



# **AD-360X2**

## **Mechanical/Electrical**

### **Service Procedure**

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**American Dryer Corporation**  
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# Retain This Manual In A Safe Place For Future Reference

American Dryer Corporation products embody advanced concepts in engineering, design, and safety. If this product is properly maintained, it will provide many years of safe, efficient, and trouble free operation.

*ONLY qualified technicians should service this equipment.*

**OBSERVE ALL SAFETY PRECAUTIONS** displayed on the equipment or specified in the installation manual included with the dryer.

The following “**FOR YOUR SAFETY**” caution **must be** posted near the dryer in a prominent location.

**FOR YOUR SAFETY**

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

**POUR VOTRE SÉCURITÉ**

Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables à proximité de cet appareil ou de tout autre appareil.

We have tried to make this manual as complete as possible and hope you will find it useful. **ADC** reserves the right to make changes from time to time, without notice or obligation, in prices, specifications, colors, and material, and to change or discontinue models.

## Important

For your convenience, log the following information:

**DATE OF PURCHASE** \_\_\_\_\_ **MODEL NO.** AD-360X2

**RESELLER'S NAME** \_\_\_\_\_

**Serial Number(s)** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Replacement parts can be obtained from your reseller or the **ADC** factory. When ordering replacement parts from the factory, you can FAX your order to **ADC** at (508) 678-9447 or telephone your order directly to the **ADC** Parts Department at (508) 678-9000. Please specify the dryer **model number** and **serial number** in addition to the **description** and **part number**, so that your order is processed accurately and promptly.

The illustrations on the following pages may not depict your particular dryer exactly. The illustrations are a composite of the various dryer models. Be sure to check the descriptions of the parts thoroughly before ordering.

**“IMPORTANT NOTE TO PURCHASER”**

Information **must be** obtained from your local gas supplier on the instructions to be followed if the user smells gas. These instructions **must be** posted in a prominent location near the dryer.

## **IMPORTANT**

**YOU MUST DISCONNECT AND LOCKOUT THE ELECTRIC SUPPLY AND THE GAS SUPPLY BEFORE ANY COVERS OR GUARDS ARE REMOVED FROM THE MACHINE TO ALLOW ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, OR TESTING OF ANY EQUIPMENT PER OSHA (Occupational Safety and Health Administration) STANDARDS.**

## **FOR YOUR SAFETY**

**DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.**

**DO NOT DRY MOP HEADS IN THE DRYER.**

**DO NOT USE DRYER IN THE PRESENCE OF DRY CLEANING FUMES.**

## **CAUTION**

**DRYERS SHOULD NEVER BE LEFT UNATTENDED WHILE IN OPERATION.**

## **WARNING**

**CHILDREN SHOULD NOT BE ALLOWED TO PLAY ON OR NEAR THE DRYERS.**

**CHILDREN SHOULD BE SUPERVISED IF NEAR DRYER(S) IN OPERATION.**

## **WARNING**

**The dryer *must never be* operated with any of the back guards or service panels removed. PERSONAL INJURY OR FIRE COULD RESULT.**

## **WARNING**

**DRYER MUST NEVER BE OPERATED WITHOUT THE LINT FILTER OR SCREEN IN PLACE, EVEN IF AN EXTERNAL LINT COLLECTION SYSTEM IS USED.**

## **IMPORTANT**

**PLEASE OBSERVE ALL SAFETY PRECAUTIONS displayed on the equipment and specified in the installation manual included with the dryer.**

The wiring diagram for the dryer is located behind the left front control panel.

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# SECTION I

## IMPORTANT INFORMATION

### A. SAFETY PRECAUTIONS

1. **DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
2. Purchaser and/or user should consult the local gas supplier for proper instructions to be followed in the event the user smells gas. The instructions **should be** posted in a prominent location.
3. Dryer(s) **must be** exhausted to the outdoors.
4. Although ADC produces a very versatile dryer, there are some articles that due to fabric composition or cleaning method **should not be** dried in it.

**WARNING:** Dry only water washed fabrics. **DO NOT** dry articles spotted or washed in dry cleaning solvents, a combustible detergent, or “all purpose” cleaners. **EXPLOSION COULD RESULT.**

**WARNING:** **DO NOT** dry rags or articles coated or contaminated with gasoline, kerosene, oil, paint, or wax. **EXPLOSION COULD RESULT.**

**WARNING:** **DO NOT** dry mop heads. Contamination by wax or flammable solvents will create a fire hazard.

**WARNING:** **DO NOT** use heat for drying articles that contain plastic, foam, sponge rubber, or similarly textured rubberlike materials. Drying in a heated basket (tumbler) may damage plastics or rubber and may be a fire hazard.

5. A program **should be** established for the inspection and cleaning of lint in the burner area and exhaust ductwork. The frequency of inspection and cleaning can best be determined from experience at each location.

**WARNING:** The collection of lint in the burner area and exhaust ductwork can create a potential fire hazard.

6. For personal safety, the dryer **must be** electrically grounded in accordance with local codes and/or the National Electrical Code ANSI/NFPA NO. 70-LATEST EDITION or in Canada, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION.

**NOTE:** Failure to do so will VOID THE WARRANTY.

7. **UNDER NO CIRCUMSTANCES** should the dryer door, lint drawer switches or heat safety devices ever be disabled.
8. READ AND FOLLOW ALL CAUTION AND DIRECTION LABELS ATTACHED TO THE DRYER.

**WARNING:** Children **should not be** allowed to play on or in the dryers. Children **should be** supervised if near dryers in operation.

# SECTION II

## ROUTINE MAINTENANCE

### A. CLEANING

A program and/or schedule **should be** established for periodic inspection, cleaning, and removal of lint from various areas of the dryer, as well as throughout the ductwork system. The frequency of cleaning can best be determined from experience at each location. Maximum operating efficiency is dependent upon proper air circulation. The accumulation of lint can restrict this airflow. If the guidelines in this section are met, an **ADC** dryer will provide many years of efficient, trouble free and most importantly safe operation.

**WARNING: LINT FROM MOST FABRICS IS HIGHLY COMBUSTIBLE. THE ACCUMULATION OF LINT CAN CREATE A POTENTIAL FIRE HAZARD.**

#### SUGGESTED INTERVAL

##### *DAILY*

Clean lint screen. Inspect lint screen and replace if damaged.

##### *90 DAYS*

Remove lint accumulation from lint chamber thermostats and sensors.

**WARNING: TO AVOID THE HAZARD OF ELECTRICAL SHOCK, DISCONTINUE ELECTRICAL SUPPLY TO THE DRYER.**

Remove lint from the motor air vents and surrounding area.

**IMPORTANT:** Lint accumulation will restrict internal motor airflow, causing overheating and irreparable damage. Motor failure due to lint accumulation will VOID THE WARRANTY.

##### *120 DAYS*

Remove lint from gas burner area with a dusting brush or vacuum cleaner attachment.

##### *6 MONTHS*

Inspect and remove lint accumulation in customer furnished exhaust ductwork system. Inspect exhaust back draft dampers to insure they are not binding. Inspect and remove **ALL** lint accumulation from in and around the control panel area, including the coin acceptors. Clean lint accumulation from around the basket (tumbler) wrapper area.

**WARNING: LINT FROM MOST FABRICS IS HIGHLY COMBUSTIBLE. THE ACCUMULATION OF LINT CAN CREATE A POTENTIAL FIRE HAZARD.**



***AS REQUIRED:***

In cleaning and care of the cabinet, avoid using harsh abrasives. A product intended for the cleaning of appliances is recommended.

**B. ADJUSTMENTS**

**SUGGESTED INTERVAL**

***6 MONTHS***

Drive belts **should be** examined. Cracked or seriously frayed belts **should be** replaced. Tighten loose drive belts when necessary, and check belt alignment. Complete operational check of control and valves. Complete operational check of **ALL** safety devices (door switches, sail switch and burner high limits and lint chamber thermostats).

***12 MONTHS***

Inspect bolts, nuts, screws, and nonpermanent gas connections, (unions, sail switch, burner, and lint chamber thermostats).

# SECTION III

## INSTALLATION REQUIREMENTS

Installation **should be** performed by competent technicians in accordance with local and state codes. In the absence of these codes, the installation **must conform** to applicable American National Standards: ANSI Z223.1-LATEST EDITION (National Fuel Gas Code) or ANSI/NFPA NO. 70-LATEST EDITION (National Electrical Code) or in Canada, the installation **must conform** to applicable Canadian Standards: CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (Liquid Propane [L.P.] Gas) or LATEST EDITION (for General Installation and Gas Plumbing) or Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION (for Electrical Connections).

### A. ENCLOSURE, AIR SUPPLY, AND EXHAUST REQUIREMENTS

**NOTE:** The following information is very brief and general. For detailed description, refer to the Installation Manual supplied with the dryer (ADC PN 113328).

Bulkheads and partitions around the dryer **should be** made of noncombustible materials. (Refer to appropriate installation manual for recommended distances and minimum allowances required.)

When the dryer is operating, it draws in room air, heats it, passes this air through the basket (tumbler), and exhausts it out of the building. Therefore, the room air **must be** continually replenished from the outdoors. If the make-up air is inadequate, drying time and drying efficiency will be adversely affected. Ignition problems and sail switch “fluttering” problems on gas dryers may result, and you could have premature motor failure from overheating. The air supply **must be** given careful consideration to ensure proper performance of each dryer.

**IMPORTANT:** Make-up air **must be** provided from a source free of dry cleaning solvent fumes. Make-up air that is contaminated by dry cleaning solvent fumes will result in irreparable damage to the motors and other dryer components.

Exhaust ductwork **should be** designed and installed by a competent technician. Improperly sized ductwork will create excessive back pressure, which will result in slow drying, increased use of energy, and shutdown of the burner by the airflow (sail) switch, burner hi-limit or lint chamber hi-heat protector thermostat. (Refer to appropriate installation manual for more details.)

**CAUTION: IMPROPERLY SIZED OR INSTALLED EXHAUST DUCTWORK CAN CREATE A POTENTIAL FIRE HAZARD.**

## B. ELECTRICAL AND GAS REQUIREMENTS

### 1. Electrical Requirements

It is your responsibility to have **ALL** electrical connections made by a properly licensed and competent electrician to assure that the electrical installation is adequate and conforms to local and state regulations or codes. In the absence of such codes, **ALL** electrical connections, materials, and workmanship **must conform** to the applicable requirements of the National Electrical Code ANSI/NFPA NO. 70-LATEST EDITION or in Canada, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION.

### 2. Grounding

A ground (earth) connection **must be** provided and installed in accordance with state and local codes. In the absence of these codes, grounding **must conform** to applicable requirements of the National Electrical Code ANSI/NFPA NO. 70-LATEST EDITION, or in Canada, the installation **must conform** to applicable Canada Standards: Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION. The ground connection may be to a proven earth ground at the location service panel.

**IMPORTANT:** Failure to comply with these codes or ordinances and/or the requirements stipulated in this manual can result in personal injury or component failure.

### 3. Gas Information

It is your responsibility to have **ALL** plumbing connections made by a qualified professional to assure that the gas plumbing installation is adequate and conforms to local and state regulations or codes. In the absence of such codes, **ALL** plumbing connections, materials, and workmanship **must conform** to the applicable requirements of the National Fuel Gas Code ANSI Z223.1-LATEST EDITION, or in Canada, the Canadian Installation Codes CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (Liquid Propane [L.P.] Gas) or LATEST EDITION.

### 4. Gas Supply

The gas dryer installation **must meet** the American National Standard...National Fuel Gas Code ANSI Z223.1-LATEST EDITION, or in Canada, the Canadian Installation Codes CAN/CGA-B149.1 M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION, as well as local codes and ordinances and **must be** done by a qualified professional.

### 5. Piping Connections

**ALL** components/materials **must conform** to National Fuel Gas Code Specifications ANSI Z223.1-LATEST EDITION, or in Canada, CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION (for General Installation and Gas Plumbing), as well as local codes and ordinances and **must be** done by a qualified professional. It is important that gas pressure regulators meet applicable pressure requirements, and that gas meters be rated for the total amount of **ALL** the appliance Btus being supplied.

**WARNING: NEVER TEST FOR LEAKS WITH A FLAME!!!**

**NOTE:** Undersized gas piping will result in ignition problems and slow drying and can create a safety hazard.

The dryer **must be** connected to the type of gas (natural or liquid propane [L.P.]) indicated on the dryer data label. If this information does not agree with the type of gas available, contact the reseller who sold the dryer or contact the **ADC** factory.

The gas input ratings shown on the dryer data label are for elevations up to 2,000 feet (609.6 meters), unless elevation requirements of over 2,000 feet (609.6 meters) were specified at the time the dryer order was placed with the factory. The adjustment for dryers in the field for elevations over 2,000 feet (609.6 meters) is made by changing the burner orifices. If this adjustment is necessary, contact the reseller who sold the dryer or contact the **ADC** factory.

**NOTE:** Any burner changes *must be* made by a qualified technician.

## C. OPERATIONAL SERVICE CHECK PROCEDURE

After performing any service or maintenance function, an operational check **should be** performed to insure that **ALL** components are performing properly.

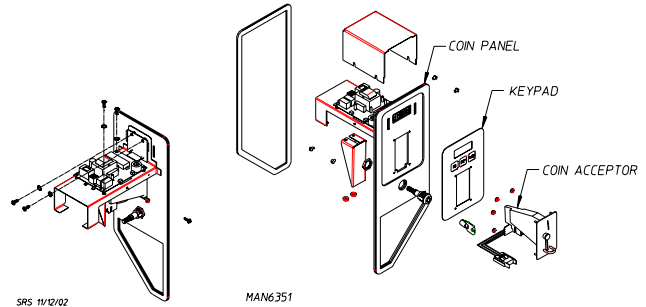
1. Make a complete operational check of **ALL** the operating controls to insure that the timing is correct; temperature selection switches are functioning properly.
2. Make a complete operational check of **ALL** safety related circuits, door switches, hi-limit thermostats, sail switch, and cycling thermostats, etc.

# SECTION IV

## DESCRIPTION OF PARTS

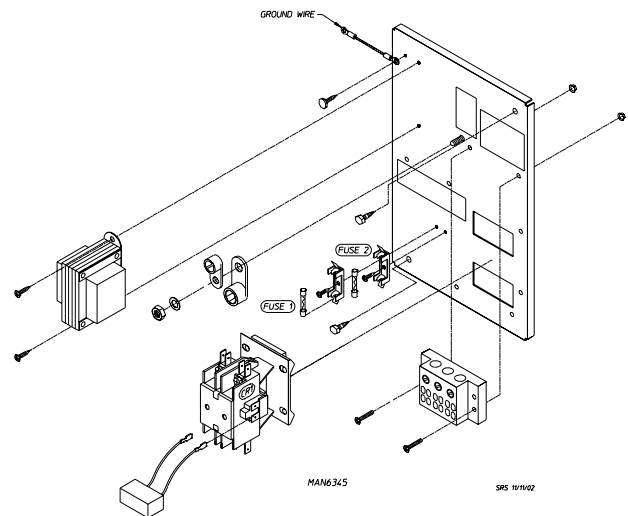
### A. CONTROL PANEL

The coin panel assembly consists of the coin operator, a display board, and the keyboard (touch pad) label. The coin acceptor is used to acknowledge that the proper coin has been put through the acceptor. The display board will just display the time and temperature in a readable number of letter characters. The keyboard (touch pad) label is used to input Hi, Low, or Perm Press selection for the dryer to start.



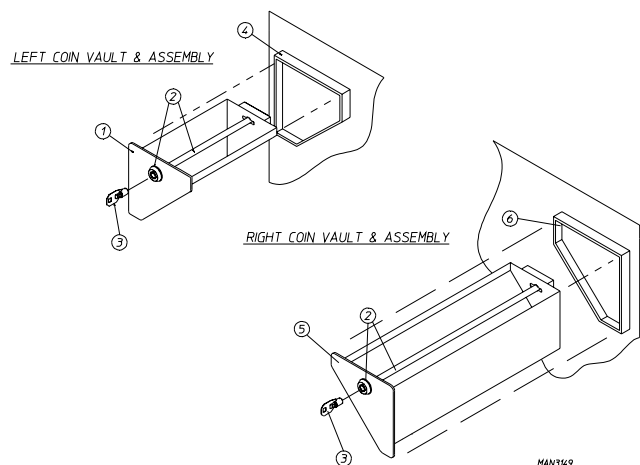
### B. CONTROL AND RELAY PANELS

The control and relay panels are located in the back of the dryer in the middle top selection. The function of the control and relay panels is to compile signals from the computer or the incoming voltage and transfer the signals to the motor and heat circuit, when the computer executes these various signals.



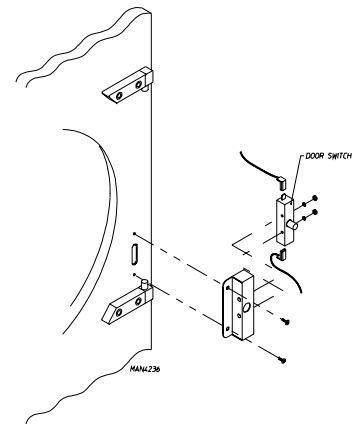
### C. COIN BOX

The coin box assembly is located below the belt and right coin panel. It is a good size triangular box. When a coin passes the acceptor, the optic switch sends a signal to the computer and the coin then falls in the coin box.



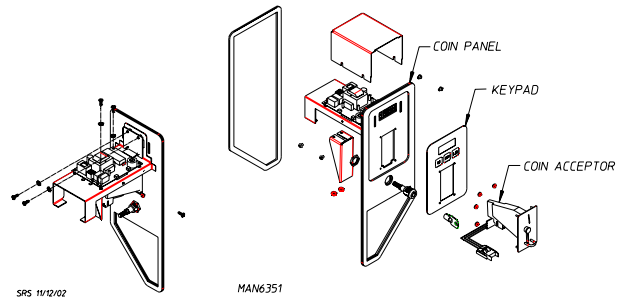
## D. DOOR SWITCH (HINGE BLOCK)

The main door switch is located behind the main door on the right hand side. When the main door is opened, the switch will also open, preventing the dryer from operating. The main door switch is a safety device and **should never be disabled**.



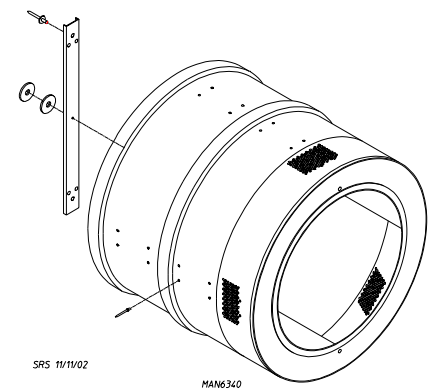
## E. MICROPROCESSOR ASSEMBLY

The microprocessor board is the latest Phase 5 controls. It monitors the dryer functions **ALL** the time. Indicator light emitting diode (L.E.D.) is mounted on the board to help with servicing of the dryer.



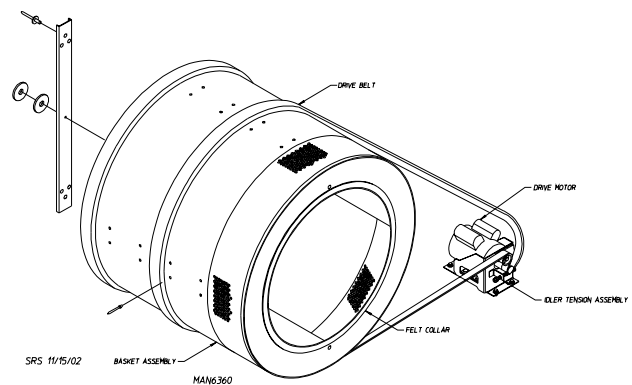
## F. BASKET (TUMBLER)

The basket (tumbler) consists of three (3) ribs and a perforated basket (tumbler) along with a front and back, which are riveted together as an assembly. The basket (tumbler) also consists of pop rivets, which attach the basket (tumbler) to the drive system in the rear. The felt collar helps to keep lint from accumulating behind the basket (tumbler).



## G. BASKET (TUMBLER) AND DRIVE MOTOR ASSEMBLY ARRANGEMENT

The basket (tumbler) and the drive motor arrangement are located (viewing from the front of the dryer) approximately at the rear right side of the dryer. The arrangement consists of an idler pulley, drive motor, and basket (tumbler), which serve to adjust, drive, and support the basket (tumbler). The idler assembly has various nuts and bolts that are made to adjust the belt tension.

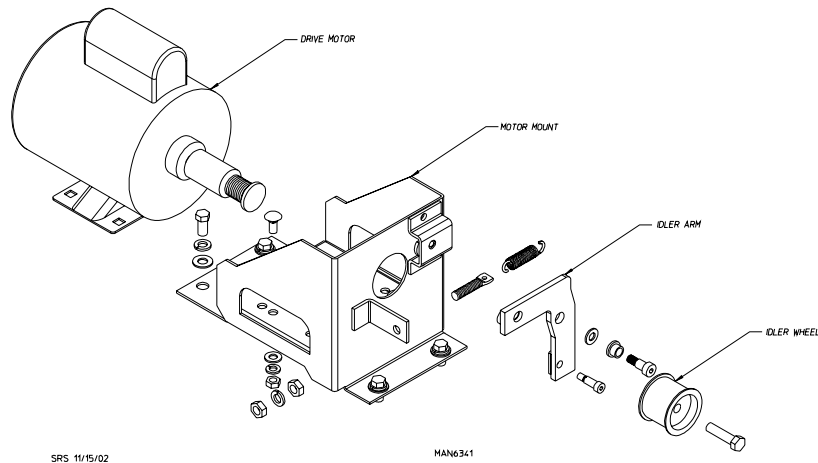


## H. IDLER ARM AND IMPELLOR MOUNT ASSEMBLY

The idler assembly is located in the back of the dryer, which is attached to the drive motor assembly. The main purpose of the idler assembly is to reduce the speed of the motor, in turn increasing the torque of the basket (tumbler) pulley.

