



A Division Of The Legacy Companies

# INSTALLATION & OPERATION

## D-8 & DD-8 DISHWASHERS



# ELECTRICAL WARNINGS

THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL ELECTRICAL EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD STARTUP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

READ THIS MANUAL THOROUGHLY BEFORE OPERATING, INSTALLING OR PERFORMING MAINTENANCE ON THE EQUIPMENT.



**WARNING:** Failure to follow all the instructions in this manual can cause property damage, injury or death.



**WARNING:** Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.



**WARNING:** Electrical connections should be performed only by a certified professional.



**WARNING:** Electrical and grounding connections must comply with the applicable portions of the National Electric Code and/or all local electric codes. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** Before connecting the unit to the electrical supply, verify that the electrical and grounding connections comply with the applicable portions of the National Electric Code and/or all local electrical codes. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** Before connecting the unit to the electrical supply, verify that the electrical connection agrees with the specifications on the data plate. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING: UL73 Grounding Instructions:** This appliance must be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor must be run with the circuit conductors and be connected to the equipment-grounding terminal or lead on the appliance. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** Appliances equipped with a flexible electric supply cord are provided with a three-prong grounding plug. It is imperative that this plug be connected into a properly grounded three-prong receptacle. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** If the receptacle is not the proper grounding type, contact an electrician. Do not remove the grounding prong from the plug. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** Before removing any sheet metal panels, always perform the Electrical LOCKOUT/TAGOUT Procedure. Be sure all circuits are disconnected. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** Do not operate this equipment without properly placing and securing all covers and access panels. Failure to comply with this procedure can cause property damage, injury or death.



**WARNING:** Do not use or store gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. Failure to comply can cause property damage, injury or death.



**WARNING:** In the event of a power failure, do not attempt to operate this appliance. Failure to comply can cause property damage, injury or death.

## ELECTRICAL LOCKOUT/TAGOUT PROCEDURE



### **WARNING**

Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always follow the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

The Electrical LOCKOUT/TAGOUT Procedure is used to protect personnel working on an electrical appliance. Before performing any maintenance or service that requires exposure to electrical components, follow these steps:

1. In electrical box, place appliance circuit breaker into OFF position.
2. Place a lock or other device on electrical box cover to prevent someone from placing circuit breaker ON.
3. Place a tag on electrical box cover to indicate that appliance has been disconnected for service and power should not be restored until tag is removed by maintenance personnel.
4. Disconnect appliance power cord from electrical outlet.
5. Place a tag on the cord to indicate that unit has been disconnected for service and power should not be restored until tag is removed by maintenance personnel.

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# GENERAL DESCRIPTION

## Model D-8

The Model D-8 door-type commercial dishwasher has a three-sided door or hood that is spring counterbalanced and opens as one unit to provide access to the machine. The machine can be easily modified from a straight-through to a corner unit by simply moving one track rail. If the unit is to be used in a corner, the right side should be positioned toward the wall to allow access to the controls.

## Model DD-8

The Model DD-8 door-type commercial dishwasher has a three-sided door or hood that is spring counterbalanced and opens as one unit to provide access to the machine. The unit has two wash tanks and can wash two dish racks at a time. The Model DD-8 can be specified as a straight-through or corner unit when ordering. The side to be used in the corner must be designated so the controls are accessible.

## Door Safety Switch

All models are equipped with a door safety switch. The machine will not operate when the door is open. If the door is accidentally opened during a cycle, the machine will stop operating. Some models may be equipped with an optional door safety lock which prevents the door from opening during a cycle.

On manual start units, the door must be closed and the operator must press the start button to initiate a cycle.

On machines equipped with the optional automatic start feature, the operator need only close the door to start a cycle.

## Pump Motor

The unit is equipped with a 1½ HP motor. Model D-8 has one motor; Model DD-8 has two motors.

## Control Circuit

All units are supplied with a 110 VAC control circuit.

## Vacuum Breaker

The fill line has a vacuum breaker installed in it to prevent any backflow of water into the fresh water supply line. If a negative pressure develops in the supply line, the loss of pressure permits a check valve inside the breaker to drop, sealing the orifice. At the same time, a vent opens admitting air to the system to break the vacuum.

## Heaters

Wash tank water is heated by electricity, steam coil, steam injection or gas. Electrically heated machines are available in 208, 240, 440, or 480 VAC only.

## Automatic Wash Tank Fill

All machines are supplied with automatic wash tank fill.

## Final Rinse Boosters (Optional)

Machines can be equipped with an optional built-in electric booster, remote mounted booster or remote mounted steam booster. These boosters are designed to raise the rinse water temperature from 140°F to 180°F-185°F.

## Heat and Voltage Field Changeover

When changing either to or from single- to three-phase electrical power, the wash pump motor must be changed. The motor overload relays must also be changed. See parts description in the separate *Illustrated Parts List* and wiring diagram.

When changing from 115 volts to 208, 230, 440 or 480 VACs, single- or three-phase, a transformer must be added. The motor overload relays must also be changed.

# INSTALLATION

## Visual Inspection

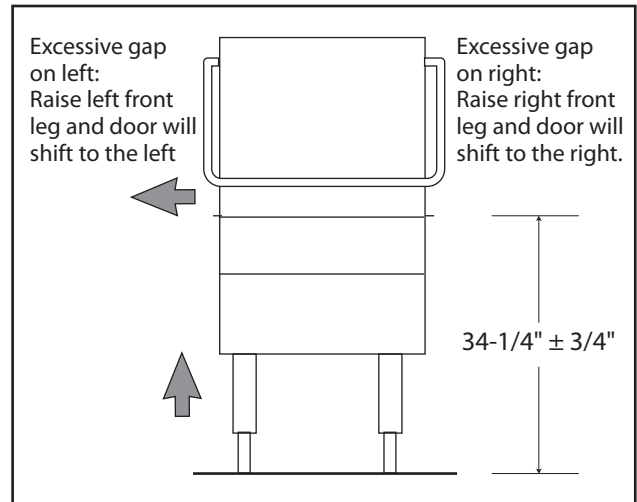
Before installing the unit, inspect the shipping container and machine for damage. A damaged container may indicate there is damage to the machine. If there is damage to both the container and machine, do not throw away the container. The dishwasher has been inspected and packed at the factory and is expected to arrive in an undamaged condition. However, rough handling by carriers or others may result in damage to the unit while in transit. If such a situation occurs, do not return the unit to Blakeslee; instead, contact the carrier and ask them to send a representative to the site to inspect the damage to the unit and to complete an inspection report. You must contact the carrier within 48 hours of receiving the machine. Also, contact the dealer where you purchased the unit.

## Unpacking the Dishwasher

Once the machine has been removed from the container, make sure that there are no parts missing from the machine. This may not be obvious at first. If an item is missing, contact Blakeslee immediately to have the missing item shipped to you.

## Leveling the Dishwasher

The dishwasher must be level to operate correctly. This allows the hood to open and close properly and ensures the best results while washing. The unit comes with adjustable bullet feet, which can be turned using a pair of channel locks or by hand if the unit can be raised safely. Ensure that the unit is level from side to side and from front to back before making any service connections. Minor adjustments to the feet may be necessary to eliminate any door gaps once the unit has been leveled.



**Leveling the Dishwasher**

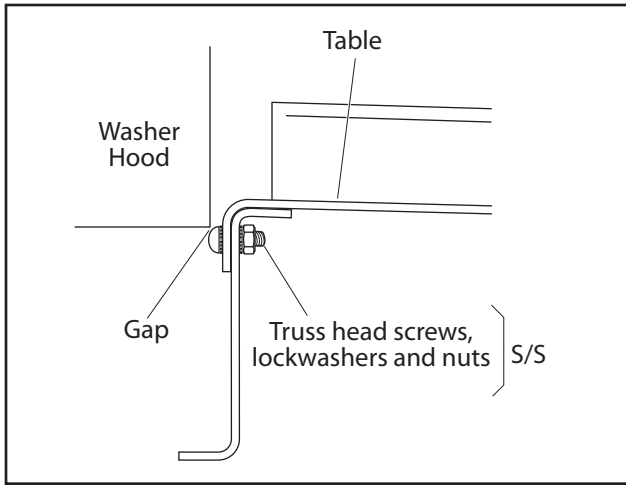
## Plumbing the Dishwasher

All plumbing connections must comply with all applicable local, state, and national plumbing codes. The installing plumber must flush the incoming water line thoroughly prior to connecting it to the dishwasher. Any valves that are fouled as a result of foreign matter left in the water line, and any expenses resulting from this fouling, are not covered under the manufacturer's warranty.

