



CLOTHES DRYER

Technical Information

Models : 402.89032010

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.

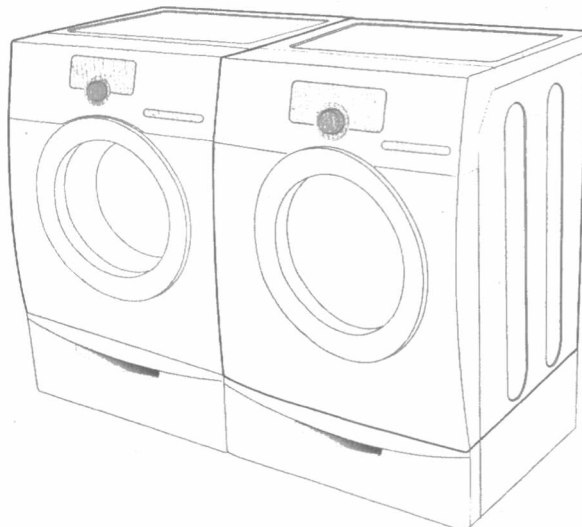
- Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.
- Refer to Service Manual for detailed installation, operating, testing, troubleshooting, and disassembly instructions.

CAUTION

All safety information must be followed as provided in Service Manual.

WARNING

To avoid risk of electrical shock, personal injury or death; disconnect power to dryer before servicing, unless testing requires power.



Code No. : DC68-02365C

INFORMATION CODES

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ERROR ITEMS AND DIAGNOSTIC CODES

An occurrence of an Error will make a sound of error melody for 5 seconds and continuously show one of the Error Displays from the following errors.

Error Display		Trigger	Action Taken
LED	LCD		
tS tO tE	Error! Temperature Sensor Problem	The Thermistor resistance is very low or high.	Check for : - Clogged lint screen - Restricted vent system. - Check Thermistor resistance.
dO dE	Error! Door is open.	Running the dryer with door open	Check for : - Close the door, and run the dryer - Loose or open wire terminals in Door sense circuit.
dF	Error! Door Open Sensing Problem	Invalid state for more than 256 milliseconds	Check for : - Loose or open wire terminals in Door sense circuit.
bE bE2	Error! A button is either stuck or is being pressed continuously.	Invalid state of key circuit short for 30secs	Check for : - Display PCB key circuit short or not
od	Error! Time Limit Exceeded	Invalid Dry time in excess Dry time	Check for : - Sensor bar Open - Using Adjust time Up excessively
hE	Error! Overheated	Invalid heating Temp in running the dryer	Check for : - Restricted vent system. - Check Thermistor resistance.
Et	Error! Electronic Control Problem	Invalid state of Eeprom communication	Check for : - PCB on Eeprom circuit
FE	Error! Power Interruption	Invalid power source Frequency	Check for : - Not using regular power source frequency - Invalid power frequency sense circuit

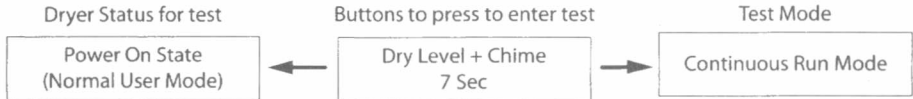
TEST MODE

WARNING

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Continuous Run Mode

How to Enter:



Continuous Run Mode:

1. Press "Dry Level" + "Chime" for 7 seconds during Power On State(Normal User Mode).
2. Once in Continuous Run Mode, 7-Segment will toggle display "cc" and the remaining time.
3. The previous cycle will restart during Continuous Run Mode until Continuous Run Mode is disabled.
4. During Continuous Run Mode, press "Dry Level" + "Chime" for 7 seconds to return to Normal User Mode. 7-segment will no long display "cc" and only display the remaining time.

Service Mode

Service Mode:

- This mode is composed to Sensor Bar Touch Data Display Mode and Cycle Count Display Mode and Software Version Display Mode. Those are Special Test Mode.

How to Enter:

1. Dryer must be on before Service Mode can be entered.
2. Press "Temp" and "Chime" Keys for 3 seconds, or until 3 beeps are heard.
3. The machine will now be in Service Mode.

Sensor Bar Touch Data Display Mode

Definition of Sensor Bar Touch Data Display Mode:

1. This mode is default mode of Special Test Mode(Initial Special Test Mode).
2. Dryer will display Sensor Bar Data.

How to Enter:

- This is same as a Service Mode.

