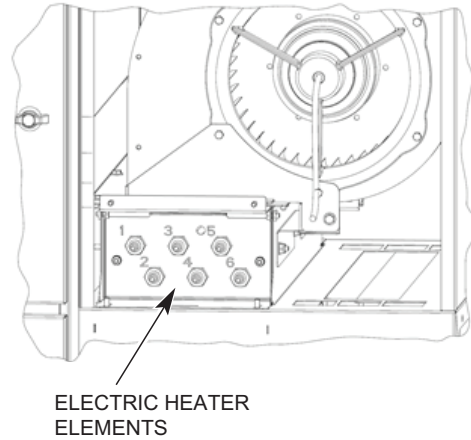


Fig. 25

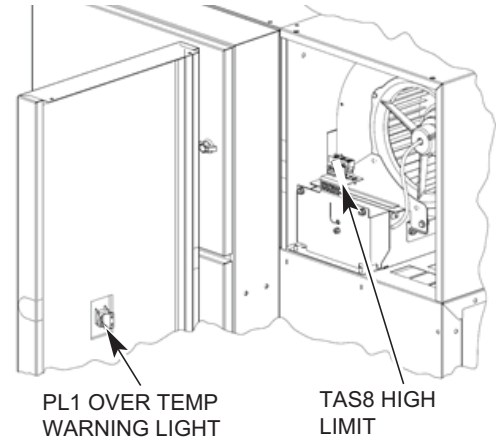


Fig. 26

Control Box / Junction Box Connections

Refer to the electrical diagram located inside the main control box door. After use, ensure the diagram is placed back inside the control box.

Although each section is pre-wired, components in the load and unload sections must be electrically connected to the main control box or appropriate junction box. All wires that need to be connected are furnished with stripped leads or crimped barrel terminals for terminal block connections. Also provided are locking plug connectors for sensor connections.

Run wires in proper routing clips, channels and so forth to openings in the lower rear of the main control box, junction box located at the power rinse or wash section and junction box located at the unload section. Run wires (in conduit) through conduit fittings; run cordage through strain reliefs. Make proper connections for wires and cordage. Properly tighten strain reliefs and conduit fittings.

After all wires are routed and connected at terminal blocks, ensure any unused holes in the lower rear portion the control box are plugged.

DO NOT permit electric cables or conduit to touch steam pipes (if machine is equipped with steam heat).

When making connections to the terminal blocks, insert the 10mm stripped wire end or barrel connection into the appropriate terminal opening by pushing the wire in until it clicks. Gently pull on the wire to ensure it is seated properly.

Load section wire connections – route the wires labeled TB15 from the load end of the machine to the junction box located behind the lower front panel of the power rinse section (FT2000 models) or the wash section (FT2000S models). Connect the wires to the appropriate TB15 terminals (Fig. 27) according to the wire labels.

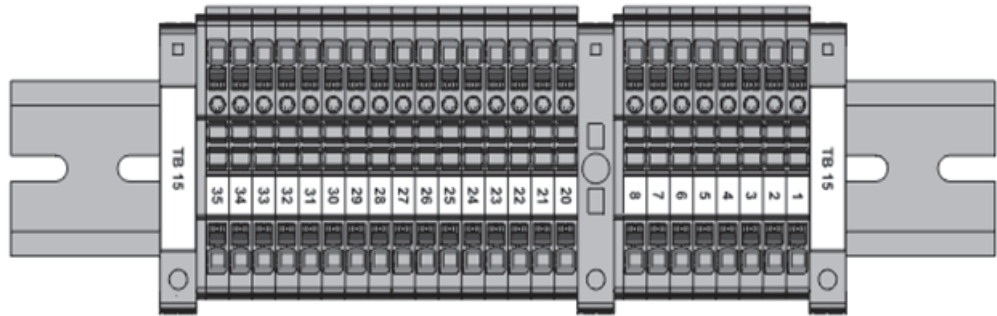


Fig. 27

Route the wires labeled TB8 from the prewash pump to the control box and connect the wires to the appropriate TB8 terminals (Fig. 28) according to the wire labels.

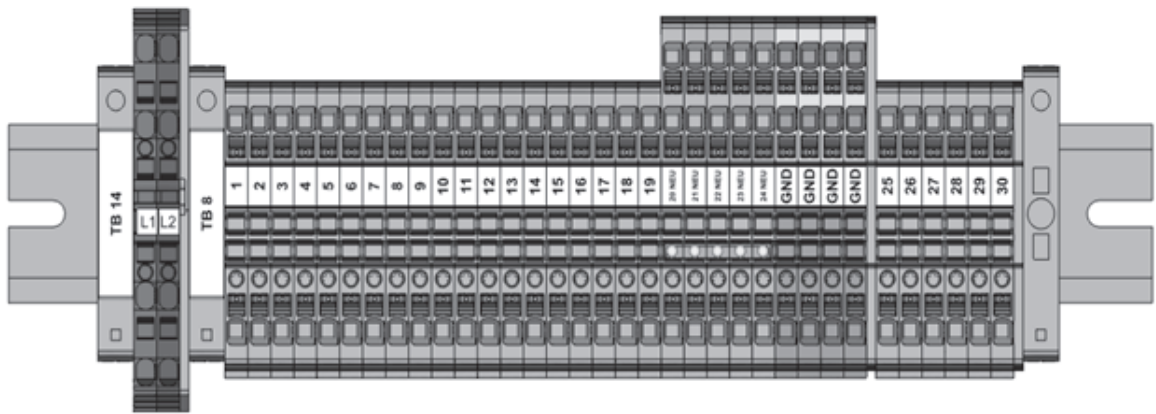


Fig. 28

Route the cables labeled PRE WSH TEMP and PRE WSH PSI from the wash tank section to the appropriate load section sensor connections.

Unload section wire connections – route the wires labeled TB16 from the control box to the junction box located under the unload section. **NOTE:** For 5.5' unload sections, the junction box is located on the side of the delime chemical container storage. For longer unload sections, the junction box is located under the unload section towards the front of the machine. Connect the wires to the appropriate TB16 terminals (Fig. 29) according to the wire labels.

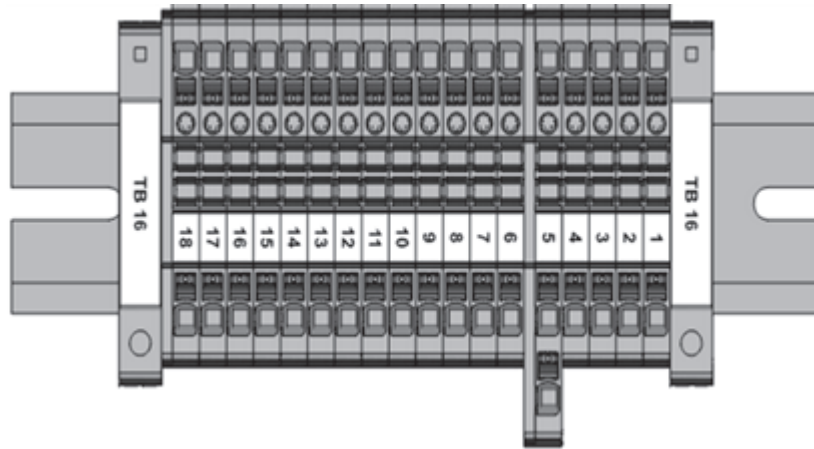


Fig. 29

Route the wires labeled TB8 from the conveyor motor, water and steam (if equipped) solenoid valves to the control box and connect the wires to the appropriate TB8 terminals (Fig. 28) according to the wire labels.

Route the cables labeled BOOSTER TEMP, BOOSTER PSI, DWT TEMP (if equipped with factory installed drain water tempering kit) and STEAM TEMP (if equipped with a steam booster heater) from the control box to the appropriate unload section sensor connections.

Electric Booster Heater Wiring

If the machine is equipped with an electric booster heater, route the wires labeled TB10.1, .2, .3, .4, .5 and .6 from the control box to the junction box located under the unload section by the booster heater. Connect the wires to the appropriate TB10 terminals according to the wire labels. **NOTE:** Torque TB10 terminal block connections to 20-inch pounds.

PLUMBING CONNECTIONS

The plumber who connects this machine is responsible for making certain that both water and steam (if equipped with steam tank heat) lines are THOROUGHLY FLUSHED OUT BEFORE connecting to the dishwasher. This flush-out is necessary to remove all foreign matter, such as chips (resulting from cutting or threading pipes), pipe joint compound from the lines or, if soldered fittings are used, bits of solder or cuttings from the tubing. Debris, if not removed, may lodge in the dishwasher's plumbing components and render them inoperative. Manual valves or solenoid valves found defective by foreign matter and any expenses resulting from this debris are NOT the responsibility of the manufacturer and associated repair costs are not covered under warranty.

⚠ WARNING Plumbing connections must comply with applicable sanitary, safety and plumbing codes.

Water Requirements

Proper water quality can improve ware washing performance by reducing spotting, enhancing effectiveness of labor and extending equipment life. Water conditions vary from one location to another. The recommended proper water treatment for effective and efficient use of this equipment will also vary depending on the local water conditions. Ask your municipal water supplier for details about local water conditions prior to installation.

Recommended water hardness is 3 grains of hardness per gallon or less. Higher hardness may cause excessive formation of lime scale. Water hardness above 3 grains per gallon requires water treatment. Water treatment has been shown to reduce costs associated with machine cleaning, reduce deliming of the dishwasher and reduce detergent usage in the dishwasher. Chlorides must not exceed 50 ppm.

NOTICE High iron levels in the water supply can cause staining and may require an iron filter. High chloride levels in the water supply can cause pitting and may require a chloride removal system. Contact your local water treatment professional for proper water treatment.

Sediment may require a particulate filter. Dissolved solids may require water treatment such as a water softener, reverse osmosis system, etc. Contact your local water treatment professional for proper water treatment.

If an inspection of the dishwasher or booster heater reveals lime build-up after the equipment has been in service, water treatment is recommended. If a water softener is already in place, ensure there is a sufficient level of salt. Contact your Hobart Service office for specific recommendations.

Water Supply Connections

Check all factory water lines for leaks, particularly unions. Tighten if necessary.

FT2000-BAS & FT2000S-BAS models require a single incoming hot water supply. FT2000-DWR, FT2000-ADV, FT2000S-DWR and FT2000S-ADV models require a hot and a cold-water supply. **NOTE:** If a drain water tempering kit is field installed on a -BAS model, an additional cold-water supply will be required. Use ½” minimum I.D. pipe size for the incoming water supply line(s) to the machine. The hot and cold (if applicable) connection points are 1” NPT.

Required flowing water pressure to the dishmachine is 20 to 65 PSIG. If flowing pressures higher than 65 PSIG are present, a pressure-regulating valve must be supplied and installed in the water line to the dishmachine (by others). If flowing pressure is less than 20 PSI, improper machine operation may result. All FT2000 models are equipped with a pumped rinse system; therefore, a water pressure gauge is not required and is not supplied with the machine.

NOTICE The water pressure regulator must have a relief bypass. Failure to use the proper type of pressure regulator may result in damage to the unit.

A water hammer arrestor meeting ASSE-1010 standard or equivalent should be supplied and installed (by others) in the hot and cold (if applicable) water supply lines at the service connections.

For temperature requirements, refer to the table below.

REQUIRED INCOMING WATER TEMPERATURE				
Model	Sanitizing Mode	Connection	Water Supply	
			Minimum	Maximum
FT2000-BAS FT2000S-BAS	Hot Water Sanitizing	Hot Water	110°F (43°C)	195°F (91°C)
FT2000-DWR FT2000-ADV FT2000S-DWR FT2000S-ADV	Hot Water Sanitizing	Hot Water	110°F (43°C)	195°F (91°C)
		Cold Water	55°F (13°C)	80°F (27°C)

NOTICE Remove the final rinse arms and purge the final rinse system prior to operation. This will reduce the possibility of clogging the final rinse nozzles. To properly purge the unit, activate the final rinse for 3 to 5 minutes and then reinstall the rinse arms.

Drain Connection

The common drain for the tanks requires only one connection to the floor drain. Connect the drain at the 2" NPT threaded fitting located at the unload end of the machine. If drain to the load end is required, move the plug from the end of the drain at the load end to the unload end drain connection and then connect the drain to the 2" NPT threaded fitting located at the load end. **NOTE:** For -DWR and -ADV models, when draining the machine to the load end, the factory drain plumbing will need to be relocated to the load end (Fig. 30).

If a grease trap is required by code, it should have a minimum flow capacity of 38 gallons per minute.

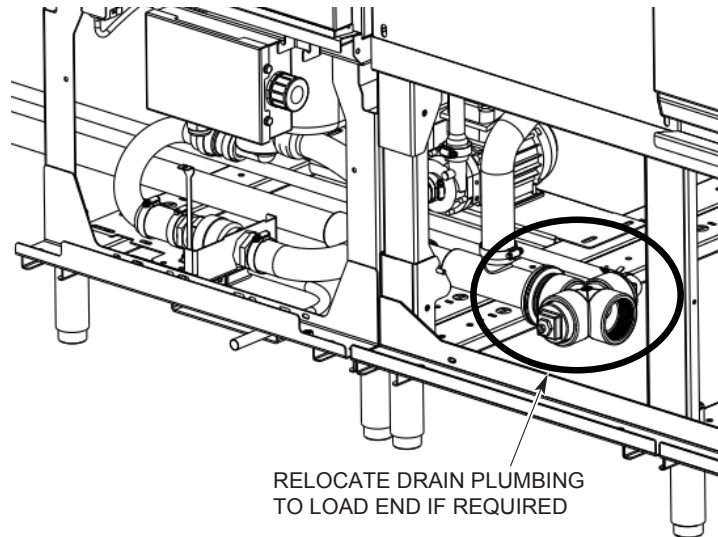


Fig. 30

Drain Water Tempering Kit

A drain water tempering kit is factory installed on all -DWR and -ADV models and is available as an accessory for all -BAS models. Refer to F-46034 FT2000 Drain Water Tempering Kit Installation Instructions supplied with the kit for proper installation.

NOTE: The Drain Water Tempering parameter must be Enabled in the Manager Menu when installed. Refer to the Programming section of the Operation manual (F-41386), to Enable the Drain Water Tempering parameter.

Steam Supply (When Equipped with Steam Tank Heat)

Check all factory steam lines for leaks, particularly unions. Tighten if necessary.

The steam supply must be 13-45 PSIG flowing pressure at the dishmachine and connects to the 1 1/2" NPT female fitting located under the unload end of the machine. If the flowing steam pressure at the machine is higher than 45 PSIG, a steam pressure regulator must be supplied and installed (by others) in the steam supply line.

NOTE: If the flowing steam pressure at the dishmachine is less than 13 PSI, contact Hobart Warewash Sales Engineering.

For steam consumption requirements, refer to the table below.

STEAM USAGE / REQUIREMENTS – POUNDS PER HOUR					
Model	Tank Heat	Booster 110° F Incoming Water 75° F Rise	Dryer	TOTAL Tank Heat & Booster	TOTAL Tank Heat, Booster & Dryer
FT2000-BAS FT2000-DWR FT2000-ADV	215	47	-	262	-
FT2000S-BAS FT2000S-DWR FT2000S-ADV	194	47	-	241	-
FT2000-BAS-BD FT2000-DWR-BD FT2000-ADV-BD	215	47	52	262	314
FT2000S-BAS-BD FT2000S-DWR-BD FT2000S-ADV-BD	194	47	52	241	293

Steam Tank Heat – Condensate Return

For machines equipped with steam tank heat, the wash tank, power rinse tank (if equipped), and dual rinse tank will each have a steam coil in the tank. A condensate return, gravity type, must be connected for each coil. Bucket-type traps are furnished (installed by others). The connection point for the condensate return lines for each coil is ¾" NPT female pipe fitting. Condensate return lines must not be plumbed uphill.

Steam Booster Heater – Condensate Return & Relief Valves

For machines equipped with a steam booster heater, the connection point for the condensate return, gravity type, is ¾" NPT female pipe fitting. A bucket-type trap is furnished (installed by others). The condensate return line must not be plumbed uphill. The steam booster heater is equipped with a steam relief valve that has a 1" NPT female pipe fitting that must be plumbed to an open drain receiver in the floor. The steam booster heater is also equipped with a hot water relief valve that has a ¾" NPT female pipe fitting that must be plumbed to an open drain receiver in the floor.

