



# AD-81 Service Manual

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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-81**

**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 OR THE STEAM 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, outer tops, 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 in the front electrical control box area.

# ***Table of Contents***

## **SECTION I**

### **IMPORTANT INFORMATION..... 3**

A. Safety Precautions .....	3
-----------------------------	---

## **SECTION II**

### **ROUTINE MAINTENANCE ..... 5**

A. Cleaning .....	5
-------------------	---

B. Adjustments .....	6
----------------------	---

C. Lubrication .....	6
----------------------	---

## **SECTION III**

### **INSTALLATION REQUIREMENTS ..... 7**

A. Enclosure, Air Supply, and Exhaust Requirements .....	7
--	---

B. Electrical and Gas Requirements .....	8
--	---

C. Operational Service Check Procedure .....	8
--	---

## **SECTION IV**

### **DESCRIPTION OF PARTS ..... 10**

A. Control Panel (Microprocessor) .....	10
---	----

B. Control Box .....	10
----------------------	----

C. Direct Spark Ignition (DSI) Module (Gas Models Only) .....	10
---	----

D. Gas Burner Assembly .....	11
------------------------------	----

E. Drive Motor .....	11
----------------------	----

F. Blower Motor and Impellor (as of August 7, 1995) .....	11
---	----

G. Blower Motor and Impellor (prior to August 7, 1995) .....	12
--	----

H. Blower Motor .....	12
-----------------------	----

I. Idler Assembly .....	12
-------------------------	----

J. Basket (Tumbler) Bearing and Pulley Arrangement .....	12
--	----

K. Basket (Tumbler) .....	13
---------------------------	----

L. Main Door Switch .....	13
---------------------------	----

M. Sail Switch (Gas Models Only) .....	13
--	----

N. Hi-Limit (Gas Models Only) .....	14
-------------------------------------	----

O. Automatic Reset Thermostat .....	14
-------------------------------------	----

P. Lint Drawer .....	14
----------------------	----

Q. Lint Drawer Switch.....	15
----------------------------	----

R. Compressed Air Requirements .....	15
--------------------------------------	----

S. Reversing Rear Control Panel Assembly (as of January 1, 1995) .....	15
--	----

T. Reversing Rear Control Panel Assembly (prior to January 1, 1995) .....	15
---	----

**SECTION V**  
**SERVICING ..... 16**

Introduction ..... 16  
A. Computer Controls ..... 17  
B. Ignition Controls ..... 18  
C. Thermostats ..... 22  
D. Sail Switch Assembly (Gas Models Only) ..... 23  
E. Front Panel and Main Door Assemblies ..... 24  
F. Pulleys ..... 27  
G. Basket (Tumbler) Assembly ..... 29  
H. Bearings (Refer To The Illustrations In Section F “Pulleys”) ..... 31  
I. V-Belts (Refer To The Illustrations In Section F “Pulleys”) ..... 33  
J. Motors and Impellers ..... 34  
K. To Replace Lint Drawer Switch ..... 36

**SECTION VI**  
**TROUBLESHOOTING ..... 37**

**SECTION VII**  
**ELECTRICAL TROUBLESHOOTING ..... 41**

A. Phase 5 OPL System Diagnostics ..... 41  
B. L.E.D. Display Indicators ..... 42  
C. L.E.D. Display/Codes ..... 44  
D. Computer Logic and Wiring Diagram ..... 48

**SECTION VIII**  
**TECHNICAL INFORMATION ..... 53**

A. Motor Data Label (High and Low Voltage) ..... 53  
B. Data Label ..... 54  
C. Using A Manometer ..... 55  
D. Tool List ..... 56

# SECTION I

## IMPORTANT INFORMATION

### A. SAFETY PRECAUTIONS

**WARNING:** For your safety, the information in this manual *must be* followed to minimize the risk of fire or explosion or to prevent property damage, personal injury, or loss of life.

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

1. **DO NOT** store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
2. Purchaser/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. WHAT TO DO IF YOU SMELL GAS...
  - a. **DO NOT** try to light any appliance.
  - b. **DO NOT** touch any electrical switch.
  - c. **DO NOT** use any phone in your building.
  - d. Clear the room, building, or area of **ALL** occupants.
  - e. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - f. If you **cannot** reach your gas supplier, call the fire department.
4. Installation and service **must be** performed by a qualified installer, service agency, or gas supplier.
5. Dryer(s) **must be** exhausted to the outdoors.
6. 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" cleaner.  
**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 rubber materials. Drying in a heated basket (tumbler) may damage plastics or rubber and may be a fire hazard.

7. A program **should be** established for the inspection and cleaning of lint in the heating unit area, exhaust ductwork, and inside the dryer. 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.

8. 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.

9. UNDER NO CIRCUMSTANCES should the dryer door switches, lint door switch, heat safety circuit ever be disabled.

**WARNING: PERSONAL INJURY OR FIRE COULD RESULT.**

10. This dryer is not to be used in the presence of dry cleaning solvents or fumes.
11. Remove articles from the dryer as soon as the drying cycle has been completed.

**WARNING:** Articles left in the dryer after the drying and cooling cycles have been completed can create a fire hazard.

12. **DO NOT** operate steam dryers with more than 125 PSI (8.61 bars) steam pressure. Excessive steam pressure can damage steam coil and/or harm personnel.
13. Replace leaking flexible hoses or other steam fixtures immediately. **DO NOT** operate the dryer with leaking flexible hoses. **PERSONAL INJURY MAY RESULT.**
14. **READ AND FOLLOW ALL CAUTION AND DIRECTION LABELS ATTACHED TO THE DRYER.**

**WARNING: YOU MUST DISCONNECT AND LOCKOUT THE ELECTRIC SUPPLY AND THE GAS SUPPLY OR THE STEAM 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.**



# SECTION II

## ROUTINE MAINTENANCE

### A. CLEANING

A program 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.**

**WARNING: KEEP DRYER AREA CLEAR AND FREE FROM COMBUSTIBLE MATERIALS, GASOLINE, AND OTHER FLAMMABLE VAPORS AND LIQUIDS.**

**NOTE:** Suggested time intervals shown are for average usage which is considered six (6) to eight (8) operational (running) hours per day.

Clean lint drawer and screen every third or fourth load

**NOTE:** Frequency can best be determined at each location.

#### *DAILY*

Beginning of each work shift.

Clean lint from the drawer and screen. Inspect lint screen and replace if torn.

#### *WEEKLY*

Clean lint accumulation from lint chamber, thermostat, and microprocessor temperature sensor (sensor bracket) area.

**WARNING:** To avoid the hazard of electrical shock, discontinue electrical supply to the dryer.

#### *STEAM DRYERS*

Clean steam coil fins using compressed air and a vacuum cleaner with brush attachment.

**NOTE:** When cleaning steam coil fins, be careful not to bend the fins. If the fins are bent, straighten by using a fin comb, which is available from local air conditioning supply houses.

## **90 DAYS**

Remove lint from basket (tumbler), drive motors, and surrounding areas. Remove lint from gas valve burner area with a dusting brush or vacuum cleaner attachment.

**NOTE:** To prevent damage, avoid cleaning and/or touching the ignitor/flame-probe assembly.

Remove lint accumulation from inside control box and at rear area behind control box.

## **6 MONTHS**

Inspect and remove lint accumulation in customer furnished exhaust ductwork system and from dryer's internal exhaust ducting.

**NOTE: THE ACCUMULATION OF LINT IN THE EXHAUST DUCTWORK CAN CREATE A POTENTIAL FIRE HAZARD.**

**NOTE: DO NOT** OBSTRUCT THE FLOW OF COMBUSTION AND VENTILATION AIR. CHECK CUSTOMER FURNISHED BACK DRAFT DAMPERS IN THE EXHAUST DUCTWORK. INSPECT AND REMOVE ANY LINT ACCUMULATION, WHICH CAN CAUSE THE DAMPER TO BIND OR STICK.

**NOTE:** A back draft damper that is sticking partially closed can result in slow drying and shutdown of heat circuit safety switches or thermostats.

**NOTE:** When cleaning the dryer cabinet(s), avoid using harsh abrasives. A product intended for the cleaning of appliances is recommended.

## **B. ADJUSTMENTS**

### **7 DAYS AFTER INSTALLATION AND EVERY 6 MONTHS THEREAFTER**

Inspect bolts, nuts, screws, (bearing setscrews), grounding connections, and nonpermanent gas connections (unions, shutoff valves, and orifices). Motor and drive belts **should be** examined. Cracked or seriously frayed belts **should be** replaced. Tighten loose V-belts when necessary. Complete operational check of controls and valves. Complete operational check of **ALL** safety devices (door switches, lint drawer switch, sail switch, burner and hi-limit thermostats).

## **C. LUBRICATION**

The motor bearings, idler bearings...and under normal/most conditions the basket (tumbler) bearings are permanently lubricated. It is physically possible to re-lubricate the basket (tumbler) bearings if you choose to do so even though this practice is not necessary. Use Shell Alvania #2 or its equivalent. The basket (tumbler) bearings used in the dryer **DO NOT** have a grease fitting. Provisions are made in the bearing housing for the addition of a grease fitting which can be obtained elsewhere.

The impellor (fan) shaft bearings **should be** lubricated every 3 months.

# 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 a detailed description, refer to the Installation Manual supplied with the dryer.

Bulkheads and partitions around the dryer **should be** made of noncombustible materials. Allowances **should be** made for the opening and closing of the control door and lint drawer. Also, allowances **should be** made in the rear for ease of maintenance. (Refer to the 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 also could have premature motor failure from overheating. The air supply **must be** given careful consideration to insure proper performance of each dryer.

**IMPORTANT:** Make-up air **must be** provided from a source free of dry cleaning fumes. Make-up air that is contaminated by dry cleaning 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 the appropriate Installation Manual for more details.)

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

## B. ELECTRICAL AND GAS 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.

**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.

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 (Liquid Propane [L.P.] Gas) or LATEST EDITION, as well as local codes and ordinances and **must be** done by a qualified professional.

**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 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 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 factory.

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

## C. OPERATIONAL SERVICE CHECK PROCEDURE

1. Turn on electric power to the dryer.
2. To start dryer:
  - a. Display will read "FILL."
  - b. Press "E" on the keyboard (touch pad) of the microprocessor controller (computer).
  - c. The dryer will start, and the display will show "dr30."

**NOTE:** Pressing keyboard (touch pad) “A,” “B,” “C,” “D,” or “F” will also start the dryer. Six (6) preprogrammed drying cycles (“A” through “F”) have been stored in the computer’s memory. (Refer to the Computer Operator’s Manual for details.)

3. Make a complete operational check of **ALL** the operating controls to assure that the timing is correct, temperature selection switches are functioning, etc.
4. Make a complete operational check of **ALL** safety-related circuits: door switch(es), hi-limit thermostat, sail switch, cycling thermostats, etc.
5. For gas dryers a gas pressure test **should be** taken at the gas valve pressure tap of each dryer to assure that the water column (W.C.) pressure is correct and consistent.

**NOTE:** Water column pressure requirements (measured at the pressure tap on the gas valve body):

Natural Gas----- 3.5 Inches (8.7 mb) Water Column.

Liquid Propane (L.P.) Gas ---- 10.5 Inches (26.1 mb) Water Column.

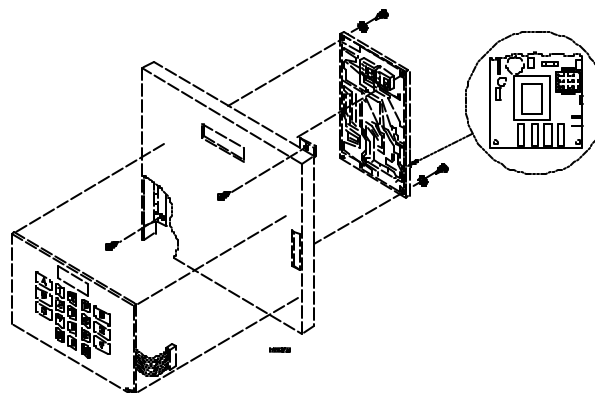
6. If computer program changes are required, refer to the Phase 5 OPL Operator’s Manual (ADC P/N 112147) for details.
7. The dryer **should be** operated through one (1) complete cycle to assure that no further adjustments are necessary and that **ALL** components are functioning properly.
8. Check the electric service phase sequence. While the dryer is operating, check to see if the blower wheel is rotating in the proper direction. Looking from the front, the blower wheel should spin in the clockwise (CW) direction. If so, the phasing is correct. If the phasing is incorrect, reverse two (2) leads at connections L1, L2, or L3 of power supply to the dryer.

# SECTION IV

## DESCRIPTION OF PARTS

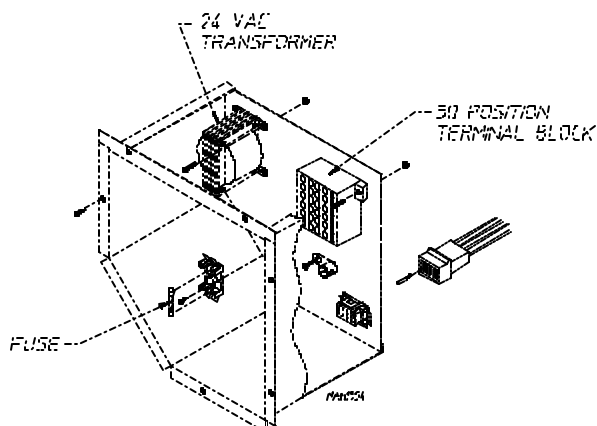
### A. CONTROL PANEL (MICROPROCESSOR)

Lifting the control door will reveal the control panel assembly. Opening the control panel will allow access to the major components which include the computer board and keyboard (touch pad). The keyboard (touch pad) inputs to the computer what temperature and program has been selected. The computer controls the entire operation of the dryer. It accepts inputs and gives outputs to various parts throughout the dryer.



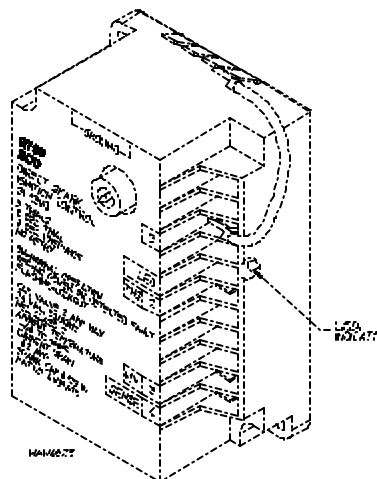
### B. CONTROL BOX

Lifting the control door and opening the computer panel will reveal the control box. Inside the control box are **ALL** the electronic control components. Located on the back of the control panel is the computer. Included in the control box are the 30-position block, fuse block, and transformer.