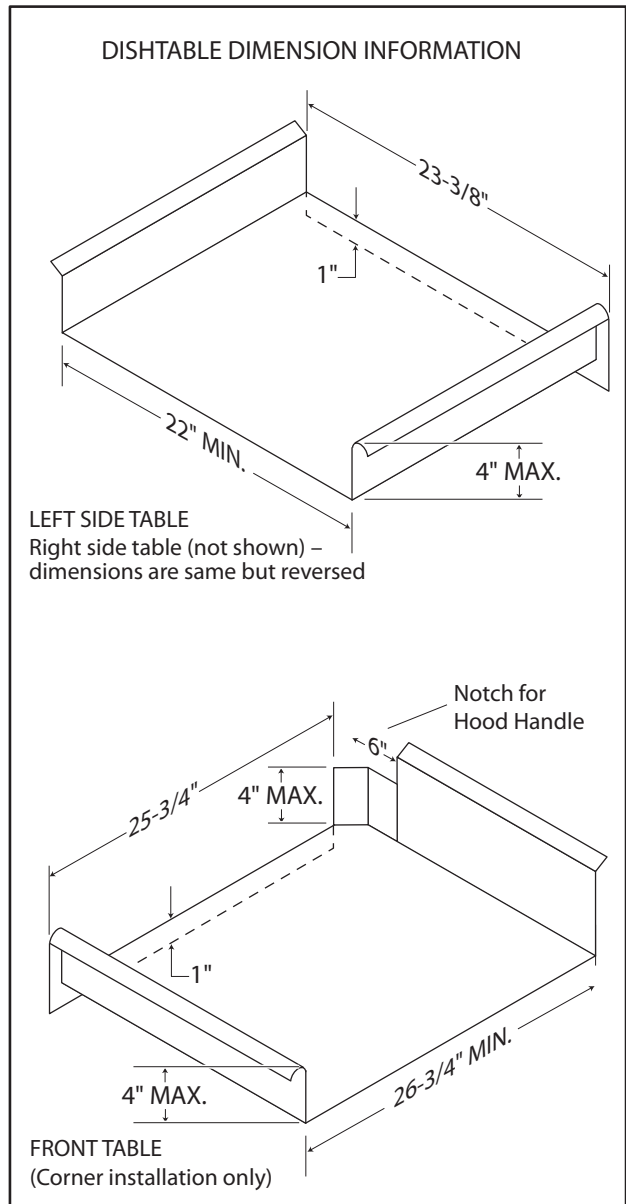
Various connections are labeled "180° Water", "Steam", "Gas", etc. Only connect the corresponding service to these connections.

## Dish Tables

Dish tables must be lipped into and slope slightly toward the dishwasher. Use silicone sealant between the dish table and the dishwasher. Secure with stainless steel truss head screws.



**Attach Table to Tank**




## Electrical Connections



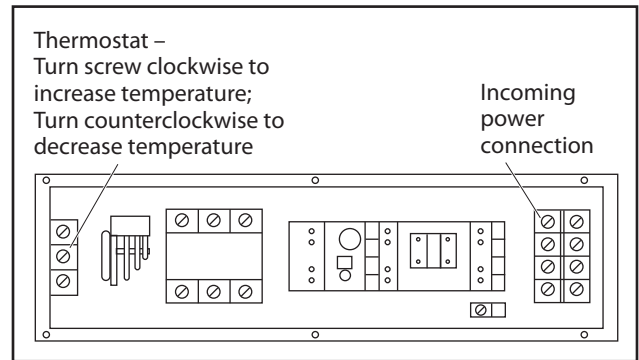
### WARNING

Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

Refer to the unit's data plate before making any connections.

 <b>BLAKESLEE</b>			
<b>POWER REQUIREMENT</b>			
MOD. <input type="text"/>	SER. NO. <input type="text"/>	CIR. DIA. NO. <input type="text"/>	
VOLTS <input type="text"/>	PH. <input type="text"/>	HZ. <input type="text"/>	AMP. <input type="text"/> HP. <input type="text"/>
<b>BRANCH CIRCUIT PROTECTION REQUIREMENT</b>			
SUPPLY CIRCUIT CONDUCTORS (MINIMUM AMPACITY) <input type="text"/>			
CIRCUIT-BREAKERS (MAXIMUM AMPACITY) <input type="text"/>			
TIME-DELAY FUSES (MAXIMUM AMPACITY) <input type="text"/>			
W-2-20878			

Any connections must correspond to the information specified on the data plate. A fused disconnect switch or circuit breaker (not supplied) **MUST** be installed in the electrical supply line for the dishwasher. This service connection must meet all local and national electrical code requirements. All connections are made at one common location in the control box. The control box cover is hinged and can be opened by removing six (6) 1/4 -20 screws and swinging the cover to the right.



**Thermostat & Power Connection Locations**

**Note:** If the unit has the optional electrical booster, refer to section on Boosters for separate electrical connection information.

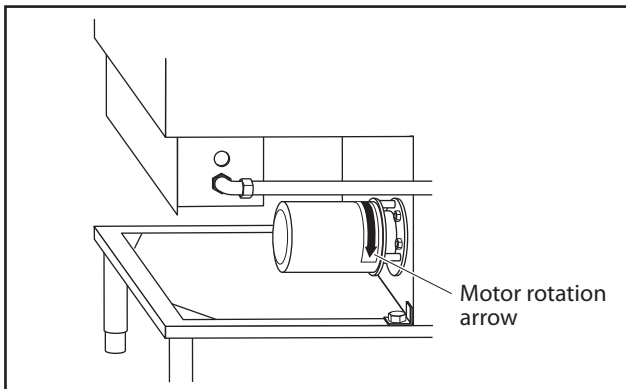
## Pump Motor Rotation



### WARNING

Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

The pump motor(s) must rotate in a clockwise direction as viewed from the front of the dishwasher. An arrow on the side of the pump motor(s) indicates the correct motor direction.



**Pump Motor Rotation**

This rotation was checked at the factory but must be rechecked before putting the dishwasher into service.

**Note:** There may be more than one pump motor depending on the model.

## Fill/Rinse

Final Rinse water is used to fill the dishwasher's wash tank(s). The water supply must have a water temperature of 180°-195° F with a dynamic flow pressure of 15 to 25 PSI at the dishwasher.

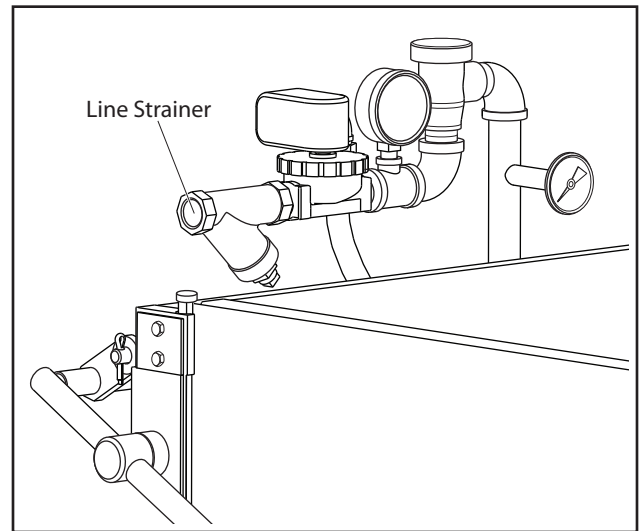
**Note:** If the dishwasher has been supplied with either a machine mounted booster or a remote booster, the water supply temperature must be 140° F minimum.

If the incoming water supply pressure is below the required 15 PSI, an optional pressure booster pump will be required. If the incoming water supply pressure is greater than 25 PSI, a pressure reducing valve (optional) will be needed.

The unit requires 72 gal/hr of 140°F water.

Connect a ¾" pipe to the line strainer.

For a piping run greater than 20 ft, increase the pipe size to insure proper flow pressure at the dishwasher.

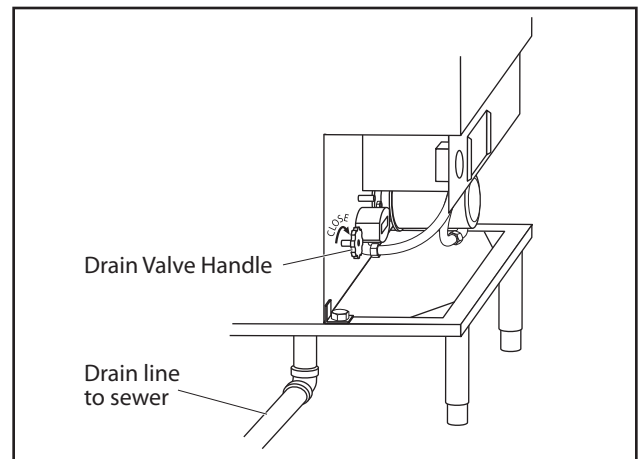


**Line Strainer**

## Drains

Drain connections must comply with all local and national code requirements.

Connect the tank drain(s) to the building drain connection using 2" pipe.



**Drain Installation**

If a grease trap is required, it must be installed below the drain line and have a capacity of 40 gallons per minute.

## Electric Heater



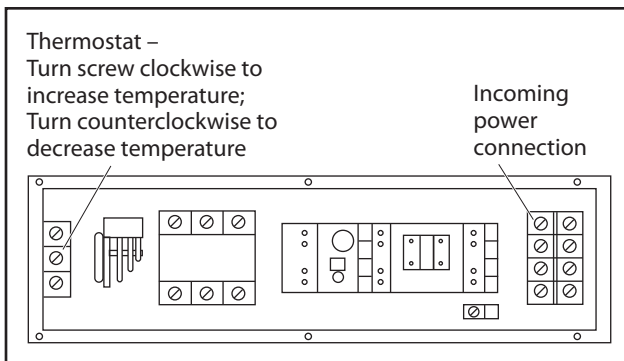
### WARNING

Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

Electrically heated machines are available in 208, 240, or 440-480 volts, single- or three-phase only. They are prewired at the factory and only one common connection is required. Use L1 and L2 for single-phase units and L1, L2 and L3 for three-phase units.

Additional instructions are located inside the control box. Make sure the wire size is adequate to carry the amperage load.

The temperature is controlled by the thermostat located in the control box.



**Thermostat & Power Connection Locations**

## Gas Heater

Before making a gas connection, verify the gas type. A tag is attached to the gas valve that will indicate the correct gas type (L.P. or Natural) to be supplied to the unit.

