Fault#	Description	Customer Action
F1	The door failed to close and lock or The door failed to remain locked during the cycle.	Check VFD fault code before turning off .Turn off thepower to the washer. Check wire connections to door /lock switches. Check wire connections from switches to controller. Check P-4 wire connections at PCB controller. Adjust the door lock mechanism. (See service manual)
F2	The washer tub does not fill with water within 7 minutes. The wash cycle will continue. The F 2 will flash threetimes, then wait for 30 seconds. The error will clear at the end of the cycle.	Check VFD fault code before turning off power. Turn of 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. This error will occur on 18# washers when water level is set for high(the pressure switch in 18# washer is only one level).
F3	Memory error in controller checksum is wrong.	Check VFD fault code before turning off power. The memory Try to clear the fault with the Palm. Try a soft Reset of the controller with the white button. If problem returns then replace controller.
F4	Washer controller communication error	Turn Power back on to the washer. If the problem returns, replace the PCB washer controller. If the machine is operating with an EASY CARD system connected then unplug reader and turn power back onto machine and if fault reappears on machine front display replace main PCB controller
F5	Pressure Switch error (only OPL) - when the high level senor indicates full but the lower one indicates empty. The wash cycle will continue. The F 5 will flash three times, then wait for 30 seconds. The error will clear at the end of the cycle.	Check VFD fault code before turning off power. Check the pressure switch.(Ohm out contacts). Check pressure switch connections to ensure they are all making good contact. Check the Molex type harness connector to ensure no wire been pushed out of the Molex type housing that it is shorting.

Fault#	Description	Customer Action
F6	Wrong washer size for drive type.	Check VFD fault code 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.
F7	Wrong size drive installed	Check VFD fault code 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.
F8	The washer tub does not empty within 7 minutes. The wash cycle will continue. The F 8 will flash three times, then wait for 30 seconds. The error will clear at the end of the cycle.	Check VFD fault code before turning off power. Check to ensure the drain valve is operating properly (slow drain has potential to cause this code). Check to ensure thepressure switch tube is clear of any blockage, and the pressure switch is operating properly. Check the pressure switch harness.
F9	The washer tub does not reach the spin target frequency within 150 seconds. The wash cycle will continue. The F 9 will flash three times, then wait for 30 seconds. The error will clear at the end of the cycle.	Check VFD fault code before turning off power. Inspect the washer to ensure the tub spins freely. If restricted, then clear the blockage. Check to ensure the enable signal to the drive is present. Reset drive and try again. (Door switch issue could cause this code) If tub spins freely, the drive needs to be replaced.
F10	After a spin the washer tub does not stop within 150 seconds.	Check VFD fault code 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.

Fault#	Description	Customer Action
F11	The drive size setting has changed.	Check VFD fault code before turning off power. Check to ensure all the harnesses are properly connected to the controller. Check to ensure the drive horsepower is proper for this size of washer. If no one has worked on machine very recently then PCB controller or VFD may need to be replaced.
F12	Washer controller internal error	Check VFD fault code before turning off power. Turn off the power to the washer. Wait one to two minute. Turn on the power to the washer. If problem reappears, contact your DEXTER representative.
F13	The control can not communicate with the drive	Check VFD fault code before turning off power. Turn the power off to the washer. Check the data cable between the controller and the drive. Remove any side loading tension on either connector. Replace data cable if no change replace drive next and try again. If still no change replace controller
F14	Over-current on the drive or motor.	(Check drive fault code before powering down)Check VFD fault code before turning off power. Turn the power off to the washer. Check the washer motor to ensure it turns freely. Check for loose wiring connections at the drive and if no change, then check resistance values between motor wires. The drive usually faults first most often this is where standard troubleshooting should start to occur.
F15	Over-voltage on the drive or motor.	(Check drive fault code before powering down) Turn the power off to the washer after checking fault code. Check the washer motor to ensure it turns freely. (Check drive fault code before powering down)Check the wiring connections to the drive, braking resistors and motor. Measure incoming line voltage. Measure braking resistance values. A TVSS should be installed if this fault continues to be displayed for no apparent reason.
F16	Overheating of the drive	Check VFD fault code before turning off power. Turn the power off to the washer. Allow the drive to cool. Check the cooling fins of the drive to ensure proper airflow. Check the wiring to the drive including the fan wiring. If no problem is observed, turn on power to the washer and test.

Fault#	Description	Customer Action
F17	Overload of the drive or motor	(Check drive fault code before powering down) Check VFD fault code before turning off power. 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.
F18	Ground Fault to the drive	Check VFD fault 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.
F19	Low Voltage to the drive	Check VFD fault 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.
F20	Internal drive error	Check VFD fault code 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.
F21	Data error on communications between the controller and drive Internal drive error # 32 This error also has CEXX errors associated with it that are presented on the drive display.	The CE errors are communications errors. Data Cable noise can cause the majority of these errors.Check VFD fault code 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)

Note: Whenever power is turned off to the washer, it must remain off for up to three minutes for drive to reset. The washer will not operate properly if this is done improperly.

Soft Reset : of the Main front PCB controller is accomplished by pushing the program button located on the rear of the front controller main PCB, and simultaneously turning power on to machine. This reset will bring Main front controller PCB back to factory default settings.

Please record any modified information that has been inserted in memory before attempting to Soft Reset the PCB.

Fault Warning Codes: F-22 THROUGH F-28

F-22	Future use
F-23	VFD has been replaced, disconnected, or removed.
F-24	Injection relay PCB has been removed or loose connection sensed.
F-25	Optional water valve PCB or water valve change has occurred .
F-26	VFD unit has been added or loose connection.
F-27	Injection relay PCB has been added to machine or loose connection.
F-28	Optional water valve PCB has been added or loose connection

Warning codes: indicate that a component (VFD, relay PCB, injectionrelay PCB, water valve) has been replaced,added,or removed and you will need to soft reset the PCB controller board.

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.

Note: Whenever power is turned off to the washer, it must remain off for up to three minutes.

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.

VARIABLE REQUENCEY DRIVE CONTROL DIGITAL READOUT FAULT CODES

Displayed at VPD Display viewed after removing inspection panel

CE1- Illegal command code, VFD received an illegal command. Possible controller problem
CE2- Illegal data address, VFD received an address not available to the controller.
CE3- Illegal data value received at VFD. Possible controller problem.
CE4- VFD unable to perform the requested action. Possible controller problem.
CE5, CE7 and CE8—Reserved by DELTA
CE6- Time frame between commands is to short. Possible controller problem.
CE9- Internal checksum error. VFD problem.
CE10- Watch dog timer. Command not received from the controller every 6 seconds
CE11- Frame error. Possible Baud rate issues between VFD and controller
CE12- Command message is to short. Possible controller problem
CE13- Command message is to long. Possible controller problem
CE14- Command message includes unused characters. Possible controller problem.

