DOUGLAS
WASHING AND SANITIZING SYSTEMS

PAN WASHER

OPERATION & MAINTENANCE MANUAL

4X CONTROLS

Parts & Service 800-331-6870

DougMac.com

We congratulate you on the purchase of your new Washing and Sanitizing System.
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
WASHING AND SANITIZING SYSTEMS

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Please Note: Specifications are subject to change without notice
This book is a publication of Douglas Machines Corp. Service Department.
Future editions will reflect changes in procedures or technical details
Use and duplication of this document is encouraged.
For technical assistance, please call
800-331-6870.

PAN WASHER SAFETY

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

- Wear appropriate P.P.E. ie... hearing protection, thermal resistant gloves, and eyewear.
- Beware of pinch points.
- Use non-permit required confined space guidelines for entering.
- Know where the **exits** are located.
- Always turn off and drain the machine before entering. Allow a cool down period. Follow facility's L.O.T.O. procedure.
- Do not Remove Access Panels, unless performing maintenance.
- When loading a rack into the washer keep hands away from the door edges. Keep hands on the horizontal bars inside of the rack. **Do not** hold racks on the vertical support bars or outside edges. Push the rack with both hands. Never strain yourself to move racks if racks are too heavy unload some product.
- Always use Caution. – Use mats to help reduce slip hazards.
- Ensure that float switches and level probes are well maintained and cleaned daily. Failure to do so can result in unintended heater startup and potential fire.
- **Never** leave your machine idle (not in use) for more than 4 hours. This can result in water evaporating out of the rinse tank causing damaging. Do not touch Rinse tank without a cool-down period.
- Machine May Be Hot – Allow Cool Down Period Before Touching.

CONTENTS

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 Pan 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, ANSIZ2 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.
- Water and waste piping and connections shall comply with the International Plumbing Code, International Code Council (ICC) or the Uniform Plumbing Code, International Association of Plumbing and Mechanical Officials (IAPMO). NSF/ANSI 3-2009
- Douglas Machines Corp. highly discourages the use of tank-less or demand water heating units as a hot water supply for our machines. They typically are not properly sized nor can they meet the demand required by our machines.

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.

BEST PRACTICES

DO'S

- Before attempting any maintenance or repairs, ensure that electrical, water, steam and or gas supply to the unit has been turned off and locked out.
- Wear safety glasses.
- Check inside the unit before starting the cycle to ensure nothing is inside.
- Keep hands and clothing clear of moving parts.
- Ensure safety rules are followed at all times.
- Ensure all electrical panel enclosures are closed before using the machine.

DO NOT

- Attempt to perform any maintenance, repairs or adjustments unless the supply power has been shut off and locked out first.
- Open door during machine cycle. There may be a delay between cycle steps so ensure cycle is complete by visually checking that the Run light is not illuminated.
- Hose down any electrical components.
- Remove any access panels or pit grids while unit is in use.
- Touch outside of cabinet without wearing gloves.
- Attempt to do any service or make any adjustments to this unit unless you are qualified service person.

DELIVERY

- 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.

ELECTRICAL CONNECTIONS: Upon receiving your machine, all wire connections in the electric panel, pump motor and electric heaters should be checked, including the wire nuts and lugs. Check connections monthly for the first six months and every 90 days after the first six months of operation.

SAFETY PRECAUTIONS

IMPORTANT: All safety precautions must be adhered to as to avoid personal injury.

PLEASE BE CAUTIOUS!

- Before attempting to perform any service to the unit ensure that the electrical disconnect has been turned to the off position and locked out with a physical locking mechanism.
- “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.”

This manual will help with troubleshooting and the replacement of parts.

For parts or technical assistance please call Douglas Machines Corporation at **800-331-6870** and ask for the Service Department. Please have your **Serial Number** available to assist with the call.