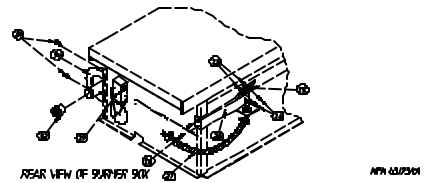
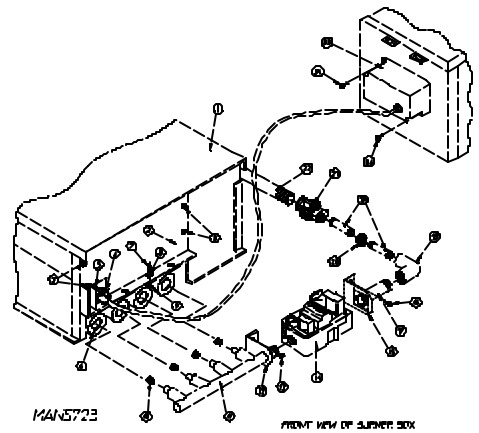
### C. DIRECT SPARK IGNITION (DSI) MODULE (GAS MODELS ONLY)

The DSI module is a 24 VAC device designed to be the “controller” of the DSI system. When activated by the dryer controls, this module constantly monitors and controls the functions of the DSI system (i.e., spark activation, gas valve off and on, flame verification, etc.). Additionally, the DSI module has self-diagnostic capabilities.



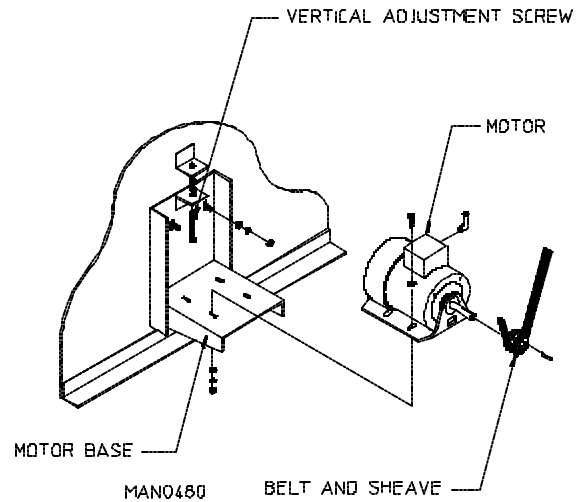
## D. GAS BURNER ASSEMBLY

Gas heated dryers are equipped with a gas burner assembly consisting of four (4) burner tubes, gas valve, spark ignition probe assembly, sail switch, and hi-limit thermostat. The inlet piping enters through the rear of the dryer on the left-hand side (viewing from the front) and runs to the front of the dryer where the gas valve is located.



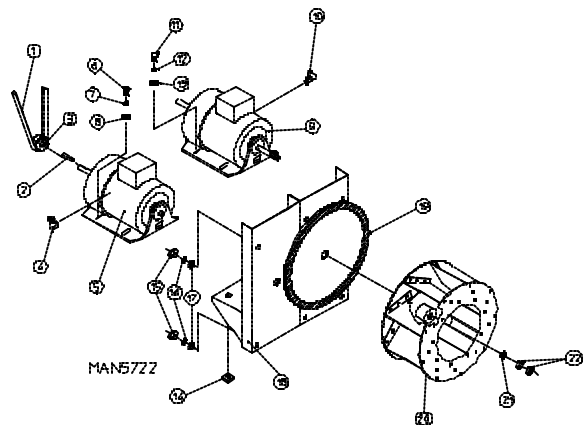
## E. DRIVE MOTOR

The totally enclosed, fan-cooled (T.E.F.C.) drive motor is located approximately lower center of the dryer. It sits on an adjustable base so that the motor can be easily adjusted to the left or right, up or down, forward or backward. The drive motor is a 1 HP (0.75 kw) motor and operates on 208 to 460 volts, 3-phase (3Ø), 50/60 Hz.



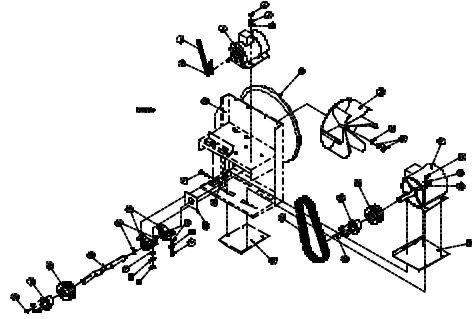
## F. BLOWER MOTOR AND IMPELLOR (FOR REVERSING MACHINES)

(Viewing from the front of the dryer). The blower motor is located on the back of the dryer at the lower right-hand corner. The impellor is a backward curved paddle wheel which is directly connected to the shaft of the blower motor.



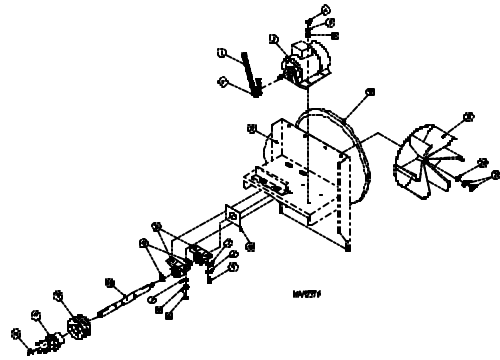
## G. BLOWER MOTOR AND IMPELLOR (PRIOR TO AUGUST 7, 1995)

The impellor is shaft driven. The blower motor drives the shaft on which the impellor is mounted. This enables the impellor to run at a higher RPM, thereby producing a higher airflow (CFM).



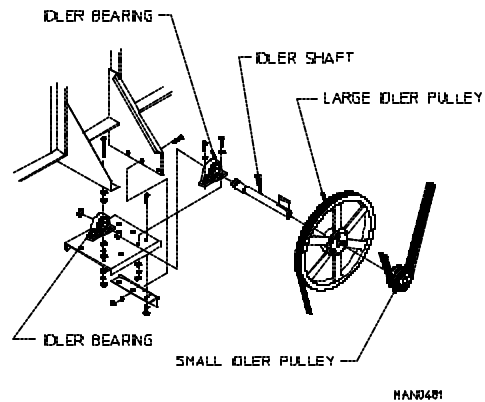
## H. BLOWER MOTOR AND IMPELLOR (AS OF AUGUST 7, 1995)

The impellor is shaft driven. The blower motor drives the shaft on which the impellor is mounted. This enables the impellor to run at a higher RPM, thereby producing a higher airflow (CFM).



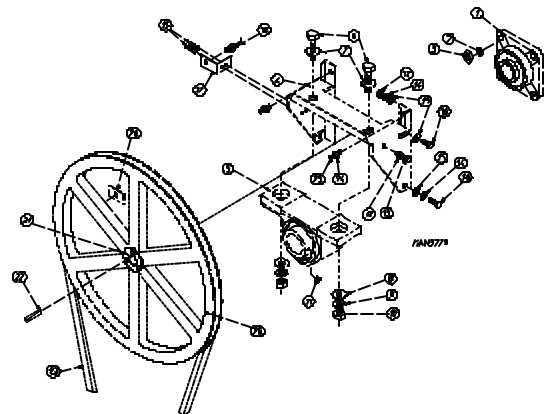
## I. IDLER ASSEMBLY

(Viewing from the rear of the dryer). The idler assembly is located approximately on the lower center of the dryer. The idler assembly consists of two (2) idler pulleys, the small and large pulleys. The idler's main purpose is to reduce the speed and increase torque provided to the basket (tumbler) bearing. Also, at the idler assembly, belt tension can be adjusted.



## J. BASKET (TUMBLER) BEARING AND PULLEY ARRANGEMENT

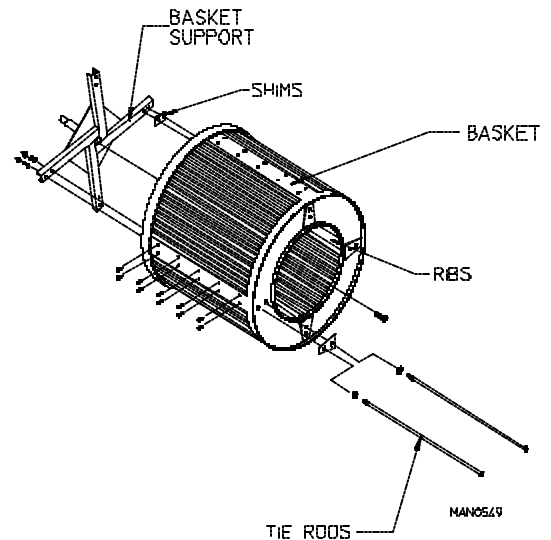
The basket (tumbler) bearing and pulley arrangement is located (viewing from the rear of the dryer) approximately at the upper center of the dryer. The arrangement consists of a pulley and two (2) bearings which serve to drive, adjust, and support the basket (tumbler).





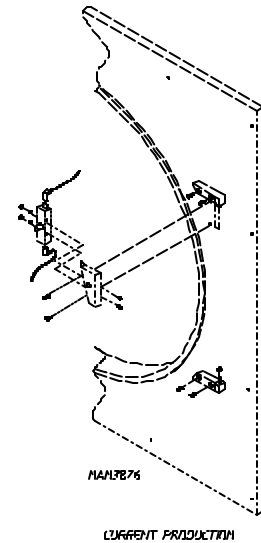
## K. BASKET (TUMBLER)

The basket (tumbler) consists of four (4) ribs and four (4) perforated panels, along with a front and back, which are screwed together as an assembly. The basket (tumbler) also consists of tie rods, which support the basket (tumbler) from the front to back. The basket (tumbler) support is used to mate the basket (tumbler) to the drive system in the rear.



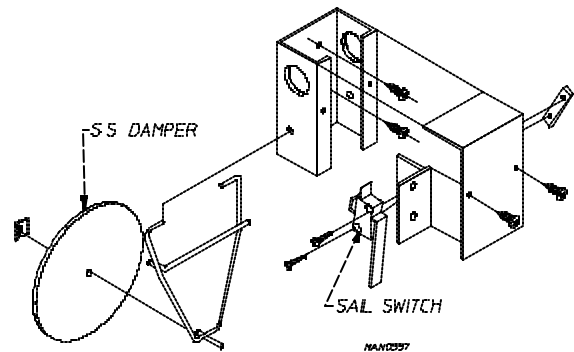
## L. MAIN DOOR SWITCH

The main door switch is located in the main door hinge block. When the main door opens, the switch will also open, preventing the dryer from operating. The main door switch is a safety device and **should never be** disabled.



## M. SAIL SWITCH (GAS MODELS ONLY)

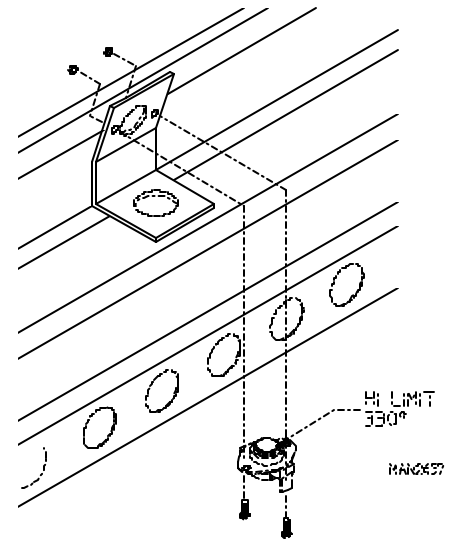
The sail switch is located on the front of the burner box. A sail switch consists of a round damper plate on a lever arm which is in contact with an electric switch. When the air blower comes on, it draws air through the gas burner. This creates a negative pressure inside the burner box, and this negative pressure pulls in the round damper and activates the sail switch. If there is improper airflow, the damper will not pull in, preventing the burner from starting.



Improper airflow can be caused by improperly designed exhaust ducting where the duct run is too long or has too many sharp bends in it. It can also be caused by a lack of make-up air.

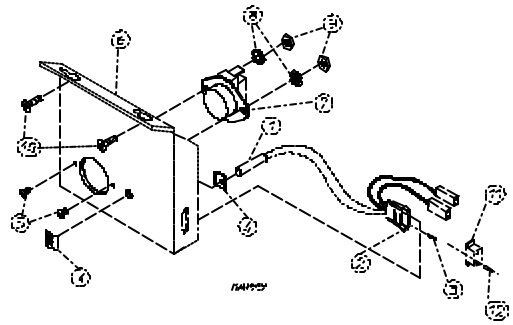
## N. HI-LIMIT (GAS MODELS ONLY)

A hi-limit thermostat is located at the burner. This is an automatic reset disc-type thermostat set at 330° F (166° C). If the flame in the burner should get too hot, this thermostat will shut off the burner. This is generally caused by low airflow through the dryer.



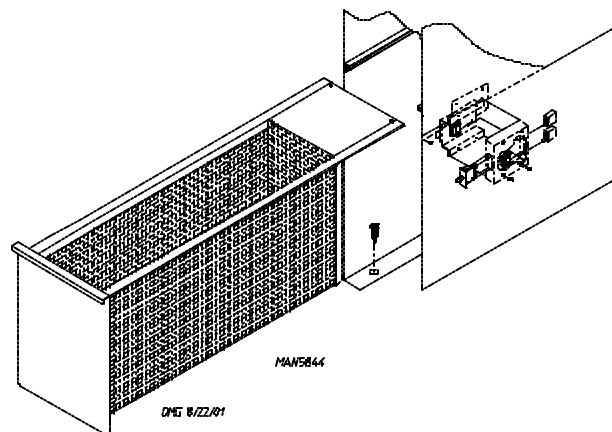
## O. AUTOMATIC RESET THERMOSTAT

This is located inside the dryer in the lint compartment above the lint drawer. This thermostat senses the heated air after it has passed through the basket (tumbler). If the air temperature gets too hot, the thermostat will shut off the burner. The dryer will not run until the air temperature cools down. At this time, the thermostat will reset. Basket (tumbler) and blower will run, but dryer will not heat.



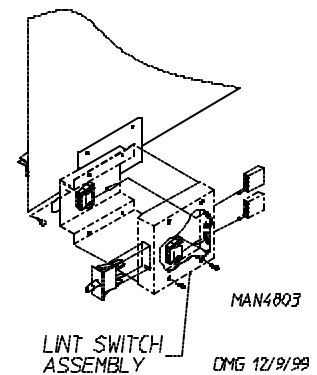
## P. LINT DRAWER

The lint drawer is a pullout type and is located at the bottom of the dryer in the lint compartment. Simply grab the lint drawer handle, slide out the drawer, brush off the lint, and slide the drawer back in. The lint screen **must be** kept clean in order for the dryer to operate properly and efficiently.



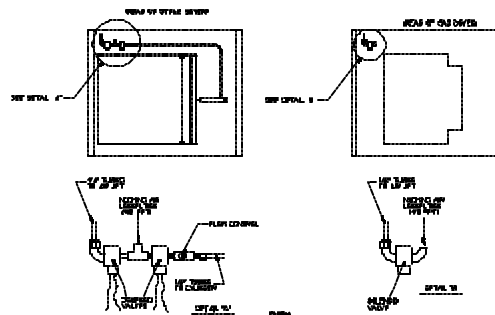
## Q. LINT DRAWER SWITCH

The lint drawer switch is located in the lint compartment and attached to the side of the lint drawer track. The lint drawer switch insures that the dryer will operate only when the lint drawer is completely closed. This is a safety device and **should never be** disabled.