Normal operation of the VFD: VFD display shows operating frequency first very quickly then changes to F0.0 at time power is returned. This will stay displayed until the VFD receives a command from main control PCB. (Pushing start button) A CE-10 fault will display at drive if improper communication between PCB and VFD has occurred.

Note: Resetting a fault code on front of washer: Turn the power off to machine (machine will need to remain off for up to three minutes).

WASHER CONTROLLER FAULT	VARIABLE FREQUENCY DRIVE FAULT	WHAT'S GOING ON?	CORRECTIVE ACTION
F13	CE10	The variable frequency drive (VFD) and the washer computer are not communicating.	Check the white communication cable between the washer computer and the variable frequency drive (VFD). 1) Make sure the cable did not become unplugged during operation. 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.
F14	oc, ocA, ocd, or ocn	The motor is trying to draw too much current. This can happen during normal operation (oc or ocn), during acceleration (ocA), or during deceleration - slow down (ocd).	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. 2) Check the motor wires for a short circuit between the 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. 3) Check braking resistors to see if they measure the correct resistance. If a resistor does not measure the proper value, replace it.
F15	ou	The variable frequency drive (VFD) senses that the internal voltage is too high. The source of the problem can originate from two different areas. 1) The input voltage can be too high, or there may be a high level of electrical noise. 2) The motor can be generating a voltage that is acting like an input to the VFD output motor terminals.	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. 2) Check the braking resistor connections at the VFD. The terminal screws should be tight. One of the braking resistor wires should be connected to terminal B1 and the other to terminal B2. 3) Measure each braking resistor separately to make sure they are the correct resistance (200 Ω for 1 and 2 Hp VFD and 160 Ω for 3 Hp VFD). 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.
F16	oH	The temperature sensor inside of the variable frequency drive detects that the internal temperature is too high.	1) Make sure the cooling fins on the VFD heatsink and the ventilation louvers on the VFD cover are clean. 2) Start a washer cycle and make sure the VFD cooling fan operates after the cylinder starts turning.

Before performing any service work, remove electrical power from the machine.

Always replace panels before putting machine into service.

Top Panel Removal

A. Remove 4 screws that hold detergent dispenser to top panel.
B. Unlock top panel lock.
C. Raise top panel, slide to the rear to release from back clips and lift off.

Detergent Dispenser

Remove top panel to access dispenser. (see Removing Top Panel) on 18lb; 25lb;40lb;55lb.
Detergent is flushed from the front of the compartment and fabric softener is flushed from the back. There will be a small amount of water left in the fabric softener compartment after each use. This is normal.
Note on front mounted dispensers hot water fills thru compartment.

Vacuum Breaker

In the left rear of the cabinet is the vacuum breaker. It guides the water to the tub and dispenser and prevents a back flow of water.

Water Valves

Remove top panel to access water valves. (see Removing Top Panel) The two dual outlet water valves are mounted to the rear channel with two screws each. Always check inlet screens to be sure that they are clean. Disassembly requires the removal of two solenoid screws and three valve body screws. Below the solenoid coil is a solenoid guide, armature, armature spring and diaphragm. All valve parts are available individually

DELTA Variable Ferquency Drive POWER:

Mains power is connected to terminals L1, L2, and L3 on the Delta drive. If the washer is connected to a three phase source, there should be voltage present on all three terminals. If the washer is connected to single phase power, there should be voltage present on terminals L1 and L2.
The voltage should measure 208 Volts to 240 Volts A.C. between phases and connected to if connected between three phase). There is a tolerance of ± 10% on the mains voltage (187 Volts to 264 Volts).

DELTA VFD MOTOR LEADS:

The wires from the motor are connected to terminals T1, T2, and T3.
Since this drive uses pulse width modulation, an accurate current or voltage reading is not possible. Although an accurate current reading is not possible, a balanced current reading should be present while the motor is running.

DELTA VFD DYNAMIC BRAKING RESISTORS:

Two, 160 Ohm or 200 Ohm braking resistors (Please check your washer model parts requirements), are connected in parallel and attached to the drive at terminals B1 and B2. These resistors allow the voltage, which is generated by the motor when decelerating, to be dissipated. They will become hot while the motor is slowing down, so care should be taken so as not to come in contact with them. This will prevent an electrical shock and/or a physical burn.

DELTA VFD COOLING FAN:

There is a cooling fan attached to the bottom of the Delta drive. This fan will operate when the internal temperature of the drive reaches a predetermined level, the same way the radiator fan in a newer car operates. **THE FAN CAN OPERATE ANYTIME POWER IS APPLIED TO THE DRIVE!** Remove power to the drive if work is required around the fan.

Circuit Breaker/Fuse

The fuse (optional circuit breaker) mounts to the rear channel. It carries all of the controls in the machine but does not include the motor. To reset the circuit breaker just push in the button.If you have a fuse then remove fuse holder and fuse and replace with a 11/2 amp fast blow type fuse on most models and 2.5 amp used for 75 lb model.

Control Mounting Trough

Remove top panel to access control trough. (see Removing Top Panel) It sets on the right side of the machine and holds the control PCB's ,transformers,and pressure switch

Micro-controlled Printed Circuit Board

Please be sure to be grounded to machine before removal of this board from machine.PC board mounted vertically behind front control panel. Remove hold down nuts in 4 corners and 1 at bottom center.

Main Relay Printed Circuit Board

Please be sure to be grounded to machine before removal of this board from machine. PCB mounted in control trough towards front of machine. Remove 4 mounting nuts.

PCB Transformer Step-down

Small transformer mounted at front of control trough that is powered with 120 VAC primary and two secondary outputs of 2.3 VAC and 24-27VAC.

Main Data Communication Cable

Goes between front PCB board and Variable Frequency Drive unit mounted center rear of machine.It has telephone type connectors at each end and is inserted at Controller PCB and the Variable Frequency Drive.

Drop Coin Acceptor

The drop style coin acceptor contains a coin switch that is actuated by each good coin that is accepted.

Removal

The coin acceptor is removed by loosening the two Torx T-10 machine screws on the right side and by removing completely the two Torx T-10 machine screws on the left side (#T-10 Torx driver, Dexter Pt. No. 8545-051-003). There are locking nuts on the back side that will have to be held. Needle-nose pliers work well for this. Sliding the acceptor to the left will remove it from the slots in the front panel. This gives access to the coin switch and acceptor for adjustments.

