

# AD-75T

(Gas/Electric/Steam)

## Installation/Operator's Manual

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

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

— **WHAT DO YOU DO IF YOU SMELL GAS**

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

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

**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 dans le voisinage de cet appareil ou de tout autre appareil.

— **QUE FAIRE SI VOUS SENTEZ UNE ODEUR DE GAZ:**

- \* Ne pas tenter d'allumer d'appareil.
- \* Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones se trouvant dans le bâtiment où vous vous trouvez..
- \* 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.



For replacement parts, contact the distributor from which the dryer was purchased or  
**American Dryer Corporation**  
88 Carrant Road  
Fall River MA 02720-4781  
Telephone: (508) 678-9000 / Fax: (508) 678-9447  
E-mail: techsupport@amdry.com

# Retain This Manual In A Safe Place For Future Reference

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

*ONLY qualified technicians should service this equipment.*

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

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

**FOR YOUR SAFETY**

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

**POUR VOTRE SÉCURITÉ**

Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil.

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

## Important

For your convenience, log the following information:

DATE OF PURCHASE \_\_\_\_\_ MODEL NO. **AD-75T** \_\_\_\_\_

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

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

\_\_\_\_\_

\_\_\_\_\_

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

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

**“IMPORTANT NOTE TO PURCHASER”**

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

## **IMPORTANT**

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

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

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

## **CAUTION**

**DRYER(S) 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 DRYER(S) IN OPERATION.**

## **FOR YOUR SAFETY**

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

## **WARNING**

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

**WARNING**

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

**WARNING**

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

**IMPORTANT**

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

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

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

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# SECTION I

## IMPORTANT INFORMATION

### A. RECEIVING and HANDLING

The dryer is shipped in a protective stretch wrap cover with protective cardboard corners and top cover (or optional box) as a means of preventing damage in transit. Upon delivery, the dryer and/or 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 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. Purchaser/user should consult the local gas supplier for proper instructions to be followed in the event the user smells gas. The instructions **should be** posted in a prominent location.
3. WHAT TO DO IF YOU SMELL GAS..
  - a. **DO NOT** try to light any appliance.
  - b. **DO NOT** touch any electrical switch.
  - c. **DO NOT** use any phone in your building.
  - d. Clear the room, building, or area of **ALL** occupants.
  - e. Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - f. If you **cannot** reach your gas supplier, call the fire department.
4. Installation and service **must be** performed by a qualified installer, service agency, or gas supplier.
5. Dryer(s) **must be** exhausted to the outdoors.
6. Although ADC produces a very versatile machine, there are some articles that, due to fabric composition or cleaning method, **should not** be dried in it.

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

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

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

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



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

7. A program **should be** established for the inspection and cleaning of lint in the heating unit area, exhaust duct work, and inside the dryer. The frequency of inspection and cleaning can best be determined from experience at each location.

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

8. For personal safety, the dryer *must be* electrically grounded in accordance with local codes and/or the National Electric Code ANSI/NFPA NO. 70-LATEST EDITION.

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

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

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

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

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

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

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

# SECTION II

## SPECIFICATIONS/COMPONENT IDENTIFICATION

### A. SPECIFICATIONS

MAXIMUM CAPACITY (Dry Weight)		75 lbs.	34 kg	
BASKET DIAMETER		37"	94 cm	
BASKET DEPTH		36"	91.5 cm	
MOTOR (Horsepower)		1 HP*	.746 kw	
DOOR OPENING (Diameter)		21-1/2"	54.61 cm	
BASKET VOLUME		22.4 cu.ft.	.634 cu.m.	
DRYERS PER 20'/40' CONTAINER		10/20		
DRYERS PER 45'/48' TRUCK		24/24		
<b>Gas</b>	VOLTAGE AVAILABLE	120-460v / 1ø - 3ø / 50/60 Hz		
	APPROX. WEIGHT (Uncrated)	721 lbs.	327 kg	
	APPROX. WEIGHT (Crated)	771 lbs.	349.7 kg	
	HEAT INPUT	200,000 btuh	50,400 kcal/hr	
	AIRFLOW	1,200 cfm	33.98 cmm	
	INLET PIPE CONNECTION**	3/4" F.P.T.**	1.91 cm	
<b>Electric</b>	VOLTAGE AVAILABLE	120-460v / 1ø - 3ø / 50/60 Hz		
	APPROX. WEIGHT (Uncrated)	721 lbs.	327 kg	
	APPROX. WEIGHT (Crated)	771 lbs.	349.7 kg	
	AIRFLOW	1,200 cfm	33.98 cmm	
<b>Steam</b>	VOLTAGE AVAILABLE	120-460v / 1ø - 3ø / 50/60 Hz		
	APPROX. WEIGHT (Uncrated)	757 lbs.	343.4 kg	
	APPROX. WEIGHT (Crated)	807 lbs.	366.1 kg	
	AIRFLOW	1,350 cfm	38.23 cmm	
	COMPRESSED AIR VOLUME	.75 cfm	.02 cmh	
	AIR CONNECTION	1/8" F.P.T.	—	
	STEAM CONSUMPTION		BOILER HP NORMAL LOAD	
	238.7 lbs/hr	108.3 kg/hr	7	
	OPERATING STEAM PRESSURE		STEAM SUPPLY	STEAM RETURN
	125 psi max	8.79 kg/sq cm	1" 2.54 cm	1" 2.54 cm

*Shaded areas are in metric equivalents*

\* For non-reversing models.

\*\* A minimum of 3/4" pipe must be supplied to the gas inlet for each dryer..

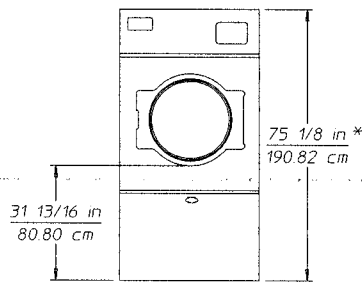
**NOTE: ADC RESERVES THE RIGHT TO MAKE CHANGES IN SPECIFICATIONS AT ANY TIME, WITHOUT NOTICE or OBLIGATION.**

# Specifications

## ADG-75T (Gas)

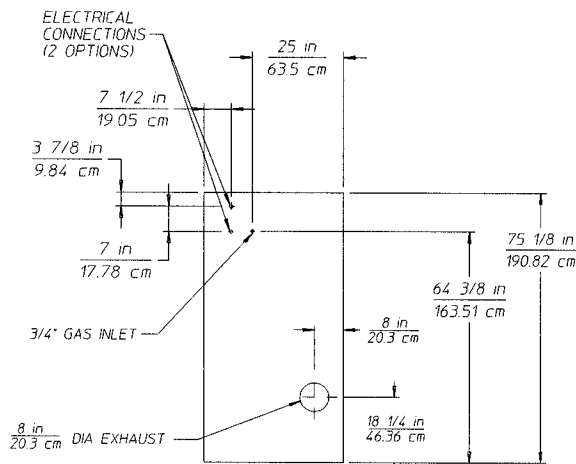
## ADE-75T (Electric)

## ADS-75T (Steam)

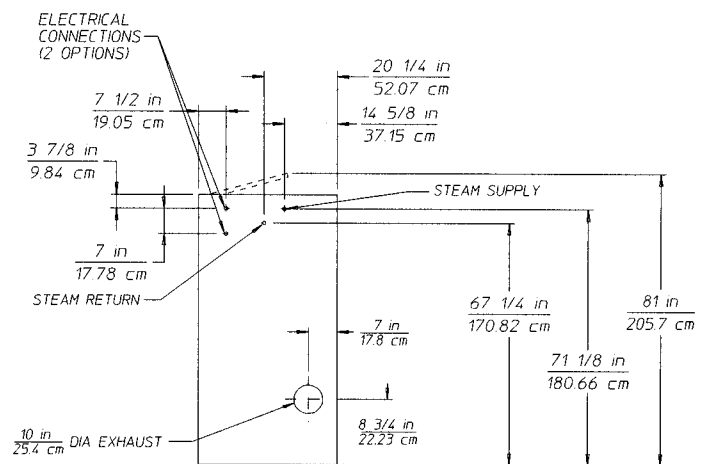


\* OPERATING HEIGHT FOR STEAM UNIT IS 81" (205.74cm)

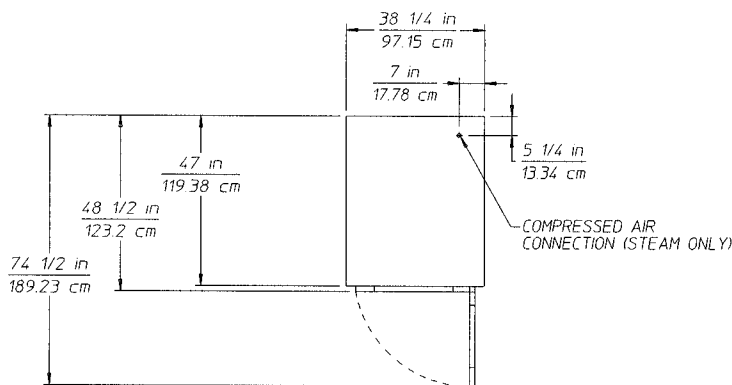
FRONT VIEW



GAS AND  
ELECTRIC  
REAR VIEW

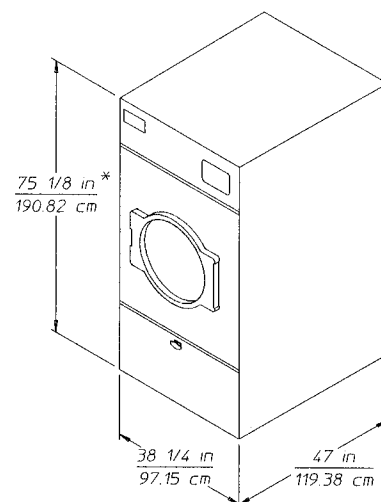


STEAM  
REAR VIEW



PLAN VIEW

SPEC134

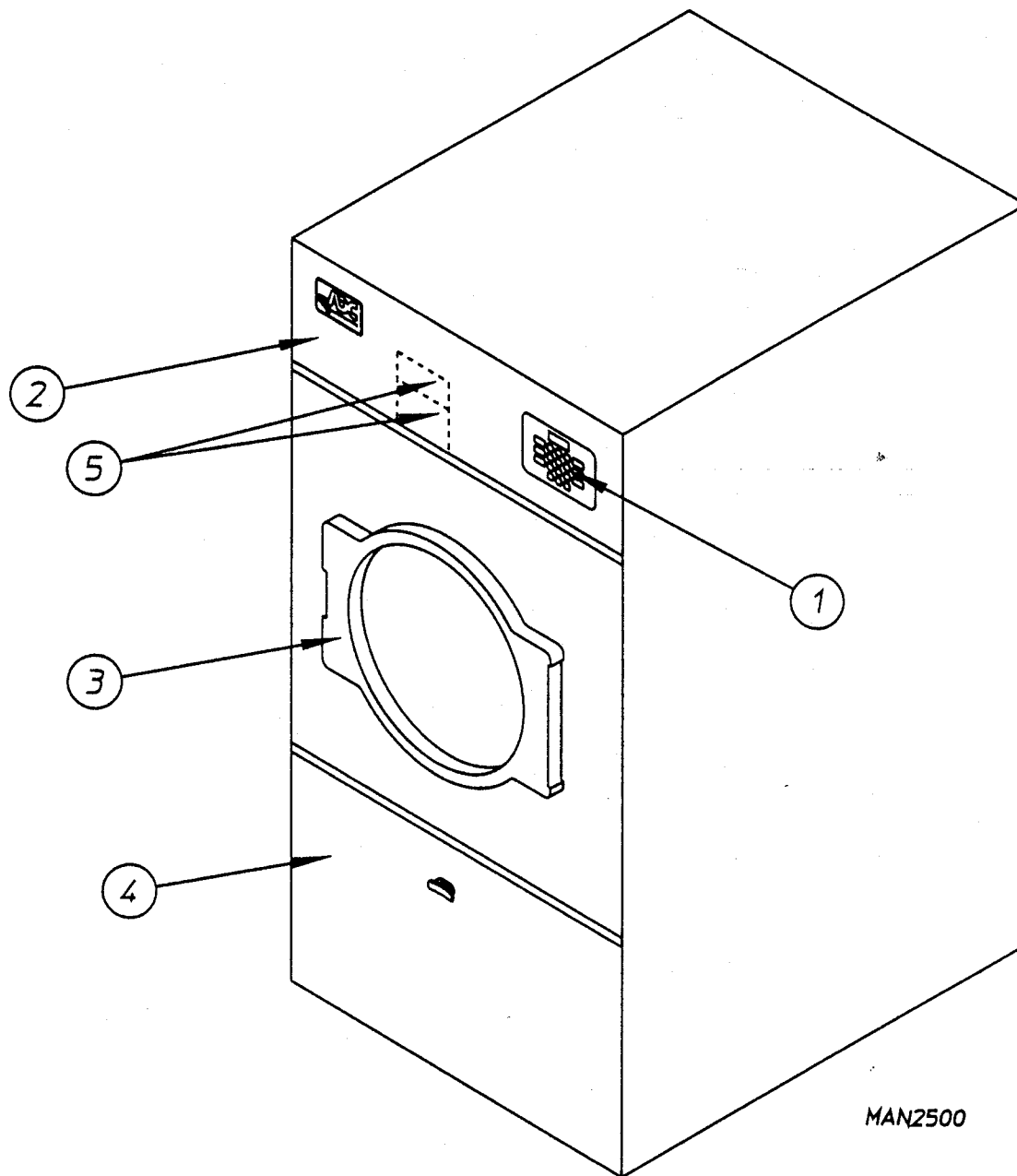


\* OPERATING HEIGHT FOR STEAM UNIT IS 81" (205.74cm)

**NOTE: ADC RESERVES THE RIGHT TO MAKE CHANGES IN SPECIFICATIONS AT ANY TIME, WITHOUT NOTICE or OBLIGATION.**

## B. COMPONENT IDENTIFICATION

### 1. DRYER FRONT VIEW

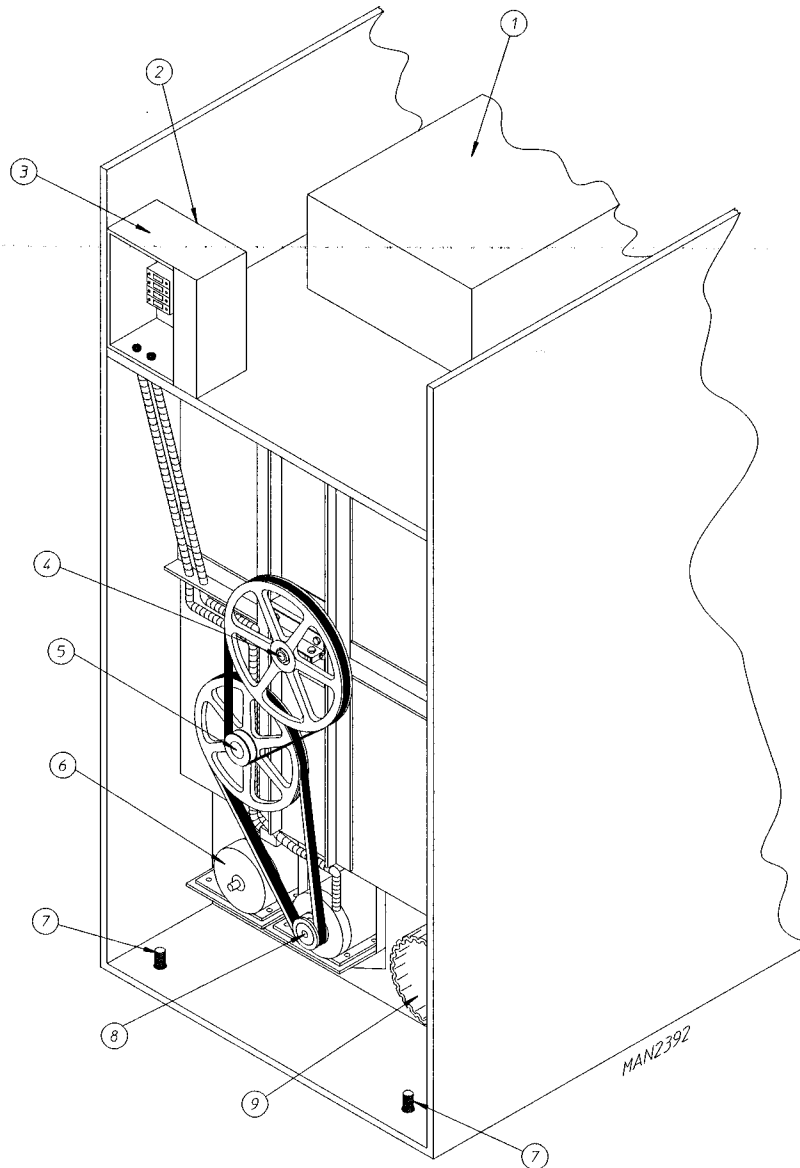


Illus. No.

