

STERO SD3

Door-Type Dishwasher

MODEL:

SD3

ML-130232



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TABLE OF CONTENTS

GENERAL	3
START-UP CHECKLIST	4
INSTALLATION	5
Unpacking	5
Installation Codes	5
Location	5
Corner Installation	6
Water Requirements	7
Plumbing Connections	7
Drain Connection	7
Water Connection	7
Without Electric Booster Water Heater	8
With Electric Booster Water Heater	8
Venting Requirements	9
Electrical Connections	10
Dishwasher without Electric Booster	10
Motor Rotation (Three-Phase Machines Only)	10
Dishwasher With Electric Booster (Separately Connected)	11
Equipment Connections	11
Exhaust Fan Control	11
Remote Booster Control	11
Detergent, Rinse Aid, Sanitizer Dispensers – Tubing Installation	12
Detergent Dispenser	12
Rinse Aid Dispenser	12
Chemical Sanitizer Dispenser	12
Detergent, Rinse Aid, Sanitizer Dispensers – Equipment Connections	13
Detergent Dispenser (<i>Figure 17</i>)	13
Rinse Aid / Sanitizer Dispenser(s) (<i>Figure 17</i>)	13
Setup	14
Sanitizing Mode	14
OPERATION	15
Preparation	15
Dishwashing	16
CLEANING	17
Do's and Don'ts for Your Stero Dishwasher	18
MAINTENANCE	18
Delime Instructions	18
Wash Arms	18
TROUBLESHOOTING	19
SERVICE	20

Installation, Operation and Care of SD3 DISHWASHER

SAVE THESE INSTRUCTIONS



Figure 1

GENERAL

The SD3 dishwasher can be configured for both straight through or corner operation. SD3 dishwashers are shipped from the factory in straight-through configuration. Straight-through machines can easily be converted to corner operation.

SD3 dishwashers are designed to operate in one of two modes: Hot water sanitizing mode (designated by the letters "SH" or "SP" on the display when the machine is turned on), or a chemical sanitizing mode (designated by the letters "SC" on the display when the machine is turned on).

The serial number can be found on the machine data plate located on the bottom of the front panel. The pump motor is rated 2 H.P. and has thermal overload protection.

DO NOT attempt to operate this dishwasher in the chemical sanitizing mode without a properly installed, NSF Certified, chemical sanitizer feeder (customer supplied). Contact an authorized detergent representative for information about a chemical sanitizer feeder.

The fill line incorporates an atmospheric vacuum breaker to prevent any reverse flow of water from the dishwasher into the potable water supply. The unit, once turned on, fills the wash tank to the appropriate level and automatically stops filling once the level is reached. A float, located in the wash tank, shuts off the heat supply if the water level becomes too low. When the water returns to the proper level, the heating circuit is again operational.

A frame-mounted 8.5 kW electric booster water heater is available as an option for models equipped with electric tank heat. For SD3 models, the booster water heater is designed to maintain a minimum final rinse temperature of 180°F provided the incoming water to the booster heater is at least 110°F.

High-temperature SD3 models typically require a hood or vent over the dishwasher to meet local codes. Low-temperature chemical sanitizing machines or low usage electric heat dishwashers may not require individual venting of the machine if the room is amply exhausted. Refer to page 9 for venting and hood requirements. Verify with local codes for final authority.

START-UP CHECKLIST

BEFORE POWER IS APPLIED

- 1. Check all utility service connections for tightness (electric, hot water and drain(s)).
- 2. Verify drain is connected with air gap (per your local code) and properly draining.
- 3. Check for any loose hardware.
- 4. Check door to table for interference.
- 5. Check free rotation of wash/rinse arms.
- 6. Check to see that all strainer pans, buckets, and screens are in place.

AFTER POWER IS APPLIED AND WATER TURNED ON

- 1. Verify water supply is connected properly and not leaking.
- 2. Verify correct supply voltage and phase to machine and confirm with data plate ratings.
- 3. Close door and allow machine to fill completely.
- 4. Allow wash tank to achieve proper operating temperature.

RUN A 1 MINUTE CYCLE

- 1. Check operation of door interlock switch.
- 2. Check for proper pump motor operation and check for leaks.
- 3. Check for proper tank temperatures with pumps on and off.
- 4. Check wash tank for proper water level during start up and operation.
- 5. Verify final rinse temperature.

REINSTALL ANY PANELS REMOVED

INSTALLATION

UNPACKING

Immediately after unpacking the dishwasher, check for possible shipping damage. If this machine is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

Prior to installation, test the electrical service to make sure it agrees with the specifications on the machine data plate; this includes the optional electric booster, if equipped. The dishwasher data plate is located at the bottom of the front panel.

INSTALLATION CODES

Installation must be in accordance with state and local codes, or in the absence of local codes, with the National Electrical Code ANSI/NFPA 70 (latest edition). In Canada, the installation standard is: CSA C22.2 No. 1 (latest editions).

LOCATION

Before finalizing the location, make sure that consideration has been given for the electrical conduit, water supply, drain connection, venting (if applicable), tabling (if needed), chemical feeder replenishment (if applicable) and adequate clearance for opening the door.

The dishwasher must be level before any connections are made. Turn the threaded feet (*Figure 2*) as required to level the machine and adjust to the desired height.

The edge of the dish table that overhangs the SD3 wash tank should be turned down and fitted over the top of the dishwasher tank (*Figure 3*). Apply an NSF approved sealant between the overhang of the dish table and the inner wall of the wash tank to prevent leakage (*Figure 3*). Fasten the dish tables to the inner wall of the wash tank with non-rusting truss head screws or rivets (*Figure 3*).

For straight-through installations, clearance at the front and 15 inches out from the dishwasher at the right side by 27 inches above the finished floor must be provided for servicing.

