

# AD-24 Installation Manual

## Phase 5 / Gas DSI & Electric

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

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

— WHAT TO 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.

**AVERTISSEMENT:** Assurez-vous de bien suivre les instructions données dans cette notice pour réduire au minimum le risque d'incendie ou d'explosion ou pour éviter tout dommage matériel, toute blessure ou la mort.

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

— QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:

- Ne pas tenter d'allumer d'appareils.
- Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones se trouvant dans le bâtiment.
- Évacuez la pièce, le bâtiment ou la zone.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

— L'installation et l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.



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ADC Part No. 113135-18

# Retain This Manual In A Safe Place For Future Reference

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

*ONLY qualified technicians should service this equipment.*

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

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

## **FOR YOUR SAFETY**

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

## **POUR VOTRE SÉCURITÉ**

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

We have tried to make this manual as complete as possible and hope you will find it useful. ADC reserves the right to make changes from time to time, without notice or obligation, in prices, specifications, colors, and material, and to change or discontinue models. The illustrations included in this manual may not depict your particular dryer exactly.

## **Important**

For your convenience, log the following information:

DATE OF PURCHASE \_\_\_\_\_ MODEL NO. **AD-24**

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

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

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

These instructions are only valid if the following country code is on the appliance... If this code is not present on the appliance, it is necessary to refer to the technical instructions which will provide the necessary information concerning the modification of the appliance to the condition of use for the country.

In accordance with EN ISO 3166-1, the names of countries shall be represented by the following codes:

**GB** United Kingdom  
**IE** Ireland

## **“IMPORTANT NOTE TO PURCHASER”**

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

# **WARNING**

## Proposition 65

Use of this product could expose you to substances from fuel combustion that contain chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

In the State of Massachusetts, the following installation instructions apply:

- Installations and repairs must be performed by a qualified or licensed contractor, plumber, or gasfitter qualified or licensed by the State of Massachusetts.
- If using a ball valve, it shall be a T-handle type.
- A flexible gas connector, when used, must not exceed 3 feet.

## IMPORTANT

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

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

«Attention: Au moment de l'entretien des commandes, étiquetez tous les fils avant de les débrancher. Des erreurs de câblage peuvent entraîner un fonctionnement inadéquat et dangereux.»

## CAUTION

DRYERS SHOULD NEVER BE LEFT UNATTENDED WHILE IN OPERATION.

## WARNING

**CHILDREN SHOULD NOT BE ALLOWED TO PLAY ON OR NEAR THE DRYER(S).  
CHILDREN SHOULD BE SUPERVISED IF NEAR DRYERS IN OPERATION.**

## FOR YOUR SAFETY

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

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

**WARNING**

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

**WARNING**

**Do not modify this appliance.**

**WARNING**

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

**WARNING**

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

**IMPORTANT**

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

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

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

**IMPORTANT**

**Dryer *must be* installed in a location/environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).**

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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 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 the number refused **must be** noted on the receipt.
4. If you determine that the dryer was damaged after the trucker has left your location, you should call the delivering carrier's freight terminal immediately and file a claim. The freight company considers this concealed damage. 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. Dryer/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 contact the **ADC** Traffic Manager at (508) 678-9000.

**IMPORTANT:** The basket (tumbler) section of 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. **DO NOT** spray aerosols in the vicinity of this appliance while it is in operation.
3. 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.
4. WHAT TO DO IF YOU SMELL GAS...
  - a. **DO NOT** try to light any appliance.
  - b. **DO NOT** touch any electrical switch.
  - c. **DO NOT** use any phone in your building.
  - d. Clear the room, building, or area of **ALL** occupants.
  - e. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - f. If you **cannot** reach your gas supplier, call the fire department.
5. Installation and service **must be** performed by a qualified installer, service agency, or gas supplier.
6. Dryer(s) **must be** exhausted to the outdoors.
7. Although ADC produces a very versatile dryer, there are some articles that, due to fabric composition or cleaning method, **should not be** dried in it.

**WARNING:** Dry only water washed fabrics. **DO NOT** dry articles spotted or washed in dry cleaning solvents, a combustible detergent, industrial chemicals, or "all purpose" cleaner. **EXPLOSION COULD RESULT.**

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

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



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

8. The possible presence of residual quantities of aggressive or decomposed chemicals in the load may produce damage to the machine and harmful fumes.
9. A program **should be** established for the inspection and cleaning of lint in the heating unit area, exhaust ductwork, and inside the dryer. The frequency of inspection and cleaning can best be determined from experience at each location.

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

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

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

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

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

12. This dryer is not to be used in the presence of dry cleaning solvents or fumes.
13. 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.

14. **CAUTION:** Label ALL wires prior to disconnection when servicing controls. Wiring errors cause improper and dangerous operation. Verify proper operation after servicing.
15. **READ AND FOLLOW ALL CAUTION AND DIRECTION LABELS ATTACHED TO THE DRYER.**
16. For safety, proper operation, and optimum performance, the dryer **must not be** operated with a load less than sixty-six percent (66%), 13 lb (5.89 kg) of its rated capacity.

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

**IMPORTANT:** Dryer *must be* installed in a location/environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).

**CE ONLY**

**IMPORTANT:** This appliance must only be installed and operated in the country of destination indicated on the dryer's data plate. If the appliance is to be installed and operated in a country other than the one indicated on the data plate, a data plate amendment must be obtained from American Dryer Corporation.

IEC335 applies.

NOTES \_\_\_\_\_

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# SECTION II

## SPECIFICATIONS

### A. SPECIFICATIONS

MAXIMUM CAPACITY (DRY WEIGHT)		20 lb	<b>9.07 kg</b>	
TUMBLER DIAMETER		27-1/4"	<b>69.22 cm</b>	
TUMBLER DEPTH		24"	<b>60.96 cm</b>	
TUMBLER VOLUME		8.10 cu ft	<b>229.37 L</b>	
TUMBLER/DRIVE MOTOR		1/2 hp	<b>0.37 kW</b>	
BLOWER/FAN MOTOR		N / A		
DOOR OPENING (DIAMETER)		21-1/2"	<b>54.61 cm</b>	
DOOR SILL HEIGHT		28-1/3"	<b>71.91 cm</b>	
WATER CONNECTION*		3/4" F.N.P.T.		
DRYERS PER 20'/40' CONTAINER		14 / 30		
DRYERS PER 48'/53' TRUCK		42 / 48		
<b>GAS</b>	VOLTAGE AVAILABLE		120-480V 1,3ø 2,3,4w 50/60 Hz	
	APPROXIMATE NET WEIGHT		426 lb <b>193.23 kg</b>	
	APPROXIMATE SHIPPING WEIGHT		461 lb <b>209.11 kg</b>	
	AIRFLOW	60 Hz	400 cfm	<b>11.33 cmm</b>
		50 Hz	333 cfm	<b>9.44 cmm</b>
	HEAT INPUT		60,000 Btu/hr	<b>15,120 kcal/hr</b>
	EXHAUST CONNECTION (DIAMETER)		6"	<b>15.24 cm</b>
	COMPRESSED AIR CONNECTION		N / A	
	COMPRESSED AIR VOLUME		N / A	
INLET PIPE CONNECTION		1/2" M.N.P.T.		
<b>ELECTRIC</b>	VOLTAGE AVAILABLE		208-480V 1,3ø 2,3,4w 50/60 Hz	
	APPROXIMATE NET WEIGHT		426 lb <b>193.23 kg</b>	
	APPROXIMATE SHIPPING WEIGHT		461 lb <b>209.11 kg</b>	
	AIRFLOW	60 Hz	400 cfm	<b>11.33 cmm</b>
		50 Hz	333 cfm	<b>9.44 cmm</b>
	EXHAUST CONNECTION (DIAMETER)		6"	<b>15.24 cm</b>
	COMPRESSED AIR CONNECTION		N / A	
	COMPRESSED AIR VOLUME		N / A	
	OVEN SIZE			
		kW	Btu/hr	kcal/hr
	18	61,400	<b>15,500</b>	
	20	68,200	<b>17,200</b>	
	24	81,900	<b>20,600</b>	
<b>STEAM</b>	VOLTAGE AVAILABLE		N / A	
	APPROXIMATE NET WEIGHT			
	APPROXIMATE SHIPPING WEIGHT			
	AIRFLOW	60 Hz		
		50 Hz		
	STEAM CONSUMPTION			
	OPERATING STEAM PRESSURE			
	EXHAUST CONNECTION (DIAMETER)			
	COMPRESSED AIR CONNECTION			
	COMPRESSED AIR VOLUME			
	BOILER HORSEPOWER (NORMAL LOAD)			
SUPPLY CONNECTION				
RETURN CONNECTION				

Shaded areas are stated in metric equivalents

10/5/10

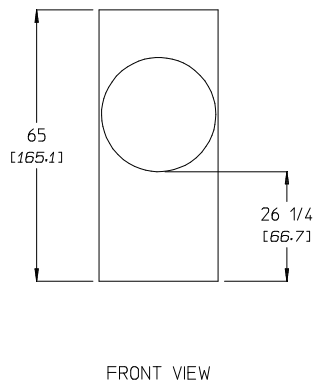
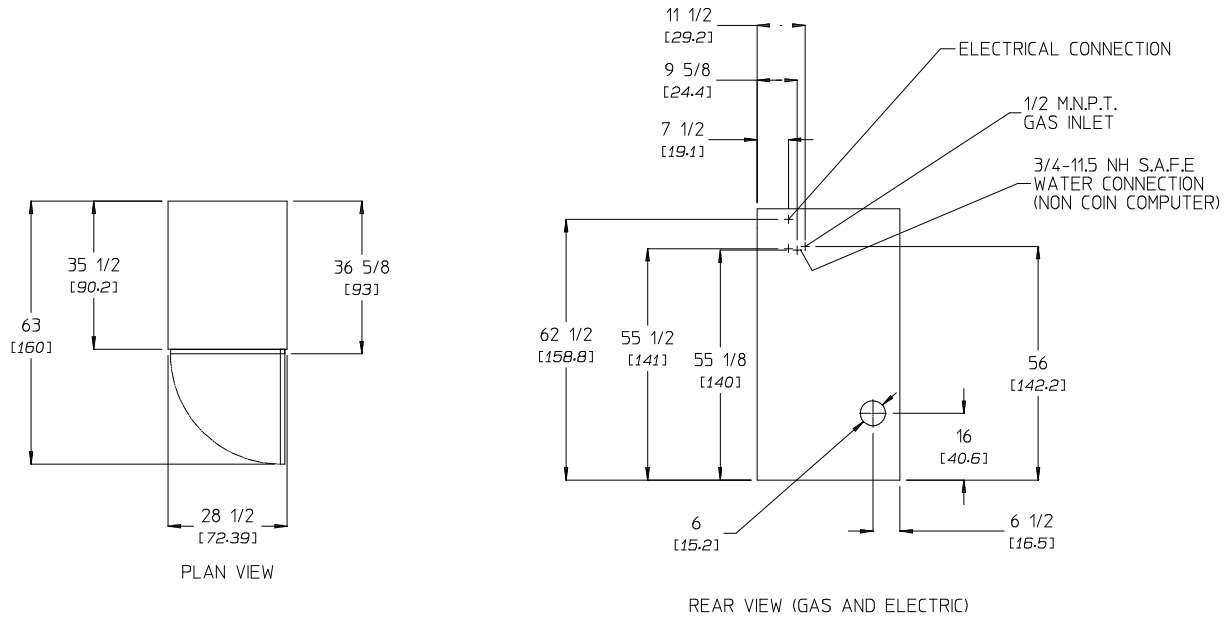
\* Water supply must be 40 psi +/- 20 psi (2.75 bar +/- 1.37 bar) for fire suppression system to operate properly.