Steam Blower Dryer – Condensate Return

For machines equipped with a steam blower dryer, the connection point for the condensate return, gravity type, is ¾" NPT female pipe fitting. A bucket-type trap is furnished (installed by others). The condensate return line must not be plumbed uphill.

NOTE: The steam blower dryer is equipped with a steam solenoid valve. The steam supply turns on once the final rinse activates and turns off once the autotimer times out.

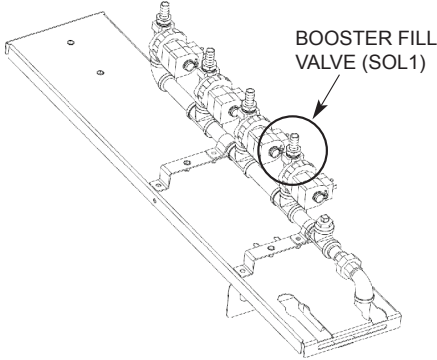
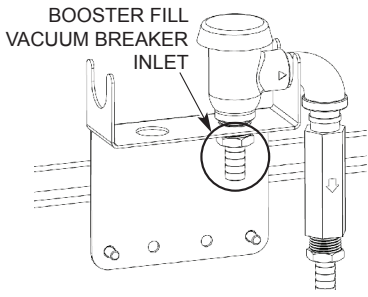
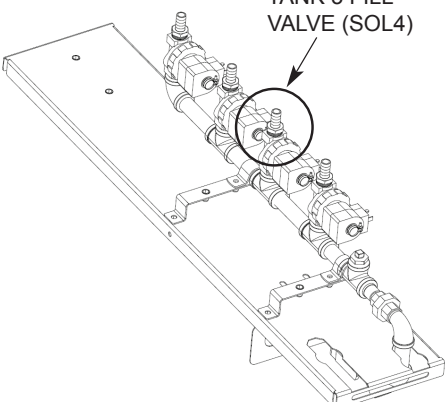
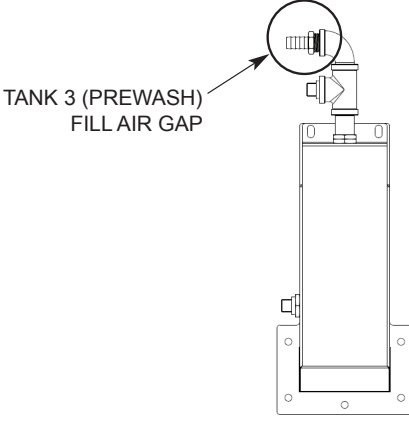
Line Strainers

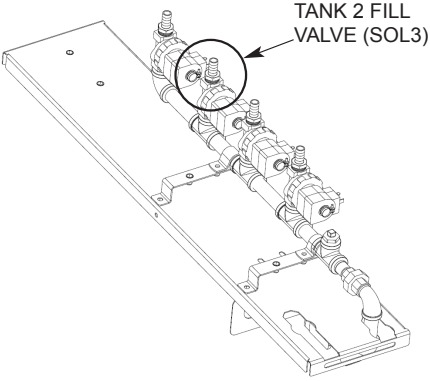
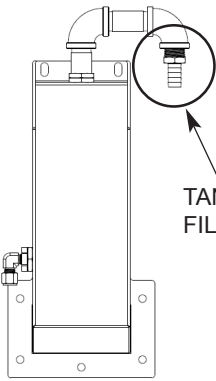
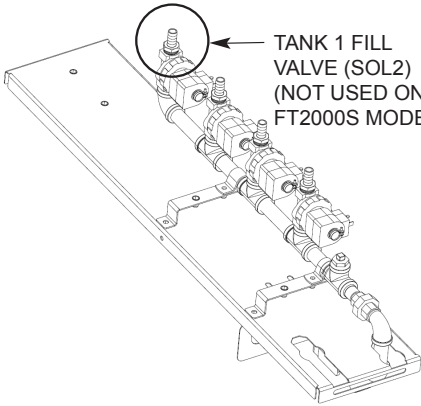
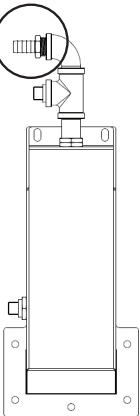
Line strainers are factory plumbed at the hot and cold (if applicable) water supply connections, and if the machine is equipped with steam heat, in the steam plumbing supplying each steam coil, steam booster and blower dryer (if equipped) and should be cleaned after installation and within the first week of operation. The line strainers will collect oils and other contaminants. Clogged line strainers will cause restrictions to the flow of water or steam (if applicable) and will reduce overall performance of the machine.

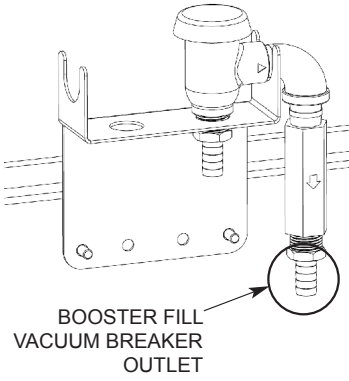
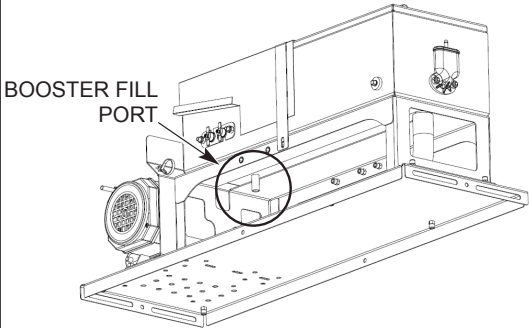
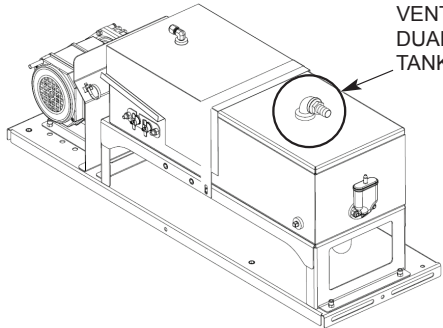
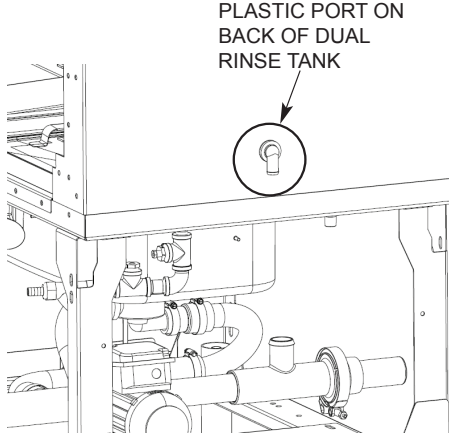
Water Hose Connections and Delime Tube

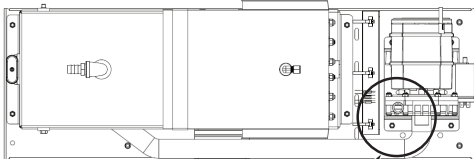
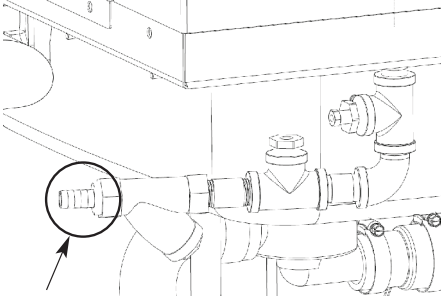
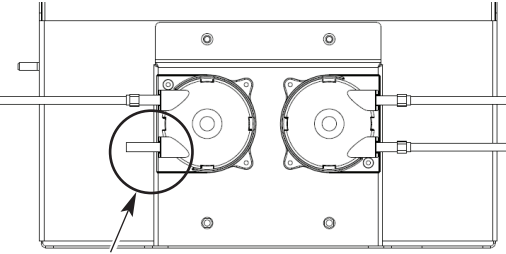
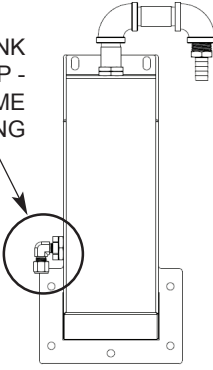
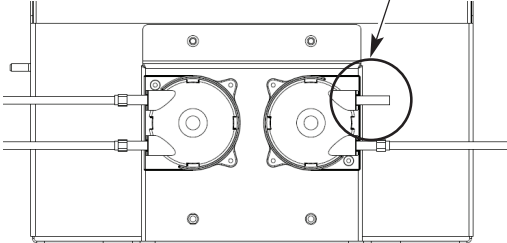
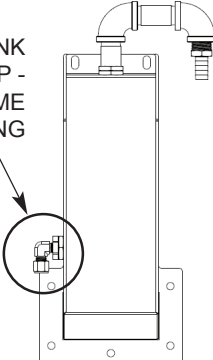
Route and connect the water hoses and the delime tube to the appropriate connections according to the below charts.

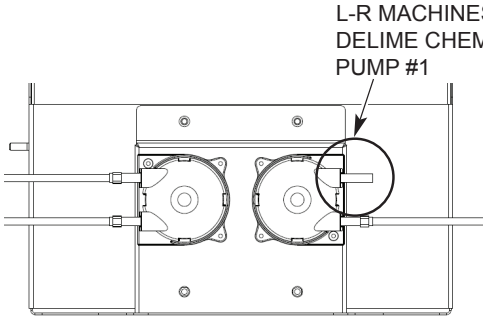
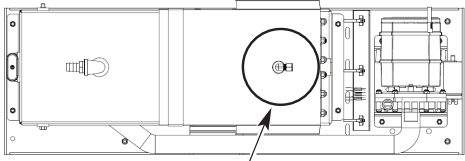
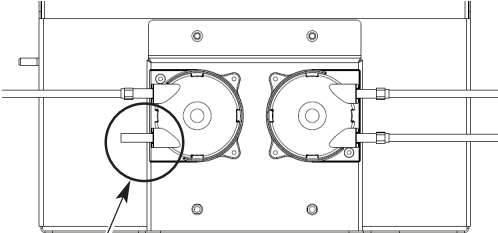
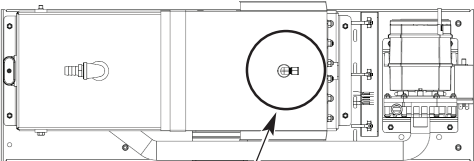
FT2000-BAS / FT2000S-BAS MODELS

CONNECTION NUMBER	FROM		TO	
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	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 1 BOOSTER FILL TO VACUUM BREAKER IN SOL 1	Field Connection / Center Section	BOOSTER VACUUM BREAKER IN
2				
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 4 TANK PREWASH FILL SOL 4	Field Connection / Load Section (Rear)	FROM VALVE 4 TANK PREWASH FILL

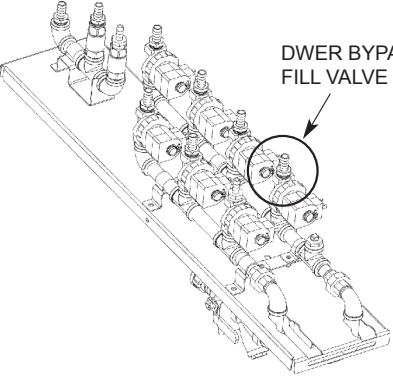
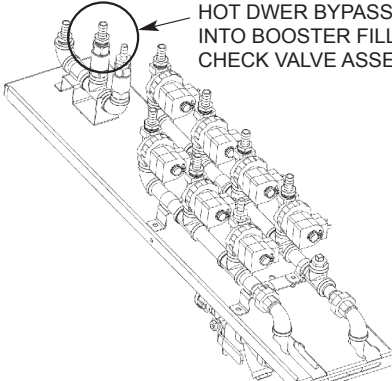
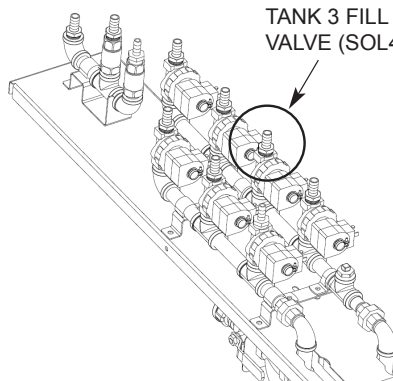
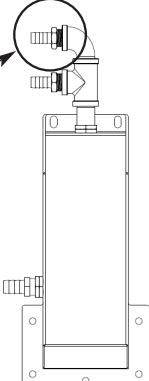
CONNECTION NUMBER	FROM		TO	
3	 <p>TANK 2 FILL VALVE (SOL3)</p>		 <p>TANK 2 (WASH) FILL AIR GAP</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 3 TANK WASH FILL SOL 3	Field Connection / Center Section (Rear)	FROM VALVE 3 TANK WASH FILL
4	 <p>TANK 1 FILL VALVE (SOL2) (NOT USED ON FT2000S MODELS)</p>		 <p>TANK 1 (POWER RINSE) FILL AIR GAP (NOT USED ON FT2000S MODELS)</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 2 TANK POWER RINSE FILL SOL 2	Field Connection / Center Section (Rear)	FROM VALVE 2 TANK POWER RINSE FILL

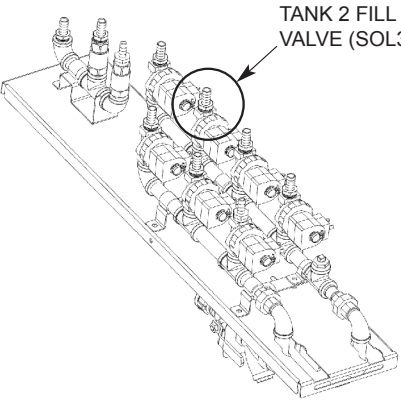
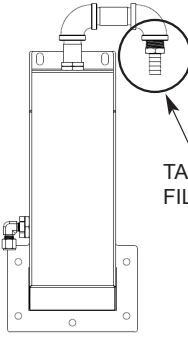
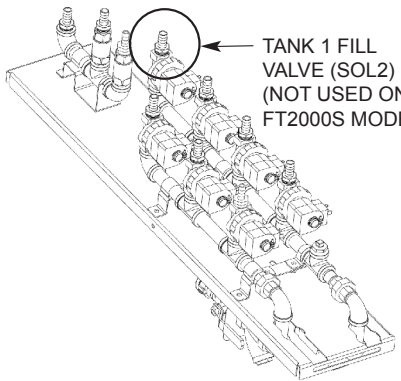
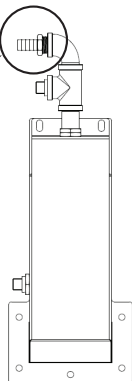
CONNECTION NUMBER	FROM		TO	
10				
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Center Section	BOOSTER VACUUM BREAKER OUT	Field Connection / Unload Section (Bottom of Booster)	BOOSTER FILL IN
12				
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Plant Connection / Unload Section	N/A	Field Connection / Center Section	BOOSTER VENT PORT DUAL RINSE CHAMBER

