Douglas Machines Corp.

GCW-1 OPERATIONS MANUAL

Preamble

First, let us at Douglas Machines Corp. congratulate you on the purchase of your new drum & barrel washer.

Please read this manual carefully to understand the proper operation and maintenance of your new machine. Supplied on the machine you'll find a Quick Reference Guide that is mounted to the side of the machine, use this guide for reference when necessary.

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.

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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."

IMPORTANT

Pre-Installation

Qualified installation personnel, individuals, firms, corporations, and or companies which either in person or through a representative are engaged in and are responsible for:

- The installation or replacement of the gas piping. The connection, installation, repair or servicing of equipment. Qualified installation personnel must be experienced in such work, familiar with all precautions required, and have complied with all requirements of the 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 1 (Std. 22.1 or latest).

- Gas heated units for Canada, should conform to "Installation Codes for Gas Burning Appliances and Equipment. CAN-I-B149.1 And B-149.2 and or any local codes or approvals.

- The installation of washers equipped with casters shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 or latest, and a quick – connect device that complies with the Standard for Quick-Disconnect Devices for use with Gas Fuel, ANSI Z21.41 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, which must be signed by you and the driver.
- Remove packaging from the washer and check for any concealed damage. Carriers will accept claims for damages if notified within nine- (9) day of delivery. Please retain packaging for inspection if claim is filed.

Douglas Machines Corp. cannot accept responsibility for loss or damage 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: Locate and remember where you're electrical disconnects are. This will be the main and supplemental power coming to the machine. You'll have two- (2) separate electrical sources connected to the machine. Locate them both.

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 incoming electrical power disconnected or turned off, remove 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 from now on 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, RINSE HEATER).**

4. **With electrical enclosure panel cover still off, turn incoming power back on. Make sure the circuit breaker marked PUMP and breaker marked 120 is in the on position. APPLIES TO U.S. MODELS ONLY (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 doesn't fill to the overflow, 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 to 30psi flow pressure as stated in the Recommend Installation Guide.** ***Note: incoming water pressure over 30psi will void warranty to related items.***

Start Up

Initial Start Up

6. **Depress the short button, the wash pump should start running at this point. If pump doesn't start running, check that all fuses are in (if applicable) and all breakers marked PUMP and 120 are in the on position. With pump running, check pump rotation, looking at the rear of the pump motor, the fan should be rotating in a clockwise direction. If 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- (1) minute dwell & steam extraction (during dwell the machine can not 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. To ensure the rinse tank is filled, you need to physically hear water spraying inside the wash cabinet after the wash pump has stopped running. You may need to run more than one –(1) 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. If not heater damage may occur, warranty will be void to related items.***

8. **Now it's time to set the thermostats. Were 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 various between the thermostat and the temperature gauge. Always set the thermostats to accommodate the desired temperature gauge reading.**

Start Up

Initial Start Up

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 every thing is working fine. It's time to put the electrical enclosure panel back on the electrical enclosure and start washing.**

OPERATION

1. **With the machine turned on, filled to the overflow, and heated up to the correct operating temperatures, we'll need to add detergent now.** ***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 manufacturer recommended specifications for application and concentration.**

2. **Loading your machine. When loading you must have the open end of the item being washed situated to drain all the water back into the wash tank of the machine. This means that you'll have the open end facing down.**

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 you're 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 it's 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 again. 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 please disconnect, or turn off all incoming power to 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 listed are a minimum requirement; frequency of maintenance is dependent on the number of hours the machine is in use and amount and type of soil being removed.

These daily maintenance items need to be done at the end of a regular shift, or if you feel the machine is not cleaning as well as it was previously.

1. **With the Power Coming To The Machine Turned Off, start draining the machine. Unless machine is equipped with electric drain. If machine does have electric drain, leave power on until drained. After the machine has drained. Clean the inside of the wash cabinet. Direct all debris toward and into the filter baskets. Remove and clean the filter baskets, leaving 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 will 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's 3/8" in diameter 2½" long with a 3/16" x 1/4" metal tip. The purpose of this probe is not to allow the heat source or pump motor to turn 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.***

MAINTENANCE

Daily Maintenance

4. **If your machine has an electric heater or heaters in the wash tank, it's time to clean those now. The heater coils will be located directly under the low water probe. Using a wire brush or scouring pad clean the exposed heating coils on the heater or heaters, directing all debris into the drain.**

5. **Now that the wash cabinet, filters, wash tank reservoir, low water probe, and electric heater or heaters (if applicable) have been cleaned. You can now put the filters back in place.**

6. **Inspect all the spray jets, look for any that are missing, obstructed, or worn out. If you find any jets missing or worn out, 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'll need to remove the jet pipe end cap (reference your parts manual for jet pipe end cap location) in order to remove the obstruction from the pipe.**

7. **Clean the outside of the machine. Using a stainless steel cleaner or soft cloth with a mild detergent wipe down the outside of the machine.**

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 till you're 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.**

MAINTENANCE

Periodical Maintenance

1. **Wash pump motor lubrication. You'll find two- (2) grease fitting on the top of the wash pump motor, one- (1) at each end. You'll need to grease these under normal conditions every 90 days. Use an electric motor bearing grease similar to Shell Dollum or Chevron SRI.**

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're finding lime and scale building up on the interior walls of the machine chances are they're also building up in the piping. This could impair washing ability. You'll need to use some sort of lime and scale removal chemical. Whatever you decide to use please make sure it's 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:

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, <u>Please Make Sure All Incoming Power Is Disconnected Or Turned Off.</u>

Problem: Machine will not turn on.
Things to check:
- Incoming power
- Machines circuit breakers and or fuses in place and turned on.

Problem: Machine will not heat up (gas heated).
Things to check:
- Machine is filled to correct level.
- Low water probe is clean.
- Gas supply is on and at correct level.
- Thermostats set to desired temperature.

Problem: Machine will not heat up (electric heated).
Things to check:
- Machine is filled to correct level.
- Low water probe is clean.
- Circuit breakers and or fuses marked heaters.
- Thermostats set to desired temperature.

Problem: Wash pump will not start.
Things to check:
- 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.

Problem: Wash pressure is low.
Things to check:
- 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

Problem: Not rinsing
Things to check:
- 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, <u>Please Make Sure All Incoming Power Is Disconnected Or Turned Off.</u>

Problem: Rinse temperature not hot enough.

Things to check:

- Incoming water temperature (120min. 140max.).
- Incoming water pressure (no less than 20psi. and no more than 30psi. of flow).
- Thermostat set to correct temperature (180min. 210max.).
- Heat source engaged.

Problem: Not cleaning

Things to check:

- Detergent level.
- Wash pressure (see door sticker for minimum pressure).
- Wash temperature.
- Wash jets (clogged or missing).
- Water Level.
- Filters clear.
- If machine has rotary hubs, are they turning freely?
- If the machine has reciprocating wash arms, are they moving back and forth?
- If your machine has a rotary table, is the table turning?

If you're experiencing any other problems or have any questions or concerns, Please Do Not Hesitate To Contact The Service Department At 1-800-331-6870