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

# SPECIFICATIONS

DRYER NOTES:

- ° DUCTWORK SIZE VARIES WITH INSTALLATION CONDITIONS.
- ° EXHAUST STATIC PRESSURE MUST BE NO LESS THAN 0 AND MUST NOT EXCEED 0.3" (0.74 MB) WATER COLUMN.



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

# SECTION III

## INSTALLATION PROCEDURES

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

### A. UNPACKING/SETTING UP

Remove protective shipping material (i.e., plastic wrap, and/or optional shipping box) from dryer.

The dryer can be moved to its final location while still attached to the skid or with the skid removed. To unskid the dryer, locate and remove the four (4) bolts securing the base of the dryer to the wooden skid. Two (2) are at the rear base (remove the back panel for access), and two (2) are located in the bottom of the lint chamber. To remove the two (2) bolts located in the lint chamber area, remove the lint door. 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 (4) 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 (1) 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.

### 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 the location **must conform** with the National Fuel Gas Code ANSI.Z223.1 LATEST EDITION, or in Canada, the installation **must conform** to applicable Canadian Standards: CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION (for General Installation and Gas Plumbing).

1. The dryer **must be** installed on a sound level floor capable of supporting its weight. Carpeting **must be** removed from the floor area that the dryer is to rest on.

**IMPORTANT:** “The dryer **must be** installed on noncombustible floors only.”

2. The dryer **must not be** installed or stored in an area where it will be exposed to water and/or weather.
3. The 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 Requirements** in Section D).
5. Clearance provisions **must be** made from noncombustible 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.

9. The dryer **must be** installed with a proper exhaust duct connection to the outside.
10. The dryer **must be** installed with provisions for adequate combustion and make-up air supply.

**CAUTION:** This dryer produces combustible lint and *must be* exhausted to the outdoors. Every 6 months, inspect the exhaust ducting and remove any lint build up.

**IMPORTANT:** Dryer *must be* installed in a location/environment, which the ambient temperature remains between 40° F (4.44° C) and 130° F (54.44° C).

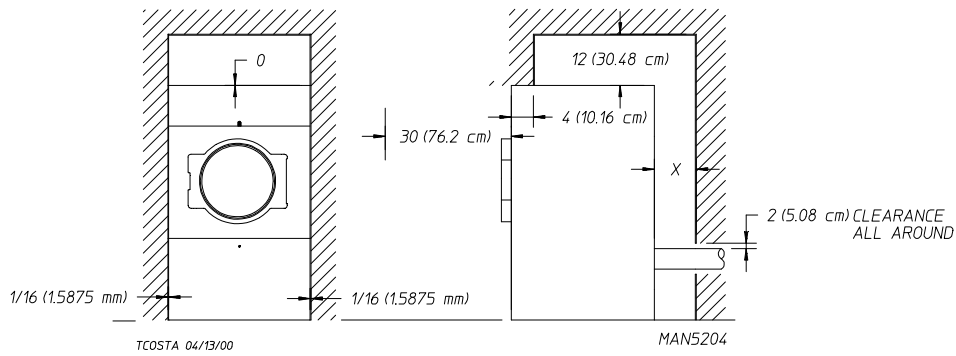
## C. DRYER ENCLOSURE REQUIREMENTS

Bulkheads and partitions **should be** made of noncombustible materials and **must be** located a minimum of 12-inches (30.48 cm), 18-inches (45.72 cm) or more is recommended for ease of installation, maintenance, and service, above the dryer outer top, except along the front of the dryer which may be closed in if desired. The clearance between the bulkhead header and the dryer **must be** a minimum of 4-inches (10.16 cm) and must not extend more than 4-inches (10.16 cm) to the rear of the front.

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

**IMPORTANT:** If the dryer is installed in a closet type enclosure there *must be* no other fuel burning appliance installed in the same closet.

Dryers may be positioned sidewall to sidewall. However, allowances **must be** made for opening and closing of the control door and the lint door. It is suggested that the dryer be positioned about 2 feet (0.61 meters) away from the nearest obstruction for ease of installation, maintenance, and service (to be measured from the back guard). Refer to the **illustration** on following page for details.



X = 12-inch (30.48 cm) minimum, 24-inches (60.96 cm) is suggested for ease of maintenance.

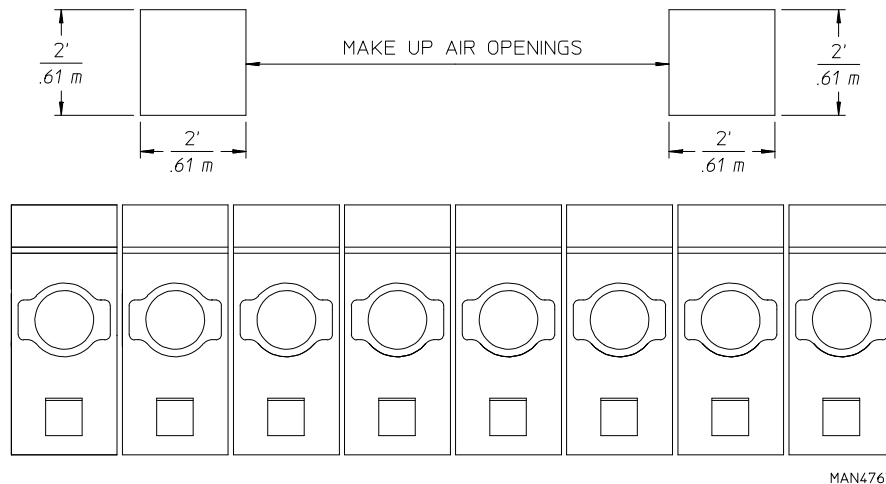
**NOTE:** Air considerations are important for proper and efficient operation.

## D. FRESH AIR SUPPLY REQUIREMENTS

This appliance may only be installed in a room that meets the appropriate ventilation requirements specified in the national installation regulations.

The 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 1 square foot (0.093 square meters) 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 separate make-up air openings 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. The dryer **must be** installed with provisions for adequate combustion and make-up air supply.

*EXAMPLE:* For a bank of eight (8) dryers, two (2) unrestricted openings measuring 2 feet by 2 feet (0.61 meters by 0.61 meters) 4 square feet (0.372 square meters) are acceptable.



TYPICAL INSTALLATION SHOWING MAKE - UP AIR OPENINGS

**IMPORTANT:** Make-up air openings *should not be* located in an area directly near where exhaust vents exit the building.

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 solvent fumes. Make-up air that is contaminated by dry cleaning solvent fumes will result in irreparable damage to the motors and other dryer components.

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

## E. EXHAUST REQUIREMENTS

Exhaust ductwork **should be** designed and installed by a qualified professional. Improperly sized ductwork will create excessive back pressure which results in slow drying, increased use of energy, overheating of the dryer, and shutdown of the burner by the airflow (sail) switches, burner hi-limits, or basket (tumbler) hi-limit thermostats. (Refer to the **illustrations** on page 13 and page 14 for details.) The dryer **must be** installed with a proper exhaust duct connection to the outside.

The design of the flue system shall be such that any condensate formed when operating the appliance from cold shall either be retained and subsequently re-evaporated or discharged.

**CAUTION:** This dryer produces combustible lint and *must be* exhausted to the outdoors.

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

**IMPORTANT:** It is recommended that exhaust or booster fans not be used in the exhaust ductwork system.

When 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° turns in 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 downwards as indicated on page 13 and page 14. 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, louvers, or caps on the outside opening of the exhaust ductwork. The ducting **should be** smooth inside with no projections from sheet metal screws or other obstructions, which will collect lint. Additionally, inspection doors **should be** installed at strategic points in the exhaust ductwork for periodic inspection and cleaning.

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 the dryer's exhaust duct area *must be* no less than 0 and *must not exceed* 0.3 inches (0.74 mb) of water column (W.C.).



**NOTE:** When the exhaust ductwork passes through a wall, ceiling, or roof made of combustible materials, the opening **must be** 2-inches (5.08 cm) larger than the duct (all the way around). The duct **must be** centered within this opening.

**IMPORTANT:** The dryer exhaust duct **must not be** connected to any gas vent, chimney, wall, ceiling, or concealing space of a building.

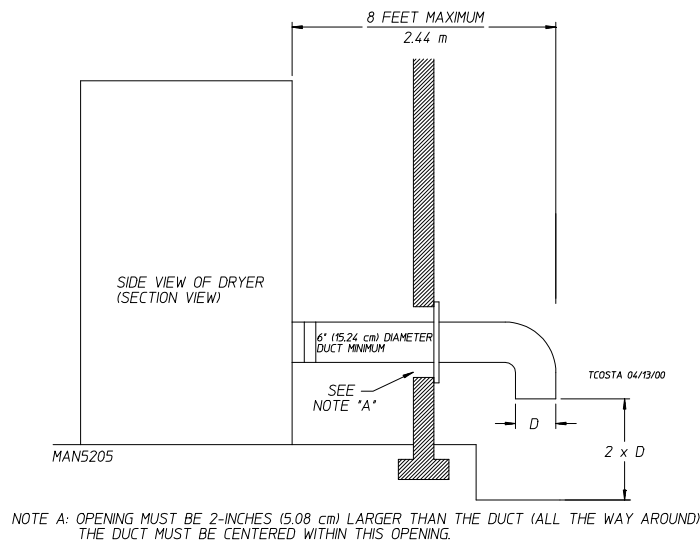
**NOTE:** As per the National Fuel Gas Code, “Exhaust ducts for type 2 clothes dryers shall be constructed of sheet metal or other noncombustible material. Such ducts shall be equivalent in strength and corrosion resistance to ducts made of galvanized sheet steel not less than 26 gauge (0.0195-inches [0.5 mm]) thick.”