Definition of Cycle Count Mode:

1. This mode is second mode of Special Test Mode.
2. Dryer will display Cycle number.

How to Enter:

- To enter Special Test Mode press While in Service Mode pressing the "Chime" key until the control beep.

TEST MODE

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Software Version Display Mode

Definition of Software Version Display Mode:

1. This mode is third mode of Special Test Mode.
2. Dryer will display software version.

How to Enter:

1. To enter Special Test Mode press While in Service Mode pressing the "Temp" key until the control beep.

example) In case of "U105", "U1" means major version, "05" means minor version.

Temperature Display Mode(in Celsius)

Definition of Temperature Display Mode:

- Dryer will display temperature of drum inside in Celsius.(Unit is 0.1°C)

How to Enter:

1. Under Normal User Mode, Press "More Time" and "Less Time" keys simultaneously for 7 seconds.
2. This action will put the dryer into Touch Sensor Mode.
3. Under Touch Sensor Mode, Press "More Time" Key.

• Converting °C → °F

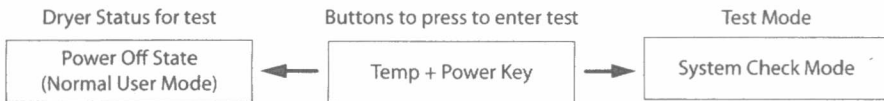
Celsius(°C)	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00
Fahrenheit(°F)	32.00	50.00	68.00	86.00	104.00	122.00	140.00	158.00

Celsius(°C)	80.00	90.00	100.00	110.00	120.00
Fahrenheit(°F)	176.00	194.00	212.00	230.00	248.00

$$F = 9/5C + 32$$

System Check Mode

How to Enter:



System Check Mode:

1. While in Power Off, pressing the "Temp" + "Power" keys simultaneously will put the dryer into the System Check Mode.
2. "t2" will display.
3. System Check Mode Progress t2 mode Function Performed Start/Pause
Motor(CW) Relay On → Heater Relay On → Heater Relay Off → Motor(CW) Relay Off (Circulation)

TROUBLE SHOOTING

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TROUBLE DIAGNOSIS

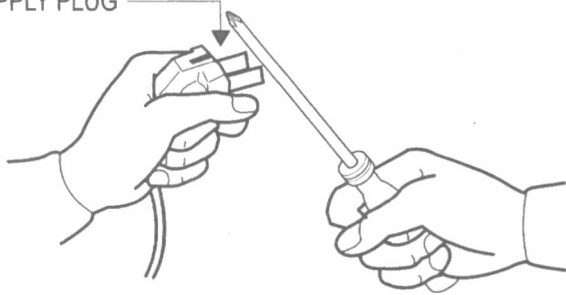
- As the micom dry machine is configured of the complicate structure, there might be the service call.
Below information is prepared for exact trouble diagnosis and suitable repair guide.

Caution for the Repair and Replacement

Please follow below instruction for the trouble diagnosis and parts replacement.

- 1) As some electronic components are damaged by the charged static electricity from the resin part of dryer or the human body, prepare the human body earth or remove the potential difference of the human body and dryer by contacting the power supply plug when the work contacting to PCB is executed.

POWER SUPPLY PLUG



- 2) Perform troubleshooting before replacing the PCB assembly.

TROUBLE SHOOTING

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No	Problem	Recommended Checks/Procedures
1	Will Not Start or Run	<ul style="list-style-type: none"> • Check power to the machine. • Dryer is plugged in. • Blown fuse or circuit breaker. • Door switch functional...door closed. Check for error code 3 (See Table for codedefinition). • Start/Pause rotary selector dial functional. • Control Board operational. • Belt off or broken and Belt Cut-off Switch operates. • Drive motor functional. • Check motor winding resistance: 2.88ohms between pin #3 and 4, 3.5ohms between pin #4 and 5.
2	Motor runs/ tumbler will not turn	<ul style="list-style-type: none"> • Belt off or broken/damaged. • Idler tension spring too weak or stretched. • Idler pulley jammed or stuck.
3	Runs a few minutes and then stops	<ul style="list-style-type: none"> • Lint buildup around drive motor. • Low voltage present. • Blower impeller blocked in blower housing. • Drive motor - start switch contacts stuck closed.
4	Blows fuses or trips circuit breaker while running(Elec. Model)	<ul style="list-style-type: none"> • Read a amp.(if machine is drawing high current or if breaker is weak, breaker/fuse rated too low, or wrong fuse installed) • Is the belt connected well? • Is the winding of the motor continuous? (Rotor winding, stator winding, generator) • Is the motor protector normal? • If above points are not found, the PCB assembly is out of order. Replace it.
5	Blows fuses or trips circuit breaker while running(Gas Model)	<ul style="list-style-type: none"> • If the dryer is drawing more amperage than it is suppose to, then the dryer is at fault. If the breaker is tripping or fuse is blowing and the dryer is drawing the correct amperage, then the problem is in the house electrical system. • Igniter harness loose and shorted to base. • Incorrect wiring or wire shorted to ground. • Drive motor winding shorting to ground.
6	Will not heat (motor runs)	<p>Open heating element.</p> <ul style="list-style-type: none"> • Regulating thermostat trips easily or is open. • Check Thermistor.
7	Will Not Dry Gas Model Poor Gas Ignition	<p>When the dryer is operated on a heat setting, the igniter should be energized and burner shall fire within 45 seconds at 120 VAC. The failure of a component in this system will usually be indicated by one of three symptoms:</p>

