

FORWARD

This Whirlpool Service Manual, (Part No. W11169659), provides the In-Home Service Professional with service information for the "WHIRLPOOL & MAYTAG 27" FRONT-LOAD GAS & ELECTRIC DRYERS."

The Wiring Diagram used in this Service Manual is typical and should be used for training purposes only. Always use the Wiring Diagram supplied with the product when servicing the dryer.

For specific operating and installation information on the model being serviced, refer to the "Use and Care Guide" or "Installation Instructions" provided with the dryer.

GOALS AND OBJECTIVES

The goal of this Service Manual is to provide information that will enable the In-Home Service Professional to properly diagnose malfunctions and repair the "WHIRLPOOL & MAYTAG FRONT-LOAD DRYERS."

The objectives of this Service Manual are to:

- Understand and follow proper safety precautions.
- Successfully troubleshoot and diagnose malfunctions.
- Successfully perform necessary repairs.
- Successfully return the dryer to its proper operational status.

WHIRLPOOL CORPORATION assumes no responsibility for any repairs made on our products by anyone other than authorized In-Home Service Professionals.

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PRODUCT SPECIFICATIONS & WARRANTY INFORMATION SOURCES (inside back cover)

Section 1: General Information

This section provides general safety, parts, and information for the "Whirlpool & Maytag Front-Load Gas & Electric Dryers."

- Dryer Safety
- Whirlpool Control Panel & Features (HMI in Door)
- Whirlpool Control Panel & Features (Console)
- Maytag Control Panel & Features (Console)
- Model/Serial Number Location
- Wiring Diagram Location
- Model & Serial Number Nomenclature
- Product Specifications

Dryer Safety

Your safety and the safety of others are very important. We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages. Image: the safety alert symbol. This is the safety alert symbol. This symbol alerts you to potential hazards that can kill or hurt you and others. All safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING." Image: the safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING." You can be killed or seriously injured if you don't immediately follow instructions.

AWARNING

You can be killed or seriously injured if you don't follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

Whirlpool Control Panel & Features (HMI in Door)

Not all features and cycles are available on all models.

NOTE: The control panel features a sensitive surface that responds to a light touch of your finger. To ensure your selections are registered, touch the control panel with your fingertip, not your fingernail. When selecting a setting or option, simply touch the appropriate button.



1 POWER/CANCEL BUTTON

Touch to turn the dryer on or off or to a cancel a cycle.

2 HOME BUTTON

Touch this button and the LCD screen will show the home screen, where you can select your cycle, settings, and options.

3 FAVORITES BUTTON

Stores and accesses your favorite cycles, and also accesses a history of recently run cycles.

4 LCD SCREEN

Use this screen to select cycle, settings, options, etc. Swiping the screen gives access to five frequently run cycles.

5 REMOTE ENABLE BUTTON

Download the Whirlpool® app and follow the instructions to connect your dryer to your home Wi-Fi network. You may also visit www.whirlpool.com/connect. In Canada, visit www.whirlpool.ca/connect. After having connected to Wi-Fi, press the REMOTE ENABLE button any time you want to use the app. Pressing this button locks out the LCD screen and you will be prompted with a message about the dryer waiting for input from the app. To exit this mode, press the REMOTE ENABLE button again.

6 TOOLS BUTTON

Touch this button to access the Tools screen.

7 START/PAUSE BUTTON

Touch and hold to start, or touch to pause a cycle. When the dryer drum begins to move, release the START/PAUSE button. Continuing to hold the Start/Pause button after the dryer has started will cause the dryer to stop.



The Tools button gives access to many other settings, utility cycles, preferences, and information. Touch the TOOLS button to access the Tools screen, which contains the following (you will need to scroll down with your finger to access all of the selections).

Control Lock

Press this icon to lock the controls. Swipe up to unlock.

Mute

Press this icon to mute or unmute sounds.

Utility Cycle

Press this icon to access utility cycles: Rinse, Spin, Drain, Clean Cycle.

Steam Refresh

Select Steam Refresh to reduce odors and light wrinkles in dry loads consisting of wrinkle-free cotton, cotton-polyester blends, common knits, and synthetics. If you will be unable to remove a load immediately, touch WRINKLE SHIELD to add up to 150 minutes of periodic tumbling. You may select the + Steam setting to add a short steam cycle after 60 minutes to help smooth out wrinkles.

Preferences

Press to access Times and Dates, Sound Volume, Display Settings, and Regional. Follow the screen prompts.

WiFi

Press to access Connect to Network, SAID Codes, Mac Address, and WiFi. Follow the screen prompts.

Info

Press to access Service & Support, Store Demo Mode, Restore Factory, WiFi Terms and Conditions, and Software Terms and Conditions. Follow the screen prompts.

Whirlpool Control Panel & Features (Console)

Not all features and cycles are available on all models.

NOTE: The control panel features a sensitive surface that responds to a light touch of your finger. To ensure your selections are registered, touch the control panel with your fingertip, not your fingernail. When selecting a setting or option, simply touch the appropriate button.

STEAM MODELS



POWER

Touch to turn the dryer on and off. Touch to stop/cancel a cycle at any time.

2 WHAT TO DRY/HOW TO DRY

Once a "What to Dry" is selected, the dryer automatically selects the recommended or last-used "How to Dry" option, as well as the recommended/last-used modifiers. Both the "How to Dry" and modifiers can be changed if desired. See the "Cycle Guide" for details.

3 START/PAUSE

Touch and hold until LED counts down "3-2-1" and the dryer starts; then let go to start a cycle, or touch once while a cycle is in process to pause it.

4 MODIFIERS

Use to select available modifiers for your dryer. Not all cycles and options are available on all models.

Temp

When using Timed Dry/Quick Cycle, you may select a dry temperature based on the type of load you are drying. Use the warmest setting that is safe for the garments in the load. Follow garment label instructions.

NOTE: Automatic Cycles will give you up to four temperatures to adjust, depending on the model and the "What to Dry" or "How to Dry" selections that have been made.

Dryness

You may adjust the Dryness on Automatic Cycles (except for the Sanitize cycle), if desired.

NOTE: Dryness is for use with Automatic Cycles only.



Quick cycle to increase or decrease the length of the cycle.

6 OPTIONS

Use to select available options for your dryer. Not all cycles and options are available on all models.

Wrinkle Shield[™] Option

If you will be unable to remove a load immediately, touch WRINKLE SHIELD[™] to add up to 150 minutes of periodic tumbling to help reduce wrinkling. You may select the "+ Steam" setting (on some models) to add a short steam cycle after 60 minutes to help smooth out wrinkles.

NOTE: If you open the dryer door prior to the end of the Wrinkle Shield[™] option, the dryer will go into standby.

Steam Refresh (steam models only)

This cycle is best for reducing wrinkles and odors from dry items. Cycle time will increase, depending on number of items. This is an independent cycle that cannot be combined with any other cycle.

Cycle Signal

Use this option to turn the signal indicating the end of a drying cycle to low, medium, high, or off. The volume you select here will also be applied to the Damp Dry Signal.

NOTE: You may also turn off the tones that sound when a feature, setting, or option is touched. Touch and hold CYCLE SIGNAL for about 3 seconds to turn sounds to low, medium, high, or off.

Whirlpool Control Panel & Features (Console) continued

Damp Dry Signal

Touch to turn the Damp Dry Signal on or off. When selected, a series of beeps will sound when the load is damp, but not completely dry. This will allow you to take clothes out of the load that do not need to dry completely. This option is available on some cycles. The Damp Dry signal is selected as a default for the Bulky Items/Normal, Bulky Items/Wrinkle Control, and Bulky Items/Heavy Duty cycles, as a reminder to manually reposition bulky loads midway through the cycle.

Reduce Static (on some models)

Touch to add the Reduce Static option to selected Automatic cycles. The dryer will automatically tumble, pause, and introduce a small amount of moisture into the load to help reduce static. This option adds approximately 3 minutes to the total cycle time.

Control Lock

Use this option to lock the controls of the dryer and avoid an accidental change in cycle options or preferences during a drying cycle.

Touch and hold CONTROL LOCK or DAMP DRY SIGNAL (depending on the model) for 3 seconds to lock or unlock the controls of the dryer. During this time, the LED Display will count down "3-2-1." Once the controls are locked, the LED Display will display "Loc."

NOTE: The Control Lock function may be enabled when recovering from a power failure. To unlock the control, touch and hold CONTROL LOCK or DAMP DRY SIGNAL (depending on the model) for at least 3 seconds.

EcoBoost[™] Option

The EcoBoost[™] option will default on only for the Regular/Normal cycle and is only available on that cycle. This option allows you to increase your energy savings by using a slightly lower heat level. The EcoBoost[™] option will increase drying times by approximately 40 minutes, which will be reflected on the LED Display. If optimal time is desired, touch ECOBOOST to turn off this option.

LED DISPLAY

When you select a cycle, its default settings will light up and the Estimated Time Remaining (for Automatic Cycles) will vary depending on "What to Dry" and "How to Dry" selections, or actual time remaining for Timed Dry cycles (for Manual Cycles) will be displayed.

CYCLE STATUS INDICATORS



The Cycle Status Indicators show the progress of a cycle. Not all indicators are available on all models.

Sensing

The Sensing indicator will light periodically during Sensor Cycles to indicate that the moisture sensor on the dryer is operating. This indicator will not light during Timed Cycles or options such as Wrinkle Shield[™].

Wet

The load is still wet and/or the cycle just started.

Damp

This indicator shows that the load is partially dried and items that you may wish to hang up or iron while still damp may be removed.

Cool Down

The dryer has finished drying with heat and is now tumbling the load without heat to cool it down.

Check Vent

The Check Vent indicator is a feature available for Automatic cycles only. This indicator will show the status of airflow through the dryer and the dryer vent system for the dryer's life. During the sensing phase at the beginning of the cycle, the Check Vent light will come on if a blocked vent or low airflow issue is detected. This light will stay on for the entire cycle. Should the Check Vent light illuminate, refer to the "Troubleshooting" section for potential solutions to the issue.

The light will be cleared upon completion of the cycle, touching Power, or opening the door. The Check Vent light will continue to illuminate during the cycle unless the root cause is resolved.

REMEMBER: The dryer will continue to operate even while the indicator is lit, but poor airflow can impact dry times and overall performance. For more information on maintaining good airflow, see "Check Your Vent System for Good Airflow."

NOTE: If there are other error issues during a cycle, the Check Vent indicator will not light up. See the "Troubleshooting" section.

End

This will indicate that the selected cycle has ended and the load may be removed from the dryer. If Wrinkle Shield[™] has been selected, the dryer may continue to tumble the load, even if "End" is displayed.

Control Lock =-0

This will illuminate once the controls are locked.

Maytag Control Panel & Features (Console)

Not all features and cycles are available on all models.

NOTE: The control panel features a sensitive surface that responds to a light touch of your finger. To ensure your selections are registered, touch the control panel with your fingertip, not your fingernail. When selecting a setting or option, simply touch the appropriate button.



POWER/CANCEL

Touch to turn the dryer on and off. Touch to stop/cancel a cycle at any time.

CYCLE CONTROL KNOB

Turn the knob to select a cycle for your laundry load. Sensor Cycles are Custom Cycle, Bulky Items, Towels, Sanitize, Whites, Heavy Duty, Regular, Delicates, Wrinkle Control, Normal, and Jeans. Timed Cycles are Timed Dry and Quick Dry. The Steam Cycle (on some models) is Steam Refresh. See "Cycle Guide" for detailed descriptions of cycles. The Cycle Control Knob can also be pressed to activate the Extra Power option for harder-to-dry loads. See the "Options" section for more information.

START/PAUSE

2

(3)

4

Touch and hold until the LED counts down "3-2-1" and the dryer starts, or touch once while a cycle is in process to pause it.

LED DISPLAY AND SETTINGS

When you select a cycle, its settings will light up and the Estimated Cycle Time (for Sensor Cycles) or actual time remaining (for Timed Cycles) will be displayed.

See "Cycle Guide" for available settings on each cycle. Not all settings are available with all cycles.

More Time/Less Time

Touch MORE TIME or LESS TIME with Timed Cycles to increase or decrease the length of a Timed Dry or Quick Dry cycle.

Temp

When using any cycle except Sanitize, you may select a dry temperature based on the type of load you are drying. Use the warmest setting safe for the garments in the load. Follow garment label instructions.

Drvness

When using Sensor Cycles (except for the Sanitize cycle), you may select a Dryness level based on the type of load you are drying.

NOTE: Dryness is for use with Sensor Cycles only.

5 OPTIONS

Use to select available options for your dryer. Not all cycles and options are available on all models.

Wrinkle Prevent

(See Whirlpool Control Panel Options, "Wrinkle Shield Option", on page 1-4.)

Maytag Control Panel & Features (Console) continued

Reduce Static

(See Whirlpool Control Panel Options, on pages 1-4 & 5.) Steam (steam models only)

Steam (steam models only)

(See Whirlpool Control Panel Options, on pages 1-4 & 5.) Cycle Signal

Use this to turn the signal indicating the end of a drying cycle on or off. Touch CYCLE SIGNAL or touch and hold REDUCE STATIC for 3 seconds to turn sounds on or off.

Control Lock

Use to lock the controls of the dryer and avoid an accidental change in cycle options or preferences during a drying cycle. Touch and hold CONTROL LOCK or STEAM for 3 seconds to lock or unlock the controls of the dryer. During this time, the LED Display will count down "3-2-1." Once the controls are locked, the Control Lock icon will illuminate.

NOTE: The Control Lock function may be enabled when recovering from a power failure. To unlock the control, touch and hold CONTROL LOCK or STEAM for at least 3 seconds.

Extra Power

The Extra Power option can be used with both Sensor and Timed Dry Cycles. Press the Cycle Control Knob to activate the Extra Power option, which provides an additional 10 minutes of cycle time (including additional heat and tumbling, where applicable). When Extra Power is activated, the Cycle Control Knob will illuminate and the estimated time remaining on the display will show an additional 10 minutes.

6 CONNECTIVITY

Use to select available connectivity options for your dryer. Not all cycles and options are available on all models. Download the Whirlpool® app and follow the instructions to connect your dryer to your home Wi-Fi network. You may also visit www.whirlpool.com/connect.

