

# SUPER AD-50

## 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 Currant Road

Fall River MA 02720-4781

Telephone: (508) 678-9000 / Fax: (508) 678-9447

e-mail: techsupport@amdry.com

080494

052799/WM/cms

ADC Part No. 112122

# 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. **SUPER AD-50**

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.

**“IMPORTANT NOTE TO PURCHASER”**

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

## **IMPORTANT**

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

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

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

## **CAUTION**

**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.

# ***Table of Contents***

## **SECTION I**

<b>IMPORTANT INFORMATION .....</b>	<b>3</b>
A. RECEIVING and HANDLING .....	3
B. SAFETY PRECAUTIONS .....	3

## **SECTION II**

<b>SUPER AD-30 SPECIFICATIONS .....</b>	<b>6</b>
---	----------

## **SECTION III**

<b>INSTALLATION PROCEDURES .....</b>	<b>8</b>
A. UNPACKING/SETTING UP .....	8
B. LOCATION REQUIREMENTS .....	9
C. DRYER ENCLOSURE REQUIREMENTS .....	9
D. FRESH AIR SUPPLY .....	10
E. EXHAUST REQUIREMENTS .....	12
F. ELECTRICAL INFORMATION .....	18
G. GAS INFORMATION .....	24
H. STEAM PIPING INFORMATION .....	28
I. PREPARATION FOR OPERATION .....	32
J. PREOPERATIONAL TESTS .....	33
K. PREOPERATIONAL INSTRUCTIONS .....	35
L. SHUT DOWN INSTRUCTIONS .....	38

## **SECTION IV**

<b>SERVICE/PARTS INFORMATION .....</b>	<b>39</b>
A. SERVICE .....	39
B. PARTS .....	39

## **SECTION V**

<b>WARRANTY INFORMATION .....</b>	<b>40</b>
A. RETURNING WARRANTY CARD(S) .....	40
B. WARRANTY .....	40
C. RETURNING WARRANTY PARTS .....	40

## **SECTION VI**

<b>ROUTINE MAINTENANCE .....</b>	<b>42</b>
A. CLEANING .....	42
B. ADJUSTMENTS .....	43
C. LUBRICATION .....	43

**SECTION VII**

**TROUBLESHOOTING** ..... 44  
MICROPROCESSOR (COMPUTER) MODELS ..... 44  
DUAL TIMER MODELS ..... 50  
    GAS MODELS ..... 50  
    ELECTRIC MODELS ..... 51  
    STEAM MODELS ..... 51

**SECTION VIII**

**REVERSING TIMER SPIN/DWELL ADJUSTMENTS** ..... 53

**SECTION IX**

**TECHNICAL INFORMATION** ..... 54

**SECTION X**

**PROCEDURE FOR FUNCTIONAL CHECK OF  
REPLACEMENT COMONENTS** ..... 56

# 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 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.

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 or in CANADA, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION.

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

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

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

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

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

12. **DO NOT** operate steam dryers with more than 125 PSI 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.**

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

# SECTION II

## SUPER AD-50 SPECIFICATIONS

### A. SPECIFICATIONS

MAXIMUM CAPACITY (DRY WEIGHT)		50 lbs	<b>22.7 kg</b>	
BASKET (TUMBLER) DIAMETER		32-3/4"	<b>83.3 cm</b>	
BASKET (TUMBLER) DEPTH		37-1/2"	<b>95.3 cm</b>	
BASKET (TUMBLER) MOTOR		1 HP	<b>.746 kw*</b>	
BLOWER MOTOR (REVERSING MODELS)		1 HP	<b>.746 kw*</b>	
DOOR OPENING (DIAMETER)		31-3/8"	<b>79.7 cm</b>	
BASKET VOLUME		18.3 cu. ft.	<b>.518 cu.m.</b>	
APPROX. WEIGHT (UNCRATED)		600 lbs	<b>272.2 kg</b>	
APPROX. WEIGHT (CRATED)		650 lbs	<b>294.8 kg</b>	
DRYERS PER 20'/40' TRUCK		10/20		
DRYERS PER 45'/48' TRUCK		24/26		
<b>Gas</b>	VOLTAGE AVAILABLE		120-460v/1 $\phi$ -3 $\phi$ /3w,4w/50/50 Hz	
	HEAT INPUT	204,000 btu/hr*	<b>51,408 kcal/hr*</b>	
		165,000 btu/hr**	<b>41,580 kcal/hr**</b>	
	AIRFLOW	950 cfm*	<b>22.6 cmm*</b>	
		800 cfm**	<b>19.8 cmm**</b>	
	INLET SIZE	3/4" N.P.T.	<b>1.91 cm</b>	
EXHAUST DUCT OUTLET	10" Dia.	<b>25.4 cm</b>		
<b>Electric</b>	VOLTAGE AVAILABLE		120-600v/1 $\phi$ -3 $\phi$ /3w,4w/50/50 Hz	
		OVEN SIZE		
		Kw	btu/hr	kcal/hr
		30 **	102,459 **	<b>25,820 **</b>
		36 ***	122,950 ***	<b>30,983 ***</b>
		40 **	136,612 **	<b>34,426 **</b>
		42 *	143,442 *	<b>36,142 *</b>
48 *	163,934 *	<b>41,311 *</b>		
<b>Steam</b>	VOLTAGE AVAILABLE		120-460v/1 $\phi$ -3 $\phi$ /3w,4w/50/50 Hz	
	HEAT INPUT		6.7 Bhp	
	STEAM CONSUMPTION		235 lbs/hr	<b>106.8 kg/hr</b>
	AIRFLOW	950 cfm*		<b>22.6 cmm*</b>
		800 cfm**		<b>19.1 cmm**</b>
	INLET SIZE (SUPPLY)		1"	<b>2.54 cm</b>
	OUTLET SIZE (RETURN)		1"	<b>2.54 cm</b>
80 PSI COMPRESSED AIR		1/8" N.P.T.	<b>.318 cm</b>	

Shaded areas are in metric equivalents

\* Specifications noted are for 60 Hertz dryer models ONLY.

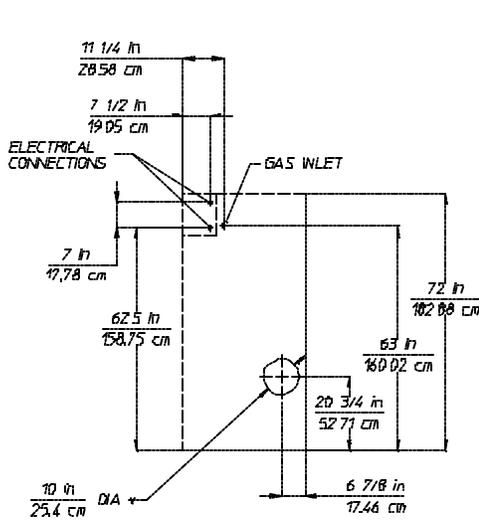
\*\* Specifications noted are for 50 Hertz dryer models ONLY.

\*\*\* 36Kw oven size is available in 60 Hertz and 50 Hertz models.

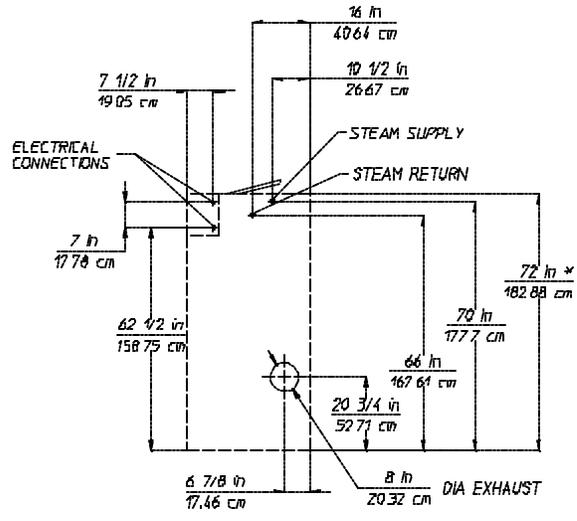
**NOTE:** ADC reserves the right to make changes in specifications at any time, without notice or obligation.

# SUPER AD-50

## Specifications



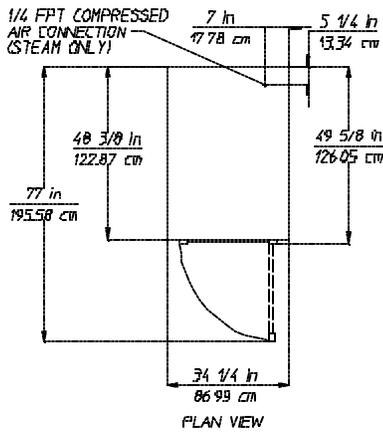
REAR VIEW (GAS ONLY)



REAR VIEW (STEAM ONLY)

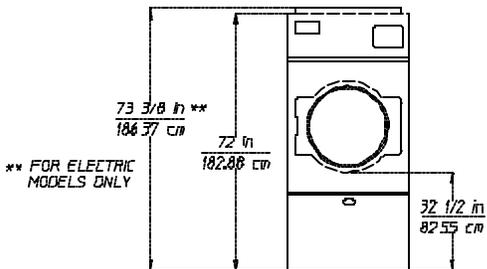
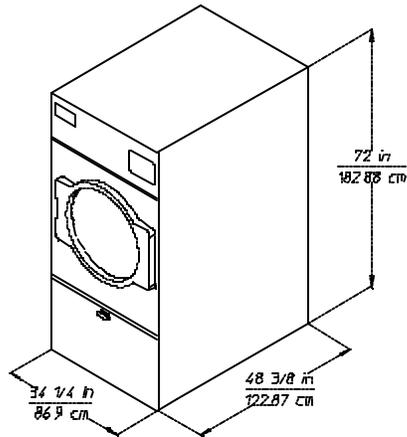
\* DUCT WORK SIZE VARIES WITH INSTALLATION CONDITIONS

\*\*\* STEAM OPERATING HEIGHT IS 78" (198.1 cm)



PLAN VIEW

SPEC287



FRONT VIEW

\*\* FOR ELECTRIC MODELS ONLY

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

# SECTION III

## INSTALLATION PROCEDURES

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

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

or in CANADA, the installation **must conform** to applicable CANADIAN STANDARDS:

CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION (for  
GENERAL INSTALLATION and GAS PLUMBING)  
and/or  
CANADIAN ELECTRICAL CODES PARTS 1 & 2 CSA C22.1-1990 or LATEST EDITION  
(for ELECTRICAL CONNECTIONS).

### A. UNPACKING/SETTING UP

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

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

**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 unskid the dryer, locate and remove the four (4) bolts securing the base of the dryer to the wooden skid. Two (2) are at the rear base (remove the back panel for access), and two (2) are located in the bottom of the lint chamber. To remove the two (2) bolts located in the lint chamber area, remove the lint door.

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 wooden block. **REMOVE THIS BLOCK BEFORE STARTING THE DRYER.**

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

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

## B. 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, or in CANADA, the Canadian Installation Codes CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91 (L.P. Gas) or LATEST EDITION.