**Note:** If the tag is missing, the gas type can be determined by inspecting the gas valve. A Natural gas valve will have a pressure regulator where a L.P. gas valve will not.



### WARNING

Instructions to be followed in the event the operator smells gas or otherwise detects a gas leak must be posted in a prominent location. This information can be obtained from the local gas company or gas supplier.



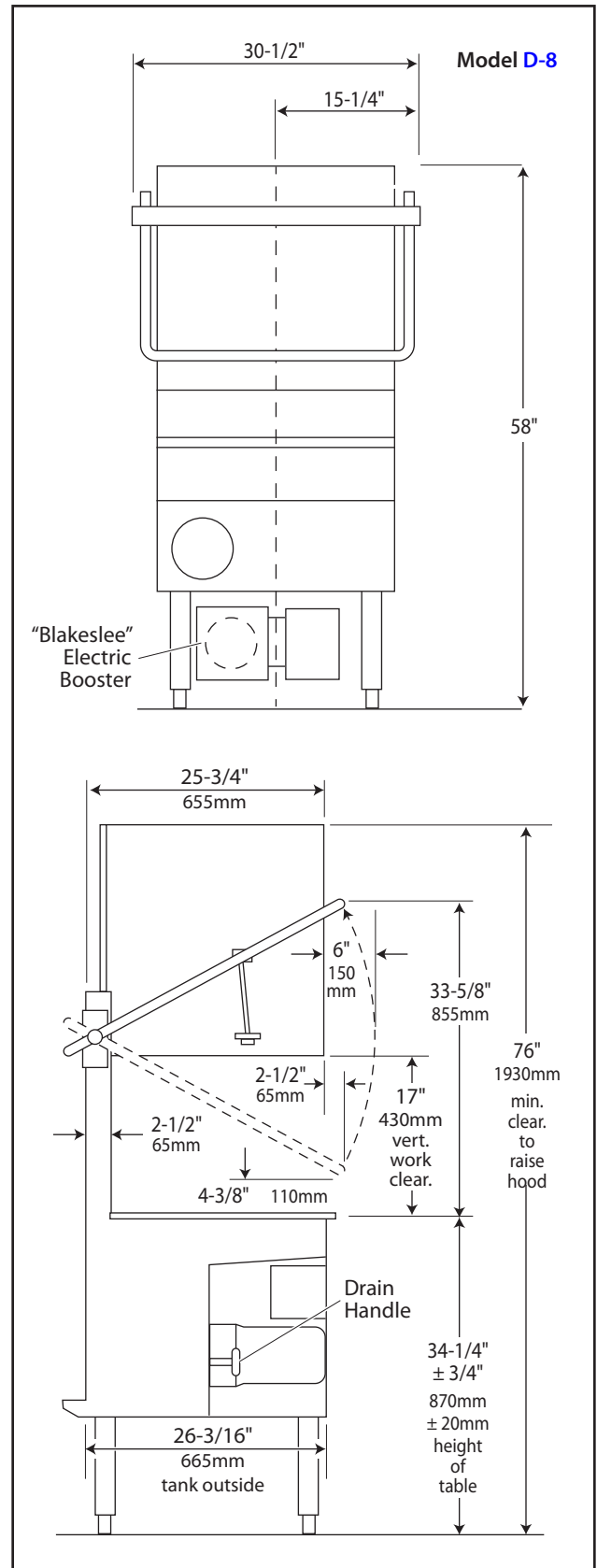
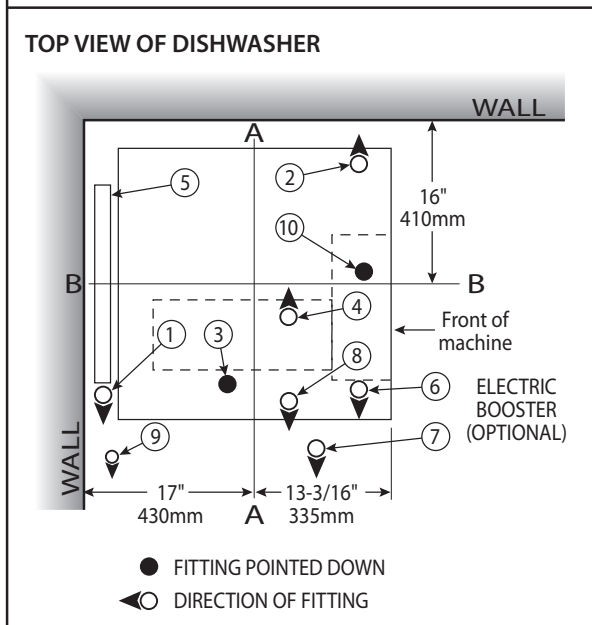
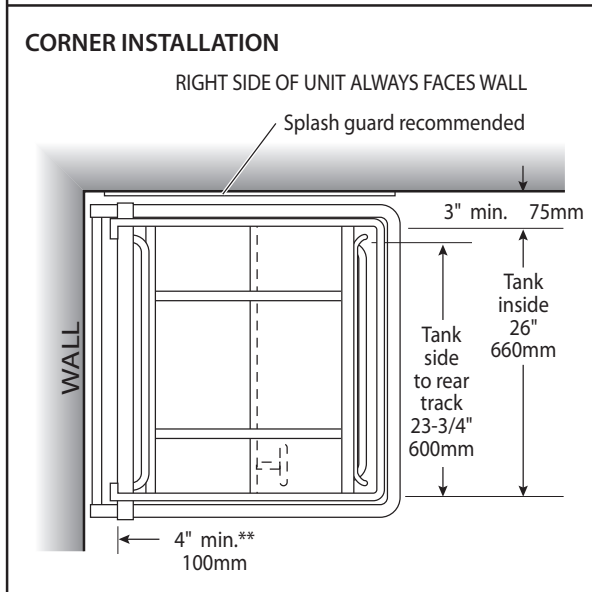
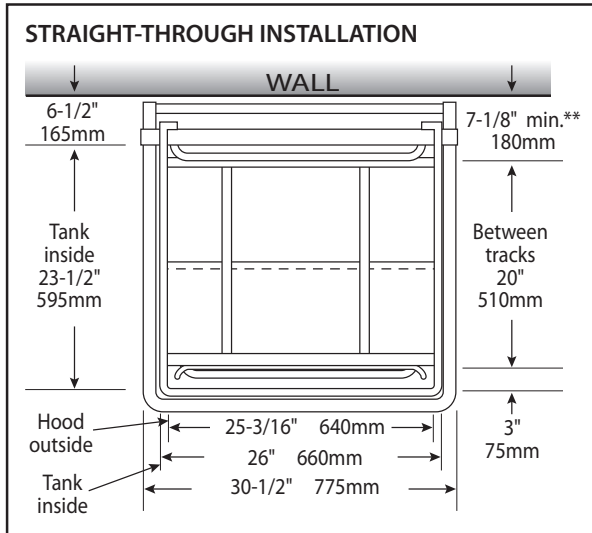
### WARNING

All connections must be sealed with a joint compound suitable for the gas being used and all connections must be tested with a solution of soapy water before lighting any pilots.

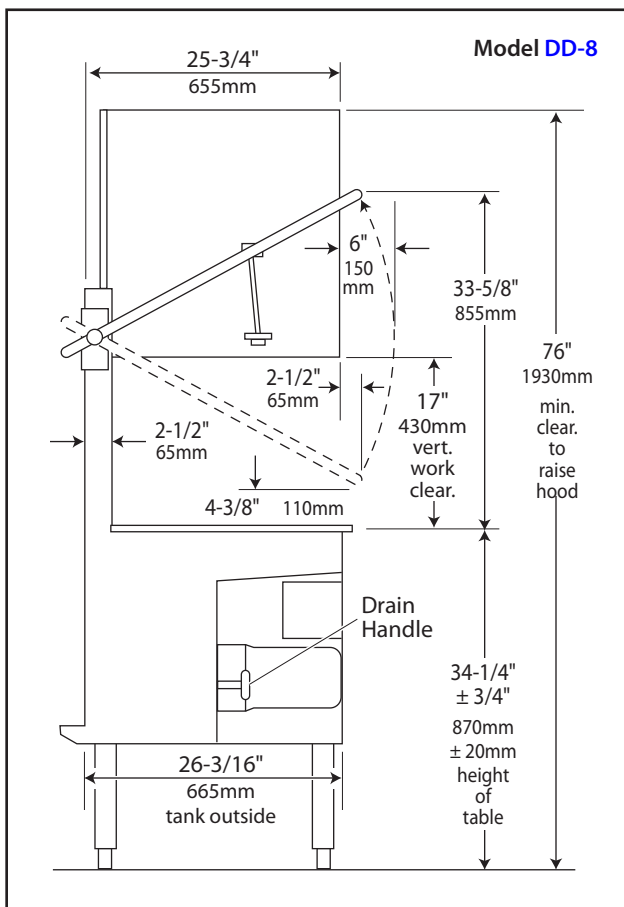
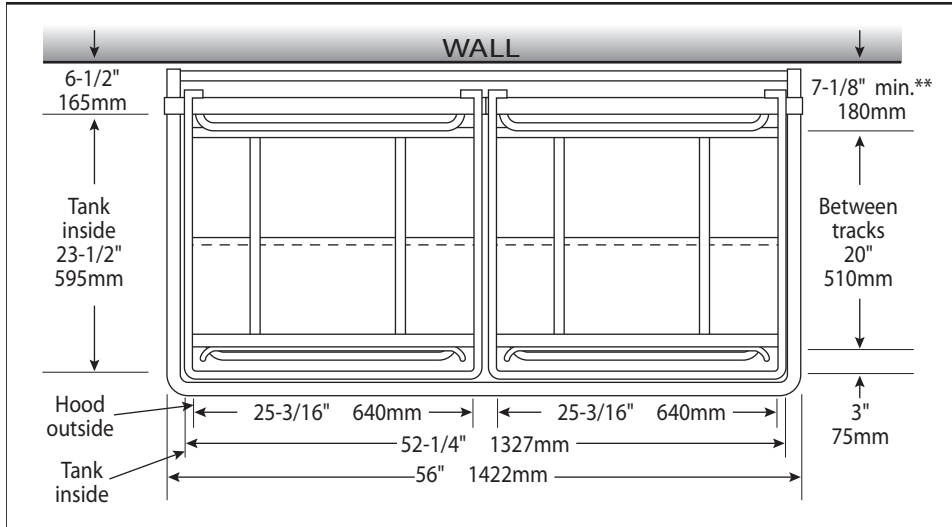
Never use matches, candles, or any other ignition source to check for leaks. If gas odors are detected, shut off the gas supply to the appliance at the main shutoff valve and immediately contact the local gas company or an authorized service agency for service.