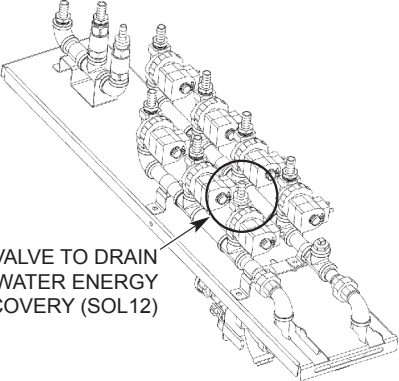
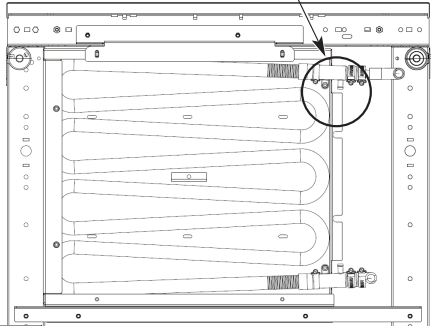
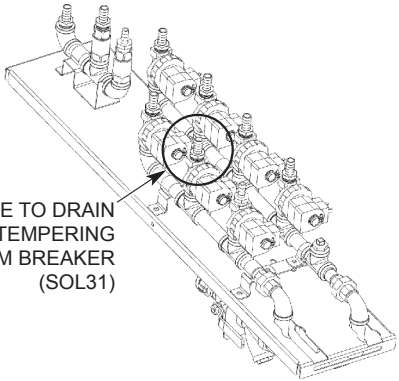
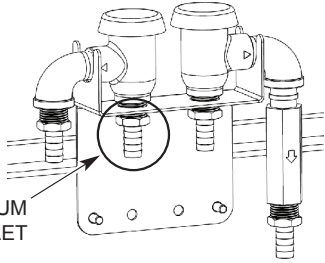
CONNECTION NUMBER	FROM		TO	
13	 <p data-bbox="527 472 738 525">FINAL RINSE PUMP TO FINAL RINSE IN</p>		 <p data-bbox="950 493 1153 577">FINAL RINSE LINE (LOCATED UNDER DUAL RINSE TANK)</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Plant Connection / Unload Section	N/A	Field Connection / Center Section	FINAL RINSE IN
15	FROM		TO	
	 <p data-bbox="397 1144 617 1228">L-R MACHINES DELIME CHEMICAL PUMP #2</p>		 <p data-bbox="1031 892 1201 997">WASH TANK FILL AIR GAP - DELIME FITTING</p>	
	 <p data-bbox="682 1344 901 1428">R-L MACHINES DELIME CHEMICAL PUMP #2</p>		 <p data-bbox="1023 1365 1193 1470">WASH TANK FILL AIR GAP - DELIME FITTING</p>	
CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT	
Field Connection / Unload Section	WASH DELIME CHEM PUMP OUT	Plant Connection / Center Section	N/A	

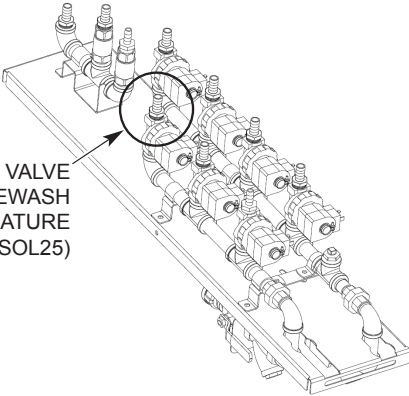
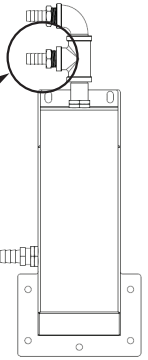
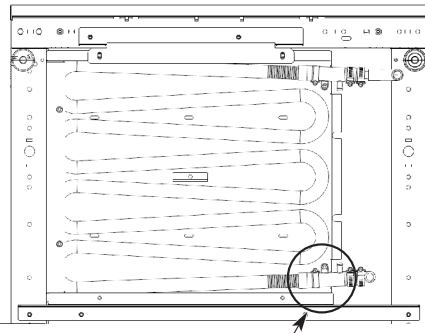
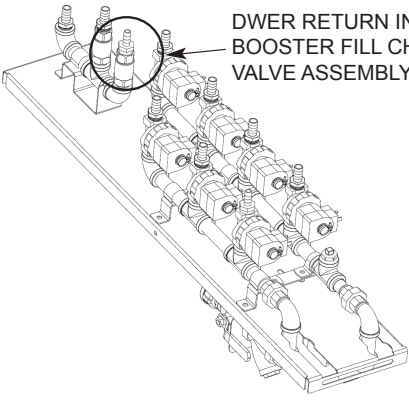
CONNECTION NUMBER	FROM		TO	
20	 <p>L-R MACHINES DELIME CHEMICAL PUMP #1</p>		 <p>BOOSTER DELIME FITTING</p>	
	 <p>R-L MACHINES DELIME CHEMICAL PUMP #1</p>		 <p>BOOSTER DELIME FITTING</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Plant Connection (Single Tank Unload) Field Connection (Split Unloads) Unload Section	BOOSTER DELIME CHEM PUMP OUT	Plant Connection / Unload Section	N/A

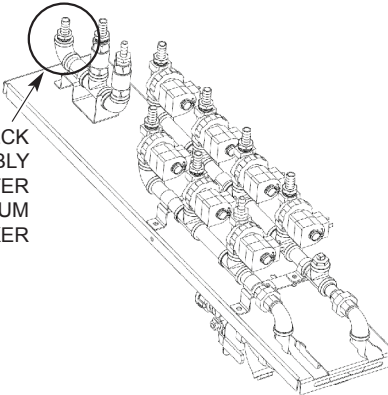
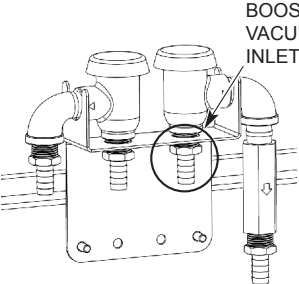
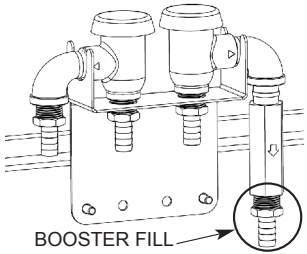
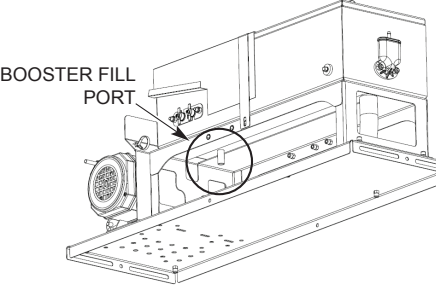
FT2000-DWR, FT2000-ADV / FT2000S-DWR, FT-2000S-ADV Models

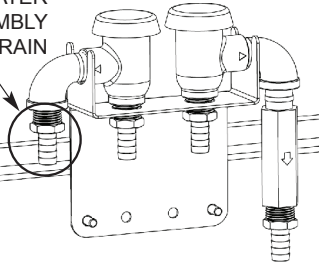
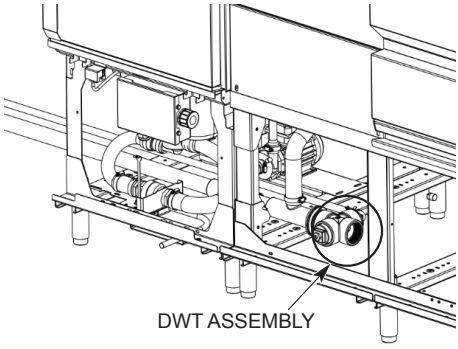
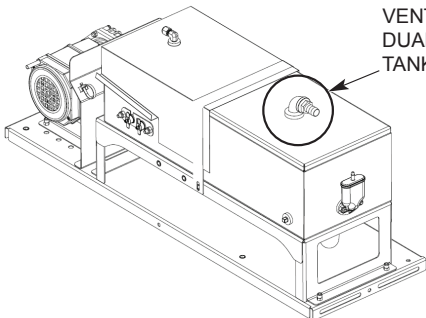
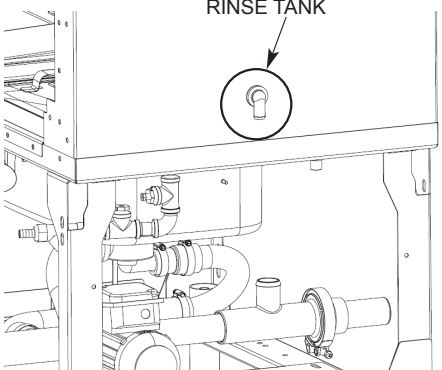
CONNECTION NUMBER	FROM		TO	
1	 <p>DWR BYPASS FILL VALVE (SOL1)</p>		 <p>HOT DWR BYPASS INTO BOOSTER FILL CHECK VALVE ASSEMBLY</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 1 BOOSTER BYPASS SOL 1	Field Connection / Unload Section	FROM VALVE 1 BOOSTER BYPASS
2	 <p>TANK 3 FILL VALVE (SOL4)</p>		 <p>TANK 3 (PREWASH) FILL AIR GAP</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 4 TANK PREWASH FILL SOL 4	Field Connection / Load Section (Rear)	FROM VALVE 4 TANK PREWASH FILL

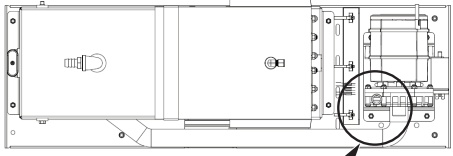
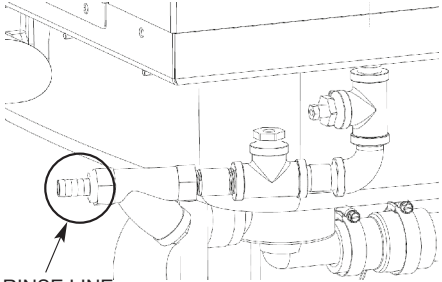
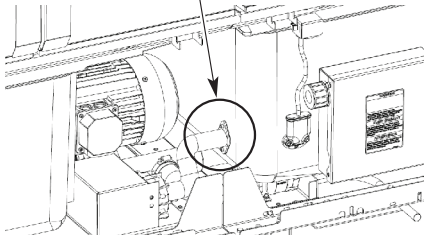
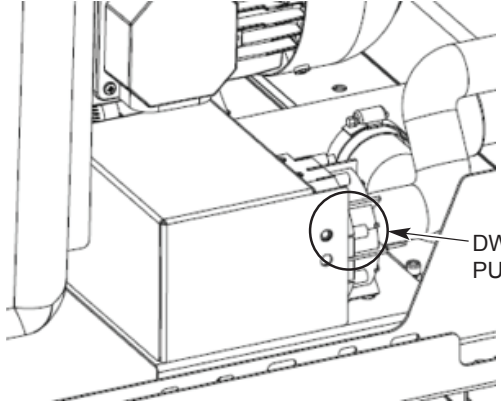
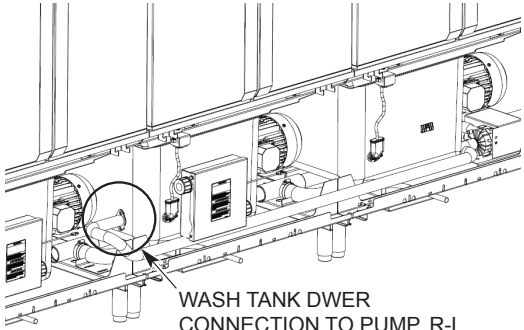
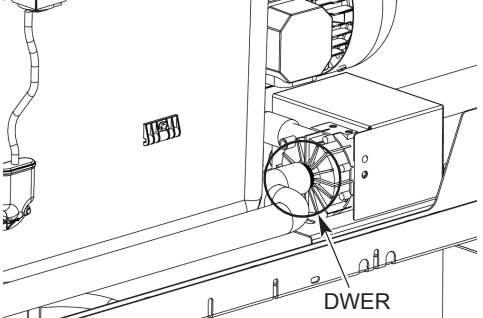
CONNECTION NUMBER	FROM		TO	
3	 <p>TANK 2 FILL VALVE (SOL3)</p>		 <p>TANK 2 (WASH) FILL AIR GAP</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 3 TANK WASH FILL SOL 3	Field Connection / Center Section (Rear)	FROM VALVE 3 TANK WASH FILL
4	 <p>TANK 1 FILL VALVE (SOL2) (NOT USED ON FT2000S MODELS)</p>		 <p>TANK 1 (POWER RINSE) FILL AIR GAP (NOT USED ON FT2000S MODELS)</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 2 TANK POWER RINSE FILL SOL 2	Field Connection / Center Section (Rear)	FROM VALVE 2 TANK POWER RINSE FILL

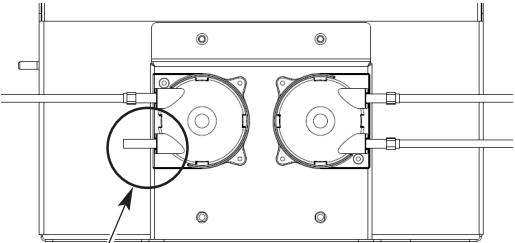
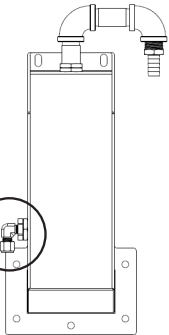
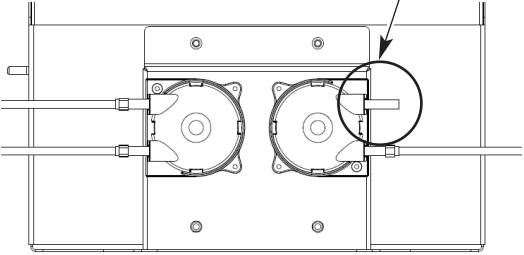
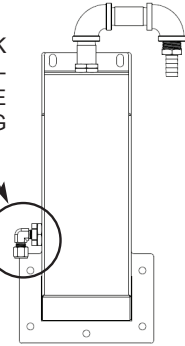
CONNECTION NUMBER	FROM		TO	
5	 <p>FILL VALVE TO DRAIN WATER ENERGY RECOVERY (SOL12)</p>		 <p>DRAIN WATER ENERGY RECOVERY COIL "IN"</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 7 TO DWER COIL SOL 12	Field Connection / Load Section (Under Prewash Tank)	FROM VALVE 7 DWER IN
6	 <p>FILL VALVE TO DRAIN WATER TEMPERING VACUUM BREAKER (SOL31)</p>		 <p>DWT VACUUM BREAKER INLET</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 6 DWT TO VACUUM BREAKER SOL 31	Field Connection / Center Section (Rear)	FROM VALVE 6 DWT TO VACUUM BREAKER

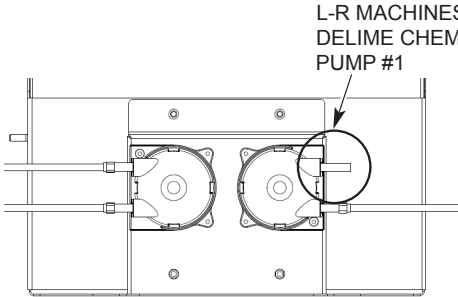
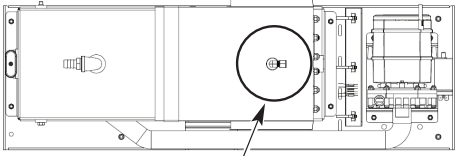
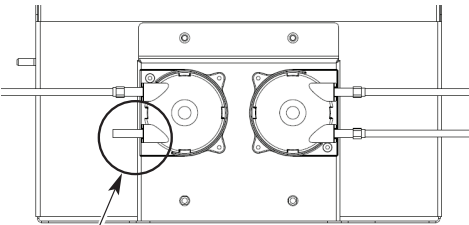
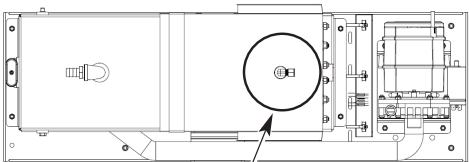
CONNECTION NUMBER	FROM		TO	
7	 <p>FILL VALVE TO PREWASH TEMPERATURE CONTROL (SOL25)</p>		 <p>TANK 3 (PREWASH) FILL AIR GAP PWTC IN</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	VALVE 5 PWTC SOL 25	Field Connection / Load Section (Rear)	FROM VALVE 5 PWTC FILL AIR GAP
8	 <p>DRAIN WATER ENERGY RECOVERY "OUT" TO BOOSTER CHECK VALVE ASSEMBLY</p>		 <p>DWER RETURN INTO BOOSTER FILL CHECK VALVE ASSEMBLY</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Load Section (Under Prewash Tank)	DWER OUT	Field Connection / Unload Section	FROM DWER OUT CHECK VALVE ASSY IN