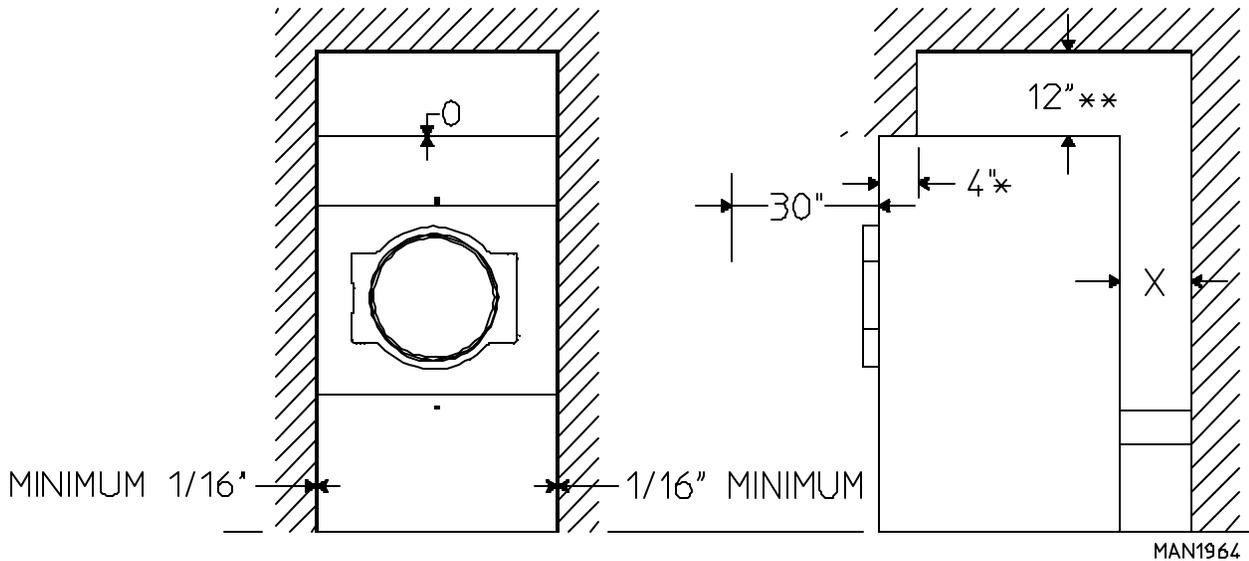
1. The dryer **must be** installed on a sound level floor capable of supporting its weight. It is recommended that carpeting be removed from the floor area that the dryer is to rest on.
2. The dryer **must not be** installed or stored in an area where it will be exposed to water and/or weather.
3. Provisions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

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

## C. DRYER ENCLOSURE REQUIREMENTS

Bulkheads and partitions **should be** made of noncombustible materials and **must be** located a minimum of 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 4-inches and **must not** extend more than 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 1-inch clearance is required.

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



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

\* 1" maximum for electric dryers.

\*\* 18" minimum for steam dryers.

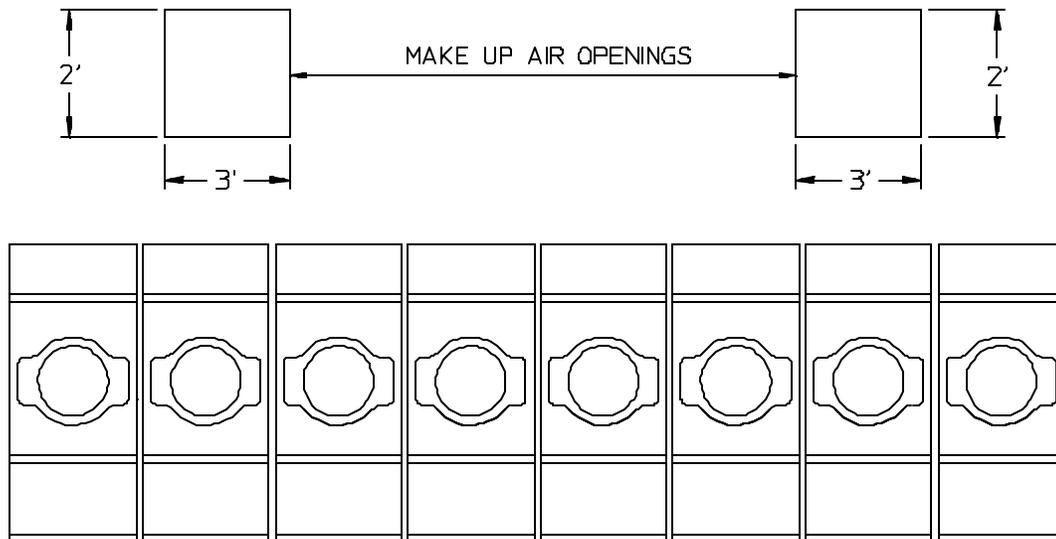
Dryers may be positioned side wall to side wall. However, a 1/16" minimum allowance **must be** made for opening and closing of the control door and the lint door. It is suggested that the dryer be positioned about two (2) feet away from the nearest obstruction for ease of installation, maintenance, and service (to be measured from the back guard.) (Refer to the **illustration** on **page 11** for details.)

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

#### D. FRESH AIR SUPPLY

The SUPER AD-50 air supply (make-up air) **must be** given careful consideration to assure proper performance of each dryer. An unrestricted source of air is necessary for each dryer. As a general rule, an unrestricted air entrance from the outdoors (atmosphere) of a minimum of 1-1/2 square feet is required for each dryer. If registers or louvers are installed over the openings, then the area **must be** increased. It is not necessary to have a separate make-up air openings for each dryer. Common make-up air openings are acceptable. However, they **must be** set up in such a manner that the make-up air is distributed equally to the dryers.

*EXAMPLE:* For a bank of eight (8) dryers, two (2) unrestricted openings measuring 2 feet by 3 feet (6 square feet) is acceptable.



MAN1779

TYPICAL INSTALLATION SHOWING MAKE - UP AIR OPENINGS

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

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

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

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

## E. EXHAUST REQUIREMENTS

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, and shutdown of the burner by the airflow (sail) switch, burner hi-limit, or lint chamber hi-heat protector thermostat.

Where possible, it is suggested to provide a separate (single) exhaust duct for each dryer.

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

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

The exhaust 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. The shape of the duct work is not critical so long as the minimum cross section area is provided. Single or independent dryer venting is recommended.

It is suggested that the use of 90° turns be avoided; use 30° and/or 45° angles instead.

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 ducts to be added should overlap the duct to which it is connected. **ALL** duct work joints **must be** taped to prevent moisture and lint from escaping into the building. Additionally, inspection doors **should be** installed at strategic points in the exhaust duct work for periodic inspection and cleaning.

**IMPORTANT:** When connecting duct work to the dryer exhaust duct, be sure that when screws are used they do not restrict the operation (both opening and closing) of the damper.

**NOTE:** When 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.

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 (i.e., roof or ground level).

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

**IMPORTANT:** Exhaust back pressure measured by a manometer at the dryer exhaust duct area **must not** exceed 0.3 inches of water column.

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

**IMPORTANT:** Exhaust back pressure measured by a manometer at the dryer exhaust duct area **must not** exceed 0.3 inches of water column

# SINGLE DRYER VENTING

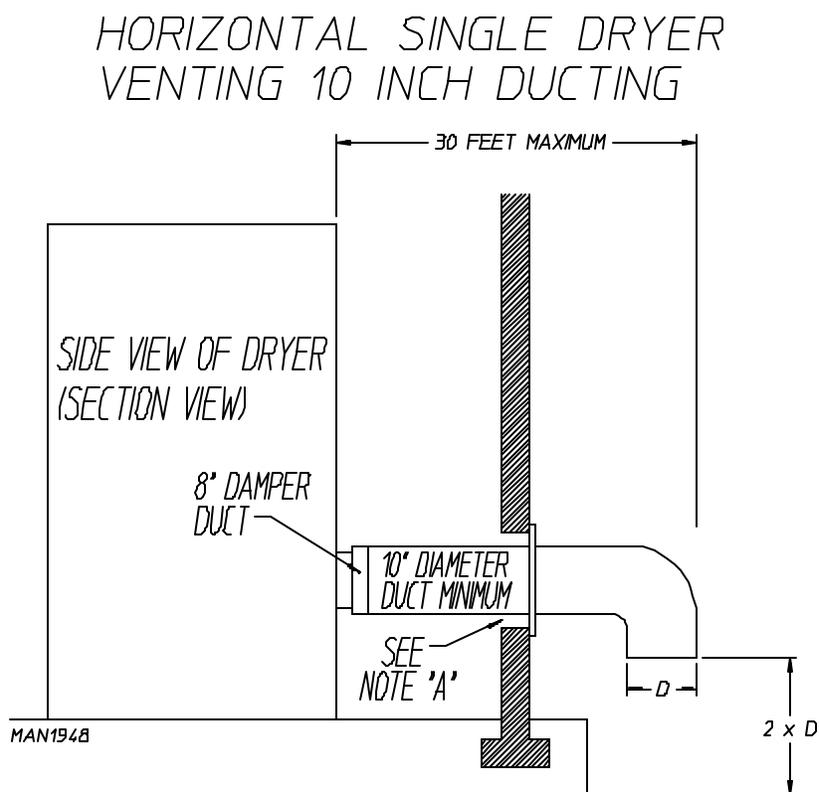
To insure efficient and safe operation, the exhaust connection to the dryer **must be** increased to a minimum of 10-inch diameter for single dryer horizontal venting, and 12-inch diameter for single venticle venting.

**IMPORTANT:** For exhaust runs over 10 feet a minimum duct size of 10-inches *must be* used.

## HORIZONTAL VENTING

When single 10-inch venting is used, the duct work from the dryer **cannot** exceed 30 feet (refer to **Illus. A** below). This calculation of 30 feet compensates or allows for the use of a maximum of only one (1) elbow.

### Illus. A



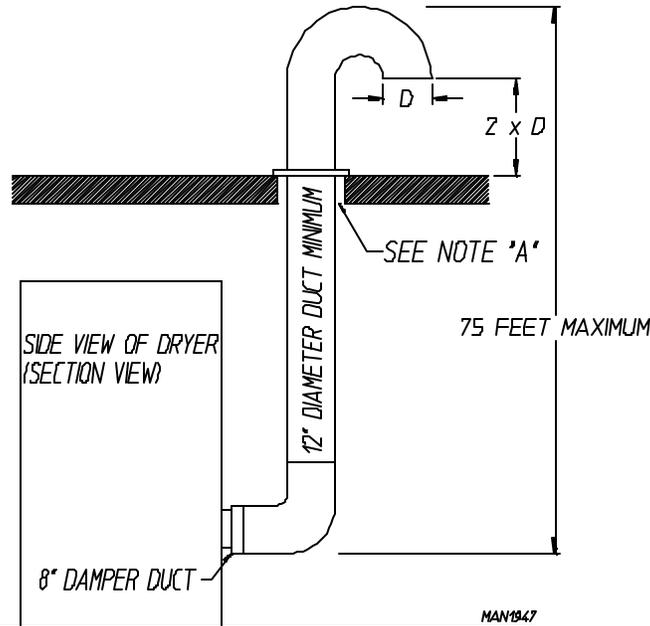
NOTE A. OPENING MUST BE TWO (2) INCHES LARGER THAN THE DUCT (ALL THE WAY AROUND)  
THE DUCT MUST BE CENTERED WITHIN THIS OPENING.

## VERTICAL VENTING

When single 12-inch vertical venting is used (refer to illus. B below), the duct work from the dryer outlet **should not** exceed 75 feet. This calculation compensates for the use of a maximum of three (3) elbows including the two (2) elbows creating the 180° (turned downward) outside outlet.

