



# **ML-82**

# **Service Manual**

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**American Dryer Corporation**  
88 Currant Road  
Fall River, MA 02720-4781  
Telephone: (508) 678-9000 / Fax: (508) 678-9447  
e-mail: techsupport@amdry.com

# 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/operator's 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 or 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 dans le voisinage 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.** \_\_\_\_\_

**DISTRIBUTORS NAME** \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

Replacement parts can be obtained from your distributor 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 orders 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.**

“Caution: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper operation.”

«Attention: Lors des opérations d'entretien des commandes étiqueter tous fils avant de les déconnecter. Toute erreur de câblage peut être une source de danger et de panne.»

## **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 DRYERS IN OPERATION.**

## **FOR YOUR SAFETY**

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

## **WARNING**

**UNDER NO CIRCUMSTANCES should the door switch or the heat circuit devices ever be disabled.**

**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 (SCREEN) IN PLACE, EVEN IF AN EXTERNAL LINT COLLECTION SYSTEM IS USED.**

**IMPORTANT**

**PLEASE OBSERVE ALL SAFETY PRECAUTIONS displayed on the equipment or specified in the installation/operator's manual included with the dryer.**

Dryers **must not** be installed or stored in an area where it will be exposed to water or weather.

The wiring diagram for the dryer is located in the front electrical control box area.

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# 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 machine, 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, 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 also may be a fire hazard.

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

## SPECIFICATIONS/COMPONENT IDENTIFICATION

### A. SPECIFICATIONS

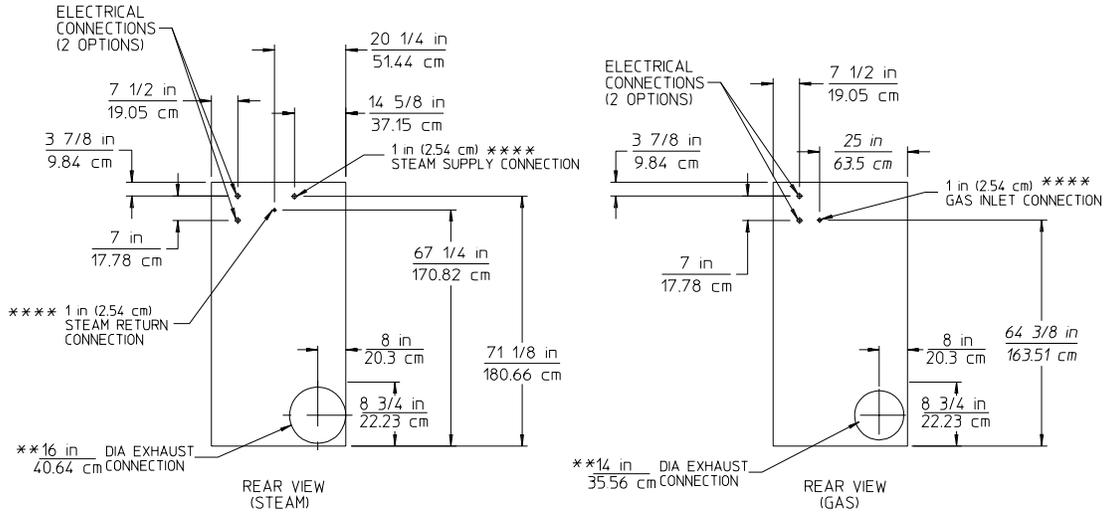
BASKET (TUMBLER) DIAMETER		37"	94 cm		
BASKET (TUMBLER) DEPTH		36"	91.5 cm		
BASKET (TUMBLER) MOTOR		1/2 HP	.373 kw		
BLOWER MOTOR		3 HP	2.238 kw		
DOOR OPENING (DIAMETER)		21-1/2"	54.61 cm		
BASKET (TUMBLER) VOLUME		22.4 cu. ft.	.634 cu.m.		
DRYERS PER 20'/40' CONTAINER		10/20			
<b>DRYERS PER 6m/12m CONTAINER</b>		<b>10/20</b>			
DRYERS PER 45'/48' TRUCK		24/24			
<b>DRYERS PER 14m/15m TRUCK</b>		<b>24/24</b>			
Gas	VOLTAGE AVAILABLE		208-460v 3ø 50/60 Hz		
	APPROX. WEIGHT (UNCRATED)		828 lbs.	375.6 kg	
	APPROX. WEIGHT (CRATED)		878 lbs.	398.3 kg	
	HEAT INPUT		270,000 btu/hr	68,040 kcal/hr	
	AIRFLOW		1,700 cfm	48.14 cmm	
	INLET PIPE SIZE		1"	2.54 cm	
Steam	VOLTAGE AVAILABLE		208-460v 3ø 50/60 Hz		
	APPROX. WEIGHT (UNCRATED)		828 lbs.	392.7 kg	
	APPROX. WEIGHT (CRATED)		914 lbs.	415.5 kg	
	AIRFLOW		2,500 cfm	98.8 cmm	
	AIR CONNECTION		1/8" F.P.T.	---	
	STEAM CONSUMPTION		BOILER HP NORMAL LOAD		
	375 lbs/hr	170.5 kg/hr	11		
	OPERATING STEAM PRESSURE		STEAM SUPPLY		STEAM RETURN
	125 psi max	8.79 kg/cm <sup>2</sup>	1"	2.54 cm	1" 2.54 cm

*Shaded areas are stated metric equivalents*

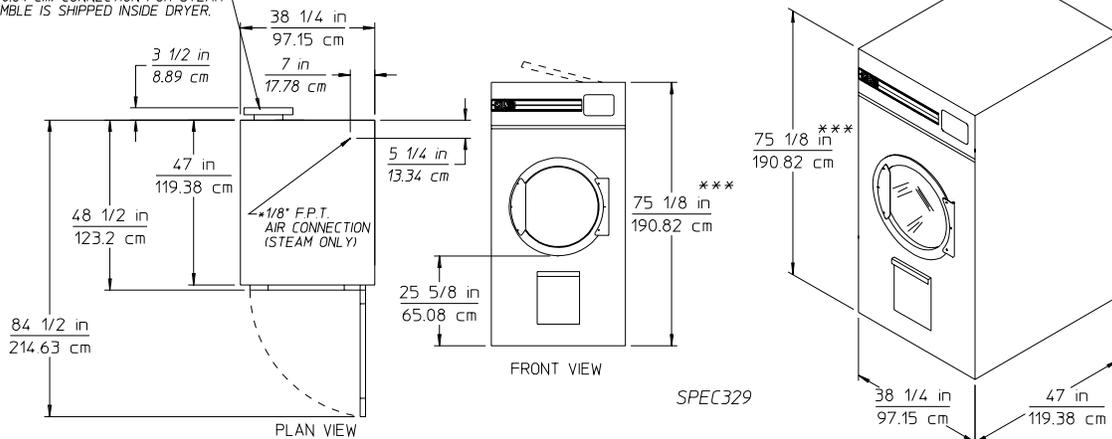
**IMPORTANT:** Steam dryers *must be* provided with a clean, dry, regulated 80 PSI +/- 10 PSI (5.51 bars +/- .68 bars) supply.

**NOTE:** ADC reserves the right to make changes in specifications at any time, without notice or obligation.

# Specifications MLG-82 (Gas) MLS-82 (Steam)



EXHAUST THIMBLE: 14" DIAMETER (35.56 cm) CONNECTION FOR GAS MODELS AND 16" DIAMETER (40.64 cm) CONNECTION FOR STEAM MODELS. THIMBLE IS SHIPPED INSIDE DRYER.



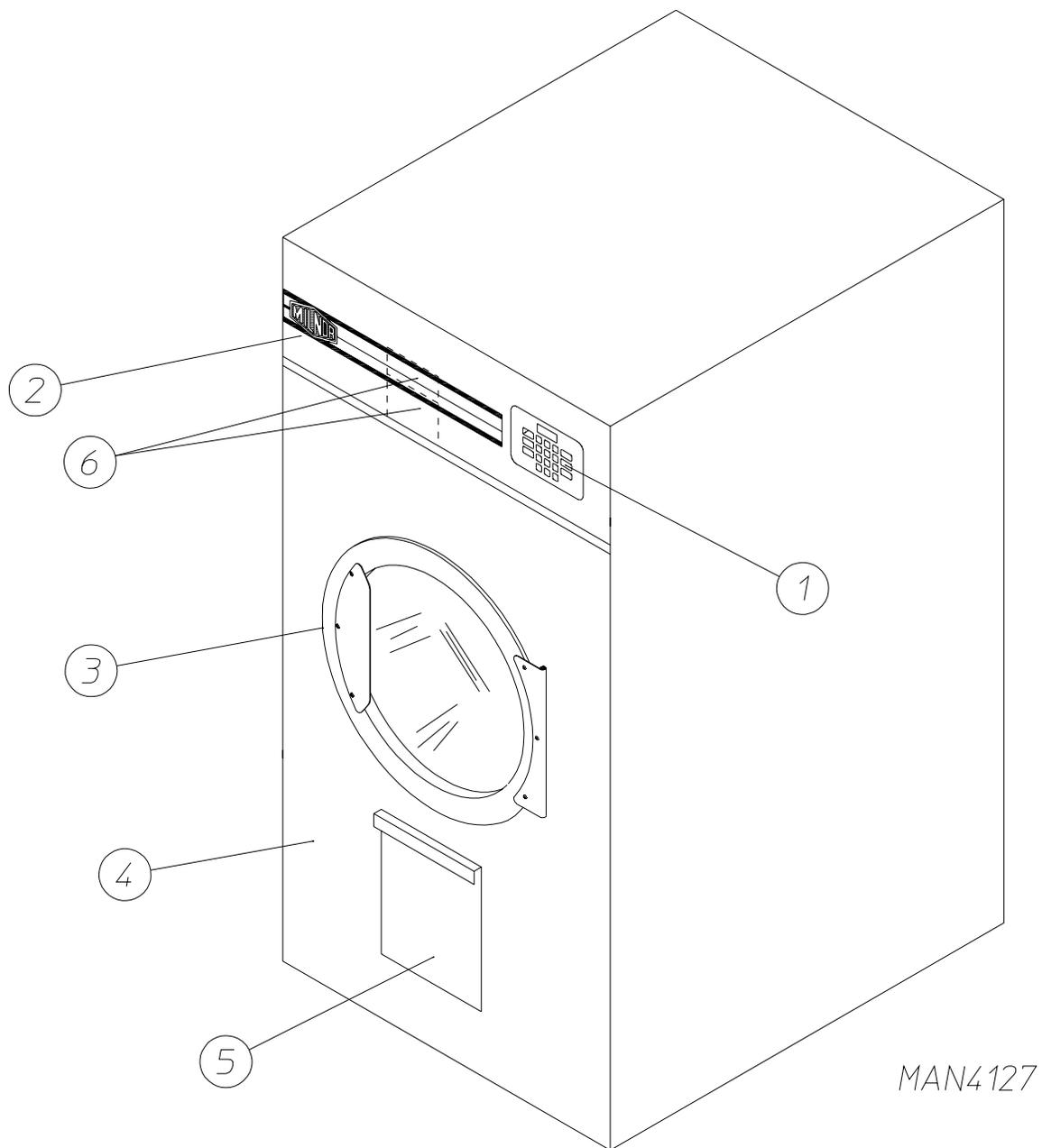
- \* STEAM DRYER MUST BE PROVIDED WITH CLEAN, DRY, REGULATED 80 PSI ± 10 PSI (5.5 BAR ± 6.9 BAR) AIR SUPPLY.
- \*\* DUCT WORK MUST BE A MINIMUM DIAMETER OF 14" (35.56cm) FOR GAS AND 16" (40.64cm) FOR STEAM. DUCT WORK SIZE VARIES WITH INSTALLATION CONDITIONS.
- \*\*\* OPERATING HEIGHT FOR STEAM UNIT IS 81" (205.74cm)
- \*\*\*\* SIZE OF PIPING TO DRYER VARIES WITH INSTALLATION CONDITIONS. CONTACT FACTORY FOR ASSISTANCE.

GS 10/21/98

**NOTE: ADC reserves the right to make changes in specifications at any time, without notice or obligation.**

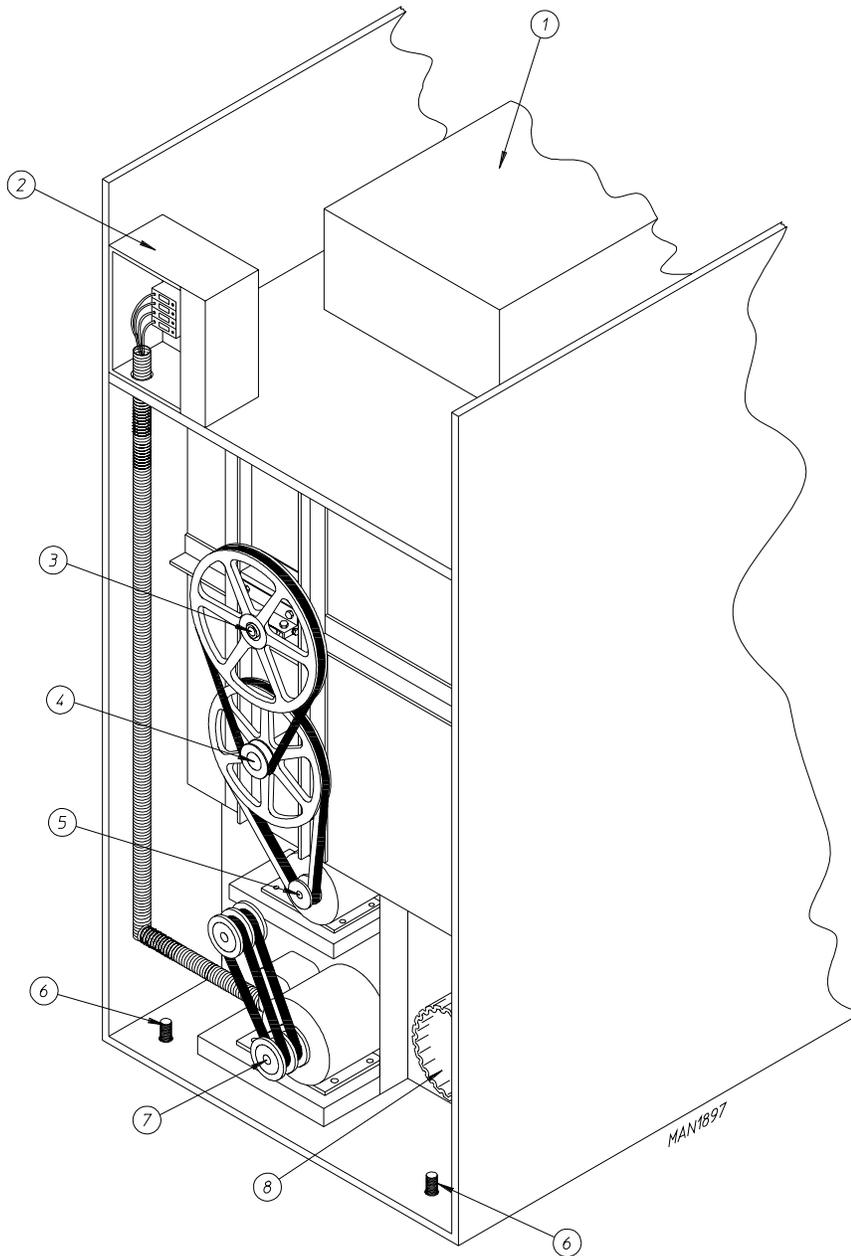
## B. COMPONENT IDENTIFICATION

### 1. Dryer Front View



<u>Illus. No.</u>	<u>Description</u>
1	Controls
2	Control (top access) Door Assembly
3	Main Door Assembly
4	Lint Compartment Area (lint screen located behind door)
5	Lint Drawer
6	Data Label and Installation Label (located behind control [service] door)

2. Dryer Rear View



<u>Illus. No.</u>	<u>Description</u>
1	Heating Unit
2	1/8" Compressed Air Supply Inlet (behind Electric Service Relay Box for Steam Models Only)
3*	Electric Service Relay Box
4	Tumbler Bearing Mount Assembly
5	Idler Bearing Mount Assembly
6	Basket (Drive) Motor Assembly (for Reversing Models Only)
7	Blower Motor Assembly
8	Dryer Exhaust

\* Electric service connections for Gas Models and Steam Models are made in this box.