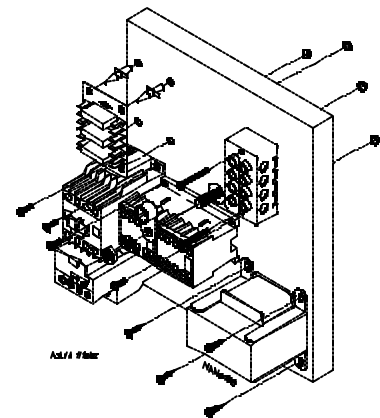
## R. COMPRESSED AIR REQUIREMENTS

The dryer requires an external supply of air (2.5 cfm @ 80 PSI [0.07 cmm @ 0.68 bars]) on the steam models, the air is necessary to operate the damper system. On both steam, as well as the gas model, the air is necessary/required for the blower air jet operation...to clean lint from the impellor/fan (squirrel cage type).



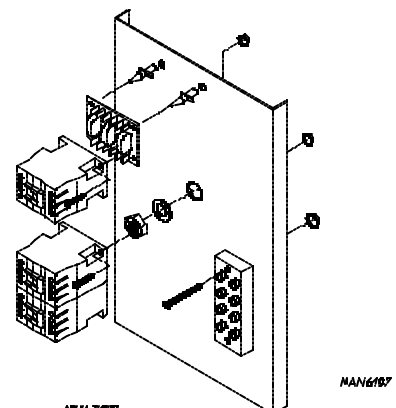
## S. REVERSING REAR CONTROL PANEL ASSEMBLY (AS OF JANUARY 1, 1995)

This panel contains your arc suppressor (A.S.) board, blower contactor, blower overload, and your forward reverse contactor. It also contains your 4-position terminal block and your step down transformer.



## T. REVERSING REAR CONTROL PANEL ASSEMBLY (PRIOR TO JANUARY 1, 1995)

This panel contains your arc suppressor (A.S.) board, blower contactor, and your forward reverse contactor. It also contains your 4-position terminal block.



# SECTION V

## SERVICING

### INTRODUCTION

**ALL** electrical/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 and serial numbers available.

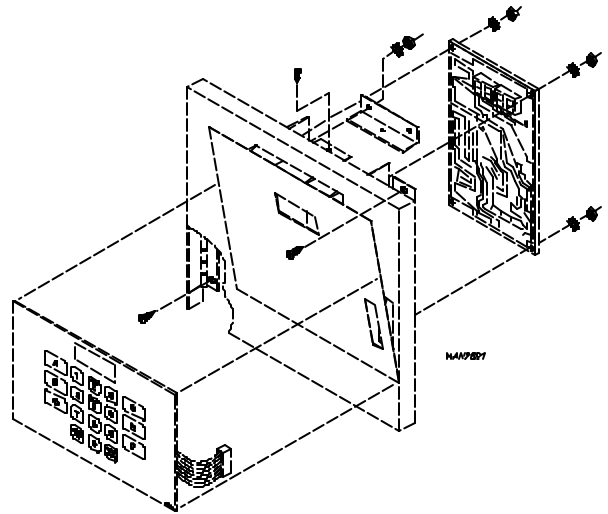
**CAUTION:** Observe **ALL** safety precautions displayed on the dryer or specified in this manual before and while making repairs.

Before considering replacement, make sure that **ALL** connectors are in place and making proper contact.

## A. COMPUTER CONTROLS

### To Replace Computer

1. Discontinue electrical power to the dryer.
2. Disconnect main power harness from rear of computer by squeezing locking tab and pulling connector straight back.
3. Disconnect the green ground wire from the computer.
4. Disconnect keyboard (touch pad) ribbon from the computer.
5. Remove the two (2) hex nuts securing the computer to the sheet metal control panel. Remove the board by pulling the other two (2) corners off the clinch studs.
6. Install new computer by reversing this procedure.
7. When replacing the computer, the “A” and “B” factors **must be** reprogrammed. (Refer to the Computer Operator’s Manual for details.)

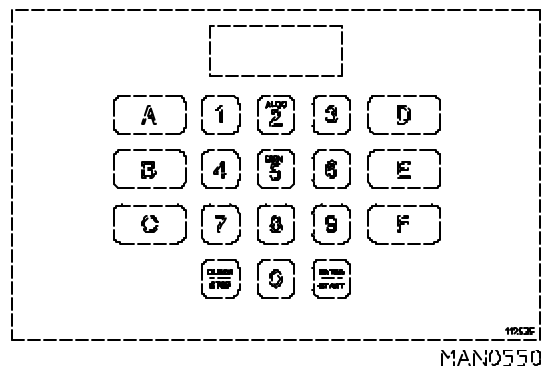


**NOTE:** The “A” and “B” factors are printed on a label located on the rear of the control panel (refer to the **illustration above**).

8. Reestablish electrical power to the dryer.

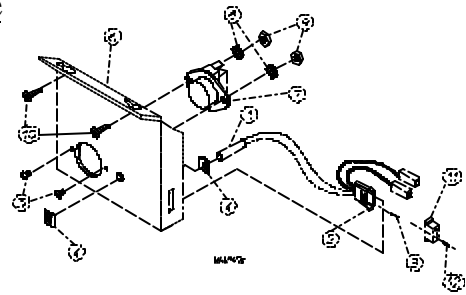
### To Replace Keyboard (Touch Pad) Label Assembly

1. Discontinue electrical power to the dryer.
2. Unplug keyboard (touch pad) ribbon from rear of computer.
3. Slowly peel off and remove keyboard (touch pad) label assembly from control panel.
4. Peel paper backing off new keyboard (touch pad) label assembly.
5. Holding the new keyboard (touch pad) label assembly close to the panel, insert the keyboard (touch pad) ribbon through the rectangular slot in the control panel. Align label assembly into position by matching the red viewing window on the label to the rectangular cutout in the panel and gently press into place.
6. Connect keyboard (touch pad) ribbon to the computer.
7. Reestablish electrical power to the dryer.



## To Replace Microprocessor Temperature Sensor Probe

1. Discontinue electrical power to the dryer.
2. Remove lint drawer. Remove two (2) screws securing lint door and remove lint door.
3. Remove microprocessor sensor bracket assembly from the dryer.
  - a. Disconnect sensor bracket harness connector.
  - b. Loosen the two (2) Phillips head screws securing bracket assembly to the dryer and remove bracket from dryer.



**NOTE: DO NOT** remove screws.

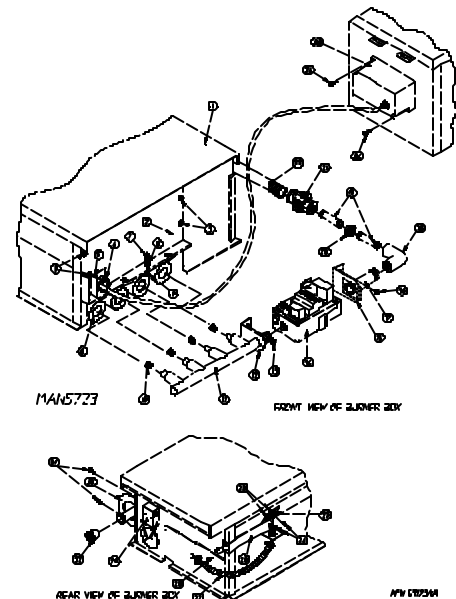
4. Disassemble sensor probe from bracket assembly by removing the top push-on fastener securing the probe from bracket. Use a small screwdriver to slowly pry the fastener off.
5. Disconnect the two (2) orange wires from the high heat (225° F [107° C]) thermostat, and remove modular bracket connector, wires, and probe from bracket assembly.
6. Install new sensor probe assembly (ADC P/N 880251) by reversing procedure.
7. Reestablish electrical power to the dryer.

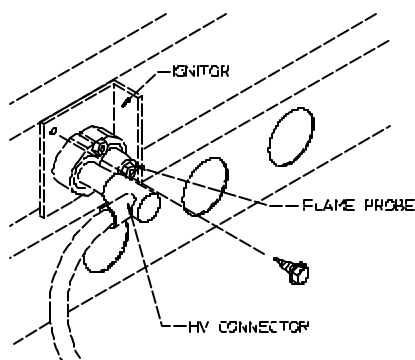
**NOTE:** If, when power is reestablished, the computer display reads “dSFL,” check for a loose connection in the wiring.

## B. IGNITION CONTROLS

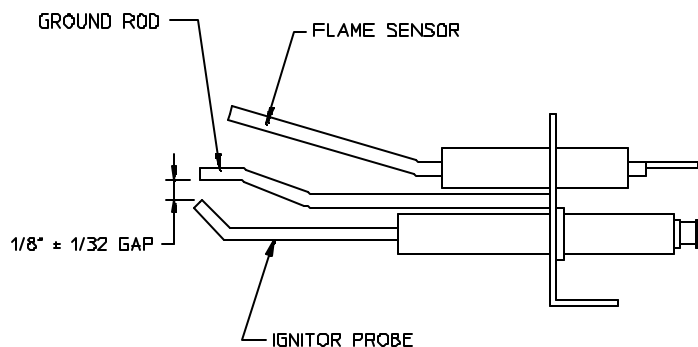
### To Remove Spark Ignitor (refer to the burner **illustration**)

1. Discontinue electrical power to the dryer.
2. Disconnect high voltage (HV) connector and flame probe connection from ignitor.
3. Disassemble ignitor from burner by removing the two (2) self-tapping screws.
4. Reverse procedure for installing new ignitor/flame-probe.





MAN1457



MAN1457

**NOTES:** Before reestablishing power to the dryer, visually check the following (refer to the **illustration**):

1. The flame electrode, ignitor electrode, and ground rod are **ALL** on the same line axis.
2. There **should be** a 1/8" gap (+/- 1/32") between the ignitor electrode and ground rod.
3. **DO NOT** wrap the red high voltage (HV) wire and the flame electrode wire together. Improper operation may result. They may run alongside each other.

### To Replace Gas Valve (refer to the burner **illustration** on **page 19**)

1. Discontinue electrical power to the dryer.
2. Close shutoff valve(s) in gas supply line.
3. Disconnect gas valve wiring.

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

4. Break union connection before gas valve.
5. Loosen and remove screws (4) securing pipe brackets to burner.
6. Remove gas valve/manifold assembly from dryer.
7. Remove valve mounting bracket, manifold, and piping from gas valve.
8. Reverse procedure for installing new gas valve.

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

### To Replace Main Burner Orifices

1. Refer to "To Replace Gas Valve" and follow steps 1 through 6.

2. Unscrew main burner orifices and replace.

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

3. Reversing the removal procedure for reinstalling.

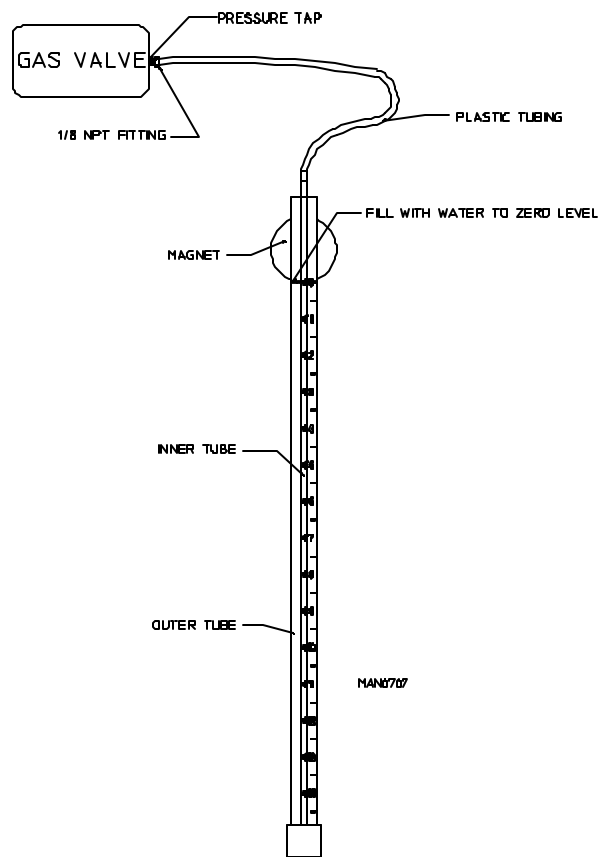
**NOTE:** Test ALL connections for leaks by brushing on a soapy water solution. NEVER TEST FOR LEAKS WITH A FLAME.

## 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. A manometer is simply a glass or transparent plastic tube with a scale in inches. When filled with water and pressure applied, the water in the tube rises showing the exact water column pressure.

**NOTE:** Manometers are available from the factory by ordering **ADC P/N 122804**.

1. To 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 (manifold) side of the valve.
  - b. Start dryer. With burner on, the correct water column reading in inches would be:  
  
Natural Gas – 3.5 inches (8.7 mb) water column.  
  
Liquid Propane (L.P.) Gas – 10.5 inches (26.1 mb) water column.
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 pressure cannot be achieved, problem may be due to an undersized gas supply line, a faulty or underrated gas meter, etc.



## To Convert from Natural Gas to Liquid Propane (L.P.) Gas

**NOTE:** ALL dryers are sold as natural gas, unless otherwise specified at the time the dryer order was placed. For L.P. gas the dryer *must be* converted as follows.

1. Refer to “Replace Gas Valve” and follow steps 1 through 6.
2. Remove the four (4) screws which secure the top cap assembly. This assembly contains the regulator adjustment screw and the terminal connections.
3. Replace the top cap assembly with the L.P. version.
4. Unscrew main burner orifices and replace with L.P. orifices.

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

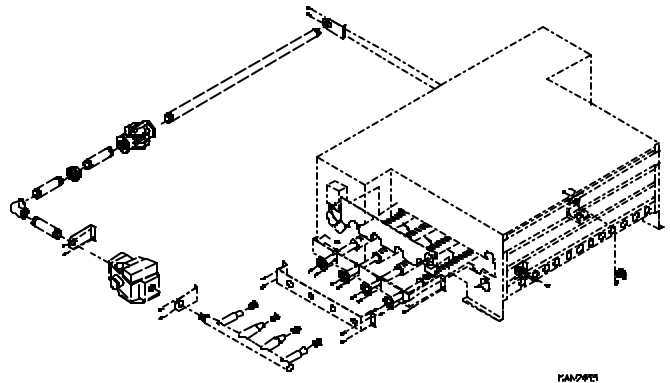
5. Reverse the procedure for reinstalling valve assembly to the dryer.

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

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

## To Replace Burner Tubes

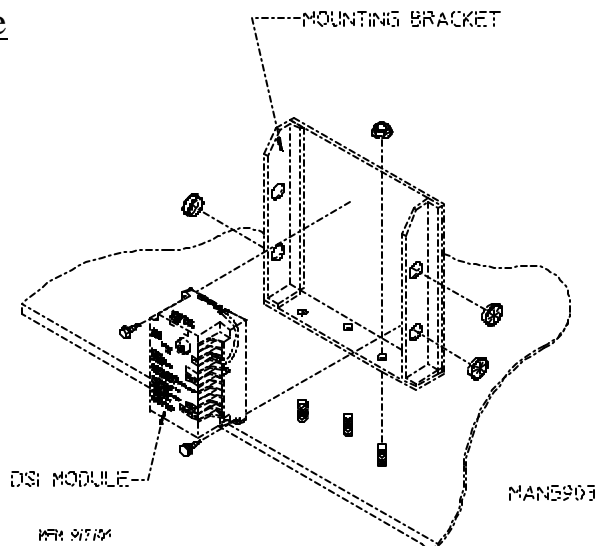
1. Refer to “Replace Gas Valve” and follow steps 1 through 6.
2. Remove four (4) screws securing manifold rest and remove rest.
3. Remove the screws securing the front flanges of the burner tubes to the burner tube rest.
4. Remove the screws securing the burner tube rest to the oven and remove this rest.
5. Remove screws securing the sight hole disk and burner box cover plate to the oven and remove both of these pieces.
6. Remove burner tubes by sliding them out.
7. Replace by reversing procedure.