### Illus. B

VERTICAL SINGLE DRYER VENTING



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

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

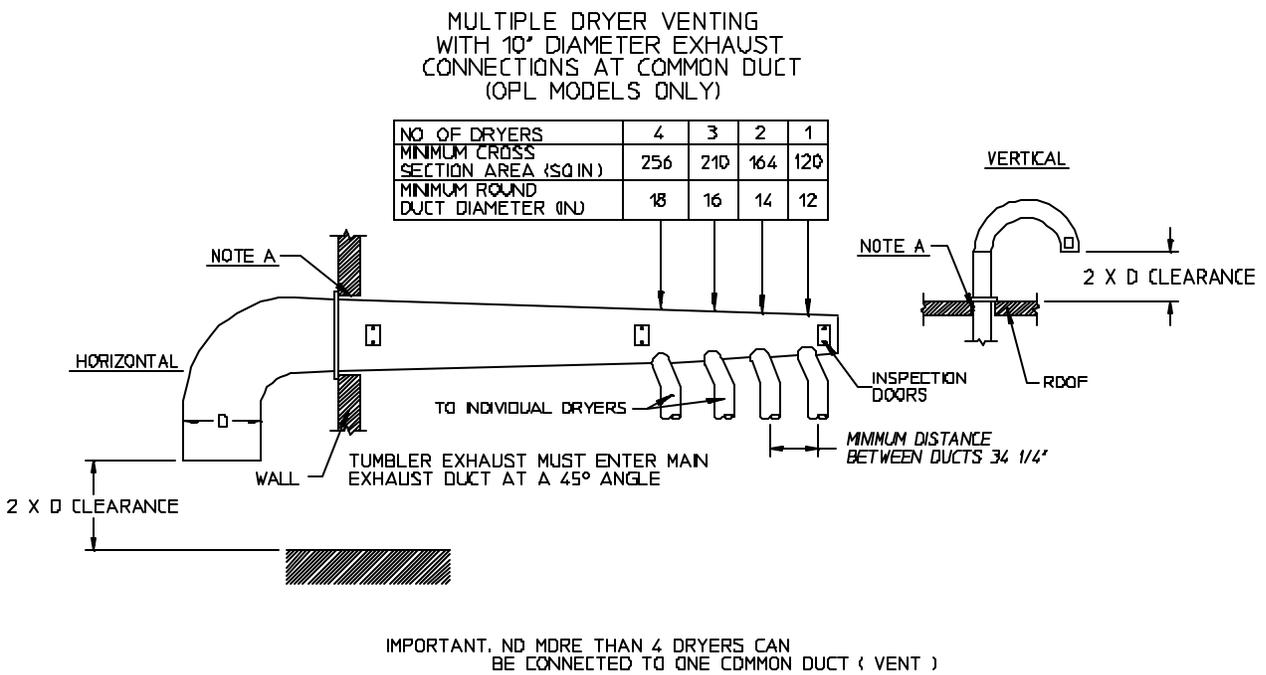
**IMPORTANT:** For extended duct work runs, the cross section area of the duct can only be increased to an extent. For extended duct work runs, a professional HVAC firm *should be* consulted for proper venting information.

# MULTIPLE DRYER (Common) VENTING

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

The main common duct may be any shape so long as the minimum cross-sectional area is provided. The main duct **should be** tapered with the diameter increasing before each individual 10-inch duct is added (refer to **Illus. C** below).

**Illus. C**



<u>FORMULAS TO CALCULATE DUCTING CROSS SECTIONAL AREA</u>	
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

MAN1944

**IMPORTANT:** No more than four (4) dryers maximum *should be* connected to one (1) main common duct with a vertical run.

**NOTE:** Distance between dryer single ducts being connected to the main common duct *must be* a minimum of 31-3/8" (dryer width).

Duct work *should be* laid out in such a manner where allowances are made at rear area of the dryer for removal of rear service panels or guards.

**Illus. C** (refer to the **previous page** {**page 15**}) shows the minimum cross-section area for horizontal multiple dryer venting. These figures **must be** increased in proportion if the main duct run from the last dryer to where it exhausts has numerous elbows or is unusually long.

**IMPORTANT:** For extended duct work runs, the cross-section area of the duct can only be increased to an extent. For extended duct work runs, a professional HVAC firm *should be* consulted for proper venting information.

## IMPORTANT VENTING REMINDERS

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

## F. ELECTRICAL INFORMATION

### 1. Electrical Requirements

It is your responsibility to have **ALL** electrical connections made by a properly licensed and competent electrician to assure that the electrical installation is adequate and conforms with local and state regulations or codes. In the absence of such codes, **ALL** electrical connections, material, and workmanship **must conform** to the applicable requirements of the National Electric Code ANSI/NFPA NO. 70-LATEST EDITION or in CANADA, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION.

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

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

**IMPORTANT:** Each dryer *must be* connected to an independently protected branch circuit.

**IMPORTANT:** USE ONLY COPPER CABLE of the proper ampacity and insulation in accordance with electric codes for making service connections.

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

### 2. Electrical Service Specifications

#### a. Electric Service

##### 1) Gas and Steam Dryers ONLY

**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 240 VAC, the supply voltage *must match* the electric service specifications of the data label exactly.

**IMPORTANT:** USE ONLY COPPER CONDUCTOR CABLE of the proper ampacity and insulation in accordance with electrical codes for making service connections

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

**NOTE:** On gas and steam dryers, to convert from 208 VAC to 240 VAC, (or vice versa), the 24 VAC transformer wiring **must be** changed.

## 2) Electric Dryers ONLY

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

**NOTE:** Electrically heated service (amperage) specifications/requirements not available at time of printing. Contact factory for update.

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

## 3. Grounding

A ground (earth) connection **must be** provided and installed in accordance with state and local codes. In the absence of these codes, grounding **must conform** to applicable requirements of the National Electric Code ANSI/NFPA NO. 70-LATEST EDITION or in CANADA, the Canadian Electrical Codes Parts 1 & 2 CSA C22.1-1990 or LATEST EDITION. The ground connection may be to a proven earth ground at the location service panel.

For added personal safety, when possible, it is suggested that a separate ground wire (no. 18 minimum) be connected from the ground connection of the dryer to a grounded cold water pipe. **DO NOT ground to a gas pipe or hot water pipe.** The grounded cold water pipe **must have** metal to metal connection all the way to 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.

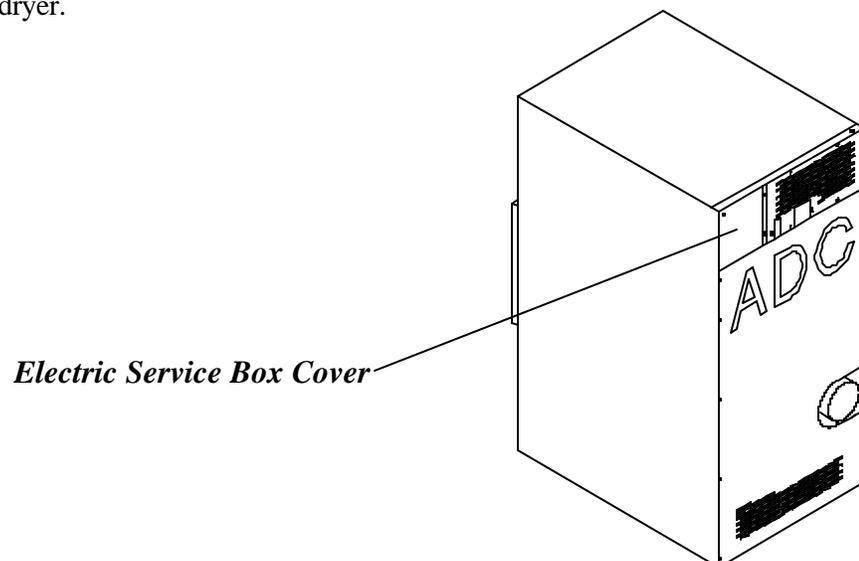
**IMPORTANT:** For personal safety and proper operation, the dryer **must be** grounded.

## 4. Electrical Connections

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

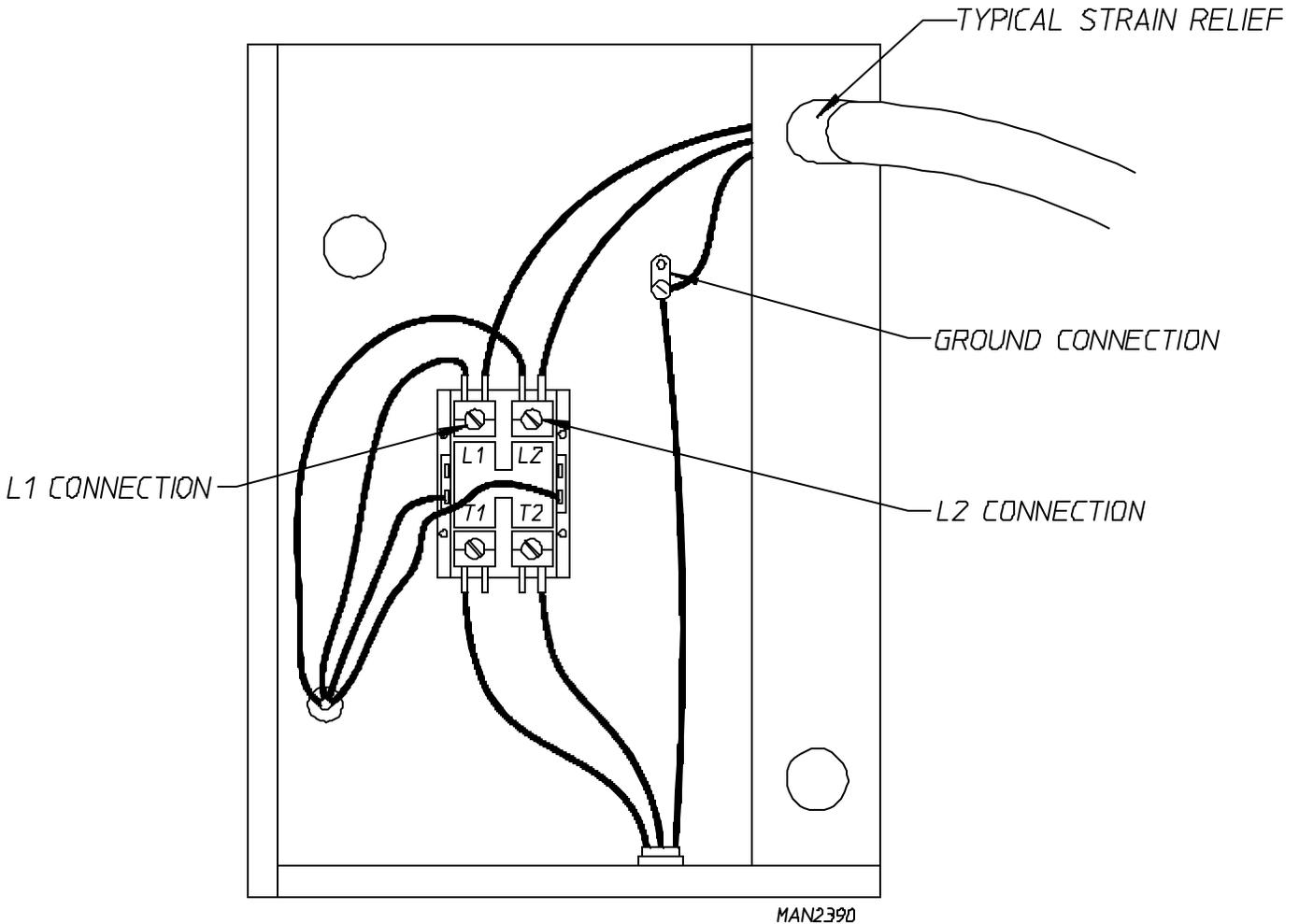
### a. Single-Phase (1 $\phi$ ) Hookup - *for GAS and STEAM DRYERS ONLY*

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



MANGIER

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.

