

Dexter Safety Guidelines



WARNING

These washers are equipped with devices and features relating to their safe operation. To avoid injury or electrical shock, do not perform and service, unless qualified to do so.

FOR SAFETY

1. Always shut off power and water supply and also discharge capacitors before servicing.
2. Do not overload the washer.
3. Do not attempt to open door if cylinder is in motion or contains water.
4. Do not mechanically force or override door lock.
5. Do not bypass any safety devices of this washer.
6. Do not use volatile or flammable substances in or near this washer.
7. Keep all panels in place.

A machine should not be allowed to operated if any of the following occur:

- Excessively high water level.
- Machine is not connected to a properly grounded circuit.
- Loading door does not remain securely locked during the entire cycle.
- Vibration or shaking from an inadequate mounting or foundation.

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Common Washer Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
Machine does not start	Power Supply	Check these areas: Circuit breakers, Voltage, Power leads, Power connections. Is front display LED showing a dollar amount.
	Door Switch	Check for continuity through door switch when door is closed. If no continuity, adjust or replace door switch.
	Control Breaker or Fuse	Check 1.5 amp (T-950 and T-1200 use 2.5amp) breaker or fuse for continuity. If no continuity, replace breaker or fuse.
	Control Transformer	Check voltage output from control transformer for 120VAC. If voltage is incorrect, replace transformer.
	Coin Acceptor	Check coin acceptor to make sure there is no blockage or damage. clean or replace acceptor.
	Check PCB board	Check all wire connections for sure contacts.
	Check wiring between PCB and VFD	Check data cable. This is the cable with the phone type connectors on the main PCB control and the VFD. With the power removed unplug and check for damage, replug and retry washer.
	Check Relay PCB	Check all wire connections for sure contact.
	Check Door Motor	Check that 120v power is at Motor after start button is pushed.
Machine will not accept and count coins	Coin Acceptor	Check coin acceptor switch for any type of blockage or damage. Clean, adjust or replace the acceptor.
	Power Supply	Check these areas: Circuit breakers, Voltage, Power leads, Power connection.
	Door Closed Safety Switch	Check door closed switch at door hinge for proper operation.
	Door Handle Closed Switch	Check single door closed switch at left side of door handle to close when handle is vertical.
	Control Breaker or fuse	Check breaker or fuse for continuity. If no continuity, replace breaker or fuse. The T-300 through T-950 use the 1.5 amp fuse. The T-1200 and t-1450 uses A 2.5 amp fuse.
	Main PCB	Replace
Door does not lock	Check display for fault code	Does Door Lock Error show on the front of display. If yes follow tests described in fault code section.
	Door locking Motor	Check to insure that Motor is receiving 120VAC from main relay PCB. If it is, replace solenoid.
	Door Switch	Check for continuity through door latch switch when door closed. If no continuity, adjust or replace door switch.
Door will not open	Thermoactuator	Check to see if thermoactuator(s) and/or its mechanism is stuck or binding and not allowing the door lock solenoid to open. Check to be sure that the locking thermoactuator is not receiving 120VAC during the last 1 1/2 minutes of the cycle. Also check to see that the unlocking thermoactuator is receiving 120VAC during the last minute of the cycle. If the thermoactuators do not receive voltage at the correct times, change the timer. If the timing and voltage are correct, replace the thermoactuator.