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

## To Replace Direct Spark Ignition (DSI) Module

1. Discontinue electrical power to the dryer.
2. Remove the wires connected to the terminal strip at the bottom of the module.
3. Remove the four (4) screws securing the module to the mounting bracket.
4. Replace module by reversing procedure.
5. Reestablish electrical power to the dryer.



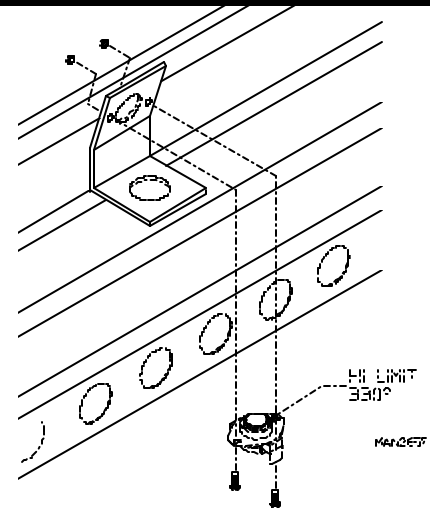
## C. THERMOSTATS

### To Replace Burner Hi-Limit Thermostat (Gas Models Only)

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 motor failure or reduced airflow condition.

**IMPORTANT:** Under no circumstances should heat circuit safety devices ever be disabled.

1. Discontinue electrical power to the dryer.
2. Disconnect wires from hi-limit thermostat.
3. Remove screw, washer, and nut securing thermostat to the bracket. Remove thermostat.
4. Reverse procedure for installing new thermostat.
5. Reestablish electrical power to the dryer.



## To Replace Lint Compartment Hi-Heat Protector (225° F [107° C]) Thermostat

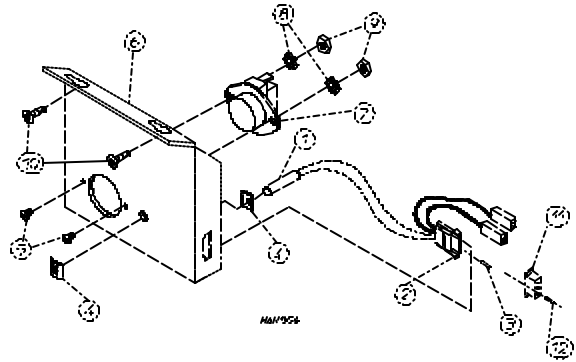
This thermostat is part of the “sensor bracket assembly” and is secured to the underside of the basket (tumbler) wrapper in the lint compartment. As a safety device, this thermostat will open (shut off) the heating unit circuit if an excessive temperature occurs. The dryer motors will remain on, even if the thermostat is open.

**IMPORTANT:** Under no circumstances should heat safety devices be disabled.

1. Discontinue electrical power to the dryer.
2. Remove lint drawer. Remove two (2) screws securing lint door and remove lint door.
3. Locate sensor bracket assembly and loosen the two (2) Phillips head screws securing bracket assembly to the basket (tumbler) wrapper.

**NOTE:** *DO NOT* remove the screws.

4. Remove bracket assembly by slightly sliding bracket towards the rear of the dryer and to the left.
5. Disconnect sensor bracket harness connector and remove bracket assembly from dryer.
6. Disconnect the two (2) orange wires from the thermostat.
7. Disassemble thermostat from bracket assembly by removing the two (2) mounting screws, washers, and nuts.
8. Reverse this procedure for installing a hi-heat protector thermostat.
9. Reestablish electrical power to the dryer.



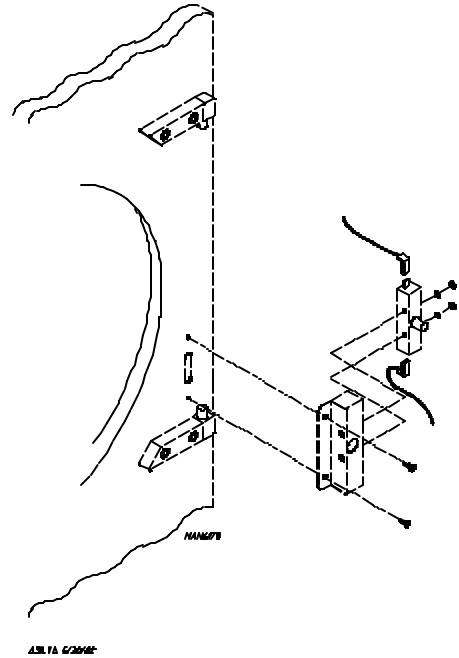
## D. SAIL SWITCH ASSEMBLY (GAS MODELS ONLY)

The sail switch is a heat circuit safety device which controls the burner 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, ignition **should now be** established. If an improper airflow occurs, the sail switch damper will release, and the circuit will open.

## E. FRONT PANEL AND MAIN DOOR ASSEMBLIES

### To Replace Main Door Switch

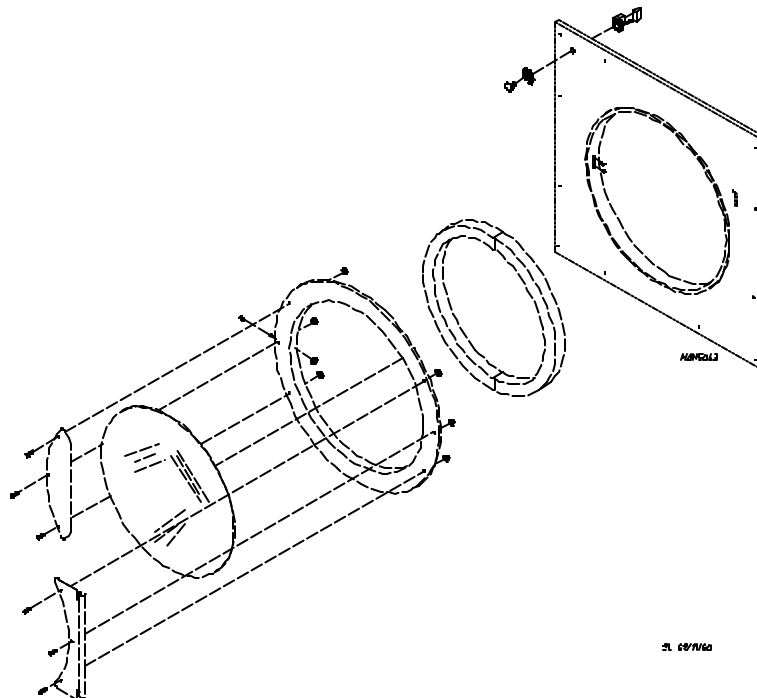
1. Discontinue electrical power to the dryer.
2. Open main door.
3. Remove the two (2) Phillips head screws holding the main door switch bracket assembly in place.
4. Remove door switch bracket from front panel and disconnect wiring from switch.
5. Disassemble door switch from bracket by removing two (2) Phillips screws and nuts securing on switch to the housing.
6. Reverse this procedure for installing new door switch.
7. Reestablish electrical power to the dryer.



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

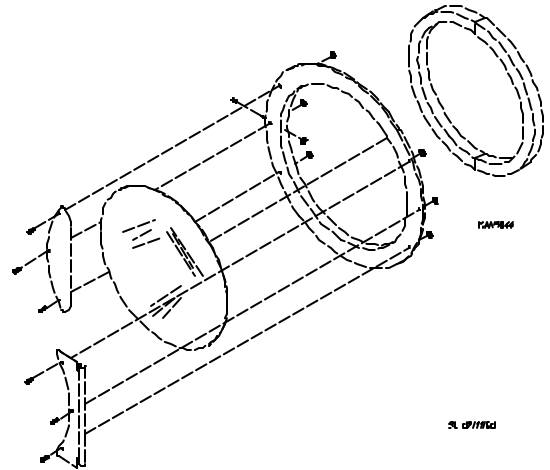
### To Replace Main Door Assembly

1. Remove screws holding top hinge block to front panel.
2. Remove door by lifting up off of bottom hinge.
3. Reverse this procedure for reinstalling new main door assembly.



## To Install New Main Door Glass

1. Remove main door assembly from dryer (follow main door removal procedure).
2. Lay main door on flat surface with the front of the door facing up.
3. Remove the four (4) acorn nuts securing the glass.
4. Remove glass and clean **ALL** old sealant off main door. This area **must be** completely cleaned for correct bonding.



5. Apply a narrow bead of silicone (ADC P/N 170730) **ALL** around main door area where glass will rest.
6. Install glass onto door adhesive and slightly press glass in place.

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

7. Fasten the four (4) acorn nuts to secure glass in place.

**IMPORTANT: DO NOT** overtighten, reducing the thickness of the silicone contact between glass and door.

8. 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 this adhesive is 24 to 36 hours.
9. After 24-hour curing period, install main door on dryer by reversing **Step #1**.

## To Replace Front Panel

1. Discontinue electrical power to the dryer.
2. Remove main door switch and bracket assembly.
3. Follow procedure for removal of main door assembly.
4. Open control (service) door.
5. Remove lint drawer and open lint door by removing two (2) screws.
6. Remove the twelve (12) Phillips head screws securing front panel to the dryer.
7. Remove “EMERGENCY STOP” (E-Stop) wiring and “EMERGENCY STOP” (E-Stop) button.
8. Pull wires up through front panel door switch wire channel and gently remove front panel assembly.
9. Reverse this procedure for installing new front panel.
10. Reestablish electrical power to the dryer.

## To Replace Main Door Hinge Blocks

1. Discontinue electrical power to the dryer.
2. Follow procedure for removal of main door assembly.
3. Disassemble bottom hinge block from front panel by removing the Allen head screws located inside the hinge block.
4. Reassemble by reversing removal procedure.
5. Reestablish electrical power to the dryer.

## To Replace Sail Switch

1. Discontinue electrical power to the dryer.
2. Remove the two (2) screws which hold sail switch box cover to sail switch box.
3. Disconnect the two (2) wires from the switch.
4. Disassemble sail switch from mounting bracket by removing the two (2) screws securing switch in place.
5. Reverse this procedure for installing new sail switch. Adjust sail switch as described in the next section.

## To Adjust Sail Switch

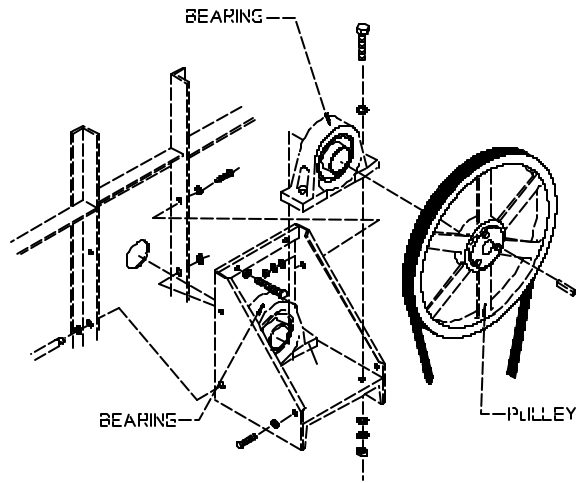
With the dryer operating at a high temperature setting, pull the sail switch away from the burner. The sail switch should open and extinguish the burner. Let the sail switch damper return to the burner wall. The sail switch should close to restart the burner ignition cycle. If the sail switch circuit does not operate as described, bend the actuator arm of the sail switch accordingly until proper operation is achieved. To check proper “open” position of sail switch, open main door, manually depress main door switch, and start dryer. With the main door open and the dryer operating, the sail switch **should be** open, and the burner should not come on.

**CAUTION: *DO NOT*** adjust this switch by taping or screwing sail switch damper to burner.  
**PERSONAL INJURY OR FIRE COULD RESULT.**

## F. PULLEYS

### To Replace Basket (Tumbler) Pulley

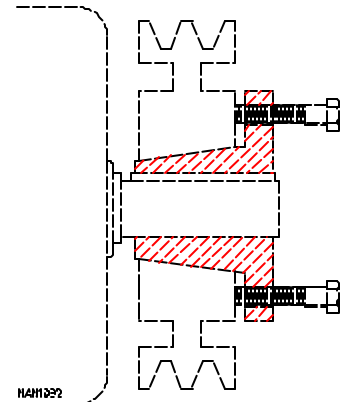
1. Loosen V-belts. Rotate pulley and roll V-belts out of grooves.
2. Remove cap screws from the bushing.
3. Insert cap screws in tapped removal holes and tighten evenly until bushing becomes loose on shaft. (Refer to figure "A.")
4. Remove bushing, pulley, and key.
5. Assemble bushing and sheave as shown in figure "B." When cap screws are loosely inserted, bushing remains fully expanded to provide a sliding fit on the shaft.
6. Insert key on the shaft, then slide sheave to desired position with cap screw heads to the outside.
7. Tighten cap screws progressively. There should remain a gap between the sheave hub and the flange of the bushing.



1A110236

**IMPORTANT:** Tighten screws evenly and progressively. Never allow the sheave to be drawn in contact with the flange of the bushing. This gap should measure from 1/8" to 1/4". Proper cap screw torque is 30 ft-lbs. (133.4 newtons). If greater tightening forces are applied, excess pressures **will be** created in the hub of the mounted sheave which may cause it to crack.

A

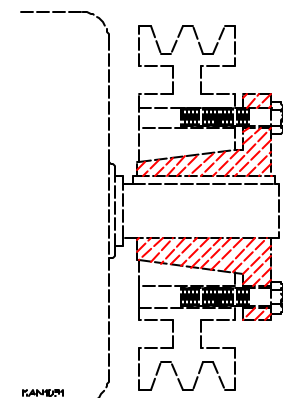


1A11022

### To Replace Small Idler Pulley

1. Loosen V-belts. Rotate pulley and roll V-belts out of grooves.
2. Remove cap screws from the bushing.
3. Insert cap screws in tapped removal holes and tighten evenly until bushing becomes loose on shaft. (Refer to figure "A.")
4. Remove bushing, pulley, and key.
5. Assemble bushing and sheave as shown in figure "B." When cap screws are loosely inserted, bushing remains fully expanded to provide a sliding fit on the shaft.
6. Insert key on the shaft, then slide sheave to desired position with cap screw heads to the outside.
7. Tighten cap screws progressively. There should remain a gap between the sheave hub and the flange of the bushing.

B

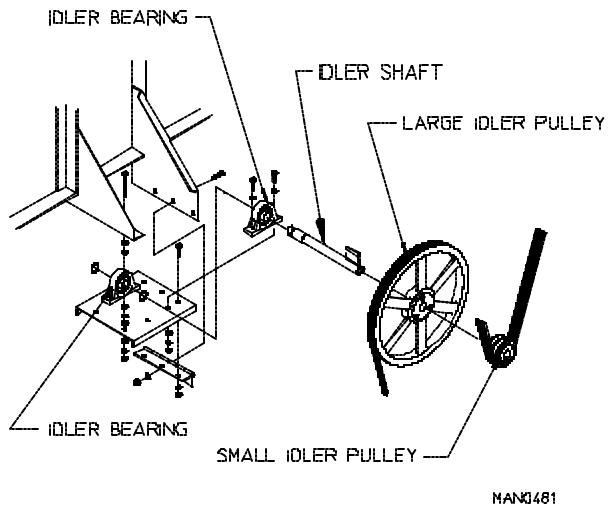


1A11021

**IMPORTANT:** Tighten screws evenly and progressively. Never allow the sheave to be drawn in contact with the flange of the bushing. This gap should measure from 1/8" to 1/4". Proper cap screw torque is 6 ft-lbs. (26.6 newtons), if greater tightening forces are applied, excess pressures **will be** created in the hub of the mounted sheave which may cause it to crack.