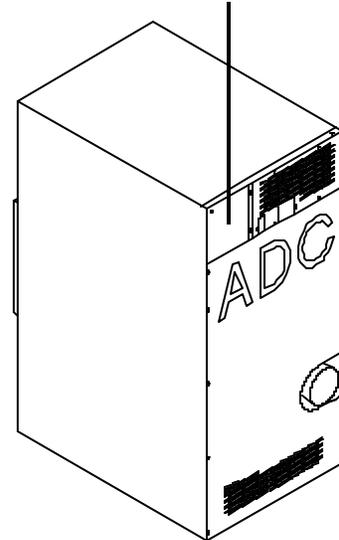
## 5. 3-Phase (3 $\phi$ ) Wiring Connections

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

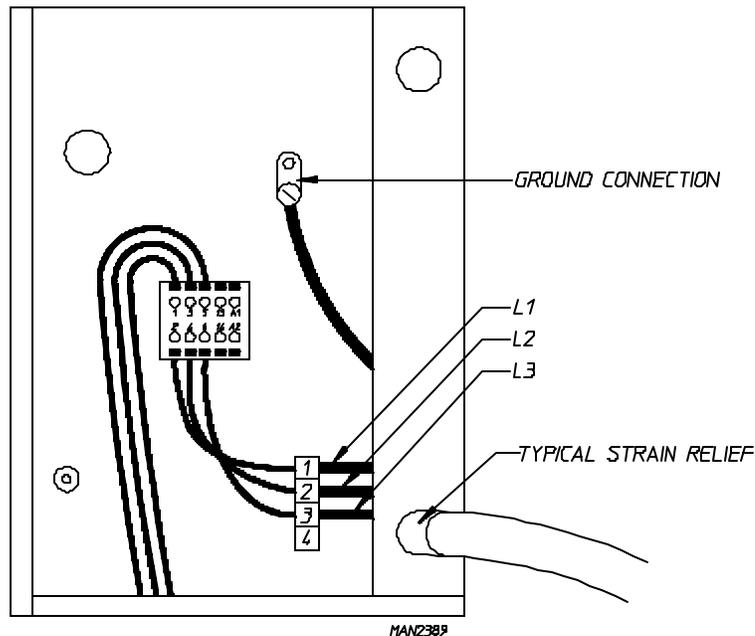
### a. GAS and STEAM DRYERS ONLY 3-Phase (3 $\phi$ ) Hookup

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

*Electric Service Box Cover*



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



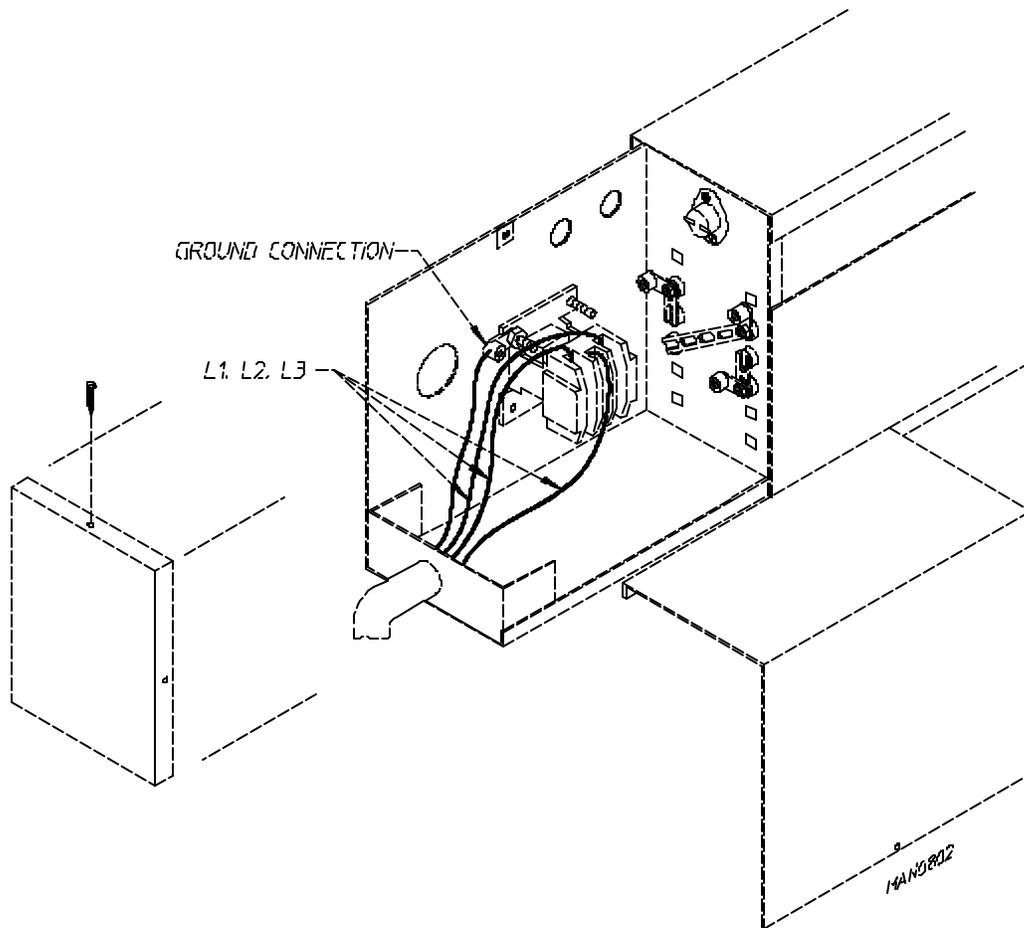
### b. 3-Phase (3 $\phi$ ) Hookup - for *ELECTRIC DRYERS ONLY*

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

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

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

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



**NOTE:** Electrically heated service (amperage) specifications/requirements not available at time of printing. Contact factory for update.

- NOTES:**
- A. Fuse ratings (as listed in the charts on [page 23](#)) 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 $\phi$  dryers **must be** 3-Pole type.

# SUPER ADG-50 (Gas) Non-Reversing SUPER ADS-50 (Steam) Non-Reversing

## ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)

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

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

SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		MIMIMUM WIRE SIZE*	FUSING		CIRCUIT BREAKER
			60 Hz	50 Hz		DUAL ELEMENT TIME DELAY		
						60 Hz	50 Hz	
120	1Ø	2	13	–	#10	20	--	25
208	1Ø	2	7.6	–	#14	10	--	15
240	1Ø	2	7	5	#14	10	8	15
208	3Ø	3	4.4	–	#14	8	--	15
240	3Ø	3	4.4	5.5	#14	8	8	15
380/400	3Ø	3/4	--	3	#14	--	5.6	15
416	3Ø	3/4	--	3	#14	--	5.6	15
460/480	3Ø	3/4	2.7	–	#14	5	--	15
460	3Ø	3	2.5	–	#14	4.5	--	15

\* AWG Stranded Wire ... for individual lengths less than 100 feet.

# SUPER ADG-50 (Gas) Reversing SUPER ADS-50 (Steam) Reversing

## ELECTRICAL SERVICE SPECIFICATIONS (PER DRYER)

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

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

SERVICE VOLTAGE	PHASE	WIRE SERVICE	APPROX. AMP DRAW		MIMIMUM WIRE SIZE*	FUSING		CIRCUIT BREAKER
			60 Hz	50 Hz		DUAL ELEMENT TIME DELAY		
						60 Hz	50 Hz	
208	3Ø	3	6	–	#14	10	--	15
230/240	3Ø	2	7	7	#14	12	12	15
380/400	3Ø	3/4	--	4	#14	--	8	15
416	3Ø	3/4	--	4	#14	--	8	15
460/480	3Ø	3/4	4	–	#14	8	--	15
460	3Ø	3	5.6	–	#14	5.6	--	15

\* AWG Stranded Wire ... for individual lengths less than 100 feet.

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

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

## 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, or in CANADA, the Canadian Installation Codes CAN/CGA-B149.1-M91 (Natural Gas) or CAN/CGA-B149.2-M91(L.P. Gas) or LATEST EDITION.

**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 the dryer from supply as noted can cause irreparable damage to the gas valve which will VOID THE WARRANTY.

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

### 1. Gas Supply

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

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

The dryer **must be** connected to the type of heat/gas indicated on the dryer 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 in out ratings shown on the dryer data label are for elevations of up to 2,000 feet are made by changing each burner orifice. If this conversion is necessary, contact the distributor who sold the dryer or the ADC factory.

## 2. Technical Gas Data

### a. Natural Gas

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

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

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

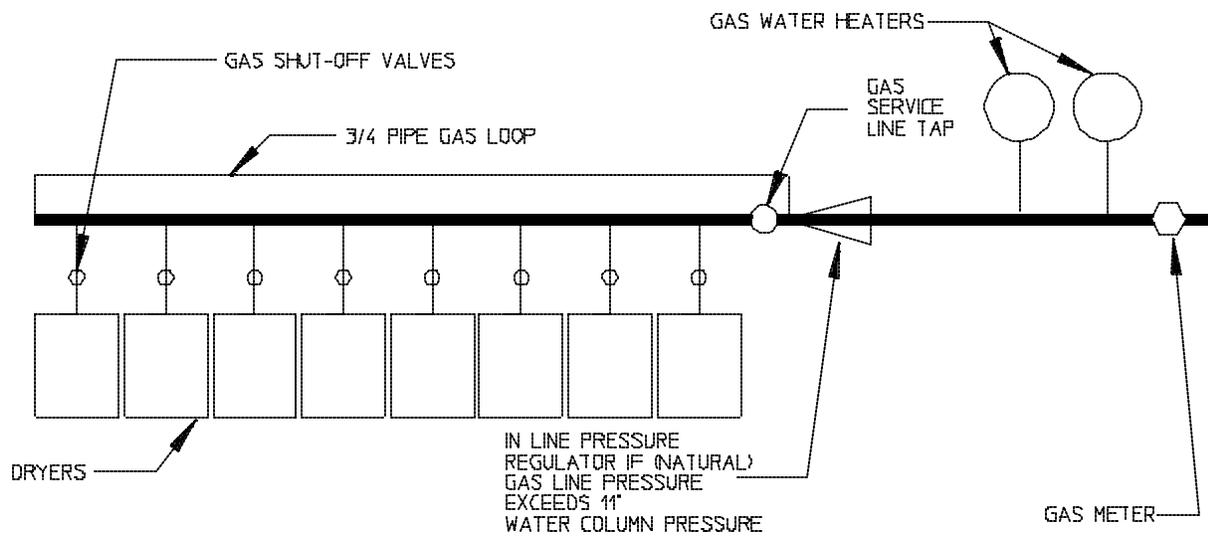
## 3. Piping/Connections

The SUPER AD-50 dryer is provided with a 3/4" N.P.T. inlet pipe connection extending out the rear area of the dryer. For ease of servicing, the gas supply line of each dryer **should have** its own shut-off valve.

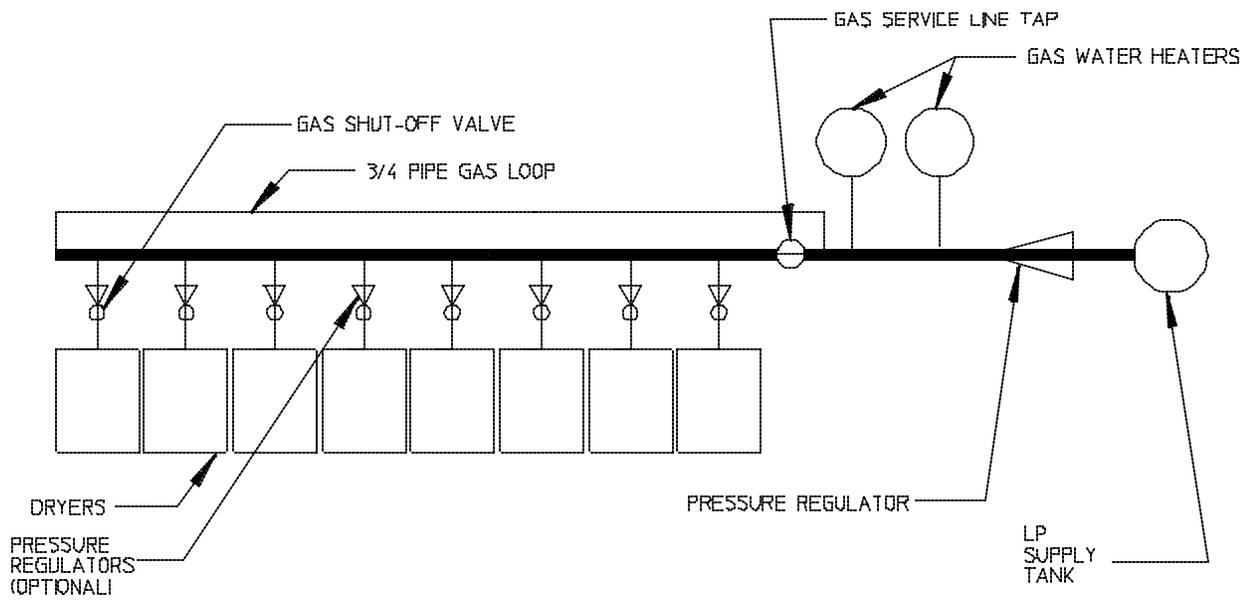
**IMPORTANT:** The gas pipe supply line to each dryer **must be** a minimum of 3/4" **DO NOT** REDUCE THIS PIPE SIZE REQUIREMENT.

