

INSTRUCTIONS

AM SELECT DISHWASHERS

MODELS

AM15	ML-130038
AM15F	ML-130045
AM15T	ML-130039

AM15VL	ML-130153
AM15VLF	ML-130155
AM15VLT	ML-130154

HOBART

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FORM 35320 Rev. E (October 2010)

POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.

IMPORTANT

IN THE EVENT A GAS ODOR IS DETECTED, SHUT DOWN UNIT(S) AT MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

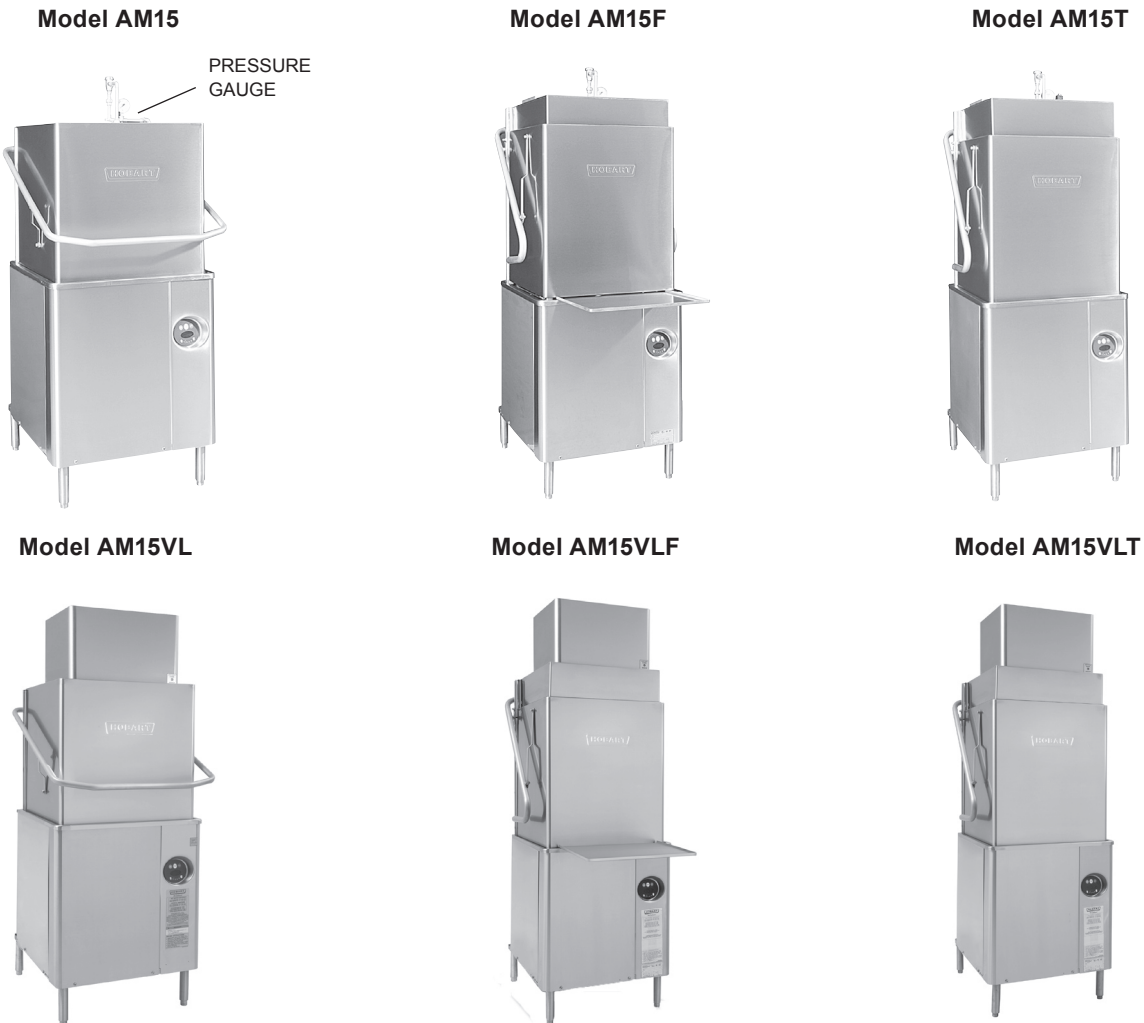


Fig. 1

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Installation, Operation and Care Of AM SELECT DISHWASHERS

SAVE THESE INSTRUCTIONS

GENERAL

Models AM15, AM15VL , AM15T, and AM15VLT dishwashers can be configured for both straight through or corner operation. Models AM15F and AM15VLF are configured for front loading. AM15, AM15VL , AM15T, and AM15VLT dishwashers are shipped from the factory in straight-through configuration. Straight-through machines can easily be converted to corner operation. Models AM15F and AM15VLF include a front-loader shelf and left- and right-side shields as standard equipment. The front-loader shelf on the AM15F and AM15VLF can be positioned up (inside the machine during operation) or down (outside the machine during operation).

The AM15, AM15F and AM15T dishwashers are designed to operate in one of two modes: Hot water sanitizing mode (designated by the letters "AH" or "AP" on the display when the machine is turned on), or a chemical sanitizing mode (designated by the letters "AC" on the display when the machine is turned on). AM15VL, AM15VLF and AM15VLT dishwashers are designed to operate in hot water sanitizing mode only (designated by the letters "HL" 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 either an atmospheric vacuum breaker for non "VL" models or an air gap for "VL" models 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. The booster water heater is standard for "VL" models. For models AM15, AM15F , and AM15T 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. For ventless models AM15VL, AM15VLF, and AM15VLT, the booster water heater is designed to maintain a minimum final rinse temperature of 180°F with cold incoming water.

Ventless models AM15VL, AM15VLF, and AM15VLT do not require a vent hood. They use an internal condensing system to minimize the water vapor escaping from the unit during loading and unloading. High-temperature AM15, AM15F and AM15T models or gas heat dishwashers 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 pages 10 and 11 for venting and hood requirements. Verify with local codes for final authority.

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 Fuel Gas Code, ANSI Z223.1 (latest edition) if applicable, and the National Electrical Code ANSI/NFPA 70 (latest edition). In Canada, the installation standards are: CAN/CGA B149.1, CAN/CGA B149.2, and 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, gas supply and 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 (Fig. 2) as required to level the machine and adjust to the desired height.

The edge of dish table that overhangs the AM15 wash tank should be turned down and fitted over the top of the dishwasher tank (Fig. 3). Apply an NSF approved sealant between the overhang of the dish table and the inner wall of the wash tank to prevent leakage (Fig. 3). Fasten the dish tables to the inner wall of the wash tank with non-rusting truss head screws or rivets (Fig. 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.

