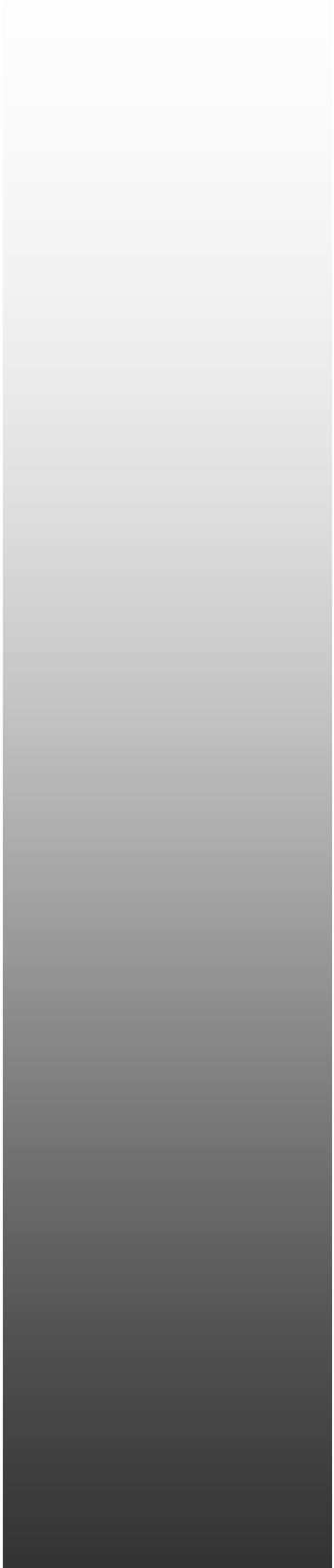


Rack Washers

Operation Manual



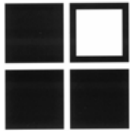
PREAMBLE

We congratulate you on the purchase of your new rack, pan, and utensil washer.

In order to understand the proper operation and maintenance of your new machine, please read this manual carefully. A Reference Guide is mounted on the side of the machine for your convenience.

You have also received a Recommended Installation Guide. Please review this guide and confirm that the machine has been installed correctly.

If you have any questions or need any further information, now or in the future, please do not hesitate to contact us.



Douglas Machines Corp.

2101 Calumet Street
Clearwater, FL 33765
(727) 461-3477 Phone
(727) 373-4014 Fax

Please Note: Specifications are subject to change without notice.

" 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 SYSTEM."

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IMPORTANT

Pre-Installation

Qualified installation personnel, individuals, firms, corporations, and companies are responsible for:

- The installation or replacement of the gas piping and connection, installation, repair or servicing of the equipment. Qualified installation personnel must be experienced in such work, familiar with all precautions required, and have complied with all requirements of state or local authorities having jurisdiction. Reference National Fuel Gas Code, NFPA 54 or latest edition or ANSI Z223.1 or latest edition, Section 1.4.
- The installation of electrical wiring from the electric meter, main control box, or service outlet, to the appliance. Qualified installation personnel must be experienced in such work, familiar with all precautions required, and have complied with all requirements of state or local authorities having jurisdiction. Reference National Electrical Code, ANSI/NFPA 70 or latest edition. In Canada, Canadian Electrical Code Part I (Std. 22.1 or latest).
- The installation of gas heated units in Canada. Qualified installation personnel should comply with the Installation Codes for Gas Burning Appliances and Equipment, (CAN-I-B 149.1 and B-149.2) and any local codes or approvals.
- The installation of washers equipped with casters. These washers shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z2 1.69 or latest, and a quick-connect device that complies with the Standard for Quick-Disconnect Devices for use with gas fuel, ANSI Z2 1.41 or latest.

Note: A fixed restraint must be provided if casters are used in conjunction with a flexible connector for movable appliances. This restraint must secure the washer to a non-movable surface to eliminate stress on the connector. If the washer is moved, the restraint must be reconnected after the washer is returned to its normal position.

DELIVERY

Upon delivery of your Douglas washer:

- Inspect the machine for any external damage. Any evidence of damage should be noted on the delivery receipt and signed by you and the driver.
- Remove packaging from the washer and check for any concealed damage. Carrier must be notified of damage immediately. Please retain packaging for inspection if claim is filed.

Douglas Machines Corp. cannot accept responsibility for lost or damaged merchandise suffered in transit. The carrier assumes full responsibility for delivery in good order; however, we are prepared to assist you in any action needed regarding shipping damage.

START UP

Initial Start Up

Important: Remember where your electrical disconnects are located.

This will be the main and supplemental power coming to the machine. You will have two (2) separate electrical sources connected to the machine. Locate both of them.