CONNECTION NUMBER	FROM		TO	
9	 <p>BOOSTER CHECK VALVE ASSEMBLY "OUT" TO BOOSTER FILL VACUUM BREAKER</p>		 <p>BOOSTER FILL VACUUM BREAKER INLET</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	CHECK VALVE ASSY OUT	Field Connection / Center Section	BOOSTER VACUUM BREAKER IN
10	 <p>BOOSTER FILL VACUUM BREAKER OUTLET</p>		 <p>BOOSTER FILL PORT</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Center Section	BOOSTER VACUUM BREAKER OUT	Field Connection / Unload Section (Bottom of Booster)	BOOSTER FILL IN

CONNECTION NUMBER	FROM		TO	
11	 <p>DWT VACUUM BREAKER "OUT" TO DRAIN WATER TEMPERING ASSEMBLY ON DRAIN</p>		 <p>DWT ASSEMBLY</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Center Section	DWT VACUUM BREAKER OUT	Field Connection / Center Section (Location installed on unload drain from plant. Can be relocated to load.)	DWT DRAIN IN
12	FROM		TO	
	 <p>BOOSTER OVERFLOW VENT OUT TO DUAL RINSE TANK PORT IN</p>		 <p>PLASTIC PORT ON BACK OF DUAL RINSE TANK</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
Plant Connection / Unload Section	N/A	Field Connection / Center Section	BOOSTER VENT PORT DUAL RINSE CHAMBER	

CONNECTION NUMBER	FROM		TO	
13	 <p data-bbox="532 499 732 548">FINAL RINSE PUMP TO FINAL RINSE IN</p>		 <p data-bbox="971 533 1154 602">FINAL RINSE LINE (LOCATED UNDER DUAL RINSE TANK)</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Plant Connection / Unload Section	N/A	Field Connection / Center Section	FINAL RINSE IN
14	<p data-bbox="467 884 748 932">WASH TANK DWER CONNECTION TO PUMP, L-R</p> 		 <p data-bbox="1403 1079 1479 1127">DWER PUMP</p>	
	 <p data-bbox="558 1625 846 1673">WASH TANK DWER CONNECTION TO PUMP, R-L</p>		 <p data-bbox="1289 1625 1365 1673">DWER PUMP</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
Field Connection / Center Section	TO DWER PUMP	Plant Connection / Load Section	N/A	
Field Connection / Center Section	TO DWER PUMP	Field Connection / Load Section	DWER PUMP FROM WASH TANK	

CONNECTION NUMBER	FROM		TO	
15	 <p data-bbox="370 485 586 562">L-R MACHINES DELIME CHEMICAL PUMP #2</p>		 <p data-bbox="1036 281 1182 380">WASH TANK FILL AIR GAP - DELIME FITTING</p>	
	 <p data-bbox="659 716 881 793">R-L MACHINES DELIME CHEMICAL PUMP #2</p>		 <p data-bbox="1044 743 1190 842">WASH TANK FILL AIR GAP - DELIME FITTING</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Field Connection / Unload Section	WASH DELIME CHEM PUMP OUT	Plant Connection / Center Section	N/A

CONNECTION NUMBER	FROM		TO	
20	 <p>L-R MACHINES DELIME CHEMICAL PUMP #1</p>		 <p>BOOSTER DELIME FITTING</p>	
	 <p>R-L MACHINES DELIME CHEMICAL PUMP #1</p>		 <p>BOOSTER DELIME FITTING</p>	
	CONNECTION / LOCATION	ID TAG TEXT	CONNECTION / LOCATION	ID TAG TEXT
	Plant Connection (Single Tank Unload) Field Connection (Split Unloads) Unload Section	BOOSTER DELIME CHEM PUMP OUT	Plant Connection / Unload Section	N/A

CHEMICAL FEEDER INSTALLATIONS

This machine must be operated with an automatic detergent feeder, including a visual means to verify that detergent is delivered or a visual or audible alarm to signal if detergent is not available for delivery to the washing system. Chemical feeders are supplied and installed by others. For chemical feeder electrical connections, refer to Electrical Connection – Detergent & Rinse Aid Dispensers, page 33. For questions about chemicals, dosing or chemical feeders, contact the chemical supplier.

The preferred location for a detergent and/or rinse aid dispenser is at the top of the machine. Two stainless steel brackets are provided for dispenser mounting (shipped loose, field install at preferred locations on top panels of machine). Route all plumbing and wiring between the rear access panels and chamber where possible using the provided knockouts located at the top and sides of the panels. **NOTE:** Remove the top panel before drilling to prevent drilling into the top of the machine chamber.

An alternate chemical dispenser mounting panel is provided on the back side of the unload section (Fig. 31).

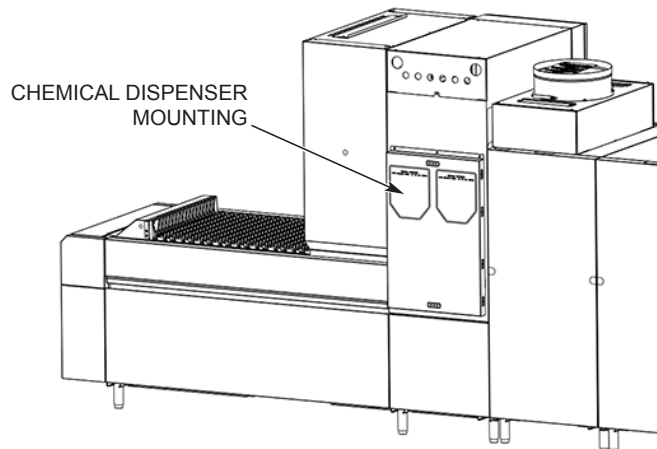


Fig. 31

For chemical feeders requiring a hot water supply, remove the 1/4" plug located under the unload section for hot water access (Fig. 32).

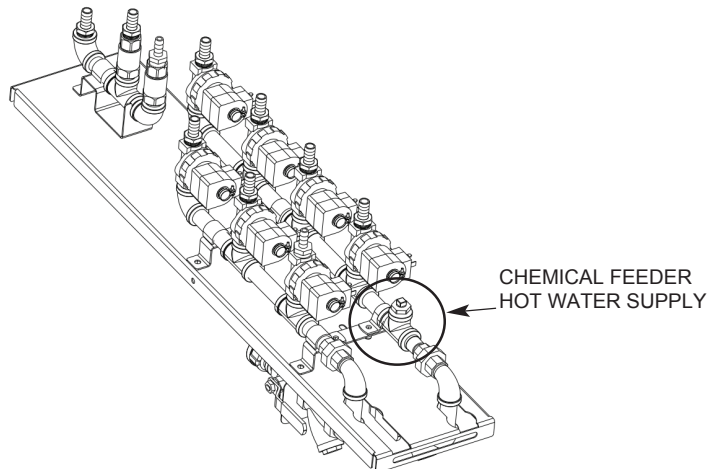


Fig. 32

Detergent Feeder

The chemical supplier will install a detergent feeder port that provides for discharge of detergent into the wash tank. A plugged hole is provided at the rear of the wash chamber for a liquid detergent dispenser inlet (Fig. 33). A plugged hole is also provided in the wash tank on the front side for a detergent sensor probe (Fig. 34).

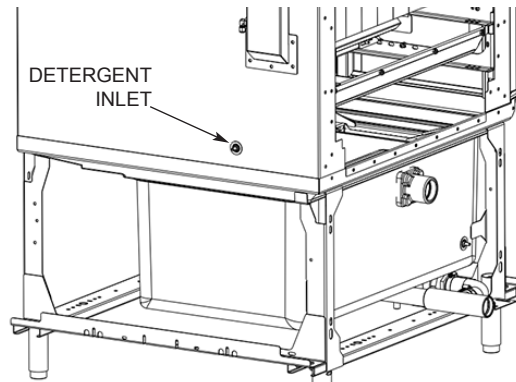


Fig. 33

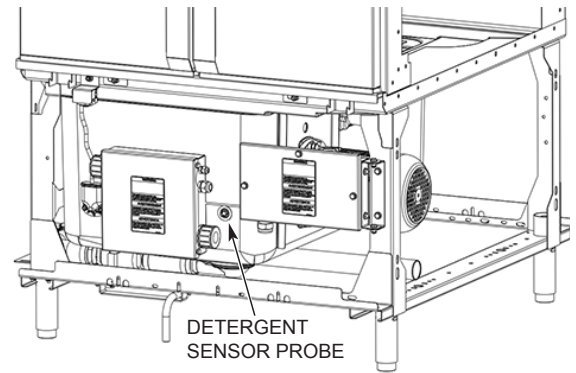


Fig. 34

Rinse Aid Feeder

A 1/8" NPT plug is provided in the final rinse plumbing located under the dual rinse section for a rinse aid inlet (Fig. 35).

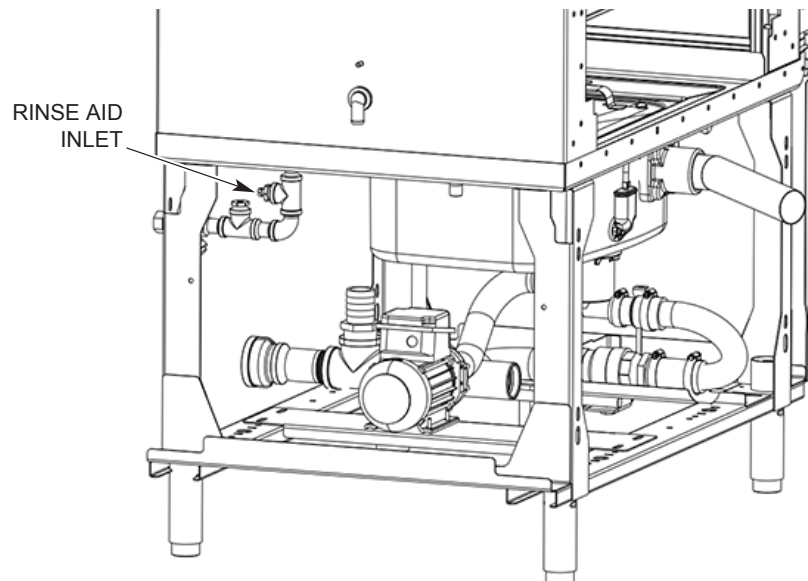


Fig. 35

Complete Delime

All FT2000 dish machines are equipped with the Complete Delime feature. During the Complete Delime process, the machine will automatically pump the required amount of delime chemical into the machine. The process takes approximately one hour to complete and cannot be cancelled once initiated. This system consists of two pumps with long tubes and standpipes that get inserted into two delime chemical containers, which are located in the dedicated delime storage location located at the unload end of the machine (Fig. 36). Remove the tape securing the delime tubes and standpipes for easy operator access when a Complete Delime cycle is required. **DO NOT** disconnect the delime tubes and standpipes from the machine.



Fig. 36

VENTING REQUIREMENTS

All FT2000 models require a direct connection vent and have a 16" diameter vent stack requiring 750 CFM exhaust (standard air conditions) at the machine connection. Proper room ventilation is required to handle the machine's latent and sensible heat and to maintain proper dish machine temperatures. Refer to the FT2000 spec sheets for the latent and sensible heat BTU/HR values.

NOTE: Do not step on top chamber covers when installing vent.

NOTE: Ensure exhaust condensate pan is not blocking air intake.

ELECTRICAL CONNECTIONS

⚠ WARNING Electrical and grounding connections must comply with applicable portions of the National Electrical Code (NFPA No. 70, latest edition) and/or other local electrical codes.

⚠ WARNING Disconnect the electrical power to the machine and follow lockout/tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

With power to all service connections locked out/tagged out, verify that the line and load service connections have been properly tightened.

Refer to the electrical diagram located inside the control box door. Some machines may require more than one electrical power supply connection. All electrical supply lines to the machine must be disconnected when servicing machine.

Run electrical conduit(s) thru provided openings on the back side of the machine behind the control box. Install conduit fitting(s) at knockouts located at rear of control box with proper conduit fitting(s)

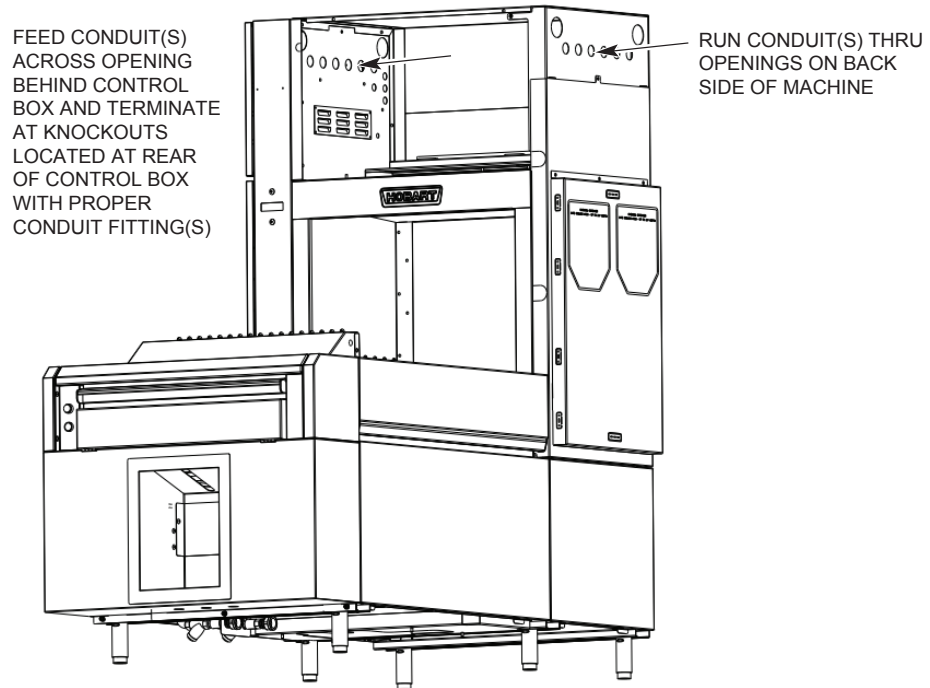


Fig. 37

Motor Overloads

Ensure all motor overloads in control panel are not tripped by pressing in on the white reset button located on the front of each motor overload (Fig 38). Verify all overloads are set to the proper amp rating per the overload label located on the inside of the control panel door and adjust as required.

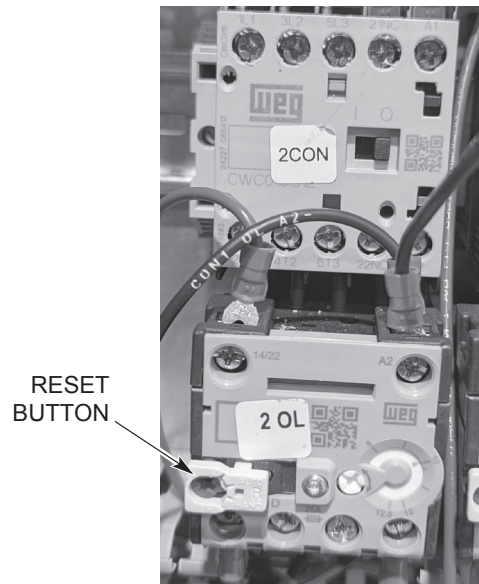


Fig. 38

Checking Motor Rotation (Three-Phase Motors)

Pumps, conveyor motor, exhaust fan and blower dryer fan motors (when equipped) are all three-phase motors. Before placing machine into service, check to verify correct rotation by observing motor direction.

If any pump motor does not rotate in the correct direction, check the rotation of the other motors. If they all are rotating backward, disconnect the electrical supply and interchange any two of the incoming power supply leads. If all motors are not running in the correct direction, only change the two incoming wires of the motor(s) that is running backward. Reconnect electrical power, push the START button and verify that the motors rotate in the proper direction.

NOTE: If the conveyor motor does not rotate in the correct direction, disconnect the electrical power supply and interchange any two of the conveyor motor wires from the Frequency Inverter at terminal TB8.25, .26 or .27.

Voltage Adjustment

This adjustment procedure applies to all FT2000 dishwashers equipped with steam heat and rated at 200 to 240 volts, 50/60 Hz, 3 phase. All other FT2000 dishwasher voltages are preset at the factory and do not require this adjustment procedure.