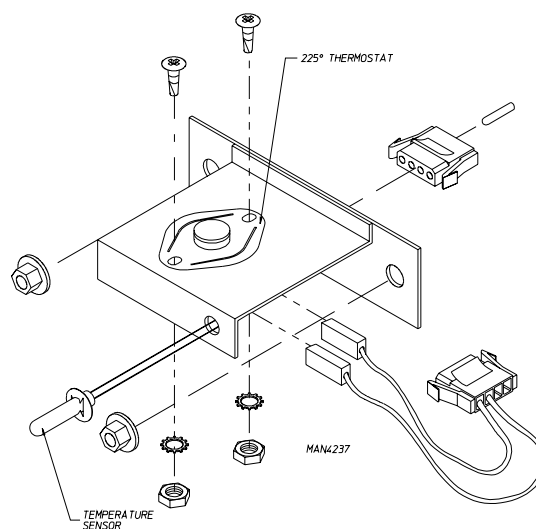
## I. DRIVE MOTOR AND IDLER PULLEY ARRANGEMENT

The dryer has a different kind of drive system. There is one (1) motor pulley, one (1) drive belt and an idler arm assembly by the basket (tumbler). The drive motor drives the belt that rotates the basket (tumbler).



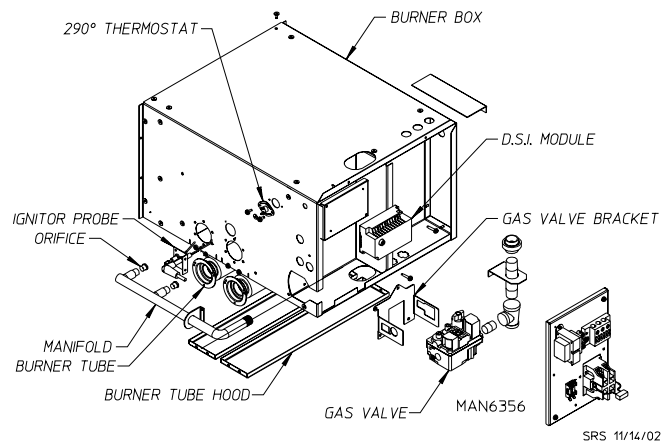
## J. TEMPERATURE SENSORS

The temperature sensor used in a transducer converts heat into microamps, that the computer board then uses to calculate the temperature.



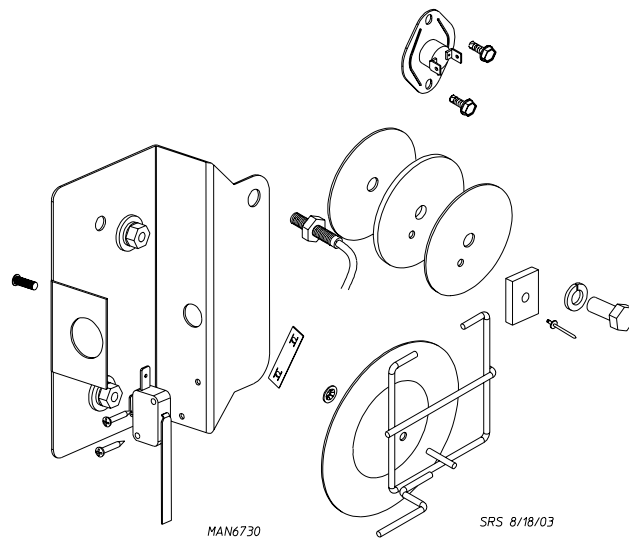
## K. GAS BURNER

The gas burner assembly consists of two (2) burner tube orifices (the orifice has a hole in it to allow gas to flow through). The hole size varies with different elevation Btus, gas valve (which can be up for natural or liquid propane [L.P.]), and a flame-probe assembly.



## L. SAIL SWITCH

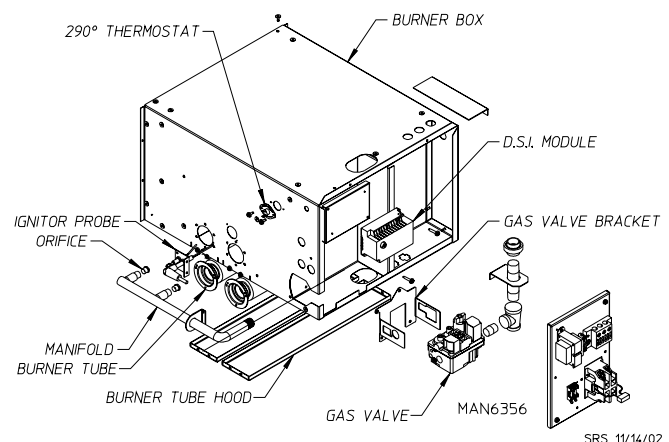
The sail switch consists of a round damper plate on a lever arm, which acts like an actuator for a microswitch. When the air blower comes on, it draws air through the burner. This creates a negative pressure inside the burner box, and this negative pressure pulls in the round damper, which activates the sail switch. If there is improper airflow, the damper will not pull in, preventing the burner from coming on.



Improper airflow can be caused by improperly designed exhaust ducting, where the duct run is too long or has too many sharp bends on it. It can also be caused by a lack of make-up air or any obstruction such as back draft damper sticking or lint build up. The sail switch is located in the back of the burner.

## M. HI-LIMIT THERMOSTAT

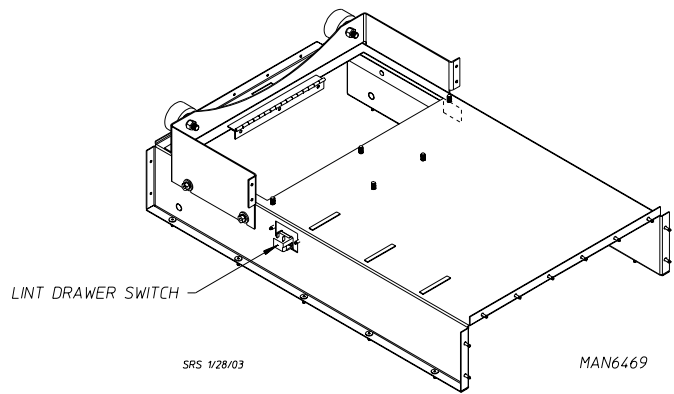
The burner hi-limit thermostat is another safety device that we use on the dryer. The hi-limit is located in the burner area. The hi-limit thermostat cuts off the heat if the temperature should reach 290° or higher. Under normal conditions, the only way this device would shut off the heat is when the airflow changes to the extent of causing the intense heat from the burner to trip the thermostat.





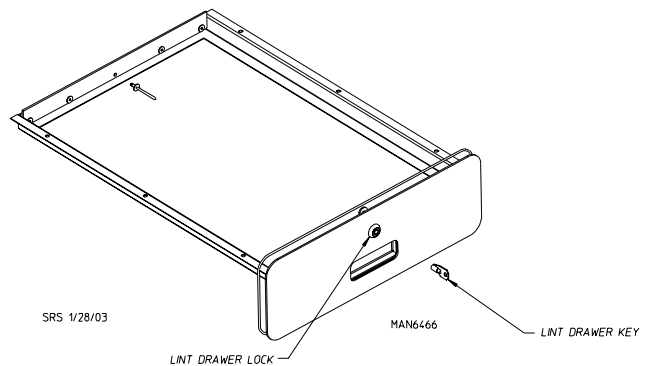
## N. LINT DRAWER SWITCH

The lint drawer switch is located under the basket (tumbler) on the right side. It is another added safety device that stops the operation of the dryer, when the lint drawer is opened. This device and the door switch are the two (2) safety switches designed to halt the basket (tumbler).



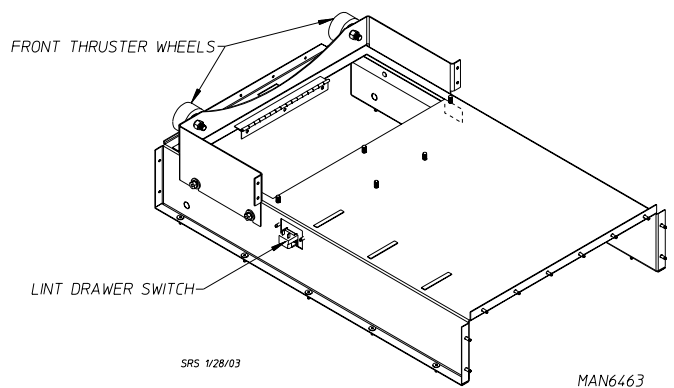
## O. LINT DRAWER

The lint drawer is located under the baskets (tumblers) of each pocket. It is a fairly large drawer that is designed to be right in the main path of the airflow, to catch any lint that happens to come out of the articles being dried.



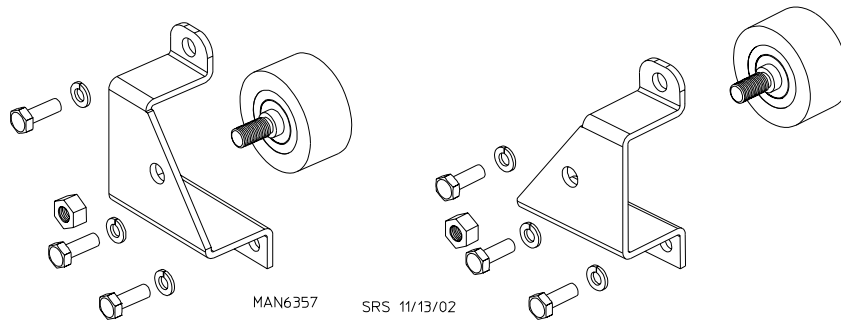
## P. FRONT THRUSTER WHEEL BRACKET ASSEMBLY

Behind the front panel for each pocket, there are two (2) basket (tumbler) drive wheels. This supports the weight of the basket (tumbler). This also allows the basket (tumbler) to spin freely without bearings and basket (tumbler) support shaft.



## Q. REAR BASKET (TUMBLER) DRIVE WHEELS

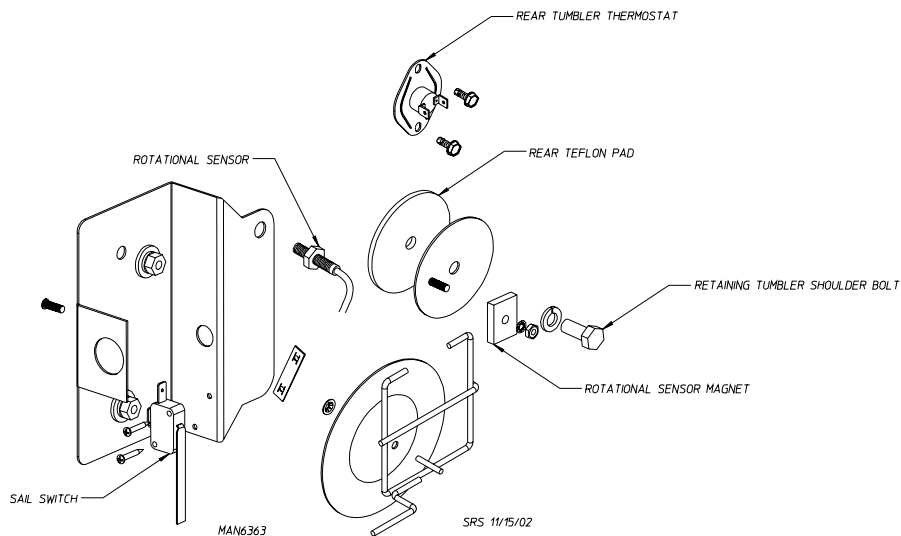
There is a left and right basket (tumbler) drive wheel bracket assembly. This allows the basket (tumbler) to spin freely without bearings or basket (tumbler) support shaft.



## R. ROTATIONAL SENSOR ASSEMBLY

The Rotational Sensor Assembly is located in the rear of the dryer. It consists of a magnet and a rotational switch, which is mounted to the sail switch/rotational sensor bracket.

The magnetic rotational sensor switch senses the rotation of the basket (tumbler). If the gap between the sensor switch and the magnet is greater than a preset amount, then the dryer will shutdown on “SEFL” (“rotational sensor failure”).



# SECTION V

## SERVICE

### A. INTRODUCTION

**ALL** electrical or mechanical service or repairs **should be** made with the electrical power to the dryer disconnected (power off).

**WARNING: PERSONAL INJURY COULD RESULT.**

The information provided in this section **should not be** misconstrued as a device for use by an untrained person making repairs. Service work **should be** performed by competent technicians in accordance with local, state, and federal codes.

When contacting the factory for assistance, always have the dryer **model number** and **serial number** available.

**CAUTION:** Observe **ALL** safety precautions displayed on the dryer or specified in this manual before and while making repairs.

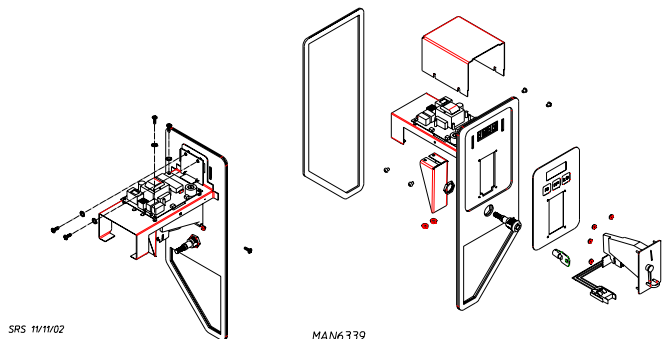
The information provided will help isolate probable components associated with the difficulty described. The experienced technician realizes, however, that a loose connection or broken or shorted wire may be at fault where electrical components are concerned, not necessarily the suspected component itself. Electrical parts **should always be** checked for failure before being returned to the factory.

**IMPORTANT: YOU MUST DISCONNECT AND LOCKOUT THE ELECTRIC SUPPLY AND THE GAS SUPPLY BEFORE ANY COVERS OR GUARDS ARE REMOVED FROM THE MACHINE TO ALLOW ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, OR TESTING OF ANY EQUIPMENT PER OSHA (Occupational Safety and Health Administration) STANDARDS.**

### B. CONTROLS (COMPUTER)

#### TO REPLACE COMPUTER

1. Disconnect power to the dryer.
2. Open coin panel (one [1] lock in the center of the coin panel).
3. Disconnect the display harness from the computer board (push the two [2] tabs on the side of the connector outwards).
4. Disconnect the optic switch harness from the computer (squeeze the tabs on the side of the connector).

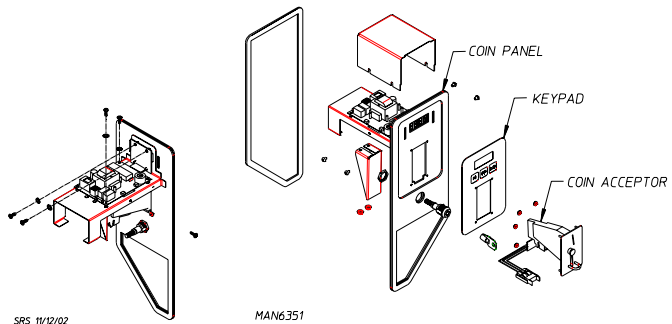


5. Disconnect the keyboard (touch pad) connector from the computer board keyboard (touch pad) harness (simply pull straight out).
6. Disconnect the 9-pin main computer harness from the computer (squeeze the one [1] tab on the connector and pull straight back).
7. Disconnect the green ground wire from the computer board.
8. Remove the two (2) Phillips head screws that secure the computer to the panel. Remove the board from the panel by pulling at the corners of the board.
9. Replace in the reverse steps of the above.
10. Reestablish power to the dryer.

**NOTE:** Use caution when handling the microprocessor controller (computer) as it can be easily damaged by static electricity.

#### TO REPLACE KEYBOARD (TOUCH PAD)

1. Discontinue power to the dryer.
2. Open the coin panel and disconnect the keyboard (touch pad) ribbon connector from the ribbon cable it is plugged into.
3. Peel the keyboard (touch pad) from the front of the control panel taking care to avoid scratching the panel.
4. Clean any adhesive residue from the panel.
5. Peel off paper backing from new keyboard (touch pad).
6. Align the display window on the keyboard (touch pad) with the cutout in the control panel and press in place.
7. Connect keyboard (touch pad) ribbon to the board and reconnect power to the dryer.
8. Test for operation by pressing each temperature selection.

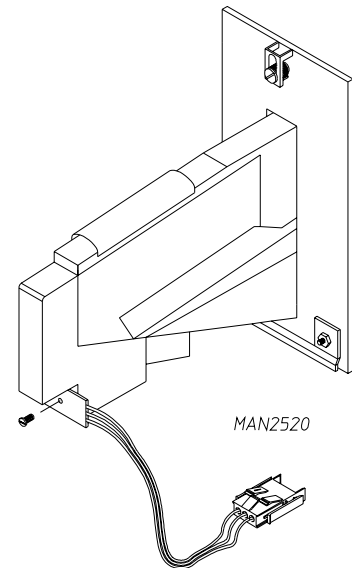


#### TO REPLACE COIN ACCEPTOR

1. Discontinue power to the dryer.
2. Open the coin panel.
3. Remove the four (4) 3mm nuts holding the coin acceptor to the panel.
4. Unplug optic switch harness connector.
5. Pull coin acceptor out gently.
6. Reverse procedure for installing new acceptor.

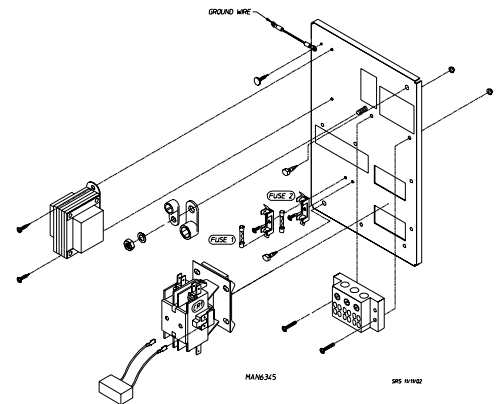
### TO REMOVE OPTIC SWITCH

1. Disconnect power to the dryer.
2. Remove top or bottom coin panel.
3. Remove optic switch from the coin acceptor (one [1] screw).
4. Unplug optic switch connector.
5. Remove optic switch from the dryer.
6. Reverse procedure for installing new optic switch.



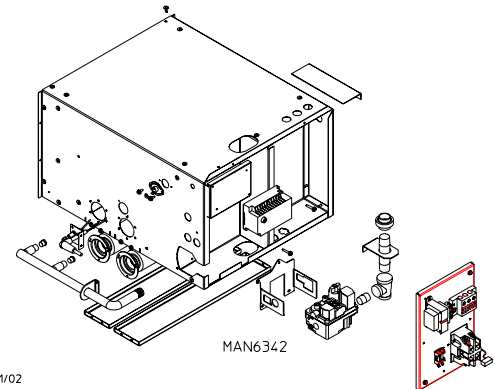
### TO REPLACE MOTOR CONTACTOR 2-POLE, 24 VAC

1. Discontinue power to the dryer.
2. Remove back guard.
3. Remove **ALL** wires from contactor (**NOTE**: Make sure each wire is marked with location removed from).
4. To remove the contactor, push up and pull the contactor towards you.
5. Install new contactor in reverse procedure.
6. Reestablish power to the dryer.



### TO REPLACE GAS VALVE

1. Discontinue power to the dryer.
2. Remove back guard.
3. Close the union shutoff located just before the gas valve and remove the two (2) wires on top of the gas valve.
4. Break and loosen union nut between union shutoff and gas valve.
5. Remove the four (4) screws holding the two (2) pipe brackets on each side of the gas valve.
6. Remove gas valve and manifold (still attached) from dryer.
7. Remove the single port manifold from the output side of the gas valve.
8. Remove the union tailpiece and nut from the input of valve. (A 1/2" Allen wrench is required.)
9. Reverse procedure for installing new valve.