The natural gas valve has a pressure regulator for minor adjustments to the gas pressure. L.P. gas pressure must be adjusted by the customer's regulator.

## Rough-in Diagrams – Model D-8



## Rough-in Diagrams – Model DD-8



## Pilot Lighting

To light the pilot burner:

1. Press the control knob and rotate it clockwise to the OFF position. Allow five (5) minutes to pass to allow any unburned gas to dissipate.



### WARNING

L.P. Gas is heavier than air and does not dissipate easily. Venting the area with a fan or equivalent is recommended before attempting to relight the pilot burner.

2. Rotate the control knob to the PILOT position, press the knob fully and light the pilot burner.
3. Continue to hold the control knob down for about one minute to allow the pilot sensor enough time to heat up and sense the flame.
4. Release the knob and the pilot should remain lit.
5. Rotate the knob to the ON position, set the thermostat located in the control box to the desired wash tank temperature (150° - 160° F).

The main burner should ignite when the thermostat calls for heat.



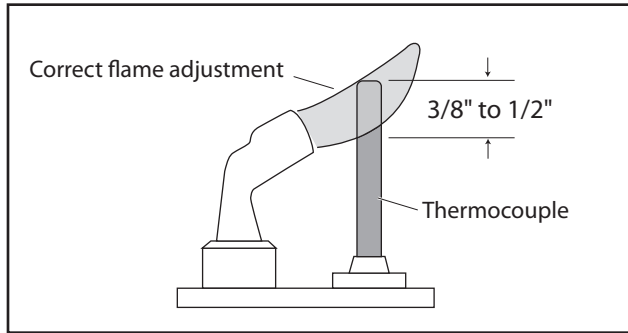
### CAUTION

Do not turn on gas heat until the wash tank is filled with water.

**Note:** The main burner is equipped with a non adjustable orifice (0.052 for L.P. gas and 0.078 for Natural gas).

## Pilot Flame Adjustment

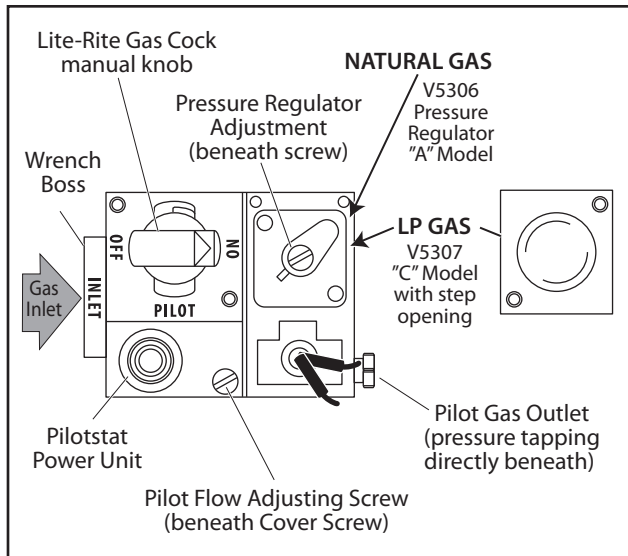
The pilot flame should engulf the tip of the pilot sensing thermocouple.



**Correct Pilot Flame**

To adjust the pilot flame:

1. Remove the pilot adjustment cover screw.



**Gas Control Valve**

2. Turn the inner adjustment screw clockwise to decrease or counter-clockwise to increase the pilot flame.
3. Replace the cover screw when finished to prevent possible gas leakage.

## Gas Vents

Gas heated machines are supplied with flues. These flues do not need to be connected to any external vents. The flue temperature is controlled by the thermostat located inside the control box.

## Steam Injected Heaters

Incoming steam supply line must be connected to the steam connection (line strainer) labeled "incoming steam". Blakeslee recommends installing a steam shutoff valve and steam regulator (not supplied) close to the dishwasher to aid in servicing. The wash tank water temperature is controlled by the thermostat located inside the control box.

## Steam Coil Heater

Incoming steam supply line must be connected to the steam connection (line strainer) labeled "Steam Supply". Blakeslee recommends installing a steam shutoff valve and steam regulator (not supplied) close to the dishwasher to aid in servicing. The wash tank water temperature is controlled by the thermostat located inside the control box.

Connect the condensate return line or drain (depending on local codes) to the steam trap.



### CAUTION

The condensate return line must run parallel or on a downward slope from the dishwasher. If the condensate must be run vertically, a condensate pump system (not supplied) must be installed.

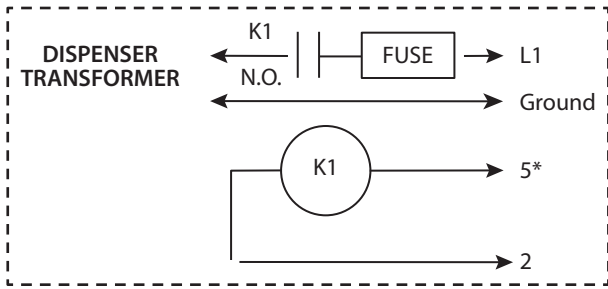
## Electrical Detergent and Rinse Additive Injector Connections



### WARNING

Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

**Note:** The dishwasher will supply a switch signal only. A relay must be installed. The switched signal is used to energize the relay coil. The Normally Open (NO) contacts on the relay can be powered by L1 and ground. Normally this would be a neutral if available.

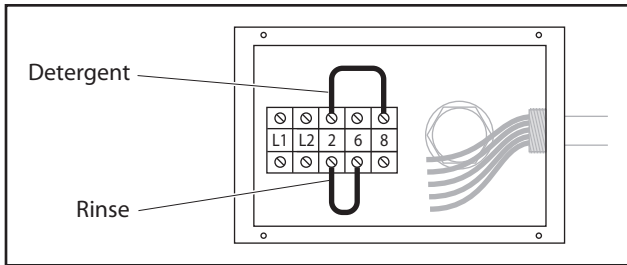


The designated wire connections for the dispensers are found in the control box. #2 is common; the switched side connection is determined by the serial number suffix.

Connections for machines manufactured after September 2005 with a suffix ABB and up:

Detergent – 8 & 2

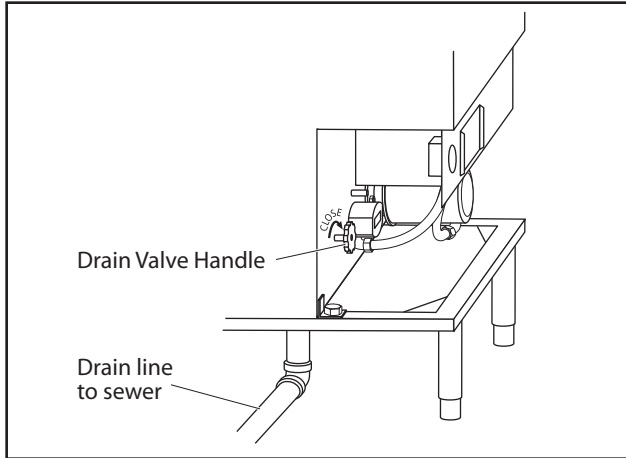
Rinse – 6 & 2



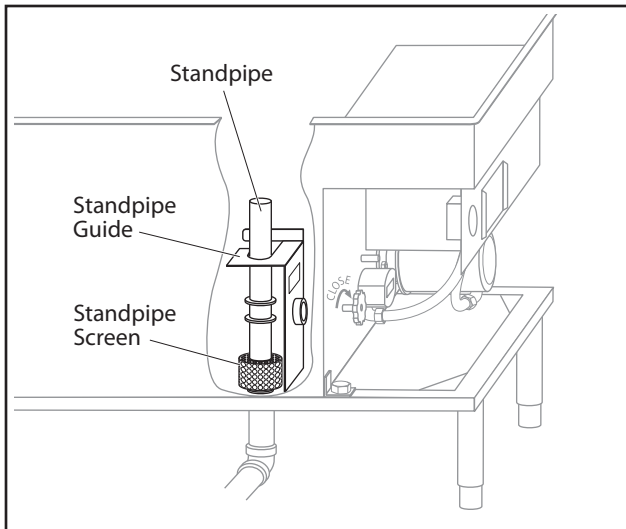
# OPERATION

## Preparing the Dishwasher for Use

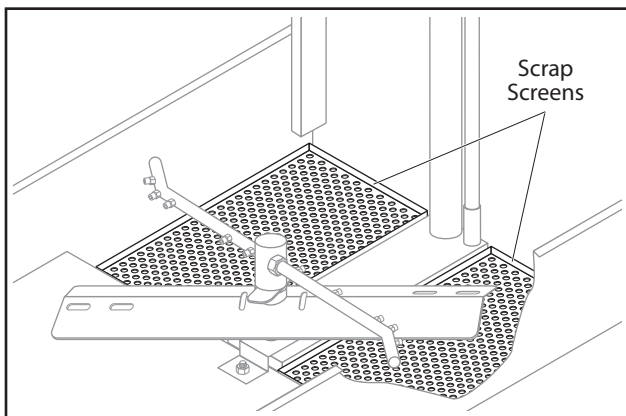
1. Close the drain by turning the drain valve handle clockwise as far as it will go.