THIS PROCEDURE MUST BE DONE ONLY BY A QUALIFIED HOBART-TRAINED SERVICE TECHNICIAN.

If the supply voltage to the machine is 224 to 264 volts, no change is necessary. The control circuit transformer [T1] should already be set to operate at 240 volts.

If the supply voltage to the machine is 177 to 224 volts, the control circuit transformer [T1] must be changed to operate at 208 volts.

Electrical Connection - Detergent & Rinse Aid Dispensers

⚠ WARNING Electrical and grounding connections must comply with applicable portions of the National Electrical Code (NFPA No. 70, latest edition) and/or other local electrical codes.

⚠ WARNING Disconnect the electrical power to the machine and follow lockout/tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

A ½" conduit hole is provided at the rear of the control panel for the chemical system conduit connection.

All FT2000 models provide an electrical connection point which supplies line voltage power to an external chemical dispenser (provided and installed by others). The line voltage power is present anytime the dish machine is powered on. The maximum rating for the chemical dispenser connected to CPS1 and CPS2 (located on the TB9 terminal block) is 1.0 amp.

Detergent Feeder – the maximum rating for a detergent dispenser connected to DPS1 and DPS2 (located on the TB9 terminal block) is 1.5 amps at line voltage (ON when the pumps are running). Refer to CHEMICAL FEEDER INSTALLATIONS, page 41, for installation details.

Rinse Aid Feeder – the maximum rating for a rinse aid dispenser connected to RPS1 and RPS2 (located on the TB9 terminal block) is 1.5 amps at line voltage (ON when the final rinse is active). Refer to CHEMICAL FEEDER INSTALLATIONS, page 41, for installation details.

Vent Fan Control

⚠ WARNING Electrical and grounding connections must comply with applicable portions of the National Electrical Code (NFPA No. 70, latest edition) and/or other local electrical codes.

⚠ WARNING Disconnect the electrical power to the machine and follow lockout/tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

The maximum rating for a vent fan connected to VFC1 and VFC2 (located on the TB9 terminal block in the upper control box behind the stainless-steel protective cover) is 1.5 amps. **NOTE:** If the facility exhaust fan circuit connected to the dish machine's vent fan control circuit exceeds 1.5 amps, then an external control relay or contactor will need to be provided and installed by others. A ½" conduit hole is provided at the rear of the control panel for the vent fan control conduit connection.

The vent fan control circuit will turn the facility exhaust fan on when the pump motors start and off after a pre-set time once the pumps turn off, eliminating the need for a separate fan switch on the wall. The factory setting for the vent fan control time delay is 5 minutes. This time can be adjusted from 0 minutes to 999 minutes in the Manager Menu. Refer to the Programming section of the Operation manual (F-41386), to adjust the vent fan control time delay parameter.

The dish machine does not supply voltage through this circuit. It is a controlling circuit utilizing a dry relay contact. A hot wire from the facility exhaust fan control connects to one of the VFC terminals located on the TB9 terminal block in the FT2000 control box and a second wire connects to the second VFC terminal and wires to the facility exhaust fan control completing the circuit. The dish machine will then close and open the circuit with the pump's operation, which will turn the facility exhaust fan on and off with machine operation.

CONVEYOR ASSEMBLY

Prior to installing the conveyor, loosen the two stop nuts located on both the front and rear take-up assemblies on the outside of the tracks located at the load end of the machine. Thread the adjusting bolts out as far as possible moving the front and rear conveyor guides towards the machine entrance (Fig. 39).

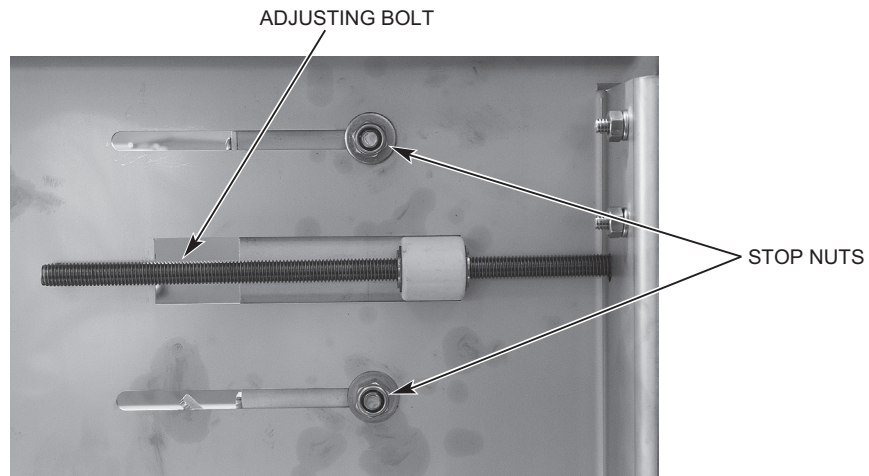


Fig. 39

Loading and Joining the Conveyor Sections

- All conveyor sections are numbered: ROLL 1, ROLL 2, ROLL 3, ROLL 4, etc.; install them in numerical sequence.
- Remove 3" tall track extensions from load end (front & rear) by removing two sets of hardware to install conveyor. Re-assemble track extensions after conveyor is assembled.
- Raise the loading platform and place a piece of cardboard under, around and above the platform to protect it from being scratched during conveyor installation.
- Remove the chain cover on the unload end and then remove the drive chain from the conveyor gear motor so that the conveyor sprockets are free to rotate.
- Position the first section of conveyor in line with the machine at the load end. The flight links must lean towards the load end of the machine (Fig. 40).
- For welded security conveyor assemblies, ensure the retaining rings are tack welded to the conveyor rods.

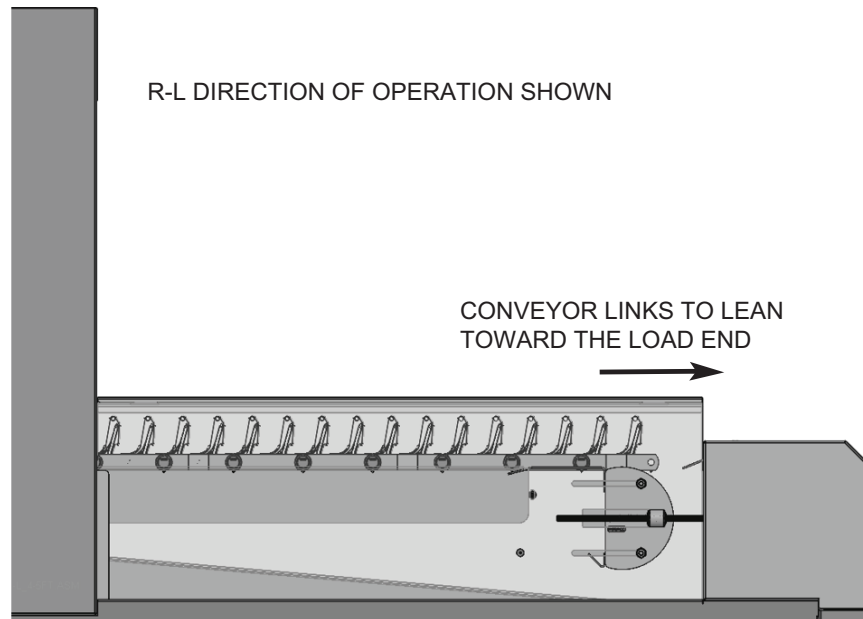


Fig. 40

- Tie a rope to the first conveyor rod. Feed the rope through the machine following the desired path of the conveyor with the flight links pointing up.
- Remove the conveyor roller from one end of the last conveyor rod on the first section. Then pull the conveyor rod out and save the roller and washers for re-assembly. To join the sections, thread the rod back through the side bars and washer and then through the flight links, alternating the links from the first and second sections, and then through the washer and side bars on the opposite side. Complete the assembly by attaching the conveyor roller with a new retaining ring (Figs. 41 & 42). Spin the roller to ensure that the retaining ring has been secured to the conveyor rod. Always use a new retaining ring to secure a tight grip on the conveyor rod. Repeat this step for joining each succeeding conveyor section.

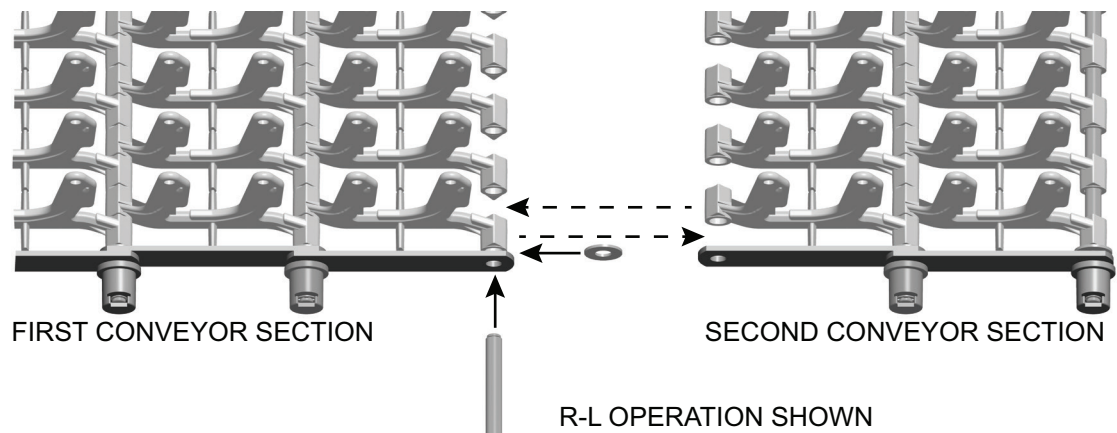


Fig. 41

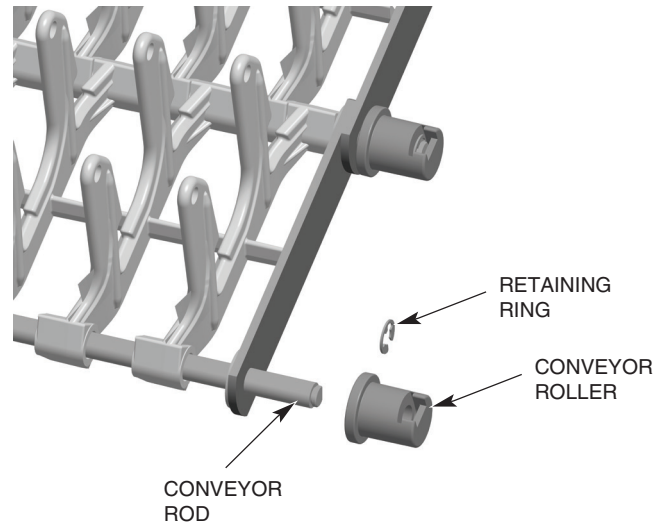


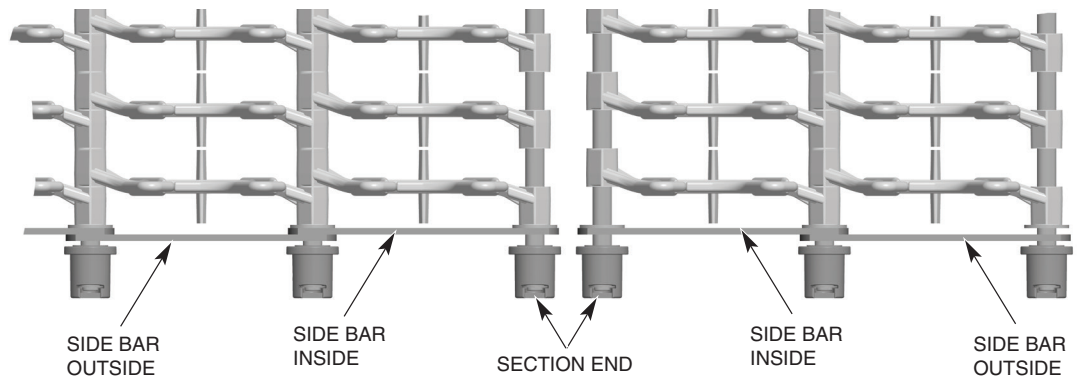
Fig. 42

Pull the conveyor through the machine starting at the load end, around the conveyor sprockets at the unload end, down to the top of the lower track and back through the machine. Make sure conveyor rollers do not feed under tracks.

Join the ends of the conveyor by threading the final conveyor rod through both rows of flight links and the side bars on both sides. Conveyor links alternate with both ends of the link on the inside following by both ends of the next link on the outside, except for the conveyor offset link, which is only used on the standard conveyor.

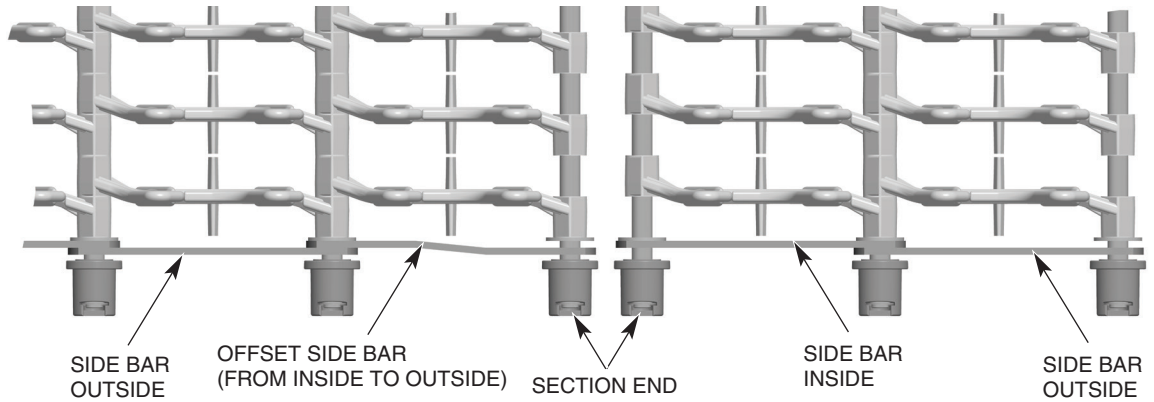
Conveyor Offset Side Bar

Conveyor offset side bars are supplied for use with the standard conveyors and are to be used, if necessary, when making the final connection to join the two conveyor ends. The total length of all conveyor sections shipped may slightly exceed the optimal length required for the machine's length and conveyor's travel. This can possibly require one or two rows of flight links to be removed together with all associated rods, side bars and end rollers. When the proper length of conveyor has been determined, pull the ends of the last two sections together to examine the side bar patterns. If both sections end with the side bars on the outside position or both sections end with the side bars on the inside position (Fig. 43), you must replace the last side bars on one of the sections with the offset side bars to maintain the pattern (Fig. 44).



INCORRECT SIDE BAR ALIGNMENT (BOTH SIDE BARS INSIDE)

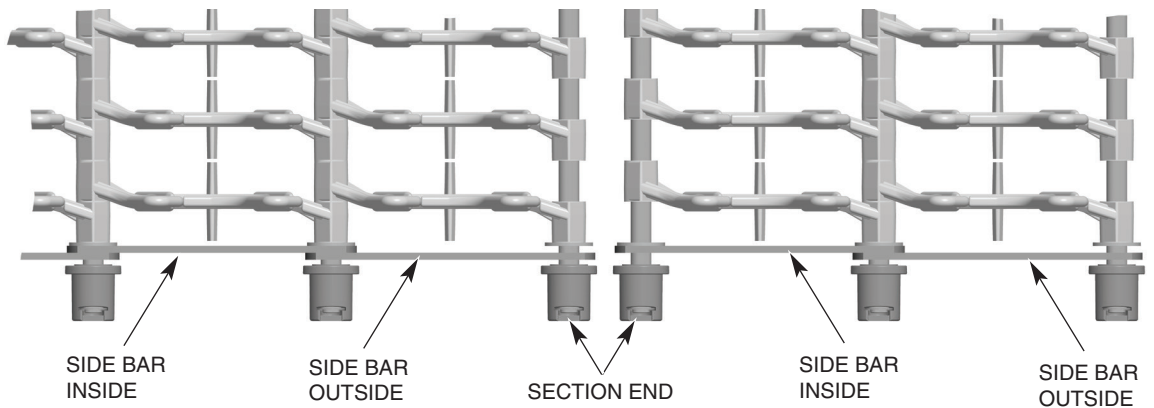
Fig. 43



CORRECT SIDE BAR ALIGNMENT WITH OFFSET BAR
(INSIDE TO OUTSIDE PATTERN MAINTAINED)

Fig. 44

However, if the sections end such that the inside to outside pattern of the side bars will be maintained, they can be joined without the use of the offset side bars (Fig. 45). Complete the joining of the conveyor sections as necessary to maintain the side bar pattern.