Coin Thickness Adjustment (see diagram)

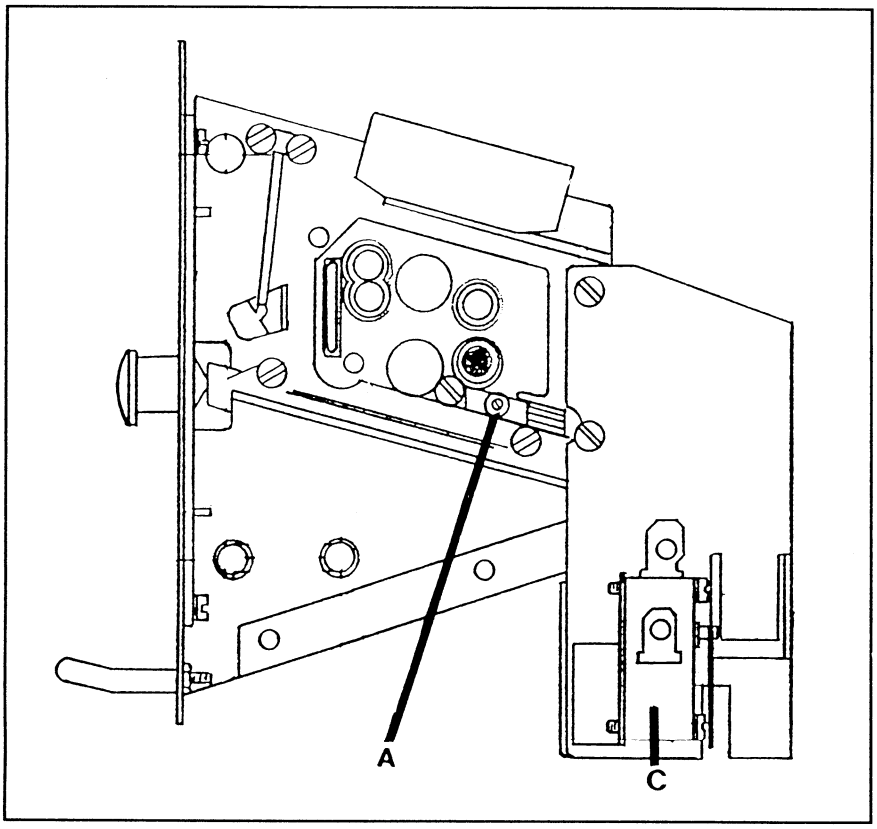
On the right side of the acceptor there is a coin thickness adjusting screw "A" with a locking nut. To allow for different thickness coins the screw can be turned in to accept thicker coins and turned out to reject thicker coins. Start with a quarter of a turn on this screw and be sure to retighten the lock nut after adjustment.

Coin Height Adjustment (see diagram)

On the left side of the acceptor is a coin height adjusting bar "B". This bar is adjusted by loosening the two mounting screws and moving both ends of the bar up or down equal amounts. The bar should be raised as high as possible while still accepting the correct coins. If it is raised up too high, the good coins will be rejected.

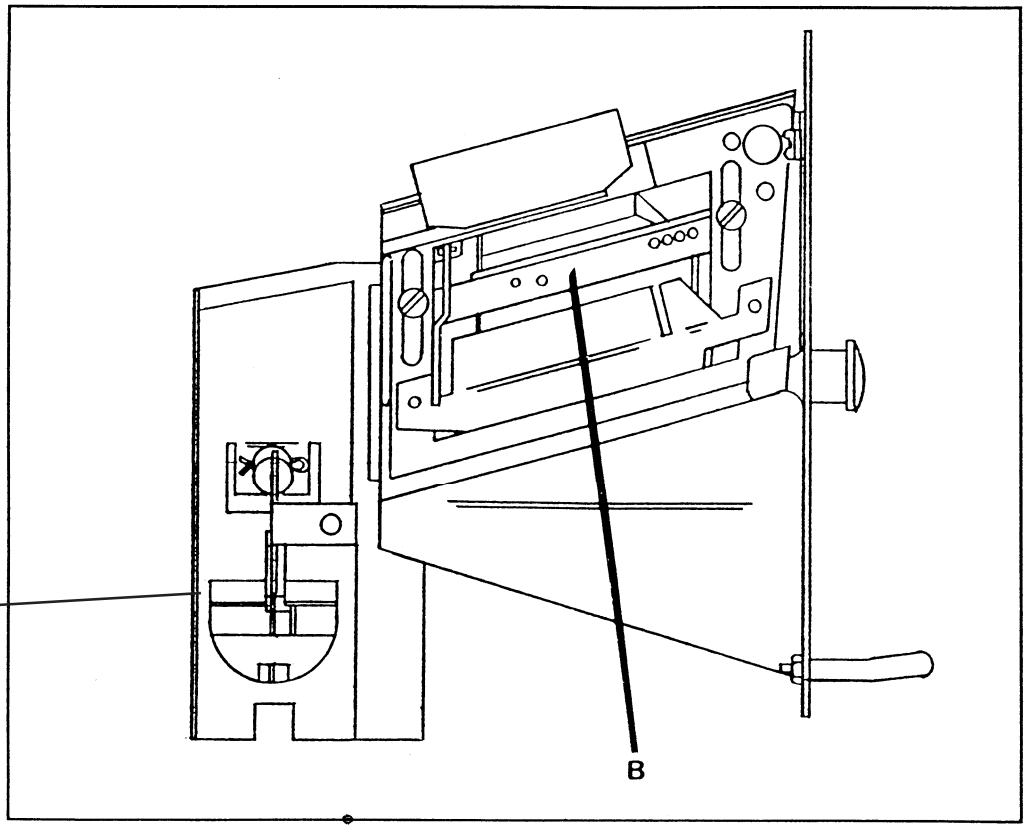
Coin Switch Adjustment (see diagram)

The normally open coin switch "C" should click (close) soon after the coin hits the operator wire. However, there must be enough travel to allow the switch to reset (open) once the coin has passed. Adjustment should be made by bending the wire very close to its attachment point.



COIN ACCEPTOR - right side

drawing of penny rejector chute



COIN ACCEPTOR - left side

Controls Transformer

This transformer is mounted at the back of the control trough and steps a range of 208 to 240 volts down to 115 volts for the controls. There are two terminals on the controls transformer for incoming power. One terminal tap is marked for 208 volts use this tap for measured voltage of 200 volts - 216 volts. and the other tap is marked 230 volts for 217 volts - 240 volts.

Note: All washers have a controls transformer. Always check the incoming voltage and use the appropriate transformer terminal when installing ALL washers.

Pressure Switch

The pressure switch sets the water level in the washer. As the water level rises, it compresses the air in the pressure switch hose. When the washer reaches the desired water level, the compressed air in the pressure switch hose opens the contacts in the switch, shutting off the water. When at the empty level, the pressure switch contacts are closed allowing the machine to either spin or fill with water. The 1/4" screw in the middle of the switch adjusts the water level. Turning it clockwise 1/8 of a turn will raise the water level 1/4 of an inch. Counter clockwise will lower the water level. Before making any adjustments of the pressure switch, drain the tub and blow the hose clear of possible water bubbles which can cause erratic pressure switch operation. With no load, the water level should be approximately at the bottom to 1" up from the bottom of the glass on ALL models.

