

Poor make-up air. ————— Incorrect drum speed. ————— Blower impeller bound. ————— Be sure element or gas valve cycles on and off.
 Adjust motor pulley or wrong motor pulley.

Shorted heating element — electric dryers only. ————— Customer overloading dryer. ————— Check clothing labels for fabric content.

WILL NOT SHUT OFF

Time Dry Models

Timer motor — Timer

Auto Dry Models

Set timer for time dry. Check voltage across timer motor. If timer will not advance, replace timer. ————— When valve or element cycles off, should have power to timer motor. If not, proceed with next check. ————— Dryer cycling on hi limit thermostat. Check following.

Lint filter clean. — Restriction in exhaust. — Exhaust hood door stuck. — Exhaust too long.

Regulating thermostat. — Customer is overloading dryer.

WON'T SHUT OFF ON AIR FLUFF. — D510

Dryer will shut off on air fluff only when the timer is set to Time Dry.

ELECTRONIC CONTROL MODELS D608, D710, D712, D808, D810

DRYER WON'T SHUT OFF. "SOLENOID NEVER ENERGIZES."

D608, D808

Be sure dryer heats, dries clothes and condition relates to malfunction of control. ————— Check for loose wires and be sure that all wires are connected to correct terminals. ————— Sensor circuit. Disconnect WH/Blue at sensor coupler. Set dial to damp dry. If dryer shuts off within 60 seconds, difficulty is caused from leakage in sensor circuit.

Shut-off solenoid. Unplug dryer and check for continuity between the two solenoid terminals.

Cycle selector switch. See Electrical Section for switch tests.

Edgeboard connector with capacitor. Set dryer to regular cycle and start unit. While dryer is operating observe neon bulb. If neon bulb flickers, replace edgeboard connector with capacitor.

Electronic control board.

D710, D712, and D810 Dryers, Permanent Press and Regular.

Be sure dryer heats, dries clothes and condition relates to malfunction of control.

Electronic control board. Insert 38204 electronic control test board. Start dryer. If dryer shuts off in approximately 10 seconds, replace electronic control board.

Edgeboard connector with capacitor. Start dryer. While dryer is operating observe neon lamp. If neon bulb flickers, replace edgeboard connector with capacitor.

Sensor Circuit. Disconnect White/Blue wire at coupler and start dryer on regular setting. If dryer shuts off in 12 to 15 minutes on dry or 18 to 22 minutes on 'more dry', difficulty is caused from leakage to ground in sensor circuit.

Shut-off solenoid. Unplug dryer and check for continuity between the two solenoid terminals.

Start control switch. With dryer unplugged and dial set on regular, depress push-to-start button. Check for continuity on the start control switch between terminals White/Red to Orange on D710 dryers. On D810 dryers, check for continuity between terminals White/Red to Orange/Black on start control switch and on D712, between White/Red 31 and Yellow 35. No continuity, replace start control switch.

Dryness control switch. Check for continuity between dryness control switch terminals. With normal dry button depressed, you should have continuity.

DRYER WON'T SHUT OFF "SOLENOID ENERGIZES". — D608, D710, D712, D808, D810.

(Except when permanent press with adjustable press care is selected on models D712-D810)

D608, D808

Check to be sure selector switch tab is not broken off. If tab is broken, replace selector switch. After replacing selector switch, check for bent solenoid bracket. If bracket is bent, bend bracket slightly upward.

D710, D712, D810

Check to be sure start control switch tab is not broken. If start control switch tab is broken, replace start control switch. After replacing start control switch, check for bent solenoid bracket. Bend bracket up if bent.

Shut-off linkage. Check for off or broken shut-off solenoid linkage.

Bent solenoid bracket. If heat stays on, check for bent solenoid bracket.

Cool-down thermostat.

Selector or start control switch. Check switch per schematic of dryer being serviced.

Buzzer will not periodically buzz during permanent press cool down (D512) _____ Timer

MISCELLANEOUS Pertaining to Electronic Control Dryers

Dryer shuts off before clothes are dry.