WiFi Connect

Touch and hold WIFI CONNECT for 3 seconds during the initial connection of the dryer to your home Wi-Fi network. If the dryer is in a Smart Delay, touch WIFI CONNECT to override the delay and begin a dry cycle immediately.

Remote Enable

To start a dryer cycle remotely from the Whirlpool® app, touch REMOTE ENABLE. The Remote Enable status indicator will begin blinking. Select the desired cycle, cycle settings, and options. Touch and hold START/PAUSE to set the Remote Enable. The Remote Enable status indicator will be solidly lit.

NOTE: Any interaction with the dryer once a Remote Enable has been set will cause the Remote Enable to cancel.

7 CYCLE AND CONNECTED STATUS INDICATORS



The Cycle Status Indicators show the progress of a cycle. The Connected Status Indicators show the connected status. Not all indicators are available on all models.

Sensing

The Sensing indicator will light during Sensor Cycles to indicate that the moisture sensor on the dryer is operating. This indicator will not light during Timed Cycles or options such as Wrinkle Prevent.

Wet

The load is still wet and/or the cycle just started.

Damp

The load still has moisture remaining, a good point in the cycle to remove a garment to air dry or iron.

Cool Down

The dryer has finished drying with heat and is now tumbling the load without heat to cool it down and reduce wrinkling.

Check Vent

The Check Vent indicator is a feature available for Sensor Cycles only. This indicator will show the status of airflow through the dryer and the dryer vent system for the dryer's life. This feature is available during Sensor and Steam Cycles only. During the sensing phase at the beginning of the cycle, the Check Vent light will come on if a blocked vent or low airflow issue is detected. This light will stay on for the entire cycle. Should the Check Vent light illuminate, refer to the "Troubleshooting" section for potential solutions to the issue.

The light will be cleared upon completion of the cycle, touching Power/Cancel, or opening the door after the cycle has completed. Although the light will be cleared at the beginning of a cycle, it will continue to illuminate during the cycle unless the root cause is resolved.

NOTE: The dryer will continue to operate even while the indicator is lit, but poor airflow can impact dry times and overall performance. For more information on maintaining good airflow, see "Check Your Vent System for Good Airflow." If there are other error issues during a cycle, the Check Vent indicator will not light up. See the "Troubleshooting" section.

End

This will indicate that the selected cycle has ended and the load may be removed from the dryer. If Wrinkle Prevent has been selected, the dryer may continue to tumble the load, even if "End" is showing in the display.

Control Lock

This will illuminate when the controls are locked.

NOTE: The Control Lock function may be enabled when recovering from a power failure. To unlock the control, touch and hold STEAM for at least 3 seconds.

Connected 🖄

This will illuminate when the dryer is connected to the internet.

Smart Delay 谷

This will illuminate when a smart delay is in effect: the operation of the dryer has been delayed to a time when lower utility rates are in effect.



Model & Serial Number Location

Figure 3 - Model / Serial Number

Wiring Diagram Location

Wiring Diagram located beneath top panel, behind Appliance Control Unit (ACU).



Figure 4 & 5 - Wiring Diagram Location

Model & Serial Number Nomenclature

MODEL NUMBER	W	E	D	9620	н	С	0
INTERNATIONAL SALES OR MARKETING CHANNEL							
BRAND	_						
W = Whirlpool; M = Maytag		J					
ACCESS							
E = Electric Dryer; G = Gas Dryer; H = H	leat Pump		J				
PRODUCT							
W = Washer; D = Dryer							
FEATURE SET				-			
Higher number represents higher featu	ire set						
YEAR OF INTRODUCTION					-		
H = 2018							
COLOR CODE							
W = White; C = Chrome Shadow; BK	= Black						
ENGINEERING CHANGE							
0 = Basic Release; 1 = First Revision							

SERIAL NUMBER	Μ	8	25	10000
PRODUCTION SITE				
M = MARION, OH				
YEAR OF PRODUCTION		-		
8 = 2018; 9 = 2019				
WEEK OF PRODUCTION				
PRODUCT SEQUENCE NUMBER				

Product Specifications

ELECTRICAL						
Fuel Type (Electric) :	240 VAC, 60 Hz, 30 Amp Service					
Fuel Type (Gas) :	120 VAC, 60 Hz, 15-20 Amp Service					
PRIMARY FEATURES*						
Capacity :	7.3 cu. ft. (Maytag) 7.4 cu. ft. (Whirlpool)					
Control Panel :	(Whirlpool) Front Console / Capacitive Touch / Electronic (Whirlpool) Screen In Door / LCD Screen / Touch Screen (Maytag) Front Console/ Indicator Lights / Cycle Select Knob					
Drum Material :	Powder Coat / Stainless Steel					
Drum Design :	Quad Lifters					
Door Style :	Side Swing, Reversible, Window					
Interior Light :	Select Models					
Energy Star [®] Qualified :	Yes					
Steam :	Select Models					
Cycles :	Varies depending on model					
Temperatures :	Varies depending on model					
Dryness Levels :	(3) Less, Normal, More					
Check Vent Indicator :	Yes					
EcoBoost™ Energy Saver :	Yes					
Cycle Time Remaining :	Yes					
Moisture Sensor :	Yes					
Smart Appliance/Remote Control :	Select Models					
INSTALLATION CONSIDERATIONS						
Pedestal Options :	Yes					
Stackable :	Yes					
Venting Direction :	4-Way (Left, Right, Bottom, Rear)					
Maximum Vent Length :	64 ft.					
OPTIONS*						
Control Lock :	Locks the controls of the dryer					
Cycle Signal :	Sound when cycle is complete					
Damp Dry Signal :	Sound when load is damp, but not completely dry					
Eco Boost™ :	Use a slightly lower heat level to increase energy savings					
Reduce Static :	Introduces a small amount of moisture to reduce static					
Wrinkle Shield™/Prevent :	Adds up to 150 minutes of periodic tumbling to reduce wrinkling					
Wrinkle Shield™/Prevent with Steam:	Adds up to 150 minutes of periodic tumbling w/steam to reduce wrinkling					
DIMENSIONS						
Height :	38 3/4" (98.4 cm)					
Width :	27″ (68.58 cm)					
Depth :	31″ (78.74 cm)					
Gross Weight :	175 lbs. (79.37 kg)					

 $\ensuremath{^*}$ Features and Options vary by brand and model.

Section 2: Diagnostics & Troubleshooting

This section provides diagnostic, fault codes, and troubleshooting information for the "Whirlpool & Maytag Front-Load Gas & Electric Dryers."

- Whirlpool Control Panel
- Maytag Control Panel
- LCD in Door Control Panel
- Abbreviations
- Diagnostic Guide
- Service Diagnostic Mode
- Activating Service Diagnostic Mode
- Key Activation & Encoder Test
- Service Test Mode
- Software Version Display
- Exiting Service Diagnostic Mode
- Service Fault/Error Codes
- Customer Fault/Error Codes
- Troubleshooting Guide
- Voltage to Hexadecimal Codes





Whirlpool/Amana/Inglis Control Panel (features and appearances may vary between models)





Figure 2 - Key Activation & Encoder Test for Service Diagnostic Mode

DIAGNOSTICS & TROUBLESHOOTING

Abbreviations

ACU: Appliance Control Unit **HMI:** Human-Machine Interface

Diagnostic Guide

Before servicing, check the following:

- Make sure there is power at the wall outlet.
- Has a household fuse blown or circuit breaker tripped? Was a regular fuse used? Inform customer that a time-delay fuse is required.
- Is dryer vent properly installed and clear of lint or obstructions?
- All tests/checks should be made with a VOM (voltohm-milliammeter) or DVM (digital-voltmeter) having a sensitivity of 20,000 Ω per volt DC or greater.
- Resistance checks must be made with dryer unplugged or power disconnected.
- IMPORTANT: Avoid using large diameter probes when checking harness connectors as the probes may damage the connectors upon insertion.
- Check all harnesses and connections before replacing components. Look for connectors not fully seated, broken or loose wires and terminals, pin insertion, or wires not pressed into connectors far enough to engage metal barbs.
- A potential cause of a control not functioning is corrosion or contamination on connections. Use an ohmmeter to check for continuity across suspected connections.

Service Diagnostic Mode

These tests allow service personnel to test and verify all inputs to the machine control electronics. You may want to do a quick and overall checkup of the dryer with these tests before going to specific troubleshooting tests.

Activating Service Diagnostic Mode

- 1. Be sure the dryer is in standby mode (plugged in with all indicators off).
- 2. Select any three (3) buttons (except **POWER** and **START**) and follow the steps below, using the same buttons (remember the buttons and the order that the buttons were pressed):

Within 8 seconds,

- Press and Release the 1st selected button,
- Press and Release the 2nd selected button,
- Press and Release the **3rd** selected button;
- Repeat this 3 button sequence 2 more times.
- 3. If this test mode has been entered successfully, all indicators on the console will be illuminated for 5 seconds with "888" showing in the three-digit display and a tone will sound. If there are no saved fault codes, all indicators on the console will momentarily turn off, and then only the seven-segment display will come back on and display "888."

NOTE: The Service Diagnostic mode will time out after 10 minutes of user inactivity, or shut down if AC power is removed from the dryer.

Unsuccessful Activation

If entry into diagnostic mode is unsuccessful, refer to the following indications and actions:

Indication 1: None of the indicators or display turn on.

Action: Select any cycle.

- If indicators come on, try to change the function for the three buttons used to activate the diagnostic test mode. If any button is unable to change the function, something is faulty with the button, and it will not be possible to enter the diagnostic mode using that button. Replace the HMI and housing assembly.
- If no indicators come on after selecting the cycle, go to TEST #1, ACU Power Check, page 3-8.

Indication 2: Console indicators begin flashing immediately.

Action: If console indicators begin flashing on and off immediately, replace the HMI.

Activation with Saved Fault Codes

If there is a saved fault code, it will be flashing in the display. Review the Fault/Error Codes table on page 2-11 for the recommended procedure. If there is no saved fault code, "888" will be displayed.

SERVICE DIAGNOSTIC MENU					
BUTTON PRESS FUNCTION BEHAVIOR					
1st Button	Momentary press	Activates Key Activation & Encoder Test			
	Press and hold for 5 seconds	Exits Service Diagnostics			
2nd Button	Momentary press	Activates Service Test Mode			
	Press and hold for 5 seconds	Software Version Display			
3rd Button	Momentary press	Displays Next Error Code			
	Press and hold for 5 seconds	Clears the Error Codes			

• See "Activating Service Diagnostic Mode" to activate these functions. Make sure all of step 3 is complete before activation.

KEY ACTIVATION & ENCODER TEST

NOTE: The Service Diagnostic mode must be activated before entering the Key Activation & Encoder Test; see procedure on page 2-4.

Active Fault Code Display In Key Activation & Encoder Test

If the display begins flashing while in the Key Activation & Encoder Test, it is displaying an active fault code. Active fault codes are codes that are currently detected. Only one active fault code can be displayed at a time.

Entry Procedure

Press and release the 1st button used to activate Service Diagnostic mode. The following test will be available:

DIAGNOSTIC: Key Activation & Encoder Test

Pressing each button will turn off its corresponding indicator(s) or display segment and sound a beep (see figure 1 or 2, pages 2-2 and 2-3.)

On some models, rotating the cycle selector knob turns off the Extra Power light.

NOTE: A second press of the **POWER** button while in Key Activation & Encoder Test mode exits the Service Diagnostic mode and returns the dryer to standby mode.

If indicators do not turn off and beep after pressing buttons and, on some models, rotating the cycle selector knob, go to TEST #6: Buttons and Indicators, page 3-20.

Exit Procedure

To exit Key Activation & Encoder Test, press the **POWER** button once or twice (depending on diagnostic procedure) or press and hold the **1st** button used to activate Service Diagnostic mode.

test has been completed, be sure to wipe up any water remaining in the drum.

SERVICE TEST MODE CHART

SERVICE TEST MODE

NOTE: The Service Diagnostic mode must be activated before entering Service Test Mode; see procedure on page 2-4.

NOTE: If, at any point, the user presses the **POWER** button or opens the door during Service Test Mode, the dryer exits to standby mode.

NOTE: Door must be closed to perform test. Dryer must be cool before test to run correctly.

Active Fault Code Display in Service Test Mode

If the display begins flashing while in Service Test Mode, it is displaying an active fault code. Active fault codes are codes that are currently detected. Only one active fault code can be displayed at a time.

Entry Procedure

To enter Service Test Mode, press and **release** the **2nd** button used to activate the Service Diagnostic mode. All LEDs (except for POWER) turn off, *"888"* is displayed for 2 seconds, and the START button begins to flash.

PERFORM ALL TESTS: Press and **release** the **START** button to run ALL tests indicated in the chart below and on page 2-6.

VOLTAGE AND WATER SYSTEM-ONLY TESTS: Press and **hold** the **START** button for 5 seconds after step 3 to run only the voltage and water system tests.

Exit Procedure

When the test is complete, press the **POWER** button to exit Service Test Mode and return to standby mode.

Step #	Action	Component	User Interface Response
1	User enters Service Test Mode through Service Diagnostics.	Door must be closed.	All LEDs are off and dryer is waiting for "START" button to be pressed.
2	Press and release the "START" button to begin the test.	Motor ON Heater/Gas Valve ON Water Valve ON (Steam models only)	Last 3 digits of serial number will display for 2 seconds (only Connected models).
3	All LEDs ON, test starts automatically.	Motor ON Heater/Gas Valve ON Water Valve ON (Steam models only)	 All LEDs are ON for 2 seconds. After 2 seconds, the word "Enc" will be displayed. (Only Maytag Models).
4	Encoder Test starts automatically (Only Maytag models) 1. Rotate encoder one position. 2. Press and release the "EXTRA POWER" button	Motor ON Heater/Gas Valve ON Water Valve ON (Steam models only)	 (Only Maytag models) 1. Display shows "Enc". User should rotate encoder at least 1 position in any direction. 2. After encoder is rotated, the encoder LED will turn OFF. 3. User must press and release the "EXTRA POWER" button in the encoder. 4. After the "EXTRA POWER" button is pressed, the LEDs illuminating the button will turn OFF.