**IMPORTANT:** Pipe dope *must be* applied to manifold before installing it into new valve.

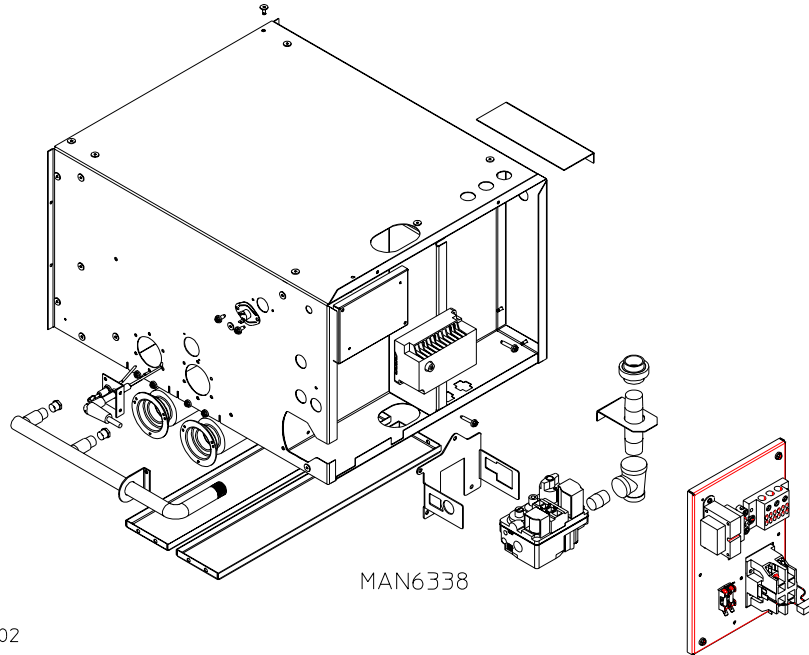
REPLACE BURNER TUBE ASSEMBLY (Refer to the **illustration below**)

1. Discontinue power to the dryer.
2. Remove the four (4) hex nuts that hold the burner hood bracket to the burner box.
3. Remove the two (2) hex nuts that hold the burner tube to the burner box.
4. Pull down on the burner tube to remove it.
5. Reassemble new burner tube (ADC PN: 141137) in reverse procedure.

**IMPORTANT:** Make sure the gap from the ignitor to the top of the burner tube is 1/8" +/- 1/32"  
(3.175 mm +/- 0.79248 mm).

TO REPLACE THE IGNITOR PROBE

1. Discontinue power to the dryer.
2. To remove the ignitor probe, remove the two (2) screws that hold them to the burner box.
3. When replacing ignitor probe, remove screws, disconnect high voltage (HV) wire from DSI module and remove the probe and high voltage (HV) wire from the ignitor.
4. Replace new items in reverse procedure.

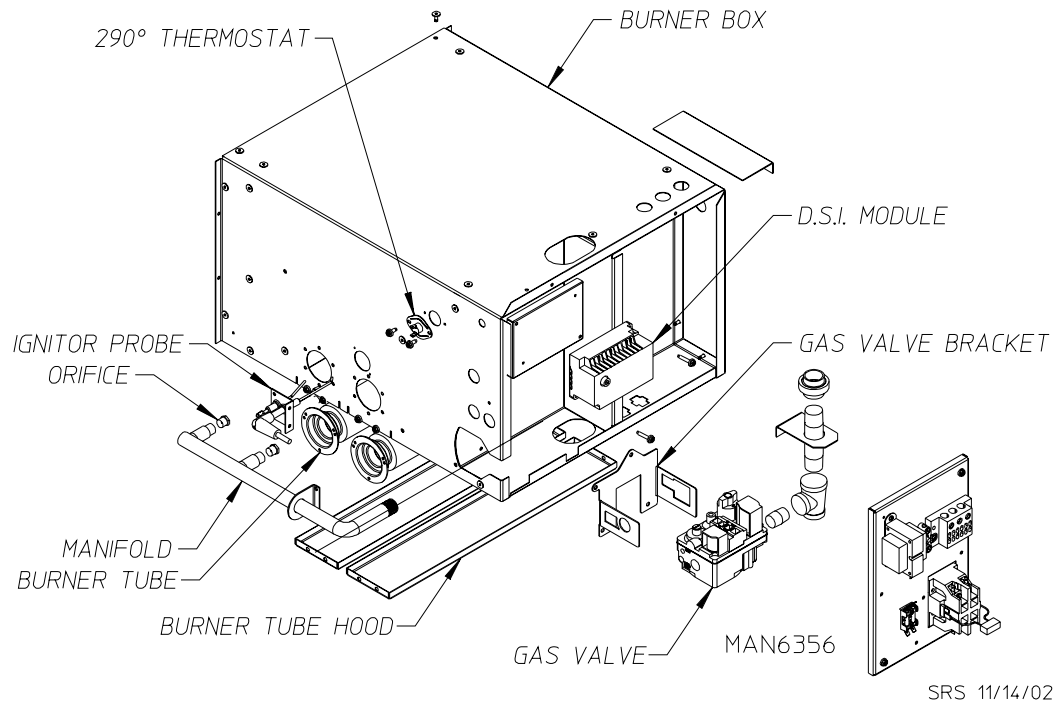


**IMPORTANT: DO NOT** wrap the high voltage (HV) wire and flame-probe wires together, improper operation may result. They may run along side each other.

**IMPORTANT:** Make sure the gap from the ignitor to the top of the burner tube is 1/8" +/- 1/32"  
(3.175 mm +/- 0.79248 mm).

## C. BURNER CONTROLS (GAS)

The **illustration below** shows you the gas valve assembly and the gas chamber.



### TO REPLACE MAIN BURNER ORIFICE

1. Discontinue power to the dryer.
2. Remove back guard.
3. Remove screws securing gas valve bracket to the burner box, and remove the two (2) screws securing pipe bracket.
4. Move the manifold assembly to the left and hold.
5. Unscrew main burner orifice and replace.

**NOTE:** Use extreme care when removing and replacing orifice. The orifice is made of brass and can be easily damaged.

6. Reverse the removal procedure for reinstalling.

**WARNING:** Test **ALL** connections for leaks by brushing on a soapy water solution.

**WARNING:** NEVER TEST FOR LEAKS WITH A FLAME!!!

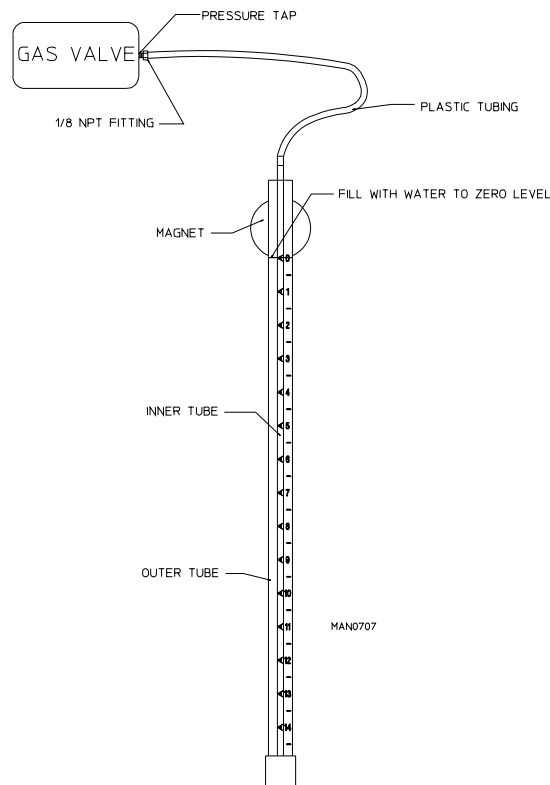
## TO TEST AND ADJUST GAS (WATER COLUMN [W.C.]) PRESSURE

There are two (2) types of devices commonly used to measure water column pressure. They are spring/mechanical type gauges and manometers. The spring/mechanical type gauge is not recommended because it is easily damaged and not always accurate. One (1) form of a manometer is a hydro-gauge, which simply consists of an inner and outer tube. When this tube is filled with water and pressure is applied, the water in the inner tube decreases giving you your gas pressure reading.

**NOTE:** Manometers are available from the factory by ordering part number 122804.

1. Test gas water column pressure.
  - a. Connect water column test gauge connection to gas valve pressure tap (1/8" N.P.T.). This pressure tap is located on the outlet (downstream) side of the valves.
  - b. Start the dryer. With burner on, the correct water column reading in inches would be:  
  
Natural Gas: ..... 3.5 Inches (8.7 mb) W.C.  
Liquid Propane (L.P.) Gas: ..... 10.5 Inches (26.1 mb) W.C.
2. To adjust water column pressure (natural gas only, L.P. gas **must be** regulated at source):
  - a. Remove the slotted vent cap on the top of the valve.
  - b. Turn the slotted adjustment screw, located on the top of the valve next to the terminals. Turn clockwise (CW) to increase manifold pressure and counterclockwise (CCW) to decrease.

**NOTE:** If correct water column (W.C.) pressure **cannot** be achieved, problems may be due to an undersized gas supply line, a faulty or underrated gas meter, etc.





## TO CONVERT FROM NATURAL TO LIQUID PROPANE (L.P.) GAS

1. Disconnect electrical power to the dryer.
2. Close **ALL** shutoff valves in dryer gas supply line.
3. Disconnect gas valve wiring.

**NOTE:** Identify location of each wire for correct reinstallation.

4. Break union connection (nut) between union shutoff and gas valve.
5. Loosen and remove four (4) screws from pipe brackets holding the gas valve/manifold assembly to the gas valve plate.
6. Remove gas valve and manifold assembly from the dryer.
7. Unscrew main burner orifice and replace with L.P. orifices supplied.

**NOTE:** Use extreme care when removing and replacing orifices. These orifices are made of brass, which is easily damaged.

8. To convert gas valve for use with L.P. gas, refer to the instructions included in kit envelope (#f92-0737) supplied.
9. Reverse procedure for installing valve manifold assembly to the dryer.

**IMPORTANT:** External regulation of a consistent gas pressure of 10.5 inches (26.1 mb) water column (W.C.) **must be** provided.

10. Open **ALL** shutoff valves and test for leaks.

**IMPORTANT:** **DO NOT** test for leaks with an open flame. Use soapy water solution or a product intended for that purpose.

11. Operate dryer through one (1) complete cycle to insure proper operation.

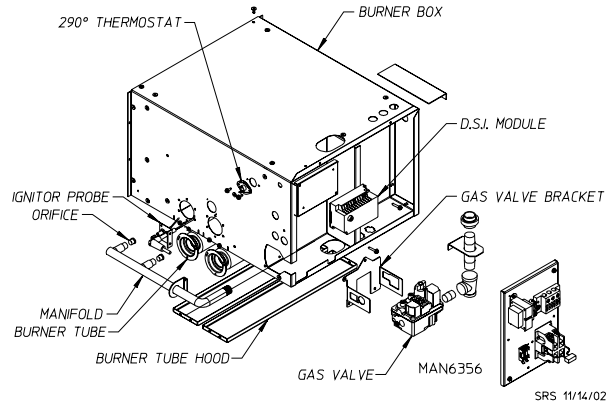
**IMPORTANT:** Conversion **should be** performed by competent technicians in accordance with local and state codes. Improper assembly or adjustment can cause hazardous conditions.

**NOTE:** There is no regulator provided in a liquid propane (L.P.) dryer. The water column pressure **must be** regulated at the source L.P. tank, or an external regulator **must be** added to each dryer.

12. Call **American Dryer Corporation** for L.P. conversion kits or the proper orifices for natural or L.P. gas.

## TO REPLACE DIRECT SPARK IGNITION (DSI) MODULE

1. Discontinue power to the dryer.
2. Remove the back guard.
3. Remove the wires connected to the terminal strip at the bottom of the module.
4. Remove the four (4) nuts securing the module to the mounting bracket.
5. Replace module by reversing process.



**NOTE:** Take note of where wires are for installing the new module.

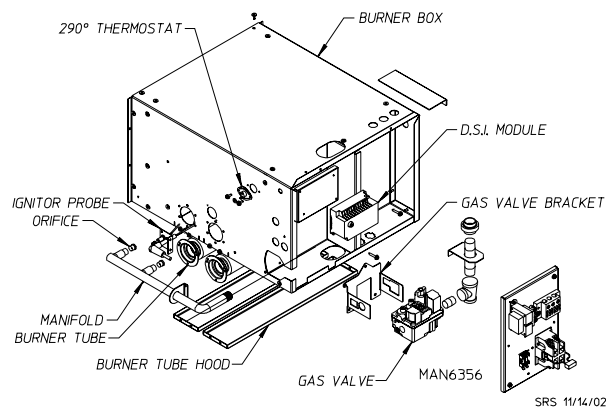
## D. THERMOSTATS AND TEMPERATURE SENSOR

### TO REPLACE HI-LIMIT THERMOSTAT (290°)

This thermostat is an important safety device, serving as an added protection against failure of the airflow sail switch to open in the event of a motor failure or reduced airflow condition.

**IMPORTANT:** UNDER NO CIRCUMSTANCES should the heat circuit safety devices ever be disabled.

1. Discontinue power to the dryer.
2. Remove the two (2) hex head screws from the hi-limit switch. Then, the hi-limit will be removed from the burner box. Remove the two (2) wires from the hi-limit.
3. Reverse procedure for installing new thermostat.



## TO REMOVE THE TEMPERATURE SENSOR OR HIGH HEAT PROTECTOR

### 1. High Heat Protector

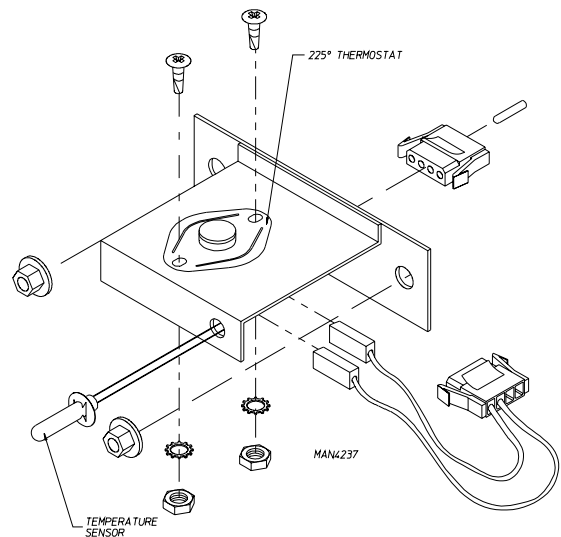
- a. Discontinue power to dryer.
- b. Remove the lint drawer from the dryer.
- c. Remove the two (2) free spin wash nuts that is securing the temperature sensor bracket to the dryer.
- d. Disconnect the 4-pin connector on the temperature sensor bracket.

**NOTE:** Be careful not to let the sensor harness that you just disconnected to fall back into the computer area.

- e. Remove the two (2) nuts, washers, and screws securing the 190° hi-limit to the sensor bracket. Also disconnect the two (2) connectors on the 225° hi-limit.
- f. Reverse the procedure for installation of new high heat protector.

### 2. Temperature Sensor

- a. Discontinue power to the dryer.
- b. Remove the lint drawer from the dryer.
- c. Remove the two (2) free spin wash nuts that are securing the temperature sensor bracket to the dryer.
- d. Disconnect the 4-pin connector on the temperature sensor bracket.



**NOTE:** Be careful not to let the sensor harness that you just disconnected to fall back into the computer area.

- e. Remove the top tinnerman clip that secures the sensor probe to the bracket. Also remove the connector from the bracket. Disconnect the two (2) wires going to the 225° hi-limit. The sensor probe assembly can now be removed from the bracket.
- f. Install new probe assembly (ADC PN: 880251) by reversing procedure.

## E. SAIL SWITCH ASSEMBLY

The sail switch is a heat circuit safety device, which controls the heat circuit only. When the dryer is operating and there is proper airflow, the sail switch damper pulls in and closes the sail switch, providing **ALL** the other heat related circuits are functioning properly. If an improper airflow occurs, the sail switch damper will release, and the circuit will open.

**IMPORTANT: UNDER NO CIRCUMSTANCES** should heat circuit safety devices ever be disabled.

### TO REPLACE SAIL SWITCH

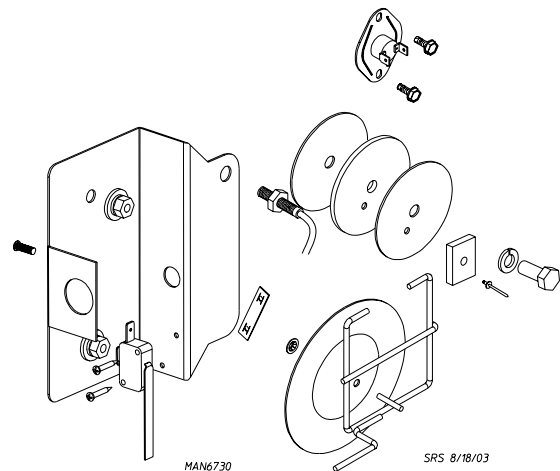
1. Discontinue power to the dryer.
2. Remove the two (2) screws, which hold the sail switch to the bracket.

**NOTE:** Be careful not to drop or lose the twin speed nut on the backside of the sail switch.

3. Disconnect the two (2) connectors on the sail switch.
4. Reverse this procedure for installing new sail switch.  
Adjust sail switch as described in the next section.

### TO ADJUST SAIL SWITCH

1. Operate the installed dryer normally to verify that the heat system is fully operational.
2. Open the main dryer door.
3. Manually depress the door switch actuator.
4. While continuing to depress the door switch actuator, and with the door open, start the dryer.
5. If the heat system is not activated in 15-seconds, the sail switch is properly adjusted.
6. If the heat system is activated, the sail switch is improperly adjusted and **must be** readjusted by bending the actuator arm of the sail switch toward the left side of the dryer. If the actuator arm is bent too far toward the left side of the dryer, the dryer may not have heat when needed. After any adjustments of the sail switch, the above procedure **must be** repeated to verify proper operation.

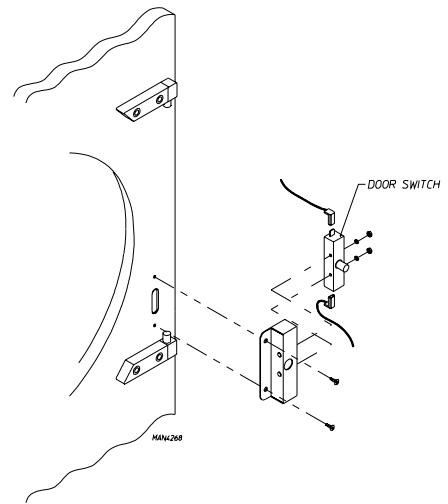


**CAUTION: DO NOT** disable this switch by taping or screwing sail switch damper to burner.  
Personal injury or fire could result.

## F. FRONT PANEL AND MAIN DOOR ASSEMBLIES

### TO REPLACE MAIN DOOR SWITCH

1. Discontinue power to the dryer.
2. Open main door.
3. Remove the two (2) Phillips head screws holding the main door switch in place.
4. Disassemble door switch bracket by removing the two (2) nuts holding the door switch to the housing, and remove the door switch.
5. Reverse this procedure for installing new door switch.



**IMPORTANT: UNDER NO CIRCUMSTANCES should the door switch be disabled.**

### TO REPLACE MAIN DOOR HINGE BLOCKS

1. Discontinue power to the dryer.
2. Remove the two (2) top 3/16" Allen screws securing the top hinge pin to the front panel.
3. Remove the door from the dryer by lifting the door off the bottom hinge pin.
4. Remove the bottom hinge pin assembly from the front panel, two (2) 3/16" Allen screws securing the hinge pin to the front panel.

**NOTE: Be careful not to lose the plastic washer on the hinge pin.**

5. Reassemble by reversing steps.

### TO INSTALL NEW MAIN DOOR GLASS

1. Remove main door assembly from the dryer (follow main door hinge removal procedure).
2. Place the main door on a flat surface with front of door face down.
3. Remove glass and clean **ALL** old sealant off main door. This area **must be** completely cleaned for correct bonding.
4. Apply a narrow bead of silicone (ADC PN: 170730) **ALL** around main door area where glass will rest.
5. Install glass on to door and adhesive and slightly press glass in place.

**IMPORTANT: *DO NOT* press hard or silicone thickness between the glass and door will be reduced resulting in poor bonding.**

6. The door assembly **should now be** put in an area where it will not be disturbed for at least 24-hours. Depending on the conditions, the curing time of the adhesive is 24- to 36-hours.
7. After 24-hour curing period, install main door on dryer by reversing **Step #1**.

### TO REPLACE FRONT PANEL

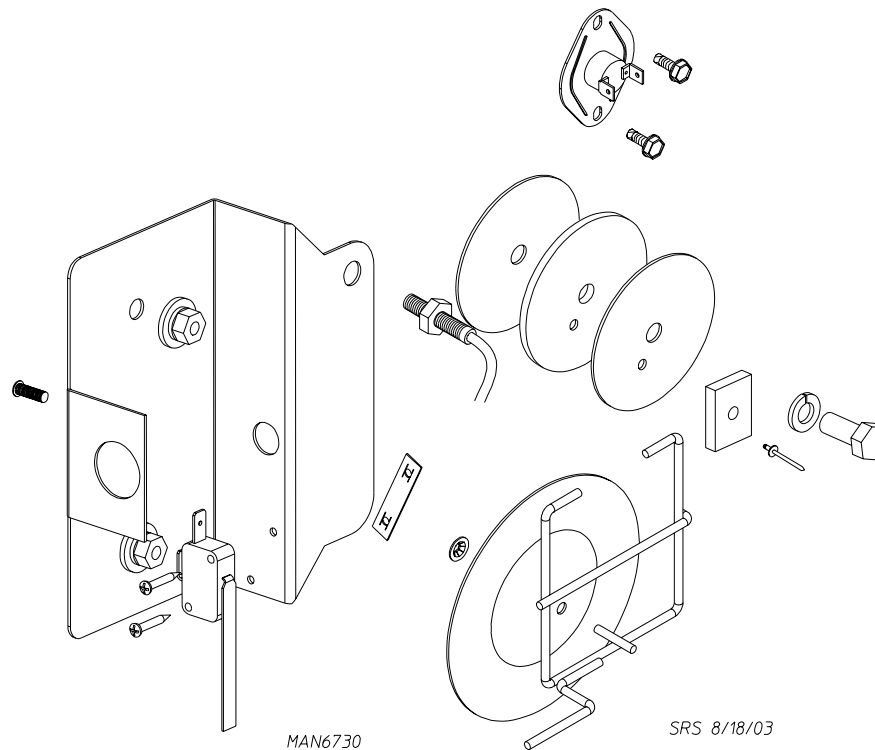
1. Discontinue power to the dryer.
2. Remove the computer panels.
3. Remove the kick trim plate.
4. Remove lint screen drawers from the dryer.
5. Remove the screws securing the front panel to the dryer.
6. Disconnect the 4-pin door switch harness connector from the lint drawer switch box, top and bottom.
7. Remove the front panel assembly from the dryer.
8. Reverse this procedure for installing the new front panel.