CORRECT SIDE BAR ALIGNMENT WITHOUT OFFSET LINK
(INSIDE TO OUTSIDE PATTERN MAINTAINED)

Fig. 45

NOTE: The proper length of conveyor, when adjusted, will have the flight links close to (within 1") or engaging the load fingers at the load platform. It may be necessary to remove one or two conveyor rods (with rows of flight links) to obtain the desired length.

NOTE: Each time a conveyor roller is installed or replaced, a NEW retaining ring (Fig. 42) must be used.

Once the conveyor is installed, reinstall the conveyor drive chain to the conveyor gear motor.

Adjusting the Conveyor Take-Up Unit (Load Section)

Tighten the tension on the conveyor by turning the adjusting bolts on the take-up units until the conveyor is no longer sagging at either the load or unload end and then re-tighten the two stop nuts located on both the front and rear take-up assemblies on the outside of the tracks (Fig. 46).

NOTE: When conveyor is adjusted to proper tension, ensure adjusting bolts are adjusted evenly on the front and rear sides by measuring from the edge of the track cutout to the face of the roller guide (Fig. 46).

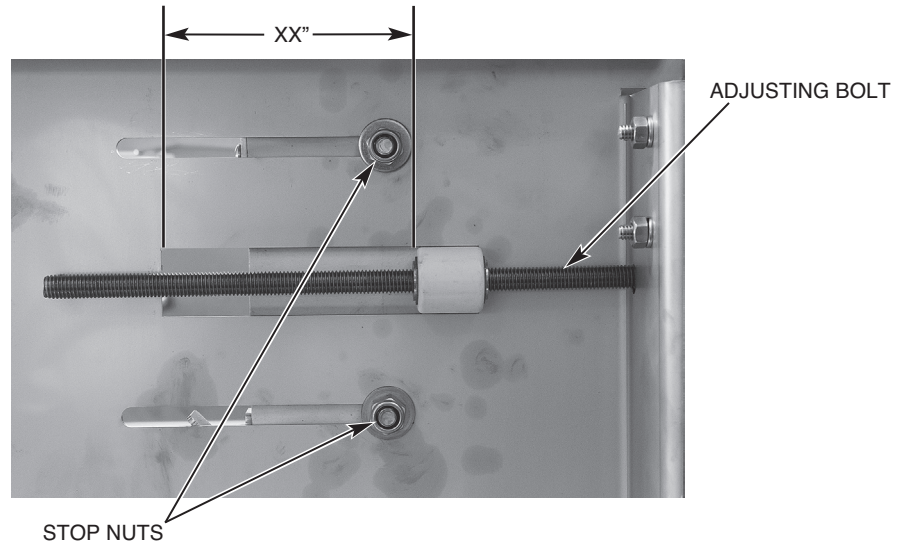


Fig. 46

Run the conveyor for 20 minutes. After running the conveyor for 20 minutes, stop the conveyor and check the tension. Proper tension is achieved when you grab both sides of the conveyor in the middle of the unload and lift so the bottom of the rollers of the conveyor (both sides) just clear the top surface of the unload tracks (Fig. 47).



Fig. 47

FT2000 Conveyor Jam Switch Setting Verification / Adjustment

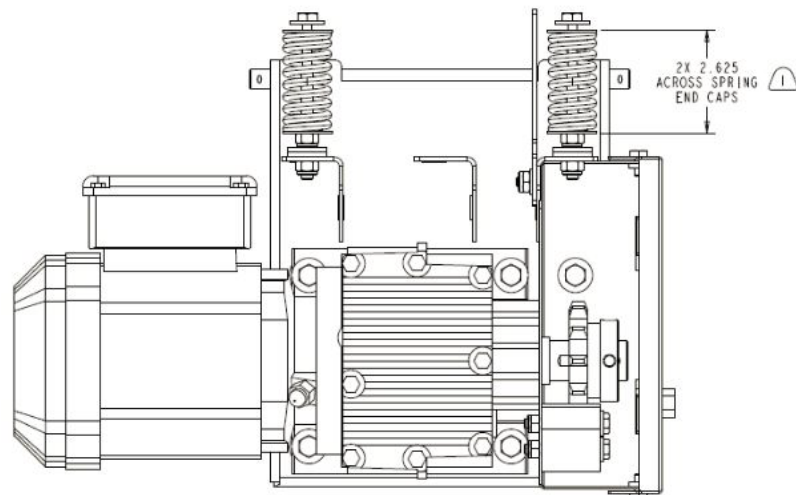
NOTE: This procedure should be performed after the machine is fully installed and operational with no ware on conveyor and will require a torque wrench capable of 150 foot pounds.

1. Remove unload lower trim panel on conveyor drive side of machine to access conveyor drive assembly. (Front panel on L-R machines, rear panel on R-L machines.)
2. Start the machine and allow the conveyor to run.
3. Using a $\frac{1}{2}$ " drive torque wrench set to 75 foot pounds with a $\frac{5}{8}$ " socket, apply torque in a clockwise direction to the hex rod protruding from the base of the drive assembly (Fig. 48).



Fig. 48

- a. If conveyor jam switch shuts machine off when torqued to 70-80 foot pounds, no further action is required. Replace lower trim panel.
 - b. If the conveyor jam switch does not shut the machine off when torqued to 70-80 foot pounds, proceed to step 4.
4. Remove unload end panel and verify the two springs are assembled correctly and compressed to the correct dimension as shown below in Fig 49.



1 THIS DIMENSION IS PRIOR TO ASSEMBLY OF THE DRIVE CHAIN.
AFTER ASSEMBLY OF THE DRIVE CHAIN THIS DIMENSION WILL DECREASE TO $2.375 \pm .125$.

Fig. 49

- a. If any of the springs are not compressed to the correct dimension, adjust the compression as necessary by loosening or tightening the nut adjacent to the spring.
5. Verify position of conveyor anti-jam actuator plate and jam sensor to ensure they are positioned as shown below and adjust as necessary (Figs 50 and 51).

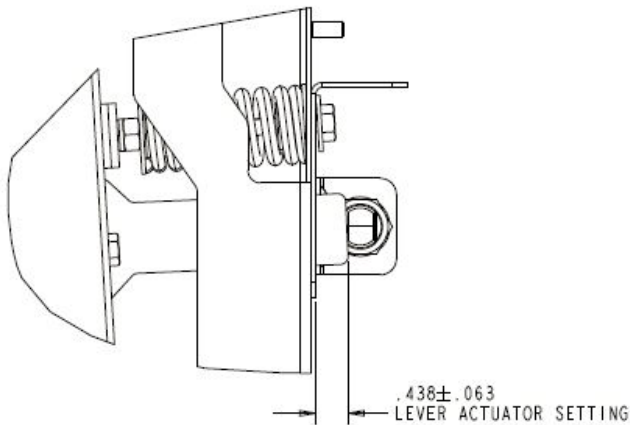


Fig. 50

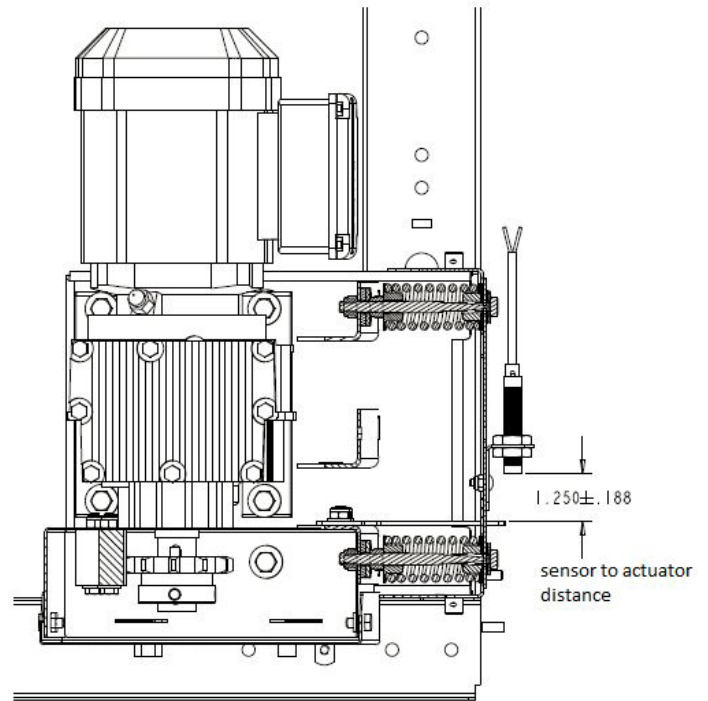


Fig. 51

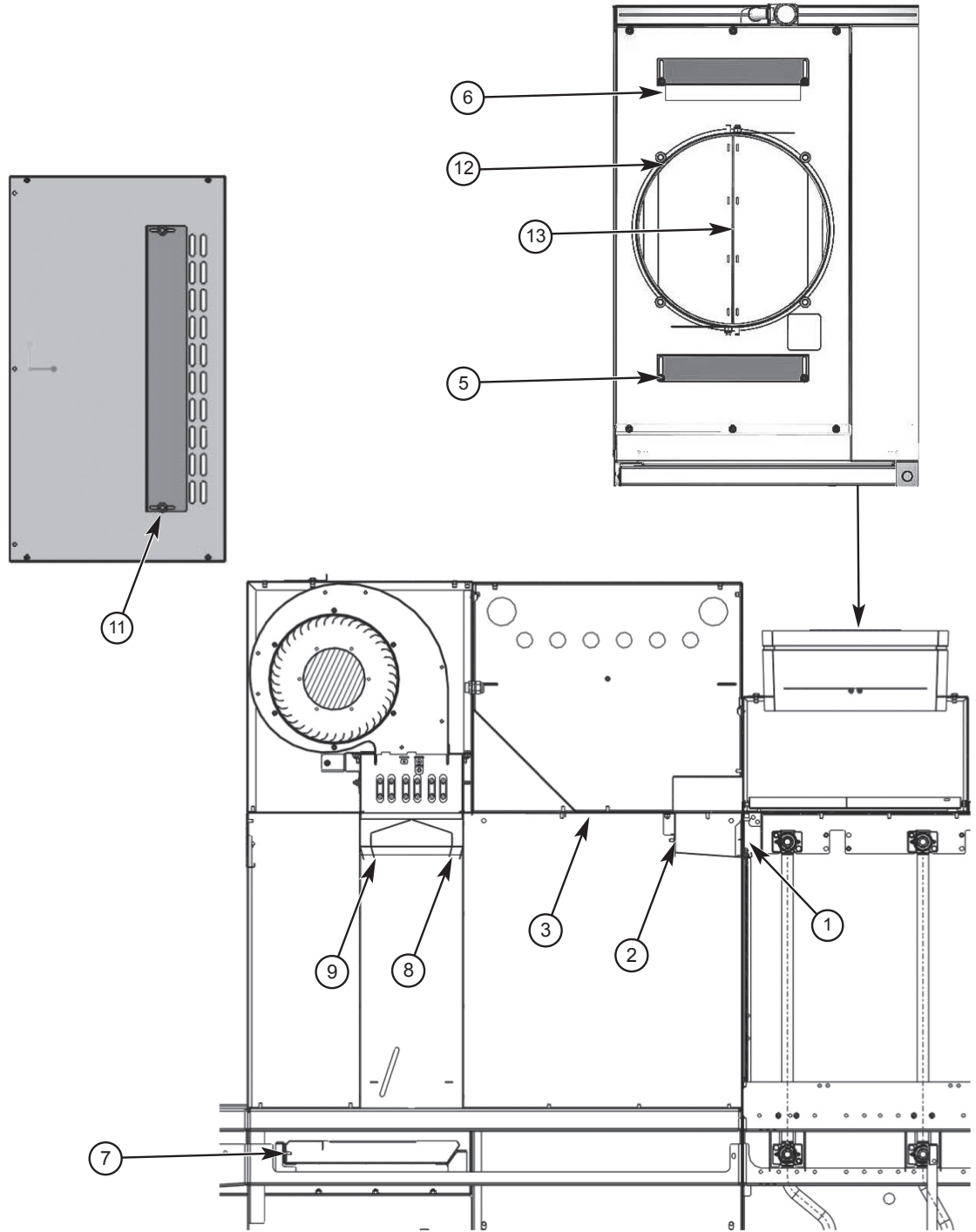
6. Refer to steps 2 and 3 and re-check the conveyor jam switch operation.
7. Re-install lower trim panels.

MISCELLANEOUS

Air Baffle Settings

The air baffles are factory set. After machine is placed in full operation with customer running ware, if adjustments are required, refer to the service manual or contact your local Hobart Service office.

The following diagrams and charts outline the standard factory baffle settings for each of the machine configurations.



FT2000 & FT2000S WITHOUT BLOWER DRYER	
Baffle Number	Baffle Setting (Open)
1	100%
2	50% (5/8")
3	N/A
4	N/A
5	Closed
6	Closed
7	N/A
8 (Entrance)	N/A
9 (Exit)	N/A
10	N/A
11	N/A
12	45° Open
13	45° Open

FT2000 & FT2000S WITH BLOWER DRYER	
Baffle Number	Baffle Setting (Open)
1	100%
2	50% (5/8")
3	Closed
4	N/A
5	Closed
6	Closed
7	Closed
8 (Entrance)	12° Towards Unload
9 (Exit)	0° (Vertical)
10	N/A
11	2 Rows Open
12	45° Open
13	45° Open

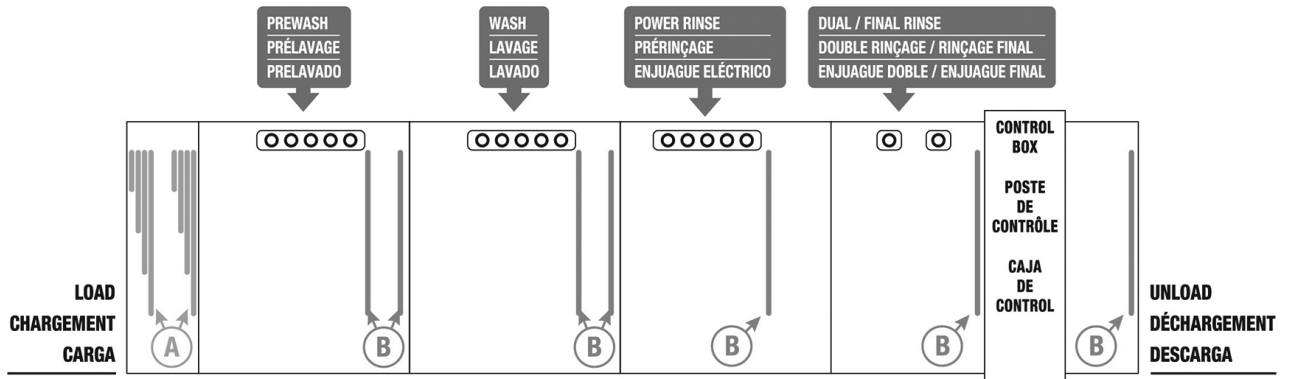
BAFFLE DESCRIPTION	
1	Captures the steam from the machine chambers and directs it through the machine exhaust.
2	Captures the steam from the unload and directs it through the machine exhaust.
3	Controls the airflow from the load end to the hot air intake of the blower dryer.
4	N/A
5 & 6	Controls the amount of room air mixed with the exhaust air.
7	Controls the amount of air discharged to the unload end from the blower dryer outlet.
8	Controls the direction of air discharged from the blower dryer outlet at the load end of the machine.
9	Controls the direction of air discharged from the blower dryer outlet at the unload end of the machine.
10	N/A
11	Controls the amount of fresh air flowing from the room into the blower dryer.
12 & 13	Controls the amount of air that is pulled up through the customer's exhaust.