## SINGLE DRYER VENTING

**IMPORTANT:** A minimum exhaust duct size of 6-inches (15.24 cm) **must be** used.

For a 6-inch (15.24 cm) horizontal run where a maximum of one (1) elbow is used (refer to the **illustration below**), the ductwork from the dryer outlet **must not exceed** 8 feet (2.44 meters).

### HORIZONTAL SINGLE DRYER VENTING 6-INCH (15.24 cm) DUCTING



If the length of the duct run or quantity of elbows used exceeds the above noted specifications, the cross-sectional area of the ductwork **must be** increased in proportion to the number of elbows or duct run added.

**IMPORTANT:** For extended ductwork runs, the cross section area of the ductwork can only be increased to an extent. When the ductwork approaches the maximum limits noted in this manual, a professional heating, venting, and air conditioning (HVAC) firm **should be** consulted for proper venting information.

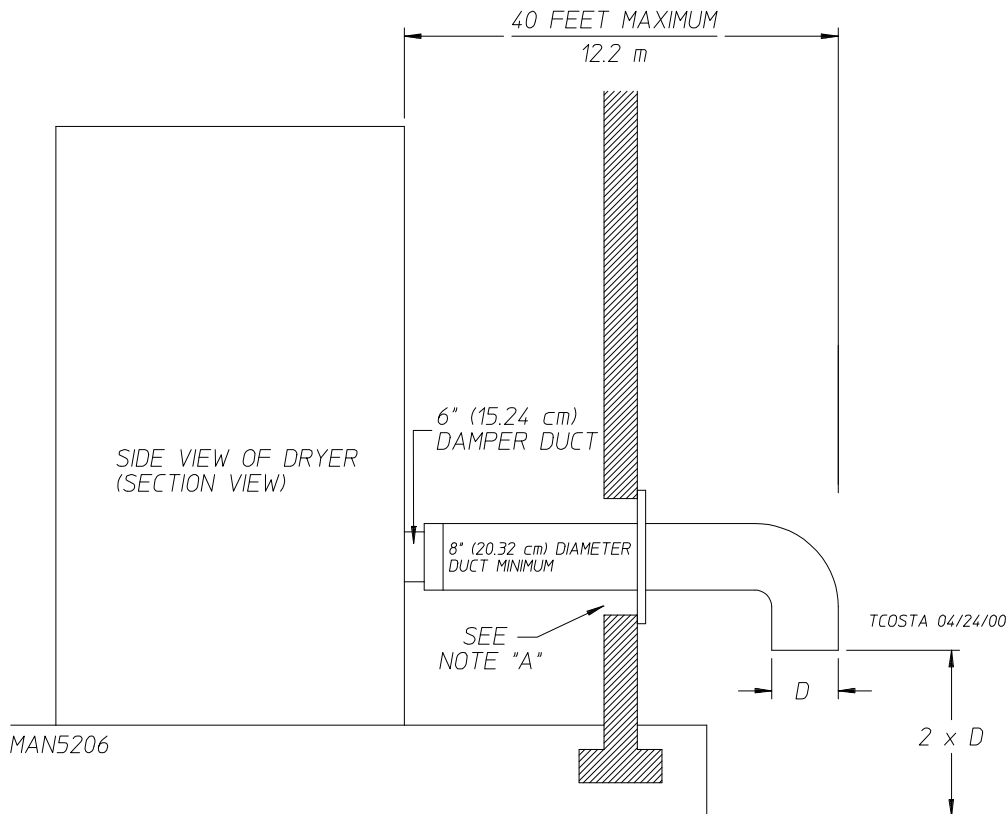
When single 6-inch (15.24 cm) venting is used, for a horizontal run, the ductwork from the dryer to the outside outlet **cannot** exceed 8 feet (2.44 meters) in total length. This calculation of 8 feet (2.44 meters) compensates or allows for the use of a maximum of one (1) elbow (which is the outside outlet protection). Refer to the **illustration above**.

# SINGLE DRYER VENTING

**IMPORTANT:** A minimum exhaust duct size of 8-inches (20.32 cm) *must be* used.

For an 8-inch (20.32 cm) horizontal run where a maximum of one (1) elbow is used (refer to the **illustration below**), the ductwork from the dryer outlet **must not exceed** 40 feet (12.2 meters).

## HORIZONTAL SINGLE DRYER VENTING 8-INCH (20.32 cm) DUCTING



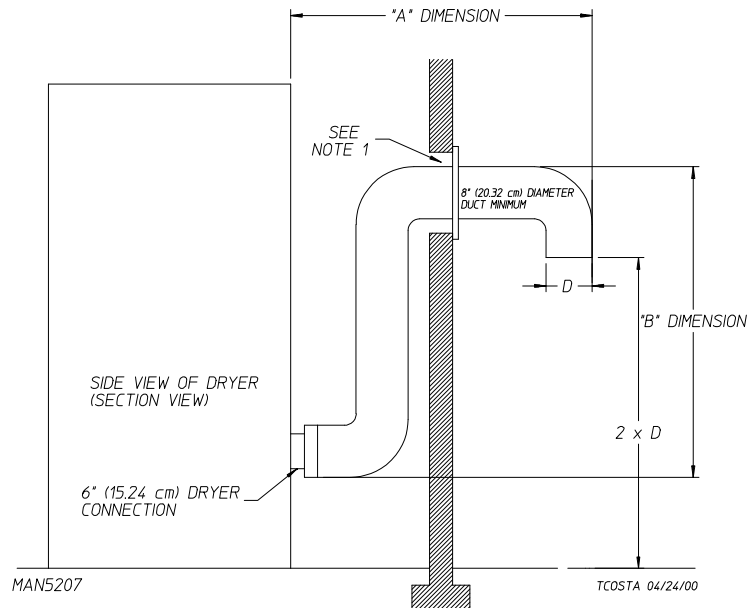
NOTE A: OPENING MUST BE 2-INCHES (5.08 cm) LARGER THAN THE DUCT (ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

If the length of the duct run or quantity of elbows used exceeds the above noted specifications, the cross-sectional area of the ductwork **must be** increased in proportion to the number of elbows or duct run added.

**IMPORTANT:** For extended ductwork runs, the cross section area of the ductwork can only be increased to an extent. When the ductwork approaches the maximum limits noted in this manual, a professional heating, venting, and air conditioning (HVAC) firm *should be* consulted for proper venting information.

When single 8-inch (20.32 cm) venting is used, for a horizontal run, the ductwork from the dryer to the outside outlet **cannot** exceed 40 feet (12.2 meters) in total length. This calculation of 40 feet (12.2 meters) compensates for or allows for the use of a maximum of one (1) elbow (which is the outside outlet protection). Refer to the **illustration above**.

## VERTICAL SINGLE DRYER VENTING 8-INCH (20.32 cm) DUCTING

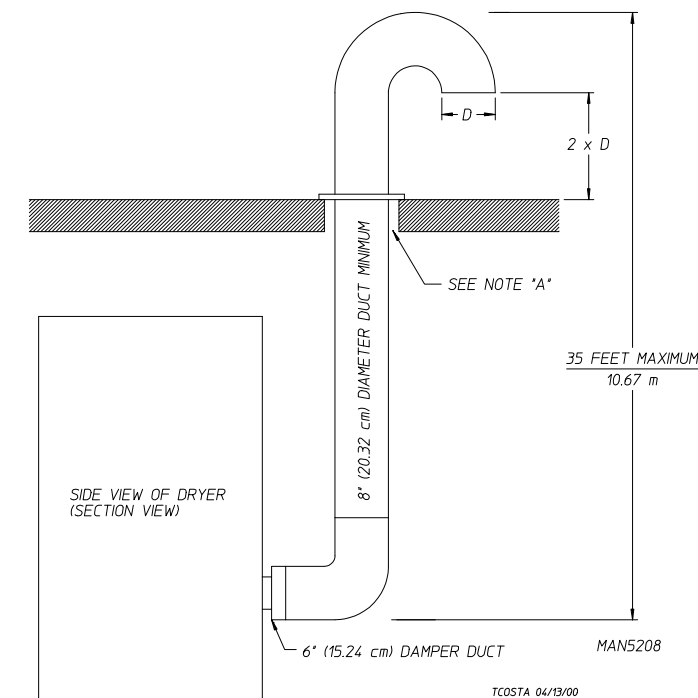


NOTE 1: OPENING MUST BE 2-INCHES (5.08 CM) LARGER THAN THE DUCT (ALL THE WAY AROUND).  
THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

NOTE 2: "A" DIMENSION + "B" DIMENSION SHOULD NOT EXCEED 35 FEET (10.67 m) MAXIMUM.

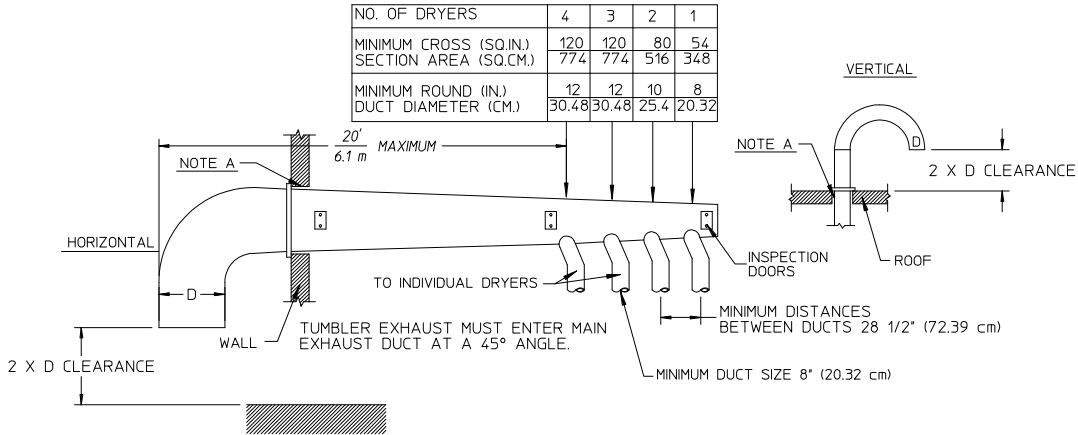
When single 8-inch (20.32 cm) vertical venting is used (refer to the **illustration below**), the ductwork from the dryer to the outside outlet **cannot** exceed 35 feet (10.67 meters) in total length. This calculation of 35 feet (10.67 meters) compensates or allows for the use of a maximum of three (3) elbows including the 180° (turned downward) outside outlet.