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

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



TYPICAL NATURAL GAS INSTALLATION



TYPICAL L.P. GAS INSTALLATION

MAN0132

Consistent gas pressure is essential at **ALL** gas connections. It is recommended that a 3/4-inch pipe gas loop be installed in the supply line serving 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. Refer to the **illustrations** on **page 26** for details.

**NOTE:** A water column (W.C.) test pressure of 3.5 inches for natural gas and 10.5 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.

**NOTE:** 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 Fuel Gas Code specifications, or in CANADA, the Canadian Installation Codes. 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.

## H. STEAM PIPING HOOKUP

Piping **must be** installed in accordance with good commercial steam system practice.

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

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

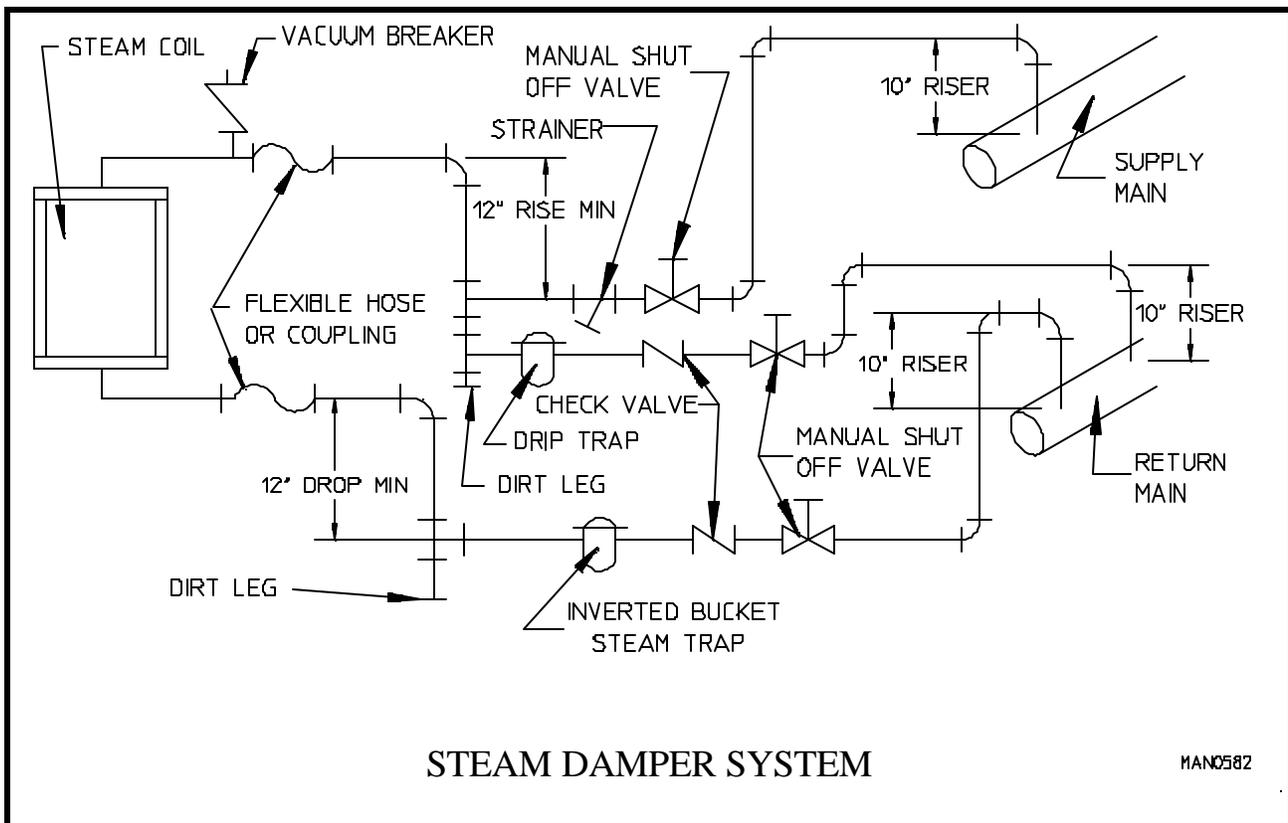
### 1. Low-Pressure (up to 15 psi) or High -Pressure (16-125 psi) Damper Models

Adherence to the following instructions is necessary to eliminate coil failures due to water hammer caused by wet steam.

The **ADC** steam dryer uses a damper system instead of an electric steam valve to control the dryer's temperature. On a call for heat the steam damper opens allowing room air to be drawn through the steam coil, then into the basket (tumbler). Once the set-point temperature has been reached, the steam damper closes, and room air now bypasses the steam coil and passes directly into the basket (tumbler).

The presence of condensate in the steam supply will cause water hammer and subsequent heat exchanger 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.

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. Flexible hoses or couplings **must be** use. The dryer vibrates slightly when it runs and this will cause steam coil connections to crack if they are hard piped to the supply and return mains.



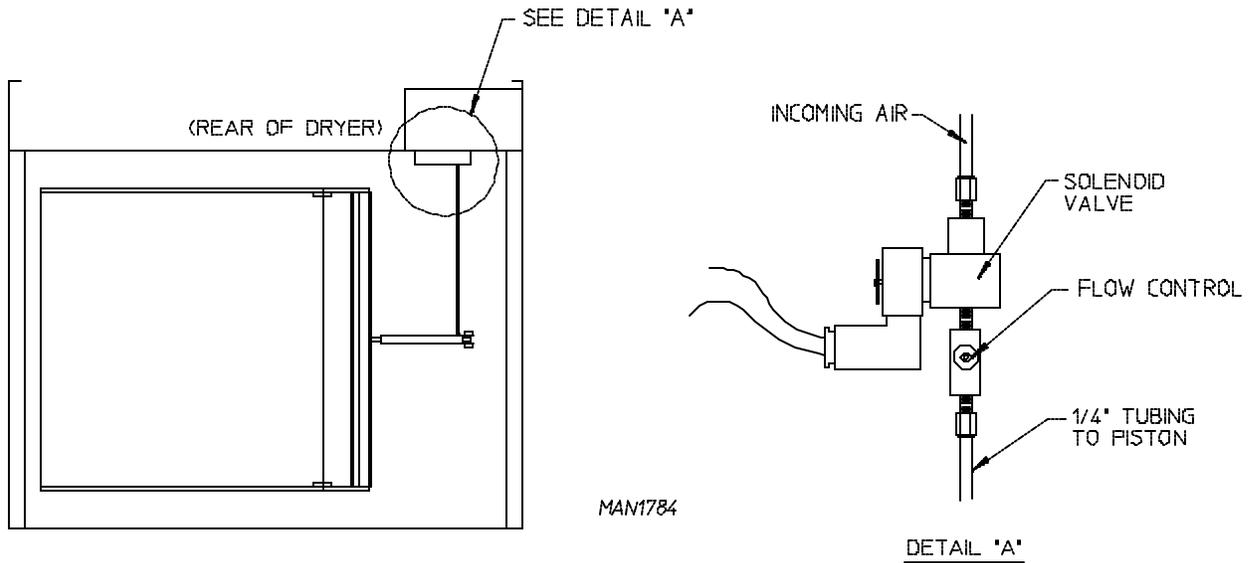
Shut-off valves for each dryer **should be** installed in the supply, return, and drip trap return lines. This will allow the dryer to be isolated from the supply and return mains if the dryer needs maintenance work.

Install an inverted bucket steam trap and check valve at least 12-inches below the steam coil as near to the coil as possible. A vacuum breaker **should be** installed in the piping. This will prevent the condensing steam from causing a vacuum inside the coil, and possibly damaging the coil. The supply and return lines **should be** insulated. This will save energy and provide for the safety of the operator and maintenance personnel.

Water pockets in the supply line, caused by low points, will provide wet steam to the coil possibly causing coil damage. **ALL** horizontal runs of steam supply piping **should be** pitched 1/4-inch every 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.

a. Steam Damper Air System connections

The pneumatic (piston) damper system requires a clean, dry, regulated external supply of compressed air. The air connection is made to the system solenoid valve which is located on the rear electric service box.



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

1) Air Requirements

a) There is no air requirement for dryers with the electromechanical damper option.

COMPRESSED AIR SUPPLY	AIR PRESSURE
Normal	80 psi
Minimum Supply	70 psi
Maximum Supply	90 psi

2) Air Connection

Air connection to system --- N.P.T.

### 3) Air Regulation

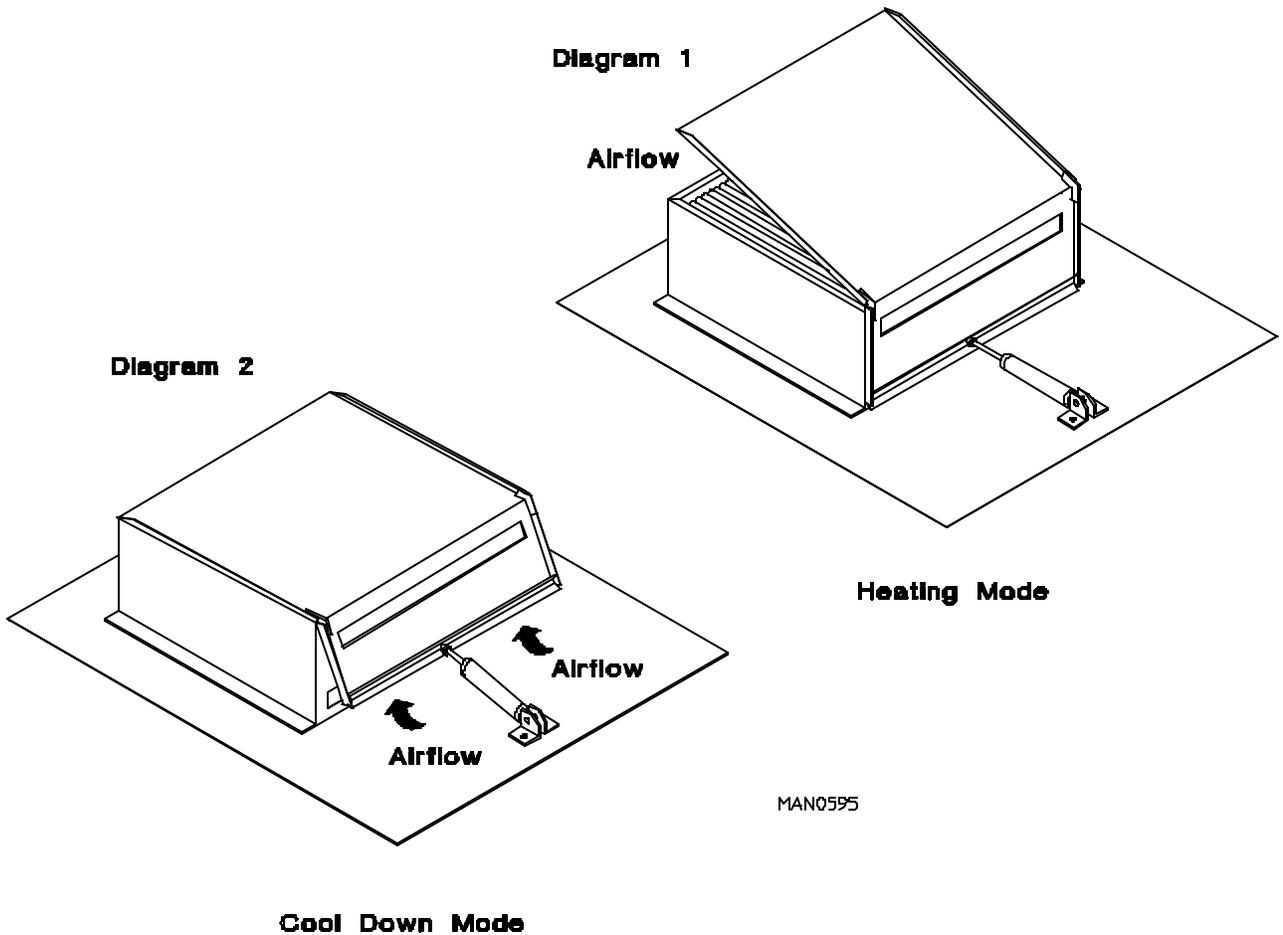
No air regulation is provided with the dryer. External regulation of 80 psi must be provided. It is suggested that a regulator/filter gauge arrangement be added to the compressed air line just before the dryer connection. This is necessary to insure that correct and clean air pressure is achieved.