If the call is an emergency and after normal working hours (Monday – Friday 8 AM - 4:30PM) you can call your warranty provider direct and follow it up with a call during normal hours of operations. Douglas Machines Corporation will provide you with your local warranty provider contact information during the Factory Start up and Demonstration.

START UP

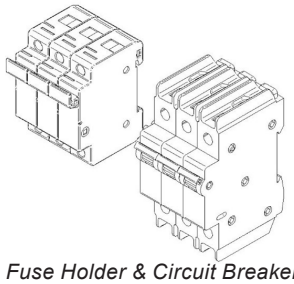
IMPORTANT: Remember where your electrical disconnects are located.

NOTE: Some of the following steps will be per formed in the electrical panel enclosure. We recommend disconnection of all the incoming power before servicing the electrical enclosure.

Please Be Cautious!

INITIAL START UP

- With the incoming electrical power disconnected or turned off, open the enclosure door located on the side of the machine by unlatching each quarter turn. Turn all thermostats to the lowest or off position (turning knobs in the counterclockwise direction).
- Locate and make sure the drain and pump petcock are in the closed position. The pump petcock will remain in the closed position unless service is needed on the pump.
- Shut off all breakers going to the heaters, if electrically heated. Breakers will be marked WASH HEATER and RINSE HEATER. If machine is fitted with fuses and fuse holders, use appropriate disconnecting means to safely de-energize the Wash and Rinse heating circuits.
- With the electrical enclosure panel cover still open, turn the incoming power back on. Make sure the circuit breaker or fuse holder marked PUMP and circuit breakers or fuse holders marked 120v are in the on position (BE VERY CAUTIOUS - THIS IS NOW AN ELECTRICALLY LIVE PANEL).



Fuse Holder & Circuit Breaker

- Turn the on/off/fill switch to the fill position and release it. At this point the machine will start to fill and continued until the water level reaches the overflow drain, which can be identified by a “Mushroom” shaped cap located in the interior table of the wash cabinet behind the filter below. If it does not fill to the overflow drain, reprogramming of the auto fill may be necessary (refer to section “Programming the PC Board”)
- You must also make sure the incoming water pressure is at a minimum 20psi (138 kPa) flow pressure not exceeding 30psi (207 kPa) flow pressure with a static pressure not exceeding 60psi (414 kPa) as stated in the Recommend Installation Guide.

NOTE: Incoming water pressure exceeding 30psi (207 kPa) flow will void warranty on related items.

- Select the Short Wash Cycle and push the Start Button; the wash pump should start running at this point. If the pump does not start running, check that all fuse (if applicable), and all breakers marked PUMP and 120v are in the on position. With the pump running, check the pump rotation looking at the rear of the pump motor and observing the cooling fan to see if it is rotating clockwise. Another indication that the pump is rotating backwards is the wash pump pressure gauge reading under 35psi (241 kPa). If the pump is not rotating in the correct direction, reversal of electrical phases will be necessary. (Contact your electrician or Douglas Machines Corp. for details.)

Now it is time to fill the rinse tank. Push the Start Button; the machine will now run through a complete cycle. A complete cycle entails a four, six, or eight-minute wash time depending on the cycle selected. During this time, the wash pump will be active. Followed by a 30 second rinse time in which the pump will be inactive and the rinse solenoid valve open. And finally, a one minuted well and steam extraction time in which the machine cannot be restarted until this time as expired. Repeat the cycle two more times to ensure the rinse tank is full.

Please note that while the machine is in the rinse and dwell period you will not see any readings on the jet pressure gauge, as the rinse cycle operates strictly off the incoming water pressure to the machine, not the wash pump. The pressure readout for the supply water is located above the machine in the incoming water supply circuit.

Failure to ensure the rinse tank is full of water may result in damage to the tank and heating components and may void the warranty of related items. Double check to ensure all heating circuits are off!

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.