## To Replace Large Idler Pulley

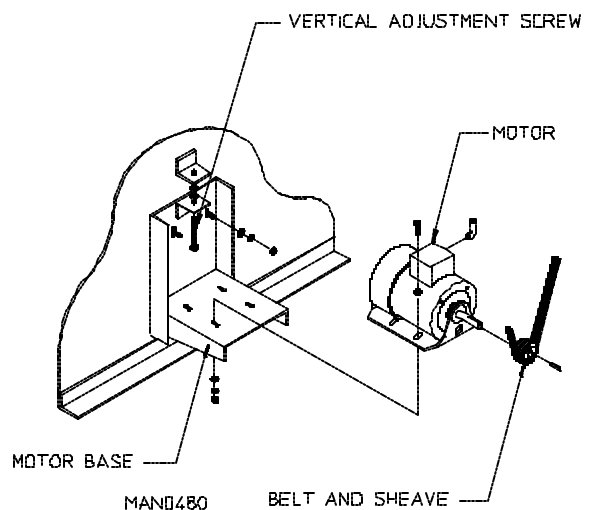
1. Loosen V-belts. Rotate pulley and roll V-belts out of grooves.
2. Remove cap screws from the bushing.
3. Insert cap screws in tapped removal holes and tighten evenly until bushing becomes loose on shaft. (Refer to figure "A" on the previous page.)
4. Remove bushing, pulley, and key.
5. Assemble bushing and sheave as shown in figure "B" on the previous page. When cap screws are loosely inserted, bushing remains fully expanded to provide a sliding fit on the shaft.
6. Insert key on the shaft, then slide sheave to desired position with cap screw heads to the outside.
7. Tighten cap screws progressively. There should remain a gap between the sheave hub and the flange of the bushing.



**IMPORTANT:** Tighten screws evenly and progressively. Never allow the sheave to be drawn in contact with the flange of the bushing. This gap should measure from 1/8" to 1/4". Proper cap screw torque is 15 ft-lbs (66.7 newtons). If greater tightening forces are applied, excess pressures **will be** created in the hub of the mounted sheave which may cause it to crack.

## To Replace Motor Pulley

1. Loosen V-belts. Rotate pulley and roll V-belts out of grooves.
2. Remove cap screws from the bushing.
3. Insert cap screws in tapped removal holes and tighten evenly until bushing becomes loose on shaft. (Refer to figure "A" on the previous page.)
4. Remove bushing, pulley, and key.





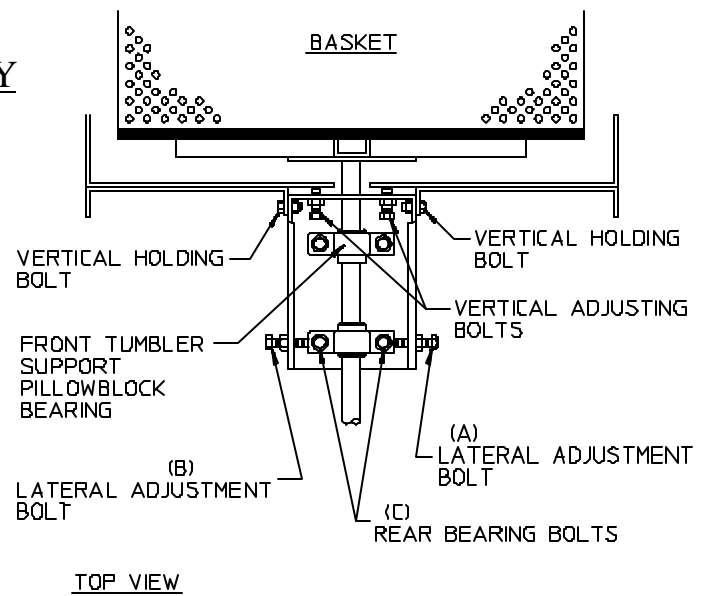
5. Assemble bushing and sheave as shown in figure “B.” When cap screws are loosely inserted, bushing remains fully expanded to provide a sliding fit on the shaft.
6. Insert key on the shaft, then slide sheave to desired position with cap screw heads to the outside.
7. Tighten cap screws progressively. There should remain a gap between the sheave hub and the flange of the bushing.

**IMPORTANT:** Tighten screws evenly and progressively. Never allow the sheave to be drawn in contact with the flange of the bushing. This gap should measure from 1/8” to 1/4”. Proper cap screw torque is 6 ft-lbs. (26.6 newtons), if greater tightening forces are applied, excess pressures **will be** created in the hub of the mounted sheave which may cause it to crack.

## G. BASKET (TUMBLER) ASSEMBLY

### Basket (Tumbler) Alignment (Vertical) (Up and Down Adjustment)

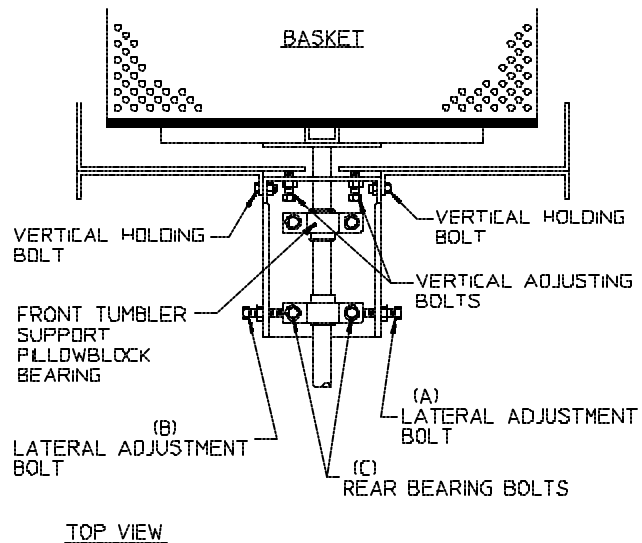
1. Discontinue electrical power to the dryer.
2. Remove back guard.
3. Loosen the two (2) vertical holding bolts on the side at the top of the bearing box (one [1] on each side).
4. Back off jam nuts on vertical adjustment bolts.
5. Turn these bolts clockwise (CW) evenly to raise basket (tumbler) or counterclockwise (CCW) evenly to lower basket (tumbler).
6. Rotate basket (tumbler) from front and check alignment with front door opening.
7. Leave a larger gap from the inside ring on the top of the front panel opening to the basket (tumbler) and a smaller gap on the bottom to compensate for the weight of the clothes when wet.
8. Retighten the two (2) vertical holding bolts on the sides, at the top of the bearing box, and the jam nuts on the two (2) vertical adjustment bolts.
9. Check basket (tumbler) drive belt for proper tension. Adjust if necessary. (Refer to Section V, on **page 34**).
10. Replace back guard.
11. Reestablish electrical power to the dryer.



MAN0551

## Basket (Tumbler) Alignment (Lateral) (Side to Side Adjustment)

1. Discontinue electrical power to the dryer.
2. Remove back guard.
3. Loosen rear pillow block bearing bolts (C).
4. Back off jam nuts on the two (2) lateral adjustment bolts (A) and (B).
5. Simultaneously loosen one (1) bolt and tighten the other. This will move the rear pillow block bearing. Center the basket (tumbler) in the wrapper cavity.

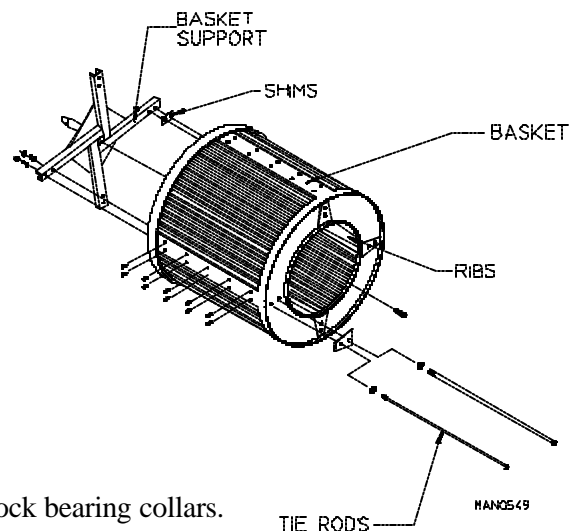


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6. Tighten and secure both lateral adjustment bolts (A) and (B) and jam nuts.
7. Tighten pillow block bearing bolts (C) loosened in step 3.
8. Replace back guard.
9. Reestablish electrical power to the dryer.

## To Replace Basket (Tumbler) or Basket (Tumbler) Support

1. Discontinue electrical power to the dryer.
2. Follow procedure for removal of main door assembly.
3. Follow procedure for removal of front panel assembly.
4. Remove back guard.
5. Remove basket (tumbler) belts.
6. Remove basket (tumbler) pulley.
7. Remove basket (tumbler) assembly and support.



- a. Loosen the two (2) setscrews on both the pillow block bearing collars.
- b. Remove the retaining rings from the grooves of the basket (tumbler) shaft.
- c. Remove the basket (tumbler) and support assembly from the front of the dryer. If the basket (tumbler) **cannot** be removed freely, clean the shaft area and spray WD-40 or similar lubricant. With a block of wood against the shaft end, strike the block wood with a hammer or mallet to move the shaft past any burrs made by the setscrews.

**IMPORTANT:** Never strike the shaft directly with a hammer.

8. Remove basket (tumbler) from basket (tumbler) support.
  - a. Remove the bolt in the center of the basket (tumbler) back wall.
  - b. Loosen and remove the eight (8) sets of nuts and washers from basket (tumbler) tie rods. Remove the eight (8) tie rods.
  - c. Replace either basket (tumbler) or basket (tumbler) support by reversing procedure.

**NOTE:** Shims might be needed between basket (tumbler) and basket (tumbler) support to insure proper balancing of basket (tumbler).

9. Reassemble components onto dryer by reversing steps 2 through 8.
10. Check basket (tumbler) vertical/lateral alignment and adjust if necessary.
11. Replace back guard.
12. Reestablish electrical power to the dryer.

## H. BEARINGS (REFER TO THE ILLUSTRATIONS IN SECTION F “PULLEYS”)

### To Replace Rear Basket (Tumbler) Support Pillow Block Bearing

1. Discontinue electrical power to the dryer.
2. Remove back guard.
3. Remove basket (tumbler) pulley.
4. Loosen lateral adjustment jam nuts and bolts. (Refer to the **illustration** in section G “Basket [Tumbler] Assembly.”)
5. Loosen the two (2) setscrews from rear pillow block bearing collar.
6. Remove the rear bearing bolts, securing bearing to bearing mount. Remove bearing.
7. Replace by reversing steps 3 through 6.
8. Adjust both lateral and vertical basket (tumbler) alignment.
9. Replace back guard.
10. Reestablish electrical power to the dryer.

## To Replace Front Basket (Tumbler) Support Pillow Block Bearing

1. Discontinue electrical power to the dryer.
2. Remove back guard.
3. Follow steps 3 through 6 from “To Replace Rear Basket (Tumbler) Support Pillow Block Bearing.”
4. Remove the two (2) retaining rings from the basket (tumbler) shaft.
5. Remove the two (2) bolts holding the front basket (tumbler) support pillow block bearing to the dryer.
6. Loosen the two (2) bearing collar setscrews and as the end of the basket (tumbler) shaft is lifted up slightly, slide the bearing off the shaft.
7. Prop a block of wood between the basket (tumbler) shaft and the bearing to the dryer.
8. Replace by reversing steps 2 through 6.

**NOTE:** Before replacing back guard, check basket (tumbler) lateral/vertical adjustment, as well as, belt adjustment and readjust if necessary.

9. Reestablish electrical power to the dryer.

## To Replace Front Idler Shaft Pillow Block Bearing

(Bearing nearest the back of the dryer)

1. Discontinue electrical power to the dryer.
2. Remove V-belts from idler pulleys.
3. Remove bolts holding each idler pillow block bearing to mount.
4. Remove idler shaft (with both bearings and idler pulleys still attached) from dryer.
5. Remove end retaining ring and loosen the two (2) setscrews in the bearing race collar.
6. Slide bearing off the shaft.
7. Replace bearing by reversing procedure.
8. Align idler pulley with basket (tumbler) pulley before tightening bolts.
9. Reestablish electrical power to the dryer.

## To Replace Rear Idler Shaft Pillow Block Bearing

1. Follow steps 1 through 3 from “To Replace Front Idler Shaft Pillow Block Bearing.”
2. Remove retaining rings on each side of forward idler shaft pillow block bearing.
3. Loosen the two (2) setscrews on each bearing collar.
4. Slide both bearings off the shaft.
5. Replace by reversing procedure.
6. Reestablish electrical power to the dryer.

## I. V-BELTS (REFER TO THE ILLUSTRATIONS IN SECTION F “PULLEYS”)

V-belts should have proper tension. If too loose, they will slip, excessive wear on the bearings will result. If the pulleys are not properly aligned, excessive belt wear will result. Proper belt tension will allow 1/2” displacement under normal thumb pressure at mid span of belt.

**NOTE:** Belts *must always be* replaced in pairs (matched sets).

### V-Belt Tension Adjustment (Basket [Tumbler] to Idler)

1. Discontinue electrical power to the dryer.
2. Back off jam nuts on idler adjustment belts.
3. Tighten belts by turning both bolts evenly clockwise (CW). (Turn counterclockwise [CCW] to loosen belts.)
4. Check vertical plane of idler pulley for parallel alignment with basket (tumbler) pulley.
5. If realignment is required, loosen basket (tumbler) pulley and bushing, and move basket (tumbler) pulley to proper position.
6. Retighten jam nuts.
7. Reestablish electrical power to the dryer.

## V-Belt Tension Adjustment (Motor to Idler)

1. Discontinue electrical power to the dryer.
2. Loosen the nuts on the four (4) studs holding the drive motor mount to the back of the dryer.
3. Loosen the jam nuts on the adjustment screw on the top of the motor mount.
4. Turn the adjustment screw to lower the motor mount (to tighten the belts) or raise the motor mount (to loosen the belts).
5. Check the vertical plane of the motor pulley and idler pulley for parallel alignment.
6. If realignment is required, loosen motor pulley and bushing and move motor pulley to proper position.
7. Retighten motor mount bolts and jam nuts.
8. Reestablish electrical power to the dryer.