#### b) Steam Damper System Operation

The steam damper, as shown 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 basket (tumbler), allowing a rapid cool down.

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

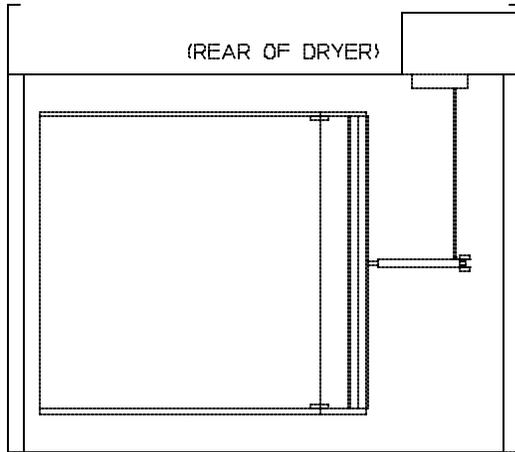
**Diagram 2** shows the damper in the cool down (closed) mode, pulling ambient air directly into the basket (tumbler) without passing the coils.



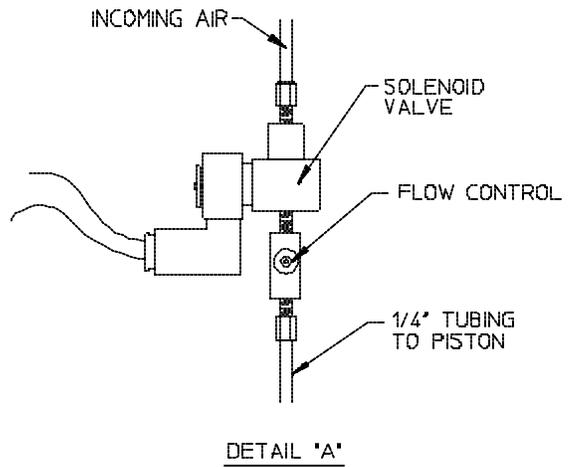
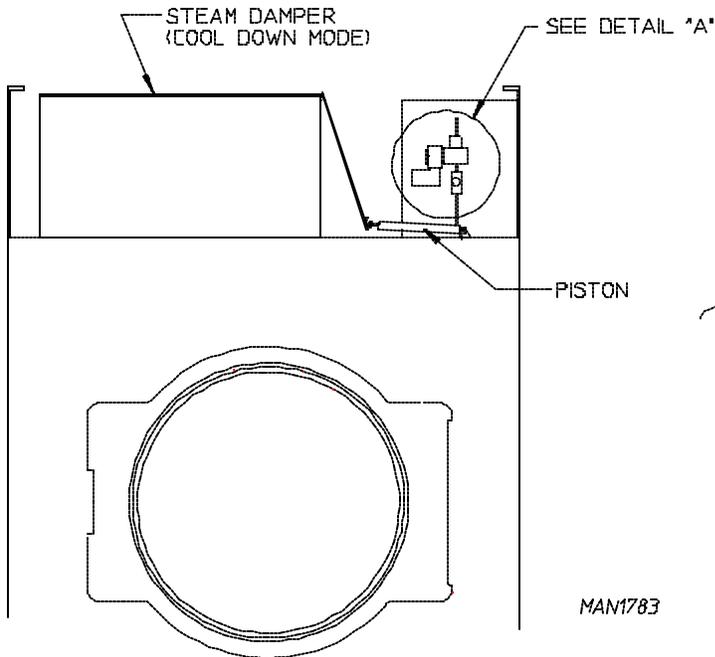
**NOTE:** With the dryer off or with no air supply, the damper is in cool down mode as shown in **Diagram 2.**

c. Steam Damper Air Piston (Flow Control) Operation Adjustment

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



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



MAN1783

## I. PREPARATION FOR OPERATION

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

**IMPORTANT:** If during installation the lint door safety chain was disconnected, it ***must be*** reconnected or personal injury may result.

10. Rotate the basket (tumbler) by hand to be sure it moves freely.
11. Check to insure **ALL** steam shut-off valves are open (*for STEAM MODELS ONLY*).
12. Check to insure that a clean, dry, regulated air supply (80 psi) is on the dryer (*for STEAM MODELS with air operated DAMPER SYSTEMS ONLY*).

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

**NOTE:** During the purging period, check to be sure that **ALL** gas 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 (W.C.) pressure is correct and consistent.

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

Natural Gas.....3.5 Inches Water Column

L.P. Gas.....11.5 Inches Water Column

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

4. Make a complete operational check of **ALL** safety related circuits:

- a. Door Switch(es)
- b. Hi-Limit thermostats
- c. Cycling thermostat
- d. Sail switch (for Gas Models and Electric Models Only)

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

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

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

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

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

7. Check the electric service phase sequence (3-phase [3 $\phi$ ] 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 (impellor/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.

## K. PREOPERATIONAL INSTRUCTIONS

### ***OPL MODELS***

1. To start the dryer:
  - a. Microprocessor (Computer) Dryers.
    - 1) The L.E.D. (light emitting diode) display will read "FILL."
    - 2) Press the "E" on the touch pad of the keyboard.
    - 3) The L.E.D. (light emitting diode) display will quickly show "Ld30," "LC04," "F180." The dryer will start, and the L.E.D. display will show "dr30."
  - b. Dual Timer Dryers
    - 1) Turn drying timer knob for a time of 20 minutes
    - 2) Select "High Temp."
    - 3) Push "Push to Start" switch.
    - 4) To Stop dryer, open the main door.

### **COIN MODELS**

1. Automatic Mode (Microprocessor [Computer] Models)
  - a. When turning on power or when no cycle is in progress, the L.E.D. (light emitting diode) display will read "FILL" and/or "Amount to Start."
  - b. Insert coin(s)...

Once correct "Amount to Start" has been inserted the L.E.D. (light emitting diode) display will read "PUSH."
  - c. Select temperature by pushing "HI TEMP," "LO TEMP," or "PERM PRESS." The dryer will start, the L.E.D. (light emitting diode) display will read the temperature cycle selected, and the drying time portion of the L.E.D. display will read "00" and count upward as time elapses.

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

- d. Once the preprogrammed dryness level and cool down period have been reached or maximum automatic time has expired, the tone (buzzer) will sound for five (5) seconds, and the L.E.D. (light emitting diode) display will read "donE," at which time the dryer will shut off.

**NOTES:**1. If the Anti-Wrinkle program is active, the L.E.D. (light emitting diode) display will continue to read "donE," and the microprocessor controller (computer) will proceed through the Anti-Wrinkle program until the maximum "Active Guard Time" has expired or until the door is opened, whichever comes first. The L.E.D. display will read "FILL" and/or "Amount to Start".

2. If the Anti-Wrinkle program is not active or in use, the L.E.D. (light emitting diode) display will read "FILL" and/or "Amount to Start."

## 2. Timed Mode (Microprocessor [Computer] Models)

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

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

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

- NOTES:**1. If the Anti-Wrinkle program is active, the L.E.D. (light emitting diode) display will continue to read "donE," and the microprocessor controller (computer) will proceed through the Anti-Wrinkle program until the maximum "Active Guard Time" has expired or until the door is opened, whichever comes first. The L.E.D. display will read "FILL" and/or "Amount to Start".
2. If the Anti-Wrinkle program is not active or in use, the L.E.D. (light emitting diode) display will read "FILL" and/or "Amount to Start."

### 3. Free Dry Mode (Computer Models)

- a. When turning on power or when no cycle is in progress, the L.E.D. (light emitting diode) display will read "FILL" and/or "FrEE."
- b. Select temperature...

The dryer will start, the L.E.D. (light emitting diode) display will read the temperature cycle selected, and the drying time portion of the L.E.D. display will read "00" and count upward as time elapses, or the vented time will count downward, depending on the program parameter setting.

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

- c. Once the preprogrammed dryness level and cool down period has been reached or maximum automatic time has expired, whichever comes first, the tone (buzzer) will sound for five (5) seconds, and the L.E.D. (light emitting diode) display will read "donE," at which time the dryer will shut off.

- NOTES:**1. If the Anti-Wrinkle program is active, the L.E.D. (light emitting diode) display will continue to read "donE," and the microprocessor controller (computer) will proceed through the Anti-Wrinkle program until the maximum "Active Guard Time" has expired or until the door is opened, whichever comes first. The L.E.D. display will read "FILL" and/or "FrEE."
2. If the Anti-Wrinkle program is not active or in use, the L.E.D. (light emitting diode) display will read "FILL" and/or "FrEE."

#### 4. Non-Microprocessor (Computer) Models

- a. Turn power on to the dryer.
- b. Insert coin(s) - rotary meter type ONLY.
- c. Select temperature by using rocker switch and selecting "HI TEMP," "LO TEMP," or "PERM PRESS."
- d. Press "Push to Start" button to start the cycle.
- e. Upon completion of the drying and cooling cycles the dryer will shut off.

**NOTE:** If the door is opened during a cycle, both the heat and motor will stop. Continuation of the cycle will only resume after the door has been closed, and the "Push to Start" button is pressed.

#### 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 (*for GAS MODELS ONLY*):
  - a. **Shut off** external gas supply shut off valve.
  - b. **Shut off** internal gas supply shut off valve located at the gas valve train area.
3. Discontinue the steam supply (*for STEAM MODELS ONLY*):
  - a. **Shut off** steam valves in the supply lines and the return lines.

# SECTION IV

## SERVICE/PARTS INFORMATION

### A. SERVICE

1. Only properly licensed or trained technicians should service the dryer. If service is required, contact the distributor from whom the **ADC** equipment was purchased. If the distributor **cannot** be contacted or is unknown, contact the **ADC** Service Department for a distributor in your area.

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

### B. PARTS

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

**NOTE:** When ordering replacement parts from the **ADC** dealer or the **ADC** factory be sure to give them the correct **model** and **serial numbers** 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. 112254) is placed on the back side of the main door glass. These warranty cards are intended to serve the customer where we record the individual installation date and warranty information to better serve you should you file a warranty claim.
  - a. If a warranty card (**ADC** Part No. 112254) did not come with your dryer, contact the **ADC** Warranty Department or **ADC** Service Department at (508) 678-9000.

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

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

### B. WARRANTY

For a copy of the **ADC** commercial warranty covering your particular dryer(s), contact the **ADC** 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 or warranty information, be sure to have the dryer's **model** and **serial numbers** available so that your inquiry can be handled in an expeditious manner.

### C. RETURNING WARRANTY PARTS

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

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

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

- a. The R.M.A. issued by the factory, as well as any other correspondence pertaining to the returned 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 a 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.