Common Washer Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
Door will not open	Door Rod	Check to see that door rod from solenoid to lock ass'y is long enough to allow lock ass'y to disengage. If not, adjust rod.
	Gear Motor	Check the door lock motor. Make sure the motor is not stuck or in a bind. If motor does not move freely, replace locking motor.
No hot water in detergent dispenser	Water Valve Coil	Check coil continuity at terminals and replace if no continuity. 120 V power only on for 20 second in wash bath.
	Water Inlet Screens	Check water inlet screens for blockage and clean screens if necessary.
	Water	Check to insure that water is turned on and operating.
	P-20 Wire Harness	Check black & white harness.
Hot water does not enter tub in wash	Water Valve Coil	Check coil continuity at terminals and replace if no continuity. Check for 120 V power from main relay PCB
	Water Inlet Screens	Check water inlet screens for blockage and clean if necessary screens
	Water	Check to insure that water is turned on and operating.
	Blk or Wht wire at main controller	Check black or white wires at Molex plug on PCB at main controller and at relay PCB.
	Pressure Switch	Check pressure switch continuity between terminals . If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
No cold water to tub in wash	Water Valve Coil	Check coil continuity at terminals and replace if no continuity.
	Water Inlet Screens	Check water inlet screens for blockage and clean if necessary.
	Water	Check to insure that water is turned on and operating.
	Blk or whit wire at controller and main relay PCB	Check black or white wires at Molex plug on PCB at main controller and at relay PCB.
	Pressure Switch	Check pressure switch continuity between terminal contacts. If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
Water comes in but level does not rise	Drain Valve (open)	Check these areas • Drain valve blockage • Drain valve motor and gear train. If power but drain valve does not close, replace valve. • Power to the drain valve. If no power to drain valve, check (brn/yel) circuit for power.
	Blk or whit wire at controller	Check black and white wires at molex plug on main PCB controller and at main relay PCB
Water does not flush softener compartment.	Water Valve Coil	Check coil continuity at terminals and replace if no continuity.
	Water Inlet Screens	Check water inlet screens for blockage and clean if necessary.
	Water	Check to insure that water is turned on and operating.

Common Washer Troubleshooting Solutions

Symptom	Probable Cause	Suggested Remedy
Water level too high	Pressure Switch	Check for blockage in pressure switch hose. Check for pressure switch opening circuit across terminals. Replace switch if contacts do not open.
Water drains slowly	Drain System	Check hoses and drain valve for blockage. Clean of inadequate size, if necessary. Check building drains for blockage
Machine does not turn	VFD	Check VFD by removing top panel and record power or fault lights are illuminated. If the fault light is on, turn power off to machine at breaker for 2 minutes and turn power back on to reset. If still no display replace VFD
Machine tumbles in one direction	VFD	Remove Top cover record if power light of fault lights are displayed, see front control for related codes. See fault code section for more info.
	VFD	Inspect yellow enable wires from main relay PCB and at VFD
Excessive vibration	Mounting System	Check these areas: <ul style="list-style-type: none"> • Strength of mounting structure, concrete or base. • Mounting bolts may be loose and need tightening.
	Drive Belt	Worn drive belt can cause vibration and noise.
	Loading	Note: Small loads contribute to out of balance loading and increase vibration.
Machine does not spin	Pressure Switch	Check pressure switch for continuity across terminals #21 & #22 indicating pressure switch has reset to the empty position. If no continuity, change pressure switch.
Machine starts and does not operate	VFD	Check yellow enable wires from relay PCB P13 & motor P14 to VFD advances through cycle are connected. Check fault code on VFD before removing power from the drive. Check orange P-15 wire for signal from door switches.
Machine does not stop	Main PCB	Main PCB controls time cycle at end of cycle
	Braking Resistors	Check braking resistors for continuity. Verify ohms resistance by Molex.
Water leakage around loading door	Door Adjustment	Door may need adjustment due to abuse or wear. Check tightness around perimeter using a dollar bill. Adjust left to right tightness by shims at door lock or hinge side. It is important to center gasket to tub opening before tightening door to hinge bolts. Chalk may be used on tub front to show point of contact with tub. If gasket is deformed, worn, or damaged, replace. Refer to parts section for door gasket expander kit.
Machine Starts goes Directly to end of cycle	E-Stop button or switch	If machine says PUSH then goes directly to "0" or "00" may be bad stop Button or switch. Replace switch assembly.