NOTE: The Water Valve (if available) will be activated during steps 2 through 8. This will leave some water in the drum. After the

Continued on following page . . .

Step #	Action	Component	User Interface Response
5	Button Test starts automatically. 1. Press and release "TEMP" button.	Motor ON Heater/Gas Valve ON Water Valve ON (Steam models only)	 Display shows "but" and dryer is waiting for "TEMP" button to be pressed. After the "TEMP" button is pressed, all LEDs on the HMI are turned OFF.
6	Model Number is displayed automatically.	Motor ON Heater/Gas Valve ON Water Valve ON (Steam models only)	 First three digits of the model number are displayed for 2 seconds. Next three digits of the model number are displayed for 2 seconds. If Model number has less than 6 digits, "-" will be displayed for each digit missing.
7	 Heater/Gas Valve Test starts automatically. Press and release "TEMP" button. After "TEMP" button is pressed, the heater or gas valve will be turned OFF. 	Motor ON Heater/Gas Valve ON Water Valve ON (Steam models only)	Display shows "Lod" and dryer is waiting for "TEMP" button to be pressed.
8	 Door Test starts automatically. Open the door. After door is opened, all Loads will be turned OFF. Drum Light will be turned ON. 	Motor ON Water Valve ON (Steam models only)	Display shows "DrS" and dryer is waiting for the door to be opened.
9	Front Moisture Strips Test starts automatically.1. User touches the front moisture strips for 5 seconds.		 Display shows "STR" or "ST1" for Quad Sensing models. Dryer is waiting for the user to touch the front moisture strips.
10	 Rear Moisture Strips Test starts automatically (Only Quad Sensing models) 1. User touches the rear moisture strips for 5 seconds. 		 (Only Quad Sensing Models) 1. Display shows "ST2". 2. Dryer is waiting for the user to touch the rear moisture strips.
11	Machine Fuel Type is automatically displayed.		Display shows "EEE" for Electric dryers or "ggg" for Gas dryers for 2 seconds.
12	Service Test finishes		If all sequences are completed, the HMI will display "PAS" and the End of Cycle sound is played.

IMPORTANT:

Turn on Water Valve if it was turned off for the Service Test Mode. Wipe up any remaining water in drum.

NOTES:

- Service Test Mode has a timeout of 2 minutes.
- If an error is discovered at anytime during the test, Service Test Mode will stop and display the corresponding error code in the 7-segment display. The error sound will be played.

SOFTWARE VERSION DISPLAY

NOTE: The Software Version Display mode will time out after 10 minutes of user inactivity and return to standby mode.

Entry Procedure

To enter Software Version Display, press and **hold** the **2nd** button used to activate the Service Diagnostic mode for 5 seconds. Upon entry, the display will automatically cycle through the following information:

- ACU Firmware revision code (C: major revision number, C: minor revision number, C: test revision number)
- ACU Settings File revision code (S: flashes 4 times, each time showing 2 digits of the 8-digit number)
- HMI Application Firmware revision code (U: major revision number, U: minor revision number, U: test revision number)
- HMI Touch Firmware revision code (t: major revision number, t: minor revision number, t: test revision number)
- HMI Audio Firmware revision code (A: major revision number, A: minor revision number, A: test revision number)

Exit Procedure

Pressing the **POWER** button will exit Software Version Display and return dryer to standby mode.

FAULT/ERROR CODES

Refer to customer diagnostic codes and service fault/error codes on page 2-11.

Fault/Error Code Display Method

Fault codes are displayed by alternately showing F# and E#. All fault codes have an F# and an E#. The F# indicates the suspect System/Category. The E# indicates the suspect Component system.

Up to five Fault/Error codes may be stored. When the oldest fault code is displayed, additional presses of the **3rd** button will result in a triple beep, then display of the most recent fault code. If each press of the **3rd** button results in a triple beep and the display shows "*BBB*", no saved fault codes are present.

Advancing Through Saved Fault/Error Codes

Procedure for advancing through saved fault codes:

Press and release the 3rd button used to activate Service Diagnostics	⇔ beep tone ⇔	most recent fault code is displayed
Repeat	⇔ beep tone ⇒	second most recent fault code is displayed
Repeat	⇔ beep tone ⇒	third most recent fault code is displayed
Repeat	⇔ beep tone ⇔	forth most recent fault code is displayed
Repeat	⇔ beep tone ⇔	fifth most recent fault code is displayed
Repeat	⇔ triple beep ⇔	back to the most recent fault code

Clearing Fault Codes

To clear stored fault codes, enter Service Diagnostic mode. Then press and hold the **3rd** button used to enter Service Diagnostic mode for 5 seconds. Once the stored fault codes are successfully erased, the seven segment display will show "888" and a beep will sound.

EXITING SERVICE DIAGNOSTIC MODE

Use either of the two methods below to exit diagnostic mode:

- Pressing and holding the **1st** button used to activate the Service Diagnostic mode for 5 seconds.
- Pressing the **POWER** button once or twice, depending on diagnostic procedure.

DIAGNOSTICS & TROUBLESHOOTING

Whirlpool LCD in Door Diagnostics



ABBREVIATIONS

ACU: Appliance Control Unit HMI: Human-Machine Interface

DIAGNOSTIC GUIDE

Before servicing, check the following:

- Make sure there is power at the wall outlet.
- Has a household fuse blown or circuit breaker tripped? Was a regular fuse used? Inform customer that a time-delay fuse is required.
- Is dryer vent properly installed and clear of lint or obstructions?
- All tests/checks should be made with a VOM (voltohm-milliammeter) or DVM (digital-voltmeter) having a sensitivity of 20,000 Ω per volt DC or greater.
- Resistance checks must be made with dryer unplugged or power disconnected.
- IMPORTANT: Avoid using large diameter probes when checking harness connectors as the probes may damage the connectors upon insertion.
- Check all harnesses and connections before replacing components. Look for connectors not fully seated, broken or loose wires and terminals, pin insertion, or wires not pressed into connectors far enough to engage metal barbs.
- A potential cause of a control not functioning is corrosion or contamination on connections. Use an ohmmeter to check for continuity across suspected connections.

SERVICE DIAGNOSTIC MODE

These tests allow service personnel to test and verify all inputs to the machine control electronics. You may want to do a quick and overall checkup of the dryer with these tests before going to specific troubleshooting tests.

ACTIVATING SERVICE DIAGNOSTIC MODE

IMPORTANT: Use Service Diagnostic Mode without laundry in the dryer.

- 1. Be sure the dryer is in standby mode (plugged in with all indicators off).
- 2. Open and close the dryer door.
- 3. Press the POWER until the dryer display turns on. After a few seconds, the home screen will display.
- 4. Press the TOOLS button 🔗
- 5. From the TOOLS menu, scroll down to "INFO."
- 6. From the INFO menu, select "SERVICE & SUPPORT."
- From the SERVICE INFO screen, <u>Press and hold</u> the DIAGNOSTICS button until the "ENTER PASSWORD" screen is displayed.
- 8. From the ENTER PASSWORD screen, input "123, 123, 123," and press "ENTER."
- 9. The WARNING DIAGNOSTIC MODE screen will display. Touch **ENTER** to enter diagnostic mode. The **DIAGNOSTIC HOME** screen will be displayed. To continue with the tests in Service Diagnostic Mode, see page 2-9.

Activation with Saved Fault Codes

If there is a saved fault code, the F number will be shown in the display. Review the Fault/Error Codes beginning on page 2-11 for the recommended procedure and how to display saved error codes.

Exit Procedure

To exit the Service Diagnostic Mode Tests, scroll to the top of the DIAGNOSTICS HOME screen, press the "<" button in the top left corner of the screen twice, and then press the **HOME** button.

NOTE: Service Diagnostic Mode times out after 5 minutes of user inactivity.

Whirlpool LCD in Door Diagnostics

A DANGER
2
Electrical Shock Hazard
Only authorized technicians should perform diagnostic voltage measurements.
After performing voltage measurements.

disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.





Electrical Shock Hazard Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- Verify the controls are in the off position so that the appliance does not start when energized.
- Allow enough space to perform the voltage measurements without obstructions.
- Keep other people a safe distance away from the appliance to prevent potential injury.
- Always use the proper testing equipment.
- After voltage measurements, always disconnect power before servicing.

SERVICE DIAGNOSTIC MODE TESTS

NOTE: The Service Diagnostic Mode must be activated before performing the tests; see procedure on this page.

The following section describes components that may be turned on and off to help with troubleshooting certain issues.

IMPORTANT: Turn off power or disconnect dryer before attaching test leads. Be sure test leads are attached prior to component activation.

To check voltage measurements, the following steps must be followed:

- 1. Unplug dryer or disconnect power.
- 2. Connect voltage measurement equipment to appropriate connectors.
- Plug in dryer or reconnect power and confirm voltage reading.
- 4. After performing voltage measurements, unplug dryer or disconnect power.

Active Fault Code Display in Quick Service Cycle

If the display begins flashing while running a Quick Service Cycle, it is displaying an active fault code. Active fault codes are codes that are currently being detected. Only one active fault code can be displayed at a time. From the DIAGNOSTICS HOME screen: Clear Error History Figure 1

Scroll down and select "Component Activation"

Clear Error History Component Activation WiFi Figure 2

Continued on following page . . .

Whirlpool LCD in Door Diagnostics SERVICE DIAGNOSTIC MODE TESTS (Continued)

Component Activation

To enter the Service Test Mode from the Component Activation menu, press "START" to begin the diagnostic test (see Figure 3). Perform the "Actions" listed in the chart below to advance through each step in the Service Test Mode.

<	Component Activation Activate only one at a time!	
START		Off

NOTE: If, at any point, the user presses the POWER button during the Service Test Mode, the dryer exits to standby mode.

PERFORM ALL TESTS: Complete all tests listed in the Service Test Mode chart below. At the completion of all the tests, the Human-Machine Interface (HMI) will respond an overall status of PASSED or FAILED.

Exit Procedure

When the test cycle is complete, press the POWER button to exit Service Test Mode and return to standby mode.

Figure 3

Service Test Mode

The Service Test Mode will run as described in the table below. NOTE: The drum must be empty during this test.

Step	Action	Component	Human-Machine Interface Response
1	User enters "Component Activation" through Service Diagnostics		Display shows "START - Off"
2	Touch START to begin "Quick Service Cycle" test.	"Motor On Water Valve On"	"Display shows ""DRYER - FACTORY TESTING"" Model Number: Serial Number: ""Advance Phase"" button prompt"
3	Touching the "Advance Phase" button begins the heater test.	"Motor On Water Valve On Heater On"	"Display shows ""DRYER - FACTORY TESTING"" Test: Heater ""Advance Phase"" button prompt"
4	Touching the "Advance Phase" button stops the heater test.	"Motor On Water Valve On Heater Off"	Display shows "START - On"
5	Open door to test the door switch.	"Motor Off Water Valve Off Door Switch"	"Display shows ""DRYER - FACTORY TESTING"" Test: Door Switch If the Door Switch FAILED, the diagnostic test will not continue or timeout. If the Door Switch test PASSED, the message advances to: Test: Moisture Sensor"
6	Touch your fingers across the two front moisture sensor strips	Moisture Sensor	"Display shows ""DRYER - FACTORY TESTING"" Test: Moisture Sensor If the Moisture Sensor FAILED, the diagnostic test will not continue or timeout. If the Moisture Sensor test PASSED, the message advances to: Overall Status: PASSED/FAILED"
7			"If all tests PASS = Overall Status: PASSED If any tests FAIL = Overall Status: FAILED"

NOTE: The steam valve will be activated during steps 1 - 4. Wipe up any excess water in drum after diagnostic test has completed.

Console and LCD Fault Error Codes

AWARNING

Electrical Shock Hazard

Replace all parts and panels before operating.

Disconnect power before servicing.

Failure to do so can result in death or

electrical shock.

Service Fault/Error Codes

Fault/Error Code Display Method

Fault codes are displayed by showing F#E#. The F# indicates the suspect System/Category. The E# indicates the suspect Component system.

The fault codes below may be indicated under various conditions and can be accessed through Service Diagnostics.

Code Description **Explanation and Recommended Procedure** Indicates no voltage detected at the heater relay. Motor or Heater Failure • Unplug dryer or disconnect power and check that the wires are plugged into the F1E1 heater element(s) and the relay(s) on the ACU. or Connector Problem For motor check, see Test #3: Motor Circuit, page 3-12. Indicates that the exhaust thermistor is open or shorted. If the temperature drops **Exhaust Thermistor** below 18° F (> 50k ohms), the exhaust thermistor is open. If the temperature is F3E1 **Open/Shorted** above 250° F (< 500 ohms), the exhaust thermistor has shorted. May occur if the J14 connector is not plugged into the ACU. See TEST #4a: Thermistors, page 3-16. Moisture Sensor 1 Indicates the moisture sensor strip is open or shorted. This fault code will only appear F3E2 **Open/Shorted** when in the service diagnostic mode. See TEST #5: Moisture Sensor, page 3-19. Indicates that the inlet thermistor is open or shorted. If the temperature drops below Inlet Thermistor Open/ 18° F (> 245k ohms), the inlet thermistor is open. If the temperature is above 391° F F3E3 Shorted (< 328 ohms), the inlet thermistor has shorted. May occur if the J14 connector is not plugged into the ACU. See TEST #4a: Thermistors, page 3-16. Moisture Sensor 2 Indicates the second moisture sensor strip is open or shorted. This fault code will only F3F5 Open/Shorted (only appear when in the service diagnostic mode. See TEST #5: Moisture Sensor, page 3-19. Quad Sense models) Indicates that the ACU and HMI have not communicated for a specified amount of time. Unplug dryer or disconnect power. F6E1 ACU - HMI Check the harness continuity and connections between the ACU and HMI. **Communication Error** Check AC and DC supplies. See TEST #1: ACU Power Check, page 3-8. F6E2 Replace the HMI. • Replace the ACU. Indicates that the WiFi Module has not responded for a specified amount of time. Unplug dryer or disconnect power. WiFi Module FCE1 **Communications Lost** Check WiFi Module at HMI. Replace HMI.