*Clean the lint screen every third or fourth load.*

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

### SUGGESTED CLEANING SCHEDULE

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

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

#### ***WEEKLY***

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

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

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

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

**WARNING:** 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 houses.

## ***90 DAYS***

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

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

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

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

**NOTE:** A back draft damper that is sticking partially closed can result in slow drying and shutdown of 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).

## **C. LUBRICATION**

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

# SECTION VII

## TROUBLESHOOTING

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

The information provided will help isolate the most probable component(s) associated with the difficulty described. The experienced technician realizes, however, that a loose connection or broken/ shorted wire may be at fault where electrical components are concerned ... and not necessarily the suspected component itself.

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

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

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

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

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

### MICROPROCESSOR (COMPUTER) MODELS

#### A. No L.E.D. (light emitting diode) display...

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

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

1. Failed drive motor contactor (relay).
2. Failed arc suppressor (A.S.) board (for Reversing Models Only).
3. Failed drive motor.

4. Failed microprocessor controller (computer).

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

1. Failed drive motor contactor (relay).
2. Failed arc suppressor (A.S.) board.
3. Failed microprocessor controller (computer).

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

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

**E. Blower motor not operating (does not start) ...**

1. Failed blower motor contactor (relay).
2. Failed arc suppressor (A.S.) board.
3. Failed motor.
4. Failed microprocessor controller (computer).

**F. Blower 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 clogged with lint.
  - b. Low voltage to the motor.
  - c. Failed motor.
  - d. Failed (out of balance) impellor (blower/fan).

**G. Both drive motor and blower motor not operating (do not start)...microprocessor controller (computer) motor indicator dots are on...**

1. Fault in main door switch circuit.
2. Blown fuse (2-amp very fast acting fuse [if applicable]).

3. Failed arc suppressor (A.S.) board (for Reversing Models ONLY).
4. Failed microprocessor controller (computer).
5. Failed 24 VAC transformer.

**H. Both drive motor and blower motor run a few minutes and then stop...microprocessor controller (computer) display continues to read time or percent of extraction and all indicator dots are off...**

1. Fault in main door switch circuit ...
  - a. Failed main door switch.
  - b. Main door switch out of adjustment.
  - c. Loose connection in door switch circuit.

**I. Microprocessor (computer) display reads "dSFL"...**

1. Fault in microprocessor heat sensing circuit ...
  - a. Failed microprocessor temperature sensor.
  - b. Failed microprocessor controller (computer).
  - c. Broken wire or connection somewhere between the microprocessor controller (computer) and the micro-processor temperature sensor.

**J. Microprocessor controller (computer) display reads "door"...**

1. Fault (open circuit) in door switch circuit ...
  - a. Failed main door switch.
  - b. Broken connection/wire in main door circuit.
2. Failed 24 VAC transformer.

**K. Microprocessor controller (computer) will not accept any keyboard entries, i.e., L.E.D. (light emitting diode) display reads "FILL" and when keyboard entries are selected, the L.E.D. display continues to read "FILL"...**

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

**L. Microprocessor controller will only accept certain keyboard entries ...**

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

**M. Microprocessor controller (computer) locks up and L.E.D. (light emitting diode) 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.

**N. Dryer stops during a cycle and L.E.D. display returns to "FILL" ...**

1. Fault in microprocessor heat sensor circuit ...
  - a. Loose connection in wires between temperature sensor and microprocessor controller (computer).
2. Loose connection somewhere in main power circuit to microprocessor controller (computer).

**O. Gas heating unit is not operating (no heat)...no spark at burner area when dryer is first started, and heat indicator dot is on...**

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.
2. Fault in burner hi-limit circuit or thermostat.
3. Fault in lint chamber sensor bracket hi-heat protector thermostat.
4. Failed Direct Spark Ignition (DSI) module.
5. Failed DSI ignitor/flame-probe assembly.
6. Failed microprocessor controller (computer).

**P. No heat (*for GAS MODELS ONLY*)...ignitor sparks, burner goes on and off right away...**

1. DSI ignitor/flame-probe out of adjustment...reposition closer to the flame area.
2. Sail switch is fluttering ...
  - a. Lint screen dirty.
  - b. Restriction in exhaust duct work.
3. Insufficient make-up air.

4. Failed ignitor/flame-probe assembly.
5. Failed Direct Spark Ignition (DSI) module.
6. Failed gas valve.

**Q. No heat (*for STEAM MODELS ONLY*)...**

1. Fault in lint chamber sensor bracket hi-heat (limit) protector thermostat.
2. Failed microprocessor controller (computer).
3. No (external) compressed air to steam damper (80 psi required).
4. Failed steam damper 24 VAC pneumatic solenoid switch.
5. Failed piston.
6. Steam damper stuck closed.

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

1. Exhaust duct work run too long or is undersized...back pressure cannot exceed .3 inches Water Column (W.C.).
2. Restriction in exhaust ...
  - a. Exhaust back draft damper is sticking partially closed.
  - b. Restriction in duct work...check duct work from dryer all the way to the outdoors.
3. Low and/or inconsistent gas pressure (*for GAS MODELS ONLY*).
4. Insufficient make-up air.
5. Poor air/gas mixture at burner...yellow or poor flame pattern; adjust gas burner air adjustment shutters (*for GAS MODELS ONLY*).
6. Lint screen not being cleaned on a regular basis or often enough.
7. Extractors (washers) not performing properly.
8. Sail switch is fluttering...restriction in exhaust (*for GAS MODELS ONLY*).
9. Failed microprocessor controller (computer)...temperature calibration is inaccurate.
10. Failed microprocessor temperature sensor...calibration is inaccurate.
11. Failed burner/oven hi-limit (*for GAS and ELECTRIC MODELS ONLY*).
12. Failed lint compartment.
13. Steam damper system not functioning properly (*for STEAM MODELS ONLY*) ...

- a. Damper sticking closed.
- b. Leak in pneumatic (air) system.

14. Failed electric oven elements (*for ELECTRIC MODELS ONLY*).

**S. Condensation on main door glass...**

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

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

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

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

1. Dryer not leveled properly.
2. Impellor (fan) out of balance ...
  - a. Excessive lint build up on impellor (fan).
  - b. Failed impellor (fan).
3. Loose basket (tumbler) 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 and/or tumbler bearings.
8. V-belt(s) either too tight or too loose.

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

1. Burner air shutters are out of adjustment.

2. Insufficient make-up air.
3. Dust and/or lint in burner.
4. Insufficient gas pressure.

## DUAL TIMER MODELS

### A. Dryer will not start..both drive and blower motors not operating (indicator light is off)...

1. Dryer control circuit fuse is blown.
2. Open at location...service main fuse or circuit breaker.
3. Failed push to start relay.
4. Failed door switch and/or circuit.
5. Failed heat timer.
6. Failed dual timer relay.

### B. Drive motor (only) not operating ...

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

### C. Blower motor (only) not operating...

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

### D. Both drive and blower motors not operating (indicator light is on)...

1. Fault with L1 termination at reversing timer (*for Reversing Models Only*).

### E. Reversing drive motor operates in one direction only, stops, and restarts in same direction (*for Reversing Models Only*)...

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

### F. Heating unit not operating (ALL temperature selections)...

## GAS MODELS

1. Fault in sail switch circuit ...
  - a. Sail switch out of adjustment and/or failed.
  - b. Sail switch not closing or fluttering ...

- 1) Check blower (impellor/fan) motor and rotation direction.
- 2) Restriction in location exhaust system.
2. Failed burner hi-limit circuit.
3. Failed lint compartment automatic (225°) safety thermostat circuit.
4. Failed heat selector switch.

### **ELECTRIC MODELS**

1. Fault in sail switch circuit ...
  - a. Sail switch out of adjustment and/or failed.
  - b. Sail switch not closing or fluttering ...
    - 1) Check blower (impellor/fan) motor and rotation direction.
    - 2) Restriction in location exhaust system.
2. Failed oven hi-limit circuit.
3. Failed lint compartment automatic (225°) safety thermostat circuit.
4. Failed oven contactor/relay.
5. Failed heat selector switch.

### **STEAM MODELS**

1. Steam damper binding and/or stuck.
2. Failed lint compartment automatic (225°) safety thermostat circuit.
3. Failed heat selector switch.

#### **G. Heat unit not operating for only one (1) temperature selection...**

1. Failed thermostat corresponding to selection made.
2. Failed heat selector switch

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

1. Heating unit cycling on hi-limit thermostat (*for GAS and ELECTRIC MODELS ONLY*).
2. Steam damper binding in partially open position (*for STEAM MODELS ONLY*).

3. Lint and/or dust accumulation on steam coil fins (*for STEAM MODELS ONLY*).
4. Housekeeping ...
  - a. Lint screen and lint compartment not being cleaned on a regular basis.
  - b. Lint accumulation in location exhaust system.
5. Insufficient make-up air.
6. Failed hi-limit thermostat (*for GAS and ELECTRIC MODELS ONLY*).
7. Failed lint compartment automatic (225°) safety thermostat circuit.
8. Extractors not performing properly.
9. Low and/or inconsistent gas pressure (*for GAS MODELS ONLY*).
10. Gas supply may have low heating value (*for GAS MODELS ONLY*).
11. Sail switch is fluttering (*for GAS and ELECTRIC MODELS ONLY*) ...
  - a. Restriction in location exhaust system.
12. Fault in electric oven element circuit (*for ELECTRIC MODELS ONLY*) ...
  - a. Failed element(s).
  - b. Failed oven contactor (relay).
13. Exceptionally cold / humid or low barometric pressure atmosphere.
14. Blower (fan) motor rotation direction is incorrect.

**I. Dryer is cycling on hi-limit thermostat (*for GAS and ELECTRIC MODELS ONLY*)...**

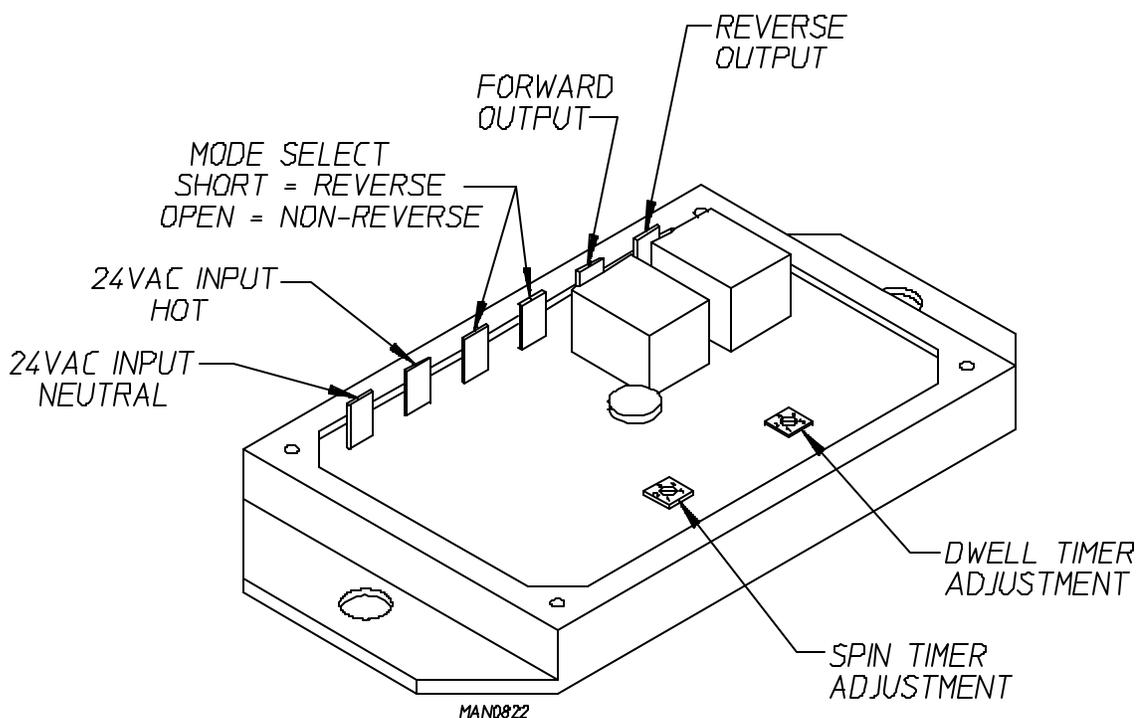
1. Blower (impellor/fan) motor failure.
2. Blower (impellor/fan) motor rotation direction is incorrect.
3. Insufficient make-up air.
4. Restriction in location exhaust system ...
  - a. Undersized exhaust ducting.
5. Lint screen needs cleaning.
6. Failed hi-limit thermostat.
7. Failed oven contactor (relay) - *for ELECTRIC MODELS ONLY*.