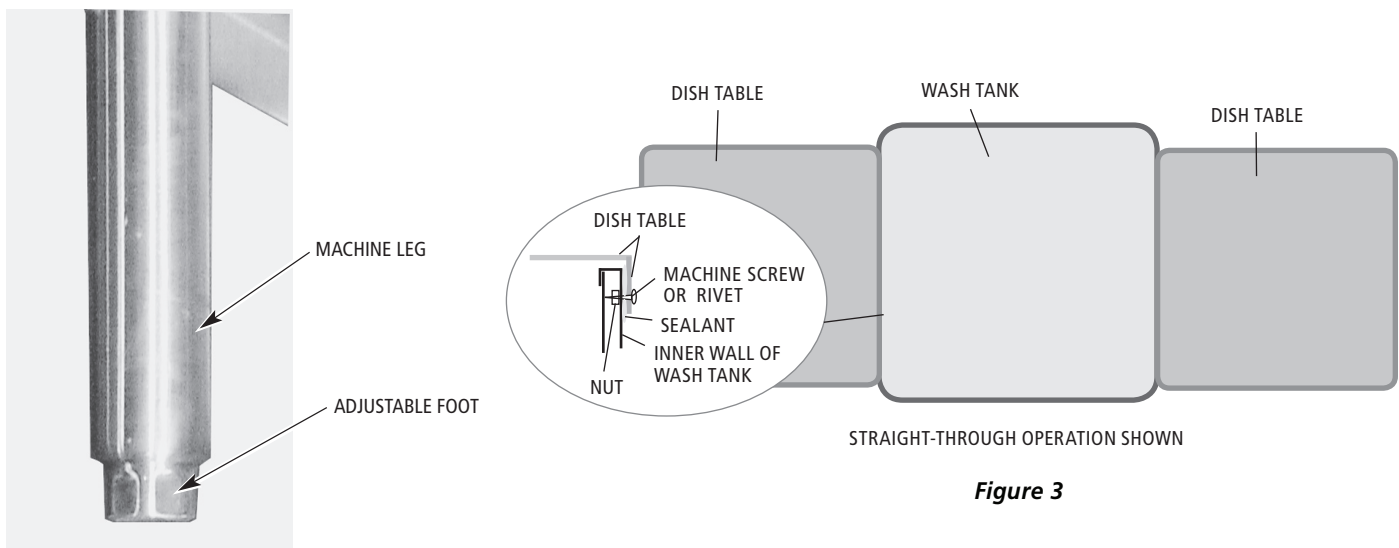


Figure 2

Figure 3

INSTALLATION *(continued)*

CORNER INSTALLATION

Before placing the dishwasher in its operating location, check machine configuration. If the machine is being installed in a corner (*Figure 4*), clearances of 20" out from the dishwasher under the left-hand tabling by 27" above the finished floor and 15" out from the dishwasher at the right side by 27" above the finished floor must be provided for servicing. For proper installation of a corner machine, the control and display should be positioned at the front corner for operator access (*Figure 4*).

For corner installation, rotate the rack track so the guide rail is positioned on the left side (*Figure 5*). For corner machines, remove the front door deflector (unscrew three bolts / nuts).

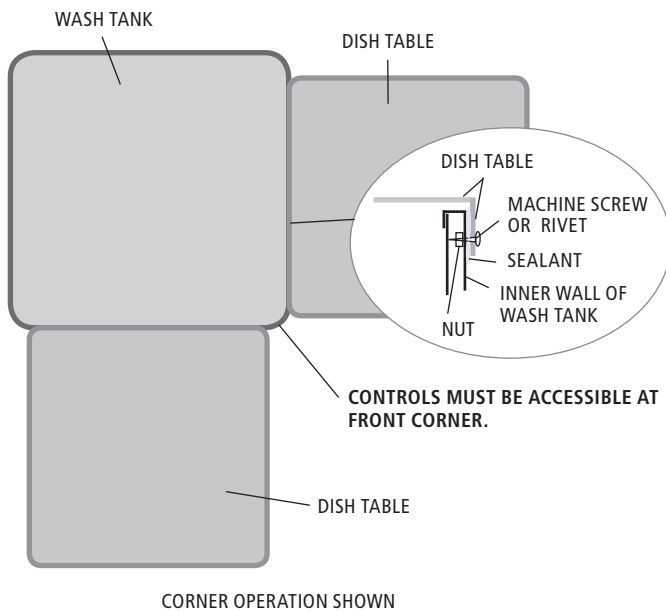


Figure 4

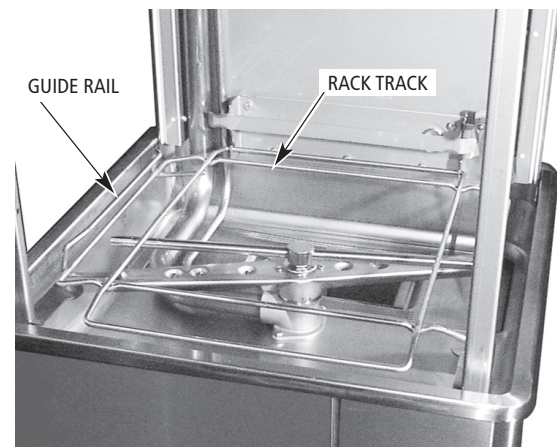
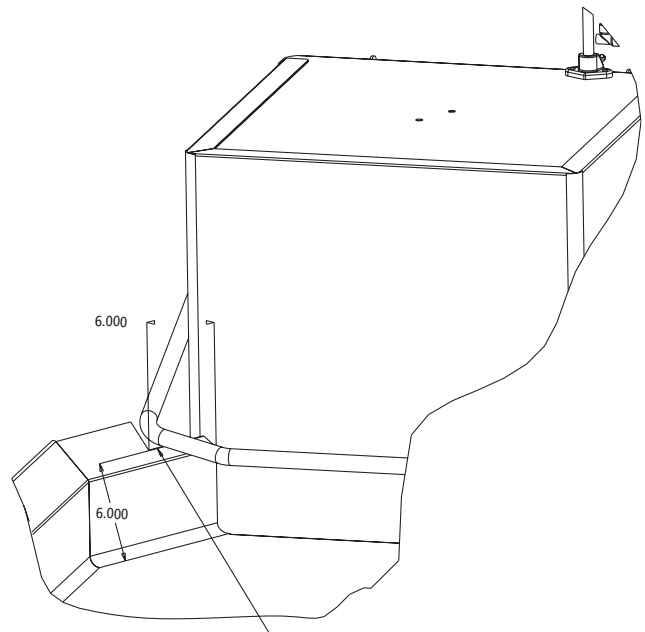


Figure 5

For corner installations, tabling with backsplashes over 6" high require that a notch be provided to prevent interference with the door mechanism (*Figure 6*).