Customer Diagnostic Codes

Code	Description	Explanation and Recommended Procedure
PF	Power Failure	PF indicates that a power failure occurred while the dryer was running. Press START to continue the cycle, or press POWER to clear the display.

Console and LCD Troubleshooting Guide

Troubleshooting Guide

NOTE: Always check for error codes first (page 2-11).

Problem	Possible Cause	Checks & Tests		
Won't Power UpNo operation	No power to dryer.	Check power at outlet, check circuit breaker, fuses, or junction box connections.		
 No keypad response 	Connection problem between AC plug and dryer.	See Test #2: Supply Connections, page 3-10.		
No LEDs or display	Connection problem between ACU and HMI.	Check connections and harness continuity between ACU and HMI.		
	Power supplies not present at machine electronics.	See Test #1: ACU Power Check, page 3-8.		
	HMI problem.	See Test #6: Buttons & Indicators, page 3-20.		
Will Not Start Cycle (No response when START button is	Door not fully closed or striking the door latch.	Be sure the door is completely closed, then press and hold the START button.		
pressed.)	Door switch problem.	See Test #7: Door Switch, page 3-21.		
	Drive belt/belt switch (gas only) problem.	See Test #3: Motor Circuit, page 3-12.		
	Thermal fuse / Motor Problem	See Test #3: Motor Circuit, page 3-12.		
	HMI problem.	See Test #6: Buttons & Indicators, page 3-20.		
	ACU problem.	See Test #1: ACU Power Check, page 3-8.		
Will Not Shut Off	Poor airflow.	Check lint screen and exhaust vent. Clean if necessary.		
When Expected	Check the Start/Pause button.	Perform Key Activation & Encoder Test.		
	Noisture sensor problem. See Test #5: Moisture Sensor, page 3-19.			
	Thermistor problem.	See Test #4a: Thermistors, page 3-16.		
	HMI problem.	See Test #6: Buttons & Indicators, page 3-20.		
	ACU problem.	See Test #1: ACU Power Check, page 3-8.		
Console Won't Accept	User selected invalid option.	Refer customer to "Use and Care Guide."		
Selections	HMI problem.	See Test #6: Buttons & Indicators, page 3-20.		
Drum Will Not Spin	Drive belt/belt switch (gas only) problem.	See Test #3: Motor Circuit, page 3-12.		
	Thermal fuse (elect. only).	See Test #4b: Thermal Fuse, page 3-17.		
	Door switch problem.	See Test #7: Door Switch, page 3-21.		
	Motor problem.	See Test #3: Motor Circuit, page 3-12.		
	ACU problem.	See Test #1: ACU Power Check, page 3-8.		
Will Not Heat	Check installation.	Verify proper dryer installation.		
	Check for L1 and L2.	Perform ACU L1 and L2 tests under Service Test Mode.		
	Heater system malfunction or open heater coil.	See Test #4: Heat System, page 3-14.		
	ACU problem.	See Test #1: ACU Power Check, page 3-8.		

Continued on following page . . .

Console and LCD Troubleshooting Guide

Troubleshooting Guide

Continued from page 2-9.

Problem	Possible Cause	Checks & Tests		
Heats in Air Cycle	Heater coil shorted.	See Test #4: Heat System, page 3-14.		
	Heater relay shorted.	See Test #4: Heat System, page 3-14.		
	Heater system problem.	See Test #4: Heat System, page 3-14.		
Shuts Off Before	Dryness setting for auto cycles.	Increase Dryness setting for one or more auto cycles.		
Clothes Are Dry	Lint screens full.	Clean if necessary. Refer customer to "Use and Care Guide."		
	Heater vent clogged.	Clean if necessary. Refer customer to "Use and Care Guide."		
	Moisture Sensor problem.	See Test #5: Moisture Sensor, page 3-19.		
Water Valve Not Dispensing (on some models)	Steam cycle not selected.	Refer customer to "Use and Care Guide".		
	No water to valve.	Verify water supply is turned on.		
(Water valve is activated intermittently during the steam cycle.)	No water from valve.	See Test #9: Water Valve, page 3-23.		
Water Leaking From Dryer (on some models) (Too much water being dispensed during steam cycles.)	Residue buildup on water nozzle opening.	Unscrew nozzle and clean if necessary. Refer customer to "Use and Care Guide."		

Voltage to Hexadecimal Codes

Voltage is displayed in hexadecimal (Hex) format on models with a 2-digit 7-segment display. If the calculated voltage is greater than 255 volts, FF will be displayed. See the table below for the voltage to hex codes.

HEX Display	Voltage						
5A	90	85	133	b0	176	db	219
5b	91	86	134	b1	177	dC	220
5C	92	87	135	b2	178	dd	221
5d	93	88	136	b3	179	dE	222
5E	94	89	137	b4	180	dF	223
5F	95	8A	138	b5	181	E0	224
60	96	8b	139	b6	182	E1	225
61	97	8C	140	b7	183	E2	226
62	98	8d	141	b8	184	E3	227
63	99	8E	142	b9	185	E4	228
64	100	8F	143	bA	186	E5	229
65	101	90	144	bb	187	E6	230
66	102	91	145	bC	188	E7	231
67	103	92	146	bd	189	E8	232
68	104	93	147	bE	190	E9	233
69	105	94	148	bF	191	EA	234
6A	106	95	149	CO	192	Eb	235
6b	107	96	150	C1	193	EC	236
6C	108	97	151	C2	194	Ed	237
6d	109	98	152	C3	195	EE	238
6E	110	99	153	C4	196	EF	239
6F	111	9A	154	C5	197	F0	240
70	112	9b	155	C6	198	F1	241
71	113	9C	156	C7	199	F2	242
72	114	9d	157	C8	200	F3	243
73	115	9E	158	C9	201	F4	244
74	116	9F	159	CA	202	F5	245
75	117	A0	160	Cb	203	F6	246
76	118	A1	161	CC	204	F7	247
77	119	A2	162	Cd	205	F8	248
78	120	A3	163	CE	206	F9	249
79	121	A4	164	CF	207	FA	250
7A	122	A5	165	d0	208	Fb	251
7b	123	A6	166	d1	209	FC	252
7C	124	A7	167	d2	210	Fd	253
7d	125	A8	168	d3	211	FE	254
7E	126	A9	169	d4	212	FF	255
7F	127	AA	170	d5	213		
80	128	Ab	171	d6	214		
81	129	AC	172	d7	215		
82	130	Ad	173	d8	216		
83	131	AE	174	d9	217		
84	132	AF	175	dA	218		

Section 3: Component Testing

This section provides a wiring diagram, control board specifications, testing procedures and strip circuits for the "Whirlpool & Maytag Front-Load Gas & Electric Dryers."

- Testing: Safety Information
- Component Locations
- Wiring Diagram Whirlpool, Electric
- Wiring Diagram Whirlpool, Gas
- Wiring Diagram Maytag, Electric
- Wiring Diagram Maytag, Gas
- Component Testing
- TEST #1: ACU Power Check
- TEST #2: Supply Connections
- TEST #3: Motor Circuit
- TEST #4: Heating System
- TEST #4a: Thermistors
- TEST #4b: Thermal Fuse
- TEST #4c: Thermal Cut-Off
- TEST #4d: Gas Valve (Gas Dryer)
- TEST #5: Moisture Sensor
- TEST #6: Buttons and Indicators
- TEST #7: Door Switch
- TEST #8: Drum LED
- TEST #9: Water Valve



Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- Verify the controls are in the off position so that the appliance does not start when energized.
- Allow enough space to perform the voltage measurements without obstructions.
- Keep other people a safe distance away from the appliance to prevent potential injury.
- Always use the proper testing equipment.
- After voltage measurements, always disconnect power before servicing.

IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. Most people begin to feel an ESD discharge at approximately 3000V. It takes as little as 10V to destroy, damage, or weaken the main control assembly. The new main control assembly may appear to work well after repair is finished, but a malfunction may occur at a later date due to ESD stress.

Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

-OR-

- Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging main control assembly in anti-static bag, observe above instructions.

IMPORTANT SAFETY NOTICE — "For Technicians only"

This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

COMPONENT LOCATIONS - WHIRLPOOL (FIGURE 1)



WIRING DIAGRAM - WHIRLPOOL, ELECTRIC (240/208 VAC)





WIRING DIAGRAM - MAYTAG, ELECTRIC (240/208 VAC)







Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

Component Testing

TESTING DRYER COMPONENTS FROM THE CONTROL

Before testing any of the components, perform the following checks:

- The most common cause for mis-diagnosed control failure is poor connections. Therefore, disconnecting, inspecting and reconnecting wires will be necessary throughout test procedures.
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000 ohms-per-volt DC, or greater.
- Check all connections before replacing components, looking for broken or loose wires, failed terminals, or wires not pressed into connectors far enough.
- Voltage checks must be made with all connectors attached to the boards.
- IMPORTANT: Resistance checks must be made with power cord unplugged or power disconnected, and with wiring harness or connectors disconnected from the control.

The testing procedures in this section may require the use of needle probes to measure voltage. Failure to use needle probes will damage the connectors.

TEST #1: ACU Power Check

This test is used to determine if power is present at the Appliance Control Unit (ACU). This test assumes that proper voltage is present at the outlet.

1. Verify that the green LED on the ACU is lit when the dryer is turned on.

NOTE: It is important to verify that the ACU is not in "Low Power" mode. If the HMI is working correctly, it will "wake up" the system after powering up and pressing Power. To verify, unplug dryer or disconnect power for 60 seconds. Plug in dryer or reconnect power. Press **POWER**. If the ACU comes up (i.e., the green LED on the ACU flashes and

then stays lit after boot-up is complete), but the HMI does not, there may be a problem with the HMI.

- 2. Unplug dryer or disconnect power.
- Check for appropriate line voltages at the outlet: 240 VAC (electric 2-phase), 208 VAC (electric 3-phase), or 120 VAC (gas).
 - If line voltage is present, go to step 4.
 - If line voltage is not present, check for tripped circuit breaker or blown household fuse. If CB (circuit breaker) is not tripped, have customer check with qualified electrician.
- 4. Remove top panel to access the machine electronics.
- ACU VAC With voltmeter set to AC, connect black probe to ACU J8-3 (N) and red probe to J9-2 (L1). (See Figure 1, page 3-9.) Plug in dryer or reconnect power.
 - If 120 VAC is present, unplug dryer or disconnect power and go to step 6.
 - If 120 VAC is not present, unplug dryer or disconnect power and perform TEST #2: Supply Connections, page 3-10.
- ACU +5 VDC With voltmeter set to DC, unplug connector J2 from the ACU and connect black probe to ACU J2-4 (ground) and red probe to J2-2 (+5 VDC). Plug in dryer or reconnect power.
 - ➢ If +5 VDC is present, go to step 9.
 - ➢ If +5 VDC is not present, go to step 7.
- 7. Unplug dryer or disconnect power. Unplug **J14** from the ACU. Plug in dryer or reconnect power and repeat step 6.
 - If +5 VDC returns, one of the thermistors has shorted. To diagnose thermistors, see TEST #4a, page 3-16.
 - If +5 VDC is not present, go to step 8.
- 8. Unplug dryer or disconnect power. Reconnect **J14** to the ACU and unplug J2 from the ACU. Plug in dryer or reconnect power and repeat step 6. Perform voltage check inside header J2 on ACU, between pins 2 & 4—DO NOT SHORT PINS TOGETHER.
 - If +5 VDC is still missing, unplug dryer or disconnect power and replace the ACU.
 - If +5 VDC returns, unplug dryer or disconnect power and check harnesses and connections between the ACU and HMI. If acceptable, replace the HMI.
- 9. ACU +12.7 VDC with voltmeter set to DC, connect black probe to ACU J2-4 (ground) and red probe to J2-1 (+12.7 VDC). Plug in dryer or reconnect power.
 - If +12.7 VDC is present, go to step 11.
 - ➢ If +12.7 VDC is not present, go to step 10.
- Unplug dryer or disconnect power. Unplug connector J2 from the ACU. Perform voltage check inside header J2 on ACU, between pins 1 & 4—DO NOT SHORT PINS TOGETHER.
 - If +12.7 VDC is still missing, unplug dryer or disconnect power and replace the ACU.
 - If +12.7 VDC returns, unplug dryer or disconnect power and check harnesses and connections between the ACU and HMI. If acceptable, replace the HMI.
- 11. Unplug dryer or disconnect power.
- 12. Reassemble all parts and panels.
- 13. Perform steps under "Service Diagnostic Mode," page 2-4, to verify repair.
ACU BOARD (FIGURE 1)



ACU CONNECTORS (FIGURE 2)

J2 – WIN BUS (+5VDC		J6 – DRUM LIGHT LE	Ð	J9 – MOTO	R/L1	
and +12.7 VDC)	J3-3 OPEN J3-4 OPEN		D ANODE D CATHODE	© ອື J9-2 ອີ J9-1		L1 MOTOR
S © J2-3 YEL DATA	of the creative		D OMINOD L	<u>J13 – MOIS</u>	STURE S	ENSOR
J2-4 BLK GND				© _₽ J13-1 ◎ [₽] J13-2		MOISTURE SENSOR MOISTURE SENSOR
J8 – MYST VALVE/DOOR SWI	TCH					
Image:					R MOIST ome mo	URE SENSOR Idels)
♥ ● J8-3 WHT NEUTRAL ● J8-2 G/Y CHASSIS GND □ J8-1 RED MYST VALVE				② ① J23-1 J23 J23-2		MOISTURE SENSOR MOISTURE SENSOR
(ON SOME MOD	ELS)	J14 – T	HERMISTO	RS		
	J14-3 R/W J14-2 RED J14-1 RED	OUTLET THERMISTOR INLET THERMISTOR INLET THERMISTOR	J14 3 6 2 5 1 4	1-5 0	UTLET TH PEN PEN	IERMISTOR



TEST #2: Supply Connections

This test assumes that proper voltage is present at the outlet, and for U.S. installations, a visual inspection indicates that the power cord is securely fastened to the terminal block (electric dryer) or wire harness connection (gas dryer).

ELECTRIC DRYER (U.S. Installations):

- 1. Unplug dryer or disconnect power.
- 2. Remove the cover plate from the top right corner of the back of the dryer. See figure 1.