- Now it is time to set the thermostats. We are looking for an idle wash tank temperature of 160 °F (71 °C), and during operation a temperature of 150 °F (66 °C). The rinse temperature should be set to read 190 °F (88 °C) temperature. Turning the thermostat knobs in a clockwise motion and using top dead center as our indicator, increase the thermostat marked WASH to 160 °F (71 °C). Now, increase the thermostat marked RINSE to 190 °F (88 °C). Switch the WASH HEATER and RINSE HEATER breakers or fuse holders to the on/energized position. Allow 30 to 60 minutes for the machine to reach operating temperatures.

NOTE: There can be as much as 12 °F to 15 °F diff erence between the thermostat and the temperature gauge. Always set the thermostats to accommodate the desired temperature using the front panel gauges as your guide. For Machine and Operator Safety DO NOT set Wash or Rinse water temperatures above 190 °F (88 °C).

- At this point your heat source should be engaged. If electrically heated, the wash and rinse heater contactor 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, please refer to the Trouble Shooting Guide or contact Douglas Machines Corp. for assistance.
- Now that everything is working fine. It is time to close and lock the electrical enclosure panel and start washing.

OPERATION

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.

A non-foaming, non-caustic, aluminum safe type of soap must be used (unless the machine has been specifically manufactured for caustic use). Machines without a caustic upgrade package are designed to work with a l chemical solution within a PH range of 5 - 9.5. Use of chlorine or bleach will void warranty, please contact Douglas Machines Corp. to determine what chemistry your machine is capable of running.

If the machine is fitted with an automatic soap dispenser, ensure the dispenser is turned on and filled up. If the machine is no t equipped with an automatic soap dispenser , follow your detergent manufacturers' recommended specifications for application and concentration.

NOTE: Douglas Machines Corp. Recommends the machine be operated with an automatic detergent dispenser equipped with a visual or audible alarm means to verify chemicals are being dispensed.

When loading the machine with bowls, buckets, or any similar type of object, all items should be facing the wash arms. This means the open end is 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 machine, you will notice that the sheet pan rack or sheet pan insert is built with angled pan supports. You need to load that rack/insert so that the face or open side of the sheet pan is leaning towards the bottom wash hub.

If you plan to wash cake pans and have purchased the cake pan rack or insert, you will need to load them in the same manner as the sheet pans, but with more per row. The cake pans will need to be loaded with the open side of the pan facing out towards the wash arms.

If you are washing cake pans and you did not purchase the cake pan racks or inserts, you will have to wash them in the same manner as you would wash bowls or buckets.
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.

Once filled, the machine should be allowed to sit and reach operating temperatures before washing. This could take anywhere from 30-60 minutes. Add detergent and load (See previous steps in General Operation). It is now time to start washing! Choose your desired wash cycle time by selecting the short four minute cycle, medium six minute cycle, or long eight 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 wash cycle. At this point you will be able to unload and then reload the machine.

NOTE: If machine is in “Wash” mode and stopped, allow 3 second ramp down time for spray arms before opening machine door.

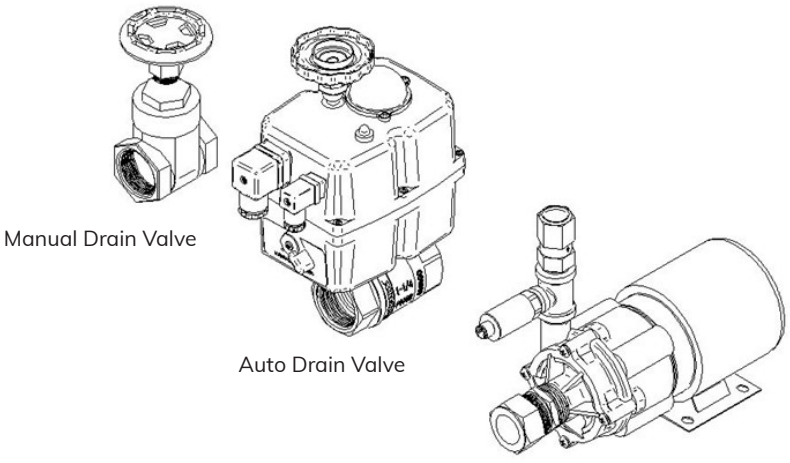
MAINTENANCE

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

DAILY 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 o f 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 o f a regular shift, or if the machine is not cleaning to its normal standards.