Description

- |   |   |
|---|---|
| 1 | Controls  |
| 2 | Control (top access) Door Assembly  |
| 3 | Main Door Assembly  |
| 4 | Lint Compartment Area (lint screen located behind door)                   |
| 5 | Data Label and Installation Label (located behind control [service] door) |

## 2. DRYER REAR VIEW



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

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

**NOTE:** 1/8-inch Compressed Air Supply Inlet (for Steam Models Only) is located behind the Electric Service Relay Box.

# 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: National Fuel Gas Code ANSI.Z223.1-LATEST EDITION and/or National Electric Code ANSI/NFPA NO. 70-LATEST EDITION.

### A. LOCATION REQUIREMENTS

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.

1. The dryer **must be** installed on a sound level floor capable of supporting its weight. It is recommended that carpeting be removed from the floor area that the dryer is to rest on.
2. The dryer **must not be** installed or stored in an area where it will be exposed to water and/or weather.
3. 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** in Section D).
5. Clearance provisions **must be** made from combustible construction as noted in this manual (refer to **Dryer Enclosure Requirements** in Section C).
6. Provisions **must be** made for adequate clearances for servicing and for operation as noted in this manual (refer to **Dryer Enclosure Requirements** in Section C).
7. Dryer **must be** exhausted to the outdoors (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 the manual (refer to **Exhaust Requirements** in Section E).

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

## B. UNPACKING/SETTING UP

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

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

The dryer can be moved to its final location while still attached to the skid or with the skid removed. To un-skid the dryer, locate and remove the four (4) bolts securing the base of the dryer to the wooden skid. Two (2) are 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.

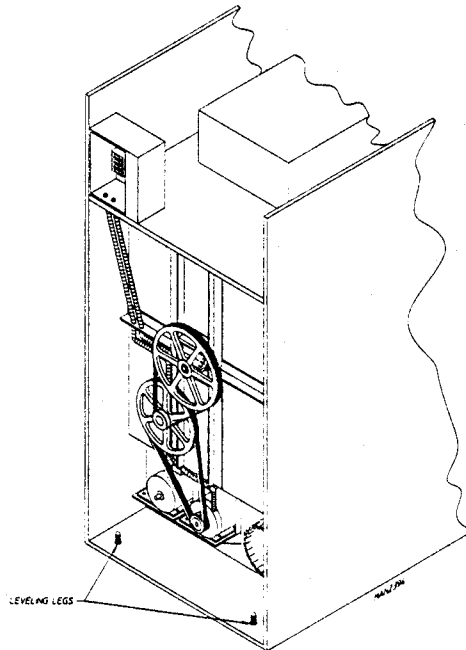
With the skid removed, to make it easier to slide the dryer into its final position, slightly lower **ALL** four (4) leveling legs, so that the dryer will slide on the legs instead of the base frame.

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

The basket (tumbler) is supported during shipping by a wooded block. **REMOVE THIS BLOCK BEFORE STARTING THE DRYER.**

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

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

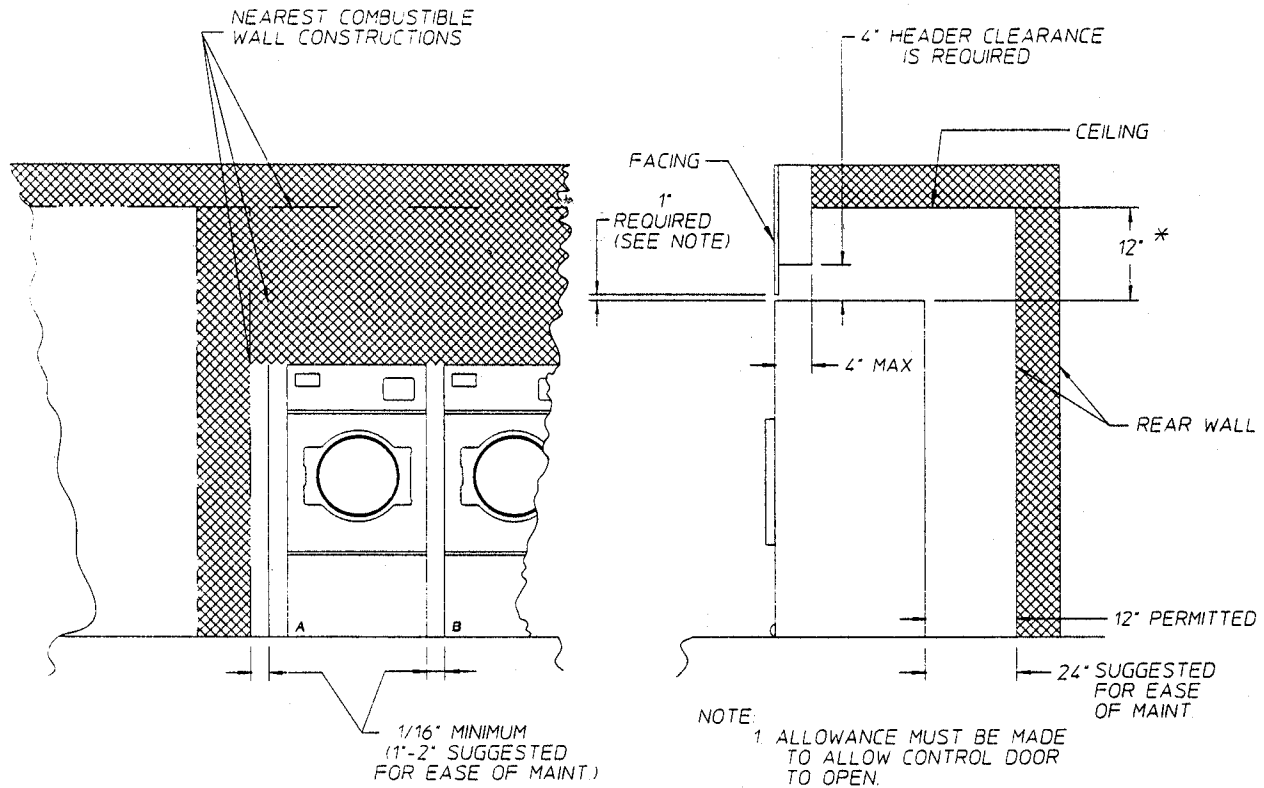


### 1. LEVELING DRYER

The dryer is equipped with four (4) leveling legs, one at each corner of the base. Two (2) are located at the rear of the dryer base, and two (2) are located in the lint chamber (coop). To increase bearing life and improve efficiency, the dryer **should** be tilted slightly to the rear.

## C. DRYER ENCLOSURE REQUIREMENTS

Bulkheads and partitions **should be** made of noncombustible materials and **must be** located a minimum of twelve (12) inches (18-inches 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 partially closed in if desired. The clearance between the bulkhead header and the dryer **must be** a minimum of four (4) inches and **must not** extent more than four (4) inches to the rear of the front. The bulkhead facing **must not** be closed in all the way to the top of the dryer. A one (1) inch clearance is required.



\*IN CASES WHERE SPRINKLER HEADS ARE OVER THE DRYERS 18" IS SUGGESTED.

MAN2381

INSTALLATION: DRYER CLEARANCE TO ADJACENT WALL STRUCTURES.

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

Dryers may positioned side wall to side wall. However, a 1/16" minimum allowance **must be** made for opening and closing of the control door and the lint door. It is suggested that the dryer be positioned about two (2) feet away from the nearest obstruction for ease of installation, maintenance, and service (to be measured from the back guard. (Refer to the **illustration** above for details.)

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



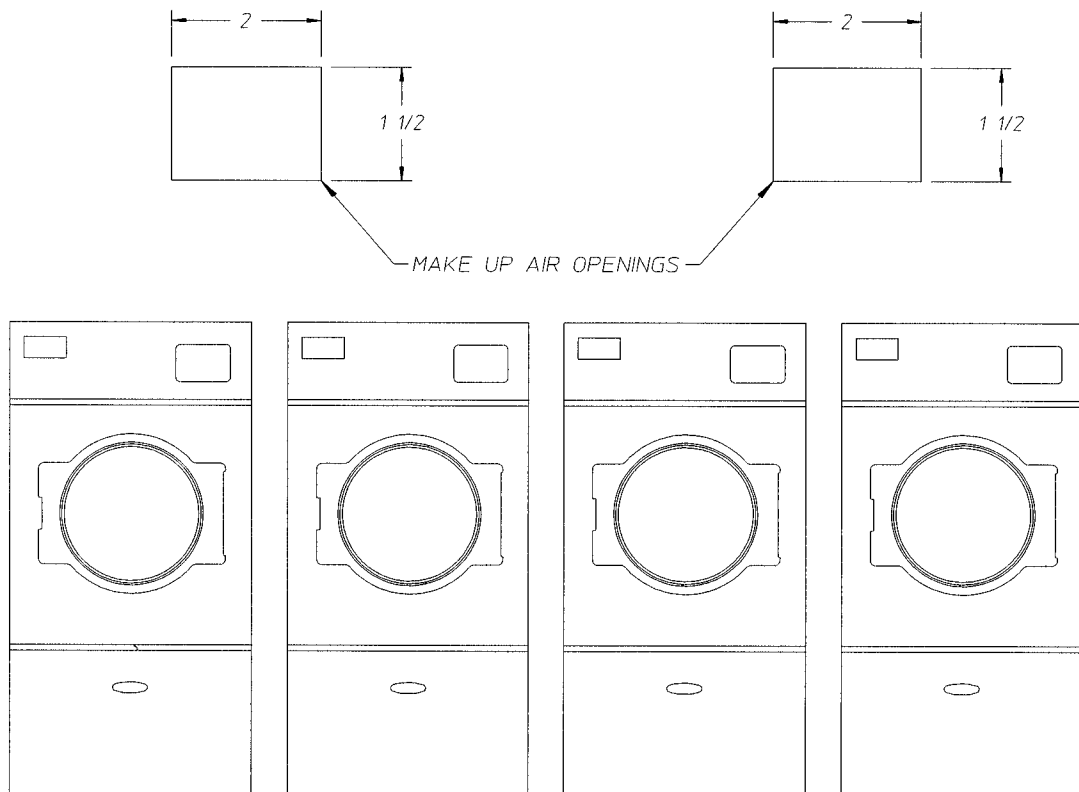
**IMPORTANT:** Even though a minimum of only 12-inches is required, 18-inches or more is suggested. The additional clearance is advantageous for ease of installation and service.

**IMPORTANT:** When fire sprinkler systems are located above the dryers, a minimum of 18-inches above the dryer console (module) is required. Dryers may be positioned side wall to side wall however, a 1/16-inch minimum allowance is required between dryers (or wall) for ease of installation and maintenance. Allowances *must be* made for the opening and closings of the control door and the lint door.

#### D. FRESH AIR SUPPLY

When the dryer is operating, it draws in room air, heats it, passes this air through the basket (tumbler), and exhausts it out of the building. Therefore, the room air **must be** continually replenished from the outdoors. If the make-up air is inadequate, drying time and drying efficiency will be adversely affected. Ignition problems and sail switch "fluttering" problems may result, as well as premature motor failure from overheating.

Air supply (make-up air) **must be** given careful consideration to assure proper performance of each dryer. An unrestricted source of air is necessary for each dryer. An air flow of 1,200 cfm (cubic feet per minute) **must be** supplied to each gas and electric dryer and 1,350 cfm (cubic feet per minute) **must be** supplied to each steam dryer. As a general rule, an unrestricted air entrance from the outdoors (atmosphere) of a minimum of 1-1/2 square feet is required for each dryer.



MAN2499

To compensate for the use of registers or louvers used over the openings, this make-up air **must be** increased by approximately thirty-three percent (33%). Make-up air openings *should not be* located in an area directly near where exhaust vents exit the building.

It is not necessary to have a separate make-up air opening for each dryer. Common make-up air openings are acceptable. However, they **must be** set up in such a manner that the make-up air is distributed equally to ALL the dryers.

EXAMPLE: For a bank of four (4) dryers, two (2) unrestricted openings measuring 2 feet by 1-1/2 feet (6 square feet) is acceptable.

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

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

## E. EXHAUST REQUIREMENTS

### 1. General Exhaust Duct Work Information

Exhaust duct work **should be** designed and installed by a qualified professional. Improperly sized duct work 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-heat thermostats.

**CAUTION: DRYER MUST BE EXHAUSTED TO THE OUTDOORS.**

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

The duct work **should be** laid out in such a way that the duct work travels as directly as possible to the outdoors with as few turns as possible. Single or independent dryer venting is recommended.

When single drying venting is used the length of ductwork from the dryer to the outside exhaust outlet should not exceed fifteen (15) feet. The minimum diameter of this duct work must be at least 10 inches (Even though the dryer exhaust duct for gas and electric units is only 8"). In the case of multiple (common) dryer venting, the distance from the last dryer to the outside exhaust outlet **should not** exceed fifteen (15) feet. The shape of the duct work is not critical so long as the minimum cross-sectional area is provided. It is suggested that the use of 90° turns **be avoided**; use 30° and/or 45° angles instead. The radius of the elbows **should preferably be** 1-1/2 times the diameter of the duct. Including basket (tumbler)/dryer elbow connections or elbows used for outside protection from the weather, no more than two (2) elbows **should be** used in the exhaust duct run. If more than two (2) elbows are used, the cross sectional area of the duct work **must be** increased.