Power Connection Terminal Block

This terminal block sets at the very back of the control trough. Incoming power to the washer should connect here. (see Electrical under Installation and Operation Section for exact connections)

LED Printed Circuit Board Display/Push-button

The selector switch is mounted in the center of the control panel and is held in place with five nuts. It allows the selection of hot, warm or cold water temperatures.

Note: Do not over tighten on reinstallation as the switch can be damaged.

Add-Bleach LED

This LED light indicates to the user the correct time to add bleach.This LED is polarity sensistive and must be connected correctly.

Lower Service Panel Removal

Remove 2 screws and pull forward to disengage from the locator studs.

Drain Valve

The drain valve is a ball type and is powered closed by the drain valve motor. It is mounted under the washer tub on the left side. It is spring loaded open. If power is interrupted to the washer, the motor releases the sealing ball, allowing the drive spring to open the valve. With the valve open, all water in the washer will drain out.

Service

For access to drain valve, remove lower service panel.

Cleaning

A. Loosen the clamp on the tub hose at the drain valve end and remove the hose from the drain valve.
B. Loosen the drain hose clamp on the back of the drain valve.
C. Remove two drain valve mounting bracket screws from the frame of the washer.
D. Remove the drain valve and bracket assembly.
E. Unplug the wiring after the drain valve is removed from the washer.

Front Panel Removal

A. Remove 2 screws between front panel top and front channel (located behind control panel).
B. Remove the two screws in the middle of the front panel.
C. Pull panel out at the bottom to about a 45 degree angle to detach the top lip and remove.

Masking Ring (door lock cover) Removal

A. Remove front panel.
B. Remove nuts that retain masking ring.
C. Move it to the left and off.

Door Lock Assembly

After removing the front panel and trim ring, the door lock assembly can now be accessed.

Operation

After loading the clothing, the door should be closed and latched. The locking cam on the door contacts the latching switch actuator which closes the latching switch. The specified number of coins should now be added to start the washer. This satisfies the coin accumulator which powers the timer rapid advance motor. A timer contact provides power to the latching switch and with the door latched, the power travels through the latching switch to the door lock solenoid. This solenoid pulls up on the locking pawl by use of a linkage rod. The locking pawl has two jobs. The first is to lock the door. This is accomplished by blocking the locking cam on the door so that it can't rotate to unlock. The second job is to close the two piggyback lock sensing switches. These switches control power to all of the controls. If the door unlocks for any reason, these two switches will stop the machine. When the door handle is 1/4 to 1/2 of an inch from its fully closed position, the latching switch should close. The two piggyback lock sensing switches should be open when the door is unlocked and should be closed when the door is locked.

Adjustment

The latching switch and the piggyback lock sensing switches all have slotted mounting for easy adjustment.

1. Set door cam over pin.
2. Tighten spring screw on switch actuator arm until it just clears cam OD. (Note : Spring screw will have approx. 1/8" thread exposed at end beyond nut.)
3. Set .040 thickness gage between arm and latch switch operator.
4. Swivel switch until it clicks closed. Back it up just until it clicks for a reset. Tighten in that position. Check again for close and rest with gage in place. Remove gage.
5. Check for switch actuation at partial turn of cam as in operation above.
6. Check that lock arm swings by cam lobe to lock position when switch just clicks.

The next two pages have photos and text to aid in adjustment procedures.

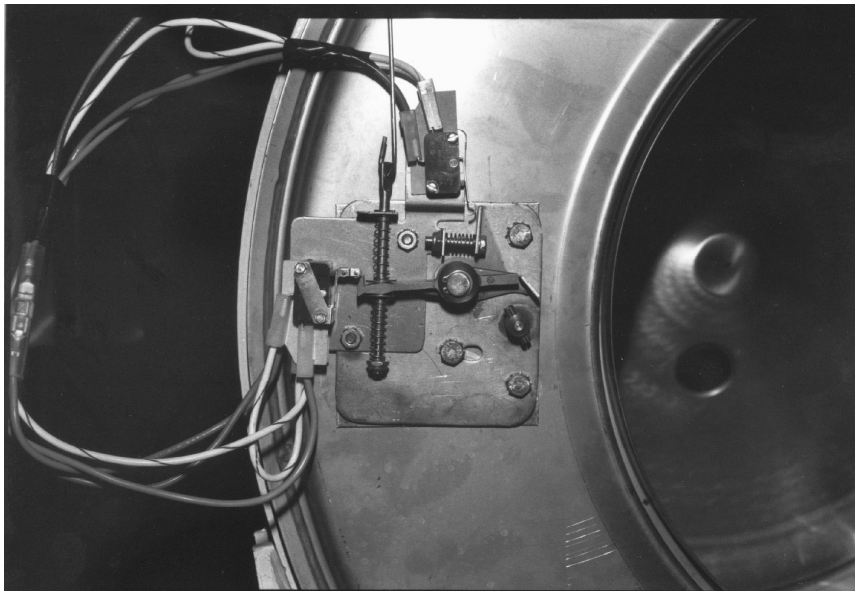


PHOTO # 1 SHOWS THE DOOR CAM AWAY FROM DOOR LOCK ASSEMBLY

PHOTO # 2

SHOWS WHERE YOU WANT CLEARANCE

PHOTO # 3 SHOWS GUAGE IN PLACE FOR ADJUSTMENT

PHOTO #4

SHOWS SWITCH SWIVELLING FOR ADJUSTMENT WITH GUAGE IN.

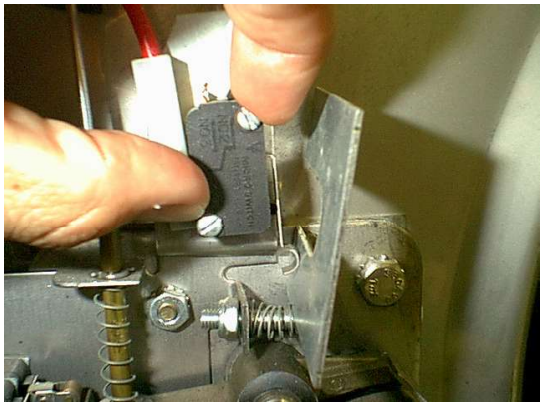


PHOTO # 5

SHOWS AREA WHERE CONTACT SHOULD BE MADE.