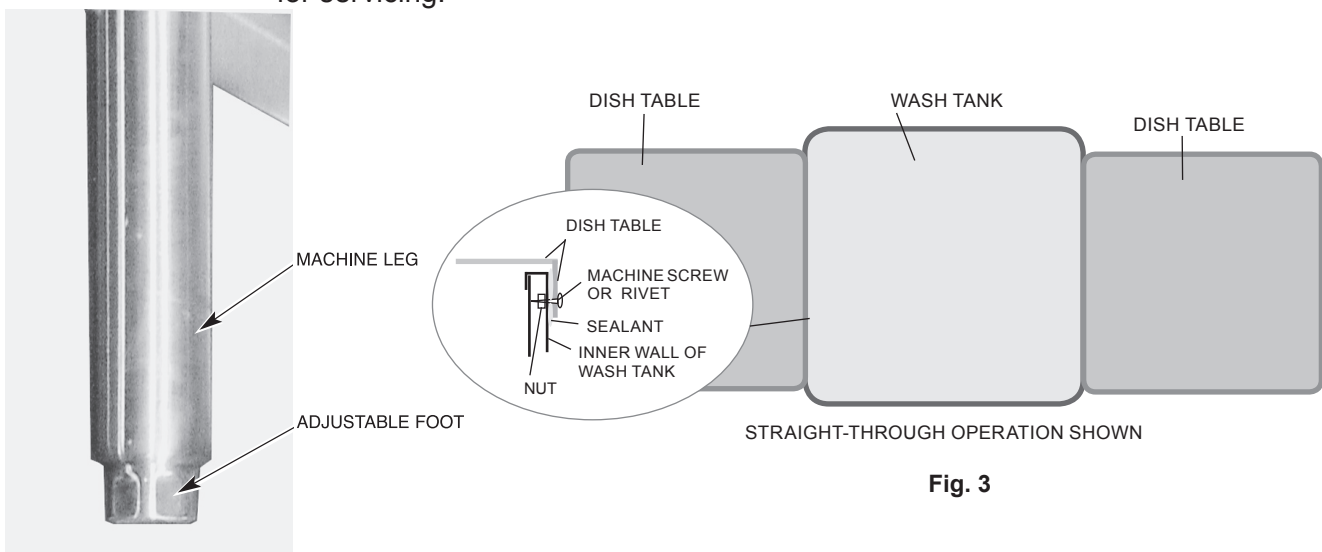


Fig. 2

Fig. 3

CORNER INSTALLATION

Before placing the dishwasher in its operating location, check machine configuration. If the machine is being installed in a corner (Figs. 4, 5), clearances of 20 inches out from the dishwasher under the left-hand tabling by 27 inches above the finished floor and 15 inches out from the dishwasher at the right side by 27 inches 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 (Fig. 5).

For corner installation, rotate the rack track so the guide rail is positioned on the left side (Fig. 6). For corner machines, remove the front door deflector (unscrew three bolts / nuts, Fig. 7).

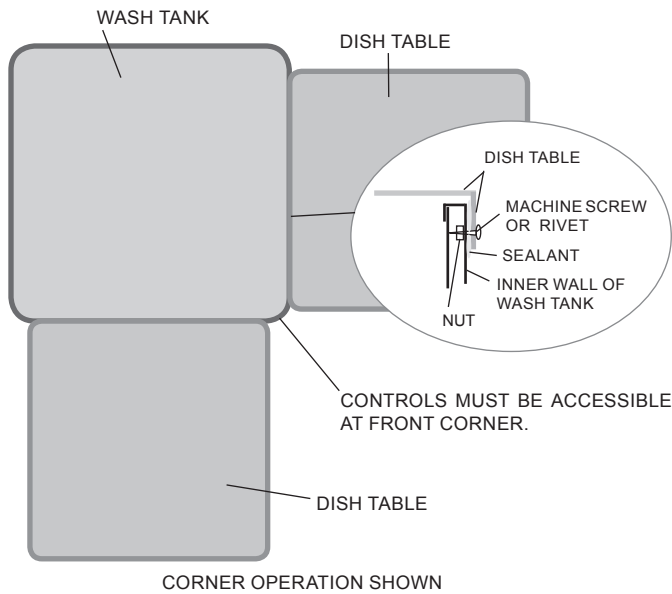


Fig. 4



Fig. 5

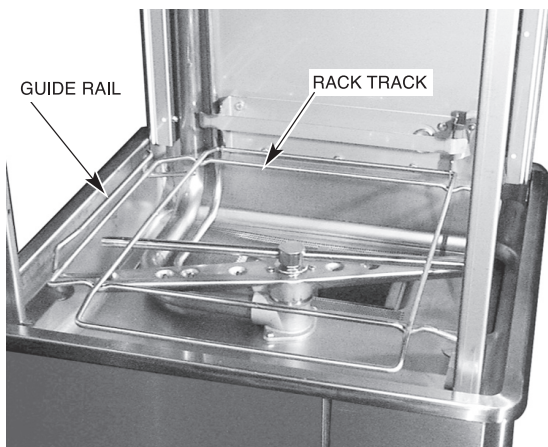


Fig. 6

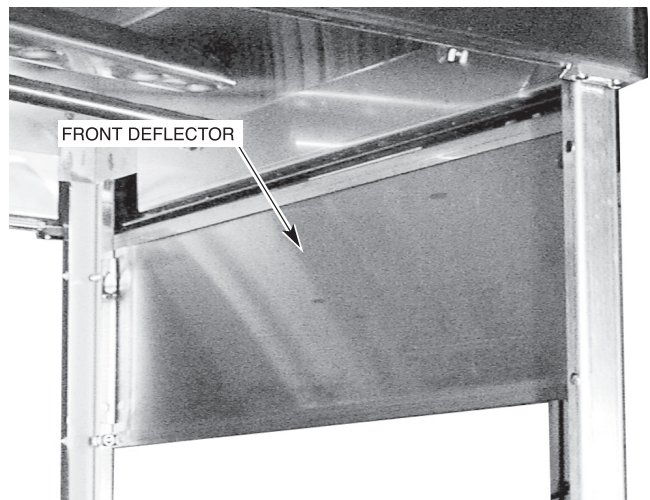


Fig. 7

A splash shield is available (at extra cost) for corner installations to cover the left side opening to the wall. Install the splash shield on the left side using the two 1/4-20 studs on the left rear corner with a lockwasher and nut for each (Fig. 8) and using the two 1/4-20 bolts, lockwashers and nuts on the left front corner (fasteners are provided in the kit).

For corner installations, tabling with backsplashes over 6" high require that a notch be provided to prevent interference with the door mechanism (Fig. 9).