**ALL** duct work **should be** smooth inside with no projections from sheet metal screws or other obstructions which will collect lint. When adding ducts, the duct to be added should overlap the duct to which it is to be connected. **ALL** duct work joints **must be** taped to prevent moisture and lint from escaping into the building. Inspection door **should be** installed at strategic points in the exhaust duct work for periodic inspection and clean-out of lint from the duct work.

**IMPORTANT:** Exhaust back pressure measured by a manometer in the exhaust duct **should not** exceed 0.3 inches of water column.

**IMPORTANT:** Minimum duct work diameter is 10-inches.

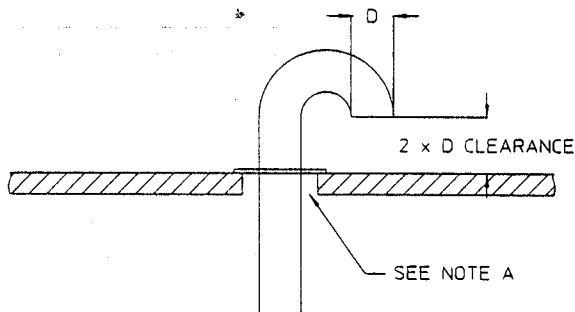
**NOTE:** Where the exhaust duct work passes through a wall, ceiling, or roof made of combustible materials, the opening **must be** 2-inches larger (all the way around) than the duct. The duct **must be** centered within this opening.

## a. Outside Duct Work Protection

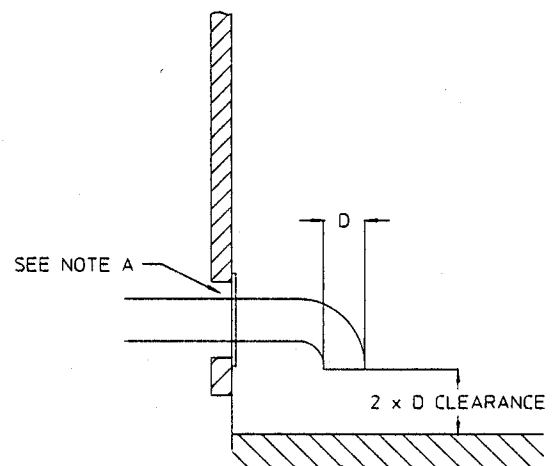
- 1) To protect the outside end of horizontal duct work from the weather, a 90° elbow bent downward **should be** installed where the exhaust exits the building. If the duct work travels vertically up through the roof, it **should be** protected from the weather by using a 180° turn to point the opening downward. In either case, allow at least twice the diameter of the duct between the duct opening and the nearest obstruction.

**IMPORTANT: DO NOT** use screens or caps on the outside of opening of exhaust duct work.

### VERTICAL DUCTING



### HORIZONTAL DUCTING



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

MAN0731

## 2. Single Dryer Venting

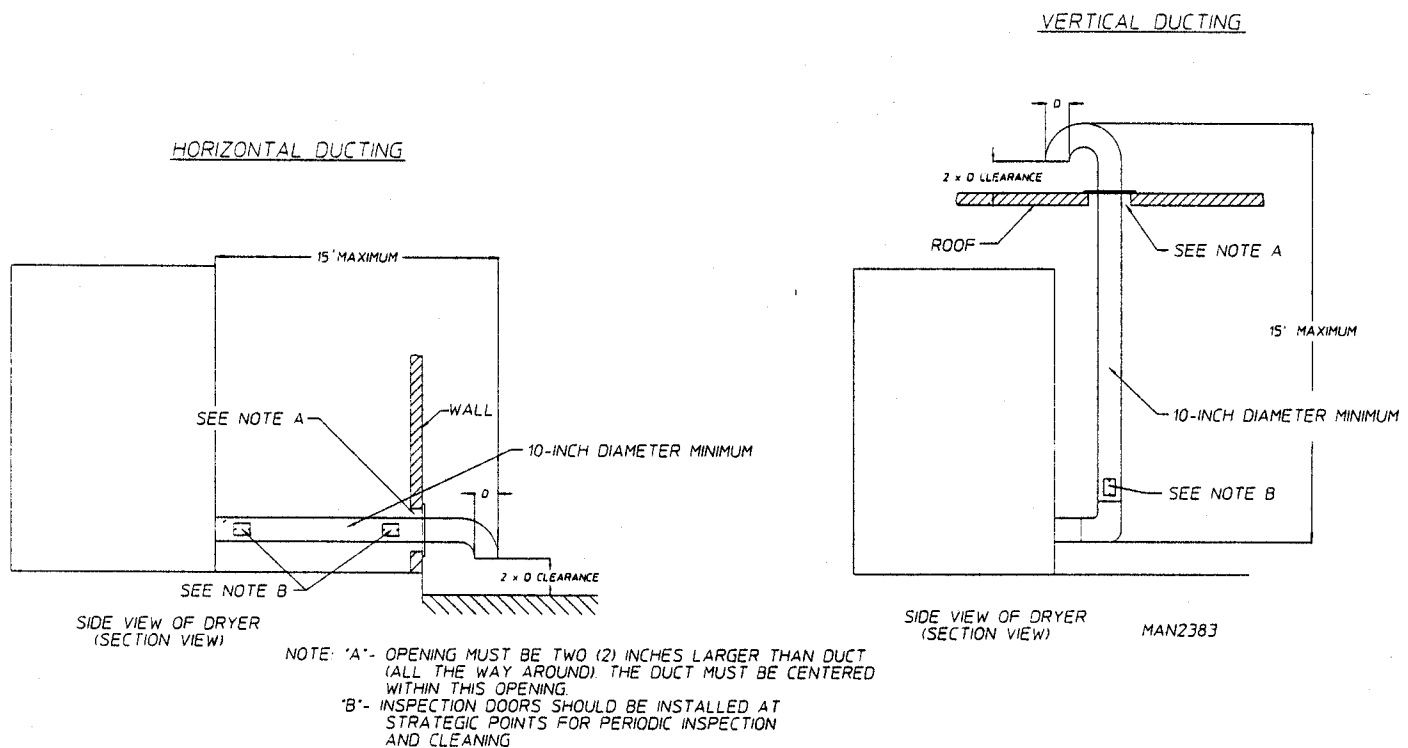
Where possible, it is suggested to provide a separate exhaust duct for each dryer. The exhaust duct **should be** laid out in such a way that the duct work travels as directly as possible to the outdoors with as few turns as possible. It is suggested that the use of 90° turns in the ducting be avoided; use 30° and/or 45° angles instead. The shape of the exhaust duct work is not critical so long as the minimum cross section area is provided.

**IMPORTANT:** Minimum duct size for the dryer is 10-inches for a round duct or 9" x 9" for a square duct. **The DUCT SIZE MUST NOT BE REDUCED ANYWHERE DOWN STREAM OF THE DRYER.**

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

It is suggested that the duct work from each dryer not exceed fifteen (15) feet with no more than two (2) elbows (excluding dryer connections and outside exhaust outlets). If the duct work exceeds fifteen (15) feet or has numerous elbows, the cross section area of the duct work **must be** increased in proportion to the length and number of elbows in it. In calculating duct size, the cross section area of a square or rectangular duct **must be** increased by twenty (20) percent for each additional fifteen (15) feet. The diameter of a round exhaust duct should be increased ten (10) percent for each additional fifteen (15) feet. Each 90° elbow is equivalent to an additional thirty (30) feet, and each 45° elbow is equivalent to an additional fifteen (15) feet.

## SINGLE DRYER VENTING



**IMPORTANT:** For extended duct work runs, the cross section area of the duct work can only be increased to an extent. Maximum proportional duct work runs **cannot** exceed fifteen (15) feet more than the original limitations of fifteen (15) feet with two (2) elbows. When the duct work approaches the maximum limits noted in this manual, a professional heating venting air conditioning (HVAC) firm **should be** consulted for proper venting information.

**ALL** duct work **should be** smooth inside with no projections from sheet metal screws or other obstructions which will collect lint. When adding ducts, the duct to be added should overlap the duct to which it is to be connected. **ALL** duct work joints **must be** taped to prevent moisture and lint from escaping into the building. Inspection doors **should be** installed at strategic points in the exhaust duct work for periodic inspection and clean-out of lint from the duct work.

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

a. Outside Duct Work Protection

- 1) To protect the outside end of horizontal duct work from the weather, a 90° elbow bent downward **should be** installed where the exhaust exits the building. If the duct work travels vertically up through the roof, it **should be** protected from the weather by using a 180° turn to point the opening downward. In either case, allow at least twice the diameter of the duct between the duct opening and the nearest obstruction.

**IMPORTANT:** DO NOT use screens or caps on the outside of opening of exhaust duct work.

3. Multiple Dryer (common) Venting

If it is not feasible to provide separate exhaust ducts for each dryer, ducts from individual dryers may be channeled into a "common main duct." The individual ducts should enter the bottom or side of the main duct at an angle not more than 45° in the direction of air flow and should be spaced at least 38-1/4 inches apart. The main duct **should be** tapered, with the diameter increasing before each individual duct (10-inch minimum) is added.

**IMPORTANT:** No more than four (4) dryers **should be** connected to main common duct.

The main duct may be any shape so long as the minimum cross sect is provided. The illustration on **page 18** shows the minimum cross section area for multiple dryer round or square venting. These figures **must be** increased 10 square inches when rectangular main ducting is used, and the ratio of duct width to depth **should not be** greater than 3-1/2 to 1. These figures **must be** increased in proportion if the main duct run at last dryer to where it exhaust to the outdoors is unusually long (over fifteen [15] feet) or has numerous (more than two [2] elbows in it). In calculating duct work size, the cross section area of a square or rectangular duct **must be** increased twenty (20) percent for each additional fifteen (15) feet. The diameter of a round exhaust **must be** increased ten (10) percent for each additional fifteen (15) feet. Each 90° elbow is equivalent to an additional thirty (30) feet and each 45° elbow is equivalent to an additional fifteen (15) feet.

**IMPORTANT:** For extended duct work runs, the cross section area of the duct work can only be increased to an extent. Maximum proportional duct work runs cannot exceed fifteen (15) feet with two (2) elbows. When the duct work approaches the maximum limits as noted in this manual, a professional HVAC firm should be consulted for proper venting HVAC from **should be** consulted for proper venting information.

The duct work should be smooth inside with no projections from sheet metal screws or other obstructions which will collect lint. When adding ducts, the duct to be added should overlap the duct to which it is to be connected. **ALL** duct work joints **must be** taped to prevent moisture and lint from escaping into the building. Inspection doors should be installed at strategic points in the exhaust duct work for periodic inspection and clean-out of lint from the duct work.

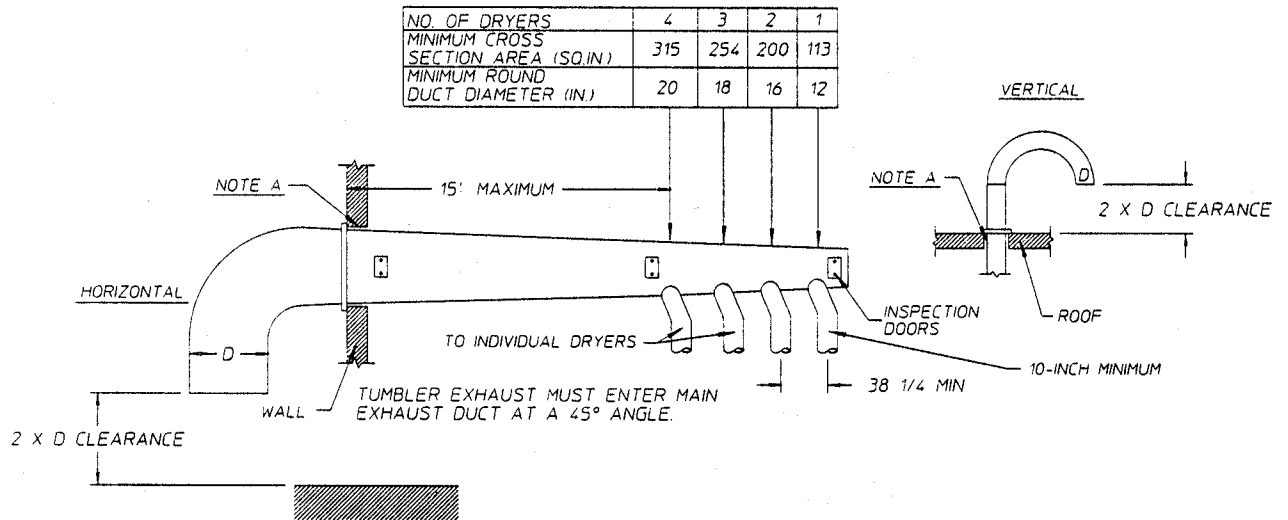
**NOTE:** Where the exhaust passes through a wall, ceiling, or roof made of combustible materials, the opening must be 2-inches larger (all the way around) than the duct. The duct must be centered within this opening.

a. Outside Duct Work Protection

- 1) To protect the outside end of horizontal duct work from the weather, a 90° elbow bent downward **should be** installed where the exhaust exits the building. If the duct work travels vertically up through the roof, it **should be** protected from the weather by using a 180° turn to point the opening downward. In either case, allow at least twice the diameter of the duct between the duct opening and the nearest obstruction.

**IMPORTANT:** DO NOT use screens or caps on the outside of opening of exhaust duct work.

MULTIPLE DRYER VENTING (ADG-75T/ADE-75T) WITH 8" DIAMETER (1200 CFM) EXHAUST CONNECTIONS AT COMMON DUCT

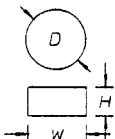


IMPORTANT: NO MORE THAN 4 DRYERS CAN BE CONNECTED TO ONE COMMON DUCT (VENT).

FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA

CROSS SECTIONAL AREA OF A ROUND DUCT =  $785 \times D^2$  WHERE D = DIAMETER OF THE DUCT

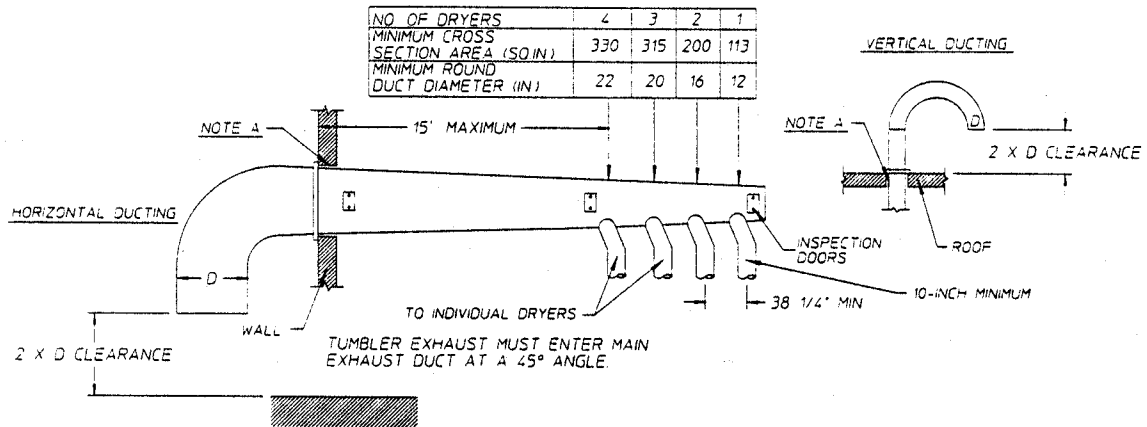
CROSS SECTIONAL AREA OF A RECTANGULAR DUCT =  $w \times h$  WHERE w = WIDTH AND h = HEIGHT



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

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MULTIPLE DRYER VENTING (ADS-75T)  
WITH 10" DIAMETER (1350 CFM) EXHAUST CONNECTIONS AT COMMON DUCT



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

**FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA**

CROSS SECTIONAL AREA OF A ROUND DUCT =  $.785 \times D^2$  WHERE D = DIAMETER OF THE DUCT.