Dryer should be externally grounded. _____ Sensor circuit open. _____ Broken ground strap.
Loose wire connections or incorrect wiring. _____ Capacitor & edgeboard connector assembly. _____ Electronic control board.

Timer will not advance during permanent press with Adjustable Press Care (D712 and D810).

Shut off solenoid must energize before timer will advance. _____ Check for incorrect wiring or wire off. _____ Timer motor.

Timer. Check for continuity between timer terminals black and pink/black on D810 and on D712 between black and yellow. _____ Start control switch. Check for continuity between start control switch terminals pink/black and red/black on D810 and D712.

Time will not advance during Time Dry (D712)

Timer-check for continuity between black and pink. _____ Timer motor.

Repeating chime does not ring — Permanent Press Cycle.

Dryer must proceed to "cool-down" before repeating chime will ring. Repeat chime switch must be "on". _____ Cycle selector switch with dial set on Permanent Press. Check for continuity between pink to red/black on D710 dryers cycle selector switch. On D608 and D808 check for continuity on switch between gray and blue. When making this check on D608 and D808 dryers, the selector switch should be in the off position. _____ Start control switch. Check for continuity between terminals pink/black and red/black on D710 dryers. On D712 and D810 dryers, check between blue and white/brown on the start control switch with the switch in the off position.

Timer D810. Check for continuity between orange and brown timer terminals. On D712 check for continuity between brown and white/brown. _____ If problem is not found in above checks, replace electronic control board.

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will enable the operator to pick a point, either more or less dry, which is most pleasing. Once this point is determined, it can be used for most loads as the automatic control, based upon time and temperature, will automatically adjust itself to the size of load.

If the operator is drying a poorly mixed load; bulky items such as cotton socks along with lightweight flat items it would be desirable to move the dial to the "more dry" so that more time is available to condition the load or to allow the moisture to surface on the bulky items. This is not necessary on a more uniform load of either bulky or lightweight items.

ELECTRONIC CONTROL MODELS (D608, D808, D710, D810, D712)

As in the other control systems, the sole purpose of the electronic control is to shut the dryer off at the end of the drying cycle. The electronic control system reacts to moisture in the clothes to keep the dryer running until the clothes are dry.

START SWITCH AND SHUT-OFF SOLENOID

The shut-off solenoid is linked to the start control switch ("10" or "12") or selector switch ("08") package. It ends the drying cycle by pulling a slide tab on the back of the start control switch ("10" and "12") or selector switch ("08"). The user sets this switch by pushing the start button ("10" and "12") or dial ("08"). The solenoid resets the switch to the off position by pulling the tab.

SILICON CONTROLLED RECTIFIER

A solid state switching device called a Silicon Controlled Rectifier, or SCR, completes the electrical circuit to the solenoid to end the cycle. It is the triggering of this SCR that is the main function of the electronic control.

CHARGING CAPACITOR

The basic concept involves building an electrical charge in a capacitor. Depending on the resistance in the charging circuit, a certain amount of time is needed to build the charge. The greater the resistance in the circuit, the longer it takes to build the charge.

SENSOR CIRCUIT

A sensor circuit is connected across the capacitor and will, as damp clothes fall against the contact bars, provide a discharge path for the accumulating charge. As long as the clothes are not dry, the charge in the capacitor cannot build to any significant level.

TRIGGER CIRCUIT

Also connected across the capacitor is a neon lamp with two limiting resistors. It is a characteristic of this lamp to be an open circuit when it is not lighted (off) and a fair conductor when on. This switch-over from "off" to "on" occurs when a threshold voltage is reached somewhere between 68 and 82 volts. When the neon lamp conducts (lights), capacitor discharge current flows and creates a voltage drop across the two limiter resistors. The voltage drop across one of these is used to trigger the SCR.

PUTTING IT ALL TOGETHER

The customer starts the cycle by pushing the button on the start control switch on "10 or 12's" or dial on selector switch for "08's". This provides circuit paths to the drive motor, the heat source (electric element, gas valve assembly), and to the electronic control assembly.