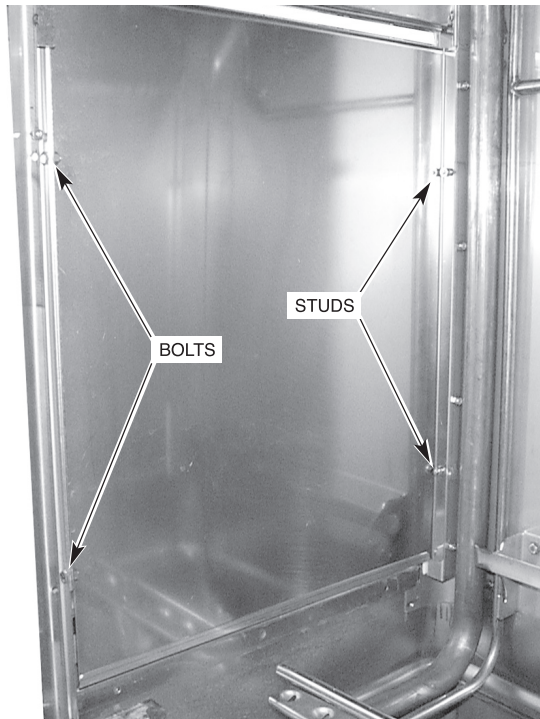
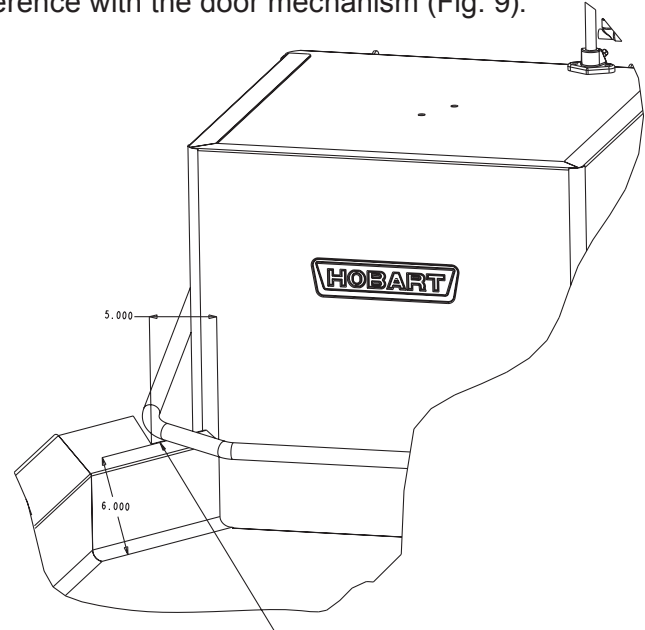


Fig. 8



A NOTCH MUST BE ADDED TO BACKSPASHES OVER 6" HIGH ON CORNER MACHINES TO PREVENT INTERFERENCE WITH DOOR MECHANISM. NOTCH MUST EXTEND 5" FROM FACE OF THE MACHINE.

Fig. 9

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 deliming 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 Hobart Service office for specific recommendations.

PLUMBING CONNECTIONS

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

Drain Connection

The drain connection is a 1 1/2 inch externally threaded pipe connected straight down from the bottom of the wash tank (Fig. 10). The connection can be made in any direction by using the proper fitting (not supplied) and routing to the appropriate drain line.

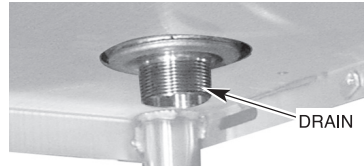


Fig. 10

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

Water Connection

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

Without Electric Booster Water Heater - Models AM15, AM15F, and AM15T

The water supply line is connected to the line strainer (top rear, Fig. 1) with 3/4 inch or 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)
VL Models	Hot Water Sanitizing	Cold Water	N/A	90°F (32°C)	65°F (18°C)
		Hot Water	110°F (43°C)	N/A	140°F (60°C)

For AM15, AM15F, and AM15T models, 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 (Fig. 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 - Models AM15, AM15F, and AM15T

The water supply line is connected below the booster with the line strainer (supplied) and 3/4 inch 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.

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.

Incoming water temperature below 110°F (43°C) may require longer wash cycle time than the 57 second cycle; refer to OPERATION, pages 17 – 18.

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.

With Electric Booster Water Heater - Models AM15VL, AM15VLF, and AM15VLT

Ventless models require both a cold water supply connection and a hot water supply connection. The cold water supply line is connected to the line strainer at the top of the machine with a 1/2 inch pipe. A pressure regulator and pressure gauge are not required. A manual shut-off valve and pipe union are required (customer supplied).

NOTICE The cold water supply must not exceed 90°F (32°C) for proper operation. Optimal results are obtained when cold water supply temperature is below 65°F (18°C). For best results, it may be necessary to use 1/2 inch pipe for the cold water pipe size and minimize the distance between the dishwasher and the entrance into the building. Pipe insulation will also improve results.

If cold water supply temperature is consistently above 90°F (32°C) or if excessive water vapor or steam is entering the room after the condensing cycle is complete, contact Hobart Service to increase condensing time.

The hot water supply line is connected to the line strainer at the rear of the machine with a 1/2 inch pipe. A pressure regulator and pressure gauge are not required as this is a pumped rinse machine. A manual shut-off valve and pipe union are required (customer supplied).

GAS TANK HEAT (WHEN SPECIFIED)

Check the gas data plate attached to the dishwasher or the tag attached to the incoming gas piping for the type of gas to be used. The burner is not adjustable. The maximum flowing inlet gas pressure must not exceed the Maximum value in the table. If line pressure exceeds the Maximum value in the table, an additional pressure regulator (not supplied) must be installed in the supply line.

GAS PRESSURE SPECIFICATION **[FLOWING GAS PRESSURE — NOT STATIC]**

Type of Gas	BTU/HR	Inches W.C. (Water Column) <i>FLOWING</i>		
		Incoming Line Pressure		Manifold Pressure
		Minimum	Maximum	
Natural	25,000	3.5	7.0	3.2
Propane	25,000	9.0	11.0	8.2

Static inlet line pressure should not exceed 14 inches W.C. The minimum value is for input adjustment.

The gas valve is provided with a pressure tap to measure the gas pressure downstream, which is also the manifold pressure. Gas supply piping must have a sediment trap (supplied by others) installed ahead of the dishwasher's gas control. Connect the gas supply to the 1/2 inch NPT gas inlet underneath the machine (Fig. 11).

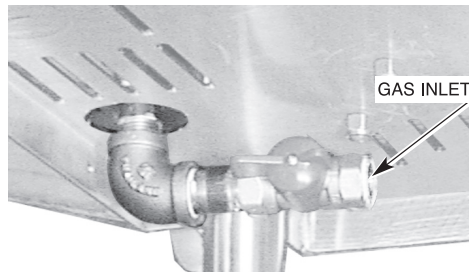


Fig. 11

⚠ WARNING Do not use Teflon tape on gas line pipe threads. For gas line pipe connections, use Loctite 565, Hobart part 546292, or a flexible sealant suitable for use with Natural and Propane Gases.

The appliance and its gas connections must be leak tested before placing the appliance in operation. Use soapy water for leak test. **Do not** use open flame. The installation must conform with local codes, or in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1 (latest edition). Copies may be obtained from American Gas Association, Inc., 1515 Wilson Boulevard, Arlington, VA 22209.

The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.45kPa).

The appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.45kPa). Dissipate test pressure from the gas supply line before re-connecting the appliance and its manual shutoff valve to the gas supply line.

NOTICE Failure to follow this procedure may damage the gas valve.

The dishwasher must be installed so that the flow of combustion and ventilation air is not obstructed. Do not store material underneath the machine; air openings into the combustion chamber must not be blocked. Make sure there is an adequate supply of make-up air in the room to allow for combustion of the gas at the burner.