Manual Drain Valve

Auto Drain Valve

Pumped Drain Valve

- Drain the machine b y locating the manual gate v alve. The machine should never be drained or cleaned unless the power is in the OFF position. A cool down period should also be allowed before cleaning. If the machine is equipped with a motorized drain valve or pumped drain, ensure the machine is turned off on the front panel, then turn the drain open/close or on/off switch to the open/ on position. Note: the electric drain valve will only operate when the power on the front panel is in the off position, to ensure the valve is never opened during operation.
- Now you need to clean the low water probe or low water float switch. If your machine has a float switch you will also need to clean the high-level float switch located above the table. This probe or float will be mounted into the side of the wash reservoir tank under the filter basket location. It is 3/8" (9.5 mm) in diameter and 2 1/2" (6.35 cm) long with a 3/16" (4.8 mm) x 1/4" (6.35 mm) 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. Clean the entire float switch if your machine is equipped with floats. Remove all scale and residue. Failure to do so may cause the heating source to remain on with no water in the reservoir, damaging heating components and may void warranty to related items.
- 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.
- When the wash cabinet, filters, wash tank reservoir, low water probe (or float switch/s), and electric heater or heaters (if applicable) have been cleaned, you can put the filters back in place.
- 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 to remove the obstruction from the pipe.
- Clean the outside of the machine. Use a stainless-steel cleaner or soft cloth with a mild detergent to wipe down the outside of the machine.
- Do not turn on the main power until you are ready to resume washing again. Never leave the machine on for longer than 4 hours between running cycles, damage to the rinse components and or tank could occur.
- Close the drain valve and check that the filters are back in place. Turn the machine back on and allow it to fill and come back to operating temperature. The machine is now ready for use.

PERIODIC MAINTENANCE

Wash pump motor lubrication. You will find two grease fittings on the top of the wash pump motor and one at each end. You will need to grease these under normal conditions every 90 days. Use an electric motor bearing grease like Shell Dollum or Chevron Sill. If you have one of the larger pan washers, such as the model SD-36, LD-36, or LD-20-PT you may need to grease the 12” (30.5 cm) s team extraction fan bearings.

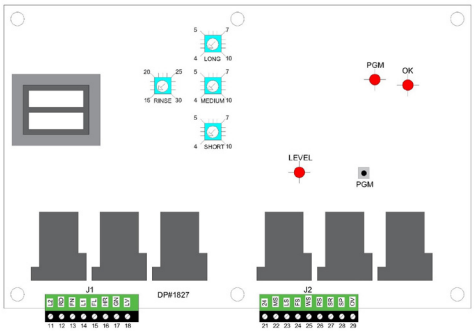
Note: Some of these fans are equipped with sealed bearings and do not require greasing. You will need to determine if your fan is equipped with the sealed bearings or if the bearings will need to be greased. Refer to your parts manual to identify the steam extraction fan and the grease fitting location. If greasing is required, it should be performed every three months. Use high temperature food grade grease such as Sentinel SInth #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 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 remover. Whatever you decide to use, be sure it is safe to apply 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.
- The Solenoid Valves should be checked periodically to ensure they are in good working condition, solenoids have a life span of about 1 million cycles.

PROGRAMMING

1827 PC BOARD

The controller is an open circuit board construction located inside of the electrical panel. The board operates on nominal 120 VAC line. The basic function of the board is to control the operation of the unit, including the wash, rinse, fan/ dwell times as well as the auto-fill function. The six relays on the board control six outputs. One relay controls two of the outputs, and the sixth relay is a master control relay. Each output includes a “ready light” for the fan, heater contactor, wash pump motor contactor, and rinse solenoid valve. Three blue potentiometers located near the center of the board set the wash times, Short, Medium, and Long. These values are adjustable. Standard wash times are four, six, and eight minutes.