## To Replace V-Belts

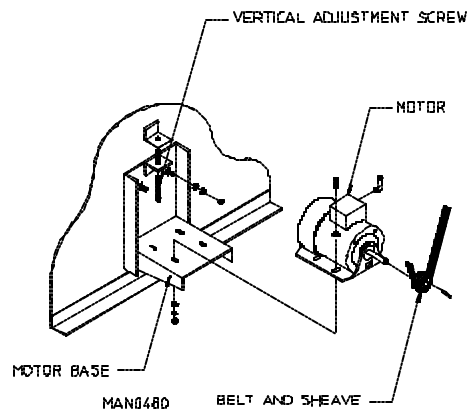
1. Loosen tension on V-belts so that they can easily be rolled off pulleys.
2. Replace V-belts.
3. Retighten V-belts and adjust tension and alignment per previous instructions.

**NOTE:** Always replace V-belts in pairs.

## J. MOTORS AND IMPELLORS

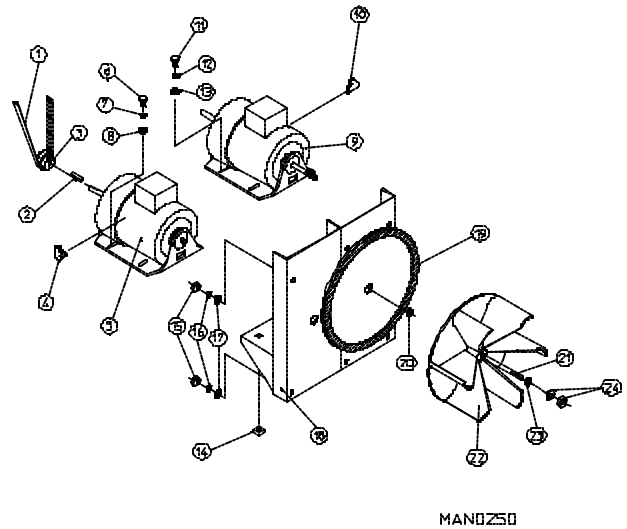
### To Replace Drive Motor

1. Discontinue electrical power to the dryer.
2. Remove drive belts.
3. Disconnect wiring harness from motor.
4. Remove bolts holding motor to mount and replace with new motor. **DO NOT** tighten bolts.
5. Remove pulley from old motor and install on new motor.
6. Align motor pulley with idler pulley and align motor shaft with idler shaft and tighten bolts.
7. Replace belts and adjust belt tension.
8. Retighten bolts.
9. Reestablish electrical power to the dryer.



### To Replace Impellor Motor (Direct Drive)

1. Discontinue electrical power to the dryer.
2. Disconnect motor harness from motor.
3. Remove nuts and washers holding the motor mount to the rear of the dryer and pull motor mount away.
4. Remove the two (2) left handed jam nuts on the motor shaft retaining the impellor. Work the impellor free from the motor shaft by means of a wheel puller to prevent damage to the motor shaft.
5. Remove the bolts holding the motor to the motor mount and replace it with the new motor.
6. Align motor with impellor face in plane with the motor mount at no less than 3/16" clearance.
7. Install impellor onto new motor shaft.
8. Reinstall the motor mount and reconnect the motor harness.
9. Reestablish electrical power to the dryer.

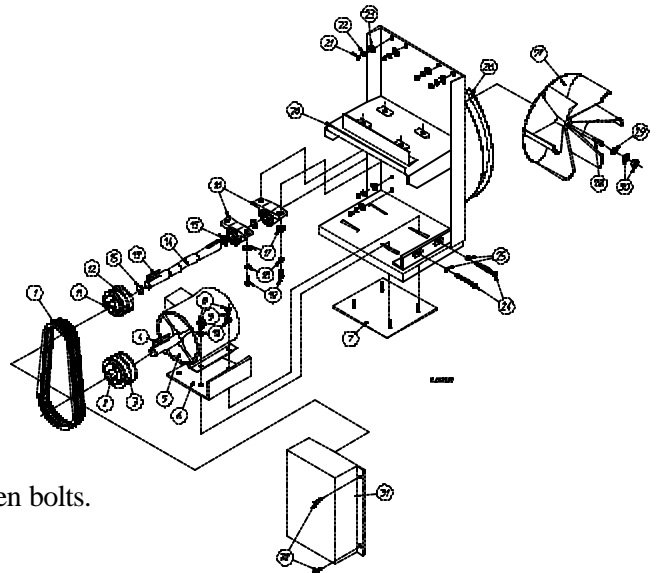


### To Replace Impellor (Direct Drive)

To replace the impellor, follow steps 1 through 4 of "To Replace Impellor Motor (Direct Drive)".

### To Replace Impellor Motor (Fan Shaft Drive)

1. Discontinue electrical power to the dryer.
2. Remove drive belts.
3. Disconnect wiring harness from motor.
4. Remove bolts holding motor to mount and replace with new motor. **DO NOT** tighten bolts.
5. Remove pulley from old motor and install on new motor.
6. Align motor pulley with fan shaft pulley and tighten bolts.
7. Replace belts and adjust belt tension.
8. Retighten bolts.
9. Reestablish electrical power to the dryer.



## To Replace Impellor

1. Discontinue electrical power to the dryer.
2. Remove the left side panel to access the fan shaft mount assembly.
3. Remove the two (2) left handed jam nuts that hold the impellor to the fan shaft.
4. Remove the impellor, washers, and the key.
5. Replace the impellor, key, washers, left handed jam nuts, and the side panel.
6. Reestablish electrical power to the dryer.

## K. TO REPLACE LINT DRAWER SWITCH

1. Discontinue electrical power to the dryer.
2. Remove lint drawer and lint door.
3. Disconnect both 4-pin connectors at the rear of the lint switch cover.
4. Remove the four (4) screws holding the lint switch cover on.
5. Remove lint switch cover and disconnect the two (2) terminals of the switch.
6. Remove switch by pressing tabs together and push switch out.
7. Install new switch by reversing procedure.



# SECTION VI

## TROUBLESHOOTING

The information provided will help isolate the most probable component(s) 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 suspect component itself.

**ELECTRICAL PARTS *SHOULD ALWAYS BE CHECKED FOR FAILURE BEFORE BEING RETURNED TO THE FACTORY.***

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

**OBSERVE ALL SAFETY PRECAUTIONS DISPLAYED ON THE EQUIPMENT OR SPECIFIED IN THIS MANUAL WHILE MAKING REPAIRS.**

Refer to “Electrical Troubleshooting” section for a detailed troubleshooting procedure for electrical components.

**A. No display on computer...**

1. Open circuit breaker switch or blown fuse.
2. Tripped overload on the blower MTR.
3. Bad wiring connection.
4. Faulty microprocessor controller (computer).

**B. Computer will not accept keyboard (touch pad) entries...**

1. Keyboard (touch pad) ribbon is not plugged into computer securely.
2. Keyboard (touch pad) is defective.
3. Faulty microprocessor controller (computer).

**C. Dryer will not start, but computer display indicators are on...**

1. Failed contactors.
2. Failed arc suppressor (A.S.) board.
3. Failed microprocessor controller (computer).
4. Failed motors.

**D. Drive motor runs, burner is on, but basket (tumbler) will not turn...**

1. Broken, damaged or loose V-belt.
2. Belts are contaminated (oil, grease, etc.).
3. Loose or broken pulley.

**E. Drive motor and blower motor start, computer display heat indicator is on, but there is no heat...**

1. Lint coop automatic safety thermostat (225° F [107° C]) has failed.
2. Sail switch is out of adjustment, has failed, or sail switch damper is not closing due to back pressure created by a restriction in the exhaust system.
3. Failed burner hi-limit (330° F [166° C] for gas models, 290° F [143° C] for electric models) safety thermostat.
4. Failed ignitor/flame-probe assembly or probe is misadjusted.
5. Failed ignition Direct Spark Ignition (DSI) module.
6. Failed gas valve.
7. Failed microprocessor controller (computer).

**F. Dryer operates, probe sparks, but gas does not flow...**

1. Dryer gas shutoff valve is closed.
2. Failed gas valve (open coil in valve).
3. Loose wiring connection from DSI module to gas valve. (Check voltage at gas valve).
4. Failed DSI module.

**G. Dryer operates, probe sparks but there is no ignition even though gas is evident...**

1. Gas pressure is too low. Check manifold pressure and take necessary corrective action.
2. Failed gas valve.
3. Ignitor probe is out of adjustment (readjust within gas flow).
4. Lint accumulation in burner tubes.

**H. Dryer operates but is taking too long to dry...**

1. An inadequate exhaust ductwork system.
2. Restriction in exhaust system.
3. Insufficient make-up air.

4. Poor housekeeping. Dirty or clogged lint screen.
5. Extractors (washers) are not performing properly.
6. An exceptionally cold/humid or low barometric pressure atmosphere.
7. The supply gas may have a low heating value, check with local gas supplier.
8. Failed temperature sensor (temperature calibration is incorrect).
9. Failed microprocessor controller (computer).

**I. Thermal overload for drive motor is tripping...**

1. Either an exceptionally low or high voltage supply.
2. Motor bearing failure.
3. Bearing failure in drive system.
4. Motor vents are blocked with lint.
5. Failed motor.
6. Insufficient make-up air.

**J. Overload for impellor (fan) motor is tripping...**

1. Either an exceptionally low or high voltage supply.
2. Motor bearing failure.
3. Motor vents are blocked with lint.
4. Failed motor.
5. Failed overload.
6. Out of balance impellor (fan).
7. Insufficient make-up air.

**K. Dryer is cycling on burner hi-limit safety thermostat...**

1. Insufficient exhaust ductwork, size or restriction in exhaust system.
2. Insufficient make-up air.
3. Lint screen needs cleaning.
4. Damaged impellor (fan).

**L. Display reads “dSFL,” dryer sensor circuit failure...**

1. Check 1/8 amp fuse on computer.
2. Faulty microprocessor temperature sensor probe.
3. Open circuit in either one (1) of two (2) wires leading from the sensor probe to the computer.
  - a. Connection at sensor bracket assembly connector.
  - b. Connection at computer harness connector.
4. Faulty microprocessor controller (computer).

**M. Dryer does not start. Display reads “door”...**

1. Main door is open.
2. Lint drawer is open.
3. Faulty main door or lint door switch.
4. Open circuit in either main door or lint drawer switch harnesses.
5. Faulty 24V transformer.

**N. There is excessive vibration coming from the basket (tumbler)...**

1. Basket (tumbler) is out of adjustment.
2. Loose or broken tie rod.
3. Failed basket (tumbler) support.

# SECTION VII

## ELECTRICAL TROUBLESHOOTING

The information provided will help isolate the most 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 suspect component itself.

**ELECTRICAL PARTS *SHOULD ALWAYS BE CHECKED FOR FAILURE BEFORE BEING RETURNED TO THE FACTORY.***

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

**OBSERVE ALL SAFETY PRECAUTIONS DISPLAYED ON THE EQUIPMENT OR SPECIFIED IN THIS MANUAL WHILE MAKING REPAIRS.**

### A. PHASE 5 OPL SYSTEM DIAGNOSTICS

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

#### Diagnostic (L.E.D. Display) Failure Codes

1. “**door**” - Indicates door switch circuit is open.
  - a. Keyboard (touch pad) entry was made while main door or lint drawer is open, or
  - b. There is a fault in the door switch circuit (external of the Phase 5 OPL microprocessor controller (computer)).
2. “**dSFL**” - Indicates a fault in the microprocessor temperature circuit.

If 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 discontinued and the problem is then corrected.

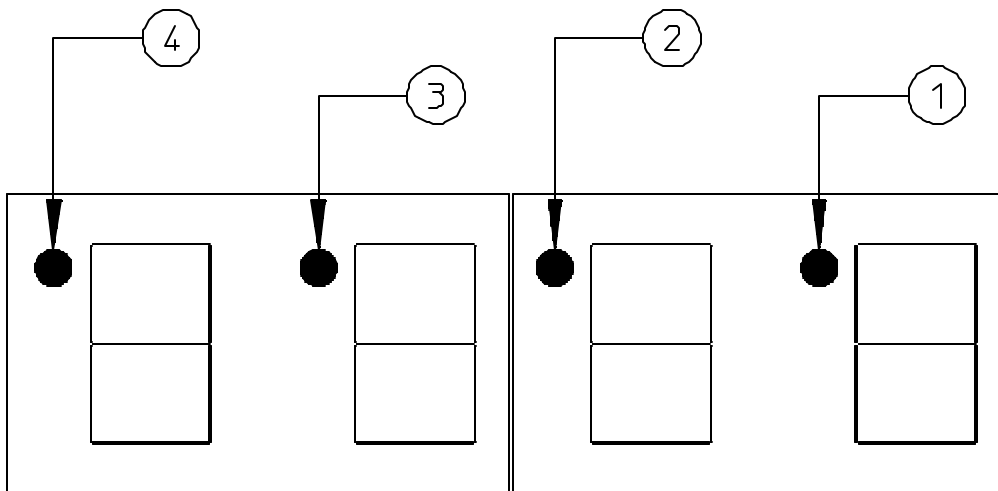
**IMPORTANT:** The Phase 5 OPL microprocessor controller (computer) has its own internal heat sensing circuit fuse protection located on the back side of the Phase 5 OPL computer. If a “dSFL” condition occurs, check to see if this fuse has blown. If it has not, **DO NOT** replace the entire Phase 5 OPL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

**NOTE:** Once the Phase 5 OPL 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 automatically 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 OPL microprocessor controller (computer) program related to this circuit (Program Location 2) is set incorrectly in the active mode (**SEn**) where the dryer is is not equipped with the optional rotational sensor and **should be** set in the nonactive mode (**nSEn**).
4. “**Hot**” - Indicates a possible overheating condition. The Phase 5 OPL 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.) display will read “Hot” until the temperature has dropped to 220° F (104° C) or lower and the Phase 5 OPL microprocessor controller (computer) is manually reset by pressing the “Clear/Stop” key.

## B. L.E.D. DISPLAY INDICATORS

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

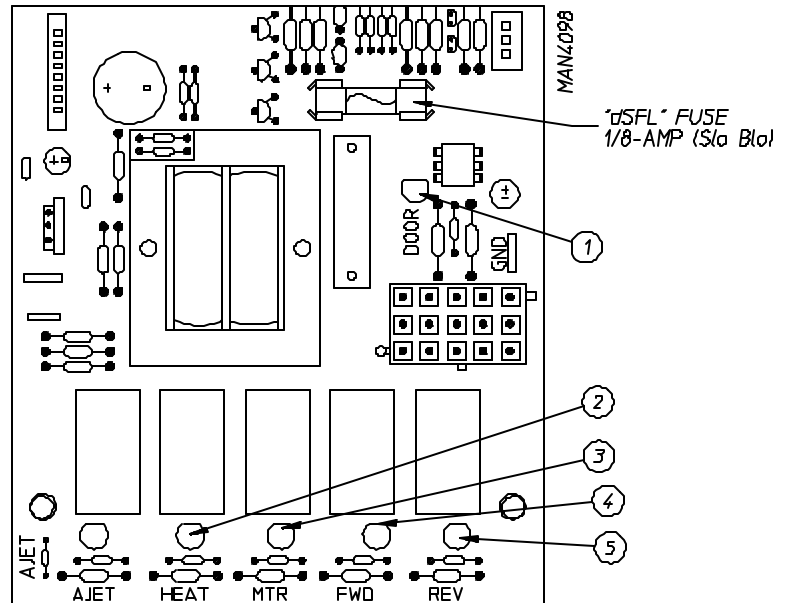


MAN1545

1. Blower Motor Circuit Indicator - Indicator dot is on whenever a cycle is in progress.
2. Heat Controller Indicator - Indicator dot is on whenever the Phase 5 OPL microprocessor controller (computer) is calling for the heating circuit to be active (on).
3. Reversing Indicator - Indicator dot is on when the drive basket (tumbler) motor is operating in the reverse mode (counterclockwise [CCW] direction).
4. Reversing Indicator - Indicator dot is on when the drive basket (tumbler) motor is operating in the forward mode (clockwise [CW] direction).