Keep the appliance area free and clear from all combustible substances. Do not obstruct the flow of combustion and ventilation air. The dishwasher must have a minimum clearance from combustible construction of 1 inch from the flue at the rear. Clearances of 20 inches out from the dishwasher at the front (or left side in a corner installation) by 27 inches above the finished floor and 15 inches out from the dishwasher at the right side by 27 inches above the finished floor must be provided for servicing. The burner is ignited automatically by solid state electronic circuitry; there is no pilot light. Gas flow is regulated by the temperature control circuit.

VENTING REQUIREMENTS — WITH GAS TANK HEAT

Hobart model AM15, AM15F or AM15T dishwashers equipped for gas tank heat are not provided with a flue collar and are not intended to have the flue directly connected to a ventilation system. However, the products of combustion must be vented to the outside air. The most common method of venting is a vent hood over the entire dishwasher (Fig. 12). Refer to Rate of Exhaust Flow Calculations on the next page for calculations of the proper vent rate for your hood. Another method is a small vent hood (Fig. 13) positioned about five inches above the flue exit at the rear of the dishwasher and connected to existing ductwork. In either case, an electrical interlock must be installed to allow the flow of gas to the dishwasher burner ONLY when the exhaust system is energized. For additional information, refer to the National Fuel Gas Code, ANSI Z223.1, NFPA 54.

NOTICE Make sure the installation meets the local code for your area.

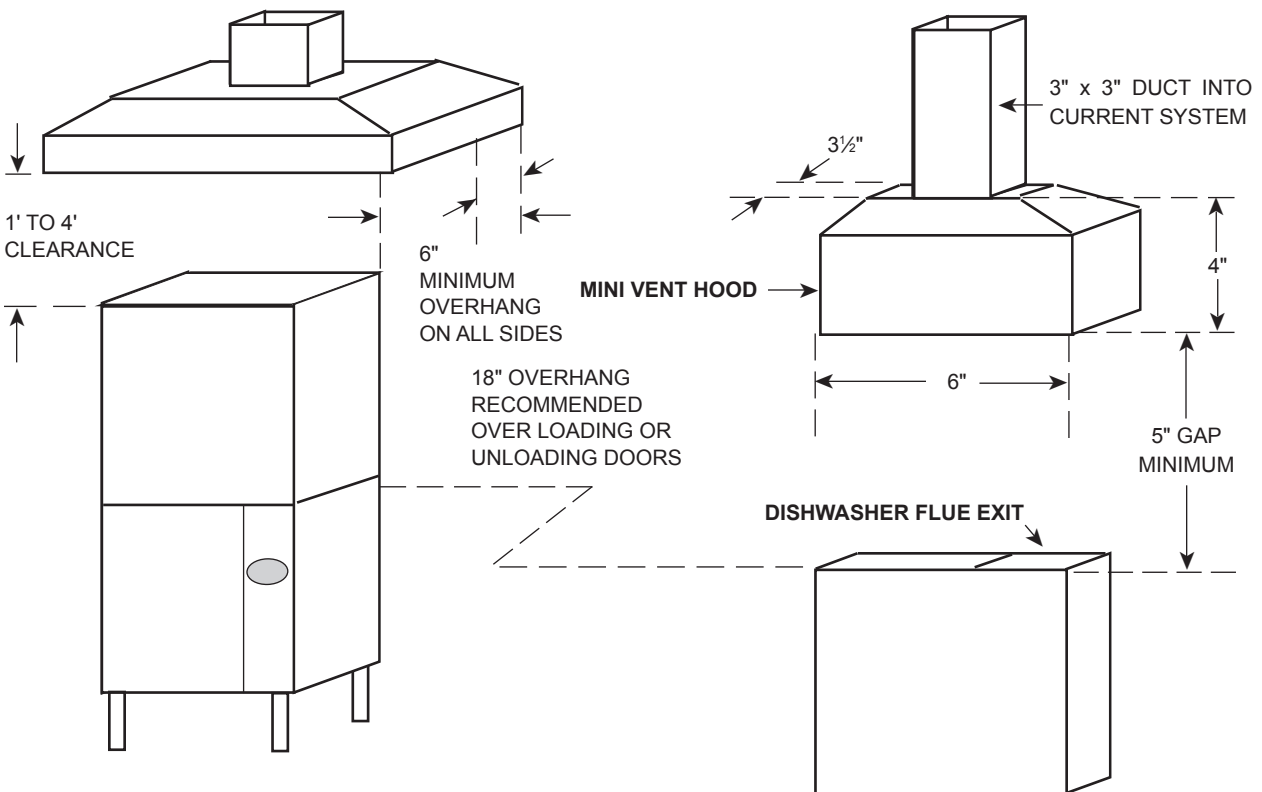


Fig. 12

Fig. 13

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.

Ventless models AM15VL, AM15VLF, and AM15VLT do not require a Type II vent hood. According to 507.22 of the 2009 IMC, Type II hoods are not required where the heat and moisture load is incorporated into the HVAC system design. See Table A for heat dissipation or heat gain to space.

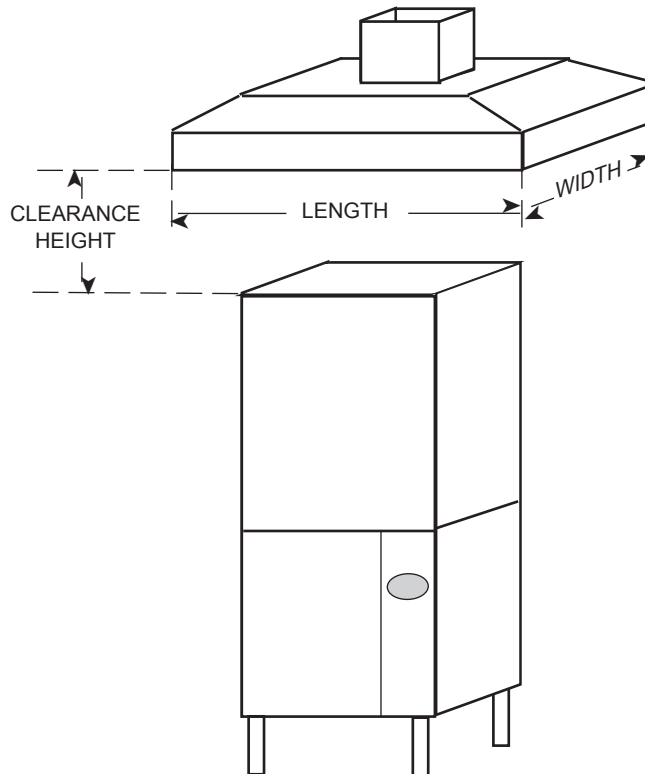


Fig. 14

TABLE A: HEAT DISSIPATION

	Model	Electric Heat	Gas Heat	13 kW Electric Booster	8.5 kW Electric Booster	Steam Booster	Latent Heat (BTU/HR)	Sensible Heat (BTU/HR)
Hot Water Sanitizing	AM15	X					7,400	3,200
		X		X			22,900	9,800
		X			X		17,500	7,500
		X				X	27,800	11,900
			X				10,900	4,700
			X			X	31,200	13,400
	AM15T, AM15F	X					10,400	4,400
		X		X			32,100	13,800
		X			X		24,600	10,500
		X				X	38,900	16,700
			X				15,200	6,500
			X			X	43,700	18,700
	AM15, AM15T, AM15F with power vent fan option	X					1,200	1,300
		X		X			3,700	4,200
		X			X		2,800	3,200
		X				X	4,500	5,100
			X				1,800	2,000
			X			X	5,000	5,700
AM15VL	X			X		9,300	3,400	
AM15VLT, AM15VLF	X			X		13,000	4,800	
Chemical Sanitizing	AM15	X					9,400	2,800
			X				10,900	4,600
	AM15T, AM15F	X					13,200	3,900
			X				15,200	6,500

- Assumptions:
1. Machines operate 70% of each hour while in use.
 2. All heat dissipated enters the room except for models with power vent fan option and gas heat models. Gas heat models must be provided with vent hood which directs 40% of heat to outside atmosphere.
 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.