Figure 1 - Remove the cover plate (appearance may vary).

- 3. With an ohmmeter, check for continuity between the neutral (N) terminal of the plug and the center contact on the terminal block. See figure 2.
 - If there is no continuity, replace the power cord and test the dryer.
 - If there is continuity, go to step 4.
- 4. In a similar way, check which terminal of the plug is connected to the left-most contact on the terminal block and make a note of it. This will be L1 (black wire) in the wiring diagram. See figure 2.
 - When this is found, go to step 5.
 - If neither of the plug terminals have continuity with the left-most contact of the terminal block, replace the power cord and retest dryer.



Figure 2 - Plug-to-terminal connections for electric dryer.

- 5. Remove top panel. Access the machine electronics without disconnecting any wiring to the ACU.
- With an ohmmeter, check for continuity between the L1 terminal of the plug (found in step 4) and J9-2 (black wire) on the ACU.
 - If there is continuity, go to step 7.
 - If there is no continuity, check that wires to the terminal block are mechanically secure. If so, replace the main wire harness and test the dryer.
- 7. Check for continuity between the neutral (N) terminal of the plug and J8-3 (white wire) on the ACU.
 - If there is continuity, go to step 8.
 - If there is no continuity, and the mechanical connections of the wire are secure, replace the main wire harness.
- 8. Visually check that ALL connectors are fully inserted into the ACU.
- 9. Visually check that ALL connectors are fully inserted into the HMI.
- 10. Reassemble all parts and panels.
- 11. Plug in dryer or reconnect power.
- 12. Perform steps under "Service Diagnostic Mode", page 2-4, to verify repair.

ELECTRIC DRYER (Canadian Installations):

- 1. Unplug dryer or disconnect power.
- 2. Remove the cover plate from the top right corner of the back of the dryer. See figure 1.
- 3. Remove top panel. Access the machine electronics without disconnecting any wiring to the ACU.
- 4. With an ohmmeter, check the continuity from L1 and N plug terminals of the power cord to the terminals for L1 and N on the ACU. See figure 3, page 3-11.
 - > If continuity exists for both connections, go to step 6.
 - If an open circuit is found, check the integrity of the connections of the power cord to the harness in the dryer; harness to the ACU; and the integrity of the power cord itself.



Figure 3 - Plug-to-terminal connections for electric dryer

- 5. If it is necessary to replace the power cord, remove the retaining clip that secures the cord to the back panel. Disconnect the cord from the main harness and the ground wire from the rear panel, then pull out the power cord.
- 6. Visually check that ALL connectors are fully inserted into the ACU.
- 7. Visually check that ALL connectors are fully inserted into the HMI.
- 8. Reassemble all parts and panels.
- 9. Plug in dryer or reconnect power.
- 10. Perform steps under "Service Diagnostic Mode", page 2-4, to verify repair.

GAS DRYER (U.S. and Canadian Installations):

- 1. Unplug dryer or disconnect power.
- 2. Remove the cover plate from the top right corner of the back of the dryer. See figure 1, page 3-10.
- 3. Check that the power cord is firmly connected to the dryer's wire harness. See figure 4.



Figure 4 - Power cord-to-wire harness connection for gas dryer.

- 4. Remove top panel. Access the machine electronics without disconnecting any wiring to the ACU.
- 5. With an ohmmeter, check for continuity between the neutral (N) terminal of the plug and J8-3 (white wire) on the ACU. The left-hand side of figure 5 shows the position of the neutral terminal (N) on the power cord plug. Also see figure 1, page 3-9.
 - If there is continuity, go to step 6.
 - If there is no continuity, disconnect the white wire of the main harness from the power cord at the location illustrated in figure 4. Test the continuity of the power cord neutral wire as illustrated in figure 5. If an open circuit is found, replace the power cord. Otherwise, go to step 6.



Figure 5 - Power cord terminals, gas dryer.

- In a similar way, check for continuity between the L1 terminal of the plug and J9-2 (black wire) on the ACU.
 - If there is continuity, go to step 7.
 - If there is no continuity, check the continuity of the power cord in a similar way to that illustrated in figure 5, but for power cord's L1 wire.
 - If an open circuit is found, replace the power cord. Otherwise, replace the main harness.
- 7. Visually check that ALL connectors are fully inserted into the ACU.
- 8. Visually check that ALL connectors are fully inserted into the HMI.
- 9. Reassemble all parts and panels.
- 10. Plug in dryer or reconnect power.
- 11. Perform steps under "Service Diagnostic Mode", page 2-4, to verify repair.



TEST #3: Motor Circuit

This test will check the wiring to the motor and the motor itself. The following items are part of this motor system:

Part of Motor System	Electric Dryer	Gas Dryer
Drum belt	✓	✓
Door switch	✓	✓
Harness/connection	✓	✓
Thermal fuse	✓	✓
Drive motor	✓	\checkmark
Belt switch	no	✓
Centrifugal switch	\checkmark	✓
ACU	\checkmark	\checkmark

NOTE: Refer to strip circuit on page 3-13 to diagnose the drive motor.

- 1. Unplug dryer or disconnect power.
- 2. Remove top panel to access the machine electronics.
- 3. Check for loose, worn, or damaged drum belt—repair as necessary.
- 4. Door Switch problems can be uncovered by following procedure under TEST #7: Door Switch, page 3-21; however, if this was not done, the following can be performed without applying power to the dryer. Connect an ohmmeter across ACU J8-3 (neutral, white wire) and J8-4 (door, tan wire).
 - With the door properly closed, the ohmmeter should indicate a closed circuit (0–2 Ω).
 - If not, check harnesses and connections between ACU and door switch. If good, replace the door switch assembly.

- 5. Motor Circuit Check Access the ACU and measure the resistance across J8-4 and J9-1.
 - If resistance across J8-4 and J9-1 is in the range of 1 to 6 Ω, the motor circuit is acceptable. Replace the ACU.
 - Otherwise, continue to step 6.
- Check the wiring and components in the path between these measurement points by referring to the appropriate wiring diagram (gas or electric) on pages 3-4 to 3-7.
 NOTE: To access motor system components, slide the top back and remove the front panel.

ALL DRYERS: Check the thermal fuse. See TEST #4b: Thermal Fuse, page 3-17.

ALL DRYERS: Continue with step 7 below to test the remaining components in the motor circuit.

7. Check the drive motor and belt switch (gas dryer only). Slowly remove the drum belt from the spring-loaded belt switch pulley, gently letting the pulley down. See figure 1.



Figure 1 - Slowly remove drum belt.

8. Remove the white connector from the drive motor switch. See figure 2.



Figure 2 - Remove white connector

9. Remove the bare copper wire terminal from pin 5 of black drive motor switch. See figure 3.



Figure 3 - Main and start winding measure points

10. Using figure 3 and the strip circuit below, check for the resistance values of the motor's Main and Start winding coils as shown in the following table.

NOTE: Main and Start winding coils must be checked at the motor.

Winding	Resistance in ohms	Contact Points of Measurements
MAIN	3.3–3.6	Blue wire in back at pin 4 and bare copper wire terminal removed from pin 5 of black drive motor switch
START	2.7–3.0	Blue wire in back at pin 4 and bare copper wire terminal on pin 3 of black drive motor switch

- If the resistance at the motor is correct, there is an open circuit between the motor and ACU. For gas models, check for a belt switch problem; see step 11. For electric models, check and repair the main wiring harness.
- If the Main or Start winding resistance is much greater or less than the values listed in the table above, replace the motor.

- 11. On gas dryer only: check the belt switch by measuring resistance between the two light blue wires in the belt switch connector block while pushing up the belt switch pulley.
 - If the resistance reading goes from open to a few ohms as pulley arm closes the switch, belt switch is good. If not, replace the belt switch.
 - If belt switch is good and there is still an open circuit, check and repair the main wiring harness.
- 12. Reassemble all parts and panels.
- 13. Plug in dryer or reconnect power.
- 14. Perform steps under "Service Dlagnostic Mode", page 2-4, to verify repair.

Pluggable Drive Motor Switch



Figure 4 - Pluggable Drive Motor Switch

Centrifugal Switch (Motor) Contacts

Contacts					
Function	1M	2M	ЗM	5M	6M
Start			┛	-	
Run	•	•		•	-•
E = Contacts closed					

Figure 4 - Centrifugal Switch Contacts



Figure 7 - Motor Strip Circuit

MOTOR STRIP CIRCUIT

A WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #4: Heat System

This test is performed when either of the following situations occurs:

- ✓ Dryer does not heat
- ✓ Heat will not shut off

This test checks the components making up the heating circuit. The following items are part of this system:

Part of Heating System	Electric Dryer	Gas Dryer
Harness/connection	✓	✓
Heater relay	✓	✓
Thermal cut-off	✓	✓
High limit thermostat	✓	✓
Heat element assembly	✓	no
Gas valve assembly	no	 ✓
Centrifugal switch	✓	~
Outlet thermistor	✓	✓
Inlet thermistor	✓	\checkmark
ACU	✓	✓
Console electronics	×	~
Gas supply	no	\checkmark

NOTE: On the gas dryer, the inlet thermistor is located at the drum inlet vent. Refer to strip circuits on page 3-15 to diagnose heater system.

Dryer does not heat:

Locate the components using figures 1 and 2 on this page. To access heater system components, remove top and front panels.

ELECTRIC DRYER ONLY:

- ✓ Quick Check: Perform steps under "Service Diagnostic Mode", page 2-4, to test for L1 and L2 line voltage.
 - If L1 is present, the heater relay is receiving L1 line voltage.
 - If L2 is present, the heater relay is receiving L2 line voltage, confirming that the centrifugal switch, heater, high limit thermostat, and the thermal cut-off are functional.
- 1. Unplug dryer or disconnect power.
- 2. Remove front panel to access thermal components.
- 3. Using an ohmmeter and referring to the strip circuit or wiring diagram, measure the resistance from the red wire terminal at the thermal cut-off to the red/white wire terminal at the heater.
 - > If the resistance is about 10 Ω , go to step 5.
 - ➢ If an open circuit is detected, go to step 4.



Figure 1 - Thermal components, electric dryer, viewed from front.



Figure 2 - Thermal components, gas dryer, viewed from front.

4. Visually check the wire connections to the thermal cutoff, high limit thermostat, and heater. If the connections look good, check for continuity across each of these components. Refer to strip circuit on page 3-15.

- Replace the heater if it is electrically open.
- Replace both the thermal cut-off and high limit thermostat if either the thermal cut-off or the high limit thermostat is electrically open.
- If no open circuit is detected, remove the J14 connector from the ACU and measure the outlet thermistor resistance between J14-3 and J14-6 at the connector. Refer to "Outlet Thermistor Resistance" table on page 3-16 for temperatures and their associated values.
 - If the resistance corresponds to the temperature, the outlet thermistor is good. Go to step 6.
 - If the thermistor resistance does not agree with the table, replace the outlet thermistor.
- 6. If the preceding steps did not correct the problem and L1 and L2 were both detected, replace the ACU. If L2 was not detected, inspect the centrifugal switch before replacing the ACU.
- 7. Reassemble all parts and panels.
- 8. Plug in dryer or reconnect power.
- 9. Perform steps under "Service Diagnostic Mode," page 2-4, to verify repair.

GAS DRYER ONLY:

- 1. Verify the gas supply to the dryer is turned on.
- 2. Unplug dryer or disconnect power.
- 3. Perform TEST #4b: Thermal Fuse on page 3-17. If the thermal fuse is OK, go to step 4.
- 4. Perform TEST #4c: Thermal Cut-Off on page 3-17. If the thermal cut-off is OK, go to step 5.
- Locate the high limit thermostat (see figure 2, page 3-14). Measure the continuity through it by connecting the meter probes to the red and black wire terminals.
 - If there is an open circuit, replace both the high limit thermostat and the thermal cut-off.
- Otherwise, go to step 6.
- 6. Perform TEST #4d: Gas Valve on page 3-18. If the gas valve is OK, go to step 7.

- 7. If the preceding steps did not correct the problem, suspect the centrifugal switch before replacing the ACU.
- 8. Reassemble all parts and panels.
- 9. Plug in dryer or reconnect power.
- 10. Perform steps under "Service Diagnostic Mode," page 2-4, to verify repair.

Heat will not shut off:

ALL DRYERS:

- 1. Unplug dryer or disconnect power.
- 2. Remove top panel to access the machine electronics.
- 3. Remove connector **J14** from the ACU and measure the resistance between J14-3 and J14-6 at the connector. Refer to "Outlet Thermistor Resistance" table on page 3-16, for temperatures and their associated values.
 - If the resistance corresponds to the temperature, the outlet thermistor is good.
 - If the thermistor resistance does not agree with the table, replace the outlet thermistor.
- 4. Check heater coil for a short to ground (usually inside the heater box). Repair or replace if necessary.
- 5. Plug in dryer or reconnect power.
- Run an "AIR" only timed dry cycle (no heat). Check heater relay output on ACU. Unplug dryer or disconnect power. With a voltmeter set to AC, connect voltmeter to terminals 1 & 2 for heater relay. Plug in dryer or reconnect power. Measure the voltage across terminals 1 & 2.
 - If voltage is present (~240 VAC for electric, ~120 VAC for gas), the relay is open and working normally.
 - If little or no voltage is present, the relay is closed and heater is activated. Unplug dryer or disconnect power and replace the ACU.
- 7. Unplug dryer or disconnect power.
- 8. Reassemble all parts and panels.
- 9. Plug in dryer or reconnect power.
- 10. Perform steps under "Service Diagnostic Mode", page 2-4, to verify repair.



AWARNING

2

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #4a: Thermistors

NOTE: Refer to strip circuit below to diagnose outlet and inlet temperature thermistors.

Outlet (Exhaust) Thermistor

The ACU monitors the exhaust temperature using the outlet thermistor, and cycles the heater relay on and off to maintain the desired temperature. **NOTE:** Begin with an empty dryer and a clean lint screen.

- 1. Unplug dryer or disconnect power.
- 2. Remove top panel to access the machine electronics.
- 3. Remove connector **J14** from the ACU and measure the resistance between J14-3 and J14-6 at the connector. The following table gives temperatures and their associated resistance values.