## Phase 5 OPL Microprocessor Controller (Computer) Relay Output Light Emitting Diode (L.E.D.) Indicators

There are a series of five (5) L.E.D. indicators (red lights) located at the lower back side area of the Phase 5 OPL microprocessor controller (computer). These are identified or labeled from left to right in the **illustration** as “HEAT,” “MTR” (motor), “FWD” (forward), “REV” (reversing), and “DOOR.” These L.E.D.s indicate that the outputs of the Phase 5 OPL microprocessor controller (computer), or, in the case of the door switch input, are functioning.



### 1. “DOOR” L.E.D. Indicator

- a. **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.

**NOTE:** If the dryer is started (display indicator dots are on) and there are no outputs (“HEAT” and/or “MTR” output L.E.D.s are off) and the “DOOR” input L.E.D. is on; then the fault is the Phase 5 OPL microprocessor controller (computer) itself.

If the failure was elsewhere (i.e., the dryer’s door switch circuit), the L.E.D. display would read “door” if a keyboard (touch pad) entry was attempted.

If the display indicator dots are on, and the “DOOR” L.E.D. input and the motor/heat output L.E.D.s are on, yet the motor and/or heat **is not** active (on); then the problem is elsewhere in the dryer.

### 2. “HEAT” Output L.E.D. Indicator

- a. If the dryer is started and there is NO “HEAT,” yet the Phase 5 OPL microprocessor controller (computer) display heat circuit indicator dot is on, but the “HEAT” output L.E.D indicator is off; then the fault is the Phase 5 OPL microprocessor controller (computer) itself.
  - 1) If both the display indicator dot and the “HEAT” output L.E.D. indicator dot are on; then the problem (fault) is elsewhere (i.e., external to the Phase 5 OPL microprocessor controller [computer]).

### 3. “MTR” Output L.E.D. Indicator

- a. If the dryer is started and the blower (impellor/fan) motor is not operating, yet both the Phase 5 OPL microprocessor controller (computer) display blower (impellor/fan) motor indicator dot and “DOOR” input L.E.D. indicator dot is off; then the fault is the Phase 5 OPL microprocessor controller (computer) itself.

- 1) If the motor is not operating and the ‘**MTR**’ output indicator is on; then the problem (fault) is elsewhere (i.e., external to the Phase 5 OPL microprocessor controller [computer]).

4. ‘**FWD**’ Output Light Emitting Diode (L.E.D.) Indicator  
(for Optional Reversing Models Only)

- a. If the dryer is started and the blower (impellor/fan) motor is operating but the drive (basket [tumbler]) motor is not, yet the Phase 5 OPL microprocessor controller (computer) display ‘‘FORWARD’’ indicator dot is on, but the ‘**FWD**’ (forward) motor output L.E.D. is off; then the fault is the Phase 5 OPL microprocessor controller (computer) itself.

- 1) If the drive (basket [tumbler]) motor is not operating and the ‘**FWD**’ indicator is on; then the problem (fault) is elsewhere (i.e., external to the Phase 5 OPL microprocessor controller [computer]).

5. ‘**REV**’ Output L.E.D. Indicator  
(for Optional Reversing Models ONLY)

- a. If the dryer is started and the blower motor is operating but the drive (basket [tumbler]) motor is not, yet the Phase 5 OPL microprocessor controller (computer) display ‘‘REVERSE’’ indicator dot is on, but the ‘**REV**’ (reverse) motor output L.E.D. is off; then the fault is the Phase 5 OPL microprocessor controller (computer) itself.

- 1) If the drive (basket [tumbler]) motor is not operating and the ‘**REV**’ indicator is on; then the problem (fault) is elsewhere (i.e., external of the Phase 5 OPL microprocessor controller [computer]).

## C. L.E.D. DISPLAY/CODES

The L.E.D. display informs the user of cycle status and program verification and displays important diagnostic and fault codes.

1. Display Operating Status

- a. Cycle in Progress - While the dryer is operating, the display will read which cycle is in progress. For example, in the drying cycle (mode), the display will read ‘‘dr,’’ and in the cool down cycle (mode), the display will read ‘‘CL.’’
- b. Cycle Status - While a cycle is in progress, the display will show the progress of the cycle (load) that is being processed.
  - 1) Automatic Drying Cycle - The cycle status portion of the display will show the percentage of extraction.
  - 2) Timed (Manual) Drying Cycle - The cycle status portion of the display will show the drying or cool down time and will count downward until the programmed time has expired.
- c. Alternate Display Programs - Programming allows for the display to read just the cycle in progress or just the basket (tumbler) temperature or to flash back and forth from cycle in progress to basket (tumbler) temperature while the dryer cycle is in progress.
- d. Indicator Dots - Located at the top of the display is a series of dots which indicate the various microprocessor controller (computer) output functions while a cycle is in progress.

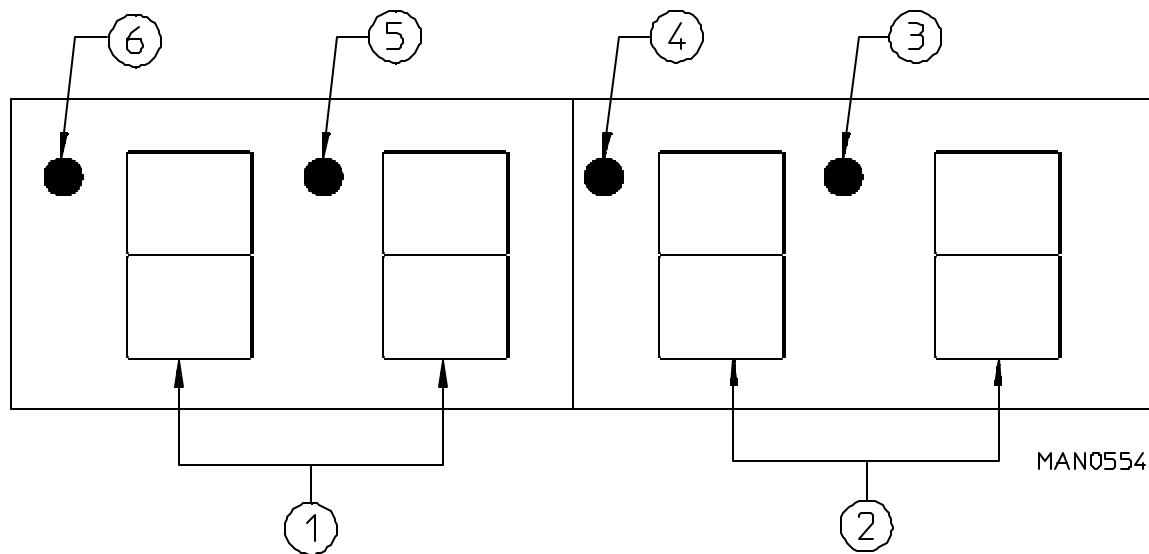


Illus. No. 3 - BLOWER MOTOR INDICATOR - This indicator dot is on whenever a cycle is in progress. In addition, when the anti-wrinkle program is active, this indicator will be on whenever the microprocessor controller (computer) is in the guard program.

Illus. No. 4 - HEAT INDICATOR - This indicator dot is on whenever the microprocessor controller (computer) is calling for the heating unit to be active (on).

Illus. No. 5 - REVERSE INDICATOR - This indicator is functional for models with the reversing action option only. This indicator will be on when the basket (tumbler) is in the reverse (counterclockwise [CCW]) direction.

Illus. No. 6 - FORWARD INDICATOR - This indicator dot is functional only for models with the reversing action option. This indicator will be on when the basket (tumbler) is in the forward (clockwise [CW]) direction. In addition, when the anti-wrinkle program is active, this indicator dot will be on whenever the microprocessor controller (computer) is in the guard program.



1. CYCLE IN PROGRESS
  - a. dr - DRYING CYCLE
  - b. CL - COOL DOWN CYCLE
2. CYCLE STATUS
  - a. AUTOMATIC MODE DISPLAYS % OF EXTRACTION
  - b. MANUAL MODE DISPLAYS DRYING TIME OR COOL DOWN TIME
3. ON INDICATOR, DRYER IS IN OPERATING MODE
4. HEAT ON INDICATOR
5. BASKET (TUMBLER) IN REVERSE MODE (Counterclockwise [CCW]) INDICATOR
6. BASKET (TUMBLER) IN FORWARD MODE (Clockwise [CW]) INDICATOR

## L.E.D. DISPLAY CODES

<b>A</b>	Slope Factor
<b>AUtO</b>	Automatic Mode ( <b>Patent No. 4,827,627</b> )
<b>ArEv</b>	Always Reverse
<b>b</b>	Heat Loss (offset) Factor
<b>bUZ</b>	Buzzer (tone)
<b>bUZ-tinE</b>	Buz Time
<b>° CEL</b>	Degree in Celsius
<b>CL</b>	Cool Down Cycle in Progress
<b>COOL-tinE</b>	Cool Down Time
<b>COOL-tEnP</b>	Cool Down Temperature
<b>CY A</b>	Preprogrammed Cycle A
<b>CY b</b>	Preprogrammed Cycle B
<b>CY C</b>	Preprogrammed Cycle C
<b>CY d</b>	Preprogrammed Cycle D
<b>CY E</b>	Preprogrammed Cycle E
<b>CY F</b>	Preprogrammed Cycle F
<b>CYCL-tinE</b>	Cycle Display Time
<b>d</b>	Dryness Level (percentage of extraction) (Numerical Value)
<b>donE</b>	Drying or Cooling Cycles Complete or Dryer is in Anti-Wrinkle Program
<b>door</b>	Door Circuit is Open or Fault in Door Switch Circuit
<b>dr</b>	Drying Cycle in Progress
<b>drY-LEuL</b>	Dryness Level (percentage of extraction)
<b>drY-tEnP</b>	Drying Temperature
<b>dSFL</b>	Dryer Sensor Circuit Failure
<b>F</b>	Fabric (temperature)
<b>° FAr</b>	Degree in Fahrenheit

<b>FILL</b>	No Cycle in Progress
<b>FLS</b>	Flash Display Active
<b>GdLY</b>	Anti-Wrinkle Delay Time
<b>G on-tInE</b>	Anti-Wrinkle On Time
<b>Grd</b>	Anti-Wrinkle Program Active
<b>Hot</b>	Overheating Condition
<b>MAnU</b>	Manual Mode
<b>MGrd</b>	Maximum Guard Time
<b>nbUZ</b>	No Buzzer (tone)
<b>nFLS</b>	No Flash Display
<b>nGrd</b>	Anti-Wrinkle Program <u>Is Not</u> Active
<b>nrEu</b>	No Reverse
<b>ProG</b>	Program Mode
<b>rEu</b>	Reverse
<b>SC</b>	Special Cool Down
<b>SEFL</b>	Rotational Sensor Circuit Failure
<b>SEn</b>	Rotational Sensor Selected
<b>SPIn-tInE</b>	Spin Time
<b>Sr</b>	Select Reverse
<b>Stop-tInE</b>	Stop Time
<b>tEnP-tInE</b>	Temperature Display Time
<b>tinE</b>	Time

## FAULT CODES

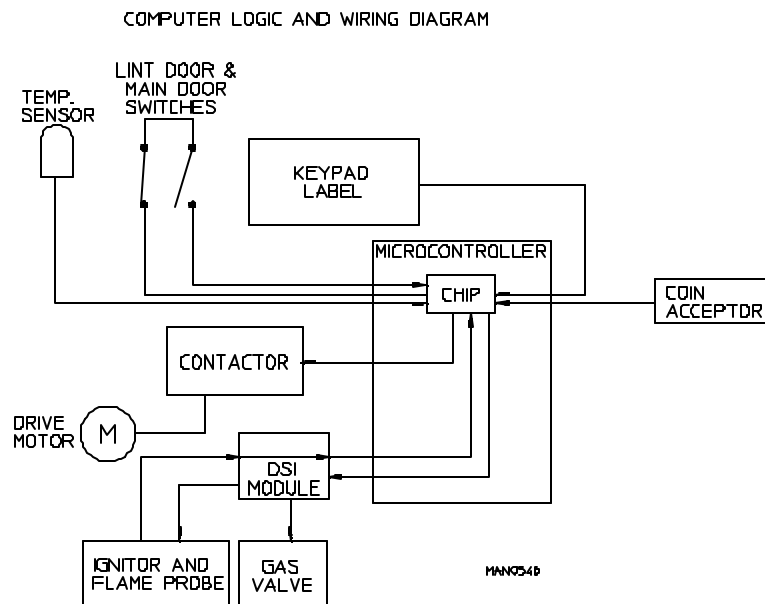
1. **door** - Keyboard (touch pad) entry was made while the main door or lint drawer was open or fault in the circuit.
2. **dSFL** - Fault in microprocessor temperature sensor circuit.
3. **SEFL** - Fault in rotation of basket (tumbler).
4. **Hot** - Indicates that the dryer has experienced an overheating condition. To cancel the “Hot” default code, press the “Clear/Stop” key.

## D. COMPUTER LOGIC AND WIRING DIAGRAM

1. Operator enters desired selection(s).
2. Information entered is sent to the microprocessor controller (computer) via the keyboard (touch pad).
3. The input information is sorted/processed and executed by the microprocessor controller (computer) chip.
4. The microprocessor controller (computer) output signal activates the contactors and Direct Spark Ignition (DSI) module which controls dryer functions.

**NOTE:** When contacting **ADC** with electrical questions, please have on hand the correct wiring diagram number for your particular dryer. This 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 revision dates (refer to the **illustration below**).

The wiring diagrams used in Troubleshooting are specifically for dryers manufactured at the time of publishing. Your particular model may vary slightly depending on the date of manufacturing and options available. The correct wiring diagram and number is either taped to the rear of the control door on each dryer, or placed in the control box. If your particular diagram is lost or unreadable, call **ADC** with the serial number of the dryer. **ADC** will be more than happy to send you a diagram by fax or mail.



## A. No display condition...

1. Check main fuses or circuit breaker.
2. Check blower motor overload, if tripped, reset.
3. Check fuse 1 or fuse 2 and if either are blown, replace.
4. Across terminal block nos. 6 and 8 you **should be** getting your 208V or 240V.

If no voltage is present at 6 and 8, double check steps 1 and 2 and also check wires and terminations at these points.

5. Take voltage reading across the microprocessor 15-pin connector nos. 7 and 13.

If there is voltage, replace the computer.

If there is no voltage, there is a bad wire(s) or termination(s) between terminal block nos. 6 and 8 and microprocessor 15-pin connector nos. 7 and 13.

**NOTE:** In this next section **ALL** voltage checks ***must be*** done in the operating mode with the appropriate microprocessor dot on!! Also appropriate light emitting diode (L.E.D.) output light on!!

