

AD-15, AD-24, AD-25, AD-285, AD-30, AD-50, AD-60, AD-75  
**OPL Installation/Operator's Manual**

**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.

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

**WHAT DO YOU DO IF YOU SMELL GAS**

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Clear the room, building or area of all occupants.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.



For replacement parts, contact the distributor from which the dryer was purchased or  
**American Dryer Corporation**  
88 Currant Road Fall River, MA 02720-4781  
Telephone: (508) 678-9010 / Fax: (508) 678-9447  
E-mail: service@amdry.com

ADC Part No. 112180

## **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 properly licensed 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.

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

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

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 materials and to change or discontinue models.

### **Important**

For your convenience, log the following information:

**DATE OF PURCHASE**

**MODEL NO.**

**DISTRIBUTOR'S NAME**

**Serial No.(s)** \_\_\_\_\_

Replacements parts can be ordered 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) 678-9010. 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.

**INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE USE SMELLS GAS MUST BE POSTED IN A PROMINENT LOCATION. THE INSTRUCTIONS TO BE POSTED SHALL BE OBTAINED FROM THE LOCAL GAS SUPPLIER.**

### **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 THE COMPUTER BOARD and THE IGNITION MODULE. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION.**

### **CAUTION**

**DRYER(S) SHOULD NEVER BE LEFT UNATTENDED WHILE IN OPERATION.**

### **WARNING**

**CHILDREN SHOULD NOT BE ALLOWED TO PLAY ON OR IN THE DRYER(S).**

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

### **FOR YOUR SAFETY**

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

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

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

**IMPORTANT**

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

Dryer(s) must not be installed or stored in an area where it will be exposed to water and/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. Receiving and Handling

The dryer is shipped in a protective stretch wrap cover with protective cardboard corners and top cover (or optional box) as a means of preventing damage in transit. Upon delivery, the dryer and/or protective packaging, and wooden skid **should be** visually inspected for shipping damage. If any damage whatsoever is noticed, inspect further before delivering carrier leaves.

#### Dryers Damaged in Shipment

1. **ALL** dryers **should be** inspected upon receipt and before they are signed for.
2. If there is suspected damage or actual damage, the trucker's receipt **should be** so noted.
3. If the dryer is damaged beyond repair, it should be refused. Those dryers which were not damaged in a damaged shipment **should be** accepted, but the number received and number refused **must be** noted on the receipt.
4. If you determine that the dryer has been damaged after the trucker has left your location, you should call your local freight terminal immediately and file a claim. This type of freight claim is very difficult to get paid and becomes extremely difficult when more than a day or two passes after the freight was delivered. It is your responsibility to file freight claims. Dryers/parts damaged in transit **cannot** be claimed under warranty.
5. Freight claims are the responsibility of the consignee, and **ALL** claims **must be** filed at the receiving end. ADC assumes no responsibility for freight claims or damages.
6. If you need assistance in handling the situation, please call ADC's Traffic Manager at 508-678-9000.

**IMPORTANT:** The dryer **must be** transported and handled in an upright position at all times.

## B. 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 can not reach your gas supplier, call the fire department.
4. Installation and service **must be** performed by a qualified installer, service agency, or the 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, or wax. **EXPLOSION COULD RESULT.**

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

**WARNING:** **DO NOT** use heat for drying articles that contain plastic, foam, sponge rubber, or similarly textured rubber-like 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 the lint in the burner area, exhaust duct work, and area around the back of 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 and/or the NATIONAL ELECTRIC CODE ANSI/NFPA No. 70-LATEST EDITION.

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

9. **UNDER NO CIRCUMSTANCES** should the dryer door switch, lint drawer switch, or heat circuit safety devices 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 steam pressure. Excessive steam pressure can damage steam coil and/or harm personnel.
13. Replace leaking flexible steam hoses or other steam fixtures immediately. **DO NOT** operate dryer with leaking flexible hoses. Personal injury may result.
14. READ and FOLLOW **ALL** CAUTION and DIRECTION LABELS ATTACHED TO 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 FOR ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, or TESTING OF ANY EQUIPMENT per OSHA (Occupational Safety and Health Administration) STANDARDS.**

# SECTION II

## INSTALLATION PROCEDURES

Installation **should be** performed by competent technicians in accordance with local and state codes. In the absence of these codes, installation must conform to applicable AMERICAN NATIONAL STANDARDS:

ANSI Z223.1-LATEST EDITION (NATIONAL FUEL GAS CODE)  
or  
ANSI/NFPA NO. 70-LATEST EDITION (NATIONAL ELECTRIC CODE)

### A. Unpacking/Setup

Remove stretch wrap protective cover, shipping corners, and top cover from dryer.

**NOTE:** For models equipped with locks, the lock used is a dummy lock and no key is supplied or needed. The lock can be turned with any key, a screwdriver, small coin or any small sharp object.

The dryer can be moved to its final location while still attached to the skid or with the skid removed. To un-skid the dryer, locate and remove the four (4) bolts securing the base of the dryer to the wooden skid. Two (2) are located at the rear base, and two (2) are located in the lint chamber. Once the bolts are removed, slide the dryer off the skid.

With the skid removed, to make it easier to slide the dryer into its final position, slightly lower all four leveling legs, so that the dryer will slide on the legs instead of the base frame. The dryer is equipped with four (4) leveling legs, one at each corner of the dryer base. Two (2) are located at the rear of the dryer base, and two (2) are located in the lint chamber.

To increase bearing life and improve efficiency, the dryer **should be** tilted slightly to the rear.

The baskets (tumblers) of **ALL** 50 Hz (15 through 75) and the AD-50, AD-60, and AD-75 60 Hz model dryers are supported during shipping by a wooden block. **REMOVE THIS BLOCK BEFORE STARTING THE DRYER.**

**IMPORTANT:** For microprocessor (computer) models, this wooden block **must be** removed before connecting power to the dryer or irreparable damage to the basket (tumbler) will result.

The lint coops of **ALL** AD-30, AD-50, AD-60, and AD-75 dryers are supported during shipping by a bracket. **REMOVE THIS BRACKET BEFORE STARTING THE DRYER.**

## **B. Location Of The Dryer**

Before installing the dryer, be sure the location conforms to local codes and ordinances. In the absence of such codes or ordinances location **must conform** with National Fuel Gas Code ANSI Z223.1-LATEST EDITION.

1. The dryer **must be** installed on a sound level floor capable of supporting its weight. It is recommended that carpeting be removed from the floor area that the dryer is to rest on.
2. The dryer **must not** be installed or stored in an area where it will be exposed to water and/or weather.
3. This dryer is for use in noncombustible locations.
4. Provisions for adequate air supply **must be** provided as noted in this manual (refer to **Fresh Air Supply** in **Section D**).
5. Clearance provisions **must be** made from non-combustible construction as noted in this manual (refer to **Dryer Enclosure Requirements** in **Section C**).
6. Provisions **must be** made for adequate clearances for servicing and for operation as noted in this manual (refer to **Dryer Enclosure Requirements** in **Section C**).

7. Dryer **must be** exhausted to the outdoors in an area where correct exhaust venting can be achieved as noted in this manual (refer to **Exhaust Requirements** in **Section E**).
8. Dryer **must be** located in an area where correct exhaust venting can be achieved as noted in this manual (refer to **Exhaust Requirements** in **Section E**).

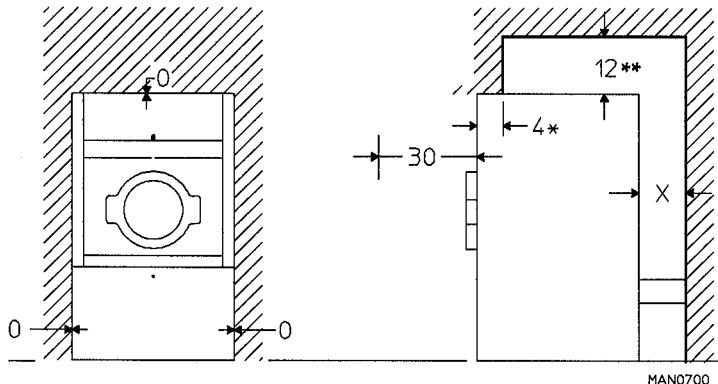
**IMPORTANT:** Dryer **should be** located where a minimum amount of exhaust duct will be necessary.

### C. Dryer Enclosure Requirements

Bulkheads and partitions **should be** made of noncombustible materials and must be located a minimum of twelve (12) inches above the dryer outer top, except along the front of the dryer which may be closed in if desired.

**NOTE:** Allowance **must be** made for opening the control door.

Dryers may be positioned side wall to side wall. However, allowances **should be** made for the opening and closing of the control and lint doors. It is suggested that the dryer be positioned about two (2) feet away from the nearest rear obstruction for ease of installation, maintenance, and service (to be measured from back guard, whether totally enclosed or rear mounted). Refer to the illustration below for details.



\* 1" Maximum for AD-15, AD-60, AD-75 steam heated dryers.

\*\* 12" for gas dryers; 18" for steam dryers.

X = 12" minimum, 24" suggested for ease of maintenance.

**NOTE:** Air considerations are important for proper and efficient operation.

## D. Fresh Air Supply

When the dryer is operating, it draws in room air, heats it, passes this air through the basket (tumbler), and exhausts it out of the building. Therefore, the room air **must be** continually replenished from the outdoors.

If the make-up air is inadequate, drying time and drying efficiency will be adversely affected. Ignition problems and sail switch "fluttering" problems on gas dryers may result, and you also could have premature motor failure from overheating.

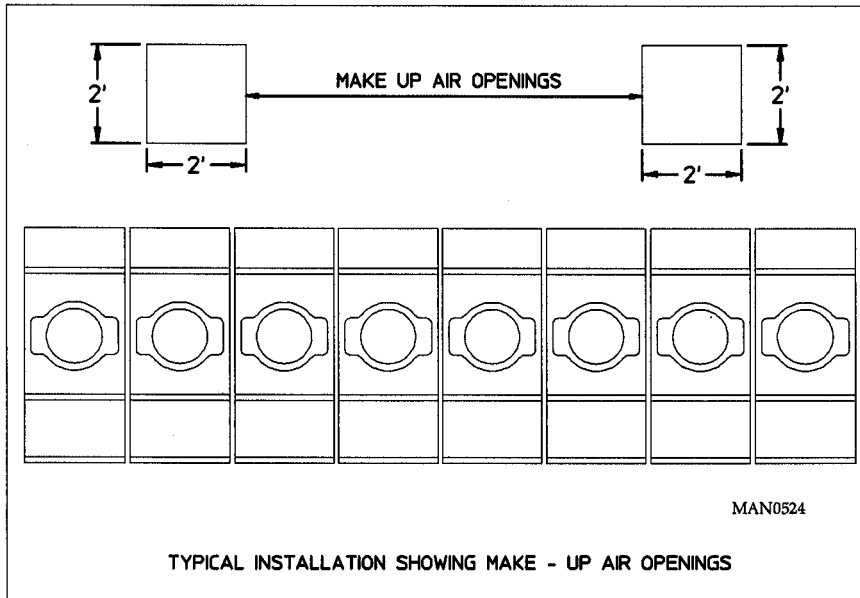
Air supply (make-up air) **must be** given careful consideration to assure proper performance of each dryer. An unrestricted source of air is necessary for each dryer. As a general rule, an unrestricted air entrance from the outdoors (atmosphere) of a minimum of one (1) square foot (1-1/2 for the AD-75) is required for each dryer. If registers or louvers are installed over the openings, then the area **must be** increased. It is not necessary to have a separate make-up air opening for each dryer. Common make-up air openings are acceptable. However, they **must be** set up in such a manner that the make-up air is distributed equally to the dryers.

*Example:* For a bank of eight (8) dryers, two (2) openings measuring 2' by 2' (4 square feet) is acceptable. Refer to the **illustration** on **page 11** for details.

**IMPORTANT:** Make up air **SHOULD NOT** be located near duct work exhaust outlets. If make up air opening is too close to the exhaust outlet, lint and fumes may be drawn back into the dryer area through these openings.

Allowances **must be** made for remote or constricting passageways or where dryers are located at excessive altitudes or predominantly low-pressure areas.