A NOTCH MUST BE ADDED TO BACKSPASHES OVER 6" HIGH ON CORNER MACHINES TO PREVENT INTERFERENCE WITH DOOR MECHANISM. NOTCH MUST EXTEND 6" FROM FACE OF THE MACHINE.

Figure 6

INSTALLATION *(continued)*

WATER REQUIREMENTS

Proper water quality can improve warewashing performance by reducing spotting, lowering chemical supply costs, improving productivity and extending equipment life. Local 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 specifics prior to installation.

Recommended water hardness is 3 grains of hardness per gallon, or less. Chlorides must not exceed 30 parts per million. Water hardness above 3 grains per gallon should be treated by a water conditioner (water softener or in-line treatment). Water treatment has been shown to reduce costs associated with machine cleaning, reduce the need for delimiting the dishwasher and reduce detergent usage.

Sediment, silica, chlorides or other dissolved solids may lead to a recommendation for particulate filtration or reverse osmosis treatment.

If an inspection of the dishwasher or booster heater reveals lime build-up after the equipment has been in service, in-line water treatment should be considered, and, if recommended, should be installed and used as directed. Contact your local service provider for specific recommendations.

PLUMBING CONNECTIONS

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

Drain Connection

The drain connection is a 1½" externally threaded pipe connected straight down from the bottom of the wash tank (*Figure 7*). The connection can be made in any direction by using the proper fitting (not supplied) and routing to the appropriate drain line.

If a grease trap is required by code, it should have a minimum flow capacity of 14 gallons per minute.

Water Connection

A suitable water hammer arrestor should be installed in the water line just ahead of the dishwasher.

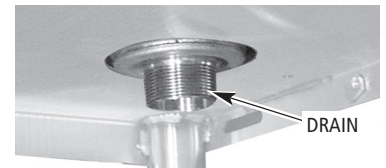


Figure 7

INSTALLATION *(continued)*

Without Electric Booster Water Heater

The water supply line is connected to the line strainer (top rear, *Figure 1*) with $\frac{3}{4}$ inch or $\frac{1}{2}$ inch pipe. A manual shutoff valve and pipe union are required (customer supplied).

REQUIRED INCOMING WATER TEMPERATURE

Model	Sanitizing Mode	Connection	Water Supply		
			Minimum	Maximum	Recommended
Without Built-in Booster	Hot Water Sanitizing	Hot Water	180°F (82°C)	194°F (90°C)	180°F (82°C)
Without Built-in Booster	Chemical Sanitizing	Hot Water	120°F (49°C)	N/A	140°F (60°C)
With Built-in Booster	Hot Water Sanitizing	Hot Water	110°F (43°C)	N/A	140°F (60°C)

For the SD3 model, proper dishwasher operation requires a flowing pressure of 20 ± 5 psig at the dishwasher. If the flowing pressure exceeds 25 psig, a pressure reducing valve (customer supplied) must be installed in the water supply line. A pressure gauge (*Figure 1*) is provided (not installed) for verification of proper water pressure. The water pressure is monitored when the solenoid valve is open and water is flowing.

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

With Electric Booster Water Heater

The water supply line is connected below the booster with the line strainer (supplied) and $\frac{3}{4}$ " pipe. A manual shut-off valve and pipe union are required (not supplied).

The water supply must have a minimum temperature of 110°F (43°C), and a flowing pressure of 20 ± 5 psig at the pressure gauge on top of the machine. If the flowing pressure exceeds 25 psig, a pressure reducing valve (not supplied) must be installed in the water supply line.

Incoming water temperature below 110°F (43°C) may require longer wash cycle time than the 57 second cycle; refer to OPERATION, pages 15 – 16.

When the fill / final rinse valve is on, water from the booster tank enters the dishwasher through the final rinse arms. During the rinse cycle, this water is 180°F (82°C). A small amount of water will likely dribble out of the lower rinse arm into the tank between cycles due to the natural expansion of water as it is being heated.

INSTALLATION *(continued)*

VENTING REQUIREMENTS

NOTE: Any listed and labeled factory-built commercial exhaust hood tested in accordance with UL Standard 710 by a nationally recognized testing laboratory, must be installed according to the terms of its listing and the manufacturer’s installation instructions.

Rate of Exhaust Flow Calculations

Based on the 2009 International Mechanical Code.

The minimum net airflow for Type II hoods used for dishwashing appliances shall be 100 cfm per linear foot of hood length. The net quantity of exhaust air shall be calculated by subtracting any airflow supplied directly to a hood cavity from the total exhaust flow rate of a hood.

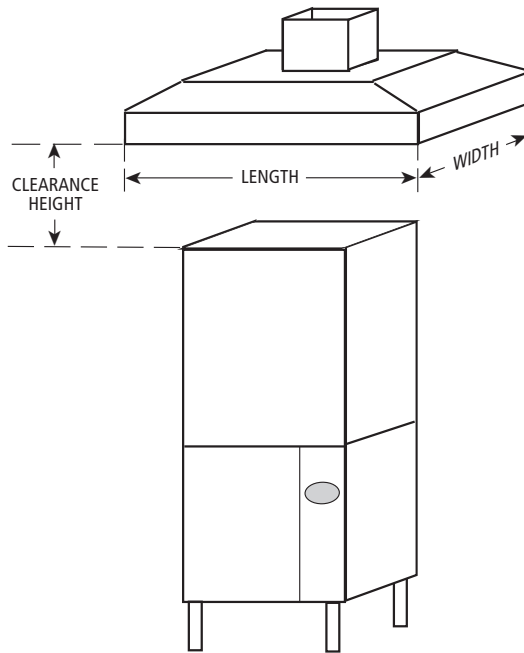


Figure 8

TABLE A: HEAT DISSIPATION

	Model	Electric Heat	8.5 kW Electric Booster	Latent Heat (BTU/HR)	Sensible Heat (BTU/HR)
Hot Water Sanitizing	SD3	X		4,400	1,900
		X	X	10,500	4,500
Chemical Sanitizing	SD3	X		4,300	1,900

Assumptions:

1. Machines operate 70% of each hour while in use.
2. All heat dissipated enters the room for chemical sanitizing models, 60% of heat enters room for hot water sanitizing models with hood.
3. 70% of heat output is latent, 30% is sensible.
4. Chemical sanitizing models operate at 60% of the heat output of equivalent hot water sanitizing models.