Troubleshooting Washer Fault Errors

The following pages are a description of fault codes that will appear on the front of the washer. There is a chart format that shows what fault code that will be displayed at washer front. These codes displayed may stop machine operation or may not stop machine. Please check chart before removing power to reset. PLEASE NOTE: CHECK DRIVE FAULT CODE BEFORE POWERING MACHINE DOWN!

Fault	Description	Customer Action	
<u>DOOR LOCK ERROR</u> <u>F1</u>	The door failed to close and lock or The door failed to remain locked during the cycle.	Condition	This error is when the Door Locked signal is not received within one second after the start of the cycle. After three attempts to start the washer.
		Delay	Immediate
		Action	When the error occurs, the Door Lock Solenoid will be turned off; all other outputs will be turned off.
		Solution	Check VFD fault light. Check to hear if door motor engaged. Turn off the power to the washer. Check wire connections to door /lock switches. Check wire connections from switches to controller. Check P-4 Door/Lock wire connections at PCB controller. Adjust the door lock mechanism. (See on line service manual or video)
<u>SLOW FILL ERROR</u> <u>F2</u>	Slow Fill Error	Condition	This error is when a low water level is not reach within 7 minutes.
		Delay	Immediate
		Action	The washer cycle will continue
		Solution	Turn off the power to the washer. Check the operation of the water valves. Check the incoming water pressure. Check for blocked or restricted water flow. Check to ensure the drain valve is functioning properly.
<u>MEMORY ERROR</u> <u>F3</u>	Checksum or Out of Range Error	Condition	Memory error in the controller. The memory checksum is wrong or a parameter value is out of range.
		Delay	Immediate
		Action	Stop the washer and turn off all the outputs.
		Solution	Check VFD fault light before turning off power. Try a soft Reset of the controller with the white button. If problem persist replace PCB controller.

Fault	Description	Customer Action	
COMM ERROR 1 F4	I2C Bus Error	Condition	Washer controller communication error on the I2C bus. Both the main slave micro and the master micro can be in this error state. The slave micro error is recoverable at any time, if I2C communication resumes. The master micro error is permanent.
		Delay	The main slave starts displaying this error after 6 seconds of no (valid) I2C activity. The master micro goes into this permanent error state after 8 seconds of no (valid) I2C activity
		Action	Stop the washer and turn off all outputs.
		Solution	Check VFD fault light before turning off power. Try the data cable first. Move around cable and remove any side loading tension from data cable connector ends. Check connection P23 to P15. Turn power back on to the washer. If the problem returns, replace the PCB washer controller.
COMM ERROR 2 F5	Wrong Washer Size Jumper Configuration	Condition	Invalid washer size jumper (harness) configuration.
		Delay	Immediate (after the wrong size jumper configuration is read). Washer size/type inputs are read only at power up, before starting a cycle, once every 24 hours, and in factory test mode.
		Action	Stop the washer.
		Solution	Check VFD fault light before turning off power. If the controller was installed in a different size machine before being installed in this machine, a problem can occur. If someone has been doing repairs on the washer, check for the correct size drive. It can also be caused by pressure switch harness. Check to ensure the correct harness is installed. The control can be reset by holding program button on controller during startup (soft reset). Check orange wire at Molex connector on controller coming from pressure switch or replace pressure switch harness.
COMM ERROR 3 F6 or F7	Washer Size or Type Changed	Condition	The washer size or washer type configuration has changed.
		Delay	Immediate (after the size jumper configuration is read). Washer size/type inputs are read only at power up, before starting a cycle, once every 24 hours, and in factory test mode.
		Action	Stop the washer.
		Solution	Check VFD fault light before turning off power. Check to ensure all the harnesses are properly connected to the controller. Check to ensure the VFD drive horsepower is proper for this size of washer. The control can be reset by holding program button on controller during startup (soft reset). Check orange wires at Molex connector on controller coming from pressure switch.