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



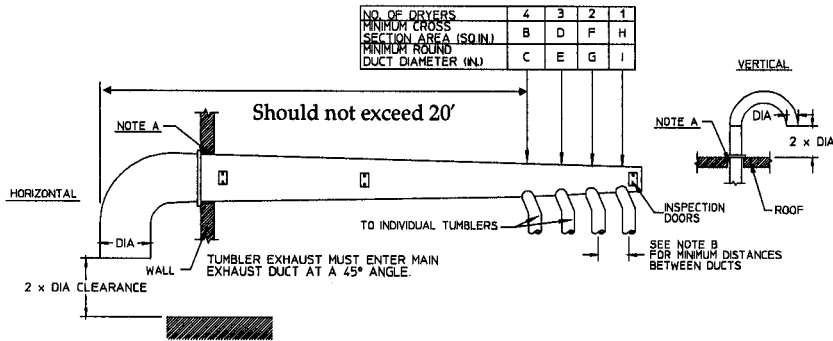
**NOTES:** Component failure due to dry cleaning fumes will VOID THE WARRANTY.

## E. Exhaust Requirements

Exhaust duct work **should be** designed and installed by a competent technician. Improperly sized duct work will create excessive back pressure which will result in slow drying, increased use of energy, and shutdown of the burner by the airflow (sail) switch, burner hi-limit, or lint chamber hi-heat protector thermostat. Refer to the **illustrations on page 12 through page 17** for details.

**CAUTION: IMPROPERLY SIZED or INSTALLED EXHAUST DUCT WORK CAN CREATE A POTENTIAL FIRE HAZARD.**

MULTIPLE DRYER VENTING  
WITH AN "A" DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS CAN BE CONNECTED TO ONE COMMON DUCT ( VENT ).

<b>FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA</b>	
CROSS SECTIONAL AREA OF A ROUND DUCT = $.785 \times \text{DIA}^2$	
CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = WIDTH x HEIGHT	

**NOTE A:** OPENING MUST BE TWO (2) INCHES LARGER THAN DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING

**NOTE B:** AD-15, AD-30 ..... 31-3/8"  
AD-25, AD-50 ..... 34-1/4"  
AD-285 ..... 28-1/2"  
AD-60 ..... 38-1/4"

WL 12/06/91

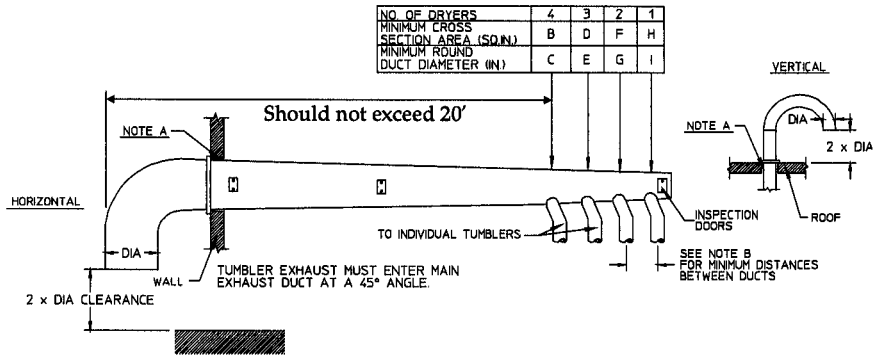
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A	B	C	D	E	F	G	H	I
6"	155	14	115	12	80	10	50	8

Dryer Exhaust Duct Size: 6"  
 Dryer Airflow: 375 cfm  
 Model Number: AD-15, AD-25, AD-285, AD-30, AD-50, AD-60  
 Heat Reclaimer: Yes  
 Controls: OPL



MULTIPLE DRYER VENTING  
WITH AN "A" DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS CAN BE CONNECTED TO ONE COMMON DUCT ( VENT ).

<p><u>FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA</u></p> <p>CROSS SECTIONAL AREA OF A ROUND DUCT = .785 x DIA<sup>2</sup></p> <p>CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = WIDTH x HEIGHT</p>		
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NOTE A: OPENING MUST BE TWO (2) INCHES LARGER THAN DUCT (ALL THE WAY AROUND); THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

NOTE B: AD-15 ..... 31-3/8"  
AD-24 ..... 28-1/2"

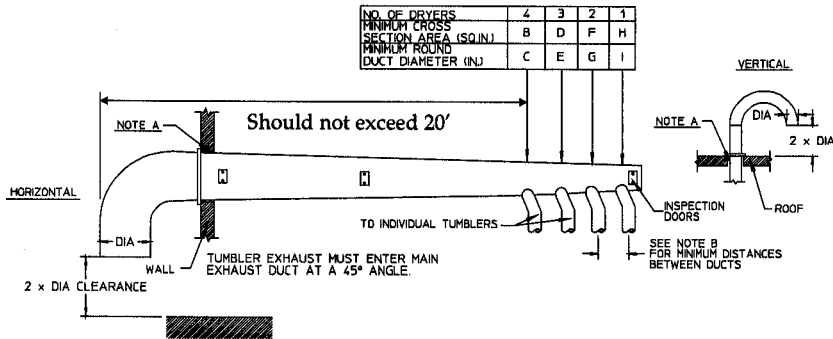
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A	B	C	D	E	F	G	H	I
6"	200	16	155	14	115	12	80	10

Dryer Exhaust Duct Size: 6"  
 Dryer Airflow: 600 cfm  
 Model Number: AD-15, AD-24  
 Heat Reclaimer: No  
 Controls: OPL

MULTIPLE DRYER VENTING  
WITH AN "A" DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS CAN BE CONNECTED TO ONE COMMON DUCT ( VENT ).

**FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA**

CROSS SECTIONAL AREA OF A ROUND DUCT = .785 x DIA<sup>2</sup>

CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = WIDTH x HEIGHT

**NOTE A:** OPENING MUST BE TWO (2) INCHES LARGER THAN DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

**NOTE B:** AD-25, AD-50 ..... 34-1/4"  
AD-30 ..... 31-3/8"  
AD-60 ..... 38-1/4"

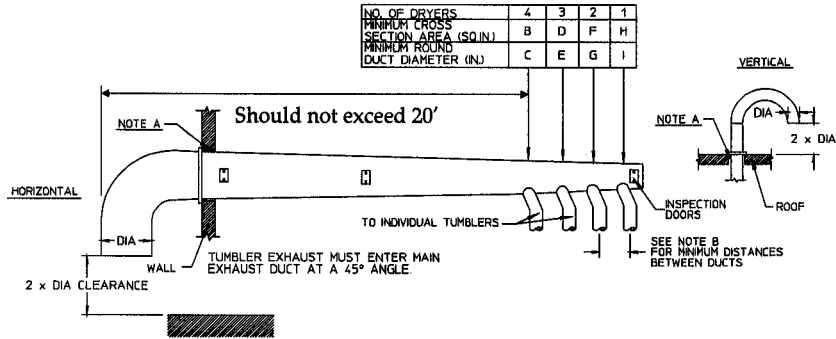
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A	B	C	D	E	F	G	H	I
8"	200	16	155	14	115	12	80	10

Dryer Exhaust Duct Size: 8"  
 Dryer Airflow: 600 cfm  
 Model Number: AD-25, AD-30, AD-50, AD-60  
 Heat Reclaimer: No  
 Controls: OPL

MULTIPLE DRYER VENTING  
WITH AN "A" DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS CAN BE CONNECTED TO ONE COMMON DUCT ( VENT ).

**FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA**

CROSS SECTIONAL AREA OF A ROUND DUCT -  $.785 \times \text{DIA}^2$

CROSS SECTIONAL AREA OF A RECTANGULAR DUCT - WIDTH x HEIGHT

NOTE A: OPENING MUST BE TWO (2) INCHES LARGER THAN DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.  
NOTE B: AD-75 ..... 38-1/4"

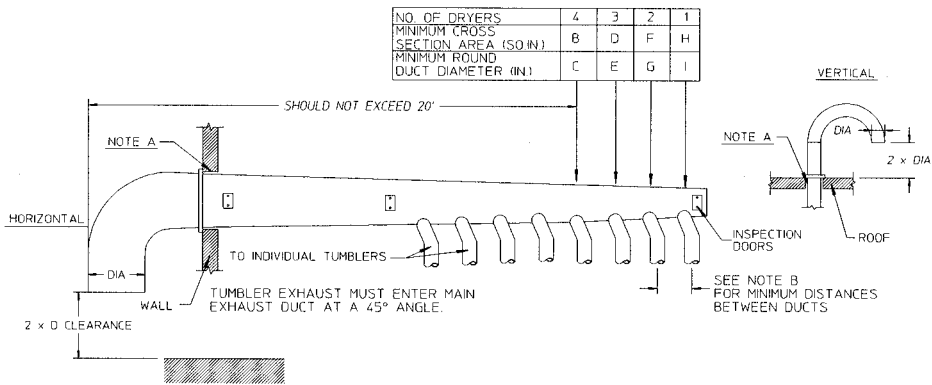
WL 12/06/91

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A	B	C	D	E	F	G	H	I
8"	255	18	200	16	155	14	115	12

Dryer Exhaust Duct Size: 8"  
 Dryer Airflow: 900 cfm  
 Model Number: AD-75  
 Heat Reclaimer: Yes  
 Controls: OPL

MULTIPLE DRYER VENTING  
WITH AN "A" DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS CAN BE CONNECTED TO ONE COMMON DUCT ( VENT ).

FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

CROSS SECTIONAL AREA OF A ROUND DUCT =  $785 \times \text{DIA}^2$

CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = WIDTH  $\times$  HEIGHT

NOTE A: OPENING MUST BE TWO (2) INCHES LARGER THAN DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING

NOTE B: AD-75...38 1/4"

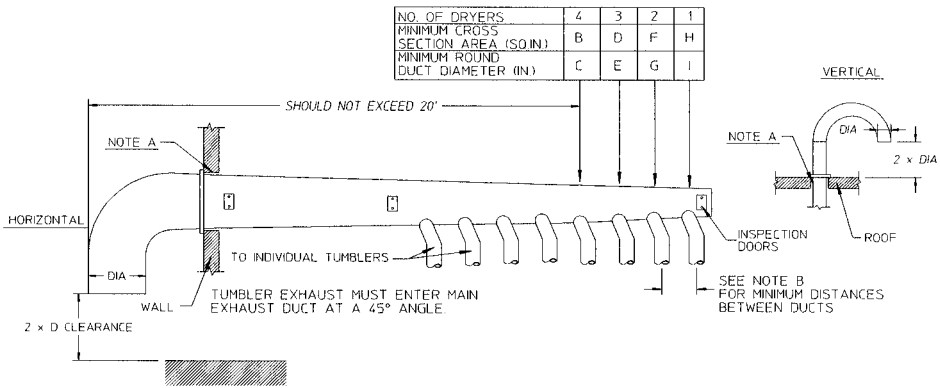
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A	B	C	D	E	F	G	H	I
8"	315	20	255	18	200	16	115	12

Dryer Exhaust Duct Size: 8"  
 Dryer Airflow: 1,200 cfm  
 Model Number: AD-75  
 Heat Reclaimer: No  
 Controls: OPL

MULTIPLE DRYER VENTING  
WITH AN "A" DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



IMPORTANT: NO MORE THAN 4 DRYERS CAN  
BE CONNECTED TO ONE COMMON DUCT ( VENT )

WL 07/14/93

MAN0621

<p><u>FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA</u></p> <p>CROSS SECTIONAL AREA OF A ROUND DUCT = .785 x DIA<sup>2</sup></p> <p>CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = WIDTH x HEIGHT.</p>	
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NOTE A: OPENING MUST BE TWO (2) INCHES LARGER THAN DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

NOTE B: AD-75...38 1/4"

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>
10"	380	22	255	18	200	16	115	12

Dryer Exhaust Duct Size: 10"  
 Dryer Airflow: 1,350 cfm  
 Model Number: ADS-75  
 Heat Reclaimer: No  
 Controls: OPL

Where possible, it is desirable to provide a separate exhaust air duct for each dryer. The duct should go as directly as possible to the outside air. Avoid sharp 90° right-angle turns in the ducting; use 30° or 45° angles instead. The radius of the elbows should preferably be 1-1/2 times the diameter of the duct. To protect the outside end of the duct from the weather, it may be bent downward as indicated on **page 12 through page 17**. Leave at least twice the diameter of the duct as clearance between the duct opening and the nearest obstruction. If the exhaust duct goes through the roof, it may be protected from the weather by using a 180° turn to point the opening down. Allow at least twice the diameter of the duct as clearance from the nearest obstruction.