# SECTION III

## 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 duct work 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.

#### *SUGGESTED CLEANING SCHEDULE*

##### ***EVERY THIRD or FOURTH LOAD***

Clean the lint screen every third or fourth load. A clogged lint screen will cause poor dryer performance. The lint screen is located behind the lint door in the base of the dryer. Open the lint door, brush the lint off of the lint screen, and remove the lint. Inspect the lint screen and replace if torn.

**NOTE:** The frequency of cleaning the lint screens can best be determined from experience at each location.

##### ***WEEKLY***

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

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

##### ***STEAM DRYERS***

Clean the steam coil fins. Suggest 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 any local air conditioning supply house.

## ***90 DAYS***

1. Remove lint from around basket (tumbler), drive motors, and surrounding areas.
2. Remove lint from gas valve burner area with a dusting brush or vacuum cleaner attachment.
3. Clean any lint accumulation in and around both the blower and drive motor casing openings.

**NOTE:** To prevent damage, avoid cleaning or touching the hot surface ignitor assembly.

## ***EVERY 6 MONTHS***

Inspect and remove lint accumulation in customer furnished exhaust duct work system and from dryers internal exhaust ducting.

**NOTE: THE ACCUMULATION OF LINT IN THE EXHAUST DUCT WORK 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 DUCT WORK. 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 shut-down of heat circuit safety switches or thermostats.

**NOTE:** When cleaning the dryer cabinets, 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 set screws), nonpermanent gas connections (unions, shut-off valves, orifices, and grounding connections). 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**

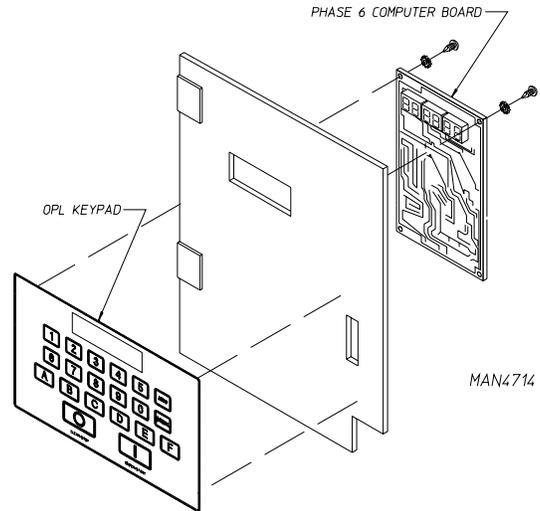
The motor bearings, idler bearings, and under normal/most conditions the tumbler bearings are permanently lubricated. It is physically possible to re-lubricate the tumbler bearings if you choose to do so even though this practice is not necessary. Use Shell Alvania #3 grease or its equivalent. The tumbler bearings used in the dryer does not have a grease fitting. Provisions are made in the bearing housing for the addition of a grease fitting which can be obtained elsewhere.

# SECTION IV

## DESCRIPTION OF PARTS

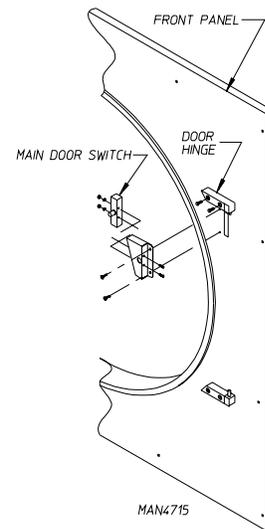
### A. CONTROL PANEL ASSEMBLY

The control panel assemble is made up of a keypad to enter your selections, and a Phase 6 main computer board. The computer controls all input and output functions of the machine.



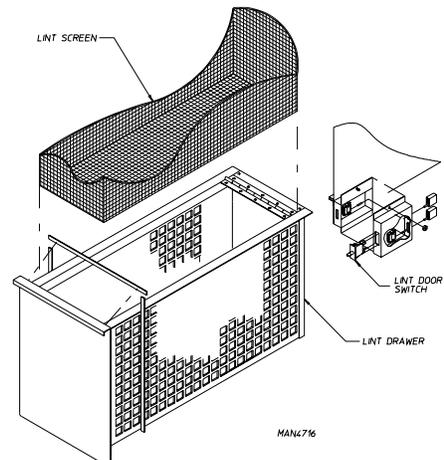
### B. DOOR SWITCH ASSEMBLY

The main door switch assembly is a safety device used to stop the tumbler in case the main door is opened during a cycle.



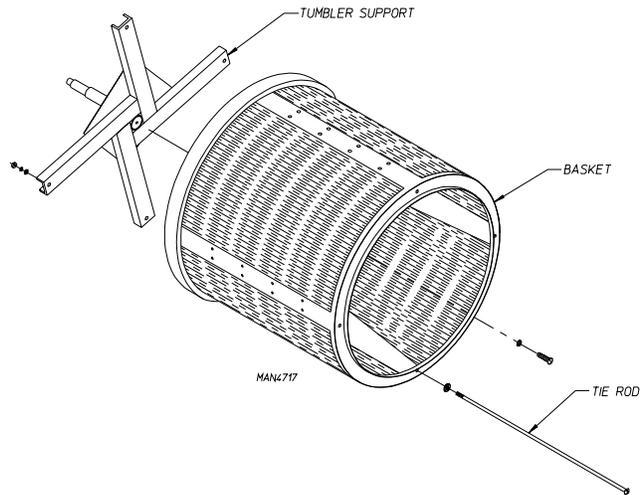
### C. LINT DRAWER AND LINT DRAWER SWITCH

The lint door/drawer is located in the bottom front of the machine. It is a drawer that pulls out with a fine mesh screen that catches the lint. The lint drawer switch is another safety device to stop the basket from turning when the lint drawer is opened.



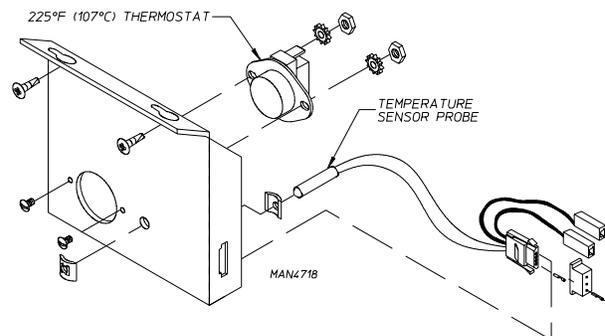
## D. THE BASKET AND SUPPORT ASSEMBLY

The basket and support assembly is designed for 80 lbs. (36 kg) of dry material. It is supported by a shaft and two (2) bearings.



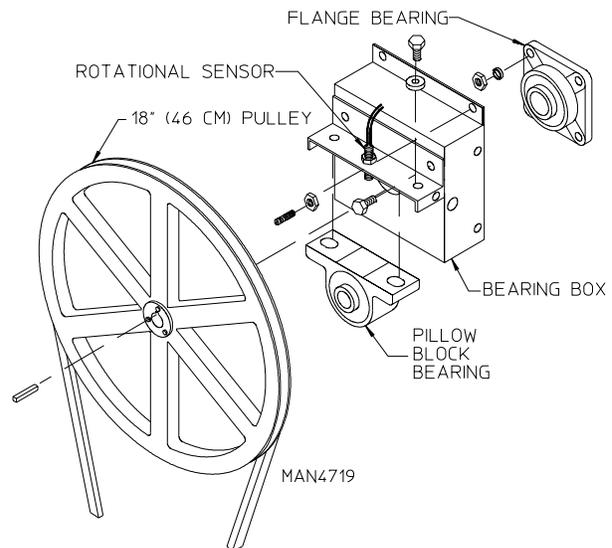
## E. TEMPERATURE SENSOR BRACKET ASSEMBLY

This bracket assembly is equipped with two (2) important devices. One is the temperature probe and the other is the 225° F (107° C) basket hi-limit. The temperature probe senses the temperature in the basket and sends a signal to the computer to read that temperature. This sensor is also known as the “TEMP SENSOR FAIL” sensor. The 225° F (107° C) thermostat is a safety device to shut down the gas valve in a case of the temperature exceeding 225° F (107° C).



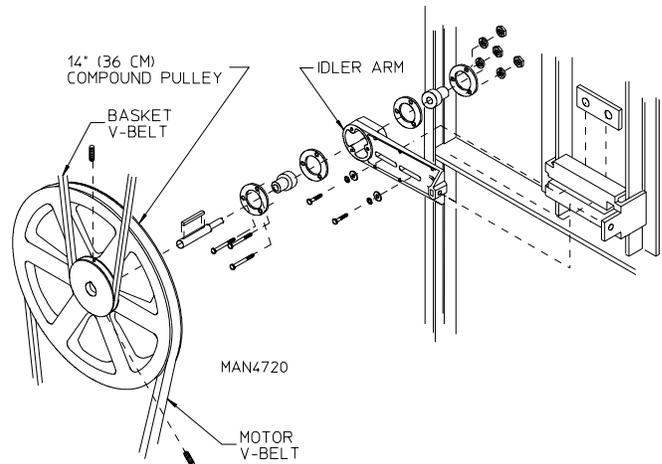
## F. TUMBLER BEARING ASSEMBLY

The bearing box is the holder for the pillow block bearing and it also has the adjustments for the basket on it. The bearings are what support the tumbler support and basket to the dryer. The rotational sensor is another safety device to stop the motor if it senses the basket has stopped during a cycle.



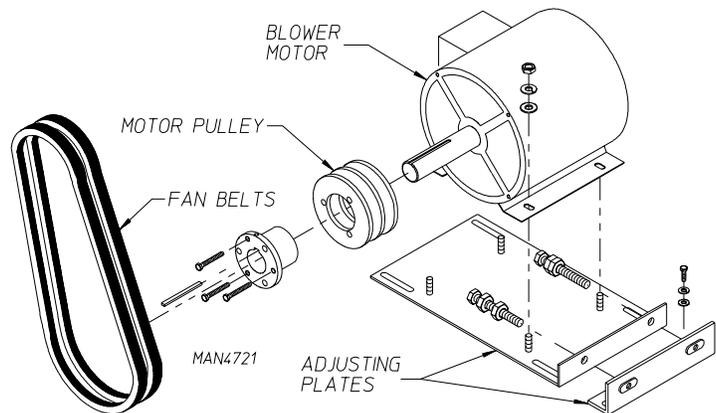
## G. IDLER ARM ASSEMBLY

The idler arm/pulley has the purpose of taking the speed of the motor and reducing it. Adding torque to the 18" (46 cm) basket pulley is also the function of the idler arm/pulley.



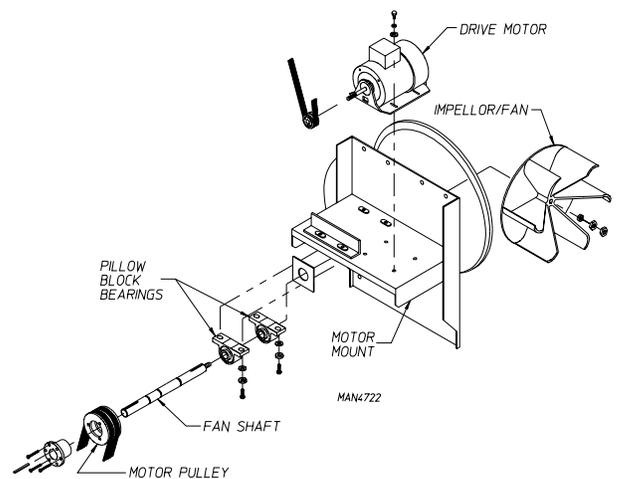
## H. BLOWER MOTOR

The blower/fan motor has only one purpose in the dryer. It produces the airflow (cfm) throughout the machine.



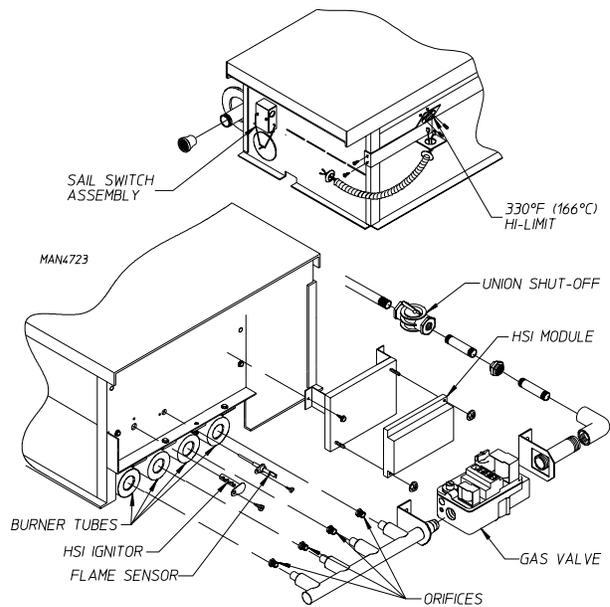
## I. DRIVE/FAN MOUNT ASSEMBLY

The drive motor is used to turn the basket in the forward and reverse motion. The fan mount assembly is used to increase the speed of the blower motor which in turn increases the cfm throughout the machine.



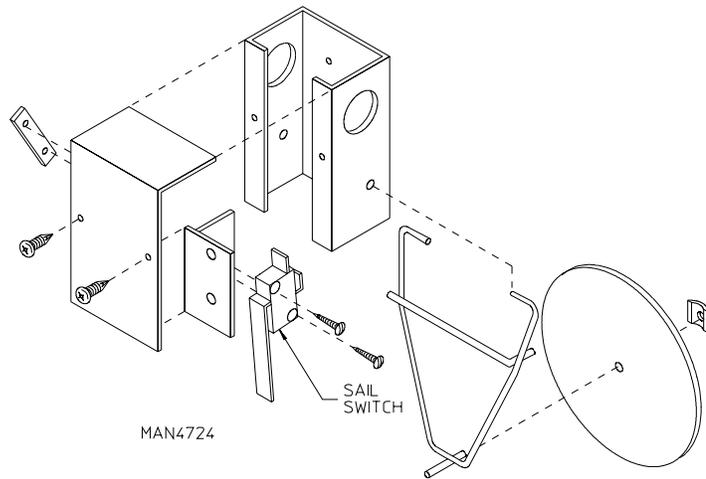
## J. HSI (HOT SURFACE IGNITION) BURNER BOX ASSEMBLY

The HSI (Hot Surface Ignition) burner box assembly consists of a number of very important parts for the dryer. A gas valve, hot surface ignitor, hot surface module, flame sensor, sail switch, burner hi-limit. These parts are for the “heat” of the dryer.