Fault	Description	Customer Action	
COMM ERROR 4 F13	VFD Non Existent or communication fault	Condition	This error is when the washer controller cannot communicate with the drive.
		Delay	Delay time is 2 seconds
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Check the data communication cable between the washer computer and the variable frequency drive (VFD). Step 1: Make sure the cable did not become unplugged during operation. Step 2: Make sure that the cable is not being pulled sideways at either the washer controller, or the VFD, plug end. If both ends of the communications cable are plugged in the washer computer and VFD and there is no tension on the communications cable pulling it from side to side, then replace the cable. Step 3: Inspect both female connection points at PCB controller and at VFD. These may need replacement if they cannot be reset.
COMM ERROR 5	VFD Communication Fault	Condition	This error is a data error on communications between the controller and the VF drive
		Delay	Delay time is 12 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	The CE errors are communications errors. Data Cable noise can cause the majority of these errors. Check VFD fault light before turning off power. Check the data cable between the controller and the drive. Replace data cable if it appears damaged and fault appears again. Please note that this fault will occur if you turned main power off and on to quickly. (See Note below)
PCB ERROR1 F12	Controller Internal Fault	Condition	This error is an internal failure of the washer controller electronics.
		Delay	Immediate
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Check VFD fault light before turning off power. Try a soft Reset of the controller with the white button. If problem. Replace PCB controller.

Fault	Description	Customer Action	
<u>SLOW DRAIN ERROR</u> <u>F8</u>	Drain Error	Condition	This error is when an empty water level is not reach within 7 minutes.
		Delay	Immediate
		Action	The washer cycle will continue. Do not spin the tumbler with out reaching an empty water level. If empty water level is not reached, agitate during the normal spin time.
		Solution	Check VFD fault light before turning off power. Check to ensure the drain valve is operating properly (slow drain has potential to cause this code). Check to ensure the pressure switch tube is clear of any blockage, and the pressure switch is operating properly. Check the pressure switch harness.
<u>SPIN STOP ERROR</u> <u>F9</u>	Stop Error	Condition	This error is when the washer does not stop spinning within 150 seconds after receiving the command.
		Delay	Immediate
		Action	Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Check VFD fault light before turning off power. Inspect the braking resistors and measure the resistance. Check connecting wiring from braking resistor to the drive mounted in the top of the washer. Reset the drive and try again. Possibly incorrectly programmed drive.
<u>DRIVE ERROR 1</u> <u>F6</u>	Washer size/ VFD size mismatch	Condition	This error is when the drive size does not match the washer size.
		Delay	Immediate. (after the size jumper configuration is read). Washer size/type inputs are read only at power up, before starting a cycle, once every 24 hours and in factory test mode
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door
		Solution	Check VFD fault light before turning off power. If the controller was installed in a different size machine before being installed in this machine, a problem can occur. If someone has been doing repairs on the washer, check for the correct size drive. It can also be caused by pressure switch harness. Check to ensure the correct harness in installed. The control can be reset by holding program button on controller during startup (soft reset). Check orange wire at Molex connector on controller coming from pressure switch or replace pressure switch harness.