**DO NOT** use screens or caps on the outside opening of the exhaust duct. The ducting **should be** smooth inside with no projections from sheet metal screws or other obstructions which will collect lint. When adding ducts, the duct to be added should overlap the duct to which it is to be connected. Provide inspection doors for periodic clean-out of lint from the main duct.

If it is not feasible to provide separate exhaust ducts for each dryer, ducts from the individual dryers may be channeled into a common main duct. Each dryer is provided with a back draft damper. The individual ducts should enter the bottom or side of the main duct at an angle not more than 45°. The main duct should be tapered with the diameter increasing before each individual duct is added.

Inadequate exhaust facilities may cause high temperature limit switches or airflow switches to shut off the dryers. **DO NOT** disable the switches, which are provided for your safety. Instead, investigate the exhaust ducting. Any obstruction or air friction due to numerous elbows/fittings in the ducting will slow the passage of air through the system with resulting inefficiency and potential fire hazard.

**IMPORTANT:** Exhaust back pressure measured by a manometer at each basket exhaust duct area **should not** exceed 0.3 inches of water column.

**NOTE:** Where the exhaust duct work passes through a wall, ceiling, or roof made of combustible materials, the opening **must be** 2 inches larger (all the way around) than the duct. The duct **must be** centered within this opening.

## F. Electrical Information

### 1. Electrical Requirements

It is your responsibility to have **ALL** electrical connections made by a properly licensed and competent electrician to assure that the electrical installation is adequate and conforms with local and state regulations or codes. In the absence of such codes, **ALL** electrical connections, material, and workmanship **must conform** to the applicable requirements of the NATIONAL ELECTRIC CODE ANSI/NFPA NO. 70-LATEST EDITION.

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

**NOTE:** Component failure due to improper installation will **VOID THE WARRANTY.**

A separate circuit serving each dryer **must be** provided. The dryer **must be** connected to copper wire only. **DO NOT** use aluminum wire which could cause a fire hazard.

**NOTE:** The use of aluminum wire will **VOID THE WARRANTY.**

## 2. Electrical Service Specifications

(refer to **Section VI** for details)

### a. Electric Service

#### 1) *Gas And Steam Dryers ONLY*

**IMPORTANT:** The dryer **must be** connected to the electrical supply shown on the data label affixed to the dryer. In the case of 208 VAC or 240 VAC, the supply voltage **must match** the electric service specifications of the data label **exactly**. The wire size **must be** properly sized to handle the rated current.

**WARNING:** 208 VAC and 240 VAC ARE NOT THE SAME. Any damage done to dryer components due to improper voltage connections will automatically **VOID THE WARRANTY**.

**NOTE:** On gas dryers, to convert from 208 VAC to 240 VAC (or vice versa), the Direct Spark Ignition (DSI) transformer wiring **must be** changed.

#### 2) *Electric Dryers ONLY*

**ALL** electrically heated dryers **must be** connected to the electric supply service shown on the dryer's data label which is affixed to the back side of the control (service) door. The connecting wires **must be** properly sized to handle the rated current.

**NOTE:** Component failure due to improper voltage application will **VOID THE WARRANTY**.



### 3. Grounding

A ground (earth) connection **must be** provided and installed in accordance with state and local codes. In the absence of these codes, grounding **must conform** to applicable requirements of the NATIONAL ELECTRIC CODE (ANSI/NFPA NO. 70-LATEST EDITION). The ground connection may be to a proven earth ground at the location service panel.

For added personal safety, when possible, it is suggested that a separate ground wire (no. 18 minimum) be connected from the ground connection of the dryer to a grounded cold water pipe. **DO NOT ground to a gas pipe or hot water pipe.** The grounded cold water pipe **must have** metal to metal connection all the way to electrical ground. If there are any nonmetallic interruptions, such as, a meter, pump, plastic, rubber, or other insulating connectors, they **must be** jumped with no. 4 copper wire and securely clamped to bare metal at both ends.

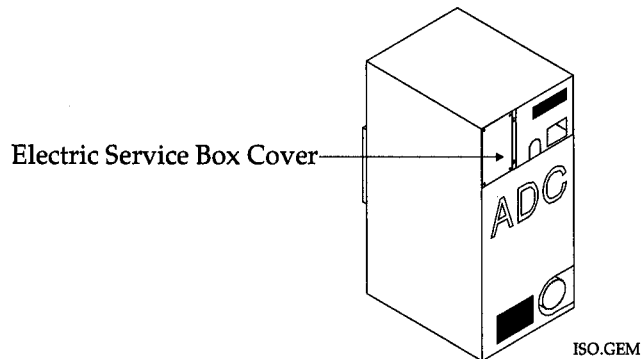
**IMPORTANT:** For personal safety and proper operation, the dryer **must be** grounded.

### 4. Electrical Connections

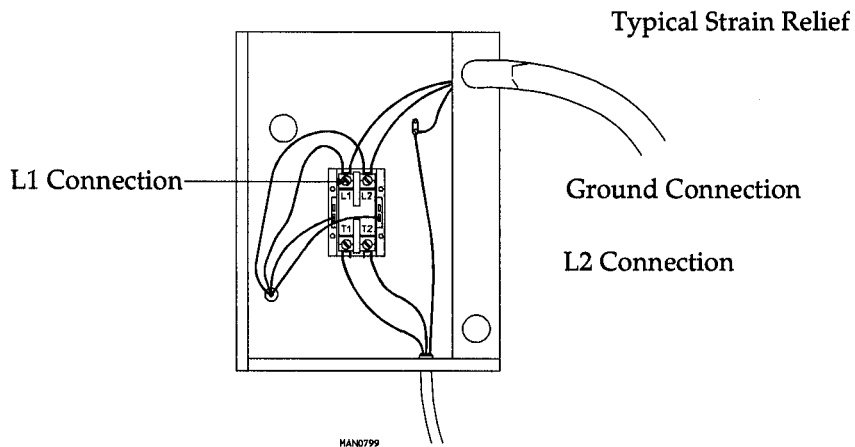
A wire diagram is located inside the control box for connection data.

#### a. GAS and STEAM DRYERS ONLY - Single-Phase (1Ø) Hookup

The electrical connections on ALL single-phase (1Ø) gas and steam dryers are made into the rear service box located at the upper left of the dryer.



Single-Phase (1Ø) Electrical Connection Leads		
Black + Positive	White - Neutral	Green Ground
or L2		

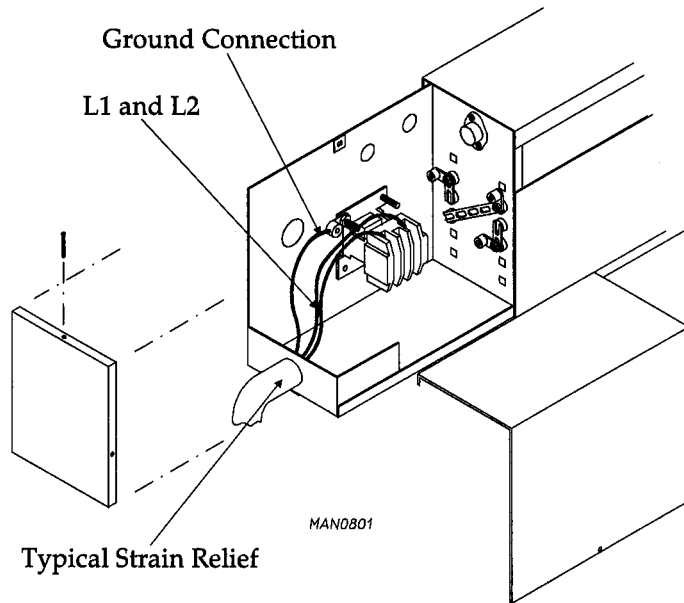


If local codes permit, power to the dryer can be made by the use of a flexible U.L. listed power cord/pigtail (wire size **must conform** to rating of dryer), or the dryer can be hard wired directly to the service breaker panel. In both cases, a strain relief **must be** installed where the wiring enters the dryer.

b. ELECTRIC DRYERS ONLY - Single-Phase (1Ø) Hookup

The electrical input connection is made into the electric oven contactor located at the upper rear of the dryer. Input connection wiring **must be** sized properly to handle the dryer's current draw. This information is printed on the dryer's data label.

**NOTE:** A separate circuit serving each dryer **must be** provided.

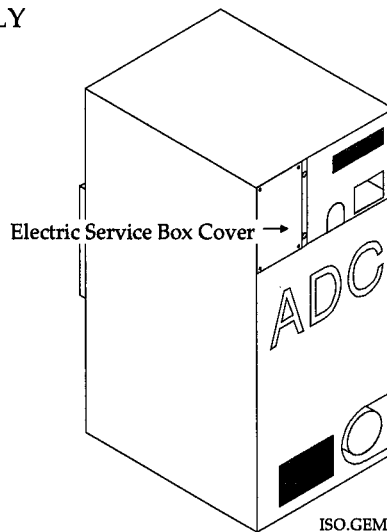


## 5. 3-Phase (3 $\phi$ ) Wiring Connections

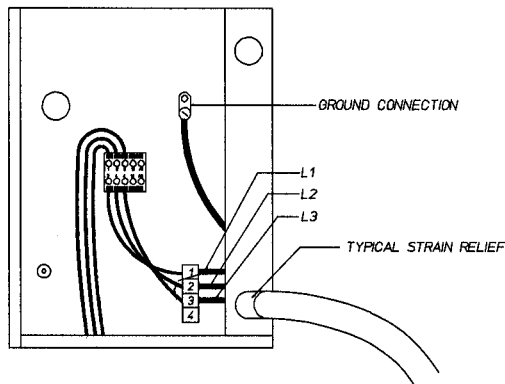
The only electrical input connections to the dryer are the 3-phase (3 $\phi$ ) power leads (L1, L2, L3, and sometimes Neutral) and ground. Single phase (1 $\phi$ ) power for the control circuit and for any single-phase (1 $\phi$ ) motors (if present) is done internally to the dryer. No single-phase (1 $\phi$ ) input connection is required on a 3-phase (3 $\phi$ ) dryer.

### a. GAS and STEAM DRYERS ONLY 3-Phase (3 $\phi$ ) Hookup

For gas and steam dryers manufactured for operation at 3-phase (3 $\phi$ ), the electrical connections are made at the power distribution block located in the service box at the rear, upper left corner of the dryer. To gain access to the service box and contactor, the service box cover **must be** removed.



Providing local codes permit, power to the dryer can be made by the use of a flexible U.L. listed cord / pigtail (wire size **must conform** to the rating of the dryer), or the dryer can be hard wired directly to the service breaker. In **ALL** cases, a strain relief **should be** used both where the wiring enters the dryer and the service box.



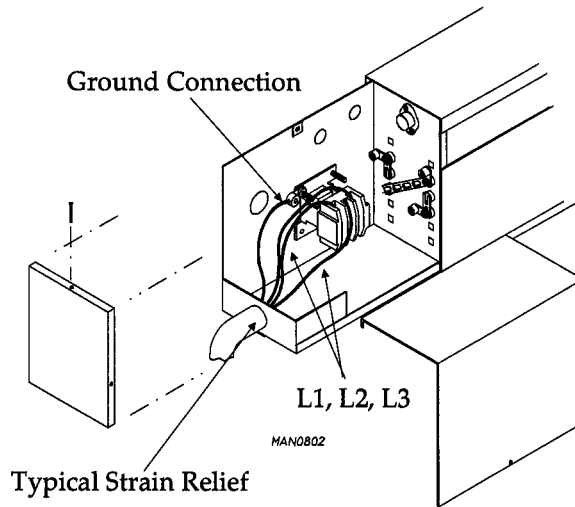
#### b. ELECTRIC DRYERS ONLY - 3-Phase (3 $\phi$ ) Hookup

The electrical input connection is made into the electric oven contactor located at the upper rear of the dryer. Input connection wiring **must be** sized properly to handle the dryer's current draw. This information is printed on the dryer's data label.

**CAUTION:** The dryer **must be** grounded. A ground lug has been provided in the service box for this purpose.

**NOTE:** A separate circuit serving each dryer **must be** provided.

The only electrical connections to the dryer are the 3-phase (3 $\phi$ ) leads (L1, L2, L3, and sometimes neutral) and ground. Single-phase (1 $\phi$ ) power for the control circuit is done by the factory at the contactor (relay), and no other wiring connections are necessary.