# SECTION VIII

## REVERSING TIMER SPIN/DWELL ADJUSTMENTS

Dual timer models with "reversing option" have an electric 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).



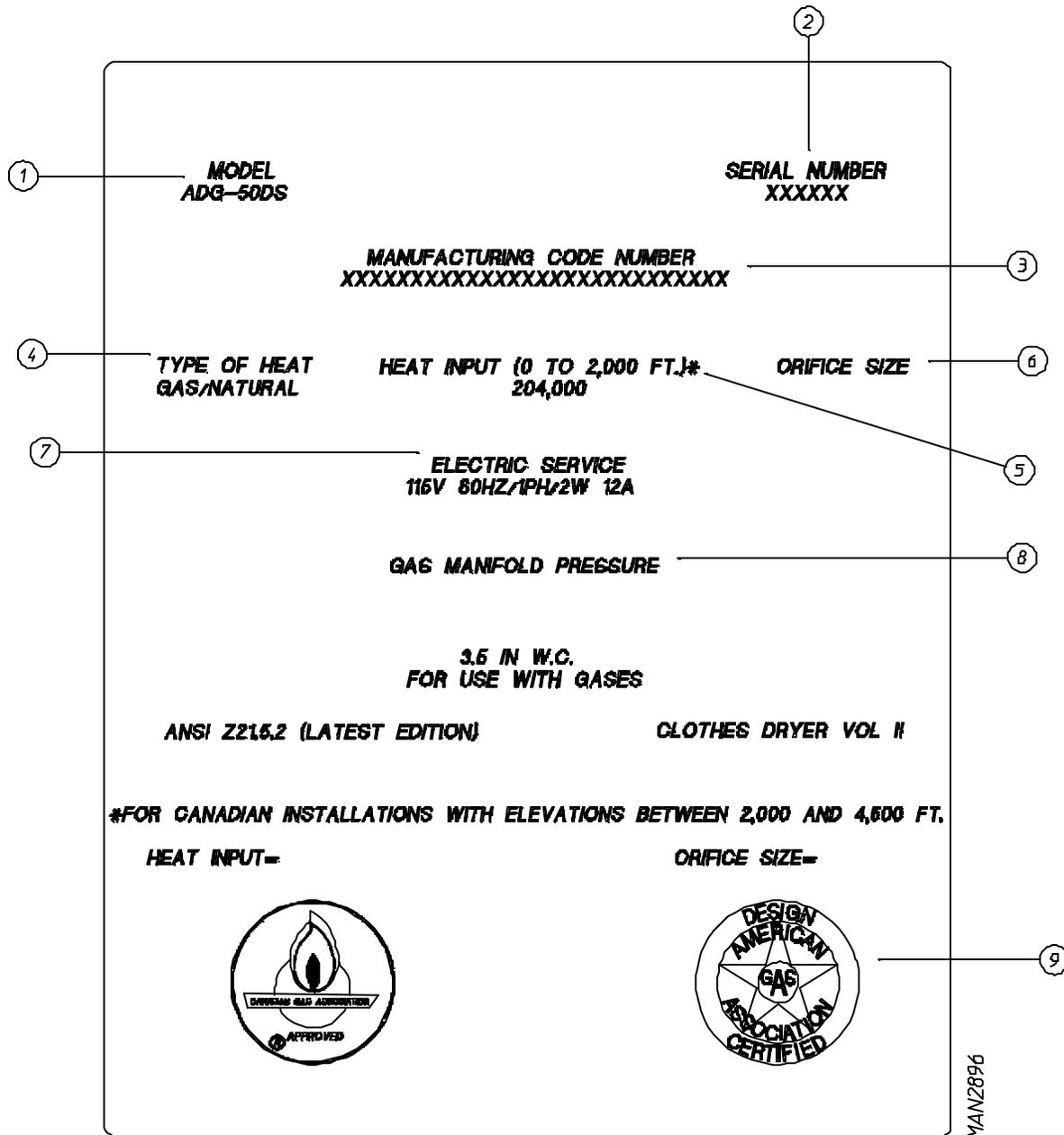
<b>TIMING LEGEND</b>					
<b>SPIN TIME</b>					
Switch Position Number	1	2	3	4	5
Time in Seconds*	30	60	90	120	150
<b>DWELL (STOP) TIME</b>					
Switch Position Number	1	2	3	4	5
Time in Seconds*	5	6	8	10	12
* Values shown are +/- 1 second.					

# SECTION IX

## 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 **ADC** please have the model number and serial number available.

## **THE DATA LABEL**

### **1. MODEL DRYER**

The model number is an **ADC** number which describes the size of the dryer and the type of heat (gas, electric, or steam).

### **2. SERIAL NUMBER**

The serial number allows **ADC** to gather information on your particular dryer.

### **3. MANUFACTURING CODE NUMBER**

The manufacturing code number is a number issued by **ADC** which describes **ALL** possible options on your particular model.

### **4. TYPE OF HEAT**

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

### **5. HEAT INPUT (*for GAS MODELS ONLY*)**

This describes the heat input in British Thermal Units per Hour (BTUH).

### **6. ORIFICE SIZE**

Gives the number drill size used.

### **7. ELECTRIC SERVICE**

This describes the electric service for your particular model.

### **8. GAS MANIFOLD PRESSURE**

-- This describes the manifold pressure taken at the gas valve tap.

### **9. APPLICABLE APPROVAL SEAL(S)**

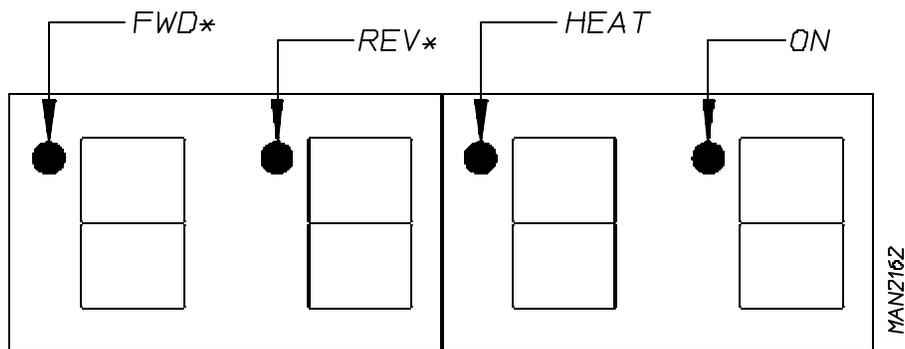
-- I.E., American Gas Association, Canadian Gas Association.

# SECTION X

## PROCEDURE FOR FUNCTIONAL CHECK OF REPLACEMENT COMPONENTS

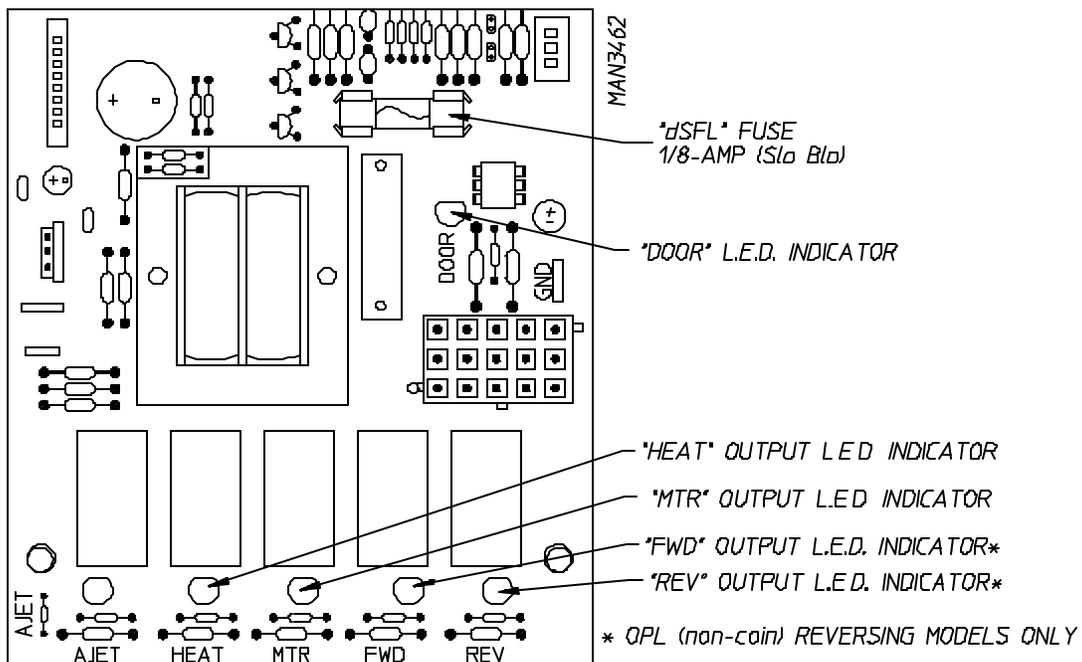
### 1. Microprocessor (computer) Board

- 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.)



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

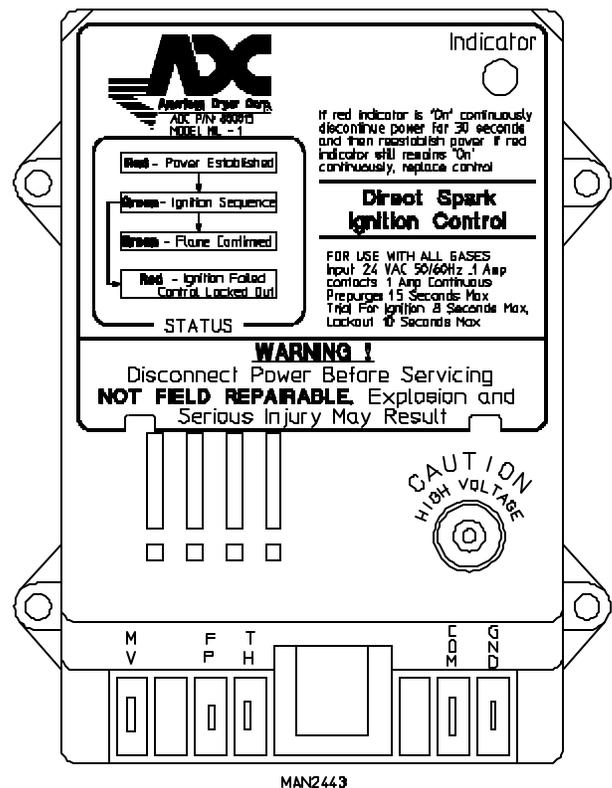
- d. Verify that motor(s) heat, and door indicator lights on the back side of the microprocessor (computer) board are lit. (Refer to illustration below.)



- e. Open main door. The dryer **must stop** and **ALL** output indicator lights on the back side of the microprocessor (computer) board **must go out**. (Refer to illustration on **previous page [page 57]**.)
- 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.



ADC 112122    1- 01/13/95-250    2\* 01/10/95-250    3\* 10/24/95-250  
4- 04/23/96-250    5\* 01/06/97-250    6- 10/14/97-50  
7- 11/04/97-250    8- 12/19/97-250    9\* 05/19/98-250  
10\* 01/12/99-250    11\* 04/17/00-100