Some of the following steps will be performed in the electrical panel enclosure. We recommend disconnection of all incoming power before doing any service in the electrical enclosure. **Please Be Cautious!**

1. With the incoming electrical power disconnected or turned off, remove the front lower panel and electrical panel enclosure cover. Turn all thermostats to the lowest or off position (turning knobs in the counter clockwise direction).
2. Locate and make sure the drain and pump petcock is in the closed position. The pump petcock will remain in the closed position unless service is needed on the pump.
3. Shut off all breakers going to the heaters, if electrically heated. Breakers will be marked WASH HEATER and RINSE HEATER.
4. With the electrical enclosure panel cover still off, turn incoming power back on. Make sure the circuit breaker marked PUMP and circuit breaker marked 120 is in the on position (BE VERY CAUTIOUS - THIS IS NOW A HOT PANEL).
5. Depress the power button on the machine. At this point the machine will start to fill. If it does not fill to the overflow, (this is a mushroom shaped cap located in the inside of the wash cabinet) reprogramming of the auto fill may be necessary (refer to Programming the Touch Pad PC Board Sheet). You must also make sure the incoming water pressure is in between 20psi and 30psi flow pressure as stated in the Recommend Installation Guide.

Note: Incoming water pressure over 30psi will void warranty on related items.

6. Depress the short button; the wash pump should start running at this point. If the pump doesn't start running, check that all fuses (if applicable) and all breakers marked PUMP and 120 are in the on position. With the pump running, check the pump rotation (Look at the rear of the pump motor; the fan should be rotating in a clockwise direction.) If the pump is not rotating in the correct direction, reversal of electrical phases will be necessary. (Contact your electrician or Douglas Machines for details.)
7. Now its time to fill the rinse tank. Depress the short button; the machine will now run through a complete cycle. A complete cycle entails wash (pump running), rinse (pump not running, rinse solenoid valve open), and a one minute dwell and steam extraction (during dwell the machine cannot be restarted). Please note while the machine is in the rinse and dwell period you will not see any readings on the jet pressure gauge.

Initial Start Up (Contd.)

To ensure the rinse tank is filled, you need to hear water spraying inside the wash cabinet after the wash pump has stopped running. You may need to run more than one cycle to accomplish this.

CAUTION: Before proceeding to the next step, make sure you can hear water spraying in the cabinet after the wash pump stops running and the rinse light cycle is illuminated. If not, heater damage may occur and the warranty will become void for related items.

8. Now it is time to set the thermostats. We are looking for a reading on the temperature gauges to be 150 degrees wash temperature and 190 degrees rinse temperature. Turning the thermostat knobs in a clockwise motion and using top dead center as our indicator, increase the thermostat marked WASH to 150 degrees. Now, increase the thermostat marked RINSE to 190 degrees. Allow 30 to 60 minutes for heat up time.

Note: There can be as much as 12 to 15 degrees difference between the thermostat and the temperature gauge. Always set the thermostats to accommodate the desired temperature gauge reading.

9. At this point your heat source should be engaged. If electrically heated, the wash and rinse heater contactors will be engaged. If gas heated, the burner or burners will fire. If steam heated, the steam solenoids will open. If you are not sure, or if the specific heat source is not on and the unit is not heating up, contact Douglas Machines for assistance.
10. Now that everything is working fine. It is time to put the electrical enclosure panel and front panel back on the machine and start washing.

OPERATION

1. With the machine turned on, filled to the overflow, and heated up to the correct operating temperatures, we will now be able to add detergent.

Note: You must use a non-foaming, non-caustic, low chlorine type of soap (unless the machine has been specifically manufactured for caustic use). If the machine is fitted with an automatic soap dispenser, ensure the dispenser is turned on and filled up. If machine is not equipped with an automatic soap dispenser, follow your detergent manufacturers' recommended specifications for application and concentration.

2. When loading bowls, buckets, or any similar type of object, all items should be facing the wash arms. The open end should be facing down. Lighter objects such as plastic buckets may need to be weighted down. This can be accomplished by using the utensil rack hold down that is supplied with the machine.

When loading sheet pans into a sheet pan rack (model designations starting with 1527). You will notice that the sheet pan rack is built with angled pan supports. Load the rack so that the face or open side of the sheet pan is facing towards the door of the unit.

If you are planning to wash cake pans and you have purchased a cake pan rack, you will need to load the cake pans into the area built on the outside of the rack. The cake pans will need to be loaded with the open side of the pan facing out towards the wash arms.

If you are planning to wash smaller utensils, such as spoons, scrappers, and whisks you will need to purchase a model specific utensil basket (contact Douglas Machines Corp. for details).