## G. Gas Information

It is your responsibility to have all plumbing connections made by a qualified professional to insure that the gas plumbing installation is adequate and conforms with local and state regulations or codes. In the absence of such codes, **ALL** plumbing connections, material, and workmanship **must conform** to the applicable requirements of the National Fuel Gas Code ANSI Z223.1-LATEST EDITION.

**IMPORTANT:** Failure to comply with these codes or ordinances, and/or the requirements stipulated in this manual, can result in personal injury and improper operation of the dryer.

The dryer and its individual shut-off valve **must be** disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa). The dryer **must be** isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.5 kPa).

**IMPORTANT:** Failure to isolate or disconnect dryer from supply as noted can cause irreparable damage to the gas valves VOIDING THE WARRANTY.

**WARNING: FIRES or EXPLOSION COULD RESULT.**

### 1. Gas Supply

The gas dryer installation must meet the American National Standard ... National Fuel Gas Code Z223.1-LATEST EDITION, as well as local codes and ordinances and **must be** done by a qualified professional.

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

The dryer **must be** connected to the type of heat/gas indicated on the dryer data label. If this information does not agree with the type of gas available, **do not** operate the dryer. Contact the distributor who sold the dryer or the ADC factory.

**IMPORTANT:** Any burner changes or conversions **must be** made by a qualified professional.

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

## 2. Technical Gas Data

### a. Natural Gas

The natural gas supply pressure to the dryer **must be** between 6 and 12 inches water column. If the pressure is too low, ignition failure and/or slow drying times may result. Excessively high supply pressure will result in erratic operation of the gas valve's internal pressure regulator. The pressure measured at the pressure tap on the body of the gas valve **must be** 4-inches water column.

### b. Liquid Petroleum (L.P.) Gas

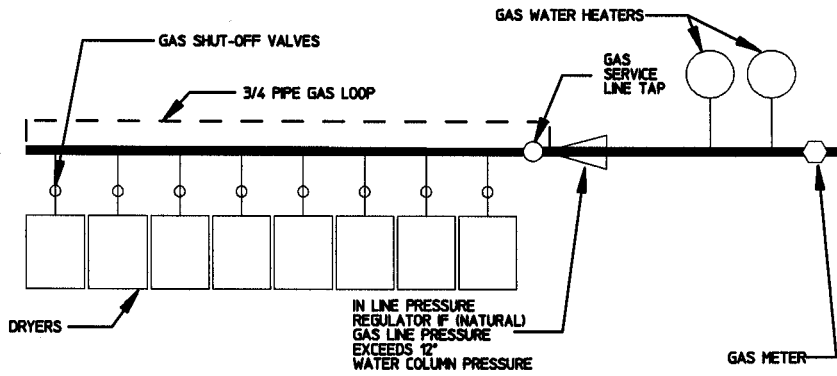
Dryers made for use with L.P. gas have the gas valve pressure regulator blocked open, so that the gas pressure **must be** regulated upstream of the dryer. The pressure measured at the gas valve body pressure tap **must be** 11 inches water column. There is no regulator provided on an L.P. dryer. The water column pressure **must be** regulated at the source (L.P. tank), or an external regulator must be added to each dryer.

## 3. Piping/Connections

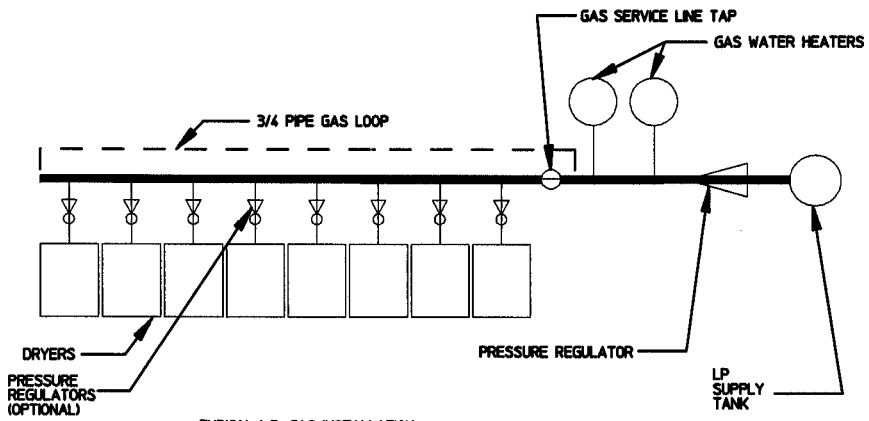
The dryer is provided with a 1/2" N.P.T. (the model ADG-75 has a 3/4") inlet pipe connection extending out the rear area or through the top of the dryer. For ease of servicing, the gas supply line of each dryer should have its own shut-off valve.

The size of the gas supply line (header) will vary depending on the distance this supply line travels from the gas meter or, in the case of L.P. gas, the supply tank, the number of tees, other gas-operated appliances, etc. Specific information regarding supply line size **should be** determined by the gas supplier.

**NOTE:** Undersized gas supply piping can create a low or inconsistent gas pressure which will result in erratic operation of the burner ignition system.



TYPICAL NATURAL GAS INSTALLATION



TYPICAL LP GAS INSTALLATION

HAN0132



Consistent gas pressure is essential at **ALL** gas connections. It is recommended that a 3/4-inch pipe gas loop be installed in the supply line serving the bank of dryers. An in-line pressure regulator **must be** installed in the gas supply line (header) if (natural) gas line pressure exceeds 12-inches water column pressure. Refer to the **illustrations on page 28** for details.

**IMPORTANT:** Water column pressure of 4.0 inches for natural gas dryers and 11.0 inches for L.P. dryers is required at the gas valve pressure tap of each dryer for proper and safe operation.

A 1/8" N.P.T. plugged tap, accessible for test gauge connection, **must be** installed in the main gas supply line immediately upstream of each dryer.

**IMPORTANT:** Pipe joint compounds that resist the action of natural gas and L.P. gas **MUST BE** used.

**WARNING:** Test **ALL** connections for leaks by brushing on a soapy water solution (liquid detergent also works well). **NEVER TEST FOR GAS LEAKS WITH AN OPEN FLAME.**

**ALL** components/materials **must conform** to NATIONAL FUEL GAS CODE specifications. It is important that gas pressure regulators meet applicable pressure requirements and that gas meters be rated for the total amount of appliance Btu's being supplied.

## H. Steam Information

It is your responsibility to have **ALL** steam plumbing connections made by a qualified professional to assure that the installation is adequate and conforms with local and state regulations or codes.

Care **must be** exercised when leveling steam dryers in final position. After leveling the dryer, check the downward pitch of the heat exchanger from front to rear with a level. Likewise, check the downward pitch of the return condensate manifold toward its outlet part. The absence of these downward pitches will result in probable water hammer and premature heat exchanger fracture and leakage.

The presence of condensate in the steam will cause water hammer and subsequent heat exchanger failure. The steam supply connection **must be** taken from the top of a well-dripped steam main. If the supply run-out to the dryer exceeds twenty (20) feet, it **should be** dripped just before the control valve with a proper trap and dirt pocket.

**IMPORTANT:** Failure to comply with the requirements stipulated in this manual can result in component failure which will **VOID THE WARRANTY.**

**NOTE:** Unless otherwise specifically ordered, steam dryers are manufactured with a pneumatic (piston) damper system which requires an external supply of clean, dry, regulated air (80 psi +/-10psi). Refer to **Steam Damper Air System Connections, Section H, item 3.**

1. Steam Requirements - High Pressure
  - a. Inlet ---- 1-inch supply line connection  
quantity one (1) at top manifold
  - b. Return - 1-inch return line connection  
quantity one (1) at bottom manifold

<b>Operating Steam Pressure</b>	
Maximum	125 psig
Minimum	100 psig*

\* Minimum operating pressure for optimum drying results.

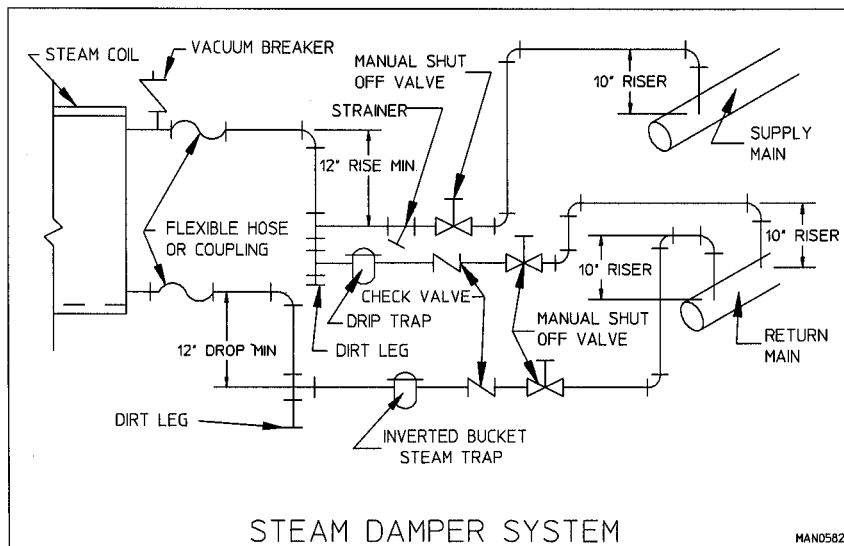
## 2. Installation Instructions

To insure that an adequate supply of steam is provided, be sure that the steam supply and steam return lines are sized and laid out as stipulated in this manual. Inadequate steam supply and steam return lines or improper steam plumbing will result in poor performance and can cause component failure. Clean, dry, regulated steam **must be** provided to the dryer.

**IMPORTANT:** Steam coil failure due to water hammer by wet steam will VOID THE WARRANTY.

- a. The pressure of the condensate in the steam supply will cause water hammer and subsequent heat exchanger (steam coil) failure. The steam supply connection into the main supply line **must be** made with a minimum 12-inch riser. This will prevent any condensate from draining towards the dryer.
- b. The steam supply piping to the dryer must include a 12-inch rise along with a drip trap and check valve. This will prevent any condensate from entering the steam coil.
- c. Flexible hoses or couplings **must be** used. The dryer vibrates slightly when it runs, and this will cause the steam coil connections to crack if they are hard piped to the supply and return mains.
- d. Shut-off valves for each dryer **should be** installed in the supply, return, and drip trap return lines. This will allow the dryer to be isolated from the supply and return mains if the dryer needs maintenance work.
- e. Install an inverted bucket steam trap and check valve at least 12-inches below steam coil as near to the coil as possible.
  - 1) An inverted bucket steam trap with a capacity of 1,400 pounds per condensate hour @ 125 PSI is **required** for each dryer.
- f. A 1/2" to 3/4" (pipe size) vacuum breaker **should be** installed for each unit in the piping. This will prevent the condensing steam from causing a vacuum inside the coil and possibly damaging the coil.

- g. The supply and return lines **should be insulated**. This will save energy and provide for the safety of the operator and maintenance personnel.
- h. Water pockets in the supply line, caused by low points, will provide wet steam to the coil possibly causing coil damage. **ALL** horizontal runs of steam supply piping **should be pitched** 1/4" for every one (1) foot back towards the steam supply header causing any condensate in the line to drain to the header. Install a bypass trap in any low point to eliminate wet steam.



### 3. Steam Damper Air System Connections

Unless the user specified otherwise, ADC steam dryers are manufactured with a pneumatic (piston) damper system which requires an external supply of compressed air. The air connection is made to the steam damper solenoid valve which is located at the rear of the top console.

#### a. Air Requirements

Compressed Air Supply	Air Pressure
Normal	80 psi
Minimum Supply	70 psi
Maximum Supply	90 psi

#### b. Air Connection

Air connection to system --- 1/8" N.P.T.