2. Make sure standpipe guide is in position.



3. Install scrap screens into position.



4. Make sure all wash and rinse arms are in position and spin freely. Tighten the lower spindle (turn clockwise) and upper wash rotor nut by hand.
5. Scatter initial charge of detergent into scrap screens. Replenish as needed. This may not be necessary on dishwashers that have an external chemical dispenser.
6. Close the counterbalanced three-way hood.
7. Place the power switch in ON (up) position. The tank will begin to fill and the tank heat will initiate when the water reaches the appropriate level.
8. When the wash tank thermometer reads between 150°F and 160°F, the dishwasher is ready for use. If after a short period of time this temperature is not attained, adjust the thermostat located in the control box.



## WARNING

Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

**Note:** Adjusting the thermostat is a user function and is not covered under the warranty.

## Automatic Tank Fill (Standard)

The dishwasher is equipped with an automatic tank fill system that utilizes a liquid level control. The unit will fill automatically when the power switch is placed in the ON (up) position. The tank takes approximately 3 minutes to fill completely.

**Note:** The liquid level control will automatically maintain the water level in the wash tank to within 3 inches of the top of the standpipe when the unit is ON. When the dishwasher is cycled, the final rinse will bring the water level up to the top of the standpipe.

## Wash Cycle Selector (Optional)

This feature allows the user to choose between wash cycle times. Choices are 1, 2, 4 and 6 minutes. The rinse cycle is a set time of 12 seconds and cannot be changed. On double units, each side will operate on the same cycle time.

## Automatic Start (Optional)

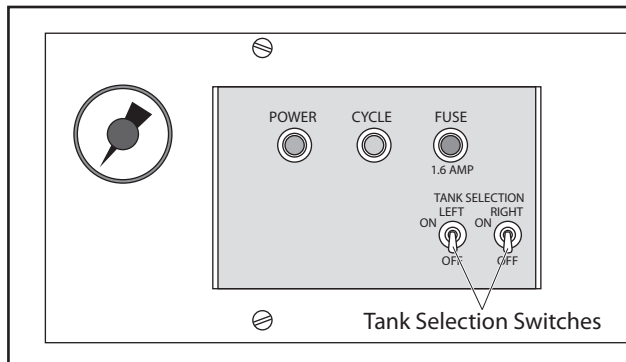
When the dishwasher is equipped with this feature, a cycle is initiated automatically when the door closes.

## Manual Start (Standard)

To start a cycle on a unit equipped with the manual start feature, the operator must close the door and press the start button to initiate a cycle.

## Tank Selection (Optional on DD-8 only)

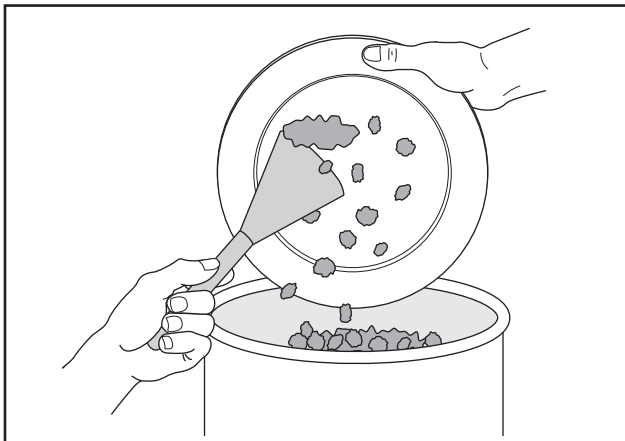
On two tank units, this feature allows the operator to choose either the left, right or both tanks to operate during each cycle. A choice of one of the single tanks can be cycled during non-rush periods. It also will allow the use of one side if the other side is disabled.



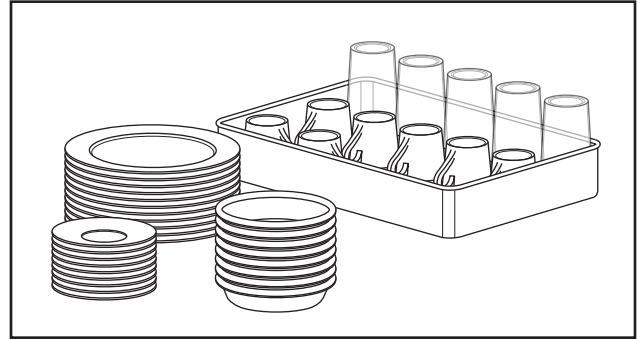
## Soiled Dishtable Operation

To increase speed and efficiency and reduce breakage, a few simple rules need to be observed:

- All food must be removed from dishware before placing them in stacks. This will maintain cleaner wash water and reduce detergent usage.



- Stackable ware, such as dishes and trays, should have food debris removed and be placed in manageable stacks. A "buildup" area should be designated for these stacks until dish racks are filled.
- Items such as coffee cups, glasses and bowls, do not stack well and should be placed directly into racks for transport.



- When racks are filled, they should be kept in the buildup area until they can be washed.
- Good organization is key to speed and efficiency in dish room operation, as well as reduced breakage.
- Silverware should be presoaked in a sink or other container to keep food particles from drying out. Silverware should then be placed in an appropriate rack and sent through the dishwasher.

**Note:** When placing silverware in flat racks, it is important not to overload. The silverware should be spread out evenly in the rack so the surfaces are exposed and can be cleaned by the spray of the dishwasher.

**Note:** As much as possible, keep soil from entering the dishwasher. This will help maintain cleaner wash water and reduce detergent usage.

## Loading the Dishwasher

As much as possible, wash similar dishes at the same time. This reduces sorting once the dishes have been cleaned.

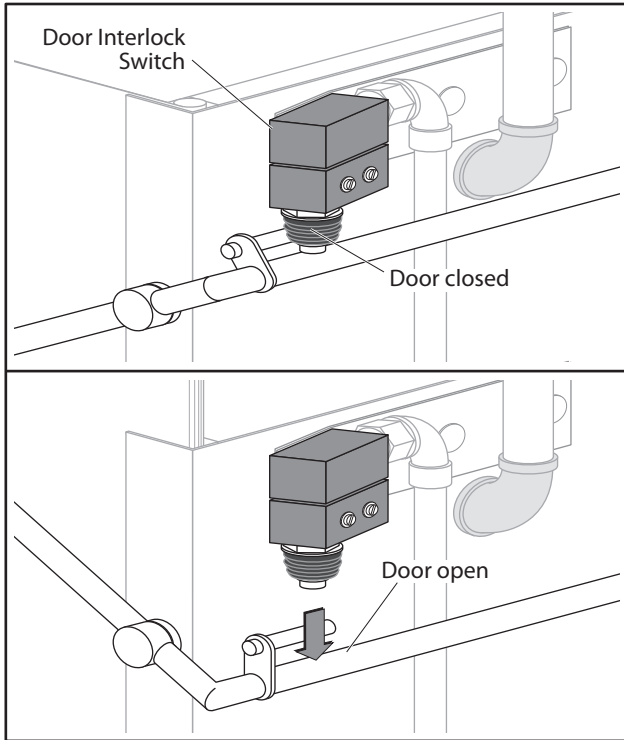
When several racks in the buildup area have been filled, run them through the dishwasher one after the other. This will allow the loading operator to return to scrapping and stacking.

For optimum results from a DD-8, two-tank dishwasher, consider using one side exclusively for glasses and silverware and the other side for more soiled ware, such as plates and bowls.

## Operating the Dishwasher

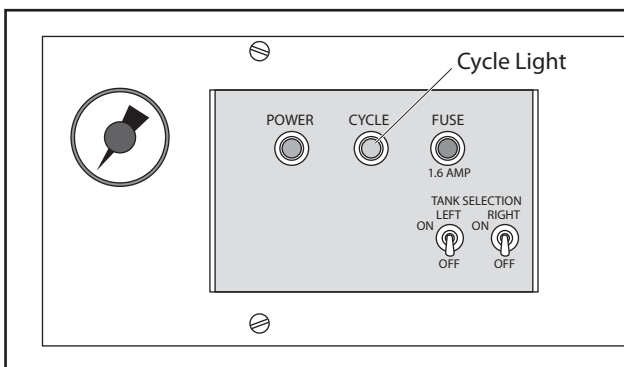
Once the wash tank has been filled and the detergent added (for units with optional Wash Cycle Timer, set the wash cycle time to 1, 2, 4 or 6 minutes), raise the hood and slide the rack (or racks for DD-8) into the dishwasher.

Lower the hood. The dishwasher has a safety switch that will prevent the machine from operating if the hood is open.