### TO REPLACE THE NYLON CATCH

1. Open the main door.
2. Drill out the two (2) pop rivets holding nylon catch to front panel using #21 (0.1590) drill bit.
3. Using two (2) pop rivets (PN: 154215) install nylon catch (PN: 170330) to the front panel. (Friction Door Latch Kit [PN: 881987]).

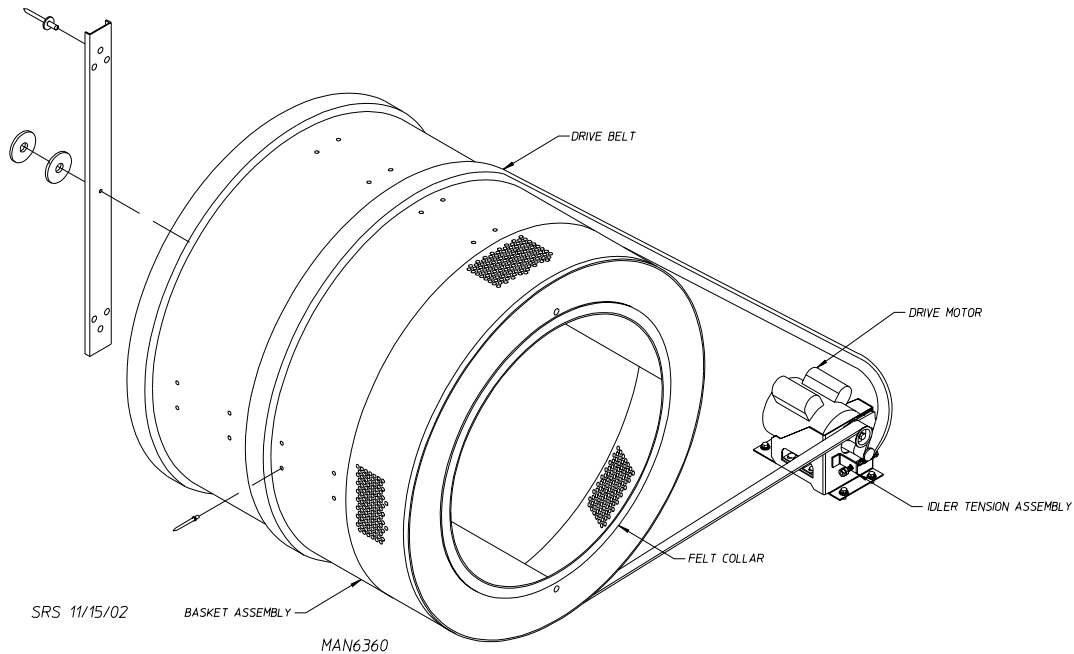
## TO REPLACE ROTATIONAL SENSOR SWITCH

1. Discontinue electrical power to the dryer.
2. Remove the magnetic rotational sensor switch from the bracket by loosening the nuts.
3. Depress the tabs on the rotational sensor harness plug and pull apart, then remove the sensor switch.
4. To install a new sensor switch, connect the plug of the new sensor switch to the sensor harness.
5. Place one (1) adjustment nut onto the sensor switch.
6. Place the second adjustment nut on, but **DO NOT** tighten. The magnet on the rear teflon plate and the sensor switch **must be** in a horizontal line to one another.
7. The gap between the magnet and the sensor switch **must be** 1/8 inch.
8. Tighten the adjustment nuts installed in **Step #5 and Step #6**.
9. Reestablish electrical power to the dryer.



## BASKET (TUMBLER) REMOVAL

1. Disconnect power to the dryer.
2. Remove the control panels and kick trim plate.
3. Remove the front panel, and disconnect the door switches.
4. Now remove the motor separator panel if removing the top basket (tumbler).
5. Loosen the two (2) nuts on the idler tension arm.
6. Move to the rear of the dryer. Remove the retaining basket (tumbler) shoulder bolt that secures the rear teflon pad to the basket (tumbler).
7. Now return to the front of the dryer and pull the basket (tumbler) outwards.
8. To install a new basket (tumbler), reverse the removal instructions.



## BASKET (TUMBLER) WHEEL REMOVAL

1. Disconnect power to the dryer.
2. Follow **Step #2 through Step #7** in Basket (tumbler) Removal above.
3. Loosen and remove the 9/16" nut and pull the wheel out.
4. Reverse **Step #3** to reinstall the wheel.
5. To reassemble, reverse the previous procedures.



# SECTION VI

## BCD-1 TYPE MODULE

### A. INTRODUCTION

The Direct Spark Ignition (DSI) system operates at 24 VAC and is a discrete component based gas ignition control (DSI module) system, which utilizes a line frequency spark as an ignition source. Safe proof of flame is accomplished through flame rectification. The DSI module has a diagnostic light emitting diode (L.E.D.) indicating light, which simplifies troubleshooting in the event of a fault.

Other Features...

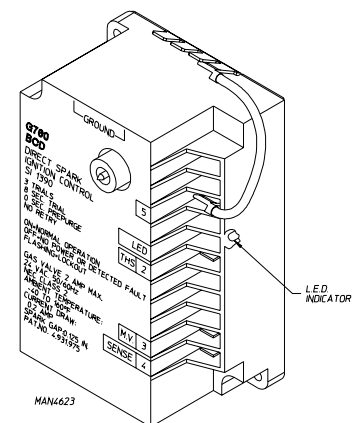
- Safe proof of ignition
- Multiple precise timing functions
- Draft tolerant burner supervision (recycles)
- Flame sensing via flame rectification
- AGA approved
- 24 VAC high cycle rated gas valves
- Suitable for operation with either natural gas or liquid propane (L.P.) gas
- Captive discharge spark
- Internal diagnostics

### B. GENERAL SYSTEM INFORMATION

#### 1. DSI System Components/Functions:

- a. The DSI module is designed to be the “controller” of the DSI system. When activated by the dryer’s controls, this module constantly monitors and controls the functions of the DSI system (i.e., spark activation, gas valve on/off functions, flame verification, etc.), can be operated at either 50 Hz or 60 Hz; and has self-diagnostic capabilities.

The L.E.D. (indicator light) on the DSI module simplifies the troubleshooting procedure in the event of a fault within the DSI system. If the L.E.D. on the module lights “GREEN” continuously, then the system is functioning properly. A flashing “GREEN” L.E.D. (LOCKOUT mode) indicates that ignition/flame has not been confirmed. Refer to the **Troubleshooting Section** of this manual for specific diagnostic information.



Direct Spark Ignition DSI Module

The DSI module allows for a continuous spark burst of three (3) 8-second durations. If a flame is not established after the initial three (3) 8-second spark burst, the module will LOCKOUT.

**NOTE:** To reset the DSI module if it is in the LOCKOUT mode, open and close the main door then restart the dryer. If the module repeatedly locks out, refer to the **Troubleshooting Section** of this manual.

The module also provides for safe proof of ignition. If a flame is is not sensed by the flame-probe electrode (of the ignitor/flame-probe assembly) within a specified time frame, the module will de-energize the gas valve and the ignitor/flame-probe assembly, and go into the LOCKOUT mode.

If a flame is established (sensed) but then lost (flame out due to possible air turbulence), the Direct Spark Ignition (DSI) module will wait 30-seconds then restart the ignition sequence.

**IMPORTANT:** The DSI module is a precision instrument, and *should be* handled carefully. Rough handling or distorting components could cause the module to malfunction.

**WARNING:** THE DSI MODULE **IS NOT** FIELD REPAIRABLE.

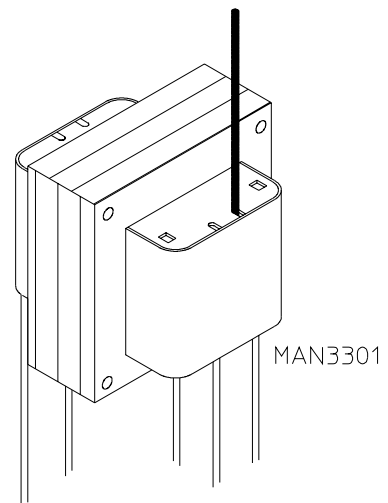
**NOTE:** To reset the DSI module if it is in the LOCKOUT mode, open and close the main door then restart the dryer. If the module repeatedly locks out, refer to the **Troubleshooting Section** of this manual.

- b. The 24 VAC transformer is designed to step down the operating (primary) voltage of the dryer from 120 VAC, 208 VAC, or 240 VAC to the 24 VAC (secondary voltage), which is necessary to operate the DSI system and in some cases the controls of the dryer.

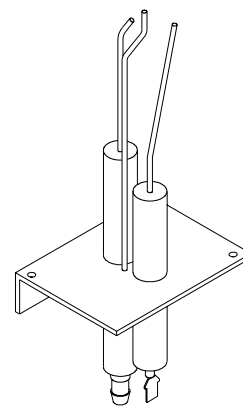
The transformer has multi-primary taps, which allow for one (1) transformer to be used for any voltage application including...120 volts, 208 volts, or 240 volts. Refer to the **Service Information Section** of this manual for specific transformer and wiring termination information.

- c. The ignitor/flame sensor assembly is located in the burner flame area and is used to ignite the gas by the use of a high volt (HV) (14,000) synchronous spark, and to provide feedback information to the DSI module as to whether the burner flame is evident (on).

The ignitor/flame-probe assembly consists of a ceramic insulated ignitor electrode, a ground rod and a ceramic insulated flame-probe electrode. The gap between the ignitor (spark) electrode and the ground rod is set, and **must be** maintained at 1/8" +/- 1/32" (3.175 mm +/- 0.79248 mm). When the DSI module provides the high voltage synchronous spark (14,000 volts) through the high voltage (HV) wire/lead, a spark is produced "over" the gap. When this spark is produced, the gas valve is opened. Upon ignition, the resistance in the flame-probe electrode (of the ignitor/flame-probe assembly) changes and the information is sent to the DSI module via the sensor probe lead connection to the module. Once the resistance is changed and sensed, the DSI module will sustain the gas flow (provide 24 VAC power to the gas valve).



24 VAC Transformer

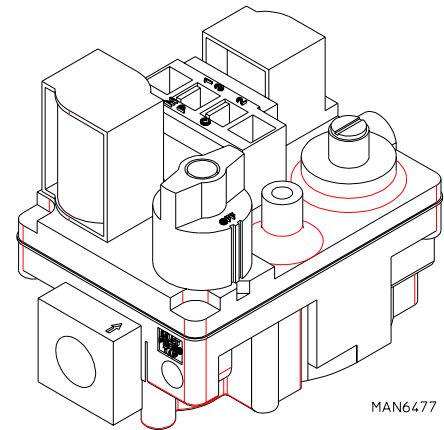


TYPICAL DIRECT SPARK IGNITION (DSI)  
IGNITOR / FLAME-PROBE ASSEMBLY

MAN4829  
MFM 12/30/99  
PB 12/14/99

**IMPORTANT: THE GAP SETTING ON THE IGNITOR/FLAME-PROBE ASSEMBLY IS CRITICAL.**

- d. The Direct Spark Ignition (DSI) 24 VAC gas valve(s) used are of the redundant type, which means the gas valve is actually two (2) gas valves in one (1); one (1) in series with the other. This is a safety feature, which provides protection against gas flow in the event of a failure of one (1) of the valves to seat properly. Other features are that the gas valves have a manual shutoff, a pressure tap outlet, and are designed for easy conversion to regulated liquid propane (L.P.) gas.



**IMPORTANT: The DSI gas valves are not field repairable. There are no parts available for field repair. Replace valve only with exact model and/or type number as noted on gas valve.**

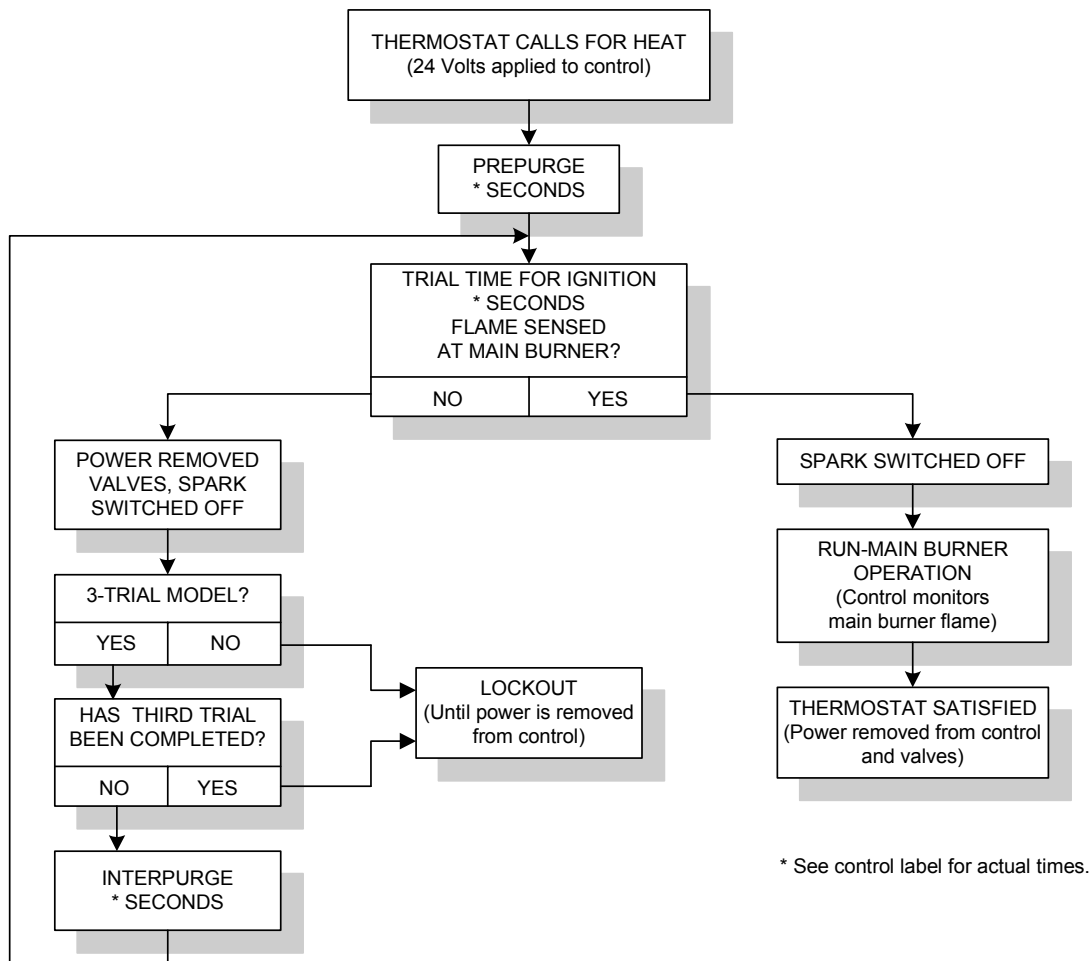
2. System (Basic) Electric Ratings/Specifications

- a. Input Voltage: 18 VAC to 30 VAC (**must be** grounded)
- b. Line Frequency: 50 Hz or 60 Hz
- c. Maximum Input Current: 0.100 amps + valve load @ 25 VAC
- d. Valve Load: 1-amp maximum @ 25 VAC
- e. Spark Voltage: 14,000 volts

3. System (Basic) Timing Specifications

- a. Trial for Ignition: 8-seconds
- b. Flame Failure Response Time: 0.5-seconds maximum
- c. Flame Failure Reignition Time: 0.5-seconds maximum
- d. Prepurge Time: 1.5-seconds +/- 0.5-seconds
- e. Retry Time: none
- f. Lockout Time: 10-seconds maximum

## C. G-760 DIRECT SPARK IGNITION (DSI) FLOWCHART



### 1. Normal Operation (Summary)

On a call for heat by the dryers' controls, 24 VAC is applied to the DSI module at which time the modules' light emitting diode (L.E.D.) indicator will light "GREEN" indicating that power has been established to the module. Almost immediately (up to approximately 1.5-seconds [prepurge]), the valve opens and the spark burst will be evident (on) for approximately 8-seconds. The burner flame **should now be** established/confirmed.

If at this time the flame has not been established/confirmed, the DSI module will try two (2) more times, then if still no ignition the modules' indicator will blink continuously. To reset or cancel the "LOCKOUT" condition, open and close the main door and restart the dryer.

Once the burner flame is established/confirmed, the DSI module L.E.D. indicator will stay "GREEN" and the burner system will continue through a normal heating cycle, where the DSI system will cycle on and off as required by the dryer's controls.

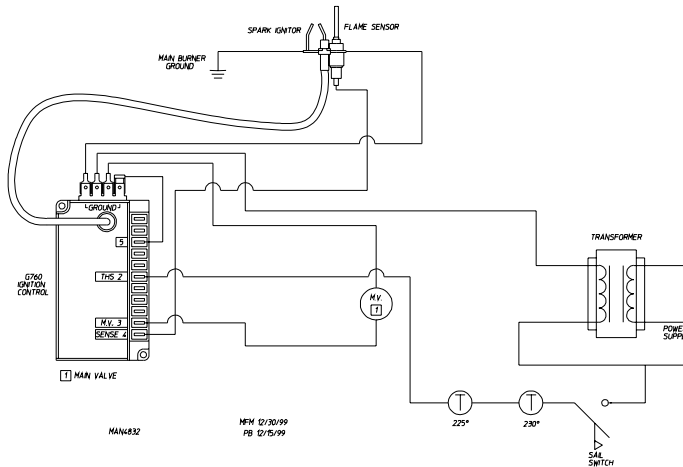
During the normal heating cycle, should a flameout occur (i.e. severe air turbulence forces the flame away from the ignitor assembly flame-probe), the DSI module will shut the gas valve off and try to reestablish the burner flame after 30-seconds.

## D. TROUBLESHOOTING

The troubleshooting information provided in this manual is intended for use only by qualified service technician. Observe **ALL** safety precautions displayed on the equipment or specified in the installation/operator's manual included with the dryer.

**IMPORTANT: UNDER NO CIRCUMSTANCES SHOULD ANY SAFETY OR HEAT CIRCUIT DEVICE EVER BE DISABLED.**

The following troubleshooting guide provides systematic procedures for isolating equipment problems, and again, is intended for use by a qualified service technician.

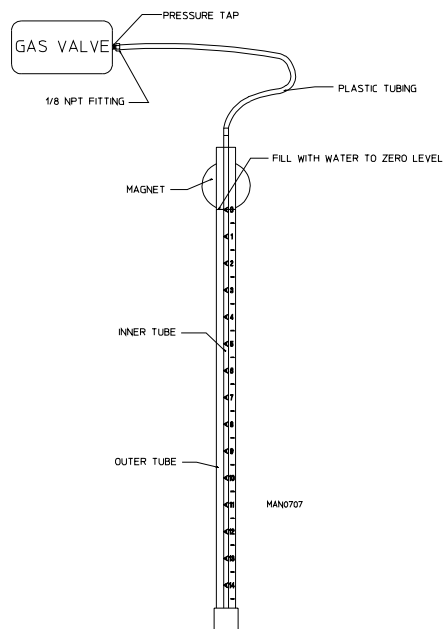


## TEST EQUIPMENT

The following pieces of test equipment will be required to troubleshoot this system with minimal time and effort:

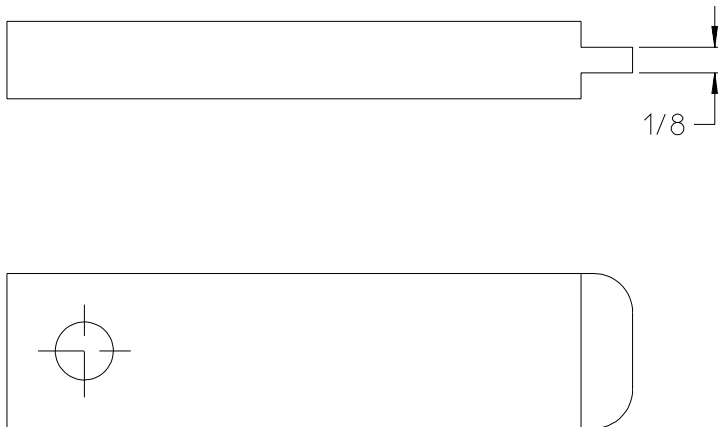
### MANOMETER

Used to measure gas pressure in inches of water column (W.C.)  
Available from ADC - Part No. 122804



### DSI IGNITOR GAP FEELER GAUGE (1/8")

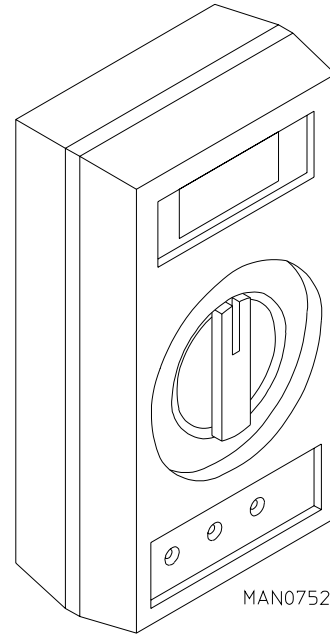
For checking the gap between ignitor assembly ground rod and spark electrode.  
Available from ADC - Part No. 305410



MAN0751

### MULTIMETER/VOLTMETER

For measuring voltage and/or amperage



MAN0752

## 1. Direct Spark Ignition (DSI) Troubleshooting Terms (Definitions)

- a. LOCKOUT Mode - DSI module "GREEN" light emitting diode (L.E.D.) indicator light blinks continuously. This indicates there is a system fault and most likely the fault is that the DSI module was not able to ignite the gas.
- b. FLAMEOUT - Burner flame shutdown by the DSI module due to lack of flame verification. This condition occurs only after ignition has been evident, but, is lost. The system will attempt to relight the burner after 30-seconds.