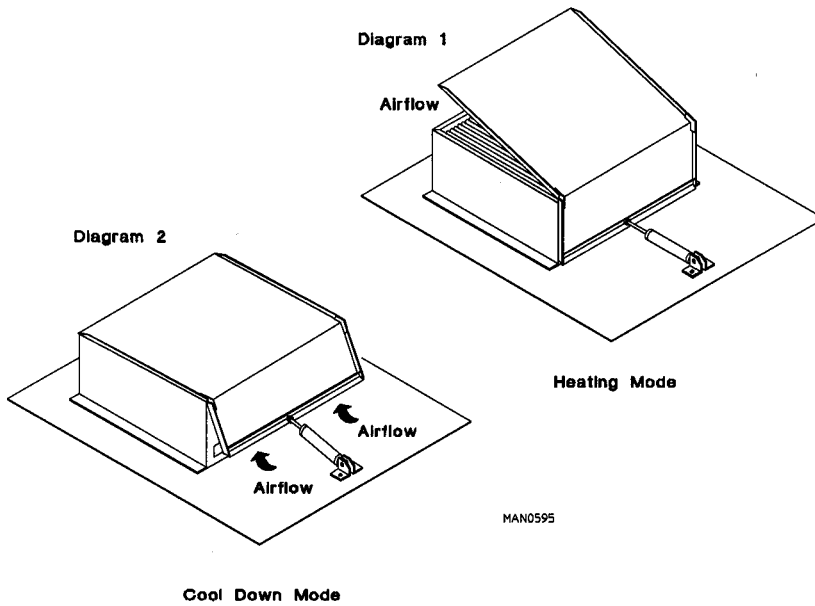
- c. No air regulation or filtration is provided with the dryer. External regulation/ filtration of 80 psi **must be** provided. It is suggested that a regulator / filter gauge arrangement be added to the compressed air line just before the dryer connection. This is necessary to insure that correct and clean air pressure is achieved.

### 4. Steam Damper System Operation

The steam damper, as shown in the **top illustrations** on the **following page (page 34)**, allows the coil to stay constantly charged eliminating repeated expansion and contraction. When the damper is opened, the air immediately passes through the already hot coil, providing instant heat to start the drying process. When the damper is closed, ambient air is drawn directly into the basket (tumbler), allowing a rapid cool down.

Diagram 1 shows the damper in the heating (open) mode, allowing heat into the basket (tumbler).

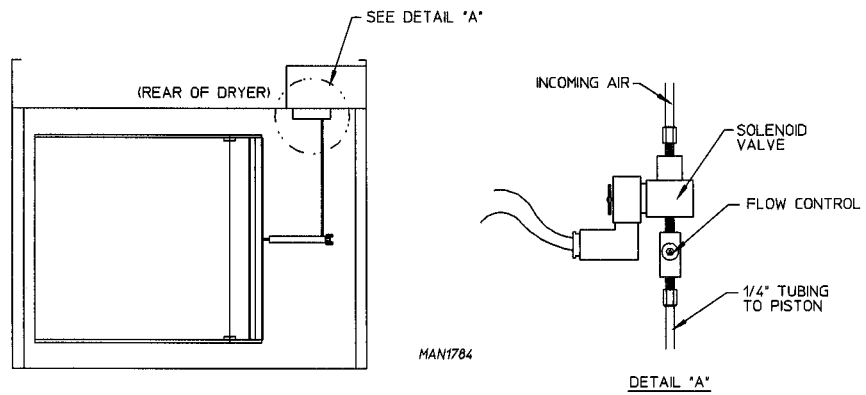
Diagram 2 shows the damper in the cool down (closed) mode, pulling ambient air directly into the basket (tumbler) without passing the coils.



**NOTE:** With the dryer off or with no air supply, the damper is in the cool down mode as shown in Diagram 2.

**5. Steam Damper Air Piston (Flow Control) Operation Adjustment**

Damper operation was tested and adjusted prior to shipping at 80 psi. If damper air adjustment is necessary, locate flow control valve and make necessary adjustments as noted below.



**NOTE:** TURNING KNOB ON FLOW CONTROL CLOCKWISE WILL RESTRICT AIR FLOW. TURNING COUNTER-CLOCKWISE WILL ALLOW HIGHER AIR FLOW.

## I. Preparation for Operation

The following items **should be** checked before attempting to operate the dryer:

1. Read and follow **ALL** "CAUTION," "WARNING," and "DIRECTION" labels attached to the dryer.
2. Check incoming supply voltage to be sure that it is the same as indicated on the dryer data label located on the back of the dryer control (service) door.
3. Check to assure that the dryer is connected to the type of heat / gas indicated on the dryer data label (*for GAS MODELS ONLY*).
4. The sail switch damper assembly is installed and pre-adjusted at the factory prior to dryer shipment. However, the sail switch adjustment **must be** checked to assure that this important safety control is functioning (*for GAS and ELECTRIC MODELS ONLY*).
5. Check bolts, nuts, screws, terminals, and fittings for tightness.
6. Be sure **ALL** gas shut-off valves are in the open position (*for GAS MODELS ONLY*).
7. Be sure **ALL** back guard panels and service box covers have been replaced.
8. Make sure the lint coop support bracket has been removed.
9. Check the lint door to assure that it is closed and secured in place.  

**IMPORTANT:** If during installation the lint door safety chain was disconnected, it **must be** reconnected or personal injury may result.
10. Rotate the basket (tumbler) by hand to be sure it moves freely.
11. Check to insure **ALL** steam shut-off valves are open (*for STEAM MODELS ONLY*).
12. Check to insure that a clean, dry, regulated air supply (80 psi) is on the dryer (*for STEAM MODELS with AIR OPERATED DAMPER SYSTEM ONLY*).

## J. Preoperational Test

**ALL** dryers are thoroughly tested and inspected before leaving the factory. However, a preoperational test **should be** performed before the dryer is publicly used. It is possible that adjustments have changed in transit or due to marginal location (installation) conditions.

1. Turn on electric power to the dryer.
2. Refer to the Operating Instructions for starting your particular model dryer.
3. Gas Dryers
  - a. When a gas dryer is first started (during initial startup), it has a tendency not to ignite on the first ignition attempt. This is because the gas supply piping is filled with air, so it may take a few minutes for the air to be purged from the lines.

**NOTE:** During the purging period, check to be sure that **ALL** gas shut-off valves are open.

**NOTE:** The dryer is equipped with a Direct Spark Ignition (DSI) system which has internal diagnostics. If ignition is not established after the first attempt, the heat circuit in the DSI module will lock out until it is manually reset. To reset the DSI system, open and close the main door and restart the dryer.

- b. A gas pressure test **should be** taken at the gas valve pressure tap of each dryer to assure that the water column pressure is correct and consistent.

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

Natural Gas ..... 4.0 Inches Water Column  
L.P. Gas ..... 11.0 Inches Water Column



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

4. Make a complete operational check of **ALL** safety related circuits:
  - a. Door switch(es)
  - b. Hi-limit thermostat
  - c. Cycling thermostat
  - d. Sail switch (*for GAS and ELECTRIC MODELS ONLY*)

**NOTE:** The sail switch can be checked for proper operation by opening the lint door while the heating circuit (gas burner/electric oven) is active (on). The heating unit should shut off within a few seconds. If not, make necessary adjustments to sail switch.

5. Make a complete operational check of **ALL** operating controls.

**NOTE:** If computer program changes are required, refer to the computer programming section of the manual supplied with the dryer.

6. The dryer **should be** operated through one (1) complete cycle to assure that no further adjustments are necessary and that **ALL** components are functioning properly.

**IMPORTANT:** The dryer basket (tumbler) is treated with a protective coating. ADC suggests tumbling old clothes or material in the basket (tumbler), using a mild detergent to remove the protective coating.

7. Check the electric service phase sequence (3-phase [3ø] models only). While the dryer is operating, check to see if the blower wheel (impellor/fan) is rotating in the proper direction. Looking from the front, the blower wheel (impellor/fan) should spin in the clockwise direction. If it is, the phasing is correct. If the phasing is incorrect, reverse the two (2) leads at connections L1, L2, or L3 of the power supply to the dryer.

**IMPORTANT:** If the blower wheel (impellor/fan) is rotating in the wrong direction, this will not only drastically reduce drying efficiency, but it can also cause premature component failure.

## K. Preoperational Instructions

### 1. To Start Dryer:

#### a. Microprocessor (Computer) Dryers

- 1) The L.E.D. display will read "FILL."
- 2) Press the "E" on the touchpad of the keyboard.
- 3) The L.E.D. display will quickly show "Ld30", "LC04", "F180".  
The dryer will start, and the L.E.D. display will show 'dr30".

#### b. Dual Timer Dryers

- 1) Turn drying timer knob for a time of 20 minutes.
- 2) Select "High Temp."
- 3) Push "Push To Start" Switch.
- 4) To stop dryer, open the main door.

## L. Shut Down Instructions

If the dryer is to be shut down (taken out of service) for a period of time, the following **MUST BE** performed:

1. Discontinue power to the dryer either at the external disconnect switch or the circuit breaker.
2. Discontinue the gas supply (*for GAS MODELS ONLY*):
  - a. **SHUT OFF external** gas supply shut off valve.
  - b. **SHUT OFF internal** gas supply shut off valve.
3. Discontinue the steam supply (*for STEAM MODELS ONLY*):
  - a. **SHUT OFF steam valves** in the supply lines and the return lines.

# SECTION III

## SERVICE/PARTS INFORMATION

### A. Service

1. Only properly licensed or trained technicians should service the dryer. 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 can be 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 faxing to (508) 678-9447 or by calling the ADC Part Department at (508) 678-9010.

**NOTE:** When ordering directly from the ADC Parts Department, 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 IV

## WARRANTY INFORMATION

### A. Returning Warranty Card(s)

1. Before any dryer leaves the ADC test booth area, a warranty card is affixed to the glass of the main door. These warranty cards are intended to serve the customer in two ways. First, when ADC receives the warranty card(s) back from a customer, we mail the appropriate parts manual to the address indicated on the returned card at no charge to the customer. Second, we record the individual installation date of that specific dryer so as to extend the customer's warranty period.
  - a. If a warranty card does not come with the individual dryer, contact the ADC Warranty Department or Service Department at (508) 678-9000.

**IMPORTANT:** A separate warranty card **must be** completed and returned for each individual dryer.

**NOTE:** Be sure to include the installation date when returning the warranty card(s).

### B. Warranty

For a copy of the ADC commercial warranty covering your particular dryer(s), contact the ADC distributor from whom you purchased the equipment and request a commercial dryer 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

ADC has a Warranty Parts Department that handles all returned warranted merchandise. 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: R.M.A.'s are 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 part(s), **must be** included inside the package with the failed merchandise.
2. Each part **must be** tagged with the following information:
    - a. The model number and serial number of dryer from which the 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. No replacements, credits, or refunds will be issued for merchandise damaged in transit. Damage claims are the responsibility of the shipper.
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 "COD" 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 that is filing the claim will be notified in writing by "Certified Mail - Return Receipt Requested," as to the information necessary to process the claim. If a reply is not received by the ADC Warranty Parts Department within thirty (30) days of the letter date, then no replacement, credit, or refund will be issued, and the merchandise **will be** discarded.

# SECTION V

## ROUTINE MAINTENANCE

### A. Cleaning

A program and/or schedule **should be** established for periodic inspection, cleaning and removal of lint from various areas of the dryer, as well as throughout the ducting 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 air flow. 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.

#### *DAILY (beginning of each work shift)*

1. Clean lint from lint drawer/screen.
2. Inspect lint screen and replace if torn.

#### *WEEKLY*

Clean lint accumulation from lint chamber, thermostat, and micro-processor temperature sensor (sensor bracket) area.



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

### ***STEAM DRYERS***

Clean steam coil fins. 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 fins are bent, straighten by using fin comb which is available from local air conditioning supply houses.

### ***90 DAYS***

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

**WARNING:** THE ACCUMULATION OF LINT IN THE EXHAUST DUCT WORK CAN CREATE A POTENTIAL FIRE HAZARD.

**WARNING:** DO NOT OBSTRUCT THE FLOW OF COMBUSTION AND VENTILATION AIR.

**WARNING:** INSPECT and REMOVE ANY LINT ACCUMULATION WHICH CAN CAUSE THE BACK DRAFT DAMPER TO BIND or STICK.

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

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

## B. Adjustments

### *7 Days After Installation and Every 6 Months Thereafter*

Inspect bolts, nuts, screws (bearing set screws), non-permanent 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 switch, lint drawer switch, sail switch, burner, and hi-limit thermostats).