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. Also, refer to Electrical Data, page 12.

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 inch diameter hole for 3/4 inch 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 inch 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
AM15	208 - 240 / 60 / 1	Gas	20		
AM15F	208 - 240 / 60 / 3	Gas	15		
AM15T	480 / 60 / 3	Gas	15		
AM15, AM15F	208 - 240 / 60 / 1	Electric	50	50	
AM15T, AM15VL	208 - 240 / 60 / 3	Electric	30	30	60
AM15VLF, AM15VLT	480 / 60 / 3	Electric	15	15	30
AM15, AM15F,	200 - 240 / 50 / 3	Electric	30	30	60
AM15T	380 - 415 / 50 / 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. Electrical connections for machines with gas tank heat are made to contactor 1CON in the controls area.

Motor Rotation (Three-Phase Machines Only)

Three-phase motors must rotate in the direction of the arrow on the pump housing. In order to check rotation, remove the bearing cap to observe the motor shaft (Fig. 15). Close the machine doors and press the power switch to ON. When the machine is completely filled, open and close machine doors to verify that the motor shaft rotates in the clockwise direction.

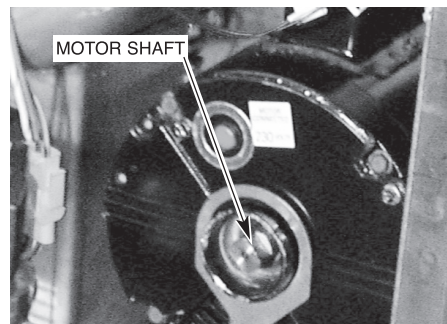


Fig. 15

If the rotation is incorrect, **DISCONNECT ELECTRICAL POWER SUPPLY** and interchange any two of the incoming power supply leads. Reconnect the power supply and verify correct rotation. Replace the motor bearing cap.

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 (Fig. 16). 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 (Fig. 17).

Dishwasher With Electric Booster (Single Point Electrical Connection)

Three phase machines configured with the optional single point electrical connection are connected to terminal block 1TB in the controls area (Fig. 18). The machine must be grounded according to electrical code(s); a grounding lug is provided.

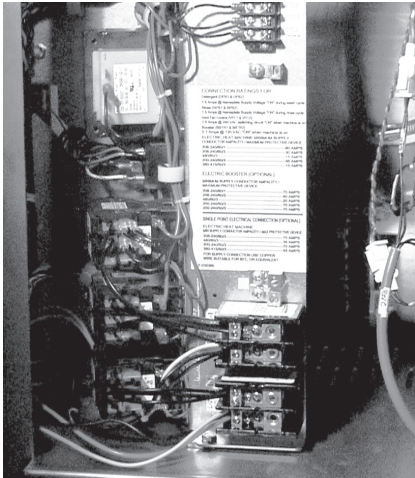


Fig. 16

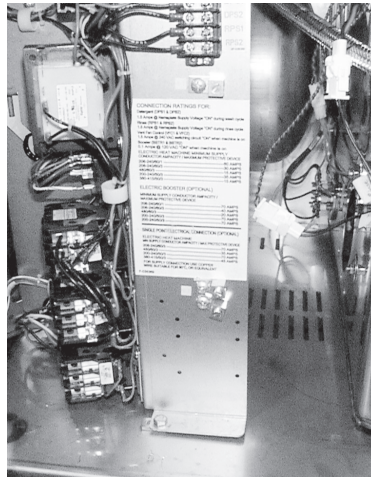


Fig. 17

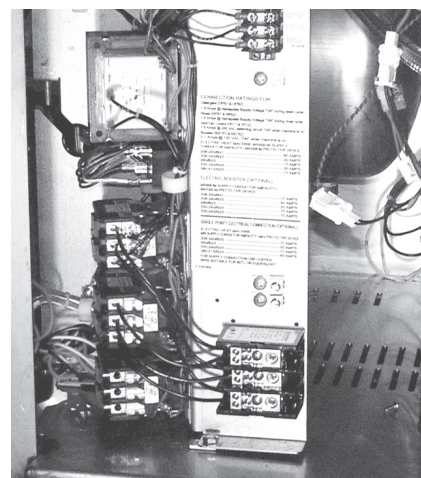


Fig. 18

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.

Vent Fan Control

The vent fan control feature is standard on models AM15, AM15F, and AM15T. This feature is not available on ventless models AM15VL, AM15VLF, and AM15VLT. The vent fan control relay provides switch contacts only and does not provide power to the vent fan motor. The rating for a vent fan control relay connected to terminals VFC1 and VFC2 is 1.5 Amps at 240 Volts maximum. When the dishwasher is connected to the vent fan, the vent 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 models AM15, AM15F, and AM15T. This feature is not available on ventless models AM15VL, AM15VLF, and AM15VLT. 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.

DETERGENT, RINSE AID, SANITIZER DISPENSERS — TUBING INSTALLATION

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

The dishwasher uses 0.74 gallons of rinse water per rack at a flow rate of 4.4 gallons per minute at 20 psig flowing pressure. This information is used when setting the detergent, rinse aid or sanitizer pumps.

NOTE: Ventless "VL" models do not have a pressure gauge.

See Hobart form F15523 for sanitizer volumes and installation instructions.

Detergent Dispenser

The dishwasher has two $\frac{7}{8}$ inch diameter plugged holes, one on the rear of the chamber and one on the lower part of the tank near the pump (Fig. 19). 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.

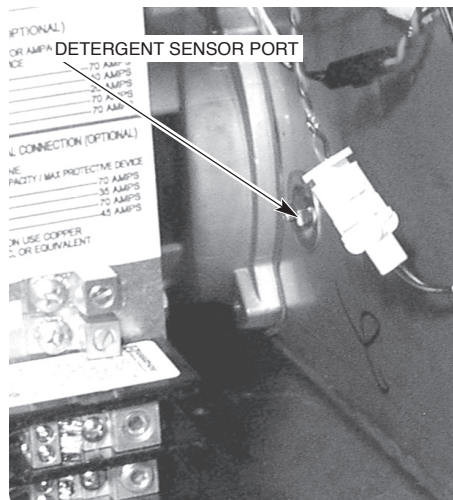


Fig. 19

Rinse Aid Dispenser

The rinse line flange connector on top of the dishwasher has two $\frac{1}{8}$ inch NPT pipe plugs (Fig. 20).