3. Now that we've filled the machine, let it heat up, put detergent in it, and loaded it. It's time to start washing! All you have to do is choose your desired wash cycle time. To do this, depress the short (four (4) minute cycle), medium (six (6) minute cycle), or long (eight (8) minute cycle) button. Let the machine run through its entire cycle (wash, rinse, and dwell). If you open the door or hit the stop button any time during the cycle, the machine will shut off. When you restart the machine it will not start from where it stopped, it will start from the beginning of the cycle. The end of the wash and rinse cycle is indicated by a series of three (3) beeps, at this point you will be able to unload and than reload the machine.

MAINTENANCE

Daily Maintenance

Note: As a precaution, you must disconnect or turn off all incoming power to the machine before proceeding with any maintenance.

Regular maintenance is essential in keeping your machine in good working order and operating at maximum efficiency. The following maintenance items are a minimum requirement. Frequency of maintenance is dependent on the number of hours the machine is in use and the amount and type of soil being removed.

These daily maintenance items need to be done at the end of a regular shift, or if the machine is not cleaning to its normal standards.

1. Unless the machine is equipped with an electric drain, you may start to drain it when the power is turned off. If the machine does have an electric drain, leave the power on until drained. After the machine has drained, use the spray off hose to clean the inside of the wash cabinet. Direct all debris toward and into the filter baskets. Remove and clean the filter baskets, then leave them out for the following steps.
2. With the filter baskets removed, finish cleaning the wash tank reservoir. Direct all remaining debris into the open drain located in the bottom of the reservoir tank.
3. Now you need to clean the low water probe. This probe will be a white plastic item mounted into the side of the wash reservoir tank under the filter basket location. It is 3/8" in diameter and 2 1/2" long with a 3/16" x 1/4" metal tip. The purpose of this probe is to prevent the heat source and pump motor from turning on unless the wash tank is full of water. Clean the metal tip of this probe with some sort of scouring pad. Remove all scale and residue. Failure to do this will void warranty to related items.
4. If your machine has an electric heater or heaters in the wash tank, it is now time to clean them. The heater coils will be located directly under the low water probe. Use a wire brush or scouring pad to clean the exposed heating coils on the heater or heaters. Direct all debris into the drain.
5. When the wash cabinet, filters, wash tank reservoir, low water probe, and electric heater or heaters (if applicable) have been cleaned, you can put the filters back in place.
6. Inspect all the spray jets and look for any that might be missing, obstructed, or worn out. If you find any missing or worn out jets, contact Douglas Machines Corp. for a replacement. If you find any jets obstructed, try to remove the obstruction by pulling it out or by forcing it back into the jet pipe. If you need to force it back into the jet pipe, you will need to remove the jet pipe end cap in order to remove the obstruction from the pipe.
7. Clean the outside of the machine. Use a stainless steel cleaner or a soft cloth with a mild detergent to wipe down the outside of the machine.

Daily Maintenance (Contd.)

8. Close the drain valve, check that the filters are back in place, and turn the main power back on. Wait to refill the machine until you are ready to wash again (it's easier and less expensive to heat warm water then cold). The machine is now ready for the next shift or next day of washing.

Periodical Maintenance

1. Wash pump motor lubrication. You will find two (2) grease fittings on the top of the wash pump motor and one (1) at each end. You will need to grease these under normal conditions every 90 days. Use an electric motor bearing grease similar to Shell Dolum or Chevron Sill.
1. If you have purchased the steam extraction option. You may need to grease the 12" steam extraction fan bearings.

Note: Some of these fans are equipped with sealed bearings and do not require greasing. You will need to determine if your fan is equipped with the sealed bearings or if the bearings will need to be greased. Refer to your parts manual to identify the steam extraction fan and the grease fitting location. If greasing is required, it should be performed every 90 days. Use high temperature food grade grease such as Sentinel Slnht #2.

2. The removal of lime and or scale may be necessary at certain times. This will vary due to the condition of your water. If you are finding lime and scale building up on the interior walls of the machine chances are they are also building up in the piping. This could impair washing ability. You will need to use a lime and scale removal chemical. Whatever you decide to use, be sure it is safe to use on stainless steel, bronze, and brass. If you have any questions on what to use or how to use it, do not hesitate to contact Douglas Machines Corp.

TROUBLE SHOOTING

Note: Your machine is equipped with a programmable circuit board that assists you in diagnosing common problems by displaying error codes on the digital display.