## C. Lubrication

The motor bearings, idler bearings, and tumbler bearings are permanently lubricated. **NO LUBRICATION IS NECESSARY.**

# SECTION VI

## ELECTRICAL SERVICE SPECIFICATIONS

AD-15 - AD-25 - AD-285 - AD-30 Gas and Steam					
<p><b>IMPORTANT:</b> 208 VAC and 230/240 VAC ARE NOT THE SAME. When ordering, specify exact voltage.</p> <p><b>NOTES:</b> A. Fuse ratings are dual element-time-delay-current limiting, class RK1 or RK5 only. B. Circuit breakers are thermal magnetic (industrial) type only. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used. C. Circuit breakers for 3Ø dryers must be 3-pole type.</p>					
Service Voltage	Phase	Wire Service	Approx. Amp Draw	Fusing Dual Element Time Delay	Circuit Breaker
115	1Ø	2	8.6	12.0	20
208	1Ø	2	5.1	6.25	15
230/240	1Ø	2	4.8	6.0	15
208	3Ø	3	3.2	4.0	15
230/240	3Ø	3	2.9	3.5	15
380	3Ø	3/4	2.2	2.8	15
416	3Ø	3/4	2.1	2.5	15
460	3Ø	3/4	2.1	2.5	15
575	3Ø	3	1.8	2.25	15

**NOTE:** Contact factory for electrical information not listed.

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

**AD-50 - AD-60 Gas and Steam**

**IMPORTANT: 208 VAC and 230/240 VAC ARE NOT THE SAME.**  
When ordering, specify exact voltage.

- NOTES:** A. Fuse ratings are dual element-time-delay-current limiting, class RK1 or RK5 only.  
B. Circuit breakers are thermal magnetic (industrial) type only. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used.  
C. Circuit breakers for 3Ø dryers must be 3-pole type.

Service Voltage	Phase	Wire Service	Approx. Amp Draw	Fusing Dual Element Time Delay	Circuit Breaker
115	1Ø	2	12.0	15	20
208	1Ø	2	6.2	8	15
230/240	1Ø	2	5.7	8	15
208	3Ø	3	3.2	4	15
230/240	3Ø	3	2.9	4	15
380	3Ø	3/4	2.2	2.8	15
416	3Ø	3/4	2.1	2.8	15
460	3Ø	3/4	2.1	2.8	15
575	3Ø	3	1.8	2.25	15

**NOTE:** Contact factory for electrical information not listed.

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

# SECTION VII

## TROUBLESHOOTING

AD-75 Gas and Steam					
<p><b>IMPORTANT:</b> 208 VAC and 230/240 VAC ARE NOT THE SAME. When ordering, specify exact voltage.</p> <p><b>NOTES:</b> A. Fuse ratings are dual element-time-delay-current limiting, class RK1 or RK5 only. B. Circuit breakers are thermal magnetic (industrial) type only. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used. C. Circuit breakers for 3Ø dryers must be 3-pole type.</p>					
Service Voltage	Phase	Wire Service	Approx. Amp Draw	Fusing Dual Element Time Delay	Circuit Breaker
115	1Ø	2	13.2	17.5	20
208	1Ø	2	7.7	10	15
230/240	1Ø	2	7.1	9	15
208	3Ø	3	4.4	5.6	15
230/240	3Ø	3	4.3	5.6	15
380	3Ø	3/4	3.0	4	15
416	3Ø	3/4	2.9	4	15
460	3Ø	3/4	2.4	3.0	15
575	3Ø	3	2.1	2.8	15

**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**

# SECTION VII

## TROUBLESHOOTING

**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.**

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...and not necessarily the suspected component itself.

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

The information provided should not be misconstrued as a handbook for use by an untrained person making repairs.

**IMPORTANT: When replacing blown fuses, the replacement must be of the exact rating as the fuse being replaced.**

**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.**

## ***MICROPROCESSOR (COMPUTER) MODELS***

### **A. No display (microprocessor [computer] models ONLY)...**

1. Service panel fuse blown or tripped breaker.
2. Blown control circuit L1 or L2 1/2-amp (Slo Blo) fuse.
3. Failed microprocessor controller (computer).
4. Failed control step down transformer (*for models 380 volts or higher ONLY*).

### **B. Drive motor not operating (does not start)...**

1. Microprocessor (computer) motor indicator dot and relay output L.E.D. indicator are on ...
  - a. Failed drive motor contactor (relay).
  - b. Failed arc suppressor (A.S.) board (*for Reversing Models ONLY*).
  - c. Failed drive motor.
2. Microprocessor (computer) motor indicator dot and "door" L.E.D. indicator are on, but motor output L.E.D. indicator is off ...
  - a. Failed microprocessor controller (computer).

### **C. Drive motor (*Reversing Models ONLY*) operates in one direction only...stops and restarts in same direction...**

1. Failed reversing contactor (relay).
2. Failed arc suppressor (A.S.) board.
3. Failed microprocessor controller (computer)...check output indicator.

**D. Drive motor operates okay for a few minutes, and then stops and will not restart...**

1. Motor is overheating and tripping out on internal overload protector ..
  - a. Motor air vents clogged with lint.
  - b. Low voltage to the motor.
  - c. Failed motor.
  - d. Basket (tumbler) is binding...check for obstruction.
  - e. Failed idler bearings or tumbler bearings.

**E. Impellor/blower/fan motor (*Reversing Models ONLY*) is not operating (does not start)...**

1. Microprocessor (computer) motor indicator dot and relay output L.E.D. indicator are on ...
  - a. Failed impellor (blower/ fan) motor contactor (relay).
  - b. Failed arc suppressor (A.S.) board.
  - c. Failed blower (impellor/ fan) motor.
2. Microprocessor (computer) "door" L.E.D. is on but motor output L.E.D. indicator is off ...
  - a. Failed microprocessor controller (computer).

**F. Impellor/blower/fan motor (*Reversing Models ONLY*) operates okay for a few minutes, and then stops and will not restart...**

1. Motor is overheating and tripping out on overload protector ...
  - a. Motor air vent is clogged with lint.
  - b. Low voltage to motor.
  - c. Failed motor.



d. Failed impellor (blower/fan)...out of balance.

**G. Both drive motor and blower/impellor/fan motor (*Reversing Models ONLY*) not operating (do not start)...microprocessor (computer) motor indicator dots and relay output L.E.D. indicators are on...**

1. Failed arc suppressor (A.S.) board.
2. Failed contactors (both blower and drive).
3. Failed (both blower and drive) motor.

**H. Both drive motor and blower/impellor/fan motor (*Reversing Models ONLY*) not operating (do not start)...microprocessor (computer) motor indicator dots and "door" L.E.D. indicator are on but relay output L.E.D. indicators are off (L.E.D. display does not read "door")...**

1. Failed microprocessor controller (computer).

**I. Both drive motor and impellor (blower/fan) motor run a few minutes and stop...microprocessor controller (computer) L.E.D. display continues to read time or percent of extraction and ALL indicator dots are off...**

1. Fault in main door switch circuit ...
  - a. Main door switch out of adjustment.
  - b. Loose connection in door switch circuit.
2. Fault in lint drawer/lint door switch circuit (if applicable) ...
  - a. Lint drawer or lint door switch out of adjustment.
  - b. Loose connection in lint drawer/door switch circuit.

**J. Microprocessor controller (computer) display reads "dSFL" continuously and the buzzer (tone) sounds every 30-seconds...**

1. Fault in microprocessor heat-sensing circuit ...

- a. Blown "dSFL" 1/8-amp fuse on the microprocessor controller (computer).
  - b. Failed microprocessor temperature sensor.
  - c. Failed microprocessor controller (computer).
  - d. Broken wire or connection somewhere between the microprocessor controller (computer) and microprocessor temperature sensor.
- K. Microprocessor controller (computer) display reads "door" and microprocessor controller (computer) "door" L.E.D. indicator is off...**
- 1. Fault (open circuit) in main door or applicable lint drawer/door switch circuit ...
    - a. Lint drawer/door not closed all the way.
    - b. Lint drawer/door switch out of proper adjustment.
    - c. Failed lint drawer/door switch.
    - d. Failed door switch.
    - e. Broken connection/wire in main door or lint drawer/door circuit.
  - 2. Failed 24 VAC step down transformer or fault in wiring.
- L. Microprocessor controller (computer) L.E.D. display reads "door" and microprocessor controller (computer) "door" L.E.D. indicator is on...**
- 1. Failed microprocessor controller (computer).
- M. Microprocessor controller (computer) will not accept any keyboard (touchpad) entries, i.e., display reads "FILL" and when keyboard entries are selected, the display continues to read "FILL." ..**
- 1. Failed keyboard label (touchpad) assembly.
  - 2. Failed microprocessor controller (computer).

**N. Microprocessor controller (computer) will only accept certain keyboard (touchpad) entries...**

1. Failed keyboard label (touchpad) assembly.

**O. Microprocessor controller (computer) locks up and display reads erroneous message(s) or only partial segments...**

1. Transient power voltage (spikes)...disconnect power to dryer, wait one (1) minute and reestablish power to dryer...if problem is still evident ...

a. Failed microprocessor controller (computer).

b. Failed keyboard label (touchpad) assembly.

**P. Dryer stops during a cycle, microprocessor controller (computer) buzzer (tone) sounds for 5-seconds, and then L.E.D. display reads "dSFL", for approximately 30-seconds, and then returns to "FILL." ..**

1. Loose connection somewhere between the microprocessor controller (computer) and the microprocessor temperature sensor.
2. Loose "dSFL" 1/8-amp fuse on the microprocessor controller (computer).

**Q. Dryer stops during a cycle, microprocessor controller (computer) buzzer (tone) sounds for 5-seconds, and then the L.E.D. display returns to "FILL." ..**

1. Loose connection somewhere in the main power circuit to the microprocessor controller (computer).
2. Failed arc suppressor (A.S.) board (*for Reversing Models ONLY*).

**R. Microprocessor controller (computer) L.E.D. display reads "SEFL." ..**

1. Rotational sensor circuit (**option**) failure...fault somewhere in basket (tumbler) rotation or circuit ...
  - a. Basket (tumbler) not rotating ...
    - 1) Broken or loose V-belts.

2) Failure in drive motor circuit...refer to **Item B, Item C, and/or Item D** in this **Troubleshooting Section**.

b. Failed rotational sensor.

c. Broken wire or connection between sensor and microprocessor controller (computer).

2. Microprocessor controller (computer) program(PL02) is set incorrectly in the active mode ("SEn") where the dryer is not equipped with the **OPTIONAL** rotational sensor...program **should be set as "nSEn."**

**S. Microprocessor controller (computer) L.E.D. display reads "Hot"..**

1. Possible overheating condition...microprocessor controller (computer) has sensed a temperature which has exceeded 220°F.

"Hot" display **will not** clear until temperature sensed has dropped to 220°F or lower and the microprocessor controller (computer) is manually reset by pressing the "CLEAR/STOP" key.

**T. Heating unit is not operating (no heat)...no voltage at heating unit (*i.e., Gas Model - DSI module, Electric Model - electric oven contactor, or Steam Model - damper system pneumatic solenoid*) when dryer is first started and both the heat indicator dot and the "HEAT" output L.E.D. are on...**

## ***Gas Models***

1. Fault in sail switch circuit ...

a. Sail switch is out of adjustment or has failed.

b. Sail switch damper is not closing or is fluttering ...

1) Lint screen is dirty.

2) Restriction in exhaust.

3) No exhaust air flow ...

- a) Failed impellor (blower/fan).
  - b) Fault in impellor (blower/fan) motor circuit.
2. Failed burner hi-limit switch.
  3. Failed lint chamber sensor bracket basket (tumbler) hi-limit switch.

### ***Electric Models***

1. Fault in sail switch circuit.
  - a. Sail switch is out of adjustment or has failed.
  - b. Sail switch damper is not closing or is fluttering ...
    - 1) Lint screen is dirty.
    - 2) Restriction in exhaust.
    - 3) No exhaust air flow ...
      - a) Failed impellor (blower/fan).
      - b) Fault in impellor (blower/fan) motor circuit.
2. Failed oven hi-limit switch.
3. Failed lint chamber sensor bracket basket (tumbler) hi-limit switch.