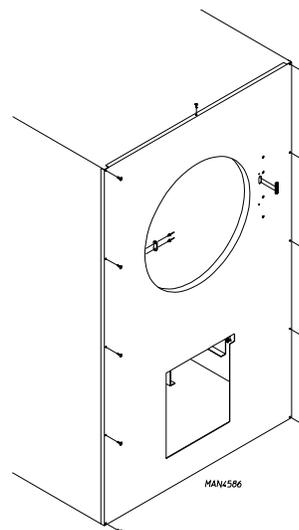
## K. SAIL SWITCH ASSEMBLY

The sail switch assembly is used on gas and electric heated machines. It is an airflow switch, the damper pulls in due to the air suction on the burner; making the switch which lets the voltage proceed to the HSI (Hot Surface Ignition) module.



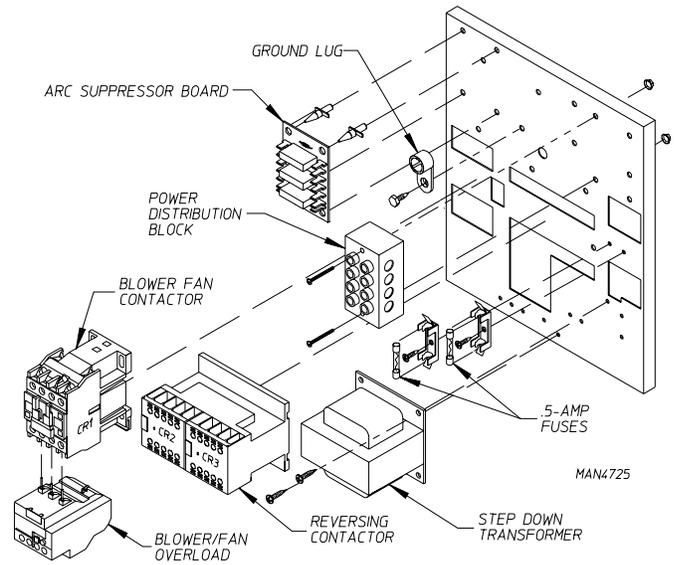
## L. FRONT PANEL ASSEMBLY

The front panel is a little different than our other models. This one is the full height and width of the dryer.



## M. REVERSING RELAY PANEL

This panel is located in the back of the machine at the upper left hand corner. On this panel is an arc suppressor (A.S.) board which filters out “noise” that might go to the coils of the contactors. Also mounted on this panel are the drive and blower/fan contactors. The two (2) fuses mounted on the panel are protecting the L1 and L3 voltage. The transformer is stepping down the incoming voltage to 24 VAC to supply the voltage to the computer and controls.



# SECTION V

## SERVICING

### INTRODUCTION

**ALL** electrical and 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.

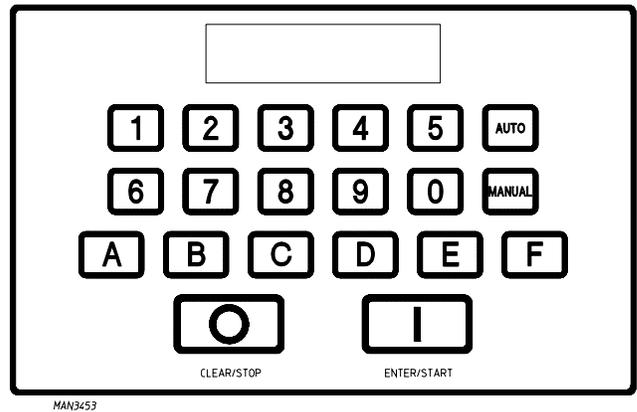
**CAUTION:** Observe **ALL** safety precautions displayed on the dryer or specified in this manual before and while making repairs.

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

## A. COMPUTER CONTROLS

### To Replace Computer Board

1. Disconnect electrical power to dryer.
2. Unplug keyboard ribbon from rear of computer.
3. Unplug all wiring harnesses connected to the computer board.
4. Remove the two (2) screws securing the computer to the computer panel. Remove the computer by pulling the other two corners off the clinch studs.
5. Install new computer by reversing this procedure.

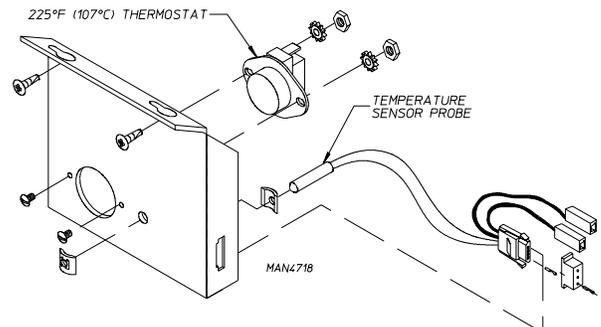


### To Replace Keyboard Label Assembly

1. Discontinue electrical power to the dryer.
2. Unplug keyboard ribbon from rear of computer.
3. Slowly peel off and remove keyboard label assembly from control panel.
4. Peel paper backing off new keyboard label assembly.
5. Holding the new keyboard label assembly close to the panel, insert the keyboard 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 ribbon to the computer.
7. Reestablish electrical power to dryer.

### To Replace Microprocessor Temperature Sensor Probe

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



**NOTE: DO NOT** remove screws.

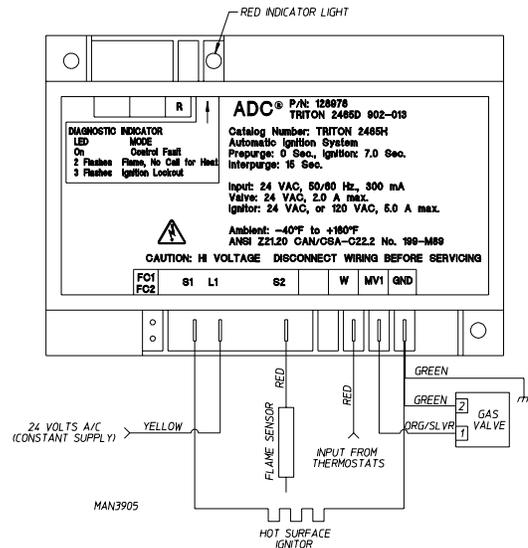
- Disassemble sensor probe from bracket assembly by removing the top push-on fastener securing the probe from bracket. Use a small screwdriver to slowly pry the fastener off.
- Disconnect the two (2) orange wires from the high heat (225° F [107° C]) thermostat, and remove modular bracket connector, wires,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

**NOTE:** If, when electrical power is reestablished, the computer display reads “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE,” check for a loose connection in the wiring.

## B. IGNITION CONTROLS

### To Remove Hot Surface Ignitor

- Discontinue electrical power to the dryer.
- Disconnect wire from S1 and GND on the HSI module.
- Disassemble ignitor from burner by removing the one (1) self tapping screw.
- Reverse procedure for installation of new ignitor.



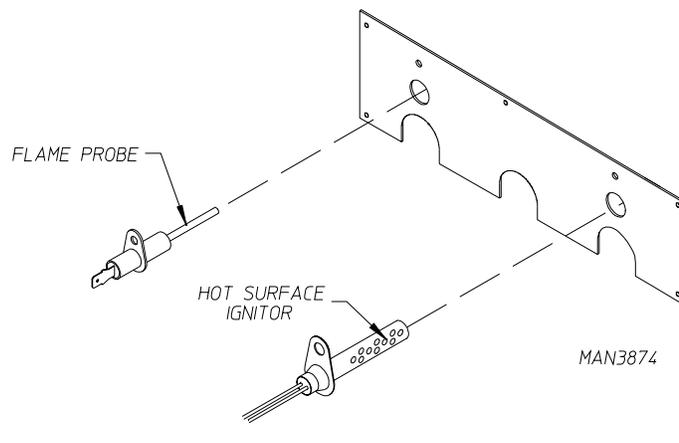
### To Remove Flame Sensor Probe

- Discontinue electrical power to the dryer.
- Disconnect the red wire from the flame sensor probe which goes to S2 on the HSI module.
- Disassemble flame sensor probe from burner by removing the one (1) self tapping screw.
- Reverse procedure for installation of new flame sensor probe.

### HSI Ignitor Flame Sensor Probe

**NOTE:** Before reestablishing electrical power to dryer visually check the following. (Refer to illustration):

- That the Hot Surface Ignitor wires are connected to S1 and GND on the HSI module.
- DO NOT** wrap the hot surface ignitor wires and the flame electrode wire together. Improper operation may result. They may run alongside each other.



## To Replace Gas Valve (Refer to burner illustration on **page 14**)

1. Discontinue electrical power to the dryer.
2. Close shut-off valves 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 four (4) screws securing pipe brackets to burner.
6. Remove valve and 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.

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

## To Replace Main Burner Orifices

1. Refer to “To Replace Gas Valve” above and follow *Step #1 through Step #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. Reverse the removal procedure for reinstalling.

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

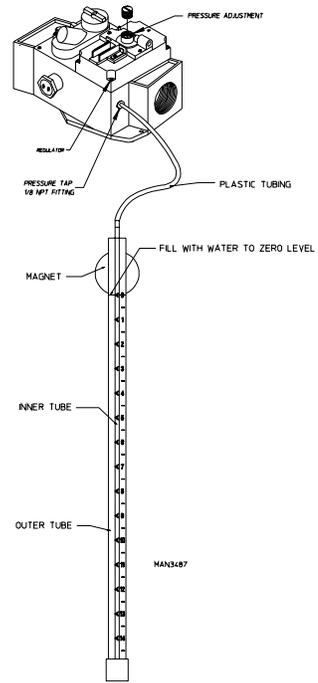
**WARNING: NEVER TEST FOR LEAKS WITH A FLAME!!!**

## To Test and Adjust Gas (Water Column) Pressure

There are two (2) types of devices commonly used to measure column pressure. They are spring and mechanical-type gauges and manometers. The spring and 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 (W.C.) Pressure:
  - a. Connect water column test gauge connection to gas valve pressure tap (1/8" NPT). 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 Water Column - 8.7 mb.
    - L.P. Gas - 10.5 Inches Water Column - 26.1 mb.
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, problems may be due to an undersized gas supply line, a faulty or underrated gas meter, etc.

### To Convert Natural Gas to 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 **Step #1 through Step #6**.
  - a. Remove top vent cap.
  - b. Insert spring and pin.
  - c. Replace vent cap.
2. Unscrew main burner orifices and replace with L.P. orifices.

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

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

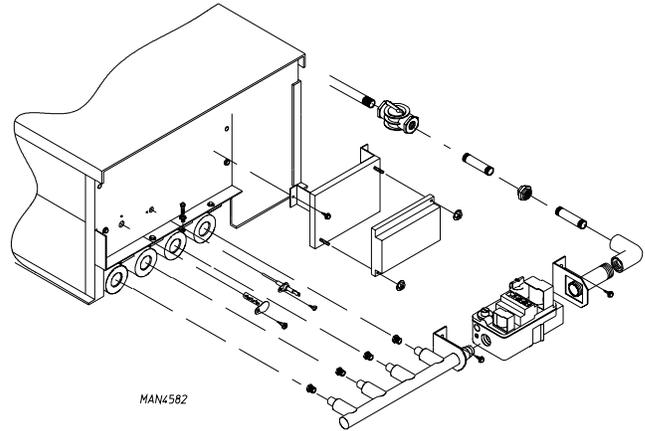
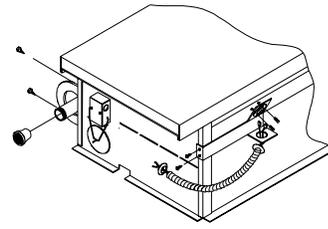
**WARNING:** Test **ALL** connections for leaks by brushing on a soapy water solution.

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

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

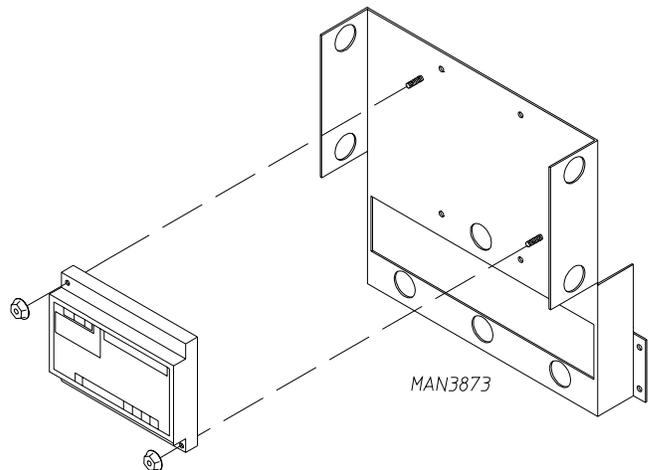
## To Replace Burner Tubes

1. Refer to “Replace Gas Valve” and follow *Steps #1 through Step #6*.
2. Remove four (4) screws securing the Hot Surface Ignitor (HSI) module mounting bracket.
3. Remove 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 burner box cover plate to the oven and remove the cover.
6. Remove burner tubes by sliding them out.
7. Replace by reversing procedure.



## To Replace HSI Module

1. Discontinue electrical power to the dryer.
2. Remove the wires connected to the terminal strip at the bottom of the module. (Mark correct location of each wire to aid in replacement on new module).
3. Remove the four (4) pal nuts securing the module to the mounting bracket.
4. Replace module by reversing procedure.
5. Reestablish electrical power to dryer.

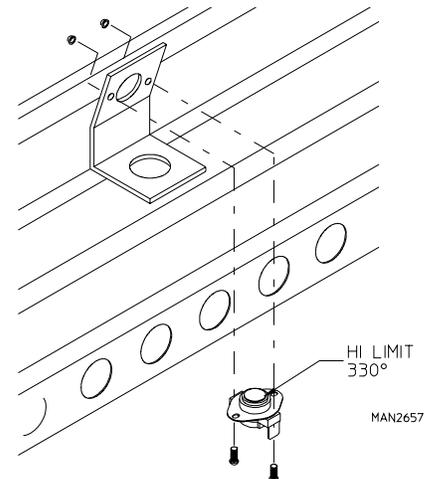


## C. TO REPLACE BURNER HI-LIMIT THERMOSTAT (GAS MODELS ONLY)

1. This thermostat is an important safety device as an added protection against failure of the airflow (sail switch) to open in the event of motor failure or reduced airflow conditions.

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

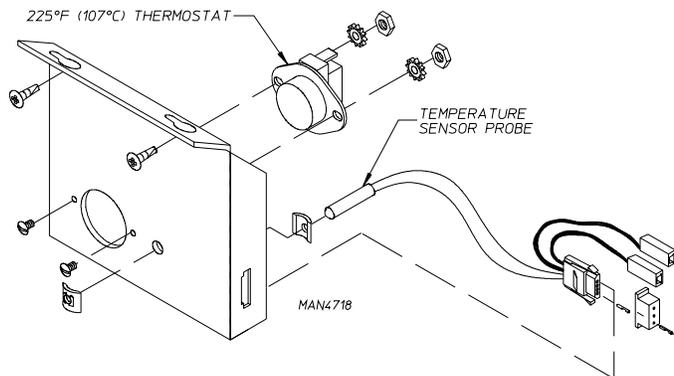
**NOTE:** Models manufactured as of 1998 are equipped with a manual reset hi-limit thermostat.



1. Discontinue electrical power to the dryer.
2. Disconnect wires from hi-limit thermostat.
3. Remove the two (2) screws, washers and nuts securing thermostat to the bracket. Remove thermostat.
4. Reversing procedure for installing new thermostat.
5. Reestablish electrical power to 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 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 motor will remain on, even if the thermostat is open.