TROUBLE SHOOTING

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No	Problem	Recommended Checks/Procedures
8	The igniter does not glow	<p>If the igniter does not heat up, remove power and using an ohmmeter, check the following:</p> <ul style="list-style-type: none"> • No power from control(L1 supply) • Open igniter while calling for heat • Open flame sensor • Open motor switch(Neutral supply)
9	Igniter glows - No gas ignition	<p>If the igniter heats up but the main burner flame is not ignited, remove power and using an ohmmeter, check the following:</p> <ul style="list-style-type: none"> • Open secondary coil • Open holding coil • Open wire harness
10	The gas is ignited but the flame goes out	<p>If a normal ignition takes place and after a short while the flame goes out, check for the following:</p> <ul style="list-style-type: none"> • Poor venting • Gas coils break down under a load. • Weak Hi-Limit • Bad drum seals
11	Improper drying clothes wrinkled Rough texture long dry time	<ul style="list-style-type: none"> • Lint filter is not clean. • Restriction in exhaust. • Outside exhaust hood damper door stuck closed. • Exhaust too long, too many elbows, flex ductwork installed. • Poor intake air available for the dryer. • Incorrect tumbler speed. Tumbler belt slipping. • Blower wheel broken. check for foreign material in blower area. • Customer overloading dryer. • Check clothing labels for fabric content and cycle selected. • Clothes too wet due to insufficient spin out by washer.
12	Noisy and/Or Vibration	<ul style="list-style-type: none"> • Thumping Check for loose tumbler baffle, rear tumbler roller(s) worn or misaligned, out-of-round tumbler or high weld seam on tumbler. • Ticking Check for loose wire harness or object caught in blower wheel area. • Scraping Check for front or rear bulkhead felt seal out of position or worn tumbler front bearings. • Roaring Check for blower wheel rubbing on blower housing or bad motor bearings. • Popping or check for idler on squealing sound. Check for a sticky or frayed belt.

TROUBLE SHOOTING

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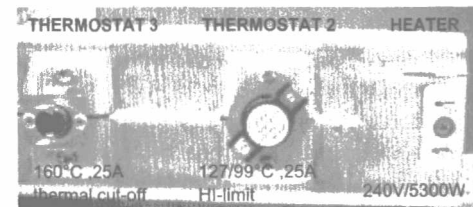
COMPONENT TESTING PROCEDURES

Component Electrical Testing (with ohmmeter)

- Thermistor resistance 10K Ω @ 25°C 77°F (2P-Blue & Red wire)
- Thermostat 1 resistance < 1 Ω (White & Yellow wire)

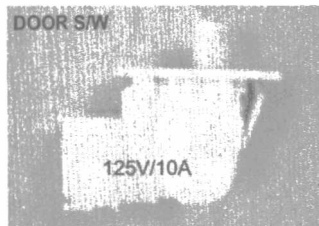


- Thermostat 3 resistance < 1 Ω (Red & Black wire) - If resistance is infinity, replace thermostat 3.
- Thermostat 2 resistance < 1 Ω (Blue & Black wire) - If resistance is infinity, replace thermostat 2.
- Heater resistance 10 Ω (Blue & Blue wire) - If resistance is infinity, replace Heater.