## VERTICAL SINGLE DRYER VENTING



NOTE A: OPENING MUST BE 2-INCHES (5.08 cm) LARGER THAN THE DUCT (ALL THE WAY AROUND).  
THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

MULTIPLE DRYER VENTING (HORIZONTAL)  
WITH A MINIMUM 8" (20.32 cm) DIAMETER EXHAUST  
CONNECTIONS AT COMMON DUCT



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

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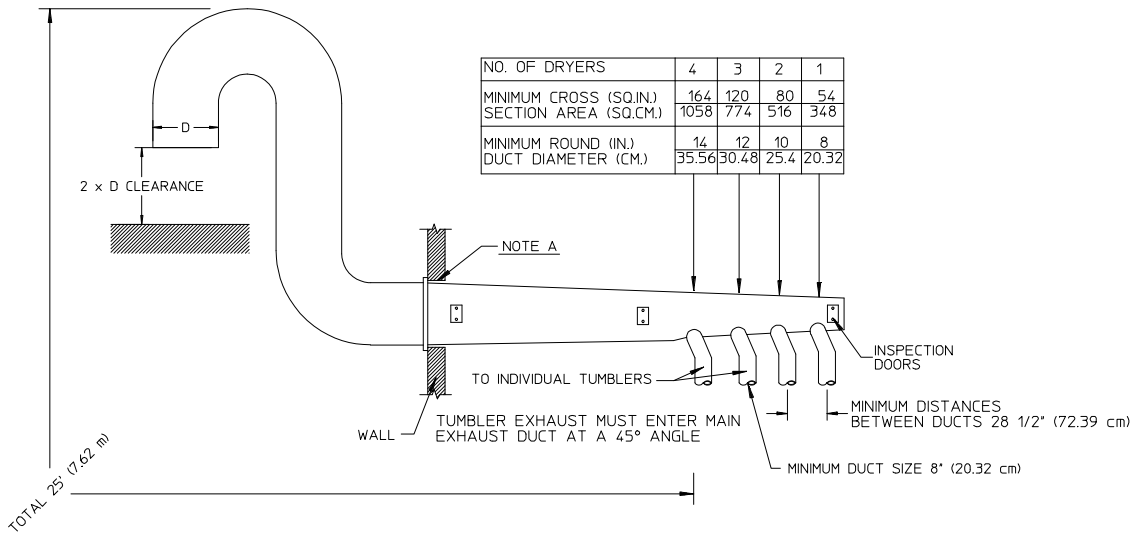
FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

CROSS SECTIONAL AREA OF A ROUND DUCT = .785 (19.939 mm) x D<sup>2</sup> WHERE D = DIAMETER OF THE DUCT.

CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = W x H WHERE W = WIDTH AND H = HEIGHT.

NOTE A: OPENING MUST BE 2-INCHES (5.08 cm) LARGER THAN DUCT  
(ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

MULTIPLE DRYER VENTING (VERTICAL) WITH A  
MINIMUM 8" (20.32 cm) DIAMETER EXHAUST CONNECTIONS AT COMMON DUCT



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

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FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

CROSS SECTIONAL AREA OF A ROUND DUCT = .785 (19.939 mm) x D<sup>2</sup> WHERE D = DIAMETER OF THE DUCT.

CROSS SECTIONAL AREA OF A RECTANGULAR DUCT = W x H WHERE W = WIDTH AND H = HEIGHT.

NOTE A: OPENING MUST BE 2-INCHES (5.08 cm) LARGER THAN DUCT  
(ALL THE WAY AROUND). THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

**IMPORTANT:** For extended ductwork runs, the cross section area of the ductwork can only be increased to an extent. When the ductwork approaches the maximum limits as noted in this manual, a professional heating, venting, and air conditioning (HVAC) firm *should be* consulted for proper venting information.

## **IMPORTANT VENTING REMINDERS**

1. Ductwork size and installation **should be** done by a qualified professional.
2. The dryer **must be** exhausted to the outdoors.
3. The dryer exhaust **must not be** connected into any gas vent, chimney, wall, ceiling, or concealing space of a building.
4. Ductwork **should be** routed as short as possible to the outdoors with as few elbows as possible.
5. Avoid 90° turns, use 30° or 45° turns instead.
6. The inside of the ductwork **should be** as smooth as possible with no projections from sheet metal screws.
7. **ALL** ducts **should be** taped to prevent moisture and lint from escaping into the building.
8. Inspection or clean out doors **should be** installed throughout strategic points in the ductwork for periodic inspection and cleaning.
9. Whenever the ductwork passes through combustible materials, the opening **must be** 2-inches (5.08 cm) larger than the duct (all the way around). The duct **must be** centered within this opening.
10. The outside of the ductwork **must be** protected from the weather. A 90° elbow **must be** used for a horizontal run and when vertically through a roof by using a 180° turn to point the opening downward. The distance between the exhaust duct and the nearest obstruction (i.e., roof or ground) **must be** twice the diameter of the duct.
11. **DO NOT** use screens, louvers, or caps on the outside opening of the exhaust ductwork.
12. Exhaust back pressure measured by a manometer at the dryer's exhaust duct area **must be** no less than 0 and **must not exceed** 0.3 inches (0.74 mb) of water column (W.C.).

**IMPORTANT:** **It is recommended** that exhaust or booster fans not be used in the exhaust ductwork system.

## 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 to local and state regulations or codes. In the absence of such codes, **ALL** electrical connections, materials, and workmanship **must conform** to the applicable requirements of the National Electrical Code ANSI/NFPA NO. 70-LATEST EDITION, or in Canada, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION.

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

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

A separate circuit servicing 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 VIII for details)

#### a. Electric Service

##### 1) Gas Dryers Only

**IMPORTANT:** The dryer **must be** connected to the electrical supply shown on the data label affixed to the left side panel area behind the top control (access) door. 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 left side panel area behind the top control (access) 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 Electrical Code ANSI/NFPA NO. 70-LATEST EDITION, or in Canada, the installation must conform to applicable Canada Standards: Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION. The ground connection may be to a proven earth ground at the location service panel.

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.

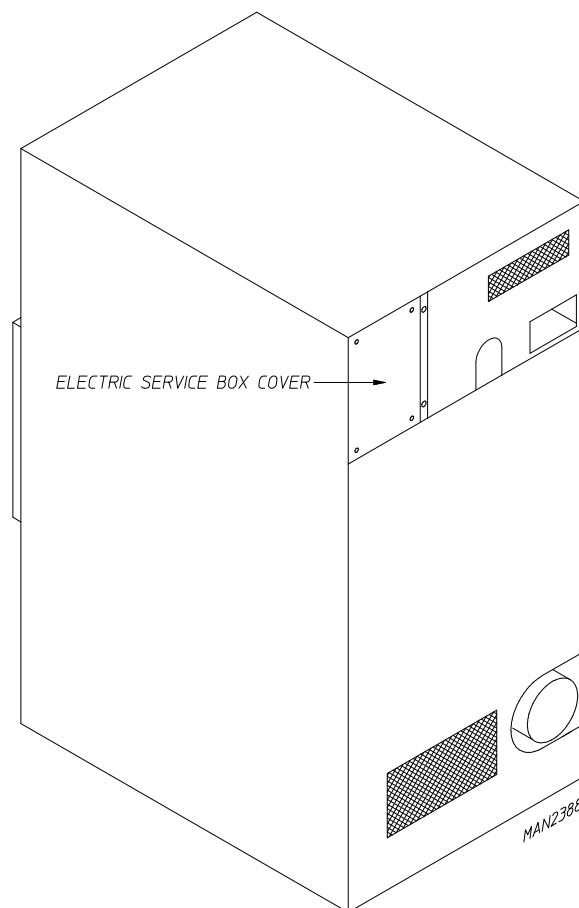
**IMPORTANT:** For personal safety and proper operation, the dryer **must be** grounded.

### 4. Electrical Connections

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

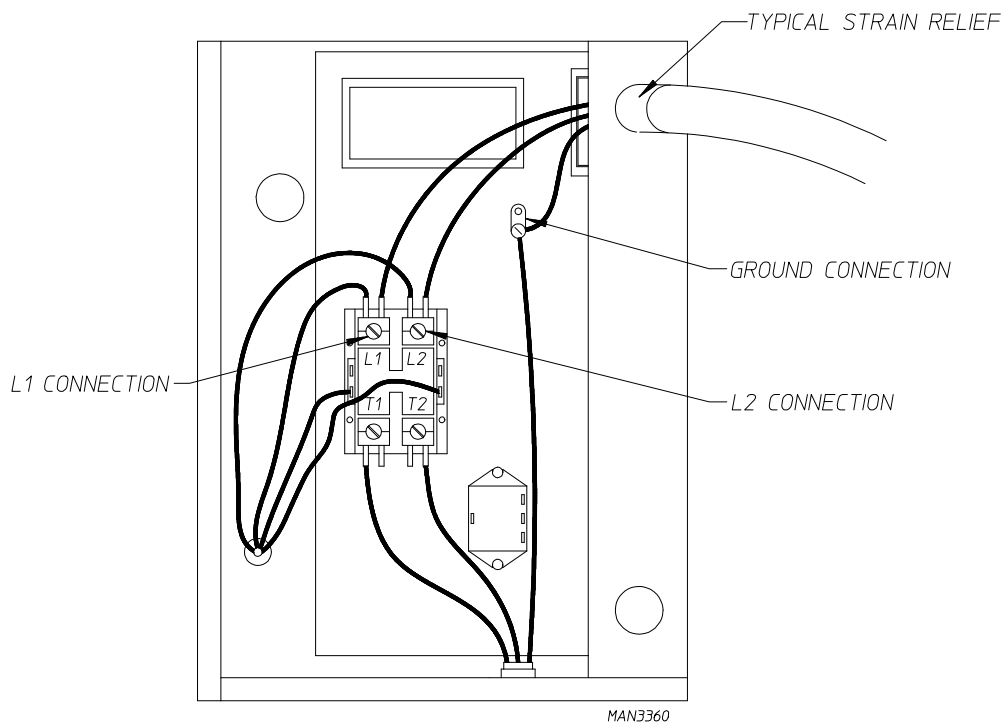
#### a. Gas Dryers Only – Single-Phase (1 $\phi$ ) Hookup

The electrical connections on **ALL** single-phase (1 $\phi$ ) dryers are made into the rear service box located at the upper left of the dryer.



Actual electrical wire connections are made to the L1 and L2 terminals of the motor contactor located in the rear service box mentioned on the previous page. The ground connection is also made to the copper lug also provided in this box.