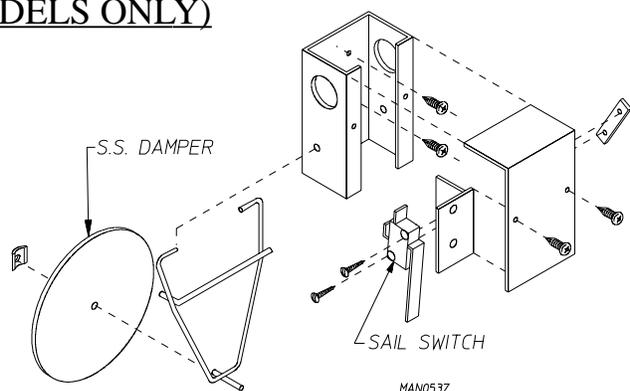
1. Disconnect electrical power to dryer.
2. Open lint door.
3. Locate sensor bracket assembly and loosen the two (2) Phillips head screws securing bracket assembly to the tumbler wrapper.

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

4. Remove bracket assembly by slightly sliding bracket toward 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.



## To Replace Sail Switch

1. Discontinue electrical power to the dryer.
2. Remove the two (2) screws which hold the 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 described in the next section.

## To Adjust Sail Switch

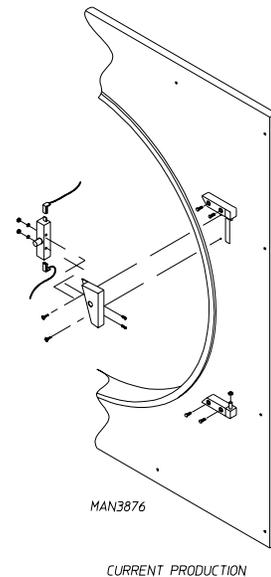
With the dryer operating at a high temperature setting, pull the sail switch away from the burner. The sail switch should open and extinguish the burner. Let the sail switch damper return to the burner wall. The sail switch should close to restart the burner ignition cycle. If the sail switch circuit 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.**

## E. FRONT PANEL and MAIN DOOR ASSEMBLIES

### To Replace Main Door Switch

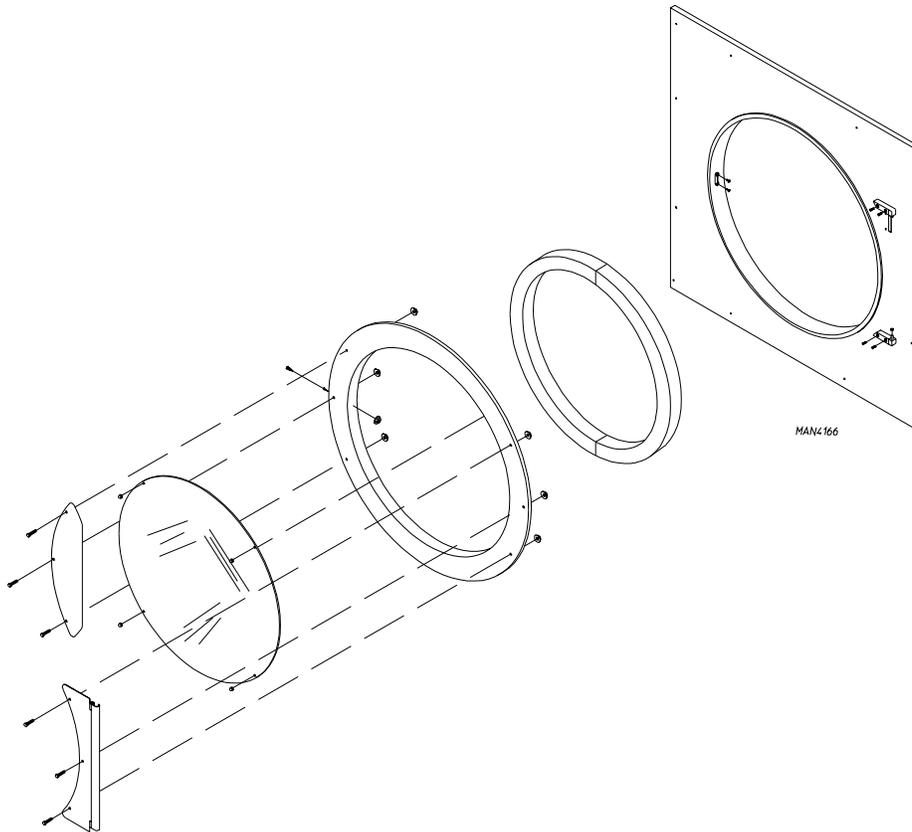
1. Discontinue electrical power to the dryer.
2. Open main door.
3. Remove the two (2) Phillips head screws holding the main door switch bracket assembly in place.
4. Disconnect wiring from switch assembly.
5. Reverse this procedure for installing new door switch assembly.
6. Reestablish electrical power to dryer.



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

## To Replace Main Door Assembly

1. Open main door.
2. Holding the door upward remove the two (2) screws from the top hinge block.
3. Lift the door up to remove.
4. 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 back of door face down.
3. Remove glass and clean all old sealant off main door. This area must be completely clean for correct bonding.
4. Apply a narrow bead of silicone (**ADC** P/N 170730) all around main door area where glass will rest.
5. Install glass onto door and adhesive. Slightly/gently press glass into place.
6. The door assembly **should now be** put in an area where it will not be disturbed for a few hours. This will give the silicone a chance to harden.

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

7. After the curing period, install the main door on the dryer by reversing *Step #4 through Step #1*.

**NOTE:** Once the silicone is cured you may want to trim any excess silicone on the inside of the main door assembly.

### To Replace Front Panel

1. Discontinue electrical power to the dryer.
2. Remove bottom lint door assembly.
3. Remove the front panel by removing the screws.

**IMPORTANT:** When pulling the front panel off, the door switch harness in the upper right hand corner *must be* unplugged.

**NOTE:** The main door assembly can be removed to make the panel removal easier. Refer to “Replace Main Door Assembly” directions.

4. Disconnect other door switch wiring switch from the old panel and reinstall on the new front panel.
5. Reinstall the new front panel by reversing *Step #1 through Step #3*.
6. Reestablish electrical power to dryer.

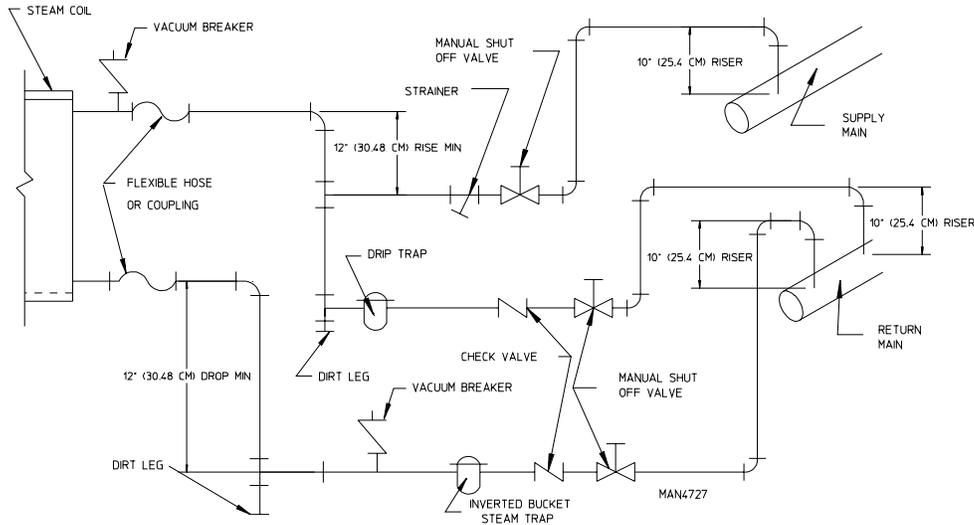
### To Replace Main Door Hinge Block

1. Discontinue electrical power to the dryer.
2. Follow procedure for removal of main door assembly for top hinge removal.
3. Remove the two screws from the bottom hinge block.
4. Reassemble by reversing removal procedure.

## F. STEAM CONTROLS

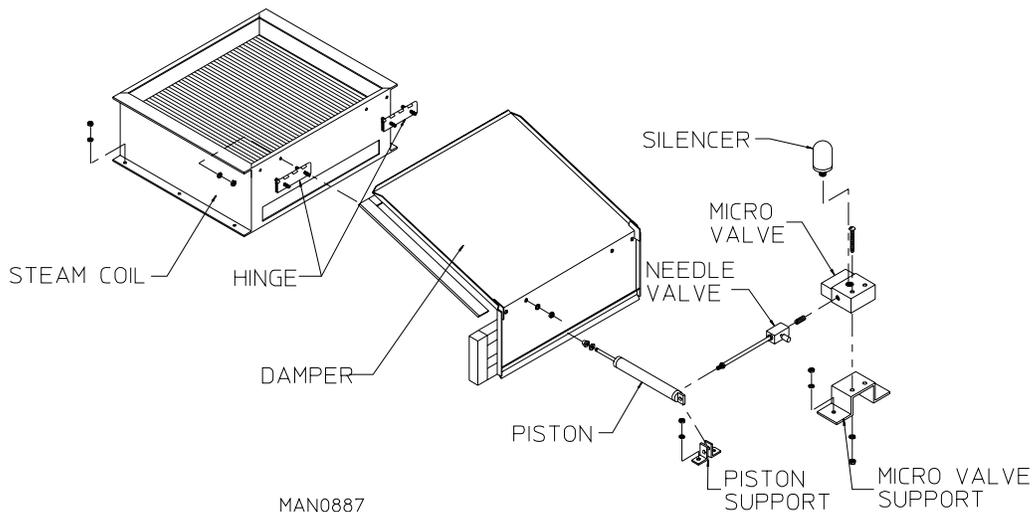
### Installation

Piping must be installed in accordance with good commercial steam system practice. See the illustration below for a typical pipe arrangement.



### To Replace Steam Coil (Damper System)

1. Discontinue electrical power to the dryer.
2. Remove the four (4) lock washers and hex nuts securing the hinges to steam coil.
3. Remove hinges from steam coil housing (these will be used on new assembly).
4. Remove six (6) washers and hex nuts securing steam coil to dryer.
5. Remove steam coil assembly.
6. Reverse procedure for new steam coil assembly.



## To Replace Piston

1. Discontinue electrical power to the dryer.
2. Discontinue the air supply to the dryer.
3. Remove left and right piston supports by removing two (2) washers and hex nuts and slide pin out.
4. Remove 1/8" M.P.T. connector from the piston and remove acorn nut on the end of piston shaft (this will be used on new piston).
5. Reverse procedure for installing new piston.

## To Replace The Needle Valve

1. Discontinue electrical power to the dryer.
2. Discontinue the air to the dryer.
3. Remove the 1/8" brass close nipple from the needle valve.
4. Remove the 1/8" M.P.T. connector from the needle valve.
5. Remove the needle valve.
6. Reverse procedure to install new needle valve.

## To Replace the 3-Way Micro Valve

1. Discontinue electrical power to the dryer.
2. Discontinue the air to the dryer.
3. Remove inlet side of air from the 3-way valve.
4. Remove the two (2) 1 inch machine bolts and mounting hardware holding the 3-way valve to the bracket.
5. Remove the 1/8" brass close nipple from the outlet side of the valve.
6. Remove valve.
7. Reverse procedure to install new micro valve.

## To Replace Steam Coil

1. Shut off steam supply line to the dryer and run dryer to remove any condensation.
2. Discontinue electrical power to the dryer.
3. Break union at flexible hose just before the steam coil at both inlet and outlet.

**CAUTION:** Steam coil and/or piping may be hot, allow time to cool.

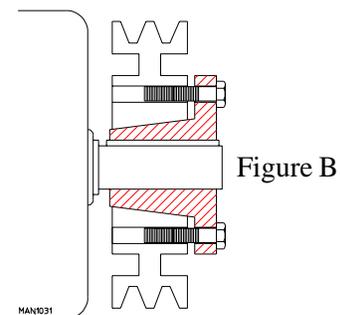
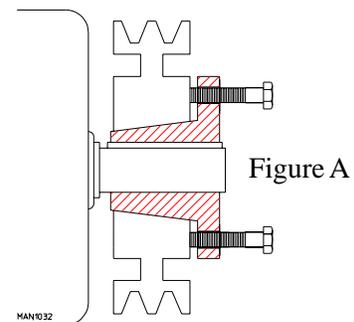
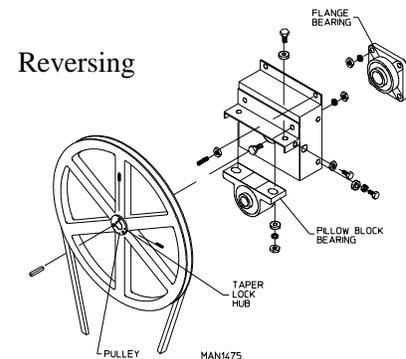
4. Remove remaining piping from steam coil.
5. Remove six (6) screws holding coil to steam rack and lift core out.
6. Reverse procedures for installing new core.

## G. TUMBLER and BEARING ASSEMBLY

(Remove back guard to access assembly)

### To Replace Tumbler Pulley (Reversing)

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



**IMPORTANT:** Tighten screws evenly and progressively. Never allow the pulley to be in contact with the flange of the bearing. This gap should measure from 1/8" to 1/4". Proper cap screw torque is 30 ft.-lbs. (4.14 kg-m), if greater tightening forces are applied, excess pressure will be created in the hub of the mounted pulley which may cause it to crack.

### To Replace The Rear Tumbler Bearing

1. Remove tumbler pulley (follow tumbler pulley removal procedure).
2. Remove the four (4) bolts securing the bearing box to the back of the dryer.
3. Loosen set screws securing bearing to shaft.
4. Pull bearing box and bearing off of shaft.

**NOTE:** If any rust has developed, use an emery cloth to polish the shaft.

5. Remove bolts securing bearing to bearing box and remove tumbler bearing.
6. Reverse procedure for installing new tumbler bearing.

**NOTE:** Check alignment of pulleys before operating dryer.

### To Replace The Front Tumbler Bearing

1. Remove tumbler pulley and bearing box (follow “To Replace The Rear Tumbler Bearing” *Step #1 through Step #4*).
2. Loosen set screws on rear tumbler bearing.
3. Using a wheel puller gently push the tumbler shaft towards the front through the front tumbler bearing.

**NOTE:** An alternate method would be to place a block of wood on the end of the tumbler shaft and strike it with a heavy hammer. To prevent damage to the shaft the wheel puller method is preferred.

4. Remove the four (4) nuts securing the bearing to the dryer back and remove the bearing.
5. Reverse procedure for installing new tumbler bearing.

**NOTE:** Check tension of belts and alignment of tumbler before operating dryer.

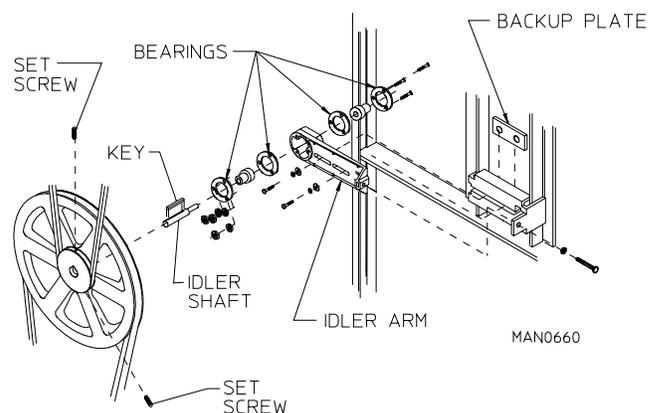
6. Replace back guard.