- Remove the plug(s) (Fig. 20) for installation of the rinse aid dispenser tube and / or chemical sanitizer tube, as needed.

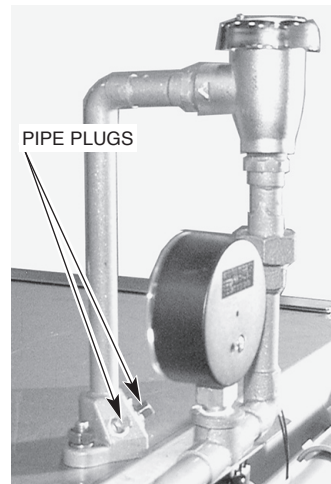


Fig. 20

Chemical Sanitizer Dispenser - AM15, AM15F, and AM15T Models Only

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 16). A chemical sanitizer dispenser that has been tested and certified by NSF International must be installed.

- Remove the pipe plug (Fig. 20) 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 $\frac{1}{4}$ inch (Fig. 21).
- Rate for 6% Sodium hypochlorite (bleach) - 3 ml. within 10 seconds (maximum).
- Rate for 8.4% Sodium hypochlorite (bleach) - 2 ml. within 10 seconds (maximum).

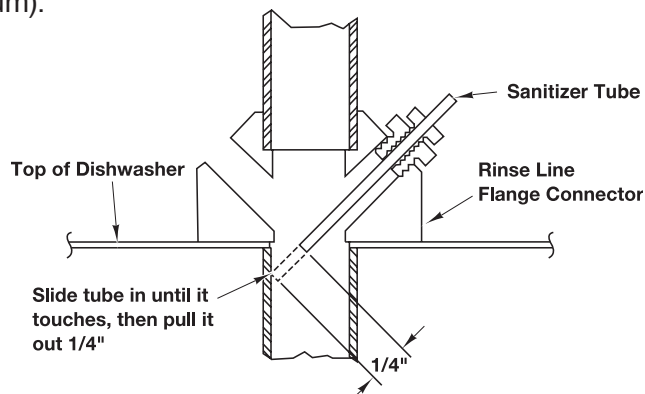


Fig. 21

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 (Fig. 22)

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) (Fig. 22)

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 $\frac{7}{8}$ inch diameter cap plug(s) for $\frac{1}{2}$ inch trade size conduit fittings from the rear of the enclosure. Strain relief fittings must be provided for all wiring.

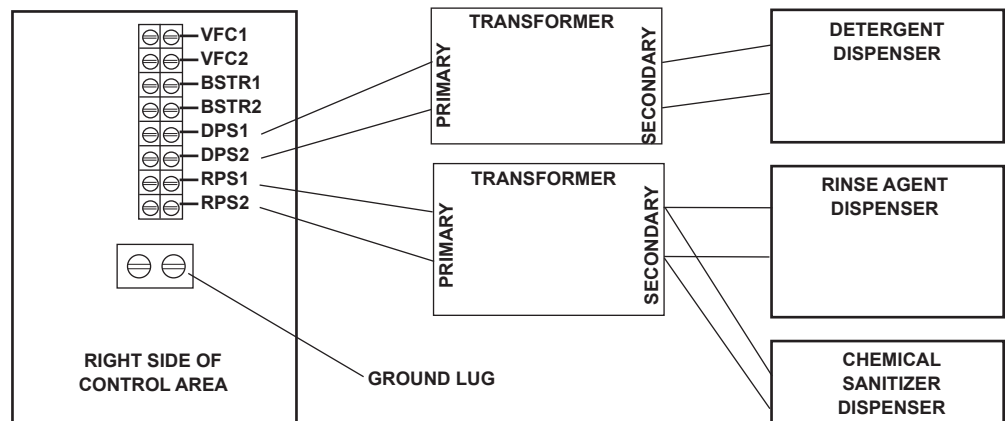


Fig. 22

SETUP (AM15, AM15F, AND AM15T MODELS ONLY)

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.

End of Cycle Buzzer - All Models

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 P, H or C. (See above).

5. Press and release the OFF key.

SET WASH XX displays. **XX** can be On or OF:

SET WASH On = End of Cycle Buzzer is ON.

SET WASH OF = End of Cycle Buzzer is OFF.

SHORTCUT IF
PROGRAMMING BOTH FEATURES
AT THE SAME TIME.



6. Press CYCLE to select On or OF for the End of Cycle Buzzer.

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 (Fig. 23). Place the strainer pan and the strainer bucket in their proper positions (Fig. 24).

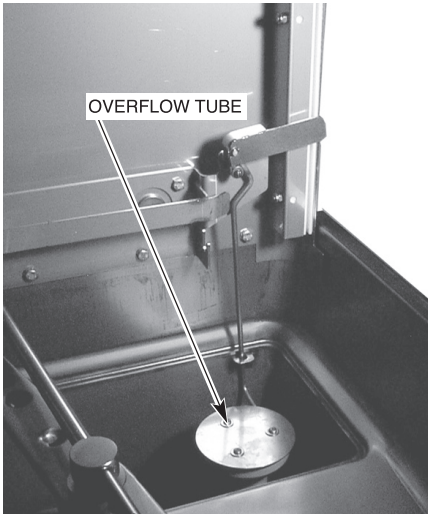


Fig. 23

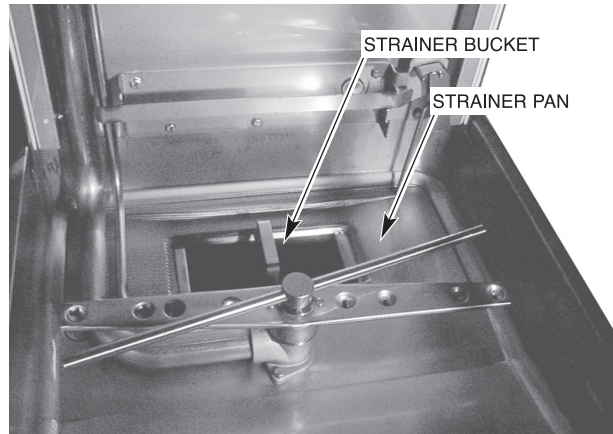


Fig. 24

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

Close the door; this will automatically close the drain.

Open the manual gas valve (if applicable). Press the ON button to turn the power on (Fig. 25). 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.



Fig. 25

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, 4 or 6 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.

For ventless models, the door must remain closed until the condensing cycle is complete and the cycle light turns off. A cycle countdown in seconds is displayed during the condensing cycle. Failure to follow these instructions will result in excess water vapor in the room.