PHOTO # 6

SHOWS LOCK ARM ENGAGED

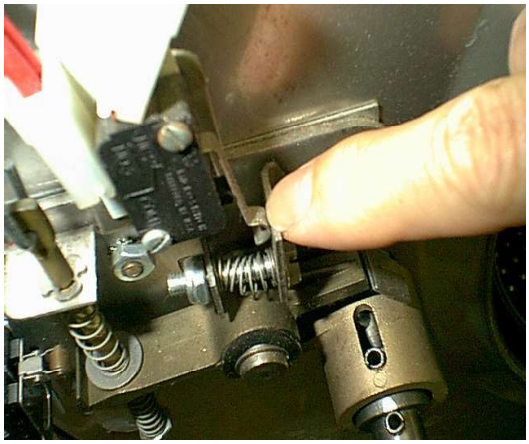
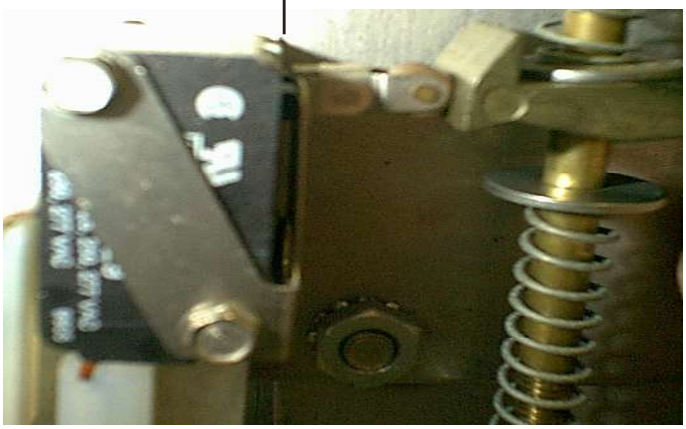


PHOTO #7

JUST TO SHOW WITHOUT GUAGE IN PLACE.

Photo #8

GAP REQUIRED AT PIGGY-BACK SWITCH ACTUATOR (NOT TOUCHING SWITCH BUT NO MORE THAN .035 MAX.



Door Locking Solenoid

The door locking solenoid is powered shut with control voltage to lock the door and releases when voltage is removed. It is located in the left front corner of the washer.

Thermoactuators

The thermoactuators are a safety device that keeps the door from immediately unlocking if power is lost while the machine is operating. They are mounted under the door locking solenoid.

Lock Thermoactuator

Control voltage is applied to the lock thermoactuator at the beginning of the cycle making it extend and block the door locking solenoid. This keeps the door locked for approximately two minutes after a power failure occurs. The lock thermoactuator does not delay the door opening at the end of a normal cycle.

Unlock Thermoactuator

To insure that the lock thermoactuator has retracted by the end of the cycle, one minute prior to the end of the cycle, the unlock thermoactuator is powered with control voltage making it extend and unblock the door locking solenoid.

Loading Door Removal

A. Support door to prevent dropping.
B. Remove 3 bolts holding hinge retainer and set door off.

Loading Door Disassembly

A. Remove the loading door as outlined above.
B. Lay the door on a flat surface with the glass down.
C. While holding down on the door glass, lift up on the door ring and roll back the lip of the gasket with your fingers.
D. Work all the way around the gasket and the glass is out.

Loading Door Reassembly

A. Lay the door ring face down on a flat surface.
B. Start the glass into one side of the door gasket.
C. Use one hand underneath to push the gasket out and the other hand on the top pulling the gasket in place.
D. The front lip of the door gasket should be checked for proper seating.

Loading Door Adjustment

The door can be adjusted by changing the number of shims behind the door hinge and the door lock assembly. The vertical fit of the door to the tub can be altered by loosening the door hinge bolts and raising or lowering the door before retightening. It is important for the door to be centered on the tub front. By chalking the nose of the tub and closing the door to transfer that line to the gasket, the centering can be evaluated. It is also important for door pressure to be similar around the door perimeter. Door pressure can be evaluated by inserting a dollar bill in several positions and tugging on it. See Parts Section for kit to increase door sealing pressure.

Loading Door Hinge Removal

A. First remove loading door, front panel, and trim ring.
B. Remove 3 screws holding door hinge. Shims may be present between hinge and tub front. The number may be increased or decreased to adjust right side door pressure.

NOTE: Door hinge mounting bolts penetrate tub front and require silicone sealer applied to holes when reinstalling.

Back Panel Removal

A. Remove all screws holding back panel in position except the bottom row.
B. The bottom row of screws are slotted and only need to be loosened and the panel will lift off.

Note: The back panel is not only a safety requirement but also contributes to the rigidity of the cabinet.

Drive Belt Removal

Turn the drive belt(s) off the basket pulley first and then remove from the motor pulley.
Reverse this procedure for installation.

Note: Drive belts that should be replaced in pairs on models that require two belts.

Drive Motor

Refer to Specifications Chart for horse power and amperage draw on motors.

Removal

A. Remove the drive belt as explained above.
B. Remove the tension spring and bracket.
C. Disconnect the motor wires in the control area at the top of the machine. The motor wire retaining clamp should be removed and reused. There is a diagram showing where each motor wire plugs in so there is no need to mark them.
D. Loosen the set screws on the motor support shaft.
E. Remove the retaining bolt from the front of the support shaft.
F. Remove the motor support shaft.
G. Lift motor out of machine.

Note: On larger washers it is advisable to put a board under the motor and slide it out rather than lifting it.

Control Panel Name Plate

The name plate on washer front is adhesive backed.

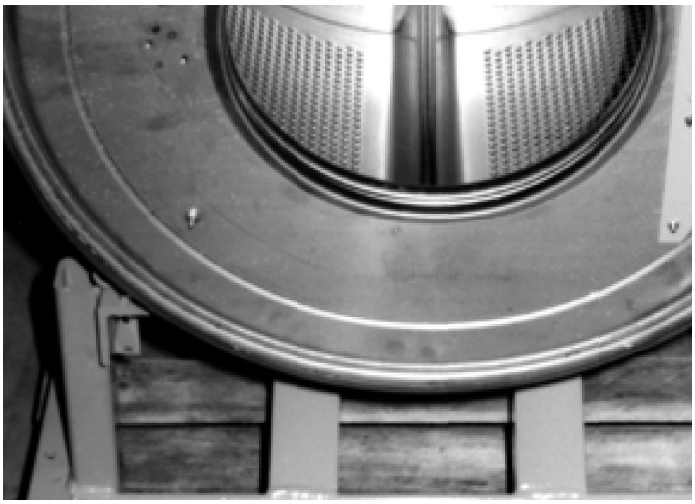
Removal

A. The name plate may be removed by simply peeling it off.

Installation

A. First remove the coin acceptor.
B. Remove any remaining glue from the control panel.
C. Before removing the paper backing from the name plate, check fit to the control panel. The program push buttons and the coin acceptor opening are the locating guides.
D. Remove the paper backing from the right side of the name plate, position it on the panel and press right end into place, then peel the backing from the left end and press into place.