## H. IDLER SHAFT and BEARING ASSEMBLY

(Remove back guard to access assembly)

### To Replace Idler Pulley

1. Remove back guard.
2. Loosen V-belts, then rotate pulley and roll V-belts out of grooves.
3. Loosen the two (2) set screws on the pulley and pull off the shaft.
4. Reverse procedure for installing new idler pulley.



**NOTE:** Check tension and alignment of belts before operating dryer.

### To Replace Idler Bearing

1. Remove idler pulley (follow “To Replace Idler Pulley”).
2. Remove idler arm.

- a. Remove two (2) bolts securing idler arm to the idler backup plate.
  - b. Remove idler arm assembly.
  - c. Loosen set screws on both the front and rear bearing and remove the idler shaft.
  - d. Remove three (3) bolts securing the bearing to the idler arm and remove bearings.
3. Reverse procedure for installing new idler bearings.

**NOTE:** Check tension and alignment of belts before operating dryer.

## I. DRIVE PULLEY

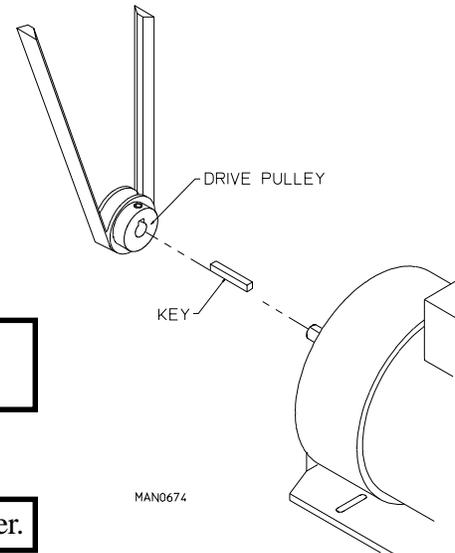
(Remove back guard to access assembly)

1. Remove back guard.
2. Loosen V-belts, then rotate pulley and roll V-belts out of grooves.
3. Loosen set screws and pull motor pulley off.

**NOTE:** If rust has developed on the shaft use an emery cloth to polish the shaft.

4. Reverse procedure for installing new drive pulley.

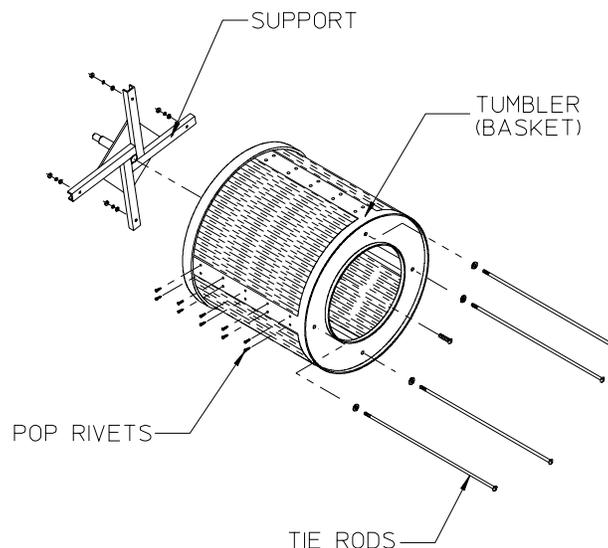
**NOTE:** Check tension and alignment of belts before operating dryer.



## J. TUMBLER (BASKET)

### Tumbler Alignment (Vertical)

1. Discontinue electrical power to the dryer.
2. Remove back guard.
3. Loosen the four (4) hex head bolts on the sides of the bearing box (2 on each side).
4. Back off jam nuts on the two (2) Allen head adjustment screws at the top of the bearing box.
5. Turn the screws clockwise (CW) evenly to raise the tumbler or counterclockwise (CCW) evenly to lower the tumbler.



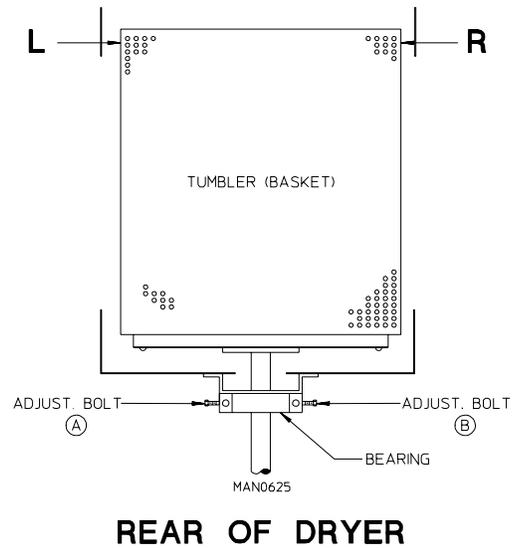
**NOTE:** V-belt tension may need to be loosened.

6. Rotate the tumbler from the front and check alignment with the main door opening.

7. Leave a larger gap from the inside ring on the top of the front panel opening to the tumbler, and a smaller gap on the bottom to compensate for the weight of the clothes being dried.
8. Tighten the four (4) hex head bolts on the sides of the bearing box, and the two (2) Allen head adjustment screws.
9. Replace back guard.
10. Reestablish electrical power to the dryer.

### Tumbler Alignment (Lateral)

1. Discontinue electrical power to the dryer.
2. Remove back guard.
3. Loosen the two (2) hex head bolts, (one turn is enough), that holds the pillow block bearing to the bearing box.
4. Back off the two (2) jam nuts on the side adjustment bolts. Now rotate the tumbler from the front of the dryer, checking the space between the tumbler and the front panel. This **should be** equal on the left hand and right hand side.
5. Lateral adjustment (viewing from the rear)
  - a. Loosening (by turning counterclockwise [CCW]) the left hand adjustment bolt and tightening (by turning clockwise [CW]) the right hand adjustment bolt will shift the basket to the right.
  - b. Loosening (by turning counterclockwise [CCW]) the right hand adjustment bolt and tightening (by turning clockwise [CW]) the left hand adjustment bolt will shift the basket to the left.
6. Tighten and secure both adjustment bolts and jam nuts.
7. Tighten the bearing box bolts.
8. Replace back guard and reestablish electrical power to the dryer.



### To Replace The Tumbler And/Or Tumbler Support

1. Remove tumbler pulley.
2. Remove front panel assembly.
  - a. Discontinue electrical power to the dryer.
  - b. Open control (service) door.
  - c. Open lint door.
  - d. Remove the screws securing the front panel to the dryer.
  - e. Gently remove the top right hand corner of the front panel assembly from the dryer.

- f. Disconnect the main door switch harness at connector.

**IMPORTANT:** When removing front panel assembly be careful not to damage door switch wires.

3. Loosen set screws on rear tumbler bearings.
4. Using a wheel puller gently push the tumbler shaft towards the front through the tumbler bearings.

**NOTE:** An alternate method would be to place a block of wood on the end of the tumbler shaft and strike it with a heavy hammer. To prevent damage to the shaft, the wheel puller method is preferred.

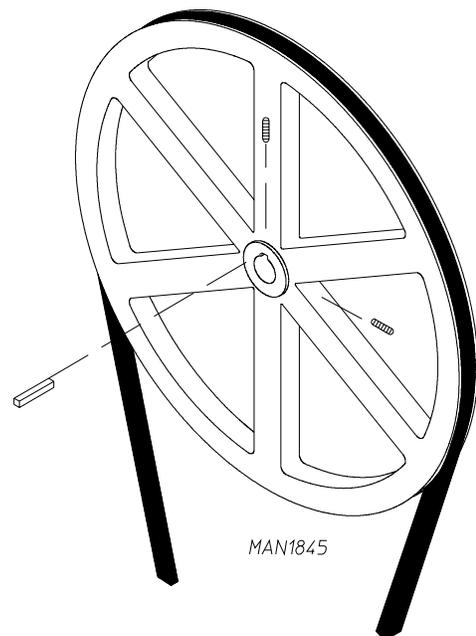
5. Remove the tumbler and support through the front of the dryer.
  - a. Remove the bolt in the center of the tumbler back wall.
  - b. Loosen and remove the nuts and washers from the tumbler tie rods. Remove the rods.
  - c. Replace either tumbler or tumbler support by reversing the procedure.
6. Reassemble components into dryer by reversing *Step #1 through Step #4*.
7. Check tumbler lateral and vertical alignment. Also, check belt tension and alignment.
8. Replace back guard and reestablish electrical power to dryer.

## K. V-BELTS (REFER TO ILLUSTRATIONS IN SECTIONS I and K)

V-belts **should have** proper tension. If too loose, they will slip, if too tight excessive wear on the bearing 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 the belt.

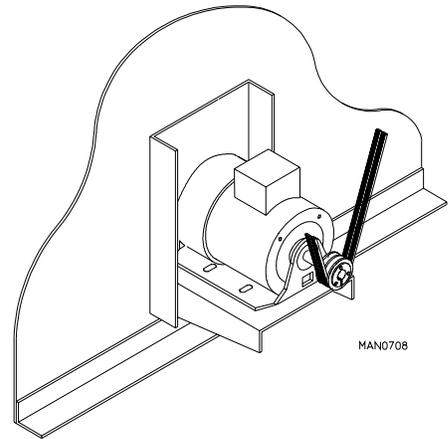
### V-Belt Tension Adjustment-Tumbler To Idler

1. Loosen two (2) bolts connecting idler arm to backup plate.
2. Back off jam nut on the adjustment bolt.
3. Tighten belts by turning adjustment bolt clockwise (CW).  
(Turn counterclockwise [CCW] to loosen belts)
4. Tighten both bolts connecting idler arm to backup plate.
5. Check vertical plane of idler pulley for parallel alignment with tumbler pulley.
6. If realignment is required, loosen tumbler pulley and move tumbler pulley to proper position.
7. Retighten jam nut.



## V-Belt Tension Alignment - Motor To Idler

1. Loosen two (2) bolts connecting idler arm to backup plate.
2. Back off on jam nut(s) on the adjusting bolt.
3. Loosen/tighten adjustment bolt to decrease/increase belt tension.
4. Tighten adjustment bolt jam nut(s).
5. Tighten the two (2) bolts loosened in ***Step #1***.



## 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.

# SECTION VI

## PHASE 6 OPL SYSTEM DIAGNOSTICS

**IMPORTANT:** You must **DISCONNECT and LOCKOUT THE ELECTRIC, GAS or 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.**

**ALL** major circuits, including door, microprocessor temperature sensor, heat and motor circuits are monitored. The Phase 6 OPL microprocessor controller (computer) will inform the user, via the L.E.D. (light emitting diode) display of certain failure codes, along with indicators both in L.E.D. display and at the output of each relay (and door switch circuit) to easily identify failures.

### A. DIAGNOSTIC (L.E.D. DISPLAY) FAILURE CODES

1. **SAIL SWITCH FAIL**- This routine will prevent start up on the machine unless the sail switch is in the correct position. If the sail switch is closed prior to start up the display will read “SAIL SWITCH FAIL” along with an audio indication.
2. **No AIRFLOW**- If the sail switch opens during cycle operation the display will read “No AIRFLOW” along with an audio indication. The machine will continue to run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). Upon failure the machine will shut down and display “No AIRFLOW” with an audio indication.
3. **bURNER SAFETY FAIL**- Routine monitors the temperature above the burner. If the Burner Hi-Limit switch opens the display will read “bURNER SAFETY FAIL.” The machine will run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). Upon failure the machine will shut down and display “bURNER SAFETY FAIL” with an audio indication.
4. **dRUM SAFETY FAIL**- This routine monitors the tumbler temperature of the tumbler Hi-Limit switch opens prior or during the cycle while the heat was on the machine will display “dRUM SAFETY FAIL.” The machine will continue to run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). Upon failure the machine will shut down and display “dRUM SAFETY FAIL” with an audio indication.
5. **No HEAT**- This routine monitors the burner ignition. If the burner mis-ignites (does not light) the HSI (Hot Surface Ignition) module will check to see if the microprocessor program has any retries left. The standard retry count is two (2). If the module notices that there are retries left it will purge for one (1) minute then try to ignite the burner again. The HSI module will try this for a total of three (3) times or until there are no retries left. If the burner does not ignite after three attempts the L.E.D. display will display the error code “no heat” with an audio indication. When this occurs the machine will run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C).

**IMPORTANT:** For other countries, such as Australia, the retry count *may not* apply due to local approvals.

6. **bURNER CONTROL FAIL**- This routine monitors the ignition control’s gas valve output response. If the valve output signal is not present from the ignition control within the valve time limits the Phase 6

microprocessor controller (computer) determines the ignition control has failed. If this occurs when the cycle is active the machine will display “bURNER CONTROL FAIL.” If the tumbler temperature is above 100° F (38° C) the machine will continue to display “bURNER CONTROL FAIL.” The machine will run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). If the tumbler temperature is below 100° (38° C) upon failure the machine will shut down and display “bURNER CONTROL FAIL” with an audio indication.

7. **bURNER FLAME FAIL-** This routine allows two (2) Flame out retries to occur before proceeding into the error. The count of two (2) will be established every time the call for heat was to occur. Only if it reaches the count of two (2) before the tumbler temperature has reached the set temperature will this error be triggered. The machine will run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). If the tumbler temperature is below 100° F (38° C) upon failure, the machine will shut down and display “bURNER FLAME FAIL” with an audio indication. This process will occur every time the heat output is active.
8. **MAIN DOOR-** This monitors the door circuit. If the machine was not active and the main door was opened the display would read “REAdY.” If a program attempt was made with the main doors open the display will read “MAIN dOOR” with an audio indication. If the machine is active and the main door was opened the display would read “MAIN dOOR” with no audio indication and the dryer will shut down. Once the main door has closed the display would read “PRESS START” press the “ENTER/START” key and it will continue the programmed cycle.
9. **LINT dOOR-** This monitors the lint drawer and door circuit. If the machine was not active and the lint drawer and door was opened the display would read “REAdY.” If a program attempt was made with the lint drawer and door open the display would read “LINT dOOR” with an audio indication. If the machine is active and the lint drawer and door was opened the display would read “LINT dOOR” with no audio indication and the dryer will shut down. Once the lint door was closed the display would read “PRESS START” press the “ENTER/START” key and it will continue the programmed cycle.
10. **TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE-** This routine monitors the tumbler temperature. When the temperature sensor or fuse opens with the machine not active the display will read “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE” with an audio indication. If the machine was active at the time that the temperature sensor or fuse opened the display would read “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE.” If the tumbler temperature is above 100° F (38° C) the machine will continue to display “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE” with an audio indication and run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). If the tumbler temperature is below 100° F (38° C) upon failure the machine will shut down and display “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE” with an audio indication. The display will continue to read “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE” an audio indication will sound for approximately 5 seconds, every 30 seconds until the problem is corrected or the power to the dryer is disconnected (and the problem is corrected).

<p><b>NOTE:</b> Once the Phase 6 microprocessor controller (computer) detects a problem in the heat circuit, it updates every 30 seconds, so that if the problem was a loose connection in the circuit which corrected itself, the “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE” condition would automatically be cancelled and the display will return to “REAdY.”</p>
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11. **ROTATE SENSOR FAIL-** Indicates a rotational sensor circuit failure meaning that there is a fault somewhere in the basket (tumbler) rotating circuit, or the Phase 6 OPL microprocessor controller (computer) program related to this circuit (program location 2) is set incorrectly. In the active mode it should be (ROTATE SENSOR ACTIVE), if the dryer is not equipped with the optional rotational sensor it should be set in the nonactive mode (No ROTATE SENSOR).