INSTALLATION *(continued)*

ELECTRICAL CONNECTIONS

⚠ WARNING Electrical and grounding connections must comply with the applicable portions of the National Electrical Code, NFPA 70 (latest edition) and / or other local electrical codes.

⚠ WARNING Disconnect the electrical power to the machine (both dishwasher and booster if applicable) and follow lockout / tagout procedures. Be sure all circuits are disconnected.

Refer to the wiring diagram attached inside the front trim panel and to the machine data plate for service size requirements when connecting the dishwasher. Refer to Electrical Data, below.

To access the controls area, remove the right side panel, remove the front panel and open the control panel door. The dishwasher electrical service connection can be made through the 1³/₃₂" diameter hole for ¾" trade size conduit located on the right side at the rear of the machine. By removing a knockout, this hole can be enlarged to 1³/₈" diameter for 1" trade size conduit, if required.

ELECTRICAL DATA

Models	Volts / Hz / Ph	Tank Heat	Minimum Circuit Ampacity Maximum Protective Device AMPS		
			Dishwasher ONLY	Optional 8.5 KW Electric Booster	
				8.5 KW Booster ONLY	Optional Single Point Electrical Connection 3 Phase Only Dishwasher and Booster
SD3	208 - 240 / 60 / 1	Electric	50	50	N/A
	208 - 240 / 60 / 3	Electric	30	30	60
	480 / 60 / 3	Electric	15	15	30

Compiled in accordance with the national electrical code, NFPA 70 (latest edition).

A fused disconnect switch or circuit breaker (customer supplied) must be installed in the electrical service line(s) supplying this dishwasher and should meet the requirements of your local electrical code.

Dishwasher without Electric Booster

For single-phase machines, power supply connections are made to terminal blocks. For three-phase machines connections are made to contactor lugs. The machine must be grounded according to electrical code(s); a grounding lug is provided in the controls area.

Direction of Rotation of Pump

This procedure applies to 3 phase machines upon initial set up or when the pump has been replaced.

Turn on the machine and let it finish the startup making sure there is water in the tank. Start a wash cycle and after motor starts, carefully insert a plastic wire tie into the back housing of the motor so that it touches the fan blades. Look for an arrow on the pump that shows the direction of rotation. If the plastic wire tie is pushed towards the opposite direction of the arrow then the pump direction needs to be reversed.

CAUTION: Make sure the power is removed from the machine before changing wires.

To reverse the direction of the motor, swap the positions of two of the 3 phase wires from the machine's power supply. Check again the direction of rotation after the adjustment using the method described above.

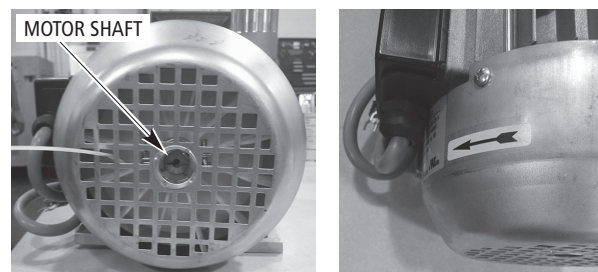


Figure 9

INSTALLATION *(continued)*

Dishwasher With Electric Booster (Separately Connected)

Single phase machines with an electric booster require two separate connections, one for the booster and the other for the dishwasher (including motor, controls and tank heat). For single-phase machines, all power supply connections are made to terminal blocks (*Figure 10*). The single phase dishwasher is connected to terminal block 1TB in the controls area. The single phase booster is connected to terminal block 2TB in the controls area.

If the machine is three phase, the electrical connection for the dishwasher is made to the contactor 2CON in the controls area. The electrical connection for the three phase booster is made to the contactor 3CON in the controls area (*Figure 11*).

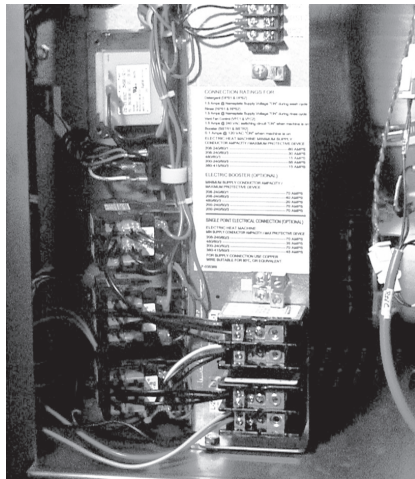


Figure 10

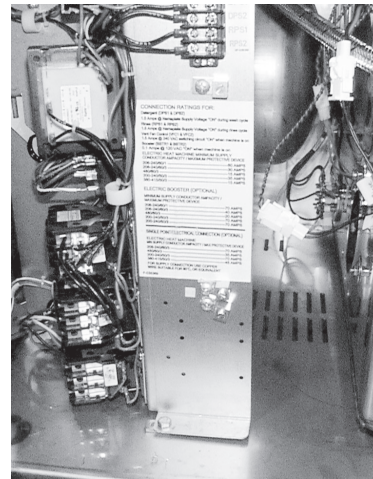


Figure 11

EQUIPMENT CONNECTIONS

⚠ WARNING Electrical and grounding connections must comply with the applicable portions of the National Electrical Code, NFPA 70 (latest edition) and / or other local electrical codes.

⚠ WARNING Disconnect the electrical power to the machine (both dishwasher and booster if applicable) and follow lockout / tagout procedures. Be sure all circuits are disconnected.

Exhaust Fan Control

The exhaust fan control feature is standard on model SD3. The exhaust fan control relay provides switch contacts only and does not provide power to the exhaust fan motor. The rating for an exhaust fan control relay connected to terminals VFC1 and VFC2 is 1.5 Amps at 240 Volts maximum. When the dishwasher is connected to the exhaust fan, the exhaust fan is switched on when the dishwasher is on, and off when the dishwasher is off.