Douglas Machines #1827 PC Board

ROUTINE OPERATIONS/CONNECTIONS

Note: that the Fill cycle activates the fill solenoid valve and waits until the water level in the machine reaches the pre-programed level which should reach and be close to the o verflow drain.

SETTING THE TIMES

CYCLE	DURATION
Rinse	30 Seconds, Non-Adjustable
Steam Extraction	1 Minute, Non-Adjustable
Long	8 Minutes
Medium	6 Minutes
Short	4 Minutes

To set times on the 1827 PC board, several steps are required:

- Open the main electrical enclosure. Locate the PC control board, a device approximately 8” x 5” with 6 relays and a transformer.
- The timer settings are located to the right of the transformer and are ½” blue squares with a white dial. They are labeled Long, Medium, Short, and Rinse.
- To decrease the time, turn the timer counterclockwise. To increase the time, turn the timer clockwise.

NOTE: that the Rinse pot is fixed @ 30 sec. to ensure the NSF standard for sanitation.

PROGRAMMING THE AUTO FILL

- Before starting, make sure there is no water in the machine and that the drain valve is closed.
- Turn the Off/On/Fill switch to the on position, but make sure not to turn all the way to Fill.
- Locate the Program button on the PC board. (see diagram)
- This black button is located on the right-hand side just below the Program LED and labeled with the letters PGM.
- Push in the PGM button but do not hold the button down, as it will then execute a test Mode.
- When the Program light located above the button begins to flash, turn the Off/On/Fill switch to the Fill position.

- The solenoid valve then opens, and the machine begins to fill.
- When the water reaches the overflow level, turn the Off/On/Fill switch again to the Fill position.
- Observe that the Fill Time is set.

NOTE: once the unit has been programmed, the machine fill cycle operates as a “one time” fill and will not refill unless the machine is turned o ff and the water drained.

To aid in troubleshooting, the PGM LED also serves as an error code indicator. In case of error, the LED flashes on and o ff at ½ second on and ½ second o ff and then pauses for 3 seconds. The flashing pattern continues if the controller is in Idle Mode. The number o f times the LED flashes between 3 second pauses indicate the number o f the error.

TROUBLE SHOOTING

NOTE: Some of the following remedies may need to be per formed 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	Incoming power turned ON Machine circuit breakers and/or fuses are in place & turned on
Machine will not heat up (gas heated)	Machine is filled to the correct water level Low water float switch is clean Gas supply is on Thermostats are set to desired temperature
Machine will not heat up (electric)	Machine is filled to the correct level Low water float switch is clean Circuit breakers and/or fuses marked “Heaters” are on Thermostats are set to desired temperature
Wash pump will not start	Machine is filled to the correct water level Lower water float switch is clean Door is in the closed position Circuit breakers and/or fuses marked “Wash Pump Motor” are on

PROBLEM	THINGS TO CHECK
Wash pressure is low	Machine is filled to the correct water level Filters are clear and in place Confirm there is no excessive foam in the wash tank Pump is rotating in the correct direction Pressure gauge is functioning correctly
Not Rinsing	Incoming water pressure is low Door is closed and door sensor is functioning properly
Rinse Temperature Is Not Hot Enough	Incoming water temperature (120° - 140° max.) Incoming water pressure (no less than 20 psi and no mor e than 30 psi of flow) Thermostat set to correct temperature (180° - 190° max) Heat source is engaged
Not Cleaning	Machine is filled to the correct level Low water float switch is clean Circuit breakers and/or fuses marked “Heaters” are on Thermostats are set to desired temperature

To aid in troubleshooting, the PGM LED also serves as an error code indicator. In case of error, the LED flashes on and o ff at ½ second on and ½ second o ff and then pauses for 3 seconds. The flashing pattern continues if the controller is in Idle Mode. The number o f times the LED flashes between 3 second pauses indicate the number o f the error.