55 LB.& 75 LB Cylinder (basket)

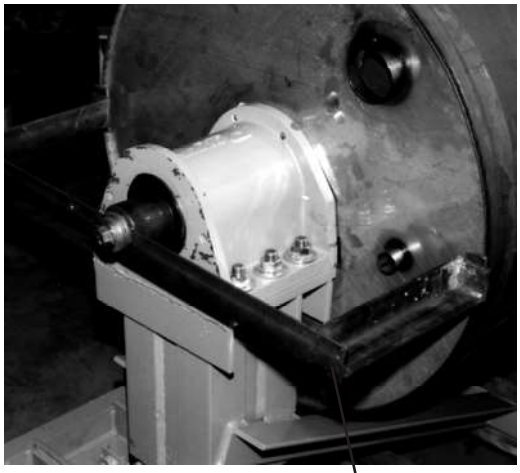


Removal

A. Remove the top panel as described previously.
B. Remove lower service panel as described previously.
C. Remove front panel as described previously.
D. Remove masking ring as described previously.
E. Remove door lock assembly.
(Leave wires & pull rod in place)
F. Remove clothes door.
G. Remove tub front clamp ring.
H. Remove tub front. Use a flat screw driver to pry the tub front loose.
I. Remove the rear access panel.
J. Remove the drive belts.
K. Remove drive pulley.
1. Remove 3 retaining screws.
2. Insert 3 2" screws into the threaded removal holes.
3. Alternately tighten these screws evenly to pull the pulley off.
L. Remove pulley hub. Drive a flat screw driver into the slot in the hub and pull it from the shaft.
M. Install cylinder puller. (Snap On part #CJ-84-C) Be sure to thread a bolt into the end of the cylinder shaft to protect the threads.
N. Push the basket out.

Reassembly

A. Use the hub of the drive pulley, a stack of 5/8" flat washers and a 3" long 5/8" bolt to pull the cylinder shaft through the bearings. After the 3" bolt a 2" long bolt will be required to finish pulling the cylinder shaft through.
B. Remove the 1/2" bolt and nut from the top of the outer tub clamping band.
C. Install Dexter Tool part # 8545-056-001 on the back of the outer tub to adjust tub front to cylinder clearance.Thread 5/8" bolt through tool and into cylinder shaft. Push the outer tub forward 1/4" to 1/2" with tool 8545-056-001by tightening the 5/8" bolt. This will ease the installation of the outer tub front.
D. Clean the silicone rubber off the tub front and the outer tub.
E. Install new bead of silicone rubber on tub front.
F. Install tub front.
1. Align hole in top of tub front with notch in top of outer tub.
2. Use 4-6 #11R vise grip clamps to hold tub front to outer tub. A rubber mallet may be needed to properly seat the tub front into the outer tub.
3. Install tub front gasket around outer edge of tub front and outer tub flange. The opening should be centered at the top.
4. Remove vise grips. The tub front gasket will hold the tub front in place.
G. Install tub front clamp ring and tighten. Tap around the clamp ring with a rubber mallet to seat the ring and gasket while tightening the clamp ring bolt.
H. Adjust clearance between the outer tub front and the front lip of the cylinder to 5/16".
I. Tighten the outer tub clamping band.
J. If necessary, the outer tub may be adjusted up or down and side to side with the 2 bolts that fasten the bottom of the outer tub clamping band to the frame.
K. Remove Dexter Tool part 8545-056-001 from the back of the outer tub.
L. Install drive pulley.
1. Install hub on cylinder shaft.
2. Hold hub against rear bearing with 5/8" bolt and flat washer in end of cylinder shaft.
3. Line up 3 unthreaded holes in pulley with the 3 threaded holes in hub.
4. Insert 3 pulley bolts and tighten evenly alternating bolts to 30ft/lbs.



dexter tool

Note: Overtightening or uneven tightening can break drive pulley.

M. Install drive belts.
N. Install back panel.
O. Install door lock. All mounting holes should be sealed with silicone rubber.

55 & 75 LB. Water Seals

Replacement

A. Remove cylinder from washer (see Cylinder (basket) removal).
B. Remove water seals from the seal mounting plate on the cylinder shaft. These are removed with your fingers.
C. The primary and secondary seals that mount on the sealing ring may be slid over the shaft and seated on the metal sealing ring with your fingers. In the unlikely event that the metal ring that mounts these sealing rings were to be damaged or moved, a new one would need to be pressed on. The T-900 ring must be pushed against the stop on the shaft.
After installing the seals, lubricate the faces of the seals with silicone grease.
D. Install cylinder (see Cylinder (basket) reassembly).

Bearing Housing Assembly 55 & 75 LB.

Removal

A. Remove cylinder from washer (see Cylinder (basket) removal).
B. Remove 6 7/16" tub back to bearing housing cap screws.
C. Remove 6 3/4" bearing housing to frame bolts.
D. Remove bearing housing from frame.
E. Remove the retaining ring next to the front bearing.
F. The bearings are pressed into the housing and must be pressed back out.

Reassembly

A. When installing new bearings into a bearing housing, first press the front (large) bearing into the housing until it bottoms and install the snap ring. With the bearing spacer in place, press the rear bearing in until the spacer is snug between the two bearings.

Note: If the tub-back water-seal mating ring has been moved it must be cleaned and resealed with silicone rubber around all 6 bolt holes and around the outer edge.

B. Set bearing housing on frame.
C. Install and torque 6 tub back to bearing housing cap screws according to the previous chart.
D. Install and torque 6 bearing housing to frame bolts according to the previous chart.
E. Install cylinder (see Cylinder (basket) reassembly).

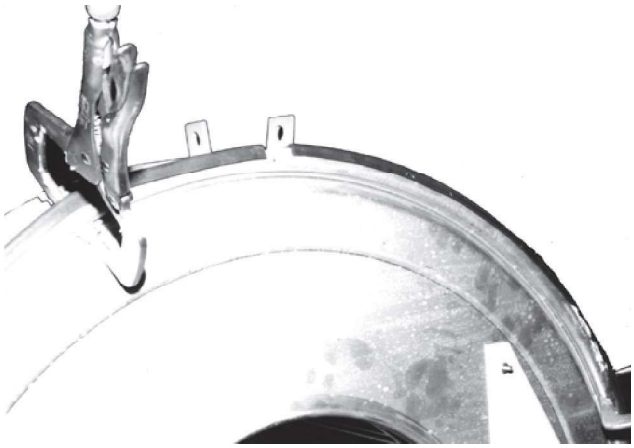
Outer Tub 55 & 75 LB.

Removal

A. The outer tub can easily be removed when the tub front, cylinder and bearing housing has been removed as outlined previously.
B. At that point the only attachments to the chassis are the two front strap mounting bolts.