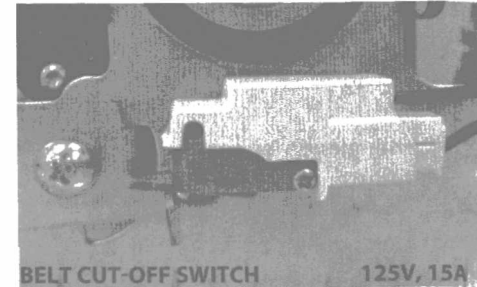


- Measure resistance of the following terminal

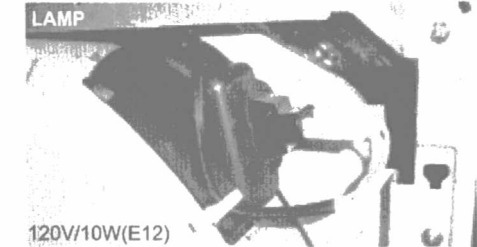
- 1) Door switch : open
Terminal : "COM" - "NC" (1-3) < 1 Ω
Terminal : "COM" - "NO" (1-2) : ∞ Ω
- 2) Door switch push: On
Terminal : "COM" - "NC" (1-3) : ∞ Ω
Terminal : "COM" - "NO" (1-2) < 1 Ω



- Belt Cut-off Switch
 - Lever open: Resistance value < 1 Ω
 - Lever push: Resistance value : ∞ Ω



- Lamp resistance 80~100 Ω (Violet & gray)



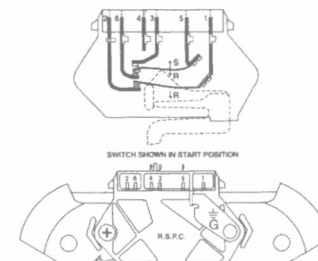
- Motor (Electronic & GAS)

Contacts

Function	1M	2M	3M	5M	6M
Start			●-----●		
Run	●-----●			●-----●	

- = Contact closed

Centrifugal Switch (Motor)



2.88 Ω between
Pin# 3 and 4

3.5 Ω between
Pin# 4 and 5

TROUBLE SHOOTING

WARNING

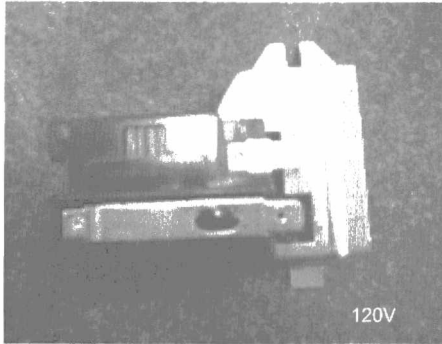
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GAS MODEL

Radiant Sensor(10RS)

Resistance value $< 1 \Omega$.

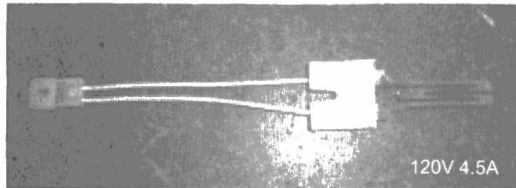
If resistance is infinite, replace Radiant sensor



Igniter(101D)

Resistance value $40 \sim 400 \Omega$

If resistance is infinite, replace Igniter



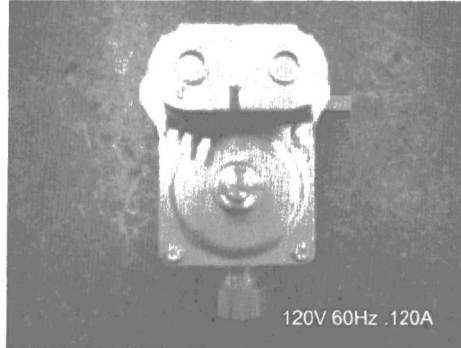
Gas Valve(25M01A)

Valve 1-2 : Resistance value $1.2K \Omega$

Valve 1-3 : Resistance value $0.5K \Omega$

Valve 4-5 : Resistance value $1.2K \Omega$

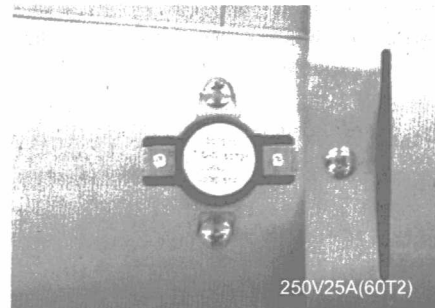
If resistance is infinity, replace Valve