CROSS SECTIONAL AREA OF A RECTANGULAR DUCT =  $W \times H$  WHERE W = WIDTH AND H = HEIGHT

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

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## F. ELECTRICAL INFORMATION

### 1. ELECTRICAL REQUIREMENTS

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

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

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

Each dryer should be connected to an independently protected branch circuit. The dryer must be connected with copper wire only. Do not use aluminum wire which could cause a fire hazard. The copper conductor wire/cable must be of proper ampacity and insulation in accordance with electric codes for making all service connections.

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



## 2. ELECTRICAL SERVICE SPECIFICATIONS

**IMPORTANT: A SEPARATE CIRCUIT SERVICING EACH DRYER MUST BE PROVIDED.**

### **ADG-75T (Gas) ADS-75 (Steam)**

Electrical Service Specifications (Per Dryer)

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

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

SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		MINIMUM WIRE SIZE*	FUSING	CIRCUIT BREAKER
			60 Hz	50 Hz		Dual Element Time Delay	
208	3 $\phi$	3/4	5	--	14	8	15
230	3 $\phi$	3	5	5	14	8	15
380	3 $\phi$	3/4	--	3	14	5	15
416	3 $\phi$	3/4	--	3	14	5	15
460	3 $\phi$	3/4	3	--	14	5	15

**IMPORTANT:** Figures shown are for non-reversing models **ONLY**. For reversing models contact the factory.

**IMPORTANT:** The dryer **must be** connected to the electric supply shown on the data label that is affixed to the back side of the upper/top control door. In the case of 208 VAC or 230/240 VAC, the supply voltage **must match** the electric service specifications of the data label exactly.

**IMPORTANT:** The wire size **must be** properly sized to handle the related current.

**WARNING:** 208 VAC and 230/240 VAC ARE NOT THE SAME. Any damage done to dryer components due to improper voltage connections will automatically VOID THE WARRANTY.

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

### 3. GROUNDING

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

For added personal safety, when possible, it is suggested that a separate ground wire (no. 18 minimum) be connected from the ground connection of the dryer to a grounded cold water pipe. DO NOT ground to a gas pipe or hot water pipe. The grounded cold water pipe must have metal to metal connection all the way to the electrical ground. If there are any non-metallic interruptions, such as, a meter, pump, plastic, rubber, or other insulating connectors, they must be jumped out 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.

Provisions are made for ground connection in each dryer at the electrical service connection area.

### 4. ELECTRICAL CONNECTIONS

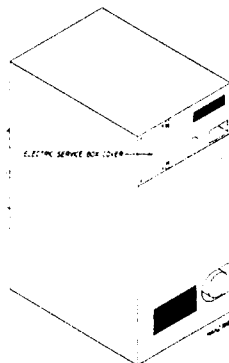
**NOTE:** A wire diagram is located in the front electrical control box for connection data.

#### a. Single Phase (1 Ø) Wiring Connections (Hookup)

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

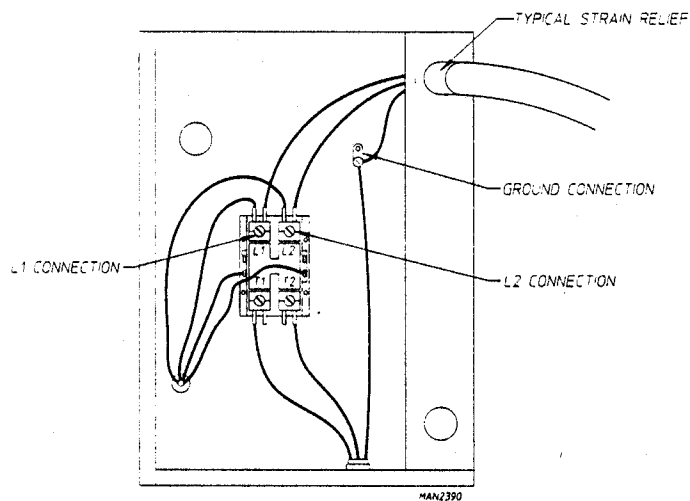
#### 1) GAS & STEAM Models Only

The electrical connections on ALL Single-phase (1 Ø) gas and steam dryers are made into the rear service box located at the upper left area 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 above. 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. 3 Phase (3 Ø) Wiring Connections / Hookup "NON-REVERSING MODELS ONLY"**

The electrical connections on ALL Three-phase (3 Ø) gas and steam dryers are made into the rear service box located at the upper left area of the dryer. Electrical connections for electrically heated dryers are made in the electric oven area located at the upper rear area of the dryer.

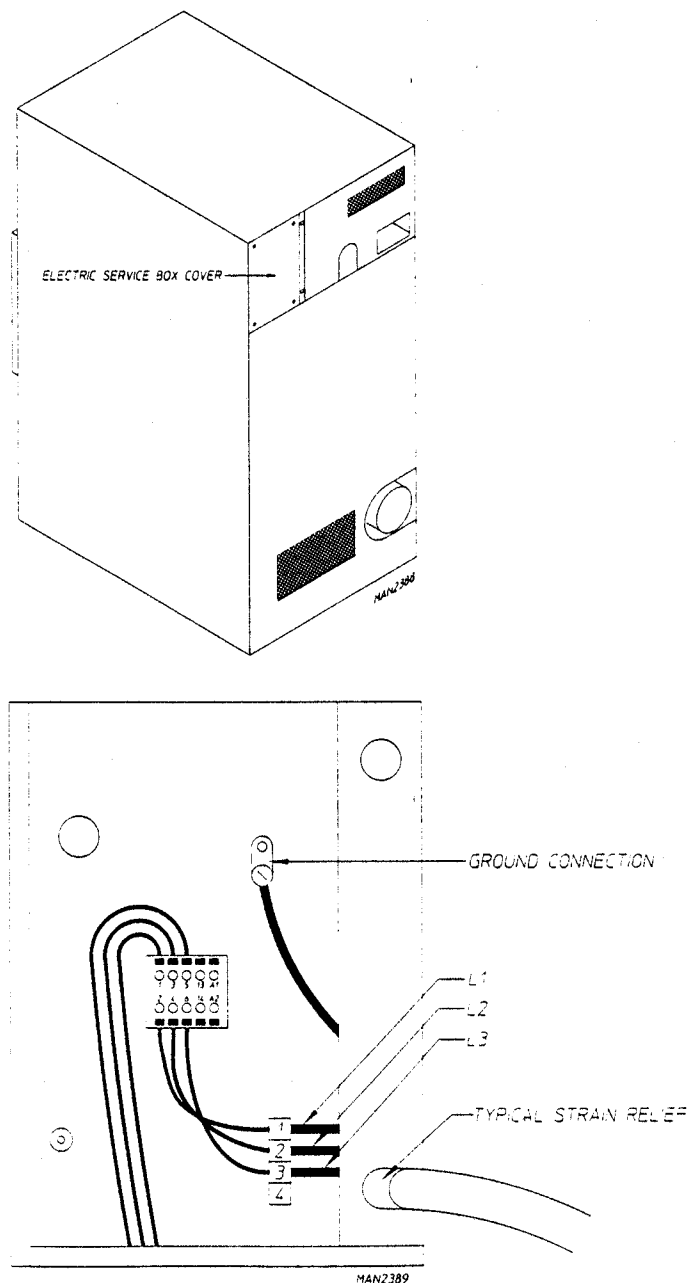
**IMPORTANT:** A separate circuit serving each dryer must be provided.

If local codes permit, power to a gas or steam 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 all cases, a strain relief must be installed where the wiring enters the dryer.

## 1) GAS & STEAM Models Only

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

For gas and steam dryers manufactured for operation at three phase (3 Ø), the electrical connections are made at the power distribution block located in the service box at the rear, upper left corner of the dryer. The ground connection is made to the copper lug also provided in this box. To gain access to the service box and contactor, the service box cover must be removed.



## 2) ELECTRICALLY Heated Models Only

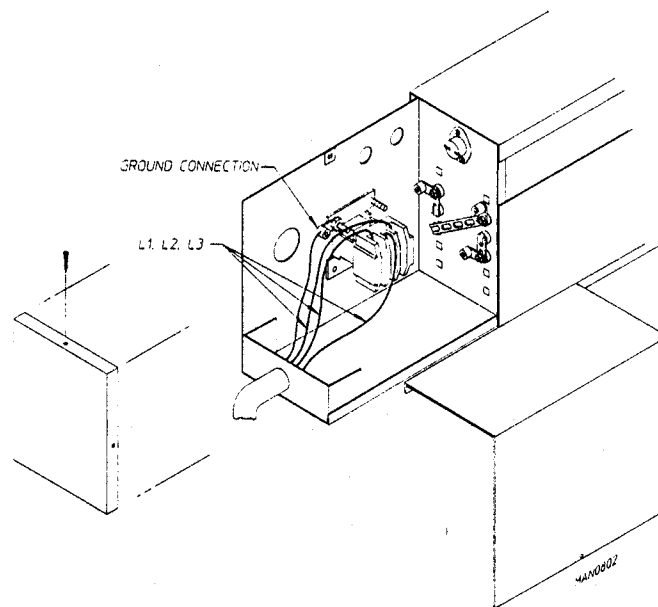
The only electrical input connections to the dryer are the 3-phase (3 Ø) power leads (L1,L2,L3 and sometimes neutral) and ground. Single phase power for the control circuit and for any single phase (1 Ø) motors (if present) is done internally to the dryer by the factory at the oven contactor. No single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

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

Input connection wiring must be sized properly to handle the dryer's current draw. This information is printed on the dryers data label.

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

The electrical input connections are made at the electric oven contactor located inside the assembly at the rear center upper section of the dryer. The ground connection is made to a oven copper lug also provided in this area. To gain access, remove oven rear service cover.



**IMPORTANT:** A strain relief must be used where the input wiring enters the oven assembly.

### c. 3 Phase (3 Ø) Wiring Connections / Hookup "REVERSING MODELS ONLY"

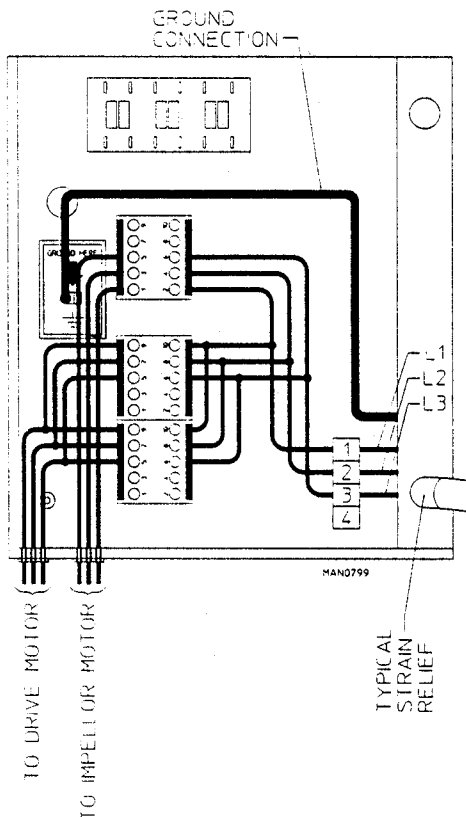
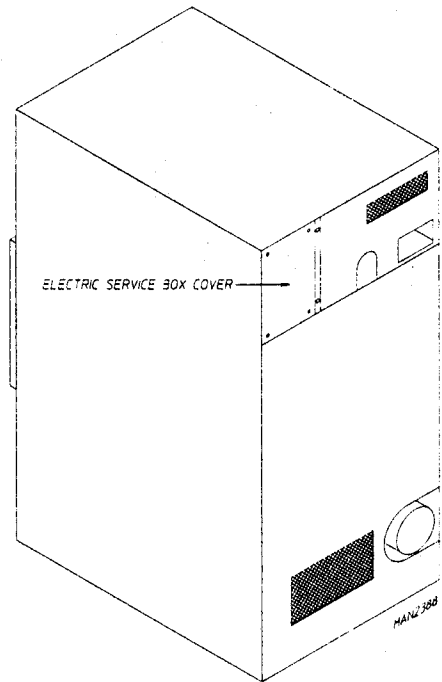
The electrical connections on ALL Three-phase (3 Ø) gas and steam dryers are made into the rear service box located at the upper left area of the dryer. Electrical connections for electrically heated dryers are made in the electric oven area located at the upper rear area of the dryer.

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

If local codes permit, power to a gas or steam 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 all cases, a strain relief must be installed where the wiring enters the dryer.

### 1) GAS & STEAM Models Only

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



For gas and steam dryers manufactured for operation at three phase (3  $\emptyset$ ), the electrical connections are made at the power distribution block located in the service box at the rear, upper left corner of the dryer. The ground connection is made to the copper lug also provided in this box. To gain access to the service box and contactor, the service box cover must be removed.

## 2) ELECTRICALLY Heated Models Only

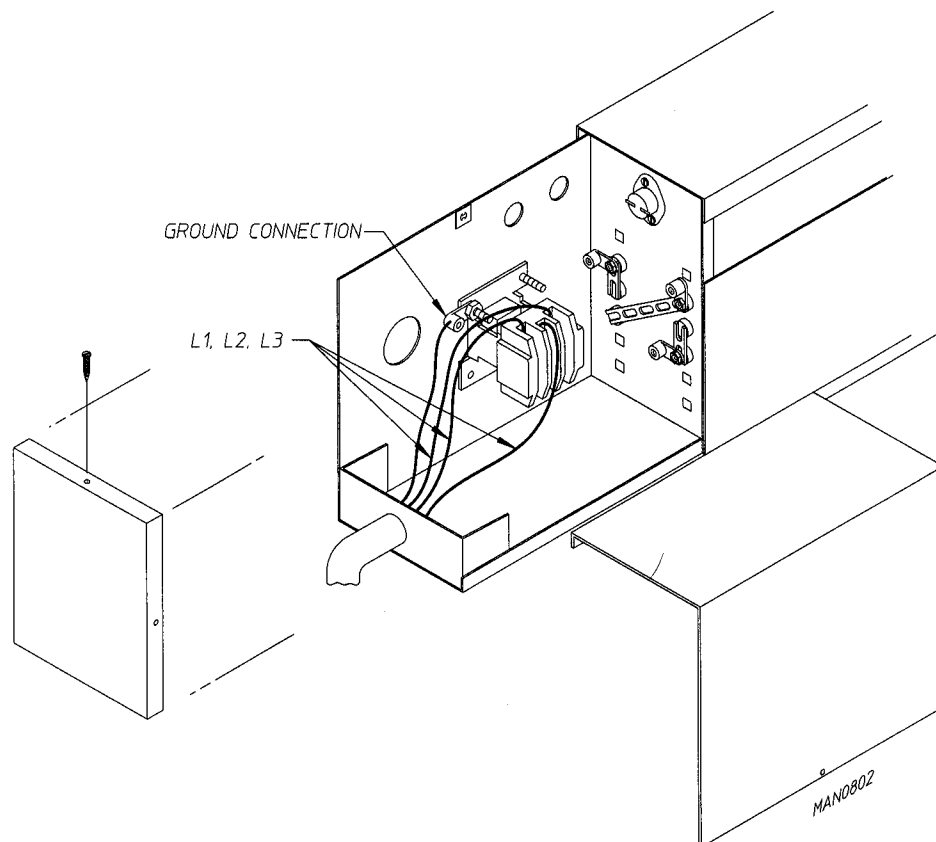
The only electrical input connections to the dryer are the 3-phase (3 Ø) power leads (L1,L2,L3 ) and sometimes neutral) and ground. Single phase power for the control circuit is done internally to the dryer by the factory at the oven contactor. No single phase (1 Ø) input connection is required on a 3-phase (3 Ø) dryer.