NOTE: All thermistor resistance measurements must be made while dryer is unplugged and connector removed from ACU.

OUTLET THERMISTOR RESISTANCE			
TEMP °F (°C)	RES. RANGE k ohms	TEMP °F (°C)	RES. RANGE k ohms
50° (10°)	19.0-22.0	80° (27°)	8.5-10.5
60° (16°)	14.8-16.8	90° (32°)	6.8-8.8
70° (21°)	11.5-13.5	100° (38°)	5.0-7.0

THERMISTORS STRIP CIRCUIT

- If the resistance is OK, the outlet thermistor is good. Proceed to step 4.
- If the thermistor resistance does not agree with the table, replace the outlet thermistor.
- 4. Check J14-3 and J14-6 to dryer cabinet ground. If either pin indicates continuity to ground (short), replace wiring harness; otherwise, proceed to step 5.
- 5. If the preceding steps did not correct the problem, replace the ACU.

Temperature Levels Incorrect – If no error code is displayed and the connections to the thermistor are good, check the exhaust temperature value at any or all of the temperature levels in question, using the **Timed Dry** cycle.

- 1. Remove load from dryer and disconnect external vent.
- 2. Plug in dryer or reconnect power.
- 3. Run a **TIMED DRY** cycle of at least 2 minutes in duration. Select High, Medium High, Medium, or Low) depending on model).
- 4. Using a calibrated temperature probe, take a temperature measurement in the center of the exhaust outlet. The correct exhaust temperatures are as follows:

EX	EXHAUST TEMPERATURES				
TEMPERATURE SETTING	HEAT TURNS OFF °F (°C)	HEAT TURNS ON °F (°C)			
High	155° ± 5° (68° ± 3°)	10–15° (6–8°)			
Medium High	$140^{\circ} \pm 5^{\circ} (60^{\circ} \pm 3^{\circ})$	below the			
Medium	125° ± 5° (52° ± 3°)	heat turn off			
Low	105° ± 5° (41° ± 3°)	temperature			

- If the temperature is not reached within ~7 minutes, check voltage level and vent blockage, and then retest.
- If the temperature probe does not agree with temperature setting, replace the outlet thermistor.
- If the temperature probe confirms the temperature setting, retest at a different temperature setting.
- 5. If the preceding steps did not correct the problem, replace the ACU.

Inlet Thermistor

NOTE: On the electric dryer, the inlet thermistor is part of the high thermostat assembly (see figure 1, page 3-15). On the gas dryer, the inlet thermistor is located at the drum inlet duct (see figure 1, page 3-3).





The ACU monitors the inlet temperature using the inlet thermistor. The inlet thermistor (along with the outlet thermistor) is used to detect air flow, and assists in calculating load size.

- 1. Unplug dryer or disconnect power.
- 2. Remove the top panel to access the machine electronics.
- 3. Remove connector **J14** from the ACU and measure the resistance between J14-1 and J14-2 at the connector. The following tables (electric & gas) give temperatures and their associated resistance values.

NOTE: All thermistor resistance measurements must be made while dryer is unplugged and connector removed from ACU.

- If the resistance is OK, the inlet thermistor is good. Proceed to step 4.
- If the thermistor resistance does not agree with the table, replace the inlet thermistor.

ELECT - INLET THERMISTOR RESISTANCE			
TEMP °F (°C)	RES. RANGE k ohms	TEMP °F (°C)	RES. RANGE k ohms
68° (20°)	61.2–63.7	131° (55°)	14.5–15.3
77° (25°)	49.0–51.0	140° (60°)	12.1–12.8
86° (30°)	39.5–41.1	149° (65°)	10.2–10.7
95° (35°)	32.0–33.3	158° (70°)	8.5–9.0
104° (40°)	26.1-27.2	167° (75°)	7.2–7.6
113° (45°)	21.4–22.3	176° (80°)	6.1–6.5
122° (50°)	17.6–18.5		

GAS - INLET THERMISTOR RESISTANCE			
TEMP °F (°C)	RES. RANGE k ohms	TEMP °F (°C)	RES. RANGE k ohms
68° (20°)	57.5–67.6	131° (55°)	14.1–15.6
77° (25°)	46.1–53.8	140° (60°)	11.8–12.9
86° (30°)	37.4–43.1	149° (65°)	9.9–10.8
95° (35°)	30.4–34.7	158° (70°)	8.4–9.0
104° (40°)	24.9–28.2	167° (75°)	7.1–7.6
113° (45°)	20.5–23.0	176° (80°)	6.0–6.4
122° (50°)	16.9–18.9		

- 4. Check J14-1 and J14-2 to dryer cabinet ground. If either pin indicates continuity to ground (short), replace wiring harness; otherwise, proceed to step 5.
- 5. If the preceding steps did not correct the problem, replace the ACU.

AWARNING

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Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or

electrical shock.

TEST #4b: Thermal Fuse

ALL DRYERS: The thermal fuse is wired in series with the dryer drive motor.

- 1. Unplug dryer or disconnect power.
- 2. Remove top panel, front panel and bulkhead, and drum to access the thermal fuse.
- 3. Using an ohmmeter, check the continuity across the thermal fuse.
 - If the ohmmeter indicates an open circuit, replace the thermal fuse.

TEST #4c: Thermal Cut-Off

If the dryer does not produce heat, check the status of the thermal cut-off.

- 1. Unplug dryer or disconnect power.
- 2. Remove top panel, front panel and bulkhead, and drum to access the thermal cut-off.
- 3. Using an ohmmeter, check the continuity across the thermal cut-off. See figures 1 and 2, page 3-14, for location.
- 4. If the ohmmeter indicates an open circuit, perform the following:

ALL DRYERS: Replace both the thermal cut-off and high limit thermostat. In addition, check for blocked or improper exhaust system, and, on electric dryers, for heat element malfunction.

AWARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #4d: Gas Valve (Gas Dryer)

- 1. Unplug dryer or disconnect power.
- 2. Access the gas valve by removing top panel, front panel, front bulkhead, and drum.
- 3. Use an ohmmeter to determine if a gas valve coil has malfunctioned. Remove harness plugs. Measure resistance across the terminals (see figure 1). Readings should match those shown in the following chart; if not, replace coils.

GAS VALVE RESISTANCE		
Terminals	Resistance in ohms	
1 to 2	1400 ± 70	
1 to 3	570 ± 28.5	
4 to 5	1300 ± 65	



Figure 1 - Measuring gas valve resistance.

- Disconnect the ignitor plug from the burner. Using an ohmmeter, measure the resistance across the ignitor's 2-pin connector. Resistance should be 50-500 Ω.
 - If resistance readings are outside the range or open, replace the ignitor.
 - If resistance readings are within range, reconnect the ignitor plug and continue to step 5.
- 5. Disconnect the wires going to the flame sensor terminals. Using an ohmmeter, measure across the two sensor terminals for continuity.
 - If there is continuity, reconnect the sensor wires and continue to step 6.
 - If the reading is open, the flame sensor needs replacing.
- 6. Reassemble all parts and panels before reconnecting power.
- 7. Plug in dryer or reconnect power.
- 8. Run a high-temp **TIMED DRY** cycle of at least 2 minutes in duration.
- 9. Watch the ignitor for a couple of minutes through the "peek window" in the side. If the ignitor stays red hot and the gas does not come out and ignite, the flame sensor needs replacing.

NOTE: If ignitor does not come on, line voltage may not be present at the gas burner. The motor centrifugal switch may be suspect.

IMPORTANT: To avoid damage to the gas burner wire harness, ensure the harness is routed exactly as it was prior to service.

- 10. Unplug dryer or disconnect power.
- 11. Reassemble all parts and panels.
- 12. Plug in dryer or reconnect power.
- 13. Perform steps under "Service Diagnostic Mode", page 2-4, to verify repair.

Gas Valve Schematic



Figure 2 - Gas Valve Schematic

AWARNING

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Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

TEST #5: Moisture Sensor

This test is performed when an automatic cycle stops too soon, or runs much longer than expected.

NOTE: Dryer will shut down automatically after 2½ hours. The following items are part of this system:

Part of Moisture System	Electric Dryer	Gas
Harness/connection	✓	✓
Metal sensor strips	✓	\checkmark
ACU	\checkmark	~

NOTE: Refer to strip circuit below to diagnose moisture sensor.

- 1. Activate the Service Diagnostic Mode. See procedures on page 2-4.
- 2. Open the door. Using a wet cloth or one finger, jointly touch both sensor strips.
 - If a repeating beep tone is heard and an alphanumeric number is displayed on the console, the moisture sensor passes the test. Go to step 9.
 - If a beep tone is not heard, or a repeating beep tone is heard before touching both moisture strips, continue with step 3.

NOTE: Overdrying may be caused by a short circuit in the sensor system.

- 3. Unplug dryer or disconnect power.
- 4. Remove top panel to access the ACU.
- 5. Access the moisture sensor wires by removing the console and front panel (see pages 4-9 & 4-11). Disconnect the 3-wire moisture sensor connector located below the door opening between the front panel and bulkhead.
- 6. Access the ACU and remove connector **J13** from the ACU. Check the wire harness for continuity between J13 and the moisture sensor connector.
 - If there is continuity, go to step 7.
 - > If there is no continuity, replace the main harness.
- 7. Measure the resistance across the outermost contacts of the connector that includes the two MOVs.



- If a small resistance is measured, clean the two metal moisture strips inside the drum. If a small resistance is measured after cleaning, replace sensor harness.
- If a small resistance is not measured, go to step 8.
- 8. Measure the resistance across each of the outermost contacts and the center terminal (ground connection).



- If a resistance less than infinity is measured, replace the sensor harness.
- 9. If the moisture sensor diagnostic test passes, check the outlet thermistor: TEST #4a, page 3-16.
- 10. If the preceding steps did not correct the problem, replace the ACU.

NOTE: Some Maytag models have an additional set of moisture sensors located at the back of the drum. To test the rear moisture sensor, repeat steps 6-10, using connector **J23**.



Figure 1 - Moisture Sensor Strip Circuit

MOISTURE SENSOR STRIP CIRCUIT

AWARNING

2



Disconnect power before servicing.

Replace all parts and panels before operating. Failure to do so can result in death or

electrical shock.

TEST #6: Buttons and Indicators

This test is performed when any of the following situations occurs during the "Key Activation & Encoder Test" (see page 2-5).

✓ None of the indicators or display turn on

- ✓ Some buttons do not light
- ✓ No beep sound is heard

None of the indicators or display turn on:

- 1. Unplug dryer or disconnect power.
- 2. Remove top panel to access the ACU and HMI.
- 3. Visually check that ALL ACU connectors are inserted all the way into the ACU.
- 4. Visually check that ALL HMI connectors are inserted all the way into the HMI.
- 5. Visually check that the HMI and housing assembly is properly inserted into the front console.
- 6. If all visual checks pass, perform TEST #1: ACU Power Check, page 3-8, to verify supply voltages.
 - If supply voltages are present, replace the HMI and housing assembly.
 - If supply voltages are not present, replace the ACU.
- 7. Reassemble all parts and panels.
- 8. Plug in dryer or reconnect power.
- 9. Perform the "Key Activation & Encoder Test" (see page 2-5) to verify repair.

Some buttons do not light:

- 1. Unplug dryer or disconnect power.
- 2. Remove top panel to access the ACU and HMI.
- 3. Visually check that the HMI and housing assembly is properly inserted into the front console.
- 4. If visual check passes, replace the HMI and housing assembly.
- 5. Reassemble all parts and panels.
- 6. Plug in dryer or reconnect power.
- 7. Perform the "Key Activation & Encoder Test" (see page 2-5) to verify repair.

No beep sound is heard (on some models, only the Normal cycle beeps upon cycle selection):

- 1. On some models, verify that the "Cycle Signal" volume is turned on. (Procedure varies by model; refer to Use & Care Guide for specific instructions to adjust cycle signal.)
- 2. Unplug dryer or disconnect power.
- 3. Remove top panel to access the ACU and HMI.
- 4. Visually check that ALL ACU connectors are inserted all the way into the ACU.
- 5. Visually check that ALL HMI connectors are inserted all the way into the HMI.
- 6. If all visual checks pass, replace the HMI and housing assembly.
- 7. Reassemble all parts and panels.
- 8. Plug in dryer or reconnect power.
- 9. Perform the "Key Activation & Encoder Test" (see page 2-5) to verify repair.



TEST #7: Door Switch

NOTE: Refer to strip circuit below to diagnose the door switch. Functionality is verified when opening the door turns on the drum light. Closing the door should turn off the drum light.

If the preceding conditions are not met:

- 1. Unplug dryer or disconnect power.
- 2. Remove console to access the machine electronics.
- 3. Check that the wires between the door switch and ACU are connected. (Refer to wiring diagrams on pages 3-4 to 3-7.)
 - If the connections are good, replace the wire and door switch assembly and retest.
 - If wire and door switch assembly have been replaced and dryer still does not start, replace the ACU.
- 4. Reassemble all parts and panels.
- 5. Plug in dryer or reconnect power.
- 6. Verify that the dryer will start with the door closed, and that it stops when the door opens.



DOOR SWITCH STRIP CIRCUIT



Failure to follow these instructions can result in death or electrical shock.

TEST #8: Drum LED

NOTE: Refer to the Drum LED circuit at right (Figure 2) to diagnose the drum LED.

This test is performed if the drum LED does not light when the dryer door is first opened.

- 1. Unplug dryer or disconnect power.
- 2. Remove the top panel to access ACU and HMI.
- 3. Verify that the drum LED connector **J6** is securely connected to the ACU (see Figure 1).
- 4. Check harness and inline connections between the drum LED and ACU.

- > If the harness and connections are good, go to step 5.
- If not, repair or replace as needed.
- 5. Unplug the drum LED connector J6 from the ACU.
- 6. With a multimeter set to milliamps, connect multimeter to ACU connector J6, pins 1 and 3. Plug in dryer or reconnect power. Open the door. Measure the current across ACU connector J6, pins 1 and 3. If the drum LED driver is working properly, there should be a measurement of 150-370 mA.
 - If the current is present, unplug dryer or disconnect power and replace the drum LED.
 - If the current is not present, unplug dryer or disconnect power and replace the ACU.
- 7. Reassemble all parts and panels.