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



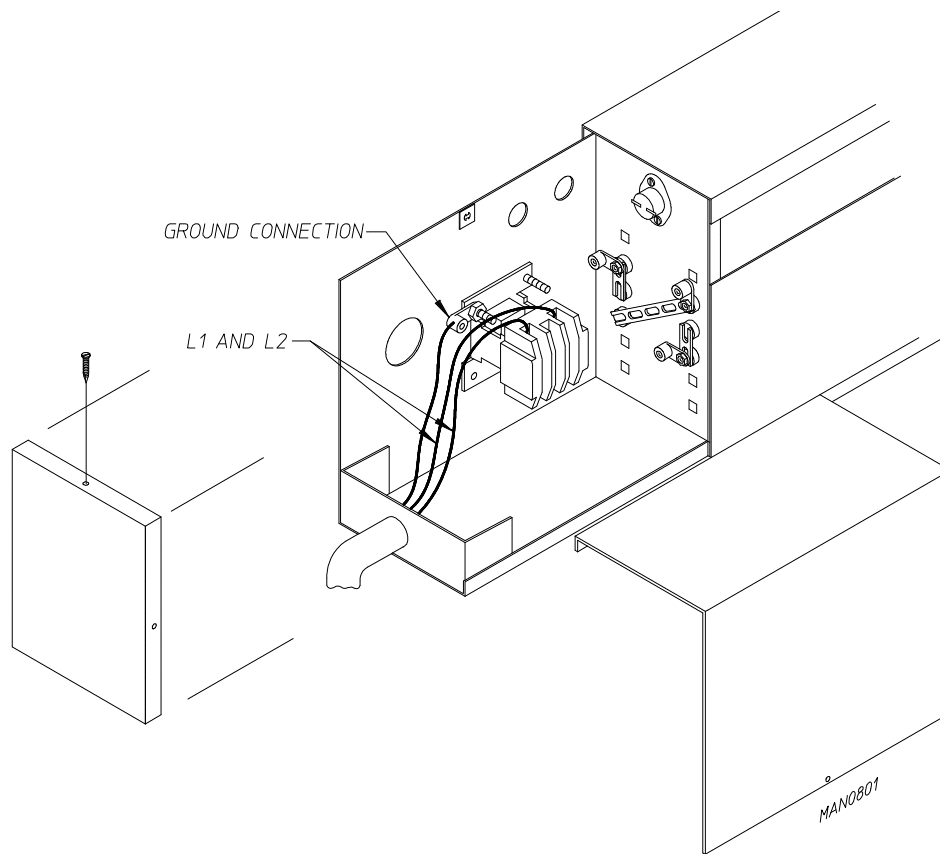
If local codes permit, power to the dryer can be made by the use of a flexible U.L. listed power cord/pigtail (wire size **must conform** to rating of dryer), or the dryer can be hard wired directly to the service breaker panel. In both cases, a strain relief **must be** installed where the wiring enters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





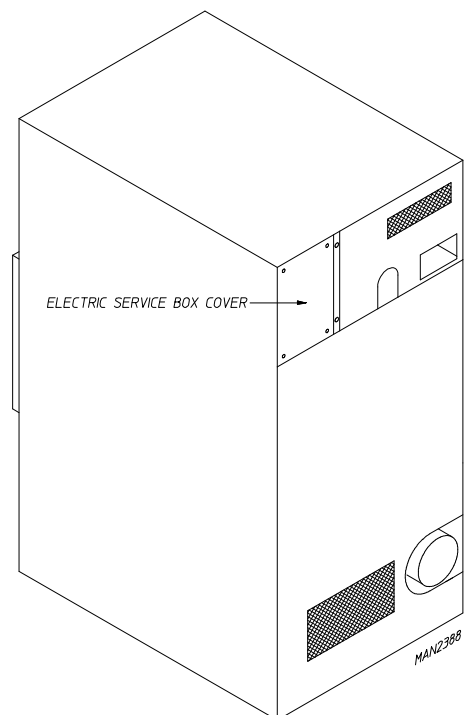
## 5. 3-Phase (3Ø) Wiring Connections

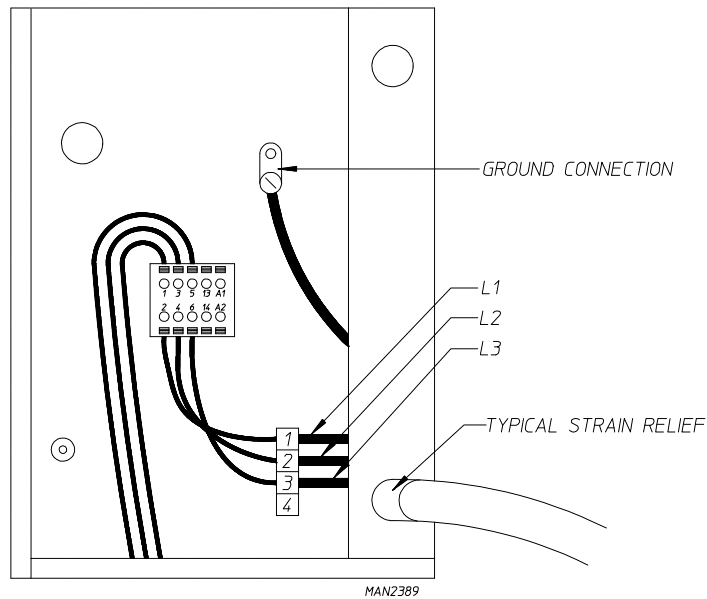
The only electrical input connections to the dryer are the 3-phase (3Ø) power leads (L1, L2, L3, and sometimes Neutral) and ground. Single-phase (1Ø) power for the control circuit and for any single-phase (1Ø) motors (if present) is done internally to the dryer. No single-phase (1Ø) input connection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

### a. Gas Dryers Only – 3-Phase (3Ø) Hookup

For gas dryers manufactured for operation at 3-phase (3Ø), 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.





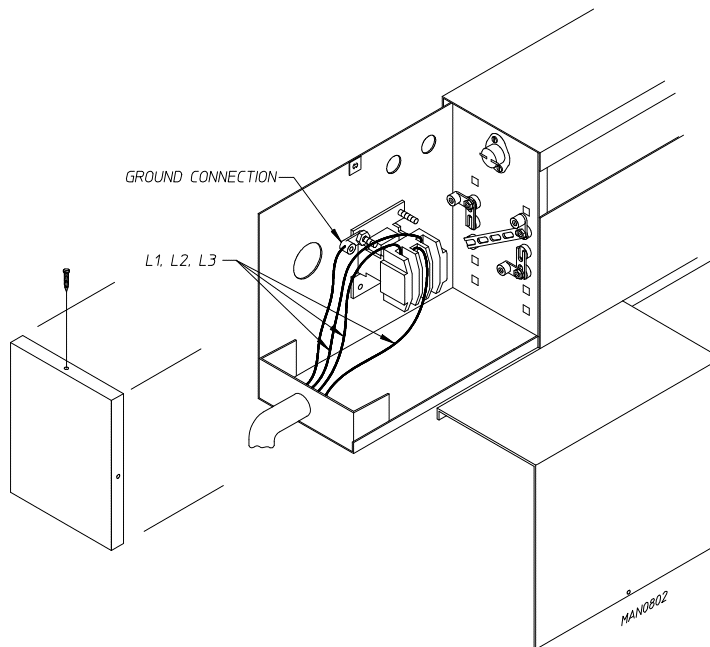
b. Electric Dryers Only – 3-Phase (3 $\phi$ ) Hookup

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

In Australia, the fuel gas code is AS 5601/AG 601, local authority, gas, electricity, and any other relevant statutory regulations.

**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.

Each dryer must have its own manual shutoff valve to provide isolation of the dryer from the gas supply.

The dryer and its individual shutoff 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 shutoff valve during any pressure testing of the gas supply system at test pressures equal to or less than 1/2 psig (3.5 kPa).

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

**WARNING: FIRE OR EXPLOSION COULD RESULT.**

### 1. Gas Supply

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

**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 affixed to the left side panel area behind the top control (access) door. If this information does not agree with the type of gas available, **DO NOT operate the dryer**. Contact the reseller who sold the dryer or contact 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 up to 2,000 feet (610 meters), unless elevation requirements of over 2,000 feet (610 meters) were specified at the time the dryer order was placed with the factory. The adjustment or conversion of dryers in the field for elevations over 2,000 feet (610 meters) is made by changing each burner orifice. If this conversion is necessary, contact the reseller who sold the dryer or contact the ADC factory.

**IMPORTANT: THIS GAS DRYER IS NOT PROVIDED WITH AN INTERNAL GAS SUPPLY SHUTOFF AND AN EXTERNAL GAS SUPPLY SHUTOFF *MUST BE* PROVIDED.**

2. Technical Gas Data

a. Gas Specifications

<b>TYPE OF GAS</b>					
	NATURAL			LIQUID PROPANE	
Manifold Pressure*	3.5 inches W.C.	8.7 mb	10.5 inches W.C.	26.1 mb	
In-Line Pressure	6.0 - 12.0 inches W.C.	14.92 - 29.9 mb	11.0 inches W.C.	27.4 mb	

*Shaded areas are stated in metric equivalents*

\* Measured at outlet side of gas valve pressure tap when gas valve is on.

b. Gas Connections:

Inlet connection --- 1/2" N.P.T.  
 Inlet supply size --- 1/2" N.P.T. (minimum)  
 Btu/hr input ----- 60,000 (15,120 kcal/hr)

1) Natural Gas

Regulation is controlled by the dryer's gas valve's internal regulator. Incoming supply pressure **must be** consistent between a minimum of 6.0 inches (14.92 mb) and a maximum of 12.0 inches (29.9 mb) water column (W.C.) pressure.

2) Liquid Propane (L.P.) Gas

Dryers made for use with L.P. gas have the gas valve's internal pressure regulator blocked open so that the gas pressure **must be** regulated upstream of the dryer. The pressure measured at each gas valve pressure tap **must be** a consistent 10.5 inches (26.1 mb) water column. There is no regulator or regulation 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.

			<b>TYPE OF GAS</b>						Liquid Propane Conversion Kit Part Number
ADC MODEL NUMBER	BTU Per Hour Rating	kcal/hr Rating	Natural			Liquid Propane			
			Qty.	D.M.S.*	Part Number	Qty.	D.M.S.*	Part Number	
ADG-24D	60,000	15,120	2	#37	140815	2	#52	140800	874058

*Shaded area is stated in metric equivalent*

\* Drill Measurement Size (D.M.S.) equivalents are as follows:

Natural Gas .....#37 = 0.1040" (2.6416 mm).  
 Liquid Propane Gas ....#52 = 0.0635" (1.6129 mm).

### 3. Piping Connections

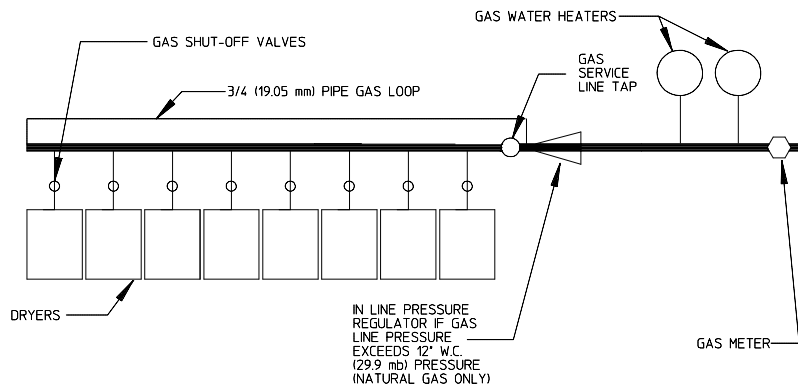
**ALL** components/materials **must conform** to National Fuel Gas Code Specifications ANSI Z223.1-LATEST EDITION, or in Canada, CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (Liquid Propane [L.P.] Gas) or LATEST EDITION (for General Installation and Gas Plumbing), as well as local codes and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

The dryer is provided with a 1/2" N.P.T. inlet pipe connection located at the right side of the base of the dryer. The minimum pipe size (supply line) to the dryer is 1/2" N.P.T. For ease in servicing, the gas supply line of each dryer must have its own shutoff valve.