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

Input connection wiring must be sized properly to handle the dryer's current draw. This information is printed on the dryers data label.

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

The electrical input connections are made at the electric oven contactor located inside the oven assembly at the rear center upper section of the dryer. The ground connection is made to a copper lug also provided in this area. To gain access, remove oven rear service cover.



**IMPORTANT:** A strain relief must be used where the input wiring enters the oven assembly.

## 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 with 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.

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

The dryer and its individual shut-off valves **must be** disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa). The dryer **must be** isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure test 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 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, 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 label affixed behind the right control box door. If this information does not agree with the type of gas available, **DO NOT operate the dryer** Contact the distributor who sold the dryer or the ADC factory.

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

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



## 2. TECHNICAL GAS DATA

### a. Gas Specifications

	Type of Gas	
	Natural	Liquid Propane
Manifold Pressure*	3.5 - 4.0 inches W.C.	10.5 - 11.0 inches W.C.
Inline Pressure	6.0 - 12.0 inches W.C.	11.0 inches W.C.

### b. Gas Connections:

Inlet connection ----- 3/4"-inch N.P.T.  
 Inlet supply size ----- 3/4"-inch N.P.T. (minimum)  
 Btu/hr input (per dryer) --- 200,000

#### 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 and a maximum of 12.0 inches water column 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 11.0 inches 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.

Model Number	BTU Per Hour Rating	Type of Gas						L.P. Conversion Kit Part Number
		Natural			Liquid Propane			
		Qty.	D.M.S.*	Part Number	Qty.	D.M.S.*	Part Number	
ADG-75T	200,000	4	# 29	140820	4	#47	140805	881231

\* D.M.S. (Drill Material Size of equivalents are as follows:

Natural Gas ..... # 29 = .1360"

Liquid Propane Gas ..... # 47 = .0785"

### 3. Piping/Connections

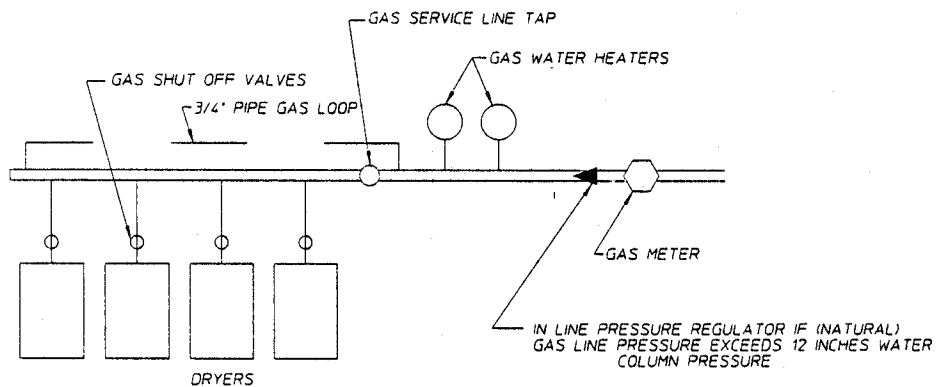
**ALL** components/materials **must conform** to National Gas Code specifications. It is important that gas pressure regulators meet applicable pressure requirements and that gas meters be rated for the total amount of **ALL** the appliance BTU's being supplied.

The dryer is provided with a 3/4" 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 3/4" N.P.T. For ease servicing, the gas supply line of each dryer **must have** its own shut-off valve.

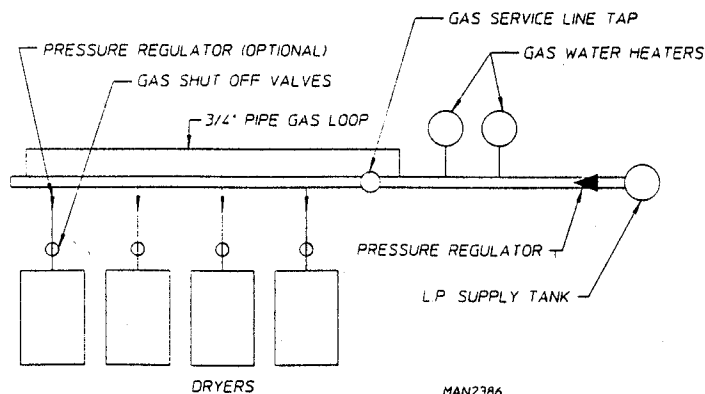
The size of the main gas supply line (header) will vary depending on the distance this line travels from the gas meter or, in the case of L.P. (liquid propane) gas, the supply tank, other gas-operated appliances on the same line, etc. Specific information regarding supply line size **should be** determined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



MAN2386

Consistent gas pressure is essential at **ALL** gas connections. It is recommended that a 2-inch pipe gas loop be installed in the supply line serving a bank of dryers. An in-line pressure regulator **must be** installed in the gas supply line (header) if the (natural) gas pressure exceeds 12.0 inches of water column pressure.

**NOTE:** A water column test pressure of 3.5-4.0 inches for natural gas and 11.0 inches for L.P. (liquid propane) dryers is required at the gas valve pressure tap of each dryer for proper and safe operation.

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

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

**IMPORTANT:** Test **ALL** connections for leaks by brushing on a soapy water solution (liquid detergent works well).

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

**ALL** components/materials **must conform** to National Gas Code specifications. It is important that gas pressure regulators meet applicable pressure requirements and that gas meters be rated for the total amount of **ALL** the appliance BTU's being supplied.

**IMPORTANT:** The dryer and its individual shut-off valve **must be** disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa).

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

## H. STEAM 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 with local and state regulations or codes.

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

**NOTE:** The ADS-75T is manufactured with a pneumatic (piston) damper system which requires an external supply of air (80 PSI +/- 10 PSI).

### 1. Steam Requirements - High Pressure

Inlet ----- 1-1/4" supply line connection—qty. one (1) at top manifold

Return --- 1-1/4" return line connection—qty. one (1) at top manifold

Operating Steam Pressure	
Maximum	125 psig
Minimum	100 psig*
Heat Input (Normal Load)	7 Bhp
Consumption (Approximate)	239 lbs/hr

### 2. Installation Instructions

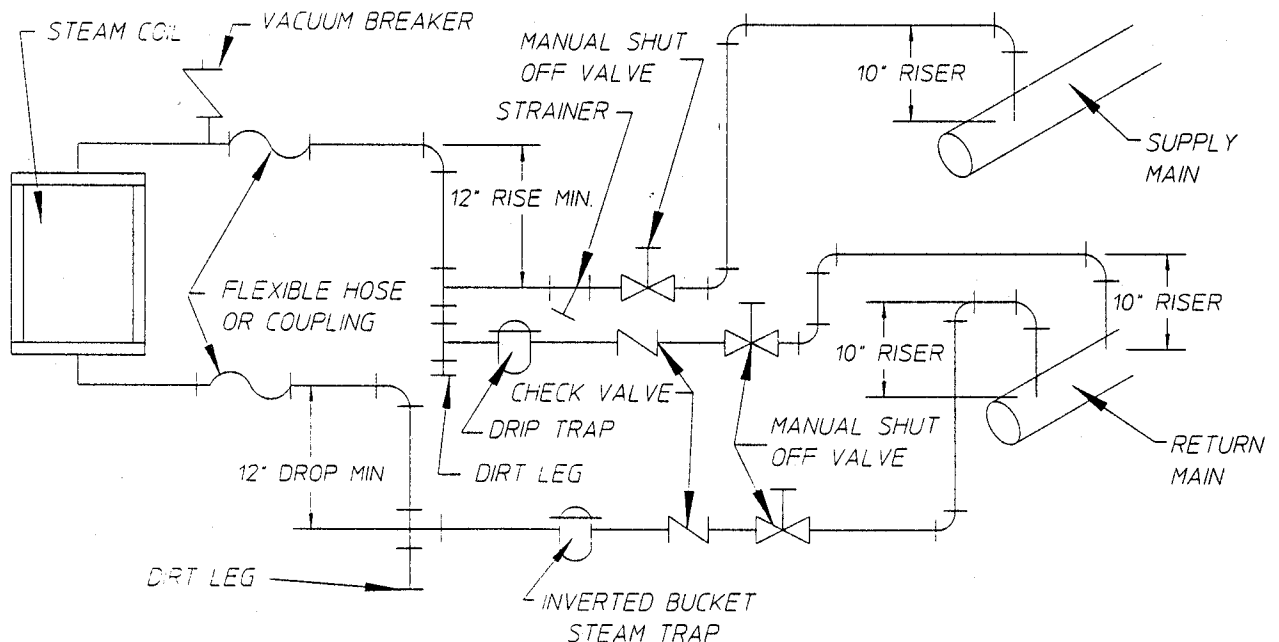
To insure an adequate supply of steam is provided, be sure that the steam lines and steam return lines are sized and laid out as stipulated in this manual. Inadequate steam lines and steam return lines or improper steam plumbing will result in poor performance and can cause component failure. Clean,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

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

- a. The pressure of the condensate in the steam supply will cause water hammer and subsequent heat exchanger (steam coil) failure). The steam supply connection into the main supply line **must be** made with a minimum 10-inch riser. This will prevent any condensate from draining towards the dryer.
- b. The steam supply piping to the dryer **must include** a 12-inch rise along with a drip trap and check valve. This will prevent any condensate from entering the steam coil.
- c. Flexible hoses or couplings **must be** used. The dryer vibrates slightly when it runs and this will cause the steam coil connections to crack if they are hard piped to the supply and return mains.

- d. Shut-off valves for each dryer **should be** installed in the supply line, return line, and drip trap return line. This will allow the dryer to be isolated from the supply main and the return main if the dryer needs maintenance work.
- e. Install an inverted bucket steam trap and check valve at least 12-inches below the steam coil as close to the coil as possible.
- 1) A trap with a capacity of 700 pounds of condensate per hour at 125 psi is needed for each unit.
- f. The supply line and the return line **should be** insulated. This will save energy and provide for the safety of the operator and maintenance personnel.
- g. Water pockets in the supply line, caused by low points, will provide wet steam to the coil possibly causing steam coil damage. **ALL** horizontal runs of steam supply piping **should be** pitched 1/4-inch for every one (1) foot back towards the steam supply header causing the condensate in the line to drain to the header. Install a bypass trap in any low point to eliminate wet steam.
- h. Water pockets in the supply line, caused any low points, will provide wet steam to the coil possibly causing coil damage. **ALL** horizontal runs of steam supply piping should be 1/4-inch for every one (1) foot back towards the steam supply header causing any condensate in the line to drain to the header. Install a bypass trap in any low point to eliminate wet steam.

**IMPORTANT:** Flexible hose/coupling must be used. Coil Failure due to hard plumbing connections will VOID THE WARRANTY.

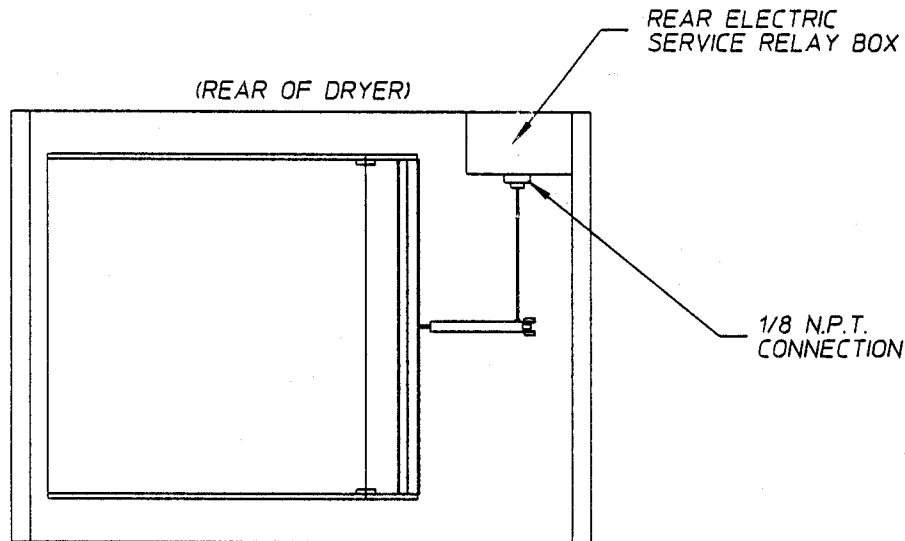


MAN1893

## STEAM DAMPER SYSTEM

### 3. STEAM DAMPER AIR SYSTEM CONNECTIONS

The ADS-75T is manufactured with a pneumatic (piston) damper system which requires an external supply of compressed air. The air connection is made to the steam damper solenoid valve which is located at the rear inner top area of the dryer just in front of the electric service relay box.