**Door Interlock Safety Switch**

For machines with the optional automatic start feature, the cycle will start when the hood is closed. For machines with manual start, close the hood and momentarily press the Start button to initiate a cycle. The cycle light will illuminate and remain on during the cycle. When the cycle is complete, the light will turn off and the hood can be opened and the dish racks removed.



**Cycle Light Location**

For units with standard timer, when the hood is opened, the cycle will stop. The cycle will resume at the stopping point when the hood is closed.

For units with the automatic start feature, if the hood is opened during a cycle, another complete cycle will be initiated when the hood is closed. This provides a complete cycle to assure proper cleaning and rinsing.



### **WARNING**

To avoid being splashed, allow at least 5 seconds before opening the hood after the cycle is completed.

## Shutdown and Cleaning

An important part of maintaining the dishwasher is keeping it clean. A thorough cleaning before shutting the unit down will help keep it working at peak performance.

### Shutdown

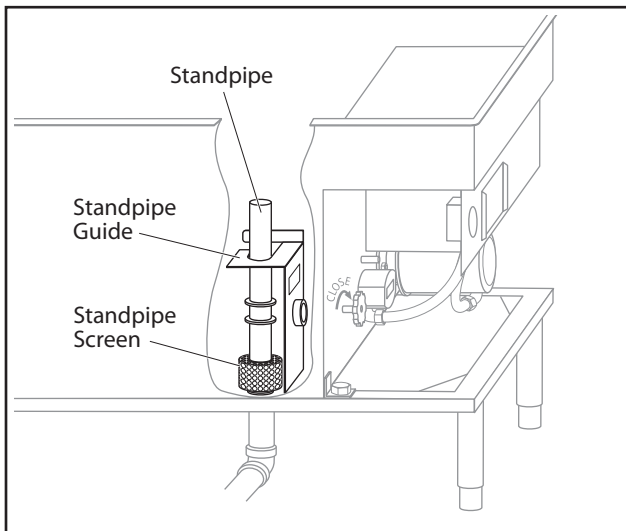
1. Place the main power switch in the OFF (down) position.
2. Drain the wash tank(s) by turning the drain valve handle(s) counter-clockwise until it stops.

### Cleaning

1. With the hood fully open, and the scrap screen still in place, wash down and thoroughly rinse the dish tables.
2. Remove the scrap screens and empty them. Take them to a sink and clean them using a suitable brush. Make sure all debris is removed. Rinse thoroughly and place them on a dish table.

**Note:** Do not hit the sides of the scrap screens on a trash container. Damage to the flanges will not allow them to seat properly in the dishwasher, permitting food debris to pass into the wash tank.

3. Inspect the rotating wash arms for blockage of any opening and free rotation. Remove and clean as needed. (See MAINTENANCE section of this manual.)
4. Lift the retainer on the standpipe guide. Remove standpipe and screen and clean thoroughly with an appropriate brush.



### **Standpipe Guide**

5. Thoroughly wash and rinse the interior of the dishwasher. Pay special attention to the hood guides and remove any residue.
6. Leave the hood open to allow the interior to dry.
7. If your dishwasher is equipped with an external chemical dispenser, wipe it clean and refill. Follow the instructions from your chemical supplier.
8. Reinstall the standpipe and screen; flip standpipe retainer back in place.

# MAINTENANCE

## Motor

No lubrication required.

## Pump

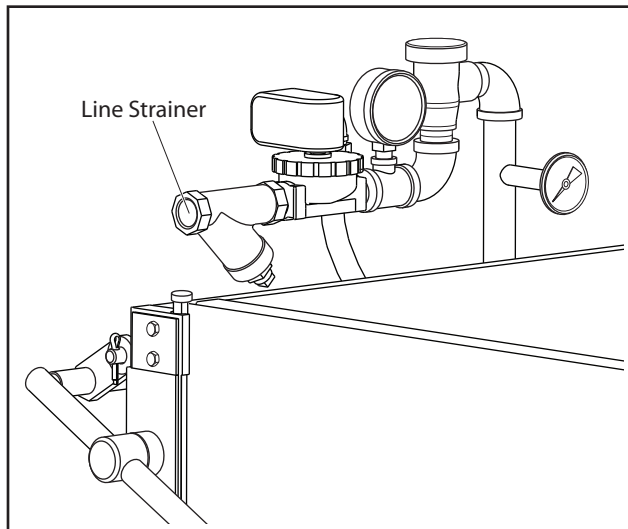
No lubrication required.

## Doors/Hood

No lubrication required.

## Line Strainers

Water inlet (and steam line, if supplied) line strainers protect solenoids and pressure reducing valves from sediment in the water (or steam) supply. The line strainer must be cleaned on a regular basis.



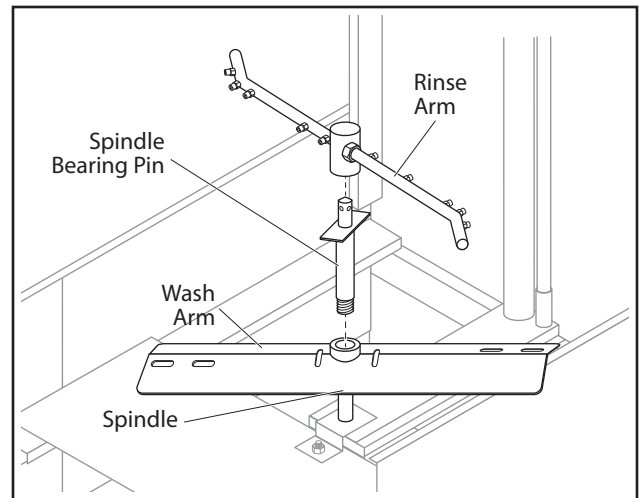
**Line Strainer**

To clean a line strainer, turn off water or steam supply and perform a lockout-tagout procedure. Unscrew the plug and clean the screen thoroughly. Reinsert the screen into the strainer body and tighten the plug.

## Wash Arms

Upper and lower wash arms must turn freely and continue to turn for a few seconds when spun by hand.

Wash arm openings may become clogged by food debris if scrap screens are not in place. The wash arms are easily removed for cleaning.



**Wash Arm**

To remove the lower wash arm, first remove the rinse arm and unscrew the spindle bearing pin. The wash arm can then be lifted off the spindle.

To remove the upper wash arm, unscrew the rotor nut and remove the wash arm.

## Final Rinse Arms and Nozzles

The rinse nozzles will need frequent cleaning if the water supply is considered "hard" and contains dissolved solids such as calcium and magnesium.

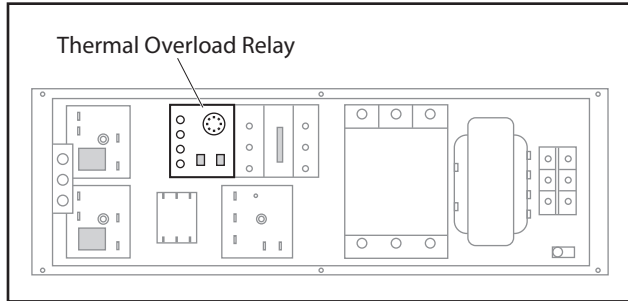
Obstructions in the lower rinse arm nozzles can be cleared using an opened paper clip or similar object. Push the obstruction into the rinse arm, then remove the end caps and flush out the tube.

The lower rinse arm can be lifted straight off the bearing pin and thrust washer assembly.

The upper rinse nozzles can be cleared by using an opened paper clip or similar object. Push the obstruction into the rinse arm. Remove the rinse nozzle closest to the end and flush out the line. Reinstall the rinse nozzle when finished.

## Pump Motor Overload Protection

Wash pump motor protection is provided by thermal overload relay(s) located in the control box. In the event the pump becomes jammed, the motor will draw a higher current and trip the overload relay. Once any jam has been cleared and the impeller turns freely, the overload must be manually reset before the motor will operate.



**Thermal Overload Relay Location**



### **CAUTION**

**Any open (blown) fuse must be replaced with the same size and type fuse. Increasing the size or rating of the replacement fuse will eliminate the circuit protection and void the warranty. The control panel uses a 1.6 amp – slow blow fuse. Blakeslee recommends that spare fuses of the correct rating and type be kept on hand. These fuses can be obtained from the Blakeslee parts distributor or authorized service agency.**

## Water Treatment

The quality of the water supplied to the dishwasher will greatly affect the maintenance requirements, detergent usage and end results.

Water quality is typically referred to as water hardness. The higher the mineral content, the harder the water. Some water supplies are only slightly hard, while others are considered very hard. Water hardness is measured in grains per gallon (gpg).

### **Water Quality Categories**

- 1–3 gpg – slightly hard
- 3–7 gpg – moderately hard
- 7–10 gpg – hard
- 10+ gpg – very hard

Left untreated, hard water will leave behind deposits, called scale, that can build up on machine surfaces. Hard water requires the use of more detergent to achieve the same cleaning results and may leave visible spots on glasses and flatware.

Water that is only slightly hard may not need treatment to achieve good results; however, if moderately hard to very hard water is being supplied to the unit, a water treatment system is recommended.

There are various water treatment systems available. Speak to a water treatment specialist or chemical supplier for water treatment options.

### **Water Treatment System Maintenance**

Depending on the type of water treatment system, regular maintenance may be required.

Water hardness may dictate the type and frequency of maintenance. Make sure to follow the manufacturer's or water treatment specialist's recommendations.