Remote Booster Control

The booster control feature is standard on model SD3. The load rating for remote booster control connections to BSTR1 and BSTR2 is 0.1 Amp. at 120 Volts maximum. The booster control provides a control signal only and does not provide power to the remote booster. When a remote booster is connected to the dishwasher, the booster is on when the dishwasher is on and off when the dishwasher is off.

INSTALLATION *(continued)*

DETERGENT, RINSE AID, SANITIZER DISPENSERS – Tubing Installation

Detergent, rinse aid and/or sanitizer dispensers (not provided by Stero) must have all connections sealed against leakage.

The dishwasher uses .97 gallons of rinse water per rack at a flow rate of 5.8 gallons per minute at 20 psig flowing pressure. This information is used when setting the detergent, rinse aid or sanitizer pumps.

Detergent Dispenser

The dishwasher has two $\frac{7}{8}$ " diameter plugged holes, one on the rear of the chamber and one on the lower part of the tank near the pump (*Figure 12*). With the tank empty, remove both plugs to install the detergent dispenser.

- The chamber hole is for installation of the detergent feeder tube.
- The lower tank hole is used for installation of the detergent sensor.

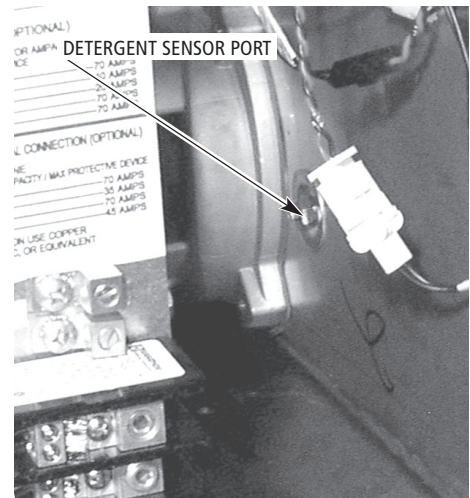


Figure 12

Rinse Aid Dispenser

The rinse line flange connector on top of the dishwasher has two $\frac{1}{8}$ " NPT pipe plugs (*Figure 13*).

- Remove the plug(s) (*Figure 13*) for installation of the rinse aid dispenser tube and / or chemical sanitizer tube, as needed.

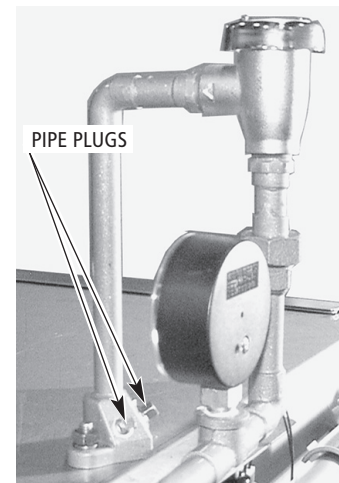


Figure 13

Chemical Sanitizer Dispenser

When the dishwasher is to be operated in the chemical sanitizing mode, the machine must be converted to low-temperature sanitization (refer to Setup, page 14). A chemical sanitizer dispenser that has been tested and certified by NSF International must be installed.

- Remove the pipe plug (*Figure 13*) for installation of the chemical sanitizer tube. To assure an unobstructed flow of sanitizer, locate the sanitizer tube in the center of water flow by drilling the sanitizer tube fitting so that its inside diameter is equal to the outside diameter of the tube. Slide the tube into the flange until it touches the opposite side and then pull it back out $\frac{1}{4}$ " (*Figure 14*).
- Rate for 6% Sodium hypochlorite (bleach) – 4 ml. within 10 seconds (maximum).
- Rate for 8.4% Sodium hypochlorite (bleach) – 3 ml. within 10 seconds (maximum).
- Rate for 12% Sodium hypochlorite (bleach) – 2 ml. within 10 seconds (maximum).

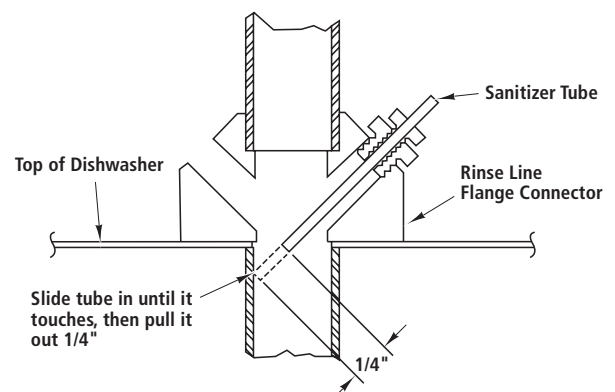


Figure 14

INSTALLATION *(continued)*

DETERGENT, RINSE AID, SANITIZER DISPENSERS – Equipment Connections

⚠ WARNING Electrical and grounding connections must comply with the applicable portions of the National Electrical Code, NFPA 70 (latest edition) and / or other local electrical codes.

⚠ WARNING Disconnect the electrical power to the machine (both dishwasher and booster if applicable) and follow lockout / tagout procedures. Be sure all circuits are disconnected.

This machine must be operated with an automatic detergent feeder and, if applicable, an automatic chemical sanitizer feeder, including a visual means to verify that detergents and sanitizers are delivered or a visual or audible alarm to signal if detergents and sanitizers are not available for delivery to the respective washing and sanitizing systems. Refer to the installation section of this manual and to the chemical feeder equipment manual(s).

Detergent Dispenser *(Figure 15)*

Terminals DPS1 and DPS2 are supplied with controlled machine line voltage. They are ON during the wash cycle and OFF between cycles or when the machine power supply is OFF. Maximum rating for detergent dispenser connected to DPS1 and DPS2 is 1.5 Amps at line voltage. Check the machine supply voltage and use corresponding feeder transformer voltage. Use UL Listed 600 volt minimum insulated wire for the connections. Do not use bell wire, lamp cord or similar type wire. Splice connections, if required, must be made in the feeder transformer junction box - not in the main controls enclosure. Remove $\frac{7}{8}$ " diameter cap plug(s) for $\frac{1}{2}$ " trade size conduit fittings from the rear of the enclosure. Remove the side panel. Strain relief fittings must be provided for all wiring.