MAN2497

#### a. Air Requirements

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

#### b. Air Connection

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

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

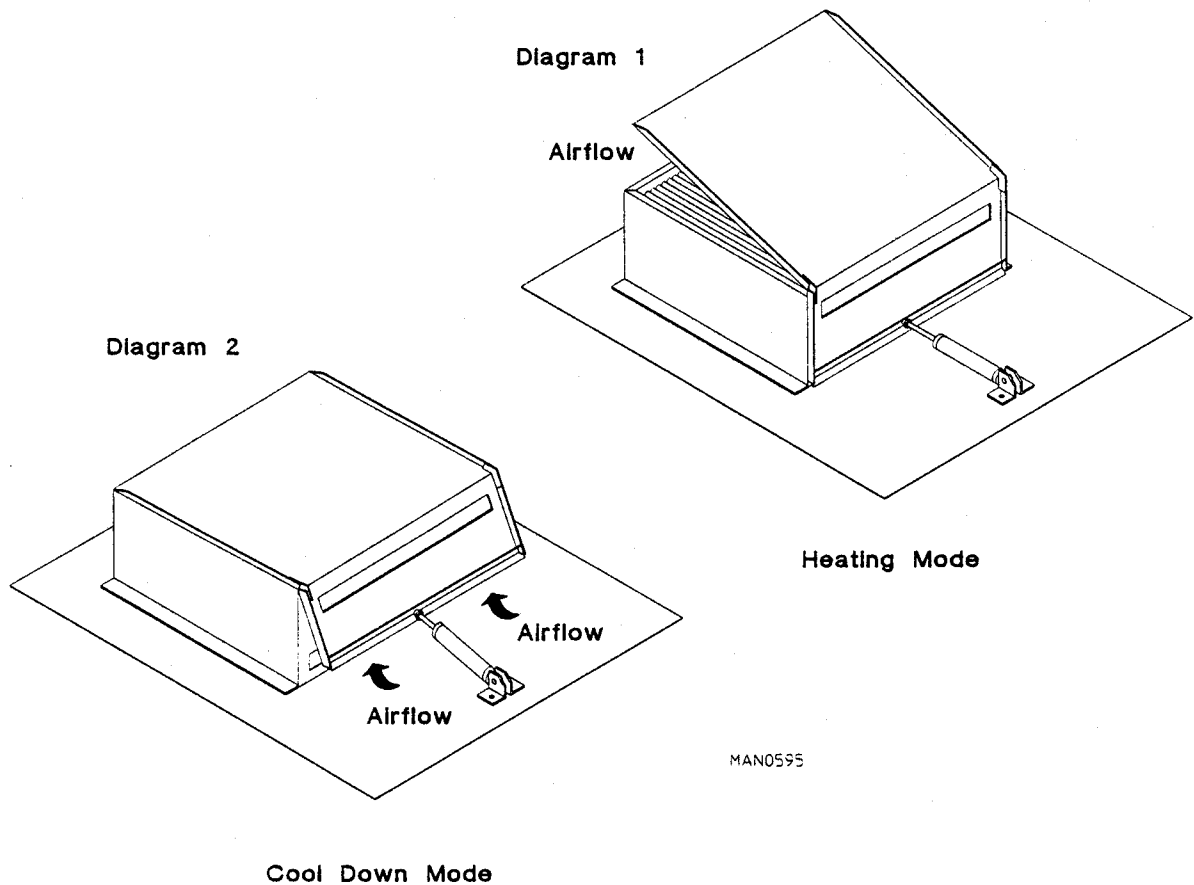
#### 4. Steam Damper System Operation

The ADS-75T steam damper shown in Diagram 1 in the illustration below, allows the coil to stay constantly charged eliminating repeated expansion and contraction. When the damper is opened, the air immediately passes through the already hot coil, providing instant heat to start the drying process. When the damper is closed, ambient air is drawn directly into the tumbler, allowing a rapid cool down (Diagram 2).

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

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

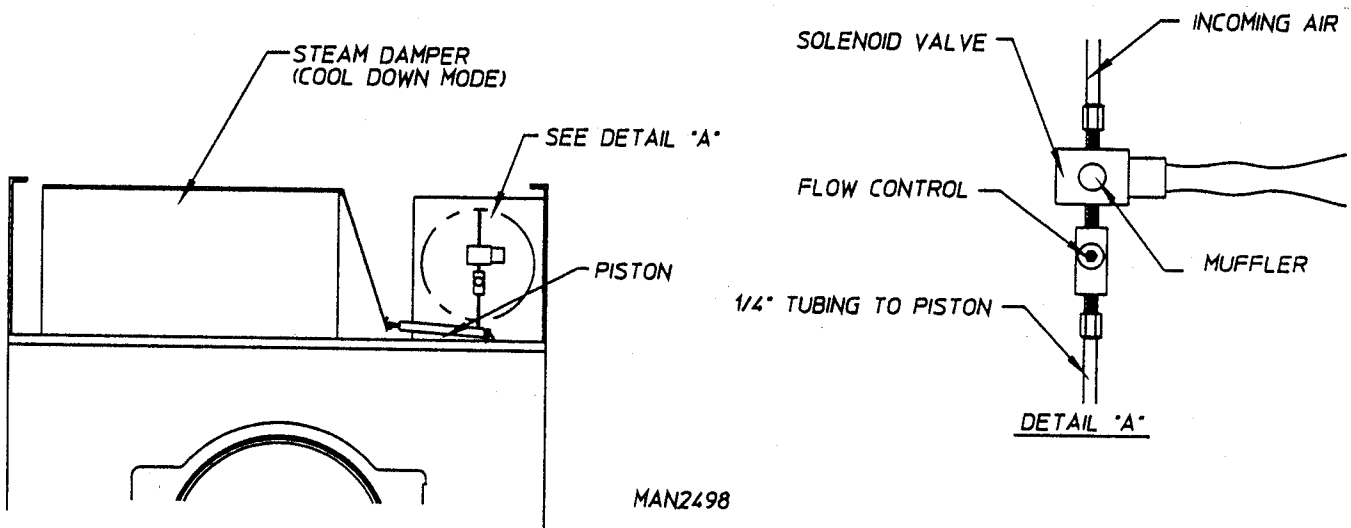
**NOTE:** With the dryer off or with no air supply, the steam damper is in the cool down mode as shown in Diagram 2.



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

Although the steam damper operation was tested and adjusted prior to shipping at 80 PSI, steam damper operation must be checked before the dryer is put into operation. Refer to pages 38 and page 39 for instructions to check steam damper operation. If steam damper adjustment is necessary, locate the flow control valve and make the necessary adjustments as noted below.

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





## I. PREPARATION FOR OPERATION/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 back side of the top front control/service door. In the case of 208 VAC or 230/240 VAC, **THE SUPPLY VOLTAGE MUST MATCH THE ELECTRIC SERVICE EXACTLY.**
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 & 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. **GAS MODELS** - be sure that **ALL** gas shut-off valves are in the open position.
6. Be sure **ALL** side and base panels are on the dryer.
7. Check **ALL** service doors to assure that they are closed and secure.
8. Be sure the lint door is securely in place.
9. Rotate the basket (tumbler/drum) by hand to be sure it moves freely.
10. Check bolts, nuts, screws, terminals, and fittings for security.
11. **STEAM MODELS** - check to insure air supply (80 PSI) is connected to the dryer.
12. **STEAM MODELS** - check to insure **ALL** steam shut-off valves are open.
13. **STEAM MODELS** - check to insure **ALL** steam shut-off valves are open
14. **STEAM MODELS** - check steam damper operation
15. Check tumbler bearing set screws to insure they are **ALL** tight.

## I. PREOPERATIONAL TESTS

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

1. Turn on electric power to the dryer.
  - a. Open ALL shut-off valves (Gas & Steam models only)
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 shut-off valves are open.

**NOTE:** Gas dryers are equipped with a direct spark Ignition (DSI) system which has internal diagnostics. If ignition is not established the heat circuit in the DSI module will lock out until it is manually reset. To reset the DSI system, open and close the main door and restart the dryer.

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

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

Natural Gas .....3.5 - 4.0 -Inches Water Column

L.P. Gas .....10.5 Inches Water Column

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

### *Steam Dryers*

- a. Check to insure that steam damper is functioning properly.

1. The steam damper should not "slam" (open or closed) when it reaches the end of (piston) travel. Additionally, the steam damper should not bind and/or stop during travel. If either of these conditions occur, the flow control must be adjusted. Refer to the bottom illustration on page 36 for air adjustment instructions.

### *Electrically Heated Dryers*

- a. Check to insure that electric oven/contactor assembly is activating.
4. Make a complete operational check of ALL safety related circuits:
    - a. Door Switch(es)
    - b. Hi-Limit thermostats
    - c. Sail switch (for Gas & Electric Models Only)

**NOTE:** To check for proper sail switch operation (for Gas & Electric Models Only), open the main door and while holding main door switch plunger in, start dryer. Dryer should start but heat circuit should not be activated (on). If heat (burner or oven) does activate, shut dryer off and make necessary adjustments.

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

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

6. Make a complete operational check of **ALL** operating controls.
  - a. For Microprocessor model check controller (computer) programs/selections...
    1. Each microprocessor controller (computer) has been preprogrammed by the factory with the most commonly used parameter (program) selections. If computer program changes are required, refer to the computer programming manual which was shipped with the dryer.
7. Check the electric service phase sequence (3-phase [3Ø] models only). While the dryer is operating, check to see if the blower wheel (impeller/fan) is rotating in the proper direction. Looking from the front, the blower wheel (impeller/fan) should spin in the clockwise direction. If it is, the phasing is correct. If the phasing is incorrect, reverse two (2) of the three (3) leads at connections L1, L2, 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.

8. REVERSING MODELS ONLY- basket (tumbler) dryer should never be operated with less than a 30 lb. load (dry weight). The size of the load will affect the coast-down and dwell (stop) times. The basket (tumbler) must come to a complete stop before starting in opposite direction.

a. Microprocessor Models

1. Spin and stop are not adjustable in the Automatic Mode and have been preprogrammed into the microprocessor controller (computer) for 120-seconds spin time and a 5-second dwell (stop) time.

2. Spin and stop times are adjustable in the Manual (timed) Mode.

b. Dual Timer Models

1. Both dwell (stop) and basket (tumbler) spin time are adjustable see illustration on page 69.

9. Check to insure that **ALL** set screws (i.e., tumbler drive, idler, etc.) are tight..

## K. PREOPERATIONAL INSTRUCTIONS

1. To start the dryer:

a. Microprocessor (computer) dryers

1. The L.E.D. display will read "FILL".

2. Press the "E" on the touch pad of the keyboard.

3. The L.E.D. display will quickly show "Ld30", "F180". The dryer will start, and the L.E.D. display will show "dr30".

Refer to the User's Manual for detailed operating instructions.

b. Dual Timer Dryers

1. Turn drying timer knob for a time of 20 minutes.

2. Select "High Temp."

3. Push "Push To Start" Switch.
4. To stop dryer, open the main door.

## L. SHUT DOWN INSTRUCTIONS

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

1. Discontinue power to the dryer either at the external disconnect switch or the circuit breaker.
2. Discontinue the heat supply:
  - a. ***GAS MODELS*** ... discontinue the gas supply.
    - 1) **SHUT OFF** external gas supply shut-off valve.
    - 2) **SHUT OFF** internal gas supply shut-off valve located in the gas valve burner area.
  - b. ***STEAM MODELS*** ... discontinue steam supply,
    - 1) **SHUT OFF** external (location furnished) shut-off valve.
    - 2) **SHUT OFF** internal steam valves in the supply lines and the return lines.

# 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 distributor from whom the **ADC** equipment was purchased. If the distributor cannot be contacted or is unknown, contact the **ADC** Service Department for a distributor in your area.

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

### B. PARTS

1. Replacement parts **should be** purchased from the distributor from whom the **ADC** equipment was purchased. If the distributor cannot be contacted or is unknown, contact the **ADC** Parts Department for a distributor in your area. Parts may also be purchased directly from the factory by calling the **ADC** Parts Department at (508) 678-9010 or you may FAX in your order at (508) 678-9447.

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

# SECTION V

## WARRANTY INFORMATION

### A. RETURNING WARRANTY CARD(S)

1. Before any dryer leaves the ADC factory test area, a warranty card (ADC Part No. 112250) is placed in a plastic bag behind the right control door. These warranty cards are intended to serve the customer in two ways. First, when ADC receives the warranty card(s) back from a customer, we mail appropriate parts manual (at no charge) to the address indicated on the returned card. Second, we record the individual installation date and warranty information to better serve you should you file a warranty claim.
  - a. If a warranty card (ADC Part No. 112250) did come with your dryer, contact the ADC Warranty Department or ADC Service Department at (508) 678-9000.

### B. PARTS

For a copy of the ADC commercial warranty covering your particular dryer(s), contact the ADC distributor from whom you purchased the equipment and request dryer warranty form ADC Part No. 450199. If the distributor cannot be contacted or is unknown, warranty information can be obtained from the factory by contacting the ADC Warranty Department at (508) 678-9000.

**NOTE:** Whenever contacting the ADC factory for warranty 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") from the factory.

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

- a. The R.M.A. issued by the factory, as well as any other correspondence pertaining to the returned 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 replacement, credit, or refund 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 duct work system. The frequency of cleaning can best be determined from experience at each location. Maximum operating efficiency is dependent upon proper air circulation. The accumulation of lint can restrict this air flow. If the guidelines in this section are met, an ADC dryer will provide many years of efficient, trouble-free, and - most importantly - safe operation.

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

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

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

#### 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.**

STEAM MODELS - clean the steam coil fins. We suggest using compressed air and a vacuum cleaner with brush attachment.

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

*90 DAYS*

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

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

*EVERY 6 MONTHS*

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

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

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

**NOTE:** A back draft damper that is sticking partially closed can result in slow drying and 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 set screws), non-permanent gas connections (unions, shut-off valves, orifices, and grounding connections). Motor and drive belts **should be** examined. Cracked or seriously frayed belts **should be** replaced. Tighten loose V-belts when necessary. Complete operational check of controls and valves. Complete operational check of **ALL** safety devices (door switches, lint drawer switch, sail switch, burner and hi-limit thermostats).

# SECTION VII

## TROUBLE SHOOTING

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

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

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

**WARNING:** All SERVICE and TROUBLESHOOTING SHOULD BE PERFORMED BY A QUALIFIED PROFESSIONAL OR SERVICE AGENCY.

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

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Excessive noise or vibration .....	N	68

## MICROPROCESSOR (COMPUTER) MODELS

### A. No L.E.D. display (microprocessor 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.
4. Failed control stepdown transformer (380 volts or higher models only).

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

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

### C. Drive motor (reversing models only) operates in one direction only..stops and restarts in same direction...

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

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

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

- e. Failed idler bearings or tumbler bearings.
  - f. Failed blower (Fan) ... out of balance (non-reversing models only).
- E. Blower/fan motor (reversing models only) is not operating (does not start)...
- 1. microprocessor (computer) motor indicator dot and relay output L.E.D. indicator are on ...
    - a. Failed blower (fan) motor contactor (relay)
    - b. Failed arc suppressor (A.S.) board.
    - c. Failed blower (fan) motor.
  - 2. microprocessor (computer) "door" L.E.D. is on but motor output L.E.D. indicator is off ..
    - a. Failed microprocessor controller (computer)
- F. Blower/fan motor (reversing models only) operates okay for a few minutes, and then stops and will not restart ...
- 1. Motor is overheating and tripping out on internal overload protector...
    - a. Motor air vent is clogged with lint.
    - b. Low voltage to motor.
    - c. Failed motor.
    - d. Failed blower (fan) ... out of balance.
- G. Both drive motor and blower (fan) motor (reversing models only) not operating (do not start) .... microprocessor (computer) motor indicator dots and relay output L.E.D. indicators are on ...
- 1. Failed arc suppressor (A.S.) board.
  - 2. Failed contactors (both blower and drive).
  - 3. Failed (both blower and drive) motors.
- H. Both drive motor and blower (fan) motor (reversing models only) not operating (do not start)... microprocessor (computer) motor indicator dots and "door" L.E.D. indicator are on but relay output L.E.D. indicators are off (L.E.D. display does not read "door")...
- 1. Failed microprocessor controller (computer).