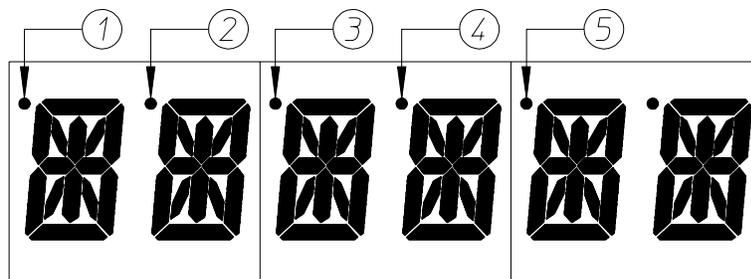
**NOTE:** RPM- This routine monitors the timing response from the existing rotational sensor input and derives a RPM measurement. To display this RPM measurement (press the “ENTER/START” key once and release, then press the “ENTER/START” key a second time and hold. This will display the RPM measurement). The rotational sensor must be active for operation of this feature.

12. **CHECK MAIN FUSE-** Indicates that the circuit fuse protection which is located on the back side of the Phase 6 microprocessor controller (computer) the display would read “CHECK MAIN FUSE.” If the display continues after the fuse has been replaced then it is the fault of the Phase 6 microprocessor controller (computer).

## B. L.E.D. (LIGHT EMITTING DIODE) DISPLAY INDICATORS

The L.E.D. (light emitting diode) indicator dots located on the top portion of the display indicates various Phase 6 OPL computer output functions while a cycle is in progress. These indicator dots (as shown in the illustration below) do not necessarily mean that the outputs are functioning. They are only indicating that the function output should be active (on).

### 1. L.E.D. DISPLAY INDICATOR NUMBER 1

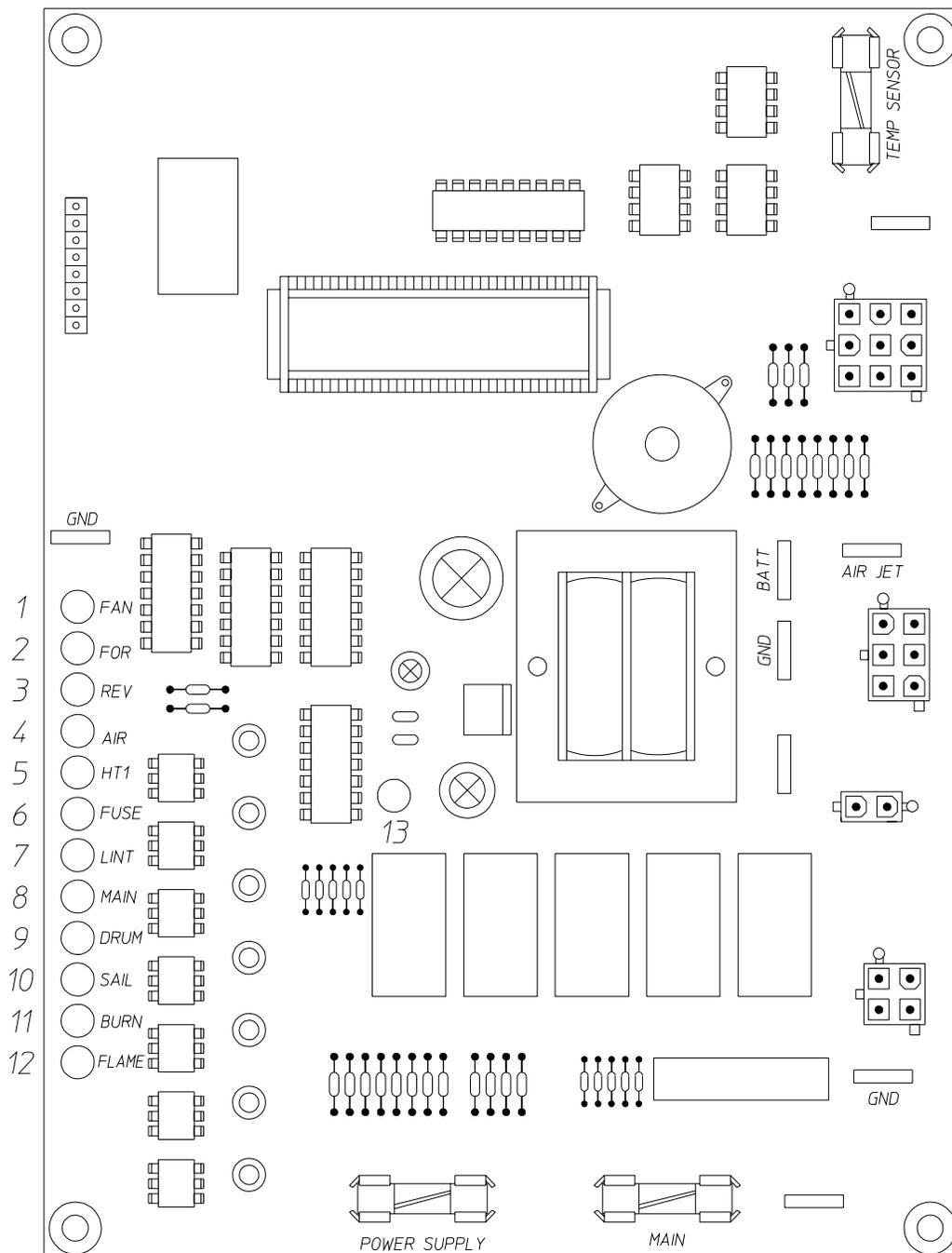


MAN3450

- a. For Optional Reversing Models:
  1. This indicator dot is on when the drive (basket [tumbler]) motor is operating in the forward mode (clockwise direction).
2. **L.E.D. DISPLAY INDICATOR NUMBER 2**
  - a. For Optional Reversing Models:
    1. This indicator dot is on when the drive (basket [tumbler]) motor is operating in the reverse mode (counterclockwise direction).
3. **L.E.D. DISPLAY INDICATOR NUMBER 3**
  - a. Heat Circuit Indicator:
    1. This indicator dot is on whenever the Phase 6 OPL microprocessor controller (computer) is calling for the heating circuit to be active (on).
4. **L.E.D. DISPLAY INDICATOR NUMBER 4**
  - a. On Indicator:
    1. This indicator dot is on whenever a cycle is in progress. Additionally, when the Anti-Wrinkle program is active, the indicator dot will be on whenever the Phase 6 OPL microprocessor controller (computer) is in the Guard On Time program.
5. **L.E.D. DISPLAY INDICATOR NUMBER 5**
  - a. Air Jet Circuit - *OPTIONAL*
    1. This indicator dot is on at the end of the dryer cycle for approximately 60 seconds.

## C. PHASE 6 OPL MICROPROCESSOR CONTROLLER RELAY OUTPUT L.E.D. INDICATORS

There are a series of five (5) L.E.D. (light emitting diode) indicators (ORANGE LIGHTS) located at the backside are of the Phase 6 OPL microprocessor controller (computer). These are identified or labeled (from top to bottom in the illustration below as: FAN-BLOWER, FOR-FORWARD, REV-REVERSE, AIR-AIR-JET, HT1-HEAT OUTPUT). There are a series of seven (7) L.E.D. indicators (red lights) FUSE-MAIN FUSE, LINT-LINT DOOR, MAIN-MAIN DOOR, DRUM-TUMBLER HI-LIMIT, SAIL-SAIL SWITCH, BURN-BURNER HI LIMIT, FLAME-FLAME PROBE). The L.E.D. in the center of the board (red light) indicates power supplied to the Phase 6 OPL microprocessor controller (computer). These L.E.D.'s indicate the inputs and outputs of the Phase 6 OPL microprocessor (computer) as it monitors the safety circuits.



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### **1. “FAN” (BLOWER) Output L.E.D. (light emitting diode) Indicator**

A. If the dryer is started and the blower motor is not operating, yet the Phase 6 OPL microprocessor controller (computer) display fan indicator dot and power supply input L.E.D. are on, but the fan output L.E.D. is off, then the fault is the Phase 6 OPL microprocessor controller (computer) itself.

1. If the motor is not operating. The fan indicator dot and output L.E.D. are also on, then the problem (fault) is elsewhere (i.e., external of the Phase 6 OPL microprocessor controller [computer]).

### **2. “FOR” (FORWARD) Output L.E.D. Indicator (for optional reversing model ONLY)**

A. If the dryer is started and the blower motor is operating, but the drive (basket/tumbler) motor is not, yet the Phase 6 OPL microprocessor controller (computer) display “FORWARD” indicator dot is on, the “FOR” (FORWARD) motor output L.E.D. is off; then the fault is the Phase 6 OPL microprocessor controller (computer) itself.

1. If the drive (basket and tumbler) motor is not operating and the forward indicator dot and output L.E.D. in on; then the problem (fault) is elsewhere (i.e., external of the Phase 6 OPL microprocessor controller [computer]).

### **3. “REV” (REVERSE) 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 and tumbler) motor is not, yet the Phase 6 OPL microprocessor controller (computer) displays “REVERSE” indicator dot is on but the “REV” (REVERSE) motor output L.E.D. is off; then the fault is of the Phase 6 OPL microprocessor controller (computer) itself.

1. If the drive (basket and tumbler) motor is not operating and reverse indicator dot and output L.E.D. is on; then the problem (fault) is elsewhere (i.e., external of the Phase 6 OPL microprocessor controller [computer]).

### **4. “AIR” (AIR JET) Output L.E.D. Indicator - OPTIONAL**

A. “AIR” is on with the display dot at the end of the dry cycle once the display reads “dONE,” it is on for approximately 60 seconds and the output L.E.D. indicator and the display dot go out. If the air jet does not energize it is not the fault of the Phase 6 OPL microprocessor controller (computer). If the output L.E.D. or dot do not go on it is the fault of the Phase 6 OPL microprocessor controller (computer).

### **5. “HT1” (HEAT) Output L.E.D. Indicator**

A. If the dryer is started and there is “No Heat” yet the Phase 6 OPL microprocessor controller (computer) display heat circuit indicator dot is on, but the “HT1” output L.E.D. indicator is off; then the fault is in the Phase 6 OPL microprocessor controller (computer) itself.

1. If the dryer is started and there is “No Heat” yet both the Phase 6 OPL microprocessor controller (computer) display indicator dots and the “HT1” output L.E.D. indicator are on; then the problem (fault) is elsewhere (i.e., external of the Phase 6 OPL microprocessor controller [computer]).

### **6. “FUSE” (MAIN FUSE) Input L.E.D. Indicator**

A. **Should be** on **ALL** the time (even if the dryer is not running). If the L.E.D. is not on; then the display will read “CHECK MAIN FUSE.” If the main fuse is good then the fault is on the Phase 6 microprocessor controller (computer).

**7. “LINT” (LINT DOOR) Input L.E.D. (light emitting diode) Indicator**

- A. Should be on ALL the time (unless the lint door is opened then the “LINT” L.E.D. indicator will go out).
- B. If the dryer is active (running) and the lint door is opened the “LINT” L.E.D. indicator will go out and the display will read “LINT dOOR.” The dryer will stop until the Lint Drawer has been closed, at which time the L.E.D. display will read “PRESS START.” At this time, to resume the drying cycle press “ENTER/START” key.

**8. “MAIN” (MAIN DOOR) Input L.E.D. Indicator**

- A. Should be on ALL the time (unless the lint door is open or the main door is opened then the “MAIN” L.E.D. indicator will go out).
- B. If the dryer is active (running) and the main door is opened the “MAIN” L.E.D. indicator will go out and the display will read “MAIN dOOR.” The dryer will stop until the main door has been closed, at which time the L.E.D. display will read “PRESS START.” At this time, to resume the drying cycle press “ENTER/START” key.

**9. “DRUM” (TUMBLER HI-LIMIT) Input L.E.D. Indicator**

- A. Should be on at ALL times (unless the tumbler hi-limit switch opens prior during the cycle while the heat was on the display would read “dRUM Safety FAIL”). The machine will run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). Then the machine will shut down still displaying “dRUM SAFETY FAIL” with an audio indication.

**10. “SAIL” (SAIL SWITCH) Input L.E.D. Indicator**

- A. This routine will prevent start up on the machine unless the sail switch is in the correct position. If the sail switch is in the closed position prior to start, the “SAIL” output L.E.D. indicator will be off, the machine will not start and the display will read “SAIL SWITCH FAIL” along with an audio indication.
- B. If the sail switch opens during the cycle the “SAIL” output L.E.D. will go out and the display will read “NO AIRFLOW.” The machine will run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C). Then the machine will shut down still displaying “NO AIRFLOW” along with an audio indication.

**11. “BURN” (BURN HI-LIMIT) Input L.E.D. Indicator**

- A. This routine monitors the temperature of the burner. If the burner hi-limit opens during the cycle while the heat was on the “BURN” output L.E.D. indicator goes out and the display reads “bURNER SAFETY FAIL.” The machine will run with no heat for three (3) minutes or until the temperature drops below 100° F (38° C) then the machine will shut down still displaying “bURNER SAFETY FAIL” with an audio indication.

## **12. “FLAME” (bURNER CONTROL FAIL) Input L.E.D. (light emitting diode) Indicator**

- A. This routine monitors the ignition control’s gas valve output response. If the valve output signal is not present from the ignition control within the valve time limits the microprocessor determines the ignition control has failed. If this occurs when the cycle is active the “FLAME” output L.E.D. indicator will go out and the display will read “bURNER CONTROL FAIL.” The machine will run with no heat for three (3) minutes or until the temp drops below 100° F (38° C). Then the machine will shut down still displaying “bURNER CONTROL FAIL” with an audio indication.

## **13. “POWER SUPPLY” Input L.E.D. Indicator**

- A. Should be on at ALL times (even if the dryer is not running). The power supply L.E.D. output indicator will not be on if the power supply fuse to the Phase 6 OPL microprocessor is not present. If the power supply fuse is bad the L.E.D. output will be off and there will be no display or keypad function. The “FUSE,” LINT,” and “DRUM” output L.E.D. indicators will remain on.