## 2. Troubleshooting/System Basic Diagnosis

- a. Preliminary Steps - The following steps **must be** performed to minimize the time required to isolate cause of fault.

1) DSI module L.E.D. indicator is off (no "GREEN" light).

- a) Check for voltage (approximately 24 VAC) across the DSI module terminals "THS" and "GND" (ground)...

If voltage (approximately 24 VAC) is evident, then, there is a malfunction within the DSI module itself, and it **must be** replaced.

- b) If there is no voltage, and the problem is not the DSI module or the ignition system, then the problem is elsewhere in the dryer (i.e., dryers' heat circuit [sail switch, hi-limit circuits, etc.]).

- 2) Direct Spark Ignition (DSI) module light emitting diode (L.E.D.) indicator lights “GREEN” for up to approximately 1.5-seconds (prepurge). This indicates that **ALL** the controls (including **ALL** the safety circuits) are functioning and power is being supplied to the DSI module.
  - a) DSI module L.E.D. indicator lights “GREEN.” This indicates a normal heating cycle. This also indicates that the preliminary diagnostics of the module has confirmed that the DSI module is functional.
  - b) DSI module L.E.D. indicator lights a blinking “GREEN” light continuously...LOCKOUT mode. This indicates that the module tried to ignite the gas a total of three (3) times of an 8-second spark each time. After the third time, this blinking “GREEN” L.E.D. comes on.

If the dryer repeatedly has DSI module “LOCKOUT” failures, the cause may be due to high voltage (HV) getting into the DSI module probe circuit.

- (1) Check to insure that the red voltage wire (between the ignitor spark electrode and the DSI module) is not wrapped around the sensor probe wire (the wire between the DSI module FP terminal and the ignitor assembly flame-probe). If the wires are touching one another, separate and secure in place **AWAY FROM ONE ANOTHER**.
- (2) Check to insure that the dryer is properly grounded and that the ground connections (GND) to the DSI module are secure.
- (3) If the problem persists, it is most likely to be in the external components (not the DSI module), or wiring, or due to flame out...proceed as follows:

**NOTE:** Preliminary steps - **DO NOT OMIT** - to minimize the time required to troubleshoot this system.

- (a) Disconnect electric power to the dryer.
- (b) Visually check DSI components for apparent damage.
- (c) Check wiring for loose connection, nicks or cracking at the ceramic insulator, or shorting of sensor to burner.
- (d) Inspect the DSI ignitor/flame-probe assembly...
  - check electrode for visible cracking at ceramic insulator or shorting of sensor to burner
  - check to insure flame sensor rod is positioned over flame area
  - check for carbon deposits on flame sensor rod
  - check to insure that there is a 1/8” gap between the ground rod and the ignitor spark electrode
- b. After performing these inspections and making corrections, restore electric power to the dryer, start the dryer and operate through one (1) complete cycle to insure **ALL** components are functioning properly. If a no heat condition persists, the three (3) visual indicators, annotated as **Item C** on **page 36**, will help isolate equipment problems and lead you directly to the proper **Quick Reference Troubleshooting Flowcharts** on **page 37**, **page 38**, and **page 39**.

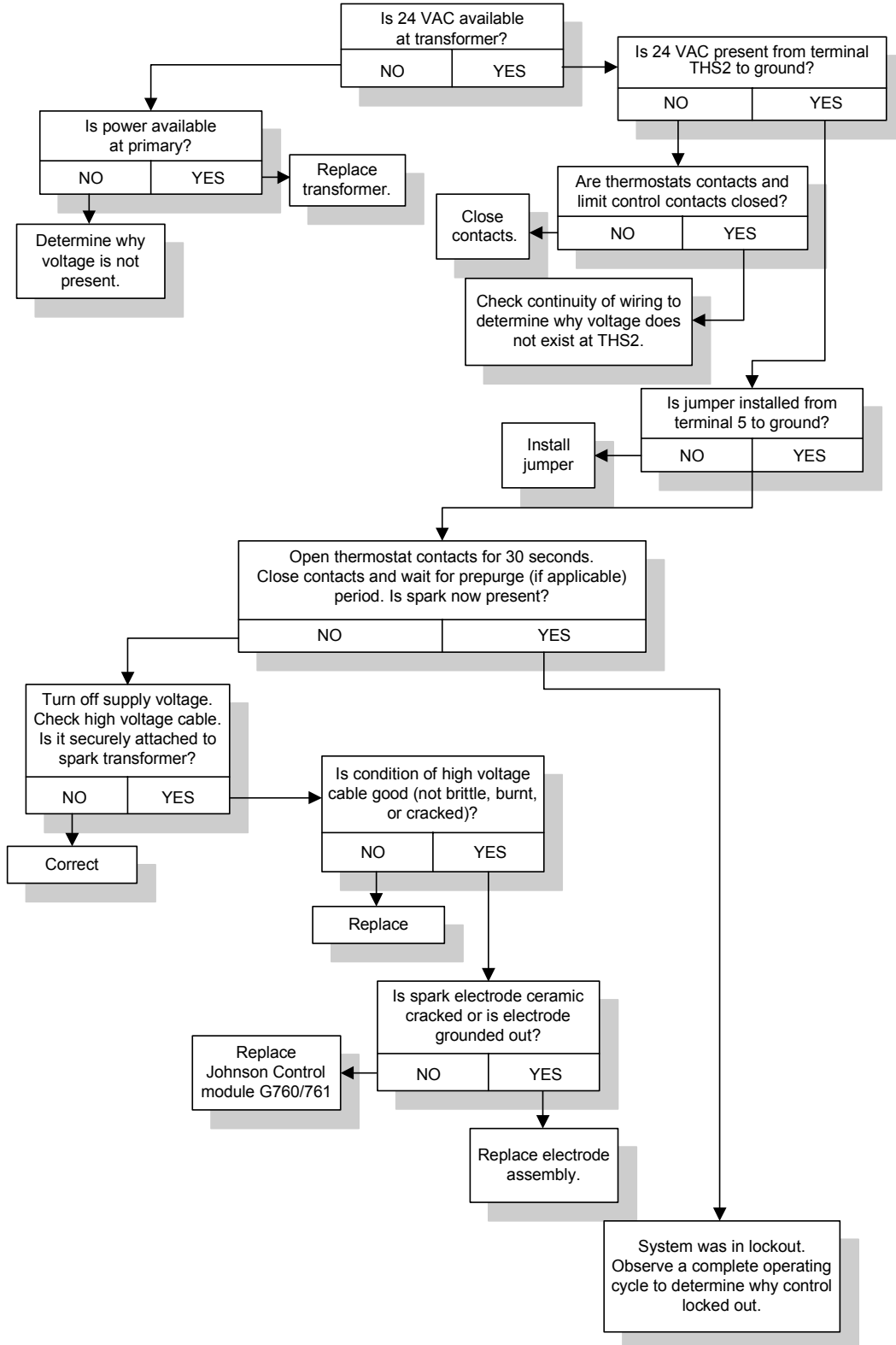
- 1) To effectively use this information or the flowcharts (on **page 37**, **page 38**, and **page 39**), each step **must be** completed in sequence, performing whatever tests are suggested. After the completion of each test, the guide will direct the service technician to the next logical step in the troubleshooting sequence based on the outcome of the previous check.
  - 2) Components **should be** replaced only after each step has been completed and replacement is suggested in the flowchart. However, the experienced technician realizes that a loose connection or broken or shorted wire may be at fault where electrical components are concerned, and not necessarily the suspected component itself.
- c. Three (3) Visual Checks...
- 1) No spark and system does not work. If not, proceed to **First Visual Check** on **page 37**.
  - 2) Spark present but main burner does not come on. If not, proceed to **Second Visual Check** on **page 38**.
  - 3) Main burner lights but does not stay on. If not, proceed to **Third Visual Check** on **page 39**.



d. Troubleshooting Flowchart - Quick Reference...

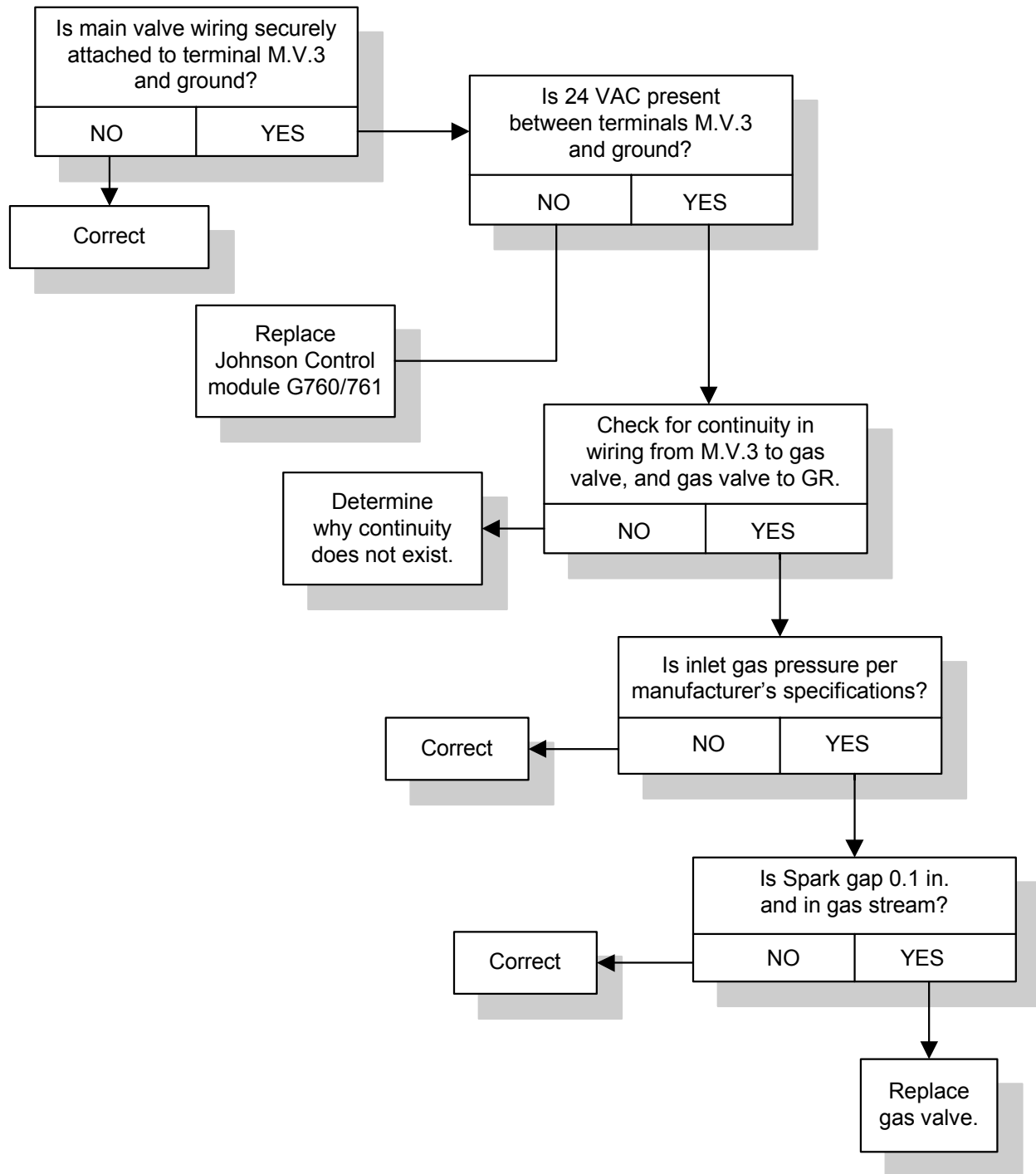
## First Visual Check

### **NO SPARK AND SYSTEM DOES NOT WORK**



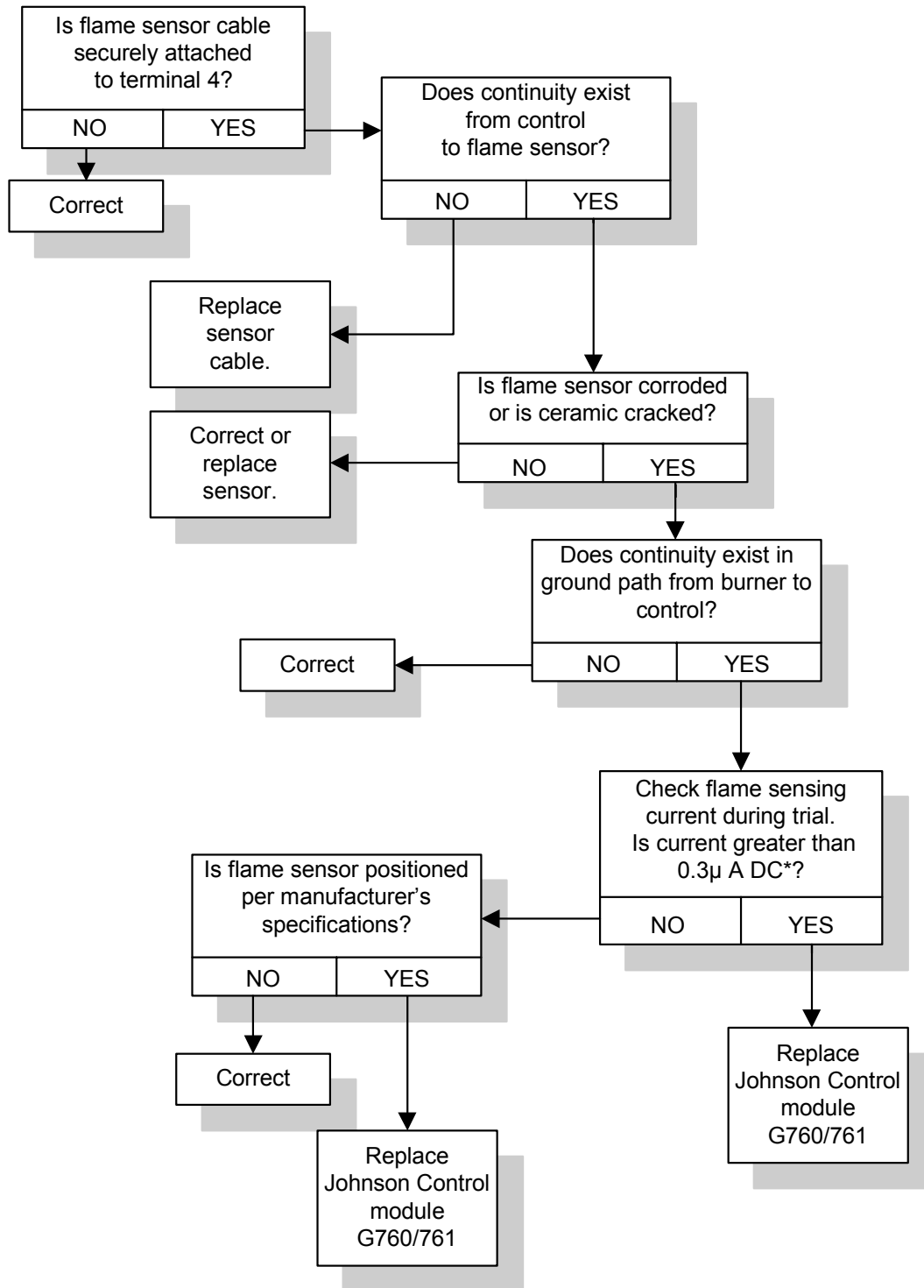
## Second Visual Check

### **SPARK PRESENT BUT MAIN BURNER DOES NOT COME ON**



### Third Visual Check

#### MAIN BURNER LIGHTS BUT DOES NOT STAY ON



### 3. Troubleshooting/System Detailed Diagnosis

When the dryer calls for heat, 24 VAC from the step down transformer is applied to the “THS” and “GND” (ground) terminals of the Direct Spark Ignition (DSI) module. The DSI module light emitting diode (L.E.D.) indicator will light “GREEN.” The gas valve will be energized, and the spark burst will be evident (on) for approximately 8-seconds at the tip of the electrode/flame-probe assembly. Flame **should now be** established/confirmed. If a flame is not sensed/confirmed by the flame-probe sensor after the approximate 8-second spark burst, the DSI module will wait 30-seconds and start **ALL** over again.

If a flame has been established/confirmed and then lost, the DSI module L.E.D. indicator will continue to light “GREEN,” wait 30-seconds and try again. The flame **should now be** established/confirmed. If a flame is not sensed/confirmed by the flame sensor probe after the initial try, the module will try two (2) more times then if it is still not established it will go into LOCKOUT.

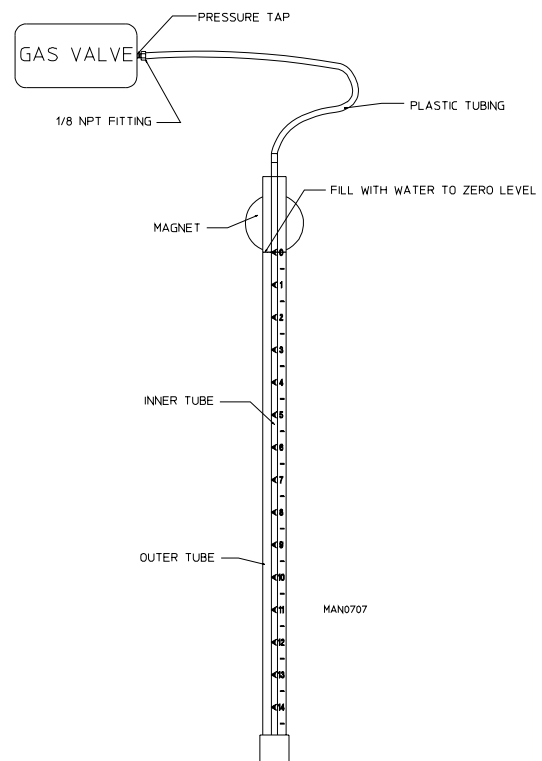
**NOTE:** To reset the DSI module if it is in the LOCKOUT mode, open and close the main door, then restart the dryer.

#### a. System Diagnosis

##### 1) Gas Pressure

A gas pressure test **should be** taken at the gas valve pressure tap provided on every gas valve to assure that the water column (W.C.) pressure is correct and consistent.

There are two (2) types of devices commonly used to measure water column pressure. They are the spring/mechanical type gauge and the water column test gauge (manometers). The use of the spring/mechanical type of gauges is not recommended because it/they are very easily damaged and they are not always accurate. The preferred type of gauge is the manometer because it is a simple device to use and is highly accurate. A manometer is simply a glass or transparent plastic tube with a scale graduated in inches. When it is filled with water and pressure is applied, the water in the tube rises, showing the exact water column pressure.



**WARNING:** Test **ALL** connections for leaks by brushing on a soapy water solution. **NEVER TEST FOR LEAKS WITH A FLAME!!!**

- a) Connect water column (W.C.) test gauge (manometer) to the gas valve pressure tap (1/8" N.P.T.).
- b) Start the dryer...with the burner on, the correct water column reading in inches **should be**:
  - Natural Gas ..... 3.5 inches (8.7 mb) water column.
  - Liquid Propane (L.P.) Gas ..... 10.5 inches (27.4 mb) water column.

When a gas dryer is first started (during initial time of installation or start-up), it has a tendency not to ignite on the first ignition attempt. This is due to the fact that the gas supply piping is filled with air, so it may take a few minutes for the air to be purged from the supply lines. During this purge period, there may be insufficient gas pressure for ignition, which might cause the Direct Spark Ignition (DSI) module to go into the LOCKOUT mode (the light emitting diode [L.E.D.] will BLINK "GREEN" CONTINUOUSLY).