ERROR CODE VALUE TABLE

	PGM ERROR	INTERPRETATION
1	Watchdog timeout on filling to level float switch	When the controller is in either a Fill cycle or a Teach Fill cycle, there is a 15-minute time limit until the w ater level reaches the level probe. If the fill valve is on for 15 minutes, the valve shuts off and the Fill cycle aborts. The controller reverts to Idle Mode.
2	Watchdog timeout on filling above the level float switch	When in a Fill cycle or a Teach Fill cycle, there is a 5-minute limit for which the fill valve may be on after the water reaches the level probe. This error could occur in a Fill cycle only if an incorrect time were stored in the EEPROM or read from the EEPROM. In Teach Mode, this could occur if the operator walked away from the machine while it was in Teach Mode. If this timeout occurs, the fill valve turns off and the machine returns to Idle Mode.
3	Loss of master control relay during machine cycle	This error could occur if the door were opened or if the motor overload trip during a cycle.
4	Loss of water level during a machine cycle	This could occur in two situations: a) If the water in the machine drops during a cycle because a large container being washed is collecting wash water. b) The water level in the machine is v ery low and the wash water circulating in the pump and plumbing is enough to lo wer the water level below the probe. The water level must be low for 5 seconds for the cycle to be abor ted. The heater output will, however, be turned off immediately when the water level is below the float switch.

	PGM ERROR	INTERPRETATION
5	EEPROM read error	Data stored in the EEPROM is redundant, and the two redundant numbers are compared. If they don't match, a read error is generated. This error could occur if a Fill cy cle is started, but a Teach cycle has not been done to program the Fill time. It should not occur, as Douglas will program a Fill time as part of the test procedure. The error could also occur if installing a new board.
6	Attempt to start a Fill cycle or Teach Fill cycle when the water level is already at the level float switch	Ensure water level is below the low water float switch before attempting to fill. Drain water below the float switch and re-attempt.
7	Attempt to start machine cycle without proper water level.	If unit has water and a clean, low water float switch, see Low Water Section.

- Note that when one of these errors occurs, the controller reverts to Idle Mode.
- Note that the error code flashes on the LED if it is in Idle Mode.
- Note that as soon as a successful Machine cycle, Fill cycle, or Teach Fill cycle executes, the error LED goes out.
- There is no need to reset anything by turning the machine off.
- For example, if the operator were to try to fill the machine a second time and the water was already at the level float switch, nothing would happen. The error would flash on the PGM LED, but if the cover were on the electrical box, no one would see it. If the start button were then pressed, the error LED would go out and a normal machine cycle would be executed.

TROUBLESHOOTING TABLE FOR 1827 PC BOARD

PROBLEM	LIKELY SOURCE OF PROBLEM	CORRECTIVE PROCEDURES
Wash pump will not start	Door	Make certain that the door is closed. Make certain that the door is not contacting the door switch or is within 1/8” of the door switch. Check to see if the door switch is faulty. If using a door switch, perform a continuity check. If using a Proximity door switch, jump out connections at PC board. Check operation. (Only Temporarily) Check to see if the OK LED on the PC board is illuminated. See if the spring-loaded Stop button is stuck in, press it in again to make it return to an outward position.
	Pump motor	Check to see if the pump motor overload has tripped. Press the blue reset button located on the overload. See Overloads in the Reference Section.
	Circuit breaker	Check to see if the circuit breaker for the pump motor has tripped. Try resetting the breaker.
	Pump motor fuses	Check to see if any of the fuses for the pump motor are blown. Check all fuses