Fig. 26

DISHWASHING

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

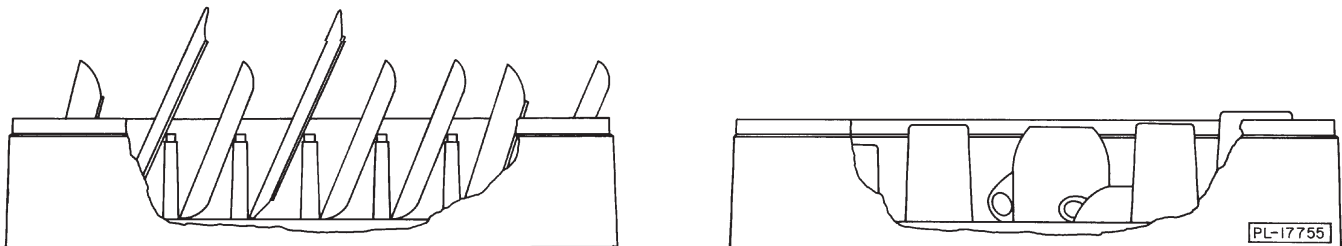


Fig. 27

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 (Fig. 27). Cups, glasses, and bowls should be inverted in an open-type or compartment type rack (Fig. 27). 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.

On AM15VL, AM15VLF, and AM15VLT models, a countdown of the remaining cycle time, along with the rinse icon only, is displayed during a condense cycle.

When the cycle is finished and the rinse icon disappears, or the condensing cycle light goes out for "VL" models, open the door, remove the clean dishes, slide in another rack and close the door.

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)

Model AM15F and AM15VLF have a front loader door and loading tray. The machine can operate with the loader tray positioned vertical inside the chamber (up position) or positioned horizontal outside the chamber (down position).

RECOMMENDED CONDENSE TIME (Based on Incoming Water Temp.)

Incoming Water Temp. °F (°C)	Condense Time (Sec.)	Rinse Time (Sec)	Racks per Hour (1 min cycle)
60 (16)	30	10	40
65 (18)	33	11	38
70 (21)	36	12	37
75 (24)	39	13	35
80 (27)	42	14	34
85+ (29+)	45	15	33

For "VL" models only - If excessive amounts of steam or water vapor exit the machine after condensing cycle light goes out and door is opened, incoming cold water temperature may be too high. Contact Hobart Service to adjust the rinse and condense times according to the adjustment table. Increasing cycle time will increase water consumption and decrease the racks per hour, but should reduce the water vapor entering the room.

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.

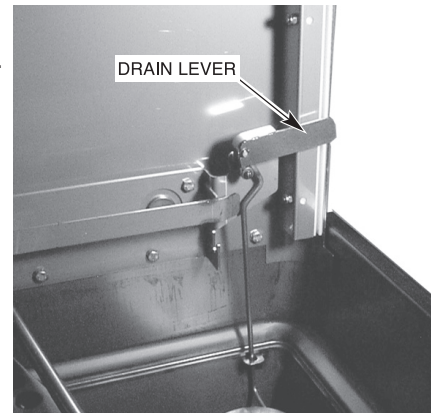


Fig. 28

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 (Figs. 29, 30) to make sure they are free of any lime and solids. Refer to Maintenance, page 26.

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.

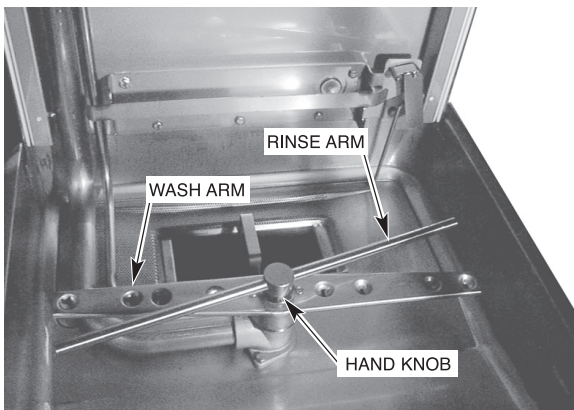


Fig. 29

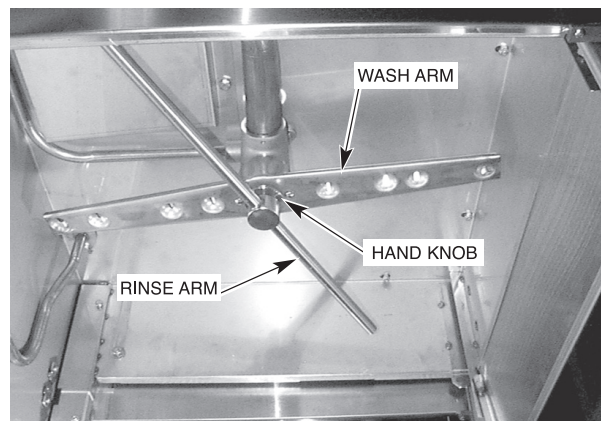


Fig. 30

FOR MODELS AM15VL,AM15VLF AND AM15VLT:

In addition to normal cleaning, the baffles, located on the upper chamber on the inside of the machine, may need periodic cleaning.

⚠ 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.