- I. Both drive motor and blower motor run a few minutes and stop...microprocessor controller (computer) L.E.D. display continues to read time or percent of extraction and ALL indicator dots are off ...
1. Fault in main door switch circuit ...
    - a. Main door switch out of adjustment
    - b. Loose connection in main door switch circuit.
- J. Microprocessor controller (computer) display reads "dSFL" continuously and the buzzer (tone) sounds every 30 seconds ...
1. Fault in microprocessor heat sensing circuit ...
    - a. Blown "dSFL" 1/8 amp fuse on the microprocessor controller (computer).
    - b. Failed microprocessor temperature sensor.
    - c. Failed microprocessor controller.
    - d. Broken wire or connection somewhere between the microprocessor controller (computer) and microprocessor temperature sensor.
- K. Microprocessor controller (computer) display reads "door" and microprocessor controller (computer) "door" L.E.D. indicator is off...
1. Fault (open circuit) in main door switch circuit ...
    - a. Main door not closed all the way.
    - b. Main door switch is out of proper adjustment.
    - c. Failed main door switch.
    - d. Broken connection/wire in main door wiring circuit.
  2. Failed 24 VAC step down transformer or fault in wiring.
- L. Microprocessor controller (computer) L.E.D. display reads "door" and microprocessor controller (computer) "door" L.E.D. indicator is on ...
1. Failed microprocessor controller (computer).
- M. Microprocessor controller (computer) will not accept any keyboard entries, i.e., display reads



"FILL" and when keyboard entries are selected, the display continues to read "FILL" ...

1. Failed keyboard label (touchpad) assembly.
  2. Failed microprocessor controller (computer).
- N. Microprocessor controller (computer) will only accept certain keyboard entries ..
1. Failed keyboard (touchpad) assembly.
- O. Microprocessor controller (computer) locks up and display reads erroneous message(s) or only partial segments ...
1. Transient power voltage (spikes) ...disconnect power to dryer, wait one (1) minute and reestablish power to dryer ... if problem is still evident ...
    - a. Failed microprocessor controller (computer).
    - b. Failed keyboard label (touchpad) assembly.
- P. Dryer stops during a cycle, microprocessor controller (computer) buzzer (tone) sounds for 5-seconds, and then the L.E.D. display reads "dSFL", for approximately 30 seconds, and then returns to "FILL" ...
1. Loose connection somewhere between the microprocessor controller (computer) and the microprocessor temperature sensor.
  2. Loose "dSFL" 1/8 amp fuse on the microprocessor controller (computer).
- Q. Dryer stops during a cycle, microprocessor controller (computer) buzzer (tone) sounds for 5-seconds, and then the L.E.D. display returns to "FILL" ...
1. Loose connection somewhere in the main power circuit to the microprocessor controller (computer).
  2. Failed arc suppressor (A.S.) board (reversing models only).
- R. Microprocessor controller (computer) L.E.D. display reads "SEFL" ...
1. Rotational sensor circuit (option) failure ... fault somewhere in basket (tumbler) rotation or circuit ...
    - a. Basket (tumbler) not rotating ...
      - 1) Broken or loose v-belts.

2) Failure in drive motor circuit .. refer to items B, C, and D of this troubleshooting section.

b. Failed rotational sensor.

c. Broken wire or connection between rotational sensor and microprocessor controller.

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

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

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

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

T. Heating unit is not operating (no heat)... no voltage at heating unit (i.e. Gas model DSI module, Steam model damper system pneumatic solenoid or 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.

3) No exhaust air flow ..

a) Failed fan.

b) Fault in blower (fan) motor circuit (Reversing models).

2. Failed burner hi-limit switch.

3. Failed lint chamber sensor bracket tumbler hi-limit switch.

#### STEAM MODELS ...

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

#### ELECTRIC MODELS ...

1. Fault in sail switch circuit.
  - a. Sail switch is out of adjustment or failed.
  - b. Sail switch damper is not closing or is fluttering ...
    - 1) Lint screen is dirty.
    - 2) Restriction in exhaust.
    - 3) No exhaust air flow.
      - a) Failed impellor.
      - b) Fault in fan motor circuit.
  - c. Failed oven hi-limit switch.
  - d. Failed lint chamber sensor bracket basket (tumbler) hi-limit switch.
- U. Heating unit is not operating (no heat)... no voltage at heating unit (i.e. Gas model DSI module, Steam model damper system pneumatic solenoid or electric oven contactor) when dryer is first started and microprocessor controller (computer) heat indicator dot is on but the "HEAT" relay output L.E.D. is NOT on ...
  1. Failed microprocessor controller (computer).
- V. No heat .. voltage is confirmed at heating unit (i.e. Gas model DSI module, Steam model damper system 3 way micro-valve or electric oven contactor) ...

#### GAS MODELS ...

1. Fault in DSI ignition system.
  - a. Ignitor sparks but no ignition and module locks out (RED indicator 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 out of adjustment .. or has failed.
  - 2) Sail switch is fluttering ...
    - a) Lint screen is dirty.
    - b) Restriction in exhaust duct work.
- c. Ignitor does not spark and module locks out (RED indicator stays on).
  - 1) Fault in HV (high voltage wire) .. break or loose connection.
  - 2) Failed ignitor probe assembly.
  - 3) Failed DSI module.

#### STEAM MODELS ...

- 1. Air operated system ...
  - a. No (external) compressed air (80 psi required) to steam damper solenoid
  - b. Failed Steam Damper Pneumatic Solenoid.
  - c. Damper stuck in "closed" position .. check for obstruction.
  - d. Leak in pneumatic system.
  - e. Failed air piston.
  - f. Flow control misadjusted.
- 2. Electrical mechanical system ...
  - a. Failed electrical mechanical motor.
  - b. Damper stuck in "closed" position .. check for obstruction.

#### ELECTRIC MODELS

- 1. Failed oven contactor/coil.

2. Failed electric heating element(s).

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

1. Exhaust duct work too long or is undersized ... back pressure cannot exceed .3 inches water column.

2. Restriction in exhaust ...

a. Dryer back draft damper is sticking partially closed.

b. Restriction/obstruction in duct work.

1) Check duct work all the way to the outdoors.

3. Insufficient make up air ...

4. Impellor/fan is rotating in the wrong direction only (3 phase models only).

5. Lint screen is dirty or is not being cleaned often enough.

6. Inadequate air flow ...

a. Impellor/fan failure.

7. GAS MODELS ...

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

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

L.P. Gas pressure must be between 10.5 inches and 11.0 inches of water column.

b. Poor air/gas mixture (too much gas or not enough air) at burner... yellow or poor flame pattern ...

1) Not enough make-up air.

2) Restriction in exhaust.

3) Gas pressure too high.

4) Impellor/fan rotating in the wrong direction (3 phase models).

5) Burner orifice size (D.M.S.) too large for application (i.e., high elevation.

c. Sail switch is fluttering ...

1) Restriction in exhaust...

a) Lint screen is dirty or is not being cleaned often enough.

d. Failed burner hi-limit switch ... opens at incorrect temperature.

e. Gas supply may have low heating value.

## 8. STEAM MODELS...

a. Low steam supply.

1) Steam trap too small.

2) Supply line too small.

b. Low steam pressure.

c. Insufficient make-up air.

d. Lint screen is dirty or is not being cleaned often enough.

e. Restriction in exhaust.

f. Dirty steam coil ...

1) Fins clogged with lint.

g. Steam damper system not functioning properly ...

1) Damper is sticking closed.

2) Leak in pneumatic (air) system.

## 9. ELECTRIC DRYERS...

a. Not enough make up air.

b. Restriction in exhaust.

c. Lint screen is dirty or is not being cleaned often enough.

d. Blower/fan is rotating in the wrong direction (3 phase models only).

e. Failed Electric element(s)

- f. Sail switch is fluttering ...
  - 1) Restriction in exhaust.
  - 2) Switch not adjusted properly.
- 10. Extractors (washers) not functioning properly.
- 11. Failed microprocessor controller ... temperature calibration is inaccurate.
- 12. Failed microprocessor temperature sensor ... calibration is inaccurate.
- 13. Failed lint chamber hi-heat switch (thermostat) .. opens at incorrect temperature.
- 14. Microprocessor temperature sensor is covered with lint.

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

- X. At completion of "AUTO" drying/cooling cycle, load is coming out over dried ...
  - 1. Percent of dryness (dryness level) of cycle selected is too high.
  - 2. A & B factors not set correctly or "B" factor has to be adjusted for adverse location conditions.
- Y. At completion of "AUTO" drying/cooling cycle, load is coming out still damp ...
  - 1. Percent of dryness (dryness level) of cycle selected is too low.
  - 2. A & B factors not set correctly or "B" factor has to be adjusted for adverse location conditions.
- Z. Main burners are burning with a yellow flame (for GAS MODELS ONLY)...
  - 1. Poor air/gas mixture (too much gas or not enough air) at burner ...
    - a. Not enough make up air.
    - b. Restriction in exhaust.
    - c. Gas pressure too high.
    - d. Blower/fan (3 phase models only) rotating in the wrong direction.
    - e. Burner orifice size (D.M.S.) too large for application (i.e. high elevation).
- AA. Condensation on main door glass ...

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

BB. 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 basket (tumbler) ... bearing set screws may have come loose, and basket (tumbler) walked forward or back.

CC. Excessive noise and/or vibration...

1. Dryer is not level properly.
2. Blower/fan out of balance.
  - a. Excessive lint build up on blower/fan.
  - b. Failed blower/fan.
3. Loose basket (tumbler) tie rod.
4. Failed tumbler support.
5. Loose motor mount.
6. Failed idler or basket (tumbler) bearings.
7. V-belts too tight or too loose.
8. Tumbler bearing set screws are loose.
9. Failed motor bearings.

TIMER MODELS ...

- A. Dryer will not start. Both drive and blower motors not operating (indicator light is off).
1. Service panel fuse blown or tripped breaker.



2. Dryer control circuit L1 or L2 1/2 amp slo blo fuse is blown.
  3. Open in main door switch circuit ...
    - a. Main door not closed all the way.
    - b. Main door switch out of proper adjustment.
    - c. Failed main door switch.
    - d. Broken connection/wire somewhere in main door switch circuit.
  4. Failed push to start relay.
  5. Failed 24 VAC stepdown transformer or fault in wiring.
  6. Failed heat timer.
  7. Failed control stepdown transformer (380 volts or higher models only).
- B. Drive motor not operating (does not start)...
1. Failed drive motor contactor (relay).
  2. Failed reversing timer (reversing models only).
  3. Failed drive motor.
- C. Drive motor (reversing models only) operates in one direction only .. stops and restarts in same direction ...
1. Failed reversing contactor (relay).
  2. Failed reversing timer.
- D. Drive motor operates okay for a few minutes, then stops and will not restart ...
1. Motor is overheating and tripping out on internal overload protector ...
    - a. Motor air vents are clogged with lint.
    - b. Low voltage to motor.
    - c. Failed motor.
    - d. Basket (tumbler) is binding ... check for obstruction.

- e. Failed idler or tumbler bearings.
- E. Blower (fan) motor (reversing models only) is not operating (does not start) ...
  - 1. Failed blower (fan) motor contactor (relay).
  - 2. Failed blower (fan) motor.
- F. Blower (fan) motor (reversing models only) operates okay for a few minutes, and then stops and will not restart ...
  - 1. Motor is overheating and tripping out on internal overload protector ...
    - a. Motor air vent is clogged with lint.
    - b. Low voltage to motor.
    - c. Failed motor.
    - d. Failed blower (fan) ... out of balance.
- G. Both drive motor and blower (fan) motors (reversing models only) not operating (do not start) and indicator light is on ...
  - 1. Fault at L1 or L2 termination(s) between terminal block and contactors (relays).
  - 2. Failed contactors (both blower and drive).
  - 3. Failed (both motor and blower) motors.
- H. Heating unit is not operating (no heat) ... no voltage at heating unit (i.e. Gas model DSI module, Steam model damper system pneumatic solenoid or 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 screen is dirty.
    - 2) Restriction in exhaust.
    - 3) No exhaust air flow ...

- a) Failed fan.
  - b) Fault in blower (fan) motor circuit.
2. Failed burner hi-limit switch.
  3. Failed lint chamber sensor bracket hi-limit switch or circuit.
  4. Failed temperature selection switch or circuit.
  5. Failed temperature cycle thermostat (try another selection).
  6. Failed heat timer.

#### STEAM MODELS ...

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

#### ELECTRIC MODELS ...

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

- f. Failed temperature cycle thermostat (try another selection).
- I. No heat .. voltage is confirmed at heating unit (i.e. Gas model DSI module, Steam model damper system pneumatic solenoid or electric oven contactor coil) ...

#### GAS MODELS ...

1. Fault in DSI ignition system.
  - a. Ignitor sparks but no ignition and module locks out (RED indicator 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 out of adjustment .. or has failed.
    - 2) Sail switch is fluttering ...
      - a) Lint screen is dirty.
      - b) Restriction in exhaust duct work.
  - c. Ignitor does not spark and module locks out (RED indicator stays on).
    - 1) Fault in HV (high voltage wire) .. break or loose connection.
    - 2) Failed ignitor probe assembly.
    - 3) Failed DSI module.

#### STEAM MODELS ...

1. Air operated models ...
  - a. No (external) compressed air (80 psi required) to steam damper solenoid.
  - b. Failed steam damper pneumatic solenoid.

- c. Damper stuck in "closed" position .. check for obstruction.
  - d. Leak in pneumatic system.
  - e. Failed air piston.
  - f. Flow control misadjusted
2. Electrical mechanical models ...
- a. Failed electrical mechanical motor.
  - b. Damper stuck in "closed" position .. check for obstruction.

#### ELECTRIC MODELS ...

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

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

- 1. Exhaust duct work run is too long or is undersized. Back pressure cannot exceed .3 inches Water Column (W.C.).
  - 2. Restriction in exhaust ...
    - a. Back draft damper is sticking partially closed.
    - b. Restriction in duct work .. check duct work from dryer all the way to the outdoors.
  - 3. Insufficient make up air.
  - 4. Blower/fan ( 3 phase models only) is going in wrong direction.
  - 5. Lint screen is dirty or not being cleaned often enough.
  - 6. Inadequate air flow ...
    - a. Blower/fan failure.
7. GAS MODELS ...

- a. Low and/or inconsistent gas pressure (GAS MODELS ONLY). Pressure for natural gas must be between 3.5 and 4.0 inches water column, and L.P. gas between 10.5 and 11.0 inches water column.

- b. Poor air/gas mixture (too much gas or not enough of air) at burner ..yellow or poor flame pattern.
    - 1) Not enough make up air.
    - 2) Restriction in exhaust.
    - 3) Too high gas pressure.
    - 4) Blower/fan (3 phase models only) going in wrong direction.
    - 5) Burner orifice size (DMS) too large for application (i.e.high elevation).
  - c. Sail switch is fluttering. Restriction in exhaust.
    - 1) Lint screen is dirty or not being cleaned often enough.
    - 2) Restriction in exhaust.
  - d. Failed burner hi-limit switch .. opens at incorrect temperature.
  - e. Gas supply may have low heating value.
8. STEAM MODELS ...
- a. Low steam pressure.
  - b. Insufficient make up air.
  - c. Lint screen is dirty or not being cleaned often enough.
  - d. Restriction in exhaust.
  - e. Dirty steam coil. Fins clogged with lint.
  - f. Steam damper system not functioning properly ....
    - 1) Damper is sticking closed.
    - 2) Leak in pneumatic (air) system.
9. Electric dryers ...
- a. Not enough make-up air.
  - b. Restriction in exhaust.