Reassembly

A. See Cylinder (basket) reassembly.



WCVD-18				
				Torque
Qty.	Bolt Size	Socket	Location	(Ft Lbs)
1	1/2-13 x 2 1/2"	3/4" Hex	Front Mtg. Clamp Ring Ends	20-30
4	1/2-13 x 1 1/4"	3/4" Hex	Front and Rear Mtg. Rings to Base	70-110
12	3/8-16 x 2"	9/16" Hex	Tub Back Ring to Tub Back	45-80
6	1/2-13 x 1 1/2"	15/16" Hex	Brg Hsg to Tub Back	70-110
6	3/8-16 x 1 3/4"	9/16" Hex	Brg Hsg, Pulley End	45-80
1	1/2-13 x 1 1/4"	3/4" Hex	Hub of Driven Pulley	70-110
2	5/16-18 x 7/8"	5/16" Square	Drive Pulley Set Screws	190-200 In/Lb

WCVD-25				Torque
Qty.	Bolt Size	Socket	Location	(Ft Lbs)
1	1/2-13 x 2 1/2"	3/4 Hex	Front Mtg. Clamp Ring Ends	30-40
4	1/2-13 x 1 1/4"	3/4 Hex	Front and Rear Mtg. Rings to Base Assy.	70-110
12	3/8-16 x 2"	9/16 Hex	Tub Back Ring to Tub Back	45-80
6	1/2-13 x 1 1/2"	15/16 Hex	Brg Hsg to Tub Back	70-110
6	3/8-16 x 1 3/4"	9/16 Hex	Brg Hsg, Pulley End	45-80
1	1/2-13 x 1 1/4"	3/4" Hex	Hub of Driven Pulley	70-110
2	5/16-18 x 7/8"	5/16" Square	Drive Pulley Set Screws	190-200 In/Lb

WCVD-40				Torque
Qty.	Bolt Size	Socket	Location	(Ft Lbs)
1	5/8-11 x 3"	15/16" Hex	Front Mtg. Clamp Ring Ends	60-80
4	5/8-11 x 1 1/2"	15/16" Hex	Front and Rear Mtg. Rings to Base Assy	120-150
12	7/16-14 x 1 1/2"	11/16" Hex	Tub Back Ring to Tub Back	100-125
6	5/8-11 x 1 1/2"	15/16" Hex	Brg Hsg to Tub Back	120-150
6	7/16-14 x 2"	11/16" Hex	Brg Hsg, Pulley End	100-125
1	5/8-11 x 1 1/2"	15/16" Hex	Hub of Driven Pulley	120-150 In/Lb
2	5/16-18 x 7/8"	5/16" Square	Drive Pulley Set Screws	190-200 In/Lb

WCVD-55				Torque
Qty.	Bolt Size	Socket	Location	(Ft Lbs)
1	1/2-13 x 2"	3/4" Hex	Front Mtg. Clamp Ring Ends	30-40
1	3/8-16 x 3"	5/16" Allen	Front Clamp Ring	100 In/Lb
2	1/2-13 x 2"	3/4" Hex	Tub to Base Assy	70-110
6	7/16-14 x 1"	9/16" Hex	Brg Hsg to Tub Back	60-80
6	3/4-10 x 3"	1 1/8" Hex	Brg Hsg to Base Assy	200-300
3	7/16-14 x 1"	9/16" Hex	Hub of Driven Pulley	28-32
3	1/4-20 x 1"	3/16" Allen	Drive Pulley Set Screws	80 In/Lb

WCVD-75				Torque
Qty.	Bolt Size	Socket	Location	(Ft Lbs)
1	1/2-13 x 2"	3/4" Hex	Front Mtg. Clamp Ring Ends	30-40
1	3/8-16 x 3"	5/16" Allen	Front Clamp Ring	100 In/Lb
2	1/2-13 x 2"	3/4" Hex	Tub to Base Assy	70-110
6	7/16-14 x 1"	9/16" Hex	Brg Hsg to Tub Back	60-80
6	3/4-10 x 3"	1 1/8" Hex	Brg Hsg to Base Assy	200-300
3	7/16-14 x 1"	9/16" Hex	Hub of Driven Pulley	28-32
3	1/4-20 x 1"	3/16" Allen	Drive Pulley Set Screws	80 In/Lb

Tub Back, Bearing and Cylinder (basket) Assembly 18lb.,25lb.,40lb.

Removal

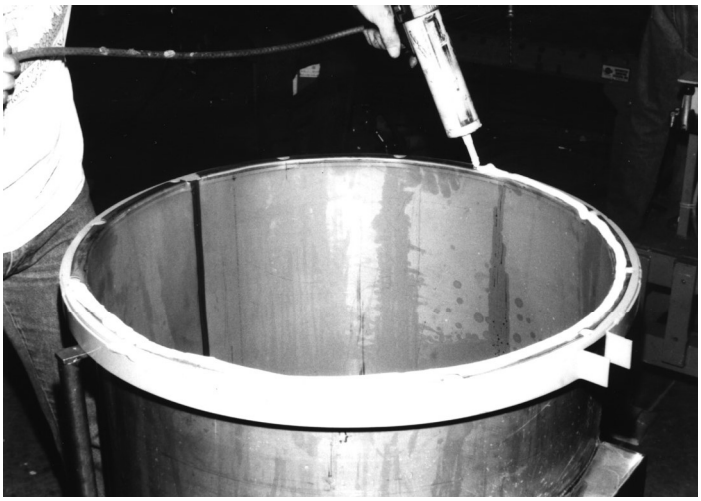
A. Remove the top and back panel as described previously.
B. Move the rear channel, that the water valves mount to, forward by removing the five mounting screws.
C. Remove the drive belt.
D. Remove the overflow hose, tub fill hose and pressure switch hose from the back of the tub.
E.. Mark the tub back and bearing assembly for ease in assembly later. (see picture)
F. Remove the 12 bolts and nuts from the perimeter of the tub back clamp ring. Two of the twelve bolts are longer and go through the thicker part of the brace where it connects to the frame.
G. Remove the 2 bolts that fasten the clamp ring to the frame.
H. The entire tub back and cylinder assembly may be lifted out of the tub (it may be necessary to break the adhesion of the silicone that seals the tub back to the tub). Blocks should be placed under the edges of the cylinder before setting it down to prevent damage to the cylinder flange.

Reassembly

Reverse the procedures above paying attention to the following areas

A. Lay the washer on its front.

Note: Put a thick pad across the front of the washer, above the door, to protect the door handle and coin acceptor.



B. Make sure the bearing housing weep holes are located at 12 o'clock and 6 o'clock.
C. Clean the silicone rubber from the back of the outer tub and the perimeter of the tub back where the two meet. There is no gasket in this area.
D. Apply a new bead of silicone rubber around the back of the outer tub. (see picture)
E. Lower the tub back, bearing and cylinder assembly into the washer outer tub. (see picture top of next page)
F. Torque all bolts according to the following chart.

Reassembly

A. Make sure that the tolerance ring is in place inside the pulley.
B. The shoulder inside the pulley that holds the tolerance ring should face the back of the washer when installed correctly.
C. Use a stack of flat washers and a longer bolt to press the pulley onto the basket shaft.
D. Reinstall the retaining bolt, lock washer and flat washer. The shaft end bolt with washer should be installed with a torque of 45 ft/lbs.

Bearing Housing, Water Seals and Tub Back 18lb., 25lb.,40lb.