DRUM LED CIRCUIT



Figure 2 - Drum LED Strip Circuit



ACU BOARD



TEST #9: Water Valve (on some models)

Activate Service Diagnostic Mode (see page 2-4). Perform Step 8 in Service Test Mode Chart (see page 2-6). Verify that water is being sprayed into the drum. See figure 1.

NOTE: Refer to the strip circuit below (Figure 2) to diagnose water valve.

If water leaks from the dryer/too much water being sprayed into the drum:

- 1. Inside the drum, unscrew the water nozzle.
- 2. Inspect nozzle opening for residue buildup; clean or replace it.

If no water is sprayed in the drum:

- 1. Verify that water is hooked up and turned on.
- 2. Unplug dryer or disconnect power.
- 3. Remove top panel to access the ACU.
- 4. Verify that the red wire coming from the water valve is connected to the ACU, **J8-1**. Refer to wiring diagrams on pages 3-4 to 3-7, or the strip circuit below.



Figure 1 - Water System Components

- Check Water Valve & Harness—using an ohmmeter, measure the resistance between the ACU J8-1 (red wire) and J9-2 (black wire).
 - If the resistance is 510-590 Ω, go to step 6; if not, replace the water valve.
 - If an open circuit is detected, go to step 7.
- 6. Inside the drum, unscrew and replace the water nozzle using a 7/16" wrench or socket. Retest water valve.
 - If water does not dispense, go to step 7.
- 7. Access the water valve by removing the back panel.
 - Check that the hose and wires are connected to the water valve assembly (see Figure 1).
 - Check that the water valve assembly hose is connected to the nozzle.
- 8. If everything is connected and the water still does not dispense:
 - Unplug dryer or disconnect power.
 - Replace the valve assembly and retest.
- 9. If the preceding steps did not correct the problem, replace the ACU.



Figure 2 - Water Valve Strip Circuit

WATER VALVE STRIP CIRCUIT

Notes

Section 4: Component Access

This section provides service parts access, removal, and installation instructions for the "Whirlpool & Maytag Front-Load Gas & Electric Dryers."

- Component Locations
- Door Reversal Round Shaped Doors
- Door Reversal Square Shaped Doors
- Removing the Top Panel
- Removing the Console/HMI
- Removing the Appliance Control Unit (ACU)
- Removing the Front Panel
- Removing the Door Switch
- Removing the Drum Light
- Removing the Moisture Sensor
- Removing the Belt, Drum, and Rollers
- Removing the Drive Motor
- Removing the Thermal Fuse the Outlet Thermistor
- Removing the Heater Element
- Removing the H-L Thermostat (Electric Models)
- Removing the Thermal Cutoff (Electric Models)
- Removing the Ignitor & Flame Sensor (Gas Models)
- Removing the High-Limit Thermostat (Gas Models)
- Removing the Thermal Cutoff (Gas Models)
- Removing the Gas Burner Assembly Coils
- Removing the Rear Panel
- Removing the Water Valve

COMPONENT LOCATIONS - WHIRLPOOL (FIGURE 1)



Door Reversal — Round-Shaped Doors

A WARNING Electrical Shock Hazard Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

Door Reversal

The following instructions are for models with round-shaped doors.

REVERSE DOOR SWING: ROUND-SHAPED DOOR

DOORS WITH ELECTRICAL WIRING:

1. Using a Phillips screwdriver, remove middle screw in hinge. Disconnect wiring. Tuck wiring into opening.

ALL DOORS:

2. Using a T25[®] screwdriver, remove the four screws securing the door hinge to the dryer and lift the door up and out to remove. Place the door on a soft towel or other non-scratch surface.



Figure 2 - Remove door from dryer.

3. Using a T25[®] screwdriver, remove the two screws securing the door strike to the door frame of the dryer. Rotate the strike 180° and attach to the opposite side of dryer door frame with the two screws removed earlier, as shown.



Figure 1 - Disconnect wiring from door.

Door Reversal — Round-Shaped Doors (continued)

4. Position the door with the inside of the door facing up. Using a Phillips screwdriver, remove the 10 screws securing the inner door to the outer door.



Figure 4 - Remove inner door from outer door.

5. Using a T20[®] screwdriver, remove the six screws holding the hinge assembly in place.



Figure 5 - Remove Hinge

6. Flip and rotate the inner door 180° so that the thin section is at the top and the thick section is at the bottom. Using a T25[®] screwdriver, remove the four screws securing the latch plate in place.



Figure 6 - Remove Latch

7. Using a T25[®] screwdriver, reinstall the latch plate on the opposite side from which it was removed with the four screws removed earlier.



Figure 7 - Reinstall latch on opposite side.

Door Reversal — Round-Shaped Doors (continued)

- 8. Flip over the inner door to the left. Using a T20[®] screwdriver, reinstall the hinge assembly on the opposite side from which it was removed.
- **10.** Reposition rotating assembly and tubing 180° to opposite side of the door.



Figure 8 - Reinstall hinge assembly on opposite side.

DOORS WITH ELECTRICAL WIRING:

9. Lift off inner door assembly. Using a Phillips screwdriver, remove the two screws securing the rotating assembly to the door.



Figure 9 - Remove rotating assembly.



Figure 10 - Reposition rotating assembly and tubing.

11. Rotate bottom of assembly 180° towards you and secure assembly with the two screws removed earlier, using a Phillips screwdriver. Press tubing into indents.

IMPORTANT: Make sure to swing hinge down in front of rotating assembly (see Step 12).



Figure 11 - Rotate assembly bottom and fasten in place.

Door Reversal — Round-Shaped Doors (continued)

ALL DOORS:

12. Position the door with the inside of the door facing up. Using a Phillips screwdriver, reinstall the 10 screws removed earlier, securing the inner door to the outer door.



DOORS WITH ELECTRICAL WIRING:

14. Plug in wire. Using a Phillips screwdriver, secure the rotating assembly to the hinge with the screw removed earlier.



Figure 14 - Reconnect wiring.

Figure 12 - Reinstall inner door assembly.

13. Doors with electrical wiring: Pull the wire through the front panel opening before reinstalling the door. Insert the tabs on the hinge into the mounting slot and slide down to engage the top tab. Secure in place with the four T25[®] screws removed earlier.



Figure 13 - Reinstall door on dryer.

Door Reversal — Square-Shaped Doors



Door Reversal

The following instructions are for models with square-shaped doors.

REVERSE DOOR SWING: SQUARE-SHAPED DOOR

1. Using a T25[®] screwdriver, remove the four screws securing the door hinge to the dryer and lift up and out to remove the door. Place the door on a soft towel or other non-scratch surface. Retain or set aside the four screws.



Figure 1 - Remove door from dryer.

2. Using a T25[®] screwdriver, remove the two screws securing the door strike to the door frame of the dryer. Remove the four screws above and below the door strike and set aside for later use. Rotate the strike 180° and attach to the opposite side of dryer door frame, as shown.



Figure 2 - Move the door strike.

3. Position the door with the inside of the door facing up. Using a Phillips screwdriver, remove the 13 screws securing the inner door to the outer door. Lift off the inner door and set aside.

NOTE: There is a small release tab on each side of the door. If the inner and outer door do not separate easily, slide a credit card, putty knife, or similar flat object between the inner and outer doors at the locations shown to release the tab.



Figure 3 - Remove inner door from outer door.

Door Reversal — Square-Shaped Doors (continued)

4. Using a T25[®] screwdriver, remove the three screws securing the latch plate and the five screws holding the hinge assembly in place.



Figure 4 - Remove hinge and latch from inner door.

5. Using a T25[®] screwdriver, reinstall the latch plate and hinge assembly on the opposite sides from which they were removed.



Figure 5 - Reinstall hinge and latch on opposite sides.

6. Position the inner door on the outer door assembly. Using a Phillips screwdriver, secure with the 13 screws removed earlier.



Figure 6 - Reattach inner door to outer door.

7. Using a T25[®] screwdriver, reinstall the four screws securing the door hinge to the dryer.



Figure 7 - Reattach door to dryer.

Removing the Top Panel & Console/HMI



To Remove the Top Panel

- 1. Unplug dryer or disconnect power.
- **2.** Remove the two (2) 5/16" hex-head screws from the back of the top panel as illustrated in Figure 1.



Figure 1 - Top panel screws.

3. Lift the rear of the top panel, pull back, and remove top panel from the dryer.

To Remove the Console/Human-Machine Interface

- **1.** Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel" prior to performing the following steps.
- **3.** Disconnect the Human-Machine Interface (HMI) connector from the Appliance Control Unit (ACU). See Figure 1.



Figure 1 - Human-Machine Interface (HMI) connector.

- 4. Detach one harness clip from the console bracket (see Figure 2).
- 5. Using a 1/4" nut driver, remove two (2) hex-head screws, one on each side of the console top as shown in Figure 2.



Figure 2 - Remove console screws and harness clip.

6. Gently lift up on the four (4) console tabs as shown in Figure 3. Separate console assembly from bracket while routing the HMI harness through the opening in the console bracket.



Figure 6 - Console Clips.

Removing the Appliance Control Unit (ACU)



To Remove the Appliance Control Unit (ACU)

IMPORTANT: Electrostatic Discharge (ESD) Sensitive Device. Failure to follow the ESD precautions outlined at the beginning of Section 3 "Testing" may destroy, damage, or weaken the main control assembly.

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel" prior to performing the following steps.
- **3.** Disconnect all connectors from the ACU (see Figure 1).
- **4.** Using a 1/4" nut driver, remove the one (1) hex-head screw securing the ACU to the left-side panel (location circled in Figure 2).
- 5. Slide the ACU towards the rear of the dryer to disengage tabs from the side panel. Remove Appliance Control Unit.



Connector	Component(s)
Motor Relay (K1)	Dryer Motor
Heater Relay #1 (K2)	Gas & Electric Heaters
Heater Relay #2 (K3)	Not Used
J2	User Interface
JG	Drum Light LED
81	Water Valve Door Switch Neutral & GND
19	L1 Motor
J13	Moisture Sensor
J14	Inlet Thermistor Outlet Thermistor
J23	Rear Moisture Sensor (some models)



Figure 2 - Appliance Control Board

Removing the Front Panel & Door Switch



To Remove the Front Panel & Door Switch

- 1. Unplug dryer or disconnect power.
- **2.** Perform the procedures on page 4-9, "Removing the Top Panel & Console/HMI" prior to performing the following steps.
- **3.** Perform the procedures on page 4-3, "Removing the Door Assembly" prior to performing the following steps.
- **4.** Disconnect the door switch "inline" connector as shown in Figure 1.



Figure 1 - Door Switch Connector

5. Remove four (4) 1/4" hex-head screws from the bottom of the front panel (see Figure 3).



Figure 2 - Remove 4 screws at bottom panel.

NOTE: Refer to Figure 3 for the following 2 steps.

- 6. Open dryer door and remove the lint screen. Next, remove the two (2) Phillips screws below the dryer door (see Figure 3).
- **7.** Remove three (3) 1/4" hex-head screws from the top of the front panel (see Figure 3).



Figure 3 - Remove remaining screws on front panel.

- **8.** Lift the front panel assembly up off the tabs and away from the dryer. Route the door switch harness around the front console bracket.
- **9.** Locate the door switch on the backside of the front panel, just above the door opening. Depress both tabs and push switch through the opening. (See Figure 4.)



Figure 4 - Remove door switch.

Removing the Drum Light & Moisture Sensor

AWARNING



Electrical Shock Hazard Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

To Remove the Drum Light

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel & Console/HMI" prior to performing the following steps.
- **3.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.
- 4. If not done already, unplug connector J6 from the ACU.
- 5. Unclip the harness clip shown in Figure 1.



Figure 1 - Harness clip location.

6. Depress the tabs on both sides of the drum light to release from bulkhead. Route the light and harness assembly through the hole (see Figure 2).



Figure 2 - Drum Light Tabs

To Remove the Moisture Sensor

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel and Console/HMI" prior to performing the following steps.
- **3.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.
- 4. Open dryer door and remove the lint screen.
- **NOTE:** Refer to Figure 3 for the following 3 steps.
- 5. Disconnect Moisture Sensor connector (see Figure 3).
- 6. From inside the drum, remove two (2) 1/4" hex-head screws securing the Outlet Grill & Housing Assembly to the front bulkhead (see Figure 3).
- 7. Lift up and remove the Outlet Grill & Housing Assembly from the bulkhead (see Figure 3).



Figure 3 - Connectors & Screws

8. Remove the harness from the moisture sensor strips (see Figure 4).



Figure 4 - Moisture Sensor Connectors

9. Separate the Outlet Grill & Housing Assembly to access and remove the moisture sensor strips. See Figure 5.



Figure 5 - Sensor Strips

Removing the Belt, Drum, and Rollers



Electrical Shock Hazard Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

5. Disconnect Moisture Sensor connector (see Figure 2).



Figure 2 - Disconnect moisture sensor connector.

To Remove the Belt and Drum

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel and Console/HMI" prior to performing the following steps.
- **3.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.
- **4.** Remove two (2) 1/4'' hex-head screws from the top of the console bracket and two (2) from the front of the bracket. Remove console bracket and set aside for reinstallation (see Figure 1).



Figure 1 - Remove console bracket screws.

6. Remove the three (circled) 1/4" hex-head screws from the lint duct as illustrated in Figure 3. Swivel the lint duct down from the bulkhead and remove.



Figure 3 - Remove lint duct screws.

Removing the Belt, Drum, and Rollers (continued)

 Remove the four (4) 1/4" hex-head screws securing the front bulkhead to the side panels as illustrated in Figure 4. Lift the bulkhead up off the side-panel tabs and remove.



Figure 4 - Remove front bulkhead screws.

- 8. Reach under the drum, (raise it as far as it will go), and push the idler pulley arm, on the back of the drive motor, to the left to relieve the tension on the belt, then remove the belt from the pulley.
- 9. Slide the belt off the front of the drum and remove belt.



Figure 5 - Remove drum belt.

10. Lift the drum and remove it from the dryer cabinet.

Reassembly Note - Belt Orientation on Pulley



Figure 6 - Viewed from rear of dryer.