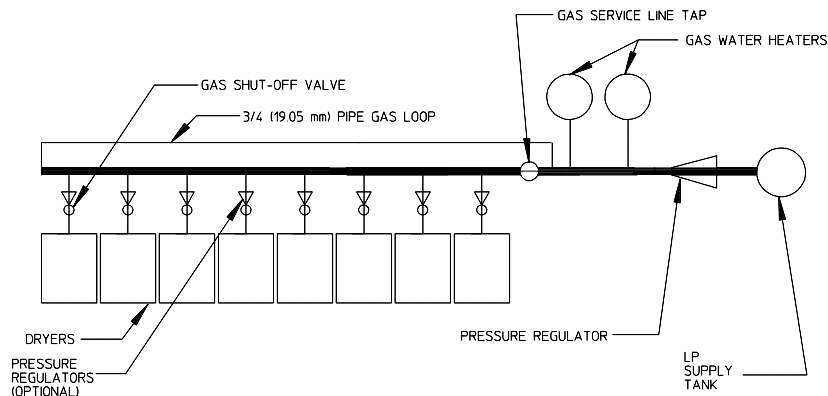
**IMPORTANT:** The gas supply line to each dryer *must be* a minimum of 1/2" (12.7 mm).  
**DO NOT REDUCE THIS PIPE SIZE REQUIREMENT.**

The size of the main gas supply line (header) will vary depending on the distance this line travels from the gas meter or, in the case of L.P. gas, the supply tank, other gas-operated appliances on the same line, 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 pressure, which will result in erratic operation of the burner ignition system.



TYPICAL NATURAL GAS INSTALLATION



TYPICAL L.P. GAS INSTALLATION

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## H. PREPARATION FOR OPERATION/START-UP

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

1. Read **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 affixed to the left side panel area behind the top control (access) door.
3. **GAS MODELS** - check to assure that the dryer is connected to the type of heat/gas indicated on the dryer data label.
4. **GAS AND ELECTRIC MODELS** – the sail switch damper assembly was installed and adjusted at the factory prior to shipping. However, each sail switch adjustment **must be** checked to assure that this important safety control is functioning.
5. Check bolts, nuts, screws, terminals, and fittings for tightness.
6. **GAS MODELS** – be sure that **ALL** gas shutoff valves are in the open position.
7. Be sure **ALL** back guard panels and service box covers have been replaced.
8. 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.

9. Rotate the basket (tumbler) by hand to be sure it moves freely.

## I. 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. Installer must instruct the user on how to correctly operate the dryer before leaving.

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 start-up), 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 shutoff valves are open.

**NOTE:** Gas dryers are 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 lockout 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 (W.C.) pressure is correct and consistent.

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

Natural Gas ----- 3.5 inches (8.7 mb) water column.

Liquid Propane (L.P.) Gas ----- 10.5 inches (26.1 mb) water column.

**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 Thermostats
  - c. Cycling Thermostats
  - 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.

### BASKET (TUMBLER) COATING

The basket (tumbler) is treated with a protective coating. We suggest dampening old garments or cloth material with a solution of water and nonflammable mild detergent and tumbling them in the basket (tumbler) to remove this 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 (CW) 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.

## J. PREOPERATIONAL INSTRUCTIONS

### 1. Coin Models

#### a. Microprocessor Controller (Computer)

- 1) When turning on power or when no cycle is in progress, light emitting diode (L.E.D.) display will read "FILL" and/or "Amount To Start" (i.e. "25").
- 2) Insert coin(s). Once correct "Amount To Start" has been inserted the display will read "PUSH."
- 3) Select temperature by pushing "HI TEMP," "LO TEMP," or "PERM PRESS." The dryer will start and the L.E.D. display will read the temperature cycle selected and the drying time.
- 4) The dryer will continue through the drying and cooling cycles, showing time counting downward.

**NOTE:** If the door is opened during a cycle, both the heat and motor will stop. However, the microprocessor controller (computer) will continue to count down in time. Continuation of the cycle will resume only after the door has been closed and any of the three (3) temperature selection buttons is again depressed.

- 5) Upon completion of drying and cooling cycles, the tone (buzzer) will sound for 5-seconds, and the L.E.D. will read "donE," at which time the dryer will shut off.

**NOTE:** If the Anti-Wrinkle program is active, the L.E.D. display will continue to read "donE," and the microprocessor controller (computer) will proceed through the Anti-Wrinkle program until the maximum "Active Guard Time" has expired or until the door is opened, whichever comes first. The L.E.D. display will read "FILL" and/or "Amount To Start" (i.e. "25").

#### b. Rotary (Mechanical) Coin Meter

- 1) Insert coin into coin acceptor and turn the knob to the right (->).
- 2) Select "HI TEMP" on the rocker switch.
- 3) Push the "Push To Start" switch.
- 4) The dryer will start and will continue through the drying and cooling cycles until the time vended has expired.

**NOTE:** If the door is opened during a cycle, both the heat and motor will stop. However, the coin meter will continue to count down in time. Continuation of the cycle will resume only after the door has been closed and the "Push To Start" button is again depressed.



c. Slide (Mechanical) Coin Meter

- 1) Insert coin into slide meter (not provided or available from/by **ADC**).
- 2) Select “HI TEMP” on the rocker switch.
- 3) Push the “Push To Start” switch.
- 4) The dryer will start and will continue through the drying and cooling cycles until the time vended has expired.

**NOTE:** If the door is opened during a cycle, both the heat and motor will stop. However, the coin meter will continue to count down in time. Continuation of the cycle will resume only after the door has been closed and the “Push To Start” button is again depressed.

2. OPL (Non Coin) Models

a. Microprocessor Controller (Computer)

- 1) When turning on power or when no cycle is in progress, light emitting diode (L.E.D.) display will read “FILL.”
- 2) Select cycle...Press the “E” on the keyboard (touch pad). The L.E.D. display will quickly show “Ld30,” “LC04,” or “F180.” The dryer will start and the display will read “dr30.”

**NOTE:** To stop the dryer at any time, either open the main door or press “CLEAR/STOP.” Continuation of the cycle will resume only after the door has been closed and “ENTER/START” is pressed.

- 3) The dryer will continue through the drying and cooling cycles, showing time counting downward.

**NOTE:** If the door is opened during a cycle, both the heat and motor will stop. However, the microprocessor controller (computer) will continue to count down in time. Continuation of the cycle will resume only after the door has been closed and “ENTER/START” is pressed.

- 4) Upon completion of drying and cooling cycles, the tone (buzzer) will sound for 5-seconds, and the L.E.D. will read “donE,” at which time the dryer will shut off.

**NOTE:** If the Anti-Wrinkle program is active, the L.E.D. display will continue to read “donE,” and the microprocessor controller (computer) will proceed through the Anti-Wrinkle program until the maximum “Active Guard Time” has expired or until the door is opened, whichever comes first. The L.E.D. display will read “FILL” and/or “Amount To Start” (i.e. “25”).

b. Dual Timer

- 1) Turn drying timer (left timer) to the right (->) to the desired time setting (i.e. 30 minutes).
- 2) Select “HI TEMP” on the rocker switch.
- 3) Push the “Push To Start” switch.

- 4) The dryer will start and will continue through the drying and cooling cycles until the time vended has expired.

**NOTE:** If the door is opened during a cycle, both the heat and motor will stop. Continuation of the cycle will resume only after the door has been closed and the “Push To Start” button is again depressed.

## K. SHUTDOWN INSTRUCTIONS

If the dryer is to be shutdown (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 shutoff valve.**
  - b. **SHUT OFF internal gas supply shutoff valve located in the gas valve burner area.**

# SECTION IV

## SERVICE/PARTS INFORMATION

### A. SERVICE

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

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

### B. PARTS

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

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

# SECTION V

## WARRANTY INFORMATION

### A. RETURNING WARRANTY CARDS

1. Before any dryer leaves the **ADC** factory test area, a warranty card is placed on the back side of the main door glass. These warranty cards are intended to serve the customer where we record the individual installation date and warranty information to better serve you should you file a warranty claim.
  - a. If a warranty card did not come with your dryer, contact the **ADC** Warranty Department or the **ADC** 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** reseller from whom you purchased the equipment and request a dryer warranty form. If the reseller **cannot** be contacted or is unknown, warranty information can be obtained from the factory by contacting the **ADC** Warranty Department at (508) 678-9000.

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

### C. RETURNING WARRANTY PARTS

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

1. No parts are to be returned to **ADC** without prior written authorization ("Return Material Authorization" [R.M.A.]) from the factory.

**NOTE:** An R.M.A. is valid for only thirty (30) 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. **Model number** and **serial number** of the dryer from which part was removed.
  - b. Nature of failure (be specific).
  - c. Date of dryer installation.
  - d. Date of part failure.
  - e. Specify whether the part(s) being returned is for a replacement, a credit, or a refund.

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

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

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

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

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

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

# SECTION VI

## ROUTINE MAINTENANCE

### A. CLEANING

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

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

**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.

**IMPORTANT:** Dryer produces combustible lint and *must be* exhausted to the outdoors. Every 6 months, inspect the exhaust ducting and remove any lint build up.