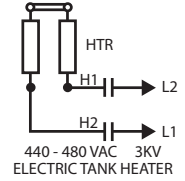
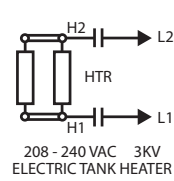
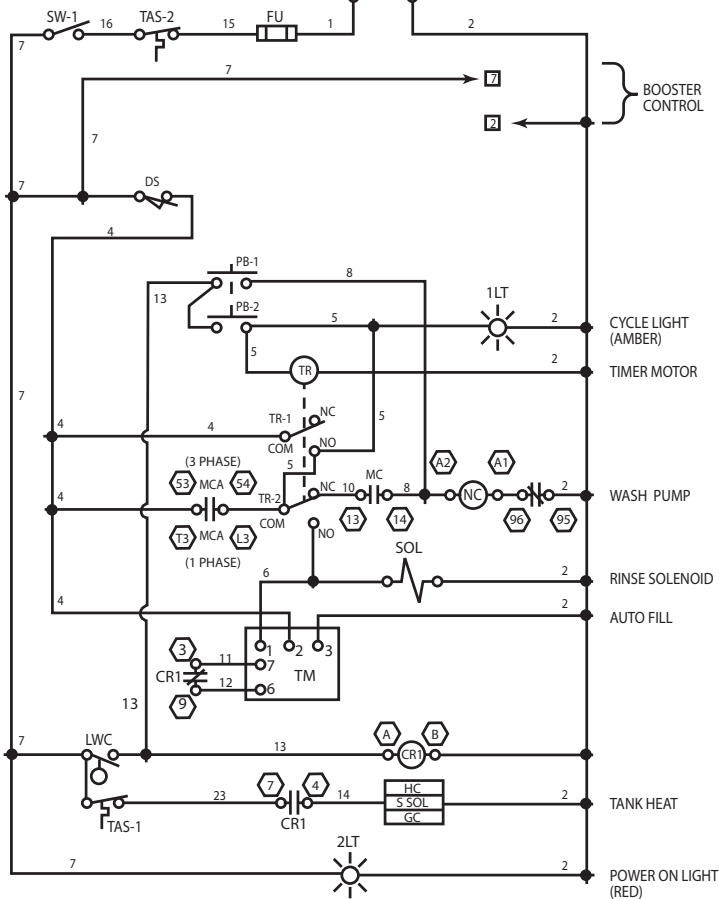
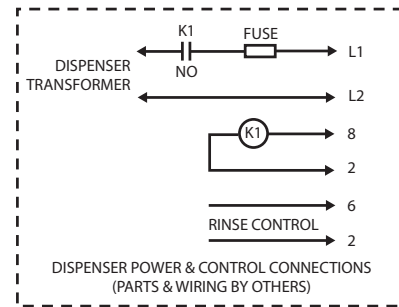
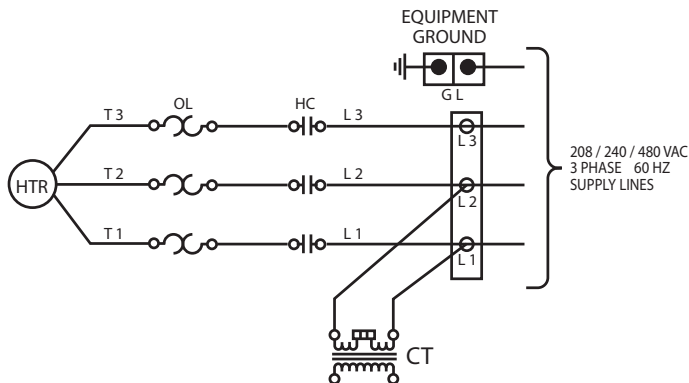
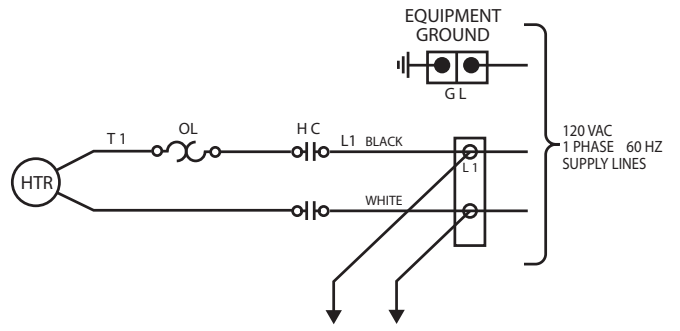
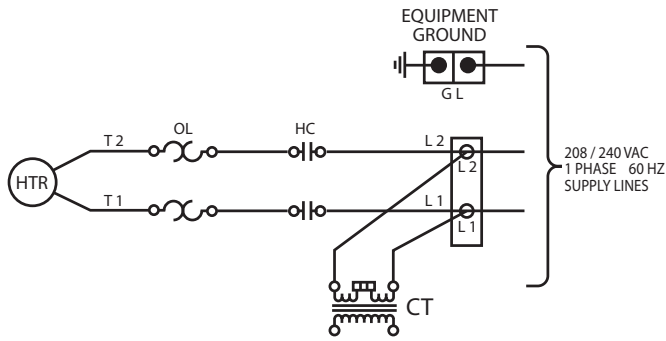
Equipment failures caused by water quality issues (scale or lime buildup, for example) are not covered under the manufacturer's warranty.

# TROUBLESHOOTING

PROBLEM	PROBABLE CAUSES	CORRECTIVE ACTION
Pump motor will not start	Overload tripped	Clear pump impeller. Reset relay.
Machine will not start	Unit not turned ON	Place power switch in ON position.
	Unit not plugged in	Plug unit in to an appropriate power receptacle.
	Power not being supplied to unit	Check building circuit breaker or fuses.
No Tank Heat	No power to unit	Place power switch in ON position. If power indicator lamp lights, unit is receiving power.
	Main gas valve, steam supply valve or circuit breaker turned off	Check each and return to on position.
	Thermostat set too low	Open control box and turn thermostat knob clockwise until heat comes on.
	Steam supply pressure too low	Contact your authorized service provider.
	Thermostat defective	Contact your authorized service provider.
	Faulty gas valve	Contact your authorized service provider.
	Faulty contactor	Contact your authorized service provider.
	Faulty steam solenoid	Contact your authorized service provider.
	Faulty steam trap	Contact your authorized service provider.
Wash tank foaming	Dirty wash water	Drain wash tank and refill.
	Too much food debris in wash water	Improve pre-scraping.
	Incorrect detergent	Use only approved detergents.
Poor wash results	Too much food debris in wash water	Improve pre-scraping.
	Scrap screens clogged	Unclog screens.
	Dirty wash water	Drain wash tank and refill.
	Wash tank temperature too low	Open control box. Turn thermostat knob clockwise and set temperature between 150° - 160°F.
	No detergent	Refill detergent dispenser. Add detergent manually.
	Pump impeller clogged	Turn off power. Drain wash tank. Clear impeller.
	Pump running backwards	Check pump rotation. If incorrect, contact your authorized service provider.
	Wash arms clogged or not turning.	Clean and free wash arms.
	Improper racking	Improve racking technique.

<b>PROBLEM</b>	<b>PROBABLE CAUSES</b>	<b>CORRECTIVE ACTION</b>
Poor rinse results	Rinse nozzles clogged	Clear rinse nozzles.
	Line strainer clogged	Turn off water supply. Clean line strainer screen.
	Clogged solenoid valve	Contact your authorized service provider.
	Faulty solenoid	Contact your authorized service provider.
	Final rinse booster turned OFF	Turn booster ON.
	Power supply to booster OFF	Restore power to booster.
	Booster thermostat set too low	Increase temperature setting on booster.
	Water supply temperature too low	Water supply temperature must be 140° F min.
	Water supply pressure to booster too low. Must be 15-25 psi flow pressure.	Contact your authorized service provider.
	Water supply line too small.	Contact your authorized service provider.
	Water quality causing spotting.	Contact your detergent supplier for remedies.
Wash tank not holding water	Drain not fully closed	Turn drain valve handle clockwise until it stops.
	Drain seat dirty	Turn off unit. Drain tank. Remove and clean standpipe drain plug and seat.
	Worn or damaged drain plug	Replace drain plug.
Wash tank will not drain	Clogged drain screen	Empty wash tank. Clean screen.
	Drain line clogged or too small	Contact your authorized service provider.
	Mineral deposits on seat	Contact your authorized service provider.