## D. L.E.D. CODES

### 1. Display Codes

A	SLOPE FACTOR
ALL REV	ALWAYS REVERSING
ANTI WRINKL dELAY TIME	ANTI-WRINKLE DELAY TIME
ANTI WRINKL GUARd ACTIVE	ANTI-WRINKLE PROGRAM ACTIVE
ANTI WRINKL GUARd ON TIME	ANTI-WRINKLE GUARD ON TIME
AUTO CYCLE	AUTOMATIC MODE
b	HEAT LOSS (OFF SET) FACTOR
bURNER CONTROL FAIL	GAS ONLY POWER (24VAC) IS NOT EVIDENT AT GAS VALVE
bURNER FLAME FAIL	NO BURNER FLAME SENSED
bURNER SAFETY FAIL	GAS/ELECTRIC ONLY BURNER/OVEN OPEN HI-LIMIT CIRCUIT
bUZZ	BUZZER (TONE)
bUZZ TIME	BUZ TIME
CEL	DEGREE IN CELSIUS
CHECK MAIN FUSE	MAIN FUSE FAILURE
CLEAN LINT	PROMPT TO CLEAN LINT SCREEN, DRYER CYCLE LOCK-OUT
COOL	COOL DOWN CYCLE IN PROGRESS
COOL TIME_M	COOL DOWN TIME
COOL TEMP_	COOL DOWN TEMPERATURE
CYCLEA	PREPROGRAMMED CYCLE A
CYCLEb	PREPROGRAMMED CYCLE B
CYCLEC	PREPROGRAMMED CYCLE C
CYCLED	PREPROGRAMMED CYCLE D
CYCLEE	PREPROGRAMMED CYCLE E
CYCLEF	PREPROGRAMMED CYCLE F
dONE	DRYING or COOLING CYCLE COMPLETE OR DRYER IN ANTI-WRINKLE MODE
dRYING	DRYING CYCLE IN PROGRESS
dRY LEVEL_	DRYNESS LEVEL (PERCENTAGE OF EXTRACTION) (NUMERICAL VALUE)
dRY TEMP F_	DRYING TEMPERATURE
dRY TIME_M	LENGTH OF DRYING CYCLE
dRUM SAFETY FAIL	TUMBLER HI-LIMIT CIRCUIT IS OPEN
ELAPSE TIME_MIN	CYCLE DISPLAY TIME
ELECTRIC	SPECIFIC HEAT TYPE OR DRYER ELECTRICALLY HEATED
F	FABRIC TEMPERATURE
FAR	DEGREE IN FAHRENHEIT
FLASH	FLASH DISPLAY ACTIVE
GAS	SPECIFIC HEAT TYPE OF DRYER GAS HEATED
HOT	INDICATES AN OVERHEAT CONDITION
LINT dOOR	LINT DRAWER/DOOR CIRCUIT IS OPEN OR FAULT IN THE A.C. SWITCH CIRCUIT
LINT COUNT	DRYING CYCLES RANGE FROM 1-10 CYCLES BEFORE CLEAN LINT DISPLAY
_M REMAIN	CYCLE DISPLAY TIME
MAIN dOOR	DOOR CIRCUIT IS OPEN OR FAULT IN THE A.C. DOOR SWITCH CIRCUIT
MANUAL CYCLE	MANUAL MODE
MAX ANTI WRINKL GUARd	MAXIMUM GUARD TIME
NFLASH	FLASH DISPLAY NOT ACTIVE
NoAIR FLOW	SAIL SWITCH OPEN
NoANTI WRINKL GUARd	ANTI-WRINKLE PROGRAM IS NOT ACTIVE
NoBUZZ	NO BUZZER (TONE)
NoHEAT	GAS ONLY IGNITION ATTEMPT FAILURE
NoREV	NO REVERSE
NoROTATE SENSOR	NO ROTATIONAL SENSOR SELECTED
PROGRAM	PROGRAM MODE
READy	NO CYCLE IN PROGRESS
ROTATE SENSOR ACTIVE	ROTATIONAL SENSOR SELECTED
ROTATE SENSOR FAIL	ROTATIONAL SENSOR CIRCUIT FAILURE
_RPM	MONITORS TUMBLER RPM WITH ROTATIONAL SENSOR CIRCUIT ACTIVE
SAIL SWITCH FAIL	GAS/ELECTRIC ONLY ATTEMPT MADE TO START DRYER WITH SAIL SWITCH DISABLED IN CLOSED POSITION
SELREV	SELET REVERSE
SPIN TIME	SPIN TIME
START GUARd	START ANTI WRINKLE GUARD CYCLE
STEAM	SPECIFIC HEAT TYPE OR DRYER STEAM HEATED
STOP TIME	STOP TIME
TEMP SENSOR FAIL CHECK	FAULT IN M.P. HEAT SENSING CIRCUIT
TEMP SENSOR FUSE	

## E. FAULT CODES

### **bURNER CONTROL FAIL**

- GAS MODELS ONLY POWER (24 VAC) IS NOT EVIDENT AT GAS VALVE

### **bURNER FLAME FAIL**

- The Phase 6 Microprocessor Controller (computer) **DOES NOT SENSE FLAME VERIFICATION** (GAS MODEL ONLY)

### **bURNER SAFETY FAIL**

- GAS/ELECTRIC ONLY BURNER/OVEN OPEN HI-LIMIT CIRCUIT

### **dRUM SAFETY FAIL**

- Fault in the TUMBLER HI-LIMIT CIRCUIT

### **HOT**

- Indicates an OVERHEAT CONDITION

### **LINT dOOR**

- When the LINT DOOR OR DRAWER is open or there is a **fault** in the LINT DOOR/DRAWER CIRCUIT

### **MAIN dOOR**

- When the MAIN DOOR is open or there is a **fault** in the DOOR CIRCUIT

### **No AIRFLOW**

- **Fault** in the SAIL SWITCH CIRCUIT (GAS/ELECTRIC MODELS ONLY)

### **No HEAT**

- GAS ONLY IGNITION ATTEMPT FAILURE

### **ROTATE SENSOR FAIL**

- **Fault** in the ROTATION SENSOR CIRCUIT

### **SAIL SWITCH FAIL**

- **Fault** in the SAIL SWITCH CIRCUIT (GAS/ELECTRIC MODELS ONLY)

### **TEMP SENSOR CHECK TEMP SENSOR FUSE**

- **Fault** in the MICROPROCESSOR TEMPERATURE SENSOR CIRCUIT

# SECTION VII

## TROUBLESHOOTING

**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.**

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/shorted wire may be at fault where electrical components are concerned...not necessarily the suspected component itself. Electrical parts **should always be** checked for failure before being returned to the factory.

**IMPORTANT:** When replacing blown fuses, the replacement *must be* of the exact rating as the fuse being replaced. The information provided *should not be* misconstrued as a handbook for use by an untrained person in making repairs.

**WARNING: ALL SERVICE and TROUBLESHOOTING *SHOULD BE* PERFORMED BY A QUALIFIED PROFESSIONAL or SERVICE AGENCY.**

**WARNING: WHILE MAKING REPAIRS, OBSERVE ALL SAFETY PRECAUTIONS DISPLAYED ON THE DRYER or SPECIFIED IN THIS MANUAL.**

### **A. No L.E.D. (light emitting diode) display on microprocessor controller (computer)...**

1. Open circuit breaker switch or blown fuse.
2. Tripped blower motor overload.
3. Faulty wiring connection.
4. Faulty transformer.
5. "EMERGENCY STOP" (E-Stop) button is depressed.
6. Faulty microprocessor controller (computer).

### **B. Computer will not accept keypad (touchpad) entries...**

1. Keypad (touchpad) ribbon is not plugged into computer securely.
2. Faulty keypad (touchpad).
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 will not turn...**

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

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

1. Improperly programmed microprocessor controller (computer).
2. An inadequate exhaust duct work system.
3. Restriction in exhaust system.
4. Insufficient make-up air.
5. Poor housekeeping.  
Dirty or clogged lint screen.
6. Washing machine extractors are not performing properly.
7. An exceptionally cold/humid or low barometric pressure atmosphere.
8. The supply gas may have a low heating valve...check with local gas supplier.
9. Failed temperature sensor (temperature calibration is incorrect).
10. Failed microprocessor controller (computer).

**F. Thermal overload for drive 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.

**G. 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. Insufficient make-up air.

**H. Burner hi-limit safety thermostat is tripping...**

1. Insufficient exhaust duct work, size, or restriction in exhaust system.
2. Insufficient make-up air.
3. Lint screen needs cleaning.
4. Damaged impellor.

**I. L.E.D. (light emitting diode) display reads “Temp Sensor Failure Check Temp Sensor Fuse”...**

1. Check 1/8-amp fuse on microprocessor (computer).
2. Faulty microprocessor temperature sensor probe.
3. Open circuit in either one 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).

**J. Dryer does not start...display reads “main door” or “lint door” with an audio indication...**

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 24 VAC transformer.

**K. There is excessive vibration coming from the basket...**

1. Basket is out of adjustment.
2. Drive shaft or idler shaft is out of alignment.
3. Faulty pillow block bearing.
4. Faulty tumbler wheel.
5. Drive motor and shaft not aligned.
6. Faulty retaining wheel.



## 1. No Display Condition

- a. Check fuse 1 or 2 and if either are blown, replace.
- b. Take voltage reading across the microprocessor (J7) 9-pin connector pins 1 and 2. If no voltage is present at pins 1 and 2, double check the secondary (24 VAC) side of transformer at the blower motor contactor number 13 to ground if voltage is present. Problem is bad wire or faulty connection from blower motor contactor #13 back through J2 9-pin connector and then to computer connector pin 1.
- c. Check primary voltage to the 24 VAC transformer. (208-240 VAC). If voltage replace the transformer. If no voltage check blower motor. Overload to see if tripped. If tripped reset, if not tripped check incoming to power block -- (L1, L3).

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

**NOTE:** In this next section when checking for voltage you are looking for 25 AC volts unless otherwise specified.

## 2. Drive motor reverses but does not forward, blower motor runs

- a. If computer dot (first dot on the left) does not come on replace the computer.
- b. Check for voltage across the coil of the forward contactor located in the reversing panel box. The contactor according to your diagram is marked CR2. The coil markings A1 and A2.

If voltage is present, replace reversing contactor.

If voltage is not present, there is a bad wire or termination between BS2 and contactor coil (CR2).

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

If there is no voltage across the two (2) AS2 terminals on the arc suppressor (A.S.) board, the problem is a bad wire or termination between the AS2 board and the J7 9-pin computer connector no. 8 or faulty computer.

## 3. Drive motor works in forward mode but does not reverse, blower motor runs

- a. If computer dot (second one from left) does not come on, check program to see if set for reverse.
- b. If set for reverse, replace computer.
- c. 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) BS3 terminals on the arc suppressor (A.S.) board.

If there is voltage across the two BS3 terminals and no voltage across the coil of the reversing contactor (A1 and A2), the problem is bad wires or terminations between BS1 and the contactor coil.

- d. If there is no voltage between the two (2) BS3 terminals on the arc suppressor board, check for voltage across the two (2) AS3 terminals on the board.

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

If there is no voltage across the two (2) AS3 terminals, the problem is bad wires or terminations between the arc suppressor board and the computer 9-pin connector no. 9 or a faulty computer.

#### 4. Blower motor does not operate, drive motor runs

- a. Check for voltage across terminals A1 and A2 of the impellor contactor. This is the single contactor in the reversing 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, the problem is bad wires or terminations between the contactor and the motor.

- b. If there is no voltage present at A1 and A2 of the contactor, check for voltage across the two (2) BS1 terminals of the arc suppressor (A.S.) board.

If there is voltage present at the two (2) BS1 terminals, the problem is bad wires or terminations between the two (2) BS1 terminals and the coil (A1 and A2) terminals.

If there is no voltage across the two (2) BS1 terminals, check for voltage across the two (2) AS1 terminals.

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

- c. If there is no voltage across the two (2) AS1 terminals, the problem is bad wires or terminations between the two (2) AS1 terminals and the computer board J7 9-pin connector no. 7 or faulty computer.

#### 5. Lint Door Condition

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

- a. Check L.E.D. (light emitting diode) input light "LINT" on the component side of the computer. If the light is on, replace the microprocessor controller (computer).
- b. Check voltage (24 VAC) from J7 9-pin connector no. 3 to ground. If voltage is present check no. 4 to ground if voltage is present replace microprocessor controller (computer).
- c. If no voltage is present at J7 9-pin connector no. 4 to ground, but voltage is present at no. 3 to ground. The problem is a bad switch, wires or termination between J7 to J11 and J11 to the lint switch.

- d. If no voltage is present at J7 9-pin connector no. 3 to ground, then voltage **should not** be present at no. 5 to ground. Replace the microprocessor controller (computer).

## 6. Main Door Condition

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

- a. Check L.E.D. (light emitting diode) input light “MAIN” on the component side of the computer. If the light is on, replace the computer.
- b. Check voltage (24 VAC) from J7 9-pin connector no. 5 to ground. If voltage is present, check no. 6 to ground. If voltage is present, replace board.
- c. If no voltage is present at J7 9-pin connector no. 6 to ground, but voltage is present at no. 5 to ground. The problem is a bad switch, bad wires or terminations J7 to J5, or J5 to main door switch.

## 7. “No Heat” drive and blower motors run, display reads normal (gas models).

- a. Check L.E.D. input light “HT1” on the component side of the computer. If the light is on replace the board.
- b. If the L.E.D. input light “HT1” on the component side of the computer is on and there is no voltage to the Hot Surface Ignitor (HSI) module “w” the display will read “BURNER CONTROL FAIL.” The problem is bad wires or terminations between microprocessor and HSI module.
- c. If voltage is present on the HSI module “w” to ground. Check voltage at the gas valve if voltage is present across the two (2) “yellow” wires at the gas valve and the gas supply is on then the fault is that of the gas valve.

## 8. “Temp Sensor Fail Check”

- a. Replace the temperature sensor underneath the basket on a bracket (the bullet shaped device).
- b. If it still read “TEMP SENSOR FAIL CHECK TEMP SENSOR FUSE,” unplug J3 4-pin connector from the temperature sensor bracket. Also, unplug the microprocessor J14 4-pin connector from the computer board. Take a continuity reading from J14 no. 1 to J3 no. 1, then from J14 no. 2 to J3 no. 2.

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

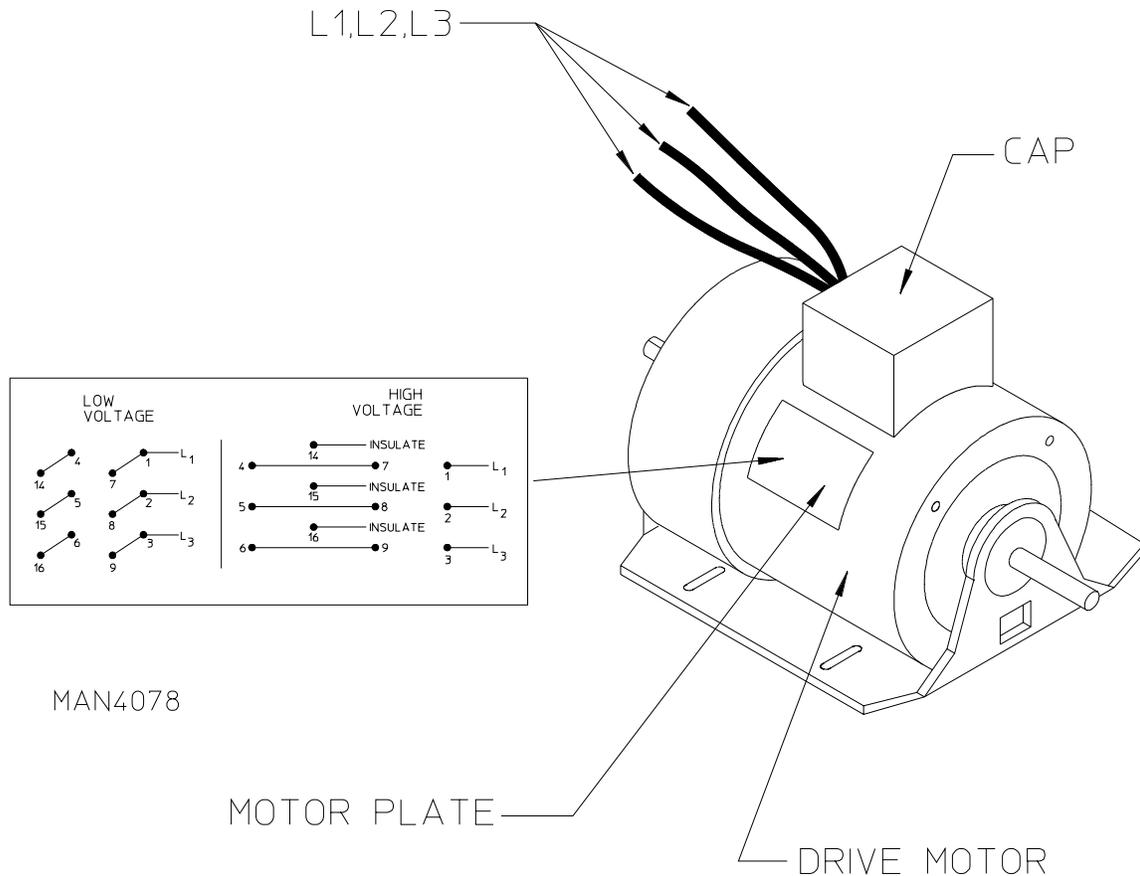
If there is continuity, microprocessor controller (computer) is faulty.