Rinse Aid / Sanitizer Dispenser(s) *(Figure 15)*

Terminals RPS1 and RPS2 are supplied with controlled machine line voltage and are ON during the rinse cycle only. Maximum rating for rinse aid dispenser connected to RPS1 and RPS2 is 1.5 Amps at line voltage. Check the machine supply voltage and use corresponding feeder transformer voltage. Use UL Listed 600 volt minimum insulated wire for the connections. Do not use bell wire, lamp cord or similar type wire. Splice connections, if required, must be made in the feeder transformer junction box (supplied by others) — not in the main controls enclosure. Remove $\frac{7}{8}$ " diameter cap plug(s) for $\frac{1}{2}$ " trade size conduit fittings from the rear of the enclosure. Strain relief fittings must be provided for all wiring.

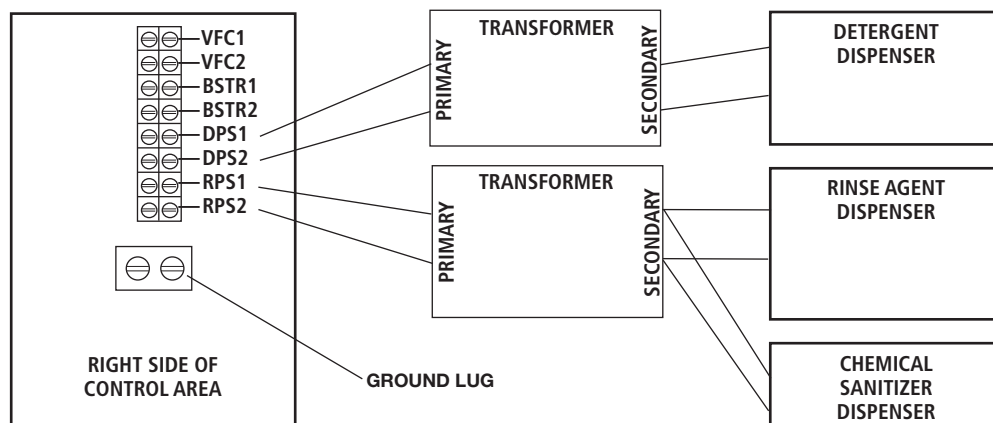


Figure 15

INSTALLATION *(continued)*

SD3 SETUP

Sanitizing Mode

1. With the machine OFF, press and hold the OFF key.
2. Press and release the ON key.
The display initializes until 88 displays.
3. Release the OFF key.

SET X^{°F}/_{°C} displays. X can be H, C or P:

H = Hot Water Sanitizing, Internal Booster

C = Chemical Sanitizing, No Booster

P = Hot Water Sanitizing, External Booster



4. Press CYCLE to select P, H, or C as the sanitizing mode.
After 15 seconds, the selection is saved and the machine turns off.

OPERATION

PREPARATION

The overflow tube must be in its proper location below the strainer pan (*Figure 16*). Place the strainer pan and the strainer bucket in their proper positions (*Figure 17*).

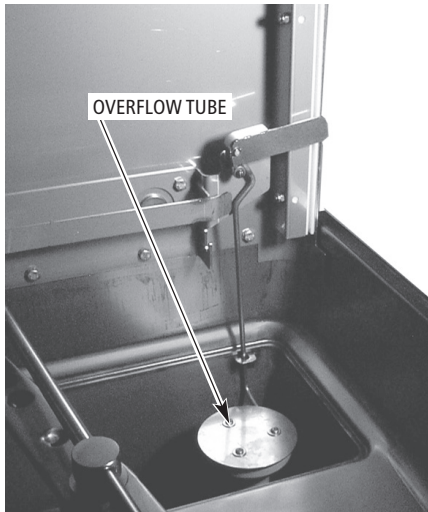


Figure 16

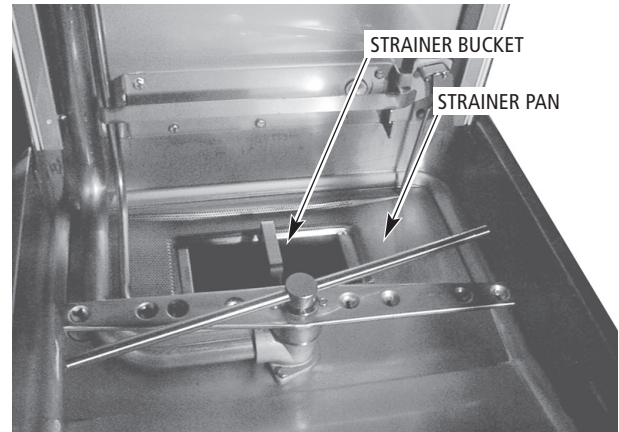


Figure 17

An automatic detergent dispenser is required. Closely follow supplier's instructions.

Close the door; this will automatically close the drain.

Press the ON button to turn the power on (*Figure 18*). If the machine's door is closed and no water is in the tank, the fill cycle will begin automatically. During the fill cycle, the word FILL is displayed.



Figure 18

When washing or in idle mode, the readout displays the wash temperature. During the rinse cycle, the rinse icon and temperature are displayed. Select the wash cycle: 1 for normal serving ware, 2 or 4 for pots and pans. Each wash cycle is followed by an automatic rinse. When the rinse cycle is complete and the rinse icon turns off, the door can be opened.

OPERATION *(continued)*

DISHWASHING

Scrape the dishes to remove large particles of food and debris. Never use steel wool on ware to be loaded into the dishwasher.