**NOTE:** In this next section when checking for voltage you are looking for 24 VAC unless otherwise specified.

## B. Drive motor reverses but **does not** go forward, blower motor runs...

1. If computer dot (First dot on the left) **does not** come on, replace the computer.
2. Check for voltage across the coil markings A1 and A2 of the forward contactor located in the rear panel box. The contactor according to your diagram is marked CR2.

If voltage is present, there is a bad wire(s) or termination(s) between BS2 and contactor coil (CR2).

3. If there is no voltage between the two (2) BS2 terminals and no voltage across the two (2) BS2 terminals, replace the arc suppressor (A.S.) board.

If there is voltage across the two (2) AS2 terminals and no voltage across the two (2) BS2 terminals, replace the arc suppressor (A.S.) board.

If there is no voltage across the two (2) AS2 terminals on the arc suppressor (A.S.) board, the problem is bad wire(s) or termination(s) between the AS2 board and the 15-pin computer connector no. 3, or faulty computer.

**C. Drive motor works in forward mode but does not reverse, blower motor runs...**

1. If computer dot (second one [1] from left) does not come on, check program to see if set for reverse.
2. If set for reverse, replace computer.
3. Check for voltage across the coil of the reversing contactor located in the rear panel box. The contactor according to your diagram is CR3, also the markings on the coil are A1 and A2.

If there is voltage, replace the coil or the complete contactor.

If there is no voltage, check for voltage across the two (2) BS1 terminals on the arc suppressor (A.S.) board.

If there is voltage across the two (2) BS1 terminals and no voltage across the coil of the reversing contactor (A1 and A2), the problem is bad wire(s) or termination(s) between BS1 and the contactor coil.

4. If there is no voltage between the two (2) BS1 terminals on the arc suppressor (A.S.) board, check for voltage across the two (2) AS1 terminals on the board.

If there is no voltage across the two (2) AS1 terminals and no voltage across the two (2) BS1 terminals, replace the arc suppressor (A.S.) board.

If there is no voltage across the two (2) AS1 terminals, the problem is bad wire(s) or termination(s) between the arc suppressor (A.S.) board and the computer 15-pin connector no. 8, or a faulty computer.

**D. Blower motor does not operate, drive motor runs...**

1. Check for voltage across terminals A1 and A2 of the impellor contactor. This is the single contactor in the rear control box.

If voltage is present check for voltage across the blower motor. If there is voltage at the blower motor replace the motor.

If there is no voltage at the blower motor, problem is bad wire(s) or termination(s) between the contactor and the motor.

2. If there is no voltage present at A1 and A2 of the contactor, check for voltage across the two (2) BS3 terminals of the arc suppressor (A.S.) board.

If there is voltage present at the two (2) BS3 terminals, problem is bad wire(s) or termination(s) between the two (2) BS3 terminals and the coil (A1 and A2) terminals.

If there is no voltage across the two (2) BS3 terminals, check for voltage across the two (2) AS3 terminals.

If there is voltage across the two (2) AS3 terminals and there is no voltage between the two (2) BS3 terminals, replace the arc suppressor (A.S.) board.

3. If there is no voltage across the two (2) AS3 terminals, problem is bad wire(s) or termination(s) between the two (2) AS3 terminals and the computer board 15-pin connector no. 5, or faulty computer.

**E. “No Heat” drive and blower motors run, display reads normal (Gas Models)...**

1. Check for voltage across terminal block nos. 3 and 7.

If no voltage is present, problem is bad wire or broken terminal from terminal block no. 3 to MP harness connector pin 4.

2. If voltage is present, check for voltage across terminal block nos. 4 and 7.

If no voltage is present, problem is bad wire or broken terminal from terminal block 3 to basket (tumbler) hi-limit switch and back to terminal block no. 4, or faulty basket (tumbler) hi-limit switch.

3. If voltage is present, check for voltage across Direct Spark Ignition (DSI) module “TH” and “GND.”

If no voltage is present, check voltage through the sail switch and burner hi-limit harness against ground. Also check for voltage at the terminals of both components. If voltage is not passing through any one (1) of the two (2) components, replace that component.

4. If voltage is present, refer to DSI Technical Manual (P/N 450119), or if equipped with ADC style DSI module refer to Technical Manual (P/N 450142).

**F. “No Heat” drive and blower motors run, display reads normal (Steam Models)...**

1. Check for voltage across terminal block nos. 3 and 7.

If no voltage is present, problem is bad wire(s) or termination(s) between terminal block 3 to MP harness connector pin 4.

2. If voltage is present, check for voltage across terminal block nos. 4 and 7.

If no voltage is present, problem is bad wire(s) or termination(s) from terminal block 3 to basket (tumbler) hi-limit switch and back to terminal block 4, or faulty basket (tumbler) hi-limit switch.

3. If voltage is present, across terminal block nos. 4 and 7, check for voltage across the Pneumatic Steam Damper Solenoid (red and green wires).

If no voltage is present, problem is bad wire(s) or termination(s) between terminal block nos. 4 and 7 and the Damper Solenoid.

If voltage is present, problem is faulty Damper Solenoid.

## G. “Door” condition...

**NOTE:** Make sure main door and lint drawer are closed. Also, if checking either switch, the plunger *must be* depressed.

Check light emitting diode (L.E.D.) input light “door” on component side of the computer. If light is on, replace computer.

1. Check voltage (24 VAC) across terminal block nos. 5 and 7.

If voltage is present, problem is bad wire(s) or termination(s) between terminal block 5 and computer 15-pin connector 2, or faulty computer.

If no voltage is present, check for voltage across the 15-pin modular connector nos. 1 and 2 against ground.

If voltage is evident at both points, problem is bad wire(s) or termination(s) between terminal block 5 and pin 2 of the 15-pin modular connector or pin 1 of that same connector to the in-line connector on the output of the 24 volt XFMR located in the computer box area.

2. If voltage is not evident at both points and ground (nos. 1 and 2 of the 15-pin modular connector located in computer box area against ground).

If no voltage at either two (2) points, problem is faulty 24V XFMR (P/N 141403).

If voltage at one (1) point, trace the voltage through the lint drawer switch and the main door switch and their connectors (J3 and J4), to the 15-pin modular connector 2.

If voltage stops at any one (1) of the switches, replace the switch.

If voltage stops at a connector, check the termination or wire back to the prior connector.

## H. Microprocessor reads “DSFL”...

**NOTE:** Before continuing with this section check the 0.125 mA fuse on the computer board.

1. Replace the temperature sensor underneath the basket (tumbler) on a bracket (the bullet shaped device).
2. If it still reads “DSFL,” unplug the 4-pin connector from the temperature sensor bracket. Also, unplug the microprocessor 15-pin connector from the computer board. Where the white/red striped wire is going into the connector, take a continuity reading across the wire and that same wire from the 4-pin connector that you unplugged earlier in this paragraph.

If there is no continuity, check for break in wire, a short to the ground, loose termination(s), or even replace the wire.

If there is continuity, do the same thing to the black wire right next to the white/red striped wire in the 15-pin connector.

If there is no continuity, check for break in wire, a short to ground, loose termination(s), or even replace the wire.

If there is continuity, computer board is faulty.

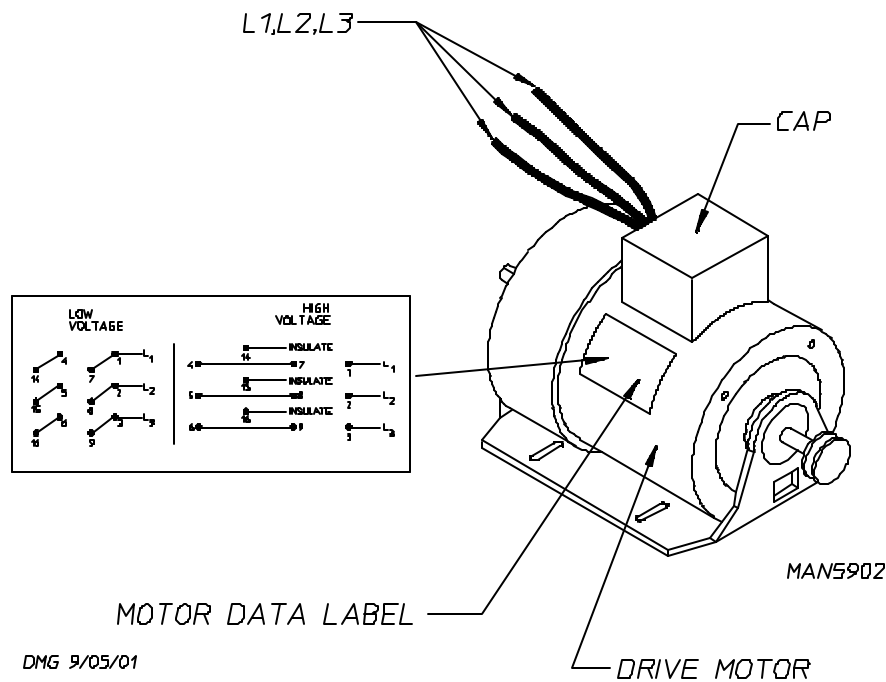


# SECTION VIII

## TECHNICAL INFORMATION

The following section contains various technical information important to the service person in servicing and maintaining the dryer.

### A. MOTOR DATA LABEL (HIGH AND LOW VOLTAGE)



The motor plate is located on the side of the drive motor (refer to the **illustration above**) and contains a graphical representation of the motor wiring for both low voltage rating and high voltage rating.

Removing the cap reveals the wiring to the motor. On each wire there is a tag with a number, which corresponds to the number on the motor data label. Depending on whether the dryer is operating on low voltage or high voltage, the wiring should match the motor data label as follows:

The dots and lines represent connections (refer to the **illustration above**).

For example:

On Low Voltage - wire #14 is connected to wire #4

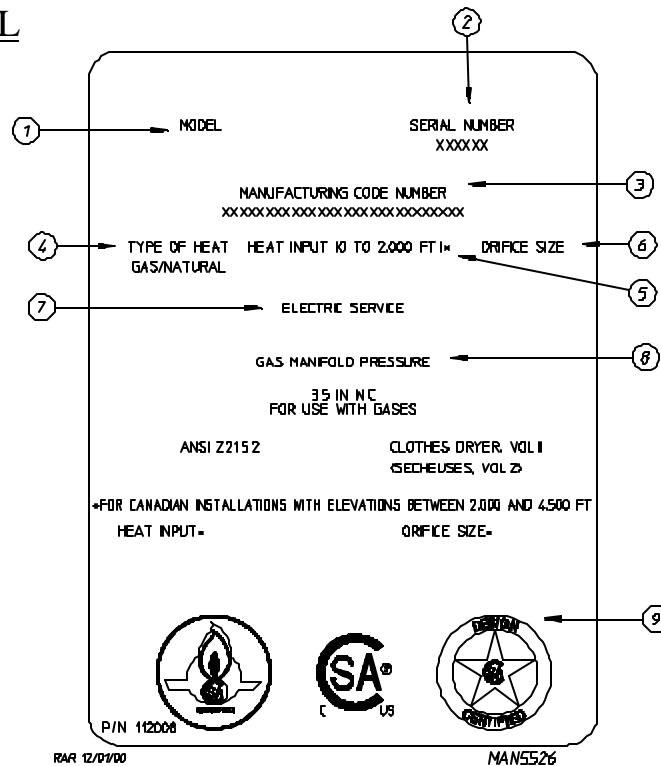
- wire #1 is connected to wire #7, which in turn are both connected to L1

On High Voltage - wire #14 is insulated or capped

- wire #4 is connected to wire #7

- wire #1 is connected to L1

## B. DATA LABEL



### Contacting **American Dryer Corporation (ADC)**

When contacting **ADC**, certain information is required to insure proper service/parts information. This information is on the data label, located on the top left hand corner of the dryer, viewed from the rear (refer to the **illustration above**). When contacting **ADC**, please have the **model number** and **serial number** readily accessible.

### INFORMATION ON THE DATA LABEL

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) or steam.
5. **HEAT INPUT** (for GAS DRYERS) - This describes the heat input in British Thermal Units per Hour (BTUH).
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.

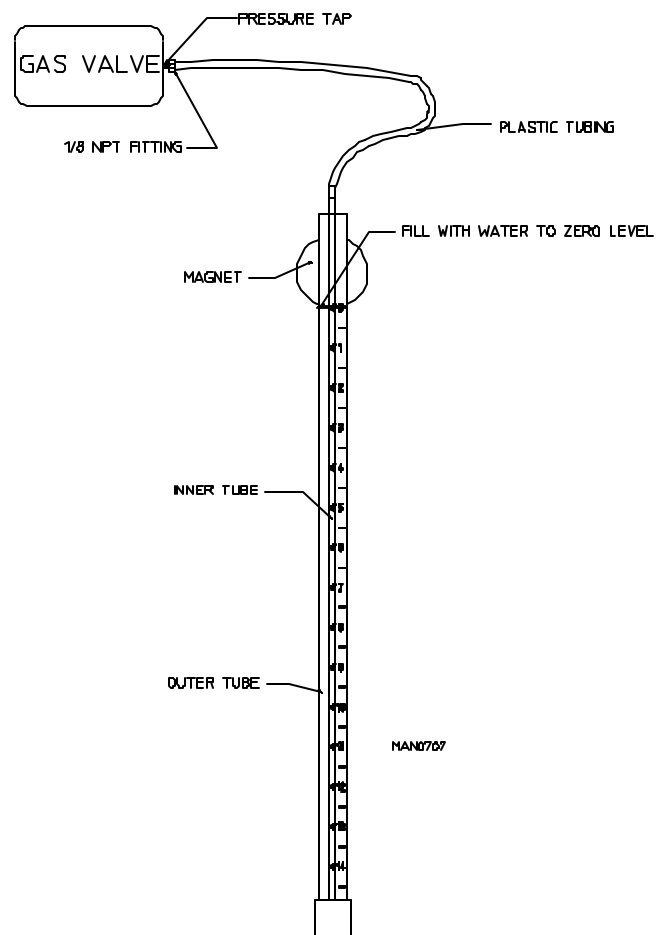
## C. USING A MANOMETER

### How To Use A Manometer

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 below**).
3. Attach manometer to the dryer using magnet.

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

4. Fill manometer with water, as shown in the **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) water column.  
  
Liquid Propane (L.P.) Gas: 10.5 inches (26.1 mb) water column.
6. If water column pressure is incorrect refer to "TO ADJUST GAS PRESSURE."
7. Reverse procedure for removing manometer.



## D. TOOL LIST

Straight Head Screwdriver

Phillips Head Screwdriver

Sensor Pin and Socket Tool (P/N 122801)

Pliers

1/4" Nut Driver

3/8" Open End Wrench

5/8" Open End Wrench

5/8" Deep Socket Wrench

3/8" Socket Wrench

1/2" Socket or Open End Wrench

1/4" Open End Wrench

5/16" Socket or Open End Wrench

1/2" Socket Wrench

7/16" Socket or Open End Wrench

5/16" Nut Driver

12" Pipe Wrench (2)

1/8" "T" Shaped or "L" Shaped Allen Wrench

3/16" "T" Shaped or "L" Shaped Allen Wrench

Wire Cutters

1/2" Allen Wrench

3/8" Allen Wrench

Channel Locks

Manometer (**ADC** P/N 122804)

MP Pin Extraction Tool (**ADC** P/N 122800)