PROBLEM	LIKELY SOURCE OF PROBLEM	CORRECTIVE PROCEDURES
Wash pump will not start	Water	Check to see if there is water in the tank. Low water protection component may be preventing the Wash pump from running. If there is water in the tank and the pump motor will not start, the low water float switch in the tank may no t be sensing the water. Clean the float switch. Check the level LED on the PC board. It should be illuminated. If the PGM LED is flashing 7 times , it means that an at tempt has been made to start a wash cycle without water to the level float switch. See Low Water Circuit: Control Type.
Machine will not go into Rinse cycle	Door	Make certain that the door is closed. Make certain that the Prox. switch is 1/8” off the door.
	Rinse solenoid	Check to see that the rinse solenoid is being energized when the Wash cycle times out. See 1827 PC Board: Routine Operation/Connections Table.
	Rinse LED	Check to see that the Rinse LED is illuminated on the PC board. If it is, the problem is most likely the solenoid.
Machine will not fill	Water	If there is already water in the machine and it is above the water float switch, but the machine is not full, drop the water level below the float switch. Restart the Fill. This condition will give an error code of 6 flashes on the PC board PGM LED (located in the elec tric panel). Ensure low water float switch is clean. It may be necessary to re-program Auto Fill time. Refer to 1827 PC Board: Setting the Times.

PROBLEM	LIKELY SOURCE OF PROBLEM	CORRECTIVE PROCEDURES
Wash tank will not fill completely	Water pressure	If water pressure in the building has changed, the Fill cycle can be affected because the Fill cycle is timed. Fill time may need to be reprogrammed. See 1827 PC Board: Programming the Auto Fill. Proper water pressure to the machine is 60 psi static and 25 psi flow.
	Auto fill power	If there is no power to the Auto Fill solenoid, refer to 1827 PC Board: Routine Operation/Connections.
Wash tank will not heat up	Low water	If there is no water in the tank, the low water protection component may be preventing the heaters or the gas burner from turning on. Refer to Low Water Circuit: 1827 PC Board. If there is water in the tank, the low water probe/float may need to be cleaned.
	Wash T-stat power	Power to the Wash T-stat should be 120V +/- 10 V from the PC board, J1-HR Wire.
	Wash contactor coil power	
	Heater circuit breaker	If the circuit breaker for the heaters has tripped, try to reset the breaker.
	Heater fuses	Check all heater fuses to see if they are blown.
	Gas heat	Refer to the Gas Heating: Maxon or Infrared: Troubleshooting.
	LED	Verify that the level and HTR LED's are illuminated on the PC board.

PROBLEM	LIKELY SOURCE OF PROBLEM	CORRECTIVE PROCEDURES
Wash pump turns off during Wash cycle	Pump motor overload	If water pressure in the building has changed, the Fill cycle can be affected because the Fill cycle is timed. Fill time may need to be reprogrammed. See 1827 PC Board: Programming the Auto Fill. Proper water pressure to the machine is 60 psi static and 25 psi flow.
	PGM LED on PC board	If the PGM LED on the PC board is flashing 4 times, it is indicating that there is not enough water in the machine. Lower the water level below the level float switch. Reprogram the Fill time. Refer to 1827 PC Board: Programming the Auto Fill.
	Excess water pressure	When the Wash pump is started, the water pressure may be pushing against the door and causing the door switch to open. In this condition, the OK LED on the PC board would not be illuminated.
Rinse tank will not heat up	Heater circuit breaker	If the circuit breaker for the heaters has tripped, try to reset the breaker.
	Heater fuses	Check all fuses in case any have blown.
	Rinse T-stat Power	Power to the Rinse contactor should be 120V +/- 10 V from the T-stat. **NOTE:** Rinse tank should always be full of water.
	Rinse Contact Power	Recommended power is 120 V +/- 10 V from T-stat Wire. **NOTE:** Rinse Tank should be full of water at all times.
	High Limit Disc	Check for continuity on High Limit Disc mounted to exterior of Rinse Tank. Disc is normally closed and auto reset type.

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