Removal From Basket Shaft

A. Remove assembly from washer (see Tub Back, Bearing and Cylinder (basket) Assembly removal).
B. Remove basket pulley (see Basket Pulley removal above).
C. It is necessary to use a puller (Grip-O-Matic #1038 for 25lb., #1045 for 40lb. to remove the bearing housing assembly from the cylinder shaft. There is a flange on the bearing housing that should be used with this three armed puller.

Disassembly

A. To remove the tub back assembly, the 6 bolts attaching it to the bearing housing must be removed.

B. Remove water seals from the seal mounting plate on the cylinder shaft. These are removed with your fingers.

IMPORTANT- Be careful not to move the flat metal plate that mounts the two rubber sealing rings on the cylinder shaft. The location of this seal mounting plate is critical and it must not be moved. The two sealing rings can be replaced without disturbing it. The included illustration shows the proper location of this plate for washer.

C. The retaining ring next to the front bearing must also be removed.

D. The bearings are pressed into the housing and must be pressed back out.

Reassembly

A. When installing new bearings into a bearing housing, first press the front (large) bearing into the housing until it bottoms. With the bearing spacer in place, press the rear bearing in until the spacer is snug between the two bearings. Be sure and reinstall the retaining ring in front of the front bearing (see picture).

B. The tub back assembly should be reattached to the bearing housing with the 6 mounting bolts and torqued according to the torque chart.

Note: The bead of silicone that seals each bolt to the tub back. This must be cleaned and replaced upon reassembly (see picture).
If the 6 support assemblies have been removed from the bearing housing, the 6 rear bearing housing bolts should be torqued according to the chart also.

C. The primary and secondary seals that mount on the sealing ring may be slid over the shaft and seated on the metal sealing ring. In the unlikely event that the metal ring that mounts these sealing rings were to be damaged or moved, a new one would need to be pressed on. The T-400 ring would need to be pressed on to the dimension shown on the following page.The T-600 ring must be pushed against the stop on the shaft. Before installing the new sealing ring, a bead of silicone should be put on the basket shaft
(see picture). After installing the seals, lubricate the faces of the seals with silicone grease (see picture).

Reinstallation onto Basket Shaft

A. Carefully set the assembly over the shaft engaging the bearings and bearing spacer.
B. The tolerance ring that fits inside the pulley should be placed in position (see Basket Pulley Reassembly for correct positioning).
C. The pulley should then be started onto the shaft. A stack of flat washers and a longer pulley bolt will be required to pull the basket shaft through the bearings and pulley.
D. Install the shaft end bolt with washers and torque to specifications in Bolt Torque Chart.
E. See Tub Back, Bearing and Cylinder Assembly for installation of complete assembly back into washer.

Outer Tub 18lb.,25lb.,40lb.

Removal

A. The outer tub can easily be removed when the tub back, bearing and cylinder assembly have been removed as outlined above.
B. At that point the only attachments to the chassis are the two front strap mounting bolts.

Reassembly

A. Install outer tub in front strap leaving bolts loose.

B. Install tub back assembly in washer (see reassembly of Tub Back, Bearing and Cylinder (basket)

Assembly).

` C. With tub back assembly bolted to washer frame and to the back of the outer tub, tighten front strap bolts.

Removal of Cabinet 18lb,25lb.,40lb.

A. The power supply, water hoses, and drain connection must all be disconnected before proceeding with the disassembly.
B. Now remove the lower service panel and the top panel assembly.
C. Remove the left and right lower front panel screws that retain the panel to the chassis.
D. Remove the bottom row of back panel screws.
E. Remove the loading door.
F. Remove the screws along the bottom of each side panel. When reinstalling these screws do not overtighten.
G. Remove clamp and soap dispenser hose where it attaches to the tub inlet.
H. Disconnect the door lock wires from all switches and the door lock solenoid. The following illustration of their locations should be consulted.
I. Disconnect pull rod between solenoid and door lock assembly.
J. Disconnect the wires to the dump valve at the bottom of the machine.
K. Disconnect the wires to the drive motor. There is a motor harness connector in the left rear corner of the control trough. The connector may be removed from the side of the trough by releasing the retainer ears. The wires from the trough components to the motor harness may be removed from the top side of the connector. There is a label on the trough floor to aid in reconnection of the wires to the connector.
L. Remove the clamp and the hose from the vacuum breaker where it connects to the inlet on the back of the tub.
M. Remove the pressure switch hose from the bottom of the switch.
N. It should now be possible for two people to lift the cabinet up and off of the front of the machine and set it aside.

Section 5

Trouble Shooting

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(75 lb. uses 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 switch to make sure coins trip switch and give continuity across switch when closed. If no continuity, adjust or replace switch.
	Check PCB board	Check all wire connections for sure contacts.
	Check wiring between PCB and VFD	Check data cable phone type connectors unplug and replug with power removed.
	Check Relay PCB	Check all wire connections for sure contact.
Machine will not accept and count coins	Coin Acceptor	Check coin acceptor switch for any type of blockage or damage. Check that coin blocking solenoid operates with 120 volts and door closed 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.

Symptom	Probable Cause	Suggested Remedy
Machine will not accept count coins (continued)	Control Breaker or fuse	Check 1.5 amp(75lb uses 2.5 amp) breaker orand fuse for continuity. If no continuity, replace breaker.
Door does not lock	Check Display for fault code	Does F1 show on the front of display.If yes follow tests described in fault code section.
	Door locking solenoid	Check to insure that solenoid is receiving 120VAC from S1 door switch. 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.
	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.
	Door Lock Solenoid	Check that door lock solenoid is not stuck closed. If stuck, replace solenoid.

Symptom	Probable Cause	Suggested Remedy
Hot water does not enter 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 Wht wire at 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 Wht wire at 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 #1 & #2. If no continuity, check pressure switch hose for obstruction. If hose okay, change pressure switch.
No hot water in detergent dispenser	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.

Symptom	Probable Cause	Suggested Remedy
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.
	Pressure Switch	Check pressure switch continuity between terminals. 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.
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 if necessary. Check building drains for blockage or inadequate size.
Machine does not turn	VFD	Check VFD by removing inspection panel and record any numbers or letters displayed. If no display turn power off to machine at breaker for 2 minutes and turn poiwer back on to reset. If still no display replace VFD.

Symptom	Probable Cause	Suggested Remedy
Machine tumbles in only one direction	VFD	Remove inspection cover at rear and record numbers or letters displayed.See fault code section for more info.
Machine does not spin	Spin Relay	Check spin relay coil for continuity, replace if no coil continuity. Check relay contacts, replace if no continuity.
	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 motor does not operate	VFD	Check yellow enable wires from relay PCB P13 & P14to VFD advances through cycle are conected. Check fault code on VFD before removing power from the drive.
Machine does not stop at end of cycle	Main PCB	Main PCB controls time cycle
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.

Symptom	Probable Cause	Suggested Remedy
Excessive vibration	Mounting System	Check these areas: - 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.