# SECTION IX

## TECHNICAL INFORMATION

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

### A. MOTOR PLATE (HIGH and LOW VOLTAGE)



The motor plate is located on the side of the drive motor (see illustration) and contains a graphical representation of the motor wiring for both low and high voltage ratings.

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

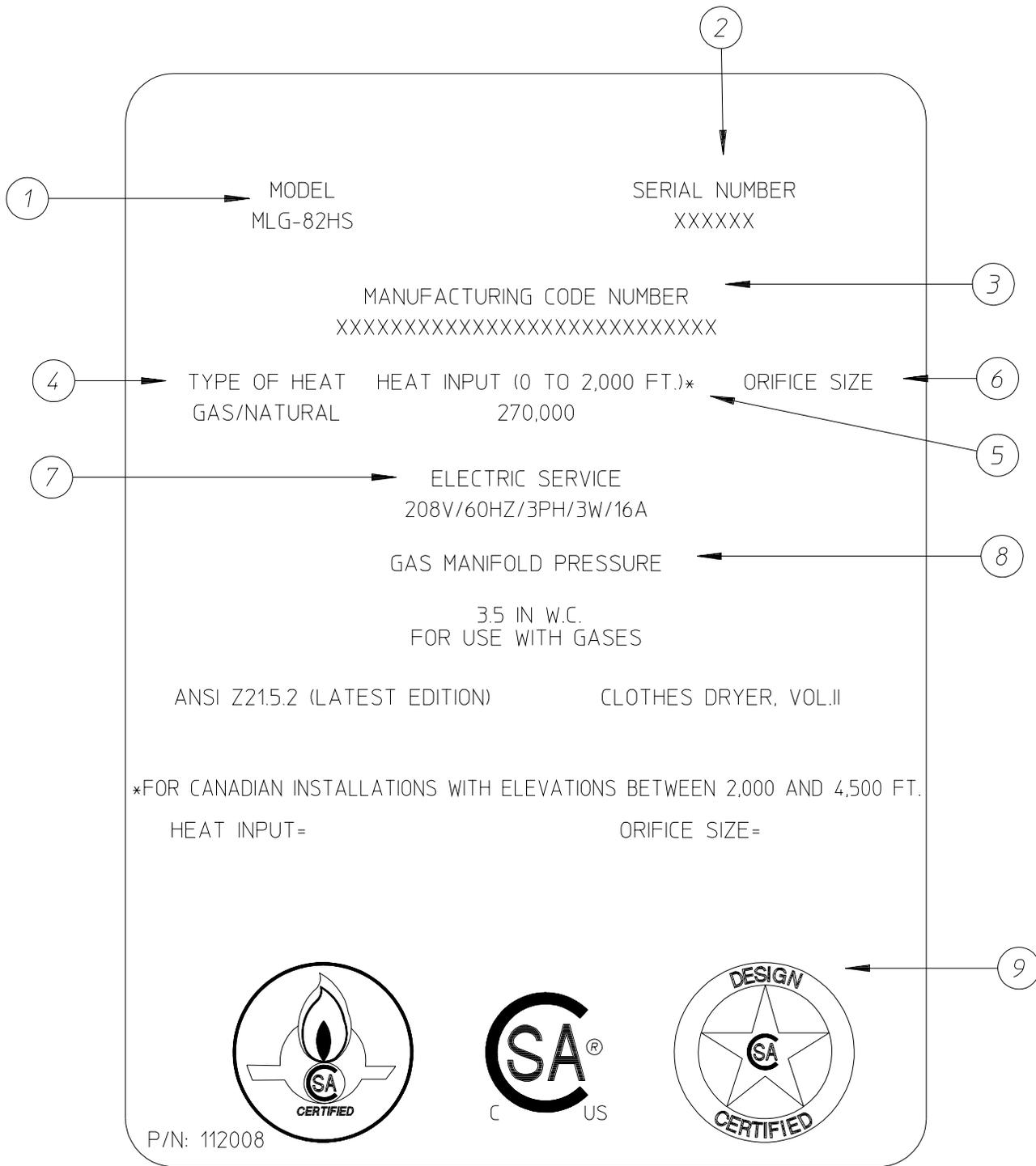
The dots and lines represent connections (refer to the illustration above).

**For example:**

- On low voltage - wire no. 14 connected to wire no. 4
- wire no. 1 is connected to wire no. 7, which in turn are both connected to L1
- On high voltage - wire no. 14 is insulated or capped
- wire no. 4 is connected to wire no. 7
- wire no. 1 is connected to L1

**B. DATA LABEL**

Contact **American Dryer Corporation**



ABE 12/14/99

MAN4826

When contacting **American Dryer Corporation** certain information is required to insure proper service/parts information from **American Dryer**. This information is on the data label located on the inside of the control door. When contacting **American Dryer** please have the model number and serial number available.

## **THE DATA LABEL**

### **1. MODEL DRYER**

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**

The type of heat describes the type heat for your particular dryer; gas (either natural gas or liquid propane [L.P.]), 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., American Gas Association, Canadian Gas Association.

# **IMPORTANT**

## **MANUAL RESET HI-LIMIT INSTRUCTIONS** **FOR PHASE 6 MODELS**

This dryer was manufactured with a manual reset burner hi-limit thermostat which is monitored by the Phase 6 computer. If the manual reset burner hi-limit thermostat is open prior to the start of the machine, the dryer will start momentarily and the shut down displaying “burner safety fail” with an audio indication.

If the manual reset burner hi-limit opens during a drying cycle, the display will read “burner safety fail” with an audio indication. If the drum temperature is above 100° F (38° C), the dryer will continue to run with no heat for three minutes or until the drum temperature has fallen below 100° F (38° C). The clear and stop button on the Phase 6 keypad **must be** pressed to clear this “burner safety fail” condition. The manual reset burner hi-limit switch must be reset “manually” prior to the start of the next drying cycle.

This hi-temperature condition may be caused due to a restricted exhaust, poor airflow or improper burner oven operation.

The location of the manual reset hi-limit switch is on the right side of the burner box.

### **IMPORTANT**

HEATING UNIT IS EQUIPPED WITH A  
HI-LIMIT THERMOSTAT  
WHICH MUST BE ***RESET MANUALLY***.

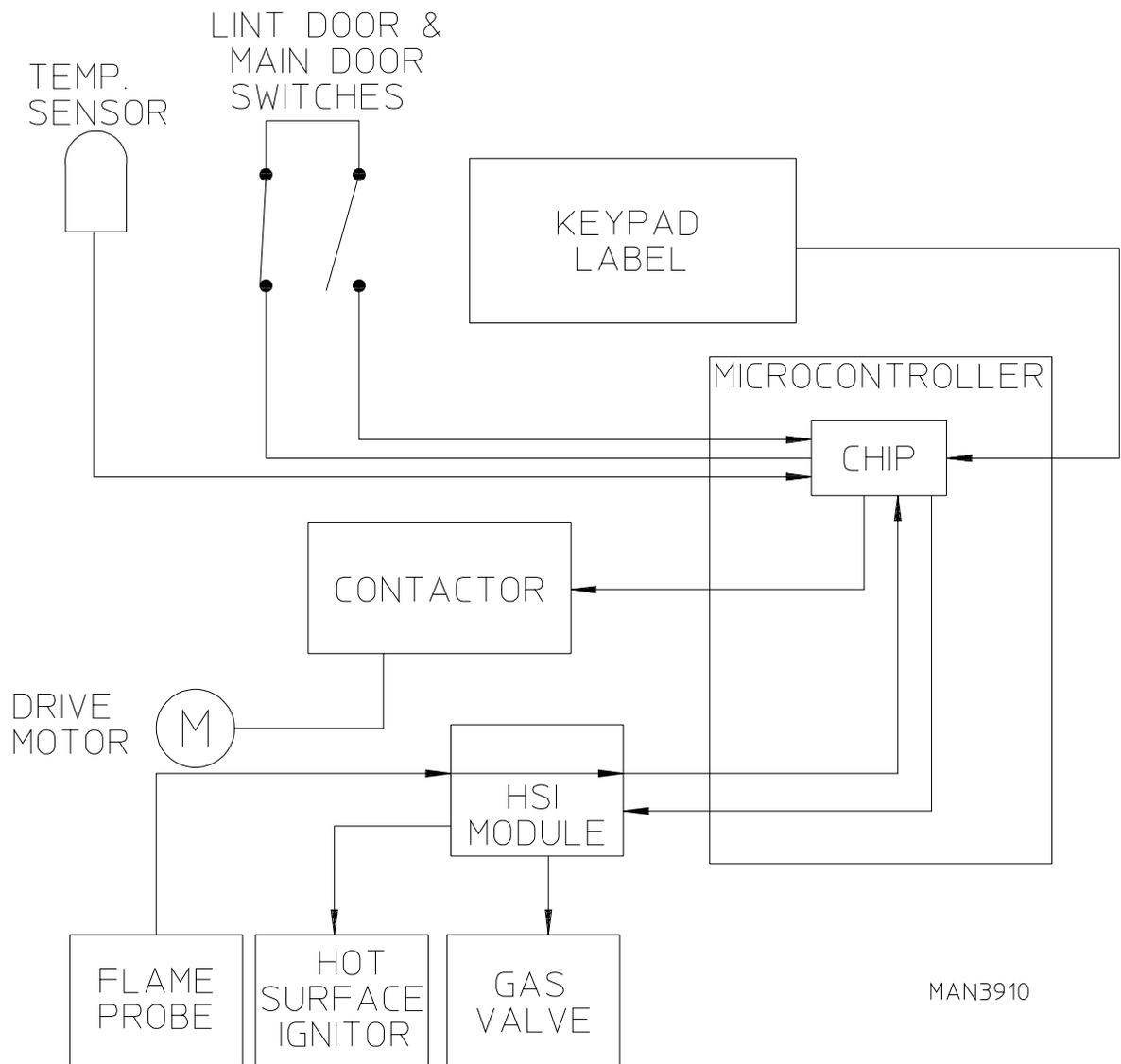
**WARNING** - DISCONTINUE POWER  
TO DRYER BEFORE ATTEMPTING TO  
RESET HI-LIMIT.

ADC P/N: 114076

## C. COMPUTER LOGIC

1. Operator enters desired selections.
2. Information entered is sent to the microprocessor via the keyboard (touchpad).

### COMPUTER LOGIC AND WIRING DIAGRAM



3. The input information is sorted, processed and executed by the microcomputer chip.
4. The microcomputer output signal activates the contactors and HSI (Hot Surface Ignition) module which control machine functions.

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 or 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.

# SECTION X

## SERVICE/PARTS INFORMATION

### A. SERVICE

1. Service **must be** performed by a qualified trained technician, service agency, or gas supplier. If service is required, contact the distributor from whom the **ADC** equipment was purchased. If the distributor **cannot** be contacted or is unknown, contact the **ADC** Service Department for a distributor in your area.

**NOTE:** When contacting the **ADC** Service Department, be sure to give them the correct **model number** and **serial number** so that your inquiry is handled in an expeditious manner.

### B. PARTS

1. Replacement parts **should be** purchased from the distributor from whom the **ADC** equipment was purchased. If the distributor **cannot** be contacted or is unknown, contact the **ADC** Parts Department for a distributor in your area. Parts may also be purchased directly from the factory by calling the **ADC** Parts Department at (508) 678-9000 or you may FAX in your order at (508) 678-9447.

**NOTE:** When ordering replacement parts from the **ADC** dealer or the **ADC** factory be sure to give them the correct **model number** and **serial number** so that your parts order can be processed in an expeditious manner.

# SECTION XI

## WARRANTY INFORMATION

### A. RETURNING WARRANTY CARD(S)

1. Before any dryer leaves the **ADC** factory test area, a warranty card is placed on the back side of the main door glass. These warranty cards are intended to serve the customer where we record the individual installation date and warranty information to better serve you should you file a warranty claim.
  - a. If a warranty card did not come with your dryer, contact the **ADC** Warranty Department or **ADC** Service Department at (508) 678-9000.

### B. PARTS

For a copy of the **ADC** commercial warranty covering your particular dryers, contact the **ADC** distributor from whom you purchased the equipment and request an **ADC** warranty form. If the distributor **cannot** be contacted or is unknown, warranty information can be obtained from the factory by contacting the **ADC** Warranty Department at (508) 678-9000.

**NOTE:** Whenever contacting the **ADC** factory for warranty information, be sure to have the dryer's **model number** and **serial number** available so that your inquiry can be handled in an expeditious manner.

### C. RETURNING WARRANTY PARTS

**ALL** dryer or parts warranty claims or inquiries **should be** addressed to the **ADC** Warranty Parts Department. To expedite processing, the following procedures **must be** followed:

1. No parts are to be returned to **ADC** without prior written authorization (“Return Material Authorization”) from the factory.

**NOTE:** An R.M.A. (“Return Material Authorization”) is valid for only sixty (60) days from date of issue.

- a. The R.M.A. issued by the factory, as well as any other correspondence pertaining to the returned parts, **must be** included inside the package with the failed merchandise.

2. Each part **must be** tagged with the following information:
  - a. **Model number** and **serial number** of the dryer from which part was removed.
  - b. Nature of failure (be specific).
  - c. Date of dryer installation.
  - d. Date of part failure.
  - e. Specify whether the part(s) being returned is for a replacement, a credit, or a refund.

**NOTE:** If a part is marked for a credit or a refund, the invoice number covering the purchase of the replacement part **must be** provided.

**NOTE:** Warranty tags (ADC Part No. 450064) are available at “no charge” from ADC upon request.

3. The company returning the part(s) must clearly note the complete company name and address on the outside of the package.
4. **ALL** returns **must be** properly packaged to insure that they are not damaged in transit. *Damage claims are the responsibility of the shipper.*

**IMPORTANT:** No replacements, credits or refunds will be issued for merchandise damaged in transit.

5. **ALL** returns **should be** shipped to the ADC factory in such a manner that they are insured and a proof of delivery can be obtained by the sender.
6. **Shipping charges are not the responsibility of ADC. ALL returns should be “prepaid” to the factory. Any “C.O.D. or “COLLECT” returns will not be accepted.**

**IMPORTANT:** No replacements, credits, or refunds will be issued if the claim **cannot** be processed due to insufficient information. The party filing the claim will be notified in writing, either by “FAX” or “CERTIFIED MAIL - Return Receipt Requested,” as to the information necessary to process claim. If reply *is not* received by the ADC Warranty Department within thirty (30) days from the FAX/letter date, then no replacement, credit, or refund will be issued, and the merchandise ***will be discarded.***

## D. ML-82 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

3/8" Socket Wrench

1/2" Socket or Open End Wrench

1/4" Open End Wrench

5/16" Socket or Open 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)