As the clothes tumble and dry, contacts are made with the sensor located in the front bulkhead. As long as the clothes still contain moisture, these contacts provide discharge paths for, and prevent the buildup of, a charge in the capacitor.

When the clothes have dried to the point that the discharge path across the sensor is no longer a factor, the charge in the capacitor builds to the threshold level of the neon lamp. The lamp flashes, triggering the SCR into conduction, the shut-off solenoid is energized, and the tab on the start control switching on ("10" and "12") or selector switch ("08") is pulled (the bell rings), andthe drying cycle is ended.

If the exhaust temperature is above 120 °F., a cool-down thermostat will continue to provide power to the drive motor, and in the case of Permanent Press and Wrinkle Release cycles, also to the electronic control for a repeat chime function.

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TROUBLESHOOTING

Troubleshooting the electronic control is made easier if we break the circuit down into blocks.

We have the shut-off solenoid circuit, which includes the start control switch ("10" and "12" and selector switch on "08") and/or cool-down thermostat, the SCR on the electronic control circuit board, the motor centrifugal switch and the door switch.

We have the electronic control assembly. This consists of the plug-in electronic control board the edg-board connector and capacitor assembly.

We have the sensor in the front bulkhead.

The system is easily divided into the parts in the control console and the sensor in the tumbler front bulkhead. A wiring connector is conveniently located in the control console area to allow separation of control components from the sensor. This is a key to service diagnosis of the electronic control system.

When the dryer won't shut off with dry clothes, you need to know whether you have a control problem or a sensor problem. (If the sensor has a leakage path to cabinet ground, the capacitor cannot build a charge. It will continually bleed off.)

Separating the two areas by pulling the wires apart at the coupler will show where the problem is located. If the dryer will shut off in less than 20 minutes without the sensor circuit hooked up, then the sensor must be keeping the dryer from shutting off. If not, then the problem will be in the electronic control, the start control switch ("10" and "12"), selector switch ("08") or shut-off solenoid.

More detailed testing is outlined in the Troubleshooting Section.

Adjustable Press Care D810, D712

The PERMANENT PRESS cycle with the ADJUSTABLE PRESS CARE setting selected will extend the cool-down period at the end of the PERMANENT PRESS CYCLE for the amount of time pre-selected, up to 40 minutes. The ADJUSTABLE PRESS CARE setting operates as follows:

With PRESS CARE set at 40 minutes, the dryer will run until the load is dry and the electronic control fires. The end of cycle "chime" will then ring once.

The dial, which has not moved up to this point, begins to advance towards the PERMANENT PRESS marking while the load continues to be tumbled without heat for the 40 minutes. Again, the time is adjustable from 0 to 40 minutes. The "reminder chime" will ring once every 8 minutes until the last 2-3 minutes of the cycle. During the last 2-3 minutes the "chime" will sound every 30 seconds until completion of the cycle.

Time Dry — D712

On the time dry setting, after the first few minutes of operation, the electronic control circuit is bypassed by timer contacts 4 and 3. Power is supplied to the timer motor and the timer will advance.

When the selected time has expired, the electronic control is brought back into the circuit when contact 4 opens and contact 5 closes. A rapid charging process begins. Shortly thereafter the electronic control will energize the shut off solenoid. If the exhaust temperature is above 120 °F., the cool down thermostat will continue to provide power to the drive motor. When the temperature drops below 120 °F., the dryer will stop.

Timer — All models except D608, D808, D710

A timer is a motor driven package of switches that establishes a sequence of operation.

On the D712 and D810 the timer will not advance in the adjustable press care setting until the shut-off solenoid energizes.

1. Pry out cap.
2. Remove nut and dial.
3. See access to control panel components.
4. Remove timer screws.

Timer Motor

1. See Access to control panel.
 2. Remove two screws securing motor to timer.
- NOTE: It may be necessary to remove timer.