To Remove a Roller

1. Pry the sides of the triangular ring out of the groove in the roller shaft with a small screwdriver (see Figure 7).



Figure 7 - Triangular Ring

2. Slide the roller off the roller shaft (see Figure 8).



Figure 8 - Remove roller from shaft.

3. To remove the roller shaft, remove the 9/16" nut and washer from the roller support, and remove the support and remaining triangular ring. See Figure 9.



Nut & Washer



Figure 9 - Roller Hardware

Removing the Drive Motor





Figure 2 - Remove Blower Wheel.

8. Lift the locking tabs on the top and bottom of the motor harness plug and disconnect the plug from the motor terminals. See Figure 3.

To Remove the Drive Motor

- 1. Unplug dryer or disconnect power.
- Perform the procedures on page 4-9, "Removing the Top Panel and Console/HMI" prior to performing the following steps.
- **3.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.
- **4.** Perform the procedures on page 4-13, "Removing the Belt and Drum" prior to performing the following steps.
- 5. Using a 1/4" nut driver, remove the one (1) hex-head screw securing blower wheel shield to blower housing (see Figure 1).



Figure 1 - Blower wheel shield screw.

NOTE: Refer to Figure 2 for the following 2 steps.

- **6.** Reach around to the back of the blower housing and attached a 7/16" open-end wrench to the hex-end of the motor shaft. Insert a 1/2" ratchet drive into the blower wheel square hole (see Figure 2).
- 7. Turn the blower wheel clockwise (shown by the "REMOVE" arrow that is embossed on the front of the wheel) and remove the wheel from the motor shaft (see Figure 2).



Figure 3 - Unplug motor connector.

9. Locate the front and rear motor clips as illustrated in Figure 4 below. Using a small flat blade screwdriver, insert the blade of the screwdriver into the pocket at the tip of the clip. Pry the clips off the tab and remove.



Figure 4 - Drive motor retaining clips.

10. Lift motor from support brackets, slide shaft from blower wheel housing and remove motor from cabinet.

Removing the Thermal Fuse & Outlet Thermistor



Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

To Remove the Thermal Fuse & Outlet Thermistor

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel and Console/HMI" prior to performing the following steps.
- **3.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.
- **4.** Remove the three (3) 1/4" hex-head screws from the lint duct as illustrated in Figure 1. Swivel the lint duct down and remove.



Figure 1 - Remove lint duct screws.

- 5. Disconnect the two wire connectors from the thermal fuse or outlet thermistor terminals (see Figure 2).
- 6. Remove the screw(s) from the thermal fuse or outlet thermistor and remove the component from the blower housing (see Figure 2).



Figure 2 - Thermal Fuse & Outlet Thermistor.

Removing the Heater, High Limit Thermostat & Thermal Cutoff



To Remove the Heater, High Limit Thermostat & Thermal Cutoff (Electric Models Only)

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel and Console/HMI" prior to performing the following steps.
- **3.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.



High-Limit Thermostat, Thermal Cutoff, & Heater Area

Figure 1 - Heater Location

4. Remove the screws from the heater shield/support and remove heat shield/support (see Figure 2).



Figure 2 - Heater Shield/Support

- 5. To Remove the Heater (see Figure 3):a) Remove the two (2) wires from the heater terminal
 - a) Remove the two (2) wires from the heater terminal block.
 - b) Remove the 1/4" hex-head screw from the heater housing and slide the heater out of the heater duct.
- 6. To remove the High Limit Thermostat or Thermal Cutoff (see Figure 3):
 - a) Disconnect the wires from the High-Limit Thermostat or Thermal Cutoff.
 - **b)** Remove the screw(s) from the High-Limit Thermostat or Thermal Cutoff and remove the component from the heater duct.



Figure 3 - Heater & Thermals

COMPONENT ACCESS

Removing the Ignitor, Flame Sensor, High-Limit Thermostat and Thermal Cutoff (Gas Models Only)



To Remove the Ignitor, Flame Sensor, High-Limit Thermostat and Thermal Cutoff

- **1.** Unplug dryer or disconnect power.
- 2. Turn off gas supply to dryer.
- **3.** Perform the procedures on page 4-9, "Removing the Top Panel and Console/HMI" prior to performing the following steps.
- **4.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.



Figure 1 - Gas Burner Assembly

5. To remove the Ignitor (see Figures 2 & 3):

- a) Disconnect the ignitor wire connector from the main harness.
- **b)** Remove the 5/16" hex-head ignitor bracket screw from the burner venturi and remove the ignitor and bracket.



Figure 2 - Removing Ignitor

c) Remove the 5/16" hex-head ignitor screw and remove the ignitor from the bracket.



Figure 3 - Ignitor

Removing the Ignitor, Flame Sensor, High-Limit Thermostat and Thermal Cutoff (continued)

6. To remove the Flame Sensor (see Figure 4):

- a) Disconnect the two (2) wire connectors from the flame sensor terminals.
- **b)** Remove the flame sensor screw from the burner venturi and remove the sensor.



Figure 4 - Removing Flame Sensor

- 7. To remove the High-Limit Thermostat or the Thermal Cutoff (see Figure 5):
 - a) Disconnect the two (2) wire connectors from the component terminals.
 - **b)** Remove the two (2) screws from the High-Limit Thermostat, or the single screw from the Thermal Cutoff. Remove the component from the venturi.



Figure 5 - Gas Burner Thermals

Removing the Gas Burner Assembly Coils (Gas Models Only)



To Remove the Gas Burner Assembly Coils

- 1. Unplug dryer or disconnect power.
- 2. Turn off gas supply to dryer.
- **3.** Perform the procedures on page 4-9, "Removing the Top Panel and Console/HMI" prior to performing the following steps.
- **4.** Perform the procedures on page 4-11, "Removing the Front Panel" prior to performing the following steps.



Figure 1 - Gas Burner Assembly

- **5.** Remove the ignitor from the burner (see page 4-18 for the procedure).
- 6. Disconnect the 2-wire and 3-wire connectors from the burner coil assembly terminals (see Figure 3).
- 7. Remove the two screws from the burner support bracket and remove the bracket from the burner (see Figure 3).
- 8. Remove the two screws from the front of the burner bracket and remove the burner assembly from the dryer.





Figure 3 - Burner Screws and Connectors

9. Remove the one (1) Phillip screw, indicated in Figure 4, to release the coil pack.



Figure 4 - Remove retainer screw.

10. Lift and remove the coil pack from the valve assembly. See Figure 5.



Figure 5 - Lift and remove coil pack.

Removing the Rear Panel

AWARNING

Electrical Shock Hazard Disconnect power before servicing. Replace all parts and panels before operating. Failure to do so can result in death or electrical shock.

To Remove the Rear Panel

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-9, "Removing the Top Panel" prior to performing the following steps.
- **3**. Using a 1/4" nut driver, remove the two (2) hex-head screws securing the rear bracket to the rear panel as indicated in Figure 1. Remove the rear bracket.



Figure 1

5. Remove the ten (10) 1/4" hex-head screws securing the rear panel to the dryer (see Figure 3).



Figure 3

- **6.** Lift up rear panel slightly to disengage from base and remove from dryer.
- **4.** Remove the 5/16" hex-head screw securing the terminal block cover to the rear panel. Remove the cover (see Figure 2).



Figure 2

Removing the Water Valve (Steam Models Only)



Failure to do so can result in death or

electrical shock.

Water Valve Components



Figure 1 - Water Valve viewed from right side.

To Remove the Water Valve

- 1. Unplug dryer or disconnect power.
- 2. Perform the procedures on page 4-21, "Removing the Rear Panel" prior to performing the following steps.
- Disconnect the water valve harness connector (see Figures 1 & 2).
- Remove the "C-Clip" from the water valve tube fitting and remove water tube from valve assembly (see Figures 1 & 2).
- Remove the 1/4" hex-head screw securing the water valve bracket to the dryer base. Remove water valve and bracket assembly from dryer. See Figures 1 & 2.



Figure 2 - Water Valve viewed from left side.

Section 5: Connectivity

This section provides connectivity setup, download, installation, and troubleshooting for the "Whirlpool & Maytag Front-Load Gas & Electric Dryers."

- Internet Connectivity Guide
- Connectivity Troubleshooting

Internet Connectivity Guide

Get the App and Get Connected

With your mobile device, get the app, connectivity setup instructions, terms of use, and privacy policy at: www.whirlpool.com/connect

In Canada, visit

www.whirlpool.ca/connect

and click on the Whirlpool[®] Connected Appliances link.

INITIAL SET UP

IMPORTANT: Proper installation of the appliance prior to use is the customer responsibility. Be sure to read and follow the Installation Instructions that came with the appliance.

Connectivity requires WiFi and account creation. App features and functionality subject to change. Data rates may apply. If you have any problems or questions, call Whirlpool Corporation Connected Appliances at **1-866-333-4591**.

You Will Need:

- A home wireless router supporting:
 - Frequency Band: 2.4GHz Band IEEE 802.11 b/g/n
 - Security: WiFi Protected Access WPA2
 - Network Support: IPV4 Minimum

If you are unsure of the router's capabilities, refer to the router manufacturer's instructions.

- The router to be ON and have a live internet connection.
- The 10-character Smart Appliance ID (SAID) code for your appliance. The SAID code is either printed on a label on the appliance or can be found on the LCD screen. Refer to the appliance Use & Care Guide for the location.

Download and Install with Touch Screen

Perform the following steps to download and install the App. Once installed, launch the app. You will be guided through the steps to set up a user account and to connect the appliance. If you have any problems or questions, call Whirlpool Corporation Connected Appliances at **1-866-333-4591**.

1. Download the Mobile App.

From your mobile device, smartphone, or tablet, go to <u>www.whirlpool.com/connect</u> and follow the instructions to download and install the Whirlpool[®] app.



- 2. Create Your Own Account.
- 3. Select Add Appliance on the Mobile Application.
- 4. Scan the QR code from the Appliance WiFi settings touchscreen display.
- 5. Follow Mobile Application instructions to use the Appliance touchscreen to select your home router and enter your home router passphrase on the appliance touch screen.
- 6. Select next on the Mobile Application instruction Screen.
- 7. On the Mobile application observe and wait for the Appliance to indicate that it is connected to the home router, Internet, and Cloud Service.
- 8. Upon Success name your appliance and start using its remote features.

Download and Install with non-Touch Screen

Perform the following steps to download and install the App. Once installed, launch the app. You will be guided through the steps to set up a user account and to connect the appliance. If you have any problems or questions, call Whirlpool Corporation Connected Appliances at **1-866-333-4591**.

1. Download the Mobile App.

From your mobile device, smartphone, or tablet, go to <u>www.whirlpool.com/connect</u> and follow the instructions to download and install the Whirlpool® app.

- 2. Create Your Own Account.
- 3. Select Add Appliance on the Mobile Application.
- 4. Scan the QR code from the Appliance Label or manually enter the SAID and MAC.
- 5. On the Mobile Application enter your home router passphrase (if your home router has a choice of frequency bands be sure to use the 2.4GHz band router name).
- 6. Select next on the Mobile Application instruction Screen.
- 7. On the Mobile application observe and wait for the Appliance to indicate that it is connected to the home router, Internet, and Cloud Service.
- 8. Upon Success name your appliance and start using its remote features.

NOTES:

- Once the dryer is connected to the consumer's home WiFi network, it will remain linked even if the power goes out, the appliance is moved, or if it is put in storage for a while.
- If the consumer replaces their wireless router (or get a different Smart Dryer), you will need to repeat this connectivity setup process.

Connectivity Troubleshooting

Troubleshooting Guide

Connection Status	Console Indicator Lights
Dryer is not connected	Smart Grid (Connected) status indicator is OFF
Dryer is attempting to connect to home WiFi router	Smart Grid (Connected) status indicator is blinking slowly
Dryer is connected to home WiFi router, but Whirlpool™ app or Smart Grid functions do not work	Smart Grid (Connected) status indicator is blinking
Dryer is connected to home WiFi router, and the Whirlpool™ app works	Smart Grid (Connected) status indicator is ON

If you experience	Possible Causes	Solution
Dryer is not connected to home Wi-Fi router:	The dryer may be in standby mode.	Touch the POWER/CANCEL button on the dryer.
	The dryer has never been connected to the home Wi-Fi router.	See "Connectivity Guide" in this section, pages 5-2.
	Lost connection to home WiFi router.	Check whether the router is on and working with other computers or devices in the home (able to access the Internet).
	Weak signal strength or signal interference between the dryer and router.	Try to place the wireless router closer to the dryer. It may be necessary to install a WiFi range extender.
Dryer is connected to home Wi-Fi router, but Whirlpool® app or Smart Grid functions do not work	User account has not been properly set up, or the dryer has not been registered in an account.	See "Connectivity Guide" in this section or the Whirlpool™ app directly for account setup and dryer registration instructions.
		Verify that the dryer is paired with the customer account in the app.
		Verify correct e-mail address, mobile number, and notification preferences.

Notes

PRODUCT SPECIFICATIONS & WARRANTY INFORMATION SOURCES

IN THE UNITED STATES:

FOR WHIRLPOOL PRODUCTS: 1-800-253-1301

FOR TECHNICAL ASSISTANCE WHILE AT THE CUSTOMER'S HOME CALL: THE TECHNICAL ASSISTANCE LINE: 1-800-832-7174

> HAVE YOUR STORE NUMBER READY TO IDENTIFY YOU AS AN AUTHORIZED IN-HOME SERVICE PROFESSIONAL

FOR LITERATURE ORDERS (CUSTOMER EXPERIENCE CENTER): PHONE: 1-800-851-4605

FOR TECHNICAL INFORMATION AND SERVICE POINTERS: www.servicematters.com

IN CANADA: FOR PRODUCT SPECIFICATIONS AND WARRANTY INFORMATION CALL PHONE: 1-800-461-5681

FOR TECHNICAL ASSISTANCE WHILE AT THE CUSTOMER'S HOME CALL: THE TECHNICAL ASSISTANCE LINE: 1-800-488-4791

> HAVE YOUR STORE NUMBER READY TO IDENTIFY YOU AS AN AUTHORIZED IN-HOME SERVICE PROFESSIONAL

Whirlpool & Maytag Front-Load Gas & Electric Dryers

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