Curtain Configurations

FT2000-BAS, FT2000-DWR and FT2000-ADV (Standard Height)

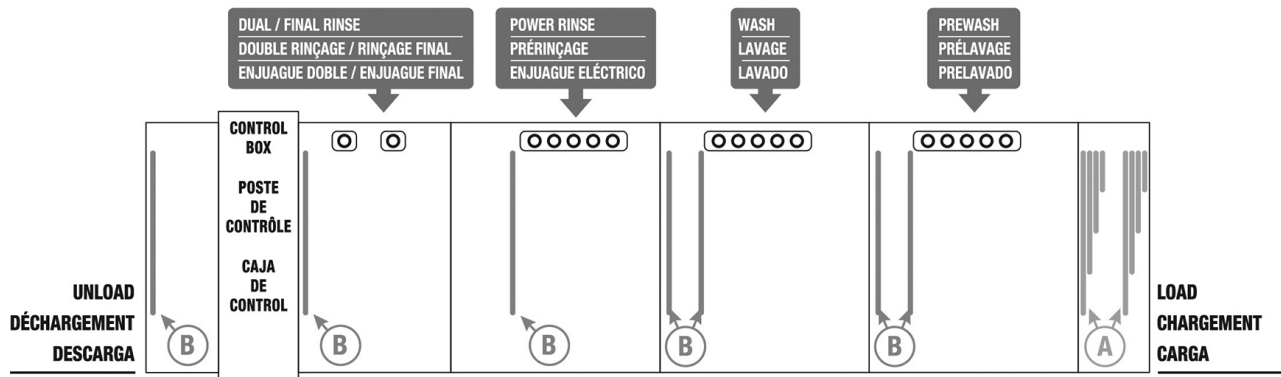
Left to Right

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



Right to Left

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



LEGEND | LÉGENDE | LEYENDA

(A) 4-PLY CURTAINS (BLUE)
RIDEAUX A 4 ÉPAISSEURS (BLEU)
CORTINAS DE 4 CAPAS (AZUL)

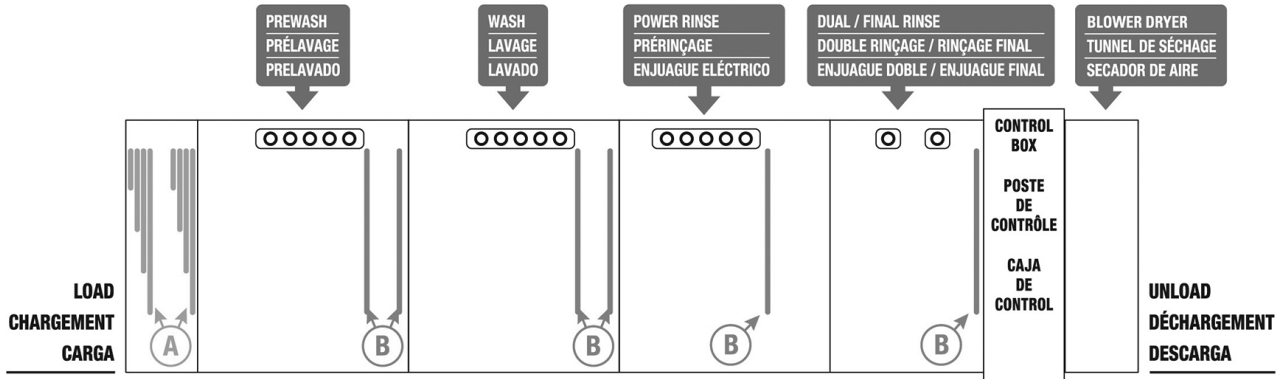
(B) LONG CURTAINS (GREEN)
RIDEAUX LONGS (VERT)
CORTINAS GRANDES (VERDE)

(C) SHORT CURTAINS (YELLOW)
RIDEAUX COURT (JAUNE)
CORTINAS CORTAS (AMARILLO)

FT2000-BAS, FT2000-DWR and FT2000-ADV
(With Blower Dryer, Standard Height)

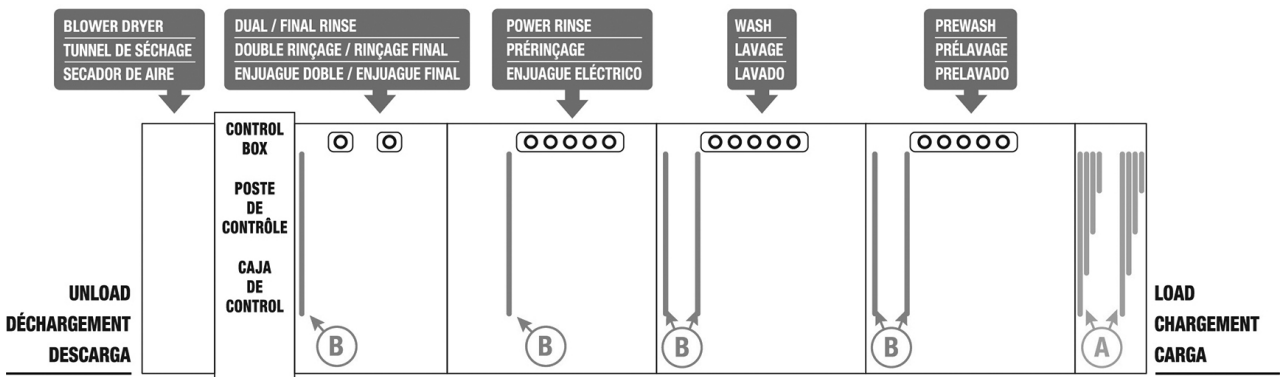
Left to Right

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



Right to Left

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



LEGEND | LÉGENDE | LEYENDA

A 4-PLY CURTAINS (BLUE)
 RIDEAUX A 4 ÉPAISSEURS (BLEU)
 CORTINAS DE 4 CAPAS (AZUL)

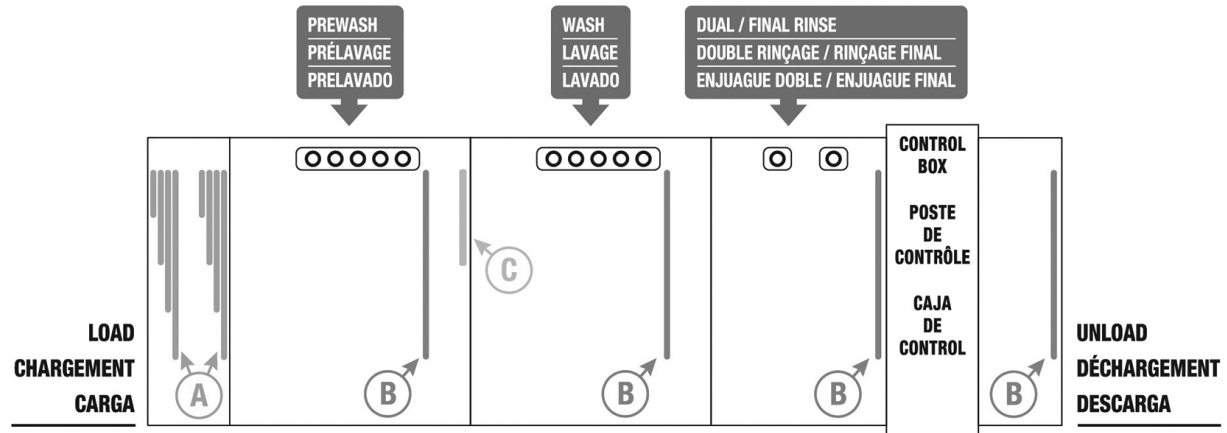
B LONG CURTAINS (GREEN)
 RIDEAUX LONGS (VERT)
 CORTINAS GRANDES (VERDE)

C SHORT CURTAINS (YELLOW)
 RIDEAUX COURT (JAUNE)
 CORTINAS CORTAS (AMARILLO)

FT2000S-BAS, FT2000S-DWR and FT2000S-ADV
(Standard Height)

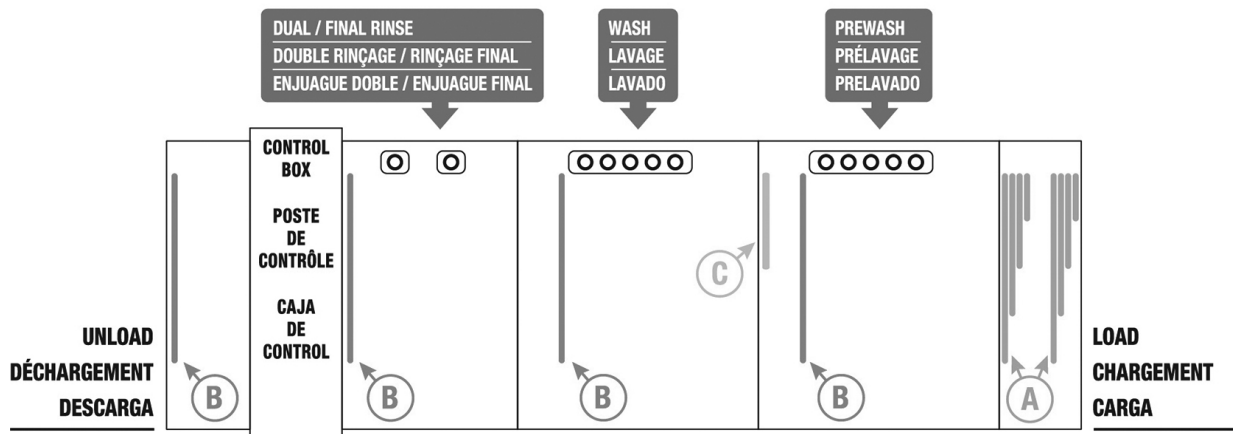
Left to Right

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



Right to Left

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



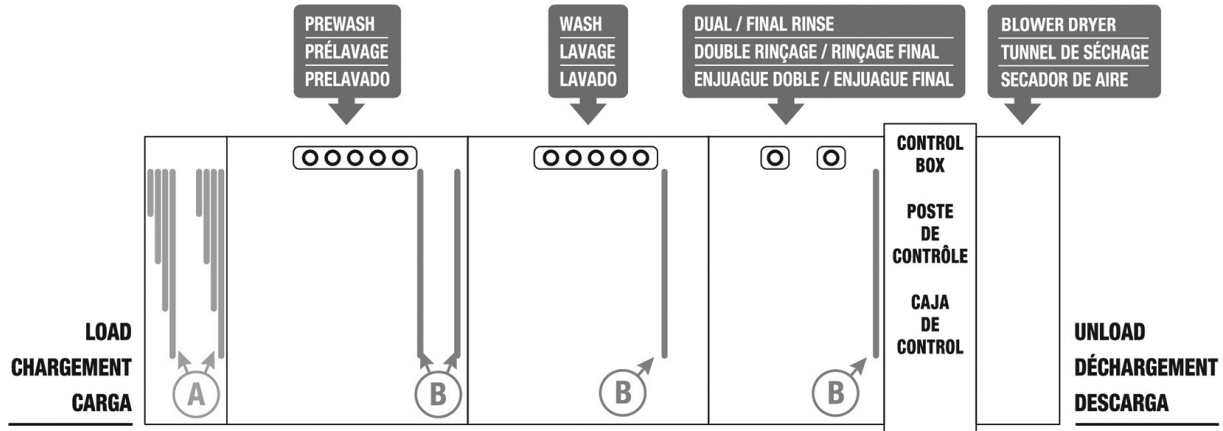
LEGEND | LÉGENDE | LEYENDA

- | | | |
|--|---|--|
| <p>(A) 4-PLY CURTAINS (BLUE)
RIDEAUX A 4 ÉPAISSEURS (BLEU)
CORTINAS DE 4 CAPAS (AZUL)</p> | <p>(B) LONG CURTAINS (GREEN)
RIDEAUX LONGS (VERT)
CORTINAS GRANDES (VERDE)</p> | <p>(C) SHORT CURTAINS (YELLOW)
RIDEAUX COURT (JAUNE)
CORTINAS CORTAS (AMARILLO)</p> |
|--|---|--|

FT2000S-BAS, FT2000S-DWR and FT2000S-ADV
(With Blower Dryer, Standard Height)

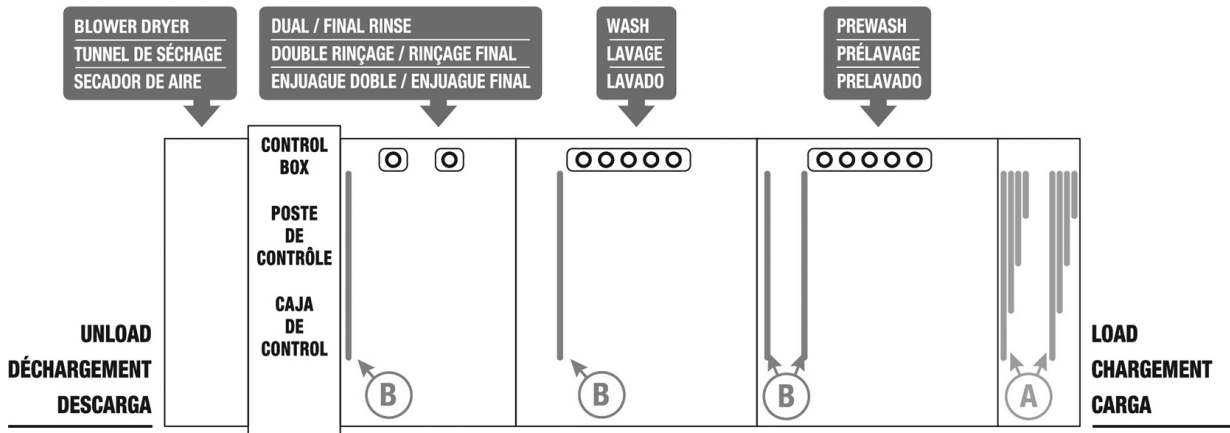
Left to Right

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



Right to Left

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



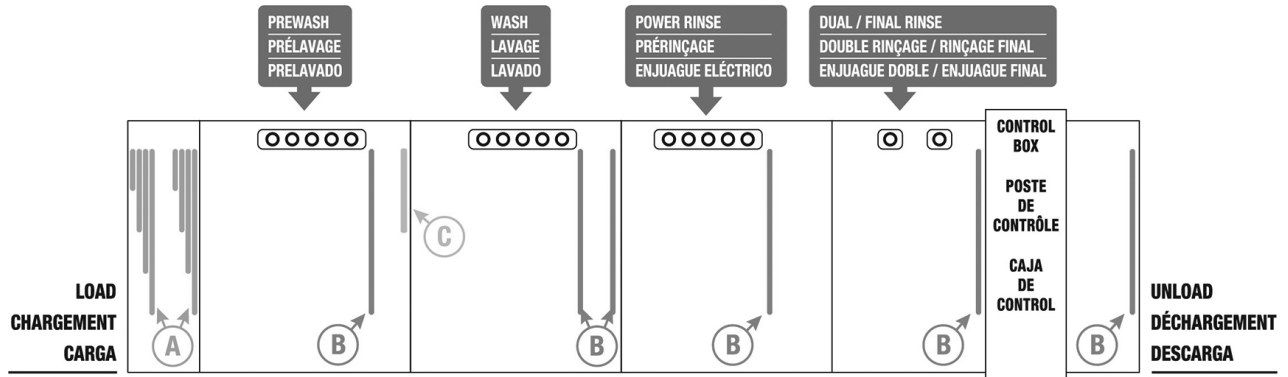
LEGEND | LÉGENDE | LEYENDA

- | | | |
|--|---|--|
| <p>(A) 4-PLY CURTAINS (BLUE)
RIDEAUX A 4 ÉPAISSEURS (BLEU)
CORTINAS DE 4 CAPAS (AZUL)</p> | <p>(B) LONG CURTAINS (GREEN)
RIDEAUX LONGS (VERT)
CORTINAS GRANDES (VERDE)</p> | <p>(C) SHORT CURTAINS (YELLOW)
RIDEAUX COURT (JAUNE)
CORTINAS CORTAS (AMARILLO)</p> |
|--|---|--|