Thermostat (60T21 Hi-Limit)230F-50F

Resistance value $< 1 \Omega$

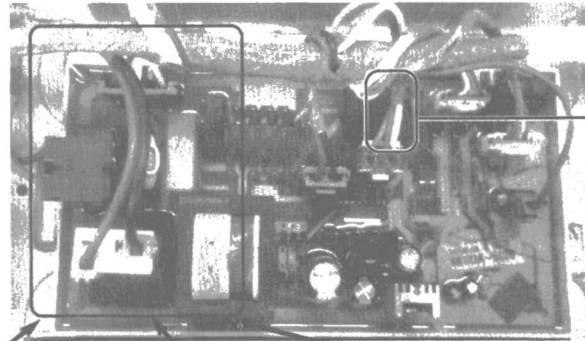
If resistance is infinity, replace Thermostat



TROUBLE SHOOTING

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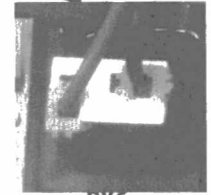
Steam model only
parts: RELAY (RY2,RY3)



CNT



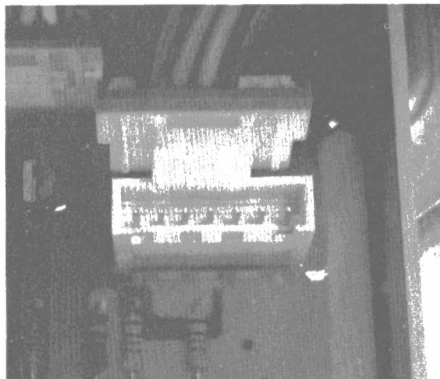
RY5



RY6

- 1. AC Power Port
 - 2. AC Power Off Detection Sensor
 - 3. Door Detection Sensor
- Motor Relay Switch
- Heater Relay Switch

Sensor Bars & temperature sensor check



Sensor Bars - Disconnect harness and test Pink wire Pin 4 to Orange wire Pin 5.

Approx $\infty \Omega$ without laundry

This mode is default mode of entering Special Test Mode. Refer to page 3.

Cycling Thermistor - Disconnect harness and test Blue wire Pin 2 to Red wire Pin 6.

Approx 10 K Ω at 25 °C/77 °F

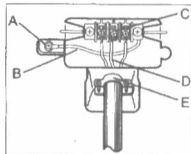
TROUBLE SHOOTING

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INSTALLATION OF 3 PRONG CORD

- A. External ground connector
- B. Neutral grounding wire (green/yellow)
- C. Center silver-colored terminal block screw
- D. Neutral wire (white or center wire)
- E. $\frac{3}{4}$ " (1.9 cm) UL-listed strain relief



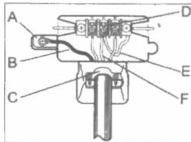
1. Loosen or remove the center terminal block screw.
2. Connect the neutral wire (white or center wire) of the power cord to the center, silver-colored terminal screw of the terminal block. Tighten screw.
3. Connect the other wires to outer terminal block screws. Tighten screws.
4. Tighten the strain relief screws.
5. Insert the tab of the terminal block cover into your Dryer's rear panel slot. Secure the cover with a hold-down screw.

WARNING:

If converting from a 4-wire electrical system to a 3-wire, the ground strap must be reconnected to the terminal block support to ground the Dryer frame to the neutral conductor.

INSTALLATION OF 4 WIRE CORD

- A. External ground connector
- B. Green or bare copper wire of power cord
- C. $\frac{3}{4}$ " (1.9 cm) UL-listed strain relief
- D. Center silver-colored terminal block screw
- E. Neutral Grounding wire (green/yellow)
- F. Neutral wire (white or center wire)



1. Remove the External ground connector screw.
2. Connect the ground wire (green or unwrapped) of the power cord to the external ground connector screw. If you want to connect B (Green or bare copper wire of power cord) to the Neutral Post without assembling with A (cabinet ground), call the service technician.
3. Loosen or remove the center terminal block screw.
4. Connect the neutral wire (white or center wire) of the power cord and the appliance ground wire (green with yellow stripes) under the central screw of the terminal block.
5. Connect the other wires to the outer terminal block screws. Tighten screws.
6. Tighten the strain relief screws.
7. Insert the tab of the terminal block cover into your Dryer's rear panel slot. Secure the cover with a hold-down screw.

WIRING DIAGRAM

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WIRING DIAGRAM