**NOTE:** During the purge period, check to be sure that ALL gas shutoff valves are open.

**NOTE:** To reset the DSI module if it is in the LOCKOUT mode, open and close the main door then restart the dryer.

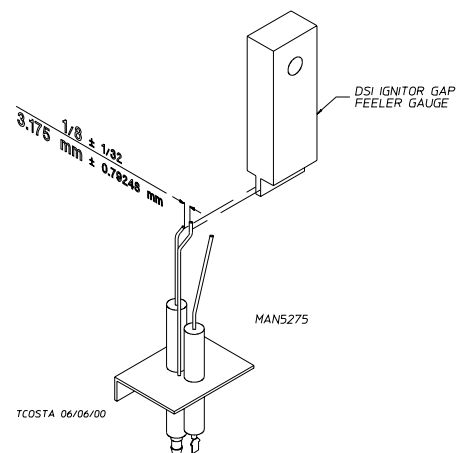
## 2) Ignitor/Flame-Probe Assembly Adjustments

The ignitor/flame-probe assembly consists of a ceramic insulated ignitor electrode, a ground rod, and a ceramic insulated flame-probe electrode. The gap between the ignitor electrode and the ground rod is set, and **must be** maintained at 1/8" +/- 1/32" (3.175 mm +/- 0.79248 mm). When the DSI module provides the high voltage (HV) synchronous spark (14,000 volts) through the high voltage (HV) lead, a spark is produced over the gap. When this spark is produced, the gas valve is opened. Upon ignition, the resistance in the flame-probe electrode (of the ignitor/flame-probe assembly) changes. Once the resistance is changed, it initializes the DSI to sustain the gas flow (from the gas valve).

**IMPORTANT:** The gap setting on the ignitor/flame-probe assembly is critical.

### a) DSI Ignitor/Flame-Probe Assembly Adjustments (TUBE BURNER TYPE)

- (1) The gap on the ignitor/flame-probe assembly **must be** set, and held at 1/8" +/- 1/32" (3.175 mm +/- 0.79248 mm). If this 1/8" gap is not maintained (if the gap is either too large or too small), the DSI module will indicate a system malfunction and go into the LOCKOUT mode (L.E.D. will BLINK "GREEN CONTINUOUSLY).

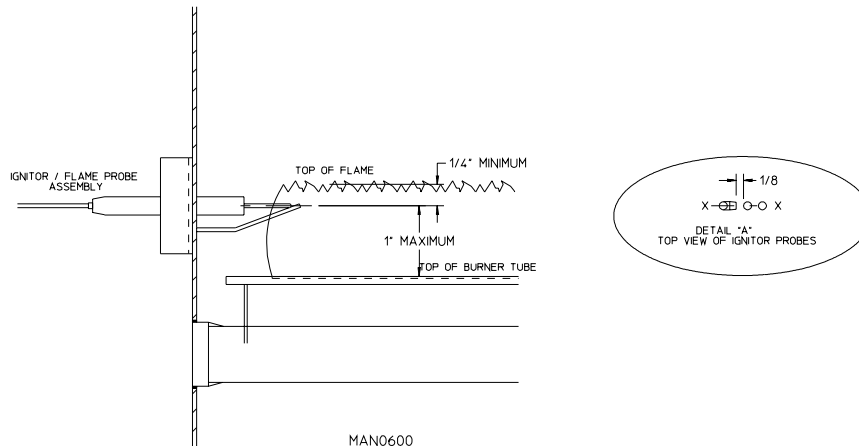


**NOTE:** To reset the Direct Spark Ignition (DSI) module if it is in the LOCKOUT mode, open and close the main door, then restart the dryer.

- (a) To check and/or set the 1/8" gap, use a DSI Ignitor gap feeler gauge (refer to the illustration on **page 41**) or similar type device to determine the gap size. **DO NOT USE FEELER GAUGE TO SET GAP**, use it only to determine the size of the gap. If an adjustment is necessary, bend the ground rod to achieve the correct gap, then recheck the 1/8" GAP with a feeler gauge.
- (b) The alignment of the ignitor/flame-probe assembly in relation to the gap on the ignitor electrode/ground rod **must be** maintained in as vertical (straight line) a position as possible (refer to the **illustration below**) otherwise the DSI module will indicate system malfunction and go into the LOCKOUT mode (L.E.D. will BLINK "GREEN" CONTINUOUSLY).

**NOTE:** To reset the DSI module if it is in the LOCKOUT mode, open and close the main door, then restart the dryer.

- (c) The positioning of the ignitor/flame-probe assembly is **extremely important** because it provides the necessary feedback information to the DSI module. The flame-probe electrode **must be** positioned 1/4" minimum into the flame path (refer to the **illustration below**) and **must be** positioned 1-inch (2.54 cm) maximum from the burner tube (refer to the **illustration below**), otherwise, the DSI module will indicate a system malfunction and go into the LOCKOUT mode (L.E.D. will LIGHT "RED" CONTINUOUSLY).



**NOTE:** To reset the DSI module if it is in the LOCKOUT mode, open and close the main door, then restart the dryer.

### 3) Air Turbulence

If there is sail switch flutter due to air turbulence or improper impellor rotation and/or a restriction in the exhaust ductwork, the DSI module will cycle erratically. This in turn might cause the DSI module to LOCKOUT (where the L.E.D. will BLINK "GREEN" CONTINUOUSLY).

- a) If air turbulence causes the flame to move away from the flame-probe electrode (of the ignitor/flame-probe assembly), or if the flame goes out completely during the heat (flame) cycle, the DSI module will attempt to reestablish a flame by going into a reignition cycle.

**NOTE:** To reset the Direct Spark Ignition (DSI) module if it is in the LOCKOUT mode, open and close the main door, then restart the dryer.

#### 4) DSI Module

If there is some sort of operational interference in the DSI system, the DSI module (acting as the “controller” for the system) will go into a LOCKOUT mode (where the light emitting diode [L.E.D.] will BLINK “GREEN” CONTINUOUSLY).

- a) Operational interference is any adverse condition (whether internal or external) to the system. (Electrical noise is considered external noise interference because it can cause the DSI module to cycle erratically.)

**NOTE:** To reset the DSI module if it is in the LOCKOUT mode, open and close the main door, then restart the dryer.

If the gap, the alignment, and the position of the ignitor/flame-probe assembly are correct; if the gas flow/pressure is constant and consistent; if there is no adverse air turbulence; and if the DSI module remains in the LOCKOUT mode (where the L.E.D. will BLINK “GREEN” CONTINUOUSLY) then, there is a malfunction within the DSI module itself, and it **must be** replaced.

#### 5) Wiring

If the DSI module is in the “LOCKOUT” mode (where the L.E.D. will BLINK “GREEN” CONTINUOUSLY), and the mechanical components have been checked (i.e., the ignitor/flame-probe assembly, the gas valve, etc.), then there may be a problem somewhere in the DSI system wiring.

- a) Check **ALL** the wiring within the DSI system, especially the ground connections on the DSI module and the ignitor/flame-probe assembly.

**NOTE:** Check for any possible damage to the ceramic insulators on the ignitor electrode and the flame-probe electrode of the ignitor/flame-probe assembly.

- b) Make sure the flame-probe electrode of the ignitor/flame-probe assembly is positioned no more than 1-inch (2.54 cm) maximum from the burner tube.

**CAUTION: *DO NOT* LET THE IGNITOR/FLAME-PROBE ASSEMBLY TOUCH THE BURNER TUBES; OTHERWISE, THE ENTIRE ASSEMBLY WILL SHORT OUT.**

#### 6) DSI 24 VAC Transformer

The DSI transformer is designed to step down the operating voltage of the dryer to 24 VAC to operate the DSI module. This transformer, like **ALL** transformers, is two (2) sided (refer to the illustration on **page 44**).

- a) Primary Side  
This is the incoming voltage side -120 VAC, 208 VAC, 230/240 VAC - of the transformer.
- b) Secondary Side  
This is the step down side - 24 VAC - of the transformer.

**WARNING:** **208 VAC and 230/240 VAC ARE NOT THE SAME.** ALL voltage connections *should be* checked and confirmed according to the wiring diagram provided with the individual dryer. Any damage done to dryer components due to improper voltage connections will automatically VOID THE WARRANTY.

**IMPORTANT:** The ADC Service Department *must be* contacted prior to any wiring change and/or conversion because, depending on the change/conversion required, some parts may have to be added, deleted, or changed. When, contacting the ADC Service Department, they *must be* given the correct **model number** and **serial number** for the dryer(s).

**NOTE:** Any wiring change(s) and/or conversion(s) *should be* accomplished by a QUALIFIED ELECTRICAL TECHNICIAN.

(1) Transformer Wiring

There are six (6) color-coded wires coming from the 24 VAC Transformer. There are four (4) wires coming from the primary (incoming) voltage side of the transformer. Their application and color-coding are as follows:

(a) **For 120 VAC application ONLY;**

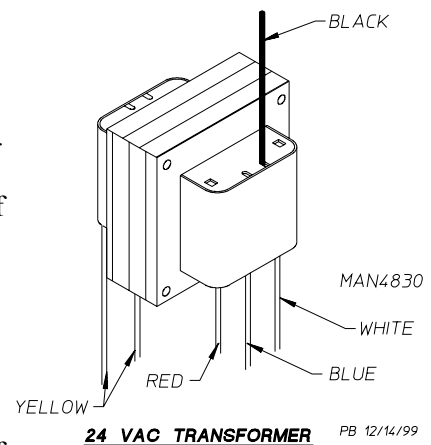
- 1 - The **BLACK** and **WHITE** wires are used.
- 2 - The **Red** and **Blue** wires are capped off individually.

(b) **For 208 VAC application ONLY;**

- 1 - The **BLACK** and **BLUE** wires are used.
- 2 - The **Red** and **White** wires are capped off individually.

(c) **For 240 VAC application ONLY;**

- 1 - The **BLACK** and “**RED**” wires are used.
- 2 - The **White** and **Blue** wires are capped off individually.



There are two (2) yellow or orange wires coming from the secondary (step down) side of the transformer.

- (d) One (1) YELLOW or ORANGE wire is connected to the “GND” (ground) termination.



- (e) One (1) YELLOW or ORANGE wire supplies the 24 VAC signal for the control and/or DSI circuit. (Refer to specific wiring diagram with the dryer for connection point.)

#### 7) Direct Spark Ignition (DSI) 24 VAC Redundant Gas Valve

There are three (3) DSI 24 VAC Redundant Gas Valves in use (refer to the **illustration below** and on the **next page**). The particular redundant gas valve that is used is dependent solely on the size (model) of the dryer. **ALL** three (3) redundant gas valves utilize 24 VAC, which is provided by the DSI module. Their applications are as follows:

**IMPORTANT:** The DSI 24 VAC Redundant Gas Valves (ADC Part No. 128927) contain no serviceable parts, replacement coils **ARE NOT** available. Replace with exact model and type number **ONLY**.

##### a) ADC PN 128927

- (1) To check the resistance values on this particular gas valve.

- (a) Disconnect the terminations at the gas valve from the DSI module.

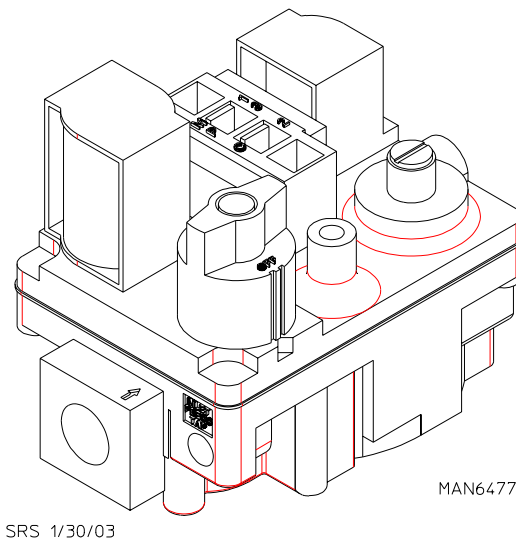
**WARNING:** When taking ohm readings, the terminations from DSI module **must be** disconnected, removed, otherwise, the readings obtained **will be** incorrect and/or erroneous.

- (2) With a meter (either a multimeter or ohmmeter) set on the 200 ohm position, place the meter leads across:

- (a) Terminals 1 and 2 - the reading **should be** approximately 96 ohms.

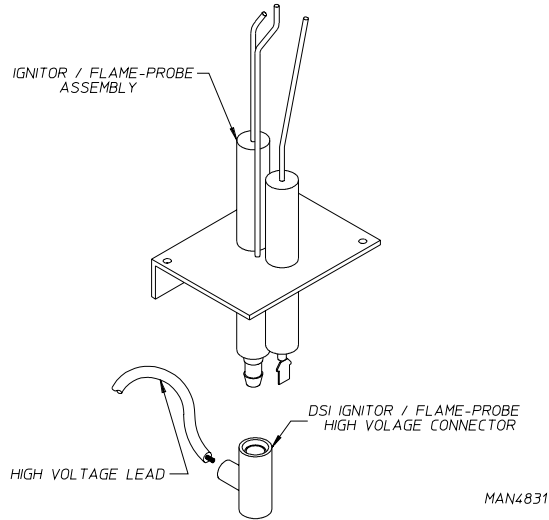
- (b) Terminals 3 and 4 - the reading **should be** approximately 96 ohms.

- (3) If, after checking the resistance values on this particular redundant gas valve it is determined that the ohm readings **DO NOT** approximate the ohm values listed above (96 ohms for both readings), then, the gas valve **must be** replaced.

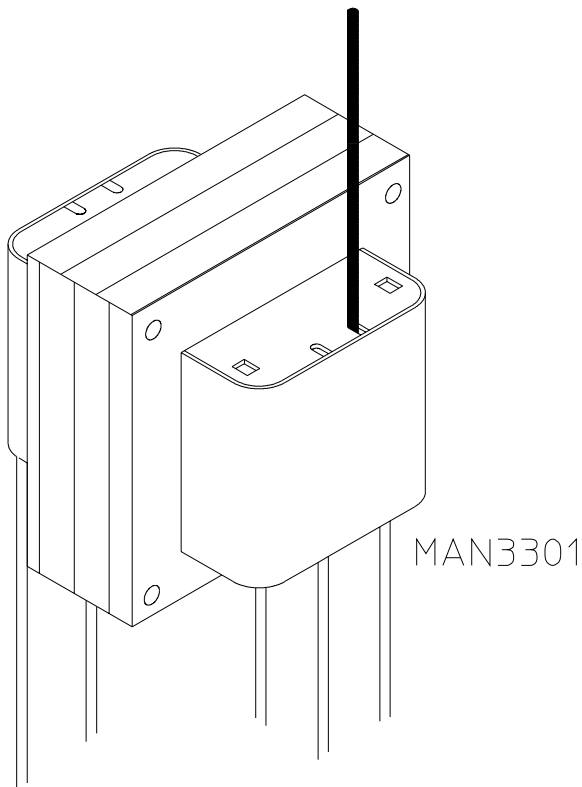


**ADC PN 128927 5N7 REDUNDANT GAS VALVE**

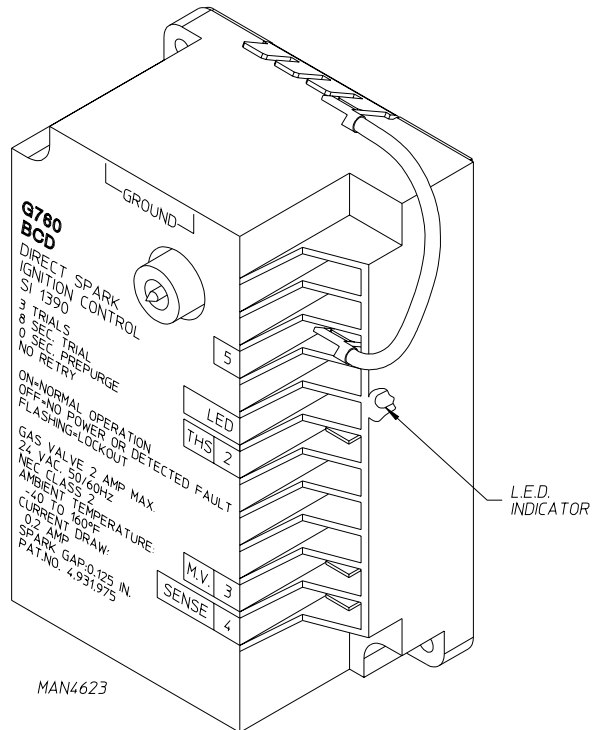
# DIRECT SPARK IGNITION (DSI) SYSTEM COMPONENTS



**DIRECT SPARK IGNITION (DSI)  
IGNITOR / PROBE ASSEMBLY KIT**



**24 VAC  
DIRECT SPARK IGNITION (DSI)  
TRANSFORMER**  
ADC PN 141403



**G760 DIRECT SPARK MODULE**  
ADC PN 128935

# SECTION VII

## TROUBLESHOOTING

The information provided will help isolate the most probable components associated with the difficulty described. The experienced technician realizes that a loose connection or broken or shorted wire may be at fault where electrical components are concerned, however, not necessarily the suspected component itself.

Electrical parts **should always be** checked for failure before returned to the factory.

The information provided **should not be** construed as a device for use by an untrained person in making repairs. Only properly licensed technicians should service the equipment.

Observe **ALL** safety precautions displaced on the equipment or specified in this manual while making repairs.

### A. PHASE 5 COIN SYSTEM DIAGNOSIS

**ALL** major circuits, including door, microprocessor temperature sensor, heat and motor circuits are monitored. The Phase 5 coin microprocessor controller (computer) will inform the user by the light emitting diode (L.E.D.) display of certain failure codes along with indicators both in the L.E.D. display at the outputs of each relay and door switch circuit to easily identify failures.

#### DIAGNOSTICS (L.E.D.) DISPLAY FAILURE CODES

1. “**dOO**r” - Indicates door switch circuit is open.
  - a. Keyboard (touch pad) entry was made while main door is open, or
  - b. There is a fault in the door switch circuit (external of the microprocessor controller [computer]).
  - c. Possible blown fuse.
2. “**dSFL**” - Indicates a fault in the microprocessor temperature sensor circuit. If a fault is detected in the microprocessor heat sensor circuit, the display will read “**dSFL**” and the tone (buzzer) will sound for approximately 5-seconds every 30-seconds until...
  - a. The problem is corrected, or
  - b. Power to the dryer is disconnected and the problem is then corrected.

**IMPORTANT:** The Phase 5 coin microprocessor controller (computer) has its own internal heat sensing circuit fuse protection, located on the back side of the controller. If a “**dSFL**” condition occurs, check to see if this fuse has blown. If it has, **DO NOT** replace the entire microprocessor controller (computer); replace the fuse and do so with a 1/8-amp (Slo-Blo) fuse only.

**NOTE:** Once the microprocessor controller (computer) detects a problem in the heat circuit, it updates every 30-seconds. If the problem was a loose connection in this circuit, which corrected itself, the “**dSFL**” condition would be cancelled.

3. “**SEFL**” - indicates rotational sensor circuit failure meaning that there is a fault somewhere in the basket (tumbler) rotation detection circuit, or the Phase 5 coin microprocessor controller (computer) program related to this circuit (PL 0.1) is set incorrectly in the active mode (**SEn**) where the dryer is not equipped with the optional rotational sensor and **should be** set in the nonactive mode (**nSEn**). Also check to see if the belt came loose, or the rotational sensor magnet is broken. If not, adjust rotational sensor reed switch within 1/4” to the magnet.
4. “**Hot**” - indicates a possible overheating condition. The Phase 5 coin microprocessor controller (computer) monitors the temperature in the dryer at **ALL** times. If the microprocessor controller (computer) detects that the temperature in the dryer has exceeded 220° F (104° C), it will disable **ALL** outputs (shut the dryer down), the tone (**bUZ**) will sound for approximately 5-seconds, and the light emitting diode (L.E.D.) temperature sensor has dropped to 220° F (104° C) or lower and the microprocessor controller (computer) is manually reset by closing and opening the program switch (PS) on the back side of the controller.

#### MICROPROCESSOR CONTROLLER (COMPUTER) RELAY OUTPUT L.E.D. INDICATORS

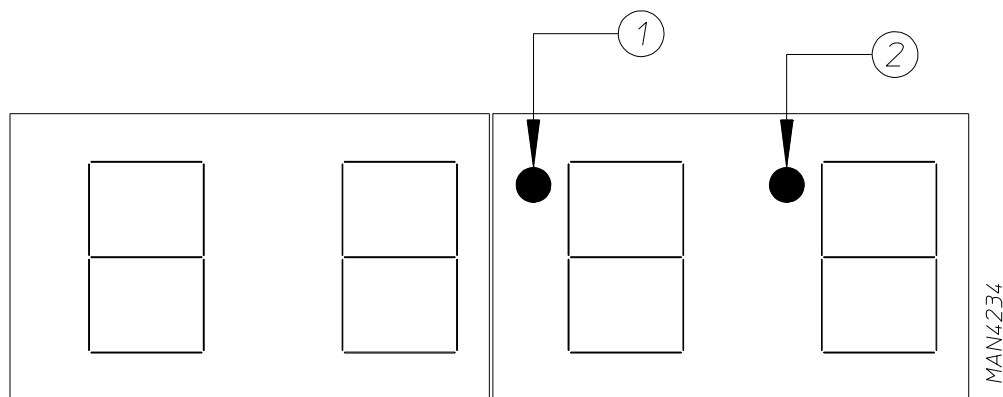
There are three (3) L.E.D. indicators (red lights) located at the lower backside area of the controller, they are identified and labeled “**dOOr**,” “**MOTOR**,” and “**HEAT**” (as shown in the illustration on the next page). These L.E.D.s indicate that the outputs of the Phase 5 coin microprocessor controller (computer) or, in the case of the door switch, the input is functioning.