**FT2000-BAS, FT2000-DWR and FT2000-ADV
(Higher Than Standard)**

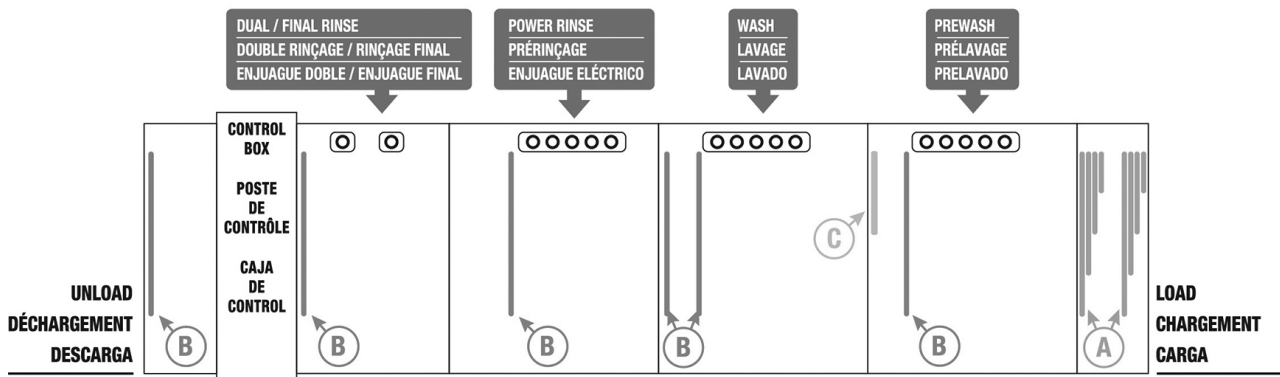
Left to Right

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



Right to Left

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



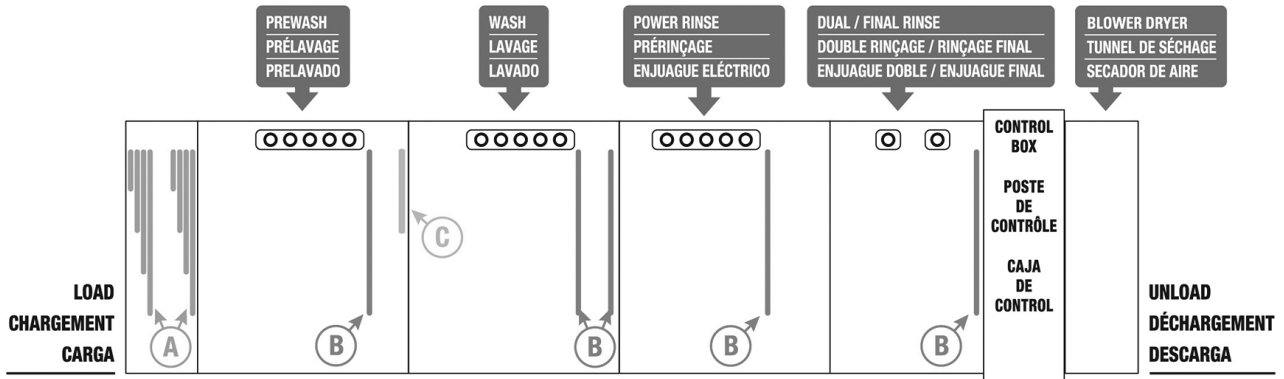
LEGEND | LÉGENDE | LEYENDA

- | | | |
|--|---|--|
| <p>(A) 4-PLY CURTAINS (BLUE)
RIDEAUX A 4 ÉPAISSEURS (BLEU)
CORTINAS DE 4 CAPAS (AZUL)</p> | <p>(B) LONG CURTAINS (GREEN)
RIDEAUX LONGS (VERT)
CORTINAS GRANDES (VERDE)</p> | <p>(C) SHORT CURTAINS (YELLOW)
RIDEAUX COURT (JAUNE)
CORTINAS CORTAS (AMARILLO)</p> |
|--|---|--|

FT2000-BAS, FT2000-DWR and FT2000-ADV
(With Blower Dryer, Higher Than Standard)

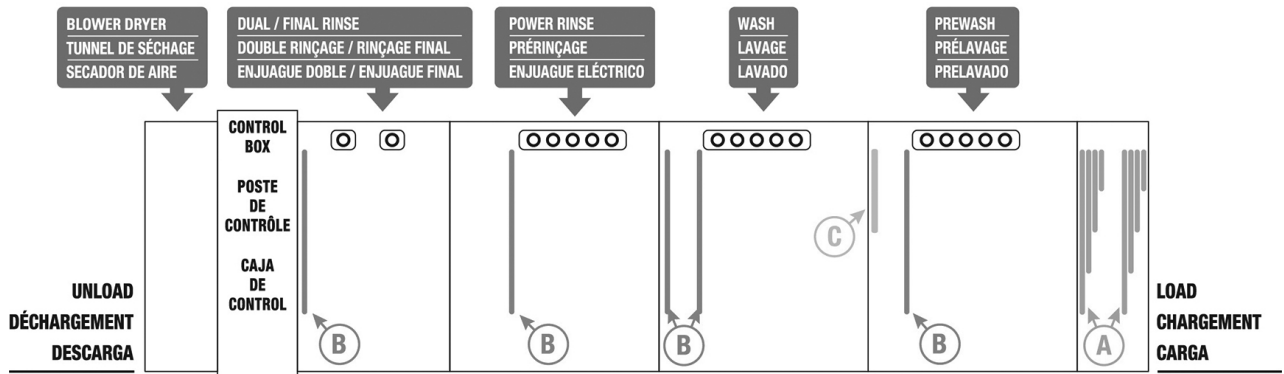
Left to Right

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



Right to Left

8' CENTER SECTION | ZONE CENTRALE DE 8 pi (2438 mm) | ZONA CENTRAL DE 8'



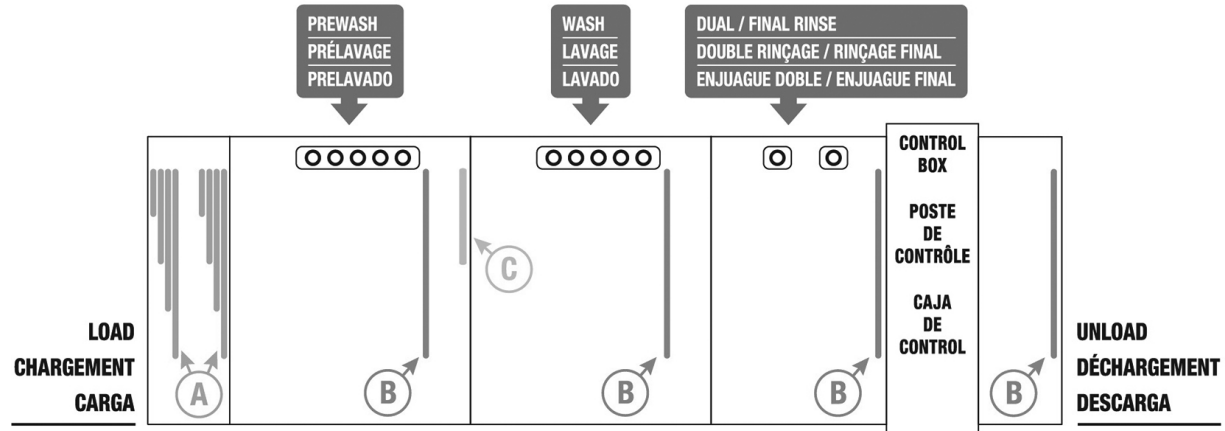
LEGEND | LÉGENDE | LEYENDA

- | | | |
|--|---|--|
| <p>A 4-PLY CURTAINS (BLUE)
RIDEAUX A 4 ÉPAISSEURS (BLEU)
CORTINAS DE 4 CAPAS (AZUL)</p> | <p>B LONG CURTAINS (GREEN)
RIDEAUX LONGS (VERT)
CORTINAS GRANDES (VERDE)</p> | <p>C SHORT CURTAINS (YELLOW)
RIDEAUX COURT (JAUNE)
CORTINAS CORTAS (AMARILLO)</p> |
|--|---|--|

FT2000S-BAS, FT2000S-DWR and FT2000S-ADV
(Higher Than Standard)

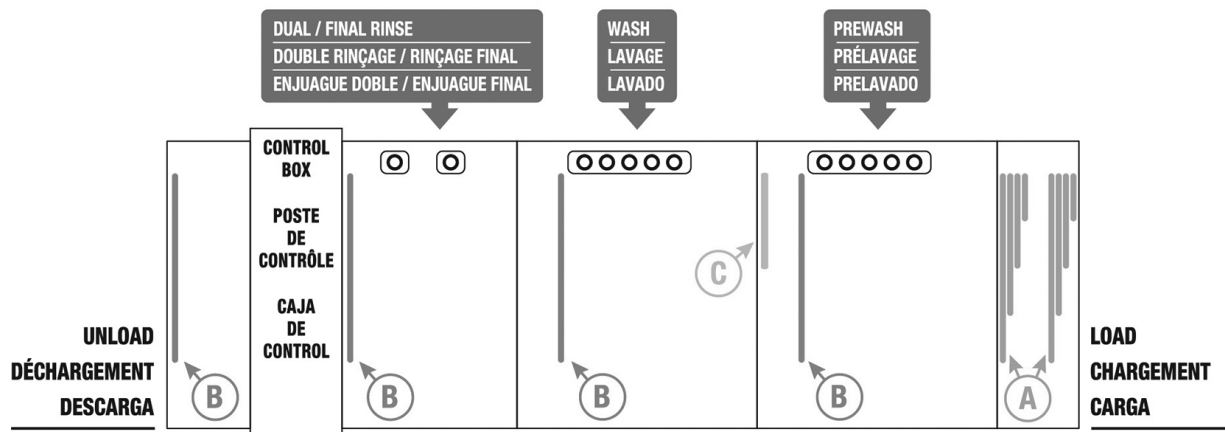
Left to Right

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



Right to Left

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



LEGEND | LÉGENDE | LEYENDA

A 4-PLY CURTAINS (BLUE)
RIDEAUX A 4 ÉPAISSEURS (BLEU)
CORTINAS DE 4 CAPAS (AZUL)

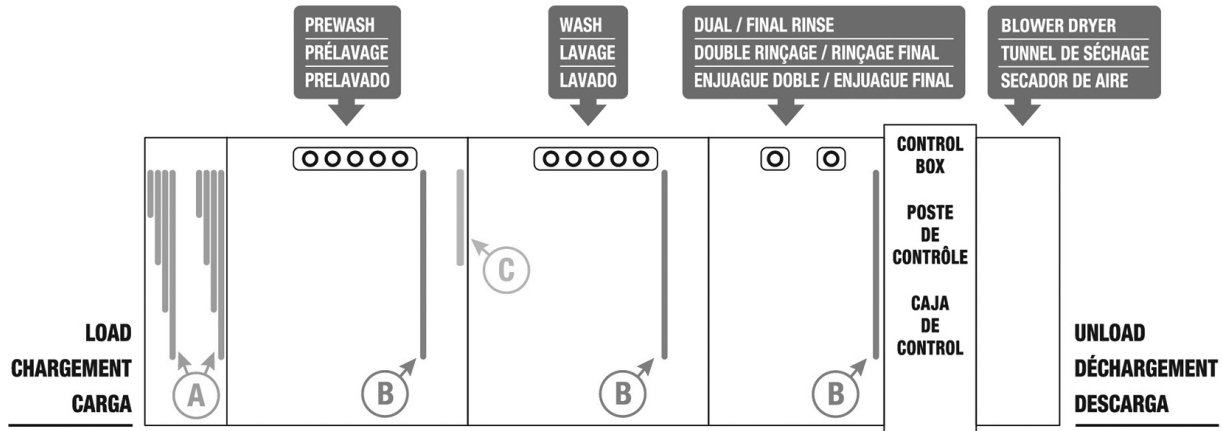
B LONG CURTAINS (GREEN)
RIDEAUX LONGS (VERT)
CORTINAS GRANDES (VERDE)

C SHORT CURTAINS (YELLOW)
RIDEAUX COURT (JAUNE)
CORTINAS CORTAS (AMARILLO)

FT2000S-BAS, FT2000S-DWR and FT2000S-ADV
(With Blower Dryer, Higher Than Standard)

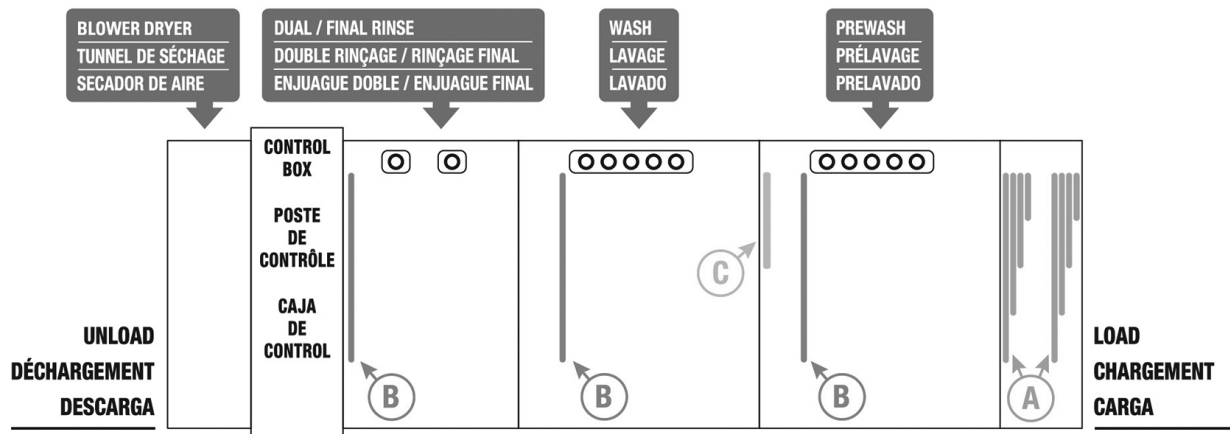
Left to Right

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



Right to Left

5' CENTER SECTION | ZONE CENTRALE DE 5 pi (1524 mm) | ZONA CENTRAL DE 5'



LEGEND | LÉGENDE | LEYENDA

A 4-PLY CURTAINS (BLUE)
RIDEAUX A 4 ÉPAISSEURS (BLEU)
CORTINAS DE 4 CAPAS (AZUL)

B LONG CURTAINS (GREEN)
RIDEAUX LONGS (VERT)
CORTINAS GRANDES (VERDE)

C SHORT CURTAINS (YELLOW)
RIDEAUX COURT (JAUNE)
CORTINAS CORTAS (AMARILLO)

Prewash, Wash, and Power Rinse Arms

Ensure all wash arms are properly installed and wash arm sliders are closed. The tabs on the sides of the arms will drop into the notches in the supports when properly installed (Fig. 52). Adjust locking brackets on lower arms if necessary.



Fig. 52

Dual Rinse / Final Rinse Arms

Ensure dual rinse and final rinse arms are properly installed (Fig. 53).



Fig. 53

Lower Trim Panels (Front) and Rear Panels

When installing the lower trim panels on the front of the machine, butt each panel end to end. With the bottom of the panel held out on a 45° angle (Fig. 54), hang the upper lip of the panel over the hooks located just below the doors (Fig. 55). Swing the bottom of the panel down and snap the lower panel clips under the frame.



Fig. 54



Fig. 55

When installing the rear panels, butt each panel end to end. Hang upper lip of panel over tabs located on the top panels of the machine. Swing the bottom of the panel down and snap the lower panel clips under the frame.

Conveyor Gear Motor

The conveyor gear motor is shipped with oil at the proper level in the speed reducer.

Lubricants are available from your local Hobart Service Office.

Delime Indicator Setup

Based on the water hardness and the final rinse water usage, the machine will calculate and notify the operator when it is time to delime. Refer to the FT2000 Operation manual (F-41386) to program the Water Hardness setting based on the customer's specific water conditions.