### SUGGESTED CLEANING SCHEDULE

#### ***EVERY THIRD OR FOURTH LOAD***

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

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

#### ***WEEKLY***

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

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

## **90 DAYS**

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

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

## **EVERY 6 MONTHS**

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

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

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

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

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

## **B. ADJUSTMENTS**

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

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

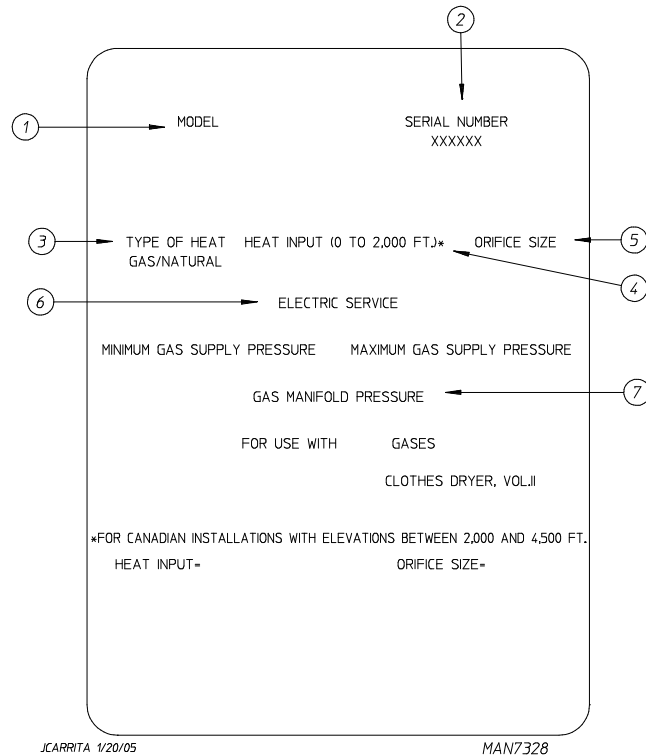
## **C. LUBRICATION**

The motor bearings, idler bearings...and under normal/most conditions the basket (tumbler) bearings are permanently lubricated. It is physically possible to relubricate the basket (tumbler) bearings if you choose to do so even though this practice is not necessary. Use Shell Alvania #2 or its equivalent. The basket (tumbler) bearings used in the dryer **DO NOT** have a grease fitting. Provisions are made in the bearing housing for the addition of a grease fitting which can be obtained elsewhere, or from **ADC** by ordering kit Part No. 882159, which includes two (2) fittings.

# SECTION VII

## DATA LABEL INFORMATION

### A. DATA LABEL



When contacting **American Dryer Corporation**, certain information is required to insure proper service/parts information from **ADC**. This information is on the data label affixed to the left side panel area behind the top control (access) door. When contacting **ADC**, please have the **model number** and **serial number** available.

1. **MODEL NUMBER** – This describes the style of dryer and type of heat (gas, electric, or steam).
2. **SERIAL NUMBER** – Allows the manufacturer to gather information on your particular dryer.
3. **TYPE OF HEAT** – This describes the type of heat for your particular dryer, gas (either natural gas or L.P. gas), electric, or steam.
4. **HEAT INPUT** (For Gas Dryers) – This describes the heat input in British thermal units per hour (Btu/hr) or kilowatts (kW).
5. **ORIFICE SIZE** (For Gas Dryers) – Gives the number drill size used.
6. **ELECTRIC SERVICE** – This describes the voltage and current rating for a particular model.
7. **GAS MANIFOLD PRESSURE** (For Gas Dryers) – This describes the manifold pressure taken at the gas valve tap.



# SECTION VIII

## ELECTRICAL SERVICE SPECIFICATIONS

<h3>Gas</h3>					
ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)					
<p><b>IMPORTANT:</b> 208 VAC AND 230/240 VAC ARE NOT THE SAME. When ordering, specify exact voltage.</p> <p><b>NOTES:</b></p> <ul style="list-style-type: none"> <li>A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data.</li> <li>B. Circuit breakers are thermal-magnetic (industrial) motor curve type ONLY. For others, calculate/verify correct breaker size according to appliance amp draw rating and type of breaker used.</li> <li>C. Circuit breakers for 3-phase (3<math>\phi</math>) dryers must be 3-pole type.</li> </ul>					
SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		CIRCUIT BREAKER
			60 Hz	50 Hz	
120	1 $\phi$	2	8.7	—	15
208	1 $\phi$	2	5.2	—	15
240	1 $\phi$	2	4.8	5.8	15
208	3 $\phi$	3	3	—	15
240	3 $\phi$	3	3.2	3.6	15
380-400	3 $\phi$	4 or 3	—	2.2	15
416	3 $\phi$	4 or 3	—	2.3	15
460 / 480	3 $\phi$	3	2.1	—	15

Check your national and local code for breaker and wire size

6/12/14

**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.

# Electric

## ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)

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

- NOTES:**
- A. When fuses are used they must be dual element, time delay, current limiting, class RK1 or RK5 ONLY. Calculate/determine correct fuse value, by applying either local and/or National Electrical Codes to listed appliance amp draw data.
  - 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 3-phase (3 $\phi$ ) dryers must be 3-pole type.

SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		CIRCUIT BREAKER
			60 Hz	50 Hz	
<b>18 kW</b>					
208	1 $\phi$	2	92	—	125
240	1 $\phi$	2	—	81	125
240	1 $\phi$	2	80	—	100
208	3 $\phi$	3	55	—	70
240	3 $\phi$	3	48	—	70

Check your national and local code for breaker and wire size

6/12/14

**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 IX

## TROUBLESHOOTING

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

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 CONTROLLER (COMPUTER) MODELS

#### A. No display (microprocessor controller [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).

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

1. Microprocessor controller (computer) motor indicator dot and relay output light emitting diode (L.E.D.) indicator are on...
  - a. Failed drive motor contactor (relay).
  - b. Failed drive motor.
2. Microprocessor controller (computer) motor indicator dot and “door” light emitting diode (L.E.D.) indicator are on, but motor output L.E.D. indicator is off...
  - a. Failed microprocessor controller (computer).

**C. 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 basket (tumbler) bearings.

**D. 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.

**E. 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 is not closed **ALL** the way.
  - b. Lint drawer/door switch is 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.

**F. 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).

**G. Microprocessor controller (computer) will not accept any keyboard (touch pad) entries, i.e., display reads “FILL” and when keyboard (touch pad) entries are selected, the display continues to read “FILL”...**

1. Failed keyboard (touch pad) label assembly.
2. Failed microprocessor controller (computer).

**H. Microprocessor controller (computer) will only accept certain keyboard (touch pad) entries...**

1. Failed keyboard (touch pad) label assembly.

**I. 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 1 minute and reestablish power to dryer...if problem is still evident...
  - a. Failed microprocessor controller (computer).
  - b. Failed keyboard (touch pad) label assembly.

**J. Dryer stops during a cycle, microprocessor controller (computer) buzzer (tone) sounds for 5-seconds, and then light emitting diode (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).

**K. 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).

**L. 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) is not rotating...
    - 1) Broken or loose V-belts.
    - 2) Failure in drive motor circuit...refer to Item B and Item C.
  - b. Failed rotational sensor.
  - c. Broken wire or connection between sensor and microprocessor controller (computer).
2. Microprocessor controller (computer) program (Key 2) 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.”

**M. Microprocessor controller (computer) light emitting diode (L.E.D.) display reads “Hot”...**

1. Possible overheating condition...microprocessor controller (computer) has sensed a temperature, which has exceeded 220° F (104° C).

“Hot” display will not clear until temperature sensed has dropped to 220° F (104° C) or lower and the microprocessor controller (computer) is manually reset by pressing the “CLEAR/STOP” key.

**N. Heating unit is not operating (no heat)...no voltage at heating unit (i.e., gas model – Direct Spark Ignition [DSI] module, electric model – electric oven contactor) 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 ductwork.
    - 3) No exhaust airflow...
      - a) Failed blower (impellor/fan).
      - b) Fault in blower (impellor/fan) motor circuit.
2. Tripped burner manual reset hi-limit switch.
3. Tripped lint chamber sensor bracket basket (tumbler) manual reset 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 ductwork.
      - 3) No exhaust airflow...
        - a) Failed blower (impellor/fan).
        - b) Fault in blower (impellor/fan) motor circuit.
  2. Failed oven hi-limit switch.
  3. Tripped lint chamber sensor bracket basket (tumbler) manual reset hi-limit switch.
- O. Heating unit is not operating (no heat)...no voltage at heating unit (i.e., gas model – Direct Spark Ignition [DSI] module, electric model – electric oven contactor) when dryer is first started and the microprocessor controller (computer) heat indicator dot is on but the “HEAT” relay output light emitting diode (L.E.D.) is not on...**
1. Failed microprocessor controller (computer).
- P. No heat...voltage is confirmed at heating unit (i.e., gas models – DSI module, electric model – electric oven contactor)...**

## GAS MODELS

1. Fault in DSI system...
  - a. Ignitor sparks but no ignition and 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 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 screen is dirty.
    - b) Restriction in exhaust ductwork.
- c. Ignitor does not spark and 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 DSI module.

## ELECTRIC MODELS

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

### Q. Dryer is taking too long to dry...

1. Exhaust ductwork run too long or is undersized...back pressure **must be** no less than 0 and **cannot** exceed 0.3 inches (0.74 mb) water column (W.C.).
2. Restriction in exhaust ductwork...
  - a. Dryer back draft damper is sticking partially closed.
  - b. Restriction/obstruction in ductwork...
    - 1) Check ductwork from dryer **ALL** the way to the outdoors.
3. Insufficient make-up air.
4. Blower (impellor/fan) is rotating in the wrong direction (3-phase [3Ø] models only).
5. Lint screen is dirty or is not being cleaned often enough.
6. Inadequate airflow...
  - a. Blower (impellor/fan) failure.

## GAS MODELS

1. Low and/or inconsistent gas pressure...
  - a. Natural gas pressure **must be** between 3.5 inches (8.7 mb) and 4.0 inches (9.9 mb) of water column.
  - b. Liquid propane (L.P.) gas pressure **must be** between 10.5 inches (26.1 mb) and 11.0 inches (27.4 mb) of water column.
2. Poor air/gas mixture (too much gas or not enough air) at burner...yellow or poor flame pattern...
  - a. Not enough make-up air.
  - b. Restriction in exhaust ductwork.
  - c. Gas pressure too high.

- d. Blower (impellor/fan) rotating in the wrong direction.
  - e. Burner orifice size Drill Measurement Size (D.M.S.) too large for application (i.e., high elevation).
3. Sail switch is fluttering...
    - a. Restriction in exhaust ductwork...
      - 1) Lint screen is dirty or is not being cleaned often enough.
  4. Gas supply may have low heating value.

## **ELECTRIC MODELS**

1. Not enough make-up air.
2. Restriction in exhaust ductwork.
3. Lint screen is dirty or is not being cleaned often enough.
4. Blower (impellor/fan) is rotating in the wrong direction (3-phase [3Ø] models only).
5. Failed electric element(s).
6. Sail switch is fluttering...
  - a. Restriction in exhaust ductwork.
  - b. Sail switch is not adjusted properly.

## **R. At the completion of the “AUtO” drying/cooling cycle...load is coming out over dried...**

1. Percentage of dryness (dryness level) of cycle selected is too high.
2. “A” and “B” factors are not set correctly or “B” factor has to be adjusted for adverse location conditions.

## **S. At the completion of the “AUtO” drying/cooling cycle...load is coming out damp...**

1. Percentage of dryness (dryness level) of cycle selected is too low.
2. “A” and “B” factors are not set correctly or “B” factor has to be adjusted for adverse location conditions.