- c. Lint screen is dirty or is not being cleaned often enough.
- d. Blower/fan ( 3 phase models only) is rotating in the wrong direction.
- e. Sail switch is fluttering...
  - 1) Restriction in exhaust.
  - 2) Switch is not adjusted properly.
- 10. Extractors (washers) not performing properly.
- 11. Failed lint chamber hi-limit switch (thermostat) ... opens at incorrect temperature.
- 12. Exceptionally cold/humid or low barometric pressure atmosphere.
- 13. Cycle temperature thermostats are covered with lint.

**NOTE:** Lint accumulation on the thermostat can act as an insulator which will effect the accuracy of the drying cycle.

- K. Main burners are burning with yellow flame (GAS MODELS ONLY)...
  - 1. Poor air/gas mixture (too much gas or not enough of air) at burner ..
    - a. Not enough make up air.
    - b. Restriction in exhaust.
    - c. Too high gas pressure.
    - d. Blower/fan (3 phase models only) going in wrong direction.
    - e. Burner orifice size (DMS) too large for application (i.e.high elevation).
- L. Condensation on main door glass ...
  - 1. Too long, undersized, or improperly installed duct work.
  - 2 Back draft damper is sticking in partially closed position.
- M. Scraping noise at basket (tumbler) area ...
  - 1. Check for object caught in basket (tumbler)/wrapper area.
  - 2. Basket is out of proper alignment ..

- a. Check both vertical and lateral alignment.
- b. Check gap between front panel and tumbler. Set bearing set screws may have come loose, and basket walked forward or back.

3. Loose basket (tumbler) tie rod.
4. Failed basket (tumbler) support.

N. Excessive noise and/or vibration ...

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



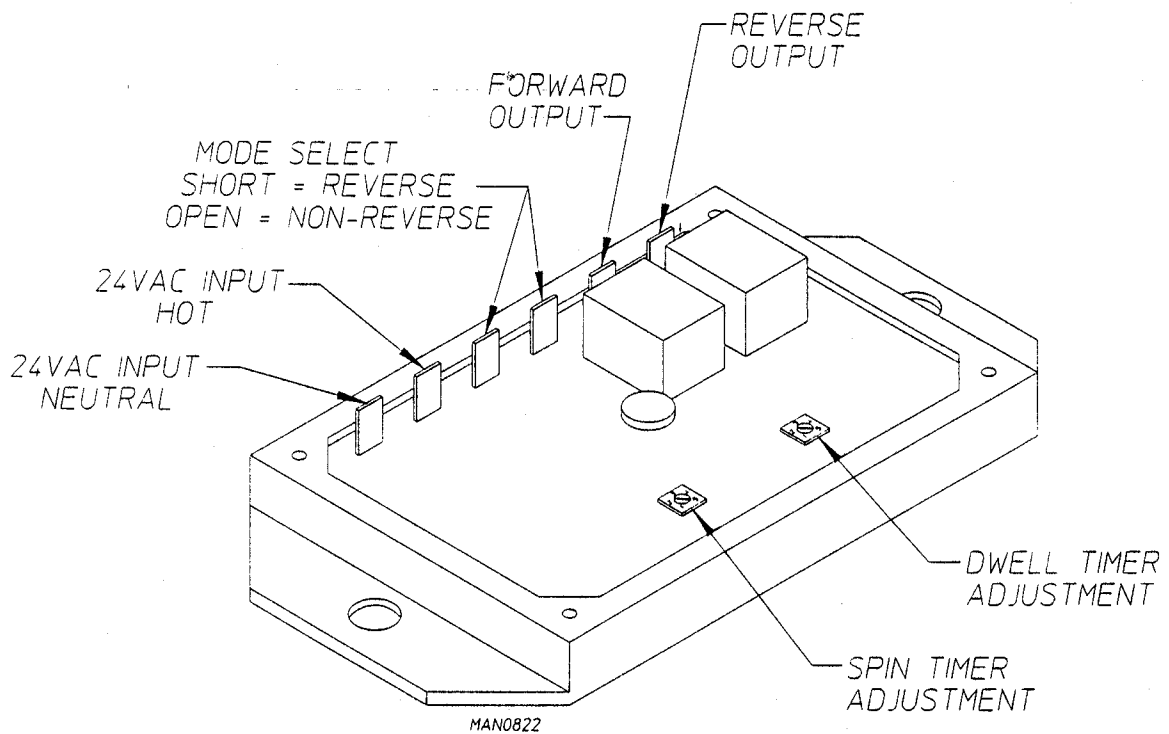
# SECTION VIII

## REVERSING TIMER SPIN/DWELL

### ADJUSTMENTS

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

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



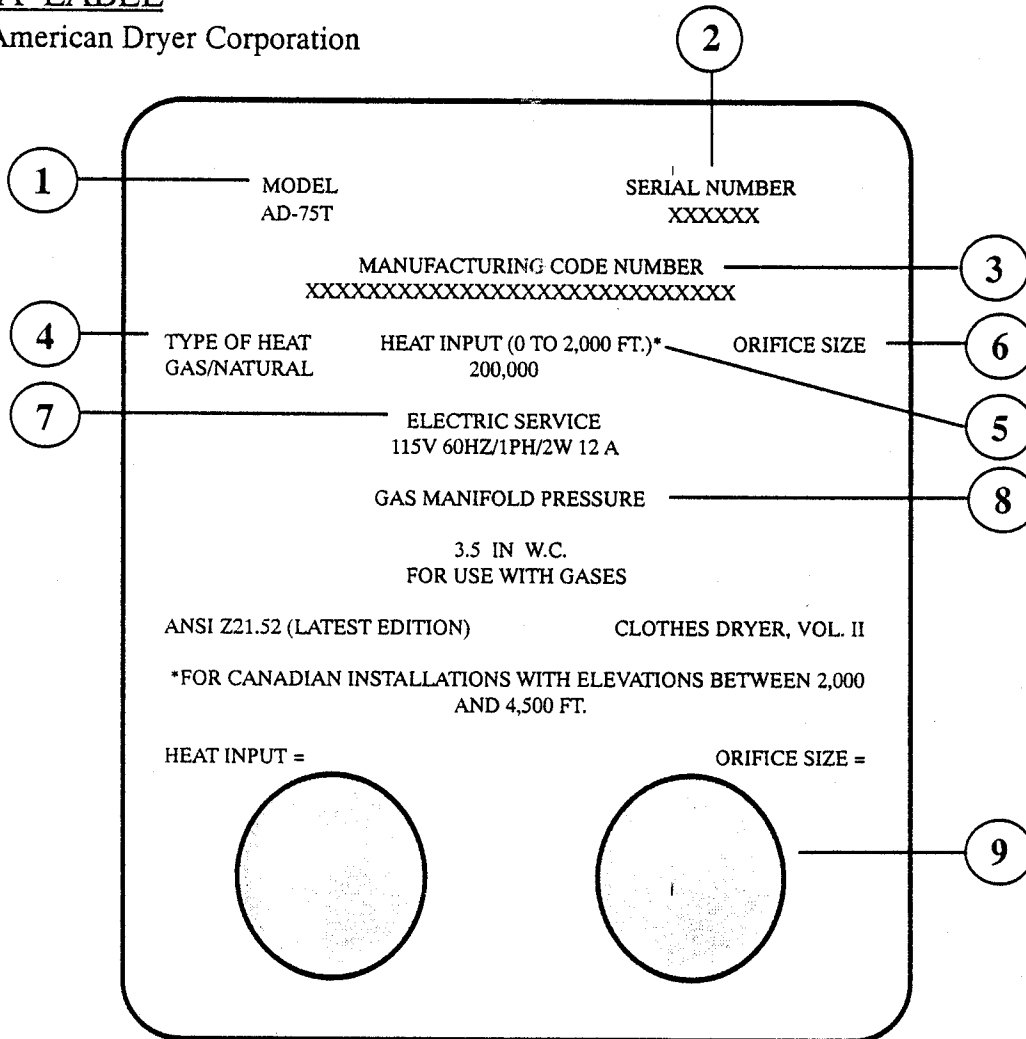
Timing Legend					
Spin Time					
Switch Position Number	1	2	3	4	5
Time in Seconds *	30	60	90	120	150
dd					
Dwell (Stop) Time	1	2	3	4	5
Switch Psoition Number	5	6	8	10	12
Time in Seconds *					
* Values shown are +/- 1second.					

# SECTION IX

## TECHNICAL INFORMATION

### A. DATA LABEL

Contact American Dryer Corporation



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

## THE DATA LABEL

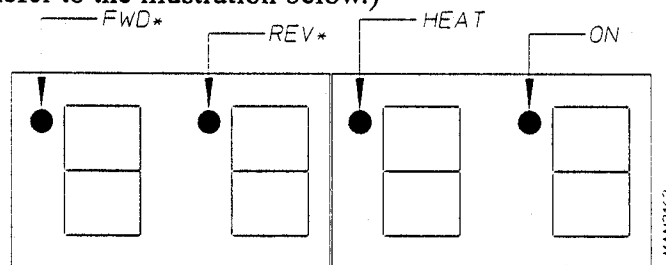
1. MODEL NUMBER— The model number is an ADC number which describes the size of the dryer and type of heat (gas, electric, or steam).
2. SERIAL NUMBER— The serial number allows ADC to gather information on your particular dryer.
3. MANUFACTURING CODE NUMBER — The manufacturing code number is a number issued by ADC which describes all possible options on your particular model.
4. TYPE OF HEAT — Describes the type of heat ; gas (natural or L.P.), steam or electric.
5. HEAT INPUT — (For gas dryers) describes the heat input in british thermal units.
6. ORIFICE SIZE — Gives the number size drill used.
7. ELECTRIC SERVICE —Describes the electric service for your particular model.
8. GAS MANIFOLD — Describes the manifold pressure as taken at the gas valve.
9. APPLICABLE APPROVAL SEAL(S) — I.E. American Gas Association, Canadian Gas Association.

# SECTION X

## PROCEDURE FOR FUNCTIONAL CHECK OF REPLACEMENT COMPONENTS

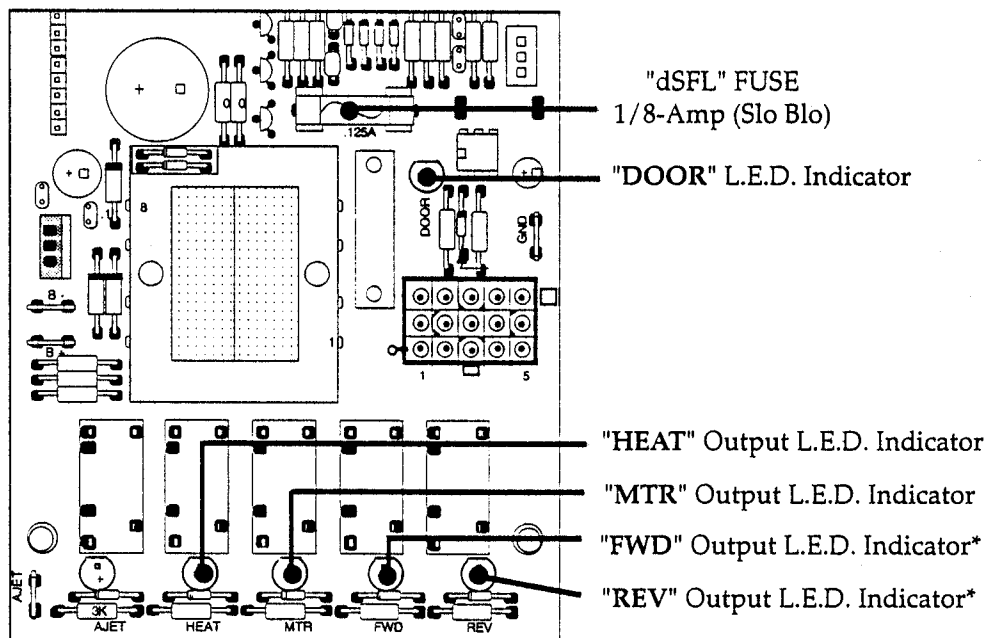
### 1. Microprocessor (computer) Board

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



\*CPL (NON-COIN) REVERSING MODELS ONLY.

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

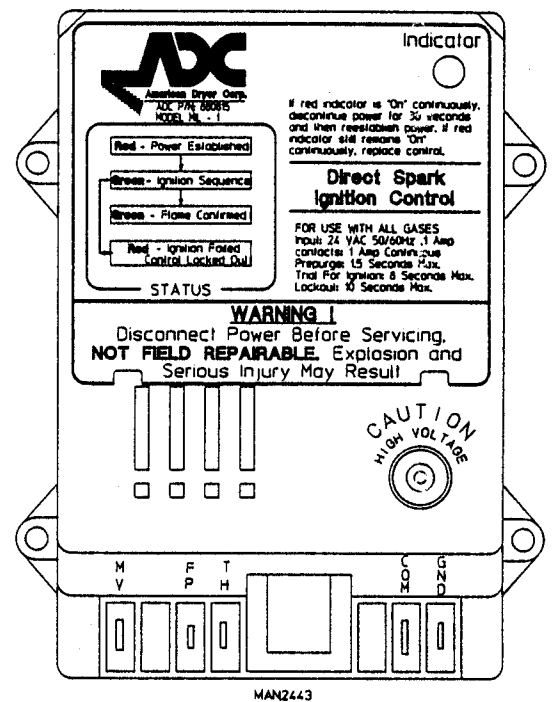


\* OPL (non-coin) REVERSING MODELS ONLY

- e. Open main door. The dryer **must stop** and **ALL** indicator lights on the back side of the microprocessor (computer) board **must go out**. (Refer to **illustration** on previous page [**page 49**].)
- f. Try to restart the dryer with the main door open.
- g. The microprocessor (computer) board's L.E.D. display **must read "DOOR."**
- h. Close the main door and restart the dryer.
- i. Functional check of microprocessor (computer) board is complete.

## 2. Direct Spark Ignition (DSI) System

- a. Upon completing installation of the replacement Direct Spark Ignition (DSI) module, reestablish power to the dryer.
- b. Start the drying cycle.
- c. The ignition (DSI) module's L.E.D. indicator will light "red" for up to approximately 1.5 seconds (pre-purge 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 lock out** 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 pre-purge, with the indicator light "red," the ignition trial time of approximately 8 seconds, with the indicator light "green," and then proceed to lock out with the indicator light "red."
- i. Functional check of the Direct Spark Ignition (DSI) Module is complete.
  - 1) Replace the flame sensor wire from the FS terminal to the DSI module.



ADC112239 1- 12/01/95-18 2\* 01/29/96-100 3\* 01/11/99-100



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