1. “**dOOr**” L.E.D. indicator **should be** on **ALL** the time (even if the dryer is not running) unless the main door is open or there is a problem (open circuit) in the main door switch circuit.
2. “**MOTOR**” Output L.E.D. Indicator - if the dryer is started and the motor is not operating, yet both the microprocessor controller (computer) display motor indicator dot and the “**dOOr**” input L.E.D. indicator are on, but the motor output L.E.D. indicator is off, then the fault is in the Phase 5 coin microprocessor controller (computer) itself. If the motor is not operating and the **MOTOR** output indicator is on, then the problem is elsewhere (i.e., external of the microprocessor controller [computer]).
3. “**HEAT**” Output L.E.D. Indicator - If the dryer is started and there is no “**heat**,” yet the microprocessor controller (computer) display heat circuit indicator dot is on, but the output L.E.D. indicator is off, then the fault is in the Phase 5 coin microprocessor controller (computer) itself. If both the display heat indicator dot and the heat output L.E.D. indicator are on, then the problem is elsewhere (i.e., external of the microprocessor controller [computer]).

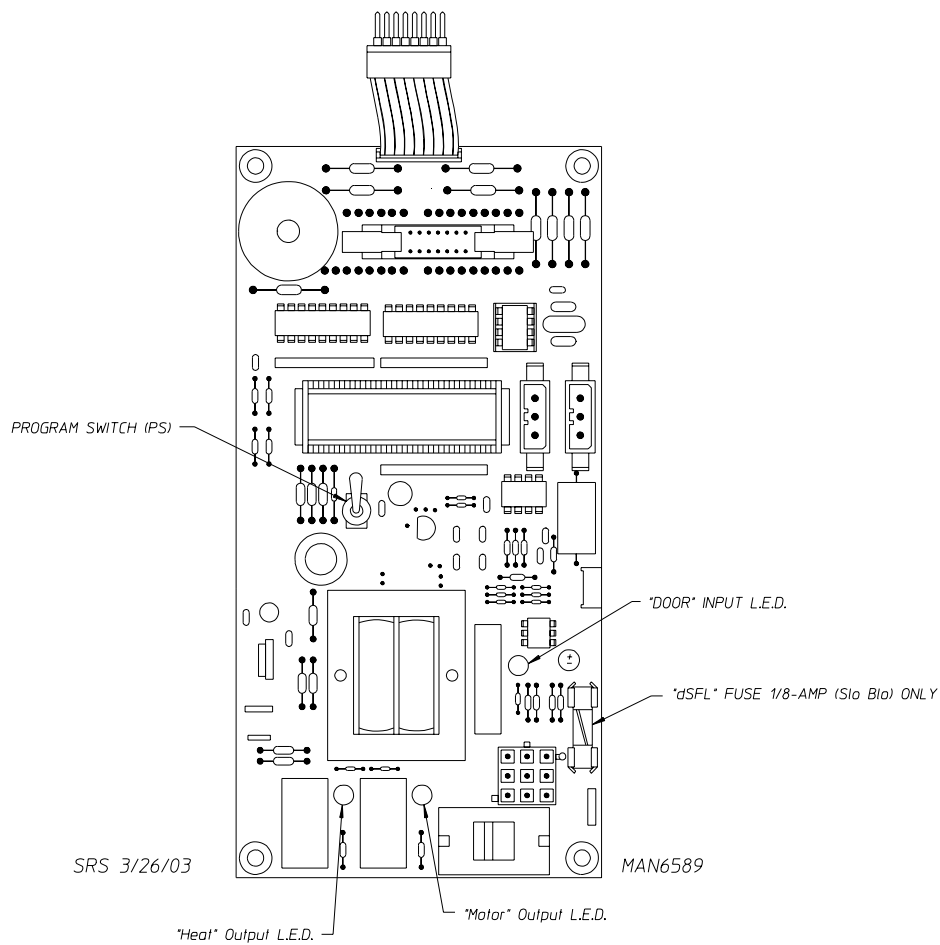
**NOTE:** If the dryer is started (the light emitting diode [L.E.D.] display indicator dots are on) and there are no outputs (heat and/or motor output L.E.D.s are off) and the “**dOO**r” input L.E.D. is on, the fault is in the Phase 5 microprocessor controller (computer) itself. If the L.E.D. display indicators are on and the door L.E.D. input and motor/heat output L.E.D.s are on the motor and/or heat **is not** active (on), then the problem **is not** the door switch circuit or the Phase 5 coin microprocessor controller (computer); the problem is elsewhere in the dryer.

### L.E.D. DISPLAY INDICATORS

The L.E.D. indicator dots located at the top portion of the L.E.D. display (refer to the **illustration below**) indicate the Phase 5 coin microprocessor controller (computer) output functions while a cycle is in progress. These dots **DO NOT** necessarily mean that the outputs are functioning. They are only indicating that the function (output) **should be** active (on).

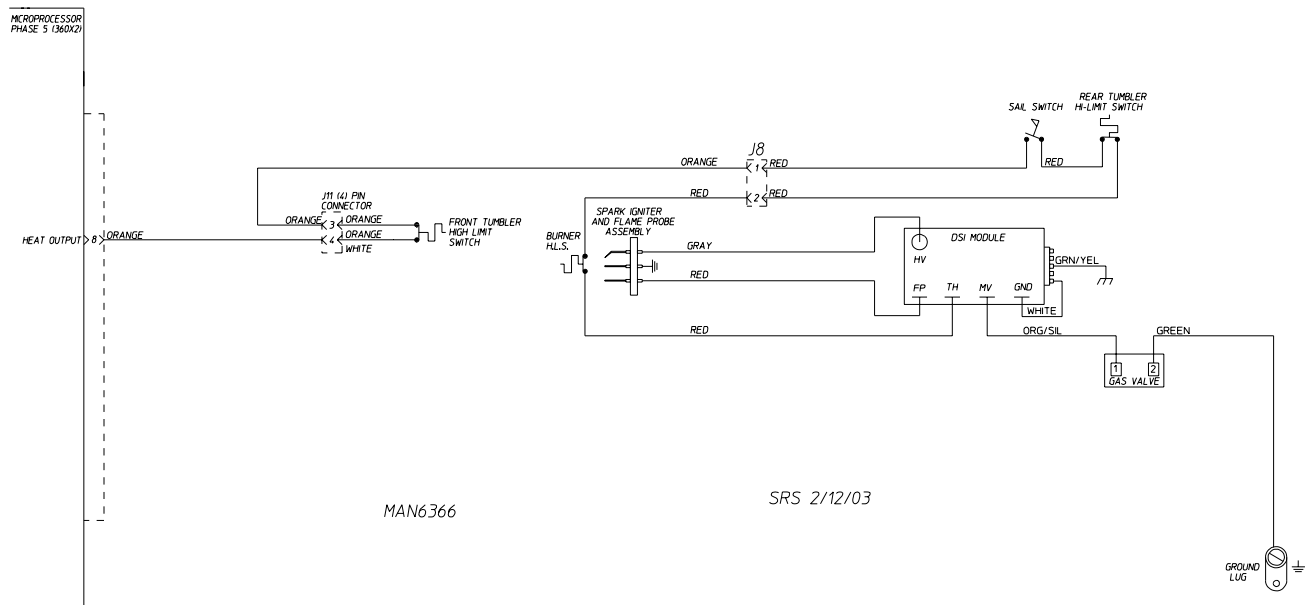


1. Heat Circuit Indicator - indicator dot is on whenever the Phase 5 coin microprocessor controller (computer) is calling for the heating circuit to be active (ON).
2. Motor Circuit Indicator - indicator dot is on whenever a cycle is in progress.

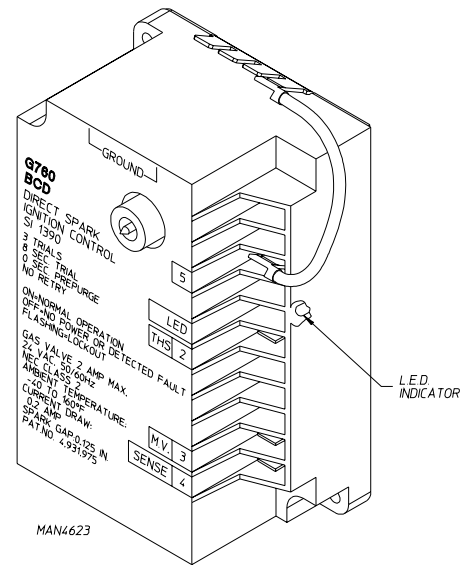


## B. NO HEAT CONDITION (BLOWER IS ON)

The following procedure **must be** performed with the microprocessor controller (computer) display in the normal operating mode, the heat indicator dot on, and the light emitting diode (L.E.D.) output light is on. Voltage is 24 VAC unless otherwise specified.

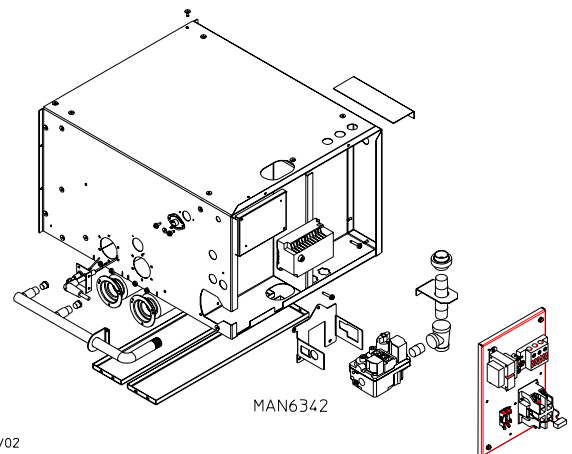


1. With the heat indicator on check for voltage at J1 connector 9-pin connector pin #8 (orange wire to ground) if 24 volt is present.
2. If no voltage (24 VAC) check for loose connection at 9-pin connector or problem may be faulty microprocessor.
3. Check for voltage (24 VAC) at J11 connector pin #3 orange wire. If no voltage, check for loose connection or bad basket (tumbler) hi-limit. If voltage is present, proceed to next step.
4. At the rear basket (tumbler) hi-limit take a voltage reading (24 VAC) from one of the red wires to ground. Do this on both wires one at a time. If voltage is not present, then the problem is a loose connection going back to the sail switch or the sail switch itself is faulty. If voltage is present on only one (1) of the red wires, then the problem is a loose connection on the rear basket (tumbler) hi-limit switch or the rear basket (tumbler) hi-limit switch itself is faulty. If voltage (24 VAC) is present from each red wire to ground then proceed to the next step.



5. Check for 24 VAC at the Direct Spark Ignition (DSI) module terminals marked “TH” and “GnD.” If no voltage (24 VAC) is present check for a loose connection going back to the burner hi-limit or the burner hi-limit itself may be faulty. If voltage (24 VAC) is present at the “TH” and “GnD” terminals proceed to the next step.
6. If no spark is present, check for any hairline cracks at the base of the ignitor. If cracks are present replace the ignitor. If no cracks are present, then the module (PN: 128935) may be faulty. If spark is occurring, then proceed to **Step #7**.
7. Check for voltage (24 VAC) on the Direct Spark Ignition (DSI) module terminals marked “MV” and “GnD” while the ignitor is sparking 24 VAC **should be** present on those two (2) terminals (“MV” and “GnD”). If no voltage (24 VAC), then the problem is either a loose connection or a faulty DSI module (PN: 128935). If voltage is present proceed to next step.

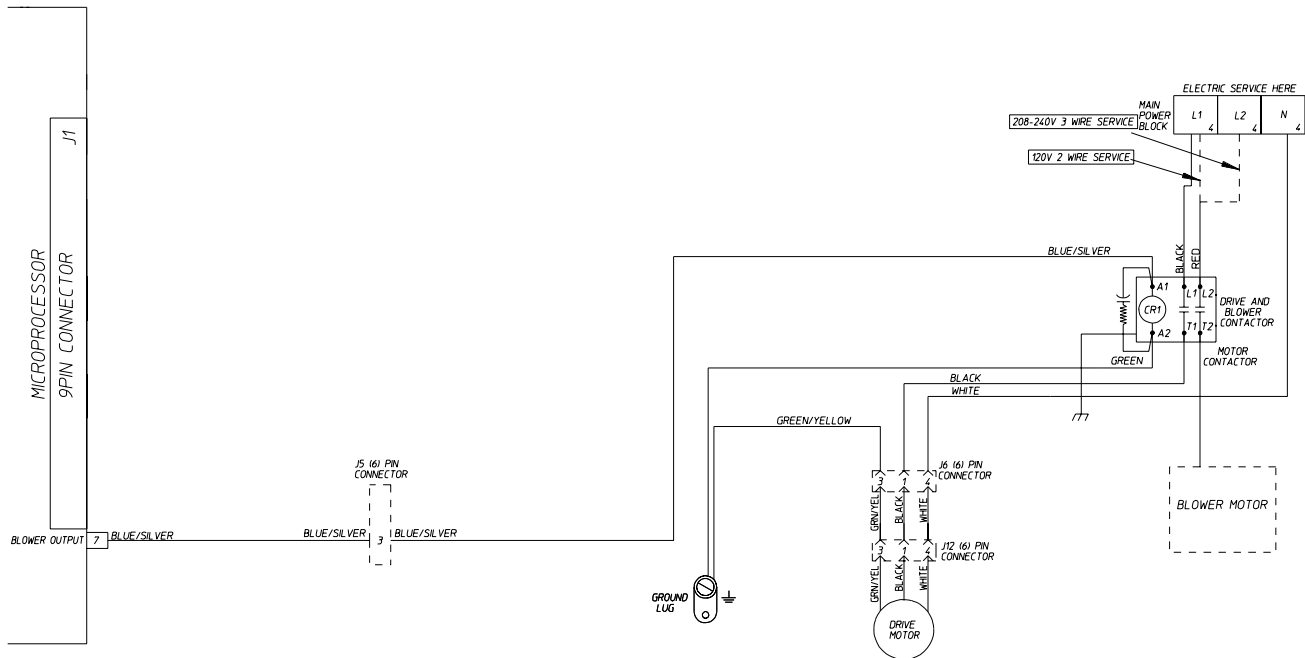
8. Check for 24 VAC at the gas valve terminals marked 1 and 2. If no voltage (24 VAC) is present check for a loose connection on the two (2) wires at the gas valve or the DSI module (PN: 128935) may be faulty. If voltage (24 VAC) is present proceed to next step.
9. Check the gas valve shutoff and make sure it is in the “on” position. Check to ensure proper gas pressure is being applied to the gas valve. If still no ignition, use a manometer on the manifold side of the gas valve. If the proper gas pressure is not present while the ignitor is sparking the problem is a faulty gas valve.



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## C. NO START CONDITION

### MOTOR CIRCUIT

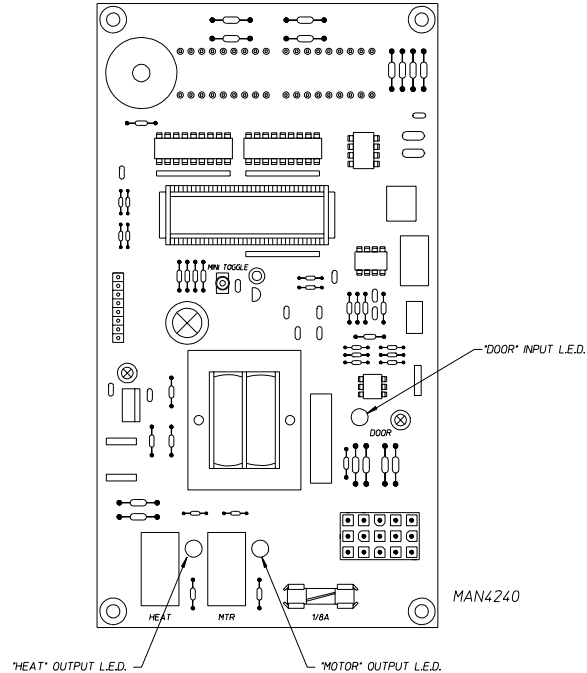


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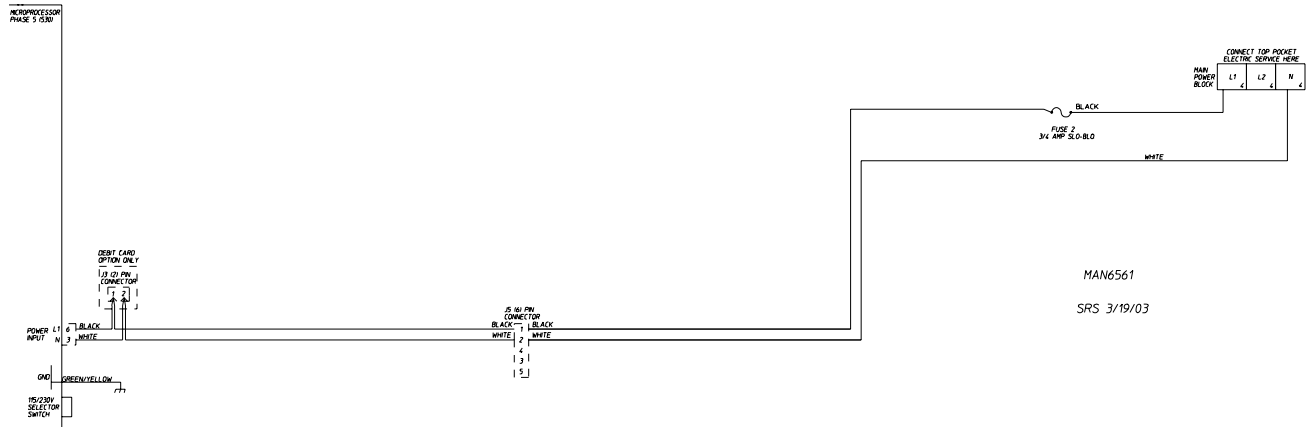
Follow this test procedure, providing that the microprocessor controller (computer) is functioning where the display is in the normal operating mode and the motor indicator dot is on, and the light emitting diode (L.E.D.) motor output light is on. The voltage you **should be** reading is 24 VAC unless otherwise specified.

1. Check to see if “**dOOr**” L.E.D. input light is on. (Located on component side of the computer board.) If it’s off, refer to “**dOOr**” in the **Troubleshooting Section**.
2. Check for voltage at the microprocessor pin #7. If no voltage check for a loose connection or the microprocessor itself is faulty. If no voltage is present, proceed to the next step.
3. Check for voltage across the coil connections of the motor relay. If no voltage is evident, check for a loose connection going back to (J5) 6-pin connector #3. If voltage is evident proceed to the next step.
4. Take a voltage reading on the motor contactor between L1 and N (neutral). If no voltage (120 VAC) replace the motor contactor. If voltage is present, check for loose connection going to the drive motor or the drive motor itself maybe faulty.



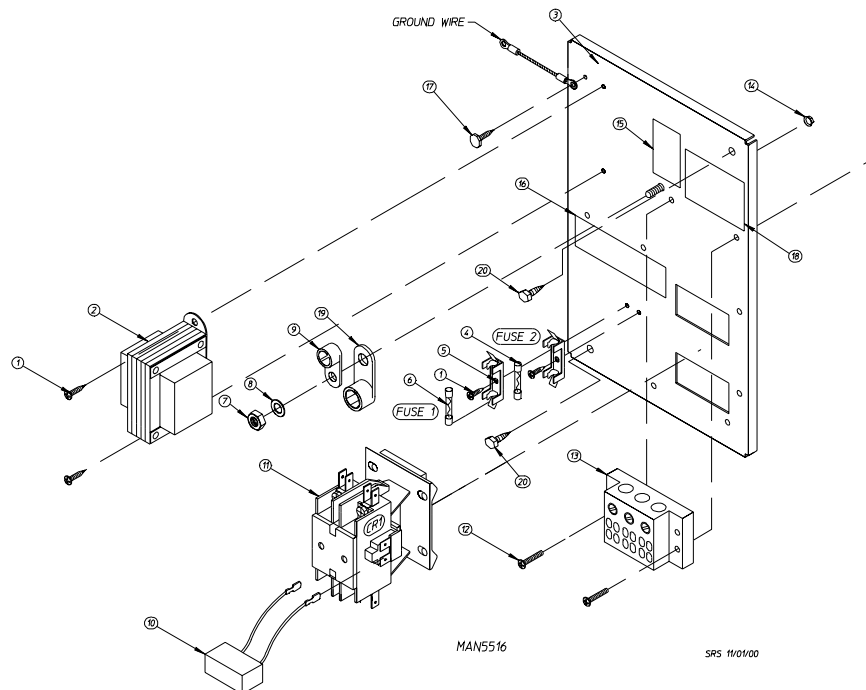


## D. NO DISPLAY CONDITION



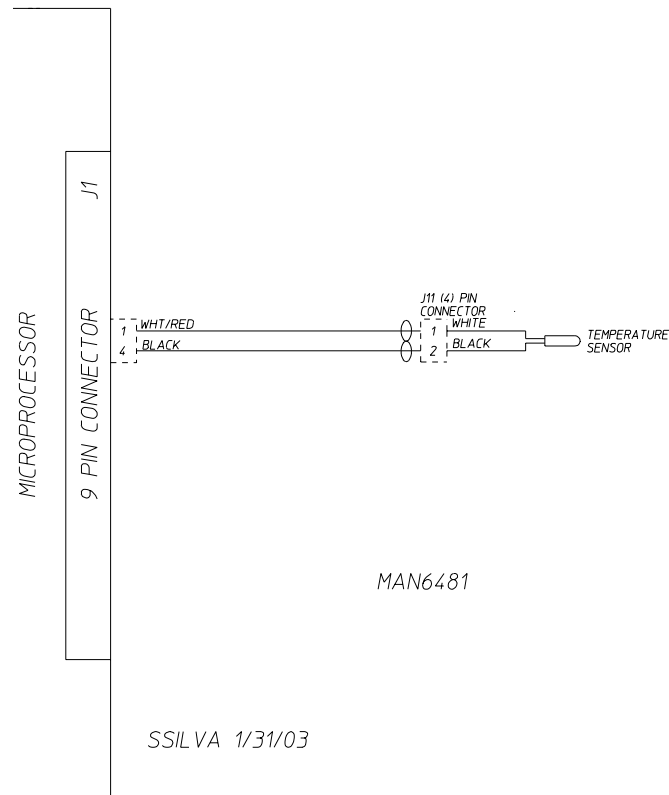
**NOTE:** Regardless of the voltage (120-240 VAC) make sure the voltage selector switch is set to 115 VAC.