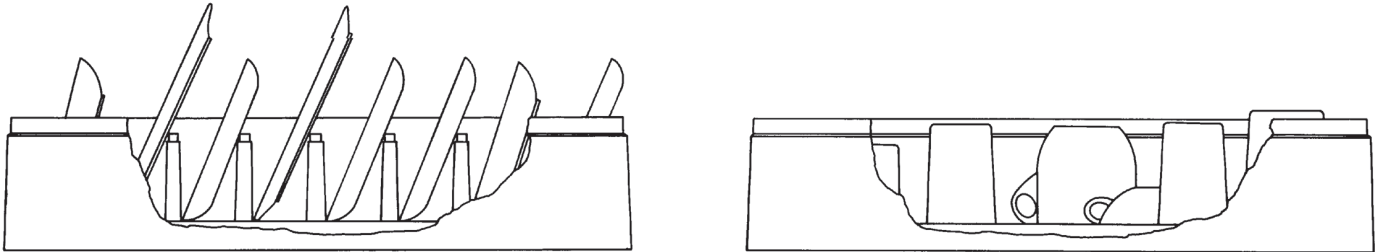


Figure 19

Arrange the dishes in a rack. Do not stack dishes one on top of another, as water must have free access to all sides of every dish. Stand plates and dishes up edgewise in a peg-type rack (Figure 19). Cups, glasses, and bowls should be inverted in an open-type or compartment type rack (Figure 19). Silverware and other small pieces may be scattered loosely over the bottom of a flat bottom rack.

Do not allow foreign objects to enter the unit, especially metallic contaminants.

After filling a rack, open the door, slide the rack into the dishwasher and close the door.

Throughout the wash cycle, the tank water temperature is displayed on the front panel display, along with the word WASH and an icon. During the rinse cycle, the rinse water temperature is displayed, along with the word RINSE and an icon. When the rinse cycle is completed, the readout displays the tank water temperature.

To add a dish after the wash cycle has started, open the door slightly. Wait 10 seconds to allow the wash arm to coast down and to avoid water splashing before opening the door fully.

Operating temperatures for all models are as follows:

Sanitizing Mode	Wash Temperature		Rinse Temperature	
	Minimum Wash	Recommended Wash	Minimum Rinse	Recommended Rinse
Hot Water	150°F (66°C)	150°F (66°C)	180°F (82°C)	180°F (82°C)
Chemical	120°F (49°C)	140°F (60°C)	120°F (49°C)	140°F (60°C)

CLEANING

The machine must be thoroughly cleaned at the end of each working shift or at least daily. Never use steel wool to clean warewasher surfaces. Use only products formulated to be safe on stainless steel.

1. Push the OFF button.
2. Open the machine door.
3. Clean off the dish tables into the dishwasher.
4. Drain the machine by lifting up the drain lever (*Figure 20*).
5. Thoroughly cleanse and flush the dishwasher interior. Remove remaining soil with a soft cloth or brush and mild cleanser. Rinse again.
6. Remove and empty the strainer bucket and pan. Wash and rinse them thoroughly.
7. Clean the pump cover with a soft cloth or brush. Do not allow food soil to accumulate on the tank bottom or to enter the drain.
8. Remove the overflow tube. Wash and rinse the overflow tube inside and out.
9. Make sure that the wash and rinse arms rotate freely and are free of any obstructions. If not, remove arms and clear out any obstructions.
10. Remove and check wash arms and rinse nozzles (*Figures 21 & 22*) to make sure they are free of any lime and solids. Refer to Maintenance, page 18.

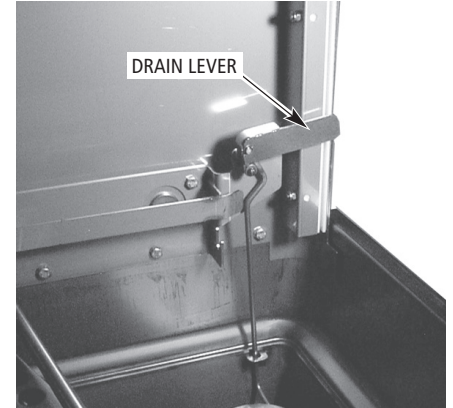


Figure 20

NOTICE Do not bang wash arms or rinse arms to clean.

11. Replace all removed parts. Leave machine door open to allow interior to air out and dry.

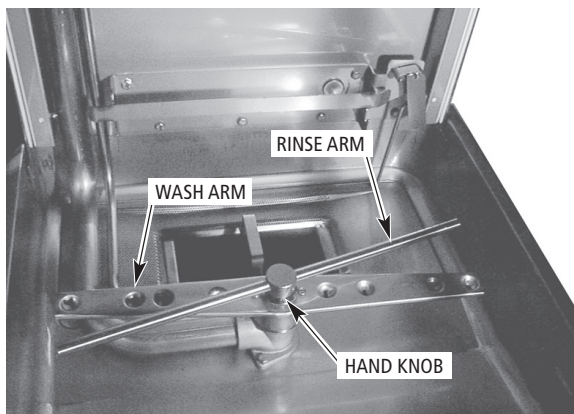


Figure 21

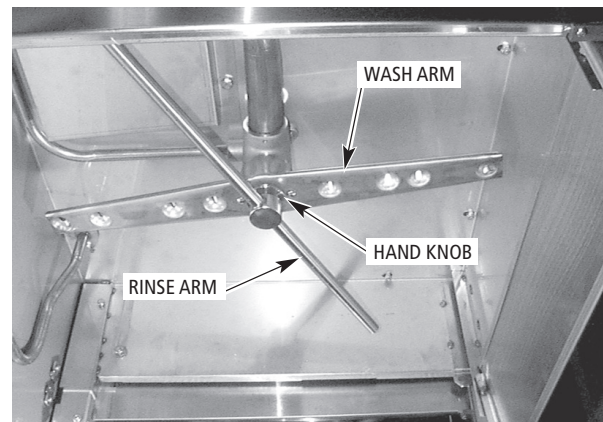


Figure 22

CLEANING *(continued)*

DO'S AND DON'TS FOR YOUR NEW STERO DISHWASHER

DO assure proper water hardness (3 grains or less per gallon is recommended).

DO pre-scrub dishes thoroughly.

DO use only detergents recommended by your chemical professional.

DO at the end of the day, thoroughly cleanse the machine, rinse and dry (leave door open).

DO closely follow your chemical professional's prescribed deliming schedule.

DO use only products formulated to be safe on stainless steel.

DO NOT use detergents formulated for residential dishwashers.

DO NOT allow food soil to accumulate on the tank bottom.