## **T. 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 ductwork.
  - c. Gas pressure too high.
  - d. Blower (impellor/fan) is rotating in the wrong direction (3-phase [3Ø] models only).
  - e. Burner orifice size Drill Measurement Size (D.M.S.) too large for application (i.e., high elevation).

## **U. Condensation on main door glass...**

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



**V. Dryer is making 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 setscrews may have come loose and basket (tumbler) walked forward or backward.

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

1. Dryer is not leveled properly.
2. Blower (impellor/fan) is out of balance...
  - a. Excessive lint build up on blower (impellor/fan).
  - b. Failed blower (impellor/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. Basket (tumbler) bearing setscrews are loose.
9. Failed motor bearings.

**NON-MICROPROCESSOR MODELS**

**A. Dryer will not start...drive motor is 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 is not closed **ALL** the way.
  - b. Lint drawer/door switch is out of proper adjustment.
  - c. Failed 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.

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

1. Failed drive motor contactor (relay).
2. Failed drive motor.

**C. 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 basket (tumbler) bearings.

**D. Drive motor is not operating (does not start) and indicator light is on...**

1. Fault in L1 or L2 termination(s) between terminal block and contactor motor (relay).
2. Failed contactor.
3. Failed motor.

**E. Heating unit is not operating (no heat)...no voltage at heating unit (i.e., gas model – Direct Spark Ignition [DSI] module, electric model – electric oven contactor)...**

**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 ductwork.
    - 3) No exhaust airflow...
      - a) Failed blower (impellor/fan).
      - b) Fault in blower (impellor/fan) motor circuit.
2. Tripped burner manual reset hi-limit switch.
3. Tripped lint chamber sensor bracket basket (tumbler) manual reset hi-limit switch or circuit.
4. Tripped 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 damper 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 ductwork.
    - 3) No exhaust airflow...
      - a) Failed blower (impellor/fan).
      - b) Fault in blower (impellor/fan) motor circuit.
  - c. Failed oven hi-limit switch.
  - d. Tripped lint chamber sensor bracket basket (tumbler) manual reset hi-limit switch.
  - e. Failed temperature selection switch or circuit.
  - f. Failed temperature cycle thermostat (try another selection).

### **F. No heat...voltage is confirmed at heating unit (i.e., gas model – Direct Spark Ignition [DSI] module, electric model – electric oven contactor coil)...**

## GAS MODELS

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

## ELECTRIC MODELS

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

### G Dryer operates but is taking too long to dry...

1. Exhaust ductwork run too long or is undersized...back pressure **must be** no less than 0 and **cannot** exceed 0.3 inches (0.74 mb) water column (W.C.).
2. Restriction in exhaust ductwork...
  - a. Exhaust back draft damper is sticking partially closed.
  - b. Restriction in ductwork...check ductwork from dryer **ALL** the way to the outdoors.
3. Insufficient make-up air.
4. Blower (impellor/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 airflow...
  - a. Blower (impellor/fan) failure.

## GAS MODELS

1. Low and/or inconsistent gas pressure (gas models only)...natural gas pressure **must be** between 3.5 inches (8.7 mb) and 4.0 inches (9.9 mb) of water column (W.C.), and liquid propane (L.P.) gas pressure **must be** between 10.5 inches (26.1 mb) and 11.0 inches (27.4 mb) of water column.
2. Poor air/gas mixture (too much gas or not enough air) at burner...yellow or poor flame pattern...
  - a. Not enough make-up air.
  - b. Restriction in exhaust ductwork.
  - c. Gas pressure too high.
  - d. Blower (impellor/fan) is rotating in the wrong direction (3-phase [3Ø] models only).
  - e. Burner orifice size Drill Measurement Size (D.M.S.) too large for application (i.e., high elevation).
3. Sail switch is fluttering...
  - a. Lint screen is dirty or is not being cleaned often enough.
  - b. Restriction in exhaust ductwork.
4. Gas supply may have low heating value.

## ELECTRIC MODELS

1. Not enough make-up air.
2. Restriction in exhaust ductwork.
3. Lint screen is dirty or is not being cleaned often enough.
4. Blower (impellor/fan) is rotating in the wrong direction (3-phase [3Ø] models only).

5. Sail switch is fluttering...
  - a. Restriction in exhaust ductwork.
  - b. Sail switch is not adjusted properly.

#### **H. 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 ductwork.
  - c. Gas pressure too high.
  - d. Blower (impellor/fan) is rotating in the wrong direction (3-phase [3Ø] models only).
  - e. Burner orifice size Drill Measurement Size (D.M.S.) too large for application (i.e., high elevation).

#### **I. Condensation on main door glass...**

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

#### **J. Dryer is making 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)...setscrews may have come loose and basket (tumbler) walked forward or backward.
3. Loose basket (tumbler) tie rod.
4. Failed basket (tumbler) support.

#### **K. Excessive noise and/or vibration...**

1. Dryer is not leveled properly.
2. Blower (impellor/fan) is out of balance...
  - a. Excessive lint build up blower (impellor/fan).
  - b. Failed blower (impellor/fan).
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 blower (impellor/fan) bearings.
8. V-belt(s) either too tight or too loose.
9. Bearing setscrews (basket [tumbler], idler, or blower [impellor/fan] shaft) are loose.
10. Failed motor bearings.

# SECTION X

## PROCEDURE FOR FUNCTIONAL CHECK OF REPLACEMENT COMPONENTS

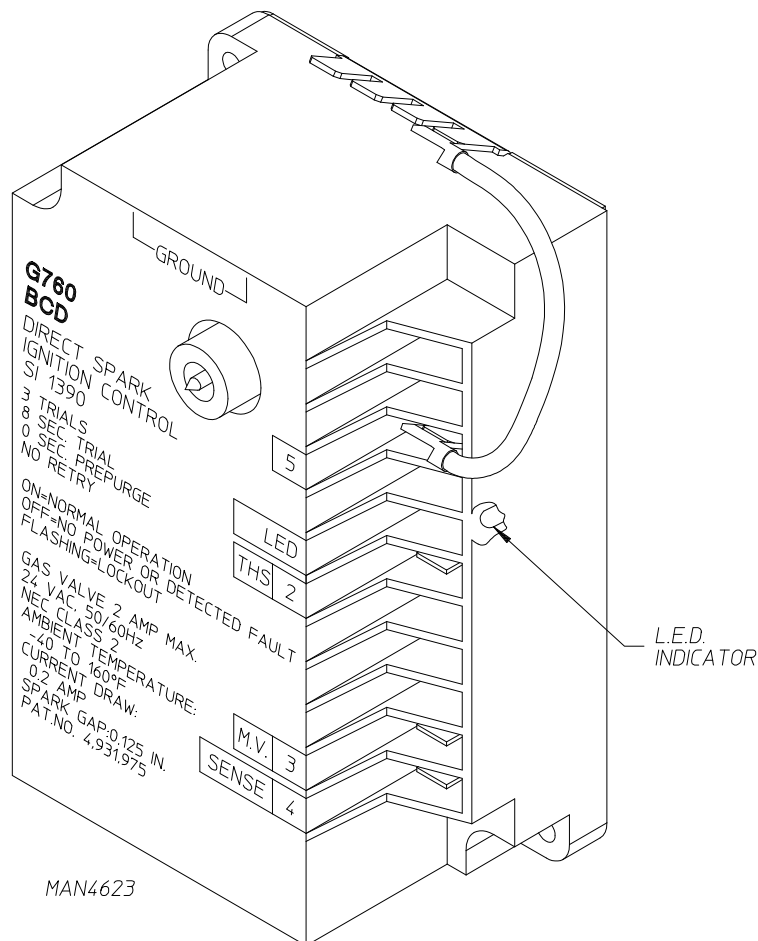
### 1. For Models With Johnson Controls Direct Spark Ignition (DSI) Module (G760)

Theory Of Operation:

Start the drying cycle. When the gas burner ignites within the chosen trial for ignition time (6-seconds), the flame sensor detects gas burner flame and signals the DSI module to keep the gas valve open...as long as there is a call for heat. The DSI module will “LOCKOUT” if the gas burner flame is not sensed at the end of the trial for ignition period. The trial for ignition period will be repeated for a total of three (3) retries/trials (the initial try and two [2] more retries/trials). If the flame is not sensed at the end of the third retry/trial (inter-purge period of 30-seconds) the DSI module will “LOCKOUT” (light emitting diode [L.E.D.] flashes).

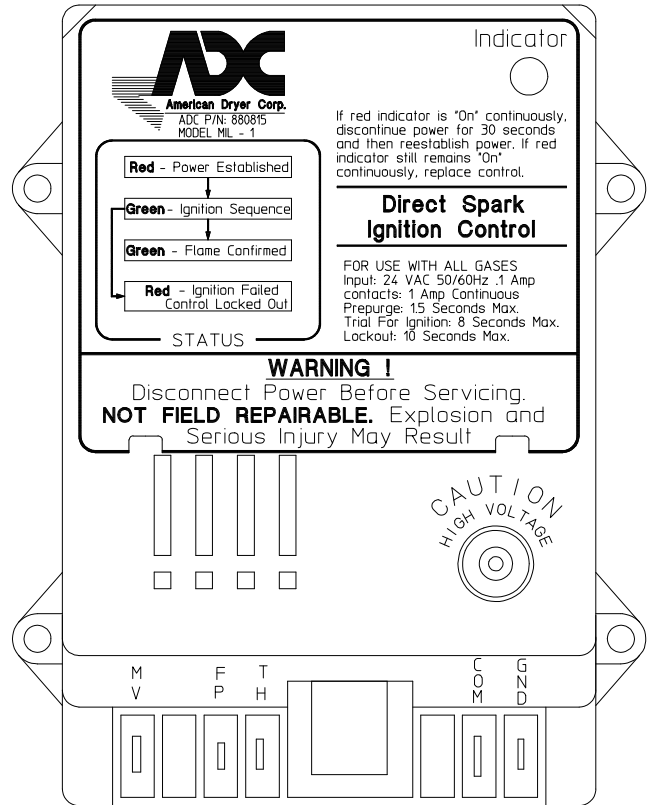
A steady L.E.D. indicator indicates normal operation.

No L.E.D. indicator indicates a power or an internal failure has occurred.



2. For Direct Spark Ignition (DSI) System Models Manufactured With ADC Module Part No. 882627

- a. Upon completing installation of the replacement DSI module, reestablish power to the dryer.
- b. Starting the drying cycle.
- c. The ignition DSI module's light emitting diode (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 sensor wire from the FS terminal of the DSI module.
- f. The burner flame must shut off and the ignition module must lockout with the DSI module's indicator light "red."



- g. Stop the drying cycle, with the flame sensor 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 lockout with the indicator light "red."
- i. Functional check of the DSI module is complete.
  - 1) Replace the flame sensor wire from the FS terminal to the DSI module.