1. Check power supply. (Dryer voltage 110v, 208v, 220v) (Circuit breaker box or fuse panel)
2. Check fuse 2 (3/4-amp Slo-Blo) if blown, replace it.
3. Check for voltage at the (J5) 6-pin connector (120 VAC) pin #1 black wire and pin #2 white wire. If no voltage, check for a loose connection.
4. Check for voltage at the microprocessor pin #6 black wire and pin #3 white wire. If no voltage, check for a loose connection. If voltage is present, the problem may be a faulty microprocessor.



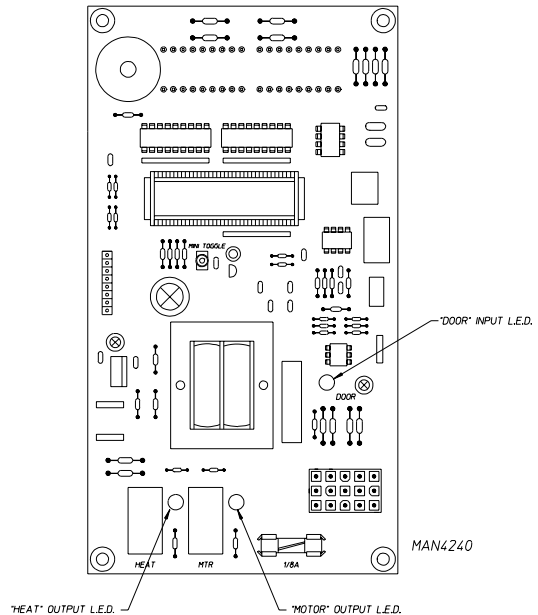
5. Check for voltage across the computer's 9-pin connector pin numbers 6 and 3 (110v, 208v, 220v). If no voltage is evident, problem is bad wire or termination from the computer's connector pin numbers 6 and 3 to the 9-pin connector (J2) pin numbers 6 and 3. If voltage is evident, problem is faulty computer.

## E. “dSFL” DISPLAY CONDITION



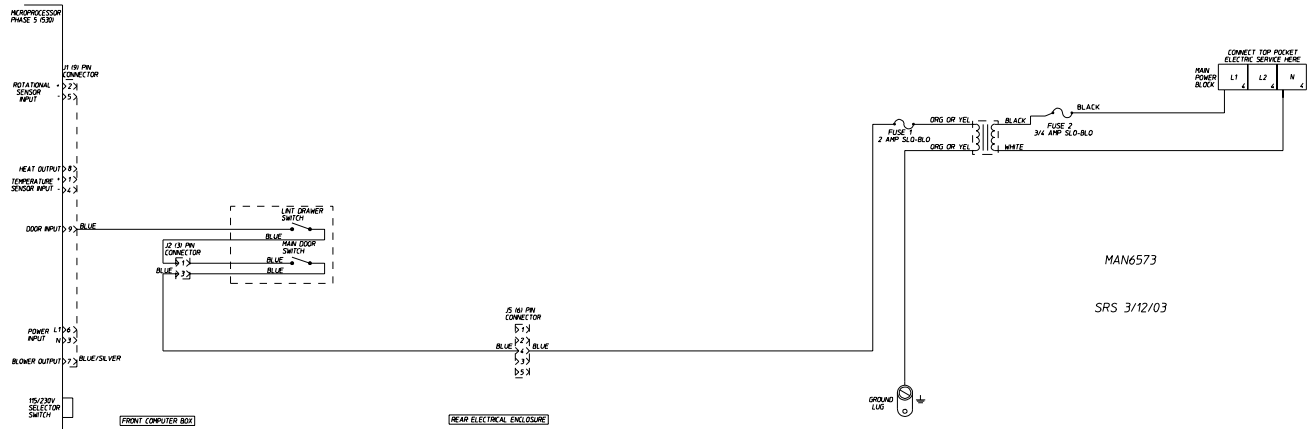
When the display reads “**dSFL**” this condition indicates a fault in the microprocessor controller (computer) heat circuit. This circuit includes the microprocessor controller (computer), microprocessor temperature sensor (located in lint compartment) and wires to and from these two (2) points.

1. Check the 1/8-amp fuse on the computer board. If no continuity, replace with **ADC PN: 136048**. If fuse repeatedly burns out go to **Step #3**.
2. Check for loose connection at the microprocessor sensor bracket harness connector (located in lint compartment), and the microprocessor 9-position connector at the microprocessor controller (computer).
3. Discontinue power to dryer. Disconnect the microprocessor 9-position connector from microprocessor controller (computer) and locate connector holes 1 and 4. Disconnect sensor harness from sensor bracket assembly (located in the lint compartment). Check for continuity across each wire from harness connector in lint compartment (J11) (pins 1 and 2) to appropriate microprocessor 9-position connector (1 and 4). If no continuity, problem is break in wire or bad termination from that 4-pin (J11) connector through to the computer 9-position connector pins 1 and 4. Also, on the two (2) wires, check for short to GND.



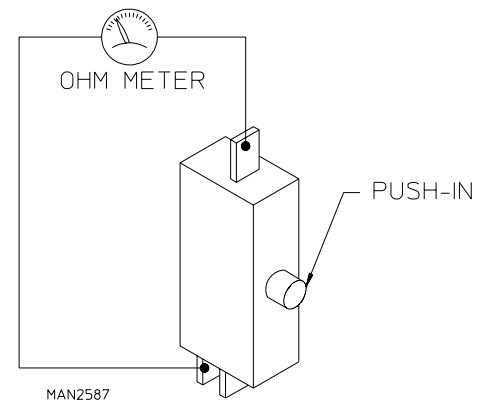
4. If above procedures check out okay, problem is a defective microprocessor temperature sensor.

## F. “dOOr” DISPLAY CONDITION

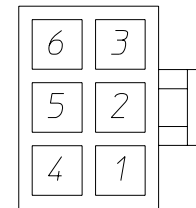


When the display reads “**dOOr**,” this indicates that there is a fault (open circuit) somewhere in the microprocessor controller’s (computer’s) door switch circuit. Include the door switch, microprocessor controller (computer) and the wires to end from these two (2) points. Before following this test procedure, check the component side of the computer to see if light emitting diode (L.E.D.) input light is on. If on and still reads door, replace computer. Voltage is 24 VAC unless otherwise specified.

1. Remove door switch assembly from dryer. Check for continuity across the two (2) terminals of the door switch with plunger pushed in. If no continuity, replace the door switch. If continuity is evident, reassemble door switch back on dryer.
  - a) Repeat the above procedure; for the lint door switch.
2. Make sure both the main and lint doors are closed and the plungers are pushed in. Check for voltage, across pin #4 (blue wire) (J5) 6-pin connector to ground. If no voltage is evident, problem could be faulty transformer or fuse 1 is blown. If voltage is evident, then continue with **Step #3**.
3. Check for voltage at the (J2) 3-pin connector pin #1 blue wire to ground. If no voltage, the problem is a loose connection or a bad main door switch. If no voltage is evident continue to **Step #4**.
4. Take a voltage reading at the microprocessor (J1) 9-pin connector, pin #9 blue wire. If no voltage is evident, the problem may be a loose connection on that wire or a bad lint drawer switch.



6 PIN CONNECTOR



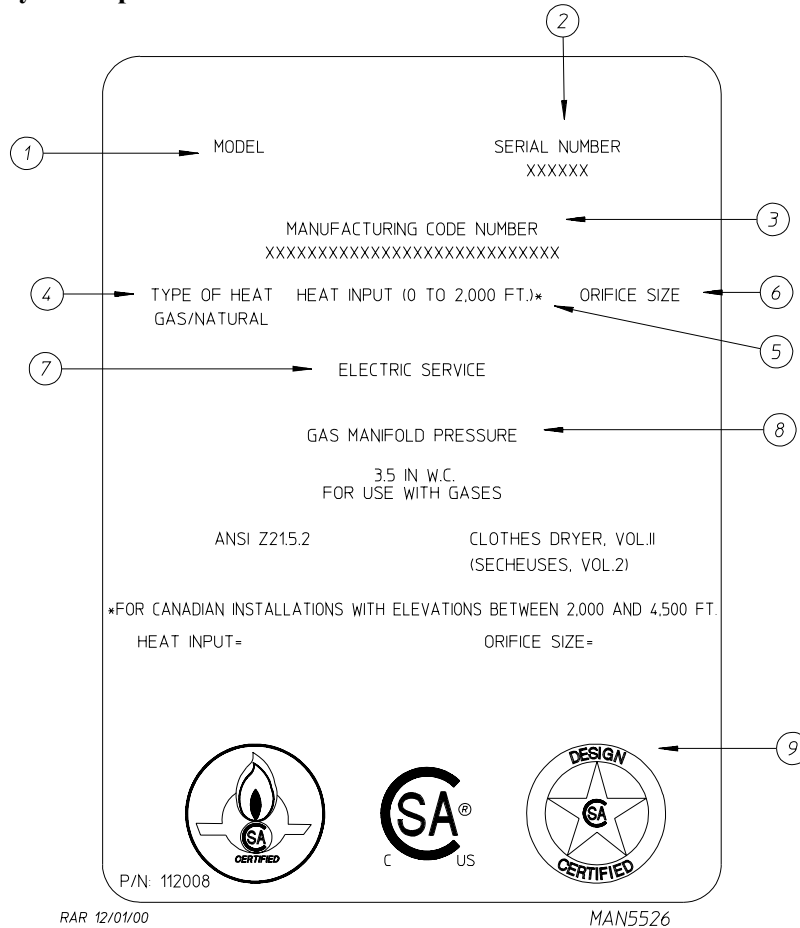
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# SECTION VIII

## DATA LABEL INFORMATION

### A. DATA LABEL

Contact **American Dryer Corporation**



When contacting **American Dryer Corporation**, certain information is required to ensure proper service or parts information from **ADC**. This information is on the data label, which is affixed to the left side panel/wall area behind the bottom control panel. When contacting **ADC**, please have the **model number** and **serial number** handy.

#### 1. **MODEL NUMBER**

The model number is an **ADC** number, which describes the size of the dryer and the type of heat (gas, electric, or steam).

#### 2. **SERIAL NUMBER**

The serial number allows **ADC** to gather information on your particular dryer.

#### 3. **MANUFACTURING CODE NUMBER**

The manufacturing code number is a number issued by **ADC**, which describes **ALL** possible options on your particular model.

#### 4. TYPE OF HEAT

This describes the type of heat for your particular dryer: gas (either natural gas or liquid propane [L.P.] gas), electric, or steam.

#### 5. HEAT INPUT (for GAS DRYERS)

This describes the heat input in British Thermal Units per Hour (Btu/hr).

#### 6. ORIFICE SIZE (for GAS DRYERS)

Gives the number drill size used.

#### 7. ELECTRIC SERVICE

This describes the electric service for your particular model.

#### 8. GAS MANIFOLD PRESSURE (for GAS DRYERS)

This describes the manifold pressure taken at the gas valve tap.

#### 9. APPLICABLE APPROVAL SEAL(S)

I.E., Canadian Standards Association International.

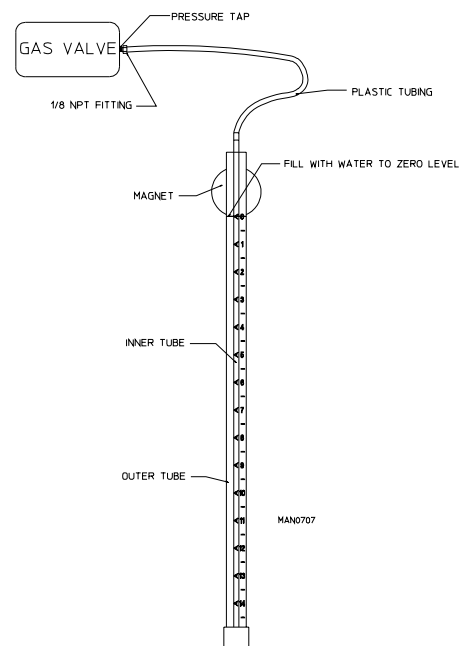
## B. USING A MANOMETER

### HOW TO USE A MANOMETER (ADC PN: 122804)

1. With dryer in nonoperating mode remove plug on the gas valve pressure tap.
2. Attach plastic tubing to pressure tap. (Fitting is supplied with manometer, refer to the illustration.)
3. Attach manometer to dryer using magnet.

**NOTE:** Place manometer in a position so that readings can be taken at eye level.

4. Fill manometer as shown in illustration to the zero level.
5. Start dryer. With burner on, take a reading.
  - a) Read water level at the inner tube. Readings **should be** taken at eye level.
  - b) Correct readings **should be**:  
  
Natural Gas: ..... 3.5 Inches (8.7 mb) W.C.  
L.P. Gas: ..... 10.5 Inches (26.1 mb) W.C.
6. If water column pressure is incorrect refer to "TO ADJUST GAS PRESSURE" on **page 20**.
7. Reverse procedure for removing manometer.



## C. LIGHT EMITTING DIODE (L.E.D.) DISPLAY CODES

A	Automatic Cycle (Slope Program Factor)
ACOn	Accumulative Coin
Adrt	Maximum Auto Dryness Time
AFAt	Amount For Additional Time
AGt	Active Anti-Wrinkle Guard Time
AtIn	Accumulative Time
AtSt	Amount Start
AUtO	Automatic Mode (Patent No. 4,827,627)
b	Automatic Cycle (Heat loss [offset] Factor)
bCLO	Bad Coin Lockout
bCrS	Bad Coin Reset
bUZ	Buzzer (Tone)
CEL	Degree in Celsius
CLCC	Clear Left Coin Count
COIn	Coin Mode
CrCC	Clear Right Coin Count
donE	Drying and Cooling Cycles Complete
	or
	Dryer is in Anti-Wrinkle Cycle
dOOOr	Door Circuit is Open
dSFL	Dryer Sensor Circuit Failure
FAr	Degree in Fahrenheit
FILL	No Cycle in Progress
FLS	Flash Display Active
FrEE	Free Dry Mode
GdLY	Anti-Wrinkle Delay Time
Gont	Anti-Wrinkle On Time
Grd	Anti-Wrinkle Program Active
HICd	High Cool Down Temp
Hot	Overheating Condition
LCC	Left Coin Count
LCde	Left Coin Denomination
LOCd	Low Cool Down Temp
nbUZ	No Buzzer (Tone)
nFLS	No Flash Display
Ngrd	No Anti-Wrinkle
nSEn	Rotational Sensor Not Selected
PdrY	Percent Dry
PL	Program Location
PLOC	Program Location Automatic Review
PP	Permanent Press
PUSH	Amount to Start has been Inserted
	Make Temperature Selection
rCC	Right Coin Count
rCdE	Right Coin Denomination
SEFL	Rotational Sensor Circuit Failure
SEn	Rotational Sensor Selected
tFAS	Time for Amount to Start
tInE	Timed Mode

The revision number is located on the top right hand corner of the diagram. It is a six (6) digit number followed by a letter to distinguish the version dates (refer to the **illustration**).

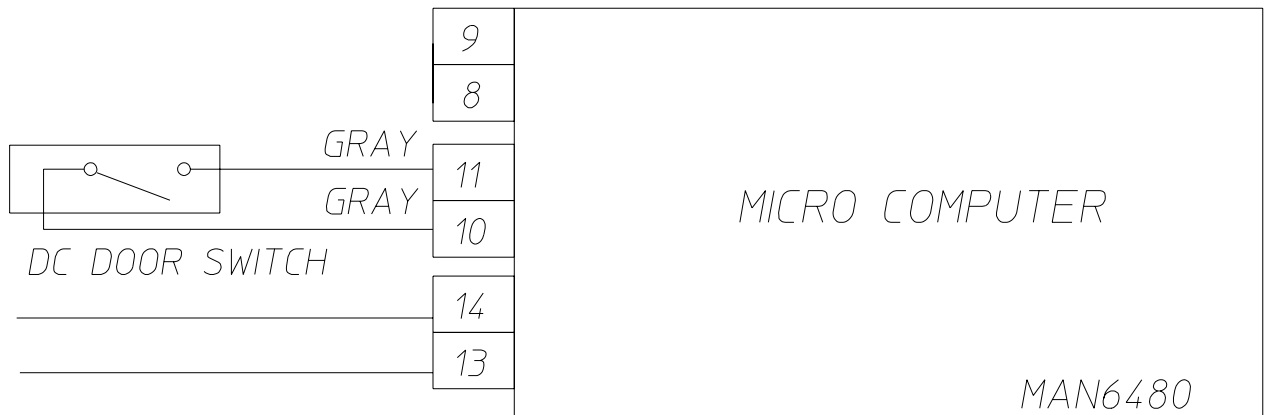
Your particular model will be different depending on the date of manufacturing and options available.

The correct wiring diagram for your dryer is folded and placed inside of the computer area.

Diagrams for this book are as follows: (including **ALL** revisions of the numbers listed below)

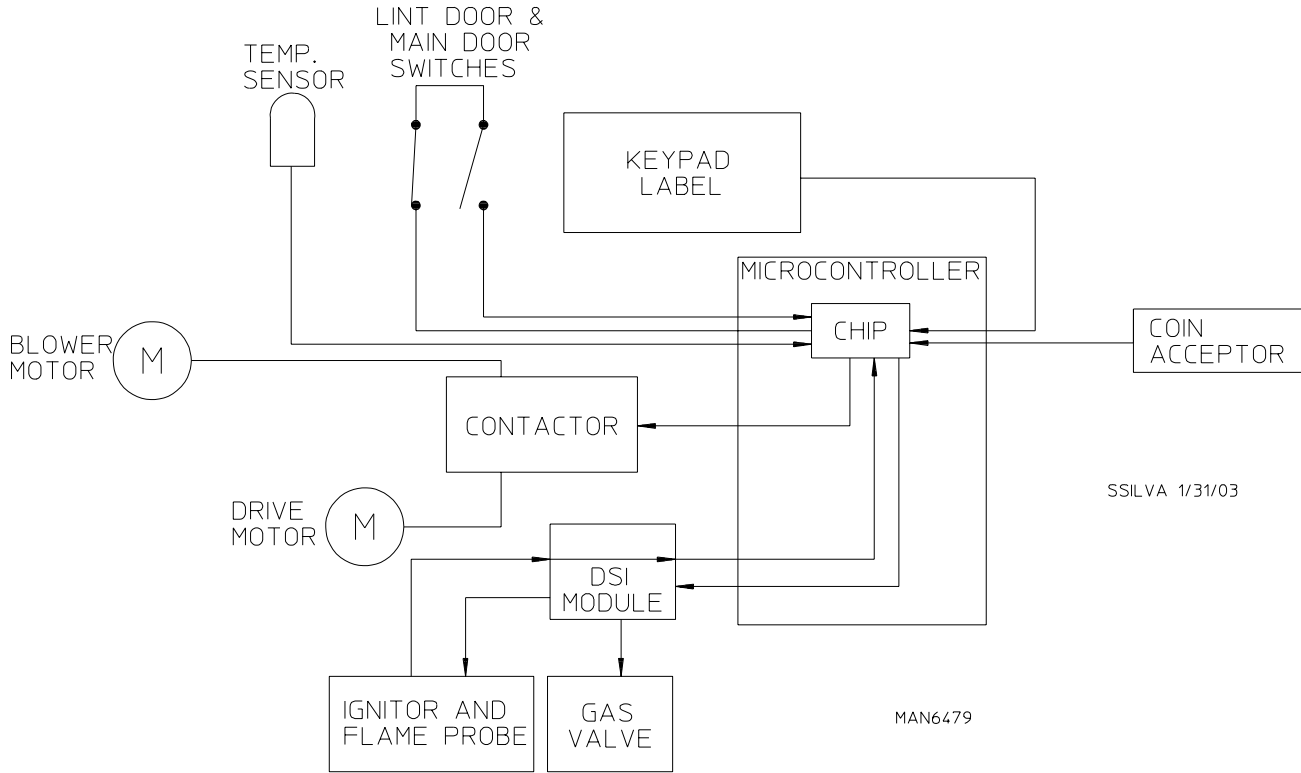
REVISION NUMBER

DATE: 11/7/90		P/N: BED2611		1	
B	REWIRED 24v TRANSFORMER	12/90			
A	SOLID STATE RELAY	11/90	ES	SD	
REV.	DESCRIPTION	DATE	APPD BY	DRN BY	



SSILVA 1/31/03

COMPUTER LOGIC AND WIRING DIAGRAM





ADC450213 1 - 08/18/03-25



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