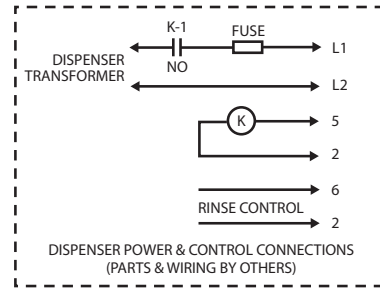
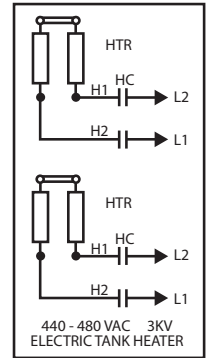
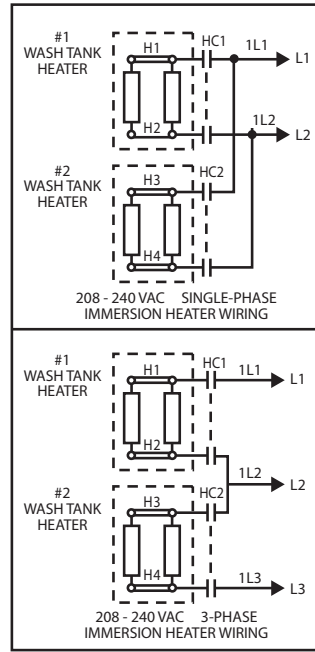
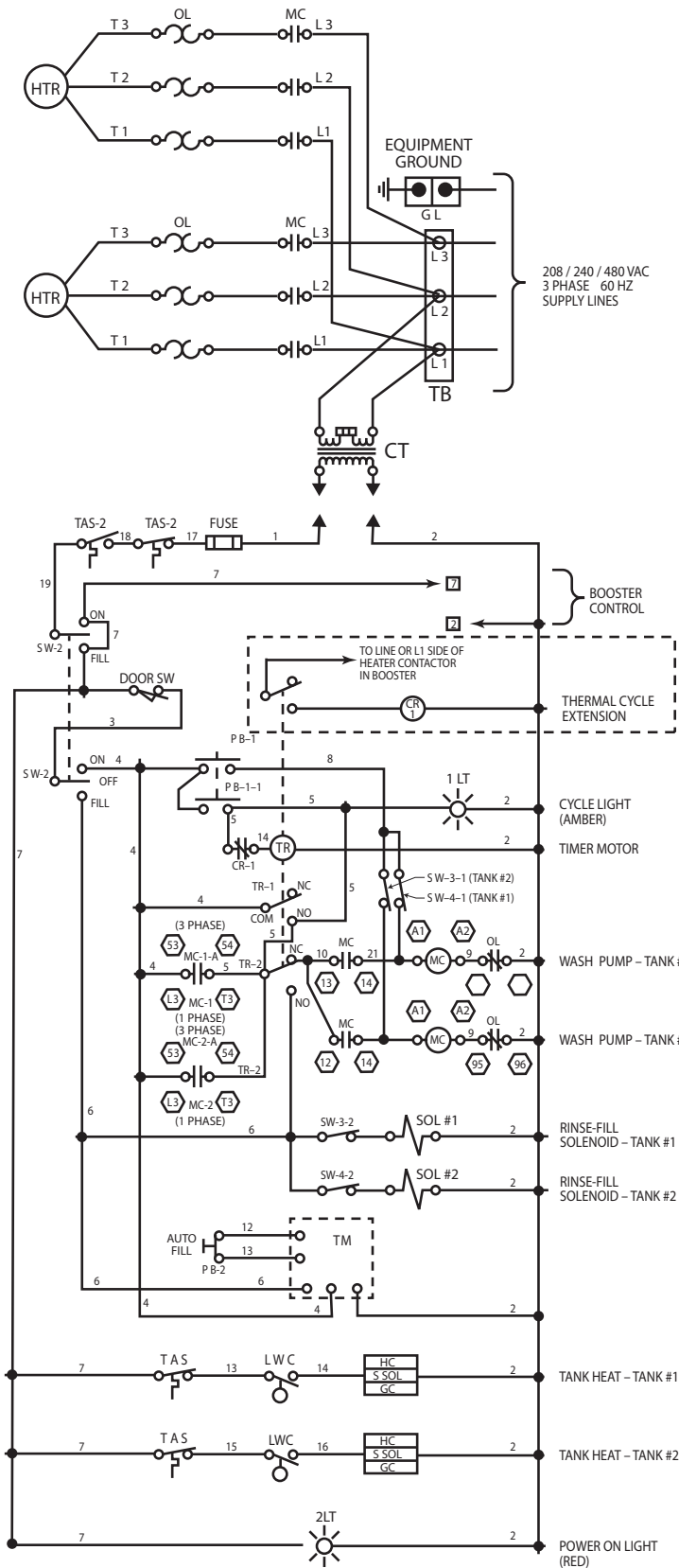
# SCHEMATIC





<b>SYM.</b>	<b>DESCRIPTION</b>
TB	Terminal Block
GL	Ground Lug
MC	25A Motor Contactor
OL	Overload Relay
MTR	1.5 HP Motor 208-240/480V, 3 PH, 60Hz 1.5 HP Motor 115/230V, 1 PH, 60Hz
CT	.150 KVA Transformer
MC-A	Auxiliary Contact Block (3-phase only)
FH	Fuse Holder
FU	1.6A Fuse
SW-2	Toggle Switch
DS	Door Switch
PB	Pushbutton (Start)
TR	Timer (60-Sec.)
1LT	Cycle Light (Amber)
2LT	Power Light (Red)
TAS-1	Thermostat
SOL	Solenoid Valve
HC	Contactora (Elec. Tank Heat)
HTR	3KV Immersion Heater
GC	Gas Control (LP or Nat.)
SSOL	Solenoid Valve (Steam)
LWC	Low Water Cutoff
TAS-2	Thermostat (High Limit)
TM	Auto Fill Timer (3-Min.)
CR1	Relay

1. All wires are identified with wire markers.
2. Line, motor circuit and immersion heater wires are #12 AWG Black, type MTW, 105 C, 600 V.
3. Control circuit wires are 16 AWG Red, type MTW, 105 C, 600 V.
4. TR-1 is a cam switch located next to the Timer Motor TR.
5. Numbers in the square boxes  are Booster Control circuit connection points.

# WIRING DIAGRAM



<b>SYM.</b>	<b>DESCRIPTION</b>
TB	Terminal Block
GL	Ground Lug
MC	25A Motor Contactor
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MTR	1.5 HP Motor 208-240/480V, 3 PH, 60Hz 1.5 HP Motor 115/230V, 1 PH, 60Hz
CT	.150 KVA Transformer
MC-A	Auxiliary Contact Block (3-phase only)
FH	Fuse Holder
FU	1.6A Fuse
SW-2	Toggle Switch (On-Off-Momentary)
DS	Door Switch
PB	Pushbutton (Start)
TR	Timer, 60-Sec. (3 cams)
1LT	Cycle Light (Amber)
2LT	Power Light (Red)
TAS-1	Thermostat
SOL	Solenoid Valve
HC	Contactora (Elec. Tank Heat)
HTR	3KV Immersion Heater
GC	Gas Control (LP or Nat.)
SSOL	Solenoid Valve (Steam)
LWC	Low Water Cutoff
TAS-2	Thermostat (High Limit)
TM	Auto Fill Timer, 3-Min.
SW 3&4	Toggle Switch (On-Off)
CR1	Relay

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3. Control circuit wires are 16 AWG Red, type MTW, 105 C, 600 V.
4. TR-1 is a cam switch located next to the Timer Motor TR.
5. Numbers in the square boxes  are Booster Control circuit connection points.
6.  indicates optional feature.

USA



A Division Of The Legacy Companies

Date of Installation \_\_\_\_\_

Serial No. \_\_\_\_\_

Model No. \_\_\_\_\_

## **Limited Warranty**

Your new Blakeslee dishwashing machine is warranted for one year from date of installation shown above against defective materials and workmanship. If any defects are found within the warranty period, parts, and labor involved with their replacement will be covered free of charge. Service must be performed by a Blakeslee authorized service agency. All labor to be performed during regular working hours. Overtime premium will be charged to the customer. All warranty parts are shipped by surface transportation. If other means of transportation is requested the customer is required to pay the premium. This warranty does not apply to damages resulting from errors in installation on the part of other contractors, nor does it apply to machines which have been subject to accident, misuse, or abuse. It is understood that Blakeslee's warranty obligation with respect to machines located outside of the United States and Canada or located in the state of Alaska is limited to the furnishing of replacement parts only. In the state of Hawaii, repair labor is provided free of charge; travel time and expenses paid by the customer. On the island of Oahu, repair labor, travel time and expenses are provided free of charge. This is the entire and only warranty of Blakeslee. We neither assume nor authorize anyone else to assume for us any other obligation or liability in connection with Blakeslee Machines.

In no case can this warranty exceed eighteen (18) months from the date of shipment from our plant at Addison, Illinois.

### **Items NOT Covered Under Warranty:**

#### **1. Lighting of Gas Pilots**

At the time of installation the gas pilots and burners should be adjusted. Continued failures of pilot lights would indicate dirty gas lines, improper original adjustment or intermittent drafts blowing out the flume.

#### **2. Replacing Fuses or resetting Overloads**

Replacing a blown fuse or resetting an open overload breaker is a very simple procedure and is the owner's responsibility. If the machine continues to blow fuses or open the overload breaker, contact your nearest authorized Blakeslee Service Center.

#### **3. Adjusting Tank Heats**

Heat adjustments are covered in the INSTALLATION & OPERATION manual and must be adjusted depending upon desired results.

#### **4. Proper Loading of Dishes**

It is important that the machine owner's personnel observe the instructions outlined in the INSTALLATION & OPERATION manual.

#### **5. Cleaning Drain Valves**

Foreign articles lodged in the drain valve seat should be removed as a part of the normal daily cleaning.

#### **6. Cleaning Rinse or Wash Nozzles and Line Strainers**

Keeping a dishwasher clean and removing obstructions from the nozzles and line strainers will be a periodic function of the machine owner's personnel. The cleaning periods will vary depending upon impurities in the water supply and cleanliness of the washing operation.

#### **7. Final Rinse Water**

Most frequent of all complaints in any dishwashing machine is that of poor final rinse. It is the responsibility of the owner to provide 180 to 195 degree (plus) water at 15-25 lb. flow pressure through clean unobstructed water lines. If the machine has a factory equipped final rinse water booster, the owner must supply the booster with a minimum of 140 degree temperature water.

#### **8. Electric Boosters and Garbage Disposals**

Although these units may have been purchased with the machine, they are warranted by the individual manufacturer. Consult the nearest factory authorized representatives for these particular items.

## Notes

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