DO NOT exceed chemical manufacturer's recommended concentrations for detergent, sanitizer, rinse aid or lime scale remover.

DO NOT use steel wool to clean ware or warewasher surfaces.

DO NOT allow foreign objects to enter the unit, especially metallic contaminants such as paper clips, retainers, etc.

NOTE: Failure to follow use, care and maintenance instructions may void your Stero warewasher warranty.

MAINTENANCE

DELIME INSTRUCTIONS

Check with your chemical provider for deliming procedures.

⚠ WARNING Disconnect the electrical power to the machine (both dishwasher and booster if applicable) and follow lockout / tagout procedures. Be sure all circuits are disconnected.

WASH ARMS

Upper and lower wash and rinse arms (*Figures 21 & 22*) should turn freely and continue turning for a few seconds after being whirled by hand. To check, rotate arms and remove any obstructions causing improper operation.

If either the strainer pan or the strainer bucket is not properly in place, obstructions (such as food particles or bones) may clog the wash arm nozzles. The wash arms are easily removed for cleaning.

To remove the lower wash arm, unscrew the hand knob and lift the rinse arm off (*Figure 21*). The wash arm can be lifted off once the rinse arm is removed.

The upper wash and rinse arms are removed by unscrewing the hand knob (*Figure 22*) and lowering both arms together. Be careful not to drop these arms.

TROUBLESHOOTING

This section outlines various symptoms and possible causes that may be encountered in the event of abnormal machine operation. If symptoms persist after possible causes have been checked, service may be required.

Symptom	Possible Causes
No machine operation.	<ol style="list-style-type: none"> 1. Machine off, turn machine on. 2. Blown fuse or tripped circuit breaker at power supply. 3. Check tank water level.
Dishes not clean.	<ol style="list-style-type: none"> 1. Insufficient wash water due to drain obstruction preventing proper drain closing. 2. Worn or torn drain O-ring allowing wash water to drain. 3. Loss of water pressure due to pump obstruction. ⚠ WARNING Disconnect electrical power supply (both dishwasher and booster if applicable) and drain tank. Check for any obstruction at the pump intake. 4. Incorrect water temperature. Contact Service for adjustment or repair. 5. Incorrect detergent dispensing. Contact your detergent representative. 6. Excessive mineral deposits throughout wash and rinse system. Deliming may be necessary, refer to page 18. 7. Check wash and rinse arms to make sure they rotate properly. 8. Strainers clogged causing inadequate water supply to pump; clean machine according to Cleaning, page 17. 9. Obstruction in wash arms or wash arms will not turn; clean machine according to Cleaning, page 17. 10. Detergent dispenser may be clogged. 11. Excessive soil quantity; scrape dishes before cycle. 12. Improper rack loading; refer to Preparation and Dishwashing, pages 15 & 16. 13. Incoming water supply turned off.
Spotting silverware, glasses and dishes.	<ol style="list-style-type: none"> 1. Improperly loaded racks. 2. Incorrect rinse water temperature or rinse pressure. 3. Loss of water pressure due to pump obstruction. ⚠ WARNING Disconnect electrical power supply (both dishwasher and booster if applicable) and drain tank. Check for any obstruction at the pump intake. 4. Excessively hard water. 5. Incorrect detergent for water type. 6. Incorrect rinse additive for water type. 7. Incorrect concentration of detergent, rinse additive and/or sanitizer. 8. Excessive soil quantity; scrape dishes before cycle.
Inadequate rinse or rinse water temperature too low. Possible EE display.	<ol style="list-style-type: none"> 1. Dirty line strainer causing reduced water flow. Turn off water supply, remove strainer cap, withdraw and clean screen. Reassemble. 2. Low supply line pressure. 3. Excessive mineral deposits throughout wash and rinse system. Deliming may be necessary, refer to page 18. 4. Incoming water temperature to booster (if applicable) below 110°F. Machine will automatically extend wash time until booster heats up (this applies to SD3 booster equipped machines only). 5. If EE displays: Booster did not reach temperature within 8 minutes after initial fill. Press OFF, wait 5 seconds and press ON. May be booster heater failure.

TROUBLESHOOTING *(continued)*

Symptom	Possible Causes
Leaking valve.	<ol style="list-style-type: none"> Foreign material preventing proper valve operation. NOTE: A critical period is soon after installation when pipe compound or metal shavings may lodge at the valve seat. Shut off supply line. Unscrew and lift bonnet from valve body. Clean valve and reassemble. If a solenoid valve is malfunctioning (not opening or not closing), it is recommended that you contact your local service provider.
No wash tank heat.	<ol style="list-style-type: none"> The machine is equipped with a low water safety device which shuts off heat if the water level drops. Check for proper water level. If the water level is too low, the overflow tube might be out of position. Or, something may be inhibiting free movement of the low water float; remove any foreign object from around the low water float or its magnet. Blown fuse or tripped circuit breaker at power supply.
No or slow fill. Possible E2 display.	<ol style="list-style-type: none"> Debris may be obstructing standpipe movement allowing fill water to drain. Water supply may be off; make sure hot water supply valve is open. Dirty line strainer causing reduced water flow. Turn off hot water supply, remove strainer cap, withdraw and clean screen. Reassemble. Worn or torn drain O-ring allowing wash water to drain. If E2 displays: Water did not reach the float during a fill within 2.5 minutes. Press OFF, wait 5 seconds and press ON.
Possible Ed display.	<ol style="list-style-type: none"> Slow leak. Make sure the drain lever is closed, the standpipe is seated and the O-ring is clear of all food soil or other debris.
Dribbling water from lower rinse arm.	<ol style="list-style-type: none"> If equipped with electric booster, normal dripping from the lower rinse arm will occur during water heating due to expansion of the water. This will occur once between machine cycles. If water dribbles or leaks continuously from rinse arms on any machine, refer to Leaking Valve, above.
Possible E6 display.	<ol style="list-style-type: none"> Contact your local service provider.
Wrench lights up and P1, P2 or P3 displays.	<ol style="list-style-type: none"> Contact your local service provider.

SERVICE

Contact your local Stero-authorized service office for any repairs or adjustments needed on this equipment.