### ***Steam Models***

1. Fault in lint chamber sensor bracket basket (tumbler) hi-limit switch.

**U. Heating unit is not operating (no heat)...no voltage at heating unit (i.e., Gas Model - DSI module, Electric Model - electric oven contactor, or Steam Model - damper system pneumatic solenoid) when dryer is first started and the microprocessor controller (computer) heat indicator dot is on but the "HEAT" relay output L.E.D. is NOT on...**

1. Failed microprocessor controller (computer).

**V. No heat...voltage is confirmed at heating unit (i.e., Gas Model - DSI module, Electric Model - electric oven contactor, or Steam Model - damper system 3-way micro valve)...**

## ***Gas Models***

1. Fault in Direct Spark Ignition (DSI) system ...

a. Ignitor sparks but no ignition and Direct Spark Ignition (DSI) module locks out (RED L.E.D. indicator light stays on) ...

1) Ignitor probe assembly is out of adjustment or has failed.

2) Severe air turbulence.

3) Failed Direct Spark Ignition (DSI) module.

4) Failed gas valve.

b. Ignitor sparks, burner lights but goes off right away ...

1) DSI ignitor flame probe is out of adjustment or has failed.

2) Sail switch is fluttering ...

a) Lint drawer screen is dirty.

b) Restriction in exhaust duct work.

c. Ignitor does not spark and Direct Spark Ignition (DSI) module locks out (RED L.E.D. indicator light stays on) ...

1) Fault in high voltage (HV) wire...break or loose connection.

- 2) Failed ignitor probe assembly.
- 3) Failed Direct Spark Ignition (DSI) module.

### ***Electric Models***

1. Failed oven contactor/coil.
2. Failed electric heating element(s).

### ***Steam Models***

1. Air Operated System ...
  - a. No (external) compressed air (80 PSI required) to steam damper solenoid.
  - b. Failed steam damper pneumatic (air) solenoid.
  - c. Damper stuck in "closed" position...check for obstruction.
  - d. Leak in the pneumatic (air) system.
  - e. Failed air piston.
2. Electrical Mechanical System ...
  - a. Failed electrical mechanical motor.
  - b. Damper stuck in closed position...check for obstruction.

### **W. Dryer is taking too long to dry...**

1. Exhaust duct work run too long or is undersized...back pressure cannot exceed .3 inches water column.
2. Restriction in exhaust ...
  - a. Dryer back draft damper is sticking partially closed.
  - b. Restriction/obstruction in duct work ...

- 1) Check duct work from dryer all the way to the outdoors.
3. Insufficient make-up air.
4. Impellor (blower/ fan) is rotating in the wrong direction (*3-Phase [3ø] Models ONLY*).
5. Lint drawer screen is dirty or is not being cleaned often enough.
6. Inadequate air flow ...
  - a. Impellor (blower/ fan) failure.

## 7. *Gas Models*

- a. Low and/or inconsistent gas pressure ...
 

Natural Gas pressure **must be** between 3.5 inches and 4.0 inches of water column.

Liquid propane (L.P.) pressure **must be** between 10.5 inches and 11.0 inches of water column.
- b. Poor air/ gas mixture (too much gas or not enough air) at burner... yellow or poor flame pattern ...
  - 1) Not enough make-up air.
  - 2) Restriction in exhaust.
  - 3) Gas pressure too high.
  - 4) Impellor (blower/ fan) rotating in the wrong direction.
  - 5) Burner orifice size (D.M.S.) too large for application (i.e., high elevation).
- c. Sail switch is fluttering ...
  - 1) Restriction in exhaust ...



- a) Lint screen is dirty or is not being cleaned often enough.
- d. Failed burner hi-limit switch...opens at incorrect temperature.
- e. Gas supply may have low heating value.

## 8. *Electric Models*

- a. Not enough make-up air.
- b. Restriction in exhaust.
- c. Lint screen is dirty or is not being cleaned often enough.
- d. Impellor (blower/ fan) is rotating in the wrong direction (*3-Phase [3ø] Models ONLY*).
- e. Failed electric element(s).
- f. Sail switch is fluttering ...
  - 1) Restriction in exhaust.
  - 2) Sail switch not adjusted properly.

## 9. *Steam Models*

- a. Low steam supply ...
  - 1) Steam trap too small.
  - 2) Supply line too small.
- b. Low steam pressure.
- c. Insufficient make-up air.
- d. Lint drawer screen is dirty or is not being cleaned often enough.
- e. Restriction in exhaust.

f. Dirty steam coil ...

1) Fins clogged with lint.

g. Steam damper system not functioning properly ...

1) Damper is sticking closed.

2) Leak in pneumatic (air) system.

10. Extractors (washers) not functioning properly.

11. Failed microprocessor controller (computer)...temperature calibration is inaccurate.

12. Failed microprocessor temperature sensor...calibration is inaccurate.

13. Failed lint chamber hi-heat thermostat...opens at incorrect temperature.

14. Microprocessor temperature sensor is covered with lint.

**NOTE:** Lint accumulation on the sensor bracket can act as an insulator which will affect the accuracy of the automatic drying cycle.

**X. At completion of the "AUtO" drying/cooling cycle...load is coming over dried...**

1. Percentage of dryness (dryness level) of cycle selected is too high.

2. "A" and "B" factors not set correctly or "B" factor has to be adjusted for adverse location conditions.

**Y. At completion of the "AUtO" drying/cooling cycle...load is coming damp...**

1. Percentage of dryness (dryness level) of cycle selected is too low.

2. "A" and "B" factors not set correctly or "B" factor has to be adjusted for adverse location conditions.

**Z. Main burners are burning with a yellow flame (for Gas Models ONLY)...**

1. Poor air/gas mixture (too much gas or not enough air at burner ...
  - a. Not enough make-up air.
  - b. Restriction in exhaust.
  - c. Gas pressure too high.
  - d. Impellor/blower/fan (*3-Phase [3ø] Models ONLY*) rotating in the wrong direction.
  - e. Burner orifice size (D.M.S.) too large for application (i.e., high elevation).

**AA. Condensation on main door glass...**

1. Too long, undersized, or improperly installed duct work.
2. Back draft damper is sticking in the partially closed position.

**BB. Dryer or scraping noise at basket (tumbler) area...**

1. Check for obstruction caught in basket (tumbler)/wrapper area.
2. Basket (tumbler) is out of proper alignment.
  - a. Check both vertical alignment and lateral alignment.
  - b. Check gap between front panel and the basket (tumbler...bearing set screws may have come loose, and basket (tumbler) walked forward or backward.

**CC. Excessive noise and/or vibration...**

1. Dryer is not leveled properly.
2. Impellor (blower/fan) out of balance ...
  - a. Excessive lint build up on impellor (blower/fan).
  - b. Failed impellor (blower/fan).

3. Loose basket (tumbler) tie rod.
4. Failed basket (tumbler) support.
5. Loose motor mount.
6. Failed idler bearings or basket (tumbler) bearings.
7. V-belts too tight or too loose.
8. Tumbler bearing set screws are loose.
9. Failed motor bearings.

### ***TIMER MODELS***

- A. Dryer will not start...both drive motor and blower motor are not operating ( indicator light is off)...**
1. Service panel fuse blown or tripped breaker.
  2. Dryer control circuit L1 or L2 1/2-amp fuse is blown.
  3. Open in main door or applicable lint drawer/ door switch circuit ...
    - a. Lint drawer/ door switch not closed all the way.
    - b. Lint drawer/ door switch out of proper adjustment.
    - c. Fail lint drawer/ door switch.
    - d. Failed main door switch.
    - e. Broken connection/ wire in main door or lint drawer/ door switch circuit.
  4. Failed push to start relay.
  5. Failed 24 VAC step down transformer or fault in wiring.
  6. Failed heat timer.

7. Failed control step down transformer (*for models 380 volts or higher ONLY*).

**B. Drive motor not operating (does not start)...**

1. Failed drive motor contactor (relay).
2. Failed reversing timer (*for Reversing Models ONLY*).
3. Failed drive motor.

**C. Drive motor (*Reversing Models ONLY*) operates in one direction only...stops and restarts in same direction...**

1. Failed reversing contactor (relay).
2. Failed reversing timer.

**D. Drive motor operates okay for a few minutes, and then stops and will not restart...**

1. Motor is overheating and tripping out on overload protector ...
  - a. Motor air vents clogged with lint.
  - b. Low voltage to the motor.
  - c. Failed motor.
  - d. Basket (tumbler) is binding...check for obstruction.
  - e. Failed idler bearings or tumbler bearings.

**E. Impellor/blower/fan motor (*Reversing Models ONLY*) is not operating (does not start)...**

1. Failed impellor (blower/fan) motor contactor (relay).
2. Failed impellor (blower/fan) motor.

**F. Impellor/blower/fan motor (*Reversing Models ONLY*) operates okay for a few minutes, and then stops and will not restart...**

1. Motor is overheating and tripping out on overload protector ...

- a. Motor air vent is clogged with lint.
- b. Low voltage to motor.
- c. Failed motor.
- d. Failed impellor (blower/ fan)...out of balance.

**G. Both drive motor and blower (impellor/fan) motor not operating (do not start) and indicator light is on...**

- 1. Fault in L1 or L2 termination(s) between terminal block and contactors (relays).
- 2. Failed contactors (both blower and drive).
- 3. Failed (both blower and drive) motor(s).

**H. Heating unit is not operating (no heat)...no voltage at heating unit (i.e., Gas Model - DSI module, Electric Model - electric oven contactor, or Steam Model - damper system pneumatic solenoid)...**

## ***Gas Models***

- 1. Fault in sail switch circuit ...
  - a. Sail switch is out of adjustment or has failed.
  - b. Sail switch damper is not closing or is fluttering ...
    - 1) Lint drawer screen is dirty.
    - 2) Restriction in exhaust.
    - 3) No exhaust air flow ...
      - a) Failed impellor (fan/blower).
      - b) Fault in impellor (fan) motor circuit.
- 2. Failed Burner hi-limit switch.

3. Failed lint chamber sensor bracket basket (tumbler) hi-limit switch or circuit.
4. Failed temperature selection switch or circuit.
5. Failed temperature cycle thermostat (try another selection).
6. Failed heat timer.

### *Electric Models*

1. Fault in sail switch circuit.
  - a. Sail switch is out of adjustment or has failed.
  - b. Sail switch damper is not closing or is fluttering ...
    - 1) Lint screen is dirty.
    - 2) Restriction in exhaust.
    - 3) No exhaust air flow ...
      - a) Failed impellor (blower/ fan).
      - b) Fault in impellor (blower/ fan) motor circuit.
  - c. Failed oven hi-limit switch.
  - d. Failed lint chamber sensor bracket basket (tumbler) hi-limit switch.
  - e. Failed temperature selection switch or circuit.
  - f. Failed temperature cycle thermostat (try another selection).

### *Steam Models*

1. Failed lint chamber sensor bracket basket (tumbler) hi-limit switch or circuit.
2. Failed temperature selection switch or circuit.

3. Failed temperature cycle thermostat (try another selection).
4. Failed heat timer.

**I. No heat...voltage is confirmed at heating unit (*i.e., Gas Model - DSI module, Electric Model - electric oven contactor coil, or Steam Model - damper system pneumatic solenoid*)...**

## ***Gas Models***

1. Fault in Direct Spark Ignition (DSI) ignition system ...
  - a. Ignitor sparks but no ignition and Direct Spark Ignition (DSI) module locks out (RED L.E.D. indicator light stay on) ...
    - 1) Ignitor probe assembly is out of adjustment or has failed.
    - 2) Severe air turbulence.
    - 3) Failed Direct Spark Ignition (DSI) module.
    - 4) Failed gas valve.
  - b. Ignitor sparks, burner lights but goes off right away ...
    - 1) Direct Spark Ignition (DSI) ignitor out of adjustment...or has failed.
    - 2) Sail switch is fluttering ...
      - a) Lint drawer screen is dirty.
      - b) Restriction in exhaust duct work.
  - c. Ignitor does not spark and Direct Spark Ignition (DSI) module locks out (RED L.E.D. indicator light stays on) ...
    - 1) Fault in high voltage (HV) wire...break or loose connection.
    - 2) Failed ignitor probe assembly.
    - 3) Failed Direct Spark Ignition (DSI) module.