Error Codes Will Be Displayed As:

Error Codes	Things to check
Er01	- Machine has exceeded allowable fill time - Indication of low incoming water pressure
Er02	- The stop button has been pressed while the machine was in the wash cycle
Er03	- Excessive water loss while the machine is in operation indicating the drain might be open
Er04	- Control board error, which may indicate that the PC board needs to be reprogrammed; contact Douglas Machines Corp. for assistance
Er05	- Operation of the machine has been attempted without a sufficient amount of water in the wash tank. Make sure the machine is filling correctly, and to the overflow level
Er06	- Door is not closed properly
Er07	- Pump overload protection device has been tripped. Reset overload; contact Douglas Machines Corp. if problem persists

If any other codes are displayed: Contact Douglas Machines Corp. for assistance.

TROUBLE SHOOTING

Note: Some of the following remedies may need to be performed in the electrical panel. **Before you perform any task in the electrical panel, please make sure all incoming power is disconnected or turned off.**

Problem	Things to check
Machine will not turn on	<ul style="list-style-type: none"> - Incoming power turned on - Machine circuit breakers and/or fuses in place and turned on
Machine will not heat up (gas heated)	<ul style="list-style-type: none"> - Machine is filled to correct level - Low water probe is clean - Gas supply is on - Thermostats set to desired temperature
Machine will not heat up (electric heated)	<ul style="list-style-type: none"> - Machine is filled to correct level - Low water probe is clean - Circuit breakers and or fuses marked heaters - Thermostats set to desired temperature
Wash pump will not start	<ul style="list-style-type: none"> - Machine is filled to correct level - Low water probe is clean - Door is in the closed position - Circuit breakers and or fuses marked wash pump motor
Wash pressure is low	<ul style="list-style-type: none"> - Machine is filled to correct level - Filters are clear and in place - All wash jets and end caps are in place - Excessive amount of foam is present - Pump is rotating in correct direction - Pressure gauge
Not rinsing	<ul style="list-style-type: none"> - Incoming water pressure - Door is closed - Rinse solenoid valve

TROUBLE SHOOTING

Note: Some of the following remedies may need to be performed in the electrical panel. **Before you perform any task in the electrical panel, please make sure all incoming power is disconnected or turned off.**

Problem	Things to check
Rinse temperature not hot enough.	<ul style="list-style-type: none">- Incoming water temperature (120° - 140°max.)- Incoming water pressure (no less than 20psi. and no more than 30psi. of flow)- Thermostat set to correct temperature (180° - 210°max.)- Heat source engaged
Not cleaning.	<ul style="list-style-type: none">- Detergent level- Wash pressure (see door sticker for minimum pressure)- Wash temperature- Wash jets (clogged)- Water Level- Filters clear- If rotary table, check if table turning freely

If you are experiencing any other problems or have any questions or concerns, please do not hesitate to contact the Service Department at 1-800-331-6870.

PROGRAMMING THE TOUCH PAD PC BOARD

Before starting the programming, make sure the 120 volt service is turned on and there is no water in the wash tank. With the control voltage turned on, the colon on the touch pad display will be illuminated and flashing.

To initiate programming, depress the stop button, then depress the power button by holding both buttons at the same time until you hear a beep and see four 0's (0.00:0) on the display. At this point the machine will automatically fill with water until the level reaches the probe. After this, you may begin the programming. The programming for the fill of the wash tank will be first, and could be the only function you need to program. All other functions have been factory preset.

Initiate Auto Fill by depressing the long cycle button. The fill process will start and the display timing will begin. After the water level has reached overflow, depress the medium cycle button. This will stop the flow of water and display timer. Next, depress the short button to enter the programmed time into the PC Board.

After programming the wash tank fill, depress the short button to scroll through the remaining functions either to exit the program mode or make any changes to the following functions. In order to exit the program mode, you may scroll through the remaining functions or depress the stop button for two seconds.

1. Auto Fill Time
2. Heater Delay (preset at 15 seconds)
3. Short Wash Cycle Time (preset at 4 minutes)
4. Medium Wash Cycle Time (preset at 6 minutes)
5. Long Wash Cycle Time (preset at 8 minutes)
6. Rinse Time (preset at 30 seconds)
7. Dwell and Fan Time (preset at 1 minute)

The settings on these functions can be changed while viewing the preset times. Depressing the medium cycle button will decrease the time. Depressing the long cycle button will increase the time. After any change has been made, you must depress the short button to enter the change.

If an error code is present on the display, you must identify the error, resolve the problem and clear the error code from the PC Board. To clear error codes from the touch pad display depress the stop button. Error codes are as follows:

1. Er01: The machine has exceeded the allowable fill time, indicating low incoming water pressure
2. Er02: The stop button has been pressed during the wash cycle
3. Er03: Excessive water loss during operation
4. Er04: Control board error, may need reprogramming
5. Er05: Operation of the machine has been attempted without adequate water in the wash tank
6. Er06: Door has not closed properly
7. Er07: Pump overload device has been tripped