Fault	Description	Customer Action	
DRIVE OC F14	VFD Over-current Fault	Condition	This error is an over-current on the VF drive
		Delay	Delay time is 35 seconds
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	<p>Step 1: Check to make sure the washer cylinder turns freely by hand. If it turns freely, continue to step 2. If it does not, remove the belt and see if the motor turns freely by hand. If the motor turns freely, then check for obstructions in the cylinder or check the bearings. If the motor does not turn freely, replace the motor.</p> <p>Step 2: Check the motor wires for a short circuit between leads. If there are motor leads that have conductors touching, separate them and insulate them. If the wires are broken, splice them together or replace the motor.</p> <p>Step 3: Check braking resistors to see if they measure the correct resistance. If a resistor does not measure the proper value, replace it.</p>
DRIVE OV F15	VFD Over-voltage Fault	Condition	This error is over-voltage on the VF drive
		Delay	Delay time is 35 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	<p>"Step 1: Measure the supply voltage to the VFD on the L1, L2 (or N), and L3 (if connected to three phase power). the supply voltage should be from 187 to 264 VAC or 108 to 132 VAC for a 120 VAC VFD. Also make sure the supply wires on L1, L2 (or N) and L3 (if connected to three phase power are securely connected.</p> <p>Step 2: Check the braking resistor connections at the VFD. The terminal screws should be tight. Once of the braking resistor wires should be connected to terminal B2.</p> <p>Step 3: Measure each braking resistor separately to make sure they are the correct resistance. (200 for 1 and 2 Hp VFD and 160 for 3 Hp VFD).</p> <p>Step 4: If you have a 240 VAC, high leg voltage supply, try disconnecting the high leg. If this cures the problem, either leave the high leg disconnected, connect a transient voltage surge suppressor (with some form of filtering) at the voltage supply panel, connect a line choke on the high leg or install a VFD filter.</p>

Fault	Description	Customer Action	
DRIVE OH F16	VFD Overheat Fault	Condition	This error is over-heating on the VF drive
		Delay	Delay time is 12 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door
		Solution	Step 1: Make sure the cooling fins on the VFD heatsink and the ventilation louvers on the VFD cooling fan cover are clean. Step 2: Start a washer cycle and make sure the VFD cooling fan operates after the cylinder starts turning.
<u>DRIVE OL F17</u>	VFD Overload Fault	Condition	This error is overload on the VF drive
		Delay	Delay time is 12 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door
		Solution	(Check drive fault code before powering down). Check the washer motor to ensure it turns freely. Check the wiring for loose connections to the drive and motor. Measure the braking resistor values. Check for damaged motor wires. Check V-Belt tension and adjust to 1" deflection at center. Check braking resistors.
DRIVE GFI F18	VFD Ground Fault	Condition	This error is a ground fault interruption on the VF drive
		Delay	Delay time is 12 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Check VFD light code before turning off power. Check the wiring connections to the drive and motor. Check the ground wiring of the drive, motor and incoming connection to ensure a proper ground is present. Check for damaged motor wires.
<u>DRIVE LV F19</u>	VFD Low Voltage	Condition	This error is low voltage on the VF drive
		Delay	Delay time is 12 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Check VFD light code before turning off power. Turn the power off to the washer. Check the wiring connections to the drive and motor. If no problem is observed, turn on power to the washer and test. (See Note) Measure the incoming line voltage.

Fault	Description	Customer Action	
DRIVE IF F21	VFD Internal Fault	Condition	This error is an internal VF drive error
		Delay	Delay time is 12 seconds.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	Check VFD fault light before turning off power. Turn the power off to the washer. Wait one minute. Turn the power on to the washer. If problem reappears, contact your Dexter representative.
Invalid DRIVE F7	Drive is not the correct Dexter version of the Delta E-drive	Condition	The error indicates the VF drive is not a Dexter version of the Delta E-drive.
		Delay	Immediate (after the Dexter indication value is read from drive). Drive indication value is read only at power up, before starting a cycle, once every 24 hours, and in factory test mode.
		Action	Stop the machine and clear the cycle. Keep the door locked until the machine has stopped moving and then unlock the door.
		Solution	VFD has been replaced, disconnected, or removed. Drive is not the correct Dexter version of the Delta E-drive. Replace drive with Dexter Delta E-drive.

Note: Whenever power is turned off to the washer, it must remain off for three minutes for drive to reset. The washer will not operate correctly if this is done improperly. This will allow most fault codes to reset that are displayed at washer front. A fault code F-13 or F-21 will appear on front display if this procedure has not been reset correctly. Note: Should a power loss occur during cycle and then power returns, P U S H will be displayed and customer must push a temperature selection button to continue the cycle.