1. Loosen and remove the nut from each baffle and remove the baffles by sliding the tab out of the retainer.

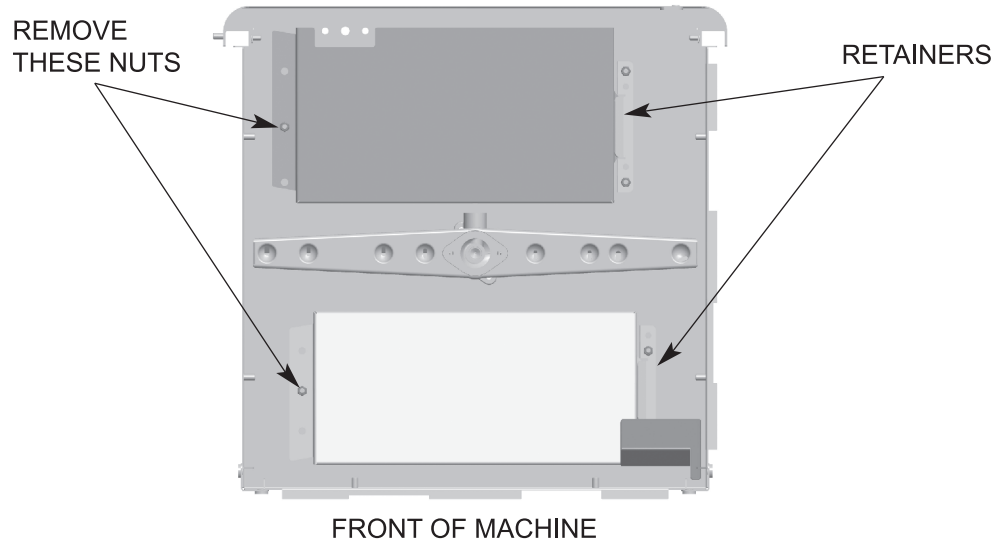


Fig. 31

2. Debris may collect on top surfaces of baffles and should be washed in a sink with a mild detergent and rinsed.

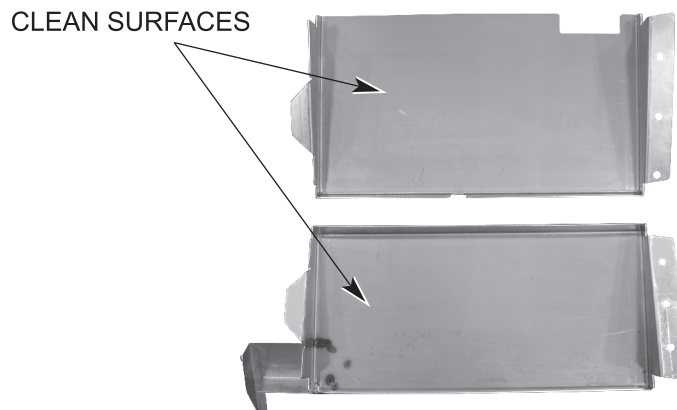
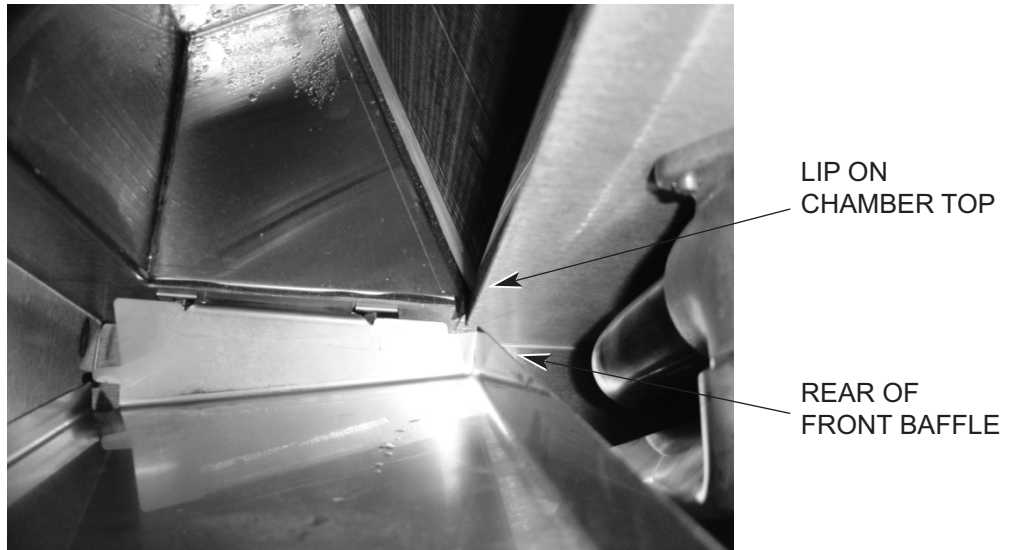


Fig. 32

3. Replace all removed parts. When replacing the front baffle be sure that the back side of the baffle is on the outside of the duct lip on the chamber top.



4. Leave machine door open to allow interior to air out and dry.

DELIME INSTRUCTIONS

If the optional delime notification is activated and the DELIME light is on, follow the instructions, below. Delime is also necessary if deposits are visible inside or outside the machine.

DELIME INSTRUCTIONS

1. Remove rack, drain tank, press "OFF".
2. Press and hold "CYCLE" & "ON" for 3 seconds; close door, unit fills then indicates "ADD DELIME".
3. Open door & add delime agent per supplier instructions for 14 gallon tank.
4. Close door, pump starts & display flashes "DELIME". After 12 minutes display scrolls "DRAIN".
5. Check interior, close door to run additional cycles if necessary.
6. Drain tank, turn unit off.

DOS AND DON'TS FOR YOUR NEW HOBART WAREWASHER

DO ASSURE PROPER WATER HARDNESS (3 GRAINS OR LESS PER GALLON IS RECOMMENDED).

DO PRE-SCRAP 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 HOBART WAREWASHER WARRANTY.

MAINTENANCE

⚠ 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 (Figs. 29, 30) 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 (Fig. 29). 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 (Fig. 30) and lowering both arms together. Be careful not to drop these arms.

MOTOR(S)

The wash pump motor, rinse pump motor ("VL" models only), fan motor ("VL" models only) and the blower motor (gas heat models) are equipped with permanently lubricated bearings and require no lubrication maintenance.

FLUE (MACHINES EQUIPPED WITH GAS TANK HEAT ONLY)

When cool, check the flue opening every three months for obstructions.

TROUBLESHOOTING

MANUAL RESET BUTTON ON PUMP MOTOR

If the pump motor becomes overheated, the thermal overload protector will cause the motor to not operate. If this occurs, contact Service.

To avoid a service call, check symptoms and related possible causes. If machine still does not operate properly, contact Service.

SYMPTOM

POSSIBLE CAUSE

<p>No machine operation.</p>	<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.
<p>Dishes not clean.</p>	<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 25. 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 24. 9. Obstruction in wash arms or wash arms will not turn; clean machine according to Cleaning, page 24. 10. Detergent dispenser may be clogged. 11. Excessive soil quantity; scrape dishes before cycle. 12. Improper rack loading; refer to Preparation and Dishwashing, pages 21, 22. 13. Incoming water supply turned off.
<p>Spotting silverware, glasses and dishes.</p>	<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.
<p>Excessive steam or water vapor after cycle is complete - AM15VL, AM15VLF, and AM15VLT models only.</p>	<ol style="list-style-type: none"> 1. Incoming cold water too warm. Contact Hobart Service for adjustment of condensing cycle time.
<p>Inadequate rinse or rinse water temperature too low. Possible EE display.</p>	<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. Note: AM15VL, AM15VLF, and AM15VLT models have 2 supply lines. 2. Low supply line pressure. 3. Excessive mineral deposits throughout wash and rinse system. Deliming may be necessary, refer to page 25. 4. Incoming water temperature to booster (if applicable) below 110°F. Machine will automatically extend wash time until booster heats up (this applies to AM15, AM15F, and AM15T 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.

SYMPTOM**POSSIBLE CAUSE**

Leaking valve.	<ol style="list-style-type: none"> 1. 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. Note: AM15VL, AM15VLF, and AM15VLT models have 2 supply lines. 2. If a solenoid valve is malfunctioning (not opening or not closing), it is recommended that you contact Hobart Service.
No wash tank heat.	<ol style="list-style-type: none"> 1. 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. 2. Gas line closed. 3. Blown fuse or tripped circuit breaker at power supply. If a failure occurs due to the gas heat control board or gas pressure, contact Hobart Service.
No or slow fill. Possible E2 display.	<ol style="list-style-type: none"> 1. Debris may be obstructing standpipe movement allowing fill water to drain. 2. Water supply may be off; make sure hot water supply valve is open. 3. Dirty line strainer causing reduced water flow. Turn off hot water supply, remove strainer cap, withdraw and clean screen. Reassemble. 4. Worn or torn drain O-ring allowing wash water to drain. 5. 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"> 1. 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"> 1. 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. 2. 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"> 1. Contact your local Hobart Service Office.
Wrench lights up and P1, P2 or P3 displays. "VL" Models - water continuously filling through chamber/holding tank.	<ol style="list-style-type: none"> 1. Contact your local Hobart Service Office. 1. Water level probe in holding tank may be contaminated or failed. Contact Hobart Service. 2. Refer to Leaking Valve above.

SERVICE

Contact your local Hobart-authorized service office for any repairs or adjustments needed on this equipment. If a gas orifice fitting is to be replaced, have it serviced by qualified Hobart-authorized service personnel. Long-term service contracts are available on this and other Hobart products. Call 1-888-4HOBART for Hobart Service 24 hours a day.