## *Electric Models*

1. Failed oven contactor or coil.
2. Failed electric oven element(s).

## *Steam Models*

1. Air Operated System ...
  - a. No (external) compressed air (80 PSI required) to steam damper solenoid.
  - b. Failed steam damper pneumatic (air) solenoid.
  - c. Damper stuck in "closed" position...check for obstruction.
  - d. Leak in the pneumatic (air) system.
  - e. Failed air piston.
2. Electrical Mechanical System ...
  - a. Failed electrical mechanical motor.
  - b. Damper stuck in "closed" position...check for obstruction.

### **J. Dryer operates but is taking too long to dry...**

1. Exhaust duct work run too long or is undersized...back pressure cannot exceed .3 inches water column (W.C.).
2. Restriction in exhaust ...
  - a. Customer-furnished exhaust back draft damper is sticking partially closed.
  - b. Restriction in duct work...check duct work from dryer all the way to the outdoors.
3. Insufficient make-up air.

4. Impellor/blower/fan (*3-Phase [3ø] Models ONLY*) rotating in the wrong direction.
5. Lint drawer screen is dirty or is not being cleaned often enough.
6. Inadequate air flow ...
  - a. Impellor (blower/ fan) failure.

## 7. *Gas Models*

- a. Low and/or inconsistent gas pressure (*Gas Models ONLY*)...  
Natural Gas pressure **must be** between 3.5 inches and 4.0 inches of water column, and Liquid Propane (L.P.) pressure **must be** between 10.5 inches and 11.0 inches of water column.
- b. Poor air/gas mixture (too much gas or not enough air) at burner... yellow or poor flame pattern ...
  - 1) Not enough make-up air.
  - 2) Restriction in exhaust.
  - 3) Gas pressure too high.
  - 4) Impellor/blower/fan (*3-Phase [3ø] Models ONLY*) rotating in the wrong direction.
  - 5) Burner orifice size (D.M.S.) too large for application (i.e., high elevation).
- c. Sail switch is fluttering...restriction in exhaust ...
  - 1) Lint drawer screen is dirty or is not being cleaned often enough.
  - 2) Restriction in exhaust.
- d. Failed burner hi-limit switch...opens at incorrect temperature.
- e. Gas supply may have low heating value.

## 8. *Electric Models*

- a. Not enough make-up air.
- b. Restriction in exhaust.
- c. Lint screen is dirty or is not being cleaned often enough.
- d. Impellor (blower/ fan) is rotating in the wrong direction (*3-Phase [3ø] Models ONLY*).
- e. Sail switch is fluttering ...
  - 1) Restriction in exhaust.
  - 2) Sail switch not adjusted properly.

## 9. *Steam Models*

- a. Low steam pressure.
  - b. Insufficient make-up air.
  - c. Lint screen is dirty or is not being cleaned often enough.
  - e. Restriction in exhaust.
  - f. Dirty steam coil ...
    - 1) Damper is sticking closed.
    - 2) Leak in pneumatic (air) system.
10. Extractors (washers) not functioning properly.
11. Failed lint chamber hi-limit thermostat...opens at incorrect temperature.
12. Exceptionally cold/humid or low barometric pressure atmosphere.
13. Cycle temperature thermostates covered with lint.

**NOTE:** Lint accumulation on the sensor bracket can act as an insulator which will affect the accuracy of the thermostat.

**K. Main burners are burning with a yellow flame (for GAS MODELS ONLY)...**

1. Poor air/gas mixture (too much gas or not enough air) at burner ...
  - a. Not enough make-up air.
  - b. Restriction in exhaust.
  - c. Gas pressure too high.
  - d. Impellor (blower/ fan) is rotating in the wrong direction (*3-Phase [3ø] Models ONLY*).
  - e. Burner orifice size (D.M.S.) too large for application (i.e., high elevation).

**L. Condensation on main door glass...**

1. Too long, undersized, or improperly installed duct work.
2. Back draft damper in duct work is sticking in partially closed position.

**M. Dryer or scraping noise at basket (tumbler) area...**

1. Check for object caught in basket (tumbler)/ wrapper area.
2. Basket (tumbler) is out of proper alignment.
  - a. Check both vertical alignment and lateral alignment.
  - b. Check gap between front panel and basket (tumbler)...set screws may have come loose, and basket (tumbler) walked forward or backward.
3. Loose basket (tumbler) tie rod.
4. Failed basket (tumbler) support.

**N. Excessive noise and/or vibration...**

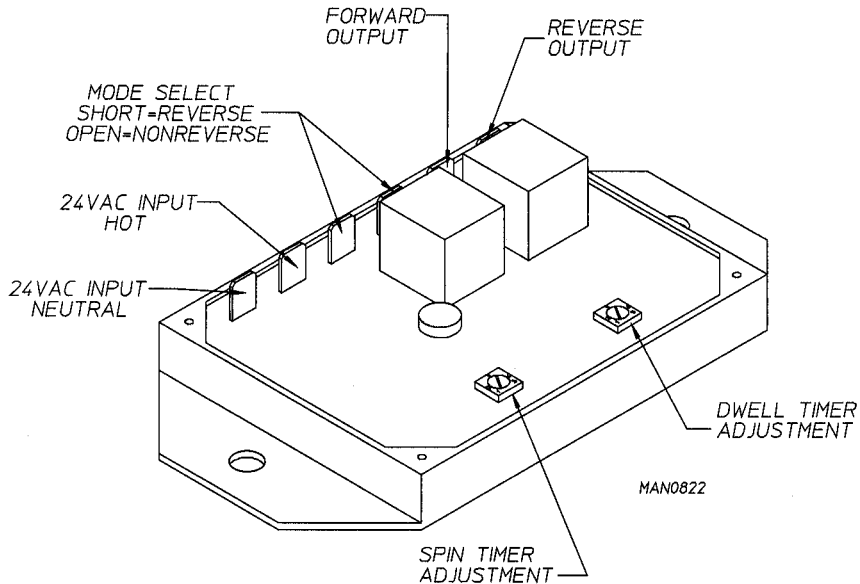
1. Dryer is not leveled properly.
2. Impellor (fan/blower) is out of balance.
  - a. Excessive lint build-up impellor (fan/blower).
  - b. Failed impellor (fan/blower).
3. Loose basket (tumbler) tie rod.
4. Basket (tumbler) is out of adjustment, or adjustment bolts (hardware) are loose.
5. Failed basket (tumbler) support.
6. Loose motor mount.
7. Failed idler, basket (tumbler), or fan (impellor) bearings.
8. V-belt(s) either too tight or too loose.
9. Bearing set screws (basket[(tumbler), idler, or impellor [blower] shaft) are loose.
10. Failed motor bearings.

# SECTION VIII

## REVERSING TIMER SPIN/DWELL ADJUSTMENTS

Dual timer models with "reversing option" have an electronic reversing timer in the electric service box which is located in the upper rear area of the dryer.

Both the dwell (stop) time and basket (tumbler) spin time are adjustable by mode selection switches located on the electronic timer (as noted in the illustration below).



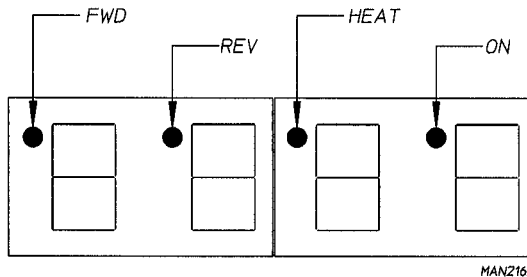
Timing Legend					
<b>Spin Time</b>					
Switch Position Number	1	2	3	4	5
Time in Seconds*	30	60	90	120	150
dd					
<b>Dwell (Stop) Time</b>					
Switch Position Number	1	2	3	4	5
Time in Seconds*	5	6	8	10	12
* Values shown are +/- 1 second.					

# SECTION IX

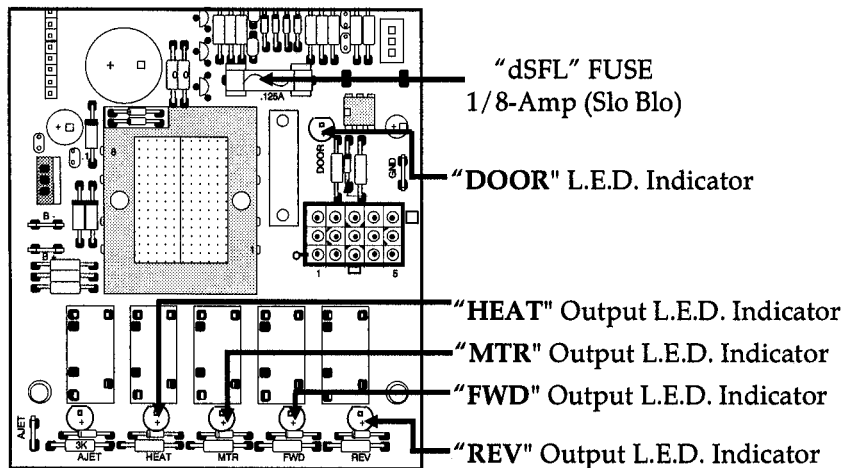
## PROCEDURE FOR FUNCTIONAL CHECK OF REPLACEMENT COMPONENTS

### 1. Microprocessor (computer) Board

- a. Upon completing installation of the replacement microprocessor (computer) board, reestablish power to the dryer.
- b. Start the drying cycle.
- c. Verify that the motor(s) and the heat indicator dots, in the microprocessor (computer) L.E.D. display are on. (Refer to the illustration below.)



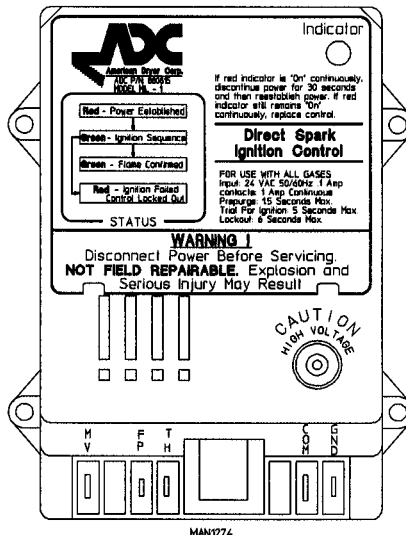
- d. Verify that the motor(s), heat, and door indicator lights on the back side of the microprocessor (computer) board are lit. (Refer to the illustration below.)



- e. Open main door. The dryer *must stop* and **ALL** indicator lights on the back side of the microprocessor (computer) board *must go out*.
- f. Try to restart the dryer with the main door open.
- g. The microprocessor (computer) board's L.E.D. display *must read* "DOOR".
- h. Close the main door and restart the dryer.
- i. Functional check of the microprocessor (computer) board is complete.

2. Direct Spark Ignition (DSI) Module

- a. Upon completing installation of the replacement Direct Spark Ignition (DSI) module, reestablish power to the dryer.
- b. Start the drying cycle.
- c. The ignition (DSI) module's L.E.D. indicator will light "red" for up to approximately 1.5 seconds (prepurge time).
- d. The module's indicator light will then turn "green." The gas valve will be energized and the ignitor probe will spark for approximately 8 seconds. The burner flame should now be established.



- e. With the burner flame on, remove the flame probe wire from the FP terminal of the DSI module.
- f. The burner flame *must shut off* and the ignition module *must lock out* with the DSI module's indicator light "red."
- g. Stop the drying cycle, with the flame probe wire still removed, restart the drying cycle.



- h. The ignition module *must proceed* through the prepurge, with the indicator light "red," the ignition trial time of approximately 8 seconds, with the indicator light "green," and then proceed to lock out with the indicator light "red."
- i. Functional check of the Direct Spark Ignition (DSI) Module is complete.
  - 1) Replace the flame probe wire from the FP terminal to the DSI module.

**ADC 112180**

<b>1-</b>	<b>12/16/94-500</b>	<b>2-</b>	<b>01/05/94-1,000</b>
<b>3-</b>	<b>01/31/95-1,000</b>	<b>4-</b>	<b>03/27/95-1,000</b>
<b>5-</b>	<b>06/06/95-1,000</b>	<b>6*</b>	<b>08/10/95-1,000</b>
<b>7*</b>	<b>12/11/95-1,000</b>	<b>8-</b>	<b>04/23/96-1,000</b>
<b>9*</b>	<b>09/19/96-1,500</b>	<b>10*</b>	<b>04/15/97-1,500</b>
<b>11*</b>	<b>07/28/97-1,500</b>	<b>12-</b>	<b>11/19/97-1,500</b>
<b>13*</b>	<b>05/09/97-1,500</b>		

